m3

MUSIC WORKSTATION/SAMPLER

Parameter Guide

EDS Enhanced Definition Synthesis

TouchView Graphical User Interface

KARMA KAY ALGORITHMIC REALTIME MUSIC ARCHITECTURE

KKS KORG Komponent System

REMS

USB2.0

GENERAL MIDI

KORG

Ⓔ ④

Conventions in the operation manuals

References to the M3

The M3 is available as several models: the 88-key M3-88, the 73-key M3-73, the 61-key M3-61, and the sound module by itself as the M3-M. References in these manuals to “the M3” refer to all of these models collectively.

Abbreviations for the manuals: OG, PG, VNL

In the documentation, references to the manuals are abbreviated as follows.

OG: Operation Guide

PG: Parameter Guide

VNL: Voice Name List (PDF)

Procedure steps 1. 2. 3. …

These indicate the steps of a procedure.

Symbols , MIDI, *Note*, *Tips*

These symbols respectively indicate a caution, a MIDI-related explanation, a supplementary note, or a tip.

Example screen displays

The parameter values shown in the example screens of this manual are only for explanatory purposes, and may not necessary match the values that appear in the Display of your instrument.

MIDI-related explanations

CC# is an abbreviation for Control Change Number.

In explanations of MIDI messages, numbers in square brackets [ ] always indicate hexadecimal numbers.

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Program mode

PROG Page Select

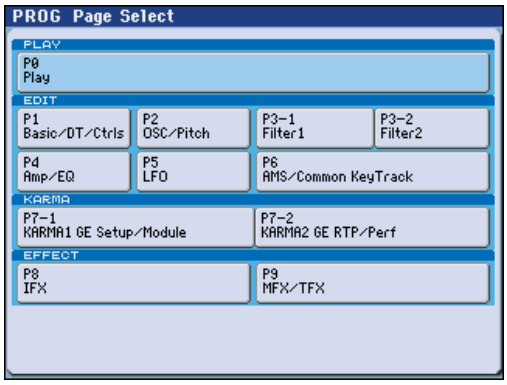
- Press the MODE PROG switch to select Program mode.

You can use the following ways to select the pages in Program mode.

1. Press the PAGE SELECT switch to access “Page Select.”

“Page Select” shows an abbreviated name for each page.

The page in which you were prior to pressing the PAGE SELECT switch is shown in light blue.



2. Select the desired page in the display.

Other ways to select pages

- Hold down the PAGE SELECT switch and press a numeric keys 0–9 to specify a page number; you will move to the corresponding page.

  For example if you want to access the P4: Amp / EQ page, hold down the PAGE SELECT switch and press numeric key 4.

  Note: For pages that consist of multiple subpages, such as P3–1 and P3–2 or P7–1 and P7–2, the first of these pages (P3–1 or P7–1) will be selected.

- You can press the EXIT switch to return to the P0: Play page you selected most recently. Press the EXIT switch once again to return to the Main page.

	Page	Main content
PLAY	P0: Play	Select and play programs. (☞p.2) Simple KARMA editing. (☞p.4) Audio input settings and resampling settings. (☞p.8) Editing from the control surface. (☞p.14)
EDIT	P1: Basic/DT/Ctrls	Basic program settings, such as voice assign mode. (☞p.25) Drum track settings. (☞p.28) X–Y control settings. (☞p.31) SW1, 2, and slider function settings. (☞p.35) Pad note and velocity settings. (☞p.36)
	P2: OSC/Pitch	Oscillator selection and pitch settings. (☞p.37)
	P3–1: Filter1	Filter 1 (tone) settings. (☞p.47)
	P3–2: Filter2	Filter 2 (tone) settings. (☞p.57)
	P4: Amp/EQ	Amp 1, 2 (volume) settings. (☞p.58) Amp 1, 2 driver and pan settings. (☞p.64) 3-band parametric EQ settings. (☞p.65)
	P5: LFO	LFO settings. (☞p.66)
	P6: AMS/Common KeyTrack	AMS Mixer settings. (☞p.70) Common keyboard tracking settings. (☞p.76)
KARMA	P7–1: KARMA1 GE Setup/Module	Overall settings for KARMA, and settings for each module. (☞p.77)
	P7–2: KARMA2 GE RTP/Perf	KARMA realtime parameter settings and performance parameter settings. (☞p.90)
EFFECT	P8: IFX	Oscillator output bus and master effect send level settings. (☞p.98) Insert effect routing, selection, and settings. (☞p.99)
	P9: MFX/TFX	Master effect routing, selection, and settings. (☞p.104) Total effect selection and settings. (☞p.105)

PROG P0: Play

This is the main Program mode page for EDS Programs. Among other things, you can:

- Select Programs
- Make basic edits to KARMA
- Set up the audio inputs and resampling options
- Check the control surface content, and control it.

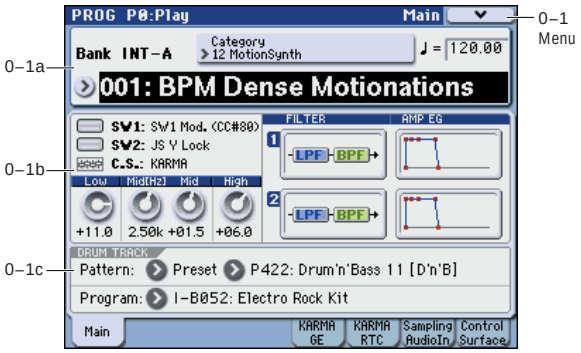
MIDI All MIDI data in Prog P0: Play is transmitted and received on the global MIDI channel **MIDI Channel** (Global 1–1a).

Tip: Auto Song Setup

The Auto Song Setup feature copies the current Program or Combination into a Song, and then puts the M3 in record-ready mode.

If inspiration for a phrase or song strikes you while you're playing, you can use this function to start recording immediately. For more information, please see "Tip: Auto Song Setup" on page 192.

0–1: Main



0–1a: Program Select

Bank (Bank Select) [INT–A...F, GM, g(1)...g(9), g(d), USER–A...G]

This is the Bank containing the current Program.

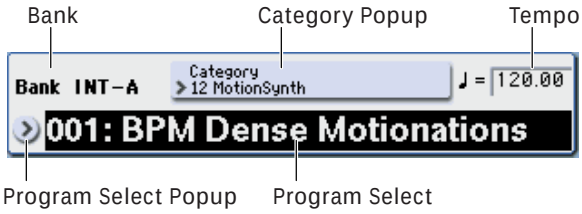
The GM bank contains a full set of General MIDI 2 Programs, as well as variation sub-banks g(1)–g(9) (GM2 variation programs), and bank g(d) (drums).

Each time you press the BANK SELECT I–G switch, you'll step through these variation banks in the following order: G→g(1)→g(2)…g(8)→g(9)→G…

Bank	Main contents
INT–A...D	For preloaded programs (EDS)
INT–E	For preloaded programs, and user programs such as programs using multisamples created in Sampling
INT–F	For EXB-RADIAS programs
G	GM2 capital programs
g(1)–(9)	GM2 variation programs*
g(d)	GM2 drums programs
USER–A...D, USER–E...G	For preloaded programs and user programs (EDS or EXB-RADIAS), and for EXB-PCM series programs

- Rewritable banks INT–A–INT–E and USER–A–G each contain 128 programs (a total of 1,536). Of the non-rewritable banks, G contains GM2 capital programs, g(1)–g(9) contain GM2 variation programs, and g(d) contain GM2 drum programs.
- Bank INT–F can be selected if the optional EXB-RADIAS is installed. If this is installed, 128 special programs for the EXB-RADIAS will be available.
- Bank INT–E will be selected as the default destination for writing resampled multisamples as programs when you use the menu command **Auto Sampling Setup**.
- The GM basic sounds will be selected for banks for which there is no variation sound. (An "*" is displayed at the beginning of the program name.)
- If the optional EXB-RADIAS is installed, the bank type of the USER-A–G banks can be switched between EDS and RADIAS. You won't be able to save programs in a bank that is set to the wrong bank type. Use the Global mode menu command **Set Prog User-Bank Type** to make this setting. For more information, please see "Set Prog User-Bank Type" on page 382.

For details on the factory Programs, please see the "Voice Name List" (PDF).



Program Select [0...127 (INT–A...F, USER–A...G), 1...128 (G, g(1)...g(9), g(d))]

Here you can select a program.

To switch programs

- Select **Program Select**, use the numeric keys 0–9 to enter a program number, and press the ENTER switch.
- Select **Program Select**, and turn the VALUE dial or use the △ / ▽ switches.

  Note: In the P0: Play page (only), the VALUE slider operates as a program modulation source. You can't use the slider to select programs while in this page.
- From the Bank / Program Select menu, view and select programs by bank.
- From the Category / Program Select menu, view and select programs by category.
- Use a foot switch to switch programs. (see "Foot Switch Assign" on page 371 and "List of Foot Switch assignments" on page 599)
- Switch programs by transmitting a MIDI program change from a connected external MIDI device.

Bank/Program Select menu:

1. **Press the popup button at the left of Program Select to open the Bank/Program Select menu.**
2. **Press one of the tabs on the left or right to select a specific bank.**

The Variation button is active if Bank GM is selected.

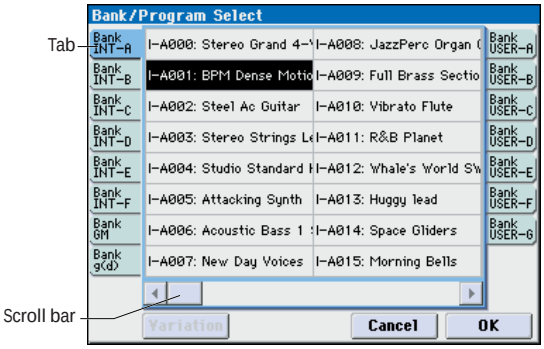
Each time you press the Variation button, the bank will switch in the order of G→g(1)→g(2)→... →g(8)→g(9)→G.

3. **Select a program from the list. You can touch a Program's name directly, or use the Inc △ and Dec ▽ switches.**

Use the scroll bar to view information not currently shown.

4. **Press the OK button to confirm your choice, or press the Cancel button to exit without changing the Program.**

Bank/Program Select menu



Category [00...17/00...07]

Here you can select the program category.

All programs are classified using eighteen main categories and eight sub-categories. You can select a category, and then select a program within that category. When you press the popup button, the Category / Program Select menu will appear.

Category/Program Select menu:

Here you can select programs by main category and sub-category. All programs are classified into up to eighteen main categories, and each category is classified into eight sub-categories. You can use these main categories and sub-categories to select programs.

1. **Press the Category popup button (above the Program Select parameter) to open the Category/Program Select menu.**
2. **Press one of the tabs on the left or right to select the desired category.**

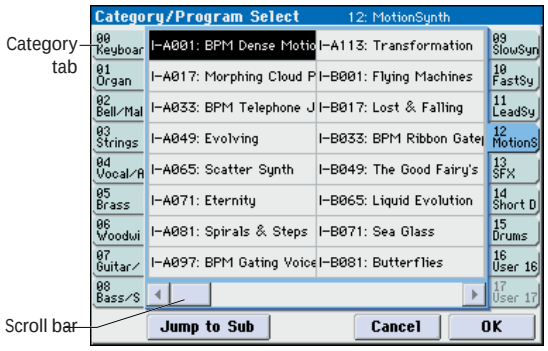
Note: If no Programs are assigned to a particular category or sub-category, you won't be able to select its tab.

3. **Select a program from the list.**

You can touch a Program's name directly, or use the Inc △ and Dec ▽ switches.

If there are more Programs than can be shown on the screen at one time, use the scroll bar to browse through the entire Category.

Category/Program Select menu

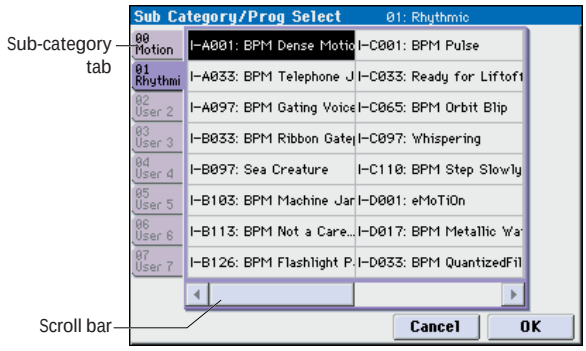


4. **To select from a sub-category, press the Jump to Sub button to access SubCategory/Program Select.**

Press one of the left tabs to select a sub-category.

Note: Sub-categories not assigned to any programs cannot be selected from the tabs.

Press the OK button to confirm your selection, or press the Cancel button to cancel it. You will return to the main categories.



5. **Press the OK button to confirm your choice, or press the Cancel button to exit without changing the Program.**

Note: You can assign a category to a Program in the **Write Program** dialog.

♩(Tempo) [40.00... 300.00, EXT]

This is the tempo for the current Program, which applies to tempo-synced LFOs, KARMA, and tempo-synced effects.

040.00...300.00 allow you to set a specific tempo in BPM, with 1/100 BPM accuracy. In addition to using the standard data entry controls, you can also just turn the TEMPO knob, or by playing a few quarter-notes on the TAP TEMPO switch.

EXT shown if **MIDI Clock** (Global 1–1a) is set to **External MIDI** or **External USB**. This is also shown if "MIDI Clock" is Auto and MIDI clock data is being received from an external device. If tempo is EXT, KARMA etc. will synchronize to MIDI clock data from an external MIDI device.

0–1b: Program Information

The following information for the selected program is shown.

SW1, SW2

These are the functions controlled by the SW1, SW2 switches of the KYBD-61 / 73 / 88.

Note: This setting is valid only if the KYBD-61 / 73 / 88 is connected to the M3-M via its To Module connector.

C.S.

This indicates the currently selected control assignment. Control via the control surface is available in any page.

FILTER 1, 2

This indicates the filter type setting for filter 1 and 2.

AMP EG 1, 2

This indicates the EG settings for amp 1 and 2.

EQ (Low, Mid[Hz], Mid, High)

This indicates the 3-band EQ settings. You can edit the values.

0–1c: Drum Track

The drum track provides an easy way for you to play back a rhythm section using the M3's high-quality drum programs and rich variety of drum track patterns.

You can try out program phrases or edit programs while listening to the drum track.

When you come up with a phrase you like, you can use the Auto Song Setup function to easily record it into the sequencer.

Pattern Bank **[Preset, User]**

Pattern No. **[P000...522, U000...999]**

Select the pattern you want to use in the drum track. You can create user patterns in Seq P10: Pattern / RPPR– Pattern Edit.

Drum Track Program **[I–A000...U–G127]**

Select the program that will play the drum track pattern.

Note: You can also edit these parameters in Prog P1: Basic / DT / Ctrls.

MIDI The MIDI channel of the drum track is specified by the Global P1: MIDI– MIDI Basic page DrumTrack **Prog MIDI Ch**. MIDI message transmission for a pattern is specified by **Prog MIDI Out**. Program changes are not transmitted or received.

▼0–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107

For more information, please see "Program: Menu Command" on page 106.

0–5: KARMA GE

This page lets you make basic adjustments to KARMA.

In Program mode you can use one KARMA module (Module [A]).

Here you can select the GE (Generated Effect) used by the KARMA module, specify the time signature of the generated pattern, and view the content assigned to the KARMA controllers.

Other settings are made in Prog P7 (see page 77–).

To enable or disable KARMA for the selected Program, use the KARMA ON / OFF switch.

The states of the KARMA ON / OFF and LATCH switches, the selected KARMA SCENES 1 / 5–4 / 8, and KARMA Switches 1–8 and Sliders 1–8 are saved independently for each Program.

0–5a: Program Select, Tempo

Bank (Bank Select)
[INT–A...F, GM, g(1)...g(9), g(d), USER–A...G]

Program Select **[0...127 (INT–A...F, USER–A...G), 1...128 (G, g(1)...g(9), g(d))]**

This shows the bank, number, and name of the currently selected program. Here you can also select a program. For more information, please see "0–1a: Program Select" on page 2.

♩(Tempo) **[040.00...300.00, EXT]**

For more information, please see "♩(Tempo)" on page 3.

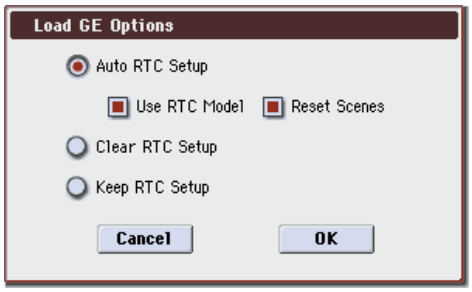
0–5b: Load GE Options, KARMA T.Sig

Load GE Options

These options let you specify whether the values and assignments for the KARMA Sliders 1–8 and Switches 1–8 will be set automatically, be initialized, or be preserved when you select a GE.

These options relate to the concept of RTC Models; for more information, see "RTC Model" on page 194 of the Operation Guide.

1. **Press the Load GE Options button to open the Load GE Options dialog box.**



2. **Specify how you want the KARMA controllers and scene settings to change (or be preserved) when you select a different GE.**

Auto RTC Setup: When you select a GE, the settings for the KARMA Sliders 1–8 and Switches 1–8 will be made automatically. This means that when you select a GE, you will be able to use the sliders and switches to control the phrases or effect variations without having to reassign the settings yourself.

Clear RTC Setup: When you select a GE, all KARMA controller and scene settings will be cleared (initialized). The Control Surface Sliders and Switches will have no effect on the GE.

Keep RTC Setup: Even if you select a GE, the current KARMA controller and scene settings will be preserved. Use this setting if you want to preserve the current KARMA controller and scene settings because you are selecting a GE whose assigned GE parameters are exactly the same (using the same RTC Model), or if you want to keep the current KARMA controller settings and edit them yourself as necessary.

3. **If you choose the Auto RTC Setup setting, check or uncheck the Use RTC Model option box to specify how the automatic settings will be made.**

On (checked): The current KARMA controller assignments and values will be cleared, and new settings will be made according to the RTC Model specified for each GE. However if you select a GE whose RTC Model is **Custom**, all KARMA controller and scene settings will be initialized (the same as if you've selected **Clear RTC Setup On**). Normally you will leave this on.

Off (unchecked): The current KARMA controller assignments and values will be preserved as much as possible. For example, you might select a drum pattern GE with this setting turned On (checked), edit some of the KARMA Scene settings appropriately for that GE, and then turn this Off (unchecked) when trying out a different drum pattern GE, thereby applying the settings you made to the new GE.

Note: If you turn on **Auto RTC Setup** and turn off **Use RTC Model**, the current KARMA controller settings will be preserved as much as possible, relative to the state of the GE Real-Time Parameters. However if (for example) the newly selected GE does not have the same realtime parameters, some of the KARMA controller settings will be cleared. Normally you will use this setting if you want to keep the KARMA controller settings.

4. **If you turned on Use RTC Model (checked), use Reset Scenes to specify whether scene settings will be reset or preserved when you select a GE.**

On (checked): When you select a GE, the current settings of scenes 1–8 will be reset to the stored GE settings.

Off (unchecked): The current settings of Scenes 1–8 will be preserved. Choose this if you intend to select a different GE that has the same RTC Model and want to continue using the same scene settings.

Even if this is Off (unchecked), the settings will be reset if you select a GE for which a different RTC Model is specified.

If **Use RTC Model** is Off (unchecked), the **Reset Scene** option is unavailable.

5. **Click the OK button to apply the settings of the dialog box, or click the Cancel button to return to the settings before you opened the dialog box.**

Note: The RTC Model associated with a GE can be viewed on the Control Surface page when it is set to KARMA, and in the VNL.

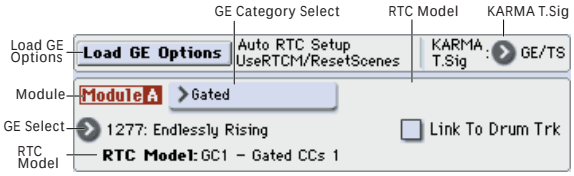
KARMA T.Sig (KARMA Time Signature) [GE/TS, 1/4...16/4, 1/8...16/8, 1/16...16/16]

This specifies the time signature of the phrases or patterns generated by the KARMA Modules.

The internal time signature of the phrase or pattern is determined by the GE, but you can set this parameter to change the time signature.

GE/TS: The initial time signature specified by each KARMA Module will be used.

1/4…16/16: Specify the desired time signature. In Combination and Sequencer modes, this will change the time signature for all four KARMA Modules.



0–5c: GE Select

The phrases and patterns produced by a KARMA Module are generated by a **GE (Generated Effect)**.

Based on input note data from the keyboard, the GE creates phrases and patterns using numerous internal parameter settings to control the development of the note data, the rhythm, the chord structure, the velocity etc.

MIDI control changes and pitch bend etc. can also be generated in synchronization with the phrase or pattern. In this way you can produce phrases and patterns in which the GE freely varies the tone or pitch. The GE can be selected independently for each KARMA Module.

In Program mode you can use one KARMA Module (Module [A]).

Module A:

GE Select [0000: Arp Model 01 Up/Dn...2092: Tempo Env Repeats]

This selects the Module's GE, from among the 2093 presets.

GE Category Select [Arpeggio...Real-Time]

This lets you select a GE by category, from **Arpeggio** through **Real-Time**.

RTC Model

This shows the RTC Model of the GE selected by GE select.

RTC stands for "Real Time Control." RTC models provide a level of standardization for controlling the over 200 internal parameters of a GE.

Link to Drum Trk [Off, On]

This links KARMA with the pattern playback of the drum track.

On (checked): The KARMA performance will be linked with the starting and stopping of the drum track. If this is On, the front panel LINKED LED (located between the DRUM TRACK ON / OFF and KARMA ON / OFF switches) will light.

If you turn on the KARMA ON / OFF switch and play the keys of the KYBD-61 / 73 / 88 (or receive a note-on message), KARMA will not be triggered. When you turn on the DRUM TRACK ON / OFF switch, KARMA will start the moment the drum track starts.

When you turn the DRUM TRACK ON / OFF switch on (when **Trigger Mode** is Start Immediately), KARMA will be triggered and will begin operating. When KARMA "LATCH" is on, and "Trigger Mode" is Wait KBD Trig, it will begin operating when you play a key (or receive a note-on message).

If you turn the DRUM TRACK ON / OFF switch off while KARMA is operating, KARMA will also stop if KARMA "LATCH" is Off.

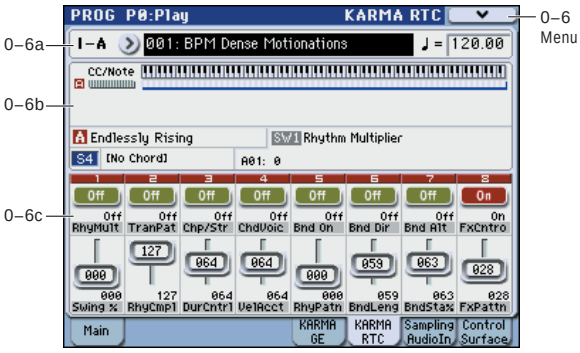
Off (unchecked): KARMA will not synchronize with the drum track.

▼0–5: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107
- 4: **Copy KARMA Module** ☞p.114
- 5: **Initialize KARMA Module** ☞p.115
- 6: **Copy Scene** ☞p.115
- 7: **Swap Scene** ☞p.115
- 8: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

0–6: KARMA RTC



Using the control surface for KARMA settings

You can use the control surface to control the KARMA function's KARMA Switches and KARMA Sliders. You can make these settings using the front panel mixer section, or in the P0: Play– Control Surface page display. The following explanation describes how to make settings from the front panel.

KARMA Switches

1. **Press the CONTROL ASSIGN KARMA switch.**
2. **Press the MIX PLAY/MUTE 1–8 switches to turn the KARMA Switches On/Off.**

KARMA Sliders

1. **Press the CONTROL ASSIGN KARMA switch.**
2. **Move the MIX VOLUMES 1–8 sliders.**

MODULE CONTROL and scene switching

In Program mode, only KARMA Module A can be used.

In Combination and Sequencer modes, the four modules A, B, C, and D can be used. Use the MODULE CONTROL switch to switch between them.

There are eight KARMA scenes, and you can use the SCENES 1 / 5–4 / 8 switches to switch between them. Each scene memorizes the settings of the KARMA Switches 1–8 and KARMA Sliders 1–8. By switching scenes, you can instantly switch between these settings to add even more variety to the sound generated by KARMA.

When you press the CONTROL ASSIGN KARMA switch, the 1–4 or 5–8 LED will blink as the next choice. When you press one of the 1 / 5–4 / 8 switches, the corresponding KARMA scene will be selected.

0–6a: Program Select, Tempo

Bank (Bank Select) [INT–A...F, GM, g(1)...g(9), g(d), USER–A...G]

Program Select [0...127 (INT–A...F, USER–A...G), 1...128 (G, g(1)...g(9), g(d))]

This shows the bank, number, and name of the currently selected program. Here you can also select a program. For more information, please see "0–1a: Program Select" on page 2.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 3.

0–6b: CCs/Notes Graphic

KARMA Module Info:

Module

This indicates module A.

CCs/Notes, Scan Zone

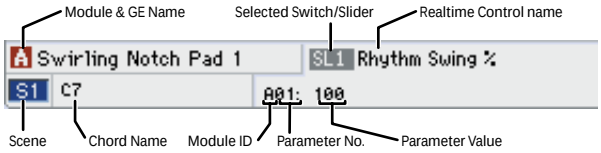
This is a real-time display of the notes or CC# message generated by the KARMA Module (Module [A]).

The Key Zone settings of the KARMA Module are displayed as a solid blue line under the notes display. For more information, please see “Zone:” on page 77.

KARMA Value

When you operate the KARMA Sliders 1–8 or KARMA Switches 1–8, the number and value of the GE Real-Time Parameters or Perf Real-Time Parameters you are controlling will be displayed. This lets you see which parameters are being controlled by the slider or switch, and how.

Display example



Module & GE Name

This shows the KARMA module and GE.

Scene

This shows the currently selected scene.

Chord Name

This shows the chord name detected by the KARMA module.

Note: Chord detection is affected by the following parameters.

- Prog 7–7–1: Program Select, Load GE Options, KARMA T.Sig, Tempo, Key Zone
- **Transpose** (Prog 7–1–7: Module Parameter-Control)
- **Destination** (Prog 7–2–3: Dynamic MIDI) Chord Scan and Smart Scan

Selected Switch/Slider [SW1...8, SL1...8]

This shows the KARMA Sliders 1–8 or KARMA Switches 1–8 you are currently operating or that was last selected.

Realtime Control Name

This shows the full name of the realtime control you are currently operating or that was last selected. Parameter assignments are made in the P7–1: KARMA2– Names page.

Module ID [A, P]

This shows which parameters you are controlling from the KARMA Sliders 1–8 or KARMA Switches 1–8.

A: Shows that KARMA Module A is being controlled. In this case, you are controlling a GE Real-Time Parameter. (Note that in Program mode, only Module A is available.) The following number identifies the specific parameter within the module. For instance, **A22** is parameter 22 of Module A.

P: Shows that the slider or switch is controlling a Performance Real-Time Parameter.

Parameter No. [01...32]

When **Module ID** is A (KARMA Module A), this area shows the GE Real-Time Parameter number 01–32 that you are controlling (7–2: KARMA2– GE RTP). If **Module ID** is P, this area shows the Performance Real-Time Parameter number 01–08 (7–2: KARMA2– Perf RTP) that you are controlling.

A slider or switch can have many parameters assigned to it. A maximum of four assigned parameters can be displayed here in the available space.

To change the parameter assignments, use the KARMA GE RTP and Perf RTP pages. For more information, please see 7–2: KARMA– GE RTP page, and Perf RTP page.

Parameter Value

This shows the value of the GE or Performance Real-Time Parameters assigned to the selected Slider or Switch. The range can vary, depending on the individual parameters. The range of the displayed value will depend on the parameter. The display and value will change when you operate the slider or switch.

Note: The number and value of the GE realtime parameters and performance realtime parameters are shown as far as can be displayed.

0–6c: RealTime Controls

This displays the names and stored settings of KARMA Switches 1–8 and KARMA Sliders 1–8.

1, 2, 3, 4, 5, 6, 7, 8:

This shows the current settings of KARMA Switches 1–8 and the KARMA Sliders. The explanation below will mention only Switch 1 and Slider 1. Switches 2–8 and Sliders 2–8 are the same as 1.

KARMA Switch1

This shows the current KARMA Switch 1 setting.

If **Control Assign** is KARMA, you can use the control surface switches and sliders to control KARMA Switches 1–8 and KARMA Sliders 1–8. You can also operate them by directly pressing the switch shown in the display.

KARMA Switch1 Stored Value

This shows the setting of KARMA Switch 1 that is written into the program.

KARMA Switch1 Name

This shows the name of KARMA Switch 1 (abbreviated name).

You can assign this name in Prog 7–2: KRMA2 – Names.

KARMA Slider1

This shows the current setting of KARMA Slider 1.

If **Control Assign** is KARMA, this is linked with operations of control surface slider 1. In addition, you can directly press the slider shown in the display and then use the VALUE slider, △ / ▽ switches, or VALUE dial to adjust the value.

KARMA Slider1 Stored Value

This shows the setting of KARMA Slider 1 that is written into the program.

KARMA Slider1 Name

This shows the name of KARMA Slider 1 (abbreviated name).

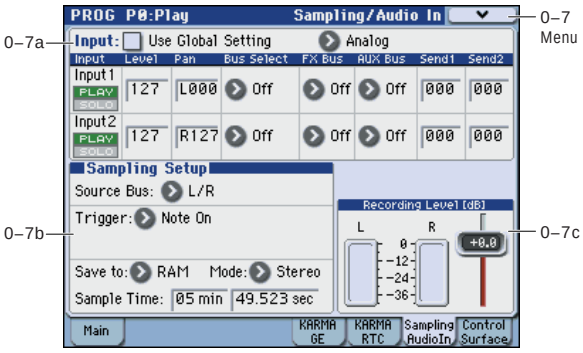
You can assign this name in Prog 7–2: KRMA2 – Names.

▼0–6: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107
- 4: **Copy KARMA Module** ☞p.114
- 5: **Initialize KARMA Module** ☞p.115
- 6: **Copy Scene** ☞p.115
- 7: **Swap Scene** ☞p.115
- 8: **Capture Random Seed** ☞p.116
- 9: **Auto Assign RTC Name** ☞p.117

For more information, please see “Program: Menu Command” on page 106.

0–7: Sampling/Audio In



This page lets you adjust the volume, pan, effects sends, and bussing for the audio inputs, including analog inputs 1–2 and the S/P DIF L/R digital inputs. It also controls the sampling-related settings for Program mode.

The M3 can sample external audio from the analog or S/P DIF inputs, at 48 kHz 16-bit resolution, in mono or stereo. You can record samples into RAM, or sample directly to media.

You can also digitally resample the complete sound of a Program, played polyphonically, live or sequenced, including any effects and KARMA-generated events.

Finally, you can also use the M3 as a 4-in, 6-out effects processor.

You can combine any and all of these features at once. For instance, you can sample a live guitar riff from the audio inputs, processed through M3 effects, while listening to and either recording or not recording a KARMA-generated phrase.

Note: If the EXB-FW option is installed, FireWire audio input/output will be added. This gives you a total of 6-in and 6-out.

Using the control surface to make audio input settings

You can use the control surface to make **Play/Mute**, **Solo On/Off**, and **Volume** settings for the audio input. These settings can be made from the front panel mixer section, or in the display of the P0: Play– Control Surface page. Here we will explain how to use the front panel.

If **Use/Edit Global Setting** is on, the control surface will control the Global mode settings.

PLAY/MUTE

1. **Press the CONTROL ASSIGN MIXER switch to make INPUTS light.**
2. **Press a MIX PLAY/MUTE 1–4 switch to change the PLAY/MUTE status of each input.**

SOLO On/Off

1. **Press the CONTROL ASSIGN MIXER switch to make INPUTS light.**
2. **Choose the menu command “Panel-Switch Solo Mode On.” (A check mark will appear when you select this.)**
3. **Press a MIX PLAY/MUTE 1–4 switch to change the solo on/off status of each input.**

Audio Volume

1. **Press the CONTROL ASSIGN MIXER switch to make INPUTS light.**
2. **Use the MIX VOLUMES 1–4 slider to control the volume.**

Note: If the EXB-FW option is installed, you can use the 5, 6 switches and 5, 6 sliders to control the above **PLAY/MUTE**, **SOLO On/Off**, and **Audio Volume** settings of the FireWire inputs.

0–7a: Audio Input

Use Global Setting [Off, On]

Programs can use the single, Global audio input mixer setup, or can instead have their own custom settings. The Global settings are described under "0–3: Audio," on page 360.

When **Use Global Settings** is **On**, the Program uses the Global settings. This is the default, and lets you change freely between different Programs and Combinations without affecting the audio inputs.

Note: FireWire 1 and 2 are enabled if the EXB-FW option is installed.

Also, any edits made on this page will affect the Global setting, along with any other Programs, Combinations, or Songs which use the Global setting.

On the other hand, it may sometimes be convenient to save a particular mixer setup with an individual Program, to set up special sub-mixer settings or effects processing for particular inputs. For example, you can set up a Program to use a mic input with a vocoder, as described under "Example: Vocoder (Program)" on page 424, and page 515.

In this case, set **Use/Edit Global Setup** to **Off**, and the audio inputs will use the Program's custom settings.

Input [Analog, S/P DIF, (FireWire)]

Analog: The INPUT 1 and 2 jacks will input mic level or line level signals.

S/P DIF: A digital audio from the S/P DIF IN jack will be input. Connect the digital output of your instrument or DAT etc. to the S/P DIF IN jack. Input1 shown below specifies the input to the L side of S/P DIF, and Input2 specifies the input to the R side. The S/P DIF input/output supports 48 kHz sample rates.

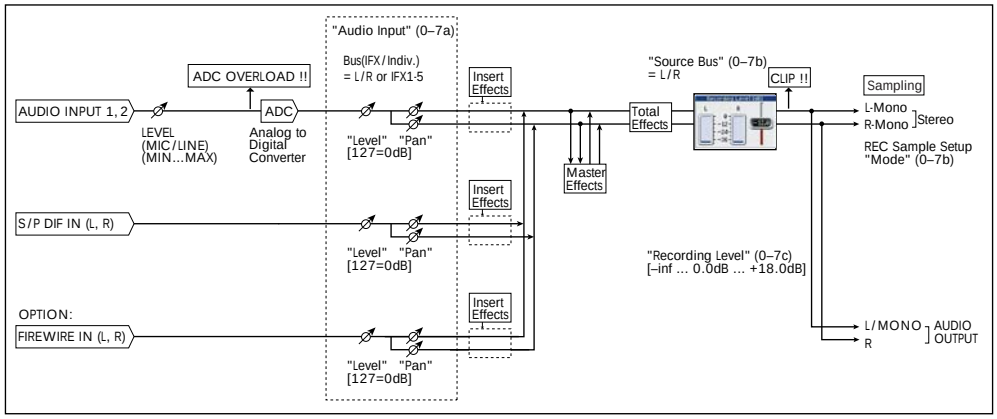
If you want to use S/P DIF, set **System Clock** to S/P DIF. For more information, please see "System Clock" on page 359.

FireWire: If the EXB-FW option is installed, input a digital audio signal from the FireWire connector. The sample rate of the FireWire input/output is 48 kHz.

Note: For details on FireWire input, please see "M3 Editor/Plug-In Editor Manual" (PDF).

Note: You can make settings independently for analog and S/P DIF. Make this **Input** setting first, and then specify the Input1 and Input2 parameters. You can also input from multiple external audio sources at the same time.

Audio input/output



Input 1, Input 2:

PLAY/MUTE [PLAY, MUTE]

This shows whether the external audio signal being input is in PLAY or MUTE status.
You can use the MIX PLAY/MUTE 1–4 switches to change this.

Mute: The input sound will be muted (silent).

Play: The input sound will be heard.

Tip: You can use the control surface to control this parameter. For more information, please see "Using the control surface to make audio input settings" on page 8.

SOLO On/Off [Off, On]

This indicates the SOLO status of each external audio signal input.

If the menu command **Panel-Switch Solo Mode** is checked, you can use the MIX PLAY/MUTE 1–4 switches to change this setting.

Tip: You can switch the **Panel-Switch Solo Mode** on/off by holding down the ENTER switch and pressing numeric key 1.

Sound will be output only from channels for which SOLO is On. Other channels will be muted.

The Solo function includes the oscillators in Program mode, the timbres in Combination mode, and MIDI tracks and audio tracks in Sequencer mode.

The way in which the Solo function operates will depend on the setting of the **Exclusive Solo** menu command in each mode.

Exclusive Solo Off: You can solo multiple audio inputs. The solo status will change each time you press Solo On/Off.

Exclusive Solo On: Pressing a SOLO button will solo only that audio input.

The **SOLO** setting is not memorized when you Write a Program.

Tip: You can hold down the ENTER switch and press numeric key 2 to switch Exclusive Solo On/Off.

Tip: You can use the control surface to control this parameter. For more information, please see "Using the control surface to make audio input settings" on page 8.

Level [000...127]

This controls the level of the external audio signal. The default is 127.

The analog audio signals from AUDIO INPUTS 1, 2 are converted into digital form by an A/D converter. This parameter sets the level of the signal immediately after this conversion.

If the sound is distorted even though this level setting is very low, see "Tips for eliminating distortion when using the analog inputs," below.

Tip: You can use the control surface to control this parameter. For more information, please see "Using the control surface to make audio input settings" on page 8.

Avoiding extraneous noise

If audio cables are connected to AUDIO INPUTS 1, 2, any noise carried by the cables will enter into the M3 mixer structure. Similarly, the S/P DIF (or option EXB-FW) input may carry noise from external devices. This may include hiss, hum, and other audio noise.

To avoid noise from unused audio inputs, either:

- Set the input's **Level** to 0

or

- Set all of the bus assignments to Off, including **Bus Select (IFX/Indiv. Out Assign)**, **AUX Bus**, and **FX Control Bus**

  If no audio cables are connected to AUDIO INPUTS 1, 2, the input signals are forced to zero, preventing any additional noise.

Pan [L000...C064...R127]

This specifies the panning of the external audio input signal. When using two inputs for a stereo audio source, you'll normally set the inputs to L000 and R127 respectively.

Bus Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the bus for the external audio input signal.

L/R: The external audio input signal will be sent to the L/R bus.

IFX1, 2, 3, 4, 5: The external audio input signal will be sent to the IFX1–5 bus. Choose one of these settings if you want to apply an insert effect while sampling.

1, 2, 3, 4: The external audio input signal will be sent, in mono, to INDIVIDUAL outputs 1, 2, 3, and 4. Pan does not apply in this case.

1/2, 3/4: The external audio input signal will be sent to the individual outputs in stereo pairs.

Off: The external audio signal will not be input.

FX Bus (FX Control Bus) [Off, 1, 2]

This sends the external audio input signal to the FX Control busses (two mono channels; 1, 2). For more information, please see "FX Control Buses" on page 423.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

This sends the external audio input signal to the AUX busses (four mono channels; 1, 2, 3, 4).

The AUX buses are used when sampling in each mode.

You can sample these signals by setting the sampling **Source Bus** (Prog 0–7b) to AUX bus.

Normally, you will set **Source Bus** to L/R, and sample the signal from the L/R bus. However, you can use the AUX buses in situations such as when you want to apply an effect to an audio signal and sample it while listening to the keyboard performance being sent to L and R outputs or to the playback of an external audio CD. You can mix multiple audio inputs to AUX buses, or mix the direct signal of the audio input with the post-insert-effect sound, and then sample the result. For more information, please see the diagram "Source Bus = AUX 1/2" on page 12

Off: The sound will not be output to the AUX buses. Normally you will leave this off.

1, 2, 3, 4: The external audio input signal will be sent to the specified AUX bus. The **Pan** setting is ignored, and the signal is sent in monaural.

1/2, 3/4: The external audio input signal will be sent in stereo to the specified pair of AUX busses. The **Pan** setting sends the signal in stereo to busses 1 and 2 or busses 3 and 4.

Note: If the EXB-RADIAS is installed, you can use the AUX buses to route the signal from the mixer or effect section to the RADIAS' oscillator or vocoder.

Send1 [000...127]
Send2 [000...127]

These adjust the levels at which the external audio input signal is sent to the master effects.

Send1: Send the signal to master effect 1.

Send2: Send the signal to master effect 2.

If **Bus Select** is set to IFX1–5, the send levels to the master effects are set by the post-IFX1–5 **Send1** and **Send2** (Prog 8–2a). For more information, please see "Audio Input, S/P DIF IN, FireWire" on page 429.

ADC OVERLOAD !

If the signal level from AUDIO INPUT 1, 2 jacks is too high, the "ADC OVERLOAD!" indication will appear. You'll need to adjust the MIC/LINE gain select switches and/or LEVEL knobs, or the output level of your external audio source.

0–7b: Sampling Setup

Source Bus [AnalogInput1/2, S/P DIF IN L/R, (FireWire IN L/R), L/R, AUX1/2, AUX3/4, Indiv.1/2, Indiv.3/4]

You can sample in stereo from any pair of audio inputs, from the two stereo AUX busses, or from the signal at any of the 7 outputs (Analog Input and Indiv. 1/2–3/4).

When you sample from an output pair or AUX bus, you'll record all audio sent to the output or bus, including internal Programs or Combinations, effects, and audio inputs.

When sampling in stereo, the odd-numbered channel (such as 1, or 3) corresponds to the left channel, and the even-numbered channel (such as 2, or 4) corresponds to the right.

Analog Input 1/2: Choose these settings to sample directly from the analog audio inputs, without any other processing by M3. The settings on the Audio Inputs mixer, including volume, pan, busses, sends, mute, and solo, will have no effect on the recorded audio.

For more information, please see the diagram "Source Bus = Audio Input 1/2" on page 11.

S/P DIF IN L/R: Choose this setting to sample the S/P DIF input directly, without any other processing by M3. The settings on the Audio Inputs mixer, including volume, pan, busses, sends, mute, and solo, will have no effect on the recorded audio.

For more information, please see the diagram "Source Bus = S/P DIF IN L/R" on page 11.

FireWire IN L/R: Choose this setting if you want to sample the input from the FireWire connector of the EXB-FW option. This lets you directly sample the inputs of the FireWire connector without routing the signal through the L/R bus, AUX buses, or Individual buses. The FireWire L/R inputs will be connected directly, regardless of the Audio Input (Prog 0–7a) **Bus Select**, **Pan**, and **Level** settings.

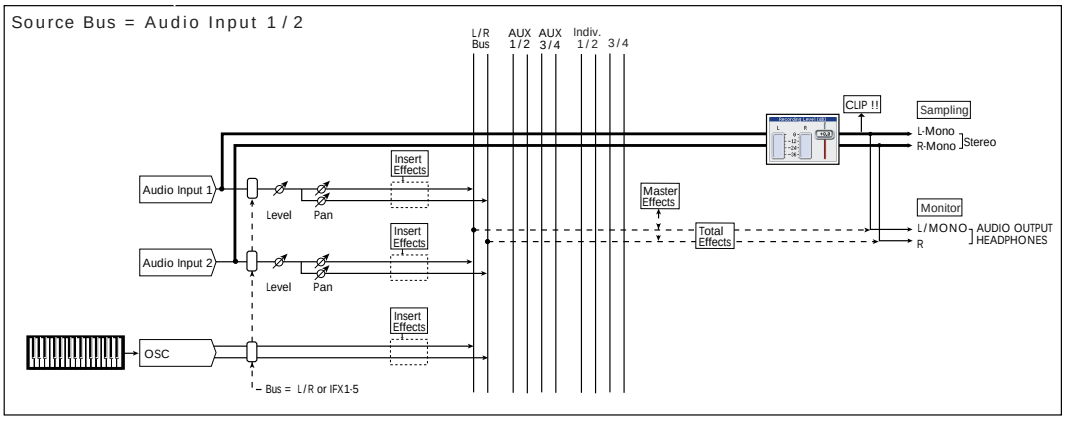
For more information, please see the diagram "Source Bus = FireWire IN L/R (Option)" on page 11.

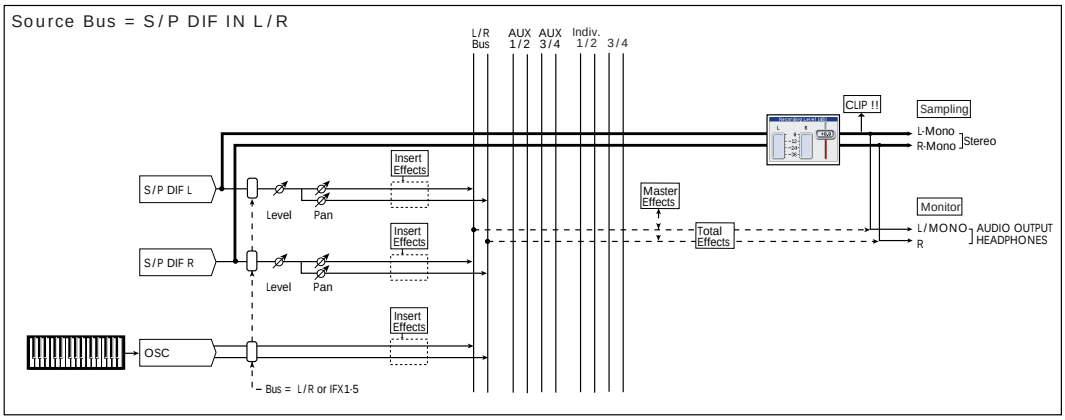
L/R: This lets you sample the signal heard at the main L/R outputs, including any processing by TFX. This is the

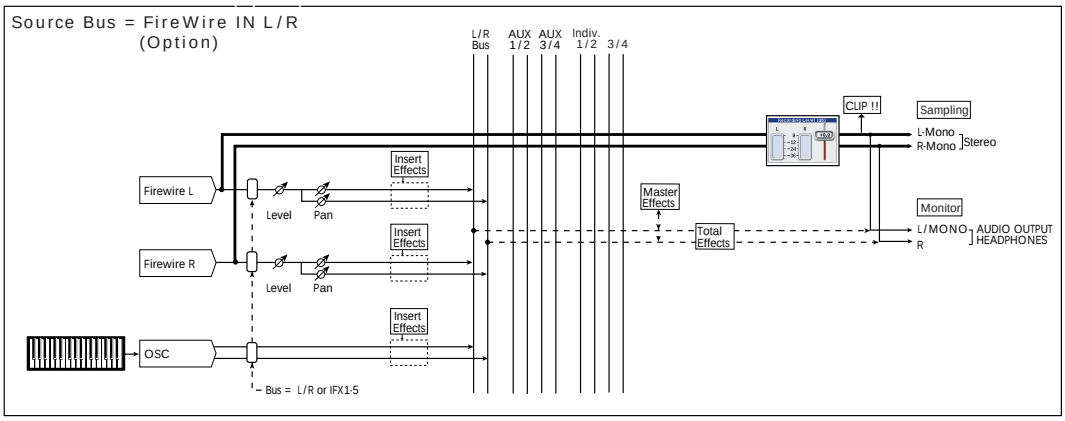
default setting. For more information, please see the diagram “Source Bus = L/R” on page 11.

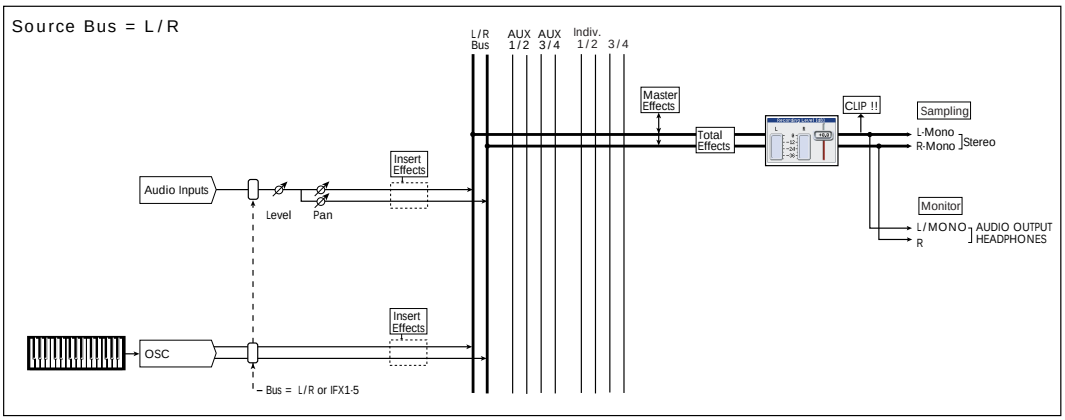
AUX 1/2, AUX 3/4: These let you sample the signals sent to the AUX 1/2 or AUX 3/4 busses.

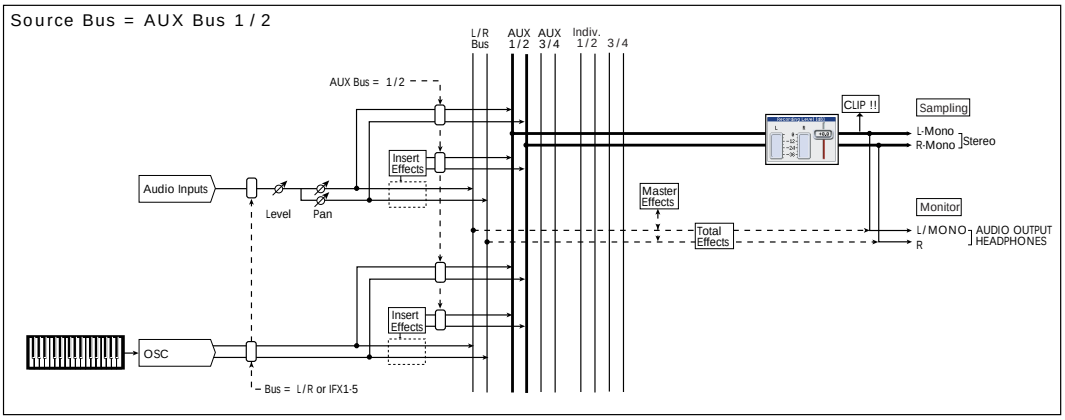
Using the AUX busses, you can isolate one or more sounds for sampling-even if the sounds are also being mixed into the main outputs. For example, you can play a guitar through M3 IFX while listening to a KARMA drum phrase, and record the processed guitar without recording the drums.

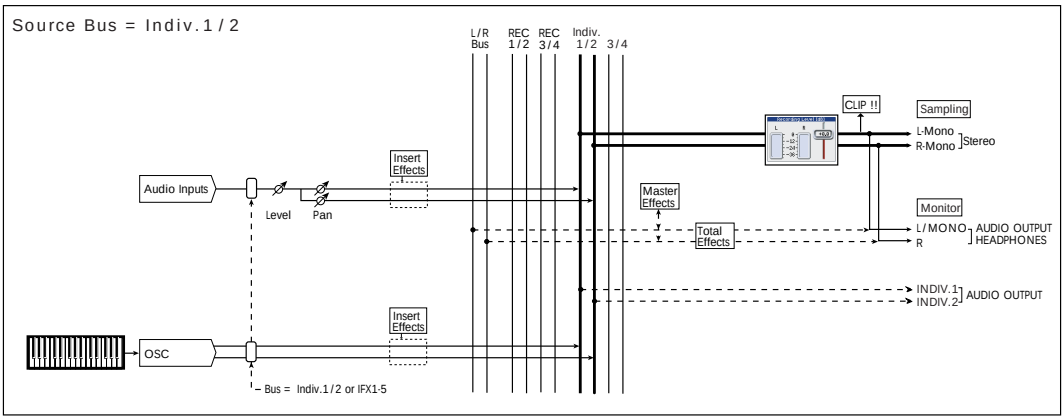












Individual Programs, Combi Timbres, Sequencer Tracks, audio inputs, and Insert Effects can all be routed to the AUX busses, in addition to their main output / IFX bus settings.

For more information, please see the diagram "Source Bus = AUX 1/2" on page 12.

Indiv.1/2, Indiv.3/4: This lets you sample the individual output busses. For more information, please see the diagram "Source Bus = Indiv. 1/2," above.

Trigger [Sampling START SW, Note On]

Specifies how sampling will be initiated.

Sampling START SW: Pressing the SAMPLING REC switch will cause the M3 to enter sampling-standby mode, and sampling will begin when you press the SAMPLING START / STOP switch.

Note On: Press the SAMPLING REC switch and then press the SAMPLING START / STOP switch to enter sampling-standby mode. Sampling will begin when you play the keyboard.

MIDI Sampling will also begin if a MIDI note-on is received (instead of playing the keyboard).

Regardless of the settings you're using, press the SAMPLING START / STOP switch once again when you've finished sampling. Alternatively, sampling will end automatically if the specified "Sampling Time" elapses.

Metronome Precount [Off, 4, 8, 3, 6]

This specifies whether the metronome will sound a count-down before sampling begins. This can be set only if **Trigger** is set to Sampling START SW.

Off: Sampling will begin immediately when you press the SAMPLING START / STOP switch from recording-standby mode.

4, 8, 3, 6: When you press the SAMPLING START / STOP switch from recording-standby mode, the metronome will count the specified number of beats at the ♩ **(Tempo)** tempo, and then sampling will begin. If you set this to 4, sampling will begin on the count of 0 after a pre-count of 4–3–2–1–0.

The output destination and level of the metronome sound are specified by the menu command **Metronome Setup**. If **Bus (Output) Select** is set to L / R, the metronome will stop sounding the instant sampling actually begins.

Save to [RAM, MEDIA]

Specifies the destination to which the data will be written during sampling.

RAM: The sound will be sampled into RAM memory.

A sample written into RAM memory can be heard immediately in Program mode or Sampling mode. Use the menu command **Select Bank & Smpl No.** (Select RAM Bank & Sample No.) to specify the Sample No. and to make settings for automatic conversion to a program.

Data written into RAM memory will be lost when the power is turned off, so you must save it if you want to keep it.

Note: If **Save to** is set to RAM, the **+12 dB** (Sampling 2–1d) setting will be applied to the sample sampled to RAM. If **+12 dB** is on, a one-voice sample will have a playback level approximately +12 dB higher, so that the level will be the same during playback as it was while sampling.

If you've selected the **Auto +12 dB On** check box in the **Select Bank & Smpl No.** menu command, the **+12 dB** setting will automatically be turned on for sampling.

MEDIA: Sample to an external hard disk etc. connected to the USB A connector.

When you sample, a WAVE file is created on the media. Use the **Select Directory** menu command to specify the writing-destination media and directory.

To open the resulting sample, you can either use Media mode to load the sample into RAM, or use **Select Directory** etc. to select the file and then press the SAMPLING START / STOP switch.

If you connect a USB device to the USB A connector, use the menu command **Scan USB device** (Media– Media Information page) to mount the device.

Mode (Sample Mode) [L-Mono, R-Mono, Stereo]

Specifies the channel(s) that you want to sample, and specify whether a mono or stereo sample will be created.

The L and R channels of the bus specified by **Source Bus** (Prog 0–7b) will be sampled.

L-Mono: The left channel of the **Source Bus** will be sampled in mono.

R-Mono: The right channel of the **Source Bus** will be sampled in mono.

Stereo: The L and R channels of the bus specified by **Source Bus** will be sampled in stereo. This will create a stereo multisample and samples. For more information, please see "About stereo multisamples and stereo samples" on page 303.

Sample Time [min sec]

This sets the amount of time that you wish to sample. This can be set in 0.001 second increments.

Immediately after the power is turned on, this parameter shows the maximum available sampling time, equivalent to the entire amount of free RAM. Each time you press STOP after sampling to RAM, the change in remaining sample time will be displayed automatically.

If **Save to** is set to **MEDIA**, the maximum value is determined by the free space on the current media, as specified by the **Select Directory** menu command.

Tip: If you have sufficient RAM memory, it's a good idea to set a generous amount of **Sample Time**. After you sample, you can then use the **Truncate** menu command to delete unwanted portions of the sample, and reduce it to the minimum size necessary. For more information, please see page 335 and page 342.

You can also press the SAMPLING START / STOP switch to manually stop sampling after you have recorded the desired material. For more details on sampling, please see "Basic sampling procedure" on page 112 of the Operation Guide.

If **Save to** is set to **RAM**, and you continue sampling with the **Auto Optimize RAM** (Global 0–2a) option unchecked, wasted space will develop in memory, decreasing the amount of available RAM. In this case, use the **Optimize RAM** menu command to recover the wasted space.

Note: **Free Sample Memory** (Sampling 0–4a) in Sampling mode lets you check the remaining amount of RAM.

Note: The various Recording Setup settings are not made independently for each program; they apply to the entire Program mode.

0–7c: Recording Level [dB]

Recording Level [–Inf, –72.0 ... +0.0 ... +18.0]

This adjusts the signal level at the final stage of sampling.

The Recording Level setting is made for Program mode as a whole, and is not saved independently with each Program.

Level Meter

This shows the signal level at the final stage of sampling, after any adjustments on the Audio Inputs page, any effects, etc. The meter is active only during standby mode and recording.

CLIP !

If 0 dB is exceeded, the display will indicate "CLIP !" This means that the level of the sampling signal is too high; in this case, adjust the Recording Level, and if necessary follow the instructions under "Tips for eliminating distortion when using the analog inputs," below.

Setting levels

For the best results, set the levels as described below:

1. **Press the SAMPLING REC switch.**

M3 will enter sampling standby mode, and the **Level Meter** becomes active.

2. **Initially, set the Recording Level to 0.0dB.**
3. **Adjust the level of the input signal so that it is as high as possible without activating the CLIP ! or ADC OVERLOAD! messages.**

If you're using AUDIO INPUTS 1 and / or 2, adjust the volume using rear-panel MIC / LINE switches and LEVEL knobs.

If you're using or the S / P DIF input, adjust the output level of your external audio source.

If you're sampling external audio through the internal effects, you may also need to adjust the individual effects input and / or output level parameters.

If you're using internal sounds, adjust the levels using the control surface, effects input / output trim, etc.

4. **If the level is still not high enough, increase the Recording Level using the on-screen slider.**

Again, the goal is to get the level as high as possible without activating the CLIP ! or ADC OVERLOAD! messages.

Tips for eliminating distortion when using the analog inputs

If sound from the analog inputs is distorted, but the CLIP ! message doesn't appear, it's possible that distortion is occurring at the analog input stage, or that distortion is being caused by the settings of the internal effects.

If the "ADC OVERLOAD!" message appears above the **Recording Level** meters, the distortion is due to excessive levels at the input. In this case, either lower the output level of the external audio source, or (for inputs 1 and 2 only) adjust the MIC / LINE gain select switch and LEVEL knob so that this message does not appear.

If there is distortion, but the "ADC OVERLOAD!" message does not appear, it's possible that the distortion is being caused by the settings of the internal effects. To solve this problem, either lower the input **Level** (see "Level," above), or adjust the effects settings (such as changing the individual effect Input Trim parameters).

▼0–7: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107
- 4: **Metronome Setup** ☞p.107
- 5: **Optimize RAM** ☞p.107
- 6: **Select Bank & Sample No.** ☞p.108 (only **Save to** RAM)
- 6: **Select Directory** ☞p.108 (only **Save to** MEDIA)
- 7: **Auto Sampling Setup** ☞p.109

For more information, please see "Program: Menu Command" on page 106.

0–8: Control Surface

The control surface refers to the eight sliders and eight switches located on the panel at the left of the display. In addition to normal mixer operation, you can use these in a variety of ways such as editing sounds, operating KARMA, or sending MIDI messages to external devices.

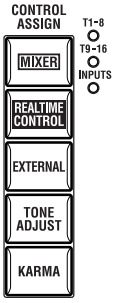
This page shows you the current values for each of the sliders, and switches, along with information about what they are controlling. For instance, you can:

- Control the volume, Play / Mute and Solo On / Off settings for oscillators 1 / 2 and the drum track.
- Modulate sounds and effects using the sliders and switches
- Control KARMA, and select KARMA scenes, using the sliders and switches
- Edit sounds using Tone Adjust
- Assign sliders, and switches to different Tone Adjust parameters

CONTROL ASSIGN switches and parameters

You can use **Control Assign** in the display or the CONTROL ASSIGN switches of the front panel to switch the function of control surface. Since the display and the front panel switches are linked, changing one will change the other correspondingly.

Control Assign switches



In Program mode, you can select one of five different functions:

MIXER (OSC Mix): The control surface will control the volume, Play / Mute and Solo On / Off status for oscillators 1 and 2 and the drum track. (In Combination mode and Sequencer mode, you can use this switch to alternate between timbres or tracks 1–8 and 9–16.

MIXER (Mixer Input): The control surface will control the audio input volume, Play / Mute and Solo On / Off status of the analog inputs, S / P DIF inputs, and FireWire inputs (if the EXB-FW is installed).

REALTIME CONTROL (RT Control): Use the sliders to control the sound or effects. Use the switches to turn effects on / off.

EXTERNAL lets you send MIDI messages to external MIDI devices. Use the Global P1: MIDI– External Mode 1 / 2 page to specify the MIDI message that will be transmitted.

TONE ADJUST gives you hands-on access to sound editing, using the sliders, and switches.

KARMA: Use the sliders and switches to control the KARMA function.

You can freely change back and forth between the different functions, without losing any of your edits.

MIX PLAY/MUTE 1–8 switches and the MIX VOLUME sliders

For the function selected by CONTROL ASSIGN, you can use the MIX PLAY / MUTE (SOLO) 1–8 switches and MIX VOLUMES 1–8 sliders to control the corresponding parameters, etc.

Reset controls

The front panel RESET CONTROLS switch lets you return the desired sliders or switches of the control surface to the saved values. You can also use this to reset the KARMA module settings. For more information, please see “Resetting controller values” on page 199 of the Operation Guide.

Resetting a single control

To reset a single slider, or switch:

1. **Hold down the RESET CONTROLS switch.**
2. **While holding down RESET CONTROLS, move a slider or press one of the control surface switches.**

The slider, or switch will be reset to the value stored in the Program.

3. **When you’re done, release the RESET CONTROLS switch.**

Resetting a group of controls

1. **Use the display’s Control Assign or the front panel CONTROL ASSIGN switches to access the controllers you want to reset.**

Note: As a safety precaution, you can only reset the parameters currently displayed on the Control Surface.

2. **Hold down the RESET CONTROLS switch.**
3. **While holding down RESET CONTROLS, press the current CONTROL ASSIGN switch again.**

All of the sliders, and switches shown on the Control Surface will be reset to the values stored in the Program.

Resetting KARMA Module parameters

In addition to the above reset operations, you can also perform the following reset operations for KARMA.

- To reset the sliders or switches of each KARMA module, hold down the RESET CONTROLS switch and press the KARMA MODULE CONTROL switch.
- To reset the KARMA scene, hold down the RESET CONTROLS switch and press the SCENE 1 / 5–4 / 8 switch whose LED is blinking.

0–8a: Program Select & Tempo

Bank (Bank Select) **[INT–A...F, GM, g(1)...g(9), g(d), USER–A...G]**

Program Select **[0...127 (INT–A...F, USER–A...G), 1...128 (G, g(1)...g(9), g(d))]**

♩(Tempo) **[040.00...300.00, EXT]**

This area displays information about the program selected for editing – the program bank / number / name, and the tempo used to control the KARMA function etc. For more information, please see “0–1a: Program Select” on page 2.

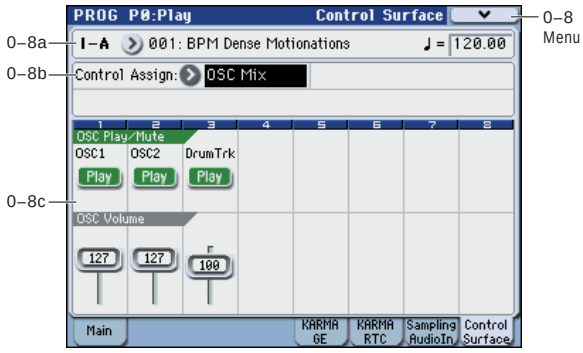
0–8b: Control Assign

Control Assign [OSC Mix, Mixer Input, RT Control, External, Tone Adjust, KARMA]

This selects the items that will be controlled by the control surface. You can also press one of the CONTROL ASSIGN switches to make this selection.

For details on each selection, please see the explanations that follow.

OSC Mix



0–8c: OSC Mix

OSC Mix lets you adjust the volume and change the Play / Mute and Solo On / Off settings of oscillators 1 and 2 and the drum track.

OSC Play/Mute:

MIX PLAY/MUTE 1, 2, 3 switches

The MIX PLAY / MUTE 1 and 2 switches will mute oscillators 1 and 2. This is convenient when you're editing a program. The 3 switch mutes the drum track.

The switch LED will light to indicate Play status, or be dark to indicate Mute status.

OSC1 Play/Mute [Play, Mute]

Play: Oscillator 1 will sound.

Mute: Oscillator 1 will be muted (silent).

OSC2 Play/Mute [Play, Mute]

Play: Oscillator 2 will sound.

Mute: Oscillator 2 will be muted (silent).

Note: OSC2 Play / Mute cannot be set for a program whose **Oscillator Mode** is Single or Drums.

Drum Trk Play/Mute 1 [Play, Mute]

Play: The drum track will sound.

Mute: The drum track will be muted (silent).

OSC Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1–6 switches

Use the menu command **Panel-Switch Solo Mode On** to specify whether the MIX PLAY / MUTE 1–6 switches will control Play / Mute or the Solo On / Off. If **Panel-Switch Solo Mode On** is on (checked), the switches will control Solo On / Off.

Tip: You can turn **Panel-Switch Solo Mode On** on / off by holding down the ENTER switch and pressing numeric key 1.

OSC1 Solo [Off, On]

Switches the Solo status on / off for oscillator 1.

OSC2 Solo [Off, On]

Switches the Solo status on / off for oscillator 2.

Drum Trk Solo [Off, On]

Switches the Solo status on / off for the drum track.

Note: Solo applies to oscillators 1 and 2, the drum track, and the audio inputs.

Note: OSC2 Solo cannot be set for a program whose **Oscillator Mode** is Single or Drums.

Note: The Solo On / Off setting is not saved when you write the program.

Exclusive Solo [Off, On]

The menu's **Exclusive Solo** parameter also affects the way that Solo works. If **Exclusive Solo** is off (unchecked), Multiple Solo will be active, allowing you to turn Solo on / off for more than one of the items oscillators 1 and 2, the drum track, and audio inputs. Each time you press a SOLO button, the solo setting will alternate between on and of.

If **Exclusive Solo** is on (checked), only one of the applicable items can be soloed simultaneously. In this mode, pressing a SOLO button automatically disables any previous solos.

Tip: You can also toggle **Exclusive Solo** by holding **ENTER** and pressing **2** on the numeric keypad.

OSC Volume:

MIX VOLUMES slider 1, 2, 3

Here you can adjust the output level of oscillators 1 and 2. This is a volume control that is independent of the Amp Level parameter. You can also adjust the output level of the drum track.

OSC 1 Volume [000...127]

This slider adjusts the volume of Oscillator 1.

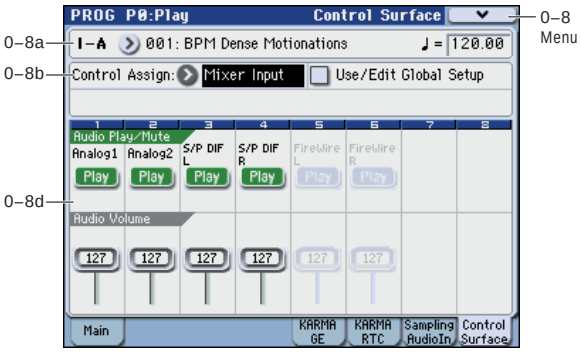
OSC 2 Volume [000...127]

This slider adjusts the volume of Oscillator 2.

Drum Trk Volume [000...127]

Adjusts the volume of the drum track.

Mixer Input



Mixer Input lets you adjust the volume and switch the Play / Mute and Solo On / Off status of the four audio inputs Analog Input 1, 2 and S / P DIF IN L, R

For example on stage, you could use this page screen as a submixer to control the output of other sound modules for output together with the M3-M's own sounds.

FireWire L and R can be used if the EXB-FW option is installed.

Note: If the EXB-FW is installed, the two inputs FireWire L and R will be added to the Analog Input 1 / 2 and S / P DIF L / R listed above.

Other Audio settings

Each audio input can be assigned to up to three busses:

- An Output / IFX Bus
- An FX Control Bus
- An AUX Bus

You can set up these bus assignments on the P0: Play– Sampling / Audio In page. For more information, please see "0–7: Sampling / Audio In" on page 8.

0–8d: Mixer Input

Use/Edit Global Setup [Off, On]

Programs can use the single, Global audio input mixer setup, or can instead have their own custom settings.

On (checked): The Global P0: Basic Setup– Audio page settings for Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) will be used.

If you switch from a program (or combination or song) for which **Use/Edit Global Setup** is on to another program (or combination or song), the same Audio Input settings will be used.

Also, any edits made on this page will affect the Global setting, along with any other Programs, Combinations, or Songs which use the Global setting.

Off (unchecked): Turn **Use/Edit Global Setup** Off if you want to use the Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) settings made individually for each program (or combination or song).

Use this setting if you want to preserve specific mixer settings for each program, if you want to use unusual submixer settings, or if you want to apply effect processing to specific input signals.

On the other hand, it may sometimes be convenient to save a particular mixer setup with an individual Program, to set up special sub-mixer settings or effects processing for particular inputs.

Audio Play/Mute:

MIX PLAY/MUTE 1...4 switches

These switch each audio input between play / muted status. The switch LED will be lit for Play, or dark for Mutes status.

Audio Play/Mute 1...4 [Play, Mute]

Play: The input will be enabled.

Mute: The input will be muted.

Audio Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1–4 switches

Solo applies to oscillator 1 and 2, the drum track, and the audio inputs. For more information, please see “OSC Solo:” on page 15.

Exclusive Solo

For more information, please see “OSC Solo:” on page 15.

Audio Solo 1...4 [Play, Mute]

This switches the Solo On / Off setting for each audio input.

Note: The Solo On / Off setting is not preserved when you write.

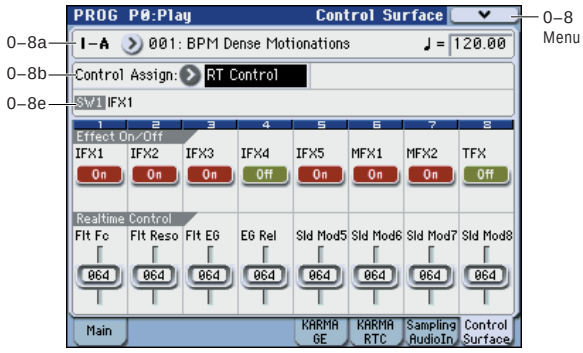
Audio Volume:

MIX VOLUMES sliders 1...4

Audio Volume 1...4 [000...127]

This adjusts each audio input level.

RT Control (Realtime Control)



Realtime Control lets you use the eight sliders to edit the parameters of a program or effect. The switches will control the effect on / off status.

0–8e: RT Control AMSource

Selected Parameter information

When you select a Slider or Switch, this area shows detailed information about its parameter assignments.

Effect On/Off:

Effect On/Off switches 1...8

These turn each effect on / off. The effect will be enabled if this is on (LED lit).

IFX1...5, MFX1, 2, TFX [Off, On]

These turn each effect on / off.

Realtime Control:

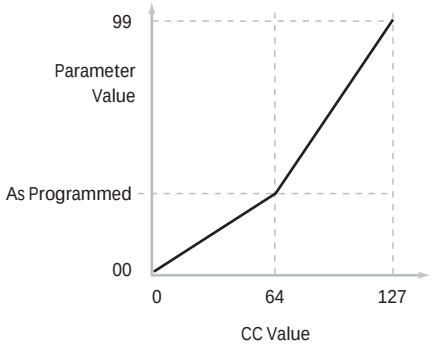
Realtime Control sliders 1...8

Sliders 1–4 all have dedicated functions which correspond to MIDI CCs. Sliders 5–8 can be assigned to a wide variety of functions, many of which also have corresponding MIDI CCs.

When you move a slider, it sends out the corresponding MIDI CC.

Unless otherwise noted, “scaling” means that the parameters are at their programmed values when the controller is at 64, at their minimum when the controller is at 0, and at their maximum when the controller is at 127. For another look at this, please see the diagram below.

CC parameter scaling



Slider 1: Flt Fc (Filter Cut Off) [000...127]

This slider scales the cutoff frequencies of Filters A and B, and transmits and receives MIDI CC #74.

Slider 2: Flt Reso (Filter Resonance) [000...127]

This slider scales the resonance of Filters A and B, and transmits and receives MIDI CC #71.

Slider 3: Flt EG (Filter EG Intensity) [000...127]

This slider scales the effect of the Filter EG on the cutoff frequencies of Filters A and B. It also transmits and receives MIDI CC#79.

Slider 4: EG Rel (EG Release) [000...127]

This slider scales the release time of the Filter and Amp EGs, and transmits and receives MIDI CC#72.

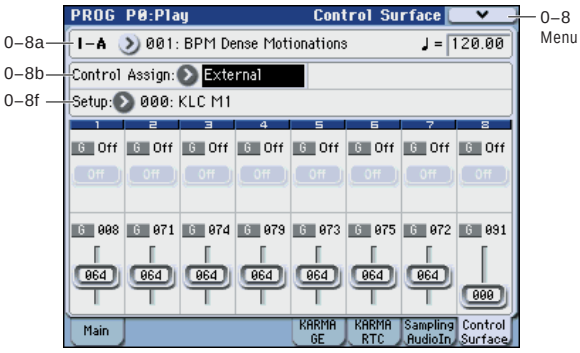
Slider 5–8 [000...127]

This is the current value of the slider and its MIDI CC.

You can set sliders 5–8 to a wide variety of modulation functions, using the P1: Basic / DT / Ctrls– Controllers Setup page.

Many of the functions scale a particular set of Program parameters. All of the settings also correspond to MIDI messages–usually CCs.

External



External control lets you transmit MIDI messages to external devices. Each slider and switch will transmit an individually assigned MIDI CC# on its MIDI channel. To each pad as well, you can assign a note or MIDI CC# for transmission on a specified MIDI channel. (See "1–3: External Mode 1" on page 369 and "1–4: External Mode 2")

You can create 128 different external setups in the Global P1: MIDI– External Mode 1, 2 pages. For instance, you might make one setup for controlling several different pieces of MIDI gear on stage, another for controlling a software synthesizer (such as one of Korg's Legacy Collection synths), and so on.

These External Controls are completely separate from the Program. You can think of External mode as being a separate control surface which just happens to share M3's sliders, switches, and drum pads.

When you select an External Setup, it stays selected even when you change Programs, or switch to Combination or Sequencer modes. This makes it easy to select different M3 sounds without disrupting any external MIDI control, and vice-versa.

0–8f: External

Setup [000...127]

This selects the Global setup for the sliders, switches, and drum pads.

Note: this selection is not stored with the Program.

Switches 1...8

MIDI Channel [01...16, G]

This read-only parameter shows the MIDI Channel for the switch. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# Assign [Off, 000...119]

This read-only parameter shows the MIDI CC sent by the switch.

Switch On/Off [Off, On]

When the switch is turned on, it sends a value of 127; when it is turned off, it sends a value of 0.

Sliders 1...8

MIDI Channel [01...16, G]

This read-only parameter shows the MIDI Channel for the slider. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

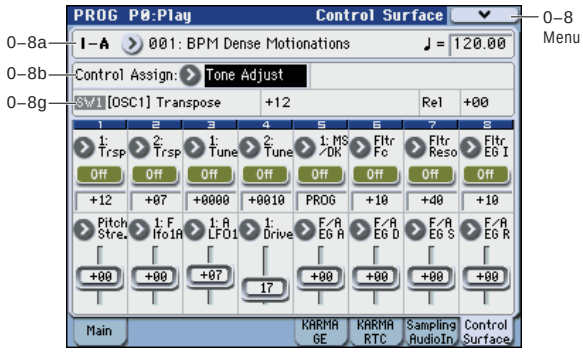
CC# Assign [Off, 000...119]

This read-only parameter shows the MIDI CC sent by the slider.

Value [000...127]

This is the current value of the slider's MIDI CC.

Tone Adjust



Tone Adjust lets you use all of the sliders, and switches on the Control Surface to edit Program parameters, like the knobs on an analog synth. You can assign important program parameters to these controllers.

Tip: In Combination and Sequencer modes, Tone Adjust also lets you edit Program parameters without needing to save a different version of the original Program. For more information on Tone Adjust in these modes, please see "Tone Adjust" on page 135 and page 212.

Absolute (Abs), Relative (Rel), Meta parameter

There are three kinds of Tone Adjust parameters: Absolute, Relative, and Meta.

Absolute parameters usually control a single Program parameter, such as **Oscillator 1 Drive**. The Program and Tone Adjust parameters mirror one another; when you change one, the other will change to match.

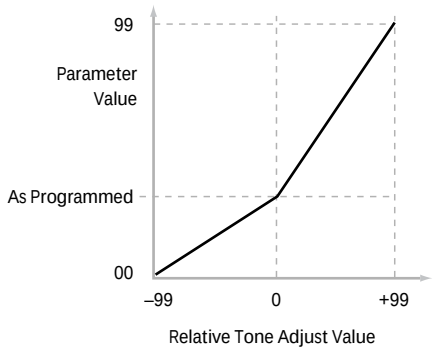
Relative parameters typically adjust two or more Program parameters simultaneously. For instance, **F/A EG Attack Time** affects a total of six Program parameters. The value of the Relative parameter shows the amount of change to these underlying Program parameters.

When the Relative parameter is at 0 (in the center of the slider), the underlying Program parameters are unchanged.

The meanings of higher and lower settings can vary, depending on the specific parameter. Unless noted otherwise, they work as follows:

When the Relative parameter is at +99 (the maximum), the Program parameters are all at their maximum as well. Similarly, when the Relative parameter is at –99 (the minimum), the Program parameters are at zero.

Relative Tone Adjust parameter scaling

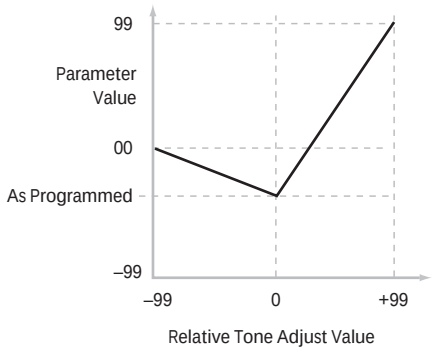


A few of the Program parameters controlled by Relative Tone Adjust are bipolar, meaning that they can be either positive or negative (instead of just positive). When these Program parameters are set to negative values, Tone Adjust may behave differently from the description above.

For instance, if EG Intensity is set to a negative value, Relative Tone Adjust will take it from 0 to –99, like the

inverse of the diagram above. EG Sustain works differently; if it's set to a negative value, Tone Adjust takes it from 0 down to the programmed value, and then up to +99, as shown below.

Relative Tone Adjust parameter scaling: EG Sustain



Meta parameters don't affect Program parameters directly. Instead, they affect the way that other Tone Adjust parameters work. For instance, **Multisample Min #** and **Max #** set the minimum and maximum values of the Tone Adjust **Multisample** parameter.

Saving Tone Adjust Edits

Tone Adjust edits are saved in two different ways, depending on whether the parameter is **Relative** or **Absolute**. (For more information, please see "Absolute (Abs), Relative (Rel), Meta parameter," below.)

Edits to **Relative** parameters affect the sound immediately, but don't change the underlying Program parameter settings until the Program is saved. When the Program is saved, the M3 calculates the combined effects of Tone Adjust and dedicated CC modulation (from the Real Time Sliders, for instance), and saves the results into the Program parameters directly. At that point, all of the Relative parameters are reset to 0.

Edits to **Absolute** parameters are immediately reflected in the corresponding on-screen parameters, and vice-versa.

Tone Adjust and MIDI SysEx

The Tone Adjust sliders, and switches all send and receive MIDI System Exclusive messages. You can use this to record and play back Tone Adjust edits with a sequencer, including the built-in sequencer.

Note: The SysEx messages are tied to the physical controls, and not to the functions to which they are assigned. For instance, let's say that slider 1 is assigned to control Filter Resonance, and that you move slider 1 while recording into a sequencer. The sequencer will record that slider 1 has moved, and not that Filter Resonance has changed. If you later change slider 1 to control LFO1 Speed, playing back the sequence will affect the LFO, and not Filter Resonance.

Interaction between Tone Adjust and MIDI CCs

A number of the Common Tone Adjust parameters affect parameters which are also modulated by dedicated MIDI CCs. The specific CC numbers are noted in the descriptions for the individual Tone Adjust parameters. For more information, please see "Tone Adjust Parameters" on page 22.

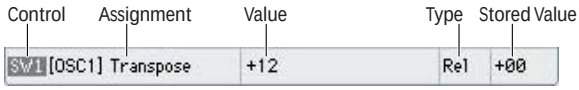
Tone Adjust and the CCs work separately. It's possible, for instance, for Tone Adjust to reduce the value of a parameter, and then for a CC to increase it again.

Tone Adjust scales the parameter first, and then the CC scales the result of the Tone Adjust.

0–8g: Tone Adjust

Selected parameter information

This status line shows detailed, read-only information about the currently selected Tone Adjust parameter.



Control [SW1...8, SL1...8]

This is the physical controller assigned to the Tone Adjust parameter.

SW: Switch

SL: Slider

Assignment

This shows the full name of the parameter assigned to the controller. You can change this using the **Assign** parameter, below.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

Type [Rel, Abs, Meta]

This shows the type of the parameter, which relates to how edits to the parameter are saved. For more information, please see "Absolute (Abs), Relative (Rel), Meta parameter" on page 19.

Stored Value

This shows the original value of the parameter, before the effects of Tone Adjust. It applies only to Tone Adjust parameters which control a single Program parameter.

If you un-assign a **Relative** parameter from a control, it will revert to this value.

Switches 1...8

Tone Adjust switches act a little differently than sliders.

When a switch is assigned to a **Relative** parameter, or an **Absolute** parameter with more than two states:

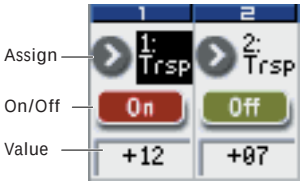
Switch On = **On Value** (see below)

Switch Off = the Program's stored value

When a switch is assigned to a two-state **Absolute** parameter, such as **Hold**, the switch status directly reflects the parameter value:

Switch On = **On**

Switch Off = **Off**



Assign

This lets you assign a Tone Adjust parameter to the switch. For a full list of the available choices, please see "Common Tone Adjust Parameters" and "Tone Adjust Parameters," below.

On Value [Depends on parameter]

The parameter is set to this value when the switch is On.

When the switch is assigned to a two-state **Absolute** parameter, such as **Hold**, this will always be the same as the **Switch Status** (see below).

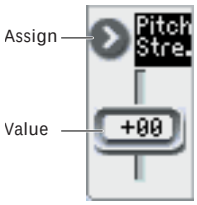
Switch Status [Off, On]

This simply shows whether the switch is On or Off. The status is also shown by the LEDs in the physical switches.

Sliders 1...8

Assign

This lets you assign a Tone Adjust parameter to the slider. For a full list of the available choices, please see "Common Tone Adjust Parameters" and "Tone Adjust Parameters," below.



Per-Oscillator parameters apply to OSC1 and 2 individually, and are marked as such: OSC1 and OSC2.

Each controller can be assigned to only one parameter, and each parameter can be assigned to only one controller.

To swap a parameter from one control to another, you'll need to first un-assign it from the old control, and then assign it to the new control.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

Common Tone Adjust Parameters

These parameters affect both Oscillators 1 and 2.

Unless otherwise noted, all of the Common Tone Adjust parameters are **Relative**.

Note: At the right of each parameter, the (value range and CC#) are shown in parentheses.

Off. This means that the Tone Adjust control has no effect.

Filter Cutoff. (–99...+99, CC#74)
This scales the cutoff frequency of all of the filters at once. It affects both Filters A and B.

Filter Resonance. **(–99...+99, CC#71)**
This scales the resonance of all of the filters at once. It affects both Filters A and B.

Filter EG Intensity. **(–99...+99, CC#79)**
This scales the effect of the Filter EG on the cutoff frequency. It affects both Filters A and B at once

–99 means no modulation. **+99** means maximum modulation in the same direction, positive or negative, as the original Program. For instance, if the original Program's EG Intensity was set to –25, then setting the Tone Adjust to +99 moves the EG Intensity to –99.

Amp Velocity Intensity. **(–99...+99)**
This scales the effect of velocity on the Amp level.

–99 removes the velocity modulation entirely. **+99** means maximum modulation in the same direction, positive or negative, as the original Program.

F/A EG Attack Time. **(–99...+99, CC#73)**
This scales the attack times of the Filter and Amp EGs, along with other related parameters.

When the value is +1 or more, this also affects the Amp EG's Start and Attack Levels, Start Level AMS, and Attack Time AMS, as described below:

Between values of +1 and +25, the Start Level, Start Level AMS, and Attack Time AMS will change from their programmed values to 0. Over the same range, the Attack Level will change from its programmed value to 99.

F/A EG Decay Time. **(–99...+99, CC#75)**
This scales the decay and slope times of the Filter and Amp EGs. It interacts with CC# 75.

F/A EG Sustain Level. **(–99...+99, CC#70)**
This scales the sustain levels of the Filter and Amp EGs.

F/A EG Release Time. **(–99...+99, CC#72)**
This scales the release times of the Filter and Amp EGs.

Filter EG Attack Time. **(–99...+99)**
This scales the attack times of the Filter EGs.

Filter EG Decay Time. **(–99...+99)**
This scales the decay and slope times of the Filter EGs.

Filter EG Sustain Level. **(–99...+99)**
This scales the sustain levels of the Filter EGs.

Filter EG Release Time. **(–99...+99)**
This scales the release times of the Filter EGs.

Amp EG Attack Time. **(–99...+99)**
This scales the attack times of the Amp EGs.

Amp EG Decay Time. **(–99...+99)**
This scales the decay and slope times of the Amp EGs.

Amp EG Sustain Level. **(–99...+99)**
This scales the sustain levels of the Amp EGs.

Amp EG Release Time. **(–99...+99)**
This scales the release times of the Amp EGs.

Pitch EG Attack Time. **(–99...+99)**
This scales the attack times of the Pitch EG (or EGs, in the case of some RADIAS instruments).

Pitch EG Decay Time. **(–99...+99)**
This scales the decay and slope times of the Pitch EG (or EGs, in the case of some RADIAS instruments).

Pitch EG Sustain Level (N / A). **(–99...+99)**
This scales the sustain levels of the Pitch EG (or EGs, in the case of some RADIAS instruments). (This does nothing for EDS programs.)

Pitch EG Release Time. **(–99...+99)**
This scales the release times of the Pitch EG (or EGs, in the case of some RADIAS instruments).

Pitch LFO1 Intensity. **(–99...+99, CC#77)**
This scales the effect of LFO1 on the Pitch.

–99 removes the LFO modulation entirely. **+99** means maximum modulation in the same direction, positive or negative, as the original Program.

LFO1 Speed. **(–99...+99, CC#76)**
This scales LFO1's frequency. When the LFO is in MIDI / Tempo mode, this adjusts the Base Note. For more information, please see "Freq (Frequency)" on page 66.

LFO1 Fade. **(–99...+99)**
This scales LFO1's fade-in time. For more information, please see "Fade" on page 67.

LFO1 Delay. **(–99...+99, CC#78)**
This scales LFO1's delay time - the time between note-on and the onset of the LFO. For more information, please see "Delay" on page 67.

This parameter interacts with CC# 78.

LFO1 Stop. **(PROG/Off/On, Absolute)**
This **Absolute** parameter controls whether LFO1 is stopped or running. For more information, please see "Stop" on page 66.

The **PROG** setting restores the Program's original values. For example if you set this to PROG when the oscillator 1 LFO is stopped and oscillator 2 is not stopped, the setting of the parameter will be used.

LFO2 Speed. (–99...+99)
This scales LFO2's frequency. When the LFO is in MIDI/Tempo mode, this adjusts the Base Note. For more information, please see "Freq (Frequency)" on page 66.

LFO2 Fade. (–99...+99)
This scales LFO2's fade-in time. For more information, please see "Fade" on page 67.

LFO2 Delay. (–99...+99)
This scales LFO2's delay time - the time between note-on and the onset of the LFO. For more information, please see "Delay" on page 67.

LFO2 Stop. (PROG/Off/On, Absolute)
This **Absolute** parameter controls whether LFO2 is stopped or running. For more information, please see "Stop" on page 66.

Common LFO Speed. (–99...+99)
This scales the Common LFO's frequency. When the LFO is in MIDI/Tempo mode, this adjusts the Base Note.

Unison. (Off/On, Absolute)
This **Absolute** parameter turns **Unison** on and off. For more information, please see "Unison" on page 26.

Number Of Voices. (2...6, Absolute)
This **Absolute** parameter sets the number of Unison voices. If **Unison** is not **On**, this parameter has no effect. For more information, please see "Number of Voices" on page 26.

Detune. (00...99, Absolute)
This **Absolute** parameter sets amount of detuning between the Unison voices. If **Unison** is not **On**, this parameter has no effect. For more information, please see "Detune" on page 26.

Thickness. (Off/01...09, Absolute)
This **Absolute** parameter sets the pattern of detuning between the Unison voices. If **Unison** is not **On**, or if **Detune** is set to **0**, this parameter has no effect. For more information, please see "Thickness" on page 26.

Tone Adjust Parameters

Macro parameters

The following three parameters affect both Oscillator 1 and Oscillator 2.

Note: At the right of each parameter, the (value range and edit type) are shown in parentheses.

Pitch Stretch. (–12...+12, Relative)
This special control increases the Oscillator **Tune** parameter while lowering the **Transpose** parameter. The result is that the pitch stays the same, but the mapping of the samples to the keys changes. You can use this to create interesting shifts in timbre.

Hold. (Off/On, Absolute)
This lets you turn Hold on and off. For more information, please see "Hold" on page 27.

Reverse. (PROG/Off/On, Absolute)
This provides a quick way to turn Reverse on or off for all Multisamples in both Oscillators. **PROG** restores the Program's original settings.

Per-Oscillator parameters

These parameters affect each Oscillator separately. In the list, the parameters for Oscillator 1 appear first, with each name prefaced by OSC1; the parameters for Oscillator 2 appear next, prefaced by OSC2.

Unless otherwise specified, all of the Per-Oscillator parameters are **Absolute**.

Note: In the list below, the items in parentheses are (value, edit type) respectively.

Tune. (–1200...+1200, Relative)
This **Relative** parameter adds to or subtracts from the Oscillator's Tune setting, as described under "Tune" on page 39.

Transpose. (–60...+60, Relative)
This **Relative** parameter adds to or subtracts from the Oscillator's Transpose setting, as described under "Transpose" on page 39.

Note: as with **Transpose**, below, this is a simple addition or subtraction, as opposed to the more complex "scaling" function.

MS/DKit Select. (PROG/0...1027, Absolute)
In Single or Double Programs, this lets you select a new Multisample for the Oscillator. In Drum Programs, it lets you select a different Drum Kit.

In general, it's best to use this in conjunction with the **MS Type** and **MS/DKit Bank** parameters, as described below.

PROG restores the Program's original Multisamples (or the Drum Kit, for a Drum Program), including all velocity ranges and **Rev (Reverse)** and **Ofs (Start Offset)** settings.

The list of Multisamples, or Drum Kits can be quite long. The sliders will let you sweep through the entire range, but it may not be possible to select all of the intermediate values. You can always select any individual item by using select the on-screen parameter and use the standard data entry controls, such as the Inc △ and Dec ▽ switches.

You can also limit the range of the control by using the **Min #** and **Max #** parameters, described below.

For Single and Double Programs:

MS/DKit Select overrides all of the Multisample Velocity zones, so that the newly selected Multisample plays over the entire velocity range.

By default, you can select from the same Bank as the original Program's MS1.

You can use the **MS/DKit Bank** parameter, described below, to change these defaults as desired.

For Multisamples only:

You can use the Tone Adjust **Rev (Reverse)** and **Ofs (Start Offset)** parameters to modify the newly selected Multisample. By default, the **Rev (Reverse)** is set to **Off**, and its **Ofs (Start Offset)** is set to **0**.

For Drum Programs:

By default, you can select from the same Bank as the original Program's DrumKit. You can use the **MS Bank** parameter, described below, to select a different Bank.

MS Bank. (ROM Mono..., Meta)
This Meta-parameter modifies the **MS/Dkit Select** parameter, so that you can select Multisamples from any Bank you like.

MS/DKit Min #. (0...1027, Meta)
This Meta-parameter sets a minimum value for the **MS/Dkit Select** parameter. You can use this in conjunction with the **MS/DKit Max #** parameter, below, so that slider selects only from a small set of choices. This is particularly convenient with the internal ROM, in which similar Multisamples are grouped together. For instance, this makes it easy to select between a group of bells, or a set of electric basses.

MS/DKit Max #. (0...1027, Meta)
This Meta-parameter sets a maximum value for the **MS/Dkit Select** parameter. Please see **MS/DKit Min #**, above, for more information.

Start Offset. **(0...8, Absolute)**
This allows you to change the Start Offset of the Multisample specified by the **MS Select** parameter. It applies only when:

The Program is a Single or Double (not a Drum Kit)

For more information, please see “Ofs (Start Offset)” on page 38.

Drive. **(0...99, Absolute)**
This controls the Oscillator’s **Drive** parameter, as described under “Drive” on page 58.

Low Boost. **(0...99, Absolute)**
This controls the Oscillator’s **Low Boost** parameter, as described under “Low Boost” on page 58.

Pitch Slope. **(–1.0...2.0, Absolute)**
This controls the Oscillator’s **Pitch Slope** parameter, as described under “Pitch Slope” on page 40.

LFO 1 Waveform. **(Triangle...Rad6, Absolute)**
This selects the waveform for the Oscillator’s **LFO 1**, as described under “Waveform” on page 66.

LFO 2 Waveform. **(Triangle...Rnd6, Absolute)**
This selects the waveform for the Oscillator’s **LFO 2**, as described under “Waveform” on page 66.

Amp LFO 1 Intensity. **(–99...+99, Absolute)**
This controls the depth and direction of Amp modulation from LFO1, as described under “Intensity (LFO1)” on page 61.

Amp LFO 2 Intensity. **(–99...+99, Absolute)**
This controls the depth and direction of Amp modulation from LFO2, as described under “Intensity (LFO1)” on page 61.

Filter LFO 1 Intensity to A. **(–99...+99, Absolute)**
This controls the depth and direction of Filter A cutoff modulation from LFO1, as described under “Intensity to A” on page 53.

Filter LFO 1 Intensity to B. **(–99...+99, Absolute)**
This controls the depth and direction of Filter B cutoff modulation from LFO1, as described under “Intensity to B” on page 53.

Filter LFO 2 Intensity to A. **(–99...+99, Absolute)**
This controls the depth and direction of Filter A cutoff modulation from LFO2, as described under “Intensity to A” on page 53.

Filter LFO 2 Intensity to B. **(–99...+99, Absolute)**
This controls the depth and direction of Filter B cutoff modulation from LFO2, as described under “Intensity to B” on page 53.

Pitch LFO 1 AMS Intensity. **(–12.00...+12.00, Absolute)**
You can use an AMS source, such as aftertouch, to modulate the depth of pitch modulation (vibrato) from LFO1. This controls the intensity of that AMS modulation. For more information, please see “Intensity” on page 40.

Pitch LFO 2 AMS Intensity. **(–12.00...+12.00, Absolute)**
This is similar to **Pitch LFO 1 AMS Intensity**, above.

Default Tone Adjust Settings

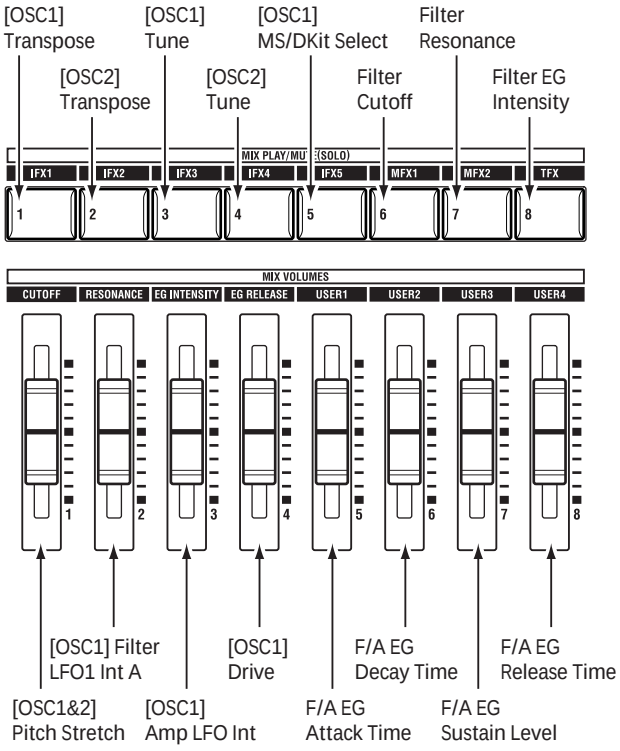
Tone Adjust provides an elegant physical interface to the parameters. Most of the factory sounds use the default layout, as shown below. You can also customize the layout for individual sounds, if desired.

For details on the Tone Adjust function, please see “0–8g: Tone Adjust” on page 20.

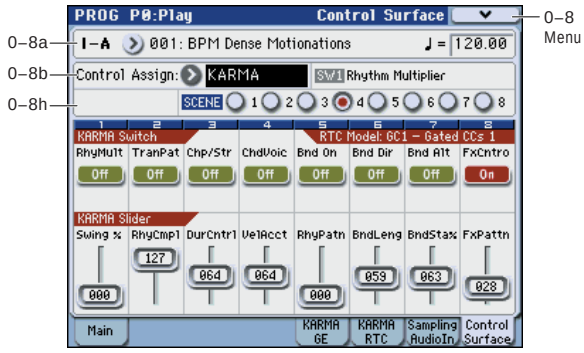
Tone Adjust parameters

This applies to common tone adjust parameters and EDS tone adjust parameters following the “0–8g: Tone Adjust” on page 20.

EDS Tone Adjust, Default Settings



KARMA



0–8h: KARMA

Selected parameter information

This status line shows detailed, read-only information about the currently selected KARMA parameter.

Selected Switch/Slider **[SW1...8, SL1...8]**

Realtime Control Name

For more information, please see “KARMA Value” on page 7.

SCENES switches 1/5...4/8

SCENE **[1...8]**

Here you can select the KARMA scene. Each of the eight scenes memorize the settings of the KARMA Switches 1–8 and KARMA Sliders 1–8. By switching between scenes, you can instantly change these settings to obtain a wide range of KARMA sounds.

To select the scene, you can either use the **SCENE** parameter or press a SCENES 1/5–4/8 switch.

When you press the CONTROL ASSIGN KARMA switch, the 1–4 or 5–8 LED will blink to indicate the candidate scenes. The corresponding KARMA scene will be selected when you press a 1/5–4/8 switch.

Switches 1...8

KARMA Switch **[Off, On]**

These control the GE realtime parameters and KARMA performance realtime parameters that are assigned in the KARMA2– GE RTP page and KARMA2– Perf RTP page. The current on/off status is indicated by the switch.

The parameters assigned to the switches and their on/off status can be edited in the KARMA2– GE RTP page or KARMA2– Perf RTP page.

Sliders 1...8

KARMA Slider **[000...127]**

These control the GE realtime parameters and KARMA performance realtime parameters that are assigned in the KARMA2 GE RTP page and KARMA2– Perf RTP page. The current value is shown below the slider.

The parameters assigned to the sliders and the range of controlled values can be edited in the KARMA2– GE RTP page or KARMA2– Perf RTP page.

▼0–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107
- 4: **Copy Tone Adjust** ☞p.111
- 5: **Reset Tone Adjust** ☞p.111
- 4: **Copy Scene** ☞p.115
- 5: **Swap Scene** ☞p.115

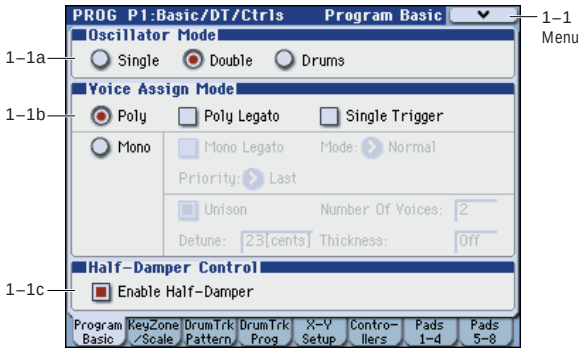
For more information, please see “Program: Menu Command” on page 106.

PROG P1: Basic/DT/Ctrls (Basic/Drum Track/Controllers)

1–1: Program Basic

This page contains all of the basic settings for the Program. Among other things, you can:

- Set up the Program to be a Single, a Double, or a Drum Kit
- Set the Program to play polyphonically or monophonically
- Enable / disable the half-damper function



1–1a: Oscillator Mode

Oscillator Mode [Single, Double, Drums]

Specifies the Program's oscillator assignment; whether it will use one or two oscillators, or a drum kit.

Single: The program will use **one oscillator** (Oscillator 1, Filter 1, Amplifier 1). In this case the program will normally have a **maximum of 120-note polyphony**.

Double: The program will use **two oscillators** (Oscillator 1 / 2, Filter 1 / 2, Amplifier 1 / 2). In this case the program will normally have a **maximum of 60-note polyphony**.

Drums: The program will use **one oscillator** (as when Single is selected), but Oscillator 1 will be assigned a drum kit instead of a multisample. In this case the program will normally have a **maximum of 120-note polyphony**.

1–1b: Voice Assign Mode

Voice Assign Mode [Poly, Mono]

Select the basic voice allocation mode. Depending on which one you select, various other options will appear, such as **Poly Legato** (**Poly** mode only) and **Unison** (**Mono** mode only).

Poly: The program will play polyphonically, allowing you play chords.

Mono: The program will play monophonically, producing only one note at a time.

Poly Legato [Off, On]

Poly Legato is available when the **Voice Assign Mode** is set to **Poly**.

Legato means to play note so that they are smooth and connected; the next note is played before the last note is released. This is the opposite of playing detached.

On (checked): When you play a legato phrase, only the first note of that phrase (and within approximately the first 30msec) will use the normal multisample start point specified by **Ofs (Start Offset)** (Prog 2–1a); all subsequent notes will use the legato start point specified for each multisample.

Note: This is a useful way to simulate the percussive attack of a tonewheel-type organ.

Off (unchecked): Notes will always use the setting of the **Ofs (Start Offset)**, regardless of whether you play legato or detached.

With some Multisamples, **Poly Legato** may not have any effect.

Single Trigger [Off, On]

Single Trigger is available when the **Voice Assign Mode** is set to **Poly**.

On (checked): When you play the same note repeatedly, the previous note will be silenced before the next note is sounded, so that the two do not overlap.

Off (unchecked): When you play the same note repeatedly, the notes will overlap.

Mono Legato [Off, On]

This is available when the **Voice Assign Mode** is set to **Mono**.

Legato means to play notes so that they are smooth and connected; the next note is played before the last note is released. This is the opposite of playing detached.

When Mono Legato is On, the first note in a legato phrase will sound normally, and then subsequent notes will have a smoother sound, for more gentle transitions between the notes.

The **Mode** parameter, below, switches between two different Mono Legato effects, each of which achieves this smoothness in a different way. See the description of that parameter for more details.

On (checked): When you play with legato phrasing, the notes within a legato phrase will sound smoother, according to the setting of the **Mode** parameter, below.

Off (unchecked): Legato phrasing will produce the same sound as detached playing.

Mode [Normal, Use Legato Offset]

This parameter is available only when **Mono Legato** is **On**.

Normal: When you play legato, the multisample, envelopes, and LFOs will not be reset; only the pitch of the oscillator will change. This setting is particularly effective for wind instruments and analog synth sounds.

With this option, the pitch may occasionally be incorrect, depending on which multisample you play, and where on the keyboard you play.

Use Legato Offset: When you play legato, the second and subsequent notes will use the legato start point specified for each multisample, rather than the **Ofs (Start Offset)** (Prog 2–1a) setting.

This is effective when used with a multisample for which you've assigned a specific legato offset point. For example, you might use it to control the attack of a breathy, slow-attack sax sound. On some multisamples, this will have no effect.

Envelopes and LFOs will still be reset, as they are with detached playing.

Priority [Low, High, Last]

Priority is available when the **Voice Assign Mode** is set to **Mono**.

This parameter determines what happens when more than one note is being held down.

Low: The lowest note will sound. Many vintage, monophonic analog synths work this way

High: The highest note will sound.

Last: The most recently played note will sound.

Unison [On, Off]

Unison can be used in both **Mono** and **Poly** modes.

On (checked): When Unison is on, the Program uses two or more stacked, detuned voices to create a thick sound.

Use the **Number of Voices** and **Detune** parameters to set the number of voices and amount of detuning, and the **Thickness** parameter to control the character of the detuning.

Off (unchecked): The Program plays normally. If **Unison** is **Off**, then all of its associated parameters are grayed out.

Number of Voices [2...6]

This controls the number of detuned voices that will be played for each note when using **Unison**. It applies only when **Unison** is **On**.

Detune [00...99 cents]

Detune is available when **Unison** is **On**.

This parameter sets the tuning spread for the Unison voices, in cents (1/100 of a semitone). The **Thickness** parameter, below, controls how the voices are distributed across the detune amount. When **Thickness** is **Off**, the voices are distributed evenly, centered around the basic pitch.

For instance, let's say that the **Number of voices** parameter is set to **3**, **Detune** is set to **24**, and **Thickness** is **Off**:

Voice one will be detuned down by 12 cents, voice two will not be detuned, and voice three will be detuned up by 12 cents.

Voice	Detune
1	–12
2	0
3	+12

As another example, let's say that **Detune** is still set to **24** and **Thickness** is still **Off**, but **Number of voices** is set to **4**:

Voice one will still be detuned down by 12 cents, voice two will be detuned down by 4 cents, voice three will be detuned up by 4 cents, and voice 4 will be detuned up by 12 cents.

Voice	Detune
1	–12
2	–4
3	+4
4	+12

Thickness [Off, 01...09]

Thickness is available when **Unison** is **On**.

This parameter controls the character of the detuning for the unison voices.

Off: Unison voices will be evenly distributed across the Detune range, as shown above.

01–09: Unison voices will be detuned in an asymmetric way, increasing the complexity of the detune, and changing the way in which the different pitches beat against one another. This creates an effect similar to vintage analog synthesizers, in which oscillators were frequently slightly out of tune. Higher numbers increase the effect.

1–1c: Half-Damper Control

A half-damper pedal is a special type of continuous foot pedal, such as the Korg DS-1H. In comparison to a standard footswitch, half-damper pedals offer more subtle control of sustain, which can be especially useful for piano sounds.

The M3 will automatically sense when a half-damper is connected to the rear-panel DAMPER input. For proper operation, you will also need to calibrate the pedal, using the **Half Damper Calibration** command in the Global menu.

The off and full-on positions of the half-damper work just like a standard footswitch. In conjunction with the **Enable Half-Damper** parameter, below, intermediate positions allow a graduated control of sustain, similar to the damper pedal of an acoustic piano.

Enable Half-Damper [On, Off]

When this is **On** (checked), Half-Damper pedals, normal sustain pedals, and MIDI CC# 64 will all modulate the Amp EG, as described below.

When this is **Off** (un-checked), the pedals and MIDI CC#64 will still hold notes as usual, but will not modulate the Amp EG.

Half-Damper Pedal and Release Time

The amount of modulation depends on whether the Amp EG **Sustain Level** is set to **0** (as is the case with most acoustic piano sounds), or set to **1** or more. The modulation is continuous, from 1x (no change) to 55 times longer; the table below shows a selection of representative points.

Half-Damper modulation of Amp EG Release Time

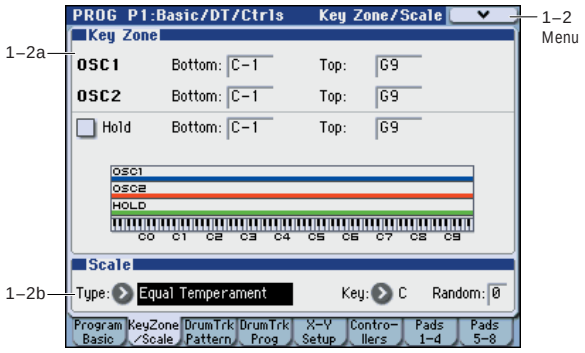
CC#64 Value	Multiply Amp EG Release Time by…	
	If Sustain = 0	If Sustain = 1 or more
0	1x	1x
32	2.1x	2.1x
64	3.2x	3.2x
80	5.9x	
96	22.3x	
127	55x	

▼1–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Scene** ☞p.115
- 4: **Swap Scene** ☞p.115

For more information, please see "Program: Menu Command" on page 106.

1–2: Key Zone/Scale



Here you can make the following settings.

- Make keyboard split settings for OSC1, OSC2, and Hold.
- Select the basic scale of the program.

1–2a: Key Zone

You can create keyboard splits by setting top and bottom keys for Oscillators 1 and 2. Also, you can control the keyboard range over which the **Hold** parameter takes effect.

Setting Key Zones from the keyboard

In addition to the usual data input methods, you can specify the key zone values by directly playing a note on the keyboard or by receiving a MIDI note-on.

1. **Select the key zone parameter you'd like to edit.**
2. **While holding down the ENTER switch, play a note on the keyboard to specify the value.**
3. **Release the ENTER switch.**

On the M3, you can use this shortcut for parameters that specify a key or a velocity. (Dialog boxes such as menu commands are an exception.)

OSC 1 Bottom [C–1...G9]

This sets the lowest key on which Oscillator 1 will play.

OSC 1 Top [C–1...G9]

This sets the highest key on which Oscillator 1 will play.

OSC 2 Bottom [C–1...G9]

This sets the lowest key on which Oscillator 2 will play.

OSC 2 Top [C–1...G9]

This sets the highest key on which Oscillator 2 will play.

Hold [On, Off]

Hold is like permanently pressing down on the sustain pedal. In other words, notes continue to sound as if you were holding down the key - even after you lift your fingers from the keyboard.

Unless the **Sustain Level** is set to **0** in Amp EG 1 (and Amp EG 2 in a Double Program), the sound will play for the entire length of the sample(s).

On (checked): The **Hold** function is enabled for the range set by the **Hold Bottom** and **Hold Top** parameters, below.

Off (unchecked): Notes will play normally. This is the default setting.

Using Hold with Drum Kits

Hold can be especially useful for drum programs, since it lets the samples ring out naturally. In general, when you set the **Oscillator Mode** to **Drums**, it's good to set **Hold** to **On**.

Once you've turned on **Hold** for a drum program, the function is controlled on a note-by-note basis according to settings within the selected Drum Kit.

If a key's **Enable Note Off Receive** parameter (Global 5–4a) is unchecked, the note will be held.

If the key's **Enable Note Off Receive** parameter is checked, it will not be held.

If you turn off **Hold** in the Program, no keys will be held - regardless of their **Enable Note Off Receive** setting.

Using Hold with Acoustic Pianos

Hold is also useful for simulating the top octaves of an acoustic piano, in which notes always sustain until they fade out naturally, regardless of how long you hold the key.

The **Hold Bottom** and **Hold Top** parameters are designed for exactly this purpose. They let you limit the effect of the Hold parameter to a specific range of the keyboard.

Hold Bottom [C–1...G9]

This sets the lowest key affected by the Hold function.

Hold Top [C–1...G9]

This sets the highest key affected by the Hold function.

1–2b: Scale

Type [Equal Temperament…User Octave Scale15]

Selects the basic scale for the Program.

Note that for many of the scales, the setting of the **Key** parameter, below, is very important.

Equal Temperament: This is the most widely used scale by far, in which each semitone step is spaced at equal pitch intervals.

Equal Temperament allows easy modulation, so that a chord progression played in the key of C sounds roughly the same as the same progression played in F#. Sacrificed, however, is some of the purity of individual intervals offered by the scales below.

Pure Major: In this temperament, major chords of the selected key will be perfectly in tune.

Pure Minor: In this temperament, minor chords of the selected key will be perfectly in tune.

Arabic: This scale includes the quarter-tone intervals used in Arabic music.

Pythagoras: This scale is based on ancient Greek musical theory, and is especially effective for playing melodies. It produces completely pure fifths, with one exception, at the expense of detuning other intervals– thirds in particular.

As much as Pythagoras might have like to do so, it's not possible to make all the fifths pure while also keeping the octave in tune. For the sake of the octave, one of the fifths– the interval from the sharp fourth degree to the sharp first degree–is made quite flat.

Werkmeister (Werkmeister III)**:** This scale was one of the many temperament systems developed towards the end of the Baroque period. These "Well-Tempered" tunings were aimed at allowing relatively free transposition–although you'll still notice that the different keys maintain their own distinct characteristics, unlike Equal Temperament.

J.S. Bach was referring to these new scales in his title, "The Well-Tempered Clavier." As such, this group are particularly appropriate for late baroque organ and harpsichord music.

Kirnberger (Kirnberger III)**:** This is a second "Well-Tempered" tuning, dating from the early 18th century.

Slendro: This is an Indonesian gamelan scale, with five notes per octave.

When **Key** is set to **C**, use the C, D, F, G and A notes. Other keys will play the normal equal-tempered pitches.

Pelog: This is another Indonesian gamelan scale, with seven notes per octave.

When **Key** is set to **C**, use the white keys. The black keys will play the equal tempered pitches.

Stretch: This tuning is used for acoustic pianos.

User All Notes Scale: This is a user-programmed scale with different settings for all 128 MIDI notes. You can set up this scale in Global mode (Global 3–1b).

User Octave Scale 00–15: These are user-programmed scales with settings for each of the 12 notes in an octave. You can set them up in Global mode (Global 3–1a).

Key (Scale Key) [C…B]

Selects the key of the specified scale.

This setting does not apply to the **Equal Temperament**, **Stretch**, and **User All Notes** scales.

If you're using a scale other than Equal Temperament, the combination of the selected scale and the **Key** setting may skew the tuning of the note. For example, A above middle C might become 442 Hz, instead of the normal 440 Hz. You can use the Global Mode's **Master Tune** (Global 0–1a) parameter to correct this, if necessary.

Random [0…7]

This parameter creates random variations in pitch for each note. At the default value of **0**, pitch will be completely stable; higher values create more randomization.

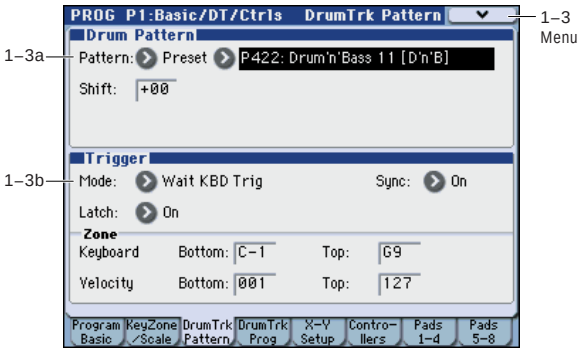
This parameter is handy for simulating instruments that have natural pitch instabilities, such as analog synths, tape-mechanism organs or acoustic instruments.

▼1–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see "Program: Menu Command" on page 106.

1–3: DrumTrk Pattern (DrumTrack Pattern)



Here you can select a drum track pattern and specify how it will sound.

The drum track lets you easily produce a rhythm section using the M3's high-quality drum programs and a rich variety of drum track patterns.

You can edit the program or try out different phrases while listening to the drum track.

When you come up with a phrase you like, you can use the Auto Song Setup function to easily record it into the sequencer.

MIDI In Program mode, the drum track patterns are triggered on the Global MIDI channel. The MIDI transmit channel is specified by the DrumTrack **Prog MIDI Ch** (Global P1: MIDI– MIDI Basic). Use the DrumTrack **Prog MIDI Out** (Global P1: MIDI– MIDI Basic) setting to specify whether the pattern will transmit MIDI note data. The default setting is channel 10.
The drum track program will not transmit or receive MIDI program changes.

1–3a: Drum Pattern

Pattern [Preset, User] [(Preset): P000...P522, (User): U000...U999]

This selects the drum pattern.

Preset/User No.	Contents
P000	Off
P001...P522	Preset drum patterns
U000...U999	For user/preloaded drum patterns

- U000–U999 can be written. Patterns you create in Sequencer mode can be converted into user drum patterns. (See page 291)
  For details on creating user drum patterns, please see "Drum Track function" on page 185 of the Operation Guide.

Shift [–24...+00...+24]

This transposes the drum pattern in semitone steps. This means that the instruments of the drum kit will change.

1–3b: Trigger

Trigger Mode [Start Immediately, Wait KBD Trig]

Start Immediately: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum track pattern will start according to the **Sync** setting. When you turn it on, the drum track pattern will stop.

Wait KBD Trig: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum pattern will wait to start. When you play the keyboard, or when a MIDI note-on is received, the drum pattern will start according to the **Sync** setting.

If you've selected **Start Immediately**, the DRUM TRACK ON / OFF switch will always be saved in the OFF state.

Note: You can link KARMA with the drum track pattern playback. For more information, please see "Link to Drum Trk" on page 6.

Sync [Off, On]

Off: The drum pattern will not synchronize to the currently-running KARMA, but will start immediately.

On: The drum pattern will synchronize to the currently-running KARMA.

Note: Use P7–1: KARMA1–Trigger **Quantize Trigger** to specify whether KARMA will synchronize to the currently-running drum pattern.

Latch [Off, On, Use KARMA Latch Switch]

This is valid if **Trigger Mode** is **Wait KBD Trig**.

Off: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will stop when you release the keyboard (note-off).

On: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will continue when you release the keyboard (note-off). The pattern will stop when you turn the DRUM TRACK ON / OFF switch off (LED dark).

Use KARMA Latch Switch: The on / off status of the KARMA LATCH switch will correspond to the above Off and On modes of operation. You will probably want to use this in conjunction with KARMA's Latch operation.

Zone:

Keyboard

Bottom [C–1...G9]

Top [C–1...G9]

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

It specifies the range of keys that will start the drum pattern.

Velocity:

Bottom [001...127]

Top [001...127]

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

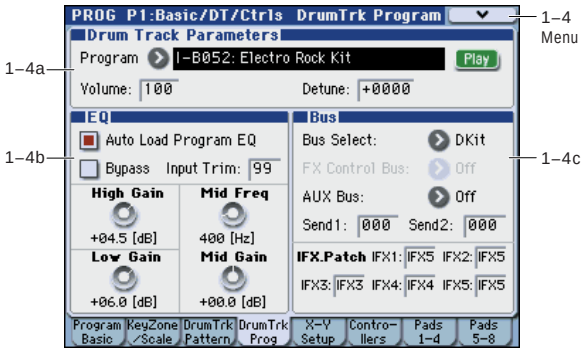
It specifies the range of velocities that will start the drum pattern.

▼1–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Drum Track** ☞p.112
- 4: **Erase Drum Track Pattern** ☞p.112

For more information, please see "Program: Menu Command" on page 106.

1–4: DrumTrk Program (DrumTrack Program)



1–4a: Drum Track Programs

Program Select [Drum Category Programs]

Here you can select the drum program that will be used by the drum track.

Note: Only programs of the Drum category can be selected.

If data is loaded or a system exclusive message received so that the selected program is no longer a Drum category program, it will be replaced with the first program of the Drum category.

The drum track program will not transmit or receive MIDI program changes.

Volume [000...127]

This adjusts the volume of the drum track program.

Play/Mute [Mute, Play]

This mutes the drum track program. The setting will alternate each time you press the Play / Mute button.

Mute: The drum track program will not be heard (Mute).

Play: The drum track program will be heard (Play).

Using the control surface to make Drum Track settings

You can use the control surface to edit the **Play/Mute**, **Solo On/Off**, and **Volume** settings of the drum track. These settings can be made using the front panel mixer section, or in the display of the P0: Play– Control Surface page. The explanation below describes how to make these settings from the front panel.

PLAY/MUTE

1. **Press the CONTROL ASSIGN MIXER switch to make T1–8 light.**
2. **Press the MIX PLAY/MUTE 3 switch to change the PLAY/MUTE setting.**

SOLO On/Off

1. **Press the CONTROL ASSIGN MIXER switch to make T1–8 light.**
2. **Select the menu command Panel-Switch Solo Mode On. (When you select it, a check mark will be added to the menu item.)**
3. **Press the MIX PLAY/MUTE each switch to turn solo on/off for input.**

The setting is not visible in this page.

Audio Volume

1. **Press the CONTROL ASSIGN MIXER switch to make T1–8 light.**
2. **Use the MIX VOLUMES 3 slider to control the volume.**

Detune [–1200...+1200]

This adjusts the pitch in one-cent steps. One cent is 1/100th of a semitone.

The pitch of each drum kit is specified in Global P5: Drum Kit.

MIDI You can control this using RPN.

1–4b: EQ

Auto Load Program EQ [Off, On]

On (checked): When you switch the drum track program, the 3-band EQ values specified for the program will automatically be loaded. Normally you will leave this checked.

You are free to edit the 3-band EQ values that are automatically loaded. You will be making changes based on the settings of the original program.

Off (unchecked): The 3-band EQ values specified for the program will not be loaded when you switch the drum track program.

- When you select a drum track: Check this so that the 3-band EQ settings of the program will be loaded. You can adjust the timbre EQ based on these settings.
- When you've edited the drum track program's EQ settings and want to leave them fixed: Uncheck this item. The EQ settings will not change when you select programs.

Bypass [On, Off]

When Bypass is checked, all of the EQ will be disabled, including the **Input Trim**.

Bypass can be convenient for comparing the results of the EQ with the original signal.

Input Trim [00...99]

This controls the volume level going into the EQ. This setting corresponds to the volume; a value of 50 corresponds to –6 dB, and a setting of 25 corresponds to –12 dB.

High settings of the **Low**, **Mid**, and **High Gain** controls can cause substantial increases in the overall level. You can compensate for this by turning down the input trim.

High Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the 10 kHz High Shelf EQ, in increments of 0.5 dB.

Mid Frequency [100Hz...10kHz]

This sets the center frequency for the Mid sweep EQ.

Mid Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the Mid Sweep EQ, in increments of 0.5 dB.

Low Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the 80 Hz Low Shelf EQ, in increments of 0.5 dB.

1–4c: Bus

Bus Select [Dkit, L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the bus that will output the drum track program.

Dkit: The **Bus (IFX/Output) Select**, **FX Control Bus**, **Send1 (to MFX1)**, and **Send2 (to MFX2)** settings (Global 5–4b) for each key of the drum kit used by the selected drum track program will be valid. Choose this setting if you want to apply separate insert effects to each drum instrument, or send them separately to the AUDIO OUTPUT (INDIVIDUAL) jacks.

When making Dkit settings, you will normally use **IFX. Patch** to specify the output destination.

L/R: Output to the L/R bus.

IFX1, 2, 3, 4, 5: Output to the IFX1–5 bus.

1, 2, 3, 4: The timbres will be output in monaural from AUDIO OUTPUT (INDIVIDUAL) 1, 2, 3, and 4 respectively.

1/2, 3/4: Output according to the timbre pan settings from AUDIO OUTPUT (INDIVIDUAL) 1 and 2 or 3 and 4 in stereo.

Off: The sound will not be output to the L/R bus, IFX1–5 bus, or Individual 1–4 bus. Use the Off setting if you have connected the drum track program output in series to a master effect. Use **Send1 (to MFX1)** or **Send2 (to MFX2)** to adjust the send level.

FX Control Bus [Off, 1, 2]

This sends the output of the drum track program to the FX Control bus (two mono channels FX Ctrl1, 2).

The FX Control bus is used when you want to use another audio signal to control the input of an effect. You can use the two FX Control buses (two mono channels) to freely control the effects in a variety of ways. For more information, please see "FX Control Buses" on page 423.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

This sends the output of the drum track program to the AUX buses (four mono channels: 1, 2, 3, 4).

The AUX buses are internal buses dedicated to recording, that can be used for sampling etc. in each mode.

For example, you can use them to resample just the drum track performance.

Resampling is possible if you select an AUX bus as the **Source Bus** (Prog 0–7b).

As the **Source Bus** (Prog 0–7b), you will normally select L/R so that you can sample the signal of the L/R bus, such as your keyboard playing or KARMA function performance. However if you want to sample only the drum track performance, you'll use an AUX bus.

Off: The drum track program output will not be sent to an AUX bus. Normally you will leave this off.

1, 2, 3, 4: The drum track program output will be sent to the corresponding AUX bus in monaural.

1/2, 3/4: The drum track program output will be sent to the corresponding pair of AUX buses (e.g., 1 and 2) in stereo.

Send 1 [000...127]
Send 2 [000...127]

These specify the send level at which the output of the drum track program will be sent to each master effect.

Send 1: Send the signal to master effect 1.

Send 2: Send the signal to master effect 2.

If **Bus Select** is set to IFX1–5, the send levels to the master effects are set by the post-IFX1–5 **Send1** and **Send2** (Prog 8–

2a). For more information, please see “Audio Input, S/P DIF IN, FireWire” on page 429.

MIDI You can use CC#93 to control **Send 1**, and CC#91 to control **Send 2**.

IFX. Patch:

IFX1 **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
IFX2 **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
IFX3 **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
IFX4 **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
IFX5 **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**

Here you can patch the **Bus Select** setting specified for each key of the drum kit, temporarily changing its connection destination from the originally specified insert effect to some other destination. This can be executed only if the drum track program’s **Bus Select** is set to DKit and the **Bus Select** (Global 5–4b) for each key of the drum kit is set to IFX1–5.

As the patch destination, choose an insert effect or L/R, 1–5, 1/2, 3/4, or Off as the output bus.

Note: If you want to return the drum kit to its previous state, change these settings to IFX1→IFX1, IFX2→IFX2, IFX3→IFX3, IFX4→IFX4, and IFX5→IFX5.

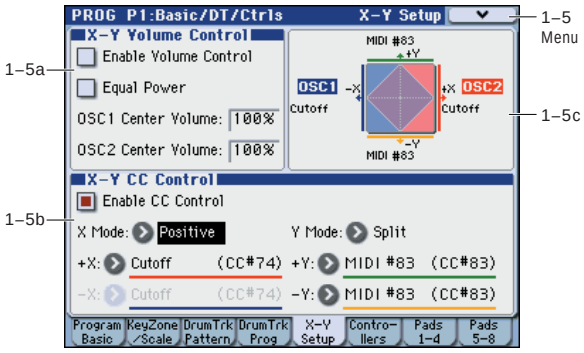
For the preloaded kits, snare sounds are normally sent to IFX1, kick sounds to IFX2, and other sounds to IFX3. In such cases if you set **Bus Select** to Dkit, these sounds will be sent to IFX1, IFX2, and IFX3, but IFX1 and IFX2 are set for normal (non-drum) programs. In such cases, you can use **IFX.Patch** to route these drum sounds to unused IFX; for example, you might send the snare sounds to IFX3, kick sounds to IFX4, and other sounds to IFX5. For more information, please see “Effect Guide” on page 421.

▼1–4: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Drum Track** ☞p.112
- 4: **Erase Drum Track Pattern** ☞p.112

For more information, please see “Program: Menu Command” on page 106.

1–5: X–Y Setup



X–Y Control lets you touch your finger to the display and move it (X–Y MODE) or capture this movement as an X–Y Motion in order to generate a control change that will control the volume balance of OSC1 and OSC2 or vary the program or effect.

What does X–Y control?

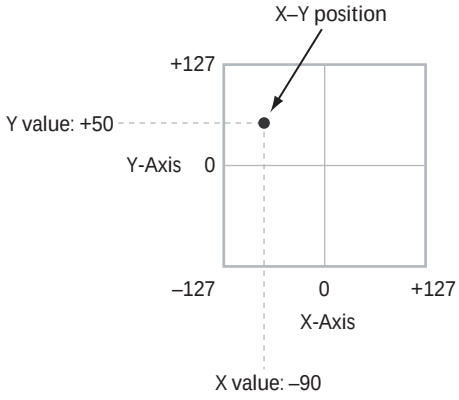
Modulation generally works by moving a single control. like a slider, in a straight line. At one end of the control, the modulation is at its minimum; at the other end, it’s at its maximum.

X–Y control is a little different. It works by moving around a point on a two-dimensional plane, both left-right and up-down.

You can think of this point as being positioned on two different lines at once: a left-right line (the X axis), and an up-down line (the Y axis).

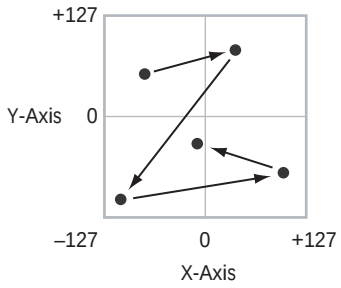
In other words, instead of just having one value (like a slider), each X–Y position has two values: one for X, and one for Y. See the graphic “X–Y position and X and Y axis values” for an example.

X–Y position and X and Y axis values



You can directly move the location of the point in the display (X–Y MODE), or you can use X–Y Motion to automatically move the location of the point as shown in the illustration below.

Using X–Y Motion to move the X–Y position



Volume and CC Control

The X–Y control does two main things: it can control the relative volume of the two Oscillators in Program mode (or of up to 16 Programs at once in Combination mode), and it can generate CCs for controlling Program and Effects parameters.

X–Y control and MIDI

The X–Y control features interact with MIDI in two different ways: through the X–Y MODE, and through the X–Y CC Control.

The **X–Y MODE** sends and receives two MIDI controllers: one for the X axis, and the other for the Y axis. In Global mode, you can assign these to any MIDI CC numbers you like. The defaults are CC#118 for the X axis, and CC#119 for the Y axis. The X–Y mode (or X–Y motion) and its CCs control the X–Y position.

The **X–Y CC Control**, on the other hand, is generated by the X–Y position. Normally, this will only affect internal sounds and effects. If you like, however, you can also enable a Global parameter to send these generated CCs to external MIDI devices.

X–Y MODE switch

When you turn on the X–Y MODE switch, the color scheme of the display will change, and the switch LED will light.

In this state, you won't be able to select parameters in the display. Turn this switch off if you want to edit settings. If you want to select a menu command such as **Write Program**, you can access it by holding down the ENTER switch and pressing a numeric keypad.
To save the program, press the REC / WRITE switch to access Update Program, and then press the ENTER switch.

HOLD switch

If you turn the HOLD switch on (LED lit) and then take your finger off the display, the effect will continue in the state in which it was at that moment. If this switch is off, the point will return to the center value (no effect) when you remove your finger from the display.

MOTION switch

This switch records or plays-back the X–Y motion. Recording or playback will occur while you hold down the switch (LED lit).

You can also use a foot switch to control this.

Recording an X–Y motion

If there are no events

1. **Press the X–Y MODE switch (LED lit).**
2. **Press the MOTION switch to enter record-ready mode.**
3. **Continue holding down the MOTION switch, and touch the display; recording will begin. Move your finger to record the motion.**
4. **Recording will end when you off the MOTION switch or when the maximum number of events have been recorded.**

If there are already events

1. **Press the X–Y MODE switch (LED lit).**
2. **Press the MOTION switch; playback will begin.**
3. **Continue holding down the MOTION switch, and touch the display; recording will begin at that moment. Move your finger to record the motion.**
4. **Recording will end when you off the MOTION switch or when the maximum number of events have been recorded.**
5. **Press the MOTION switch once again, and the old events will play (up to the point you began re-recording) followed by the newly-recorded events.**

Playing back the X–Y motion

1. **Press the X–Y MODE switch (LED lit).**
2. **The X–Y motion will play back while you continue holding down the MOTION switch.**

Play the keyboard.

Note: You can also use a foot switch to turn the MOTION switch on / off. For more information, please see "List of Foot Switch assignments" on page 599.

Resetting the X–Y motion

While holding down the ENTER switch, press the MOTION switch; the recorded events will be erased.

1–5a: X–Y Volume Control

You can adjust the relative volume balance between oscillators 1 and 2 by moving X–Y MODE (or an X–Y Motion) left or right on the X-axis.

If you check "Equal Power," you'll be able to fade smoothly between the two oscillators when changing the X–Y position. You can also use **OSC 1/2 Center Volume** to create more complex fades.

In Combination mode, you can use this to control the relative volumes of up to 16 Programs at once, using both the X and Y axes. For more details, please see the X–Y Volume Control section of Combination mode.

Enable Volume Control [Off, On]

When this box is checked, moving the X–Y position will change the volume of oscillators 1 and 2.

When this box is not checked, the X–Y position will not directly affect volume. However, it's still possible to control volume via X–Y CCs and AMS.

Equal Power [Off, On]

This applies only when **Enable Volume Control** is turned **On**.

When **Equal Power** is **On**, the X–Y will fade between Oscillators 1 and 2 using an equal-power volume curve. This provides a smooth fade between the two sounds, and is the type of volume control used by classic vector synths.

Also, when this is checked, the OSC 1 and OSC 2 **Center Volume** parameters will be grayed out, since **Equal Power** sets the center volumes automatically.

When **Equal Power** is **Off**, the OSC 1 and OSC 2 **Center Volume** parameters determine the way in which X–Y position affects volume.

OSC1 Center Volume [0, 25, 50, 75, 100%]

This sets the volume of Oscillator 1 at the center of the X axis. It applies only when **Equal Power**, above, is set to **Off**.

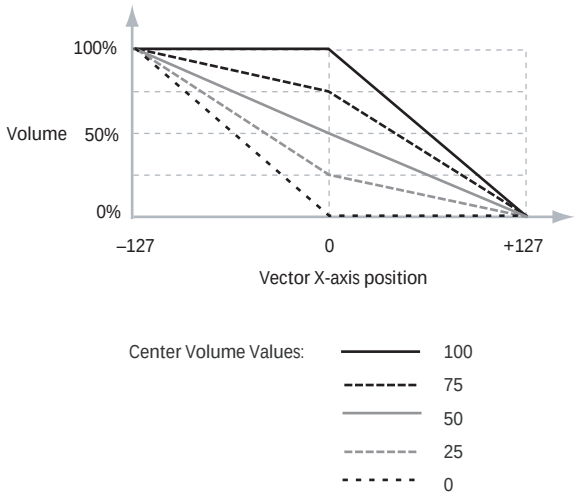
The volumes at the extreme ends of the X axis are fixed. At the left side, Osc 1 is always at 100% volume; at the right side, Osc 1 is always at 0%.

OSC2 Center Volume [0, 25, 50, 75, 100%]

This sets the volume of Oscillator 2 at the center of the X axis.

The volumes at the extreme ends of the X axis are fixed, in the opposite direction of Oscillator 1's. At the left side, Osc 2 is always at 0% volume; at the right side, Osc 2 is always at 100%.

Osc Center Volume and X-Axis Position



1–5b: X–Y CC Control

X–Y CC control lets you use movements of the X–Y position in X–Y MODE (or X–Y Motion) as an AMS source to control the parameters of a program or as a Dmod source to control an effect.

Each of the four directions of the X–Y can send a different CC, including left (–X), right (+X), up (+Y), and down (–Y). You can choose between several different patterns combining these four directions by using the **X Mode** and **Y Mode** parameters.

The X–Y CC is transmitted as MIDI control change messages on the global MIDI channel. This means that it controls all voices of the program, not individual voices.

Note: A Global parameter allows you to enable or disable MIDI output for the CC Control. By default, this is disabled. This setting does not affect the internal Programs, which can always receive the X–Y CCs.

Enable CC Control [Off, On]

When this box is checked, the X–Y position will control the CCs assigned to +X, –X, +Y, and –Y, as set below.

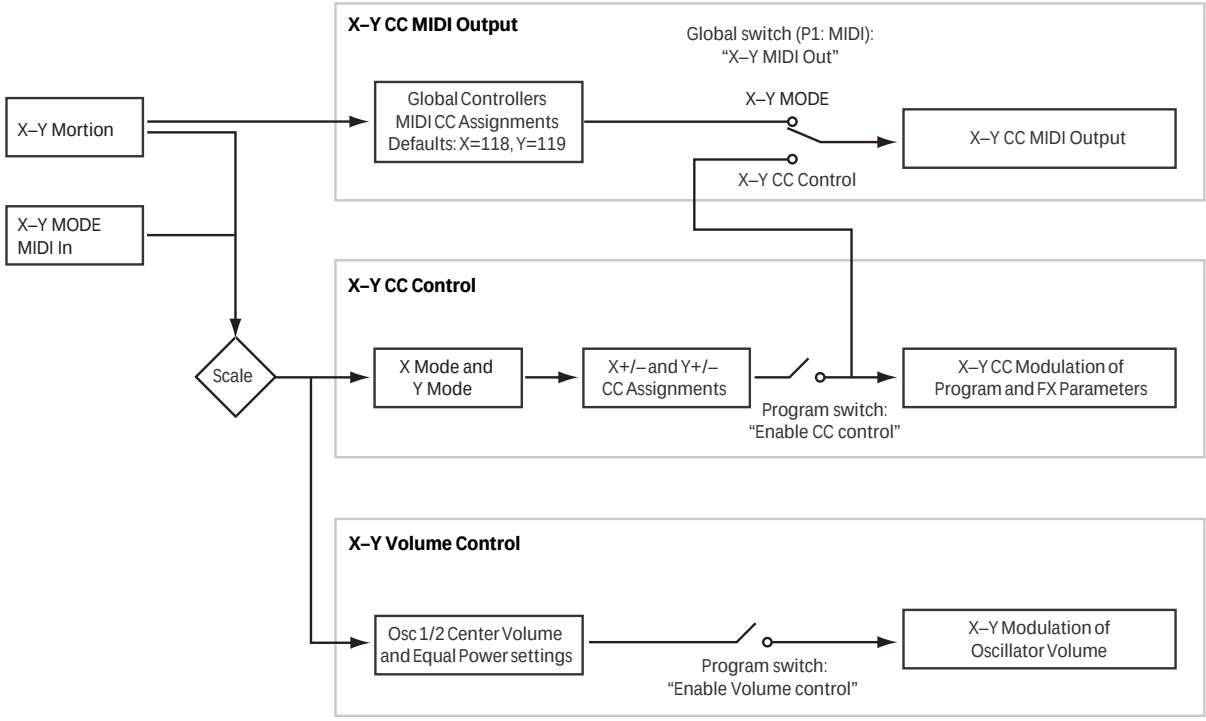
When this box is not checked, the CC assigned to +X, –X, +Y, and –Y will have no effect. The MIDI CC# specified by Global settings **X (X–Y Mode)** and **Y (X–Y Mode)** (P2: Controllers – MIDI CC# Assign) will be transmitted and received. For more information, please see "X–Y control and MIDI" on page 32.

X Mode [Positive, Negative, Xfade, Split]

You can set up the X–Y CC control to send out CCs in several different patterns, as shown in the graphic below. This controls the pattern for the X axis. Note that this setting affects only CC Control; it has no effect on Volume Control.

Positive sends out only +X, starting at 0 at the far left, and increasing to 127 at the far right. –X is disabled in this mode.

Negative sends out only –X, starting at 0 at the far left, and increasing to 127 at the far right. In this mode, +X is grayed out.

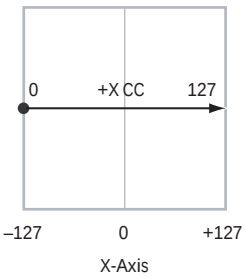


Xfade sends out both +X and –X, overlapping throughout the X axis. As one increases, the other decreases.

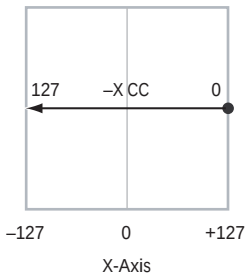
Split sends out both +X and –X, with a split in the center. +X is sent when the point moves to the right of the center, and –X is sent when the point moves to the left of center.

X–Y CC Modes

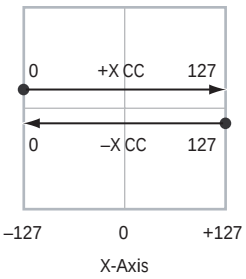
Positive
Generates only +X, increasing from left to right.



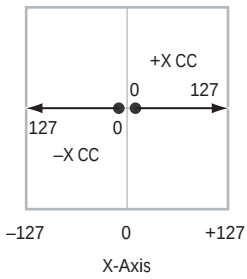
Negative
Generates only –X, increasing from right to left.



Xfade
Generates both +X and –X. One increases as the other decreases.



Split
Generates both +X and –X. Both are 0 in the center. +X increases to the right; –X increases to the left.



+X [Off...MIDI CC#119]

This assigns the controller transmitted by the +X direction. You can use this as an AMS source to control Program parameters, or as a Dmod source to control Effects parameters. It will be grayed out if the **X Mode**, above, is set to Negative.

–X [Off...MIDI CC#119]

This assigns the controller transmitted by the –X direction. It will be grayed out if the **X Mode**, above, is set to Positive.

The selections are the same as for **+X**, above.

Y Mode [Positive, Negative, Xfade, Split]

This controls the X–Y CC pattern for the Y axis. For more information, please see the description under **X Mode**, above.

+Y [Off...MIDI CC#119]

This assigns the controller transmitted by the +Y direction. It will be grayed out if the **Y Mode**, above, is set to Negative.

The selections are the same as for **+X**, above.

–Y [Off...MIDI CC#119]

This assigns the controller transmitted by the –Y direction. It will be grayed out if the **Y Mode**, above, is set to Positive.

The selections are the same as for **+X**, above.

1–5c: X–Y Graphic

X–Y Graphic

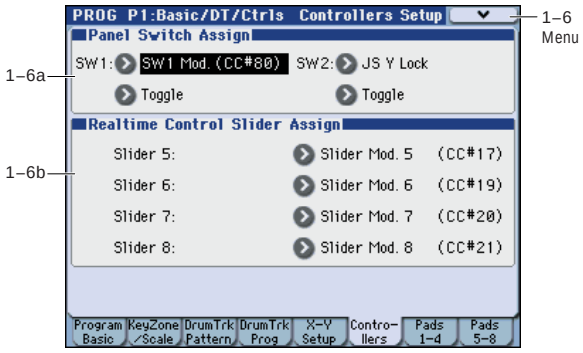
The X–Y graph shows a representation of the volume change when using Equal Power mode or the Center Volume setting.

▼1–5: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy X–Y Motion** ☞p.107

For more information, please see “Program: Menu Command” on page 106.

1–6: Controllers Setup



Here you can specify the SW1 and SW2 switch and 5–8 slider functions of the program when Control Assign REALTIME CONTROL is selected.

Note: SW1 and SW2 can be controlled by the KYBD-61 / 73 / 88's SW1 and SW2 switches.

1–6a: Panel Switch Assign

SW (SW1 Assign) [Off, ..., After Touch Lock]

This assigns the function of SW1. For more information, please see "List of SW 1 / 2 assignments" on page 597.

Note: If the KYBD-61 / 73 / 88 is connected, the on / off status of the SW1, SW2 switches is memorized when you save the program.

If you change the function setting, the status is reset to off.

Mode (SW1 Mode) [Toggle, Momentary]

This specifies the on / off operation when you press the SW1 switch.

Toggle: The state will alternate between On and Off each time you press the SW1 switch.

Momentary: The state will remain On only while you continue holding down the SW1 switch.

SW2 Assign [Off, ..., After Touch Lock]

SW2 Mode [Toggle, Momentary]

This assigns the function of SW2. The functions that can be assigned to SW2 are the same as for SW1, with the substitution of SW2 Mod. (CC#81) instead of the SW1's SW1 Mod. (CC#80).

1–6b: Realtime Control Slider Assign

Here you can assign the functions (mainly types of control change) that sliders 5–8 will have when Control Assign REALTIME CONTROL is selected. (See "Realtime Control Slider 5–8 Assignments" on page 598)

The functions you assign here are active when you select CONTROL ASSIGN REALTIME CONTROL switch and operate sliders 5–8.

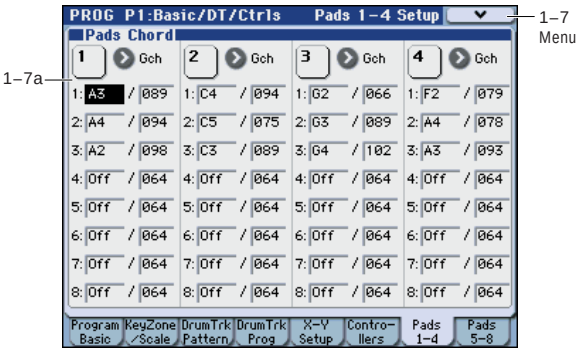
Slider 5 **[Off, ..., MIDI CC#95]**
Slider 6 **[Off, ..., MIDI CC#95]**
Slider 7 **[Off, ..., MIDI CC#95]**
Slider 8 **[Off, ..., MIDI CC#95]**

▼1–6: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107

For more information, please see "Program: Menu Command" on page 106.

1–7: Pads 1–4 Setup, 1–8: Pads 5–8 Setup



There are eight velocity-sensitive trigger pads below the display. These look like drum machine pads, and playing drum sounds is certainly one use for them.

However, they can also play up to eight-note chords on any sound–not just drums. The pads even remember the velocities of the individual notes within the chord, as well as the notes themselves. These settings are stored independently for each Program.

Assigning notes to the pads

You can assign notes to the pads directly from the keyboard and front-panel controls, without using this page at all. Alternatively, you can enter notes and velocities using the parameters on this page. Regardless of how the notes were first assigned, you can edit their values here.

For more information, including step-by-step instructions and usage tips, please see “Drum & Chord Pads” on page 44 of the Operation Guide.

1–7(8)a:Pads Chord

Pad 1

MIDI Channel [Gch, Dch]

Here you can specify the MIDI channel on which the pad will transmit.

Gch: The pad will transmit on the global MIDI channel. The program will sound.

Dch: The pad will transmit on the Drum Track MIDI channel. The program of the drum track will sound.

Notes 1...8 [Off, C–1...G9 / 001...127]

These parameters let you edit the 8 notes assigned to each pad, along with a separate velocity for each note. To play fewer than 8 notes, just set the unwanted notes to **Off**.

Off: Select this to disable the note.

C–1…G9: This sets the note number.

001…127: This sets the note’s velocity value. For more information on pads and velocity, please see “Pad Mode: Fixed Velocity vs. Velocity Sensitive,” below.

Pad Mode: Fixed Velocity vs. Velocity Sensitive

Each pad stores a velocity level for each of its 8 notes. The **PAD MODE** switch, to the right of the pads, controls whether or not the pads respond to how hard you play. Its setting is stored with each Program, Combination, and Song.

In **Fixed Velocity** mode, the pads always use their stored velocity settings, regardless of how hard you play.

In **Velocity Sensitive** mode, hitting the pad very strongly produces the preset velocities. When you play more softly, the preset velocities are scaled down accordingly, maintaining the balance between the notes in the chord.

Assigning notes and chords to pads

You can assign single notes and chords to the pads in three different ways.

Play the notes, and then press CHORD ASSIGN

1. **Play a single note, or a chord of up to 8 notes.**
2. **Press the CHORD ASSIGN switch.**
3. **Press the pad to which you’d like to assign the notes.**

That’s it! The notes are now assigned to the pad.

Press CHORD ASSIGN, and then play notes

This method lets you create a chord out of widely-spaced notes, even if you can’t play all of the notes simultaneously.

1. **Press the CHORD ASSIGN switch.**
2. **Play a single note, or a chord of up to 8 notes.**

You can play a single note, or a simple chord.

If you like, you can also play up to 8 notes as a legato phrase. As long as you take care that the notes overlap each other, the entire phrase will be recorded as a single chord. You can take as long as you like to play the phrase.

3. **Press the pad to which you’d like to assign the notes.**

After pressing the pad, you’re done!

Edit notes and velocities using the display

You can edit the recorded notes and velocities using the on-screen parameters. If you like, you can also enter new notes this way. For more information, please see “Pad 1,” above.

Copying and Merging Pads

Just as you can assign notes to a pad by playing them on the keyboard, you can press a pad to copy its assigned notes to another pad.

The method is similar to steps **1**–**3** above; press the pad that you want to copy, and then press the CHORD ASSIGN switch. Then press the copy-destination pad; the assignments will be copied.

You can also use this to combine the assignments of two or more pads, up to a maximum of eight notes. To do so, just press all of the “copy from” pads simultaneously, and then proceed as above.

For more detailed instructions, please see “Drum & Chord Pads” on page 44 of the Operation Guide.

Pad 2...4, 5...8

These are the same as for Pad 1, as described above.

▼1–7(8): Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Pad Setup** ☞p.112

For more information, please see “Program: Menu Command” on page 106.

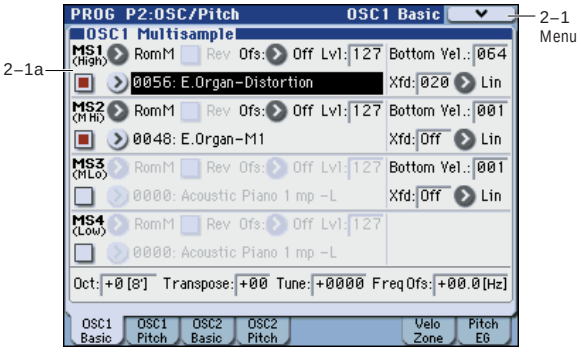
PROG P2: OSC/Pitch

These pages control the first and most basic elements of sounds: the Multisamples that the oscillators play, and the pitch at which it plays them. For instance, you can:

- Select Multisamples for Single and Double Programs, or Drum Kits for Drum Programs.
- Set up velocity splits, crossfades, and layers for Single and Double Programs.
- Set the basic pitch of the sound, including the octave, fine tuning, and so on.
- Control pitch modulation using a variety of controllers such as LFO, pitch EG, and the KYBD-61/73/88's joystick and ribbon controller.

Note that when the **Oscillator Mode** is set to **Single** or **Drums**, only Oscillator 1's filters are active; the pages for Oscillator 2's filters will be grayed out.

2–1: OSC1 Basic



Program's sounds are based on samples, and this page lets you set up all of the basic sample-related settings. Among other things, you can:

- Select Multisamples for the Oscillator (in a Single or Double Program), or select the Drum Kit for a Drum Program
- Set the Oscillator's basic pitch
- Create velocity splits and crossfades between Multisamples

2–1a: OSC1 Multisample

This setting will depend on the **Oscillator Mode** setting.

If it is **Single** or **Double**, each oscillator can use up to four multisamples. In Drum mode, there is one Oscillator, and it plays a single Drum Kit.

Multisamples, and Drum Kits

Multisamples, and Drum Kits allow you to play samples in different ways.

- Multisamples lay out one or more samples across the keyboard. For instance, a very simple guitar Multisample might have six samples–one for each string.
- As the name suggests, Drum Kits are optimized for playing drum samples.

Velocity splits, crossfades, and layers

As mentioned above, unless you're in Drum mode, each Oscillator has four velocity zones, named MS1 (High) through MS4 (Low). Each of these zones can play either a Multisample, and has separate settings for Level, Start Offset, and so on.

Each of the zones can fade into the next, to create smoother velocity transitions. Zones can even be layered together, two at a time.

"Oscillator Mode" Single, Double

MS1 (High)

These are the settings for the first and highest velocity zone.

If you want to create a simple setup with only a single Multisample, just set up MS1 as desired, and then set the **Bottom Vel. (Bottom Velocity)** to 1 and the **Xfd (Crossfade Range)** to 0.

Multisample On/Off **[Off, On]**

Specifies whether the MS1 multisample will sound.

It will sound if this is On (checked).

Bank
[RomM, RomS, RamM, RamS, EX * M, EX * S, ...]

This is displayed if **Multisample On/Off** is On.

There are three main types of Banks: **ROM**, **RAM**, and **EX***. For each type, you can also choose between looking at mono and stereo Multisamples. Note that stereo Multisamples will require twice as many voices as mono Multisamples.

ROM Multisamples are the built-in "factory" sounds, and are always available.

RAM Multisamples include Akai, AIFF, WAV or SoundFont 2.0 files loaded from media, and samples created in Sampling mode.

EX * M, EX * S Multisamples selects a PCM expansion series multisample bank. Each bank has its own number. The menu will show only the EX * banks that are currently loaded.

Multisample select **[List of Multisample]**

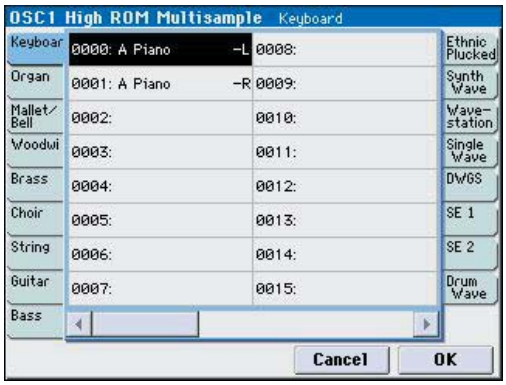
This specifies a multisample for MS1.

Some multisamples have an upper limit; they will not sound for notes higher than this limit.

When you press the **Multisample Select** popup button, the multisample list will appear, allowing you to select a multisample from the list.

ROM Multisample Select menu

Use the tabs to select a category, and select a multisample within the category. Press the OK button to execute, or the Cancel button to cancel.

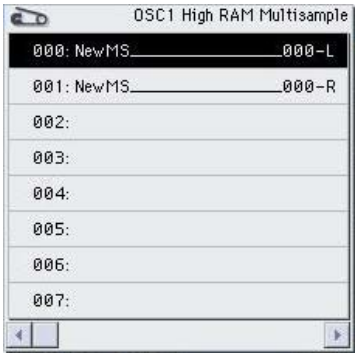


If **Bank** is set to RomM, the list shows all of the mono Multisamples in the Bank. If the Bank contains stereo multisamples, you'll also see the left and right channels as separate, mono multisamples, with –L and –R appended to the end of the name.

If **Bank** is set to RomS, only stereo multisamples will be shown.

RAM Multisample Select menu

Select a RAM multisample from the list. Press the OK button to execute, or the Cancel button to cancel.



If **Bank** is set to RamM, the list shows all of the mono Multisamples in the Bank. If the Bank contains stereo multisamples, you'll also see the left and right channels as separate, mono multisamples, with –L and –R appended to the end of the name.

If **Bank** is set to RamS, only the stereo Multisamples will appear. However, they will still be listed as separate left and right Multisamples. Selecting either the left or right channels will select the stereo pair.

Rev (Reverse) [Off, On]

This plays the selected multisample in reverse without looping it.

Note: If an individual sample within the multisample is already set to reverse, it will play in reverse without this setting.

On (checked): The multisample will play in reverse.

Off (unchecked): The multisample will play normally.

Ofs (Start Offset) [Off, 1st...8th]

In addition to simply starting playback from the beginning, ROM and EXB Multisamples can have up to 8 different pre-programmed alternate starting points.

Similarly, RAM Multisamples can play either from the beginning of the waveform, or from the loop start point.

Ofs (Start Offset): ROM and EXB Multisamples

With ROM and EXB Multisamples, the **Start Offset** specifies whether to use the normal start point (**Off**), or to use one of the alternate start points (**1st–8th**).

Some ROM and EXB Multisamples may have fewer than 8 pre-programmed points, in which case only the available points can be selected.

Ofs (Start Offset): RAM Multisamples

With RAM Multisamples, only Off and 1st are available. **Off** uses the normal start point, and **1st** uses the loop start instead. **2nd** through **8th** will be grayed out.

Lvl (Level) [000...127]

This sets the basic volume level of the multisample. The Amp section can modify this basic level extensively with envelopes, LFOs, keyboard tracking, and other modulation; for more information, please see "PROG P4: Amp / EQ," on page 58.

Depending on the multisample, high **Level** settings may cause distortion when playing many notes at a time. If this occurs, lower the **Level**.

With RAM Multisamples, each Sample also has a "+12dB" option. If this is turned on, the Sample will play back approximately 12 dB louder. You can configure this parameter for each Sample in Sampling mode.

Bottom Vel. (Bottom Velocity) [001...127]

This sets the lowest velocity at which the Multisample will sound. MS1's **Bottom Vel**. can be equal to, but not lower than, than that of MS2.

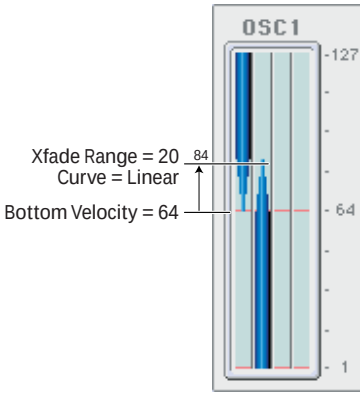
Xfd (Crossfade Range) [Off, 001...127]

This sets the range of velocities over which MS1 will fade into MS2, going up from the **Bottom Vel**.

For instance, if the **Bottom Vel**. is set to 64, and the **Xfd** is set to 20, MS2 will start to fade in at velocities of 84 and below.

When velocities are within the **Xfd**, the Oscillator will use twice as much polyphony as it would normally.

Note: You can only fade between two zones at once.



Curve [Linear, Power, Layer]

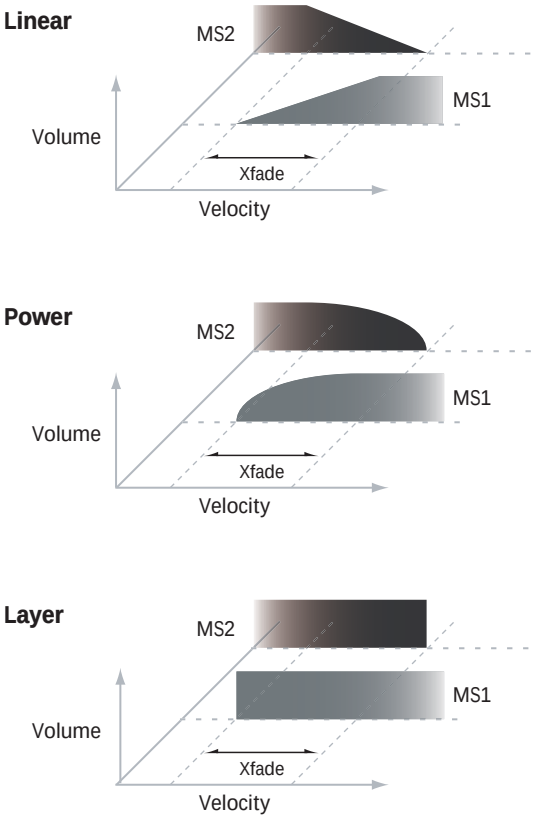
This controls the volume curve of the crossfade. **Linear** and **Power** (short for Equal Power) let you fine-tune the way that the two Multisamples mix together; one or the other may be more appropriate for a given pair of Multisamples. **Layer**, true to its name, lets you layer the two Multisamples together without any crossfading.

Linear means that the two samples will each be at 50% of their full volume in the middle of the crossfade. Sometimes, this may create a dip in the volume level; if so, try using **Power** instead.

Power, short for Equal Power, means that the two samples will each be at around 70% of their full volume in the middle of the crossfade. Sometimes, this may create a bump in the volume level, in which case you might try selecting **Linear** instead.

Layer means that the two Multisamples will be layered together, both at full volume, for the entire range of the crossfade.

Crossfade Curves



MS2 (Mid Hi), MS3 (Mid Lo), MS4 (Low)

These are the settings for the second, third, and fourth velocity zones. The parameters for MS2 and MS3 are exactly the same as those for MS1, as described above.

The parameters for MS4 are also similar to those for MS1, except that MS4 has no settings for **Bottom Vel**. (which is always fixed at 1), **Xfd**, or **Curve**.

OSC1 Frequency

Oct (Octave) [–2[32'], –1[16'], +0[8'], +1[4']]

This sets the basic pitch of the Oscillator, in octaves. The default is +0[8']. The standard octave of a multisample is +0 [8'].

Transpose [–12...+12]

This adjusts the pitch in semitones, over a range of ±1 octave.

Tune [–1200...+1200]

This adjusts the pitch in cents, over a range of ±1 octave. A cent is 1/100 of a semitone.

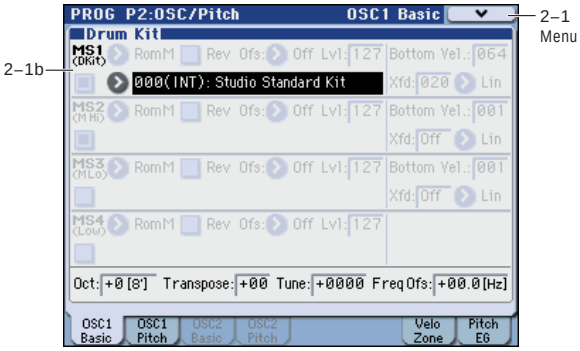
Freq Ofs (Frequency Offset) [–10.0Hz ... +10Hz]

This adjusts the pitch by increments of 0.1 Hz. **Frequency Offset** is different from **Tune** in that, when used to detune the two oscillators, it can create a constant beat frequency across the range of the keyboard.

2–1b: OSC1 Multisample

"Oscillator Mode" Drums

MS1 (DKit)



These parameters appear when the **Oscillator Mode** is set to Drum Kit.

Drum Kit [000...031 (INT), 032...143 (U–A...U–G), 144...152 (GM)]

This selects a drum kit.

For 000(INT)–143(U–G), you can use Global P5: Drum Kit to edit the instrument assignments.

Drum Kit Frequency

Oct (Octave) [–2[32'], –1[16'], +0[8'], +1[4']]

This adjusts the pitch in octave units. When using a drum kit, set the Octave to **8'**.

When editing a drum program, you must set this parameter to **8'**. With other settings, the sounds of the drum kit will be assigned to the wrong notes of the keyboard.

Transpose [–12...+12]

This adjusts the location of the instruments in the selected drum kit. Unless you need to change this, leave it at **0**.

Tune [–1200...+1200]

This adjusts the pitch in one-cent units.

The pitch of each drum kit can be adjusted in Global P5: Drum kit.

Freq Ofs (Frequency Offset) [–10.0Hz ... +10Hz]

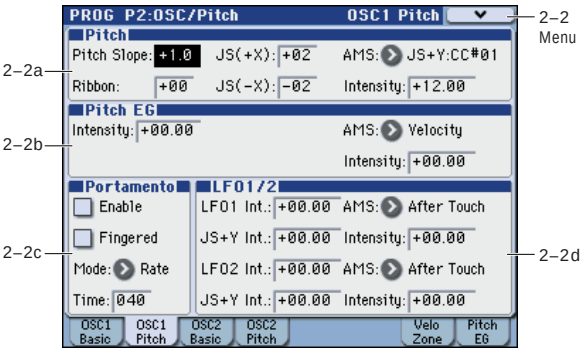
This adjusts the pitch by increments of 0.1 Hz. **Frequency Offset** is different from **Tune** in that, when used to detune the two oscillators, it can create a constant beat frequency across the range of the keyboard.

▼2–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Swap LFO 1&2** ☞p.113

For more information, please see "Program: Menu Command" on page 106.

2–2: OSC1 Pitch



This page contains all of the settings for Oscillator 1's pitch modulation. For example, you can:

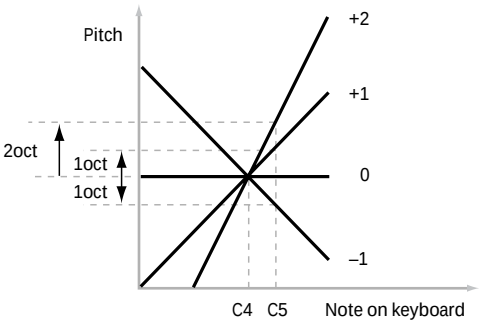
- Specify pitch bend controlled by the KYBD-61/73/88's joystick X (or an incoming pitch bend message) set to independent Bend Up and Bend Down, or controlled by the ribbon controller (or by incoming CC#16).
- Use Pitch Slope to control how the pitch changes when you play up and down the keyboard.
- Assign AMS modulation for pitch.
- Set up initial amounts of pitch modulation from the Pitch EG and LFO1/2, as well as AMS modulation of LFO and EG amounts.
- Set up Portamento.

2–2a: Pitch

Pitch Slope [–1.0...+2.0]

Normally, this should be set to the default of **+1.0**.

Pitch Slope, pitch, and note



Positive (+) values cause the pitch to rise as you play higher on the keyboard, and **negative (–)** values cause the pitch to fall as you play higher on the keyboard.

When this is set to **0**, playing different notes on the keyboard won't change the pitch at all; it will be as if you're always playing C4. This can be useful for special effects sounds, for instance.

Ribbon [–12...+12]

Specify in semitones how the pitch will change when the ribbon controller is pressed (or when CC#16 is received).

Positive (+) values make the pitch rise when you press the ribbon controller to the right of center, and **negative (–)** values will cause the pitch to fall.

For example, with a setting of **+12**, pressing the far right edge of the ribbon controller will raise the pitch one octave, and pressing the far left edge will lower the pitch by one octave.

With a setting of **–12**, the effect is reversed; pressing on the right edge will lower the pitch, and pressing on the left will raise the pitch.

When you lift off of the ribbon, the pitch will snap back to the center (unless you're using the SW1/2 "Ribbon Lock" feature). So, by tapping on the right edge of the ribbon and then releasing quickly, you can create guitar "hammer-on" effects.

JS (+X) [–60...+12]

Specify in semitones how the pitch will change when the joystick is moved to the right (or when a pitch bend message is received). For normal pitch bend, set this to a positive value.

For example, if you set this to **+12** and move the joystick all the way to the right, the pitch will rise one octave above the original pitch.

JS (–X) [–60...+12]

Specify in semitones how the pitch will change when the joystick is moved to the left (or when a pitch bend message is received). For normal pitch bend, set this to a negative value.

For example, if you set this to **–60** and move the joystick all the way to the left, the pitch will fall five octaves below the original pitch. You can use this to create guitar-style downward swoops.

AMS (Pitch) [List of AMS Sources]

This selects a AMS source to control the pitch. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity [–12.00...+12.00]

This controls the depth and direction of the pitch modulation, in semitones.

For example if you set **AMS (Pitch)** to **After Touch** and then press down on the keyboard, the pitch will rise if this parameter is set to a **positive (+)** value, or fall if this parameter is set to a **negative (–)** value.

2–2b: Pitch EG

Intensity [–12.00...+12.00]

This controls the initial effect of the Pitch EG on Oscillators 1's frequency, in half-steps, before any AMS modulation.

The Pitch EG's shape can swing all the way from +99 to –99. When the **Intensity** is set to a **positive (+)** value, positive values from the EG raise the pitch, and negative values lower the pitch.

When the **Intensity** is set to a **negative (–)** value, the effect of the EG is reversed; positive EG values mean lower pitches, and negative EG values mean higher pitches.

AMS (Pitch EG) [List of AMS Sources]

This selects any AMS modulation source to scale the amount of the Pitch EG applied to the pitch.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity [–12.00...+12.00]

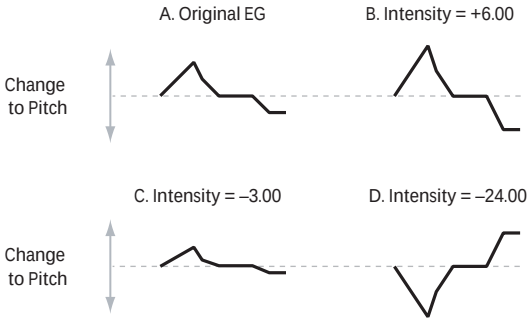
This controls the depth and direction of the pitch EG AMS modulation. The AMS modulation and the initial Intensity are added together to determine the Pitch EG's final effect.

With **positive (+) values**, greater modulation will increase the effect of the Pitch EG, as shown in example **B** below.

With **negative (–) values**, greater modulation will introduce the opposite effect of the Pitch EG–like inverting the polarity of the envelope. You can use this in several different ways:

- You can set an initial positive amount with the Intensity parameter, and then reduce this amount with AMS. In this case, the final effect of the EG is simply diminished, and not actually inverted, as shown in example **C**.
- You can also set the AMS Intensity amount to be greater than the initial Intensity. In this case, the EG will have a positive effect with low modulation amounts, and an inverted effect at higher modulation amounts–as shown in example **D**.

Pitch EG AMS



2–2c: Portamento

Portamento lets the pitch glide smoothly between notes, instead of changing abruptly.

Enable [Off, On]

On (checked): Turns on Portamento, so that pitch glides smoothly between notes.

Off (unchecked): Turns off Portamento. This is the default state.

Fingered [Off, On]

This parameter allows you to control Portamento through your playing style. When it's enabled, playing legato will turn on Portamento, and playing detached will turn it off again.

This option is only available when Portamento **Enable** is turned on.

On (checked): Turns on Fingered Portamento.

Off (unchecked): Turns off Fingered Portamento.

Mode [Rate, Time]

Rate means that Portamento will always take the same amount of time to glide a given distance in pitch - for instance, one second per octave. Put another way, gliding several octaves will take much longer than gliding a half-step.

Time means that Portamento will always take the same amount of time to glide from one note to another, regardless of the difference in pitch. This is especially useful when playing chords, since it ensures that each note in the chord will end its glide at the same time.

Time [000...127]

This controls the portamento time. Higher values mean longer times, for slower changes in pitch.

This option is only available when Portamento **Enable** is turned on.

Assigning SW1 or SW2 to Portamento On/Off

You can turn portamento on / off by using the KYBD-61 / 73 / 88's two assignable switches SW1 and SW2.

To do so:

1. **Go to the Prog P1: Basic/DT/Ctrls– Controllers Setup page.**
2. **Under Panel Switch Assign, set either SW1 or SW2 to Porta.SW (CC#65).**

Now, the selected switch will enable and disable Portamento. It will also send the MIDI Portamento controller, CC#65.

MIDI Even if you don't assign SW1 / 2 to Portamento, you can still use MIDI Controller #65 to turn Portamento on and off.

2–2d: LFO1/2

LFO1 and LFO2 can both control the pitch. You can control the strength of each LFO's modulation in three different ways:

- Set an initial amount of LFO modulation, using the **LFO1 Int.**, **LFO2 Int.** parameters.
- Use **JS +Y Int.** to adjust the amount of LFO produced by JS+Y operations.
- Use any AMS source to scale the amount the LFO.

The results are added together to produce the total LFO effect.

LFO1

LFO1 Int. (LFO1 Intensity) [–12.00...+12.00]

This controls the initial effect of the LFO on the pitch, in semitones, before any **JS+Y Int.** or AMS modulation.

Negative (–) settings will invert the phase of the LFO.

JS+Y Int. (LFO1 JS+Y Intensity) [–12.00...+12.00]

Specify the depth of pitch modulation produced by OSC1 LFO1 when the KYBD-61 / 73 / 88's joystick is moved in the +Y (away) direction (or when CC#1 is received). (Joystick control in the +Y direction is called "JS +Y.")

This parameter sets the maximum amount of LFO modulation added by JS+Y, in semitones.

As this value is **increased**, moving the joystick in the +Y direction will cause the OSC1 LFO1 to produce deeper pitch modulation.

Negative (–) settings will invert the phase of the LFO. You can also use this to reduce the initial amount of the LFO, as set by **LFO1 Int.**, above. For example:

1. **Set LFO1 Int. to +7.00.**

The LFO will now have a fairly strong effect on the pitch, bending it by a perfect 5th.

2. **Set JS+Y Int. Intensity to –7.00.**

Now, if you move the joystick up, the effect of the LFO will fade away. When the joystick is all the way at the top of its range, the LFO will be completely cancelled out.

AMS (LFO1) [List of AMS Sources]

This selects any AMS modulation source to scale the amount of the LFO applied to pitch.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity [–12.00...+12.00]

This controls the depth and direction of the **AMS (LFO1)** modulation for pitch.

With a setting of **0**, modulation will not be applied. With a setting of **12.00**, the OSC1 LFO1 will apply a maximum of +/–1 octave of pitch modulation.

For example if **AMS (LFO1)** is set to **AfterTouch** and you press down on the keyboard, pitch modulation from OSC1 LFO1 will be applied in positive phase if this is a **positive (+)** value, or applied in negative phase if this is a **negative (–)** value.

LFO1 Int., **JS+Y Int.**, and **AMS (LFO1)** settings are summed to determine the depth and direction of pitch modulation produced by OSC1 LFO1.

LFO2:

The parameters for LFO2 are identical to those for LFO1. For more information, please see the descriptions under LFO1, above.

▼2–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Swap LFO 1&2** ☞p.113

For more information, please see “Program: Menu Command” on page 106.

2–3: OSC2 Basic

This page controls the basic settings for Oscillator 2. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

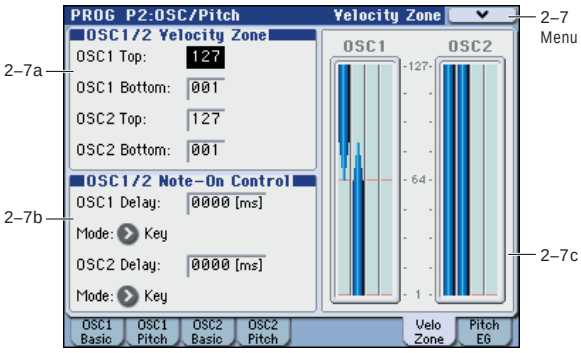
The parameters are identical to those for Oscillator 1, as described under “2–1: OSC1 Basic,” on page 37.

2–4: OSC2 Pitch

This page controls the pitch settings for Oscillator 2. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under “2–2: OSC1 Pitch,” on page 40.

2–7: Velocity Zone



2–7a: OSC 1/2 Velocity Zone

You can specify the velocity zone for each of the four multisamples of the oscillator. Here you will specify the velocity zone for each oscillator.

These velocity zones take precedence over the velocity settings for the individual MS1–4.

OSC1 Top [001...127]

This sets the highest velocity at which the Oscillator 1 will sound.

Note: The **OSC1 Top** velocity must be greater than the **OSC1 Bottom** velocity.

OSC1 Bottom [001...127]

This sets the lowest velocity at which the Oscillator 1 will sound.

Entering velocity values from the keyboard

You can enter velocity values directly by playing them on the keyboard. To do so:

1. **Select OSC1 Top or OSC1 Bottom.**
2. **Hold down the ENTER switch.**
3. **While holding ENTER, play a note on the keyboard at the desired velocity.**

OSC2 Top [001...127]

OSC2 Bottom [001...127]

This specifies the maximum and minimum velocity values for which oscillator 2 will sound.

See **OSC1 Top** and **OSC1 Bottom**, above.

2–7b: OSC1/2 Note-On Control

OSC1 Delay [0000ms...5000ms, KeyOff]

This specifies the time from when you press a key until oscillator 1 actually begins to sound.

This is most useful in Double Programs, for delaying one oscillator in relation to the other.

KeyOff is a special setting. Instead of delaying the sound by a particular amount of time, the sound will play as soon as you release the key. You can use this to create the “click” heard when a harpsichord note is released, for instance.

In general, when you use the **KeyOff** setting, it’s also best to set the oscillator’s Amp EG **Sustain Level** to **0**.

Mode [Key, Key + Damper]

Normally, you play notes simply by pressing keys on the keyboard. In special cases, however, you can set this parameter so that you must first be holding down the

damper pedal, and then press a key, in order to play a note. For instance, this can be useful when modeling the behavior of a piano soundboard.

Key is the normal mode.

When you select **Key + Damper**, notes will only sound if the damper pedal is being held down. When the damper pedal is released, all notes will be stopped–even if they are still being held down.

OSC2 Delay **[0000ms...5000ms, KeyOff]**

Mode **[Key, Key + Damper]**

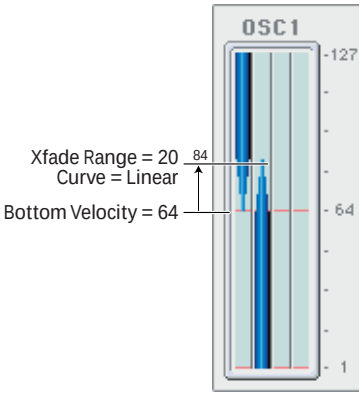
This specifies the time from when you press a key until oscillator 2 actually begins to sound.

See **OSC1 Delay** and **Mode**, above.

2–7c: OSC 1/2 Velocity Zone Window

This shows the velocity zone.

This graphic reflects the OSC1 Basic and OSC2 Basic **Bottom Vel.**, **Xfd**, and **Curve**, and the Velocity Zone **OSC1 Top**, **OSC1 Bottom**, **OSC2 Top**, and **OSC2 Bottom** settings.

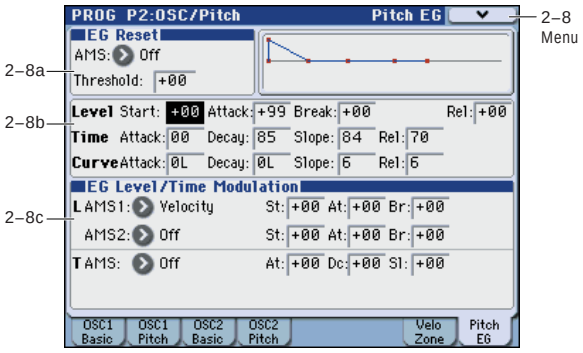


▼2–7: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see “Program: Menu Command” on page 106.

2–8: Pitch EG AMSource



The Pitch EG, or Envelope Generator, lets you create complex, time-varying changes to the pitch of Oscillators 1 and 2. The parameters on this page control the shape of the EG. For instance, you can:

- Create the basic EG shape by setting the levels and times of each segment.
- Control the curvature of each EG segment, for subtle control over the sound of the EG.
- Set up complex modulation of EG levels and times.
- Set up an AMS source, such as an LFO, to restart the EG.

To control how much effect the EG has on the pitch, use the Pitch EG parameters on the P2: OSC / Pitch– OSC1 Pitch page and OSC2 Pitch page, as described under “2–2b: Pitch EG,” on page 40.

Differences from the other EGs

The Pitch EG is different from the Filter and Amp EGs in several ways:

- The single Pitch EG is shared by both Oscillator 1 and Oscillator 2.
- The Sustain level is always 0.
- The Level modulation has two AMS sources instead of one, and the Time modulation has one AMS source instead of three.

Pitch EG is also an AMS source

You can use the Pitch EG as an AMS source to modulate other parameters, just like the keyboard tracking and LFOs. Simply select the Pitch EG in the AMS list for the desired parameter.

2–8a: EG Reset

AMS (EG Reset AMS) **[List of AMS Sources]**

This selects an AMS source to reset the EG to the start point. For instance, you can use a tempo-synced LFO to trigger the EG in a repeating rhythm. This reset is in addition to the initial note-on, which always causes the EG to start.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Threshold **[–99...+99]**

This sets the AMS level which will trigger the EG reset. Among other things, you can use this to adjust the exact point in an LFO’s phase at which the EG will be reset, effectively controlling its “groove” against other rhythmic effects.

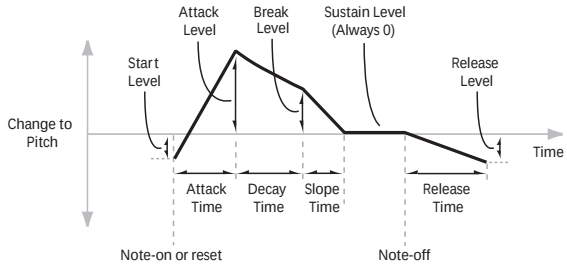
When the threshold is **positive**, the EG triggers when passing through the threshold moving upwards. When the threshold is **negative**, the EG triggers when passing through the threshold moving downwards.

Note: For several types of LFO waveform or if the LFO cycle is fast, the LFO output may not always keep up with high values such as +99 or –99.

In this case, setting the **Threshold** to these values may cause inconsistent behavior, or may mean that the EG doesn't reset at all. If this happens, reduce the **Threshold** until the EG triggers consistently.

2–8b: Envelope

Pitch EG



The envelope moves to a specified level over the specified time, and then moves to the next specified level over the specified time. It produces a modulation signal corresponding to this movement.

The parameters below let you set four levels, the amount of time it takes to go from each of the levels to the next, and the shape (from linear to curved) of each transition.

Level

Each of the four levels can be either positive or negative.

Positive levels will make the pitch (or other AMS destination) go up from its programmed value; **negative** levels will make it go down.

Note that, unlike the Filter and Amp EGs, the Pitch EG's Sustain Level is always 0.

Start **[–99...+99]**

This sets the initial EG level, at note-on.

Attack **[–99...+99]**

This sets the level at the end of the Attack time.

Break **[–99...+99]**

Break, short for Break Point, sets the level at the end of the Decay time.

Rel (Release) **[–99...+99]**

This sets the level at the end of the Release time.

Time

Higher values mean longer times, as shown below:

EG Value	Actual Time
10	10 ms
20	44 ms
30	104 ms
40	224 ms
50	464 ms
60	944 ms
70	1.8 seconds
80	3.8 seconds
90	10.9 seconds
99	87.3 seconds

Attack **[00...99]**

This sets how long the EG takes to move from the Start level to the Attack level.

For the fastest possible attack time, you can set the Start level to +99; in this case, the EG will start instantaneously at its maximum value.

Decay **[00...99]**

This sets the time it takes to move from the Attack level to the Break level.

Slope **[00...99]**

This sets how long the EG takes to move from the Break level to the Sustain level (which for the Pitch EG is always 0). Once it reaches the Sustain, the EG will stay there until note-off, unless it is reset via AMS.

Rel (Release) **[00...99]**

This sets how long it takes the EG to move from the Sustain level to the Release level.

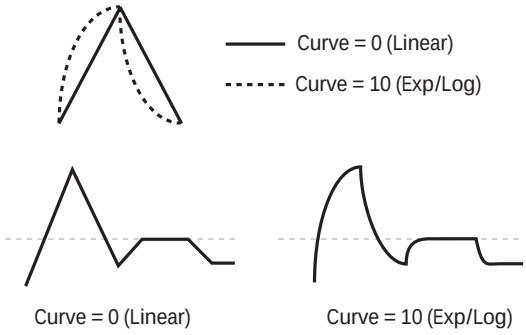
Curve

For the sake of simplicity, most of the diagrams in this manual show envelopes as being made out of straight lines. In actuality, though, envelopes are more likely to be made out of curves.

In other words, each segment's level will change quickly at first, and then slow down as it approaches the next point. This tends to sound better than straight, linear segments.

Classic analog synth envelopes made these curved shapes naturally. The M3 goes a step further than vintage synths, however, and lets you control the amount of curvature separately for each of the four envelope segments.

Pitch EG Curve



When you change the curvature, the EG times remain the same. However, greater curvature will tend to sound faster, because the value changes more quickly at the beginning.

Different curve settings for up and down

You may find that different amounts of curvature are suitable for segments which go up and segments which go down.

For instance, a curve of 3 is a good default setting for upward segments, such as Attack. On the other hand, a curve of 6 or more is good for downward segments, such as Decay and Release.

Attack **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Attack segment - the transition from the Start level to the Attack level.

Decay **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Decay segment - the transition from the Attack level to the Break level.

Slope [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Slope segment - the transition from the Break level to the Sustain level (which for the Pitch EG is always 0).

Rel (Release) [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Release segment - the transition from the Sustain level to the Release level.

2–8c: EG Level/Time Modulation

L (Level)

These settings let you use two different AMS sources to control the Level parameters of the EG. For each of the two AMS sources, the Start, Attack, Decay, and Break levels each have their own modulation intensities.

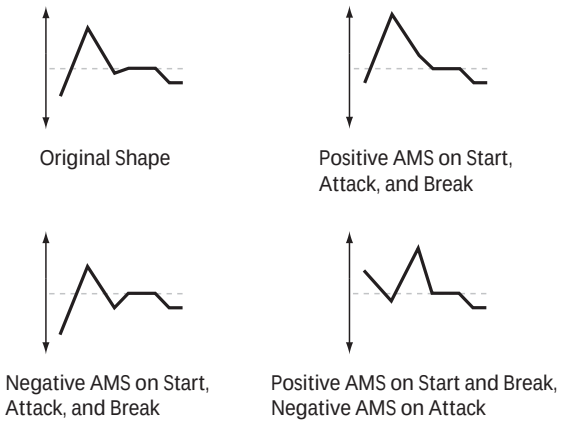
By using different settings for each of the three levels, you can cause both subtle and dramatic changes to the EG shape, as shown below.

Note: Once the EG has started a segment between two points, that segment can no longer be modulated. This includes both the time of the segment, and the level reached at the end of the segment.

For instance, if the EG is in the middle of the Decay time, you can no longer modulate either the Decay time or the Break level.

This also means that modulating the Start level, Attack level, or Attack time will not affect notes that are already sounding, unless the EG is then re-started via EG Reset.

Pitch EG Level Modulation



AMS1

AMS1 [List of AMS Sources]

This selects the first AMS source to control the EG's Level parameters.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

St (Start) [–99...+99]

This controls the depth and direction of the AMS modulation for the Start level.

For example, if you set the **AMS1** source to Velocity and set **St** to **+99**, the Start level will increase as you play harder. If you instead set **St** to **–99**, the Start level will decrease as you play harder.

At (Attack) [–99...+99]

This controls the depth and direction of the AMS modulation for the Attack level.

Br (Break) [–99...+99]

This controls the depth and direction of the AMS modulation for the Break level.

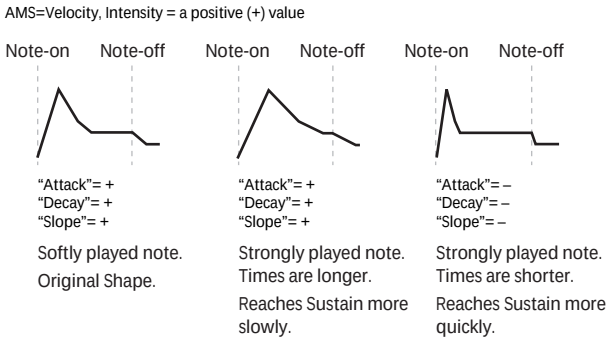
AMS2

This selects the second AMS source for controlling the EG's Level parameters. The Start, Attack, Decay, and Break levels share this source, but each has its own modulation intensity. The parameters ofAMS2 are identical to those of AMS1, above.

T (Time)

These settings let you use an AMS source to control the Time parameters of the EG. The Attack, Decay, and Slope times share this AMS source, but each has its own modulation intensity.

Pitch EG Time Modulation



AMS

AMS [List of AMS Sources]

This selects the AMS source to control the EG's Time parameters. Velocity and Keyboard Track can both be useful here, for instance.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

At (Attack) [–99...+99]

This controls the depth and direction of the AMS modulation for the Attack time.

For example, if you set the **AMS** source to Velocity and set **Attack** to +99, the Attack time will get much longer at higher velocities. If you instead set **Attack** to –99, the Attack time will get much shorter at higher velocities.

When the AMS source is at its maximum value–for instance, when **Velocity** is at 127–a setting of +8 will make the Attack time almost twice as long, and a setting of –8 will cut the Attack time almost in half.

Dc (Decay) [–99...+99]

This controls the depth and direction of the AMS modulation for the Decay time.

Sl (Slope) [–99...+99]

This controls the depth and direction of the AMS modulation for the Slope time.

▼2–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see “Program: Menu Command” on page 106.

PROG P3–1: Filter1

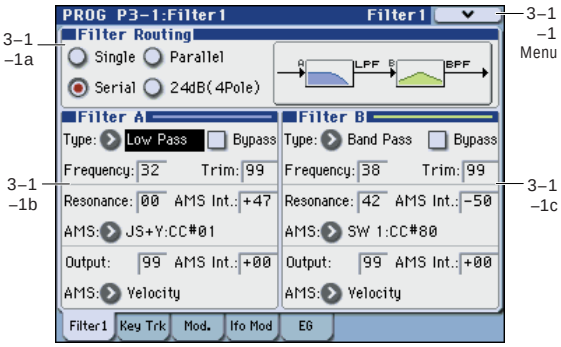
Filtering can make subtle or dramatic changes to the oscillator's timbre. Each oscillator has two multimode resonant filters, A and B, as well as a dedicated filter envelope and keyboard tracking generator.

These pages let you control all aspects of the filters. Among other things, you can:

- Make basic settings for each oscillator's filters, including routing, modes, cutoff, resonance, etc.
- Set up filter modulation, including keyboard tracking, the filter envelope, LFO modulation, and AMS control.

Note that when the **Oscillator Mode** is set to **Single**, only Oscillator 1's filters are active; the pages for Oscillator 2's filters will be grayed out.

3–1–1: Filter1



This page contains all of the basic settings for Oscillator 1's Filter A and Filter B. For example, you can:

- Set up the filters to produce a single 12 dB / oct filter, dual 12 dB / oct filters in either serial or parallel routing, or a single 24 dB / oct filter.
- Set each of the two filters to Low Pass, High Pass, Band Pass, or Band Reject modes.
- Set the cutoff, resonance, and input and output levels of each filter, including modulation of resonance and output level.

3–1–1a: Filter Routing

Filter Routing
[Single, Serial, Parallel, 24dB(4Pole)]

Each oscillator has two filters, Filter A and Filter B. This parameter controls whether one or both of the filters are used, and if both are used, it controls how they are connected to each other.

Single. This uses only Filter A as a single 2-pole, 12 dB / octave filter (6 dB for Band Pass and Band Reject). When this option is selected, the controls for Filter B will be grayed out.

Serial. This uses both Filter A and Filter B. The oscillator first goes through Filter A, and then the output of Filter A is processed through Filter B.

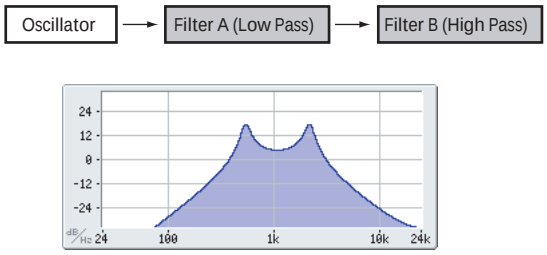
Parallel. This also uses both Filter A and Filter B. The oscillator feeds both filters directly, and the outputs of the two filters are then summed together.

24dB/oct. This merges both filters to create a single 4-pole, 24 dB / octave filter (12 dB for Band Pass and Band Reject). In comparison to Single, this option produces a sharper roll-off beyond the cutoff frequency, as well as a slightly more delicate resonance. Many classic analog synths used this general type of filter.

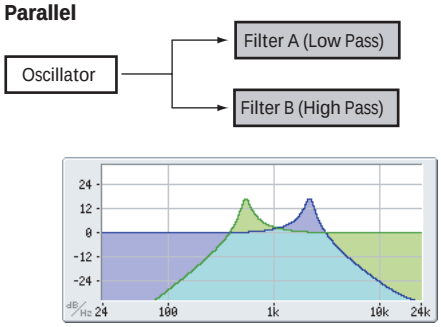
When 24 dB / oct is selected, only the controls for Filter A are active; the controls for Filter B will be grayed out.

Serial and Parallel Routing

Serial

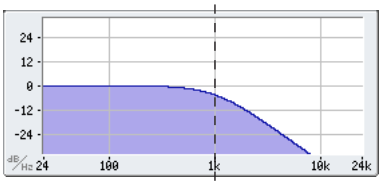


Parallel

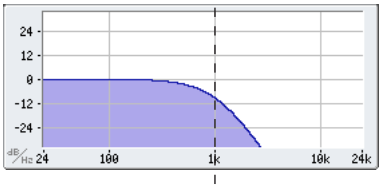


12db/oct / 24db/oct

Low Pass: 12dB/oct



Low Pass: 24dB/oct



3–1–1b: Filter A

Filter Type
[Low Pass (12dB/oct), High Pass (12dB/oct), Band Pass (6dB/oct), Band Reject (6dB/oct)]

The filter will produce very different results depending on the selected filter type. The selections will change slightly according to the selected **Filter Routing**, to show the correct cutoff slope in dB per octave.

Low Pass (12dB/oct). This cuts out the parts of the sound which are **higher** than the cutoff frequency. Low Pass is the most common type of filter, and is used to make bright timbres sound darker.

High Pass (12dB/oct). This cuts out the parts of the sound which are **lower** than the cutoff frequency. You can use this to make timbres sound thinner or more buzzy.

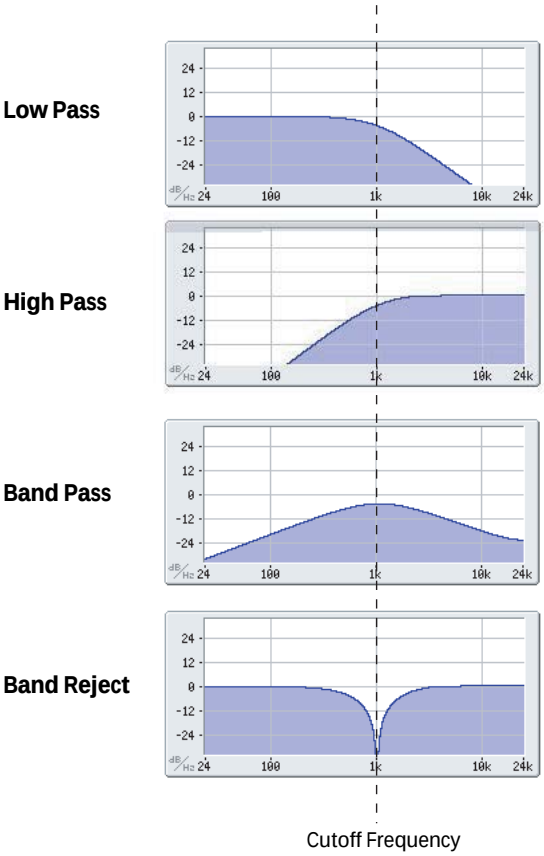
Band Pass (6dB/oct). This cuts out all parts of the sound, both highs and lows, except for the region around the cutoff

frequency. Since this filter cuts out both high and low frequencies, its effect can change dramatically depending on the cutoff setting and the oscillator's multisample.

With low resonance settings, you can use the Band Pass filter to create telephone or vintage phonograph sounds. With higher resonance settings, it can create buzzy or nasal timbres.

Band Reject (6dB/oct). This filter type–also called a notch filter–cuts only the parts of the sound directly around the cutoff frequency. Try modulating the cutoff with an LFO to create phaser-like effects.

Filter Types and Cutoff Frequency



Bypass [Off, On]

This lets you bypass Filter A completely.

If **Bypass** is **Off**, Filter A functions normally.

When **Bypass** is **On**, Filter A will have no effect.

Frequency [00...99]

This controls the cutoff frequency of Filter A, in increments of 1/10 of an octave. The specific effect of the cutoff frequency will change depending on the selected **Filter Type**.

Trim [00...99]

This adjusts the volume level at the input to the filter. If you notice that the sound is distorting, especially with high **Resonance** settings, you can turn the level down here, or at the **Output**.

Resonance [00...99]

Resonance emphasizes the frequencies around the cutoff frequency.

When this is set to 0, there is no emphasis, and frequencies beyond the cutoff will simply diminish smoothly.

At medium settings, the resonance will alter the timbre of the filter, making it sound more nasal, or more extreme.

At very high settings, the resonance can be heard as a separate, whistling pitch.

To make the resonance track the keyboard pitch, please see "Key Follow," on page 50.

AMS (Resonance) [List of AMS Sources]

This selects a AMS source to control the Resonance amount. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS Int. [–99...+99]

This controls the depth and direction of the Resonance modulation.

For example, if Velocity has been selected, changes in keyboard velocity will affect the resonance. With positive (+) values, the resonance will increase as you play more strongly, and as you play more softly the resonance will approach the level specified by the **Resonance** setting. With negative (–) values, the resonance will decrease as you play more strongly, and as you play more softly the resonance will approach the level specified by the **Resonance** setting.

The resonance level is determined by adding the **Resonance** and **AMS Int.** values.

Output [00...99]

This controls the output level of Filter A. You can use this to balance the volumes of Filters A and B when the **Routing** is set to Parallel, or to turn down the volume to avoid clipping later in the signal chain.

AMS (Output AMS) [List of AMS Sources]

This selects a modulation source to control the output level of Filter A. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS Int. [–99...+99]

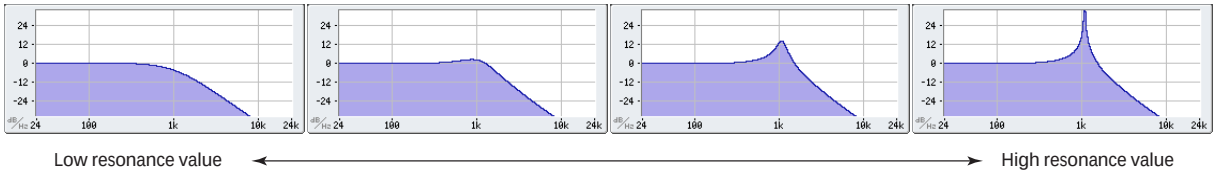
This controls the depth and direction of the output level modulation.

3–1–1c: Filter B

Filter B is available when the **Filter Routing** is set to **Serial** or **Parallel**. Otherwise, the parameters in this section will be grayed out.

The parameters for Filter B are identical to those for Filter A. For more information, please see the descriptions under Filter A, above.

Resonance

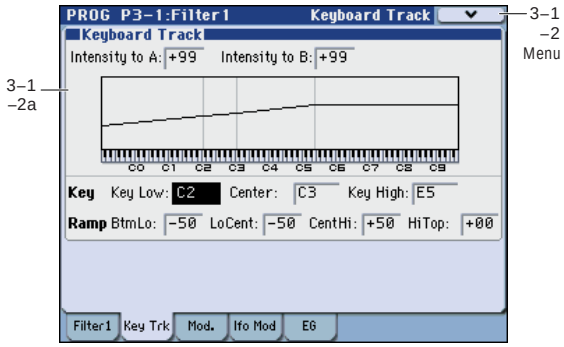


▼3–1–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see “Program: Menu Command” on page 106.

3–1–2: Keyboard Track



This page contains the settings for Oscillator 1’s filter keyboard track. Among other things, you can:

- Set up complex keyboard tracking shapes, and control how the tracking affects filter cutoff.

Filter B is available when the **Filter Routing** is set to **Serial** or **Parallel**. Otherwise, the parameters for Filter B will be grayed out.

3–1–2a: Keyboard Track

Most acoustic instruments get brighter as you play higher pitches. At its most basic, keyboard tracking re-creates this effect by increasing the cutoff frequency of a lowpass filter as you play higher on the keyboard. Usually, some amount of key tracking is necessary in order to make the timbre consistent across the entire range.

The M3 keyboard tracking can also be much more complex, since it allows you to create different rates of change over up to four different parts of the keyboard. For instance, you can:

- Make the filter cutoff increase very quickly over the middle of the keyboard, and then open more slowly–or not at all–in the higher octaves.
- Make the cutoff increase as you play lower on the keyboard.
- Create abrupt changes at certain keys, for split-like effects.

How it works: Keys and Ramps

The keyboard tracking works by creating four ramps, or slopes, between five keys on the keyboard. The bottom and top keys are fixed at the bottom and top of the MIDI range, respectively. You can set the other three keys–named **Key Low**, **Center**, and **Key High**–to be anywhere in between.

The four Ramp values control the rate of change between each pair of keys. For instance, if the **Lo Cent (Low-Center)** Ramp is set to 0, the value will stay the same between the **Key Low** key and the **Center** key.

The Key value will be the break point, and the slope of the lower and higher regions on the keyboard is specified by Ramp.

At the **Center** key (the main hinge), the keyboard tracking has no effect.

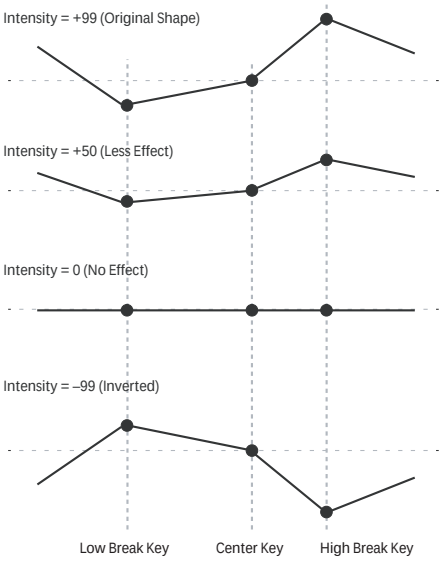
Intensity to A [–99...+99]

This controls how much the keyboard tracking will affect Filter A’s cutoff frequency. The overall effect of the Keyboard Track is a combination of this Intensity value and the overall Keyboard Track shape.

With **positive values (+)**, the effect will be in the direction specified by keyboard tracking; if the ramp goes up, the filter cutoff will **increase**.

With **negative values (–),** the effect will be in the opposite direction; if the ramp goes up, the filter cutoff will decrease.

Keyboard Track Shape and Intensity



Intensity to B [–99...+99]

This controls how much the keyboard tracking will affect Filter B's cutoff frequency.

Key

Key Low [C–1...G9]

This specifies the note at which the two sloped lines in the lower range will be connected.

Center [C–1...G9]

This specifies the note that will be the break point for the center of keyboard tracking. At this key, the keyboard tracking has no effect on the filter cutoff, or on any AMS destinations.

Key High [C–1...G9]

This specifies the note at which the two sloped lines in the upper range will be connected.

Using the keyboard to enter a note value

You can press the keyboard to enter a note number directly.

1. **Select one of the Key parameters.**
2. **Hold down the ENTER switch.**
3. **While holding ENTER, play a note on the keyboard.**

Ramp

Positive ramp values mean that the keyboard tracking output increases as you play farther from the **Center Key**; negative ramp values mean that it decreases.

Because of this, the meanings of positive and negative ramp settings will change depending on whether the ramp is to the left or right of the **Center Key**.

Btm Lo (Bottom-Low) and Lo Cent (Low-Center): negative ramps make the keyboard tracking's output go down as you play lower on the keyboard, and positive ramps make the output go higher.

Cent Hi (Center-High) and Hi Top (High-Top): negative ramps make the keyboard tracking's output go down as you play higher on the keyboard, and positive ramps make the output go up.

The effect on the filter cutoff is a combination of the ramp values, as set below, and the **Intensity to A (B)** parameters.

When **Intensity to A (B)** is set to +99, a ramp of 50 changes the filter frequency by 1 octave for every octave of the keyboard, and a ramp of +99 changes the frequency by 2 octaves for every octave of the keyboard.

Btm Lo (Bottom-Low) [–Inf, –99...+99, +Inf]

This sets the slope between the bottom of the MIDI note range and the **Key Low** key. For normal key track, use negative values.

Lo Cent (Low-Center) [–Inf, –99...+99, +Inf]

This sets the slope between the **Key Low** and **Center** keys. For normal key track, use negative values.

Cent Hi (Center-High) [–Inf, –99...+99, +Inf]

This sets the slope between the **Center** and **Key High** keys. For normal key track, use positive values.

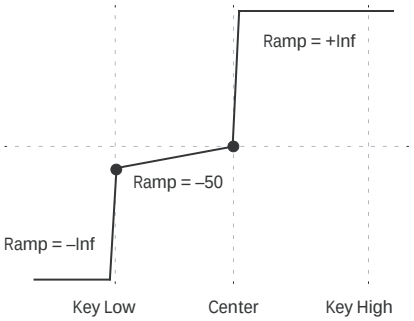
Hi Top (High-Top) [–Inf, –99...+99, +Inf]

This sets the slope between the **Key High** key and the top of the MIDI note range. For normal key track, use positive values.

+Inf and –Inf ramps

+Inf and –Inf are special settings which create abrupt changes for split-like effects. When a ramp is set to +Inf or –Inf, the keyboard tracking will go to its extreme highest or lowest value over the span of a single key.

+Inf and –Inf Ramps



Note: if you set the **Cent Hi** ramp to +Inf or –Inf, the **Hi Top** parameter will be grayed out. Similarly, if you set the **Lo Cent** ramp to +Inf or –Inf, the **Btm Lo** ramp will be grayed out.

Key Follow

To create the classic Key Follow effect, in which the filter frequency tracks the pitch of the keyboard:

1. **Set the Filter Frequency to 30.**
2. **Set the Keyboard Track Intensity to +99.**
3. **Set the Btm Lo and Lo Cent ramps to –50.**
4. **Set the Cent Hi and Hi Top ramps to +50.**
5. **Set the Center Key to C4.**

The settings for the **Key Low** and **Key High** keys don't matter in this case.

Filter Keyboard Track is also an AMS source

You can use the keyboard tracking as an AMS source to modulate other parameters, just like the envelopes and LFOs. Simply select **Filter Keytrack** in the AMS list for the desired parameter.

▼3–1–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

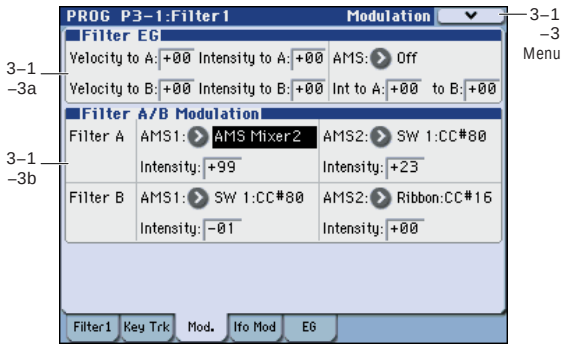
For more information, please see “Program: Menu Command” on page 106.

3–1–3: Modulation

This page contains the settings for Oscillator 1’s filter modulation. Among other things, you can:

- Control the effect of the Filter Envelope on filter cutoff.
- Assign AMS modulation for filter cutoff.

Filter B is available when the **Filter Routing** is set to **Serial** or **Parallel**. Otherwise, the parameters for Filter B will be grayed out.



3–1–3a: Filter EG

The Filter EG modulates the Filter A and B cutoff frequencies over time. You can control how strongly the EG will affect the filters in three different ways:

- Set an initial amount of EG modulation, using the **Intensity to A** and **B** parameters.
- Use velocity to scale the amount of the EG applied to the filter.
- Use any AMS source to scale the amount of the EG applied to the filter.

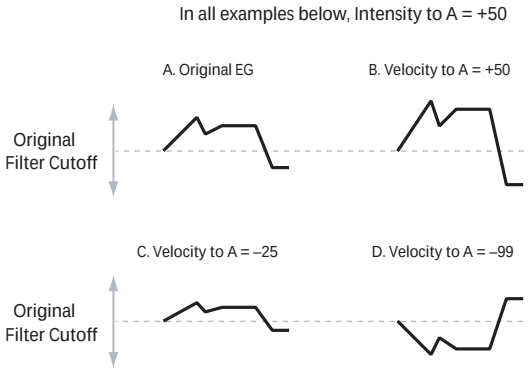
You can use all three of these at once, and the results are added together to produce the total EG effect.

To set up the EG itself, including attack and release times, levels, and so on, please see “3–1–5: EG,” on page 54.

Velocity to A [–99...+99]

This lets you use velocity to scale the amount of the Filter EG applied to Filter A.

Velocity control of Filter EG



With **positive (+) values**, playing more strongly will increase the effect of the Filter EG, as shown in example **B** above.

With **negative (–) values**, playing more strongly will introduce the opposite effect of the Filter EG–like inverting the polarity of the envelope. You can use this in several different ways:

- You can set an initial positive amount with the Intensity to A / B parameters, and then reduce this amount with velocity. In this case, the final effect of the EG is simply diminished, and not actually inverted, as shown in example **C** above.
- You can also set the Velocity to A / B amounts so that they are greater than the initial amounts of Intensity to A / B. In this case, the EG will have a positive effect at low velocities, and an inverted effect at high velocities– as shown in example **D**.

Velocity to B [–99...+99]

This lets you use velocity to scale the amount of the Filter EG applied to Filter B. For more information, please see "Velocity to A," above.

Intensity to A [–99...+99]

This controls the initial effect of the Filter EG on Filter A's cutoff frequency, before any velocity or AMS modulation.

The Filter EG's shape can swing all the way from +99 to –99. Positive values increase the cutoff frequency, and negative values decrease the cutoff frequency. For instance, please see the graphic "Velocity control of Filter EG," above. The EG shape in example **A** rises up at first, and then falls below 0 towards the end.

When **Intensity to A** is set to a **positive (+)** value, EG's effect will match its shape. When the EG rises above 0, the cutoff frequency will increase.

With **negative (–)** values**,** the effect will be in the opposite direction; when the EG rises above 0, the filter cutoff will decrease.

Intensity to B [–99...+99]

This controls the initial effect of the Filter EG on Filter B's cutoff frequency, before any velocity or AMS modulation. For more information, please see "Intensity to A," above.

AMS (Filter EG AMS) [List of AMS Sources]

This selects any AMS modulation source to scale the amount of the Filter EG applied to Filters A and B. The two filters share a single AMS source, with separate intensity settings. Otherwise, the AMS modulation will work in the same way as the **Velocity to A** parameter, described above.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Int to A (AMS Intensity to A) [–99...+99]

This controls the depth and direction of the EG AMS modulation for Filter A.

Int to B (AMS Intensity to B) [–99...+99]

This controls the depth and direction of the EG AMS modulation for Filter B.

3–1–3b: Filter A/B Modulation

This section lets you assign any two AMS sources to control Filter A, and another two AMS sources to control Filter B. This modulation is added to the basic Filter A and B cutoff frequencies, as set on the Filter 1 page.

Filter A

AMS1 (Filter A AMS1) [List of AMS Sources]

This selects the first modulation source for controlling Filter A's cutoff frequency. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity (AMS1 Intensity) [–99...+99]

This controls the depth and direction of AMS1.

AMS2 (Filter A AMS2) [List of AMS Sources]

This selects the second modulation source for controlling Filter A's cutoff frequency. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity (AMS2 Intensity) [–99...+99]

This controls the depth and direction of AMS2.

Filter B

The parameters for Filter B are identical to those for Filter A. For more information, please see the descriptions under Filter A, above.

▼3–1–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

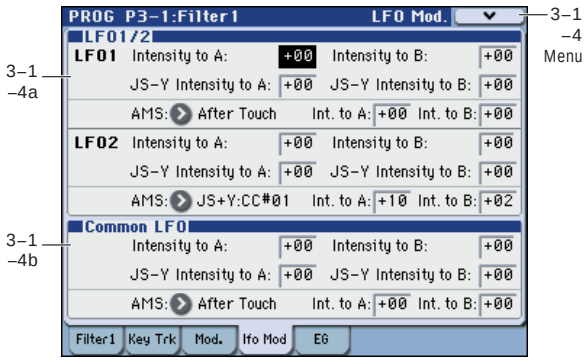
For more information, please see "Program: Menu Command" on page 106.

3–1–4: LFO Mod. (Modulation)

LFO1, LFO2, and the Common LFO can all modulate Filter A and B's cutoff frequencies. You can control the strength of each LFO's modulation in three different ways, independently for each filter:

- Set an initial amount of LFO modulation, using the **Intensity to A** and **B** parameters.
- Use JS-Y to scale the amount of the LFO.
- Use any AMS source to scale the amount the LFO.

You can use each of these methods for each of the three LFOs, and do so separately for both Filter A and Filter B. The results are added together to produce the total LFO effect.



3–1–4a: LFO 1/2

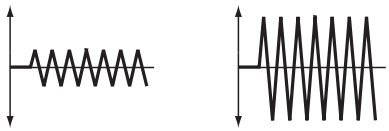
LFO1

Intensity to A [–99...+99]

This controls the initial effect of the LFO on Filter A's cutoff frequency, before any JS-Y or AMS modulation.

Negative (–) settings will invert the phase of the LFO. You can produce interesting effects by using the same LFO to modulate two different parameters (such as Filter A and Filter B), but with one set to a positive intensity, and the other set to a negative intensity.

LFO modulation of Filter Cutoff



Intensity to B [–99...+99]

This controls the initial effect of the LFO on Filter B's cutoff frequency, before any JS-Y or AMS modulation.

JS–Y Intensity to A [–99...+99]

This adjusts the depth by which the LFO will modulate the cutoff frequency of filter A when you move the joystick from the center in the –Y direction (toward yourself) (or when CC#2 is received). (Joystick control in the –Y direction is called "JS –Y".)

Negative (–) settings will invert the phase of the LFO. You can also use this to reduce the initial amount of the LFO, as set by **Intensity to A**, above. For example:

1. **Set Intensity to A to +50.**

The LFO will now have a fairly strong effect on the filter cutoff.

2. **Set JS-Y Intensity to A to –50.**

Now, if you move the joystick down, the effect of the LFO will fade away. When the joystick is all the way at the bottom of its range, the LFO will be completely cancelled out.

JS–Y Intensity to B (LFO1) [–99...+99]

This lets you use JS-Y to scale the amount of the LFO applied to Filter B.

AMS (LFO1) [List of AMS Sources]

This selects any AMS modulation source to scale the amount of the LFO applied to Filters A and B. The two filters share a single AMS source, but with separate intensity settings.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity to A (LFO1) [–99...+99]

This controls the depth and direction of the LFO1 AMS modulation for Filter A.

For example, if **AMS** is set to **After Touch**, **positive** settings mean that aftertouch will increase the amount of LFO1 applied to Filter A.

Intensity to B (LFO1) [–99...+99]

This controls the depth and direction of the LFO1 AMS modulation for Filter B.

LFO 2

The parameters for LFO2 are identical to those for LFO1. For more information, please see the descriptions under LFO1, above.

3–1–4b: Common LFO

The parameters for the Common LFO are identical to those for LFO1. For more information, please see the descriptions under LFO1, above.

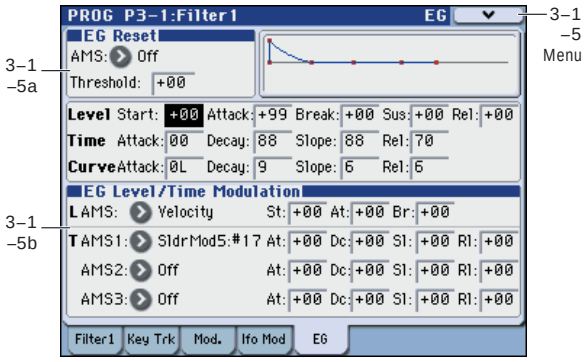
Note that while LFO1 and LFO2 are separate for each voice, the Common LFO is shared by all voices in the Program. This makes it useful when you want all of the voices to have an identical LFO effect.

▼3–1–4: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see "Program: Menu Command" on page 106.

3–1–5: EG



The Filter EG, or Envelope Generator, lets you create complex, time-varying changes to the cutoff frequencies of Filters A and B. The parameters on this page control the shape of the EG. Among other things, you can:

- Create the basic EG shape by setting the levels and times of each segment.
- Control the curvature of each EG segment, for subtle control over the sound of the EG.
- Set up complex modulation of EG levels and times.
- Set up an AMS source, such as an LFO, to restart the EG.

To control how much effect the EG has on the filters, use the Filter EG parameters on the P3–1: Filter1– Modulation page, as described under “3–1–3a: Filter EG,” on page 51.

Filter EG is also an AMS source

You can use the Filter EG as an AMS source to modulate other parameters, just like the keyboard tracking and LFOs. Simply select the Filter EG in the AMS list for the desired parameter.

3–1–5a: EG Reset

AMS [List of AMS Sources]

This selects an AMS source to reset the EG to the start point. For instance, you can use a tempo-synced LFO to trigger the EG in a repeating rhythm. This reset is in addition to the initial note-on, which always causes the EG to start.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Threshold [–99...+99]

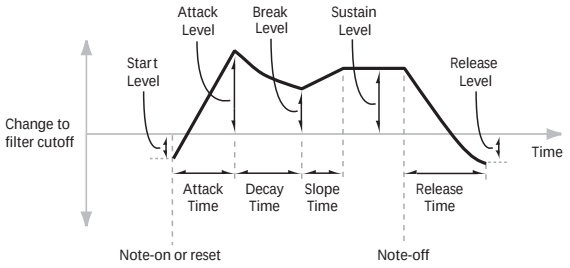
This sets the AMS level which will trigger the EG reset. Among other things, you can use this to adjust the exact point in an LFO’s phase at which the EG will be reset, effectively controlling its “groove” against other rhythmic effects.

When the threshold is **positive**, the EG triggers when passing through the threshold moving upwards. When the threshold is **negative**, the EG triggers when passing through the threshold moving downwards.

Note: With some LFO shapes, and with faster LFO speeds, the LFO may not always reach the extreme values of +99 or –99. In this case, setting the **Threshold** to these values may cause inconsistent behavior, or may mean that the EG doesn’t reset at all. If this happens, reduce the **Threshold** until the EG triggers consistently.

3–1–5b: Envelope

Filter EG



An envelope creates a modulation signal by moving from one level to another over a specified time, and then moving to another level over another period of time, and so on.

The parameters below let you set five levels, the amount of time it takes to go from each of the levels to the next, and the shape (from linear to curved) of each transition.

Level

Each of the five levels can be either positive or negative.

Positive levels will make the cutoff frequency (or other AMS destination) go up from its programmed value; **negative** levels will make it go down.

Start [–99...+99]

This sets the initial EG level, at note-on.

Attack [–99...+99]

This sets the level at the end of the Attack time.

Break [–99...+99]

Break, short for Break Point, sets the level at the end of the Decay time.

Sus (Sustain) [–99...+99]

This sets the level at the end of the Slope time. Once it reaches the Sustain level, the EG will stay there until note-off, unless it is reset via AMS.

Rel (Release) [–99...+99]

This sets the level at the end of the Release time.

Time

Higher values mean longer times, as shown below:

EG Value	Actual Time
10	10 ms
20	44 ms
30	104 ms
40	224 ms
50	464 ms
60	944 ms
70	1.8 seconds
80	3.8 seconds
90	10.9 seconds
99	87.3 seconds

Attack [00...99]

This sets how long the EG takes to move from the Start level to the Attack level.

For the fastest possible attack time, you can set the Start level to +99; in this case, the EG will start instantaneously at its maximum value.

Decay **[00...99]**

This sets the time it takes to move from the Attack level to the Break level.

Slope **[00...99]**

This sets how long the EG takes to move from the Break level to the Sustain level. Once it reaches the Sustain level, the EG will stay there until note-off (unless it is reset via AMS).

Rel (Release) **[00...99]**

This sets how long it takes the EG to move from the Sustain level to the Release level.

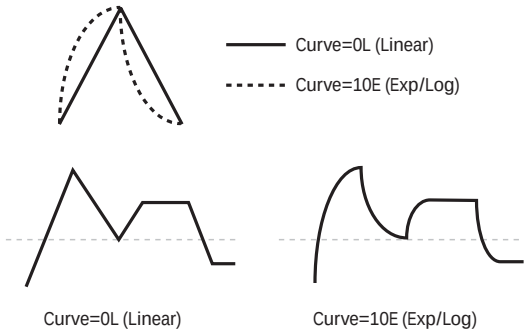
Curve

For the sake of simplicity, most of the diagrams in this manual show envelopes as being made out of straight lines. In actuality, though, envelopes are more likely to be made out of curves.

In other words, each segment's level will change quickly at first, and then slow down as it approaches the next point. This tends to sound better than straight, linear segments.

Classic analog synth envelopes made these curved shapes naturally. The M3 goes a step further than vintage synths, however, and lets you control the amount of curvature separately for each of the four envelope segments.

Filter EG Curve



When you change the curvature, the EG times remain the same. However, greater curvature will tend to sound faster, because the value changes more quickly at the beginning.

Different curve settings for up and down

You may find that different amounts of curvature are suitable for segments which go up and segments which go down.

For instance, a curve of 3 is a good default setting for upward segments, such as Attack. On the other hand, a curve of 6 or more is good for downward segments, such as Decay and Release.

Attack **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Attack segment - the transition from the Start level to the Attack level.

Decay **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Decay segment - the transition from the Attack level to the Break level.

Slope **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Slope segment - the transition from the Break level to the Sustain level.

Rel (Release) **[0L (Linear), 1...9, 10E (Exp/Log)]**

This sets the curvature of the Release segment - the transition from the Sustain level to the Release level.

3–1–5c: EG Level/Time Modulation

Level

These settings let you use any AMS source to control the Level parameters of the EG. The Start, Attack, and Break levels share a single AMS source, but can each have different modulation intensities.

By using different settings for each of the three levels, you can cause both subtle and dramatic changes to the EG shape, as shown below.

Once an EG segment begins, it can't be modulated

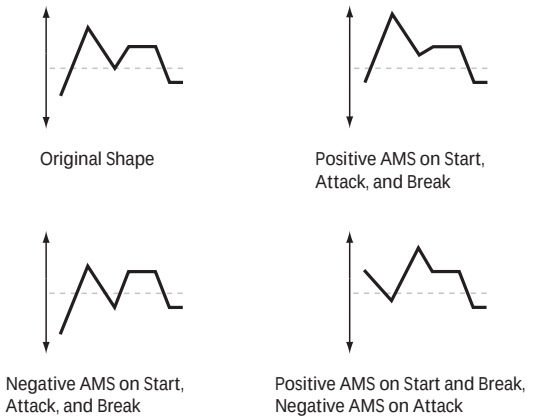
Once the EG has started a segment between two points, that segment can no longer be modulated. This includes both the time of the segment, and the level reached at the end of the segment.

For instance, if the EG is in the middle of the Decay time, you can no longer modulate either the Decay time or the Break level.

As another example, let's say that you've assigned the Common LFO to modulate Break Level. The LFO may be moving all the time, but the Break Level is only affected by the LFO's value at the instant that the Decay segment starts. After that, the level is fixed.

Finally, this also means that modulating the Start level, Attack level, or Attack time will not affect notes that are already sounding, unless the EG is then reset via AMS.

Filter EG Level Modulation



AMS **[List of AMS Sources]**

Selects an AMS source to control the EG's Level parameters.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

St (Start) **[–99...+99]**

This controls the depth and direction of the AMS modulation for the Start level.

For example, if you set the **AMS** source to Velocity and set **St (Start)** to +99, the Start level will increase as you play harder. If you instead set **St (Start)** to –99, the Start level will decrease as you play harder.

At (Attack) **[–99...+99]**

This controls the depth and direction of the AMS modulation for the Attack level.

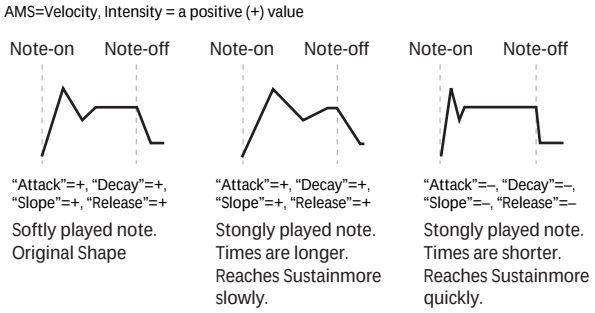
Br (Break) **[–99...+99]**

This controls the depth and direction of the AMS modulation for the Break level.

Time

These settings let you use three different AMS sources to control the Time parameters of the EG. For each of the three AMS sources, the Attack, Decay, Slope, and Release times each have their own modulation intensities.

Filter EG Time Modulation



AMS1 [List of AMS Sources]

Selects the first AMS source to control the EG's Time parameters. Velocity and Keyboard Track can both be useful here, for instance.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

At (Attack) [–99...+99]

This controls the depth and direction of the AMS modulation for the Attack time.

For example, if you set the **AMS** source to Velocity and set **At (Attack)** to +99, the Attack time will get much longer at higher velocities. If you instead set **At (Attack)** to –99, the Attack time will get much shorter at higher velocities.

When the AMS source is at its maximum value–for instance, when **Velocity** is at 127–a setting of +8 will make the Attack time almost twice as long, and a setting of –8 will cut the Attack time almost in half. (See page 593)

Dc (Decay) [–99...+99]

This controls the depth and direction of the AMS modulation for the Decay time.

Sl (Slope) [–99...+99]

This controls the depth and direction of the AMS modulation for the Slope time.

Rl (Release) [–99...+99]

This controls the depth and direction of the AMS modulation for the Release time.

AMS2 and AMS3

These select the second and third AMS sources, respectively, for controlling the EG's Time parameters. Each has its own intensities for Attack, Decay, Slope, and Release. The parameters of both AMS2 and AMS3 are identical to those of AMS1, above.

▼3–1–5: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111
- 5: **Sync Both EGs** ☞p.113

For more information, please see "Program: Menu Command" on page 106.

PROG P3–2: Filter2

3–2–1: Filter2

This page controls Oscillator 2's basic filter 2 settings. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "3–1–1: Filter1," on page 47.

3–2–2: Keyboard Track

This page contains the settings for Oscillator 2's keyboard track. Among other things, you can:

- Set up complex keyboard tracking shapes, and control how the tracking affects filter cutoff.
- Control the effect of the Filter Envelope on filter cutoff.
- Assign AMS modulation for filter cutoff.

Filter B is available when the **Filter Routing** is set to **Serial** or **Parallel**. Otherwise, the parameters for Filter B will be grayed out.

3–2–3: Modulation

This page controls Oscillator 2's filter modulation. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "3–1–3: Modulation," on page 51.

3–2–4: LFO Mod. (Modulation)

This page controls Oscillator 2's LFO filter modulation. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "3–1–4: LFO Mod. (Modulation)," on page 53.

3–2–5: EG

This page controls Oscillator 2's Filter EG. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "3–1–5: EG," on page 54.

PROG P4: Amp/EQ

Oscillators 1 and 2 have separate controls for volume (also called “amplitude,” or “amp” for short), pan, and Drive, as well as dedicated amp envelopes and keyboard tracking generators. Additionally, both Oscillators share a three-band EQ.

These pages let you control all of these related parameters. Among other things, you can:

- Set up the Driver circuit, which adds saturation and bass boost to the timbre.
- Set the pan position and pan modulation.
- Control amp level and modulation, including keyboard tracking, the amp envelope, LFO modulation, and AMS control.
- Set up the three-band Track EQ.

Note that when the **Oscillator Mode** is set to **Single**, only Oscillator 1’s amp, pan, and drive parameters are active; the pages for Oscillator 2 will be grayed out.

4–1: Amp1/Driver1

This page controls the basic settings for the Amp / EQ section. Here, you can:

- Set up the Driver circuit.
- Set the initial volume level.
- Control the pan position and pan modulation.

4–1a: Driver

The Driver adds saturation and overdrive to the sound, for everything from subtle fattening to drastic distortion. Unlike an overdrive effect, the Driver processes each voice individually, so the timbre stays the same regardless of how many voices are being played.

The two main parameters, **Drive** and **Low Boost**, work together to create the overall Driver effect. **Drive** contributes edge and bite, and **Low Boost** provides the body as well as boosting the bass.

Bypass [Off, On]

When **Bypass** is On, the Driver is completely removed from the signal path.

Drive [00...99]

This controls the amount of edge and bite in the timbre. Low settings will produce mild saturation, and higher settings create more obvious distortion.

Often, it’s useful to increase the **Low Boost** along with the **Drive**.

Note: Even when the **Drive** amount is set to 0, the Driver circuit still affects the timbre. If your goal is a completely pristine sound, use the Bypass control instead.

AMS (Drive) [List of AMS Sources]

This selects an AMS modulation source to control the **Drive** amount.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Intensity [–99...+99]

This controls the depth and direction of the AMS modulation for Drive.

Low Boost [00...99]

This low-frequency EQ controls the body character of the sound. The specific EQ frequencies affected will change with the **Drive** setting.

Higher amounts increase the bass boost, and will also intensify the effect of the **Drive** parameter.

AMS [List of AMS Sources]

This selects an AMS modulation source to control the **Low Boost** amount.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Intensity [–99...+99]

This controls the depth and direction of the AMS modulation for **Low Boost**.

4–1b: Amp Level

Amp Level [000...127]

This controls the basic volume level of Oscillator 1, before keyboard tracking, velocity, and other modulation.

The Control Surface and volume

You can control the Oscillator volume directly from the Control Surface sliders. This is a separate parameter, in addition to **Amp Level**. To do so:

1. **Press the CONTROL ASSIGN MIXER switch.**
2. **Move Slider 1 to set the volume for Oscillator 1, and Slider 2 for Oscillator 2.**

MIDI and volume

MIDI You can control the Program’s overall volume via MIDI using both Volume (CC#7) and Expression (CC#11). When used one at a time, the two controllers work in exactly the same way: a MIDI value of 127 is equal to the **Amp Level** setting, and lower values reduce the volume.

If both CC#7 and CC#11 are used simultaneously, the one with the lower value determines the maximum volume, and the one with the higher value scales down from that maximum.

This is controlled on the global MIDI channel (Global 1–1a).

4–1c: Pan

Pan [Random, L001...C064...R127]

This controls the stereo pan of Oscillator 1. A setting of **L001** places the sound at the far left, **C064** in the center, and **R127** to the far right.

When this is set to **Random**, the pan position will be different for each note-on.

MIDI You can also control pan via MIDI Pan (CC#10). A CC#10 value of 0 or 1 places the sound at the far left, 64 places the sound at the location specified by the **Pan** parameter, and 127 places the sound at the far right. This is controlled on the global MIDI channel (Global 1–1a).

Note: Random can be selected only from the display.

AMS (Pan) [List of AMS Sources]

This selects an AMS source to modulate Pan.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Intensity [–99...+99]

This controls the depth and direction of the AMS modulation for Pan.

For example, if **Pan** is set to C064 and **AMS** is set to Note Number, **positive (+)** intensities will cause the sound to move toward the right as you play higher than C4, and toward the left as you play lower than C4. **Negative (–)** intensities will have the opposite effect.

Use DKit Setting [Off, On]

This option is available only when the **Oscillator Mode** is set to **Drums**.

Unlike standard Programs, Drum Kits can have a different pan setting for every note. This parameter lets you choose whether to use the Drum Kit pan settings, or to use the Program’s pan setting instead.

On (checked): The Program will use the Drum Kit’s per-note pan settings; pan AMS will still apply. This is the default setting.

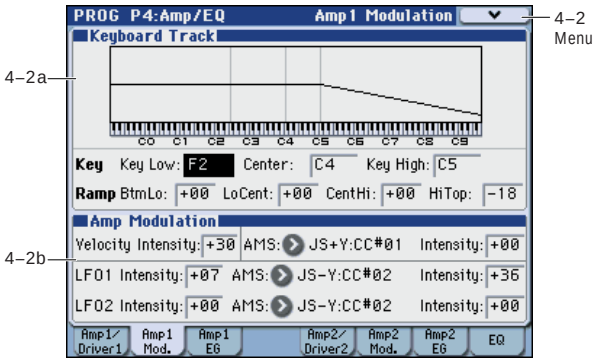
Off (unchecked): The Program will ignore the Drum Kit’s settings, and use the Program pan instead.
All keys of the drum kit will use the **Pan** (Global 5–4b) setting.

▼4–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see “Program: Menu Command” on page 106.

4–2: Amp1 Modulation



This page contains the settings for Oscillator 1’s Amp level modulation. Among other things, you can:

- Set up complex keyboard tracking shapes to control the Amp level.
- Assign AMS modulation for the Amp level.
- Control the effect of the LFOs on the Amp level.

The total effect of the modulation can increase the volume to a maximum of two times louder than the **Amp Level** setting.

4–2a: Keyboard Track

Keyboard tracking lets you vary the volume as you play up and down the keyboard. Usually, some amount of key tracking is necessary in order to make the volume consistent across the entire range.

M3’s keyboard tracking can be fairly complex, if desired. You can create different rates of change over up to four different parts of the keyboard. For instance, you can:

- Make the volume increase very quickly over the middle of the keyboard, and then increase more slowly–or not at all–in the higher octaves.
- Make the volume increase as you play lower on the keyboard.
- Create abrupt changes at certain keys, for split-like effects.

How it works: Keys and Ramps

The keyboard tracking works by creating four ramps, or slopes, between five keys on the keyboard. The bottom and top keys are fixed at the bottom and top of the MIDI range, respectively. You can set the other three keys–named **Key Low**, **Center**, and **Key High**–to be anywhere in between.

The four Ramp values control the rate of change between each pair of keys. For instance, if the **Low-Center** Ramp is set to 0, the value will stay the same between the **Key Low** key and the **Center** key.

The Key value will be the break point, and Ramp specifies the slope of the lower region and higher region on the keyboard.

If Key is **Center**, keyboard tracking will have no effect.

Key:

Key Low [C–1...G9]

This specifies the note that will be the break point connecting the two sloped lines in the low region.

Center [C–1...G9]

This specifies the note that will be the break point in the center of keyboard tracking. At this key, the keyboard tracking has no effect on the volume, or on any AMS destinations.

Key High [C–1...G9]

This specifies the note that will be the break point connecting the two sloped lines in the high region.

Entering notes from the keyboard

You can enter velocity values directly by playing them on the keyboard. To do so:

1. **Select one of the Key parameters.**
2. **Hold down the ENTER switch.**
3. **While holding ENTER, play a note on the keyboard.**

Ramp:

Positive ramp values mean that the keyboard tracking output increases as you play farther from the **Center** Key; negative ramp values mean that it decreases.

Because of this, the meanings of positive and negative ramp settings will change depending on whether the ramp is to the left or right of the **Center** Key.

Btm Lo (Bottom-Low) and Lo Cent (Low-Center): negative ramps make the keyboard tracking's output go down as you play lower, and positive ramps make the output go higher.

Cent Hi (Center-High) and Hi Top (High-Top): negative ramps make the keyboard tracking's output go down as you play higher, and positive ramps make the output go up.

Differences from other Keyboard Tracks

There are several differences between the Amp keyboard tracking and the Filter and Common keyboard tracking.

For example, the results of the **Ramp** values are different. As shown in the graphic "Amp Keyboard Tracking," below, negative slopes are more steep than positive slopes.

Also, the amp does not have separate control of Intensity. Instead, Intensity is always fixed at the maximum amount, allowing keyboard tracking to change the volume from complete silence to twice as loud as the programmed level.

Btm Lo (Bottom-Low) [–Inf, –99...+99, +Inf]

This sets the slope between the bottom of the MIDI note range and the **Key Low** key. For normal key track, use negative values.

Lo Cent (Low-Center) [–Inf, –99...+99, +Inf]

This sets the slope between the **Key Low** and **Center** keys. For normal key track, use negative values.

Cent Hi (Center-High) [–Inf, –99...+99, +Inf]

This sets the slope between the **Center** and **Key High** keys. For normal key track, use positive values.

Hi Top (High-Top) [–Inf, –99...+99, +Inf]

This sets the slope between the **Key High** key and the top of the MIDI note range. For normal key track, use positive values.

Ramp	Change in level
–Inf	Silent in one half-step
–99	Silent in one whole-step
–95	Silent in one octave
–48	Silent in two octaves
–25	Silent in four octaves
00	no change
+25	x2 in four octaves
+50	x2 in two octaves
+99	x2 in one octave
+Inf	x2 in one half-step

+Inf and –Inf ramps

+Inf and –Inf are special settings which create abrupt changes for split-like effects. When a ramp is set to +Inf or –Inf, the keyboard tracking will go to its extreme highest or lowest value over the span of a single key.

When a ramp is set to +Inf, the keyboard tracking will go to its highest value (double the programmed volume) over a single half-step.

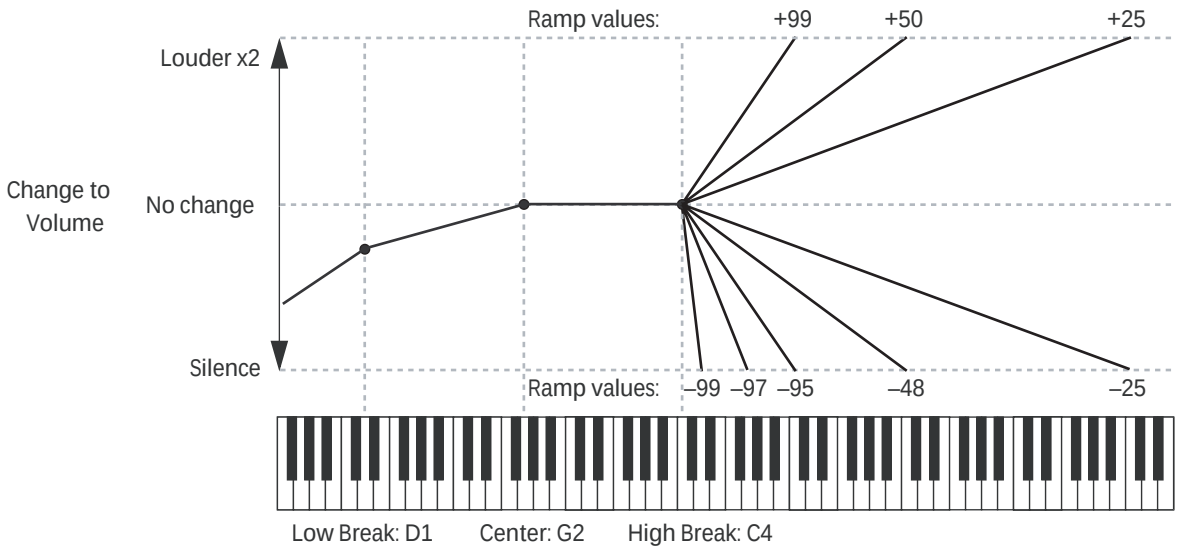
Similarly, when a ramp is set to –Inf, the keyboard tracking will go to its lowest value (complete silence) over a single half-step.

Note: If you set the **Cent Hi (Center-High)** ramp to +Inf or –Inf, the **Hi Top (High-Top)** parameter will be grayed out. Similarly, if you set the **Lo Cent (Low-Center)** ramp to +Inf or –Inf, the **Btm Lo (Bottom-Low)** ramp will be grayed out.

Amp KTrk is also an AMS source

You can use the keyboard tracking as an AMS source to modulate other parameters, just like the envelopes and LFOs. Simply select Amp KTrk in the AMS list for the desired parameter.

Amp Keyboard Tracking



4–2b: Amp Modulation

You can modulate the Amp level by both velocity and an AMS source.

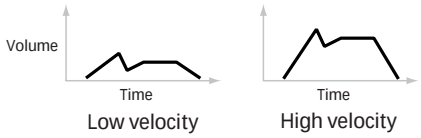
This modulation scales the basic Amp level and Amp EG level parameters. The resulting volume is determined by multiplying the volume changes of the amp EG by other values such as AMS. If these original levels are low, the maximum volume available with modulation will also be reduced.

Velocity Intensity [–99...+99]

With **positive (+)** values, the volume will increase as you play harder.

With **negative (–)** values, the volume will decrease as you play harder.

Velocity modulation of Amp level, with Amp EG



AMS [List of AMS Sources]

This selects any AMS modulation source to control the Amp1 level. For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Intensity [–99...+99]

This controls the depth and direction of the modulation.

For example, if **AMS** is set to After Touch, **positive (+)** values of this parameter will make the volume increase when you press down on the keyboard.

Note that if the other modulation settings have already raised the volume to its maximum level (double the **Amp Level** and Amp EG level settings), the volume cannot be increased any further.

With **negative (–)** values of this parameter, the volume will decrease when pressure is applied to the keyboard.

LFO 1/2

You can modulate the Amp level with both LFO1 and LFO2.

LFO1

Intensity (LFO1) [–99...+99]

This controls the depth and direction of LFO1’s effect on the oscillator’s volume.

Negative (–) values will invert the LFO waveform.

AMS (LFO1) [List of AMS Sources]

This selects an AMS modulation source to scale the amount of the LFO1 applied to the Amp level.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Intensity [–99...+99]

This controls the depth and direction of the LFO1 AMS modulation for the Amp level.

For example, if **AMS (LFO1)** is set to **After Touch**, **positive** settings mean that aftertouch will increase the amount of LFO1 applied to the Amp level.

LFO2

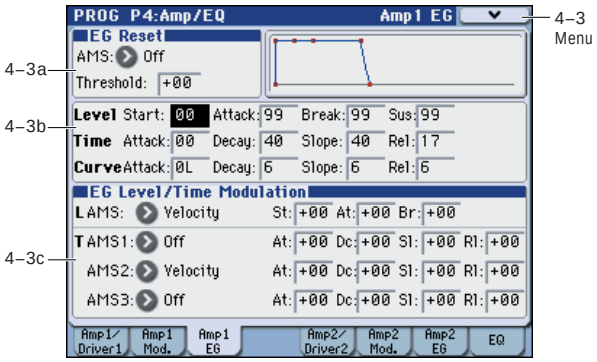
The parameters for LFO2 are identical to those for LFO1. For more information, please see the descriptions under LFO1, above.

▼4–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see “Program: Menu Command” on page 106.

4–3: Amp1 EG



These parameters let you create time-varying changes in the volume of oscillator 1.

4–3a: EG Reset

AMS [List of AMS Sources]

This selects an AMS source to reset the EG to the start point. For instance, you can use a tempo-synced LFO to trigger the EG in a repeating rhythm. This reset is in addition to the initial note-on, which always causes the EG to start.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Note: Once the Amp EG is in its Release segment, it cannot be reset. (Otherwise, the sound might keep playing forever!)

Threshold [–99...+99]

This sets the AMS level which will trigger the EG reset.

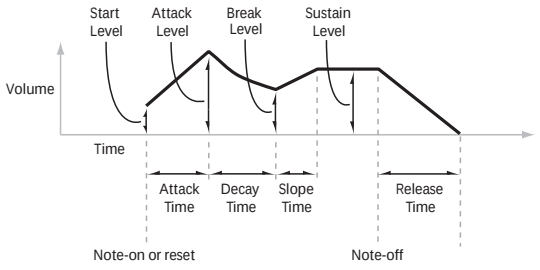
Among other things, you can use this to adjust the exact point in an LFO’s phase at which the EG will be reset, effectively controlling its “groove” against other rhythmic effects. When the threshold is **positive**, the EG triggers when passing through the threshold moving upwards. When the threshold is **negative**, the EG triggers when passing through the threshold moving downwards.

Note: With some LFO shapes, and with faster LFO speeds, the LFO may not always reach the extreme values of +99 or –99. In this case, setting the **Threshold** to these values may cause inconsistent behavior, or may mean that the EG doesn’t reset at all. If this happens, reduce the **Threshold** until the EG triggers consistently.

4–3b: Envelope

These parameters specify how the amp 1 EG will change over time.

Amp EG



Level

Start [00...99]

This sets the initial volume level at note-on.

Attack [00...99]

This sets the level at the end of the Attack time.

Break [00...99]

Break, short for Break Point, sets the level at the end of the Decay time.

Sus (Sustain) [00...99]

This sets the level at the end of the Slope time. Once it reaches the Sustain level, the EG will stay there until note-off (unless it is reset via AMS).

Time

Higher values mean longer times, as shown below.

EG Value	Actual Time
10	10 ms
20	44 ms
30	104 ms
40	224 ms
50	464 ms
60	944 ms
70	1.8 seconds
80	3.8 seconds
90	10.9 seconds
99	87.3 seconds

Attack [00...99]

This sets how long the EG takes to move from the Start level to the Attack level.

For the fastest possible attack time, you can set the Start level to +99; in this case, the EG will start instantaneously at its maximum value.

Decay [00...99]

This sets the time it takes to move from the Attack level to the Break level.

Slope [00...99]

This sets how long the EG takes to move from the Break level to the Sustain level. Once it reaches the Sustain level, the EG will stay there until note-off (unless it is reset via AMS).

Rel (Release) [00...99]

This sets how long it takes the EG to move from the Sustain level to silence.

Curve

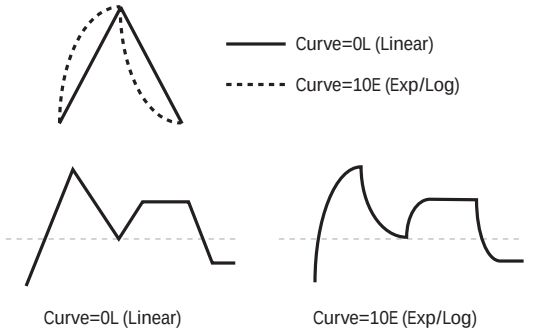
For the sake of simplicity, most of the diagrams in this manual show envelopes as being made out of straight lines. In actuality, though, envelopes are more likely to be made out of curves.

In other words, each segment’s level will change quickly at first, and then slow down as it approaches the next point. This tends to sound better than straight, linear segments.

Classic analog synth envelopes made these curved shapes naturally. The M3 goes a step further than vintage synths, however, and lets you control the amount of curvature separately for each of the four envelope segments.

When you change the curvature, the EG times remain the same. However, greater curvature will tend to sound faster, because the value changes more quickly at the beginning.

Amp EG Curve



Different curve settings for up and down

You may find that different amounts of curvature are suitable for segments which go up and segments which go down.

For instance, a curve of 3 is a good default setting for upward segments, such as Attack. On the other hand, a curve of 6 or more is good for downward segments, such as Decay and Release.

Attack [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Attack segment - the transition from the Start level to the Attack level.

Decay [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Decay segment - the transition from the Attack level to the Break level.

Slope [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Slope segment - the transition from the Break level to the Sustain level.

Rel (Release) [0L (Linear), 1...9, 10E (Exp/Log)]

This sets the curvature of the Release segment - the transition from the Sustain level to the Release level.

4–3c: EG Level/Time Modulation

Level

These settings let you use any AMS source to control the Level parameters of the EG. The Start, Attack, and Break levels share a single AMS source, but can each have different modulation intensities.

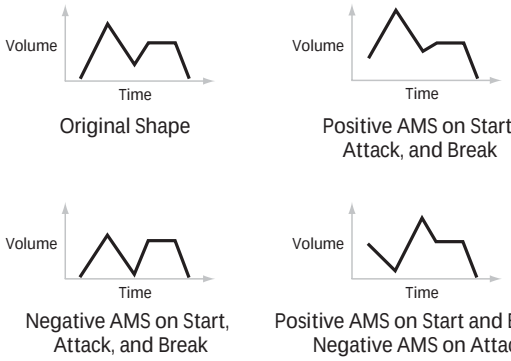
By using different settings for each of the three levels, you can cause both subtle and dramatic changes to the EG shape, as shown below.

Once an EG segment begins, it can't be modulated

Once the EG has started a segment between two points, that segment can no longer be modulated. This includes both the time of the segment, and the level reached at the end of the segment.

For more information, please see "Once an EG segment begins, it can't be modulated" on page 55.

Amp EG Level Modulation



AMS [List of AMS Sources]

This selects an AMS source to control the EG's Level parameters.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

St (Start) [–99...+99]

This controls the depth and direction of the AMS modulation for the Start level.

For example, if you set the AMS source to Velocity and set **St (Start)** to +99, the Start level will increase as you play harder. If you instead set **St (Start)** to –99, the Start level will decrease as you play harder.

At (Attack) [–99...+99]

This controls the depth and direction of the AMS modulation for the Attack level.

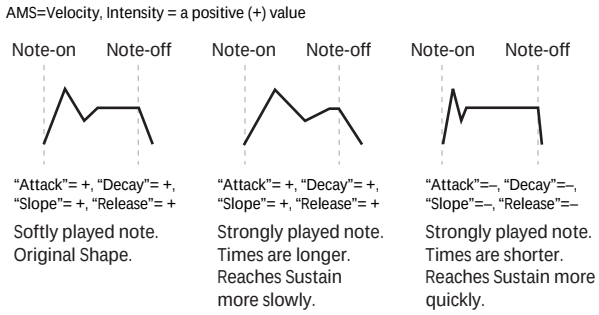
Br (Break) [–99...+99]

This controls the depth and direction of the AMS modulation for the Break level.

Time

These settings let you use three different AMS sources to control the Time parameters of the EG. For each of the three AMS sources, the Attack, Decay, Slope, and Release times each have their own modulation intensities.

Amp EG Time Modulation



AMS1 [List of AMS Sources]

Selects the first AMS source to control the EG's Time parameters. Velocity and Keyboard Track can both be useful here, for instance.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

At (Attack) [–99...+99]

This controls the depth and direction of the AMS modulation for the Attack time.

For example, if you set the AMS source to Velocity and set **At (Attack)** to +99, the Attack time will get much longer at

higher velocities. If you instead set **At (Attack)** to –99, the Attack time will get much shorter at higher velocities.

When the AMS source is at its maximum value–for instance, when **Velocity** is at 127–a setting of +8 will make the segment time almost twice as long, and a setting of –8 will cut the segment time almost in half.

Dc (Decay) [–99...+99]

This controls the depth and direction of the AMS modulation for the Decay time.

Sl (Slope) [–99...+99]

This controls the depth and direction of the AMS modulation for the Slope time.

Rl (Release) [–99...+99]

This controls the depth and direction of the AMS modulation for the Release time.

AMS2 and AMS3

These select the second and third AMS sources, respectively, for controlling the EG's Time parameters. Each has its own intensities for Attack, Decay, Slope, and Release. The parameters of both AMS2 and AMS3 are identical to those of AMS1, above.

▼4–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111
- 5: **Sync Both EGs** ☞p.113

For more information, please see "Program: Menu Command" on page 106.

4–5: Amp2/Driver2

This page controls Oscillator 2's basic level, pan, and driver settings. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "4–1: Amp1 / Driver1," on page 58.

4–6: Amp2 Modulation

This page controls Oscillator 2's amp modulation. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

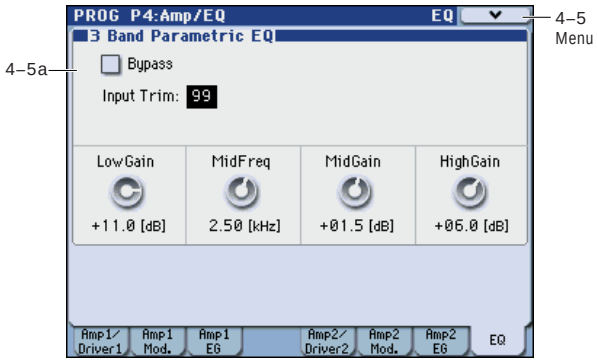
The parameters are identical to those for Oscillator 1, as described under "4–2: Amp1 Modulation," on page 59.

4–7: Amp2 EG

This page controls Oscillator 2's amp EG. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under "4–3: Amp1 EG," on page 62.

4–8: EQ



This three-band EQ, with sweepable mid, is shared by both of the Program's oscillators 1, 2.

In Combinations and Sequencers, each timbre and track has its own individual EQ. You can import the Program's EQ settings into Tracks and Timbres by using the Combination and Sequencer "Auto Load Program EQ" options.

4–8a: 3 Band Parametric EQ

Bypass [On, Off]

When **Bypass** is checked, all of the EQ will be disabled, including the **Input Trim**.

Bypass can be convenient for comparing the results of the EQ with the original signal.

Input Trim [00...99]

This controls the volume level going into the EQ. The setting corresponds to the volume; 50 corresponds to –12 dB, and 25 corresponds to –24 dB.

High settings of the **Low**, **Mid**, and **High Gain** controls can cause substantial increases in the overall level. You can compensate for this by turning down the input trim.

Low Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the 80 Hz Low Shelf EQ, in increments of 0.5 dB.

Mid Frequency [100Hz...10.00kHz]

This sets the center frequency for the Mid sweep EQ.

Mid Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the Mid Sweep EQ, in increments of 0.5 dB.

High Gain [–18.0...+00.0...+18.0dB]

This controls the gain of the 10 kHz High Shelf EQ, in increments of 0.5 dB.

▼4–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see "Program: Menu Command" on page 106.

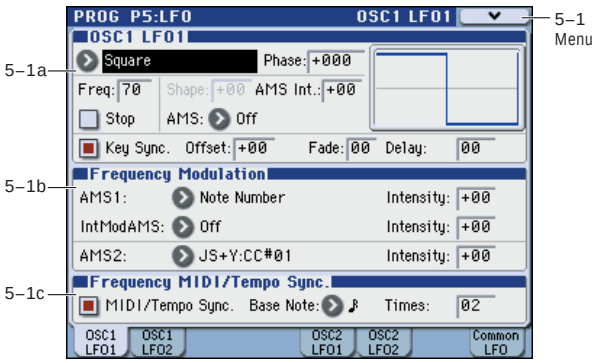
PROG P5: LFO

Each of the Oscillators 1, 2 has two LFOs, which you can use to modulate the filter, amp, pitch, and many other parameters.

The two Oscillators also share a single Common LFO, similar to the global LFO on some vintage analog synths.

These pages let you set up all of the parameters for all five LFOs.

5–1: OSC1 LFO1 AMSource



This page has all of the controls for the first LFO of Oscillator 1. For instance, you can:

- Select the LFO's basic waveform, and modify it with the **Shape** parameter.
- Control the LFO's frequency, and assign AMS controllers to modulate the frequency.
- Use the **Key Sync** parameter to choose whether the LFO runs separately for each voice, or is synchronized across all of the voices
- Use the **Fade** and **Delay** parameters to control how long the LFO waits to start after note-on, and whether it starts abruptly or fades in slowly.
- Set the LFO to sync to MIDI tempo.

5–1a: OSC 1 LFO 1

Waveform [Triangle...Random6 (Continuous)]

This selects the basic LFO waveform, as shown in the graphic below.

Most of the waveforms should be self-explanatory, but a few will benefit from more details:

Guitar is intended for guitar vibrato, and its shape is specifically tuned for this purpose. The waveform is positive-only, so that when used for pitch, it will only bend up, and not down.

Random1 (S/H) generates traditional sample and hold waveforms, in which the level changes randomly at fixed intervals of time.

Random2 (S/H) randomizes both the levels and the timing.

Random3 (S/H) generates a pulse wave with random timing. It's the opposite of traditional sample and hold; the timing varies, but the levels don't.

Random4–6 (Continuous) are smoothed versions of Random 1–3, with ramps instead of steps. You can use them to create more gentle random variations.

Phase [–180...+180, Random]

This controls the phase of the waveform at the start of the note, in steps of 5 degrees.

If **Key Sync** is Off, the Start Phase will apply only to the first note of the phrase.

Freq (Frequency) [00...99]

This controls the speed of the LFO, before any modulation. Higher values mean faster speeds, as shown in the table below.

By using AMS modulation, you can also get speeds much faster and much slower than are available through this basic setting.

Frequency Value	Frequency in Hz
00	0.014 Hz
10	0.112 Hz
20	0.422 Hz
30	0.979 Hz
40	1.79 Hz
50	2.84 Hz
60	4.14 Hz
70	5.69 Hz
80	7.49 Hz
90	9.53 Hz
99	26.25 Hz
99 + Fine 99	32 Hz

Stop [Off, On]

On (checked): Instead of the LFO operating normally, it will ignore the **Freq** setting. The LFO will maintain the initial value (determined by the combination of **Waveform**, **Phase**, **Shape**, and **Offset**) until the note-off.

Since the value will change only at note-on, using a Random waveform will produce a fixed value that changes randomly at each note-on (or at the first note-on).

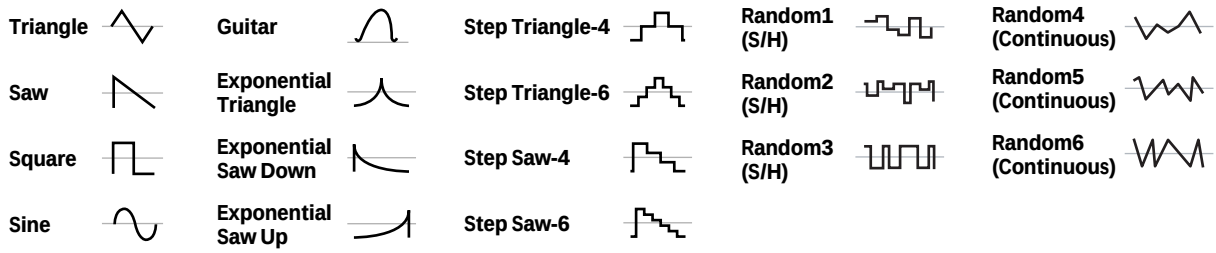
Off (unchecked): The LFO will operate normally.

Shape [–99...+99]

Shape adds curvature to the basic waveform. As you can see in the graphic below, this can make the waveforms either more rounded or more extreme. It can also be useful to emphasize certain value ranges, and de-emphasize others.

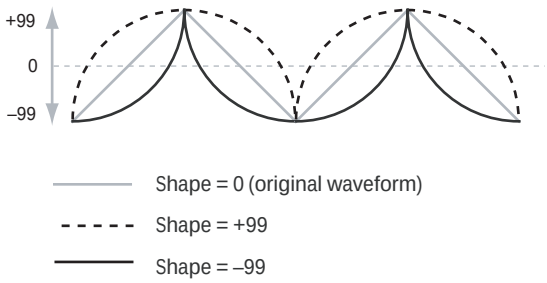
For example, let's say that you are using a triangle LFO to modulate filter cutoff. If **Shape** emphasizes the high value range, the filter will spend more time at the higher

LFO waveform



frequencies. If it emphasizes the low range, the filter will spend more time at the lower frequencies.

LFO Shape



Note: Shape does **not** affect the Square and Random3 waveforms, since their values are always either +99 or –99. When these are selected, **Shape** is grayed out.

AMS (Shape) [List of AMS Sources]

This selects a AMS source for controlling the LFO's Shape. Modulating the shape can dramatically alter the effect of the LFO–try it out!

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS Int (Intensity) [–99...+99]

This controls the depth and direction of the **AMS (Shape)** modulation.

Key Sync. [Off, On]

On (checked): When Key Sync is **On**, the LFO starts each time you press a key, and an independent LFO runs for each note. This is the normal setting.

Off (unchecked): When Key Sync is **Off**, the LFO starts from the phase determined by the first note in the phrase, so that the LFOs for all notes being held are synchronized together. The **Fade** and **Delay** settings will only apply to the first note's LFO.

Note that even if Key Sync is Off, each note's LFO speed may still be different if you modulate the Frequency by note number, velocity, key scaling, or other note-specific AMS sources.

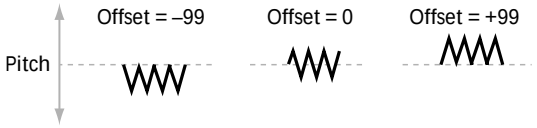
Offset [–99...+99]

By default, almost all of the LFO waveforms are centered around 0, and then swing all the way from –99 to +99. This parameter lets you shift the LFO up and down, so that–for instance–it's centered on 50, and then swings from –49 to +149.

For example, let's say that you're using an LFO for vibrato. If the **Offset** is **0**, the vibrato will be centered on the note's original pitch, bending it both up and down.

If the **Offset** is **+99**, on the other hand, the vibrato will only raise the pitch above the original note.

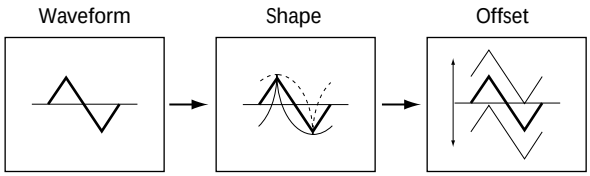
Offset settings and pitch change produced by vibrato



The one exception to this is the Guitar waveform, which is designed to emulate bending a string on a guitar–so that the pitch only goes up, and not down. Because of this, the waveform is centered on 50, and not on 0. Of course, you can always use a negative **Offset** to shift it back down below 0 again!

Since Offset affects the output values of the LFO, it's important to note that it affects the signal after the Shape function, as shown below:

How the LFO signal is affected by Shape and Offset



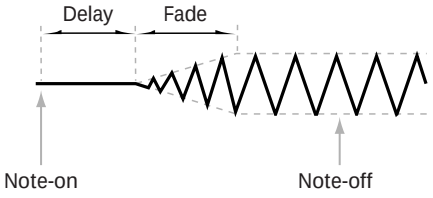
Fade [00...99]

The LFO can fade in gradually, instead of simply starting immediately at full strength. This parameter specifies the time from when the LFO begins to play until it reaches its maximum amplitude.

If the **Delay** parameter is being used, then the fade will begin after the delay is complete.

When **Key Sync** is **Off**, the fade will apply only to the first note in the phrase.

LFO Fade and Delay



Delay [00...99]

This sets the time from note-on until the LFO starts.

When **Key Sync** is **Off**, the delay applies only to the first note of the phrase.

5–1b: Frequency Modulation

You can use two alternate modulation sources (AMS) to adjust the speed of the LFO.

AMS1 (Frequency) [List of AMS Sources]

This selects the first AMS source for the LFO1's frequency. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Note that you can use LFO2 to modulate LFO1's frequency.

Intensity [–99...+99]

This sets the initial amount of **AMS1 (Frequency)**. The **Int Mod AMS** then adds to this initial amount.

When AMS is at its maximum value (for example by moving the joystick fully away from yourself), the AMS affects the frequency as shown below:

Intensity	Change to LFO Frequency	
+99	64x	Faster
+82	32x	
+66	16x	
+49	8x	
+33	4x	
+16	2x	
–16	1/2x	Slower
–33	1/4x	
–49	1/8x	
–66	1/16x	
–82	1/32x	
–99	1/64x	

Int Mod AMS (Intensity Mod AMS) [List of AMS Sources]

This selects a secondary AMS source to scale the intensity of AMS1.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity [–99...+99]

This controls the depth and direction of the **Int Mod AMS**. Even if the main AMS1 Intensity is set to 0, **Int Mod AMS** can still control the final amount of AMS A over the full +/–99 range.

For example, if **AMS1** is set to the **Pitch EG**, and **Int Mod AMS** is set to **After Touch**, **positive** settings mean that aftertouch will increase the intensity of the Pitch EG modulation of LFO Frequency.

AMS2 (Freq. AMS2) [List of AMS Sources]

This selects the second AMS source for the LFO1's frequency. For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Intensity [–99...+99]

This controls the amount of modulation from **AMS2 (Freq. AMS2)**.

5–1c: Frequency MIDI/Tempo Sync.

MIDI/Tempo Sync. [Off, On]

When MIDI/Tempo Sync is **On**, the LFO will synchronize to the system tempo, as set by either the Tempo knob or MIDI Clock. The LFO speed will be controlled by the **Base Note** and **Times** parameters, below. All settings for **Frequency** and **Frequency Modulation** will be ignored.

When MIDI/Tempo Sync is **Off**, the **Frequency** and **Frequency Modulation** settings will determine the speed of the LFO, and the tempo settings will have no effect.

Base Note (Sync. Base Note) [𝅘𝅥𝅯 ... 𝅝]

This sets the basic speed of the LFO, relative to the system tempo. The values range from a 32nd note to a whole note, including triplets.

Times (Sync. Times) [01...32]

This multiplies the length of the **Base Note**. For instance, if the **Base Note** is set to a sixteenth note, and **Times** is set to **03**, the LFO will cycle over a dotted eighth note.

▼5–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Swap LFO 1&2** ☞p.113

For more information, please see "Program: Menu Command" on page 106.

5–2: OSC1 LFO2 AMSource

This is Oscillator 1's second LFO. Its parameters are exactly the same as those for the first LFO, as described under "5–1: OSC1 LFO1" on page 66–except that LFO1 cannot modulate LFO2.

5–5: OSC2 LFO1 AMSource

This page controls Oscillator 2's first LFO. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

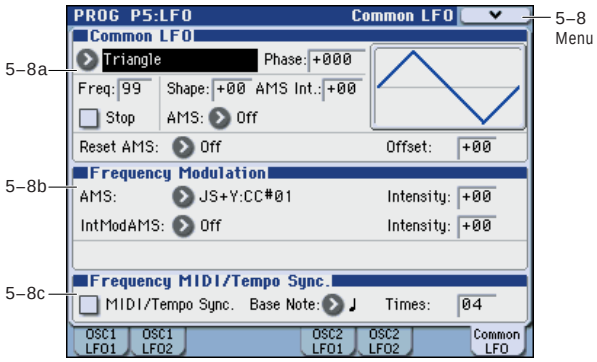
The parameters are identical to those for Oscillator 1, as described under "5–1: OSC1 LFO1" on page 66.

5–6: OSC2 LFO2 AMSource

This page controls Oscillator 2's second LFO. It is available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

Its parameters are exactly the same as those for the first LFO, as described under "5–1: OSC1 LFO1" on page 66–except that LFO1 cannot modulate LFO2.

5–8: Common LFO AMSource



This is a single, Common LFO, global for all voices in the Program–like the modulation LFOs in some vintage analog synths.

Differences from LFO1/2

The Common LFO starts running as soon as you select the Program, and only resets when you tell it to do so explicitly via the Reset Source control, below. This is different from LFO1/2's **Key Sync** parameter, which resets whenever all notes are released.

The Common LFO's persistence can be handy if you want to create a constant rhythm with an LFO, and then play "underneath" that rhythm without re-triggering it. For instance, you can use a MIDI controller in your sequencer to reset the Common LFO every few bars, regardless of what notes are being played.

The Common LFO has most of the same controls as LFO1/2. However, it does not include the **Delay**, **Fade**, and **Key Sync** settings, since these only make sense for per-voice LFOs.

5–8a: Common LFO

Waveform [Triangle...Random6 (Continuous)]

This selects the basic LFO waveform. For a complete list of the waveforms and more details, please see the entry under LFO1 "Waveform," on page 66.

Phase [–180...+180, Random]

The **Reset AMS**, described above, lets you reset the Common LFO. This is the phase from which the LFO will start when it is reset.

Freq (Frequency) [00...99]

This controls the speed of the LFO, before any modulation. Higher values mean faster speeds. For a complete description, please see the entry under LFO1 "Freq (Frequency)," on page 66.

Stop [Off, On]

On (checked): Instead of the LFO operating normally, it will ignore the **Freq** setting. Instead, the LFO simply generate a single value when the Program is selected, and then holds that value until you select another Program, or until you reset the LFO via AMS.

Note: This is different from LFO1/2, in which the value is reset with every note-on.

You can use this in conjunction with the Random waveforms to create static, random modulation, with the value changing only when you first select the Program.

Off (unchecked): When Stop is **Off**, the LFO will function normally.

Shape [–99...+99]

Shape adds curvature to the basic waveform. For more details, please see the entry under LFO1 "Shape," on page 66.

Note: Shape does **not** affect the Square and Random3 waveforms, since their values are always either +99 or –99.

AMS (Shape) [List of AMS Sources]

This selects a AMS source for controlling the LFO's Shape. Modulating the shape can dramatically alter the effect of the LFO–try it out!

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS Int (AMS Intensity) [–99...+99]

This controls the depth and direction of the **AMS (Shape)** modulation.

Reset AMS [List of AMS Sources]

This selects an AMS source to reset the LFO to the Start **Phase**. The LFO resets when the AMS value passes the halfway mark: +50 for most AMS sources, or 64 for MIDI controllers.

To create an effect similar to the per-voice LFO's **Key Sync.** setting, set this to **Gate 2+ Damper**.

Offset [–99...+99]

By default, almost all of the LFO waveforms are centered around 0, and then swing all the way from –99 to +99. This parameter lets you shift the LFO up and down, so that–for instance–it's centered on 50, and then swings from –49 to +149.

For a complete description, please see the entry under LFO1 "Offset," on page 67.

5–8b: Frequency Modulation

These parameters are identical to the Frequency Modulation settings for LFO1, as described under "5–1b: Frequency Modulation," on page 67.

5–8c: Frequency MIDI/Tempo Sync

These parameters are identical to the Frequency MIDI/Tempo Sync for LFO1, as described under "5–1c: Frequency MIDI/Tempo Sync.," on page 68.

▼5–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107

For more information, please see "Program: Menu Command" on page 106.

PROG P6: AMS/C.KTrk (AMS Mixer/Common Keyboard Track)

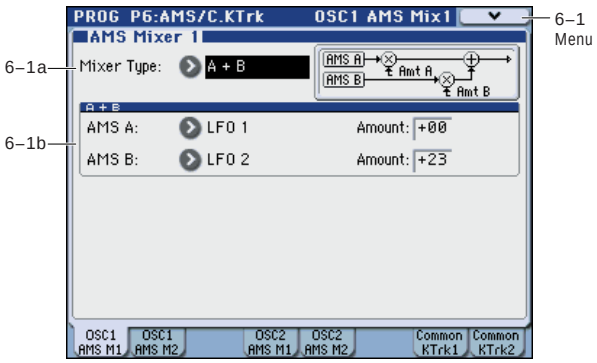
Each Oscillator has two AMS Mixers, which are simple but powerful tools for combining and modifying AMS signals.

The two Oscillators also share two Common keyboard tracking generators, in addition to the dedicated keyboard tracking for the Filter and Amp.

These pages let you control all of these modulation sources.

Note that when the **Oscillator Mode** is set to **Single**, only Oscillator 1's AMS Mixers are active; the pages for Oscillator 2 will be grayed out.

6–1: OSC1 AMS Mix1 AMSource



The AMS Mixers combine two AMS sources into one, or process an AMS source to make it into something new.

For instance, they can add two AMS sources together, or use one AMS source to scale the amount of another. You can also use them to change the shapes of LFOs and EGs in various ways, modify the response of realtime controllers, and more.

You can select the output of the AMS mixers as an AMS source in the same way as an LFO or EQ.

This also means that the original, unmodified inputs to the AMS Mixers are still available as well. For instance, if you use LFO1 as an input to a AMS Mixer, you can use the processed version of the LFO to control one AMS destination, and the original version to control another.

Finally, you can cascade the two AMS Mixers together, by using AMS Mixer 1 as an input to AMS Mixer 2.

6–1a: AMS Mixer 1

Mixer Type **[A+B, Amt AxB, Offset, Smoothing, Shape, Quantize, Gate Control]**

This controls the type of processing performed by AMS Mixer 1. Each of the Mixer Types is discussed in detail over the next several pages.

A+B adds two AMS sources together. For more information, please see "A+B" on page 70.

Amt Ax B scales the amount of one AMS source with the other. For more information, please see "Amt AxB" on page 71.

Offset adds or subtracts a constant value to or from an AMS source. For more information, please see "Offset" on page 71.

Smoothing specifies the smoothness of movement between two values. You can use this to smooth sudden changes such as an abrupt movement of the KYBD-61/73/88's joystick or sharp angle of the LFO. For more information, please see "Smoothing" on page 72.

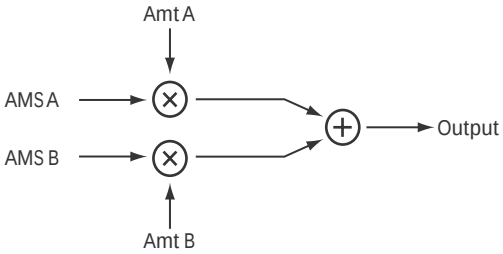
Shape adds curvature to the AMS input. For more information, please see "Shape" on page 72.

Quantize turns smooth transitions into discrete steps. For more information, please see "Quantize" on page 73.

Gate Control uses a third AMS source to switch between two AMS inputs (or a fixed value). For more information, please see "Gate Control" on page 73.

A+B

AMS Mixer, Type = A+B

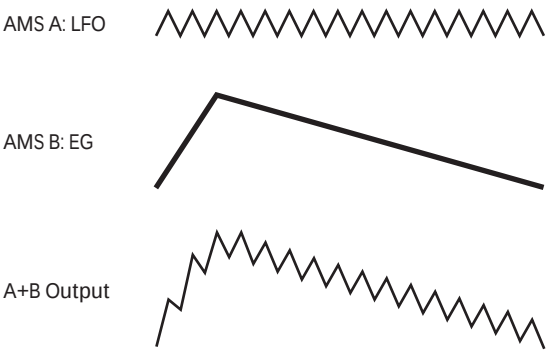


A+B merges two AMS sources into one. This can be handy when you need to add one more modulation source to a parameter, but you've already used up all of the available AMS slots.

For instance, let's say that you're using an LFO to modulate **Filter Resonance**, and then you decide that it would be interesting to scale that parameter with an EG as well. Resonance has only a single AMS input, but you can easily merge the LFO and the EG together using the A+B AMS Mixer:

1. **Assign the LFO to AMS A.**
2. **Assign the EG to AMS B.**
3. **Assign the AMS Mixer as the Filter Resonance AMS source.**

AMS Mixer A+B example



AMS A **[List of AMS Sources]**

This selects the first AMS input.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS A Amount **[–99...+99]**

This controls the depth and direction of the AMS A input.

AMS B **[List of AMS Sources]**

This selects the second AMS input.

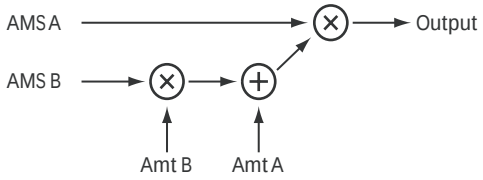
For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

AMS B Amount [–99...+99]

This controls the depth and direction of the AMS B input.

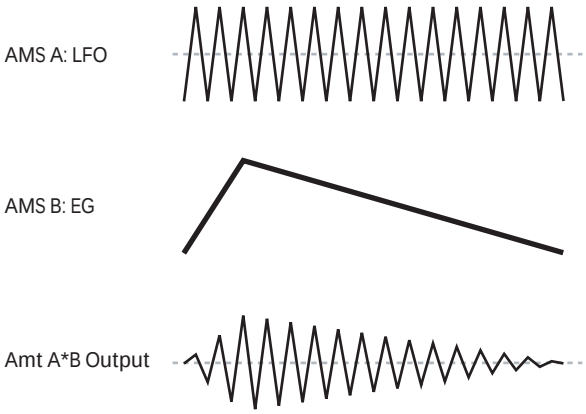
Amt AxB

AMS Mixer, Type =Amt A x B



This Mixer Type uses AMS B to scale the amount of AMS A. For instance, you can control the amount LFO1 with the Filter EG, or control the amount of the Pitch EG with the ribbon.

AMS Mixer Amt AxB example



AMS A [List of AMS Sources]

This selects the first AMS source, which can then be scaled by AMS B.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

AMS A Amount [–99...+99]

This controls the initial amount of AMS A, before modulation from AMS B. Input from AMS B then adds to this initial amount.

Even if Amount A is set to 0, AMS B can still control the final amount of AMS A over the full + / –99 range.

AMS B [List of AMS Sources]

This selects the second AMS source, to scale the amount of AMS A.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

AMS B Amount [–99...+99]

This controls the depth and direction of the AMS B modulation of AMS A.

For example, if **AMS A** is set to LFO1 and **AMS B** is set to the Filter EG, **positive** settings mean that the EG will increase the amount of LFO1.

Tip: use SW 1/2 to turn an AMS source on and off

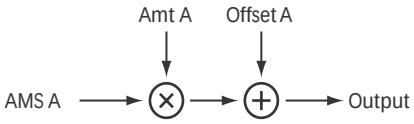
You can use Amt AxB to “gate” an AMS source:

1. **Set AMS A to the desired source, and set AMS A Amount to 0.**
2. **Set AMS B to SW1 or 2, and AMS B Amount to +99.**

Now, SW1 or 2 will turn AMS A on and off.

Offset

AMS Mixer, Type = Offset



This simple processor adds a constant offset to the input, and also allows you to double the gain of an AMS source.

For instance, you can use this to convert a bipolar LFO (both negative and positive) to a unipolar LFO (positive only). To do this:

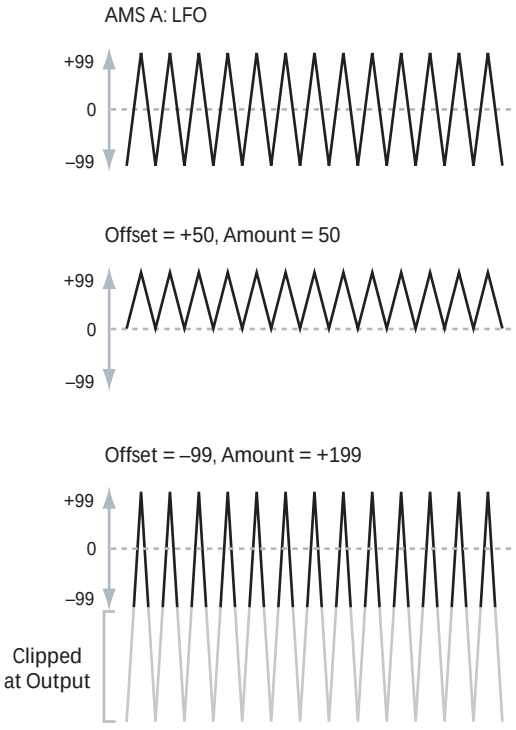
1. **Select the LFO as the AMS A input.**
2. **Set the AMS A Amount to 50.**

This cuts the overall level of the LFO in half, so that instead of swinging between –99 and +99, it only swings between –50 and +50.

3. **Set the AMS A Offset to 50.**

This adds 50 to the LFO level, so that it now swings between 0 and +99, as shown below.

AMS Mixer Offset examples



AMS A [List of AMS Sources]

This selects the AMS source to be offset.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

AMS A Amount [–199...+199]

This controls the basic level of AMS A.

+199 doubles the original signal level, while –199 doubles the level and inverts the phase. The values are clipped only at the output; internally, they can be greater than the normal range of –99 to +99.

AMS A Offset [–199...+199]

This controls the amount of offset for AMS A.

Setting Offset to +199 shifts an AMS input of –99 all the way to +99. In conjunction with high **AMS A Amount** values, this can be useful for creating clipped shapes, such as shown in the last of the "AMS Mixer Offset examples," above.

Smoothing

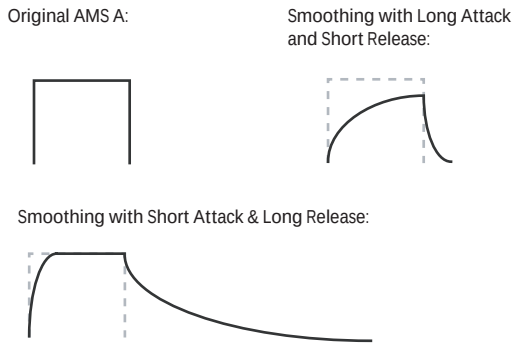
This Mixer Type smooths out the AMS input, creating more gentle transitions between values. You have separate control of the amount of smoothing during the attack (when the signal is increasing) and decay (when it's decreasing).

The higher the Attack and Decay settings, the more that the input will be smoothed.

Low settings provide subtle controller smoothing, creating more gradual aftertouch, for instance. Higher settings create auto-fade effects, transforming a quick gesture into a longer fade-in and / or fade-out event.

Smoothing can also be used to alter the shape of programmable mod sources, such as LFOs and EGs. For instance, you can turn a "blip" into a simple envelope shape, as shown below.

AMS Mixer Smoothing examples



AMS A [List of AMS Sources]

This selects the AMS source to be smoothed.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

AMS A Attack [00...+99]

This controls the attack time of the smoother, or how long it takes the smoother to reach a new, higher value.

Higher Attack settings mean longer times.

Depending on how quickly the AMS input value is changing, high Attack settings may mean that the value is never quite reached, as shown in "AMS Mixer Shape examples," above.

AMS A Decay [00...+99]

This controls the decay time of the smoother, or how long it takes the smoother to reach a new, lower value.

Higher Decay settings mean longer times.

Shape

This Mixer Type adds curvature to the AMS input. This applies deformation to the AMS input. You can use this to customize a controller curve, such as the exponential curve of the KYBD-61 / 73 / 88's joystick or the logarithmic curve of velocity control. It can also alter the shape of programmable modulation sources, such as EGs and LFOs.

Note: Shape only affects AMS signals which already have some amount of slope, such as EGs, triangle and sine LFOs, and so on. It does not affect signals which only contain abrupt transitions, such as square waves.

AMS A [List of AMS Sources]

This selects the AMS input source to be shaped.

For a list of AMS sources, please see "AMS (Alternate Modulation Source) List" on page 588.

Shape [–99...+99]

This controls the amount of curvature, and whether the curves are concave or convex. As you can see in the graphic examples, the shape will tend to emphasize certain value ranges, and de-emphasize others.

For example, let's say that you are using a triangle LFO, through **Shape**, to modulate filter cutoff. If Shape emphasizes the high value range, the filter will spend more time at the higher frequencies. If it emphasizes the low range, the filter will spend more time at the lower frequencies.

Mode [Symmetric, Asymmetric]

This selects whether Shape will produce one or two curves. The graphic "AMS Mixer Shape examples" may help to visualize how this works.

Asymmetric will produce a single curve, extending from –99 to +99.

Symmetric will produce two matching curves extending outwards from 0 to –99 and +99, respectively.

Bipolar and Unipolar AMS sources

To understand Shape, it helps to understand the difference between **bipolar** and **unipolar** AMS sources.

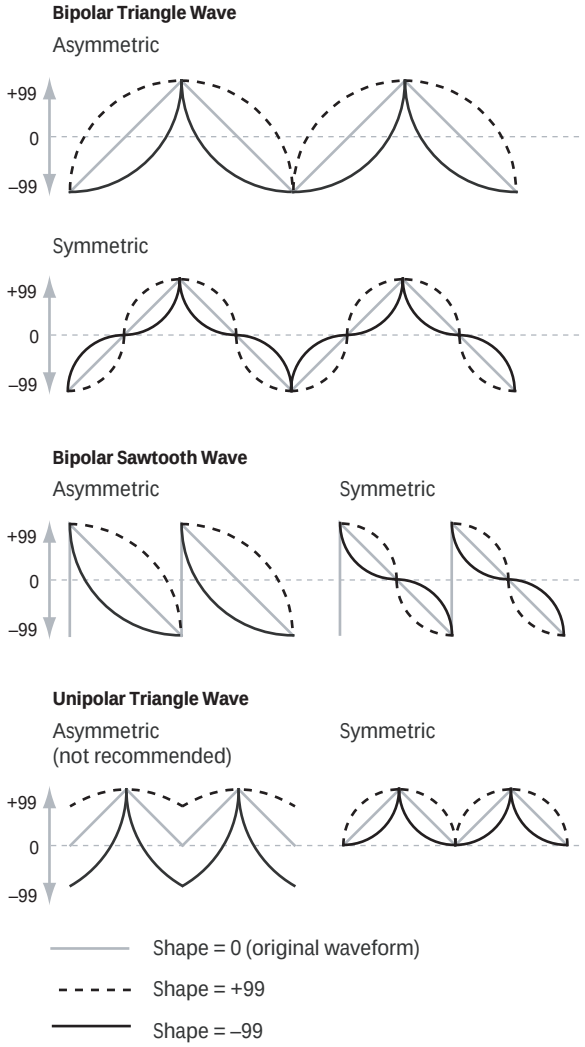
Bipolar sources can swing all the way from –99 to +99, with 0 in the middle. Most LFOs are bipolar, for instance; so is Pitch Bend.

Generally, bipolar AMS sources will work better with the **Asymmetric** mode, but **Symmetric** may also produce interesting results.

Unipolar sources only go from 0 to 99, with 50 in the middle. MIDI controllers, such as JS+Y (CC#1), are all unipolar. In practice, EGs are usually programmed to be unipolar, even though the Filter and Pitch EGs do allow both positive and negative levels.

With unipolar sources, it's almost always better to use the **Symmetric** mode. The **Asymmetric** mode can cause offsets and other strange results.

AMS Mixer Shape examples

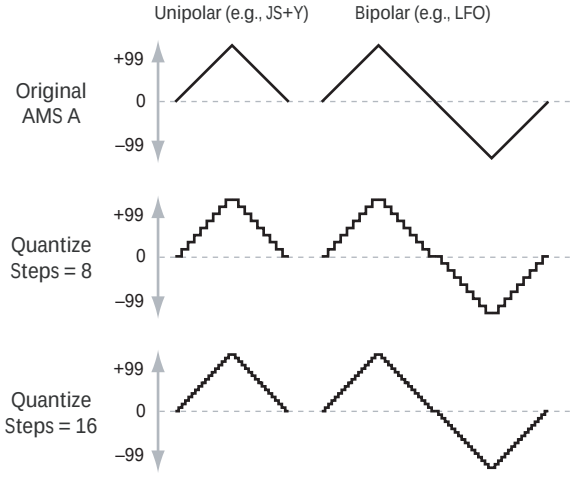


Quantize

This Mixer Type changes the input from a continuous signal into a series of discrete steps. Instead of moving smoothly between values, it will snap immediately from one value to another.

You can use this to change the shape of LFOs or EGs, or to force a controller to land on a few specific values.

AMS Mixer Quantize examples



AMS A [List of AMS Sources]

This selects the AMS input source to be quantized.

For a list of AMS sources, please see “AMS (Alternate Modulation Source) List” on page 588.

Number Of Steps [2...32]

This controls the severity of the effect. The lower the number of steps, the more “steppy” the output will be.

For instance, when this is set to 2, there will be “steps” at 0, 50, and 99. With a bipolar AMS input, there will also be steps at –50 and –99.

As another example, when it is set to 5, there will be steps at 0, 20, 40, 60, 80, and 99 (as well as –20, –40, –60, –80, and –99 for bipolar inputs).

Tip: Quantized Ribbon Pitch Bend

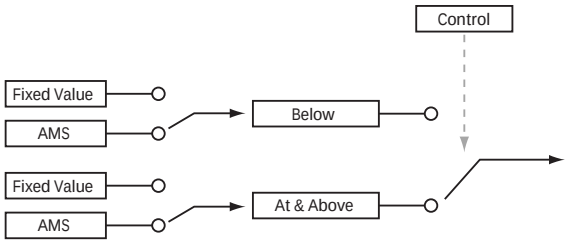
You can use the KYBD-61/73/88’s ribbon controller to create quantized pitch bends that simulate sliding across the frets of a guitar, or jump-bend sounds caused by differences in the length of the tube of a trumpet. To do so:

1. **Select the AMS Mixer as the Oscillator Pitch AMS input.**
2. **Set the Pitch AMS Intensity to any exact half-step value, such as +5.00, +7.00, etc.**
3. **Set the Ribbon amount to 0.00.**
4. **In the AMS Mixer, select the Ribbon as AMS A.**
5. **Set the Number Of Steps to the same number you used in Step 2.**

Now, playing the Ribbon will create quantized pitch bends. JSX will still produce smooth pitch bends, as usual, so you can use both techniques together.

Gate Control

AMS Mixer, Type = Gate Control



This Mixer Type lets you set up two different AMS sources (or fixed AMS amounts), and then switch between the two using a third AMS source.

It’s similar to an audio gate with a side-chain, but with even more flexibility–since you get to choose what happens when the gate is closed (below the threshold), as well as when it’s open (above the threshold).

You can also choose whether the gate will be able to open and close continuously in response to the control source, or whether it only opens or closes at the beginning of the note, and then stays that way over the note’s entire duration.

You can use the Gate to:

- Use a foot-switch (or other controller) to apply pitch-bend or other effects to some notes, but not to others
- The parameter will be applied when the controller reaches a specific threshold. For example, the velocity value could control the filter resonance only if the velocity value exceeds 90.
- Use the KYBD-61/73/88’s joystick, switches, or controllers to change between two separate LFOs (or other AMS sources).

Gate Control:

Source **[List of AMS Sources]**

This selects the AMS source to control the gate.

Control At Note-On Only **[Off, On]**

When this is enabled (checked), the value of the **Control Source** at note-on will select the output (**Below Threshold** or **At & Above Threshold**). The selected output will then remain active throughout the duration of the note, regardless of any subsequent change in the **Control Source's** value.

Note that the output value itself can continue to change; only the selection of **Below** or **At & Above** is fixed.

Threshold **[–99...+99]**

This sets the value of the **Control Source** at which the gate opens or closes.

Gate Output:

If the value of the **Control Source** is less than the **Threshold**, the Gate outputs the preset value or AMS source selected under **Below Threshold**.

If the value of the **Control Source** is greater than or equal to the **Threshold**, the Gate outputs the preset value or AMS source selected under **At & Above Threshold**.

Below Threshold **[Fixed Value, AMS A]**

This selects whether **Below Threshold** uses a preset value, or the selected AMS source.

Fixed Value **[–99...+99]**

This lets you set a specific value to be used when the **Control Source** is less than the **Threshold**. This only applies when **Below Threshold** is set to **Fixed Value**.

AMS A **[List of AMS Sources]**

This lets you set an AMS source to pass through the Gate when the **Control Source** is less than the **Threshold**. This only applies when **Below Threshold** is set to **AMS A**.

At & Above Thresh (At & Above Threshold) **[Fixed Value, AMS B]**

This selects whether **At & Above Threshold** uses a preset value, or the selected AMS source.

Fixed Value **[–99...+99]**

This lets you set a specific value to be used when the **Control Source** is greater than or equal to the **Threshold**. This only applies when **At & Above Threshold** is set to **Fixed Value**.

AMS B **[List of AMS Sources]**

This lets you set an AMS source to pass through the Gate when the **Control Source** is greater than or equal to the **Threshold**. This only applies when **At & Above Threshold** is set to **AMS B**.

Tips on using the Gate

Selective pitch-bend, using a switch

You can use **Control At Note-On Only** to apply an effect to some notes, but not others, based on the state of an AMS source at the start of the note. For instance:

1. **Set the Control Source to Foot SW: CC#82**
2. **Set Control At Note-On Only to On (checked).**
3. **Set the Threshold to 50.**
4. **Set Below Threshold to a Fixed Value of +00.**
5. **Set At & Above Threshold to AMS B: Ribbon: CC#16.**
6. **On the OSC Pitch page, assign the AMS Mixer to control the pitch.**
7. **Also on OSC Pitch, set the standard Ribbon amount to 0.**

This way, only the AMS Mixer's processed version of the Ribbon will affect the pitch.

8. **With the foot-switch off, play a chord, and hold it through step 9.**
9. **Press down on and hold the footswitch, and then play a new note above the chord.**
10. **Use the ribbon to bend the pitch of the new note.**

The new note will bend, but the original chord (played before you pressed on the foot-switch) will not.

Selective pitch-bend, using only the joystick

You can also use a single AMS source as both the Control Source and a value source:

1. **Set the Control Source to JS X.**
2. **Set Control At Note-On Only to On (checked).**
3. **Set the Threshold to 00.**
4. **Set Below Threshold to AMS A: JS X.**
5. **Set At & Above Threshold to a Fixed Value of 00.**
6. **On the OSC Pitch page, assign the AMS Mixer to control the pitch.**
7. **Also on OSC Pitch, set the standard JS+X and JS–X amounts to 0.**

This way, only the AMS Mixer's processed version of the joystick will affect the pitch.

8. **With the joystick in the center, play a chord, and hold it through step 9.**
9. **Bend the joystick to the left, and then play a new note above the chord.**
10. **Use the joystick to bend the pitch of the new note.**

The new note will bend, but the original chord (played before you bent the joystick down) will not. This method is particularly good for bending the top note of a chord up to pitch.

Generating a static value

Sometimes, it can be handy to have a preset value as an AMS source. The Gate is one way to create this. To do so:

1. **Set both Below Threshold and At & Above Threshold to Fixed Value, and enter the same value into each.**

Now, the AMS mixer will always generate this static value.

▼6–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see "Program: Menu Command" on page 106.

6–2: OSC1 AMS Mix2 AMSource

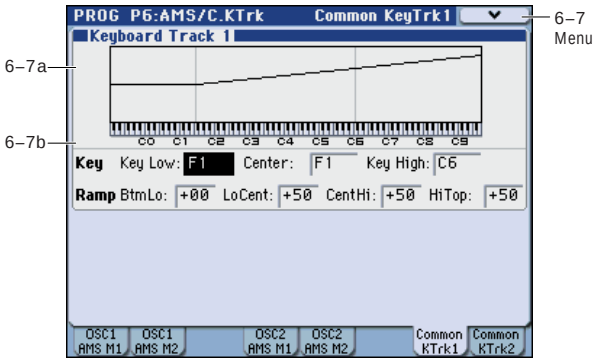
This is the second AMS Mixer for Oscillator 1. The parameters are exactly the same as those for AMS Mixer 1, as described under "6–1a: AMS Mixer 1" on page 70.

6–4: OSC 2 AMS Mix1 AMSource , 6–5: OSC 2 AMS Mix2 AMSource

This page controls the two AMS Mixers for Oscillator 2. These are available only when the **Oscillator Mode** is set to **Double**; if not, the page will be grayed out.

The parameters are identical to those for Oscillator 1, as described under “6–1: OSC1 AMS Mix1,” on page 70.

6–7: Common KeyTrk 1 (Common Keyboard Track 1)



The two Oscillators share two Common keyboard tracking generators, in addition to each Oscillator’s dedicated keyboard tracking for the Filter and Amp. You can use these Common keytracks as AMS sources for modulating most AMS destinations.

The Common Keyboard Track parameters are shared by the entire Program, but the actual AMS values are calculated individually for each voice.

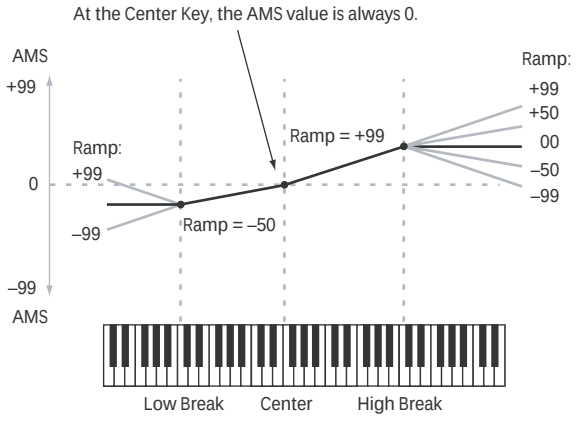
What does Keyboard Tracking do?

At its most basic, keyboard tracking lets you vary the modulation amount as you play up and down the keyboard. This can be useful for making the timbre consistent across the entire range, or adjusting parameters according to pitch.

The M3 keyboard tracking can be fairly complex, if desired. You can create different rates of change over up to four different parts of the keyboard. For instance, you can:

- Make the modulation increase very quickly over the middle of the keyboard, and then increase more slowly–or not at all–in the higher octaves.
- Make the modulation increase as you play lower on the keyboard.
- Create abrupt changes at certain keys, for split-like effects.

Common Keyboard Tracking



How it works: Keys and Ramps

The keyboard tracking works by creating four ramps, or slopes, between five keys on the keyboard. The bottom and top keys are fixed at the bottom and top of the MIDI range, respectively. You can set the other three keys–named **Low Break**, **Center**, and **High Break**–to be anywhere in between.

The four Ramp values control the rate of change between each pair of keys. For instance, if the **Low-Center** Ramp is

set to 0, the value will stay the same between the **Low Break** key and the **Center** key.

The Key value will be the break point, and Ramp specifies the slope of the lower region and higher region on the keyboard.

If Key is **Center**, keyboard tracking will have no effect.

6–7a: Keyboard Track 1 AMSource

Key

Low Break [C–1...G9]

This specifies the note that will be the break point connecting the two sloped lines in the low region.

Center [C–1...G9]

This specifies the note that will be the break point in the center of keyboard tracking. At this **key**, the keyboard tracking has no effect on the AMS destinations.

High Break [C–1...G9]

This specifies the note that will be the break point connecting the two sloped lines in the high region.

Entering notes from the keyboard

You can enter note numbers directly by playing them on the keyboard. To do so:

1. **Select one of the Key parameters.**
2. **Hold down the ENTER switch.**
3. **While holding ENTER, play a note on the keyboard.**

Ramp

Positive ramp values mean that the keyboard tracking output increases as you play farther from the **Center** Key; negative ramp values mean that it decreases.

Because of this, the meanings of positive and negative **Ramp** settings will change depending on whether the ramp is to the left or right of the **Center** Key.

Bottom-Low and Low-Center: negative ramps make the keyboard tracking's output go down as you play lower on the keyboard, and positive ramps make the output go higher.

Center-High and High-Top: negative ramps make the keyboard tracking's output go down as you play higher on the keyboard, and positive ramps make the output go up.

Bottom-Low [–Inf, –99...+99, +Inf]

This sets the slope between the bottom of the MIDI note range and the **Low Break** key. For normal key track, use negative values.

Low-Center [–Inf, –99...+99, +Inf]

This sets the slope between the **Low Break** and **Center** keys. For normal key track, use negative values.

Center-High [–Inf, –99...+99, +Inf]

This sets the slope between the **Center** and **High Break** keys. For normal key track, use positive values.

High-Top [–Inf, –99...+99, +Inf]

This sets the slope between the **High Break** key and the top of the MIDI note range. For normal key track, use positive values.

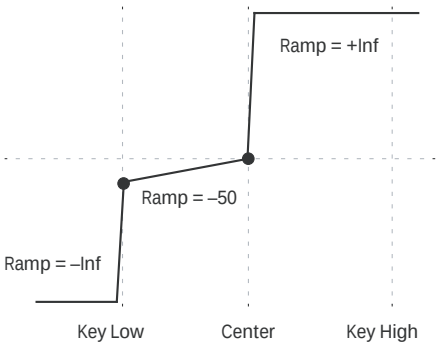
The table below shows how the **Ramps** affect the AMS output:

Ramp value	AMS change
–Inf	goes to –99 in 1 half-step
–99	–20 per octave
–50	–10 per octave
0	no change
+50	+10 per octave
+99	+20 per octave
+Inf	goes to +99 in 1 half-step

+Inf and –Inf ramps

+Inf and –Inf are special settings which create abrupt changes for split-like effects. When a ramp is set to +Inf or –Inf, the keyboard tracking will go to its extreme highest or lowest value over the span of a single key.

+Inf and –Inf Ramps



Note: If you set the **Center-High** ramp to +Inf or –Inf, the **High-Top** parameter will be grayed out. Similarly, if you set the **Low-Center** ramp to +Inf or –Inf, the **Bottom-Low** ramp will be grayed out.

6–7b: Keyboard Track 2 AMSource

This is the second Common keyboard tracking generator.

Its parameters are exactly the same as those for Keyboard Track 1, as described under "6–7a: Keyboard Track 1" on page 76.

▼6–7: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Oscillator** ☞p.111
- 4: **Swap Oscillator** ☞p.111

For more information, please see "Program: Menu Command" on page 106.

6–8: Common KeyTrk 2 (Common Keyboard Track 2)

Here you can make settings for the second common keyboard track.

For more information, please see "6–7: Common KeyTrk 1 (Common Keyboard Track 1)" on page 75.

PROG P7: KARMA

These pages let you control the Program's KARMA settings. In Program mode, you can use one KARMA Module (Module [A]).

Turning KARMA on and off

KARMA can be enabled or disabled for the current Program by using the front-panel KARMA ON / OFF switch. You can also temporarily disable KARMA for all Programs, Combinations, and Songs by using the Global **All KARMA Off** parameter. For more information, please see "All KARMA / DT Off" on page 357.

Linking KARMA settings to Program changes

KARMA settings can be saved individually for each Program. This includes all of the KARMA-related front-panel buttons, sliders, as well as the on-screen parameters.

Normally, when you select a new Program, its KARMA settings will be loaded as well. In some cases, however, you may wish to try out different Programs while keeping the KARMA settings the same.

The Global Basic page **Load KARMA when changing** parameters let you select between these two behaviors. There are separate settings for Programs, Combinations, and Songs. To set this up:

1. **Go to the P0: Global Setup– Basic page.**
2. **Under "Load KARMA when changing", set the "Programs" check-box as desired.**

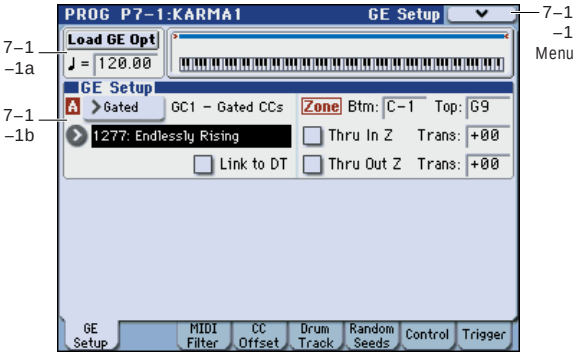
Check the box to load the individual Programs' KARMA settings.

Un-check the box to keep KARMA settings the same, even when changing Programs.

For more information, please see the Global parameter "Load KARMA when changing:" on page 357.

PROG P7–1: KARMA 1

7–1–1: GE Setup



This page lets you select the GE used by the KARMA Module, and set up the Key Zone in which it operates.

7–1–1a: Load GE Options, KARMA T.Sig, Tempo

Load GE Options

For more information, please see "Load GE Options" on page 4.

♩(Tempo) [040.00...300.00, EXT]

This specifies the tempo when the KARMA function is operating.

For more information, please see "♩(Tempo)" on page 3.

7–1–1b: GE Setup

A:

GE Category Select [Arpeggio...Real-Time]

For more information, please see "GE Category Select" on page 5.

GE Select [0000: Arp Model 01 Up/Dn...2092: Tempo Env Repeats]

For more information, please see "GE Select" on page 5.

RTC Model

For more information, please see "RTC Model" on page 5.

Link to DT (Link to Drum Track) [Off, On]

For more information, please see "Link to Drum Trk" on page 6.

Zone:

The KARMA Module is controlled by input note data in numerous ways, including the variation of phrase or pattern produced by the GE, by trigger, and by chord detection.

Here you can specify the range of note data (Key Zone) that will control the KARMA Module.

Note: Within the Key Zone specified Bottom and Top Values will be input into the KARMA function, while notes outside the Key Zone may be used for other functions, or echoed thru.

Note: In Program mode, all MIDI data for the KARMA Module is transmitted and received on the Global **MIDI channel** (Global 1–1a).

Btm (Key Zone Bottom) [C–1...G9]

Specifies the bottom key (lower limit) of the Key Zone.

Top (Key Zone Top) [C–1...G9]

Specifies the top key (upper limit) of the Key Zone.

Note: These parameters can also be set by holding down the ENTER switch and pressing a note.

Thru In Z (Thru In Zone) [Off, On]

On (checked): Note data from keys within the Key Zone will be input to the KARMA Module, and will also be input directly to the tone generator.

When you play a key within the Key Zone, the phrase or pattern generated by the KARMA Module will sound, as will the note itself.

Off (unchecked): Only the phrase or pattern generated by KARMA will sound. Keys played within the Key Zone will not sound.

Trans (Transpose In Zone) [–36...+36]

Specifies the transpose setting applied to note data from within the Key Zone.

Make this setting if you wish to apply a transposition in semitone steps to the pitch of notes played from the keyboard when **Thru In Z** is **On (checked)**.

Thru Out Z (Thru Out Zone) [Off, On]

On (checked): Note data from keys outside the Key Zone will be input directly to the tone generator. (They will not be input to the KARMA Module, since they are outside the key zone.) When you play keys outside the key zone, the tone generator will sound.

Off (unchecked): The tone generator will not sound even if you play keys outside the Key Zone.

Trans (Transpose Out Zone) [–36...+36]

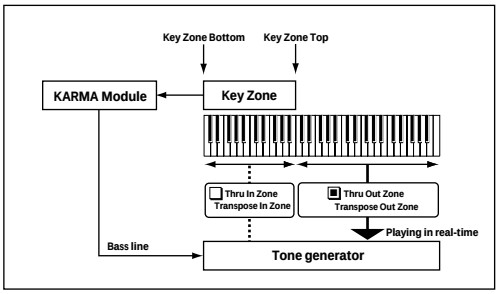
Specifies the transpose setting applied to note data from keys outside the Key Zone.

Make this setting if you wish to apply a transposition in semitone steps to the pitch of notes played conventionally from the keyboard when **Thru Out Z** is **On (checked)**.

You could select a bass program and make the settings shown below.

Example

Using the KARMA Module to control the bass line in the lower range of the keyboard, and playing in real-time in the upper range.



Module Zone Display:

A solid blue line indicates the specified Key Zone.

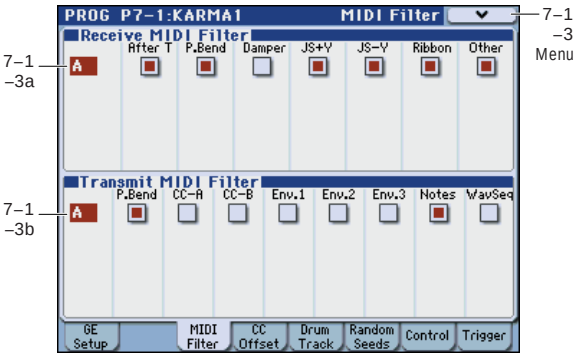
Notes and messages from the MIDI IN connector within this zone will be input to the KARMA Module.

▼7–1–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

7–1–3: MIDI Filter



Here you can make MIDI filter settings for the KARMA function.

7–1–3a: Receive MIDI Filter

A (Module A):

This specifies whether filters will be applied to the MIDI control data received by the KARMA Module before it is passed on (echoed) to the tone generator.

On (checked): The corresponding MIDI data will be echoed to the tone generator.

Off (unchecked): The corresponding MIDI data will not be echoed to the tone generator.

When the KARMA function is **on**, the MIDI control data received by the KARMA Module will be transmitted to the tone generator without change. Depending on these settings, you can (for example) make settings so that the damper pedal is enabled when the KARMA Module is **off**, and disabled when it is **on**. (See the diagram below, "KARMA Receive / Transmit MIDI Filter.")

These settings do not affect the Dynamic MIDI (Prog 7–2–3) settings. If you have specified MIDI control data as the Dynamic MIDI source, it will be valid regardless of these settings.

After T (After Touch) [Off, On]

On (checked): Specifies whether MIDI aftertouch messages will be echoed to the tone generator.

P.Bend (Pitch Bend) [Off, On]

On (checked): Specifies whether MIDI pitch bend messages will be echoed to the tone generator.

Damper (CC#64) [Off, On]

On (checked): Specifies whether MIDI control change message #64 Sustain (damper pedal) will be echoed to the tone generator.

JS+Y (CC#01) [Off, On]

On (checked): Specifies whether MIDI control change message #1 (the KYBD-61 / 73 / 88's joystick +Y axis, specified as the assignment of a real-time control slider, or X–Y CC control) will be echoed to the tone generator.

JS-Y (CC#02) [Off, On]

On (checked): Specifies whether MIDI control change message #2 (the KYBD-61 / 73 / 88's joystick –Y axis, specified as the assignment of a real-time control slider, or X–Y CC control) will be echoed to the tone generator.

Ribbon (CC#16) [Off, On]

On (checked): Specifies whether MIDI control change message #16 (the KYBD-61 / 73 / 88's ribbon controller, specified as the assignment of a real-time control slider, or X–Y CC Control) will be echoed to the tone generator.

Other (CC) [Off, On]

On (checked): Specifies whether MIDI control change messages other than the above will be echoed to the tone generator.

7–1–3b: Transmit MIDI Filter

A (Module A):

This specifies whether MIDI control data generated by the GE of the KARMA module will be sent to the tone generator. (**See the diagram on the preceding page, "KARMA Receive/Transmit Filter."**)

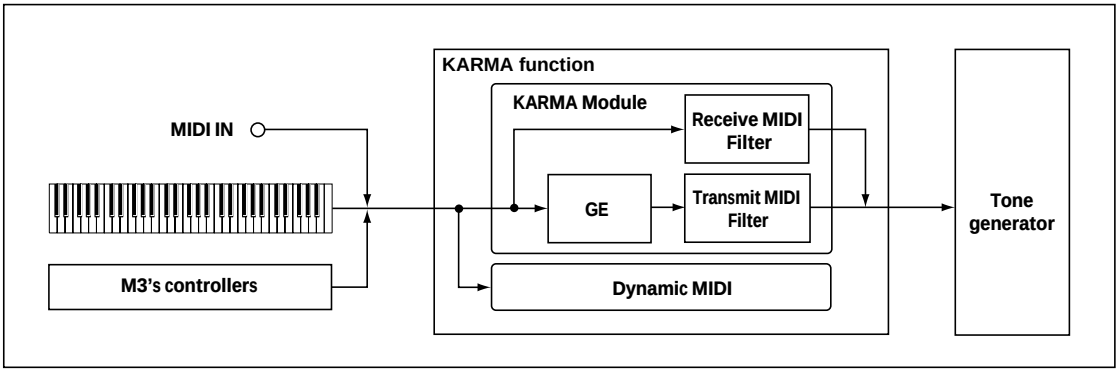
On (checked): The corresponding MIDI data will be transmitted from the KARMA Module.

Off (unchecked): The corresponding MIDI data will not be transmitted from the KARMA Module.

Note: The GE can also automatically produce pitch bend and various types of control change messages in addition to note data. Three envelope generators can also be used to apply time-variant change to velocity, tempo, duration, and various control changes such as pitch bend, JS +Y (CC#1) etc.

The data that is output will depend on the settings of the parameters for the selected GE. For example, transmitting / filtering pitch bend will produce no result if the GE has not been designed to produce pitch bend data. For more information, please see the "Voice Name List" (PDF).

KARMA Receive/Transmit MIDI Filter



P.Bend (Pitch Bend) [Off, On]

On (checked): Specifies whether to transmit the MIDI pitch bend messages generated by the GE selected for the KARMA Module. (See “Bend Group” on page 569)

Note: This setting also applies to the pitch bend messages that may be produced by **CC–A**, **CC–B**, **Env. 1**, **Env. 2**, and **Env. 3**.

When the KARMA function is on and the KARMA Module is producing pitch bend data, the pitch bend range of the program will be controlled as follows.

The pitch bend range specified within KARMA GE will automatically be transmitted from the KARMA Module, and set within the program. This ensures that the pitch bend data produced by the GE of the KARMA will function correctly. At this time, the pitch bend data produced when you operate the KYBD-61 / 73 / 88’s joystick will automatically be optimized so that it will produce the same bend effect as if the KARMA were off (in most cases).

CC–A, CC–B [Off, On]

On (checked): Specifies whether to transmit the various MIDI messages generated by CC–A / CC–B of the GE selected by the KARMA Module.

However if CC–A / CC–B are producing pitch bend messages, these settings will be ignored, and the **Pitch Bend** setting will be used.

Env.1, Env.2, Env.3 (Envelope1, 2, 3) [Off, On]

On (checked): Specifies whether to transmit the various MIDI messages or other functions generated by Env. 1, Env. 2, and Env. 3 of the GE selected by the KARMA Module. (See “Envelope Group” on page 560)

If Env.1, Env.2, or Env.3 are producing pitch bend messages, these settings will be ignored, and the **Pitch Bend** setting will be used.

Notes (GE Notes) [Off, On]

On (checked): Specifies whether the MIDI note-on / note-off messages generated by the KARMA Module will be transmitted.

Note: This setting lets you mute the note phrases generated by the KARMA Module, and use only the control data generated from the KARMA Module (e.g., pan, filter cutoff, resonance) to apply modulation to phrases or chords you yourself play on the keyboard.

WavSeq [Off, On]

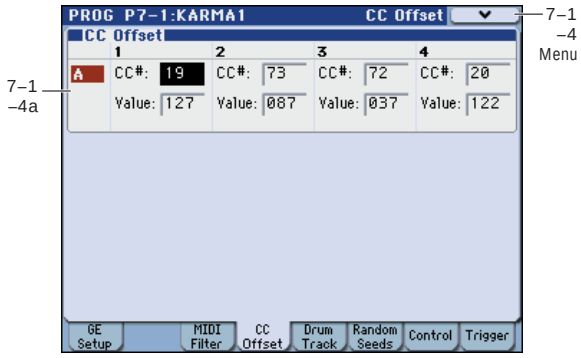
On (checked): Specifies whether the wave sequence data (multisample number) generated by the KARMA Module will be transmitted.

▼7–1–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

7–1–4: CC Offset



In this page you can make CC Offset settings for the KARMA function. You can specify the following items.

- The MIDI control change messages transmitted when you turn on the KARMA function (CC Offset parameter).

When the KARMA function is **turned on**, MIDI control change messages can be transmitted to the tone generator. Make these settings when you wish to control the program sound or effects etc. when the KARMA function is **turned on**.

You can assign up to four MIDI control changes for each KARMA Module.

7–1–4a: CC Offset

A:

1, 2, 3, 4:

CC# (Number) [Off, 00...95]

Selects the MIDI control change message that will be transmitted.

The value of the transmitted message is specified by **Value**.

If the KARMA ON / OFF switch is **on**, the specified MIDI control change message will be transmitted when you select a program whose KARMA ON / OFF switch is turned **on**. If the selected GE produces the control change specified here, the effect of the control change produced by the GE will be given priority.

Note: The MIDI control change messages specified here for transmission and the MIDI control change messages produced by the selected GE when the KARMA ON / OFF switch is **On** will be reset automatically when the KARMA ON / OFF switch is turned **Off**.

Value [000...127]

Specifies the value of the message that will be transmitted.

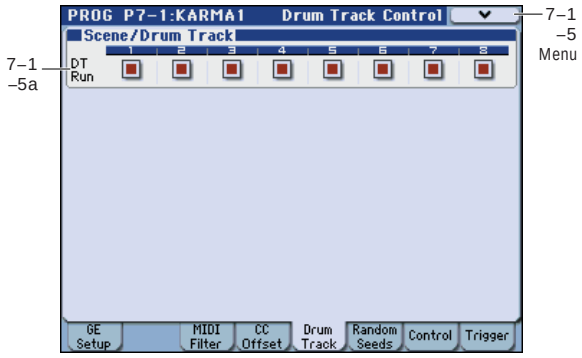
This will have no effect if **CC#** is **Off**.

▼7–1–4: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

7–1–5: DrumTrack Control



7–1–5a: Scene/Drum Track

DT Run (Drum Track Run) 1...8 [Off, On]

Here you can turn drum track muting on / off for each Master scene.

If you turn DRUM TRACK ON / OFF switch on when KARMA is Off, the drum track will operate and produce according to the Trigger **Mode** setting.

If KARMA is **On**, and you select a Master scene in which **DT Run** is **Off**, the drum track will be muted (silent) even it is operating. If you select a Master scene in which **DT Run** is **On**, the drum track will be unmuted (i.e., will produce sound).

On (checked): If DRUM TRACK ON / OFF switch is **On**, the drum track will operate according to the Trigger **Mode** setting, and muting will be off (sound will be produced).

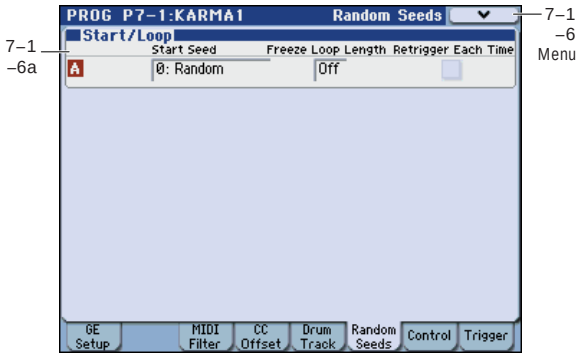
Off (unchecked): For Master scenes in which this is **Off**, the drum track will be muted (silent) even if it is operating.

▼7–1–5: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

7–1–6: Random Seeds



Here you can make randomization settings for the KARMA function.

This lets you capture the endlessly varying phrases generated by randomization.

7–1–6a: Start/Loop

This lets you freeze (capture and reproduce) any desired phrase of the infinite variations generated by Randomize, which is one of the KARMA function's main features.

By using the menu command **Capture Random Seed** with the **Start Seed** and **Freeze Loop Length** parameters, you can loop a randomly changing phrase, or play the same phrase each time you trigger it. This functionality is collectively referred to as **Freeze Randomize**.

Not all GEs have been programmed to utilize the KARMA function's randomize capabilities. If randomize is not used, these Freeze Randomize parameters will have no effect.

A:

Start Seed [–2147483648...0: Random...+2147483647]

Specifies the seed that is used by the KARMA module to generate the random phrase.

Note: "Seed" is the internal data from which the randomization is created. **Start Seed** is used when a trigger occurs.

0: Random: A different phrase will be generated each time the trigger occurs. Within the KARMA module, a different **Start Seed** value is specified randomly each time the trigger occurs.

Any value other than Random: The same phrase will be generated each time the trigger occurs. In contrast to 0: Random, fixing the **Start Seed** value will cause the same phrase to be generated each time the trigger occurs. Different values for the **Start Seed** parameter will produce different phrases, but the same phrase will always be generated if the **Start Seed** value is the same.

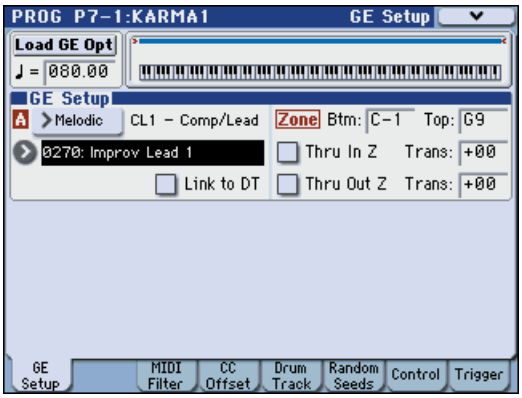
How the Start Seed setting affects the phrase

Let's hear how different **Start Seed** settings will change the phrase.

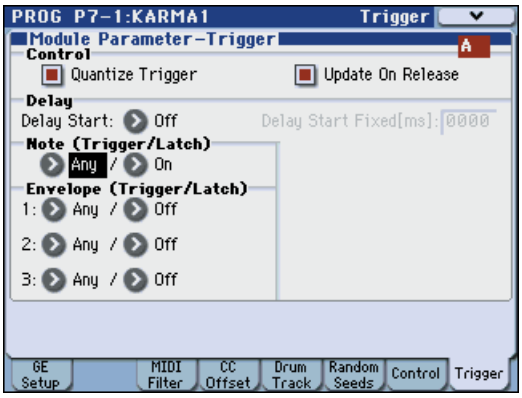
1. **In Program mode, select INT-C103: Vintage SciFi Lead.**

This program plays a phrase using a lead synth sound.

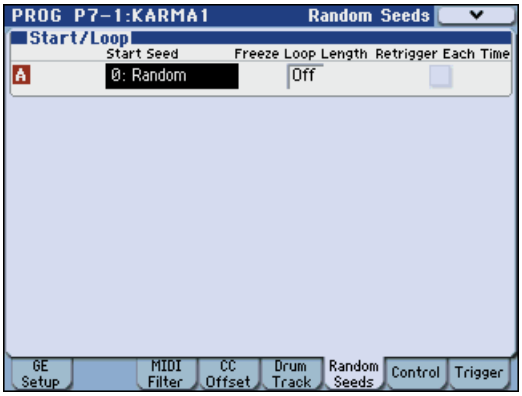
2. **Turn the front panel KARMA ON/OFF switch on.**
3. **In the Prog P7–1: KARMA1– GE Setup page, set "GE Select" to 270: Improv Lead 1.**



4. **In the Prog P7–1: KARMA1– Trigger page, set "Note (Trigger/Latch)" Trigger to Any.**



5. **Turn the front panel KARMA LATCH switch on.**
6. **Go to the Prog P7–1: KARMA1– Random Seeds page, and set the KARMA module's "Start Seed" to 0: Random.**



The KARMA module will generate a lead synth phrase.

7. **Use pad 1 to produce a trigger several times at a fixed interval (one or two seconds). When doing so, pay attention to the phrase that begins immediately after triggering. A different phrase will begin playing each time triggering occurs.**
8. **Set Start Seed to any value other than 0: Random. For this example, we'll set it to +1.**
9. **As you did in step 7, trigger pad 1 several times, and pay attention to the phrase that begins immediately after triggering. The same phrase will begin playing each time triggering occurs.**
10. **Set Start Seed to a value other than +1, and repeat the actions you performed in step 7.**

The phrase will be different than when **Start Seed** was +1, but the same phrase will begin playing each time triggering occurs.

Note: If you set **Start Seed** to 0: Random, and execute **Capture Random Seed** (see page 116) after triggering, the **Start Seed** value that was internally set within the module at the time of triggering will be specified here. While listening to the phrases that change randomly at each trigger, you can execute this when you hear a phrase that you like. In conjunction with the **Freeze Loop Length** and **Retrigger Each Time** settings, you can also loop a phrase that you like. For more information, please see "Checking the Freeze Randomize function, and performing "Capture Random Seed"" on page 116.

Freeze Loop Length [Off, 01...32]

Specifies the number of measures in the phrases that are repeatedly generated by the KARMA module. After being triggered, the module will generate a phrase of the number of measures you specify here, and will then repeat that phrase.

If you set this to **Off**, the phrase will not be repeated.

Examples of Start Seed and Freeze Loop Length settings

Depending on the settings of the GE you're using, the KARMA module will generate a randomly changing phrase or control data each time triggering occurs or the phrase is repeated, with different combinations of **Start Seed** and **Freeze Loop Length** producing different results as described below.

1. Start Seed: 0:Random, Freeze Loop Length: Off

The phrase will change randomly each time triggering occurs. Each time the phrase repeats, it will change randomly.

For example, suppose there is a GE that, if you input C–D–E–F, will randomly vary the order of notes, and repeatedly play four notes in each measure.

When you trigger this GE, it produces notes in a random order of (for example) C–D–E–F, C–C–D–F, F–D–C–E, … When you trigger this GE again, it produces a different random phrase of (for example) E–D–C–C, C–C–D–D, C–D–C–E…

2. Start Seed: any value, Freeze Loop Length: Off

Each time triggering occurs, the same phrase will be generated. Different **Start Seed** values cause different phrases to be generated. The phrase will change randomly each time it repeats, but the same phrase will always be generated each time you retrigger with a given **Start Seed** value. This lets you select any desired one of more than four billion different phrase variations.

For example, suppose there is a GE that, if you input C–D–E–F, will randomly vary the order of notes, and repeatedly play four notes in each measure.

When you trigger this GE, it produces notes in a random order of (for example) C–D–D–C, D–C–E–C, D–E–C–D, … Even if you trigger this GE again, it reproduces the same phrase of C–D–D–C, D–C–E–C, D–E–C–D, … If you change the **Start Seed** value, a different phrase will be generated; for example, E–E–C–D, D–C–C–C, E–E–E–E…

3. Start Seed: 0:Random, Freeze Loop Length: 1…32

The phrase will change randomly each time triggering occurs. However, that phrase will loop (repeat) for the number of measures you specified in **Freeze Loop Length**. The same phrase will continue looping until you trigger the GE again. When you trigger the GE again, a different phrase will loop.

For example, suppose there is a GE that, if you input C–D–E–F, will randomly vary the order of notes, and repeatedly play four notes in each measure.

If you set **Freeze Loop Length** to 1 (measure) and trigger this GE, the same four notes will continue looping as (for example) F–E–D–C, F–E–D–C, F–E–D–C, … When you trigger it again, a different phrase will loop; (for example) D–D–C–C, D–D–C–C, D–D–C–C, … (See "Retrigger Each Time" on page 94)

4. Start Seed: any value, Freeze Loop Length: 1…32

The same phrase will play each time you trigger the GE. That phrase will loop for the number of measures you specified in **Freeze Loop Length**. For example if you select a program or combination and make these settings for a KARMA module that generates random changes each time it is triggered and a phrase is played, the same phrase will loop every time. The phrase that is looped will change if you change the **Start Seed** value and trigger the GE.

For example, suppose there is a GE that, if you input C–D–E–F, will randomly vary the order of notes, and repeatedly play four notes in each measure.

If you set **Freeze Loop Length** to 1 (measure) and trigger this GE, the same four notes will loop (e.g., D–E–E–C, D–E–E–C, D–E–E–C, …). Even if you trigger the GE again, the same phrase (D–E–E–C, D–E–E–C, D–E–E–C, …) will be reproduced. If you change the **Start Seed** value, a different phrase will loop (e.g., C–C–E–E, C–C–E–E, C–C–E–E, …). (See "Retrigger Each Time" on page 94)

Retrigger Each Time [Off, On]

On (checked): Every time the measures specified by **Freeze Loop Length** are repeated, the Phase Pattern, Envelope, and Index Pattern will retrigger as if the keyboard itself etc. was retriggered.

The phrase will be restarted according to the **Note Trigger** setting (see "Note Trigger" on page 93) and GE settings, and the envelope will be retriggered according to the Envelope Trigger / Latch settings. For more information, please see "Envelope Trigger" on page 89, "Envelope Latch" on page 89 and "Checking the Freeze Randomize function, and performing "Capture Random Seed"" on page 116.

Off (unchecked): The Phase Pattern, Envelope, and Index Pattern will be retriggered according to the length of the phase pattern specified by the GE. For example in a GE for which an eight-measure phase pattern is specified, and **Freeze Loop Length** is set to two measures, the randomizations of the rhythm and phrase etc. will be reset every two measures. Then the phrase and envelope will be retriggered every eight measures. For more information, please see "Checking the Freeze Randomize function, and performing "Capture Random Seed"" on page 116.

Note: **Retrigger Each Time** is not available if **Freeze Loop Length** is off.

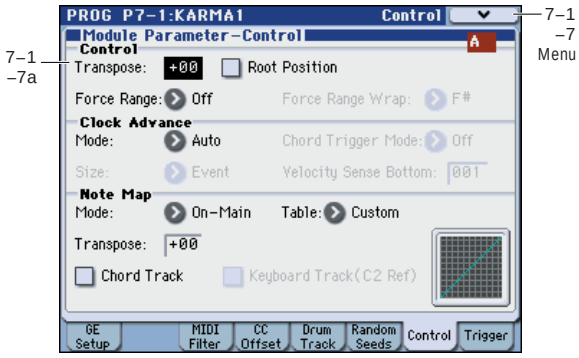
Note: For some GE settings, on and off may produce the same result.

▼7–1–6: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

7–1–7: Control



Here you can set KARMA Module Control parameters. Note that in Program mode, you can use one KARMA Module (Module [A]).

You can make the following settings:

- Specify the transposition, range, and chord inversion for phrases and chords generated by the KARMA module
- Control the clock that operates the KARMA module
- Convert or delete the note data generated by the KARMA module.

7–1–7a: Module Parameter-Control

Control:

Transpose [–36...+36]

Controls the pitch of the phrases or chords produced by the KARMA Module, in semitone steps.

The note data from the keyboard or the MIDI IN connector will be input to the KARMA Module. (Prog 7–1–1b: “Btm (Key Zone Bottom),” “Top (Key Zone Top)”) Here you can transpose the pitch (in semitone steps) of the note data that is input to the KARMA Module.

Force Range [Off, Lowest, Highest, C3-B3[1], C3-B3[2]]

Controls the pitch range of the phrases or chords produced by the KARMA Module, in relationship to the area of the keyboard that is played.

The note data from the keyboard or from the MIDI IN connector will be input to the KARMA module. (**Btm (Key Zone Bottom)**, **Top (Key Zone Top)** (7–1–1b), **Transpose** 7–1–7a). Here you can make settings so that the note data input to the KARMA Module is restricted to a specific range.

Off: The note data from the keyboard or from the MIDI IN connector will be input to the KARMA module without modification.

Lowest: The note data from the keyboard or from the MIDI IN connector will be converted within the octave of the lowest note, and then input to the KARMA module. Useful for eliminating inversions so that a chord voiced in different ways produces identical results.

If you play a chord of **E2**, **E4**, **G#4**, **B4**, and **D#5** (i.e., **E Maj7**) on the keyboard, the input notes will all be transposed to be within an octave of the lowest note (**E2**): **E2**, **G#2**, **B2**, and **D#3**.

Highest: The note data from the keyboard or from the MIDI IN connector will be converted within the octave of the highest note, and then input to the KARMA module. Useful for eliminating inversions so that a chord voiced in different ways produces identical results.

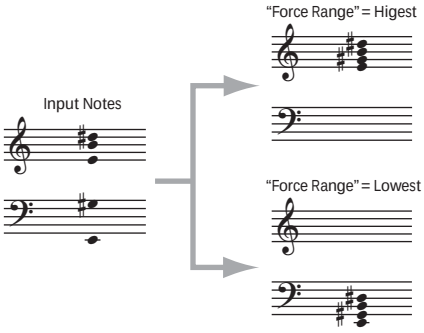
If you play a chord of **E2**, **E4**, **G#4**, **B4**, and **D#5** (i.e., **E Maj7**) on the keyboard, the input notes will all be transposed to be within an octave of the highest note (**D#5**): **E4**, **G#4**, **B4**, and **D#5**.

Played on keyboard:
E2 E4 G#4 B4 D#5 (play an EMaj7 chord)

Resulting transposed input notes:

Lowest: input notes transposed to **E2 G#2 B2 D#3**

Highest: input notes transposed to **E4 G#4 B4 D#5**



C3–B3 [1]: all notes near 4th octave (maintain inversion)

The input notes will be forced to a range near the middle octave (C3–B3). The **Force Range Wrap** parameter will become available (see below), and specifies the scale step at which a wrap around will be performed. For example, if **Force Range Wrap**= 7: G, if the pitch of the lowest note is C to F#, it will be placed in the 4th octave with the other notes grouped above it. If the pitch of the lowest note is a G to B, it will be placed in the 3rd octave, with the other notes grouped above it. Playing the same chord chromatically up the keyboard will “wrap around” when the scale step of the root of the chord is determined to be “G,” dropping the notes down an octave. This essentially maintains the inversion the chord was played with - notes may also extend into the 5th octave or 3rd octave.

This is effective when you wish to produce phrases or patterns having a similar inversion to what was played, but in a fixed range regardless of where you are playing on the keyboard. The behavior is similar to an auto-accompaniment pattern, in that no matter where you play on the keyboard, the result is in the same octave.

C3–B3 [2]: The input notes will be forced to a range within the center octave (C3–B3). Because of this, the chord inversion will change significantly; for example, the bass note may change. This is effective when you want to absolutely limit the input notes to a specific octave.

Played on keyboard:

Play chords in the order of

E4 G#4 B4 D#5 (EMaj7 first inversion)

G#4 B4 D#5 E5 (EMaj7 second inversion)

B4 D#5 E5 G#5 (EMaj7 third inversion)

D#5 E5 G#5 B5 (EMaj7 fourth inversion)

C3–B3 [1]

Resulting transposed input notes:

E3 G#3 B3 D#4 (EMaj7 first inversion)

G#2 B2 D#3 E3 (EMaj7 second inversion)

B2 D#3 E3 G#3 (EMaj7 third inversion)

D#3 E3 G#3 B3 (EMaj7 fourth inversion)

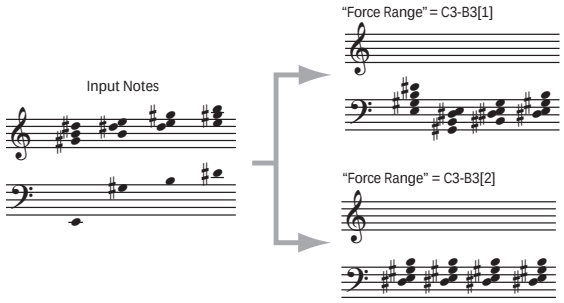
C3–B3 [2]

Resulting transposed input notes:

D#3 E3 G#3 B3 (EMaj7 / D#)

D#3 E3 G#3 B3 (EMaj7 / D#)

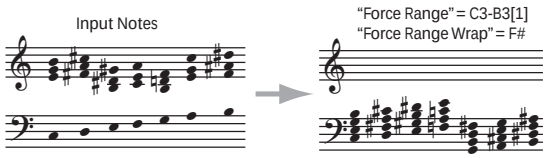
D#3 E3 G#3 B3 (EMaj7 / D#)
D#3 E3 G#3 B3 (EMaj7 / D#)
(all identical)



Note: You can use the **Transpose** setting to change the octave of the input notes.

Force Range Wrap [C...B]

When **Force Range** (above) is set to **C3B3 [1]**, this parameter sets the highest scale step for the chord's root note, after which the range-modified input notes will be dropped down an octave in order to stay centered around the 4th octave. For example, if the value is F#, then starting with G the notes will be dropped down an octave.



Above shows an example where a Maj7 chord in a variety of voicings is played through 7 scale tones, i.e. CMaj7, DMaj7, EMaj7, FMaj7, GMaj7 etc. Since **Force Range Wrap** = F#, the resulting input notes drop down an octave starting with the GMaj7 chord. This allows you to keep a GE in a specific range regardless of where a chord is played on the keyboard, but to adjust at which point it drops down an octave.

Note: Not available unless **Force Range** is set to C3B3 [1].

Root Position [Off, On]

The phrases and patterns produced by a KARMA Module are generated by a GE (Generated Effect). In most cases, this is done based on a Note Series.

When **Root Position** is **On (checked)**, the **Note Types** will be created in root position, regardless of the inversion of the chord, based on chord recognition. In other words, when this is **Off (unchecked)**, if you play CMaj / E, the Note Series will start from E and continue up, or if you play CMaj / G, the Note Series will start with G.

By using **Root Position On (checked)**, you can make sure that any inversion of a chord ends up the same. For example, CMaj / E and CMaj / G will both be the same as CMaj, and the Note Series will start from a C. This can allow a GE to behave more predictably with all inversions of a chord. (See "Note Series Group" on page 531)

Note: When the **GE Type** is **Generated-Drum**, the notes come from **Drum Patterns** and not the Note Series. The drum patterns can be used to generate melodies, in addition to drum and percussion grooves. **Root Position** also has a similar effect on how the Drum Patterns are transposed, but only if **Track Keyboard** is **on**. For more information, please see "Drum Group" on page 572.

Also when the GE-Type is **Generated-Drum**, if using arpeggiated pitch-bending (based on the Note Series), the resulting pitch bend data will be affected as well. For more information, please see "Bend Group" on page 569.

When the "GE-Type" is **Real-time**, this parameter has no effect unless you are using Dynamic MIDI to Direct Index the Note Series (see "Dynamic MIDI Sources & Destinations" on page 601).

Note: When **Root Position** is turned on for any "Note Type" except Regular (i.e. Scalic, Scalic2, Chromatic, Whole Tone etc.), the behavior is very consistent: the scale specified by the Note Type is place in root position before applying the rest of the Note Series parameters to create the Note Series.

However, when **Root Position** is turned on for "Note Type" Regular, the behavior is a bit different, and requires some explanation, as below.

If the input notes span an octave or less, the effect is very predictable, and similar to the effect when "Note Type" is any other setting besides Regular.

If the input notes span an octave or less:

Input Sort is:	Result on Input Notes before replication:
Up	Notes placed in root position for chord, in octave of lowest note, sorted in up direction
Down	Notes placed in root position for chord, in octave of lowest note, sorted in down direction
As Played Random	Notes are arranged so the first note is the root pitch class.

If the input notes span more than an octave, the effect is less predictable. If the "Input Sort" = Up, As Played, or Random, the first note of each replication will be the root pitch class (meaning that the Note Series will start with the root note, i.e. if the key of the chord is D, the first note will be a D). If the "Input Sort" = Down, then the last note of each replication will be the root pitch class. However, notes lower than the root note will still be allowed, since, after all, the purpose of "Note Type" = Regular is to collect the notes as played. For example, with "Input Sort" = Up, if you play G2 – C4 – E4 – G 4 (Cmaj / G), the notes will be ordered so that a C is first, but the low G will still be present in each replication.

If the input notes span more than an octave:

Input Sort is:	Result on Input Notes before replication:
Up, As Played Random	Notes are arranged so the first note is the root pitch class (i.e. if the key of the chord is D, the first note will be a D). Notes lower than the root note will still be allowed.
Down	Notes are arranged so the last note is the root pitch class. Notes lower than the root note will still be allowed.

Note: That **Force Range** may be applied in conjunction with **Root Position**. For example, with any **Force Range** setting other than "Off," the effects of **Root Position** with **Note Type** = Regular become quite predictable, as spans greater than an octave are essentially compressed into one octave before going into the Note Series section.

Clock Advance:

Here you can make settings for the clock that will operate the KARMA Module. By using these settings in conjunction with the Dynamic MIDI (Prog 7–2–3) function, you can use **Manual Advance** by operating controllers such as the KYBD-61 / 73 / 88's joystick or notes from the keyboard to trigger the clock that operates the KARMA Module, causing the phrase or pattern to advance under your control.

Mode [Auto, Dyn, Auto+Dyn1, Auto+Dyn2]

Auto: The KARMA Module will operate according to the **♩(Tempo)** (Prog 0–1a) setting. If **MIDI Clock** (Global 2–1a) is External, the KARMA Module will operate in

synchronization with the MIDI clock from the **External** MIDI device. Normally you will select **Auto**.

Dyn: The clock by which the KARMA Module will operate can be triggered by operating the joystick or other controller according to the Dynamic MIDI (Prog 7–2–3) setting, causing the phrase or pattern to advance, note by note. (Set Dynamic MIDI **Destination** to **Clock Advance**.)

You can input a chord from one area of the keyboard, and use notes from another area of the keyboard to advance through the arpeggio pattern.

Auto+Dyn1: The KARMA Module will operate according to both **Auto** and **Dyn**.

Auto+Dyn2: The KARMA Module will operate according to both **Auto+Dyn**, except that a trigger received from Dynamic MIDI will momentarily stop the automatic advancement until the KARMA Module playback is restarted.

Size [𝅘𝅥𝅯𝄾₃, 𝅘𝅥𝅰𝄾₃, 𝅘𝅥𝅯𝄾, 𝅘𝅥𝅰𝄾₃, 𝅘𝅥𝅯, 𝅘𝅥𝅰, 𝅘𝅥𝅰₃, 𝅘𝅥𝅮, 𝅘𝅥𝅮., 𝅗𝅥₃, 𝅗𝅥, Event]

This is valid when **Mode** is **Dyn**, **Auto+Dyn1** or **Auto+Dyn2**. It specifies the unit by which the phrase or pattern will be advanced when the controller is operated.

𝅘𝅥𝅯𝄾₃…𝅗𝅥: The phrase or pattern will be advanced by the specified note value, synchronized to the rhythm of the phrase or pattern. Depending on the internal GE Rhythm Parameters, this may result in no notes, 1 note, or several notes for a a particular trigger.

Event: The phrase or pattern will be advanced by one note or one chord, ignoring the rhythm of the phrase or pattern. Each trigger will produce the next note or chord in the phrase.

Chord Trigger Mode [Off, 1st, Chord1, Chord2, Chord3]

This is valid when **Mode** is **Dyn**, **Auto+Dyn1** or **Auto+Dyn2**. It specifies how a chord will be sounded when that chord is input from the keyboard.

Off: There will be no sound when you input a chord from the keyboard. This is analogous to a guitarist changing chords in the left hand. The phrase or pattern will sound from the first step when you operate the controller.

1st: When you input a chord from the keyboard, the first step of the phrase or pattern will sound. When you operate the controller, the phrase or pattern will continue advancing.

Chord1: When you input a chord from the keyboard, the first several steps of the phrase or pattern will sound, according to the number of notes that you input. When you operate the controller, the phrase or pattern will continue advancing.

Chord2: When you input a chord from the keyboard, it will sound in the same way as for Chord1. However, the phrase or pattern will play from the beginning of the pattern when you operate the controller.

Chord3: When you input a chord from the keyboard, it will sound in the same way as for Chord1. However, the phrase or pattern will start from the second step when you operate the controller. When simulating acoustic guitar finger picking, this allows you to create a natural connection between the played chord and the finger picking sounded by the controller.

Velocity Sense Bottom [001...127]

This is valid when **Mode** is **Dyn**, **Auto+Dyn1** or **Auto+Dyn2**. If the Dynamic MIDI **Source** is **Note** or **Velocity**, the phrase will be produced by applying the velocity of each Manual Advance trigger that is input to the KARMA Module to the notes as they are generated. This parameter specifies the lower limit of a scaled range that the velocity is adjusted by before being applied.

With a setting of **001**, the velocity data will be input to the KARMA Module with an unmodified range of 1–127 (full sensitivity).

With a setting of **064**, velocity data in the range of 1–127 will be scaled to the range of 64–127 before it is input to the KARMA Module (half sensitivity).

Note Map:

The Note Map Parameters allow a “final note shaper” to be applied at the end of the KARMA note generation process. Implemented as a large grid (128 x 129), it allows any incoming MIDI note generated by KARMA (0–127) to be remapped to any other MIDI note (0–127), or filtered out (removed). Therefore, a diagonal line represents “linear / no change,” and what goes in is what comes out.

You can use it to remap drum kits from one set of drum sounds to another, remove or substitute different drum sounds within the same kit, remove certain pitches from melodic output, constrain output pitches to various scales, limit notes generated thru Melodic Repeat to certain pitches, and more. For more information, please see “Repeat (Melodic Repeat) Group” on page 564.

Each program, combination, or song contains a single user table. named “Custom.” The settings of this single table are stored inside the program, combination, or song. Additionally, there are a number of tables stored in global memory, with pre-defined functions, that can be selected for use by any Module.

The same table can be applied to multiple Modules at the same time. All Modules can run through the single.

Custom table at the same time, or be assigned to utilize various Global Note Maps, in any combination.

Mode (Note Map Mode) [Off, On-Main, On-Repeat, On-All]

Selects one of several different modes of operation, controlling whether all notes generated by KARMA or a subset of those notes are modified by the specified Note Map Table.

Off: The table is inactive and no filtering or remapping is done.

On-Main: The table is used to map or filter notes being generated from the Note Series or Drum Pattern(s), but not any notes generated as a result of the Melodic Repeat parameters.

On-Repeat: The table is used to map or filter notes being generated as a result of the Melodic Repeat parameters, but not the main notes generated by the Note Series or Drum Pattern(s). For example, this can be used to “thin out” repeats or limit “strange notes” in Drum Patterns from transposed repeats, without affecting the main notes.

For more information, please see “Repeat (Melodic Repeat) Group” on page 564.

On-All: The table is used to map or filter all notes being generated by the module.

Table (Note Map Table) [Custom, Gtable 1...Gtable 64]

Selects the Custom table (user table) or one of the Global Note Map Tables.

Note: You can edit a custom table in Prog 7–2–8: Note Map. (See "7–2–8a: Note Map" on page 97.)

Transpose (Note Map Transpose) [–12...+12]

This allows you to set up a "Fixed" Note Transpose Map, without **Chord Track** or **Keyboard Track (C2 Ref)**, and then apply an offset to transpose it to other keys. In other words, you can set up a fixed map so that no matter what you play, it comes out in C Mixolydian. Then, you can set the Note Map Transpose to +2, and it would be D Mixolydian, etc.

The **Transpose** parameter is only available when **Chord Track** is Off (unchecked).

Chord Track (Note Map Chord Track) [Off, On]

Selects whether the Note Map Table will track your chord changes within the range of a single octave.

Tables use the key of C as a reference. As an example, assume you play a C Chord that generates a C Major arpeggio (C–E–G etc.) in the Middle C octave (C4 to C5). You edit that octave in the note Map Editor to have no 3rd (E4 removed).

With **Chord Track** set to Off (unchecked), playing a D chord would exhibit no changed notes, because there is no E4 in the arpeggio. With **Chord Track** set to On (checked), the D chord would sound the same as the C chord (no 3rd), except it would be in the key of D. When On (checked), all chords played in the Middle C octave would have their 3rd removed.

However, if you play the input chord an octave lower, the notes would go through the octave of the table below Middle C, and would not have the removed note. This allows you to set up different maps for each octave, yet have the table track your chord changes within each octave.

The functioning of this parameter may be additionally modified by **Keyboard Track (C2 Ref)**, below.

Keyboard Track (C2 Ref) (Note Map Keyboard Track) [Off, On]

Selects whether the Note Map Table will track your chord changes across the entire keyboard, with reference to C2.

When **Chord Track** is already turned on, setting **Keyboard Track (C2 Ref)** to On (checked) provides the additional functionality of tracking the table to the lowest note of the input chord (with reference to C2), no matter where it is played.

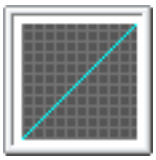
In other words, any chord played in any octave will be transposed so it ends up with its lowest note in the C2 octave before being run through the table, and returned to the correct octave after. As an example, assume you play an input chord in the key of C in the C2 octave (lowest octave of a 61 note keyboard).

If you remove the 3rd (for example) which is E2, playing a chord anywhere on the keyboard will have the lowest note run through the table at C2 and hence keep the exact same table mapping for any chord, removing the third in any key, in any octave. This allows you to set up complex melodic maps spanning several octaves if desired, and then have them track your chords all over the keyboard.

Note: Not available unless **Chord Track** is set to On (checked).

Note Map Table

This displays a small graphic of the current Note Map Table selected for the Module. Changing the **Table (Note Map Table)** setting (directly or via Real-Time Parameter Control) causes the selected table to be displayed.



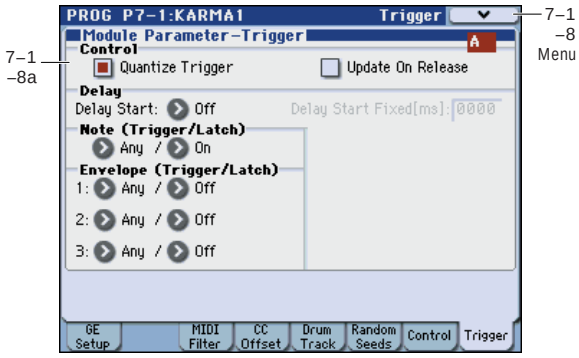
The various Note Map Tables can be viewed full size on the Note Map page (Prog 7–2–8).

▼7–1–7: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

7–1–8: Trigger



Here you can set KARMA Module Trigger parameters. In Program mode, you can use one KARMA Module (Module [A]).

You can make the following settings.

- Timing correction and latch operation for triggers
- Settings for the envelope generators inside the GE

7–1–8a: Module Parameter-Trigger

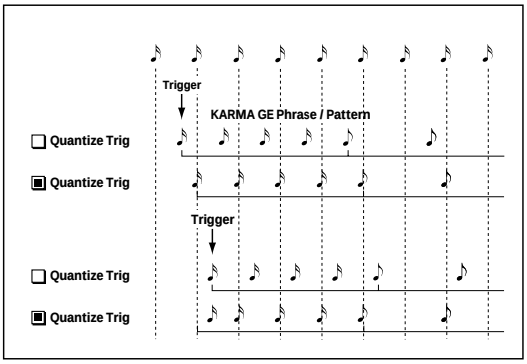
Control:

Quantize Trigger [Off, On]

Quantize (correct) the timing of the triggering caused by the note data or Dynamic MIDI.

On (checked): Trigger timing will be quantized in 16th note units relative to the basic tempo.

Off (unchecked): Triggering will occur at the moment you play the keyboard or activate a trigger through Dynamic MIDI (Prog 7–2–3).



Note: When this is **On (checked)**, triggering at a timing that is within a 32nd note of the 16th note base value will cause the playback to begin simultaneously (lower row of the preceding diagram). If the trigger is later than this, playback will start at the next 16th note (upper row of the diagram above).

Update On Release [Off, On]

Allows the release of individual input notes to remove those notes from the notes going to the GE, thereby changing the effect to use only those notes still being held.

Off (unchecked): Releasing some notes while holding others causes no change to the input source material, and therefore no change in the Generated Effect. This is the most smooth and natural way, and similar to most advanced auto-accompaniment keyboards.

On (checked): Notes that are released are removed from the input source material, thereby changing the effect to use only those notes still being held. This is typically the way simple arpeggiators work, especially if their latch mode is turned off.

Delay:

Delay Start [Off, Fixed, 𝅘𝅥𝅯₃...4x1]

Specify the delay from when the trigger (by note data) is input, until the phrase or pattern starts.

𝅘𝅥𝅯₃...4x1: Specify the delay time as a note value interval relative to the tempo.

Fixed: The delay time will be specified in time units (ms). Set the time in **Delay Start Fixed**.

Delay Start Fixed [ms] [0000...5000]

This is valid if **Delay Start** is set to **Fixed**. Set **Delay Start** in ms units. The delay specified here will remaing constant, even when the tempo is changed.

Note (Trigger/Latch):

Note Trigger [Any, AKR, 1st, Dyn]

Any (Any Note + Dynamic MIDI): Every note-on will cause triggering; i.e., each note-on will cause the phrase or pattern to restart from the beginning.

AKR (1st Note After Key Release + Dynamic MIDI): Triggering will occur when the first note-on occurs from a state in which no keys are "on." Triggering will not occur if even one note is being pressed. By changing the chord you play on the keyboard while holding at least one note, you can change the notes of the phrase or pattern without triggering.

1st (1st Only Until Module Stops + Dynamic MIDI): After KARMA function is turned on, only the first note-on will cause triggering. Subsequent note-ons will not cause triggering. This is useful for drum grooves and phrases where you do not want subsequent chord changes to restart the phrase.

Dyn (Dynamic MIDI): Triggering will be produced by operating the controller specified by Dynamic MIDI (Prog 7–2–3). In this case, note-ons will not cause triggering.

Note: With any of these settings, the trigger will be applied by operations of the controller specified for Dynamic MIDI (Prog 7–2–3), if **Destination** is set to **Trigger Notes&Envs**, **Trigger Note** (see "Dynamic MIDI Sources & Destinations" on page 601).

Note Latch [Off, On]

Specifies whether the phrase or pattern will continue when you release your hand from the keyboard (**latch on**) or whether the phrase or pattern will stop (**latch off**). In Program mode, turn this **On (checked)** and use the LATCH switch to control latch on / off.

Off: Latch will be off regardless of the LATCH switch on / off status.

On: The LATCH switch will control latch on / off. When the LATCH switch is **off** (LED dark), **latch is off**. When the LATCH switch is **on** (LED lit), **latch is on**.

Note: In Combination and Sequencer mode, up to four KARMA Modules can be used. In these modes, you can turn **Note Latch** on / off independently for each KARMA Module. If you use "Copy KARMA Module" to copy KARMA Module settings from these modes to a program, there may be cases in which the setting here will be **off**, so that latch-on will not occur even if you turn **on** the LATCH switch. In such cases, turn this **on**.

Envelope (Trigger/Latch):

Each GE provides three Envelopes. They can produce time-variant control of velocity, tempo, duration, pitch bend, and various control changes.

You can specify triggering conditions and latch conditions for each of the three Envelopes of the GE, separately from the Note Trigger and Latch (although many times you will want them to be the same.)

If the selected GE does not use Envelopes, these settings will have no effect. For information on specific GEs, please see the "Voice Name List" (PDF).

Envelope1:

Envelope Trigger [Any, AKR, 1st, Dyn]

Any (Any Note + Dynamic MIDI): Every note-on will cause triggering; i.e., each note-on will cause the envelope to start from the beginning.

AKR (1st Note After Key Release + Dynamic MIDI): Triggering will occur when the first note-on occurs from a state in which no keys are "on." Retriggering will not occur if even one note is being pressed.

1st (1st Only Until Module Stops + Dynamic MIDI): After KARMA is turned on, only the first note-on will cause triggering. Subsequent note-ons will not cause triggering.

Dyn (Dynamic MIDI): Triggering will be produced by operating the controller specified by Dynamic MIDI (Prog 7–2–3). In this case, note-ons will not cause triggering.

Note: For any of these settings, triggering will be applied by operations of the controller specified for Dynamic MIDI, if "Destination" is set to **Trigger Notes&Envs**, **Trigger Env1…Trigger Env3**.

Envelope Latch [Off, Sus1, Rel1, Sus2, Rel2]

Off: The envelope will not be latched. When all keys are released or a Dynamic MIDI trigger is released (note-off), the envelope will move to the release segment.

Sus1: Once the envelope is started, it will proceed through attack → decay → sustain → release. If note-off occurs before the envelope reaches the sustain level, the envelope will not begin the release immediately but wait until after reaching the sustain level. Even in the case of a note for which the note-on / off interval is short, the envelope will proceed through attack → decay → sustain → release as if the key was being held for a longer time. If the envelope reaches the sustain level before receiving note-off, it will hold at the sustain level (the same operation as for the Off setting). If the note-off occurs after the envelope reaches the sustain level, the envelope will begin the release when note-off occurs (the same operation as for the Off setting).

Rel1: Once the envelope has started, it will proceed through attack → decay → release, regardless of when the note-off occurs. Even if a key is being pressed, the envelope will ignore sustain, and will proceed immediately to the release.

Sus2: The envelope will ignore note-off, and will proceed through attach → decay → sustain. Therefore, this setting will never reach the release portion. Other operation is the same as for **Sus1**.

Rel2: The same operation as **Rel1**, except will ignore note-off for the purpose of looping, as explained below.

The envelope can be set to repeat as a loop as part of the GE. A looped envelope will be controlled as follows.

For Sus1 and Rel1, the envelope will continue repeating as long as the key is held.

For Sus2 and Rel2, the envelope will continue repeating even if the key is released.

Envelope2, Envelope3:

These are the same as for Envelope 1.

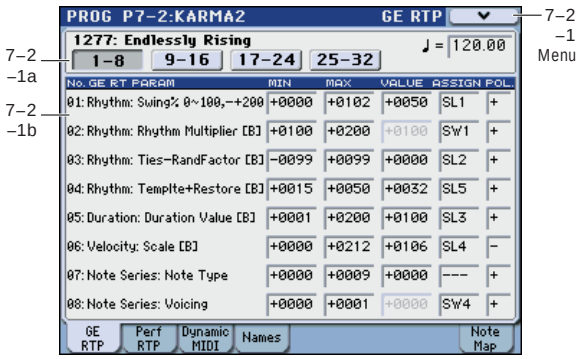
▼7–1–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

PROG P7–2: KARMA 2

7–2–1: GE RTP (GE Real-Time Parameters)



Here you can edit the parameters of the GE selected for the KARMA module. If you assign GE parameters to the KARMA Sliders or KARMA Switches 1–8, you'll be able to control the generated phrases and patterns in realtime.

7–2–1a: GE Number & Name, GE RTC Select, Tempo

GE Number & Name

This shows the GE selected for the Module. For more information, please see "0–5c: GE Select" on page 5.

GE RTC Select [1-8, 9-16, 17-24, 25-32]

This switches the GE realtime parameter display.

1–8, 9–16, 17–24, 25–32: Respectively display GE realtime parameters 1–8, 9–16, 17–24, and 25–32.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 3.

7–2–1b: GE Real-Time Parameters

GE RT Parm 1–8, 9–16, 17–24, 25–32:

Each GE has up to 32 preset parameters for controlling the phrase or pattern, referred to as GE Real-Time Parameters (or GE RTP). The specific parameters, and the available value ranges, will vary depending on the selected GE.

For details on the individual GE Real-Time parameters, please see "KARMA GE guide" on page 525.

GE RT PARAM (GE Real-Time Parameter)

Each of the GE Real-Time Parameters has a basic value, a controller assignment with polarity, and minimum and maximum values (for setting the range of the selected controller).

When you select a new GE, the basic, minimum, and maximum values will be reset to the values saved in the GE, and the controller assignment will be set to the defaults for the GE's RTC Model.

For details on the individual GE Real-Time parameters, please see "KARMA GE guide" on page 525.

MIN (GE Real-Time Parameter Minimum Value) [–5000...+5000]

This sets the parameter value when the selected controller is at its minimum point—for instance, when a slider is at the bottom of its throw. Note that you can reverse the action of the controller by setting this to be higher than the **MAX** value, below.

The available values will depend on the GE Real-Time parameter.

MAX (GE Real-Time Parameter Maximum Value) [–5000...+5000]

This sets the parameter value when the selected controller is at its maximum point—for instance, when a slider is at the top of its throw.

The available values will depend on the GE Real-Time parameter.

VALUE (GE Real-Time Parameter Value) [–5000...+5000]

This sets the basic value of the GE parameter, which corresponds to the center position of the controller. It must be within the **MIN** and **MAX** values.

ASSIGN (GE Real-Time Parameter Assign) [---, SL1...SL8, SL1s...SL8s, SW1...SW8, Dyn1...Dyn8]

Here you can assign the controller for the GE Real-Time parameter.

By assigning GE Real-Time Parameter to KARMA Real-Time Controls, they can be controlled in real-time while you play.

---: No assignment.

SL1…SL8 (Slider1…8): Assign the parameter to KARMA Sliders 1–8. The slider will continuously control the "value."

For example, let's assume that the **Rhythm Swing%** parameter of the selected GE is set to a **MIN** of +0000, and a **MAX** of +0100.

- If you set "Value": **+0050**, "Assign": **SL1**, and **Polarity**:**+**

  Slider 1 at the center position will produce a value of **+0050**. At minimum the value will be **+0000**, and at maximum the value will be **+0100**. Turning the Slider from center toward the minimum will control the value from **+0050…+0000**, and turning it from center toward the maximum will control the value from **+0050…+0100**.

- If you set "Value": **+0080**, "Assign": **Slider 1**, and "Polarity":**+**

  Slider 1 at the center position will produce a value of **+0080**. At minimum the value will be **+0000**, and at far maximum the value will be **+0100**. Turning the slider from center toward the minimum will control the value from **+0080…+0000**, and turning it from center toward the maximum will control the value from **+0080…+0100**.

SL1s…SL8s (Slider SW 1…8): Assign the parameter to KARMA Sliders 1–8. The Slider will switch the value between minimum and maximum only. The minimum to center range of the Slider is off, and the center to maximum is on.

- If you set "Value": **+0050**, "Assign": **Slider (SW) 1**, and **Polarity**:**+**

  Turning the slider toward the minimum will produce a value of **+0000**. Turning it to center or maximum will produce a value of **+0100**.

SW1…SW8: The parameter will be assigned to switches 1–8. The minimum is off, and the maximum is on.

Note: The correspondence between the KARMA Sliders, Switches and MIDI control change messages can be specified in Global P2: Controllers– MIDI CC# Assign. For SW1…8 and Slider (SW) 1…8, a MIDI control change message value of less than 64 will be "off," and 64 or greater will be "on."

Dny1…Dny8 (DynaMIDI 1…8): This corresponds to Dynamic MIDI 1…8.

Select this if you wish to control a GE parameter using the controller selected for **Source** in Dynamic MIDI (Prog 7–2–3). (Set the Dynamic MIDI "Destination" to **RT Params Control**.)

POL. (GE Real-Time Parameter Polarity) [+, –]

This sets the polarity of the selected controller.

+: In the case of **SL1–SL8 (Slider 1–8)**, moving down from the center will move the value towards the "Minimum" setting, and moving up from the center will move towards the "Maximum" setting.

In the case of **SL1s–SL8s (Slider SW 1–8)**, the bottom of the slider throw will be "Minimum," and the top will be "Maximum."

In the case of **SW1–8**, the parameter will be "Maximum" when the LED is lit.

–: In the case of **SL1–SL8 (Slider 1–8)**, moving down from the center will move the value towards the "Maximum" setting, and moving up from the center will move towards the "Minimum" setting.

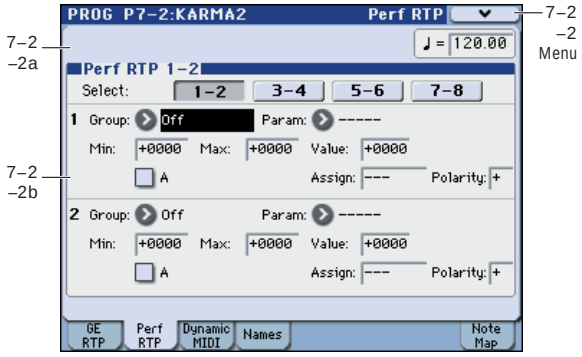
In the case of **SL1s–SL8s (Slider SW 1–8)**, the bottom of the slider throw will be "Maximum," and the top will be "Minimum." In the case of **SW1–8**, the parameter will be "Maximum" when the LED is dark.

▼7–2–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

7–2–2: Perf RTP (Perf Real-Time Parameters)



Here you can assign controllers to KARMA Performance Real-Time Parameters (Perf. RTP) outside of the GE Real-Time Parameters that control the internal settings of the GE. Examples include the **KARMA Key Zone** parameters (Prog 7–1–1) and KARMA Control and Trigger parameters (Prog 7–1–7, 7–1–8).

By assigning these to KARMA Sliders 1–8 and KARMA Switches 1–8 etc., you can control them in real-time while you play.

In Perf Real-Time Parameters 1–8, if you select a parameter by **Group** and **Parameter** and **On (checked) Module A**, that parameter can no longer be edited as a **KARMA Key Zone** parameter (Prog 7–1–1) or **KARMA Control** and **Trigger** parameter (Prog 7–1–7, 7–1–8).

7–2–2a: Tempo

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 3.

7–2–2b: Perf RTP 1–2, 3–4, 5–6, 7–8 (Perf Real-Time Parameters)

Select (Perf RTP Select) [1–2, 3–4, 5–6, 7–8]

This selects the performance realtime parameters you'll edit.

Group [Off, PE, Mix, Control, Trigger, Key Zones, Random Seeds]

Selects the group of parameters that you wish to choose a "Parameter" from.

The KARMA parameters are divided into six groups.

Parameter [Time Signature...Retrigger Each Time]

Indicates the parameter that you wish to assign.

The parameters that can be selected will differ according to the **Group** setting, above.

Min (Min Value) [–8192...+8191]

This sets the parameter value when the selected controller is at its minimum point—for instance, when a slider is at the bottom of its throw. Note that you can reverse the action of the controller by setting this to be higher than the **MAX** value, below.

The available values will depend on the selected parameter. When a parameter is selected, the minimum parameter value will be set as the default.

Max (Max Value) [–8192...+8191]

This sets the parameter value when the selected controller is at its maximum point—for instance, when a slider is at the top of its throw.

The available values will depend on the selected parameter.

Value [–8192...+8191]

Specifies the value of the selected KARMA parameter.

If you turn on **A (Module A)** and select **Parameter**, this will be set as the current value of the parameter (set in 7–1–7 and 7–1–8).

The value you specify here will be the center value when you use **Assign** to control the parameter from a KARMA Slider, etc. The value will not be available when assigning to Switches or Slider (SW).

A (Module A) [Off, On]

Specifies the module to which the settings of Perf RTP 1–8 will apply.

In Program mode, only one KARMA Module (Module A) can be used. Thus in Program mode, you can turn the Perf RTP 1–8 settings on / off.

On (checked): Perf RTP settings will be valid.

Off (unchecked): Perf RTP settings will be ignored.

Assign [---, SL1...SL8, SL1s...SL8s, SW1...SW8, Dyn1...Dyn8]

Assigns the selected parameter to a controller.

If you assign a parameter to KARMA Real-Time Controls, you can control it in real-time while you play.

For more information, please see “ASSIGN (GE Real-Time Parameter Assign)” on page 90.

Polarity [+, –]

Specifies the polarity used when you operate the KARMA Real-Time Controls that you selected for **Assign**.

For more information, please see “POL. (GE Real-Time Parameter Polarity)” on page 91.

Group: PE (Performance)

Time Signature [+0000...+0048]

Assigns the **KARMA T.Sig (KARMA Time Signature)** (Prog 0–5b) function.

+0000: Off

+0001…+0048: Corresponds to 1 / 4–16 / 16.

For more information, please see “KARMA T.Sig (KARMA Time Signature)” on page 5.

If you select **Time Signature** as a parameter for assignment, you will not be able to set **A (Module A)**.

Group: Mix

Transpose [–0036...+0036]

Assigns the **Transpose** (Prog 7–1–7a) function. Control the transposition in semitone steps.

Transpose Octave [–0036...+0036]

Assigns the **Transpose** (Prog 7–1–7a) function. Control the transposition in octave steps.

Transpose Octave/5th [–0036...+0036]

Assigns the **Transpose** (Prog 7–1–7a) function.

Control the transposition in steps of an octave and a fifth.

Group: Control

Force Range [+0000...+0004]

Assigns the **Force Range** (Prog 7–1–7a) function.

+0000: Off
+0001: Lowest
+0002: Highest
+0003: C3–B3[1]
+0004: C3–B3[2]

For more information, please see “Force Range” on page 84.

Force Range Wrap [+0000...+0011]

Assigns the **Force Range Wrap** (Prog 7–1–7a) function.

+0000: **C…0011**: **B**

For more information, please see “Force Range Wrap” on page 85.

Root Position [+0000, +0001]

Assigns the **Root Position** (Prog 7–1–7a) function.

+0000: Off
+0001: On

For more information, please see “Root Position” on page 85.

Clock Advance Mode [+0000...+0003]

Assigns the **Mode (Clock Advance Mode)** (Prog 7–1–7a) function.

+0000: Auto
+0001: Dyn
+0002: Auto+Dyn1
+0003: Auto+Dyn2

For more information, please see “Mode” on page 85.

Clock Advance Size [+0000...+0011]

Assigns the **Size (Clock Advance Size)** (Prog 7–1–7a) function.

+0000…+0010: 𝅘𝅥𝅯₃…𝅗𝅥
+0011: Event

For more information, please see “Size” on page 86.

CA Vel. Sensitivity [+0001...+0127]

Assigns the **Velocity Sense Bottom** (Prog 7–1–7a) function.

For more information, please see “Velocity Sense Bottom” on page 86.

CA Chord Trigger Mode [+0000...+0004]

Assigns the **Chord Trigger Mode** (Prog 7–1–7a) function.

+0000: Off
+0001: 1st
+0002: Chrd1
+0003: Chrd2
+0004: Chrd3

For more information, please see “Chord Trigger Mode” on page 86.

Note Map Mode [+0000...+0003]

Assigns the **Mode (Note Map Mode)** (Prog 7–1–7a) function.

+0000: Off
+0001: On-Main
+0002: On-Repeat
+0003: On-All

For more information, please see “Mode (Note Map Mode)” on page 86.

Note Map Table [+0000...+0064]

Assigns the **Table (Note Map Table)** (Prog 7–1–7a) function.

+0000: Custom
+0001…+0064: Global Tables 1…64

For more information, please see "Table (Note Map Table)" on page 87.

Note Map Transpose [–0012...+0012]

Assigns the **Transpose (Note Map Transpose)** (Prog 7–1–7a) function.

For more information, please see "Transpose (Note Map Transpose)" on page 87.

Note Map Chord Track [+0000, +0001]

Assigns the **Chord Track (Note Map Chord Track)** (Prog 7–1–7a) function.

+0000: Off
+0001: On

For more information, please see "Chord Track (Note Map Chord Track)" on page 87.

Note Map Kbd Track [+0000, +0001]

Assigns the **Keyboard Track (Note Map Kbd Track)** (Prog 7–1–7a) function.

+0000: Off
+0001: On

For more information, please see "Keyboard Track (C2 Ref) (Note Map Keyboard Track)" on page 87.

Group: Trigger

Quantize Trigger [+0000, +0001]

Assigns the **Quantize Trigger** (Prog 7–1–8a) function.

+0000: Off
+0001: On

For more information, please see "Quantize Trigger" on page 88.

Delay Start [+0000...+0025]

Assigns the **Delay Start** (Prog 7–1–8a) function.

+0000: Off
+0001: Fixed
+0002…+0025: 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯…4x 𝅝

For more information, please see "Delay Start" on page 88.

Delay Start ms [+0000...+5000]

Assigns the **Delay Start Fixed** (Prog 7–1–8a) function.

For more information, please see "Delay Start Fixed [ms]" on page 88.

Note Trigger [+0000...+0003]

Assigns the **Note Trigger** (Prog 7–1–8a) function.

+0000: Any
+0001: AKR
+0002: 1st
+0003: Dyn

For more information, please see "Note Trigger" on page 88.

Note Latch [+0000, +0001]

Assigns the **Note Latch** (Prog 7–1–8a) function.

+0000: Off
+0001: On

For more information, please see "Note Latch" on page 88.

Update On Release [+0000, +0001]

Assigns the **Update On Release** (Prog 7–1–8a) function.

+0000: Off
+0001: On

For more information, please see "Update On Release" on page 88.

Env1 Trigger [+0000...+0003]
Env2 Trigger [+0000...+0003]
Env3 Trigger [+0000...+0003]

Assigns the **Envelope Trigger** (Prog 7–1–8a) functions.

+0000: Any
+0001: AKR
+0002: 1st
+0003: Dyn

For more information, please see "Envelope Trigger" on page 89.

Env1 Latch [+0000...+0004]
Env2 Latch [+0000...+0004]
Env3 Latch [+0000...+0004]

Assigns the **Envelope Latch** (Prog 7–1–8a) functions.

+0000: Off
+0001: Sus1
+0002: Rel1
+0003: Sus2
+0004: Rel2

For more information, please see "Envelope Latch" on page 89.

Group: Key Zones

Thru Inside Zone [+0000, +0001]

Assigns the **Thru In Zone** (Prog 7–1–1b) function.

+0000: Off
+0001: On

For more information, please see "Thru In Z (Thru In Zone)" on page 78.

Thru Outside Zone [+0000, +0001]

Assigns the **Thru Out Zone** (Prog 7–1–1b) function.

+0000: Off
+0001: On

For more information, please see "Thru Out Z (Thru Out Zone)" on page 78.

Key Zone Bottom [+0000...+0127]

Assigns the **Bottom (Key Zone Bottom)** (Prog 7–1–1b) function.

+0000…+0127: C-1–G9 (corresponds to note numbers)

For more information, please see "Btm (Key Zone Bottom)" on page 78.

Key Zone Top [+0000...+0127]

Assigns the **Top (Key Zone Top)** (Prog 7–1–1b) function.

+0000…+0127: C-1–G9 (corresponds to note numbers)

For more information, please see "Top (Key Zone Top)" on page 78.

Transpose In Thru [–0036...+0036]

Assigns the **Transpose In Zone** (Prog 7–1–1b) function. This controls transposition of the note data from the keyboard within the Key Zone, in semitone steps.

For more information, please see "Trans (Transpose In Zone)" on page 78.

Transpose Out Thru [–0036...+0036]

Assigns the **Transpose Out Zone** (Prog 7–1–1b) function. This controls the transposition of note data from the keyboard outside the Key Zone, in semitone units.

For more information, please see “Thru Out Z (Thru Out Zone)” on page 78.

Transpose Octave In Thru [–0036...+0036]

Assigns the **Transpose In Zone** (Prog 7–1–1b) function. This controls the transposition of note data from the keyboard within the Key Zone, in octave units.

Transpose Octave Out Thru [–0036...+0036]

Assigns the **Transpose Out Zone** (Prog 7–1–1b) function. This controls the transposition of note data from the keyboard outside the Key Zone, in octave units.

Transpose Octave/5th In Thru [–0036...+0036]

Assigns the **Transpose In Zone** (Prog 7–1–1b) function. This controls the transposition of note data from the keyboard within the Key Zone, in units of an octave and a fifth.

Transpose Octave/5th Out Thru [–0036...+0036]

Assigns the **Transpose Out Zone** (Prog 7–1–1b) function. This controls the transposition of note data from the keyboard outside the Key Zone, in units of an octave and a fifth.

Group: Random Seeds

Start Seed [–8192...+0000...+8191]

Assign the **Start Seed** (Prog 7–1–6a) function.

+0000: Random

Other than +0000: Any desired **Start Seed** value. However, you cannot select values outside the range of -8192 to +8191 when changing the value in this way.

For more information, please see “Start Seed” on page 82.

Note: If the **Start Seed** value is set to a value outside of this range when you first assign it as a RT Parameter, it will be limited to either end of the range.

Freeze Loop Length [+0000...+0032]

Assigns the **Freeze Loop Length** (Prog 7–1–6a) function. This specifies the number of measures (bars) in the phrases that are repeatedly generated by the KARMA Module. After being triggered, the Module will generate a phrase of the number of measures you specify here, and will then repeat that phrase.

For more information, please see “Freeze Loop Length” on page 83.

Freeze Loop Length + Reset [+0000...+0032]

Like **Freeze Loop Length**, above, this also assigns the **Freeze Loop Length** (Prog 7–1–6a) function. However, when this is used, and the **Start Seed** is set to some other value than 0: Random, changing the **Freeze Loop Length** to any value except 0: Off will reset the **Start Seed** internally to the indicated value, thereby restoring the original phrase at the next downbeat without retriggering it from the keyboard.

Normally, if you were generating a randomized riff from a particular **Start Seed** value, setting **Freeze Loop Length** to 0: Off would cause the phrase to continue randomizing from its current internal position. If you then set the **Freeze Loop Length** to some other value than 0: Off, thereby looping the phrase, it does not automatically reset the **Start Seed** until you retrigger it from the keyboard (depending on Trigger settings). By using **Freeze Loop Length + Reset**, a change in the Freeze Loop Length can additionally reset the internal **Start Seed** and therefore generate the same phrase as before, allowing instantaneous switching between “randomized” and “preset” phrases.

Retrigger Each Time [+0000, +0001]

Assigns the **Retrigger Each Time** (Prog 7–1–6a) function.

+0000: Off

+0001: On

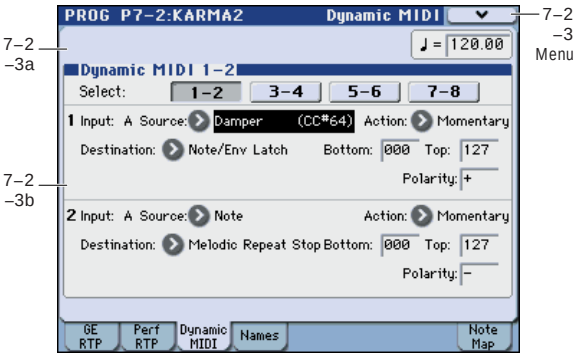
For more information, please see “Retrigger Each Time” on page 83.

▼7–2–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

7–2–3: Dynamic MIDI



Dynamic MIDI lets you use this instrument's controllers and MIDI control messages to control specific KARMA functions.

You can take advantage of this to control KARMA in various ways while you play. For example, you can use note-ons to advance the KARMA clock (Manual Advance), or a KYBD-61 / 73 / 88's joystick to Trigger the start of the patterns. You can use a foot pedal to control Auto Transpose, or a damper pedal to control the KARMA Latch settings.

7–2–3a: Tempo

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 3.

7–2–3b: Dynamic MIDI

Dynamic MIDI Select [1–2, 3–4, 5–6, 7–8]

This selects the Dynamic MIDI parameters you'll edit.

Input (Dynamic MIDI Input Module)

In Program mode this is fixed at A.

This is because only KARMA Module A is used. This setting cannot be changed.

Source (Dynamic MIDI Source) [Off, JS+Y (CC#01)...Velocity Outside Zone]

Indicates the controller or action. that will be the Dynamic MIDI source.

For more information, please see "Dynamic MIDI Sources & Destinations" on page 601.

Action (Dynamic MIDI Range Action) [Momentary, Toggle, Continuous]

Specifies the operation mode for Dynamic MIDI.

Momentary: The parameter will be controlled as a momentary switch. For example if **Source** is **JS+Y (CC#01)**, the parameter will normally be **off**, and will be **on** when you move the joystick.

Note: If **Polarity** is + and the source controller value is less than or equal to the **Bottom** setting, the destination will be off. If the controller value is greater than or equal to the **Top** setting, it will be on.

Example

When **Bottom**: **000** and **Top**: **127**

The controller value and the on / off status are related as follows.

000 → 127: **on** at **127**

127 → 000: **off** at **000**

Toggle: The parameter will be controlled as a toggle switch. For example if **Source** is JS+Y #01, the on / off state will alternate each time you tilt the joystick.

Note: If **Polarity** is **+**, on and off will alternate each time the source controller value exceeds the **Top** value after having passed through the **Bottom** value.

Example

When **Bottom**: **0** and **Top**: **127**

The controller value and the on / off status are related as follows.

000 → 127: **on** → **off** at **127**

127 → 000 → 127: **off** → **on** at **127**

(127 → 001 → 127: no change)

Continuous: The parameter will be controlled continuously, over the range specified by **Bottom** and **Top**. For example, if bottom is 25 and **Top** is 100, the destination value will be smoothly operated when the controller's value moves between 25 and 100. Values outside that range will cause no further change.

The operating modes that can be selected are limited by the **Destination**. For more information, please see "Dynamic MIDI Sources & Destinations" on page 601.

Destination (Dynamic MIDI Destination) [Off, RT Params Control...Buffer Latch]

Selects the Dynamic MIDI Control destination function.

For more information, please see "Dynamic MIDI Destinations" on page 603.

Bottom (Dynamic MIDI Range Bottom) [000...127]

Specifies the lower limit for the value controlled by **Source**.

If **Source** is **Short Note**, **Note No.**, **White Note**, or **Black Note**, the numeric value corresponds to the note numbers C-1–G9.

Top (Dynamic MIDI Range Top) [000...127]

Specifies the upper limit for the value controlled by **Source**.

If **Source** is **Short Note**, **Note No.**, **White Note**, or **Black Note**, the numeric value corresponds to the note numbers C-1–G9.

Polarity (Dynamic MIDI Polarity) [+, –, +/–, –/+]

Specifies the Dynamic MIDI polarity.

For example if you set **Polarity** to **+** and the Source is **KARMA SLIDER 1**, moving the Slider 1 from min to max will change the value from **0** → **127**. If you set **Polarity** to **–**, the same Slider 1 movement will change the value from **127** → **0**.

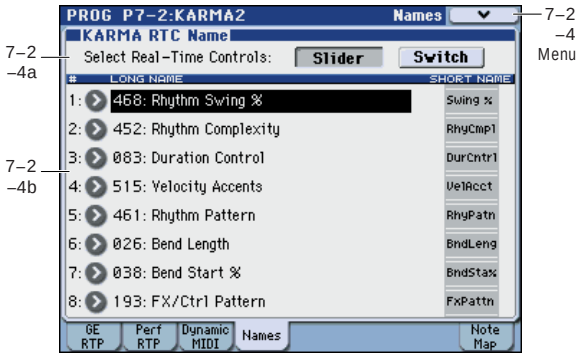
For more information, please see "Dynamic MIDI Sources & Destinations" on page 601.

▼7–2–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see "Program: Menu Command" on page 106.

7–2–4: Names



Here you can specify names for KARMA Sliders 1–8 and KARMA Switches 1–8.

7–2–4a: KARMA RTC Name

Select Real-Time Controls [Slider, Switch]

Here you can choose whether you want to specify the names for sliders or for switches.

Slider: The names of KARMA Sliders 1–8 will be displayed.

Switch: The names of KARMA Switches 1–8 will be displayed.

7–2–4b: Names

Slider:

Slider1…Slider8
[000 (no name)...571: Waveform Select [16]]

Select the names for KARMA Sliders 1–8.

On the M3, suitable names for the various functions are provided as presets. The long name is shown at the left, and the short name at the right.

You can also change or newly specify the slider assignments and names.

Switch:

SW1…SW8
[000 (no name)...571: Waveform Select [16]]

Select the names for KARMA Switches 1–8. The long name is shown at the left, and the short name at the right.

On the M3, suitable names for the various functions are provided as presets.

You can also change or newly specify the switch assignments and names.

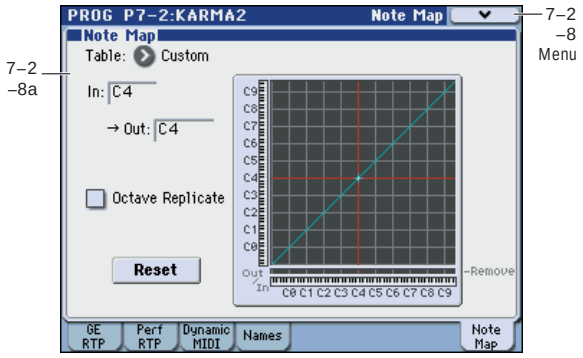
Note: The short names are shown on the switches or sliders in the P0: Play– KARMA RTC page and the P0: Play– Control Surface page for KARMA.

▼7–2–4: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Auto Assign RTC Name** ☞p.117

For more information, please see “Program: Menu Command” on page 106.

7–2–8: Note Map



Here you can create a Custom note map table (user table).

7–2–8a: Note Map

Note Maps allow notes being generated by the GE to be selectively remapped to other notes, or removed completely (changed into rests). Here you can view Global Note Map Tables, and edit the Custom Note Map Table that is stored with each Program. The Note Map Table is assigned in 7–1: KARMA1– Control: Note Map. For more information, please see “Note Map:” on page 86.

Table [Custom, Global 1...64]

There are 64 Global Note Map Tables provided in the system which cannot be edited, and provide a wide variety of preset note-remapping functions. There is also a single Custom Note Map Table stored in each Program, Combination, and Sequencer.

When **Table**= Custom, you can edit the Custom Table using the “In” and “Out” parameters below. When “Table” is one of the 64 Global Tables, you cannot edit it.

In (Note In) [C–1...G9]

Specifies a note number (of data being generated by the GE) that you want to map to a different note or to remove (change to a rest).

Note: When **In** or **Tempo** is selected, you can hold down the ENTER switch and press a note on the KYBD-61/73/88’s keyboard to set the **In** field to that note.

Out (Note Out) [Remove, C–1...G9]

Specify what will be done with the note you specified in the “In” field.

Remove: The note specified by **In** will be removed from the output data (and changed to a rest).

C1…G9: The note specified by **In** will be converted to the note number you specify here, and sent to the tone generator.

Note: When **Out** is selected, you can hold down the ENTER switch and press a note on the keyboard to set the **Out** field to that note.

Table Grid

This area graphically shows the overall “In” and “Out” settings in visual form.

The horizontal axis (X-axis) corresponds to the incoming note numbers, and the vertical axis (Y-axis) corresponds to the outgoing note numbers. The note transmitted for each received note is shown by the light blue pixels. Notes that are being removed from the incoming data are shown in yellow pixels in the bottom “Remove” row. A straight diagonal line represents no change (what goes in is passed through without modifications).

Octave Replicate [Off, On]

When **On (checked)**, any edit that you make within an octave will be made in **every** octave. This is mainly for applying the table to Melodic GEs, where you want to do something like remove every minor third, remap every fourth to a fifth, etc., and have that change take place in every octave.

Reset [button]

Restores the current table to “linear/no change” (a diagonal line).

▼7–2–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116

For more information, please see “Program: Menu Command” on page 106.

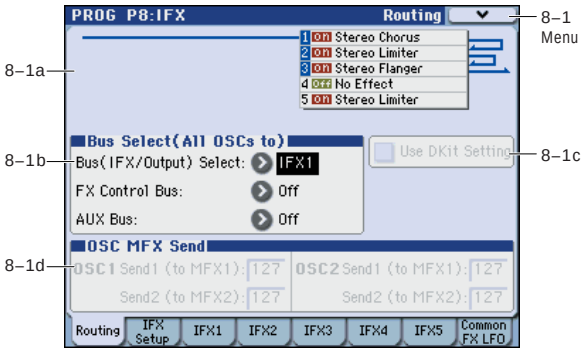
PROG P8: IFX (Insert Effect)

These pages let you can make settings for the insert effects. For instance, you can:

- Send the output of a oscillator to an insert effect
- Route a sound to an insert effect
- Make detailed settings for insert effects
- Make common LFO settings for effects

For more information, please see “Effect Guide” on page 421.

8–1: Routing



8–1a: Routing Map

This graphic shows an overview of the insert effects, including the routing of the oscillators to the effects, the effects names and on/off status, chaining between the effects, and the output bus to which the insert effects are themselves routed.

This page lets you adjust the routing of the oscillators to the insert effects. To adjust the other settings shown in this graphic, please see “8–2: Insert FX Setup,” as described on page 99.

8–1b: Bus Select (All OSCs to)

Bus (IFX/Output) Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the output bus for oscillators 1 and 2.

L/R: The oscillators will be output to the L/R bus. Normally you will choose L/R.

IFX1…5: Output to the IFX1–5 busses.

1, 2, 3, 4: The oscillator will be output in mono from the corresponding AUDIO OUTPUT (INDIVIDUAL).

1/2, 3/4: The oscillator will be output in stereo according to its pan setting (4–1c, 4–5: Amp2/Driver2) from the corresponding AUDIO OUTPUT (INDIVIDUAL) pair.

Off: The oscillator will not be output from the L/R bus, IFX1–5 busses, or Individual 1–4 busses. Choose the Off setting if you want the program oscillator output of the timbre to be connected in series to a master effect. Use **Send1 (to MFX1)** and **Send2 (to MFX2)** to specify the send levels.

FX Control Bus [Off, 1, 2]

Sends the output of the oscillator 1, 2 to an FX Control bus (two-channel mono FX Ctrl 1 or 2).

Use the FX Control busses when you want a separate sound to control the audio input of an effect. You can use two FX Control busses (each is a two-channel mono bus) to control effects in various ways.

For more information, please see “FX Control Buses” on page 423.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

These settings send the output of the oscillator 1, 2 to the AUX busses (four mono channels: 1, 2, 3, 4).

The AUX buses are internal buses used in each mode for sampling, etc.

In Program mode, you can resample your keyboard or KARMA performance, or sample an external audio signal from the AUDIO INPUT jacks.

In order for you to sample, **Source Bus** must be set to a AUX bus.

Normally, you will select L/R as the **Source Bus** so that you can sample the signal of the L/R bus (e.g., your keyboard performance and the KARMA function’s performance). However, you can use the AUX buses if you want to sample an audio input processed by effects, while listening to your keyboard performance or KARMA performance via the L/R outputs. If desired, multiple audio inputs can be mixed to a AUX bus, or the direct signal from an audio input can be mixed to a AUX bus along with the sound from an insert effect and sampled. For more information, please see the diagram “Source Bus = AUX 1/2” on page 12.

Off: The signal will not be sent to a AUX bus. Normally you will leave this off.

1, 2, 3, 4: The output of the oscillator 1, 2 will be sent to the corresponding AUX bus. The **Pan** setting (Prog 4–1c, 4–5: Amp2/Driver2) of each oscillator will be ignored, and the signal will be sent in monaural.

1/2, 3/4: The output of the oscillator 1, 2 will be sent in stereo to the corresponding pair of AUX busses. The signal is sent in stereo to AUX busses 1/2 or 3/4 according to the **Pan** setting.

Note: If the EXB-RADIAS is installed, you will use the AUX buses to route signals from the mixer or effect section to the RADIAS’ oscillator or vocoder.

8–1c: Use Dkit Setting

Use DKit Setting [Off, On]

This is shown if **Oscillator Mode** (Prog 1–1a) is set to **Drums**. If **Oscillator Mode** is set to **Single** or **Double**, this setting is ignored.

On (checked): The **Bus Select**, **FX Control Bus**, **Send 1**, and **Send 2** settings (Global 5–4b) for each key of the selected drum kit will be used. Check this if you want to apply an individual insert effect to each drum instrument, or send it separately from an AUDIO OUTPUT (INDIVIDUAL).

Tip: In most preloaded drumkits, the drum instruments have the same **Bus Select** settings according to their type, as follows.

Snares → IFX1

Kicks → IFX2

Other → IFX3

Off (unchecked): The **Bus Select** (Prog 8–1b), **FX Control Bus** (Prog 8–1b), **OSC MFX Send** (Prog 8–1d) settings will be used. All drum instruments will be sent to the specified bus.

8–1d: OSC MFX Send

OSC1:

OSC1 Send1 (to MFX1) **[000...127]**

Sets the volume (send level) at which the output of oscillator 1 will be sent to master effect 1. This applies only when **Bus Select** (Prog 8–1b) is set to **L/R** or **Off**.

If **Bus Select** is set to **IFX1–IFX5**, the send levels to master effects 1 and 2 are set by **Send 1** and **Send 2** (Prog 8–2a) after passing through IFX1–5.

OSC1 Send2 (to MFX2) **[000...127]**

Sets the volume (send level) at which the output of oscillator 1 will be sent to master effect 2. For more information, please see “OSC1 Send1 (to MFX1)” on page 99.

OSC2:

OSC2 Send1 (to MFX1) **[000...127]**

OSC2 Send2 (to MFX2) **[000...127]**

Sets the volume (send level) at which the output of OSC2 will be sent to master effects 1 and 2. These parameters will be valid when **Oscillator Mode** is set to Double and **Bus Select** is set to L/R or Off.

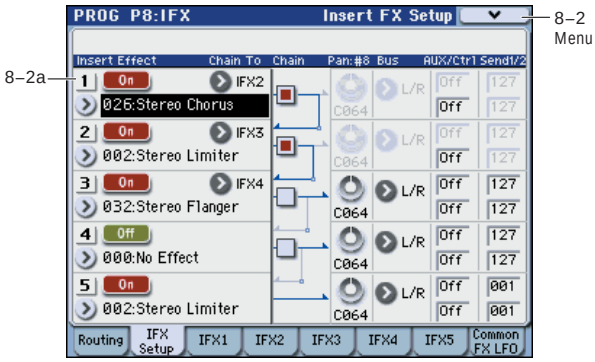
MIDI CC#93 controls OSC 1/2’s Send 1 level, and CC#91 controls the Send 2 level. These are controlled on the global **MIDI Channel** (Global 1–1a). The actual send level is determined by multiplying these values with the send levels of each oscillator.

▼8–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see “Program: Menu Command” on page 106.

8–2: Insert FX Setup



8–2a: Insert Effect

Here you can choose the type of each insert effect 1 through 5, its on/off status, chaining, and adjust the post-IFX mixer settings. For insert effects, the direct sound (Dry) is always stereo-in and out. The input/output configuration of the effect sound (Wet) depends on the effect type. For more information, please see “Insert Effects (IFX1…IFX5)” on page 426.

Insert Effect:

IFX1...4 **[000...170]**

IFX5 **[000...153]**

This selects the effect type for insert effect.

IFX5 cannot use double-size effects (154–170). If you use a double-size effect, the next insert effect will be unavailable. For example if you select a double-size effect for IFX1, you won’t be able to use IFX2.

Category/IFX Select menu

When you press the popup button, the Category/IFX Select menu will appear, letting you select effects by category. Use the tabs to select a category, and then select an effect within that category. Press the OK button to execute your selection, or press the Cancel button to cancel.

IFX1...5: IFX On/Off **[Off, On]**

Switches the insert effect on/off.

If this is off, the input will simply be passed to the output. (When 000:No Effect is selected, there’s no difference between On and Off.)

The setting will alternate between on and off each time you press the button.

MIDI Separately from this setting, you can use MIDI CC #92 (on the global **MIDI Channel)** to turn all insert effects off. A value of 0 turns them off, and values of 1–127 restore the original setting.

Note: If **Control Assign** is set to RT Control, you can use switches 1–5 to turn IFX 1–5 on/off.

Chain:

IFX1: Chain to **[IFX2...IFX5]**

IFX2: Chain to **[IFX3...IFX5]**

IFX3: Chain to **[IFX4...IFX5]**

You can chain up to five insert effects together in series, to create more complex effects. Set up the chain using this parameter, and then enable it using the **Chain** check box, below.

Effects must be chained in ascending numeric order. For example, IFX1 can be chained to any of IFX2 through IFX5, and IFX2 can be chained to IFX3 through IFX5.

You can chain two or more effects into the same downstream effect. For instance, both IFX1 and IFX2 can be chained to IFX5.

Effects can also join a chain in the middle. For instance, you can chain IFX3 to IFX4 to IFX5, and then chain IFX2 to IFX5 as well.

The **Pan:#8**, **Bus Select**, **AUX/Ctrl Bus**, and **Send1/2** settings apply only to the last effect in the chain. However, any effect in the chain can be sent to the FX Control buses.

IFX1: Chain [Off, On]
IFX2: Chain [Off, On]
IFX3: Chain [Off, On]
IFX4: Chain [Off, On]

This enables the chain, as set up by the **Chain to** parameter, above.

Pan:#8:

Pan: #8 (Post IFX PanCC#8) [L000...C064...R127]

Specifies the panning immediately after the insert effect.

MIDI You can use CC#8 to control this.

Bus:

Bus (Bus Select) [Off, L/R, 1...4, 1/2, 3/4]

Specifies the bus to which the signal will be sent immediately after the insert effect.

L/R: The signal will be sent to the L/R bus, which passes through TFX and then goes to the main L/R outputs. This is the default setting.

1, 2, 3, 4: The signal will be sent, in mono, to the selected individual output.

1/2, 3/4: The signal will be panned by the **Pan: #8** setting, and sent in stereo to the selected pair of audio outputs.

Off: The signal will not be sent directly to the outputs. This setting is useful if you want to:

Use **Send 1** or **2** to route the signal entirely through the master effects, without sending the dry signal to the outputs.

Use the **FX Control Bus** to route the signal to an effects side-chain, such as a gate or vocoder, without being heard directly at the outputs.

Use the **AUX Bus** to record the signal, without routing the signal directly to the outputs.

AUX/Ctrl:

AUX (AUX Bus) [Off, 1, 2, 3, 4, 1/2, 3/4]

Sends the post-IFX signal to the AUX busses. For more information, please see "AUX Bus" on page 98. If you want to resample via the AUX busses, set the sampling **Source Bus** (Prog 0–7b) to AUX 1/2 or AUX 3/4.

Ctrl (FX Control Bus) [Off, 1, 2]

Sends the post-IFX signal to the FX Control busses. For more information, please see "FX Control Bus" on page 98.

If you're using **Ctrl (FX Control Bus)** as an input signal for Vocoder etc., a feedback loop will occur if you output to the same bus as specified here, and oscillation will occur. Set this with care to avoid creating a loop.

Send1/2:

Send1 [000...127]
Send2 [000...127]

These adjust the level at which the post-IFX signal is sent to master effects 1 and 2. This is valid if **Bus (Bus Select)** (Prog 8–2a) is set to L/R or Off.

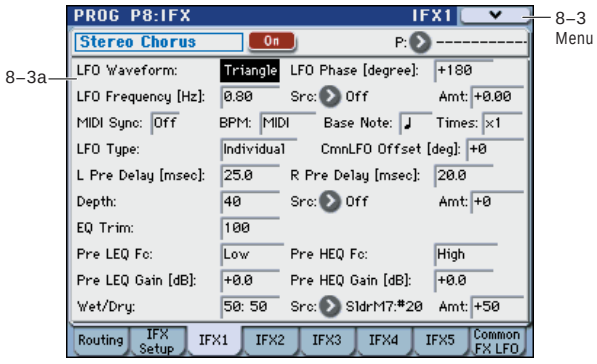
MIDI You can use CC#93 to control the Send 1 level, and CC#91 to control the Send 2 level. The global MIDI channel specified by **MIDI Channel** (Global 1–1a) is used for these messages.

▼8–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see "Program: Menu Command" on page 106.

8–3: IFX1



8–3a: Insert Effect 1 (IFX1)

Here you can edit the parameters of the insert effect you selected in the P8: IFX– Insert FX Setup page.

MIDI Effect dynamic modulation (Dmod) is controlled on the global **MIDI Channel** (Global 1–1a). For more information, please see “Dynamic Modulation Source List” on page 594.

IFX1 On/Off [Off, On]

This turns the insert effect on and off. It is linked with the on / off setting in the Insert FX Setup page.

Note: If **Control Assign** is RT Control, you can use switches 1–5 to turn IFX 1–5 on / off.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequencer, and Sampling).

Note that edits to effects parameters are automatically stored with the Program–you don’t need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Program, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: Initial Set: These are the default settings that are recalled when you select an effect type in the Insert FX Setup page. You can’t save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You’ll see this if you’ve just selected an effect, written a Program, or selected a new Program. Selecting this setting from the menu will not have any effect.

Note: Programs save the effects parameter settings, but they don’t save the number of the selected Effect Preset. If you select an Effect Preset, and then save the Program, the Effect Preset setting will revert to “**----------.**”

Using Effect Presets

1. **Select an effect in the Insert FX Setup page.**
2. **The P00: Initial Set settings will be recalled.**

“P (Effect Preset)” will indicate --------.

3. **Use “P (Effect Preset)” to select an effect preset: P00–P15 or U00–U15.**

The stored parameters will be recalled. Note that this will overwrite all parameters of the effect.

4. **Edit the recalled parameters as desired.**
5. **If you’ve come up with settings you like and want to save them as a new preset, use the Write FX Preset menu command.**

IFX1 Parameters:

IFX1 Parameters

This tab shows the parameters for IFX1, as selected on the Insert FX Setup page.

For details on the specific parameters of each effect, please see “Insert Effects (IFX1…IFX5)” on page 426.

▼8–3: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see “Program: Menu Command” on page 106.

8–4: IFX2,
8–5: IFX3,
8–6: IFX4,
8–7: IFX5

Here you can edit the effect parameters for the insert effects selected in the Insert FX Setup page.

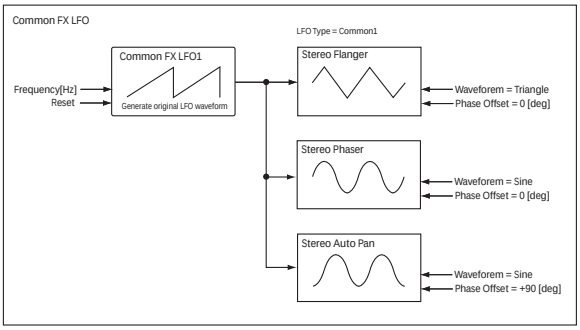
The parameters for IFX2–IFX5 are the same as for IFX1.

8–8: Common FX LFO

The two Common FX LFOs allow you to synchronize LFO-based modulation for multiple effects, such as phasers, flangers, filters, and so on.

The Common LFOs control only the frequency, MIDI synchronization, and reset options; each individual effect still has its own settings for the LFO waveform and phase.

Within the individual effects, you can choose whether to use one of the Common LFOs, or to use the individual effect's frequency, sync, and / or reset settings instead. This is done via the effect's **LFO Type** parameter; select **Individual** to use the effect's settings, or **Common 1** or **2** to use the Common LFOs.



MIDI Dmod (Dynamic Modulation) is controlled on the global MIDI channel specified in Global mode P1.

8–8a: Common FX LFO1

Sync (Reset) [Off, On]

This specifies whether the Common FX LFO will be reset.

If this is on, operating the **Source** (below) will reset the phase of the LFO.

Source (Dmod Source) [List of Dmod Sources]

If **Sync (Reset)** is on, this selects the Dmod source that will reset the Common LFO. For a complete list of Dmod sources, please see "Dynamic Modulation Source List" on page 594.

MIDI This will be off when the modulation source specified by **Source** has a value below 64, and on when the value is above 64. The LFO will be reset when this value rises from a level below 64 to a level higher than 64.

Frequency [0.02...20.00 (Hz)]

This specifies the frequency of the Common FX LFO. Higher values make the LFO faster.

MIDI/Tempo Sync [Off, On]

Off (unchecked): The speed of the Common FX LFO will be determined by the **Frequency** setting.

On (checked): The speed of the Common FX LFO will be determined by the **BPM**, **Base Note**, and **Times** settings (see below).

BPM [MIDI, 40.00...300.00]

Base Note [𝅘𝅥𝅯, 𝅘𝅥𝅯₃, 𝅘𝅥𝅰, 𝅘𝅥𝅰₃, 𝅘𝅥, 𝅗𝅥₃, 𝅗𝅥, 𝅗𝅥₃, 𝅗𝅥, 𝅝]

Times [01...32]

The frequency of the Common FX LFO will be the length of the **Base Note** note value multiplied by the **Times** value, relative to the tempo specified by the **BPM** value. If **BPM** is set to MIDI, this will operate according to the ♩**(Tempo)** (Prog 0–1a) setting. If **MIDI Clock** (Global 1–1a) is set to External, this will follow the MIDI clock of the master device.

8–8b: Common FX LFO2

The parameters are identical to those for Common FX LFO1, as described under "8–8a: Common FX LFO1," above.

▼8–8: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see "Program: Menu Command" on page 106.

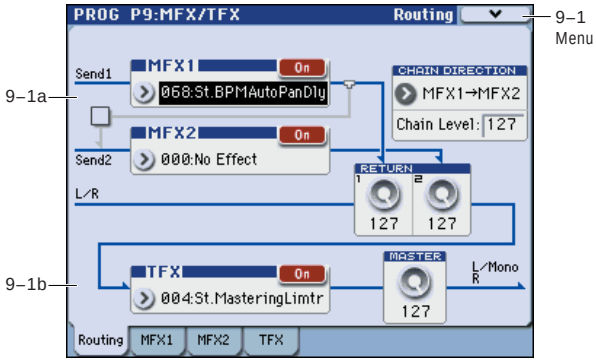
PROG P9: MFX/TFX (Master/Total Effect)

Here you can make settings for the master effects and total effect. For instance, you can:

- Route a sound to an master effects and total effect
- Make detailed settings for master effects and total effect

For more information, please see “Effect Guide” on page 421.

9–1: Routing



Here you can specify the type of master effects and total effect, and turn them on / off.

The master effects are sent to the L / R bus. The total effect is inserted into the L / R bus.

9–1a: MFX1, 2

The master effect does not output the direct sound (Dry). Adjust the **Return 1** and **Return 2** return levels to return the signal to the L / R bus and mix it with the L / R bus signal.

The master effects are stereo-in / out, but depending on the selected effect type, the output may be monaural. For more information, please see “In / Out” on page 426.

MFX1:

MFX1 **[000...170]**

This selects the effect type for master effect 1. You can use any of the available effects, without limitation. If you choose 000:No Effect, the output from the master effect is muted.

Category/MFX Select menu

When you press the popup button, the Category / MFX Select menu will appear, letting you select effects by category. Use the tabs to select a category, and then select an effect within that category. Press the OK button to execute your selection, or press the Cancel button to cancel.

MFX1 On/Off **[Off, On]**

Switches the master effect 1 on / off. When off, the output will be muted. This will alternate between on and off each time it is pressed.

MIDI Separately from the settings here, you can use control change #94 to turn master effects 1 and 2 off. A value of 0 turns them off, and values of 1–127 restore the original setting. The global MIDI channel specified by **MIDI Channel** (Global 1–1a) is used for this message.

Return 1 **[000...127]**

This specifies the return level from the master effect to the L / R bus (after which it passes through TFX, and is sent from L / MONO and R).

MFX2:

MFX2 **[000...153]**

MFX2 On/Off **[Off, On]**

Return 2 **[000...127]**

These parameters specify the effect type for master effect 2, its on / off status, and the return level from master effect 2 to the L / R bus. For more information, please see “MFX1:,” above.

MFX2 cannot use double-size effects (154–170). If you select a double-size effect for MFX1, you won’t be able to use MFX2.

Chain:

Chain On/Off **[Off, On]**

On (checked): Chain (series connection) will be turned on for MFX1 and MFX2.

Chain Direction **[MFX1...MFX2, MFX2...MFX1]**

Specifies the direction of the connection when MFX1 and MFX2 are chained.

MFX1→MFX2: Connect from MFX1 to MFX2.

MFX2→MFX1: Connect from MFX2 to MFX1.

Chain Level **[000...127]**

When chain is On, this sets the level at which the sound is sent from the first master effect to the next master effect.

If you select a double-size effect, the “Chain” settings will be ignored.

9–1b: TFX

These are the parameters for the total effect, which is placed at the final stage of the L / R bus. After passing through the total effect, the sound is output to AUDIO OUTPUT (MAIN OUT) L / MONO and R.

For the total effect, the direct sound (Dry) is always stereo-in / out. The input / output configuration of the effect sound (Wet) will depend on the selected effect type.

The total effect is stereo-in and stereo-out, but the output may be monaural depending on the type of effect you select. For more information, please see “In / Out” on page 426.

TFX:

TFX **[000...153]**

This selects the effect type for total effect.

TFX cannot use double-size effects (154–170).

Category/TFX Select menu

When you press the popup button, the Category / TFX Select menu will appear, letting you choose effect types by category. Use the tabs to select an effect category, and then choose an effect within that category. Press the OK button to execute your choice, or press the Cancel button to cancel.

TFX On/Off [Off, On]

This turns total effect on / off. If this is off, the input will be passed directly through. The setting will alternate between on / off each time you press this.

MIDI Separately from this setting, you can use control change #95 to turn the total effect off. A value of 0 turns the total effect off, and values of 1–127 restore the original setting. The global MIDI channel specified by **MIDI Channel** (Global 1–1a) is used for this message.

9–1c: Master Volume

Master Volume [000...127]

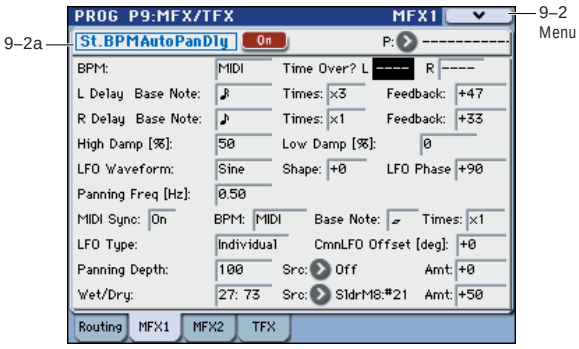
This specifies the final level of the audio output that has passed through total effect, and output from AUDIO OUTPUT (MAIN OUT) L / MONO and R.

▼9–1: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118

For more information, please see “Program: Menu Command” on page 106.

9–2: MFX1



9–2a: MFX1

Here you can edit the parameters of the effect you choose for MFX1 in the P9: MFX / TFX– Routing page.

MIDI Effect dynamic modulation (Dmod) is controlled on the global **MIDI Channel** (Global 1–1a). For more information, please see “Dynamic Modulation Source List” on page 594.

MFX1 On/Off [Off, On]

This turns master effect 1 on / off. It is linked with the on / off setting in the P9: MFX / TFX– Routing page.

The setting will alternate between On and Off each time you press this.

MIDI Separately from this setting, you can use CC#94 to turn Master effects 1 / 2 off. CC#95 will turn the Total effect off. A value of 0 is Off, and a value of 1–127 selects the original setting. This is controlled on the global MIDI channel specified by **MIDI Channel** (Global 1–1a).

Note: If **Control Assign** is RT Control, you can use switch 6 to turn MFX1 on / off. MFX2 and TFX can be controlled by switches 7 and 8.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

This selects the effect preset. For more information, please see “P (Effect Preset)” on page 101.

MFX1 Parameters

Here you can edit the parameters of the master effect selected in the P9: MFX / TFX– Routing page.

For details on the master effects, please see “Master Effects (MFX1, 2)” on page 432.

▼9–2: Menu Command

- 0: **Write Program** ☞p.106
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118
- 5: **Write FX Preset** ☞p.118

For more information, please see “Program: Menu Command” on page 106.

9–3: MFX2

9–4: TFX

These pages let you edit the parameters of Master Effect 2 and Total Effect. To select different effects types, use the P9: MFX / TFX– Routing page.

The parameters for MFX2, TFX is the same as for MFX1. For more information, please see “9–2: MFX1” on page 104.

Program: Menu Command

ENTER + 0–9: shortcuts for menu commands

Each page has a set of menu commands, which provide access to different utilities, commands, and options, depending on the page you're currently on. You can use the menu commands entirely from the touch-screen, by pressing the menu button in the upper right-hand corner of the screen and then selecting an option from the menu that appears.

Even though each page may have its own unique menu commands, the menus are standardized as much as possible. For instance, WRITE is almost always the first menu item in Program, Combination, and Sequencer modes.

You can take advantage of this standardization by using a shortcut to access any of the first ten menu items:

1. **Hold down the ENTER switch.**
2. **Press a number (0–9) on the numeric keypad to select the desired menu command, starting with 0.**

For instance, press 0 for the first menu command, 1 for the second, and so on.

If the menu command just toggles an option on and off (such as Exclusive Solo), then you're done. If the command calls up a dialog box, the dialog will appear on the display, and you can proceed just as if you'd selected the command from the touch-screen.

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

Write Program

This command writes an edited Program into the M3 internal memory. It is available on every page in Program mode.

Write Program lets you:

- Save your edits
- Rename the Program
- Assign the Program to a Category
- Copy the Program to a different Bank and number

Be sure to **Write** any Program that you wish to keep. An edited Program cannot be recovered if you do not write it before turning off the power or selecting another Program.

1. **Select "Write Program" to open the dialog box.**

2. **The upper line of the dialog shows the Bank, number, and Program name.**

If you wish to modify the program name, press the text edit button to move to the text edit dialog box, and enter the desired program name.

3. **In Category and Sub Category, specify the category of the program that you are writing.**

The category can be used to find this Program when selecting a program in Program, Combination, or Sequencer modes.

Note: You can edit these category names in the Global P4: Category page. For more information, please see "4–1: Program Main" and "4–2: Program Sub" on page 374.

4. **Press "To Program" to specify the destination Bank and number.**

You can also use the BANK SELECT I-A–U-G switches to select a bank.

Important: EDS Programs can only be written to EDS Banks, and RADIAS Programs can only be written to RADIAS Banks. For more information on the default Bank types, and on how to change them, please see "Bank (Bank Select)" on page 4.

5. **To Write the Program, press the OK button. To cancel, press the Cancel button.**

Note: You can also use the SEQUENCER REC / WRITE switch to write in the same way as **Write Program**. Press the SEQUENCER REC / WRITE switch to access the dialog box and write the program. In this case, the settings will be saved to the currently selected program. If the X–Y MODE is on when you save, you'll need to use this method. While the dialog box is open, the ENTER switch will operate as the OK button, and the EXIT switch will operate as the Cancel button.

Panel–SW Solo Mode On

When you select **Panel–SW Solo Mode On** and add a check mark to the menu item, the MIX PLAY / MUTE 1–8 switches will operate as Solo on / off.

If you've selected the CONTROL ASSIGN MIXER switch or the corresponding **Control Assign** parameter, you'll be able to control the Solo on / off status of the signals listed below.

Use the MIX PLAY / MUTE 1–8 switches or the Solo On / Off buttons of the Control Surface page to switch Solo on / off.

Note: The Solo function applies to the following targets in each mode. All are treated as a single group. If Exclusive Solo is active, all other sources will be off if even one source is being soloed.

Program:
OSC1, OSC2, Drm Track, Audio Input 1, 2, S / P DIF L, R, (FireWire L, R)

Combination:
Timbre 1...16, Audio Input 1, 2, S / P DIF L, R, (FireWire L, R)

Sequencer:
MIDI Track 1...16, Audio Input 1, 2, S / P DIF L, R, (FireWire L, R)

Sampling:
OSC, Audio Input 1, 2, S / P DIF L, R, (FireWire L, R)

1. **Select the menu command Panel–SW Solo Mode On.**

When you select this command, a check mark will be added at the left of **Panel–SW Solo Mode On** in the menu. The check mark will appear or disappear each time you select this command.

The MIX PLAY / MUTE switches will perform the following function.

With check mark: Play / Mute

No check mark: Solo On / Off

Alternatively, you can turn this setting on / off by holding down the ENTER switch and pressing numeric key 1.

This function will operate differently depending on the menu command **Exclusive Solo**, please see "Exclusive Solo," below.

Note: The **SOLO** setting is not memorized when saving.

Exclusive Solo

The behavior of the Solo function will alternate each time you select **Exclusive Solo**.

The Solo function can operate in one of the following two ways.

- **Multiple Solo**

The specified OSC1, OSC2, drum track, or audio input will be soloed. The solo on / off setting will alternate each time you press the SOLO button.

- **Exclusive Solo**

Only one of the OSC1, OSC2, drum track, or audio inputs will be soloed.

Note: Solo operations can be performed using MIX PLAY / MUTE switches 1–8 if the page command **Panel–SW Solo Mode On** is checked, or in the P0: Play– Control Surface page of each mode.

Note: The Solo function applies to each mode. All sources are handled as a single group. In the case of Exclusive Solo, all other sources will be off if even one source is being soloed.

Note: For details on the Solo function for each mode, please see the "*Note*" in **Panel–SW Solo Mode On**.

1. **Use the menu to select Exclusive Solo.**

When you select this item, a check mark will be added at the left of **Exclusive Solo** in the menu. The check mark will appear or disappear each time you select this item.

No check mark: Multiple Solo

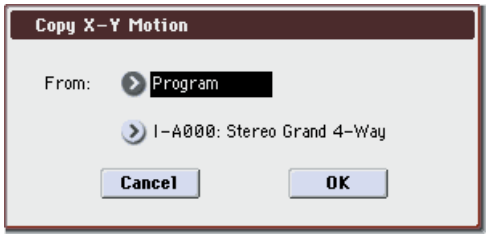
Check mark: Exclusive Solo

Alternatively, you can turn this setting on / off by holding down the ENTER switch and pressing numeric key 2.

Copy X–Y Motion

Here's how you can copy the X–Y motion setting from any program, combination, or song, or from Sampling mode.

1. **Select "Copy X–Y Motion" to open the dialog box.**



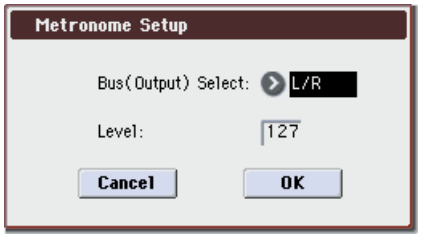
2. **Use the From fields to select the copy-source mode, bank, and number. You can press a BANK SELECT switch to select the bank.**
3. **Press the OK button to execute the Copy X–Y Motion function, or press the Cancel button if you decide to cancel.**

Metronome Setup

This specifies whether the metronome will sound a count-down before sampling begins. This can be set only if **Trigger** is set to Sampling START SW.

The **Metronome Precount** (Prog 0–7b) setting is used.

1. **Select "Metronome Setup" to open the dialog box.**



2. **Use "Bus (Output) Select" to specify the output destination for the metronome sound.**

L/R: Output to OUTPUT (MAIN) L / Mono, R, S / P DIF OUT, and headphones.

1...4: Output to OUTPUT (INDIVIDUAL) 1–4 respectively.

3. **Use Level to specify the volume of the metronome sound.**

Optimize RAM

Optimize RAM is available on the Sampling / Audio In tab of the Play page.

In some cases, especially if you've been loading and deleting different Samples and Multisamples, the internal memory can become fragmented.

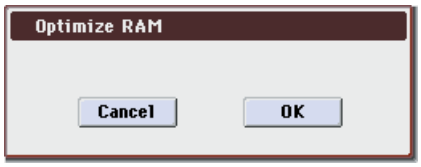
"Fragmented" means that there are chunks of data scattered throughout the physical RAM, like toy blocks scattered across a floor. While the memory isn't completely full, some of it can't be used - just like it's difficult to walk across a messy floor.

The **Optimize RAM** command cleans up the floor, so to speak. It collects all of the data into a single, continuous area of memory, so that the remaining free space can be used more efficiently.

If you run out of memory, try using this command; it may free up some extra space.

You can check the remaining amount of RAM in Sampling mode, on the main Recording page, under **Free Sample Memory**. For more information, please see "0–4a: Free Sample Memory" on page 308.

1. **Select "Optimize RAM" to open the dialog box.**



2. **Press the OK button to execute the command, or press the Cancel button to cancel without executing.**

Auto Optimize RAM

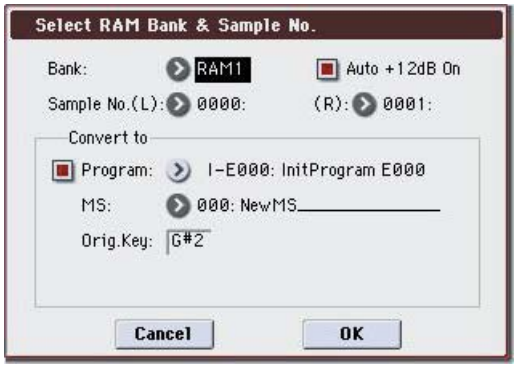
If **Auto Optimize RAM** (Global 0–2a) is enabled, you don't need to use the **Optimize RAM** command; instead, RAM will be optimized automatically.

Select Bank & Sample No.

Select Sample No. is available on the Sampling / Audio In tab of the Play page, when the sampling **Save to** parameter is set to RAM.

This specifies the sample number into which the sampled data will be written. You can also specify whether the sample will automatically be converted to a program after sampling.

1. **Select "Select Bank & Smpl No." to open the dialog box.**



2. **Use Bank to specify the writing-destination RAM bank.**

By default, you can use RAM1.

Note: If the optional EXB-M256 is installed, you'll be able to select RAM2.

3. **In Sample No., specify the writing-destination sample number.**

By default, this will be the lowest-numbered vacant sample number. If you select "----:----No Assign----" or a sample number that already contains data, the data will automatically be sampled into the lowest vacant sample number. If you are sampling in stereo, **Mode** (Prog 0–7b), specify **Sample No.(L)** and **Sample No.(R)**.

4. **Set Auto +12 dB On.**

On (checked): +12 dB (Sampling 2–1d) will automatically be turned on for samples you record. Samples for which **+12 dB** is on will play back approximately +12 dB louder than if this setting were off.

When you resample a performance in Program, Combination, or Sequencer modes, you should normally set **Recording Level** to about 0.0 (dB), so that it will be as high as possible without clipping.

When you resample, the sound will be recorded at the optimum level for sampled data, but the playback level at playback will not be as loud as it was during the resampling process (if **+12 dB** (Sampling 2–1d) is off). In such cases, you can check the **Auto +12 dB On** check box when you resample, so that **+12 dB** will automatically be on, making the sample play back at the same level as when it was resampled.

In these modes, the power-on defaults are **Recording Level** set to 0.00 (dB) and **Auto +12 dB On** turned on. If you resample a performance in one of these modes with these settings, the sample will play back at the same level at which it was resampled.

The **Auto +12 dB On** setting is made independently for Program, Combination, Sequencer, and Sampling modes.

5. **Convert to specifies whether the sample will automatically be converted into a program as soon as it has been sampled. This is convenient when you want to hear the sound immediately after sampling.**

If you check the **Program** check box, the sample will automatically be converted into a program.

At the right, set **Program** and **MS** to specify the program number and multisample number for the converted program.

Set **OrigKey (Original Key)** (Sampling 0–1b) to specify the location of the original key. The multisample will create an **Index** (Sampling 0–1a) with this key as the **Top Key** (Sampling 0–1b). The **OrigKey (Original Key)** will increment by one after sampling, and the next higher note will be assigned the next time you sample.

6. **Press the OK button to apply the settings you made, or press the Cancel button to return to the state prior to accessing this dialog box.**

Select Directory

Select Directory is available on the Sampling / Audio In tab of the Play page, when the sampling **Save to** parameter is set to MEDIA.

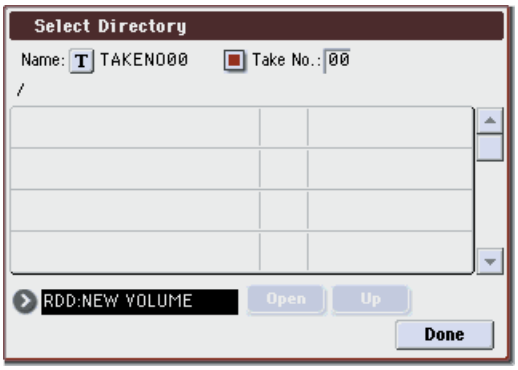
When sampling to media, this lets you set the media, directory, and file name for the resulting WAVE file.

This dialog also lets you audition WAVE files directly from the media; you can use this as a shortcut, instead of using the similar function in Media mode.

Note: You can select a USB storage device (e.g., hard disk) connected to the USB A connector.

Specifying the save destination for a WAVE file

1. **Select "Select Directory" to open the dialog box.**



2. **Use the popup button located at the left of "Drive select" to select the writing-destination drive for sampling.**
3. **Use the Open button and Up button to move to the desired directory.**
4. **In Name, specify a name for the WAVE file that will be written during sampling.**

If you check **Take No.**, the file will be saved with a two-digit **Take No.** added to the end of the filename. This number will automatically increment each time you sample. This is convenient when you are sampling repeatedly, since each sample will be saved with its own filename.

If **Take No.** is not checked, you can input up to eight characters in **Name**. If **Take No.** is checked, you can input up to six characters.

5. **Press the Done button to complete the settings.**

Playing back a WAVE file

1. **Select "Select Directory" to open the dialog box.**
2. **Use Drive Select and the Open and Up buttons to select the drive and directory, and select the WAVE file (48 kHz) that you want to play.**

3. **Press the SAMPLING START/STOP switch or Play button.**

The selected WAVE file will be played.

4. **Press the SAMPLING START/STOP switch or Stop button once again to stop playback.**

If the WAVE file is mono, the same sound will be output to L / R.

Auto Sampling Setup

Auto Sampling Setup is available on the Sampling / Audio In tab of the Play page.

This command automatically configures the Program mode sampling-related parameters, making it easy for you to sample an external audio source or to resample your performance as you play a Program. You can also use this command to initialize the sampling settings.

After using **Auto Sampling Setup**, you can further adjust any of the settings to suit your needs as described in the paragraphs of each section.

When you execute this command, the applicable parameters will be set automatically. You cannot use the **COMPARE** switch to recall the previous settings.

1. **Select "Auto Sampling Setup" to open the dialog box.**

2. **Press a radio button to select the type of settings you want to make.**

Initialize: Initializes the sampling-related parameters to their default state.

Resample Program Play: Sets the sampling-related parameters to allow you to play a Program and resample your performance.

REC Audio Input: Sets the sampling-related parameters so that you can sample an external audio source. With these settings, you can play a Program while sampling, but only the external input will be recorded.

3. **The settings for the rest of the procedure will depend on what you selected in step 2. (For details, please see the explanations below.)**

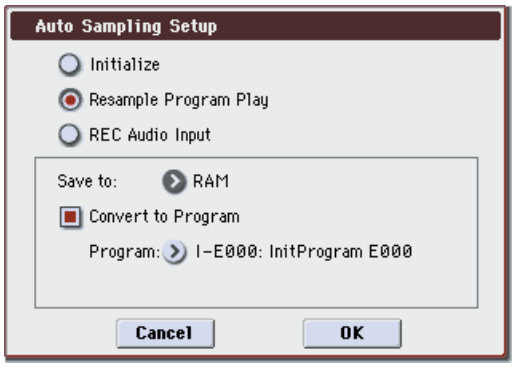
If you selected Initialize:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select Initialize.**
2. **Press the OK button to execute the command. If you decide not to execute, press the Cancel button.**

For the parameters and values that will be set, please see page 110.

Resample Program Play, If you selected Resample Combination Play:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select Resample Program Play.**



2. **Use Save to select either RAM or MEDIA as the destination to which the resampled data will be written.**

If you choose RAM, the sampled data will be written into RAM. If this is set to MEDIA, the sampled data will be used to create a WAVE file, which will then be saved on an external USB storage device (such as a hard disk). For more information, please see "Save to" on page 12.

3. **If you selected RAM for Save to, you can also specify whether the sample will be automatically converted to a program after resampling.**

If you want to convert the sample, check the **Convert to Program** option, and use **Program** to specify the desired convert-destination program.

4. **Press the OK button to execute Resample Program Play. If you decide not to execute, press the Cancel button. (See "Automatically-set parameters and their values" on page 110)**

Execute the command, and then resample

1. **Press the SAMPLING REC switch and then the SAMPLING START/STOP switch, and then play a note on the keyboard etc.**

Since **Trigger** (Prog 0–7b) is set to Note On, sampling will begin at the first note-on.

2. **When you've finished performing, press the SAMPLING START/STOP switch to stop resampling.**

Note: If **Save to** was set to RAM and **Convert to Program** was checked when you executed Resample Program (/ Combination) Play, and you continue sampling without changing the settings, the samples will automatically be assigned to C#2, D2 ... etc. When you execute **Resample Program (/Combination) Play** once again and sample, a new multisample will be created.

Auditioning the sampled data

- If **Save to** was set to RAM and **Convert to Program** was checked when you executed, you can select the program you specified as the conversion-destination, and play the C2 note to hear the result.
  If **Convert to Program** was not checked, select the sample in Sampling mode and audition it.
- If **Save to** was set to MEDIA when you executed, use the menu command **Select Directory** to audition the result.

Note: If you want to change the sample number to be sampled (when **Save to** is RAM), use the menu command **Select Bank & Sample No.** to change it.

Changing the writing destination

If you want to change the destination to which the WAVE file will be saved (when **Save to** is MEDIA), use the menu command **Select Directory** to make the change.

Changing the way in which sampling begins

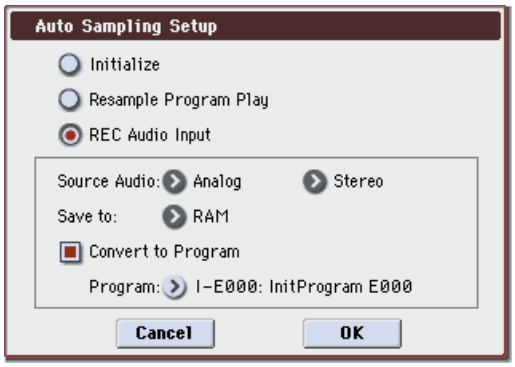
If you want to change the way in which sampling begins, change the **Trigger** setting (Prog 0–8c).

Sampling multiple sources simultaneously

If you want to sample an external audio source from AUDIO INPUT etc. simultaneously with the performance of a program, set Sampling / Audio In page Input 1, 2 **Bus Select** to L / R, and **Source Bus** to L / R.

If you selected REC Audio Input:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select REC Audio Input.**



2. **Use Source Audio to select the external audio input source.**

Analog: Selects the analog audio source connected to the AUDIO INPUT 1 and AUDIO INPUT 2 jacks.

S/P DIF: Selects the digital audio source connected to the S / P DIF jack. (See "0–7a: Audio Input" on page 9)

FireWire: If the EXB-FW option is installed, the digital audio output of the computer connected to the FireWire connector can be input to the M3.

3. **Use Mono-L/Mono-R/Stereo to specify whether the input source is mono or stereo.**

Mono-L: Settings will be made for sampling to L-MONO from Input 1 (if you've selected Analog).

Mono-R: Settings will be made for sampling to R-MONO from Input 2 (if you've selected Analog).

Stereo: Settings will be made for sampling Input 1 / 2 in stereo.

4. **Use Save to specify the writing-destination for the sampled data. RAM will write the data into RAM memory. MEDIA will create a WAVE file of the sampled data, and save it to media.**
5. **If you've selected Save to RAM, you can specify whether the sample will automatically be converted to a program. If you want the sample to be converted to a program, check Convert to Program and use the Program field to specify the convert-destination program.**
6. **Press the OK button to execute REC Audio Input. If you decide not to execute, press the Cancel button.**

Execute the command, and then sample

1. **Then press SAMPLING REC, and then START/STOP to begin sampling. (This is because Trigger is set to Sampling START SW.)**
2. **When you're finished, press the SAMPLING START/STOP switch to stop sampling.**

If you want to sample while monitoring the performance generated by the KARMA function, check "Latch" and start sampling while the KARMA function is playing.

Note: If you've set **Source Audio** to S / P DIF, use **System Clock** (Global 0–2a) to change the system clock.

If you want to apply an insert effect to the input source while you sample

Note: In the Prog P0: Play– Sampling / Audio In page Input 1, 2, S / P DIF L / R, use **Bus Select** to choose IFX1–IFX5, choose 1 / 2 as the **AUX Bus** following the insert effect you're using, and set **Source Bus** to AUX 1 / 2.

For additional information, please see "Resample Program Play, If you selected Resample Combination Play:" on page 109.

Automatically-set parameters and their values

		[Initialize]	[Resample Program Combination Play]	[REC Audio Input]
Input (Input Source)*1		Analog	Analog	[Source Audio]*2
		S/P DIF	S/P DIF	
		FireWire	FireWire	
Input1	BUS Select	Off	Off	Off
	FX Ctrl BUS	Off	Off	Off
	AUX BUS	Off	Off	1/2
	Send1/2	000	000	000
	Pan	L000	L000	L000
	Level	127	127	127
Input2	BUS Select	Off	Off	Off
	FX Ctrl BUS	Off	Off	Off
	AUX BUS	Off	Off	1/2
	Send1/2	000	000	000
	Pan	R127	R127	R127
	Level	127	127	127
Sampling Setup	Source BUS	L/R	L/R	AUX1/2
	Trigger	Note On	Note On	Sampling START SW
	Metronome Precount	Off	(N/A)	-
	Save to	RAM	[Save to]	[Save to]
	Mode	Stereo	Stereo	[Source Audio]*3
	Sample Time(RAM)	Maximum	-	-
	Sample Time(MEDIA)	4 min 59.999 sec	-	-
	Rec Level	+0.0	+0.0	+0.0
Select Sample	Auto +12dB On	On	On*4	On*4
	Convert to Program	Off	[Convert to Program]*5	[Convert to Program]*5
	Program	-	[Program]*5	[Program]*5
	MS	-	(Create new)*5	(Create new)*5
	Original Key	-	(C2)*5	(C2)*5
Select Directly	-	-	-	-

- : Not set automatically
Values enclosed in parentheses [ ] are automatically set according to the settings you make in the dialog box.

*1: [ ] User Global Setting: Edit Program Parameters
[x] User Global Setting: Edit Global Parameters

*2: Set to the input source specified by Source Audio.

*3: Set to Mono-L, R-Mono, or Stereo to match the Source Audio setting.

*4: If **Save to** is RAM.

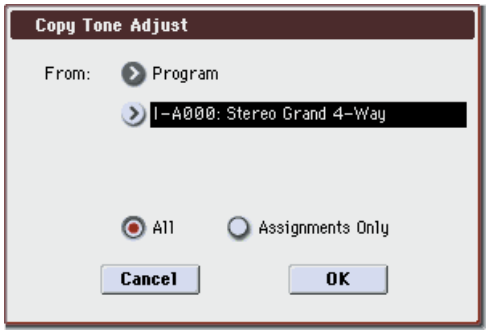
*5: If **Save to** is RAM and **Convert to Program** is On.

Copy Tone Adjust

Copy Tone Adjust is available on the Control Surface page when **CONTROL ASSIGN** is set to **TONE ADJUST**.

This command replaces the current Tone Adjust settings with those of any other Program, Combination Timbre, or Song Track.

1. **Select "Copy Tone Adjust" to open the dialog box.**



2. **Use From to select the copy-source mode, bank, and number.**

You can use the front-panel BANK switches to select the desired bank.

3. **In the Timbre field (if you've selected a Combination) or Track field (if you've selected a Song), select the Timbre or Track to copy from.**
4. **Select either All or Assignments Only to specify the Tone Adjust parameters you want to copy.**

All: This copies both the Tone Adjust parameter assignments and values.

Assignments Only: This copies only the Tone Adjust parameter assignments, without the values.

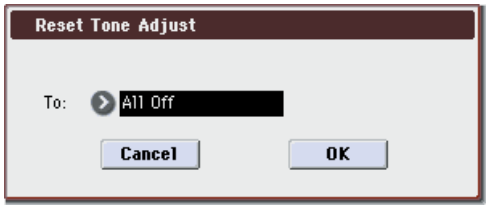
5. **Press the OK button to execute the Copy Tone Adjust command, or press the Cancel button if you decide to cancel.**

Reset Tone Adjust

Reset Tone Adjust is available on the Control Surface page when **CONTROL ASSIGN** is set to **TONE ADJUST**.

This command resets the Tone Adjust settings for all of the Switches, and Sliders to their default values.

1. **Select "Reset Tone Adjust" to open the dialog box.**



2. **Use the To field to specify how the Switches 1–8, Sliders 1–8, and Master Slider parameters will be reset.**

All Off: All will be reset to Off.

Default Setting: The parameters will be reset to the default values for the applicable type of program (EDS, RADIAS).

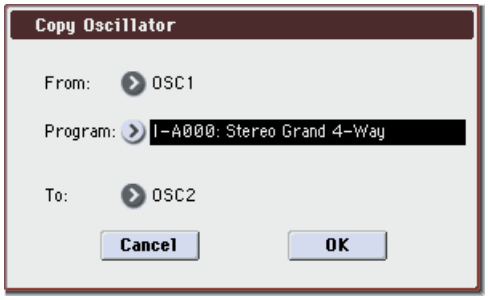
3. **To execute the Reset Tone Adjust command, press the OK button. To exit without resetting the controls, press the Cancel button.**

Copy Oscillator

Copy Oscillator is available on all of the tabs under the Basic / DT / Ctrls (Drum Trk Pattern – Pads 5–8 Setup is excluded), OSC / Pitch, Filter, Amp / EQ, AMS / C.KTrk pages.

This command is used to copy the settings from one oscillator to another.

1. **Select "Copy Oscillator" to open the dialog box.**



2. **Use the From field to select the oscillator that you want to copy.**
3. **Use Program to select the bank and number of the copy-source program.**

You can press a BANK SELECT switch to select the desired bank.

Note: You can't select EXB-RADIAS programs.

4. **In To, specify the copy destination oscillator.**
5. **To execute the Copy Oscillator command, press the OK button. To cancel, press the Cancel button.**

Swap Oscillator

Swap Oscillator is available on all of the tabs under the Basic / DT / Ctrls (Drum Trk Pattern – Pads 5–8 Setup is excluded), OSC / Pitch, Filter, Amp / EQ, AMS / C.KTrk pages.

This command exchanges the settings of oscillators 1 and 2.

1. **Select "Swap Oscillator" to open the dialog box.**

2. **To execute the Swap Oscillator command, press the OK button. To cancel, press the Cancel button.**

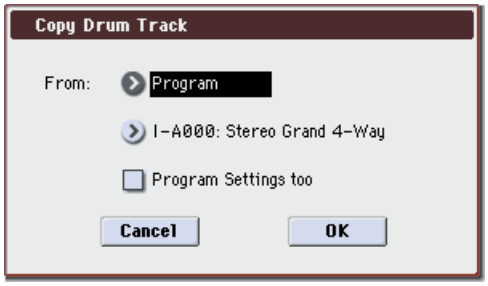
Note: This can be selected only if **Oscillator Mode** (Prog 1–1a) is Double.

Copy Drum Track

Copy Drum Track is available on the DrumTrk Pattern tab or DrumTrk Program tab of the Basic / DT / Ctrls.

This command copies settings from the specified program, combination / timbre, or song.

1. **Select "Copy Drum Track" to open the dialog box.**



2. **Use the From field to select the mode, bank, and number of the desired copy-source. You can press a BANK switch to select the desired bank.**
3. **If you execute this command in Program mode, and select Program in From, the additional field Program Settings too will appear.**

On (checked): The parameter settings of the Drum Track Pattern page and Drum Track Program page will be copied.

Off (unchecked): The parameter settings of the Drum Track Pattern page will be copied.

If you execute this command in Combination or Sequencer mode, the parameter settings of the Drum Track Program page will be copied. However, the **MIDI Channel** setting will not be copied.

4. **To execute the Copy Drum Track command, press the OK button. To cancel, press the Cancel button.**

Erase Drum Track Pattern

Erase Drum Track is available on the DrumTrk Pattern tab or DrumTrk Program tab of the Basic / DT / Ctrls.

This erases the drum track pattern you specify.

1. **Select "Erase Drum Track Pattern" to open the dialog box.**

2. **Select the user drum track pattern you want to erase.**
3. **If you check All Drum Track Patterns, all user drum track patterns will be erased.**
4. **To execute the Erase Drum Track Pattern command, press the OK button. To cancel, press the Cancel button.**

Copy Pad Setup

Copy Pad Setup is available on the Pads 1–4 Setup or Pads 5–8 Setup of Basic / DT / Ctrls page.

This command copies the pad settings of the specified Program, Combination, or Song.

1. **Select "Copy Pad Setup" to open the dialog box.**

2. **Use the From field to select the mode, bank, and number of the desired copy-source. You can also select Banks via the front-panel BANK SELECT switches.**
3. **Select the copy-source pad number. If you want to copy all settings for pads 1–8, check the All option.**
4. **Use the To field to specify the copy-destination pad.**

Note: Executing this command will copy the note number and velocity value. The MIDI channel is not copied.

5. **To execute the Copy Pad Setup command, press the OK button. To cancel, press the Cancel button.**

Sample Parameters

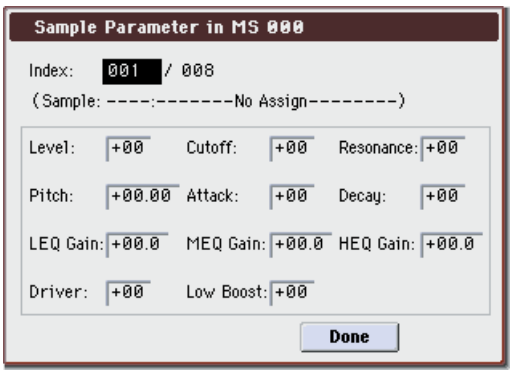
Sample Parameters is available on the OSC 1 / 2 Basic pages.

This command lets you adjust various parameters for the individual samples within a RAM multisample, including volume level, cutoff, resonance, pitch, EG attack and decay, drive and low boost, and EQ gains.

The Sample Parameters command is available only if you've selected a RAM Multisample; it is not available for ROM Multisamples, or Drum Kits.

When you've finished editing the parameters, press the Done button. Please note that Compare is not available for edits made in this dialog box.

Note: The Sample Parameters settings apply everywhere that the Multisample is used, and not just to the current Program. If another Program uses the same Multisample, it will also be affected by any changes that you make here.



Index [001…128]

An Index is a key zone in a Multisample, including a single Sample and all of its associated parameters. This is the currently selected Index.

The number following "/" is the total number of indexes in the current Multisample.

Sample [000]

This is the number and name of the Index's Sample.

Level [–99…+00…+99]

This adjusts the volume of the Sample, relative to the Oscillator's settings. **Negative (–)** values will decrease the levels, and **positive (+)** values will increase the levels. A setting of **+99** will double the volume. This is the same as the index **Level** parameter in Sampling mode; edits here will affect the values shown in Sampling mode, and vice-versa.

Each Sample also has a **+12dB** setting, as configured in Sampling mode; if this is on, the Sample will play back approximately 12dB louder.

Cutoff [–99…+00…+99]

This adds to, or subtracts from, the Oscillator's filter cutoff settings.

Resonance [–99…+00…+99]

This adds to, or subtracts from, the Oscillator's filter resonance settings.

Pitch [–64.00…+00.00…+63.00]

This adjusts the playback pitch in one-cent steps. A setting of **+12.00** raises the pitch one octave, and a setting of **–12.00** lowers the pitch one octave. This is the same as the index **Pitch** parameter in Sampling mode; edits here will affect the values shown in Sampling mode, and vice-versa.

Attack [–99…+00…+99]

This adds to, or subtracts from, the attack times of the filter EG and amp EG.

Decay [–99…+00…+99]

This adds to, or subtracts from, the attack times of the filter EG and amp EG.

LEQ Gain [–36dB…+00…+36dB]

This adds to, or subtracts from, the Program's Low EQ gain setting. If the EQ is bypassed, this will have no effect.

MEQ Gain [–36dB…+00…+36dB]

This adds to, or subtracts from, the Program's Mid EQ gain setting. If the EQ is bypassed, this will have no effect.

HEQ Gain [–36dB…+00…+36dB]

This adds to, or subtracts from, the Program's High EQ gain setting. If the EQ is bypassed, this will have no effect.

Driver [–99…+00…+99]

This adds to, or subtracts from, the Oscillator's Driver setting. If the Driver circuit is bypassed, this will have no effect.

Low Boost [–99…+00…+99]

This adds to, or subtracts from, the Oscillator's **Low Boost** setting. If the Driver circuit is bypassed, this will have no effect.

1. **When you've finished editing the parameters, press the Done button. Please note that Compare is not available for edits made in this dialog box.**

Note: The **Sample Parameters** settings apply everywhere that the Multisample is used, and not just to the current Program. If another Program uses the same Multisample, it will also be affected by any changes that you make here.

Sync Both EGs

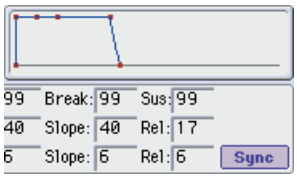
Sync Both EGs is available on the Filter 1/2 EG and Amp 1/2 EG pages.

This option allows you to edit the EGs of Oscillator 1 and Oscillator 2 together. When it is checked, editing the Filter EG of either Oscillator 1 or 2 will change both Filter EGs simultaneously. Similarly, editing the Amp EG of either Oscillator will change both Amp EGs.

This option is available only when the **Oscillator Mode** is set to **Double**.

1. **Select Sync Both EGs.**

The display will indicate "Sync," and the two EGs will be synchronized.



2. **If you no longer want the EGs to be synchronized, select Sync Both EGs once again.**

The indication will disappear from the display.

Swap LFO 1&2

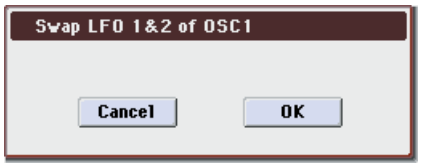
Swap LFO 1 & 2 is available on all of the LFO pages, except for the Common LFO tab.

This command copies the settings of LFO1 to LFO2, and vice-versa.

Note: If LFO2 is being used to modulate LFO1, this command will erase that modulation routing (since the LFOs cannot modulate themselves).

After opening the dialog box, press the OK button to swap the LFO settings, or press the Cancel button to close the dialog box without making any changes.

1. **Select "Swap LFO 1&2" to open the dialog box.**



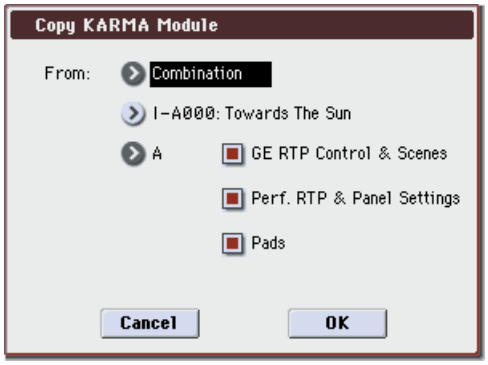
2. **To execute the Swap LFO 1&2 command, press the OK button. To cancel, press the Cancel button.**

Copy KARMA Module

Copy KARMA Module is available on all of the KARMA pages, as well as the KARMA GE tab or KARMA RTC of the Play page.

This command copies the settings of the KARMA Module used by a specified program, combination, or song.

1. **Select “Copy KARMA Module” to open the dialog box.**



2. **In From, select the copy source mode, bank, and number.**

You can use the front panel BANK SELECT I-A–U-G switches to select the bank.

3. **If you selected a combination or song as the copy-source, select the module from which you want to copy.**
4. **As appropriate for the content that you want to copy, turn “GE RTP Control & Scenes” On (checked).**

For more information, please see “Settings copied by “Copy KARMA Module”,” below.

5. **If you want to copy performance realtime parameters, Dynamic MIDI, and front panel settings, turn “Perf. RTP & Panel Settings” On (checked).**

For more information, please see “Settings copied by “Copy KARMA Module”,” below.

6. **If you want to copy the note and velocity settings of pads 1–8, turn “Pads” On (checked).**
7. **To execute the Copy KARMA Module command, press the OK button. To cancel, press the Cancel button.**

Settings copied by “Copy KARMA Module”

When copying from a program

If **GE RTP Control & Scenes** and **Perf. RTP & Panel Settings** are Off (unchecked), the following content is copied.

- The GE selected by the copy-source KARMA module.
- Link to DT setting.
- Settings of the KARMA module parameters (7–1: KARMA1– Trigger page, 7–1: KARMA1– Control page).
- 7–2: KARMA2– GE RTP page **MIN**, **MAX**, and **VALUE** settings.

If you turn “GE RTP Control & Scenes” On (checked)

In addition to the content copied when **GE RTP Control & Scenes** is Off (unchecked), the following content is copied.

- 7–2: KARMA2– GE RTP **ASSIGN** and **POL.** settings.
- The scene selected in the master buffer, the KARMA Slider and KARMA Switch settings of each scene (0: Play– KARMA RTC and 0: Play– Control Surface “KARMA” settings).
- 7–2: KARMA2– Names controller name settings.

If you turn “Perf. RTP & Panel Setting” On (checked)

In addition to the content copied when “Perf. RTP & Panel Settings” is Off (unchecked), the following content is copied.

- **Tempo** setting.
- **Time Signature** setting.
- KARMA ON / OFF switch setting.
- KARMA LATCH switch setting.
- 7–1: KARMA1– Drum Track Control page settings.
- 7–2: KARMA2– Perf RTP page settings.
- 7–2: KARMA2– Dynamic MIDI page settings.

When copying from a combination or song

If **GE RTP Control & Scenes** and **Perf. RTP & Panel Settings** are Off (unchecked) when you copy from a combination or song, the following content is copied.

- The GE selected for the copy-destination KARMA module (including the GE realtime parameters).
- Link to DT setting of the copy-source KARMA module.
- KARMA module parameters (7–2: KARMA2– Trigger, 7–2: KARMA2– Control).
- 7–3: KARMA3– GE RTP **MIN**, **MAX**, and **VALUE** settings.

If you turn “GE RTP Control & Scenes” On (checked)

In addition to the content copied when **GE RTP Control & Scenes** is Off (unchecked), the following content is copied.

- 7–3: KARMA3– GE RTP **ASSIGN** and **POL.** settings.
- The KARMA slider and KARMA switch settings of each scene in the copy-source buffer, and the currently selected scene.
- 7–4: KARMA4– Names controller name settings.
- 7–4: KARMA4– Note Map settings.

If you turn “Perf. RTP & Panel Setting” On (checked)

In addition to the content copied when **Perf. RTP & Panel Settings** is Off (unchecked), the following content is copied.

- **Tempo** setting.
- **Time Signature** setting.
- KARMA ON / OFF switch setting.
- KARMA LATCH switch setting.
- KARMA Module Control switch setting.
- 7–1: KARMA1– Scene Matrix “DT Run” page settings.
- 7–4: KARMA4– Perf RTP page settings.
- 7–4: KARMA4– Dynamic MIDI page settings.

The **In (Input Channel)** and **Out (Output Channel)** (Combi / Seq 7–1–1c) settings of a combination or song are not copied.

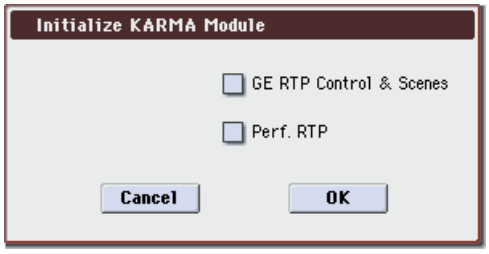
Initialize KARMA Module

Initialize KARMA Module is available on all of the KARMA pages, as well as the KARMA GE tab or KARMA RTC of the Play page.

This command sets the KARMA Module's parameters to their default values.

The GE selection will not be initialized. The GE parameter "Values" will be set to the default values that are preset for the selected GE.

1. **Select "Initialize KARMA Module" to open the dialog box.**



2. **As appropriate for the settings you want to initialize, you can turn on (check) the GE RTP Control settings & Scenes and/or Perf. RTP & Panel Setting options.**

For more information, please see "Settings initialized by Initialize KARMA Module," below.

3. **To initialize the settings, press the OK button. To cancel without initializing, press the Cancel button.**

Settings initialized by Initialize KARMA Module

When initializing from a program

If you initialize with the **GE RTP Control & Scenes** and **Perf. RTP** options turned Off (unchecked), the following parameters will be initialized.

- Settings of the KARMA module parameters (7–1: KARMA1– Trigger page, 7–1: KARMA1– Control page).
- 7–2: KARMA2– GE RTP **MIN**, **MAX**, and **VALUE** (they will return to the values preset by the GE).

The GE selection will not be initialized.

If you initialize with "GE RTP Control & Scenes" turned On (checked)

In addition to the parameters initialized with the Off (unchecked) setting, the following parameters will also be initialized.

- 7–2: KARMA2– GE RTP **ASSIGN** (→Off) and **POL.** (→+).
- KARMA Sliders 1–8 and KARMA Switches 1–8 settings in each scene (→064 / 0).
- KARMA Sliders 1–8 and KARMA Switches 1–8 names (→no name).

If you initialize with "Perf. RTP" turned On (checked)

In addition to the parameters initialized with the Off (unchecked) setting, the following parameters will also be initialized.

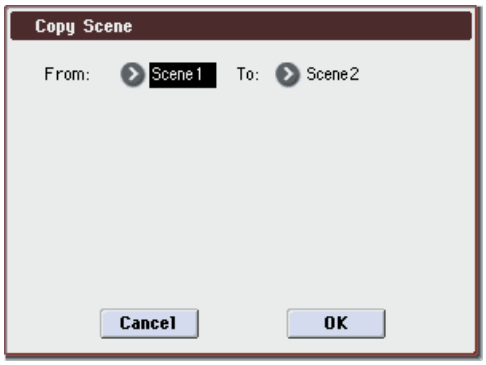
- 7–1: KARMA1– Drum Track Control page settings.
- 7–2: KARMA2– Perf RTP page settings.
- 7–2: KARMA2– Dynamic MIDI page settings.

Copy Scene

Copy Scene is available on all of the KARMA pages, as well as the KARMA GE tab or KARMA RTC of the Play page. It's also available on the Control Surface page, when **CONTROL ASSIGN** is set to **KARMA**.

This command copies settings for the KARMA Scenes. You can use this command when you want to make settings for a scene based on the other scene settings you edited, or vice versa.

1. **Select "Copy Scene" to open the dialog box.**



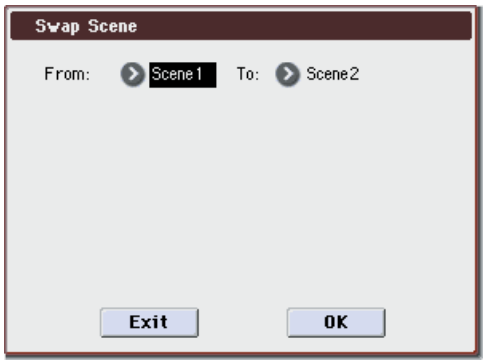
2. **In From select the scene that you wish copy.**
3. **In To select the copy destination scene.**
4. **To execute the copy, press the OK button. To cancel without executing, press the Cancel button.**

Swap Scene

Swap Scene is available on all of the KARMA pages, as well as the KARMA GE tab or KARMA RTC of the Play page. It's also available on the Control Surface page, when **CONTROL ASSIGN** is set to **KARMA**.

This command swaps (exchanges) the settings of two KARMA Scenes.

1. **Select "Swap Scene" to open the dialog box.**



2. **In Source1 and Source2, select two KARMA Scenes. that you wish to swap.**
3. **To execute the Swap KARMA Scene command, press the OK button. To cancel, press the Cancel button. You can then continue by specifying Source 1 and Source 2 and executing again.**

Capture Random Seed

Capture Random Seed is available on all of the KARMA pages, as well as the KARMA GE tab or KARMA RTC of the Play page.

The **Start Seed** is the source of the randomness of the phrase generated by the KARMA Module. For more information, please see “Start Seed” on page 82.

When you are listening to the randomly changing phrases generated each time a KARMA Module is triggered, and you hear a phrase that you would like to reproduce consistently each time you trigger that GE, you can execute this command to capture the seed that resulted in that phrase.

For more information, please see “Checking the Freeze Randomize function, and performing “Capture Random Seed”” on page 116.

1. **Select “Capture Random Seed” to open the dialog box.**

2. **If you are in a mode that can use more than one KARMA Module (Combination or Sequencer modes), use To to select the module for which you want to capture the seed value.**

If you select A–D, the seed value will be captured for that KARMA Module. If you select All, the seed values will be captured for all four KARMA Modules.

In Program mode, this is fixed at A.

3. **To execute the Capture Random Seed, press the OK button. To cancel without executing, press the Cancel button.**

If the **Start Seed** parameter (see page 82) of the KARMA Module for which you execute Capture Random Seed is assigned as a Perf Real-Time Parameter (see page 91), a message of “Could not execute Capture Random Seed because the selected Start Seed is assigned as an RTParm” will be displayed, and Capture Random Seed will not be executed. (Press the OK button to close the message.)

If you set the **To** field of the dialog box to ALL (Combination, Sequencer mode) to execute Capture Random Seed for all KARMA Modules, Capture Random Seed will be executed only for the KARMA Modules whose **Start Seed** parameter is not assigned as an Perf Real-Time Parameter. If the **Start Seed** parameter of any KARMA Module is assigned as a Perf Real-Time Parameter, Capture Random Seed will not be executed for those KARMA Modules.

Checking the Freeze Randomize function, and performing “Capture Random Seed”

By using the **Capture Random Seed**, **Start Seed** (Prog 7–1–6a), and **Freeze Loop Length** (Prog 7–1–6a) settings, you can loop a randomly changing phrase as desired, or generate the same phrase each time you trigger the GE.

Procedure

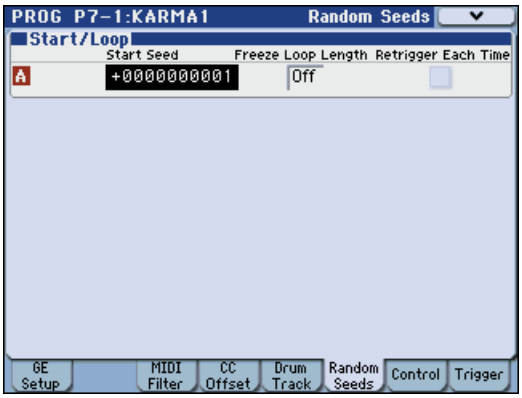
An example of the procedure in Program mode is shown below.

1. **Make settings as described in steps 1–6 of “How the Start Seed setting affects the phrase” on page 82.**
2. **Use a pad or the keyboard to trigger GE “0270: Improv Lead” for the KARMA Module.**

The phrase generated by this GE will always change randomly (each time you trigger it, or each time the phrase is repeated).

3. **Go to the Prog 7–1–6: Random Seeds page, and set “Start Seed” to 1 (+0000000001).**

Retrigger the Chord trigger. Each time it will play the same randomized phrase; however, if you let it continue, it will always make new randomizations as it goes along.



4. **Set Freeze Loop Length to 2 (2 bars).**

Now, every 2 bars, it will loop and repeat the exact same series of randomizations that is specified by **Start Seed** 1. However, this particular GE has a Phase Pattern of 8 steps (bars), so it may not sound always as if it is restarting every 2 bars, because of the internal settings of the Phase Pattern. It will repeat the same randomizations, but not necessarily restart the riff from the beginning. However, this can also be useful for getting the same rhythm and note movements, with a longer evolving phrase.

5. **Set Retrigger Each Time to On (checked).**

Now, every 2 bars, the Phase Pattern is restarted also, in conjunction with the Freeze Loop length, and the phrase becomes a simple 2 bar loop.

6. **Set Start Seed back to 0: Random.**

Retrigger the phrase by pressing a pad or playing the keyboard. A completely new randomized phrase will be generated each time you trigger, but every 2 bars it will loop and repeat until you trigger it again.

7. **Now set Retrigger Each Time back to Off (unchecked).**

Once again, even though the randomizations are being repeated every 2 bars, the 2 step GE Phase Pattern allows longer evolving phrases to be created.

8. **Set the Freeze Loop Length parameter.**

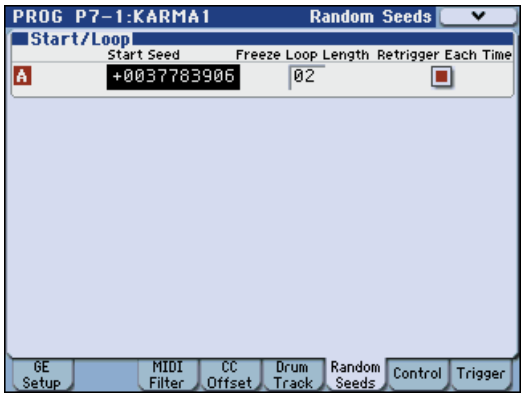
If you set this to **1–32**, the phrase will loop for the specified number of measures. For this example, set this to **2** and set the **Retrigger Each Time** to **On (checked)**. With this setting, the random phrase will freeze to a two-measure phrase. You can use this to loop a phrase during a live performance.

9. **In the same way as in step 2, use the pad or keyboard to trigger the KARMA Module.**
10. **When you hear a phrase you want to be played each time you trigger the GE, execute Capture Random Seed. Press the Page Menu button and choose Capture Random Seed from the menu.**

11. When the dialog box appears, press the OK button.

The **Start Seed** parameter will automatically be set to the internal value needed to reproduce the phrase.

*Example: Capture Random Seed has set **Start Seed** to a value of +0037783906*



Note: **Seed** is the source data from which the randomizations are created. The "Seed" of the phrase being looped is automatically set internally within the KARMA Module as the **Start Seed**. The **Start Seed** is used each time the GE is triggered. This means that each time you trigger the GE, a specific **Seed** is always used to generate the phrase.

12. Press the KARMA ON/OFF switch to temporarily turn off the KARMA function. Then press the KARMA ON/OFF switch once again to turn the KARMA function back on.

13. In the same way as in step 2, use the pad or keyboard to trigger the KARMA Module.

The phrase that was looped in step 12 will be reproduced each time the module is triggered. You can now save the Program and recall this phrase at any time.

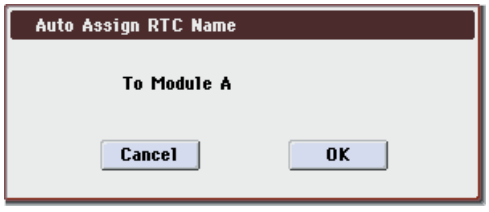
Auto Assign RTC Name

This command is available on the KARMA GE tab or KARMA RTC of the Play page, and the Name / Note Map tab of the KARMA page.

Auto Assign KARMA RTC Name will automatically assign appropriate names to the KARMA Sliders and Switches, based on the GE Real-Time parameters and Performance Real-Time parameters to which they are assigned. You can use this when creating new KARMA function assignments, or editing existing ones.

The names are selected from a list of 400 options, such as Rhythm Swing% and Rhythm Complexity.

1. Select "Auto Assign RTC Name" to open the dialog box.



2. To execute the command, press the OK button. To cancel without executing, press the Cancel button.

Please be aware that even with un-edited, factory-preloaded Programs or Combinations, executing this command may assign names that are different from those currently specified.

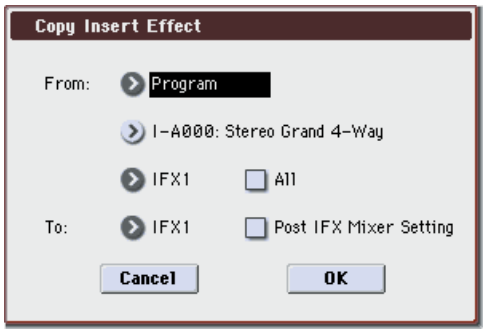
Copy Insert Effect

Copy Insert Effect is available on all of the IFX pages.

This command copies effects settings from within the current Program, from other Programs, Combinations, or Songs, or from the current Sampling mode settings.

To execute the Copy Insert Effect command, press the OK button. To cancel, press the Cancel button.

If you're copying from a master effect, the result will not be identical due to differences in the routing and level settings of the master effects.



From (Mode) [Program, Combination, Song, Sampling Mode]

This selects whether you'll copy from a Program, a Combination, a Song, or the current Sampling Mode settings.

From (Bank and Number) [Bank and Number]

For Programs and Combinations, this selects the Bank and Number from which to copy. When this parameter is selected, you can also use the front-panel BANK buttons to select Banks.

(Effects slot select) [IFX 1…5, MFX 1&2, TFX]

Select which of the effects you wish to copy.

You can also copy from a master effect and total effect.

All [check-box]

When this is enabled, the settings of all insert effects (the contents of the Insert FX page and the effect parameters of IFX1–5, but not **Ctrl Ch**) will be copied.

To [IFX 1…5]

This selects the insert effect copy destination.

Post IFX Mixer Settings [check-box]

When this is checked, the **Pan**, **Bus Sel.**, **Ctrl Bus**, **AUX Bus**, and **Sends 1** and **2** settings that follow the copy source insert effect will also be copied.

When this is not checked, only the effect type and its parameters will be copied.

Copying 000: No Effect

Copying a single effect set to "000: No Effect" will not work: no data will be copied.

If either **All** or **All used** is selected, and "000: No Effect" exists within a chain, it will be copied. However, if the entire chain consists of "000: No Effect," nothing will be copied.

Swap Insert Effect

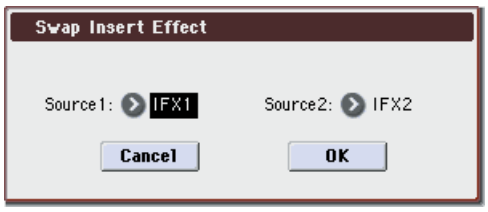
Swap Insert Effect is available on all of the IFX pages.

This command exchanges the effects, and their internal parameters, between two IFX slots.

All of the parameters shown on the IFX 1–5 pages will be copied.

Other IFX slot parameters will not be affected, including Pan, Sends 1 and 2, Chain, AUX Bus, and FX Control Bus.

1. **Select "Swap Insert Effect" to open the dialog box.**



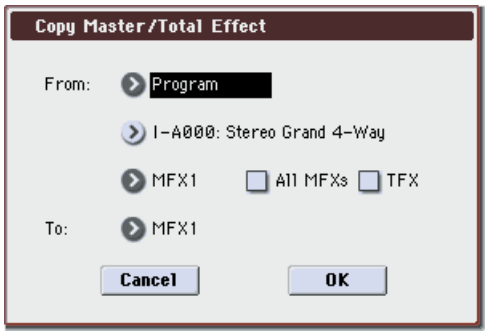
2. **In Source 1 and Source 2, select each of the insert effects that you wish to swap.**
3. **To execute the Swap Insert Effect command, press the OK button. To cancel, press the Cancel button.**

Copy MFX/TFX

Copy MFX/TFX is available on all of the MFX / TFX pages.

This command lets you copy any desired effect settings from Program, Combination, Song, or Sampling mode.

1. **Select "Copy MFX/TFX" to open the dialog box.**



2. **In From, select the copy source mode, bank, and number.**

You can also use the BANK SELECT switches to select the desired bank.

3. **Select the effect that you want to copy.**

You can copy from an insert effect by selecting IFX1–5.

If you copy from an insert effect, the result may not be exactly the same, due to differences in routing and level settings.

If you select MFX1 or MFX2, the **Return** level will be copied at the same time.

You can copy settings from a total effect by selecting TFX.

If you check **All MFXs**, all master effect settings will be copied.

If you check **TFX**, all total effect settings will be copied. Master Volume settings will not be copied.

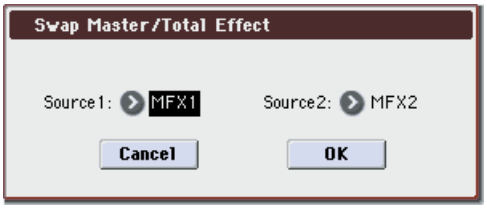
4. **In To, specify the copy destination master effects or total effect.**
5. **To execute the Copy MFX/TFX command, press the OK button. To cancel, press the Cancel button.**

Swap MFX/TFX

Swap MFX/TFX is available on all of the MFX / TFX pages.

This command swaps (exchanges) settings between MFX1, MFX2, TFX.

1. **Select "Swap MFX/TFX" to open the dialog box.**



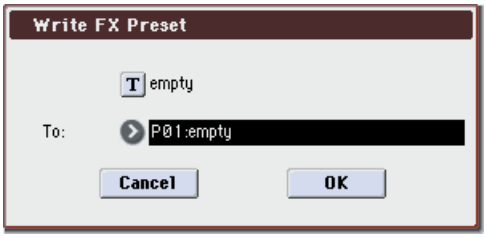
2. **Use Source 1 and Source 2 to select the master effect(s) or total effect(s) that you want to swap.**
3. **To execute the Swap MFX/TFX command, press the OK button. To cancel, press the Cancel button.**

Write FX Preset

Write FX Preset is available on all of the effects parameter editing pages, including IFX 1–5, MFX 1 and 2, and TFX.

This command saves the edited effect into the M3's internal memory.

1. **Select "Write FX Preset" to open the dialog box.**



2. **Press the text edit button to open the text edit dialog box, and input a name for the effect preset.**
3. **Use the To field to select the writing destination. We recommend that you use U00–U15.**
4. **Press the OK button to write the user preset, or press the Cancel button if you decide to cancel.**

COMBI Page Select

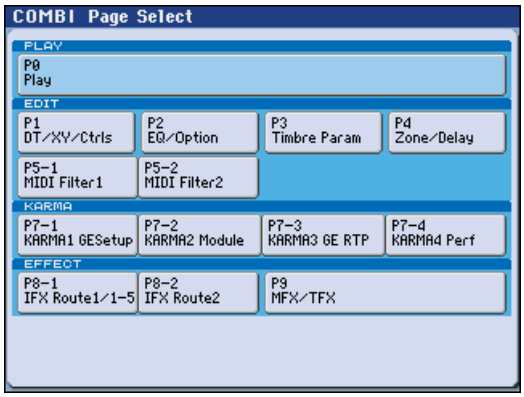
- Press the MODE COMBI switch to select Combination mode.

You can use the following ways to select the pages in Combination mode.

1. Press the PAGE SELECT switch to access "Page Select."

"Page Select" shows an abbreviated name for each page.

The page in which you were prior to pressing the PAGE SELECT switch is shown in light blue.



2. Select the desired page in the display.

Other ways to select pages

- Hold down the PAGE SELECT switch and press a numeric keys 0–9 to specify a page number; you will move to the corresponding page.

  For example if you want to access the P3: Timbre Param page, hold down the PAGE SELECT switch and press numeric key 3.

  Note: For pages that consist of multiple subpages, such as P5–1 and P5–2, P7–1 through P7–4 or P8–1 and P8–2, the first of these pages (P5–1, P7–1 or P8–1) will be selected.

- You can press the EXIT switch to return to the P0: Play page you selected most recently. Press the EXIT switch once again to return to the Main page. Press the EXIT switch to return to the P0: Play page.

	Page	Main content
PLAY	P0: Play	Select and play combinations. (☞p.120) Program selection for each timbre. (☞p.121) Pan and volume settings etc. for each timbre. Simple KARMA editing. (☞p.137) Audio input settings and resampling settings. (☞p.128) Editing from the control surface. (☞p.131)
EDIT	P1: DT/XY/Ctrls	Drum track settings. (☞p.138) X–Y control settings. (☞p.142) SW1, 2, and slider function settings. (☞p.144) Pad note and velocity settings (☞p.145)
	P2: EQ/Option	EQ settings for each timbre. (☞p.147) Settings for the EXB-RADIAS option. (☞p.148)
	P3: Timbre Param	Various parameter settings for each timbre (MIDI channel, OSC selection, Pitch setting, etc.) (☞p.149)
	P4: Zone/Delay	Key split and layer settings. (Key zone and velocity zone) (☞p.153) Time delay from note-on to beginning of sound. (☞p.155)
	P5–1: MIDI Filter 1	MIDI transmit/receive filter 1 settings. (☞p.157)
	P5–2: MIDI Filter 2	MIDI transmit/receive filter 2 settings. (☞p.160)
KARMA	P7–1: KARMA1 GE Setup	Overall KARMA settings. (☞p.161)
	P7–2: KARMA2 Module	Settings for each KARMA module. (☞p.169)
	P7–3: KARMA3 GE RTP	KARMA GE realtime parameter settings. (☞p.171)
	P7–4: KARMA4 Perf	KARMA performance parameter settings. (☞p.173)
EFFECT	P8–1: IFX Route1/ 1–5	Oscillator output bus and master effect send level settings. (☞p.177) Insert effect routing, selection, and settings. (☞p.179)
	P8–2: IFX Route2	Bus settings for oscillator output. (☞p.181) Common FX LFO 1, 2 settings (☞p.182)
	P9: MFX/TFX	Master effect routing, selection, and settings. (☞p.183) Total effect selection and settings. (☞p.184)

COMBI P0: Play

This is the main page of Combination mode. Among other things, you can:

- Select combinations
- Select a program for each timbre, and specify its Play / Mute and Solo On / Off status.
- Edit the KARMA function in simple ways
- Make audio input and resampling settings for use in Combination mode
- Check the control surface content, and control it.

Tip: Auto Song Setup

The Auto Song Setup feature copies the current Program or Combination into a Song, and then puts the M3 in record-ready mode.

If inspiration for a phrase or song strikes you while you're playing, you can use this function to start recording immediately. To do so:

1. **Hold down the ENTER switch and press the SEQUENCER REC/WRITE switch.**

The Setup to Record dialog box will open and ask "Are you sure?"

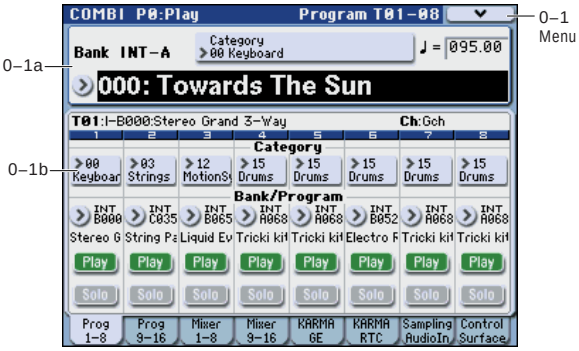
2. **Press OK.**

You will automatically enter Sequencer mode, and will be in the record-ready state.

3. **Press the START/STOP switch to start the sequencer and begin recording.**

For more information, please see "Tip: Auto Song Setup" on page 192.

0–1: Program T01–08, 0–2: Program T09–16



This is the main page for selecting and playing Combinations. You can also set the Program, Play / Mute, and Solo On / Off for each of the Timbres 1–8 and 9–16.

For more information, please see "0–1: Program T01–08, 0–2: Program T09–16" on page 120.

0–1(2)a: Combination Select

Bank [INT–A...INT–G, USER–A...USER–G]

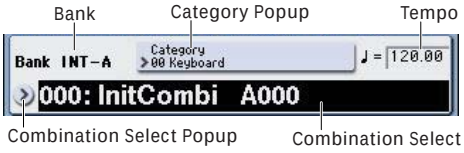
This indicates the currently selected combination bank.

Press one of the BANK SELECT I-A–U-G switches to select the desired bank.

- Each bank contains rewritable combination program areas for 128 combinations (a total of 1,792).

Bank	No.	Description
INT–A…C	000…127	Preloaded combinations
INT–D…G, USER–A…G	000…127	User combinations

Note: Pressing one of the BANK SELECT I-A–U-G switches while the **Program Select** parameter is selected in this page will change the timbre program bank (rather than the combination bank).



Combination Select [000...127]

Here you can select the desired Combination.

To switch combinations

- Choose "Combination Select," use numeric keys 0–9 to input the desired combination number, and press the ENTER switch.
- Choose "Combination Select" and turn the VALUE dial or use the △/▽ switches.

  Note: On this page only, the VALUE slider functions as a modulation source - which means that you cannot use it to select combinations.
- If the "0–1a: Combination Select" parameter is selected, the BANK SELECT I-A–U-G switches will switch combination banks.
- From the Bank / Combination Select menu you can view and select combinations by bank.
- From the Category / Combination Select menu you can view and select combinations by category.
- You can use a foot switch to select combinations. For more information, please see the Global parameter "Foot Switch Assign" on page 371. For a list of the functions that can be assigned to the footswitch, please see "Foot Switch Assignments" on page 599.
- You can transmit MIDI program changes from a connected external MIDI device.

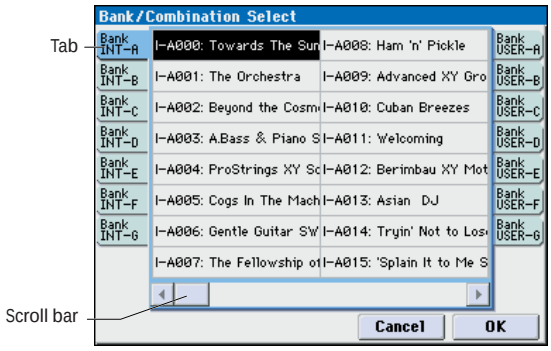
Bank/Combination Select menu:

1. **Press the popup button located at the left of "Combination Select" to access the Bank/Combination Select menu.**
2. **Press one of the tabs at left or right to select a bank.**
3. **Select a combination from the list. You can directly press your choice within the list, or use the △/▽ switches.**

If the screen cannot display all of the available items, use the scroll bar.

4. **Press the OK button to execute, or press the Cancel button to cancel your selection.**

Bank/Combination Select menu



Category [00...17/00...07]

Here you can select the combination category.

All programs are classified using eighteen main categories and eight sub-categories. You can select a category, and then select a combination within that category. When you press the popup button, the Category / Combination Select menu will appear.

Category/Combination Select menu:

You can select combinations by category and sub-category. All combinations are organized into up to eighteen categories, and each category is further organized into eight sub-categories. You can use these categories and sub-categories to select combinations.

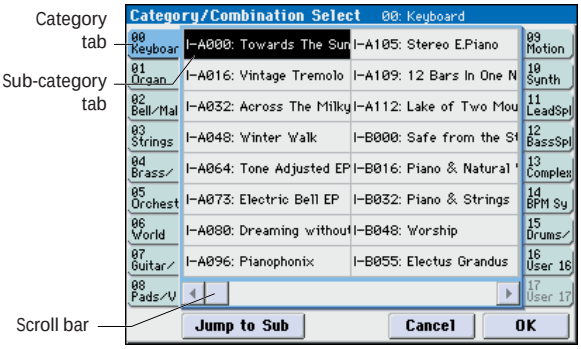
1. **Press the Category popup button (above the Combination Select parameter) to open the Category/Combination Select menu.**
2. **Press one of the tabs on the left and right to select the desired category.**

Note: You cannot select the category tab of a category to which no combinations have been assigned.

3. **Select a combination from the list. You can directly press your choice within the list, or use the ∆/∇ switches.**

If there are more combinations than can be shown in the screen, use the scroll bar to see the remaining combinations.

Category/Combination Select menu

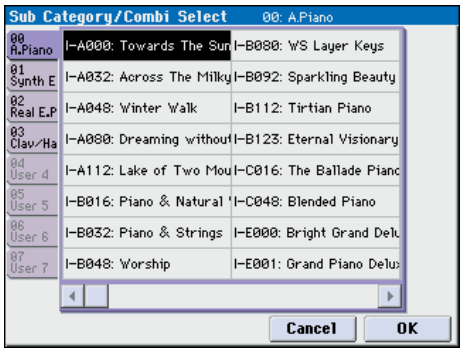


4. **To select from a sub-category, press the Jump to Sub button to access SubCategory/Program Select.**

Press one of the left tabs to select a sub-category.

Note: Sub-categories not assigned to any programs cannot be selected from the tabs.

Press the OK button to confirm your selection, or press the Cancel button to cancel it. You will return to the main categories.



5. **Press the OK button to execute, or press the Cancel button to cancel your selection.**

Note: The category of each combination can be specified in the "Write Combination" dialog box.

♩(Tempo) [40.00... 300.00, EXT]

This is the tempo for the current Combination, which applies to tempo-synced LFOs and effects, KARMA, and tempo-synced effects.

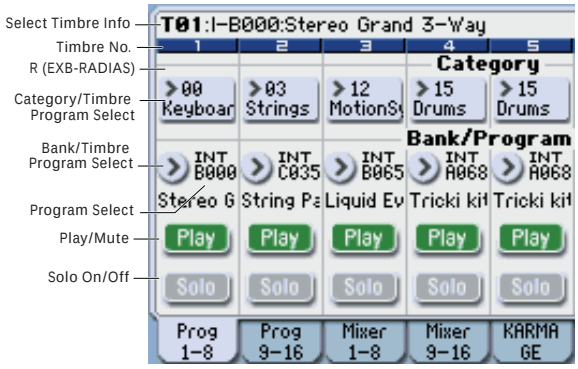
040.00…300.00 allow you to set a specific tempo in BPM, with 1 / 100 BPM accuracy. In addition to using the standard data entry controls, you can also just turn the TEMPO knob, or by playing a few quarter-notes on the TAP TEMPO switch.

EXT shown if **MIDI Clock** (Global 1–1a) is set to **External MIDI** or **External USB**. This is also shown if "MIDI Clock" is Auto and MIDI clock data is being received from an external device. If tempo is EXT, KARMA etc. will synchronize to MIDI clock data from an external MIDI device. For more information, please see "MIDI Clock (MIDI Clock Source)" on page 364.

0–1(2)b: Timbre Program Select

Selected Timbre Info

This area shows information on the timbre selected for editing. **T:** Timbre number / program bank / number / name, **Ch:** MIDI channel / number.



Timbre Number

This indicates the timbre number. Below each timbre number are shown various parameters which you can edit for that timbre.

Timbre 01 (Timbre Number):

R (EXB-RADIAS)

This is shown for timbres that can use the EXB-RADIAS option. For details, please see "EXB-RADIAS for M3 Manual" (PDF).

Note: This is not shown for an M3 in which the EXB-RADIAS option is not installed.

Category (Timbre Program) [00...17/00...07]

Here you can select the program used by each timbre by program category and sub-category. All programs are organized into up to eighteen categories and eight sub-categories.

Press this popup button to get the Category / Program Select menu, then select the desired category and sub-category, and finally select the desired program.

Category/Timbre Program Select menu:

Here you can select the program for each timbre by main category and sub-category. All programs are classified into a maximum of eighteen main categories, and each category is classified into eight sub-categories. You can select programs using these main categories and sub-categories.

- Press **Category** and use the Category / Timbre Program Select menu to select a program.

For the procedure, please see "Category / Combination Select menu:," above.

Program Select [INT–A...F, USER–A...G: 000...127, G, g(1)...g(9), g(d): 001...128]

Here you can select the program used by each timbre. The lower line displays part of the program name.

To switch the program of a timbre

- Choose **Program Select**, use numeric keys 0–9 to input the program number, and press the ENTER switch.
- Choose **Program Select** and turn the VALUE dial, VALUE slider or use the △ / ▽ switches.
- If the **Program Select** parameter is selected, the BANK I-A–U-G switches will switch program banks. (If Timbre Program Select is selected, the BANK switch LED of the program bank selected for that timbre will light.)
- From the Bank / Program Select menu you can view and select programs by bank.
- From the Category / Program Select menu you can view and select programs by category.
- You can transmit MIDI program changes from a connected external MIDI device.

MIDI When you select a Combination on the M3, a MIDI program change for the selected combination number will be transmitted on the global **MIDI Channel** (Global 1–1a). At the same time, bank select, program change, and volume (CC#7) messages will be transmitted on the MIDI channel specified for each timbre whose **Status** (Combi 3–1(2)c) is set to EXT or EX2. However, these messages will not be transmitted for timbres that are set to the same MIDI channel as the global MIDI channel. In this case, EX2 timbres will show the "Program" Bank as "–", and will transmit the bank number that was specified in **Bank Select (When Status=EX2)** (Combi 3–1(2)c).

When you play on the M3 keyboard and controllers, MIDI messages are transmitted on the global **MIDI channel**. At the same time, timbres whose **Status** is set to EXT or EX2 will transmit the same messages on their own MIDI channel.

If bank select and program change messages are received on a MIDI channel that matches the MIDI channel of a timbre whose **Status** is INT, the program of that timbre will change. However if the MIDI channel of the incoming message matches the global MIDI channel **MIDI Channel**, then the combination will change.

If you do not want the combination to change, you can either change the global MIDI channel so that it does not match the channel on which the program change messages are being received, or you can uncheck **Combination Change** (Global 1–1c). You can also uncheck "Bank Change" so that only the program number will change and the bank will remain the same.

If you wish to change the program assigned to certain timbres without changing the combination, you can also set **Enable Program Change** (Combi 5–1–1(2)c) so that the program will change on certain timbres but not on others.

Bank/Timbre Program Select menu:

- Press the popup button located at the left of **Program Select**, and choose a program from the Bank / Program Select menu.

For the procedure, please see "Bank / Program Select menu:" on page 3.

Play/Mute [Play, Mute]

This setting mutes a timbre.

Play: The timbre will produce sound.

Mute: The timbre will be muted (silent).

Note: You can use the MIX PLAY / MUTE 1–8 switches to control this setting.

Solo On/Off [On, Off]

Turns the Solo function on / off for each timbre.

The Solo function applies to timbres and audio inputs.

The Solo function operates differently depending on the setting of the **Exclusive Solo** menu command.

If **Exclusive Solo is off**, you can turn Solo on for more than one timbre. The setting will alternate each time you press the Solo On / Off button.

If **Exclusive Solo is on**, pressing a SOLO button will turn Solo on for only that timbre.

Note: You can use the MIX / PLAY MUTE 1–8 switches to control this setting.

Note: The Solo function applies to timbres 1–16 and audio inputs.

Note: The Solo On / Off status is not preserved when you write the combination.

Using the control surface to make timbre settings

You can use the control surface to edit the mix parameters for each timbre, including **Play/Mute**, and **Solo On/Off**. These can also be controlled from the mixer section of the front panel, or from the screen.

Play/Mute

1. **Press the CONTROL ASSIGN MIXER switch to select T1–8 or T9–16.**
2. **Use the MIX PLAY/MUTE 1–8 switches to switch the Play/Mute status of each timbre.**

Note: If the Solo On / Off status changes instead of Play / Mute, you'll need to uncheck the **Panel–SW Solo Mode On** menu command.

Solo On/Off

1. **Press the CONTROL ASSIGN MIXER switch to select T1–8 or T9–16.**
2. **Select the menu command Panel–SW Solo Mode On so that it has a check mark. Alternatively, hold down the ENTER switch and press the key 1.**
3. **Use the MIX PLAY/MUTE 1–8 switches to switch the Solo On/Off status of each timbre.**

Timbre 02...08, 09...16 (Timbre Number):

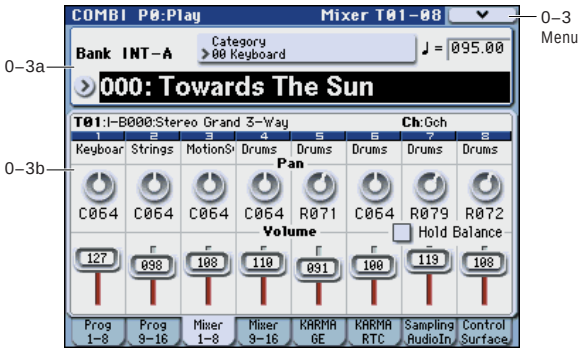
Here you can specify the program, Play / Mute status, and Solo On / Off status for timbres 2–8 and 9–16. These are the same as for timbre 01. For more information, please see "Timbre 01 (Timbre Number):," above.

▼0–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107

For more information, please see "Combination: Menu Command" on page 185.

0–3: Mixer T01–08, 0–4: Mixer T09–16



This is the main page for selecting and playing Combinations.

You can also set the pan, and volume for each of the Timbres 1–8 and 9–16.

For more information, please see "0–1: Program T01–08, 0–2: Program T09–16" on page 120.

0–3(4)a: Combination Select

For more information, please see "0–1(2)a: Combination Select" on page 120.

0–3(4)b: Pan, Volume

Selected Timbre Info

This area shows information on the timbre selected for editing.

For more information, please see "0–1(2)b: Timbre Program Select" on page 121.

Timbre 01 (Timbre Number):

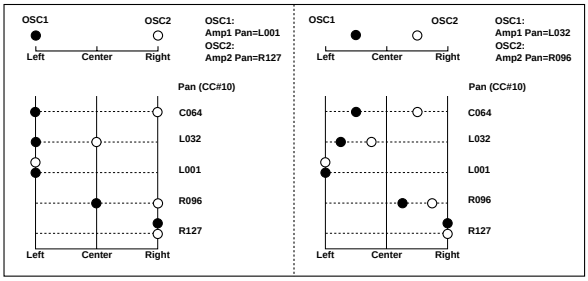
Category **[Category Name]**

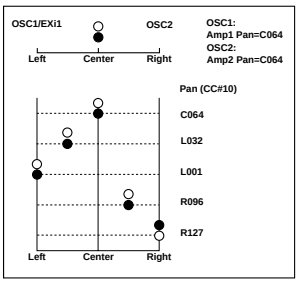
This indicates the category.

Pan **[RND, L001...C064...R127]**

This specifies the pan of each timbre.

L001…C064…R127: A setting of L001 is far left and R127 is far right. A setting of C064 will reproduce the pan setting of the Program mode.





If a mono insert effect is in use, the settings you make here will be ignored. In this case, the **Pan: #8** parameter in P8–1: IFX–Insert FX Setup page will adjust the panning of the sound after the insert effect (“Mixer” on page 430).

RND: The oscillator pan will change randomly at each note-on.

MIDI If **Status** (Combi 3–1(2)c) is set to INT, CC#10 (pan) messages can be received to control the setting. CC#10 values of 0 or 1 will place the sound at far left, 64 at center, and 127 at far right. (exclude RND) Pan can be controlled by messages received on the **MIDI Channel** (Combi 3–1(2)c).

Volume [000...127]

Adjusts the volume of each timbre 1–8.

Tip: You can use the control surface to control this parameter.

MIDI The volume of each timbre is determined by multiplying this volume value with the MIDI volume (CC#7) and expression (CC#11).

If **Status** (Combi 3–1(2)c) has been set to INT, incoming MIDI CC#7 or CC#11 messages will control the volume of a timbre. (However these messages will not affect the setting of this parameter.)

If **Status** is EXT or EX2, the value of this parameter will be transmitted as MIDI CC#7 when the combination is changed. However this will not be transmitted by a timbre that is set to the same MIDI channel as the global MIDI channel. This message is transmitted on the **MIDI Channel** (Combi 3–1(2)c) specified for each timbre.

Hold Balance [Off, On]

On (checked): When any one of the volume sliders is moved, the volume of the other timbres will change as well. The volume balance of timbres 1–16 will be maintained. This is useful when you wish to adjust the overall volume.

Using the control surface to adjust the volume

You can use the control surface to adjust the **Volume** of each timbre. These settings can be made from the front panel mixer section, or within this display page. Here’s how to adjust the volume from the front panel.

Volume

1. **Press the CONTROL ASSIGN MIXER switch to select timbres 1–8 or 9–16.**
2. **Operate the MIX VOLUMES 1–8 sliders.**

Timbre 02...08 (Timbre Number):

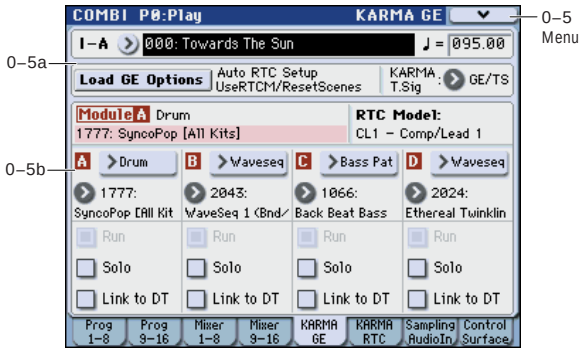
Here you can specify the program etc. for each Timbre 2 through 8. These are the same as for timbre 01. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼0–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107

For more information, please see “Combination: Menu Command” on page 185.

0–5: KARMA GE



This page gives you an overview of the four KARMA Modules (A–D), and lets you make basic adjustments.

Here you can select the GE (Generated Effect) used by each KARMA module, turn each KARMA module on / off (controlled by **Run** and **Solo**), and change the **Link to DT** setting. Other settings can be made in the Combi P7–1 to 7–9 pages (see page 161–).

The settings of the KARMA ON / OFF and LATCH switches, KARMA SCENES 1 / 5–4 / 8 switches, KARMA Sliders 1–8, and KARMA Switches 1–8 are saved independently for each Combination.

0–5a: Combination Select, Load GE Options, KARMA T.Sig, Tempo

Bank, Combination Number & Name

These are the bank, number, and name of the current Combination. Here you can also select a combination.

For more information, please see “0–1(2)a: Combination Select” on page 120.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see “♩(Tempo)” on page 121.

Load GE Options

These options let you specify whether the values and assignments for the KARMA Sliders 1–8 and Switches 1–8 will be set automatically, be initialized, or be preserved when you select a GE.

For more information, please see “Load GE Options” on page 4.

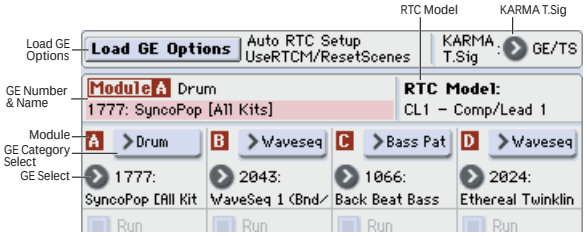
KARMA T.Sig (KARMA Time Signature) [GE/TS, 1/4…16/4, 1/8…16/8, 1/16…16/16]

This specifies the time signature of the phrases or patterns generated by the KARMA Modules.

The internal time signature of the phrase or pattern is determined by the GE, but you can set this parameter to change the time signature.

GE/TS: The initial time signature specified by each KARMA Module will be used.

1/4…16/16: Specify the desired time signature. In Combination and Sequencer modes, this will change the time signature for all four KARMA Modules.



0–5b: GE Select

The phrases and patterns produced by a KARMA Module are generated by a **GE (Generated Effect)**. Based on input note data from the keyboard, the GE creates phrases and patterns using numerous internal parameter settings to control the development of the note data, the rhythm, the chord structure, the velocity etc. MIDI control changes and pitch bend etc. can also be generated in synchronization with the phrase or pattern. In this way you can produce phrases and patterns in which the GE freely varies the tone or pitch.

Select KARMA Module Info:

This displays information for the KARMA Module specified by the Module Control Setting.

GE Number & Name

This displays the GE number and full GE name for the specified KARMA Module. If you select the **GE Select** parameter (see page 5) for another Module, it will display the GE number & name for that Module, until the Module Control Setting is changed.

RTC Model

This shows the GE’s RTC Model, as specified internally for each preset GE.

RTC stands for “Real Time Control.” RTC models provide a level of standardization for controlling the over 200 internal parameters of a GE.

For more information, please see “RTC Model” on page 5.

A (Module A):

Here you can make settings for Module A.

GE Category Select [Arpeggio…Real-Time]

This lets you select a GE by category, from **Arpeggio** through **Real-Time**.

GE Select [0000: Arp Model 01 Up/Dn…2092: Tempo Env Repeats]

This selects the Module’s GE, from among the 2093 presets.

For more information, please see “GE Select” on page 5.

Run [Off, On]

Turns on the selected Module(s). When off, the Module (s) may still playing, but they are muted. In this case, turning Run on allows the Module to resume playback from its present location. The Run settings are stored with the combination.

Solo [Off, On]

Solos the selected Module(s), even if their Run button(s) are Off (unchecked). This setting will be cleared when you reselect the combination.

It will not be remembered when you write the combination.

Link to DT (Link to Drum Track) [Off, On]

This links KARMA with the pattern playback of the drum track.

On (checked): The KARMA performance will be linked with the starting and stopping of the drum track. If even one of the modules A–D is On, the front panel LINKED LED (located between the DRUM TRACK ON / OFF and KARMA ON / OFF switches) will light.

If you turn on the KARMA ON / OFF switch and play the keys (or receive a note-on message), KARMA will not be triggered. When you turn on the DRUM TRACK ON / OFF switch, KARMA will start the moment the drum track starts.

When you turn the DRUM TRACK ON / OFF switch on (when **Trigger Mode** is Start Immediately), KARMA will be triggered and will begin operating. When KARMA "LATCH" is on, and **Trigger Mode** is Wait KBD Trig, it will begin operating when you play a key (or receive a note-on message).

If you turn the DRUM TRACK ON / OFF switch off while KARMA is operating, KARMA will also stop if KARMA "LATCH" is Off.

Off (unchecked): KARMA will not synchronize with the drum track.

B, C, D (Module B, C, D):

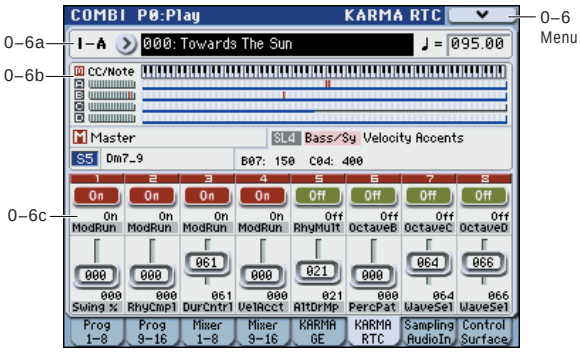
Here you can make settings for Modules B through D. These settings are the same as for Module A. See "A (Module A):".

▼0–5: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107
- 5: **Copy KARMA Module** ☞p.188
- 6: **Initialize KARMA Module** ☞p.189
- 7: **Copy Scene** ☞p.115
- 8: **Swap Scene** ☞p.115
- 9: **Capture Random Seed** ☞p.116

For more information, please see "Combination: Menu Command" on page 185.

0–6: KARMA RTC



0–6a: Combination Select, Tempo

Bank, Combination Number & Name

These are the bank, number, and name of the current Combination. Here you can also select a combination.

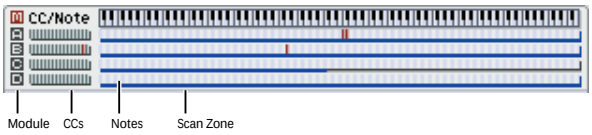
For more information, please see "0–1(2)a: Combination Select" on page 120.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 121.

0–6b: Note/CC Activity

KARMA Module Info:



Module

A, B, C, and D indicate the corresponding module.

CCs/Notes

This is a real-time display of the notes or CC# message generated by the KARMA Modules (Module A, B, C, D).

Scan Zone

The key zone settings of the KARMA Module are displayed as a solid blue line under the notes display.

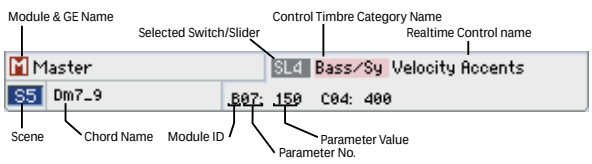
For more information, please see "7–1–1b: GE Setup" on page 161.

Select KARMA Module Info:

This displays information for the KARMA Module specified by the Module Control Setting.

When you operate the KARMA Sliders 1–8 or KARMA Switches 1–8, the number and value of the GE Real-Time Parameters or Performance Real-Time Parameters you are controlling will be displayed. This lets you see which parameters are being controlled by the slider or switch, and how.

Display example



Module & GE Name

This indicates the module (M, A, B, C, D) selected by Module Control.

This name is the name of the GE selected for each KARMA module. The exception is that this will indicate Master only if Master is selected.

Scene

This indicates the currently selected scene.

Chord Name

This shows the name of the chord detected for the KARMA Module specified by the **Module Control** setting.

If "M" Master is selected, the chord for the last of the Modules in operation will be displayed. (In other words, if Modules A, B and C are running, the chord for Module C will be displayed.)

Note: Chord detection is affected by the **key zone** (Combi 7–1–1b) and **Transpose** (Combi 7–3b: Module Parameter-Control) of each KARMA Module, and by the **Dynamic MIDI Destination** (Combi 7–8) **Chord Scan** and **Smart Scan** settings.

Selected Switch/Slider [SW1...8, SL1...8]

This indicates the KARMA Sliders 1–8 or KARMA Switches 1–8 that is currently being operated or was operated most recently.

Control Timbre Category Name

This indicates the category of the program used by the timbre that is being played from the KARMA Module.

This will indicate Multi if a single KARMA Module is playing multiple timbres of differing categories.

Realtime Control Name

This shows the full name of the realtime control that is currently being operated or was operated most recently.

Module ID [A...D, P]

Indicates which parameters you are controlling from the KARMA Sliders or KARMA Switches.

A, B, C, D: Indicates the KARMA Module that is being controlled. In this case, you are controlling a GE Real-Time Parameter.

P: Indicates that the slider or switch is controlling a Performance Real-Time Parameter.

Parameter No. [01...32]

When **Module ID** is A,B,C or D (KARMA Module), this area indicates the GE Real-Time Parameter number 01–32 that you are controlling (see "7–2–1: GE RTP (GE Real-Time Parameters)" on page 90).

If **Module ID** is P, this area indicates the Performance Real-Time Parameter number 01–08 (see "7–2–2: Perf RTP (Perf Real-Time Parameters)" on page 91) that you are controlling.

Parameter Value

This area indicates the value of the GE Real-Time Parameter or Performance Real-Time Parameter you are controlling. The value will change as you move the slider or operate the switch.

A slider or switch can have multiple parameters assigned to it. A maximum of four assigned parameters can be displayed here in the available space. If there are more, they will not be displayed (but a ">" will be added to the end of the line). They will still function when the control is activated, but you cannot view their values directly.

0–6c: Realtime Controls

This displays the names and settings of KARMA Sliders 1–8 and KARMA Switches 1–8.

1, 2, 3, 4, 5, 6, 7, 8:

This shows the current settings of KARMA Switches 1–8 and the KARMA Sliders. The explanation below will mention only Switch 1 and Slider 1. Switches 2–8 and Sliders 2–8 are the same as 1.

KARMA Switch1

This shows the current KARMA Switch 1 setting.

If **Control Assign** is KARMA, you can use the control surface switches and sliders to control KARMA Switches 1–8 and KARMA Sliders 1–8. You can also operate them by directly pressing the switch shown in the display.

KARMA Switch1 Stored Value

This shows the setting of KARMA Switch 1 that is written into the program.

KARMA Switch1 Name

This shows the name of KARMA Switch 1 (abbreviated name).

You can assign this name in "7–4–3b: CAT., Names" on page 175.

KARMA Slider1

This shows the current setting of KARMA Slider 1.

This shows the current setting of KARMA Slider 1. If **Control Assign** is KARMA, this is linked with operations of control surface slider 1. In addition, you can directly press the slider shown in the display and then use the VALUE slider, △ / ▽ switches, or VALUE dial to adjust the value.

KARMA Slider1 Stored Value

This shows the setting of KARMA Slider 1 that is written into the program.

KARMA Slider Name

This shows the name of KARMA Slider 1 (abbreviated name).

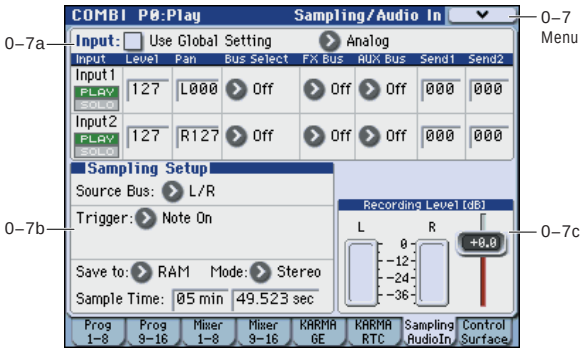
You can assign this name in "7–4–3b: CAT., Names" on page 175.

▼0–6: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107
- 5: **Copy KARMA Module** ☞p.188
- 6: **Initialize KARMA Module** ☞p.189
- 7: **Copy Scene** ☞p.115
- 8: **Swap Scene** ☞p.115
- 9: **Capture Random Seed** ☞p.116
- 10: **Auto Assign RTC Name** ☞p.117

For more information, please see "Combination: Menu Command" on page 185.

0–7: Sampling/Audio In



Here you can adjust the settings for the analog / digital audio signal input (Analog, S / P DIF), and the sampling-related settings for Combination mode.

As in Program mode, sampling in Combination mode allows you to sample an incoming audio signal or to sample a M3 performance. The M3 can also be used as a 4-in 6-out effect processor.

For example, here are some ways you might use this.

- Sample only an external audio signal from AUDIO INPUT (e.g., guitar) or S / P DIF, while you listen to the performance using the KARMA function or Drum Track function.
- You can play a combination that uses filters, effects, or the KARMA function, and resample your performance.
- You can sample your performance on the M3 together with an external audio source.

Note: By installing the EXB-FW option you can add input / output via FireWire. This gives you a total of 6-in and 6-out.

Using the control surface to make audio input settings

You can use the control surface to make **Play/Mute**, **Solo On/Off**, and **Volume** settings for the audio input. These settings can be made from the front panel mixer section, or in the display of the P0: Play– Control Surface page. Here we will explain how to use the front panel.

For the procedure, please see “Using the control surface to make audio input settings” on page 8.

The control surface will control the Global mode settings if **Use Global Setting** is On (checked).

0–7a: Audio Input

Use Global Setting [Off, On]

On (checked): The Audio Input settings (Analog 1, 2, S / P DIF 1, 2) you specify in Global P0: Basic Setup– Audio page will be used.

Note: FireWire 1 and 2 are enabled if the EXB-FW option is installed.

Normally you will leave this setting **On (checked)**. The Audio Input setting you make in Global mode will always be used; i.e., the Audio Input setting will not change even if you switch combinations. This is convenient when you want to select various combinations and sample an external audio source from Audio Input along with your playing.

Off (unchecked): The Audio Input settings (Analog 1, 2, S / P DIF 1, 2) you specify here will be used.

If you want to make specific Audio Input settings as part of the combination, uncheck this, and make the desired Audio Input settings here. You can make oscillator, effect, and audio input settings in conjunction with each other; for example, you could create and store a combination in which an external audio source drives a vocoder effect. For more information, please see “Example: Rhythmic Vocoder (Combination)” on page 424.

Input [Analog, S/P DIF, (FireWire)]

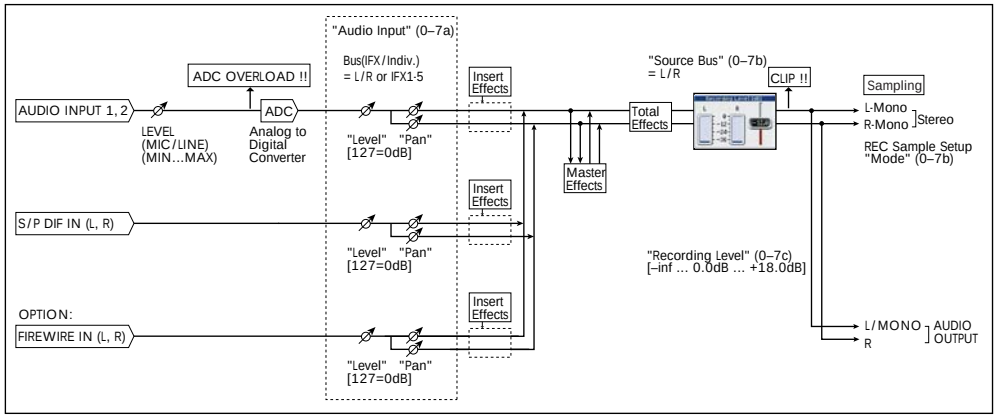
Analog: The INPUT 1 and 2 jacks will input mic level or line level signals.

S/P DIF: A digital audio from the S / P DIF IN jack will be input. Connect the digital output of your instrument or DAT etc. to the S / P DIF IN jack. The S / P DIF input / output supports 48 kHz sample rates.

If you want to use S / P DIF, set **System Clock** to S / P DIF. For more information, please see “System Clock” on page 359.

FireWire: If the EXB-FW option is installed, input a digital audio signal from the FireWire connector. The sample rate of the FireWire input / output is 48 kHz.

Audio input/output



Input1, Input2:

PLAY/MUTE [PLAY, MUTE]
SOLO On/Off [Off, On]
Level [000...127]
Pan [L000...C064...R127]
Bus Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]
FX Bus (FX Control Bus) [Off, 1, 2]
AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]
Send1 [000...127]
Send2 [000...127]

Here you can specify the input source for the analog and digital audio devices, and set the input level, pan, buses, and the send levels to the master effects. These input settings are valid when **User Global Setting** is turned off.

These parameters are the same as in Program mode P0: Play– Sampling / Audio In. For more information, please see "0–7a: Audio Input" on page 9.

ADC OVERLOAD !

For more information, please see "0–7a: Audio Input" on page 9.

0–7b: Sampling Setup

Here you can select the source to be sampled, and the method by which to initiate sampling.

Source Bus [Analog Input1/2, S/P DIF IN L/R, (FireWire IN L/R), L/R, AUX1/2, AUX3/4, Indiv.1/2, Indiv.3/4]
Trigger [Sampling START SW, Note On]
Metronome Precount [Off, 4, 8, 3, 6]
Save to [RAM, MEDIA]
Mode (Sample Mode) [L-Mono, R-Mono, Stereo]
Sample Time [min sec]

These parameters are the same as in Program mode P0: Play– Sampling / Audio In. For more information, please see "0–7b: Sampling Setup" on page 10.

The **Sampling Setup** settings apply to all of Combination mode, and are not saved with individual Combinations.

0–7c: Recording Level [dB]

This adjusts the signal level at the final stage of sampling. The default setting is 0 dB.

Recording Level [–Inf, –72.0 ... +0.0 ... +18.0]
Level Meter
CLIP !

These parameters are the same as in Program mode P0: Play– Sampling / Audio In. For more information, please see "0–7c: Recording Level [dB]" on page 13.

The **Recording Level** setting applies to all of Combination mode, and is not saved with individual Combis.

▼0–7: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107
- 5: **Metronome Setup** ☞p.107
- 6: **Optimize RAM** ☞p.107
- 7: **Select Bank & Sample No.** ☞p.108 (only **Save to** RAM)
- 7: **Select Directory** ☞p.108 (only **Save to** MEDIA)
- 8: **Auto Sampling Setup** ☞p.109

For more information, please see "Combination: Menu Command" on page 185.

0–8: Control Surface

The Control Surface is the set of 8 sliders, and 8 switches to the left of the display. It can do many things, including editing sounds, controlling KARMA, and sending MIDI messages to external devices.

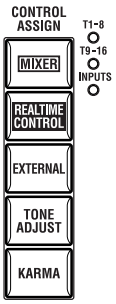
This page shows you the current values for each of the sliders, and switches, along with information about what they are controlling. For instance, you can:

- Control the timbre 1–16 volume, Play / Mute status, and Solo On / Off status.
- Modulate sounds and effects using the sliders and switches
- Control KARMA, and select KARMA scenes, using the sliders and switches
- Edit sounds using Tone Adjust
- Assign sliders, and switches to different Tone Adjust parameters

CONTROL ASSIGN switches and parameters

You can use **Control Assign** in the display or the CONTROL ASSIGN switches of the front panel to switch the function of control surface. Since the display and the front panel switches are linked, changing one will change the other correspondingly.

Control Assign switches



In Combination mode, you can select one of five different functions:

MIXER (Mixer T1–8, T9–16): This lets you use the control surface to adjust the volume of timbres 1–16, and switch the Play / Mute and Solo On / Off status. (In Combination mode and Sequencer mode, you can use this switch to alternate between timbres or tracks 1–8 and 9–16.)

MIXER (Mixer Input): The control surface will control the audio input volume, Play / Mute and Solo On / Off status of the analog inputs, S / P DIF inputs, and FireWire inputs (if the EXB-FW is installed).

REALTIME CONTROL (RT Control): Use the sliders to control the sound or effects. Use the switches to turn effects on / off.

EXTERNAL lets you send MIDI messages to external MIDI devices. Use the Global P1: MIDI– External Mode 1 / 2 page to specify the MIDI message that will be transmitted.

TONE ADJUST lets you edit Programs within the context of the Combination, and without making any changes to the original Program data. You also get hands-on access to these edits, using the sliders and switches.

KARMA: Use the sliders and switches to control the KARMA function.

You can freely change back and forth between the different functions, without losing any of your edits.

MIX PLAY/MUTE 1–8 switches and the MIX VOLUME sliders

For the function selected by CONTROL ASSIGN, you can use the MIX PLAY / MUTE (SOLO) 1–8 switches and MIX VOLUMES 1–8 sliders to control the corresponding parameters, etc.

Reset controls

The front panel RESET CONTROLS switch lets you return the desired sliders or switches of the control surface to their saved values. You can also use this to reset the KARMA module settings.

Resetting a single control

To reset individual controls:

1. **Hold down the RESET CONTROLS switch.**
2. **While holding down RESET CONTROLS, move a slider, or press one of the control surface buttons.**

The slider, or switch will be reset to the value stored in the Combination.

3. **When you're done, release the RESET CONTROLS switch.**

Resetting a group of controls

To reset a group of controls at once:

1. **Make sure that the Control Surface is showing the parameters you want to reset.**

As a safety precaution, you can only reset the parameters currently displayed on the Control Surface.

For instance, if you want to reset the volume and pan for Timbres 1–8, make sure that Control Assign is set to **MIXER 1–8**.

2. **Hold down the RESET CONTROLS switch.**
3. **While holding down RESET CONTROLS, press the current CONTROL ASSIGN switch again.**

All of the sliders, and switches shown on the Control Surface will be reset to the values stored in the Combination.

Resetting KARMA Module parameters

In addition to the above reset operations, you can also perform the following reset operations for KARMA.

- To reset the sliders or switches of each KARMA module, hold down the RESET CONTROLS switch and press the KARMA MODULE CONTROL switch.
- To reset the KARMA scene, hold down the RESET CONTROLS switch and press the SCENE 1 / 5–4 / 8 switch whose LED is blinking.

0–8a: Combination Select, Tempo

Bank (Bank Select) **[INT–A...G, USER–A...G]**
Program Select **[0...127]**
♩ (Tempo) **[040.00...300.00, EXT]**

This area displays information about the program selected for editing – the program bank / number / name, and the tempo used to control the KARMA function etc.

For more information, please see "0–1(2)a: Combination Select" on page 120.

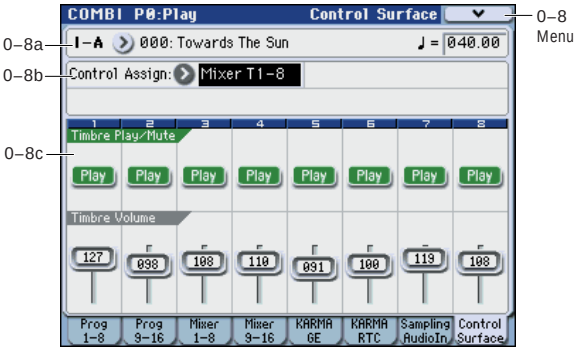
0–8b: Control Assign

Control Assign [Mixer T1–8, Mixer T9–16, Mixer Input, RT Control, External, Tone Adjust, KARMA]

This selects the items that will be controlled by the control surface. You can also press one of the CONTROL ASSIGN switches to make this selection.

For details on each selection, please see the explanations that follow.

Mixer T1–8, Mixer T9–16



0–8c: Mixer T1–8, Mixer T9–16

Here you can adjust the volume of timbres 1–16, and switch the Play / Mute and Solo On / Off status.

Use the CONTROL ASSIGN MIXER switch to select the timbres to be controlled (1–8 or 9–16)

Timbre Play/Mute:

MIX PLAY/MUTE 1 (9)... 8 (16) switches

Use these switches to mute the corresponding timbres.

The switch LED will be lit for Play, or dark for Mutes status.

Timbre Play/Mute [Play, Mute]

This switches each timbre between Play or Muted status.

Timbre Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1 (9)...8 (16) switches

Use the menu command **Panel-Switch Solo Mode On** to specify whether the MIX PLAY / MUTE 1–8 switches will control Play / Mute or Solo On / Off.

If **Panel-Switch Solo Mode On** is On (checked), these switches will control Solo On / Off.

Tip: You can turn **Panel-Switch Solo Mode On** on / off by holding down the ENTER switch and pressing numeric key 1.

Solo [Off, On]

This switches the Solo On / Off setting of each timbre.

Note: The Solo function applies to each timbre and the audio inputs.

Note: The Solo On / Off setting is not preserved when you write the combination.

Exclusive Solo

The menu's **Exclusive Solo** parameter also affects the way that Solo works. When **Exclusive Solo** is **Off** (unchecked), you can solo multiple Timbres and Audio Inputs at once.

When **Exclusive Solo** is **On** (checked), only one Timbre or Audio Input can be soloed at a time. In this mode, pressing a SOLO button automatically disables any previous solos.

Tip: You can also toggle **Exclusive Solo** by holding **ENTER** and pressing **2** on the numeric keypad.

Timbre Volume:

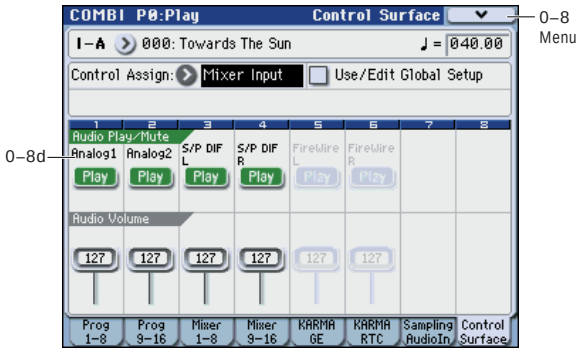
MIX VOLUMES sliders 1 (9)...8 (16)

These sliders adjust the volume level of the Timbres.

Timbre Volume [000...127]

This controls the volume of each timbre.

Mixer Input



Mixer Input lets you adjust the volume and switch the Play / Mute and Solo On / Off status of the four audio inputs Analog Input 1, 2 and S / P DIF IN L, R

For example on stage, you could use this page screen as a submixer to control the output of other sound modules for output together with the M3-M's own sounds.

FireWire L and R can be used if the EXB-FW option is installed.

Other Audio Input settings

Each audio input can be assigned to up to three busses:

- An Output / IFX Bus
- An FX Control Bus
- An AUX Bus

You can set up these bus assignments on the P0: Play– Sampling / Audio In page. For more information, please see "0–7: Sampling / Audio In" on page 8.

0–8d: Mixer Input

Use/Edit Global Setup [Off, On]

Programs can use the single, Global audio input mixer setup, or can instead have their own custom settings.

On (checked): The Global P0: Basic Setup– Audio page settings for Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) will be used.

If you switch from a combination (or program or song) for which **Use/Edit Global Setup** is on to another combination (or program or song), the same Audio Input settings will be used.

Also, any edits made on this page will affect the Global setting, along with any other Programs, Combinations, or Songs which use the Global setting.

Off (unchecked): Turn **Use/Edit Global Setup** Off if you want to use the Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) settings made individually for each combination (or program or song).

Use this setting if you want to preserve specific mixer settings for each combination, if you want to use unusual submixer settings, or if you want to apply effect processing to specific input signals.

On the other hand, it may sometimes be convenient to save a particular mixer setup with an individual Combination, to set up special sub-mixer settings or effects processing for particular inputs.

Audio Play/Mute:

MIX PLAY/MUTE 1...4 switches

These switch each audio input between play / muted status. The switch LED will be lit for Play, or dark for Mutes status.

Audio Play/Mute 1...4 [Play, Mute]

Play: The input will be enabled.

Mute: The input will be muted.

Audio Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1–4 switches

Solo applies to timbre 1–16, and the audio inputs. For more information, please see “Timbre Solo:” on page 131.

Clearing all solos

Exclusive Solo

For more information, please see “Timbre Solo:” on page 131.

Audio Solo 1...4 [Play, Mute]

This switches the Solo On / Off setting for each audio input.

Note: The Solo On / Off setting is not preserved when you write.

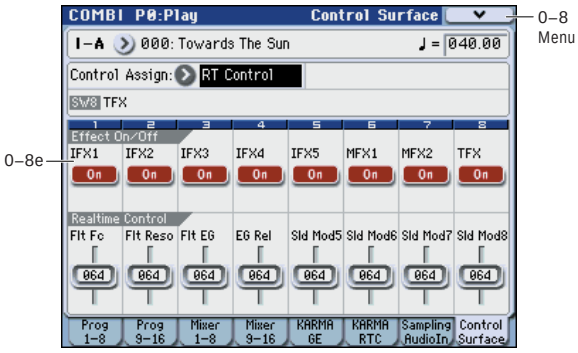
Audio Volume:

MIX VOLUMES sliders 1...4

Audio Volume 1...4 [000...127]

This adjusts each audio input level.

RT Control (Realtime Control)



Realtime Control lets you use the eight sliders to edit the parameters of a combination or effect. The switches will control the effect on / off status.

0–8e: RT Control AMSource

Selected Parameter information

When you select a Slider or Switch, this area shows detailed information about its parameter assignments.

Effect On/Off:

Effect On/Off switches 1...8

These turn each effect on / off. The effect will be enabled if this is on (LED lit).

IFX1...5, MFX1, 2, TFX [Off, On]

These turn each effect on / off.

Realtime Control:

MIDI This will control the timbres of the global MIDI channel.

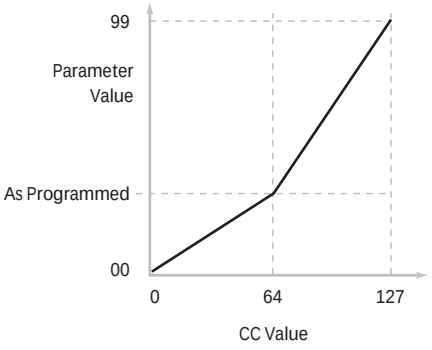
Realtime Control sliders 1...8

Sliders 1–4 all have dedicated functions which correspond to MIDI CCs. Sliders 5–8 can be assigned to a wide variety of functions, many of which also have corresponding MIDI CCs.

When you move a slider, it sends out the corresponding MIDI CC.

Most of these functions adjust (scale) the parameter settings of the timbre programs. Unless otherwise noted, “scaling” means that the parameters are at their programmed values when the controller is at 64, at their minimum when the controller is at 0, and at their maximum when the controller is at 127. For another look at this, please see the diagram below.

CC parameter scaling



Slider 1: Flt Fc (Cut Off) [000...127]

This slider scales the cutoff frequencies of Filters A and B, and transmits and receives MIDI CC #74.

Slider 2: Flt Reso (Resonance) [000...127]

This slider scales the resonance of Filters A and B, and transmits and receives MIDI CC #71.

Slider 3: Flt EG (Filter EG Intensity) [000...127]

This slider scales the effect of the Filter EG on the cutoff frequencies of Filters A and B. It also transmits and receives MIDI CC#79.

Slider 4: EG Rel (EG Release) [000...127]

This slider scales the release time of the Filter and Amp EGs, and transmits and receives MIDI CC#72.

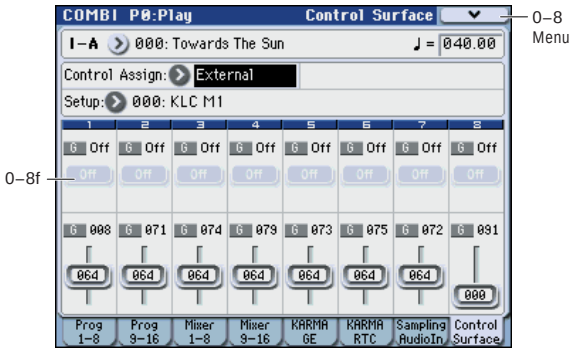
Slider 5–8 [000...127]

This is the current value of the slider and its MIDI CC.

You can set sliders 5–8 to a wide variety of modulation functions, using the P1: DT / XY / Ctrls– Controllers Setup page.

Many of the functions scale a particular set of Program parameters. All of the settings also correspond to MIDI messages–usually CCs.

External



This External control lets you transmit MIDI messages to external devices. Each slider and switch will transmit an individually assigned MIDI CC# on its MIDI channel. To the pads as well, you can assign a note or MIDI CC# for transmission on a specified MIDI channel. (See “1–3: External Mode 1” on page 369 and “1–4: External Mode 2”)

You can create 128 different external setups in the Global P1: MIDI– External Mode 1, 2 pages. For instance, you might make one setup for controlling several different pieces of MIDI gear on stage, another for controlling a software synthesizer (such as one of Korg’s Legacy Collection synths), and so on.

These External Setup are completely separate from the Program. You can think of External mode as being a separate control surface which just happens to share M3’s sliders, switches, and drum pads.

When you select an External Setup, it stays selected even when you change Programs, or switch to Combination or Sequencer modes. This makes it easy to select different M3 sounds without disrupting any external MIDI control, and vice-versa.

0–8f: External

Setup [000…127]

This selects the Global setup for the sliders, switches, and drum pads.

Note: this selection is not stored with the Program.

Switches 1...8

MIDI Channel [01…16, G]

This read-only parameter shows the MIDI Channel for the switch. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# Assign [Off, 000…119]

This read-only parameter shows the MIDI CC sent by the switch.

Switch On/Off [Off, On]

When the switch is turned on, it sends a value of 127; when it is turned off, it sends a value of 0.

Sliders 1–8

MIDI Channel [01…16, G]

This read-only parameter shows the MIDI Channel for the slider. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

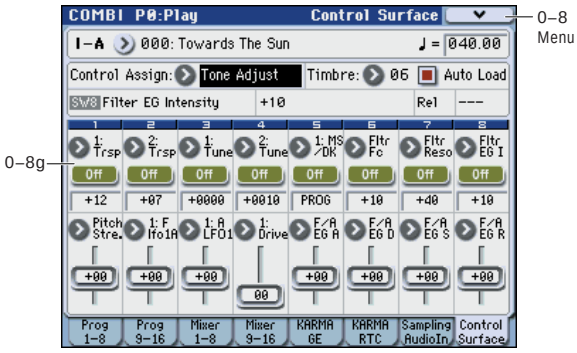
CC# Assign [Off, 000…119]

This read-only parameter shows the MIDI CC sent by the slider.

Value [000…127]

This is the current value of the slider's MIDI CC.

Tone Adjust



Tone Adjust provides two important features simultaneously:

- The Tone Adjust parameter lets you use the sliders and switches to control the principal Program parameters as if you were turning the knobs of an analog synthesizer.
- It lets you modify Programs for use within a specific Combination including everything from subtle tweaks (like changing LFO speeds) to dramatic changes (such as selecting a different Multisample). Any changes that you make are stored with the Combination, and do not alter the original Program.

Each of the sixteen Timbres has its own set of tone adjust parameters. However, only one timbre at a time can be adjusted from the control surface.

For more information, see:

- "Tone Adjust and MIDI SysEx" on page 20
- "Interaction between Tone Adjust and MIDI CCs" on page 20
- "Absolute (Abs), Relative (Rel), Meta parameter" on page 19

Saving Tone Adjust Edits

In Program mode, when you make edits via Tone Adjust and then save the results, the Program data is changed–just as if you'd edited the internal parameters directly. For more information, please see "Saving Tone Adjust Edits" on page 20.

In Combination mode, however, all Tone Adjust edits are stored within the Combination; the Program itself is not changed. This lets you alter the way that a Program sounds in one specific Combi without affecting the way that it sounds in Program mode, or in any other Combinations or Songs.

0–8g: Tone Adjust

Timbre select

Timbre [1…16]

This selects the timbre that will be controlled via the Tone Adjust parameters. You can switch back and forth between the different timbres as much as you like, without losing your edits.

Auto Load (Auto Load PRG) [Off, On]

When you first load a Program into a Timbre, this parameter determines whether or not the Program's Tone Adjust settings will be loaded as well.

These settings include the parameters assigned to each slider, and switch, along with the on / off state of any Switches assigned to Absolute parameters.

Once the Program has been loaded, you can change any or all of the Tone Adjust settings as desired, including both assignments and values. All such edits are stored in the Combination, without affecting the original Program.

If **Auto Load PRG** is **On**, Tone Adjust settings will be automatically loaded along with the Program.

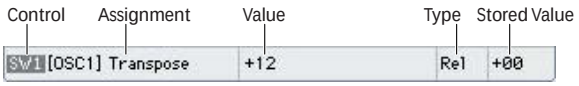
If **Auto Load PRG** is **Off**, then the relationship between the types of the old and new Programs will determine what happens., as shown in the table below:

If the old Program is…	And the new Program is…	Then Tone Adjust parameters and values are…
An EDS Program	An EDS Program	kept the same
An EDS Program	A RADIAS Program	loaded from the new Program
A RADIAS Program	An EDS Program	loaded from the new Program
A RADIAS Program	A RADIAS Program	kept the same

Note: The EXB-RADIAS option must be installed in order to use RADIAS programs.

Selected parameter information

This status line shows detailed, read-only information about the currently selected Tone Adjust parameter.



Control [SW1…8, SL1…8]

This is the physical controller assigned to the Tone Adjust parameter.

Assignment [List of Tone Adjust assignments]

This shows the full name of the parameter assigned to the controller. You can change this using the "Assign" parameter, below.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

Type [Rel, Abs, Meta]

This shows the type of the parameter, which relates to how edits to the parameter are saved. For more information, please see "Absolute (Abs), Relative (Rel), Meta parameter" on page 19.

Stored Value

This shows the original value of the parameter, before the effects of Tone Adjust. It applies only to Tone Adjust parameters which control a single Program parameter.

If you un-assign a parameter from a control, it will revert to this value.

Switches 1...8

Tone Adjust switches act a little differently than sliders.

When a switch is assigned to a **Relative** parameter, or an **Absolute** parameter with more than two states:

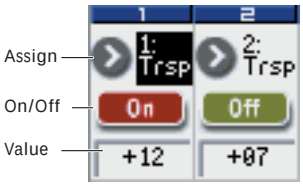
Switch On = **On Value** (see below)

Switch Off = the Program's stored value

When a switch is assigned to a two-state **Absolute** parameter, such as **Hold**, the switch status directly reflects the parameter value:

Switch On = **On**

Switch Off = **Off**



Assign

This lets you assign a Tone Adjust parameter to the switch.

The first group of parameters are the Common set, which are supported by most Program types. For a full list, please see "Common Tone Adjust Parameters" on page 21.

After the Common parameters, the items in the list will vary depending on the Program type. For more information, please see:

"Tone Adjust Parameters" on page 22

"EXB-RADIAS for M3 Manual" (PDF)

EDS, and RADIAS will have their own set of parameters, as described in their manuals.

On Value [Depends on parameter]

The parameter is set to this value when the switch is On.

When the switch is assigned to a two-state **Absolute** parameter, such as **Hold**, this will always be the same as the **Switch Status** (see below).

Switch Status [Off, On]

This simply shows whether the switch is On or Off. The status is also shown by the LEDs in the physical buttons.

Sliders 1–8

Assign

This lets you assign a Tone Adjust parameter to the slider.

The first group of parameters are the Common set, which are supported by most Program types. For a full list, please see "Common Tone Adjust Parameters" on page 21.

After the Common parameters, the items in the list will vary depending on the Program type. For more information, please see:

"Tone Adjust Parameters" on page 22

"EXB-RADIAS for M3 Manual" (PDF)

EDS, and RADIAS will have their own set of parameters, as described in their manuals.

Assignments are exclusive

Per-Oscillator parameters apply to OSC1 and 2 individually, and are marked as such: OSC1 and OSC2.

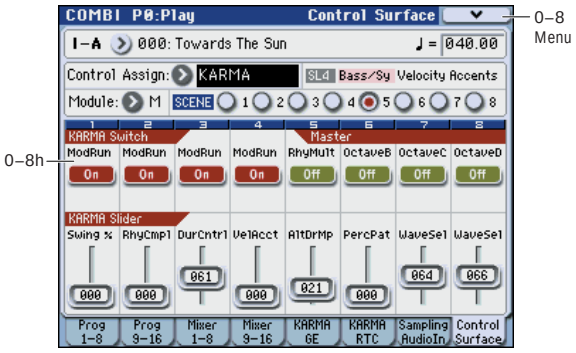
Each controller can be assigned to only one parameter, and each parameter can be assigned to only one controller.

To swap a parameter from one control to another, you'll need to first un-assign it from the old control, and then assign it to the new control.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

KARMA



0–8h: KARMA

Selected parameter information

This status line shows detailed, read-only information about the currently selected KARMA parameter.

Selected Switch/Slider [SW1...8, SL1...8]

Control Timbre Category Name

Realtime Control Name

For more information, please see “Select KARMA Module Info:” on page 125.

Module Control

Module (Module Control) [M, A, B, C, D]

When used to control KARMA, the Control Surface sliders and switches are five layers deep: one for each Module (A–D), and a Master Layer capable of controlling selected parameters from all of the Modules at once. Each layer has its own Slider, Switch, and Scene settings.

The **Module Control** radio buttons (and the front-panel **MODULE CONTROL** switch) let you switch between these five layers.

To select a different layer, just press its on-screen radio button, or use the front-panel **MODULE CONTROL** switch to step through each layer in turn. When you do so, all of the KARMA Sliders, Switches and Scenes will update instantly to show their current values and names within the selected layer.

KARMA Scenes 1–8

KARMA Scenes [1...8]

A KARMA SCENE includes the settings for all of the KARMA Sliders and Switches. Each Combi can contain up to eight Scenes.

To select a Scene, just press its switch - you’ll see all of the KARMA Sliders and Switches update instantly to their new values.

KARMA Switches 1–8

KARMA Switch [Off, On]

These switches control KARMA Performance or GE (Generated Effect) Real-Time Parameters, as assigned on the KARMA Perf RTP and GE RTP pages.
The switches indicate the current on / off status.
The parameters assigned to the switches and their on / off status can be edited in the GE RTP page or the KARMA Perf RTP page.

KARMA Sliders 1–8

KARMA Slider [000...127]

These sliders control KARMA Performance or GE Real-Time Parameters, as assigned on the KARMA Perf RTP and GE RTP pages.

The current values are shown under the sliders. The parameters assigned to the sliders and their value can be edited in the GE RTP page or the KARMA Perf RTP page.

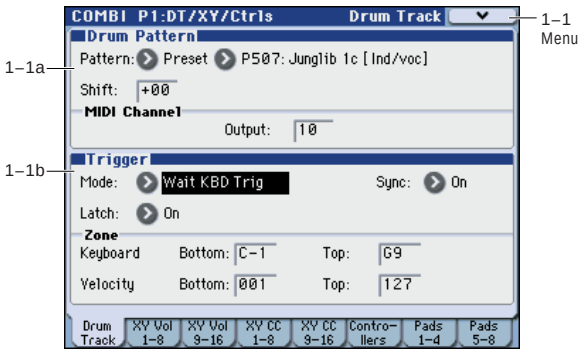
▼0–9: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107
- 5: **Copy Tone Adjust** ☞p.111 (only in “Tone Adjust”)
- 6: **Reset Tone Adjust** ☞p.111 (only in “Tone Adjust”)
- 5: **Copy Scene** ☞p.115 (only in “KARMA”)
- 6: **Swap Scene** ☞p.115 (only in “KARMA”)

For more information, please see “Combination: Menu Command” on page 185.

COMBI P1: DT/XY/Ctrls (Drum Track/X–Y/Controllers)

1–1: Drum Track



Here you can select a drum track pattern and specify how it will sound.

Note: In Combination mode (unlike Program mode) there is no dedicated timbre for the drum track. You can assign the drum track program to be any timbre 1–16. The drum track program will be played when the drum track's output MIDI channel **Output** matches the timbre's MIDI channel **MIDI Channel**.

MIDI In Combination mode, the drum track patterns are triggered on the Global MIDI channel.

1–1a: Drum Pattern

Pattern **[Preset, User]**
[(Preset): P000...P522, (User): U000...U999]

This selects the drum pattern.

Preset/User No.	Contents
P000	Off
P001...P522	Preset drum patterns
U000...U999	For user/preloaded drum patterns

- U000–U999 can be written. Patterns you create in Sequencer mode can be converted into user drum patterns. (See page 291)
  For details on creating user drum patterns, please see "Drum Track function" on page 185 of the Operation Guide.

Shift **[–24...+00...+24]**

This transposes the drum pattern in semitone steps. This means that the instruments of the drum kit will change.

MIDI Channel

Output **[01...16, Gch]**

This specifies the MIDI channel that will transmit the MIDI data of the drum pattern. The drum pattern will sound using the program of the timbre that is set to the same channel as this MIDI channel.

Gch: The data will be sent to the channel specified by the global MIDI channel **MIDI Channel** setting (Global 1–1a).

Whether the pattern data will be output to an external device will depend on the **Status** setting of the timbre that matches the **Output** MIDI channel.

1–1b: Trigger

Trigger Mode **[Start Immediately, Wait KBD Trig]**

Start Immediately: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum pattern will start according to the **Sync** setting. When you turn it on, the drum pattern will stop.

Wait KBD Trig: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum pattern will wait to start. When you play the keyboard of the KYBD-61 / 73 / 88, or when a MIDI note-on is received, the drum pattern will start according to the **Sync** setting.

If you've selected **Start Immediately**, the DRUM TRACK ON / OFF switch will always be saved in the OFF state.

Note: You can link KARMA with the drum track pattern playback. For more information, please see "Link to Drum Trk" on page 6.

Sync **[Off, On]**

Off: The drum pattern will not synchronize to the currently-running KARMA, but will start immediately.

On: The drum pattern will synchronize to the currently-running KARMA.

Note: Use P7–1: KARMA1–Trigger **Quantize Trigger** to specify whether KARMA will synchronize to the currently-running drum pattern.

Latch **[Off, On, Use KARMA Latch Switch]**

This is valid if **Trigger Mode** is **Wait KBD Trig**.

Off: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will stop when you release the keyboard (note-off).

On: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will continue when you release the keyboard (note-off). The pattern will stop when you turn the DRUM TRACK ON / OFF switch off (LED dark).

Use KARMA Latch Switch: The on / off status of the KARMA LATCH switch will correspond to the above Off and On modes of operation. You will probably want to use this in conjunction with KARMA's Latch operation.

Zone:

Keyboard

Bottom **[C–1...G9]**

Top **[C–1...G9]**

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

It specifies the range of keys that will start the drum pattern.

Velocity:

Bottom **[001...127]**

Top **[001...127]**

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

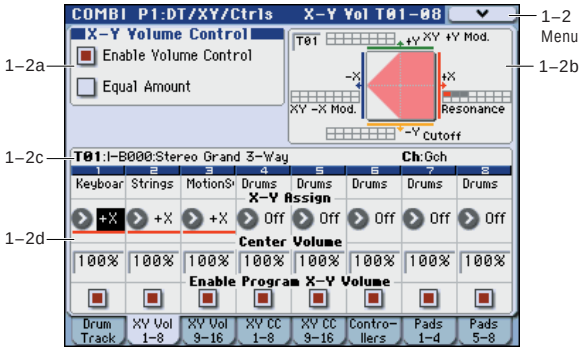
It specifies the range of velocities that will start the drum pattern.

▼1–1: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy Drum Track** ☞p.112
- 5: **Erase Drum Track Pattern** ☞p.112

For more information, please see “Combination: Menu Command” on page 185.

1–2: X–Y Vol T01–08, 1–3: X–Y Vol T09–16 (X–Y Volume Control T01–08, T09–16)



X–Y Control lets you control the timbre volume and program or effect parameters by moving your finger on the display (X–Y Mode) or by using an X–Y Motion that records such a movement.

For more background information on X–Y control, please see “1–5: X–Y Setup” on page 31.

X–Y control operation of programs and combinations

Volume and CC control of each timbre program in Combination mode can be performed according to the X–Y control settings made in Program mode. You can disable the Program X–Y Volume and CC control separately for each timbre, if desired.

There is also a separate Combi-wide X–Y control, with its own X–Y Volume and X–Y CC control settings. As with the Program X–Y control, you can disable the Combi Volume and CC control separately for each timbre.

How Combi X–Y Volume works

In Program mode, X–Y Volume fades between the two Oscillators. Oscillator 1 is always at maximum volume when the X–Y position is all the way to the left (–X), and Oscillator 2 is always at maximum when the X–Y Position is all the way to the right (+X).

In Combination mode, on the other hand, the X–Y Volume can fade between any or all of the 16 Timbres. You can assign each of the Timbres to be controlled by any of the four X–Y axes (+X, –X, +Y, –Y), or to not be controlled at all.

If the EXB-RADIAS is installed, you can create complex fades between different programs, such as EDS programs and RADIAS programs.

1–2(3)a: X–Y Volume Control

X–Y Volume Control lets you adjust the relative volumes of the 16 Timbres by moving the X–Y mode (or the X–Y motion) from left to right on the X axis, and up and down on the Y axis.

The **Equal Amount** check-box makes the X–Y control create a smooth fade between the Timbres, while the individual **Center Volume** parameters allow you to create more complex fade shapes.

Enable Volume Control [Off, On]

On (checked): X–Y position movements will control the volume of all timbres whose **X–Y Assign** is not Off.

Off (unchecked): X–Y position will not affect the volume. However, you can use program parameter settings for X–Y CC or AMS to control the volume.

Equal Amount [Off, On]

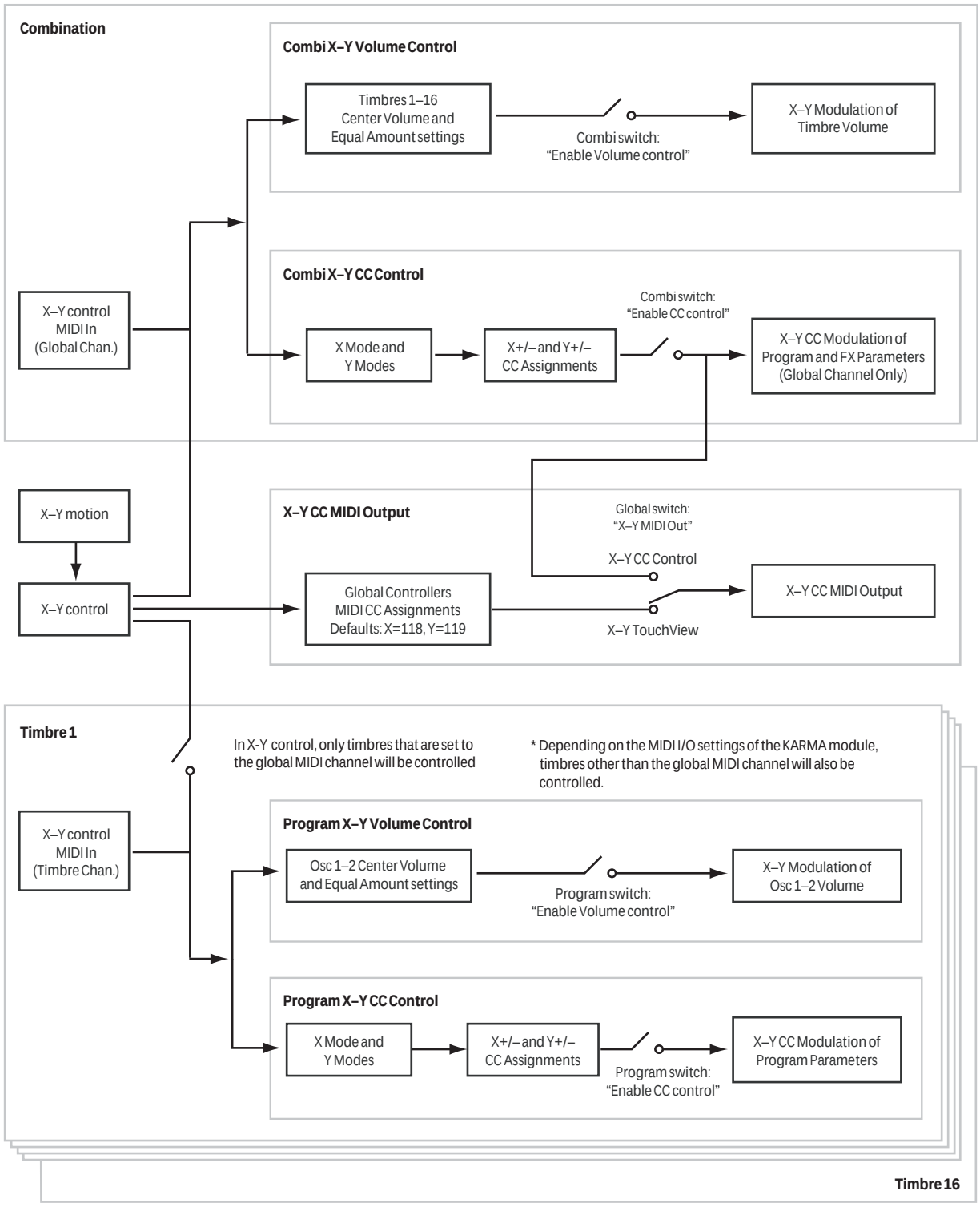
This applies only when **Enable Volume Control** is **On**.

When **Equal Amount** is **On**, the X–Y will fade between all four X–Y axes while maintaining a total amount of 100%. This provides a smooth fade between the different sounds, and is the type of volume control used by classic Vector synths.

Note that this will work best when the Programs assigned to each of the four axes have equivalent volumes. For instance, you might create a Combination with four Programs, each sounding at the same volume and assigned to a different axis. You could then add a fifth Program, assign it to one of the axes, and then use the Timbre volume sliders to reduce the levels of both Programs on that axis by 50%–so that their combined volume is the same as any one of the other Programs.

Also, when this is checked, the **Center Volume** parameters will be grayed out, since **Equal Amount** sets them automatically.

X–Y Synthesis system, Combination mode



When **Equal Amount** is **Off**, the individual Timbre **Center Volume** parameters determine the way in which X–Y position affects volume.

Note: For an interesting variation on this effect, turn **Equal Amount Off**, and instead set all of the Timbre **Center Volumes** to **50%**. The Timbres will still fade together smoothly, but with a more gentle effect towards the extremes of the X–Y axes.

1–2(3)b: X–Y Graphic

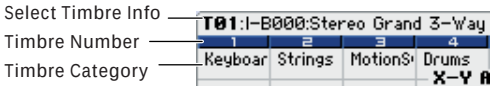
X–Y Graphic

The X–Y graphic is shown if **Equal Amount** is on, or to indicate the way in which volume is changed by the Center Volume setting.

Timbre Select [01…16]

This selects the timbre whose data will be shown in the X–Y graph.

1–2(3)c: Timbre Info



Selected Timbre Info:

This area displays information about the timbre selected for editing – **T:** timbre number / program bank / number / name, **Ch:** MIDI channel number.

Timbre Number:

This indicates the timbre number. The various parameters below each timbre number make settings for the corresponding timbre.

Timbre Category:

This shows the abbreviated category name of the Program assigned to the Timbre.

1–2(3)d: X–Y Assign, Center Volume, Enable Program X–Y Volume

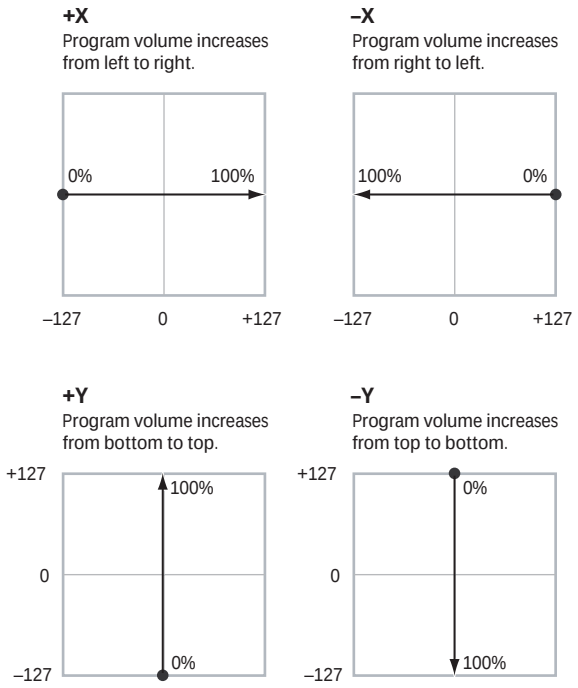
Timbre 1

X–Y Assign [Off, +X, –X, +Y, –Y]

This assigns an axis of the X–Y to control the Timbre's volume. See the diagram "X–Y Assign and Program Volume," below, for more details.

Off means that the X–Y position will not affect the Timbre's volume.

X–Y Assign and Program Volume



Center Volume [0, 25, 50, 75, 100%]

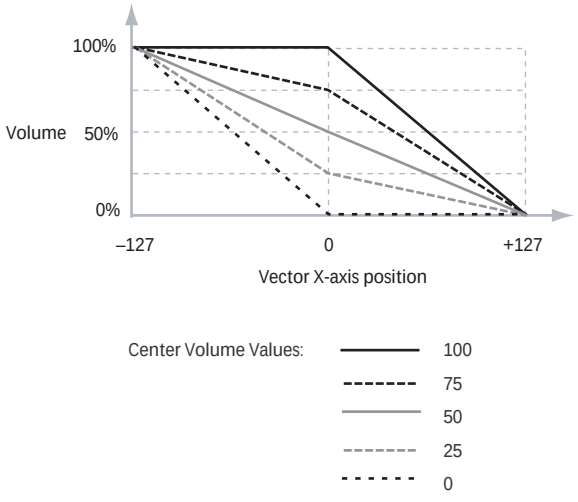
This sets the volume of Timbre 1 at the center point. It applies only when **Equal Amount**, above, is set to **Off**.

The volumes at the extreme ends of the axis are fixed, depending on the setting of the **X–Y Assign** parameter.

For instance, if **X–Y Assign** is set to –X, the Timbre will always be at 100% volume on the left side, and 0% (silent) on the right side.

This parameter applies only to the Combi X–Y Volume control, and does not change the Program's individual X–Y Volume settings.

Timbre Center Volume, X–Y Assign = –X



Enable Program X–Y Volume [Off, On]

When this is turned **On**, the Program's X–Y Volume control will function as it does in Program mode, crossfading between Oscillators 1 and 2. The program's X–Y volume setting is controlled by the X–Y position.

When this is turned **Off**, the Program's X–Y Volume control will be disabled.

Timbre 2...8, 9...16

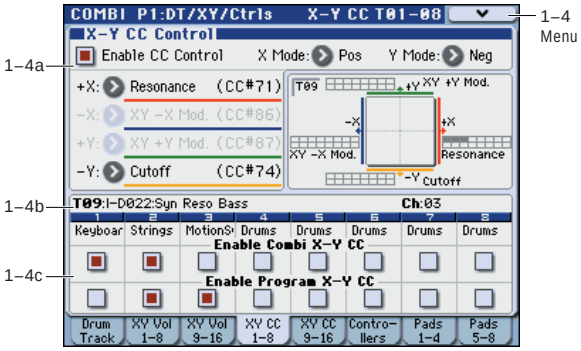
The parameters for Timbres 2–8 and 9–16 are identical to those for Timbre 01, as described above.

▼1–2(3): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107

For more information, please see “Combination: Menu Command” on page 185.

1–4: X–Y CC T01–08, 1–5: X–Y CC T09–16 (X–Y CC Control T01–08, T09–16)



1–4(5)a: X–Y CC Control

X–Y CC control (X–Y CC) uses X–Y mode (or X–Y motion) to control the timbre programs and effects.

Each of the four directions of the X–Y can send a different MIDI CC, including left (–X), right (+X), up (+Y), and down (–Y). You can choose between several different patterns combining these four directions by using the X Mode and Y Mode parameters.

The X–Y CCs are also sent to all Global Channel Timbres. These may modulate Program parameters, like any other MIDI CCs, depending on the settings within each individual Program.

Finally, you can optionally send these CCs out to external MIDI instruments. By using the Global parameter **X–Y MIDI Out** with X–Y CC Control, you can turn the X–Y CC control MIDI output on / off. By default, X–Y CC control output is not transmitted.

X–Y control operation of programs and combinations

Volume and CC control of each timbre program in Combination mode can be performed according to the X–Y control settings made in Program mode. You can disable the Program X–Y Volume and CC control separately for each timbre, if desired.

Program X–Y CCs affect only their own Program, even if other Timbres are set to the same MIDI channel.

There is also a separate Combi-wide X–Y control, with its own X–Y Volume and CC control settings. Combi X–Y CCs affect all Timbres set to the Global channel. As with the Program X–Y, you can disable the Combi X–Y and CC control separately for each timbre.

X–Y control and MIDI

The X–Y control features interact with MIDI in two different ways: through the X–Y Volume, and through the X–Y CC Control.

The **X–Y mode** sends and receives two MIDI controllers: one for the X axis, and the other for the Y axis. In Global mode, you can assign these to any MIDI CC numbers you like. The defaults are CC#118 for the X axis, and CC#119 for the Y axis.

The X–Y mode (or X–Y motion) and its CCs control the X–Y position.

In contrast, X–Y CC control normally controls only the program’s sound and effects, but the generated MIDI

control change messages can also be sent to an external MIDI device using **X–Y MIDI Out** (Global 1–2a).

Note that, in Combination mode, only the Combi's X–Y CCs can be sent to external MIDI instruments; the individual Program's X–Y CCs are only used internally.

Enable CC Control [Off, On]

When this box is **checked**, the X–Y position will control the CCs assigned to +X, –X, +Y, and –Y, as set below.

When this box is **not checked**, the CC assigned to +X, –X, +Y, and –Y will have no effect, but the MIDI CC numbers specified by X (X–Y Mode) and Y (X–Y Mode) in Global P2: Controllers– MIDI CC# Assign can be transmitted and received.

For more information, please see "X–Y control and MIDI" on page 142.

This parameter affects only the Combi X–Y CCs. Even if this is turned **Off**, the individual Programs' X–Y CCs will still function normally.

X Mode [Positive, Negative, Xfade, Split]

You can set up the X–Y CCs to send out CCs in several different patterns, as shown in the graphic below. This controls the pattern for the X axis. Also, it applies only to the Combi X–Y CCs, and has no effect on the individual Program X–Y CCs.

Positive sends out only +X, starting at 0 at the far left, and increasing to 127 at the far right. –X is disabled in this mode.

Negative sends out only –X, starting at 0 at the far right, and increasing to 127 at the far left. In this mode, +X is grayed out.

Xfade sends out both +X and –X, overlapping throughout the X axis. As one increases, the other decreases.

Split sends out both +X and –X, with a split in the center. +X is sent when the point moves to the right of the center, and –X is sent when the point moves to the left of center.

+X [Off…MIDI CC#119]

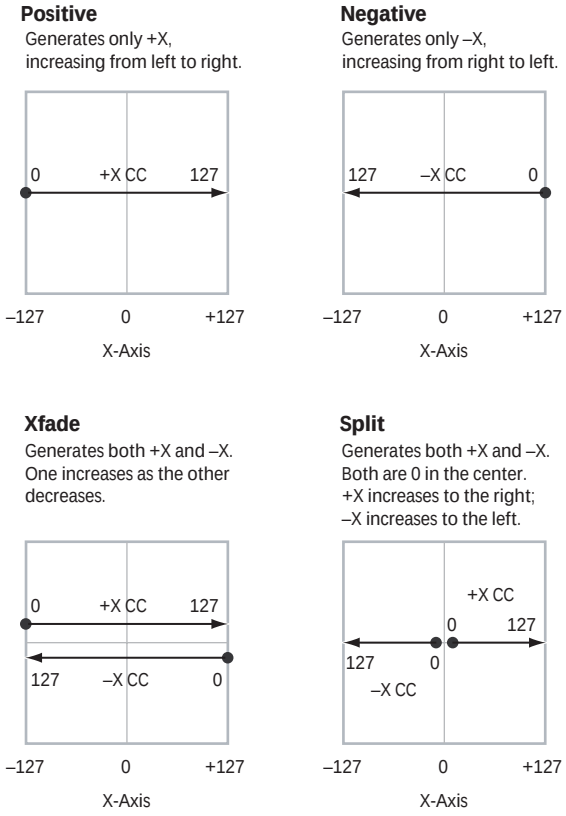
This assigns the controller transmitted by the +X direction. You can use this as an AMS source to control Program parameters, or as a Dmod source to control Effects parameters. It will be grayed out if the **X Mode**, above, is set to Negative.

–X [Off…MIDI CC#119]

This assigns the controller transmitted by the –X direction. It will be grayed out if the **X Mode**, above, is set to Positive.

The selections are the same as for +X, above.

X–Y CC Modes



Y Mode [Positive, Negative, Xfade, Split]

This controls the X–Y CC pattern for the Y axis. For more information, please see the description under X Mode, above.

+Y [Off…MIDI CC#119]

This assigns the controller transmitted by the +Y direction. It will be grayed out if the **Y Mode**, above, is set to Negative.

The selections are the same as for +X, above.

–Y [Off…MIDI CC#119]

This assigns the controller transmitted by the –Y direction. It will be grayed out if the **Y Mode**, above, is set to Positive.

The selections are the same as for +X, above.

X–Y Graphic:

X–Y Graphic

The X–Y graph shows a representation of the volume change when using Equal Power mode or the Center Volume setting.

Timbre Select [01…16]

This selects the timbre whose data will be shown in the X–Y graph.

1–4(5)b: Timbre Info

Selected Timbre Info:
Timbre Number:
Timbre Category:

For more information, please see "1–2(3)c: Timbre Info" on page 141.

1–4(5)c: Enable Combi X–Y CC, Enable Program X–Y CC

Timbre 01

Enable Combi X–Y CC [Off, On]

This controls whether or not the Timbre will receive the Combi X–Y CCs.

If this is **On**, the Timbre will receive the CCs, and the Timbre's Program will respond to them according to its own AMS settings.

If this is **Off**, the Timbre will not receive the CCs. This can be useful if the Combi's X–Y CCs are causing unwanted modulation, or conflicting with the Program's own X–Y CCs.

Enable Program X–Y CC [Off, On]

This controls whether or not the Program's own X–Y CCs will be active.

If this is **On**, the Program's X–Y CCs will work as AMS sources, just as they did in Program mode. The CCs will not affect any other Timbres, even if they are set to the same MIDI channel.

Note that in some cases, the X–Y CCs may have been used for modulating the Program's effects via Dmod. This functionality is not carried into the Combi; for modulating the Combi effects, use the Combi's X–Y CCs instead.

If Enable Program X–Y CC is **Off**, then the Program's X–Y CCs will have no effect. This can be useful if they are conflicting with the Combi's X–Y CCs.

Timbres 02...08, 09...16

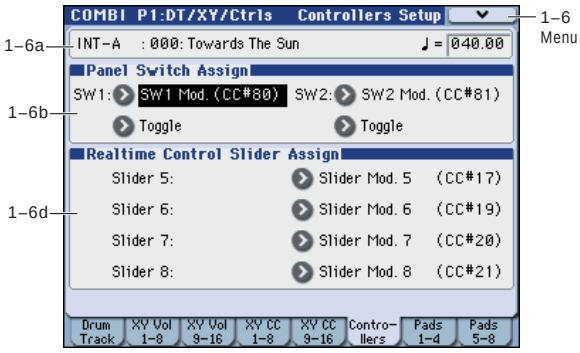
The settings for Timbres 2–8 and 9–16 are identical to those for Timbre 01, as described above.

▼1–4(5): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy X–Y Motion** ☞p.107

For more information, please see "Combination: Menu Command" on page 185.

1–6: Controllers Setup



Here you can specify the SW1 and SW2 switch and 5–8 slider functions of the combination when Control Assign REALTIME CONTROL is selected.

Note: SW1 and SW2 can be controlled by the KYBD-61 / 73 / 88's SW1 and SW2 switches.

Note: The Panel Switch Assign setting of the program assigned to each timbre will have no effect.

1–6a: Combination, Tempo

Bank, Combination Number & Name

These are the bank, number, and name of the current Combination.

For more information, please see "0–1(2)a: Combination Select" on page 120.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see "♩(Tempo)" on page 121.

1–6b: Panel Switch Assign

SW (SW1 Assign) [Off, ..., After Touch Lock]

This assigns the function of SW1. For more information, please see "List of SW 1 / 2 assignments" on page 597.

Note: If the KYBD-61 / 73 / 88 is connected, the on / off status of the SW1, SW2 switches is memorized when you save the combination.

If you change the function setting, the status is reset to off.

Mode (SW1 Mode) [Toggle, Momentary]

This specifies the on / off operation when you press the SW1 switch.

Toggle: The state will alternate between On and Off each time you press the SW1 switch.

Momentary: The state will remain On only while you continue holding down the SW1 switch.

SW2 (SW2 Assign) [Off, ..., After Touch Lock]

Mode (SW2 Mode) [Toggle, Momentary]

This assigns the function of SW2. The functions that can be assigned to SW2 are the same as for SW1, with the substitution of SW2 Mod. (CC#81) instead of the SW1's SW1 Mod. (CC#80).

1–6c: Realtime Modulation Slider Assign

Here you can assign the functions (mainly types of control change) that sliders 5–8 will have when Control Assign REALTIME CONTROL is selected. (See “Realtime Control Slider 5–8 Assignments” on page 598)

The functions you assign here are active when you select CONTROL ASSIGN REALTIME CONTROL and operate sliders 5–8.

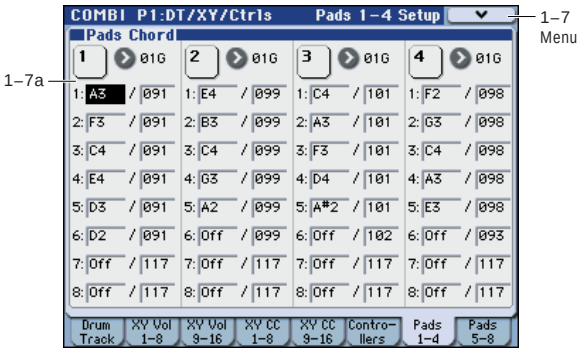
Slider 5 **[Off, ..., MIDI CC#119]**
Slider 6 **[Off, ..., MIDI CC#119]**
Slider 7 **[Off, ..., MIDI CC#119]**
Slider 8 **[Off, ..., MIDI CC#119]**

▼1–6: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

1–7: Pad 1–4 Setup, 1–8: Pad 5–8 Setup



There are eight velocity-sensitive trigger pads below the display. These look like drum machine pads, and playing drum sounds is certainly one use for them.

However, they can also play up to eight-note chords on any sound–not just drums. The pads even remember the velocities of the individual notes within the chord, as well as the notes themselves.

These settings are stored independently for each Combination.

Assigning notes to the pads

You can assign notes to the pads directly from the keyboard and front-panel controls, without using this page at all. Alternatively, you can enter notes and velocities using the parameters on this page. Regardless of how the notes were first assigned, you can edit their values here.

For more information, including step-by-step instructions and usage tips, please see “Drum & Chord Pads” on page 44 of the Operation Guide.

1–7(8)a: Pads Chord

Pad 1:

MIDI Channel **[Ch01...Ch16, Gch]**

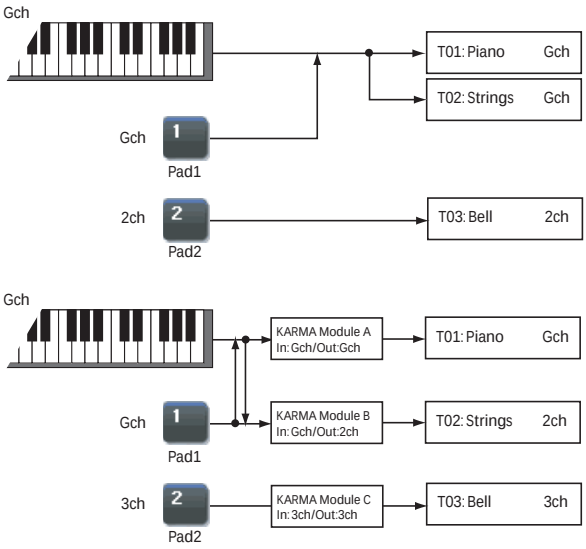
This sets the pad’s MIDI output channel. You can set this to either a specific channel (1–16), or the Global MIDI Channel.

Ch01…Ch16: The pad will transmit on the selected MIDI channel. As shown in the diagram “Pads and MIDI Channel,” below, you can:

- Use this in conjunction with the Timbre **MIDI Channel** (Combi 3–1(1)c) setting, to route a pad to a specific Timbre. For more information, please see “MIDI Channel” on page 149.
- Use this with the KARMA Module **In (Input Channel)** (Combi 7–1–1c) setting, to generate a phrase or other KARMA function when you play a specific pad. For more information, please see “In (Input Channel)” on page 162.

Gch: Use the global **MIDI Channel** setting. This is the default. For more information, please see “MIDI Channel (Global MIDI Channel)” on page 363.

Pads and MIDI Channel



Notes 1–8 [Off, C–1…G9 / 001…127]

These parameters let you edit the 8 notes assigned to each pad, along with a separate velocity for each note. To play fewer than 8 notes, just set the unwanted notes to **Off**.

Off: Select this to disable the note.

C–1…G9: This sets the note number.

001…127: This sets the note's velocity value.

For more detailed instructions, please see "1–7(8)a: Pads Chord" on page 36.

Pad 2...4, 5...8

These are the same as for Pad 1, as described above.

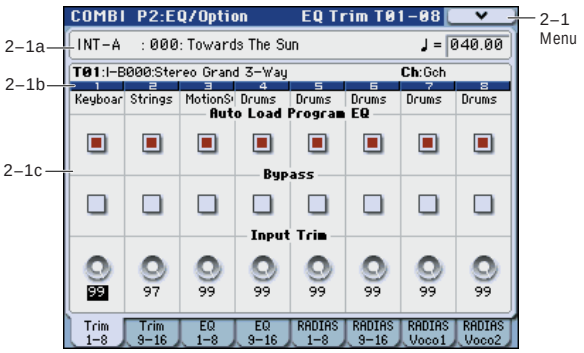
▼1–7(8): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Copy Pad Setup** ☞p.112

For more information, please see "Combination: Menu Command" on page 185.

COMBI P2: EQ/Option

2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16



Here you can set the signal level that enters the EQ of timbres 1–8 and 9–16.

2–1(2)a: Combination Name, Tempo

Bank, Combination Number & Name

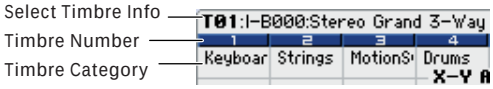
These are the bank, number, and name of the current Combination.

For more information, please see “0–1(2)a: Combination Select” on page 120.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see “♩(Tempo)” on page 121.

2–1(2)b: Timbre Info



Selected Timbre Info:

This area displays information about the timbre selected for editing – **T:** timbre number / program bank / number / name, **Ch:** MIDI channel number.

Timbre Number:

This indicates the timbre number. The various parameters below each timbre number make settings for the corresponding timbre.

Timbre Category:

This shows the abbreviated category name of the Program assigned to the Timbre.

2–1(2)c: Trim

Timbre 01 (Timbre Number):

Auto Load Prog EQ [Off, On]

When you first load a Program into a Timbre, this parameter determines whether or not the Program’s EQ settings will be loaded as well.

Once the Program has been loaded, you can change any or all of the EQ settings as desired. All such edits are stored in the Combination, without affecting the original Program.

Regardless of this setting, subsequent edits to the Program’s EQ in Program mode will not affect the Combination.

On: the Program’s EQ settings will be loaded automatically along with the Program. This is the default setting.

Off: the Program’s EQ settings won’t be loaded. Use this if you’ve set up the EQ in a specific way, and then want it to stay unchanged while you try out different Programs.

Bypass [On, Off]

If this is **On (checked)**, all of the EQ will be disabled, including “Input Trim.” Bypass can be convenient for comparing the results of the EQ with the original signal.

Input Trim [00…99]

This controls the volume level going into the EQ. Note that this parameter uses a linear scale; 50 is equivalent to –6 dB, 25 is the same as –12 dB, and so on.

High settings of the Low, Mid, and High Gain controls can cause substantial increases in the overall level. You can compensate for this by turning down the input trim.

Timbre 02...08, 09...16 (Timbre Number):

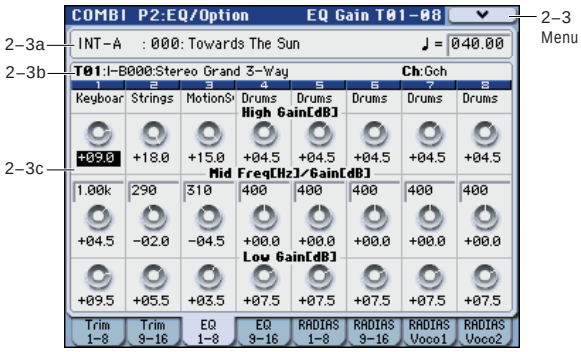
Here you can make settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼2–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

2–3: EQ Gain T01–08, 2–4: EQ Gain T09–16



These parameters adjust the three-band EQ (with sweepable mid range) for timbres 1–8 and 9–16.

2–3(4)a: Combination Name, Tempo
2–3(4)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

2–3(4)c: 3 Band Parametric EQ

Timbre 01 (Timbre Number):

High Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the 10 kHz High Shelf EQ, in increments of 0.5 dB.

Mid Freq [Hz] (Mid Frequency) **[100…10k]**

This sets the center frequency for the Mid sweep EQ.

Mid Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the Mid Sweep EQ, in increments of 0.5 dB.

Low Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the 80 Hz Low Shelf EQ, in increments of 0.5 dB.

Timbre 02...08, 09...16 (Timbre Number):

These parameters adjust the three-band EQ (with sweepable mid range) for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼2–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

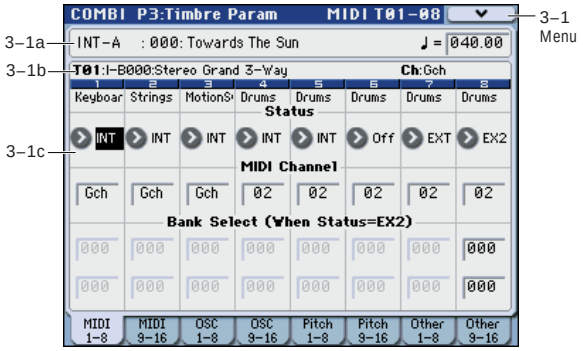
For more information, please see “Combination: Menu Command” on page 185.

2–5: RADIAS T01–08, 2–6: RADIAS T09–16, 2–7: RADIAS Vocoder 1, 2–8: RADIAS Vocoder 2

These settings will be available if the EXB-RADIAS option is installed. Please see “EXB-RADIAS for M3 Manual” (PDF) of the option CD-ROM.

COMBI P3: Timbre Param (Timbre Parameters)

3–1: MIDI T01–08, 3–2: MIDI T09–16



Here you can make MIDI settings for timbres 1–8 and 9–16.

3–1(2)a: Combination Name, Tempo
3–1(2)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

3–1(2)c: MIDI

Timbre 01 (Timbre Number):

Status **[Off, INT, EXT, EX2]**

This sets whether the Timbre controls the internal sounds, or external MIDI devices.

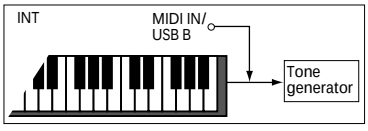
When controlling external MIDI devices, it also allows you to choose between using the internal Bank Select numbers (as set by the front-panel switches), or using custom Bank Select settings to match the external device.

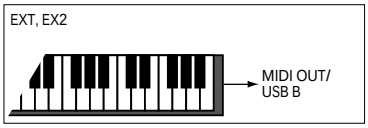
Off: Use this to disable the Timbre. With this setting, the Timbre’s Program will not sound, and MIDI data will not be transmitted.

INT: When you operate the KYBD-61 / 73 / 88 or a controller, the timbre will sound, and will also sound in response to MIDI messages from an external MIDI device. MIDI data will not be transmitted.

EXT: The timbre will not sound even if it receives messages from the KYBD-61 / 73 / 88 or a controller, but MIDI data will be transmitted to external devices.

EX2: Use this to play an external MIDI device, with custom-set **Bank Select** via the **Bank Select (When Status=EX2) LSB** and **MSB** parameters, on the **MIDI** tab of the **Timbre Parameters** page. In all other ways, this is the same as EXT.





MIDI Channel **[01...16, Gch]**

Sets the MIDI transmit / receive channel for each timbre.

Gch: The timbre will use the channel that has been selected as the global **MIDI Channel** (Global 1–1a).

When **Status** is INT, MIDI messages will be received on the channel you specify here. If this setting is the same as the global MIDI channel, the internal tone generator will sound according to the internal settings. If this is set to EXT or EX2, playing the M3 will transmit MIDI messages on the MIDI channel specified here. (Messages will also be transmitted simultaneously on the global MIDI channel.)

Bank Select (When Status = EX2) MSB **[000...127]**
Bank Select (When Status = EX2) LSB **[000...127]**

Specifies the bank number that will be transmitted when **Status** is set to EX2. The upper line is the MSB, and the lower line is the LSB. This setting has no effect if **Status** is other than EX2.

Timbre 02...08, 09...16 (Timbre Number):

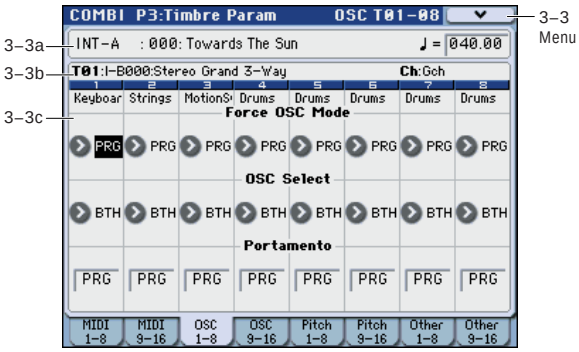
These are the MIDI-related settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼3–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

3–3: OSC T01–08, 3–4: OSC T09–16



These settings specify how timbres 1–8 and 9–16 will be played.

3–3(4)a: Combination Name, Tempo
3–3(4)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

3–3(4)c: OSC

Timbre 01 (Timbre Number):

Force OSC Mode [PRG, Poly, MN, LGT]

This lets you override the Program’s stored Voice Assign Mode settings, if desired.

PRG: The Program’s stored Prog P1: Basic / DT / Ctrls–Program Basic **Voice Assign Mode** settings will be used.

Poly: The timbre will play polyphonically, regardless of the Program’s settings.

MN (Mono): The timbre will play monophonically, regardless of the Program’s settings.

LGT (Legato): The timbre program will sound monophonically, and will play legato according to the Program’s **Mode** setting (Prog 1–1b).

With the MN or LGT settings, the Program’s **Priority** setting (Prog 1–1b) will determine the priority of the note that sounds when you play two or more notes.

OSC Select [BTH, OS1, OS2]

Specifies whether the timbre’s program will play OSC1, OSC2, or both.

For EDS programs whose **Oscillator Mode** (Prog 1–1a) is Double, this setting lets you specify that only OSC1 or OSC2 will sound.

BTH (Both): OSC1 and 2 will sound as specified by the settings of the program.

OS1: Only OSC1 will sound.

OS2: Only OSC2 will sound. EDS programs will not sound if **Oscillator Mode** is set to Single or Drums.

Portamento [PRG, Off, 001...127]

Make portamento settings for each timbre.

PRG: Portamento will be applied as specified by the program settings.

Off: Portamento will be off, even if the original program settings specified for it to be on.

001…127: Portamento will be applied with the portamento time you specify here, even if it is turned off by the program settings.

MIDI If the **Status** (Combi 3–1(2)c) is set to INT, CC#05 (portamento time) and CC#65 (portamento switch) messages will be received and will control and change these settings. (If the setting is PRG, CC#05 portamento time will not be received.) These messages will be received on the MIDI channel specified for each timbre by **MIDI Channel** (Combi 3–1(2)c).

Timbre 02...08, 09...16 (Timbre Number):

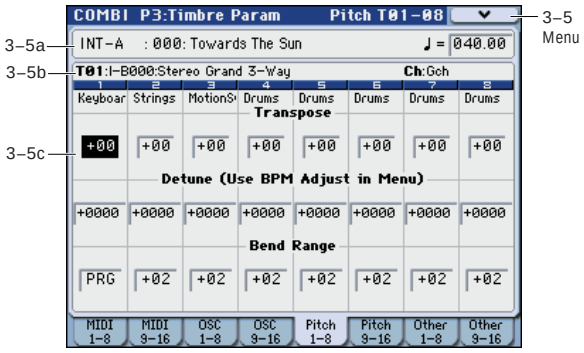
Here you can make voice assignment settings for timbres 2–8 and 9–16. The settings are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼3–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

3–5: Pitch T01–08, 3–6: Pitch T09–16



Here you can make pitch-related settings for timbres 1–8 and 9–16.

3–5(6)a: Combination Name, Tempo 3–5(6)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

3–5(6)c: Pitch

Timbre 01 (Timbre Number):

Transpose [–60…+00…+60]

Adjusts the pitch of each timbre in semitone steps. 12 units equal one octave.

MIDI When **Status** (Combi 3–1(2)c) is INT, this parameter will affect the pitches sounded by the M3. When **Status** is EXT, this parameter will affect the note numbers of the MIDI note messages that are transmitted.

For example if you make settings of +04 and +07 respectively for two timbres that are set to EXT, playing the C key will transmit a C note number on the global MIDI channel, and at the same time will also transmit E and G note numbers on the MIDI channels of those timbres.

Detune (Use BPM Adjust in Menu) [–1200...+0000...+1200]

Adjusts the pitch of each timbre in one-cent units.

+0000: Normal pitch.

Note: You can also use the **Detune BPM Adjust** menu command to alter a loop’s tempo via detuning. Since this will alter the pitch of the loop along with the tempo, it’s generally suited only to un-pitched percussive loops.

MIDI **Transpose** and **Detune** can be controlled via MIDI RPN messages. The way that this works depends on whether or not the Timbre uses an Drum Program.

If the Timbre does not use an Drum Program–for example, if it uses a Single or Double Program–then MIDI RPN Coarse Tune will control **Transpose**, and RPN Fine Tune will control **Detune**.

If the Timbre uses an Drum Program, MIDI RPN Coarse Tune and Fine Tune will be combined to control **Detune**. The overall range is ±1 octave for coarse tune and fine tune together.

Bend Range [PRG, –24...+00...+24]

Specifies the amount of pitch change that will occur when the pitch bender is operated, in semitones.

PRG: The pitch range specified by the program will be used.

–24…+24: This setting will be used regardless of the setting in the program.

MIDI The MIDI RPN Pitch Bend Change message can be received to control this and change the setting. (However it will not be received if this parameter is set to PRG.) This message is received on the MIDI channel for each timbre set by **MIDI Channel** (Combi 3–1(2)c). For more information, please see KARMA “7–1–5b: Transmit MIDI Filter” **P.Bend (Pitch Bend).**

Timbre 02...08, 09...16 (Timbre Number):

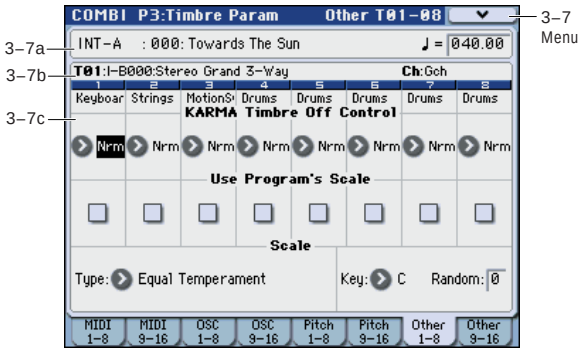
These are the pitch-related settings for timbres 2–8 and 9–16. The settings are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼3–5(6): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185
- 4: **Detune BPM Adjust** ☞p.188

For more information, please see “Combination: Menu Command” on page 185.

3–7: Other T01–08, 3–8: Other T09–16



Here you can make settings for the KARMA and scale of timbres 1–8 and 9–16.

3–7(8)a: Combination Name, Tempo
3–7(8)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

3–7(8)c: KARMA/Scale

Timbre 01 (Timbre Number):

KARMA Timbre Off Control
[Normal, Timbre Off by KARMA Off, Timbre Off by KARMA On]

Nrm (Normal): The KARMA ON / OFF switch will not control whether a timbre will sound. Normally you will select Normal.

by Off (Timbre Off by KARMA Off): The timbre will sound as usual when the KARMA ON / OFF switch is on.

The timbre will not sound when the KARMA ON / OFF switch is off.

Use this when you want a specific timbre of multiple timbres set to the same MIDI channel to be silent only when KARMA is off.

by On (Timbre Off by KARMA On): The timbre will not sound when the KARMA ON / OFF switch is on. The timbre will sound as usual when the KARMA ON / OFF switch is off.

Use this when you are using a KARMA Module to control multiple timbres that are set to the same MIDI channel, and want a specific timbre to be silent only when the KARMA function is on.

For example you can use this to play a two-timbre layer from the keyboard when KARMA is off, and use one timbre to sound the phrase when KARMA is on.

If the **Status** (Combi 3–1(2)c) of each timbre is INT, you can use the **Timbre Off Control** setting to stop the oscillator of each timbre from sounding.

Use Program's Scale **[Off, On]**

Timbre can use the scale that is specified by **Scale** (Prog 1–2b).

On (checked): The scale specified by the program will be used.

Off (unchecked): The scale specified by **Type (Combi's Scale)** (Combi 3–7(8)c) will be used.

Timbre 02...08, 09...16 (Timbre Number):

Here you can make settings for the KARMA function of each timbre 2–8 and 9–16. The settings are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

Scale:

This specifies the scale that the combination will use. For more information, please see “1–2b: Scale” on page 27.

Type (Combi's Scale)
[Equal Temperament...User Octave Scale15]

Selects the scale.

Key **[C...B]**

Selects the tonic key of the selected scale.

Random **[0...7]**

As this value is increased, an increasingly random deviation will be added to the pitch at each note-on.

MIDI If **Status** (Combi 3–1(2)c) is INT, this setting will affect the pitch produced by the M3. If **Status** is EXT, this setting will affect the note number of the note messages transmitted via MIDI.

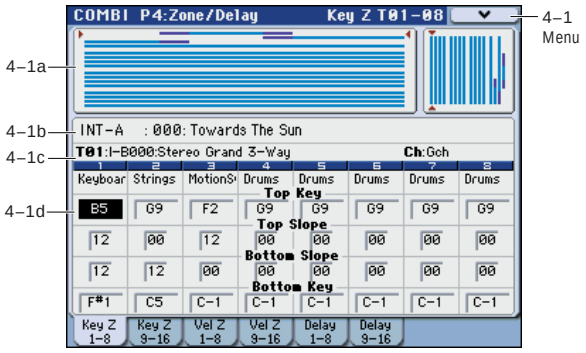
▼3–7(8): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P4: Zone/Delay

4–1: Key Z T01–08, 4–2: Key Z T09–16 (Keyboard Zones T01–08, T09–16)



These settings specify the keyboard range in which timbres 1–8 and 9–16 will sound.

The top / bottom key parameters specify the range of notes in which timbres 1–8 and 9–16 will sound, and the top / bottom slope parameters specify the range over which the original volume will be reached.

Key Split: By setting timbres of different sounds to ranges that do not overlap, you can play different sounds in different ranges of the keyboard.

Layer: By setting the ranges to overlap, you can play two or more sounds with a single note.

Positional Cross-fade: If you set the slopes (the grayed portion) to overlap, the sounds will overlap, and the proportion of the overlap will change according to the keyboard location.

4–1(2)a: Zone Map

This area indicates the note and velocity ranges in which each timbre will sound.

The display uses lines to indicate the range of notes and velocities that will sound, and show the slope portion.

4–1(2)b: Combination Name, Tempo
4–1(2)c: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

4–1(2)d: Keyboard Zones

Timbre 01 (Timbre Number):

Top Key **[C–1...G9]**

Specifies the top key (upper limit) of the notes that will sound each timbre.

Top Slope **[00, 01, 02, 03, 04, 06, 08, 10, 12, 18, 24, 30, 36, 48, 60, 72]**

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the top key.

0: The volume will be at the original level from the top key.

12: The volume will increase gradually as you play downward, and will reach the original volume one octave below the top key.

72: The volume will increase gradually as you play downward, and will reach the original volume six octaves below the top key.

Bottom Slope **[00, 01, 02, 03, 04, 06, 08, 10, 12, 18, 24, 30, 36, 48, 60, 72]**

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the bottom key.

0: The volume will be at the original level from the bottom key.

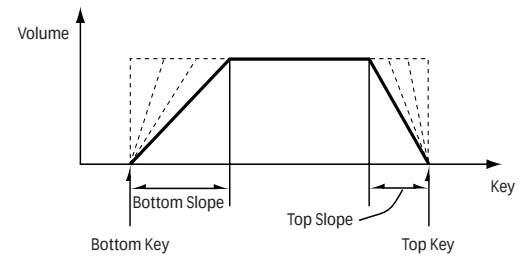
12: The volume will increase gradually as you play upward, and will reach the original volume one octave above the bottom key.

72: The volume will increase gradually as you play upward, and will reach the original volume six octaves above the bottom key.

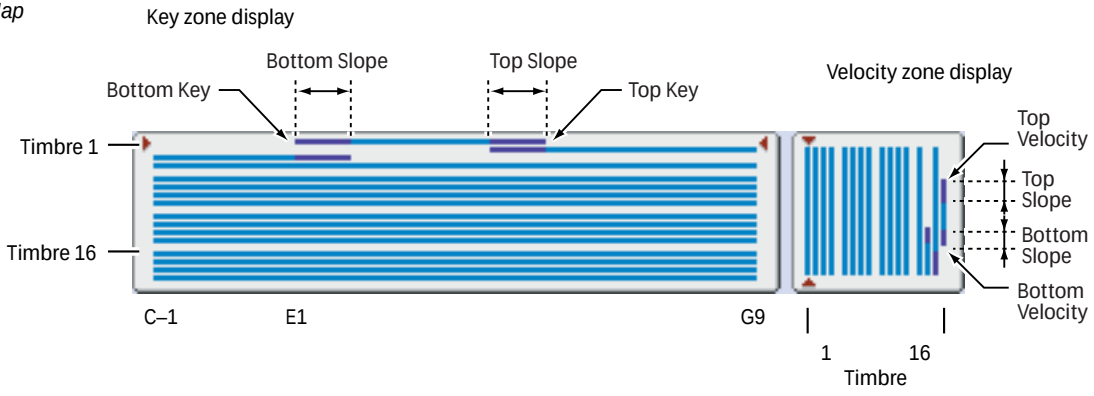
Bottom Key **[C–1...G9]**

Specifies the bottom key (lower limit) of the notes that will sound each timbre.

How volume will change according to keyboard location



Zone Map



Top Key and **Bottom Key** settings can also be input by holding down the ENTER switch and playing a note on the keyboard.

It is not possible to set the bottom key above the top key of the same timbre. Nor is it possible for the top and bottom slopes to overlap.

Timbre 02...08, 09...16 (Timbre Number):

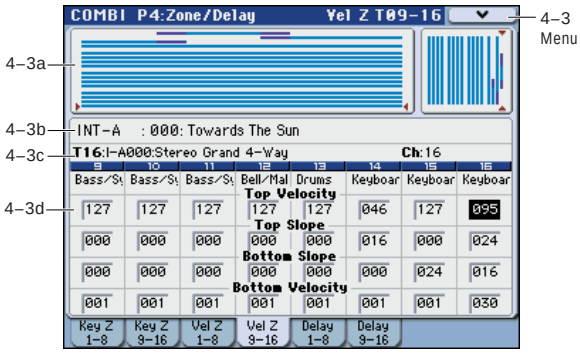
These are the key zone settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼4–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

4–3: Vel Z T01–08, 4–4: Vel Z T09–16 (Velocity Zones T01–08, T09–16)



Sets the Top / Bottom Velocity parameters to specify the range of velocities that will sound for each timbre 1–8 and 9–16, and set the Top / Bottom Slope parameters to specify the range over which the volume will change.

Velocity switch: If you set the velocity zones of multiple timbres so that they do not sound together, you can play separate sounds by striking the keyboard at different strengths.

Layer: If you set two or more timbres to velocity zones that overlap, the sounds will be heard together.

Velocity Cross-fade: If the slope ranges (gray line) overlap, different sounds will be sounded together, and your playing dynamics will determine the proportion of each sound.

It is not possible to set the bottom velocity greater than the top velocity for the same timbre. Nor can the top slope and the bottom slope overlap.

4–3(4)a: Zone Map

This area indicates the note and velocity ranges in which each timbre will sound.

For more information, please see “4–1(2)a: Zone Map” on page 153.

4–3(4)b: Combination Name, Tempo
4–3(4)c: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

4–3(4)d: Velocity Zones

Timbre 01 (Timbre Number):

Top Velocity **[001...127]**

Specifies the maximum velocity value that will sound each timbre.

Top Slope **[000...120]**

Specifies the number of velocity steps over which the original volume will be reached, starting from the Top Velocity.

0: The volume will be at the original value from the top velocity.

120: The volume will decrease as the velocity approaches the top velocity.

Bottom Slope [000…120]

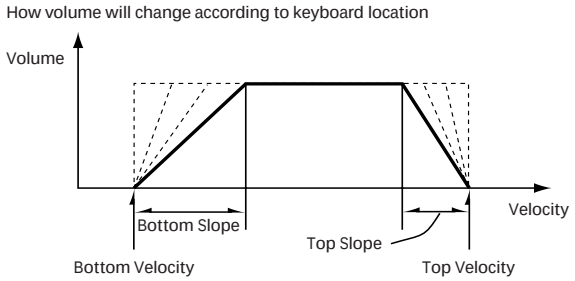
Specifies the number of velocity steps over which the original volume will be reached, starting from the Bottom Velocity.

0: The volume will be at the original value from the bottom velocity.

120: The volume will decrease as the velocity approaches the bottom velocity.

Bottom Velocity [001…127]

Specifies the minimum velocity value that will sound each timbre.



Top Velocity and **Bottom Velocity** settings can also be input by holding down the ENTER switch and playing a note on the keyboard.

Timbre 02…08, 09…16 (Timbre Number):

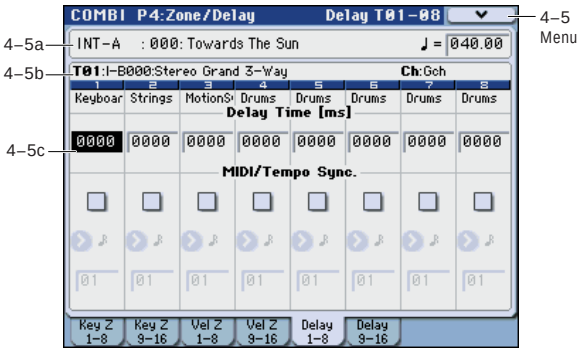
These are the velocity zone settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see "Timbre 01 (Timbre Number):," above.

▼4–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

4–5: Delay T01–08, 4–6: Delay T09–16



This specifies the time (delay) from when the timbres 1–8 and 9–16 receives a note-on until the sound begins.

4–5(6)a: Combination Name, Tempo 4–5(6)b: Timbre Info

For more information, please see "2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16" on page 147.

4–5(6)c: Delay

Timbre 01 (Timbre Number):

Delay Time [ms] [0000…5000ms, KeyOff]

Specifies the time (delay time) from note-on until the timbre begins to produce sound, in units of ms (1/1000th of a second). This setting is available if **MIDI/Tempo Sync**. is set to Off.

KeyOff: The note will begin sounding at note-off. In this case, the sound will not die away if the sustain level of the program's amp EG is other than 0. This setting is used when creating harpsichord sounds.

Normally you will set this to 0000.

MIDI/Tempo Sync. [Off, On]

The time (delay time) from note-on until the timbre produces sound will be specified in note length units relative to the ♩ (**Tempo**).

On (checked): Specify the delay time in terms of a **Base Note** and **Times** relative to the **Tempo**. For example if **Base Note** = 𝅗𝅥, **Times** = 01, and **Tempo** = 60 BPM, the delay time will be equivalent to 1000 ms.

Off (unchecked): The delay time will be set by the **Delay Time** setting.

Base Note [𝅘𝅥𝅯, 𝅘𝅥𝅯₃, 𝅘𝅥𝅮, 𝅘𝅥𝅮₃, ♪, ♩₃, ♩, 𝅗𝅥₃, 𝅗𝅥, 𝅝]

Times [01…32]

It specifies the time (delay time) from note-on until the timbre begins to produce sound, in terms of a note value relative to the ♩ (**Tempo**) (Combi 0–1(2)a).

Use **Base Note** to specify the desired note value, and use **Times** to extend that note value by the specified multiple.

For example if you set **Base Note** to a quarter note (♩) and **Times** to 02, that timbre will sound with a delay of a half note (𝅗𝅥). Even if you change ♩ (**Tempo**) (Combi 0–1(2)a), the delay time will always be a half note (𝅗𝅥). If you use these parameters to specify a delay of a half note (𝅗𝅥). In this case, a **Tempo** of 60.00 BPM will produce a 2000 ms delay, and a **Tempo** of 120.00 BPM will produce a 1000 ms delay.

Timbre 02...08, 09...16 (Timbre Number):

These are the delay time settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼4–5(6): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P5: MIDI Filter

These settings allow you to apply filters to the MIDI data that will be transmitted and received by each timbre 1–16. For example even if two timbres are being played by the same MIDI channel, you can make settings so that the damper pedal will apply to one but not the other.

On (checked): Transmission and reception of MIDI data is enabled.

If **Status** (Combi 3–1(2)c) is INT, the effects of the checked items will be applied to the timbre's program when the controllers of the M3 are operated or when MIDI data is received. (Effect Dynamic Modulation is not affected by these settings.)

In the case of EXT or EX2, operating a controller on the M3 will transmit MIDI data on the channel of that timbre. MIDI transmission / reception settings for the entire M3 can be made in **MIDI Filter** (Global 1–2b).

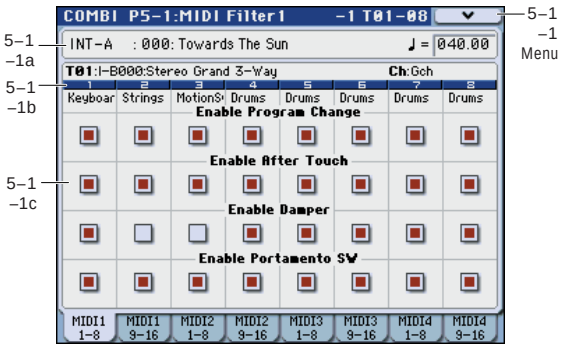
The MIDI Filter pages 1–4 and 2–5 contain MIDI filters for assignable controllers (whose function can be set by the user), and if these are assigned to MIDI control changes, the filter settings will affect those control changes. In this case, if the same control change has been assigned in MIDI Filter pages 1–3, the settings in MIDI Filter pages 1–1 through 1–3 will take priority. Also, if the same control change is assigned to two or more controllers in the MIDI Filter pages 1–4 and 2–5, checking any one of them will enable that control change.

Off (unchecked): Transmission and reception of MIDI data is disabled.

Note: MIDI CC# = MIDI control change message numbers.

COMBI P5–1: MIDI Filter 1

5–1–1: –1 T01–08, 5–1–2: –1 T09–16



5–1–1(2)a: Combination Name, Tempo
5–1–1(2)b: Timbre Info

For more information, please see "2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16" on page 147.

5–1–1(2)c: MIDI Filter1

Timbre 01 (Timbre Number):

Enable Program Change **[Off, On]**

Specifies whether or not MIDI program change messages will be transmitted and received.

Enable After Touch **[Off, On]**

Specifies whether or not MIDI after touch messages will be transmitted and received.

Enable Damper **[Off, On]**

Specifies whether or not MIDI CC#64 hold (damper pedal) messages will be transmitted and received.

Enable Portamento SW **[Off, On]**

Specifies whether or not MIDI CC#65 portamento on / off messages will be transmitted and received.

Timbre 02...08, 09...16 (Timbre Number):

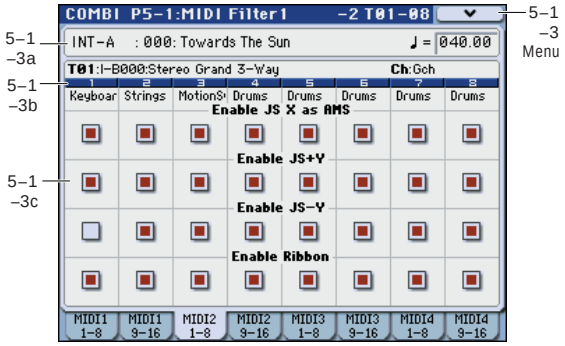
These are the MIDI Filter1 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see "Timbre 01 (Timbre Number):," above.

▼5–1–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

5–1–3: –2 T01–08, 5–1–4: –2 T09–16



5–1–3(4)a: Combination Name, Tempo 5–1–3(4)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

5–1–3(4)c: MIDI Filter2

Timbre 01 (Timbre Number):

Enable JS X as AMS **[Off, On]**

Specifies whether or not MIDI pitch bend messages (the X axis of the joystick) will be received to control the AMS effect assigned to JS X. (This is not a filter for MIDI pitch bend message reception.) For more information, please see “Alternate Modulation Sources (AMS)” on page 587.

Enable JS+Y **[Off, On]**

Specifies whether MIDI CC#1 (the +Y axis of the joystick, or a realtime modulation slider assign setting) will be transmitted and received.

Enable JS–Y **[Off, On]**

Specifies whether MIDI CC#2 (the –Y axis of the joystick, or a realtime modulation slider assign setting) will be transmitted and received.

Enable Ribbon **[Off, On]**

Specifies whether or not MIDI CC#16 (the ribbon controller, or specified as the assignment of a realtime modulation slider) will be transmitted or received.

Timbre 02...08, 09...16 (Timbre Number):

These are the MIDI Filter2 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼5–1–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

5–1–5: –3 T01–08, 5–1–6: –3 T09–16

Here you can specify whether the effects of sliders 1–8 will be transmitted when the CONTROL ASSIGN REALTIME CONTROL switch is selected. The MIDI control messages of sliders 1–4 are fixed.

5–1–5(6)a: Combination Name, Tempo 5–1–5(6)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

5–1–5(6)c: MIDI Filter3

Timbre 01 (Timbre Number):

Enable Realtime Control Slider-1 **[Off, On]**

Specifies whether Slider 1 MIDI CC#74 (the M3’s filter cutoff frequency) will be transmitted and received.

Enable Realtime Control Slider-2 **[Off, On]**

Specifies whether Slider 2 MIDI CC#71 (the M3’s filter resonance) will be transmitted and received.

Enable Realtime Control Slider-3 **[Off, On]**

Specifies whether Slider 3 MIDI CC#79 (the M3’s filter EG intensity) will be transmitted and received.

Enable Realtime Control Slider-4 **[Off, On]**

Specifies whether Slider 4 MIDI CC#72 (the M3’s filter / amp EG release time) will be transmitted and received.

Timbre 02...08, 09...16 (Timbre Number):

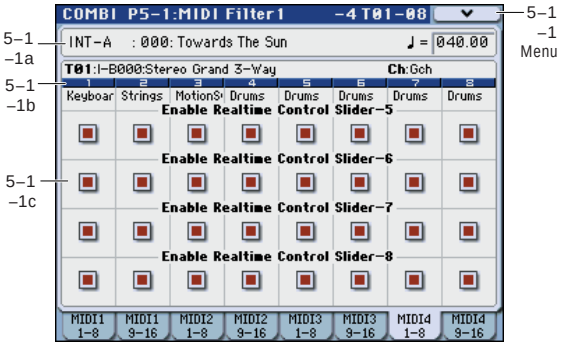
These are the MIDI Filter3 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼5–1–5(6): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

5–1–7: –4 T01–08, 5–1–8: –4 T09–16



Here you can specify whether the effects of sliders 5–8 will be transmitted when the CONTROL ASSIGN REALTIME CONTROL switch is selected. The functions of sliders 5–8 can be specified in the P1: DT / XY / Ctrls– Controllers Setup page.

5–1–7(8)a: Combination Name, Tempo 5–1–7(8)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

5–1–7(8)c: MIDI Filter4

Timbre 01 (Timbre Number):

Enable Realtime Control Slider-5 **[Off, On]**
Enable Realtime Control Slider-6 **[Off, On]**
Enable Realtime Control Slider-7 **[Off, On]**
Enable Realtime Control Slider-8 **[Off, On]**

These specify whether MIDI message will be transmitted and received for Sliders 5 through 8.

Timbre 02...08, 09...16 (Timbre Number):

These are the MIDI Filter4 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

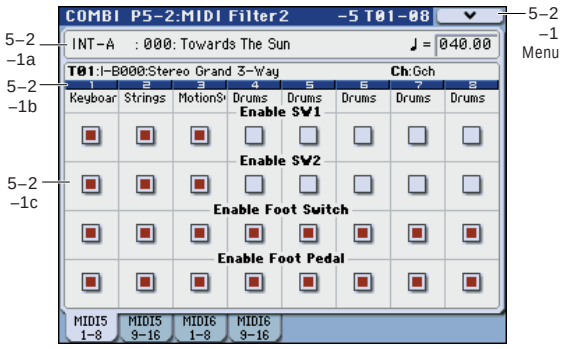
▼5–1–7(8): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P5–2: MIDI Filter 2

5–2–1: –5 T01–08, 5–2–2: –5 T09–16



5–2–1(2)a: Combination Name, Tempo
5–2–1(2)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

5–2–1(2)c: MIDI Filter5

Timbre 01 (Timbre Number):

Enable SW1 **[Off, On]**

Enable SW2 **[Off, On]**

Specifies whether or not the effect of the SW1 and SW2 switches will be transmitted and received.

SW1 and SW2 are controlled by the KYBD-61 / 73 / 88’s SW1 and SW2 switches.

The function of these switches is specified in the P1: DT / XY / Ctrls– Controllers Setup page.

These settings are valid if these keys are assigned to SW1 Mod. (CC#80), SW2 Mod. (CC#81), or Portamento SW (CC#65).

Enable Foot Switch **[Off, On]**

Specifies whether or not the effect of the ASSIGNABLE SWITCH will be transmitted and received. The function is assigned in Global P2: Controllers– Foot Controllers page.

This filter setting is valid when a MIDI control change is assigned.

Enable Foot Pedal **[Off, On]**

Specifies whether or not the effect of the ASSIGNABLE PEDAL will be transmitted and received. The function is assigned in Global P2: Controllers– Foot Controllers page.

This filter setting is valid when a MIDI control change is assigned.

Timbre 02...08, 09...16 (Timbre Number):

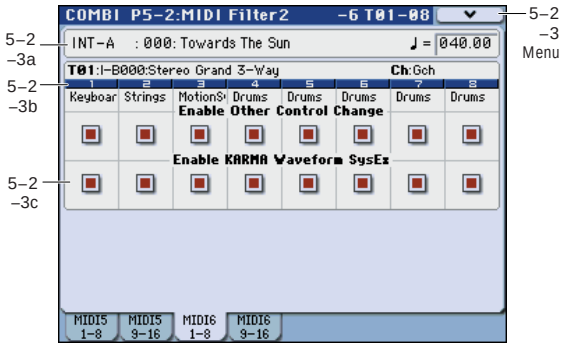
These are the MIDI Filter5 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼5–2–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.185
- 2: **Exclusive Solo** ☞p.185
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

5–2–3: –6 T01–08, 5–2–4: –6 T09–16



5–2–3(4)a: Combination Name, Tempo
5–2–3(4)b: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

5–2–3(4)c: MIDI Filter6

Timbre 01 (Timbre Number):

Enable Other Control Change Messages **[Off, On]**

Specifies whether or not MIDI control messages not covered in the preceding items MIDI Filter will be transmitted and received.

Enable KARMA Waveform SysEx **[Off, On]**

This allows you to enable or disable the System Exclusive messages used by KARMA Wave Sequencing.

Timbre 02...08, 09...16 (Timbre Number):

These are the MIDI Filter6 settings for timbres 2–8 and 9–16. They are the same as for timbre 1. For more information, please see “Timbre 01 (Timbre Number):,” above.

▼5–2–3(4): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.185
- 2: **Exclusive Solo** ☞p.185
- 3: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P7: KARMA

Here you can make KARMA function settings for the combination. In Combination mode, you can use all four KARMA Modules (A, B, C, and D). This allows you to create a wide variety of setups, including assigning different phrases or patterns to different Programs. You can also link or synchronize this with the Drum Track function.

Turning KARMA on and off

KARMA can be enabled or disabled for the current Combination by using the front-panel KARMA ON / OFF switch. You can also temporarily disable KARMA for all Programs, Combinations, and Songs by using the Global **All KARMA Off** parameter. For more information, please see “All KARMA / DT Off” on page 357.

Linking KARMA settings to Program changes

KARMA settings can be saved individually for each Combination. This includes all of the KARMA-related front-panel switches, and sliders, as well as the on-screen parameters.

Normally, when you select a new Combination, its KARMA settings will be loaded as well. In some cases, however, you may wish to try out different Combinations while keeping the KARMA settings the same.

The Global Basic page **Load KARMA when changing** parameters let you select between these two behaviors. There are separate settings for Programs, Combinations, and Songs. To set this up:

1. **Go to the P0: Global Setup– Basic page.**
2. **Under “Load KARMA when changing”, set the “Combinations” check-box as desired.**

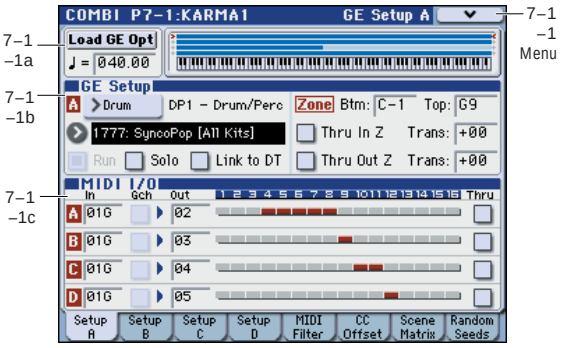
Check the box to load the individual Combinations’ KARMA settings.

Un-check the box to keep KARMA settings the same, even when changing Combinations.

For more information, please see the Global parameter “Load KARMA when changing:” on page 357.

COMBI P7–1: KARMA 1

7–1–1: GE Setup A



Here you can select the GE (Generated Effect) that will be used by each KARMA Module, and specify the Key Zone and MIDI Setup for the four KARMA Modules used by the combination.

In the GE Setup A page you can make settings for KARMA module A. The MIDI input / output channels are specified for each module.

7–1–1a: Load GE Options, Tempo

Load GE Options

These options let you specify whether the values and assignments for controllers such as the KARMA Sliders 1–8 and KARMA Switches 1–8 will be set automatically, be initialized, or be preserved when you select a GE.

For more information, please see “Load GE Options” on page 4.

♩ (Tempo) [040.00...300.00, EXT]

For more information, please see “♩ (Tempo)” on page 121.

7–1–1b: GE Setup

A (Module A):

GE Category

This indicates the category of the GE used by the KARMA module.

GE Category Select [Arpeggio...Real-Time]

This lets you select a GE by category, from **Arpeggio** through **Real-Time**.

GE Select [0000: Arp Model 01 Up/Dn...2092: Tempo Env Repeats]

This selects the Module’s GE, from among the 2093 presets.

For more information, please see “GE Select” on page 5.

RTC Model

This shows the GE’s RTC Model, as specified internally for each preset GE.

For more information, please see “RTC Model” on page 5.

Run [Off, On]

For more information, please see “Run” on page 125.

Solo [Off, On]

For more information, please see “Solo” on page 125.

Link to DT (Link to Drum Track) [Off, On]

For more information, please see “Link to DT (Link to Drum Track)” on page 126.

Zone:

You can specify the range of note data (Key Zone) that will control the KARMA Module.

Note: In Combination mode, MIDI data for the KARMA module is transmitted and received on the **In (Input Channel)** and **Out (Output Channel)** (Combi 7–1–1c) of each module.

For details on these parameters, please see “Zone:” on page 77.

Btm (Key Zone Bottom) **[C–1…G9]**

Top (Key Zone Top) **[C–1…G9]**

Thru In Z (Thru In Zone) **[Off, On]**

Trans (Transpose In Zone) **[–36…+36]**

Thru Out Z (Thru Out Zone) **[Off, On]**

Trans (Transpose Out Zone) **[–36…+36]**

Module Zone Display:

The key zone settings of each of the four KARMA Modules are displayed as a solid blue line.

Notes and messages from the MIDI IN connector within this zone will be input to the KARMA Module.

7–1–1c: MIDI I/O

Specifies the MIDI input / output channels for the four KARMA Modules used by the combination.

A, B, C, D (Module A, B, C, D):

In (Input Channel) [01…16, Gch]

Specifies the MIDI input channel for each KARMA Module.

MIDI data from the keyboard or from MIDI IN that matches the specified MIDI channel will be input to the KARMA Module. (**See the diagram below, “KARMA-MIDI Input/Output Channel.”**)

Gch: The MIDI channel will always match the global **MIDI channel** (Global 1–1a).

When using KARMA with keyboard playing in Combination mode, you will normally select **Gch**.

Gch (Gch Also) [Off, On]

Determines whether input on the Global Channel will also be used for the selected Module, in addition to the channel that is selected in the **In (Input Channel)**.

Off (unchecked): The selected Module will receive data from the specified **In (Input Channel)**, and will not receive data from the Global Input Channel.

On (checked): The selected Module will receive data from the specified **In (Input Channel)** and the Global Input Channel.

This is useful when using a pad on a specific MIDI Channel to send data into a Module. Turning **Gch Also** On (checked) allows a keyboard (sending on the Global Channel) to also control the same Module.

Not available unless the Module’s **In (Input Channel)** is set to something other than **Gch Also** or global MIDI channel.

Out (Output Channel) [01…16, Gch]

Specifies the MIDI output channel for each KARMA Module.

The MIDI data from the KARMA Module will be transmitted on the specified MIDI channel, and will sound timbres whose channel matches. (**See the diagram below, “KARMA-MIDI Input/Output Channel.”**)

Gch: The MIDI channel will always match the global **MIDI channel** (Global 1–1a).

Thru (when KARMA Off) [Off, On]

In (Input Channel) and **Out (Output Channel)** settings are normally valid only when the KARMA ON / OFF switch is on.

As an exception, **Timbre Thru** specifies whether MIDI data that has passed through the KARMA Module will be sent (Thru) to timbres when KARMA is off.

On (checked): When the KARMA function is off, MIDI data that has passed through the KARMA Module will be sent via the **Out (Output Channel)** to timbres.

Off (unchecked): When the KARMA function is off, MIDI data that has passed through the KARMA Module will not be sent to timbres.

If you wish to apply separate phrases or patterns by using KARMA Module [A] for timbre 1 and KARMA Module [B], set the MIDI channels as follows:

Example setting 1

1. **Set the global MIDI channel (Global 1–1a: MIDI Channel) to 01.**
2. **Set timbre 1 as follows.**

Program Select: Bass program

MIDI Channel (Combi 3–1(2)c): Gch

3. **Set timbre 2 as follows.**

Program Select: Piano program

MIDI Channel (Combi 3–1(2)c): 02

4. **Set KARMA Module [A] as follows.**

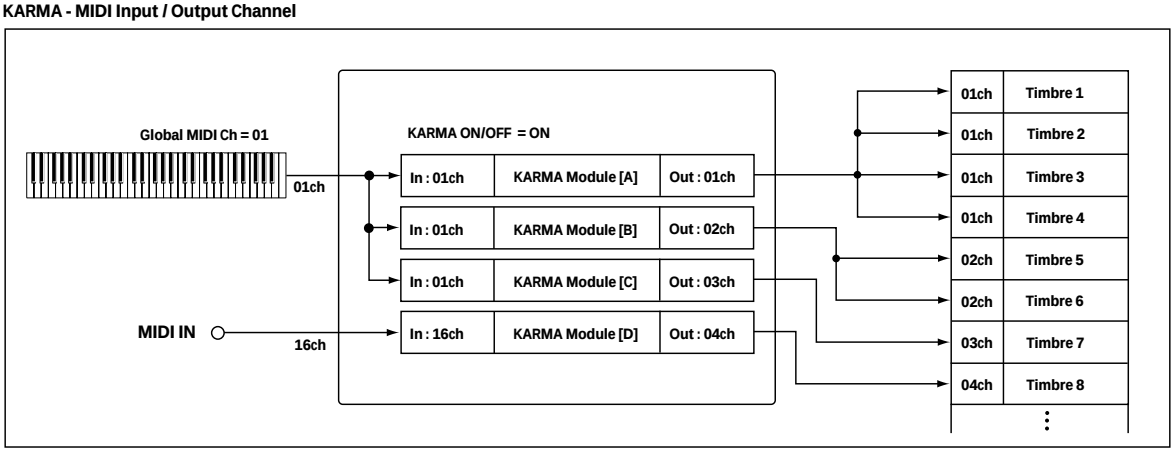
GE Select: Any riff from the Bass GE category

In (Input Channel): Gch

Out (Output Channel): Gch

Timbre Thru: Off

KARMA - MIDI Input / Output Channel



5. Set KARMA Module [B] as follows.

GE Select: Any riff from the Keyboard GE category

In (Input Channel): Gch

Out (Output Channel): 02

Timbre Thru: Off

6. Turn the KARMA ON/OFF switch on.

When you play the keyboard, KARMA Module [A] will play the bass of timbre 1, and KARMA Module [B] will play the piano of timbre 2. (**See "KARMA ON/OFF=ON (1)(2)" in the diagram below.**)

7. Turn the KARMA ON/OFF switch off.

When you play the keyboard, you will hear the bass of timbre 1, whose MIDI channel is set to Gch. Since timbre 2 is set to MIDI channel 2, it will not sound in response to the keyboard. (**See "KARMA ON/OFF=OFF (1)" in the diagram below.**)

Example setting 2

1. Follow steps 1–3 from Example setting 1, above.

2. Set KARMA Module [A] as follows.

GE Select: Any riff from the Bass GE category

In (Input Channel): Gch

Out (Output Channel): Gch

Thru: Off

3. Set KARMA Module [B] as follows.

GE Select: Any riff from the Keyboard GE category

In (Input Channel): Gch

Out (Output Channel): 02

Thru: On

4. Turn the KARMA ON/OFF switch on.

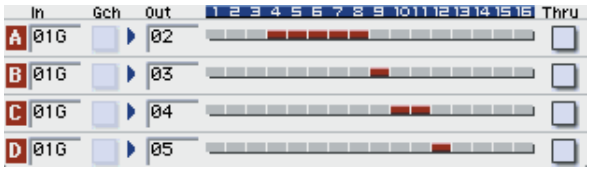
When you play the keyboard, the result will be the same as for step 6 in Example setting 1. (**See "KARMA ON/OFF=ON (1)(2)" in the diagram below.**)

5. Turn the KARMA ON/OFF switch off.

When you play the keyboard, you will hear the bass timbre, whose MIDI channel is Gch. The piano of timbre 2 will also be played by the keyboard because of the **Timbre Thru** On setting of KARMA Module [B]. (**See "KARMA ON/OFF=OFF (2)" in the diagram below.**)

Module – Timbre MIDI Display:

This shows the timbres that will be sounded by each KARMA Module, according to the MIDI output channel settings of each KARMA Module and the MIDI channel of each timbre (Combi 3–1(2)c: **MIDI Channel**).



▼7–1–1: Menu Command

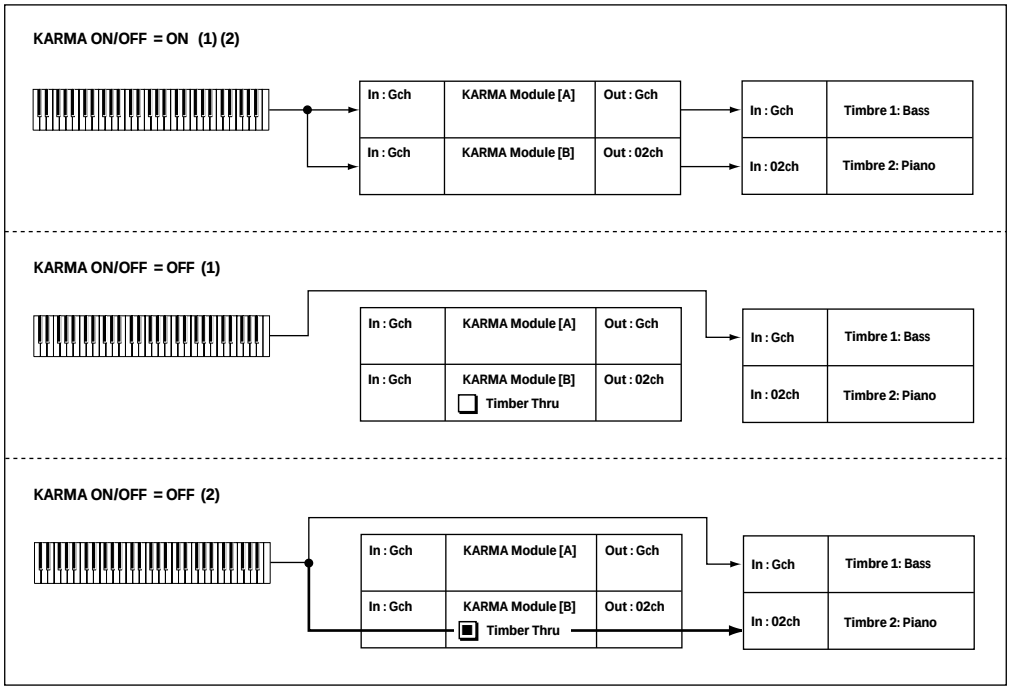
- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

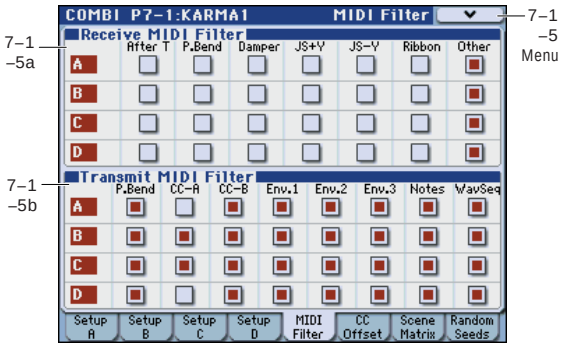
7–1–2: GE Setup B, 7–1–3: GE Setup C, 7–1–4: GE Setup D

These are the same as "7–1–1: GE Setup A."

For more information, please see "7–1–1: GE Setup A" on page 161.



7–1–5: MIDI Filter/CC Offset



Here you can make MIDI filter settings for each KARMA module.

7–1–5a: Receive MIDI Filter

These parameters specify whether the MIDI messages received by each KARMA module will be sent unchanged to the sound generator.

On (checked): The corresponding MIDI data will be echoed to the tone generator.

Off (unchecked): The corresponding MIDI data will not be echoed to the tone generator.

For more information, please see “7–1–3a: Receive MIDI Filter” on page 79.

Aft. T (After Touch) **[Off, On]**
P. Bend (Pitch Bend) **[Off, On]**
Damper (CC#64) **[Off, On]**
JS+Y (CC#01) **[Off, On]**
JS-Y (CC#02) **[Off, On]**
Ribbon (CC#16) **[Off, On]**
Other (Other CC) **[Off, On]**

For more information, please see “7–1–3a: Receive MIDI Filter” on page 79.

7–1–5b: Transmit MIDI Filter

For each KARMA Module, specify whether to filter the MIDI control data received by the Module.

On (checked): The corresponding MIDI data will be transmitted from the KARMA Module.

Off (unchecked): The corresponding MIDI data will not be transmitted from the KARMA Module.

For more information, please see “7–1–3b: Transmit MIDI Filter” on page 79.

P. Bend (Pitch Bend) **[Off, On]**

On (checked): Specifies whether to transmit the MIDI pitch bend messages generated by the GE selected for the KARMA Module.

Note: This setting also applies to the pitch bend messages that may be produced by **CC–A**, **CC–B**, **Env. 1**, **Env. 2**, and **Env. 3**.

If the KARMA function is on and a KARMA Module is generating pitch bend data, the **Bend Range** (“3–5(6)c: Pitch” on page 151) of the timbre will be controlled as follows.

The pitch bend range specified within the KARMA GE will be transmitted from the KARMA Module so that the corresponding timbre will be forcibly set to this bend range. This ensures that the pitch bend data generated by the KARMA Module’s GE will function as intended. At this time, pitch bender data produced by operating the joystick will automatically be adjusted to produce the same bend effect as when KARMA is off (in most cases). If multiple timbres are being controlled by one KARMA Module, the settings of the lowest-numbered timbre will be used.

CC–A, CC–B **[Off, On]**
Env.1–3 (Envelope1–3) **[Off, On]**
Notes (GE Notes) **[Off, On]**
WavSeq (Wave Sequence) **[Off, On]**

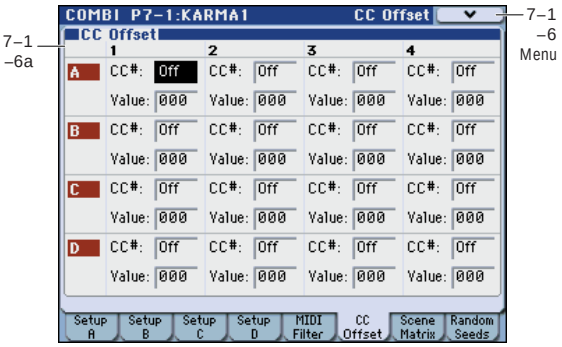
For more information, please see “7–1–3b: Transmit MIDI Filter” on page 79.

▼7–1–5: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

7–1–6: CC Offset



These parameters specify the MIDI control change messages (CC Offset parameters) transmitted when the KARMA function is turned on.

7–1–6a: CC Offset

When the KARMA function is turned on, MIDI control change messages are transmitted to the tone generator. This lets you use MIDI control change messages to control program sounds or effects when the KARMA function is on.

These messages will be transmitted on the **Out (Output Channel)** (Combi 7–1–1c) of the KARMA Module.

1, 2, 3, 4:

CC# (Number) **[Off, 00...95]**

Value **[000…127]**

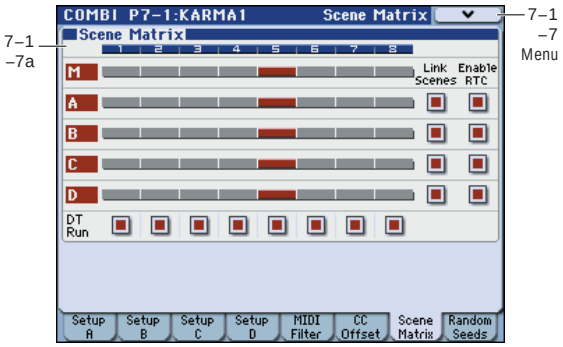
For more information, please see “7–1–4a: CC Offset” on page 80.

▼7–1–6: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

7–1–7: Scene Matrix



7–1–7a: Module Control Scene Matrix

Here you can conveniently view and edit the selected Scenes for each of the five Module Control layers at the same time.

There is a row for each Module, with the top row corresponding to the Master setting. Each row has eight buttons corresponding to the eight front panel KARMA Scenes Switches 1/5–4/8. Therefore, you can select any scene in any layer without changing the MODULE CONTROL switch setting. The grid shows an overview of which Scene is selected in any of the layers at any given time.

M **[1…8]**

A **[1…8]**

B **[1…8]**

C **[1…8]**

D **[1…8]**

You can touch any row and change scenes in any Module, or change Scenes in the Master Layer and consequently change the other layers if they are linked to it (if **Link Scenes** is On (checked)).

Link Scenes (Link Scenes To Master):

A **[Off, On]**

B **[Off, On]**

C **[Off, On]**

D **[Off, On]**

On (checked): Changing a Scene in the Master Layer selects a new Scene for the linked Module Layer. All four Modules independently store their current Scene in the top level Master Scene. It can be the same Scene for each linked Module, or completely different Scenes. This allows complete flexibility as to which Modules have which Scenes in which combinations.

This is the mode you would use mainly in Combination mode, for real-time play, and for setting up **Song Templates** (Combination made to be song inspiration templates, i.e. Scenes similar to verses, choruses, fills, etc.) For example if master buffer 1 is selected, module A (e.g., drum pattern) could be switched to scene 5, and module B (e.g., bass riff) could be switched to scene 8.

Off (unchecked): Changing a Scene in the Master Layer only changes Module parameters assigned to KARMA Sliders 1–8 and KARMA Switches 1–8 in the Master Layer. The Module Layers do not change Scenes, but stay where they are.

Each layer is independent - this is the mode you would use mainly in the sequencer when you want to copy in four

unrelated KARMA GEs one a time and use them in a song. In this case, you do not usually want them to be connected to each other.

Enable RTC (Enable RTC By Master):

A **[Off, On]**
B **[Off, On]**
C **[Off, On]**
D **[Off, On]**

Off (unchecked): If there are controls in the Master Layer that are assigned to the specified Module, moving them or changing scenes in the Master Layer will have no effect on the Module's parameters.

This allows you to "disconnect" a Module Layer from the Master and "freeze" its current sound (in conjunction with turning **Link Scenes To Master** off.)

On (checked): If there are controls in the Master Layer that are assigned to the specified Module, moving them or changing scenes in the Master Layer will affect the parameters and sound of the Module.

Note: In order to completely disconnect a Module from alteration by the Master Layer ("freeze" its settings), you need to uncheck both **Link Scenes To Master** and **Enable RTC By Master**. If you only disable **Link Scenes To Master**, the settings of the Master Scenes may still influence any parameters that are hooked up to controls in both the Master and Module Layers, depending on whether they were last moved in the Master.

Of course, any Module's Real-Time Parameters that are only assigned to controls in the Master Layer for that Module will also be affected by the Master Scenes, unless **Enable RTC By Master** is Off (unchecked).

When **Enable RTC By Master** is turned Off (unchecked), any parameters that are assigned to controls in both the Master and Module Layers may change, because the values for the Module Layer will be sent out for whatever scene is selected in the Module Layer.
In other words, if Duration % (Gate) is assigned in both layers to a Slider, and it was last moved in the Master Layer, the GE will be playing with the Master Layer duration setting. If you disconnect the Master Layer, the duration value indicated by the Module Layer will be sent out. You can adjust the Module Layer's Duration % (Gate) control to sound the same at that point, if desired.
Turning **Enable RTC By Master** back on will resend the Master Layer's duration setting, if it was the last moved control connected to the duration in that Master Scene.

DT Run (Drum Track Run) 1...8 [Off, On]

This turns drum track muting on / off for each Master scene.

When KARMA is Off, the drum track is not affected by this setting. When you turn DRUM TRACK ON / OFF On, the drum track will operate and sound according to the Trigger **Mode** setting.

When KARMA is On, the drum track will be muted (silent) when you select a Master scene in which **DT Run** is Off, even though the drum track had been operating. When you select a Master scene in which **DT Run** is On, muting will be turned off (the drum track will sound).

On (checked): When DRUM TRACK ON / OFF is On, the drum track will operating according to the Trigger **Mode** setting, and its muting will be off (i.e., it will sound).

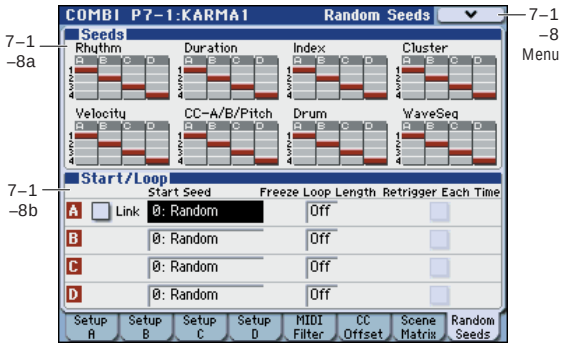
Off (unchecked): For Master scenes in which this is Off, the drum track will be muted (silent) even if it had been operating.

▼7–1–7: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

7–1–8: Random Seeds



The Random Seeds page allows you to control some of the randomizable characteristics of a Module's GE. Different Modules using the same GE can have various randomizable characteristics "linked" so that they share the same start seeds, generating phrases with the same characteristics.

7–1–8a: Seed

Rhythm (Rhythm Seed):

A **[1, 2, 3, 4]**
B **[1, 2, 3, 4]**
C **[1, 2, 3, 4]**
D **[1, 2, 3, 4]**

Allows you to share the same random rhythm characteristics between modules using the same GE. For the GE selected for each KARMA Module, you can often control the degree of randomness for various parameter groups such as rhythm, duration, velocity etc. The random calculations are performed based on initial starting values, known as "seeds."

For example, if you select **Rhythm Seed 1** for all four KARMA Modules, running the same GE under the same conditions will cause the randomness of the rhythms to be identical. If many types of randomness are being used, such as duration, velocity etc., setting all the seeds to the same value within each group will cause the resulting phrases to be identical.

Conversely, if you select **Rhythm Seed 1**, **2**, **3**, and **4** respectively for the four KARMA Modules and run the same GE under the same conditions, the randomness of the rhythms will be different. If many types of randomness are being used, such as duration, velocity etc., setting all the seeds to the different values within each group will cause the resulting phrases to be completely different.

Normally, you will select different values, such as [A]: 1, [B]: 2, [C]: 3, [D]: 4.

Select identical values if you want two or more KARMA Modules to play the same randomizable GE in unison or harmony with the same randomizations.

For more information, please see "Rhythm Group" on page 539.

Changing these settings will not have any effect for GEs that were not designed to utilize various random capabilities.

Duration (Duration Seed):

Controls the randomizable characteristics for the Duration Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "Duration Group" on page 543.

Index (Index Seed):

Controls the randomizable characteristics for the Index Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "Index Group" on page 546.

Cluster (Cluster Seed):

Controls the randomizable characteristics for the Cluster Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "Cluster Group" on page 549.

Velocity (Velocity Seed):

Controls the randomizable characteristics for the Velocity Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "Velocity Group" on page 551.

CC–A/B (CC–A/B Seed):

Controls the randomizable characteristics for the CCs / Pitch Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "CCs / Pitch Group" on page 554.

Drum (Drum Seed):

Controls the randomizable characteristics for the Drum Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "Drum Group" on page 572.

WaveSeq (WaveSeq Seed):

Controls the randomizable characteristics for the WaveSeq Group, similar to those explained under "Rhythm (Rhythm Seed):," above. For more information, please see "WaveSeq Group" on page 557.

7–1–8b: Start/Loop

Link (Link to Start Seed) [Off, On]

If turned On, when you specify a **Start Seed** value for one of the active KARMA Modules, the **Start Seed** of all other active Modules in the Performance will be set to the same value.

This is useful for quickly trying out new settings on all Modules at the same time.

This setting is ignored while **Capture Random Seed** is being executed.

Start Seed
[–2147483648…0: Random…+2147483647]

Specifies the seed that is used by the KARMA module to generate the random phrase.

Note: "Seed" is the internal data from which the randomization is created (see "Start Seed" on page 82). **Start Seed** is used when a trigger occurs.

0: Random: A different phrase will be generated each time the trigger occurs. Within the KARMA module, a different **Start Seed** value is specified randomly each time the trigger occurs.

Any value other than Random: The same phrase will be generated each time the trigger occurs. In contrast to 0: Random, fixing the **Start Seed** value will cause the same phrase to be generated each time the trigger occurs. Different values for the **Start Seed** parameter will produce different phrases, but the same phrase will always be generated if the **Start Seed** value is the same.

For more information, please see “How the Start Seed setting affects the phrase” on page 82.

Freeze Loop Length [Off, 01…32]

Specifies the number of measures in the phrases that are repeatedly generated by the KARMA module. After being triggered, the module will generate a phrase of the number of measures you specify here, and will then repeat that phrase.

If you set this to **Off**, the phrase will not be repeated.

For more information, please see “Examples of Start Seed and Freeze Loop Length settings” on page 83.

Retrigger Each Time [Off, On]

On (checked): Every time the measures specified by **Freeze Loop Length** are repeated, the Phase Pattern, Envelope, and Index Pattern will retrigger as if the keyboard itself etc. was retriggered.

The phrase will be restarted according to the **Note Trigger** setting (see “Note Trigger” on page 93) and GE settings, and the envelope will be retriggered according to the Envelope Trigger / Latch settings. For more information, please see “Envelope Trigger” on page 89, “Envelope Latch” on page 89 and “Checking the Freeze Randomize function, and performing “Capture Random Seed”” on page 116.

Off (unchecked): The Phase Pattern, Envelope, and Index Pattern will be retriggered according to the length of the phase pattern specified by the GE. For example in a GE for which an eight-measure phase pattern is specified, and **Freeze Loop Length** is set to two measures, the randomizations of the rhythm and phrase etc. will be reset every two measures. Then the phrase and envelope will be retriggered every eight measures. For more information, please see “Checking the Freeze Randomize function, and performing “Capture Random Seed”” on page 116.

Note: **Retrigger Each Time** is not available if **Freeze Loop Length** is off.

Note: For some GE settings, on and off may produce the same result.

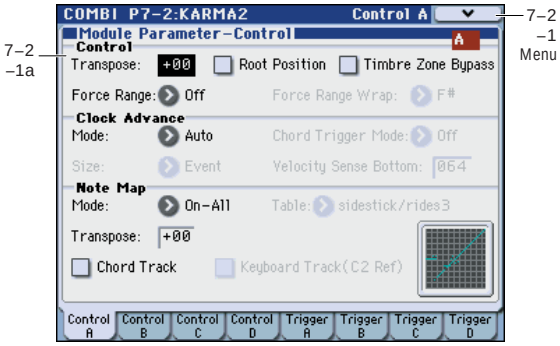
▼7–1–8: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P7–2: KARMA 2

7–2–1: Control A



Here you can set KARMA Module Control parameters. In Combination mode, four KARMA Module A can be used.

7–2–1a: Module Parameter-Control

Control:

Transpose [–36…+36]

Root Position [Off, On]

Force Range
[Off, Lowest, Highest, C3-B3[1], C3-B3[2]]

Force Range Wrap [C…B]

For more information, please see “Control:” on page 84.

Timbre Zone Bypass [Off, On]

Specifies whether the key zone settings and velocity zone settings (Combi 7–1–1b) of the timbre will be applied to the phrase or pattern generated by the KARMA Module.

On (checked): The key zone settings and velocity zone settings of the timbre will be bypassed for the phrase or pattern generated by the KARMA Module. The settings of the timbre will be ignored, and the notes generated by the KARMA Module will be sounded.

Off (unchecked): The key zone settings and velocity zone settings of the timbre will be applied to the phrase or pattern generated by the KARMA Module. Notes generated by the KARMA Module will not be sounded if they are outside the key zone or velocity zone of the timbre.

Clock Advance:

Mode [Auto, Dyn, Auto+Dyn1, Auto+Dyn2]

Chord Trigger Mode
[Off, 1st, Chord1, Chord2, Chord3]

Size [𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯3, 𝅘𝅥𝅯𝅘𝅥𝅯3, 𝅘𝅥𝅯3, 𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯3, 𝅘𝅥𝅯, 𝅘𝅥𝅯3, 𝅘𝅥, 𝅘𝅥3, 𝅗𝅥, Event]

Velocity Sense Bottom [001…127]

For more information, please see “Clock Advance:” on page 85.

Note Map:

Mode (Note Map Mode)
[Off, On-Main, On-Repeat, On-All]

Table (Note Map Table)
[Custom, Gtable 1…Gtable 64]

Transpose (Note Map Transpose) [–12…+12]

Chord Track (Note Map Chord Track) [Off, On]

Keyboard Track (C2 Ref)
(Note Map Keyboard Track) [Off, On]

Note Map Table Display

For more information, please see “Note Map:” on page 86.

▼7–2–1: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

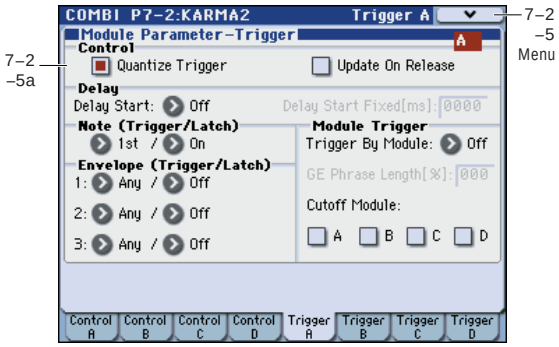
For more information, please see “Combination: Menu Command” on page 185.

7–2–2: Control B, 7–2–3: Control C, 7–2–4: Control D

In these pages you can set the parameters (controls) for KARMA modules B, C, and D.

For more information, please see “7–2–1: Control A,” above.

7–2–5: Trigger A



Specifies the trigger conditions and latch on / off for the GE that is selected for KARMA Module A.

7–2–5a: Module Parameter-Trigger

Control:

Quantize Trigger **[Off, On]**

Update On Release **[Off, On]**

For more information, please see “Control:” on page 84.

Delay:

Delay Start **[Off, Fixed, 𝅘𝅥𝅯₃…4x1]**

Delay Start Fixed **[0000ms…5000ms]**

For more information, please see “Delay:” on page 88.

Note (Trigger/Latch):

Note Trigger **[Any, AKR, 1st, Dyn]**

Note: With any of these settings, the trigger will be applied by operations of the controller specified for Dynamic MIDI (Prog 7–2–3), if **Destination** is set to **Trigger Notes&Envs**, **Trigger Note** (see “Dynamic MIDI Sources & Destinations” on page 601).

For more information, please see “Note Trigger” on page 88.

Note Latch **[Off, On]**

Note: In Combination mode, this can be turned on / off for each KARMA Module. A KARMA Module for which this is On (checked) will be in a Latch On condition when the LATCH switch is on (LED lit).

For more information, please see “Note Latch” on page 88.

Envelope (Trigger/Latch):

Envelope1, Envelope2, Envelope3:

Envelope Trigger **[Any, AKR, 1st, Dyn]**

Envelope Latch **[Off, Sus1, Rel1, Sus2, Rel2]**

For more information, please see “Envelope (Trigger / Latch):” on page 89.

Module Trigger:

Note and envelope triggering of a KARMA Module can be controlled by the operation of another KARMA Module.

Trigger By Module **[Off, A, B, C, D]**

When the KARMA Module you specify here advances by the length specified in **GE Phrase Length**, the KARMA Module itself will be triggered automatically, starting the phrase or pattern.

For example you could make settings so that harp glissando phrases specified for each KARMA Module are triggered consecutively. Alternatively, you could make settings so that the four KARMA Modules are connected in series, and play repeatedly.

GE Phrase Length **[000…100%]**

Specifies a percentage of a Module’s overall GE Phrase Length after which triggering of this Module will occur. When the KARMA Module chosen above advances by the percentage of length specified here, this Module will be automatically triggered.

This is valid except when **Trigger By Module** is Off.

Setting a Module to be triggered by a percentage of its own phrase will have no additional effect.

Note: The actual overall GE Phrase Length is determined by the number of Phase Pattern Steps, the Phase Length Mode, and various other internal GE settings.

Cutoff Module A, B, C, D **[Off, On]**

When this Module’s effect is triggered, it can cutoff any effects that are playing on the specified Modules.

This is mainly for use when you do not want effects from the Modules overlapping each other, but want them to appear continuous (i.e. 4 sax riffs, 4 different strumming effects, etc.). For example, you could trigger different Modules in separate areas of the keyboard, and only have one playing at any particular time.

This can also be used to cycle back and forth between Modules, with each Module shutting off the previous Module when it is triggered in.

▼7–2–5: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

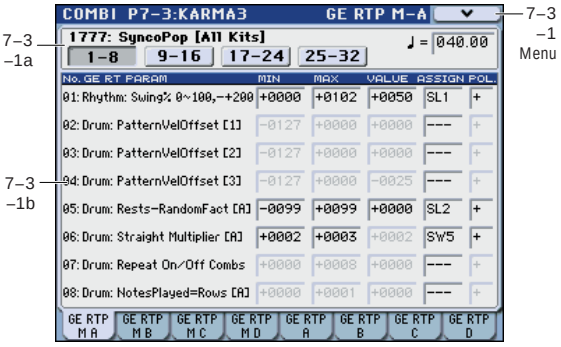
7–2–6: Trigger B, 7–2–7: Trigger C, 7–2–8: Trigger D

In these pages you can set the trigger parameters for KARMA modules B, C, and D.

For more information, please see “7–2–5: Trigger A,” above.

COMBI P7–3: KARMA 3

7–3–1: GE RTP M–A (GE Real-Time Parameters Master A)



Here you can edit the Real-Time Parameters of the GE for KARMA Module A. In addition, you can assign GE Real-Time Parameters to the KARMA Sliders 1–8 or Switches 1–8 so that you can control the phrase or pattern in real-time while you play.

7–3–1a: GE Number & Name, GE RTC Select, Tempo

GE Number & Name

This shows the GE selected for the Module.

GE RTC Select [1–8, 9–16,17–24, 25–32]

This switches the GE realtime parameter display.

1–8, 9–16, 17–24, 25–32: Respectively display GE realtime parameters 1–8, 9–16, 17–24, and 25–32.

♩(Tempo) [040.00…300.00, EXT]

For more information, please see "♩(Tempo)" on page 121.

7–3–1b: GE Real-Time Parameters for Module Control = Master

Module Control = Master lets you use a single controller (e.g., Slider 1) to control multiple KARMA Modules simultaneously, or control individual parameters from different Modules conveniently at the same time.

GE RT Parm 1–8, 9–16, 17–24, 25–32:

Here you can edit GE parameters and assign GE parameters to KARMA Real-Time Controls etc. for use with Module Control = Master.

GE RT PARAM (GE Real-Time Parameter)

MIN (GE Real-Time Parameter Minimum Value) [–5000…+5000]

MAX (GE Real-Time Parameter Maximum Value) [–5000…+5000]

VALUE (GE Real-Time Parameter Value) [–5000…+5000]

ASSIGN (GE Real-Time Parameter Assign) [---, SL1...8, SL1s...8s, SW1...8, Dyn1...8]

POL. (GE Real-Time Parameter Polarity) [+, –]

For more information, please see "GE RT Parm 1–8, 9–16, 17–24, 25–32:" on page 90.

Note: Normally, the **MIN**, **MAX**, **VALUE**, and **POL.** parameters of each module are specified in module A. These parameter settings are possible if you specify **ASSIGN** in Master A.

For example if you want to use Slider1 to control the GE REALTIME PARAMETER No.1 of module A when Module Control is set to Master, you would set the Master, A, B, C, and D's GE REALTIME PARAMETER No.01 **ASSIGN** to Slider1. If these are set to **ASSIGN**, you are able to edit the **MIN**, **MAX**, **VALUE**, and **POL.** parameters for Master, A, B, C, and D.

In this way, you can make GE realtime parameter settings independently of module A.

▼7–3–1: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

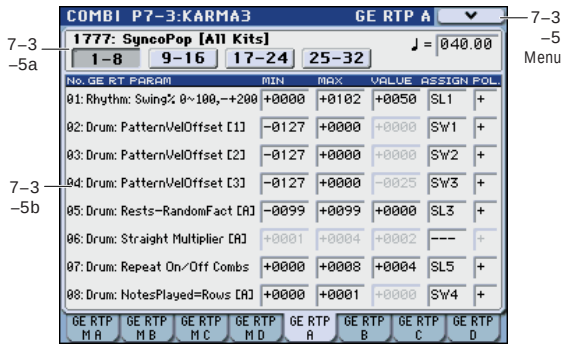
For more information, please see "Combination: Menu Command" on page 185.

7–3–2: GE RTP M–B, 7–3–3: GE RTP M–C, 7–3–4: GE RTP M–D (GE Real-Time Parameters Master B, C, D)

Here you can edit the parameters of the GE selected by Module Control=Master for KARMA modules B, C, and D.

For more information, please see "7–3–1: GE RTP M–A (GE Real-Time Parameters Master A)," above.

7–3–5: GE RTP A (GE Real-Time Parameters A)



In KARMA module A, you can control the GE realtime parameters independently specified for the KARMA module.

7–3–5a: GE Number & Name, GE RTC Select, Tempo

GE Number & Name

GE RTC Select [1–8, 9–16,17–24, 25–32]

For more information, please see "7–3–1a: GE Number & Name, GE RTC Select, Tempo" on page 171.

♩(Tempo) [040.00…300.00, EXT]

For more information, please see "♩(Tempo)" on page 121.

7–3–5b: GE Real-Time Parameters for Module Control = A

Module Control = A let you control GE Real-Time Parameters independently for the corresponding KARMA Module.

GE RT Parm 1–8, 9–16,17–24, 25–32:

Here you can edit the GE Real-Time Parameters of each KARMA Module and assign them to KARMA Real-Time Controls for use with Module Control = Master, A.

GE PARAMETER (GE Real-Time Parameter)

MIN (GE Real-Time Parameter Minimum Value) [–5000…+5000]

MAX (GE Real-Time Parameter Maximum Value) [–5000…+5000]

VALUE (GE Real-Time Parameter Value) [–5000…+5000]

ASSIGN (GE Real-Time Parameter Assign) [---, SL1…8, SL1s…8s, SW1…8, Dyn1…8]

POL. (GE Real-Time Parameter Polarity) [+, –]

For more information, please see "GE RT Parm 1–8, 9–16, 17–24, 25–32:" on page 90.

▼7–3–5: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

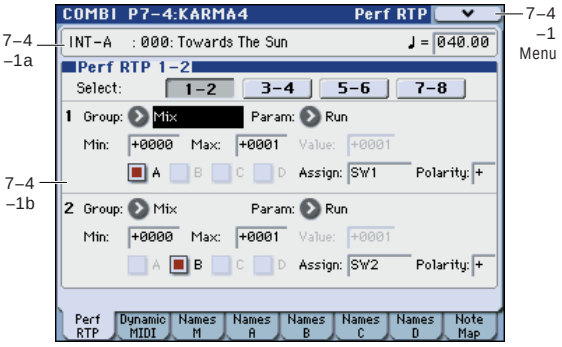
7–3–6: GE RTP B, 7–3–7: GE RTP C, 7–3–8: GE RTP D (GE Real-Time Parameters B, C, D)

In each KARMA modules B, C, and D, you can control the GE realtime parameters independently specified for the KARMA module.

For more information, please see "7–3–5: GE RTP A (GE Real-Time Parameters A)," above.

COMBI P7–4: KARMA 4

7–4–1: Perf RTP (Perf Real-Time Parameters)



Here you can assign controllers to KARMA Performance Real-Time Parameters (Perf. RTP) outside of the GE Real-Time Parameters that control the internal settings of the GE.

By assigning these to KARMA Sliders 1–8 and KARMA Switches 1–8 etc., you can control them in real-time while you play.

Parameters selected in **Group** and **Param** (Global 7–4–1b) and for which **A** / **B** / **C** / **D** is turned on cannot be edited in pages such as the KARMA key zone parameter or KARMA module parameter pages.

7–4–1a: Combination Name, Tempo

For more information, please see “2–1(2)a: Combination Name, Tempo” on page 147.

7–4–1b: Perf Real-Time Parameters

Select (Perf RTP Select) [1–2, 3–4, 5–6, 7–8]

This selects the performance realtime parameters you’ll edit.

Group [Off, PE, Mix, Control, Trigger, Key Zones, Random Seeds]

Param (Parameter) [---, Time Signature…Retrigger Each Time]

Min (Min Value) [–8192…8191]

Max (Max Value) [–8192…8191]

Value [–8192…8191]

For more information, please see “7–2–2b: Perf RTP 1–2, 3–4, 5–6, 7–8 (Perf Real-Time Parameters)” on page 91.

A/B/C/D [Off, On]

Specifies whether the Perf Real-Time Parameter settings will be valid for each Module.

On (checked): The Perf Real-Time Parameter settings will be valid.

Off (unchecked): The Perf Real-Time Parameter settings will be ignored.

Assign [---, SL1…8, SL1s…8s, SW1…8, Dyn1…8]

Polarity [+, –]

For more information, please see “POL. (GE Real-Time Parameter Polarity)” on page 91.

Group: PE (Performance)

For more information, please see “Group: PE (Performance)” on page 92.

Group: Mix

For more information, please see “Group: Mix” on page 92.

In Combination and Sequencer modes, you will also be able to specify **Run** in addition to the settings of Program mode.

Run [+0000, +0001]

Assign the function of **Run** (Combi 0–5b).

+0000: Off
+0001: Run

For more information, please see “Run” on page 125.

Group: Control

For more information, please see “Group: Control” on page 92.

Group: Trigger

For more information, please see “Group: Trigger” on page 93.

Trigger By Module [+0000...+0004]

Assign the function of **Trigger By Module** (Combi 7–2–5a).

+0000: Off
+0001: A
+0002: B
+0003: C
+0004: D

For more information, please see “Trigger By Module” on page 170.

GE Phrase Length [+0000…+0100]

Assign the function of **GE Phrase Length** (Combi 7–2–5a).

For more information, please see “GE Phrase Length” on page 170.

Group: Key Zones

For more information, please see “Group: Key Zones” on page 93.

Group: Random Seeds

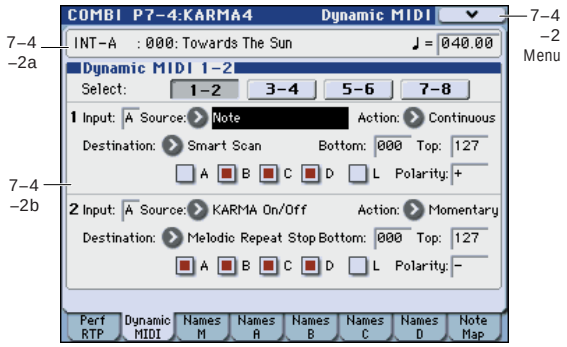
For more information, please see “Group: Random Seeds” on page 94.

▼7–4–1: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

7–4–2: Dynamic MIDI



Dynamic MIDI is a function that lets you use this instrument's controllers and MIDI control messages to control specific KARMA functions.

For more information, please see "7–2–3: Dynamic MIDI" on page 95.

7–4–2a: Combination Name, Tempo

For more information, please see "2–1(2)a: Combination Name, Tempo" on page 147.

7–4–2b: Dynamic MIDI

Select (Perf RTP Select) [1–2, 3–4, 5–6, 7–8]

This selects the Dynamic MIDI parameters you'll edit.

Input (Dynamic MIDI Input Module) [A…D]

Indicates either A, B, C, or D as the KARMA Module that will be the **Dynamic MIDI Source** input.

MIDI control data that matches the **In (Input Channel)** (Combi 7–1–1c) of the KARMA Module that you select here will be used as the **Source**. If the **Source** is **Note In Zone** or **Note Out Zone**, the zone will be the key zone (Combi 7–1–1b) of the KARMA Module that you select here.

Source (Dynamic MIDI Source) [Off, JS+Y (CC#01)…Velocity Outside Zone]

Action (Dynamic MIDI Range Action) [Momentary, Toggle, Continuous]

Destination (Dynamic MIDI Destination) [Off, RT Params Control…Buffer Latch]

Bottom (Dynamic MIDI Range Bottom) [000…127]

Top (Dynamic MIDI Range Top) [000…127]

For more information, please see "Dynamic MIDI Sources & Destinations" on page 601.

A/B/C/D [Off, On]

Specifies the Modules for which the Dynamic MIDI settings will be valid.

On (checked): The Dynamic MIDI settings will be valid.

Off (unchecked): The Dynamic MIDI settings will be ignored.

L (Last Triggered) [Off, On]

The Dynamic MIDI settings will be valid only for the last-triggered KARMA Module A, B, C, or D. For example, this allows you to assign different Modules to be triggered from different parts of the keyboard, and depending on which one was last triggered, route a Dynamic MIDI effect to it, such as Direct Indexing.

Polarity (Dynamic MIDI Polarity) [+, –, +/–, –/+]

For more information, please see "Polarity (Dynamic MIDI Polarity)" on page 95.

▼7–4–2: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see "Combination: Menu Command" on page 185.

7–4–3: Names Master

Here you can select and edit the names of the master KARMA Sliders and Switches.

7–4–3a: KARMA RTC Name

Select Real-Time Controls [Slider, Switch]

Here you can choose whether you want to specify the names for sliders or for switches.

Slider: The names of KARMA Sliders 1–8 will be displayed.

Switch: The names of KARMA Switches 1–8 will be displayed.

7–4–3b: CAT., Names

Each Module Control layer has its own set of names for the 8 KARMA Sliders and 8 KARMA Switches.

Slider:

CAT. (Category)

This indicates the category of the program used by the timbre that is being played from the KARMA Module.

This will indicate Multi if a single KARMA Module is playing multiple timbres of differing categories.

Slider1…Slider8 [000 (no name)...571: Waveform Select [16]]

Select the names for KARMA Sliders 1–8.

On the M3, suitable names for the various functions are provided as presets. The long name is shown at the left, and the short name at the right.

You can also change or newly specify the slider assignments and names.

Switch:

CAT. (Category)

For more information, please see “CAT. (Category),” above.

SW1…SW8 [000 (no name)...571: Waveform Select [16]]

Select the names for KARMA Switches 1–8. The long name is shown at the left, and the short name at the right.

On the M3, suitable names for the various functions are provided as presets.

You can also change or newly specify the switch assignments and names.

▼7–4–3: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185
- 9: **Auto Assign RTC Name** ☞p.117

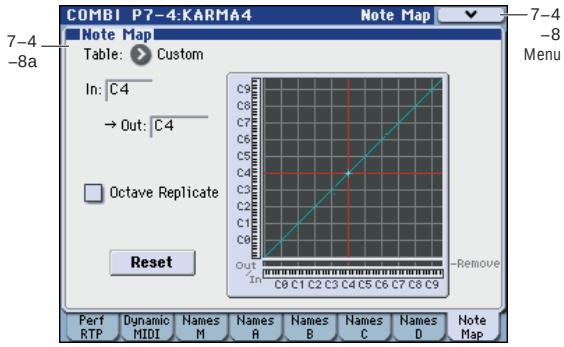
For more information, please see “Combination: Menu Command” on page 185.

7–4–4: Name Map A, 7–4–5: Name Map B, 7–4–6: Name Map C, 7–4–7: Name Map D

Here you can select and edit the names of the KARMA Sliders and Switches for modules A, B, C, and D.

For more information, please see “7–4–3: Names Master,” above.

7–4–8: Note Map



Edit the Custom Note Map Table stored with the Combination.

7–4–8a: Note Map

Table **[Custom, Global 1…64]**

Note In **[C–1…G9]**

Note Out **[Remove, C–1…G9]**

Octave Replicate **[Off, On]**

Reset

For more information, please see “7–2–8: Note Map” on page 97.

▼7–4–8: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **Copy from Program** ☞p.185

For more information, please see “Combination: Menu Command” on page 185.

COMBI P8: IFX (Insert Effect)

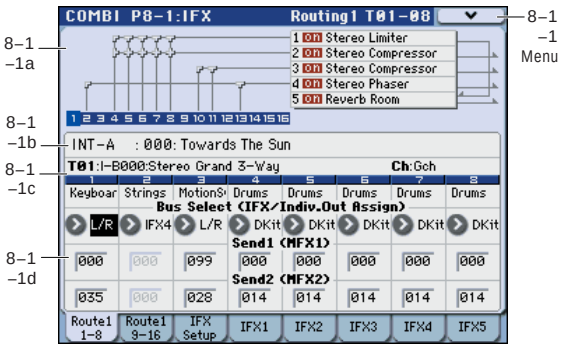
You can also specify the bus routing for the program used by each timbre 1–16. For instance, you can:

- Send the output of a timbre to an insert effect
- Route a sound to an insert effect
- Make detailed settings for insert effects
- Make common LFO settings for effects

For more details on the Insert Effects, please see the “Effect Guide” on page 421.

COMBI P8–1: IFX

8–1–1: Routing1 T01–08, 8–1–2: Routing1 T09–16



Specifies the bus to which the program oscillator(s) used by timbres 1–8 and 9–16 will be sent. You can also set the send levels to the master effects from this page.

8–1–1(2)a: Routing Map

This shows the status of the insert effects.

This area shows the insert effect routing (Bus Select), the name of the assigned effect, the on / off status, chaining, and the output bus that follows the insert effect. The type of insert effect, the on / off status, and the chain settings can be edited in the 8–1–3: Insert FX Setup page.

8–1–1(2)b: Combination Name
8–1–1(2)c: Timbre Info

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

8–1–1(2)d: Routing1

Bus Select (IFX/Indiv.Out Assign) [DKit, L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the output bus for the timbre’s program oscillator. This parameter can also be edited from the P8–2: IFX Routing 2 T01–08, T09–16 page.

L/R: Output to the L / R bus.

IFX1…5: Output to the IFX1–5 buses.

1, 2, 3, 4: The timbre will be output in mono from the corresponding AUDIO OUTPUT (INDIVIDUAL) 1, 2, 3, or 4.

1/2, 3/4: The timbre will be output in stereo according to its pan setting from the corresponding AUDIO OUTPUT (INDIVIDUAL) pairs 1 / 2, or 3 / 4.

Off: The timbre will not be output from the L / R bus, IFX1–5 buses, or Individual 1–4 buses. Choose the Off setting if you want the program oscillator output of the timbre to be connected in series to a master effect. Use **Send1 (to MFX1)** and **Send2 (to MFX2)** to specify the send levels.

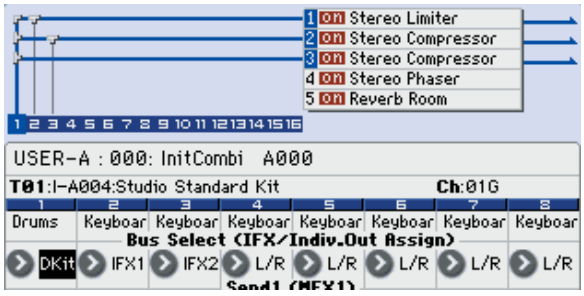
Tip: You can create a wide variety of routings by using each timbre’s **Bus Select** and the **Chain to** and **Chain** settings (Combi 8–1–3b) that follow the insert effect.

Example: Inserting a single IFX into multiple timbre

Example: Inserting a separate IFX into each timbre, and then inserting an IFX at the final stage

Example: Sharing a portion of a timbre’s IFX chain with another timbre

DKit: This can be selected only if the timbre’s program is a drum program (**Oscillator Mode** Drums).



The **Bus Select**, **FX Control Bus**, **Send1**, and **Send2** (Global 5–4b) settings for each key of the selected Dkit will be used. Check this setting if you want to apply an individual insert effect to each drum instrument, or to send individual drum instruments to AUDIO OUTPUT (INDIVIDUAL).

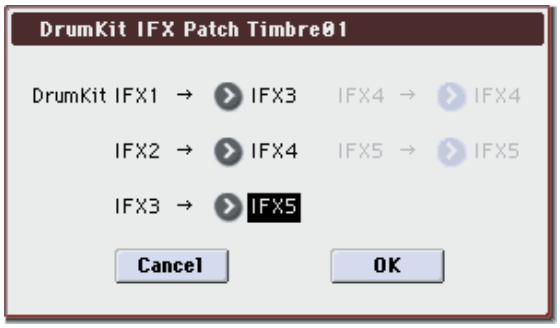
Tip: In most preloaded drumkits, the drum instruments have the same **Bus Select** settings according to their type, as follows.

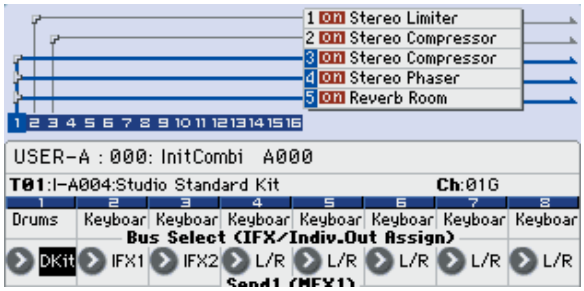
Snares → IFX1

Kicks → IFX2

Other → IFX3

If you want to edit these routings, use the **DrumKit IFX Patch** menu command. For more information, please see “DrumKit IFX Patch” on page 190.





Send1 (MFX1) **[000...127]**
Send2 (MFX2) **[000...127]**

For each timbre, these parameters set the send level to master effects 1 and 2. These settings are valid when **Bus Select** is set to L / R or Off. When IFX 1–5 are selected, the send levels to master effects 1 and 2 are set by the **Send1** and **Send2** parameters of the Insert FX Setup page, after the sound has passed through IFX1–5.

If **Bus Select** is set to 1, 2, 3, 4, 1 / 2, or 3 / 4, these settings are ignored.

MIDI Control change CC#93 can be used to control the Send 1 level, and CC#91 to control the Send 2, and modify their respective settings. These messages will be received on the MIDI channel specified for each timbre in the P2: MIDI channel page.

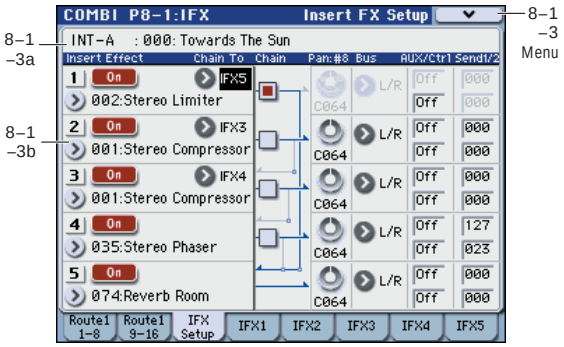
The actual send levels are determined by multiplying this value with the send level **Send1** and **Send2** (Prog 8–1d) for each oscillator of the program selected for the timbre.

▼8–1–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118
- 5: **DrumKit IFX Patch** ☞p.190

For more information, please see “Combination: Menu Command” on page 185.

8–1–3: Insert FX Setup



8–1–3a: Combination Name

For more information, please see “2–1: EQ Trim T01–08, 2–2: EQ Trim T09–16” on page 147.

8–1–3b: Insert Effect

Here you can choose the type of each insert effect 1 through 5, its on / off status, chaining, and adjust the post-IFX mixer settings. For insert effects, the direct sound (Dry) is always stereo-in and out. The input / output configuration of the effect sound (Wet) depends on the effect type.

For detailed explanations of the individual effects, please see the “Effect Guide” on page 421.

The following parameters are the same as in Program mode. For more information, please see “8–2: Insert FX Setup” on page 99.

However, unlike in Program mode, you can use a different MIDI channel to modulate each effect, if desired. This includes the post-IFX **Pan: #8**, **Send1**, and **Send2** settings, as well as the effect’s dynamic modulation (Dmod). To set the MIDI channel, use the **Ch** parameter on the IFX 1–5 page (Combi 8–1–4a).

Insert Effect:

IFX1...4 **[000...170]**
IFX5 **[000...153]**

IFX1...5: IFX On/Off **[Off, On]**

Chain:

IFX1: Chain to **[IFX2...IFX5]**
IFX2: Chain to **[IFX3...IFX5]**
IFX3: Chain to **[IFX4...IFX5]**

IFX1: Chain **[Off, On]**
IFX2: Chain **[Off, On]**
IFX3: Chain **[Off, On]**
IFX4: Chain **[Off, On]**

Pan:#8:

Pan: #8 (Post IFX PanCC#8) **[L000...C064...R127]**

Bus:

Bus (Bus Select) **[Off, L/R, 1...4, 1/2, 3/4]**

AUX/Ctrl:

AUX (AUX Bus) **[Off, 1, 2, 3, 4, 1/2, 3/4]**

Ctrl (FX Control Bus) **[Off, 1, 2]**

Send1/2:

Send1 **[000...127]**

Send2 **[000...127]**

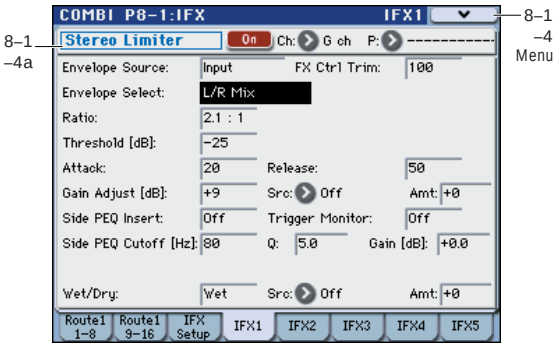
For more information, please see “8–2: Insert FX Setup” on page 99.

▼8–1–3: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see “Combination: Menu Command” on page 185.

8–1–4: IFX1



This page lets you edit the detailed parameters of the five insert effects. Use the tabs at left to select IFX1 through IFX5.

To select different effects types, use the Insert FX Setup page. For more information, please see “8–1–3: Insert FX Setup” on page 178.

8–1–4a: Insert Effect 1 (IFX1)

IFX1 On/Off [Off, On]

Turns the insert effect on / off. This is linked with the on / off setting in the P8–1: IFX– Insert FX Setup page.

Note: If **Control Assign** is RT Control, you can use switches 1–5 to turn IFX 1–5 on / off.

Ch (Control Channel) [Ch01...16, G ch, All-R]

This parameter specifies the MIDI channel that will be used to control effect dynamic modulation (Dmod), pan following the insert effect (CC#8), Send 1, and Send 2.

The channel number of the timbre routed through this IFX will be followed by a “*” displayed at the right of Ch01–16. If two or timbres with different MIDI channel settings are routed through the same IFX, this parameter specifies which of these channels will be used to control the effect.

G ch: The global **MIDI Channel** (Global 1–1a) will be used to control the effect. Normally you will set this to G ch.

All-R (All Routed): The channel of any timbre routed through this effect can be used to control the effect. (Channels of each routed timbre will be indicated by “*”.)

Drum Kits and the MIDI Control Channel

If a Timbre is using a Drum Kit, and the Timbre’s **Bus Select (IFX/Indiv. Out Assign)** (Combi 8–1–1(2)d) is **DKit**, this effects the MIDI Control Channel as well. In this case, the Timbre’s MIDI channel will be used to control any effect whose **Ch** is set to All-R, regardless of the **Bus Select** (Global 5–4b) settings or the settings of the **DrumKit IFX Patch** menu command.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequencer, and Sampling).

Note that edits to effects parameters are automatically stored with the Combi–you don’t need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Combination, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: Initial Set: These are the default settings that are recalled when you select an effect type in the Insert FX Setup page. You can't save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You'll see this if you've just selected an effect, written a program, or selected a new Combination. Selecting this setting from the menu will not have any effect.

Note: Combis save the effects parameter settings, but they don't save the number of the selected Effect Preset. If you select an Effect Preset, and then save the Combination, the Effect Preset setting will revert to "**----------.**"

For more information, please see "Using Effect Presets" on page 101.

IFX1 Parameters:

IFX1 Parameters

Here you can set the effect parameters of the insert effect you chose in the Insert FX Setup page.

For more details, please see "Insert Effects (IFX1…IFX5)" on page 426.

▼8–1–4: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118
- 5: **Write FX Preset** ☞p.190

For more information, please see "Combination: Menu Command" on page 185.

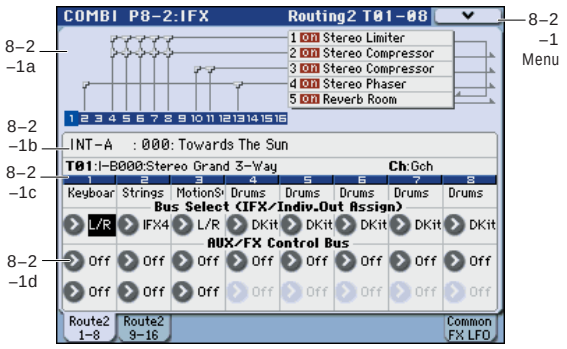
8–1–5: IFX2, 8–1–6: IFX3, 8–1–7: IFX4, 8–1–8: IFX5

Here you can edit the effect parameters for insert effects 2–5 selected in the Insert FX Setup page.

For more information, please see "8–1–4: IFX1," above.

COMBI P8–2: IFX

8–2–1: Routing2 T01–08, 8–2–2: Routing2 T09–16



Here you can specify the program oscillator output bus, effect control bus, and AUX bus for timbres 1–8 and 9–16.

8–2–1(2)a: Routing Map, 8–2–1(2)b: Combination Name, 8–2–1(2)c: Timbre Info

For more information, please see “8–1–1: Routing1 T01–08, 8–1–2: Routing1 T09–16” on page 177.

8–2–1(2)d: Routing2

Bus Select (IFX/Indiv. Out Assign) [DKit, L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the output bus for the timbre’s program oscillator. This is the same parameter as in the 8–1: IFX-Routing 1 T01–08 and T09–16 pages.

For more information, please see “Bus Select (IFX / Indiv. Out Assign)” on page 181.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

These settings send the output of the timbre to the AUX buses (four mono channels: 1, 2, 3, 4).

The AUX buses are internal buses used for sampling etc. in each mode.

In Combination mode, you can resample your keyboard or KARMA performance, or sample an external audio signal from the Audio Inputs.

Normally you will set **Source Bus** (Combi 0–7b) to L / R, so that you can sample the signal of the L / R bus line, such as your keyboard or KARMA performance.

However, you can use a AUX bus if you want to sample only an audio input while performing on the keyboard or KARMA function which are being output via L and R. If desired, multiple audio inputs can be mixed to a AUX bus, or the direct signal from an audio input can be mixed to a AUX bus along with the sound from an insert effect and sampled. Alternatively, you can resample the keyboard performance of only specific timbres. For more information, please see the diagram “Source Bus = AUX 1 / 2” on page 12.

Off: The signal will not be sent to a AUX bus. Normally you will leave this off.

1, 2, 3, 4: The output of the timbre will be sent to the corresponding AUX bus. The **Pan** setting (Combi 0–3(4)b) of each timbre will be ignored, and the signal will be sent in monaural.

1/2, 3/4: The output of the timbre will be sent in stereo to the corresponding pair of AUX buses. The signal is sent in stereo to AUX buses 1 / 2 or 3 / 4 according to the **Pan** setting (Combi 0–3(4)b) of each timbre.

FX Control Bus [Off, 1, 2]

Sends the output of the timbre to an FX Control bus (two-channel mono FX Ctrl 1 or 2).

Use the FX Control buses when you want a separate sound to control the audio input of an effect. You can use two FX Control buses (each is a two-channel mono bus) to control effects in various ways.

For more information, please see “FX Control Buses” on page 423.

▼8–2–1(2): Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118
- 5: **DrumKit IFX Patch** ☞p.190

For more information, please see “Combination: Menu Command” on page 185.

8–2–8: Common FX LFO

The two Common FX LFOs allow you to synchronize LFO-based modulation for multiple effects, such as phasers, flangers, filters, and so on.

The Common LFOs control only the frequency, MIDI synchronization, and reset options; each individual effect still has its own settings for the LFO waveform and phase.

Within the individual effects, you can choose whether to use one of the Common LFOs, or to use the individual effect's frequency, sync, and / or reset settings instead. This is done via the effect's **LFO Type** parameter; select **Individual** to use the effect's settings, or **Common 1** or **2** to use the Common LFOs.

8–2–8a: Common FX LFO1

Ctrl Ch (Control Channel) **[Ch01...Ch16, G ch]**

Specifies the MIDI channel that will control dynamic modulation (Dmod) for Common LFO 1 and 2.

G ch: The global **MIDI channel** (Global 1–1a) will be used for control. This is the default.

Sync (Reset) **[Off, On]**

Source (Dmod Source) **[List of Dmod Sources]**

Frequency **[0.02...20.00 (Hz)]**

MIDI/Tempo Sync **[Off, On]**

BPM **[MIDI, 40.00...300.00]**

Base Note **[𝅘𝅥𝅯, 𝅘𝅥𝅯₃, 𝅘𝅥𝅮, 𝅘𝅥𝅮₃, ♪, ♪₃, 𝅗𝅥, 𝅗𝅥₃, 𝅗𝅥₃, 𝅝]**

Times **[01...32]**

These parameters are the same as in Program mode. For more information, please see "8–8: Common FX LFO" on page 102.

8–2–8b: Common FX LFO2

These parameters are the same as for Common FX LFO1.

▼8–2–8: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Insert Effect** ☞p.118

For more information, please see "Combination: Menu Command" on page 185.

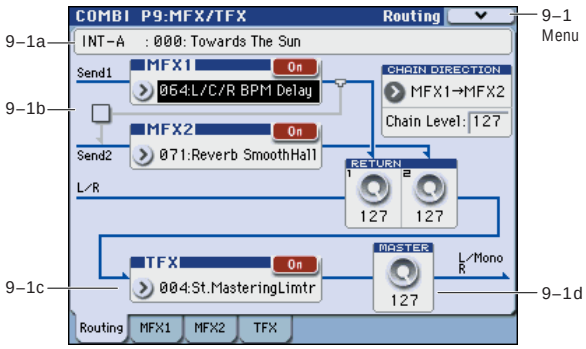
COMBI P9: MFX/TFX (Master/Total Effect)

Here you can make settings for the master effects and total effect. For instance, you can:

- Route a sound to an master effects and total effect
- Make detailed settings for master effects and total effect

For more information, please see “Effect Guide” on page 421.

9–1: Routing



- Here you can specify the type of master effects 1, 2 and total effect, and turn them on / off.
- The master effects are sent to the L / R bus. The total effect is inserted into the L / R bus.

These parameters are the same as in Program mode. For more information, please see “9–1: Routing” on page 103.

9–1a: Combination Name

These are the bank, number, and name of the current Combination. For more information, please see “0–1(2)a: Combination Select” on page 120.

9–1b: MFX1, 2

MFX1:

MFX1 **[000...170]**
MFX1 On/Off **[Off, On]**
Return 1 **[000...127]**

MFX2:

MFX2 **[000...153]**
MFX2 On/Off **[Off, On]**
Return 2 **[000...127]**

Chain:

Chain On/Off **[Off, On]**
Chain Direction **[MFX1→MFX2, MFX2→MFX1]**
Chain Level **[000...127]**

For more information, please see “9–2: MFX1” on page 104.

9–1c: TFX

TFX:

TFX **[000...153]**
TFX On/Off **[Off, On]**

For more information, please see “9–4: TFX” on page 105.

9–1d: Master Volume

Master Volume **[000...127]**

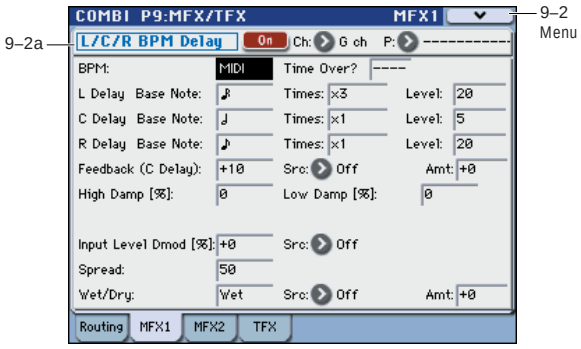
For more information, please see “9–1c: Master Volume” on page 104.

▼9–1: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118

For more information, please see “Combination: Menu Command” on page 185.

9–2: MFX1



Here you can edit the parameters of the effect you selected for MFX1 in the P9: MFX / TFX– Routing page.

9–2a: MFX1

MFX1 On/Off [Off, On]

This turns master effect 1 on / off. This is linked with the on / off setting in the P9: MFX / TFX– Routing page.

Note: If **Control Assign** is RT Control, MFX 1 On / Off can be controlled by switch 6. MFX2 and TFX are controlled by switches 7 and 8, respectively.

Ch (Control Channel) [Ch01...16, G ch]

Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master effect.

Ch01…Ch16: The specified MIDI channel will be used for control.

G ch: The global **MIDI Channel** (Global 1–1a) will be used for control. Normally you will use the G ch setting.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequence, and Sampling).

Note that edits to effects parameters are automatically stored with the Combination–you don't need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Combination, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: Initial Set: These are the default settings that are recalled when you select an effect type in the P9: MFX / TFX– Routing page. You can't save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You'll see this if you've just selected an effect, written a Combination, or selected a new Combination. Selecting this setting from the menu will not have any effect.

Note: Combinations save the effects parameter settings, but they don't save the number of the selected Effect Preset. If you select an Effect Preset, and then save the Combination, the Effect Preset setting will revert to "**----------.**"

For more details, please see "Using Effect Presets" on page 101.

MFX1 Parameters

Here you can set the effect parameters of the insert effect you chose in the P9: MFX / TFX– Routing page.

For details on the master effects, please see the "Effect Guide" on page 421.

▼9–2: Menu Command

- 0: **Write Combination** ☞p.185
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118
- 5: **Write FX Preset** ☞p.190

For more information, please see "Combination: Menu Command" on page 185.

9–3: MFX2, 9–4: TFX

These pages let you edit the parameters of Master Effect 2 and Total Effect. To select different effects types, use the P9: MFX / TFX– Routing page.

The parameters for MFX2, TFX is the same as for MFX1. For more information, please see "9–2: MFX1," above.

Combination: Menu Command

ENTER + 0–9: shortcuts for menu commands

Each page has a set of menu commands, which provide access to different utilities, commands, and options, depending on the page you're currently on. You can use the menu commands entirely from the touch-screen, by pressing the menu button in the upper right-hand corner of the screen and then selecting an option from the menu that appears.

Even though each page may have its own unique menu commands, the menus are standardized as much as possible. For instance, WRITE is almost always the first menu item in Program, Combination, and Sequencer modes.

You can take advantage of this standardization by using a shortcut to access any of the first ten menu items:

1. **Hold down the ENTER switch.**
2. **Press a number (0–9) on the numeric keypad to select the desired menu command, starting with 0.**

For instance, press 0 for the first menu command, 1 for the second, and so on.

If the menu command just toggles an option on and off (such as Exclusive Solo), then you're done. If the command calls up a dialog box, the dialog will appear on the display, and you can proceed just as if you'd selected the command from the touch-screen.

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

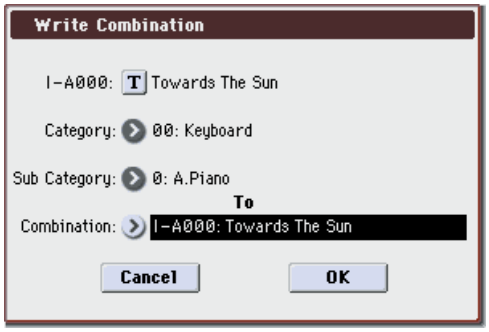
Write Combination

This command writes an edited Combination into the M3 internal memory. It is available on every page in Combination mode.

This lets you:

- Save your edits
- Rename the Combination
- Assign the Combination to a Category
- Mark the Combination as a Favorite
- Copy the Combination to a different Bank and number

Be sure to **Write** any Combination that you wish to save. An edited Combination cannot be recovered if you do not write it before turning off the power or selecting another Combination.



If you use **Category**, or **Sub Category** to specify a category for the combination you are writing, you will be able to select that combination by its category or sub category in Combi P0: Play.

The names of the combination categories can be edited in P4: Category– Combination Main and Combination Sub page.

Note: You can also use the SEQUENCER REC / WRITE switch to write a combination in the same way as **Write Combination**. Press the SEQUENCER REC / WRITE switch to open the dialog box, and write the combination. In this case, the data will be written to the currently selected combination. If you want to save with the X–Y Pad function turned on, use this method to save. While the dialog box is shown, the ENTER switch will operate as the OK button, and the EXIT switch will operate as the Cancel button.

Panel–SW Solo Mode On

When you select **Panel–SW Solo Mode On** and add a check mark to the menu item, the MIX PLAY / MUTE 1–8 switches will operate as Solo on / off.

For more information, please see "Panel–SW Solo Mode On" on page 106.

Exclusive Solo

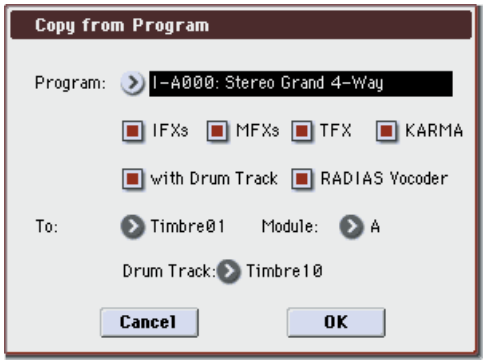
This command is available on every page in Combination mode. When **Exclusive Solo** is **On**, only one Timbre is soloed at a time; when it is **Off**, multiple Timbres can be soloed together.

For more information, please see "Exclusive Solo" on page 107.

Copy from Program

This command is available on every page in Combination mode. It copies Effects and / or KARMA settings from a selected Program to the current Combination. This lets the Program sound the same as it did in Program mode.

1. **Select "Copy from Program" to open the dialog box.**



2. **Use Program to select the copy-source program.**
3. **Select the IFXs used, MFXs, and TFX options to specify which, if any, of the Program's effects settings to copy.**

IFXs: The settings of all insert effect settings (the contents of the Insert FX page and the IFX1–5 effect parameters) of the copy-source program will be copied.

MFXs: All master effect settings of the copy-source program will be copied.

TFX: All total effect settings of the copy-source program will be copied.

About the Bus Select (Combi 8–1–1(2)d, 8–1–3b) setting

- Regardless of the **IFXs used**, **MFXs**, and **TFX** settings, will be set to DKit if the copy-source program's **Use**

DKit Setting is checked. In conjunction with this, the **Drum Kit IFX Patch** setting will be reset to the default setting.

- If **IFXs** is checked, the **Bus Select** setting of the copy-source program will be copied. If the copy-destination timbre **Bus Select** was set to IFX1–IFX5, it will automatically be set to L / R. If you check **IFX-All used**, the routing will be automatically set to match the copy-source program.
- If **IFXs used** is unchecked, then the copy-source **Bus Select** setting will be ignored. or if the **Bus Select** of the copy-source program and copy-destination timbre is set to IFX1–IFX5, it will automatically be set to L / R.

4. **If you check "with KARMA," the Program's KARMA settings will also be copied.**

If this is On (checked), the KARMA Module settings of the copy-source program will be copied to the "KARMA Module" you specify in step 8. The Set Up Pads settings will be also be copied.

In Combination mode, the KARMA Module's **In (Input Channel)** will be set to Gch, its **Out (Output Channel)** will be set to the MIDI channel of the timbre you specify in step 5, and **Track Thru** will be turned On (checked).

5. **If you check "with Drum Track," the Drum Track Pattern settings of the copy-source program will also be copied.**

If this is On (checked), the Drum Track Pattern settings of the copy-source program will be copied to the "Drum Track" you specify in step 9.

The MIDI channel specified for the Drum Track copy-destination timbre will be used.

6. **If you check RADIAS Vocoder, the RADIAS Vocoder parameters of the copy-source RADIAS program will also be copied.**

The EXB-RADIAS must be installed in order to select and use a RADIAS program.

This is invalid if an EDS program is selected by the copy-source.

7. **Use the To field to specify the copy-destination timbre.**

The parameters for each timbre will be initialized. The copy-source program will be assigned to **Program** (see "0–1(2)b: Program Select" on page 122).

- The **MIDI Channel** (Combi 3–1(2)c) setting will not change if "KARMA" is checked. If "KARMA" is unchecked, **MIDI Channel** will be automatically set to G ch.
- The **Bank Select (When Status=EX2)** (Combi 3–1(2)c) setting will not change.
- The **Status** (Combi 3–1(2)c) setting will automatically be set to INT.
- The P1: DT / XY / Ctrls– Controllers Setup settings of the copy-source program will be copied.

8. **Use the "Module" field to select the copy-destination KARMA Module; either A, B, C, or D.**
9. **Use Drum Track to specify the destination timbre to which the drum track program will be copied.**
10. **Press the OK button to execute the copy. If you decide not to execute, press the Cancel button.**

Copy X–Y Motion

Here's how you can copy the X–Y motion setting from any program, combination, or song, or from Sampling mode.

For more information, please see "Copy X–Y Motion" on page 107.

Metronome Setup

This specifies whether the metronome will sound a count-down before sampling begins. This can be set only if **Trigger** is set to Sampling START SW.

The **Metronome Precount** (Prog 0–7b) setting is used.

For more information, please see "Metronome Setup" on page 107.

Optimize RAM

Optimize RAM is available on the Sampling / Audio In tab of the Play page. This command reorganizes unused space in RAM, allowing the full amount of remaining memory to be used.

For more information, please see "Optimize RAM" on page 107.

Select Bank & Smpl No.

Select Sample No. is available on the Sampling / Audio In tab of the Play page.

This specifies the sample number into which the sampled data will be written. You can also specify whether the sample will automatically be converted to a program after sampling. **Select Sample No.** can be selected if you have selected RAM as the **Save to** destination.

For more information, please see "Select Bank & Sample No." on page 108.

Select Directory

Select Directory is available on the Sampling / Audio In tab of the Play page, when the sampling **Save to** parameter is set to MEDIA.

When sampling to media, this lets you set the media, directory, and file name for the resulting timbres 2–8 and 9–16WAVE file.

For more information, please see "Select Directory" on page 108.

Auto Sampling Setup

Auto Sampling Setup is available on the Sampling / Audio In tab of the Play page.

This command automatically sets sampling-related parameters in Combination mode. This is a helpful convenience when you're resampling your performance on a combination, or when you're using a combination as a guide while sampling an external source. You can also use this command to initialize the settings.

- **Initialize:** Sets sampling-related parameters to their default state.

Resample Combination Play: Makes settings so you can play a combination and resample your performance.

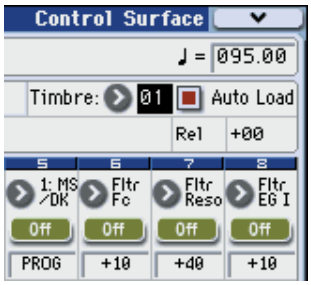
REC Audio Input: Makes settings so you can sample an external audio source while listening to yourself play a combination.

For more information, please see “Auto Sampling Setup” on page 109.

Copy Tone Adjust

Copy Tone Adjust is available on the Control Surface page when **CONTROL ASSIGN** is set to **TONE ADJUST**.

This command replaces the Tone Adjust settings of the selected Timbre (Combination mode) or Track (Sequencer mode) with those of any other Program, Timbre, or Track.

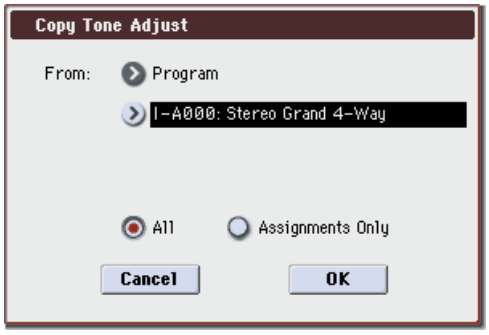


1. **Select the Timbre (Combination mode) or Track (Sequencer mode) whose Tone Adjust settings you want to replace.**

For a timbre, access the Combi P0: Play– Control Surface page, and select the **Control Assign** Tone Adjust **Timbre**.

For a track, access the Seq P0–2: Play / REC– Control Surface page, and select the **Control Assign** Tone Adjust **Track**.

2. **Select “Copy Tone Adjust” to open the dialog box.**



3. **Use From to select the Program, Combination, or Song from which to copy.**

You can also use the front-panel BANK keys to select the desired bank.

4. **If you’ve selected a Combination or Song, select a specific Timbre or Track as well.**
5. **Choose either All or Assignments Only to select the Tone Adjust parameters that you want to copy.**

All: This copies both the Tone Adjust parameter assignments and values.

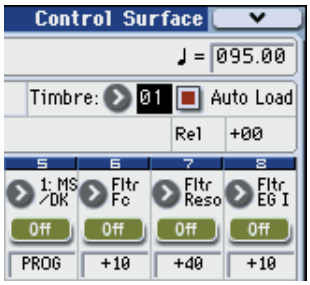
Assignments Only: This copies only the Tone Adjust parameter assignments, without the values.

6. **To execute the Copy Tone Adjust command, press the OK button. To exit without copying the controls, press the Cancel button.**

Reset Tone Adjust

Reset Tone Adjust is available on the Control Surface page when **CONTROL ASSIGN** is set to **TONE ADJUST**.

This command affects only the selected Timbre or Track, as opposed to the entire Combination or Song. It resets the Tone Adjust settings for all of the Track / Timbre’s, Switches, and Sliders to their default values.



1. **Select the Timbre (Combination mode) or Track (Sequencer mode) to reset.**

For a timbre, access the Combi P0: Play– Control Surface page, and select the **Control Assign** Tone Adjust **Timbre**.

For a track, access the Seq P0–2: Play / REC– Control Surface page, and select the **Control Assign** Tone Adjust **Track**.

2. **Select “Reset Tone Adjust” to open the dialog box.**

3. **Use the To field to specify how the Tone Adjust parameters will be reset.**

All Off: All parameters will be reset to Off.

Default Setting: The parameters will be reset to the default settings for the corresponding program type (EDS or EXB-RADIAS option).

4. **To execute the Reset Tone Adjust command, press the OK button. To exit without resetting the controls, press the Cancel button.**

Copy Drum Track

This command copies the drum track settings of the specified Program, Combination, or Song.

For more information, please see “Copy Drum Track” on page 112.

Erase Drum Track Pattern

This erases the drum track pattern you specify.

For more information, please see “Erase Drum Track Pattern” on page 112.

Copy Pad Setup

Copy Pad Setup is available on the Pads tab of the DT / XY / Ctrls page.

This command copies the Pad from a specified program, combination / timbre, or song.

For more information, please see “Copy Pad Setup” on page 112.

Detune BPM Adjust

Detune BPM Adjust is available on the Pitch tab of the Timbre Parameters page.

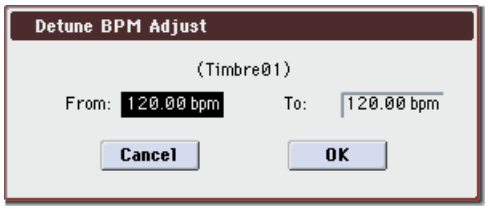
This command changes a loop's tempo by changing the Timbre's **Detune** parameter. The sample data itself is not altered. Since this alters the pitch of the loop along with the tempo, it's generally suited only to un-pitched percussive loops.

Note: Using **Detune BPM Adjust** will over-write any previous **Detune** settings.

1. **Go to the Pitch tab of the Timbre Parameters page.**
2. **Select the Detune parameter for the desired Timbre.**

Detune BPM Adjust is available only when the **Detune** parameter has been selected. Otherwise, the menu selection will be grayed out.

3. **Select "Detune BPM Adjust" to open the dialog box.**



4. **In From, specify the loop's original BPM value.**

Ignore any previous changes from using Detune BPM adjust.

5. **In To, specify the desired BPM value.**

The appropriate **Detune** value will be calculated automatically from these two values.

For example, if you set **From** to 60 bpm and **To** to 120 bpm, **Detune** will be set to +1200 (one octave up).

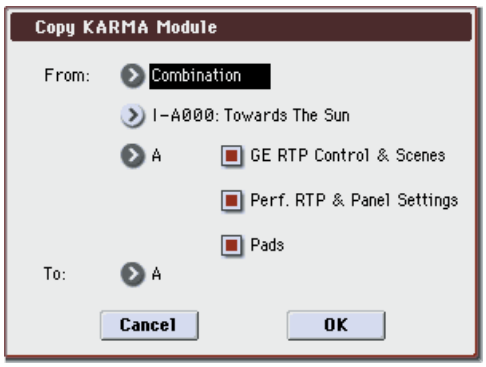
6. **To execute the Detune BPM Adjust command, press the OK button. To exit without changing the Detune value, press the Cancel button.**

Note: Since this command does not affect the sample data itself, and always over-writes the previous **Detune** amount, using it repeatedly has no cumulative effect.

Copy KARMA Module

This command copies the settings of the KARMA Module used by a specified program, combination, or song.

1. **Select "Copy KARMA Module" to open the dialog box.**



2. **In From, select the copy source mode, bank, and number.**

   You can press a BANK SELECT I-A–U-G switch to select the bank.

3. **If you selected a combination or song as the copy-source, select the module from which you want to copy.**
4. **As appropriate for the content that you want to copy, turn "GE RTP Control & Scenes" On (checked). (see "Settings copied by Copy KARMA Module")**
5. **If you want to copy performance realtime parameters, Dynamic MIDI, and front panel settings, turn "Perf. RTP & Panel Settings" On (checked). (see "Settings copied by Copy KARMA Module")**
6. **If you also want to copy the note and velocity settings of pads 1–8, turn "Pads" On (checked).**
7. **Use the To field to select the copy-destination KARMA module.**
8. **Press the OK button to execute the Copy KARMA Module command, or press the Cancel button if you decide to cancel.**

Settings copied by "Copy KARMA Module"

When copying from a program

If **GE RTP Control & Scenes** and **Perf. RTP & Panel Settings** are Off (checked), the following content is copied.

- The GE selected by the copy-source KARMA module.
- Link to DT setting.
- Settings of the KARMA module parameters (7–1: KARMA1– Trigger, 7–1: KARMA1– Control).
- 7–2: KARMA2– GE RTP **MIN**, **MAX**, and **VALUE** settings.

If you turn "GE RTP Control & Scenes" On (checked)

In addition to the content copied when "GE RTP Control & Scenes" is Off (unchecked), the following content is copied.

- 7–2: KARMA2– GE RTP **ASSIGN** and **POL.** settings.
- The scene selected in the master buffer (A), the KARMA Slider and KARMA Switch settings of each scene (0: Play– KARMA RTC and 0: Play– Control Surface "KARMA" settings).
- 7–2: KARMA2– Names controller name settings.

If you turn "Perf. RTP & Panel Setting" On (checked)

In addition to the content copied when "Perf. RTP & Panel Settings" is Off (unchecked), the following content is copied.

- **Tempo** setting.
- **Time Signature** setting.
- KARMA ON / OFF switch setting.
- KARMA LATCH switch setting.
- 7–1: KARMA1– Drum Track Control page settings.
- 7–2: KARMA2– Perf RTP page settings.
- 7–2: KARMA2– Dynamic MIDI page settings.

When copying from a combination or song

If **GE RTP Control & Scenes** and **Perf. RTP & Panel Settings** are Off (unchecked) when you copy from a combination or song, the following content is copied.

- The GE selected for the copy-destination KARMA module (including the GE realtime parameters).
- Link to DT setting of the copy-source KARMA module.
- KARMA module parameters (7–2: KARMA2– Trigger, 7–2: KARMA2– Control).
- 7–3: KARMA3– GE RTP **MIN**, **MAX**, and **VALUE** settings.

If you turn "GE RTP Control & Scenes" On (checked)

In addition to the content copied when **GE RTP Control & Scenes** is Off (unchecked), the following content is copied.

- 7–3: KARMA3– GE RTP page **ASSIGN** and **POL.** settings.
- The KARMA CONTROLS slider and KARMA SWITCH settings of each scene in the copy-source buffer, and the currently selected scene.

- 7–4: KARMA4– Names controller name settings.
- 7–4: KARMA4– Note Map settings.

If you turn "Perf. RTP & Panel Setting" On (checked)

In addition to the content copied when "Perf. RTP & Panel Settings" is Off (unchecked), the following content is copied.

- **Tempo** setting.
- **Time Signature** setting.
- KARMA ON / OFF switch setting.
- KARMA LATCH switch setting.
- KARMA Module Control switch setting.
- 7–1: KARMA1– Scene Matrix "DT Run" page settings.
- 7–4: KARMA4– Perf RTP page settings.
- 7–4: KARMA4– Dynamic MIDI page settings.

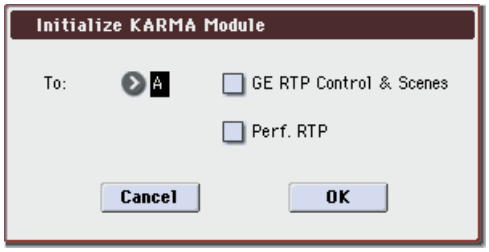
The **In (Input Channel)** and **Out (Output Channel)** (Combi / Seq 7–1–1c) settings of a combination or song are not copied.

Initialize KARMA Module

This command initializes the settings of the KARMA Module.

The GE selection will not be initialized. The GE parameter **Values** will be set to the default values that are preset for the selected GE.

1. **Select "Initialize KARMA Module" to open the dialog box.**



2. **In To, select the KARMA Module that you wish to initialize. If you select All, all KARMA Modules A, B, C, and D will be initialized.**
3. **According to the content you want to initialize, you can turn "GE RTP Control & Scenes" and/or "Perf. RTP" On (checked).**

The KARMA Sliders 1–8 and KARMA Switches 1–8 settings and names in each master buffer are initialized as when the **Perf. RTP** option is On (checked).

4. **To initialize the settings, press the OK button. To cancel without initializing, press the Cancel button.**

When initializing from a combination or song

If you initialize with the **GE RTP Control & Scenes** and **Perf. RTP** options turned Off (unchecked), the following parameters will be initialized.

- Settings of the KARMA module parameters (7–2: KARMA2– Trigger page, 7–2: KARMA2– Control page).
- 7–3: KARMA3– GE RTP **MIN**, **MAX**, and **VALUE** (they will return to the values preset by the GE).

The GE selection will not be initialized.

If you initialize with "GE RTP Control & Scenes" turned On (checked)

In addition to the parameters initialized with the Off (unchecked) setting, the following parameters will also be initialized.

- 7–3: KARMA3– GE RTP **ASSIGN** (→Off) and **POL.** (→+).
- KARMA Sliders 1–8 and KARMA Switches 1–8 settings in each scene (→064 / 0).
- KARMA Sliders 1–8 and KARMA Switches 1–8 names (→no name).

If you initialize with "Perf. RTP" turned On (checked)

In addition to the parameters initialized with the Off (unchecked) setting, the following parameters will also be initialized.

- 7–1: KARMA1– Scene Matrix "DT Run" page settings.
- 7–4: KARMA4– Perf RTP page settings.
- 7–4: KARMA4– Dynamic MIDI page settings.

Copy Scene

This command copies settings for the KARMA Scenes.

For more information, please see "Copy Scene" on page 115.

Swap Scene

This command swaps (exchanges) the settings of two KARMA Scenes.

For more information, please see "Swap Scene" on page 115.

Capture Random Seed

The **Start Seed** is the source of the randomness of the phrase generated by the KARMA Module. For more information, please see "Start Seed" on page 82.

When you are listening to the randomly changing phrases generated each time a KARMA Module is triggered, and you hear a phrase that you would like to reproduce consistently each time you trigger that GE, you can execute this command to capture the seed that resulted in that phrase.

For more information, please see "Capture Random Seed" on page 116.

Auto Assign RTC Name

This command is available on the KARMA GE tab or KARMA RTC of the Play page, and the Name / Note Map tab of the KARMA page.

For more information, please see "Auto Assign RTC Name" on page 117.

Copy Insert Effect

This command copies effects settings from Program, Combination, Song, or Sampling modes. For more information, please see "Copy Insert Effect" on page 117.

Note: The slot's MIDI control channel, as specified by the **Ch** parameter on the P8–1: IFX– IFX1–5 pages, will not be copied.

Swap Insert Effect

This command swaps (exchanges) insert effect settings. For more information, please see "Swap Insert Effect" on page 118.

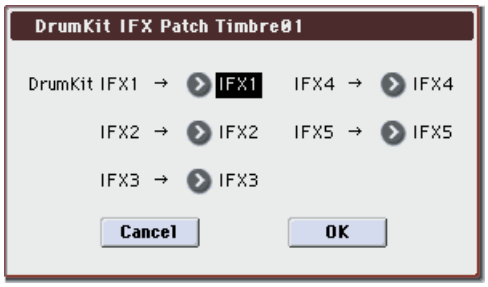
Note: The slot's MIDI control channel, as specified by the **Ch** parameter on the P8–1: IFX– IFX1–5 pages, will not be swapped.

DrumKit IFX Patch

This patches the **Bus Select** settings for each key of a drum kit, temporarily changing the insert effect connection destinations.

You can execute this command if the program assigned to the timbre is a drum program and **Bus Select** is set to **DKit**. The **Bus Select** setting (Global 5–4b) of each key in the drum kit must be set to one of IFX1–5.

1. **In the Routing1 page or Routing2 page, select the timbre for which you want to make settings. (Select a timbre parameter or Timbre Number.)**
2. **Select "DrumKit IFX Patch" to open the dialog box.**



3. **In the DrumKit "IFX" popup, select the output bus to which you want to patch the signal: an insert effect or L/R, 1–4, 1/2, 3/4, or Off.**
4. **To execute the Drum Kit Insert Effect Patch command, press the OK button. To cancel, press the Cancel button.**

Note: To restore the condition of the drum kit, execute IFX1→IFX1, IFX2→IFX2, IFX3→IFX3, IFX4→IFX4, IFX5→IFX5 (see page 177).

Copy MFX/TFX

This command copies effect settings from Program, Combination, Song, or Sampling modes. For more information, please see "Copy MFX / TFX" on page 118.

Note: The slot's MIDI control channel, as specified by the **Ch** parameter on the P9: MFX / TFX– MFX1 and TFX page, will not be copied.

Swap MFX/TFX

This command swaps (exchanges) insert effect settings. For more information, please see "Swap MFX / TFX" on page 118.

Note: The slot's MIDI control channel, as specified by the **Ch** parameter on the P9: MFX / TFX– MFX1 and TFX page, will not be copied.

Write FX Preset

This command saves the edited effect into the M3's internal memory.

For more information, please see "Write FX Preset" on page 118.

Sequencer mode

An overview of Sequencer mode

The M3 contains a 16-track MIDI sequencer.

This lets you record and play back MIDI data on sixteen MIDI tracks and one master track (containing tempo data, etc.), using the internal sound generator or external sound modules.

When you've completed a song, you can create a WAVE file by resampling your song to a USB storage device (such as a hard disk). If you've connected an external USB CD-R / RW drive, you can create an audio CD in Media mode.

The In-Track Sampling function, Time Stretch / Slice function, KARMA function, drum track function, RPPR function, the sophisticated effects, controllers, and the numerous other functions of the M3 can be used together to give you a wide range of possibilities for music production or live performance.

When you turn off the power, the Sequencer mode settings, the songs you've recorded, the cue list, and the user pattern data will disappear. If you need to keep this data, you must save it to a USB storage device or a data filer (via MIDI Data Dump) before powering-off.

If you wish to save the programs, track parameters, effects, and KARMA function settings etc. selected for a song as a template song, use the menu command **Save Template Song**.

Immediately after the power is turned on, M3 will not contain any cue list and song data, so if you wish to playback a song on the sequencer, you must first load data from media or receive a MIDI data dump from a MIDI filer. (See page 384, page 401, and OG page 145)

MIDI sequencer

- The sequencer lets you record a maximum of 210,000 MIDI events, up to 128 songs, and as many as 999 measures per song.
- Up to **20 cue lists** can be created.
  A cue list is an arrangement of up to 99 songs that will be played as a chain. You can specify the number of times that each song will repeat. A cue list can also be converted into a single song.
- Timing resolution is a maximum of ♩ / 480.
- There are sixteen tracks for MIDI performance data, and a master track that controls the time signature and tempo.
- The KARMA function can be used during playback or recording.
- You can perform or record using the Drum Track function.
- The RPPR (Realtime Pattern Play / Recording) function can be used during playback or recording.
- A three-band EQ is provided on each MIDI track.
- For each song, you can use five stereo insert effects, two stereo master effects, and one stereo total effect.
- Sixteen different template songs are built-in, and contain program and effect settings suitable for various musical styles. Up to sixteen original templates that you create can be saved as user template songs.
- A track play loop function lets you loop specified measures independently for each track.
- 522 preset patterns ideal for drums are built in. In addition, you can create up to 100 user patterns for each song. These patterns can be used as musical data within a song, or can be played by drum track or the drum track and / or RPPR function.

MIDI recording features

- Various methods of recording are supported, including realtime recording in which your performance on the keyboard and controllers (including MIDI control events) is recorded just as you play, and step recording in which the timing, length, and velocity of each note can be specified in the display as you input the pitches from the keyboard.
- The musical data and control events that you recorded can be edited in various ways (including event editing and many other edit commands).
- MIDI System Exclusive (SysEx) messages can be recorded and played back. SysEx messages received from an external MIDI device or parameter changes produced by editing track parameters or effect parameters can be recorded in real-time on any desired track.

Parameter-related features

- When the **Status** of a track is set to INT or BTH, an external sequencer can be used to play M3 as a multi-timbral tone generator. When the **Status** of a track is set to BTH, EXT, or EX2, the sequencer of M3 can play external tone generators.
- **Tone Adjust** parameters let you make temporary adjustments to the sound of the program used by a track, while leaving the original program unchanged. While creating a song, you can use this capability to make changes in realtime by (for example) softening the tone of the bass sound or sharpening the attack of the strings without having to return to Program mode and edit the program itself.
- M3's AMS (Alternate Modulation) capability lets you use control changes for realtime control of the parameters of the programs used in a program. Its MIDI Sync abilities let you synchronize the LFO speed to changes in the tempo.
- Dmod (Dynamic Modulation) functionality lets you control effect parameters in realtime. You can also use MIDI Sync to synchronize the LFO speed or delay time to changes in the tempo.
- The MIDI clock master can be set to Internal, External, or Auto, allowing synchronized performance with an external MIDI device.

Editing and operation features

- The Auto Song Setup function lets you instantly set up program or combination settings of Program mode or Combination mode as a song, so that you can start recording simply by pressing the SEQUENCER START / STOP switch. Since performances using the Drum Track function or KARMA function in Program or Combination mode are seamlessly integrated with song production, any inspiration or ideas for phrases and songs that occur to you while playing can be immediately be turned into a song.

- Program and Combination settings can be copied to a song.
- Sequencer data such as a song that you create can be saved in M3's native format, or transmitted as a MIDI data dump.
- A song you created can be converted into SMF (Standard MIDI File) data. SMF songs can also be loaded.
- The **Play/Rec/Mute** and **Solo On/Off** buttons let you instantly play / mute any desired track on the fly.
- You can rewind or fast-forward MIDI Tracks while listening to the sound.
- You can assign names not only to the song, but also to each pattern and track.
- The LOCATE switch lets you move quickly to a desired location.
- You can convert user pattern data for use in the drum track. The converted pattern can be used as a drum track pattern in each mode. This data will remain even after the power is turned off (unlike user patterns in Sequencer mode).

Sampling features

- The M3 provides an In-Track Sampling function which lets you sample an external audio source while the song plays back, and will automatically create note data to trigger that sample at the appropriate point during the playback of the track.
- Multisamples you create can be played back together with internal programs in Sequencer mode. The Time Slice function of Sampling mode lets you divide a rhythm loop sample and create performance data that corresponds to the divided samples. In Sequencer mode you can play this performance data, and adjust the playback tempo without affecting the pitch of the rhythm loop sample. You can also exchange the note numbers of the data, or modify the timing to freely re-create new rhythm loops.
- After you've created a song, you can create a WAVE file by resampling it to a USB storage device, and use Media mode to record WAVE files as an audio CD.

Setup parameters & Musical data

Each song consists of MIDI tracks 1–16, a master track, various song parameters such as the song name, settings for the X–Y control function, settings for the KARMA function, drum track function, effect settings, RPPR function parameters, and 100 user patterns.

Up to 128 such songs can be created in the M3.

MIDI tracks 1–16 each consist of "track parameters" that specify the starting state of the track, and "playback data." The master track consists of tempo and time signature data.

MIDI tracks 1–16

Setup parameters

Bank / Program No.*, Play / Rec / Mute, Pan*, Volume*

Track Play Loop, Loop Start Measure, Loop End Measure, Play Intro, EQ (Bypass, Low Gain, Mid Frequency, Mid Gain, High Gain) Status, MIDI Channel, Bank Select (When Status=EX2), Force OSC Mode, OSC Select, Portamento*, Transpose**, Detune**, Bend Range**, Use Program's Scale, Delay (Mode, Time, Base Note, Times), KARMA Track Off Control, MIDI Filter, Keyboard Zone, Velocity Zone, Track Name, IFX / Indiv.Out Bus, FX Control Bus, AUX Bus, Send1(MFX1)*, Send2(MFX2)*, Drum Kit IFX Patch

Musical data

Note On / Off
Program Change (including Bank Select)
Pitch Bend
After Touch (Poly After)
Control Change
Pattern No.
Exclusive Message

Master track

Setup parameters/Musical data

Time signature*, Tempo*

* When you change the setting during realtime-recording, this will be recorded as musical data. This allows the starting settings to be modified during the playback.

** Musical data (MIDI RPN data) can be used to change the starting settings during playback.

Other parameters: You can adjust parameters during realtime recording and record these changes as MIDI System Exclusive messages. This means that the settings at the start of playback can change as the song progresses.

- For details on Control Change messages and RPN, please see "Control change" on page 616, and "Using RPN (Registered Parameter Numbers)" on page 620.
- For details on MIDI System Exclusive messages, please see "System Exclusive events supported in Sequencer mode" on page 295.

The Global mode "SEQ Mode" setting

In SEQ mode, you will normally use the internal sequencer as the master that controls the internal sound generator or external MIDI sound modules. However, you can also use the M3 as a multi-timbral sound module that can simultaneously play multiple tracks of performance data from an external MIDI sequencer. (Normally, you'll use Combination mode if you want to use the M3 as a master keyboard.)

You can switch the M3's setting as appropriate for these two purposes. This setting is made in Global P1: MIDI– MIDI Basic page SEQ Mode **Track MIDI Out**.

"for Master" is the appropriate setting if you want to use the M3's internal sequencer to control an external sound module, or use the M3 in Sequencer mode as a master keyboard. In this case when you switch songs on the M3, tracks whose **Status** is set to EXT or BTH can transmit MIDI messages such as program changes to set up your external MIDI sound module.

"for External-Sequencer" is the appropriate setting if you want to use the M3 as a multi-timbral sound module for your external sequencer. When you switch songs on the M3, MIDI messages such as program changes will not be transmitted (by tracks whose **Status** is EXT or BTH). This ensures that echo-back from your external MIDI sequencer will not cause M3 tracks of the corresponding MIDI channel to switch their program, pan, or volume settings.

Tip: Auto Song Setup

The Auto Song Setup function copies the settings of a program or combination to a song, and puts you in record-ready mode. Then you can simply press the SEQUENCER START / STOP switch to begin recording immediately. This lets you seamlessly move from playing a program or combination to producing a song. For example if you've been using the drum track or KARMA function and have come up with a phrase or an idea, this function lets you easily turn your inspiration into a song.

Procedure (example: Combination mode)

1. **Enter Combination mode.**
2. **In P0: Play page, select the desired combination and edit the KARMA RTC etc. as desired.**

Note: If you want to save the edited state of the combination, use the **Update Combination** or **Write Combination** menu commands.

3. **Hold down the ENTER switch and press the REC/WRITE switch.**

The **Setup to Record** dialog box will appear.

4. **To execute the Auto Song Setup function, press the OK button. If you decide not to execute, press the Cancel button.**

You will automatically move to Sequencer mode, and the settings of the combination will be copied to the song.

The first unused song will be the copy-destination song.

Contents automatically copied from a combination

The copied contents will be the same as when you execute the menu command **Copy From Combi** with the following settings in the dialog box. (see page 273)

- **IFXs**, **MFXs**, **TFX** checked
- **Multi REC Standby** checked

Contents automatically copied from a program

The copied contents will be the same as when you execute the menu command **Copy From Program** with the following settings in the dialog box. (see page 273)

- **IFXs**, **MFXs**, **TFX** checked
- **KARMA** checked
- **To** set to Track 01
- **KARMA Module** set to A
- **with Drum Track** checked
- **To**: **Drum Track** set to Track 10
- Check **Multi REC Standby** for tracks 01 and 10

5. **The M3 will automatically enter record-ready mode, and the metronome will sound according to the Metronome setting (Seq 0–1–8b).**
6. **Press the START/STOP switch to begin realtime recording. To stop recording, press the START/STOP switch once again.**

SEQ Page Select

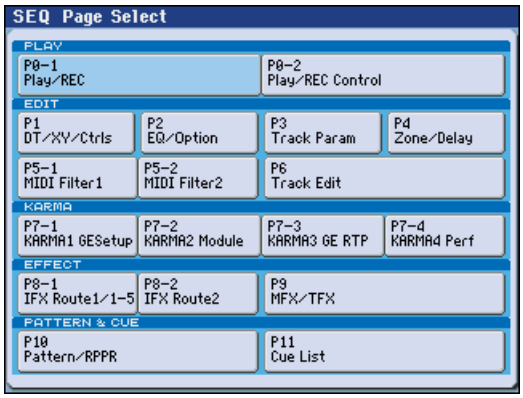
- Press the MODE SEQ switch to select Sequencer mode.

You can use the following ways to select the pages in Sequencer mode.

1. **Press the SEQ switch, and then press the MENU switch to access “Page Select.”**

“Page Select” shows an abbreviated name for each page.

The page in which you were prior to pressing the PAGE SELECT switch is shown in light blue.



2. **Select the desired page in the display.**

Other ways to select pages

- Hold down the PAGE SELECT switch and press a numeric keys 0–9 to specify a page number; you will move to the corresponding page.

  For example if you want to access the P3: Track Param page, hold down the PAGE SELECT switch and press numeric key 3.

  Note: For pages that consist of multiple subpages, such as P0–1, P0–2, P5–1 and P5–2, P7–1 through P7–4 or P8–1 and P8–2, the first of these pages (P0–1, P5–1, P7–1 or P8–1) will be selected.

- You can press the EXIT switch to return to the P0: Play page you selected most recently. Press the EXIT switch once again to return to the Main page. Press the EXIT switch to return to the P0: Play page.

	Page	Main content
PLAY	P0–1: Play/REC	Song selection, playback, and recording. (☞p.195) Program selection for each track. (☞p.197) Pan and volume settings etc. for each track. (☞p.199) Track playback loop settings. (☞p.200) Audio input settings and resampling settings. (☞p.201) Recording method selection. (☞p.202)
	P0–2: Play/REC Control	Simple KARMA editing. (☞p.205) Editing from the control surface. (☞p.208)
EDIT	P1: DT/XY/Ctrls	Drum track settings. (☞p.215) X–Y control settings. (☞p.216) SW1, 2, and slider function settings. (☞p.221) Pad note and velocity settings. (☞p.222)
	P2: EQ/Option	EQ settings for each track. (☞p.224) Settings for the EXB-RADIAS option. (☞p.225)
	P3: Track Param	Various parameter settings for each track (MIDI channel, OSC selection, Pitch setting, etc.) (☞p.226)
	P4: Zone/Delay	Key split and layer settings. (Key zone and velocity zone) (☞p.231) Time delay from note-on to beginning of sound. (☞p.233)
	P5–1: MIDI Filter1	MIDI transmit/receive filter 1 settings. (☞p.235)
	P5–2: MIDI Filter2	MIDI transmit/receive filter 2 settings. (☞p.239)
	P6: Track Edit	Step recording. Event recording. Copy, delete, and other track editing. (☞p.241)
KARMA	P7–1: KARMA1 GE Setup	Overall KARMA settings. (☞p.243)
	P7–2: KARMA2 Module	Settings for each KARMA module. (☞p.250)
	P7–3: KARMA3 GE RTP	KARMA GE realtime parameter settings. (☞p.252)
	P7–4: KARMA4 Perf	KARMA performance parameter settings. (☞p.254)
EFFECT	P8–1: IFX Routing1/1–5	Oscillator output bus and master effect send level settings. (☞p.257) Insert effect routing, selection, and settings. (☞p.261)
	P8–2: IFX Routing2	Bus settings for oscillator output. (☞p.261) Common FX LFO 1, 2 settings (☞p.262)
	P9: MFX/TFX	Master effect routing, selection, and settings. (☞p.263) Total effect selection and settings. (☞p.264)
PATTERN&CUE	P10: Pattern/RPPR	Pattern recording and editing. (☞p.265) RPPR settings. (☞p.267) Converting a pattern to a drum track pattern. (☞p.267)
	P11: Cue List	Cue list settings. Consecutive playback of multiple songs. Converting to a song. (☞p.269)

SEQ P0: Play/REC

SEQ P0–1: Play/REC

0–1–1: Program T01–08, 0–1–2: Program T09–16

Here you can make basic settings for MIDI track recording and playing back in the song, and can select the program that will be used by each track.

0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

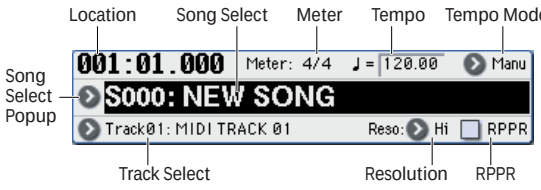
Location [001:01.000…999:16.479]

This display shows the current position in the song.

From the left, the numbers are the measure (001–999), beat (01–16), and clock (000–479). When you modify these values, the current location will change.

When **MIDI Clock** (Global 1–1a) is set to **Internal** (or **Auto**, if no MIDI clocks are being received), the M3 will transmit Song Position Pointer messages when the **Location** is changed.
Also, if the **MIDI Clock** parameter is set to **External MIDI** (or **Auto**, if MIDI clocks are currently being received), and **Receive Ext. Realtime Commands** (Global 1–1a) is on, the **Location** will change in response to received Song Position Pointer messages.

The range in which the beat and clock can be modified will depend on the currently specified time signature.



Meter [**/**, 1/4…16/4, 1/8…16/8, 1/16…16/16]

This is the time signature at the current location of the song. The time signature can be changed at each measure.

****/**:** This will be displayed when you press the SEQUENCER REC / WRITE switch. Specify this when you wish to use the time signature that is already recorded for that measure, and wish to record without changing the time signature.

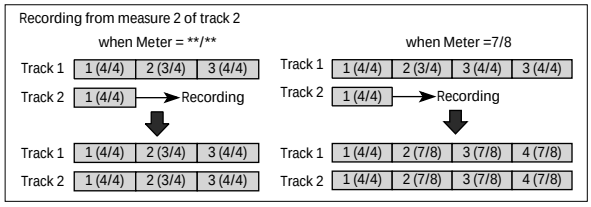
1/4–16/4, 1/8–16/8, 1/16–16/16: This is the time signature at the current location of the song.

Set **Track Select** to a Track 01–16 press the SEQUENCER REC / WRITE switch, and specify the time signature here.

When you press the SEQUENCER START / STOP switch to begin recording, the time signature you specify will be recorded on the Master Track and on the already-recorded tracks.

Be aware that if you press the SEQUENCER START / STOP switch during the pre-count to stop recording, the time signature will not be recorded.

Normally, you will specify the time signature when you record the first track, and select **/** when recording subsequent tracks.

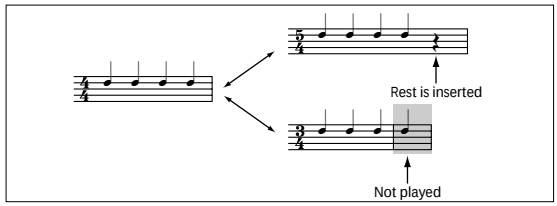


Changing the time signature in the middle of a song

If you know beforehand the location at which you wish to change time signatures in the middle of a song, use the **Insert Measure** menu command to specify and insert the time signature for each measure of the same time signature, and then record your musical data.

If you wish to change the time signature in the middle of a song which already contains musical data, use **Track Select** to specify the Master Track (or any Track 01–16 which contains data), and use the **Event Edit** menu command to modify the time signature of the Bar event.

If the number of beats in a measure increases when you modify the time signature, rests will be inserted in the portion that was added. Conversely if the number of beats decreases, that portion will not be played. However if you return to the original time signature, the data that had been hidden will once again be played. (The data itself will not be erased.)



♩(Tempo) [040.00...300.00, EXT]

This specifies the tempo of the song. This tempo applies to song playback, KARMA function and drum track function, etc.

040.00…300.00: When the **Tempo Mode** is Manu (Manual), this tempo will be used for recording and playback. When **Tempo Mode** is REC, this tempo will be recorded on the master track.

EXT: This will appear when **MIDI Clock** (Global 1–1a) is set to either External MIDI, External USB or Auto. The tempo of the internal sequencer will synchronize with MIDI Clock messages received from an external sequencer or other MIDI device.

If **MIDI Clock** (Global 1–1a) is set to **Internal**, the above tempo setting (040.00–300.00) is used. If you've selected Auto, operation will automatically switch from Internal to External if MIDI Clock data is received from an external MIDI device connected to the MIDI INPUT connector, and this indication will appear.

Note: You can also adjust this by turning the TEMPO knob. Alternatively, you can set the tempo by pressing the TAP TEMPO switch at the desired interval.

Note: If Tempo is selected as an alternate modulation source, ♩ = 120.00 will be the base value.

To record tempo changes

First, set **Track Select** to a MIDI Track.

Press the SEQUENCER REC / WRITE switch to enter recording-standby mode, you will be able to select REC.

Set **Tempo Mode** to REC, start recording, and change the **♩(Tempo)** value either by turning the TEMPO knob, or using numeric keys 0–9 to enter a value and then pressing the ENTER switch. You can also vary the tempo by pressing the TAP TEMPO switch at the desired timing.

This cannot be selected when the Preferences page item **Recording Setup** is set to Loop All Tracks.

When you change the **♩(Tempo)** value while recording, the tempo changes will be recorded, causing the tempo to change as the song progresses.

You can't record tempo changes during audio recording.

Tempo changes can also be created using the **Event Edit** or **Create Control Data** menu commands.

Note: If you wish to record only the tempo changes, set **Recording Setup** (Seq 0–1–8b) to Overdub, and the tempo will be recorded on the master track without being affected by the musical data of **Track Select**.

Tempo Mode [Auto, Manual, REC]

Auto: The tempo will follow the tempo of the Master Track. The tempo of the master track can be specified by using the **Event Edit** menu command, with the Master Track chosen in **Track Select**, or by the REC operation described below. When Auto is selected, it will not be possible to modify the **♩(Tempo)** setting while a song is playing or recording (or during standby).

Manu (Manual): The **♩(Tempo)** setting will be used.

REC: Tempo changes will be recorded on the Master Track.

Song Select [000…127]

Select the song that you want to record or play back.

Either select the song name from the popup menu, or use numeric keys 0–9 to specify the song number and then press the ENTER switch.

Creating a new song

Choose a number from the popup menu whose song name is blank, or use the numeric keys 0–9 to specify the song number and press the ENTER switch to open the dialog box. Then specify **Set Length** to specify the number of measures in the song, and press the OK button.

Note: If you want to change the length of a song after creating it, use the menu command **Set Song Length**. When creating a new song, you can specify the length to be somewhat longer than necessary, and after you have finished recording and editing, use **Set Song Length** to specify the correct length.

MIDI A Song Select message is transmitted when you switch songs on the M3. When a Song Select message is received from an external device, the song will be switched.
If **Track MIDI Out** (Global P1: MIDI– MIDI Basic) is set to "for Master," and the song is switched, tracks whose track status (**Status** 3–1(2)a) is EXT, EX2, or BOTH will transmit Bank Select, Program Change, Volume, Panpot, Portamento, Send 1/2, Post IFX Pan, and Post IFX Send 1/2 messages on the MIDI channel of that track. These messages will not be transmitted if **Track MIDI Out** is set to "for External Sequencer."

Track Select [Track01…Track16, Master Track]

Track 01–Track 16: Select the MIDI track that you want to record. This is also where you make your selection when editing a MIDI track in P6: Track Edit.

When **Multi REC** is off, this also selects the record-enabled track.

When **Multi REC** (Seq 0–1–8b) is on, the **Play/Rec/Mute** buttons (Seq 0–1–1(2)b) select the record-enabled tracks, regardless of the **Track Select** setting.

Use **Track Name** (Seq 6–2) to give the track a descriptive name.

MIDI If other tracks are set to the same MIDI channel as the selected track, and their **Status** is set to INT or BTH, they'll be controlled by the keyboard as well.
Also, if other tracks are set to the same MIDI channel as the selected track, and their **Status** is set to EXT, EX2, or BTH, they'll transmit MIDI to external devices. For another look at this, please see the table below.

MIDI Channel	Status	Keyboard plays Internal Sounds	Keyboard Transmits MIDI Out
Same as the selected MIDI Track	OFF	No	No
	INT	Yes	No
	EXT	No	Yes
	EX2	No	Yes
	BTH	Yes	Yes
Different from the selected MIDI Track	Any setting	No	No

If you've selected Master Track, the settings of the most recently selected MIDI track will be used.

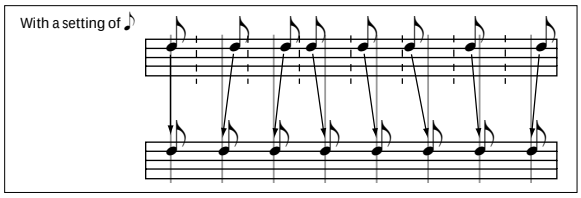
Master Track: Select the master track if you want to use the P6: Track Edit menu commands to edit the master track. You cannot perform realtime recording or step recording on the master track by itself.

Reso (Realtime REC Quantize Resolution) [Hi, 𝅘𝅥𝅯₃, 𝅘𝅥𝅯, 𝅘𝅥₃, 𝅘𝅥, 𝅘𝅥₃, 𝅗𝅥, 𝅗𝅥]

When you realtime-record, the timing of the MIDI data you play will be corrected.

Hi (High Resolution): Timing will not be corrected. Data will be recorded at the maximum resolution (𝅗𝅥/192).

𝅘𝅥𝅯₃ – ♩: Data will be corrected to the nearest interval of the specified timing as it is recorded. For example if you select 𝅘𝅥𝅯₃, data will be corrected to the nearest 32nd note triplet interval. If you select ♩, data will be corrected to the nearest quarter note interval.



Because all the MIDI data and automation event being recorded will be corrected to the specified timing resolution, coarse settings of this parameter will cause continuous controllers such as pitch bend to be recorded in "stair-step" fashion.

In such cases, use a setting of Hi to record, and then use the **Quantize** menu command to correct only the desired type of data (notes etc.). It is best to avoid recording at a stiff resolution to begin with.

RPPR [Off, On]

This turns the RPPR (Realtime Pattern Play / Recording) function on / off. RPPR lets you assign a pattern to each note of the keyboard, so that the pattern will playback (or be recorded) when you press the appropriate key.

On (checked): The RPPR function will be on. If a pattern has been assigned to each key in the P5: RPPR Setup page, pressing that key will perform the assigned pattern. For more information, please see "10–3: RPPR Setup" on page 267.

0–1–1(2)b: Track Program Select

Selected Track Info

This page displays information about the track you're editing. **T:** indicates the MIDI track number / program bank / number / name. **Ch:** indicates the MIDI channel number, and **RPPR (Assign):** indicates the key number that will start the RPPR assigned to the track.

RPPR (Assign) will not show all of the assignments if there are many RPPR assignments. The P10: Pattern / RPPR–Pattern Edit page lets you see all of the assignments.

Track 01 (Track Number):

This shows the MIDI track number. The parameters below this let you make settings for the track.

R (EXB-RADIAS)

This is shown for tracks that can use the EXB-RADIAS option. For details, please see "EXB-RADIAS for M3 Manual" (PDF).

Note: This is not shown if the EXB-RADIAS option has not been installed in the M3.

Category (Track Program) [00...17/00...07]

Here you can select a category and sub-category to choose the program used by the MIDI track. All programs are organized into up to 18 categories and 8 sub-categories. Choose the desired category and sub-category, and then choose from the programs within that category.

Press this popup button to access the Category / Program Select menu, and choose a program.

Category/Track Program Select menu:

Here you can select the program for each track by main category and sub-category. All programs are classified into a maximum of eighteen main categories, and each category is classified into eight sub-categories. You can select programs using these main categories and sub-categories.

- Press **Category** and use the Category / Track Program Select menu to select a program.

For the procedure, please see "Category / Program Select menu:" on page 3.

Program Select [INT–A...F, USER–A...G: 000...127 G, g(1)...g(9), g(d): 001...128]

Selects the program that will be used by each MIDI track.

The lower line displays part of the program name.

The program you select here will be used when the song is played or recorded from the beginning. If the program is changed while recording, the program change will be recorded as musical data, and the program will change during playback. You can also change the program manually during playback. However if musical data (program change data) is already recorded, the program will change at that point.

MIDI If the **Status** (Seq 3–1(2)c) is either INT or BTH, programs can be selected by receiving MIDI program change messages. Also, when the song is changed or when the song returns to the beginning, tracks whose **Status** is EXT, EX2 or BTH will transmit the bank and program numbers via MIDI. Tracks whose **Status** is EX2 will show Bank as "–" and will transmit the bank number that was selected in the **Bank Select** (Seq 3–1(2)c) parameter.

Various ways to change the program for a track

- Choose **Program Select**, use numeric keys 0–9 to input a program number, and press the ENTER switch.
- Choose **Program Select**, and turn the VALUE dial or use the △ / ▽ switches.
- If you've chosen **Program Select**, the front-panel BANK SELECT I-A–U-G switches will change the program bank for the selected track. (If **Program Select** is selected, the BANK switch LED of the program bank selected for the track will light.)
- Use the Bank / Program Select menu to view and select programs by bank.
- Use the Category / Program Select menu to view and select programs by category.
- Transmit MIDI program change messages from a connected external MIDI device (if the track **Status** is INT or BTH).
- You can also use the above methods to **switch programs while a song is playing**. If you switch programs while recording, the program change data will be recorded, and the program will switch at that point in the song during playback. You can also use the menu command **Event Edit** to add program change data to a track.

Play/Rec/Mute [Play, Rec, Mute]

Use this to mute a MIDI track, or to select the recording tracks for multi-track recording.

During playback, or for single-track recording (normal recording), it is possible only to select Play or Mute for tracks (playback tracks) other than the recording track. For multi-track recording, tracks can be set to Play, Rec, or Mute.

The setting will alternate each time you press the Play / Rec / Mute button.

Play: The track will play.

Rec: For single track recording (normal recording), the tracks to be recorded will be set to REC when you press the REC / WRITE switch. It cannot be selected.

When you use multi-track recording (when the Preferences page **Multi REC** is on), select REC for the tracks that you wish to record.

Mute: The track will be muted (silent).

Note: You can use the MIX PLAY / MUTE 1–8 switches to control the setting. The switch LED will change as follows.

Play: lit

Rec: blinking

Mute: dark

Solo On/Off [On, Off]

Turns the Solo function on / off for each track.

Only tracks with Solo On will sound. Other tracks will be muted.

The setting will alternate on / off each time you press the SOLO button.

The operation will depend on the **Exclusive Solo** setting.

Exclusive Solo off: Multiple tracks can be soloed. The solo setting of each track will change each time you press its Solo On / Off button.

Exclusive Solo on: When you press a Solo On / Off button, only that track will be soloed.

Note: You can use the MIX PLAY / MUTE 1–8 switches to control the setting. The switch LED will change as follows.

Solo On: lit

Solo Off: dark

MIDI If MIDI tracks whose **Status** (Seq 3–1(2)c) is BTH, EXT, or EX2 are muted by Mute or by the Solo function, note on / off messages will not be transmitted on the MIDI channel selected for those tracks.

Note: The Solo function applies to tracks 1–16 and audio inputs.

Solo settings are not saved with the song.

Using the control surface to make mute and solo settings

You can use the control surface to edit the mix parameters for each track, including **Play/Mute**, and **Solo On/Off**. These can also be controlled from the mixer section of the front panel, or from the display.

Play/Mute

1. **Press the CONTROL ASSIGN MIXER switch to select T1–8 or T9–16.**
2. **Use the MIX PLAY/MUTE 1–8 switches to switch the Play/Mute status of each track.**

Note: If the Solo On / Off status changes instead of Play / Mute, you'll need to uncheck the **Panel–SW Solo Mode On** menu command.

Solo On/Off

1. **Press the CONTROL ASSIGN MIXER switch to select T1–8 or T9–16.**
2. **Select the menu command Panel–SW Solo Mode On so that it has a check mark. Alternatively, hold down the ENTER switch and press the key 1.**
3. **Use the MIX PLAY/MUTE 1–8 switches to switch the Solo On/Off status of each track.**

Track 02...08, 09...16 (Track Number):

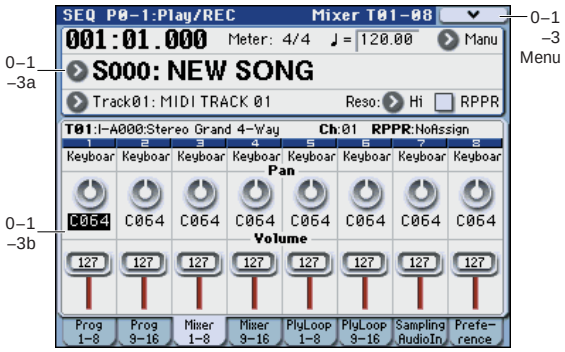
Here you can specify the program, Play / Mute status, and Solo On / Off status for Tracks 2–8 and 9–16. These are the same as for Track 01. For more information, please see "Track 01 (Track Number):," above.

▼0–1–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107

For more information, please see "Sequencer: Menu Command" on page 271.

0–1–3: Mixer T01–08, 0–1–4: Mixer T09–16



Here you can set the pan and volume of each MIDI track.

0–1–3(4)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

For more information, please see “0–1–1: Program T01–08, 0–1–2: Program T09–16” on page 195.

0–1–3(4)b: Pan, Volume

The pan and volume that you specify here will be used when you playback or record from the beginning of the song. If you change the settings during recording, the changes will be recorded as musical data, and pan and volume will change during playback. You can also change the settings during playback. However when the song reaches a location where pan or volume data was recorded, the settings will change accordingly.

Selected Track Info

This area shows information on the MIDI track selected for editing.

For more information, please see “0–1–1(2)b: Track Program Select” on page 197.

Track 01 (Track Number):

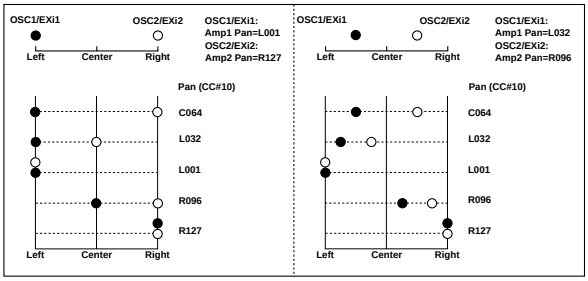
Category **[Category Name]**

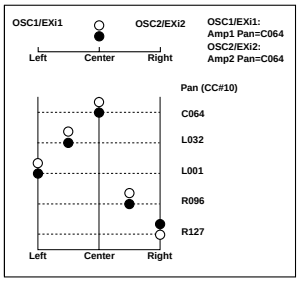
This indicates the category.

Pan **[RND, L001...C064...R127]**

Here you can set the pan of each MIDI track.

L001…C064…R127: A setting of L001 is far left and R127 is far right. A setting of C064 will reproduce the oscillator pan setting of the Program mode.





If a mono insert effect is in use, the settings you make here will be ignored. In this case, the **Pan: #8** parameter in P8–1: IFX– Insert FX Setup page will adjust the panning of the sound after the Insert Effect. For more information, please see “Mixer” on page 430.

RND: The pan will change randomly at each note-on.

MIDI If **Status** (Seq 3–1(2)c) is INT or BTH, CC#10 Pan can be received to control the panning. When receiving CC#10, a value of 0 or 1 is far left, 64 is center, and 127 is far right. When you change the song or return to the beginning of the song, tracks whose **Status** is EXT, EX2 or BTH will transmit the pan you specify here as a MIDI message (except for RND).

Volume **[000...127]**

Here you can set the volume of each MIDI track.

Using the control surface to adjust the volume

You can use the control surface to adjust the **Volume** of each track. These settings can be made from the front panel mixer section, or display page. Here’s how to adjust the volume from the front panel.

Volume

1. **Press the CONTROL ASSIGN MIXER switch to select T1–8 or T9–16.**
2. **Use the MIX VOLUMES 1–8 sliders to control the volume.**

MIDI When **Status** (Seq 3–1(2)c) is INT or BTH, CC#7 Volume can be received to control the volume. The volume of a track is determined by multiplying the MIDI Volume (CC#7) and Expression (CC#11) values. When you change the song or return to the beginning of the song, tracks whose **Status** is EXT, EX2 or BTH will transmit the volume you specify here as a MIDI Volume message.

Track 02...08, 09...16 (Track Number):

For more information, please see “Track 01 (Track Number):,” above.

▼0–1–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107

For more information, please see “Sequencer: Menu Command” on page 271.

0–1–5: PlayLoop T01–08, 0–1–6: PlayLoop T09–16

When playing or recording a song, you can independently loop the MIDI tracks.

0–1–5(6)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

For more information, please see “0–1–1: Program T01–08, 0–1–2: Program T09–16” on page 195.

0–1–5(6)b: Play Loop

Selected Track Info

This displays information about the currently selected MIDI track. For more information, please see “0–1–1(2)b: Track Program Select” on page 197.

Track 01 (Track Number):

Category **[Category Name]**

Indicates the category.

Track Play Loop **[Off, On]**

Specifies looping for a MIDI track.

On (checked): That track will loop between **Loop Start Measure** and **Loop End Measure**.

Loop Start Measure **[001...999]**

Specifies the first measure of the loop.

Loop End Measure **[001...999]**

Specifies the last measure of the loop.

Play Intro **[Off, On]**

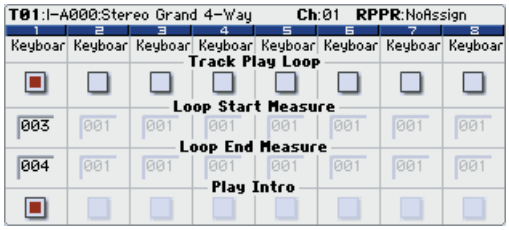
On (checked): After the measures before the specified **Loop Start Measure** are played once, the region of **Loop Start Measure** – **Loop End Measure** will be played repeatedly.

For example, you can use this on a drum track to make it play a fill-in and then begin looping.

Off (unchecked): Playback will begin from the **Loop Start Measure**, and will begin looping immediately.

This will be valid if **Track Play Loop** is checked and **Loop Start Measure** is set to other than 001.

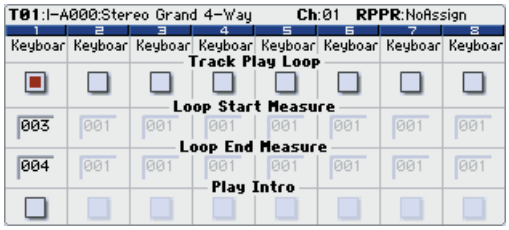
Example)
When "Play Intro" is checked



Track 1 will loop as follows.

M001 – M002 – M003 – M004 – M003 – M004 –M003 – M004…

When "Play Intro" is not checked



Track 1 will loop as follows.

M003 – M004 – M003 – M004 – M003 – M004 – M003 – M004…

In this way, you can use **Track Play Loop** to make the realtime recording process more efficient.

Track 02...08, 09...16 (Track Number):

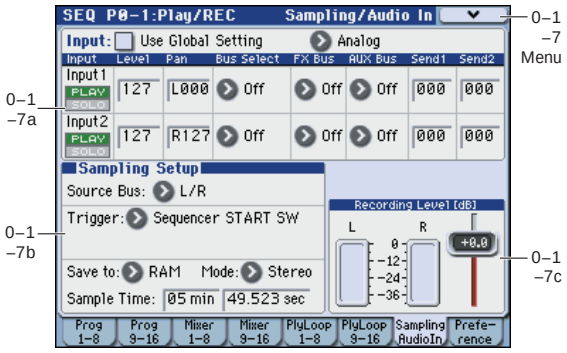
For more information, please see "Track 01 (Track Number):," above.

▼0–1–5(6): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107

For more information, please see "Sequencer: Menu Command" on page 271.

0–1–7: Sampling/Audio In



Here you can adjust the settings for the analog / digital audio signal input (Analog, S/P DIF), and the sampling-related settings for Sequencer mode.

In Sequencer mode, you can sample the external audio input source you specify here, or sample a song played back by the M3 or your own keyboard performance. You can also use the M3 as a 4-in / 6-out effect processor.

For example, here are some ways you might use this.

- Sample only an external audio signal from AUDIO INPUT (e.g., guitar) or S/P DIF, while you listen to the performance using the KARMA function or Drum Track function.
- Resample the song that's playing back.
- You can sample your performance on the M3 together with an external audio source.

You can't record a Song or pattern while sampling. Nor can you sample while recording a Song or pattern.

Note: By installing the EXB-FW option you can add input / output via FireWire. This gives you a total of 6-in and 6-out.

Using the control surface to make audio input settings

You can use the control surface to make **Play/Mute**, **Solo On/Off**, and **Volume** settings for the audio input. These settings can be made from the front panel mixer section, or in the display of the P0: Play– Control Surface page. Here we will explain how to use the front panel.

For the procedure, please see "Using the control surface to make audio input settings" on page 8.

The control surface will control the Global mode settings if **Use Global Setting** is On (checked).

0–1–7a: Audio Input

Use Global Setting [Off, On]

On (checked): The Audio Input settings (Analog 1, 2, S/P DIF 1, 2) you specify in Global P0: Basic Setup– Audio page will be used.

Note: FireWire 1 and 2 are enabled if the EXB-FW option is installed.

Normally you will leave this **On (checked)**. The Audio Input settings you make in Global will always be valid; the Audio Input settings will not change even if you switch songs.

Off (unchecked): The Audio Input settings (Analog 1, 2, S/P DIF 1, 2) you specify here will be used.

If you want to have separate Audio Input settings for each song, uncheck this box and make the desired Audio Input settings here.

Input [Analog, S/P DIF, (FireWire)]

Analog: The INPUT 1 and 2 jacks will input mic level or line level signals.

S/P DIF: A digital audio from the S/P DIF IN jack will be input. Connect the digital output of your instrument or DAT etc. to the S/P DIF IN jack. The S/P DIF input/output supports 48 kHz sample rates.

If you want to use S/P DIF, set **System Clock** to S/P DIF. For more information, please see "System Clock" on page 359.

FireWire: If the EXB-FW option is installed, input a digital audio signal from the FireWire connector. The sample rate of the FireWire input/output is 48 kHz.

Input1, Input2:

PLAY/MUTE [PLAY, MUTE]
SOLO On/Off [Off, On]
Level [000...127]
Pan [L000...C064...R127]
Bus Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]
FX Bus (FX Control Bus) [Off, 1, 2]
AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]
Send1 [000...127]
Send2 [000...127]

Here you can specify the input source for the analog and digital audio inputs, and set the input level, pan, buses, and the send levels to the master effects. These input settings are valid when **User Global Setting** is turned off.

These parameters are the same as in Program mode P0: Play– Sampling/Audio In page. For more information, please see "0–7a: Audio Input" on page 9.

ADC OVERLOAD !

For more information, please see "0–7a: Audio Input" on page 9.

0–1–7b: Sampling Setup

Here you can select the source to be sampled, and the method by which to initiate sampling.

Except for **Trigger**, the following parameters are the same as in the Program mode P0: Play– Sampling/Audio In page. For more information, please see "0–7b: Sampling Setup" on page 10.

"Sampling Setup" settings are maintained not separately for each song, but as a single set in Sequencer mode.

Source Bus [Analog Input1/2, S/P DIF IN L/R, (FireWire IN L/R), L/R, AUX1/2, AUX3/4, Indiv.1/2, Indiv.3/4]
Trigger [Sampling START SW, Note On, Threshold, Sequencer START SW]

Specifies how sampling will be initiated.

Sampling START SW: Pressing the SAMPLING REC switch will cause the M3 to enter sampling-standby mode, and sampling will begin when you press the SAMPLING START/STOP switch.

Note On: Press the SAMPLING REC switch, and then press the SAMPLING START/STOP switch to enter sampling-standby mode. Sampling will begin when you play the keyboard.

MIDI You can also initiate sampling by receiving a MIDI note-on message instead of playing the keyboard.

Threshold: Sampling will begin automatically when the input level exceeds the specified **Level** value. For more information, please see "Trigger" on page 305.

Sequencer START SW: Press the SAMPLING REC switch and then the SAMPLING START/STOP switch to enter sampling-standby mode. Then press the SEQUENCER START/STOP switch to begin sampling. Use this when you want to resample the song playback.

To stop sampling, press the SAMPLING START/STOP switch once again. Sampling will also end if you keep sampling until the time specified by **Sample Time**. For more information, please see "Trigger" on page 305.

Threshold Level [–63 dB...00dB]

When sampling with **Trigger** set to Threshold, this specifies the level at which sampling will begin. This can be set only when **Trigger** is set to Threshold. See step 3 of the **Trigger** Threshold procedure. For more information, please see "Trigger" on page 305.

Save to [RAM, MEDIA]
Mode (Sample Mode) [L-Mono, R-Mono, Stereo]
Sample Time [min sec]

For more information, please see "0–7b: Sampling Setup" on page 10.

0–1–7c: Recording Level [dB]

This adjusts the signal level at the final stage of sampling. The default setting is 0 dB.

Recording Level [–Inf, –72.0 ... +0.0 ... +18.0]
Level Meter
CLIP !

These parameters are the same as in Program mode P0: Play– Sampling/Audio In. For more information, please see "0–7c: Recording Level [dB]" on page 13.

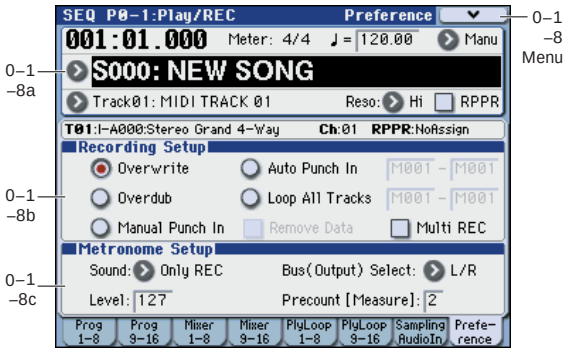
The **Recording Level** setting is not saved per song; it is a single setting for Sequencer mode.

▼0–1–7: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107
- 14: **Optimize RAM** ☞p.107
- 15: **Select Bank & Sample No.** ☞p.108 (only **Save to** RAM)
- 15: **Select Directory** ☞p.108 (only **Save to** MEDIA)
- 16: **Auto Sampling Setup** ☞p.109

For more information, please see “Sequencer: Menu Command” on page 271.

0–1–8: Preferences



Here you can specify the realtime recording method, adjust levels and make other settings for audio recording, and adjust the metronome settings.

0–1–8a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

For more information, please see “0–1–1: Program T01–08, 0–1–2: Program T09–16” on page 195.

Selected Track Info

This displays information about the currently selected MIDI track. (Prog 0–1–1(2)a)

0–1–8b: Recording Setup

Selects the method of realtime recording.

For detailed, step-by-step instructions, please see “MIDI recording” on page 83 of the Operation Guide.

Overwrite

When recording for the first time, you will normally select this method.

To begin recording, press the SEQUENCER REC / WRITE switch and then the SEQUENCER START / STOP switch. To stop recording, press the SEQUENCER START / STOP switch once again.

If you use this method to record on a track on which data has already been recorded, all data will be replaced for the measure at which you began recording and all subsequent measures.

Overdub

Select this method when you wish to add data to a previously-recorded track. (except for audio events)

To begin recording, press the SEQUENCER REC / WRITE switch and then the SEQUENCER START / STOP switch. To stop recording, press the SEQUENCER START / STOP switch once again.

If you use this method to record on a track on which data has already been recorded, the previously-recorded data will remain, and the newly-recorded data will be added to it.

Manual Punch In

Select this method when you wish to use the SEQUENCER REC / WRITE switch or a foot switch to re-record selected portions of a previously-recorded track.

Press the SEQUENCER START / STOP switch to playback the song. When you reach the measure at which you wish to begin re-writing the data, press the SEQUENCER REC /

WRITE switch or the foot switch, and recording will begin. When you are finished recording, press the SEQUENCER REC / WRITE switch or the foot switch once again, and recording will end.

Auto Punch In

Select this method when you wish to automatically re-record selected portions of a previously-recorded track.

If you select Auto Punch In, the display will indicate "M***–M*** (**Auto Punch In Start Measure**–**Auto Punch In End Measure**)" at the right, allowing you to specify the range of measures that will be rewritten.

Press the SEQUENCER REC / WRITE switch and then the START / STOP switch, and playback will occur until the specified measure is reached. Then, recording will occur only over the specified area (**Auto Punch In Start Measure**–**Auto Punch In End Measure**), rewriting it with the newly recorded data.

Auto Punch In Start Measure [M001…M999]
Auto Punch In End Measure [M001…M999]

When **Recording Setup** is set to Auto Punch In, specify the measures at which recording will start and end.

Loop All Tracks

Select this method when you wish to repeatedly record a specified area of a track, and continue adding data. This is suitable for creating drum patterns, etc.

If you select Loop All Tracks, the display will indicate "M***–M*** (**Loop Start Measure**–**Loop End Measure**)" at the right, allowing you to specify the range of measures that will be recorded repeatedly.

Press the SEQUENCER REC / WRITE switch and then the SEQUENCER START / STOP switch, and playback will occur until the specified measure is reached. Then, recording will occur repeatedly over the specified area (**Loop Start Measure**–**Loop End Measure**). Previously-recorded data will remain, and the new data will be added.

While recording, you can check **Remove Data** to delete unwanted data.

If **Multi REC** is **checked**, this parameter will not be available.

Loop Start Measure [M001…M999]
Loop End Measure [M001…M999]

Specifies the range of measures over which recording will repeat when **Recording Setup** is set to Loop All Tracks.

Remove Data [Off, On]

Use this to delete unwanted MIDI data that you recorded while using Loop All Tracks. This is available when **Recording Setup** is set to Loop All Tracks.

On (checked): You can delete unwanted MIDI data while recording with Loop All Tracks. During recording, press the key (note number) that corresponds to the MIDI data you wish to delete. All occurrences of that note number will be deleted for the interval that you continue holding down the key.

Controller data can also be erased in a similar way. For example while you move and hold the joystick in the X (horizontal) direction, bender data will be erased. While you apply pressure to the keyboard, after touch data will be erased. This applies to keyboard aftertouch, Joystick+Y (CC#01) / –Y (CC#02), Joystick X (Pitch Bend), Ribbon Controller (CC#16), and Damper (CC#64).

Also, you can press and hold down the SEQUENCER REC / WRITE switch to delete all MIDI data for as long as the key is held.

Multi REC [Off, On]

On (checked): Multi-track recording setup is enabled. Select this if you want to record two or more tracks simultaneously.

Use MIDI multi-track recording if you want to simultaneously record multiple MIDI tracks of different channels, such as when recording the output of the drum track, KARMA or RPPR functions, or when recording from an external multi-track sequencer.

If the Multi REC box is checked, the **Play/Rec/Mute** status of the track you select in **Track Select** will be set to REC; press the **Play/Rec/Mute** button of the track(s) you want to record so that they indicate REC. (The button indication will change in the order of Play → Rec → Mute.)

Regardless of the **Track Select** (Seq 0–1–1(2)a) setting, data will be recorded on the MIDI tracks that are set to REC. MIDI data will be recorded on the tracks of the matching MIDI channel.

For details on how to record from the KARMA function or an external multi-track sequencer onto multiple tracks of different MIDI channels, please see "Synchronizing the playback of the KARMA function, Drum Track function or sequencer" on page 622, and OG page 93.

Note: If you're recording data from an external multi-track sequencer, set **MIDI Clock** (Global 1–1a) to External MIDI so that the M3 will synchronize to your external sequencer. Tempo changes cannot be recorded.

Off (unchecked): Single track recording setup will be selected. Recording will occur on the track selected by **Track Select**.

This cannot be selected if **Recording Setup** is set to Loop All Tracks.

0–1–8c: Metronome Setup

Here you can make metronome settings.

Sound [Only REC, REC & Play, Off]

Only REC: The metronome will sound only during recording.

REC & Play: The metronome will sound during recording and playback.

Off: The metronome will not sound. However, the pre-count will sound before recording begins.

Level [000…127]

Sets the volume of the metronome.

Bus (Output) Select [L/R, L, R, 1, 2, 3, 4, 1/2, 3/4]

Selects the output destination of the metronome sound.

L/R, L, R: Output from OUTPUT (MAIN) L / Mono and / or R.

1, 2, 3, 4, 1/2, 3/4: Output from OUTPUT (INDIVIDUAL) 1–4 respectively.

Precount [Measure] [0…2]

Specifies the pre-count that will occur before recording begins.

With a setting of 0, recording will begin the instant you press the SEQUENCER START / STOP switch (after first pressing the SEQUENCER REC / WRITE switch).

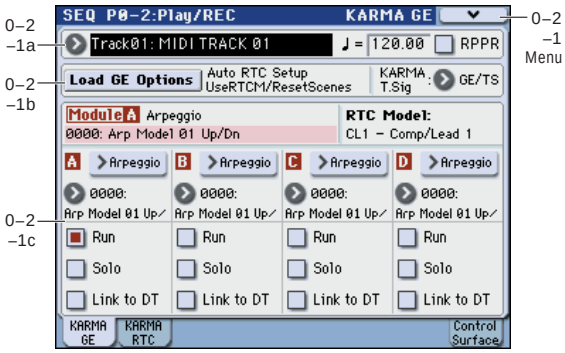
▼0–1–8: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P0–2: Play/REC Control

0–2–1: KARMA GE



This page gives you an overview of the four KARMA Modules (A–D), and lets you make basic adjustments.

Here you can select the GE (Generated Effect) used by each KARMA module, turn each KARMA module on / off (using **Run** and **Solo**), and specify the **Link to DT** setting. Other settings can be made in the Seq P7–1 – 7–4 pages.

The settings of the KARMA ON / OFF and LATCH switches, KARMA SCENE 1 / 5–4 / 8 switches, KARMA Sliders 1–8, and KARMA Switches 1–8 are saved independently for each song.

0–2–1a: Track Select, Tempo, RPPR

Track Select **[Track01…16, Master Track]**
♩ (Tempo) **[040.00…300.00, EXT]**
RPPR **[Off, On]**

Here you can select the track, specify the tempo that will control KARMA etc., and turn RPPR on / off.

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

0–2–1b: Load GE Options, KARMA T.Sig

Load GE Options

For more information, please see “Load GE Options” on page 4.

KARMA T. Sig (KARMA Time Signature) [GE/TS, 1/4…16/4, 1/8…16/8, 1/16…16/16]

For more information, please see “KARMA T.Sig (KARMA Time Signature)” on page 125.

0–2–1c: GE Select

Selected KARMA Module Info:

GE Number & Name

RTC Model

A (Module A):

GE Category Select **[Arpeggio…Real-Time]**
GE Select **[0000: Arp Model 01 Up/Dn…2092: Tempo Env Repeats]**
Run **[Off, On]**
Solo **[Off, On]**
Link to DT (Link to Drum Track) **[Off, On]**

B, C, D (Module B, C, D):

For more information, please see “0–5b: GE Select” on page 125.

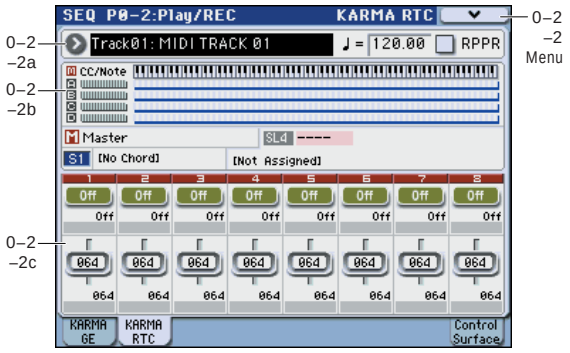
▼0–2–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272

- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107
- 14: **Copy KARMA Module** ☞p.188
- 15: **Initialize KARMA Module** ☞p.189
- 16: **Copy Scene** ☞p.115
- 17: **Swap Scene** ☞p.115
- 18: **Capture Random Seed** ☞p.116

For more information, please see “Sequencer: Menu Command” on page 271.

0–2–2: KARMA RTC



0–2–2a: Track Select, Tempo, RPPR

Track Select **[Track01…16, Master Track]**

♩(Tempo) **[040.00…300.00, EXT]**

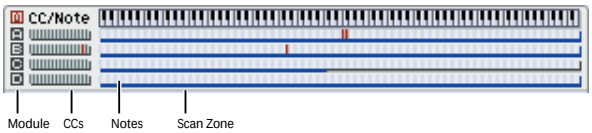
RPPR **[Off, On]**

Here you can select the track, specify the tempo that will control KARMA etc., and turn RPPR on / off.

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

0–2–2b: Note/CC Activity

KARMA Module Info:



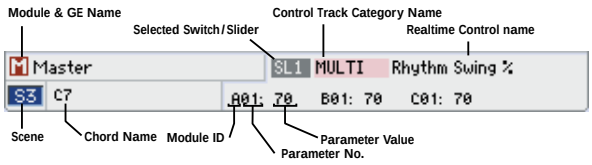
Module

CCs/Notes

Scan Zone

Select KARMA Module Info:

Display example



Module & GE Name

Scene

Chord Name

Selected Switch/Slider

SW1…8, SL1…8]

Control Track Category Name

Realtime Control Name

Module ID **[A…D, P]**

Parameter No. **[01…32]**

Parameter Value

For more information, please see “0–6b: Note / CC Activity” on page 126.

0–2–2c: RealTime Controls

1, 2, 3, 4, 5, 6, 7, 8:

KARMA Switch

KARMA Switch Stored value

KARMA Switch Name

KARMA Slider

KARMA Slider Stored value

KARMA Slider Name

For more information, please see “0–6c: RealTime Controls” on page 7.

▼0–2–2: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107
- 14: **Copy KARMA Module** ☞p.188
- 15: **Initialize KARMA Module** ☞p.189
- 16: **Copy Scene** ☞p.115
- 17: **Swap Scene** ☞p.115
- 18: **Capture Random Seed** ☞p.116
- 19: **Auto Assign RTC Name** ☞p.117

For more information, please see “Sequencer: Menu Command” on page 271.

0–2–8: Control Surface

The Control Surface is the set of 8 sliders, and 8 switches to the left of the display. It can do other things as well, including editing sounds, controlling KARMA, and sending MIDI messages to external devices.

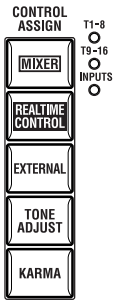
This page shows you the current values for each of the sliders, and switches, along with information about what they are controlling. For instance, you can:

- Control the MIDI track 1–16 volume, Play / Mute status, and Solo On / Off status.
- Modulate sounds and effects using the sliders and switches
- Control KARMA, and select KARMA scenes, using the sliders and switches
- Edit sounds using Tone Adjust
- Assign sliders, and switches to different Tone Adjust parameters

CONTROL ASSIGN switches and parameters

You can use **Control Assign** in the display or the CONTROL ASSIGN switches of the front panel to switch the function of control surface. Since the display and the front panel switches are linked, changing one will change the other correspondingly.

Control Assign switches



In Sequencer mode, you can select one of five different functions:

MIXER (Mixer T1–8, T9–16): This lets you use the control surface to adjust the volume of tracks 1–16, and switch the Play / Mute and Solo On / Off status. (In Combination mode and Sequencer mode, you can use this switch to alternate between timbres or tracks 1–8 and 9–16.)

MIXER (Mixer Input): The control surface will control the audio input volume, Play / Mute and Solo On / Off status of the analog inputs, S / P DIF inputs, and FireWire inputs (if the EXB-FW is installed).

REALTIME CONTROL (RT Control): Use the sliders to control the sound or effects. Use the switches to turn effects on / off.

EXTERNAL lets you send MIDI messages to external MIDI devices. Use the Global P1: MIDI– External Mode 1 / 2 page to specify the MIDI message that will be transmitted.

TONE ADJUST lets you edit Programs within the context of the Song, and without making any changes to the original Program data. You also get hands-on access to these edits, using the sliders, and switches.

KARMA: Use the sliders and switches to control the KARMA function.

You can freely change back and forth between the different functions, without losing any of your edits.

MIX PLAY/MUTE 1–8 switches and the MIX VOLUME sliders

Reset controls

The front panel RESET CONTROLS switch resets the desired sliders and switches of the control surface to their values when the song was selected. You can also use this to reset the KARMA module settings.

Resetting a single control

To reset individual controls:

1. **Hold down the RESET CONTROLS switch.**
2. **While holding down RESET CONTROLS, move a slider, or press one of the control surface buttons.**

The slider or switch will be reset to the value it had when the song was selected.

3. **When you're done, release the RESET CONTROLS switch.**

Resetting a group of controls

To reset a group of controls at once:

1. **Make sure that the Control Surface is showing the parameters you want to reset.**

As a safety precaution, you can only reset the parameters currently displayed on the Control Surface.

For instance, if you want to reset the volume and pan for MIDI Tracks 1–8, make sure that Control Assign is set to **MIXER 1–8**.

2. **Hold down the RESET CONTROLS switch.**
3. **While holding down RESET CONTROLS, press the current CONTROL ASSIGN switch again.**

All of the sliders, and switches shown on the Control Surface will be reset to the value it had when the song was selected.

Resetting KARMA Module parameters

In addition to the above reset operations, you can also perform the following reset operations for KARMA.

- To reset the sliders or switches of each KARMA module, hold down the RESET CONTROLS switch and press the KARMA MODULE CONTROL switch.
- To reset the KARMA scene, hold down the RESET CONTROLS switch and press the SCENE 1/5–4/8 switch whose LED is blinking.

0–2–8a: Track Select, Tempo, RPPR

Track Select **[Track 01…16, Master Track]**

♩ (Tempo) **[040.00…300.00, EXT]**

RPPR **[Off, On]**

Here you can select the track, specify the tempo that will control KARMA etc., and turn RPPR on / off.

For more information, please see "0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR" on page 195.

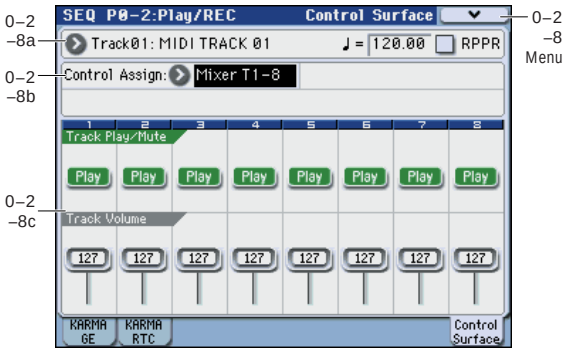
0–2–8b: Control Assign

Control Assign **[Mixer T1–8, Mixer T9–16, Mixer Input, RT Control, External, Tone Adjust, KARMA]**

This selects the items that will be controlled by the control surface. You can also press one of the CONTROL ASSIGN switches to make this selection.

For details on each selection, please see the explanations that follow.

Mixer T1–8, Mixer T9–16



0–2–8c: Mixer T1–8, Mixer T9–16

Here you can adjust the volume of MIDI tracks 1–16, and switch the Play / Mute and Solo On / Off status.

Use the CONTROL ASSIGN MIXER switch to select the tracks to be controlled (1–8 or 9–16)

Track Play/Rec/Mute:

MIX Play/Rec/Mute 1 (9)... 8 (16) switches

Use each switch to change the Play / Rec / Mute status of the corresponding track.

The switch LED will change as follows.

Play: lit

Rec: blinking

Mute: dark

Track Play/Mute **[Play, Mute]**

This switches each track between Play or Muted status.

Track Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1 (9)...8 (16) switches

Use the menu command **Panel-Switch Solo Mode On** to specify whether the MIX PLAY / MUTE 1–8 switches will control Play / Mute or Solo On / Off.

If **Panel-Switch Solo Mode On** is On (checked), these switches will control Solo On / Off.

The switch LED will change as follows.

Solo On: lit

Solo Off: dark

Tip: You can turn **Panel-Switch Solo Mode On** on / off by holding down the ENTER switch and pressing numeric key 1.

Solo **[Off, On]**

This switches the Solo On / Off setting of each track.

Note: The Solo function applies to each track and the audio inputs.

Exclusive Solo

The menu's **Exclusive Solo** parameter also affects the way that Solo works. When **Exclusive Solo** is **Off** (unchecked), you can solo multiple Tracks and Audio Inputs at once.

When **Exclusive Solo** is **On** (checked), only one Track or Audio Input can be soloed at a time. In this mode, pressing a SOLO button automatically disables any previous solos.

Tip: On most pages, you can also toggle **Exclusive Solo** on / off by holding down the ENTER switch and pressing numeric key 2.

Track Volume:

MIX VOLUMES sliders 1 (9)...8 (16)

These sliders adjust the volume level of tracks.

Track Volume [000…127]

This controls the volume of each track.

Mixer Input

Mixer Input lets you adjust the volume and switch the Play / Mute and Solo On / Off status of the four audio inputs Analog Input 1, 2 and S / P DIF IN L, R

For example on stage, you could use this page screen as a submixer to control the output of other sound modules for output together with the M3's own sounds.

FireWire L and R can be used if the EXB-FW option is installed.

Other Audio Input settings

Each audio input can be assigned to up to three busses:

- An Output / IFX Bus
- An FX Control Bus
- An AUX Bus

You can set up these bus assignments on the Seq P0: Play / REC– Sampling / Audio In page. For more information, please see "0–7: Sampling / Audio In" on page 8.

0–2–8d: Mixer Input

Use/Edit Global Setup [Off, On]

Programs can use the single, Global audio input mixer setup, or can instead have their own custom settings.

On (checked): The Global P0: Basic Setup– Audio page settings for Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) will be used.

If you switch from a song (or program or combination) for which **Use/Edit Global Setup** is on to another song (or program or combination), the same Audio Input settings will be used.

Also, any edits made on this page will affect the Global setting, along with any other Programs, Combinations, or Songs which use the Global setting.

Off (unchecked): Turn **Use/Edit Global Setup** Off if you want to use the Analog Input 1, 2, S / P DIF L, R, FireWire L and R (if the EXB-FW is installed) settings made individually for each song (or program or combination).

Use this setting if you want to preserve specific mixer settings for each song, if you want to use unusual submixer settings, or if you want to apply effect processing to specific input signals.

On the other hand, it may sometimes be convenient to save a particular mixer setup with an individual Song, to set up special sub-mixer settings or effects processing for particular inputs.

Audio Play/Mute:

MIX PLAY/MUTE 1...4 switches

These switch each audio input between play / muted status. The switch LED will be lit for Play, or dark for Mutes status.

Audio Play/Mute 1...4 [Play, Mute]

Play: The input will be enabled.

Mute: The input will be muted.

Audio Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1–4 switches

Solo applies to track 1–16, and the audio inputs. For more information, please see “Track Solo:” on page 208.

Exclusive Solo

For more information, please see “Track Solo:” on page 208.

Audio Solo 1...4 (6) [Play, Mute]

This switches the Solo On / Off setting for each audio input.

Note: The Solo On / Off setting is not preserved when you write.

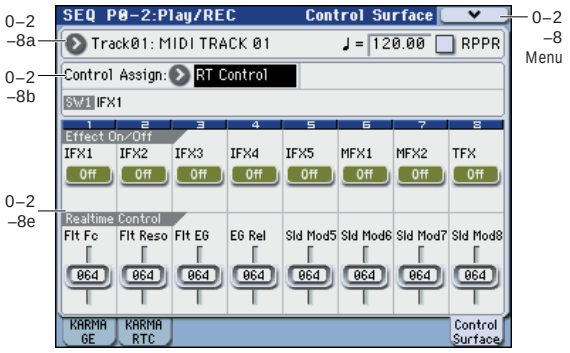
Audio Volume:

MIX VOLUMES sliders 1...4 (6)

Audio Volume 1...4 (6) [000...127]

This adjusts each audio input level.

RT Control (Realtime Control)



Realtime Control lets you use the eight sliders to edit the parameters of a combination or effect. The switches will control the effect on / off status.

0–2–8e: RT Control AMSource

Selected Parameter information

When you select a Slider or Switch, this area shows detailed information about its parameter assignments.

Effect On/Off:

Effect On/Off switches 1...8

These turn each effect on / off. The effect will be enabled if this is on (LED lit).

IFX1...5, MFX1, 2, TFX [Off, On]

These turn each effect on / off.

Realtime Control:

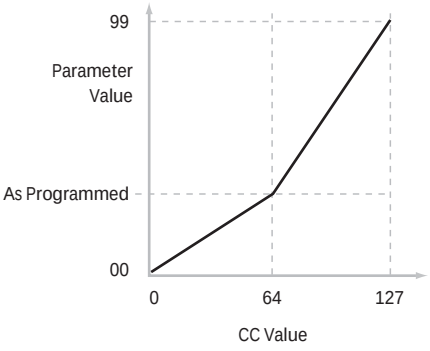
Realtime Control sliders 1...8

Sliders 1–4 all have dedicated functions which correspond to MIDI CCs. Sliders 5–8 can be assigned to a wide variety of functions, many of which also have corresponding MIDI CCs.

When you operate a slider, the corresponding MIDI control change message will be transmitted on the **Track Select** MIDI channel.

Most of these functions adjust (scale) the parameter settings of the track programs. Unless otherwise noted, “scaling” means that the parameters are at their programmed values when the controller is at 64, at their minimum when the controller is at 0, and at their maximum when the controller is at 127. For another look at this, please see the diagram below.

CC scaling of parameters



Slider 1: CUTOFF (CC#74) [000…127]

This slider scales the cutoff frequencies of Filters A and B, and transmits and receives MIDI CC #74.

Slider 2: RESONANCE (CC#71) [000…127]

This slider scales the resonance of Filters A and B, and transmits and receives MIDI CC #71.

Slider 3: Filter EG Intensity (CC#79) [000…127]

This slider scales the effect of the Filter EG on the cutoff frequencies of Filters A and B. It also transmits and receives MIDI CC#79.

Slider 4: EG Release (CC#72) [000…127]

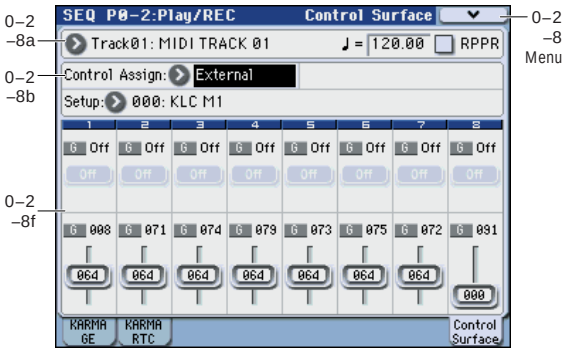
This slider scales the release time of the Filter and Amp EGs, and transmits and receives MIDI CC#72.

Slider 5–8 [000...127]

You can set sliders 5–8 to a wide variety of modulation functions, using the P1: DT / XY / Ctrls– Controllers Setup page.

Many of the functions scale a particular set of Program parameters. All of the settings also correspond to MIDI messages–usually CCs.

External



This External Setup lets you transmit MIDI messages to external devices. Each slider and switch will transmit an individually assigned MIDI CC# on its MIDI channel. To the pads as well, you can assign a note or MIDI CC# for transmission on a specified MIDI channel. (See “1–3: External Mode 1” on page 369 and “1–4: External Mode 2”)

You can create 128 different external setups in the Global P1: MIDI– External Mode 1, 2 pages. For instance, you might make one setup for controlling several different pieces of MIDI gear on stage, another for controlling a software synthesizer (such as one of Korg’s Legacy Collection synths), and so on.

These External Setup are completely separate from the Program. You can think of External mode as being a separate control surface which just happens to share M3’s sliders, switches, and drum pads.

When you select an External Setup, it stays selected even when you change Programs, or switch to Combination or Sequencer modes. This makes it easy to select different M3 sounds without disrupting any external MIDI control, and vice-versa.

0–2–8f: External

Setup [000…127]

This selects the Global setup for the sliders, switches, and pads.

Note: this selection is not stored with the Song.

Switches 1...8

MIDI Channel [01…16, G]

This read-only parameter shows the MIDI Channel for the switch. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# Assign [Off, 000…119]

This read-only parameter shows the MIDI CC sent by the switch.

Switch On/Off [Off, On]

When the switch is turned on, it sends a value of 127; when it is turned off, it sends a value of 0.

Sliders 1–8

MIDI Channel [01…16, G]

This read-only parameter shows the MIDI Channel for the slider. Each can send on a different channel, if desired.

G means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# Assign [Off, 000…119]

This read-only parameter shows the MIDI CC sent by the slider.

Value [000…127]

This is the current value of the slider's MIDI CC.

Tone Adjust

Tone Adjust provides two important features simultaneously:

- The Tone Adjust parameter lets you use the sliders and switches to control the principal Program parameters as if you were turning the knobs of an analog synthesizer.
- It lets you modify Programs for use within a specific Song, including everything from subtle tweaks (like changing LFO speeds) to dramatic changes (such as selecting a different Multisample). Any changes that you make are stored with the Song, and do not alter the original Program.

Each of the sixteen tracks has its own set of tone adjust parameters. However, only one track at a track can be adjusted from the control surface.

For more information, see:

- "Tone Adjust and MIDI SysEx" on page 20
- "Interaction between Tone Adjust and MIDI CCs" on page 20
- "Absolute (Abs), Relative (Rel), Meta parameter" on page 19

Saving Tone Adjust Edits

In Program mode, when you make edits via Tone Adjust and then save the results, the Program data is changed–just as if you'd edited the internal parameters directly. For more information, please see "Saving Tone Adjust Edits" on page 20.

In Sequencer mode, however, all Tone Adjust edits are stored within the Song; the Program itself is not changed. This lets you alter the way that a Program sounds in one specific Song without affecting the way that it sounds in Program mode, or in any other Combis or Songs.

0–2–8g: Tone Adjust

Track select

Track [1…16]

This selects the track whose Tone Adjust parameters. You can switch back and forth between the different tracks as much as you like, without losing your edits.

Auto Load (Auto Load PRG) [Off, On]

When you first load a Program into a track, this parameter determines whether or not the Program's Tone Adjust settings will be loaded as well.

These settings include the parameters assigned to each slider, and switch, along with the on/off state of any Switches assigned to Absolute parameters.

Once the Program has been loaded, you can change any or all of the Tone Adjust settings as desired, including both

assignments and values. All such edits are stored in the Song, without affecting the original Program.

If **Auto Load PRG** is **On**, Tone Adjust settings will be automatically loaded along with the Program.

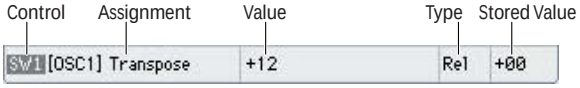
If **Auto Load PRG** is **Off**, then the relationship between the types of the old and new Programs will determine what happens., as shown in the table below:

If the old Program is…	And the new Program is…	Then Tone Adjust parameters and values are…
An EDS Program	An EDS Program	kept the same
An EDS Program	A RADIAS Program	loaded from the new Program
Any RADIAS Program	An EDS Program	loaded from the new Program
A RADIAS Program	A RADIAS Program	kept the same

Note: The EXB-RADIAS option must be installed in order to use RADIAS programs.

Selected parameter information

This status line shows detailed, read-only information about the currently selected Tone Adjust parameter.



Control [SW1…8, SL1…8]

This is the physical controller assigned to the Tone Adjust parameter.

Assignment [List of Tone Adjust assignments]

This shows the full name of the parameter assigned to the controller. You can change this using the "Assign" parameter, below.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

Type [Rel, Abs, Meta]

This shows the type of the parameter, which relates to how edits to the parameter are saved. For more information, please see "Absolute (Abs), Relative (Rel), Meta parameter" on page 19.

Stored Value

This shows the original value of the parameter, before the effects of Tone Adjust. It applies only to Tone Adjust parameters which control a single Program parameter.

If you un-assign a parameter from a control, it will revert to this value.

Switches 1…8

Tone Adjust switches act a little differently than sliders.

When a switch is assigned to a **Relative** parameter, or an **Absolute** parameter with more than two states:

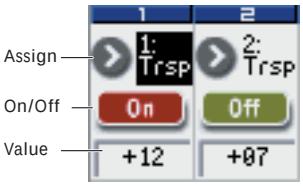
Switch On = **On Value** (see below)

Switch Off = the Program's stored value

When a switch is assigned to a two-state **Absolute** parameter, such as **Hold**, the switch status directly reflects the parameter value:

Switch On = **On**

Switch Off = **Off**



Assign

This lets you assign a Tone Adjust parameter to the switch. For a full list of the available choices, please see "Common Tone Adjust Parameters" on page 21 and "Tone Adjust Parameters" on page 22.

On Value [Depends on parameter]

The parameter is set to this value when the switch is On.

When the switch is assigned to a two-state **Absolute** parameter, such as **Hold**, this will always be the same as the **Switch Status** (see below).

Switch Status [Off, On]

This simply shows whether the switch is On or Off. The status is also shown by the LEDs in the physical buttons.

Sliders 1–8

Assign

This lets you assign a Tone Adjust parameter to the slider.

The first group of parameters are the Common set, which are supported by most Program types. For a full list, please see "Common Tone Adjust Parameters" on page 21.

After the Common parameters, the items in the list will vary depending on the Program type. For more information, please see:

"Tone Adjust Parameters" on page 22

"EXB-RADIAS for M3 Manual" (PDF)

EDS, and RADIAS will have their own set of parameters, as described in their manuals.

Assignments are exclusive

Per-Oscillator parameters apply to OSC1 and 2 individually, and are marked as such: OSC1 and OSC2.

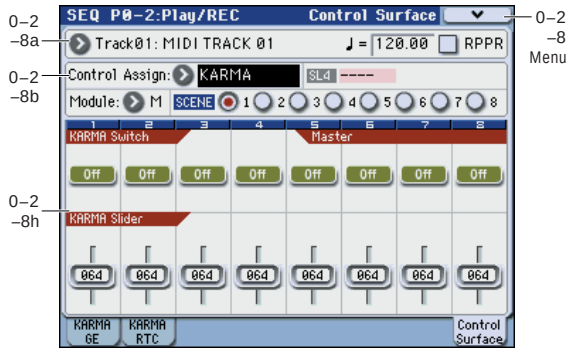
Each controller can be assigned to only one parameter, and each parameter can be assigned to only one controller.

To swap a parameter from one control to another, you'll need to first un-assign it from the old control, and then assign it to the new control.

Value

This shows the current value of the parameter. The range of values will vary depending on the parameter assigned to the control.

KARMA



0–2–8h: KARMA

Selected parameter information

This status line shows detailed, read-only information about the currently selected KARMA parameter.

Selected Switch/Slider **[SW1...8, SL1...8]**

Control Track Category Name

Realtime Control Name

For more information, please see “Selected KARMA Module Info:” on page 205.

Module Control

Module (Module Control) **[M, A, B, C, D]**

When used to control KARMA, the Control Surface sliders and switches are five layers deep: one for each Module (A–D), and a Master Layer capable of controlling selected parameters from all of the Modules at once. Each layer has its own Slider, Switch, and Scene settings.

The **Module Control** radio buttons (and the front-panel **MODULE CONTROL** switch) let you switch between these five layers.

To select a different layer, just press its on-screen radio button, or use the front-panel **MODULE CONTROL** switch to step through each layer in turn.

When you do so, all of the KARMA Sliders, Switches and Scenes will update instantly to show their current values and names within the selected layer.

KARMA Scenes 1–8

KARMA Scenes **[1...8]**

A KARMA SCENE includes the settings for all of the KARMA Sliders and Switches. Each Song can contain up to eight Scenes.

To select a Scene, just press its switch - you’ll see all of the KARMA Sliders and Switches update instantly to their new values.

KARMA Switches 1–8

KARMA Switch **[Off, On]**

These switches control KARMA Performance or GE (Generated Effect) Real-Time Parameters, as assigned on the KARMA Perf RTP and GE RTP pages.

KARMA Sliders 1–8

KARMA Sliders **[000...127]**

These sliders control KARMA Performance or GE Real-Time Parameters, as assigned on the KARMA Perf RTP and GE RTP pages.

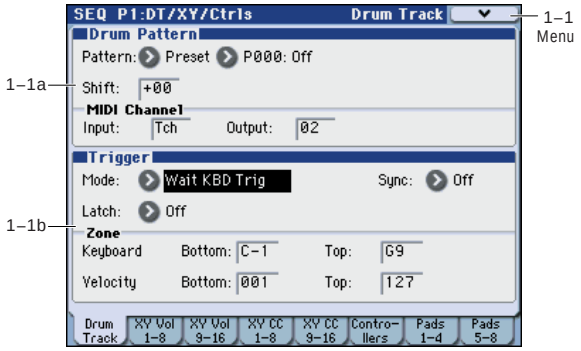
▼0–2–8: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy X–Y Motion** ☞p.107
- 14: **Copy Tone Adjust** ☞p.187 (Only Tone Adjust)
- 15: **Reset Tone Adjust** ☞p.187 (Only Tone Adjust)
- 14: **Copy Scene** ☞p.115 (Only KARMA)
- 15: **Swap Scene** ☞p.115 (Only KARMA)

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P1: DT/XY/Ctrls (Drum Track/X–Y/Controllers)

1–1: Drum Track



Here you can select a drum track pattern and specify how it will sound.

Note: In Sequencer mode (unlike Program mode) there is no dedicated track for the drum track. You can assign the drum track program to be any track 1–16. The drum track program will be played when the drum track's output MIDI channel **Output** matches the track's MIDI channel **MIDI Channel**.

In Sequencer mode, the drum track patterns are triggered on the Input.

1–1a: Drum Pattern

Pattern [Preset, User]

[(Preset): P000...P522, (User): U000...U999]

This selects the drum pattern.

Preset/User No.	Contents
P000	Off
P001...P522	Preset drum patterns
U000...U999	For user/preloaded drum patterns

- U000–U999 can be written. Patterns you create in Sequencer mode can be converted into user drum patterns. (See page 291)
  For details on creating user drum patterns, please see "Drum Track function" on page 185 of the Operation Guide.

Shift [–24...+00...+24]

This transposes the drum pattern in semitone steps. This means that the instruments of the drum kit will change.

MIDI Channel

Input [01...16, Tch]

This specifies the MIDI channel that will trigger the drum pattern.

Tch: The MIDI channel that triggers the drum pattern will automatically be set to the MIDI channel (Seq 3–1(2)c) of the track that's selected in **Track Select** (Seq 0–1–1(2)a).

If **Trigger Mode** is Wait KBD Trig, and you set **Track Select** to a track for which the MIDI channel you specify here is selected, the keyboard will trigger the drum pattern. Pads or MIDI IN messages of the matching MIDI channel will also trigger the drum track.

Output [01...16, Tch]

This specifies the MIDI channel that will transmit the MIDI data of the drum pattern. The drum pattern will sound using the program of the track that is set to the same channel as this MIDI channel.

Tch: The MIDI channel of the output will automatically be set to match the MIDI channel (Seq 3–1(2)c) of the track selected by **Track Select** (Seq 0–1–1(2)a).

Whether the pattern data will be output to an external device will depend on the **Status** setting of the track that matches the **Output** MIDI channel.

1–1b: Trigger

Trigger Mode [Start Immediately, Wait KBD Trig]

Start Immediately: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum pattern will start according to the **Sync** setting. When you turn it on, the drum pattern will stop.

Wait KBD Trig: When you press the DRUM TRACK ON / OFF switch to turn it on (LED lit), the drum pattern will wait to start. If you set **Track Select** to a track that matches the MIDI Channel **Input** setting and play the KYBD-61 / 73 / 88's keyboard, or if you strike a pad or receive a MIDI note-on of the matching MIDI channel, the drum pattern will start according to the **Sync** setting.

If you've selected **Start Immediately**, the DRUM TRACK ON / OFF switch will always be saved in the OFF state.

Note: You can link KARMA with the drum track pattern playback. For more information, please see "Link to Drum Trk" on page 6.

Sync [Off, On]

Off: The drum pattern will not synchronize to the currently-running KARMA, but will start immediately.

On: The drum pattern will synchronize to the currently-running KARMA.

Note: Use P7–2: KARMA2–Trigger A, B, C, D **Quantize Trigger** to specify whether KARMA will synchronize to the currently-running drum pattern.

Latch [Off, On, Use KARMA Latch Switch]

This is valid if **Trigger Mode** is **Wait KBD Trig**.

Off: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will stop when you release the keyboard (note-off).

On: If the DRUM TRACK ON / OFF switch is on (LED blink), the pattern will start when you play the keyboard (note-on). The pattern will continue when you release the keyboard (note-off). The pattern will stop when you turn the DRUM TRACK ON / OFF switch off (LED dark).

Use KARMA Latch Switch: The on / off status of the KARMA LATCH switch will correspond to the above Off and On modes of operation. You will probably want to use this in conjunction with KARMA's Latch operation.

Zone:

Keyboard

Bottom [C–1...G9]

Top [C–1...G9]

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

It specifies the range of keys that will start the drum pattern.

Velocity:

Bottom **[001...127]**

Top **[001...127]**

This is valid if **Trigger Mode** is set to **Wait KBD Trig**.

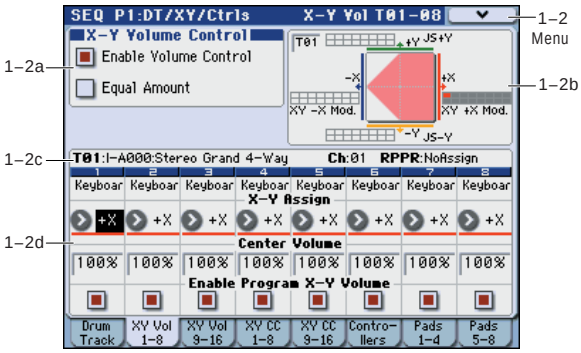
It specifies the range of velocities that will start the drum pattern.

▼1–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy Drum Track** ☞p.112
- 14: **Erase Drum Track Pattern** ☞p.112

For more information, please see “Sequencer: Menu Command” on page 271.

1–2: X–Y Vol T01–08, 1–3: X–Y Vol T09–16 (X–Y Volume Control T01–08, T09–16)



X–Y Control lets you control the track volume and program or effect parameters by moving your finger on the display (X–Y Mode) or by using an X–Y Motion that records such a movement.

For more background information on X–Y control, please see “1–5: X–Y Setup” on page 31.

X–Y control operation of programs and songs

Volume and CC control of each track program in Sequencer mode can be performed according to the X–Y control settings made in Program mode. You can disable the Program X–Y Volume and CC control separately for each track, if desired.

There is also a separate Song-wide X–Y control, with its own X–Y Volume and CC control settings. As with the Program X–Y control, you can disable the Song Volume and CC control separately for each track. Note that the Song X–Y CCs affect only Tracks and Effects on the Global MIDI Channel.

How Sequencer mode X–Y Volume works

In Program mode, X–Y Volume fades between the two Oscillators. Oscillator 1 is always at maximum volume when the X–Y position is all the way to the left (–X), and Oscillator 2 is always at maximum when the X–Y Position is all the way to the right (+X).

In Sequencer mode, on the other hand, the X–Y Volume can fade between any or all of the 16 Tracks. You can assign each of the Tracks to be controlled by any of the four X–Y axes (+X, –X, +Y, –Y), or to not be controlled at all.

If the EXB-RADIAS option is installed, you can create complex fades between different programs, such as EDS programs and RADIAS programs.

1–2(3)a: X–Y Volume Control

X–Y Volume Control lets you adjust the relative volumes of the 16 Tracks by moving the X–Y mode (or the X–Y motion) from left to right on the X axis, and up and down on the Y axis.

The **Equal Amount** check-box makes the X–Y control create a smooth fade between the Tracks, while the individual Track **Center Volume** parameters allow you to create more complex fade shapes.

Enable Volume Control [Off, On]

On (checked): X–Y position movements will control the volume of all tracks whose **X–Y Assign** is not Off.

Off (unchecked): X–Y position will not affect the volume. However, you can use program parameter settings for X–Y CC or AMS to control the volume.

Equal Amount [Off, On]

This applies only when **Enable Volume Control** is **On**.

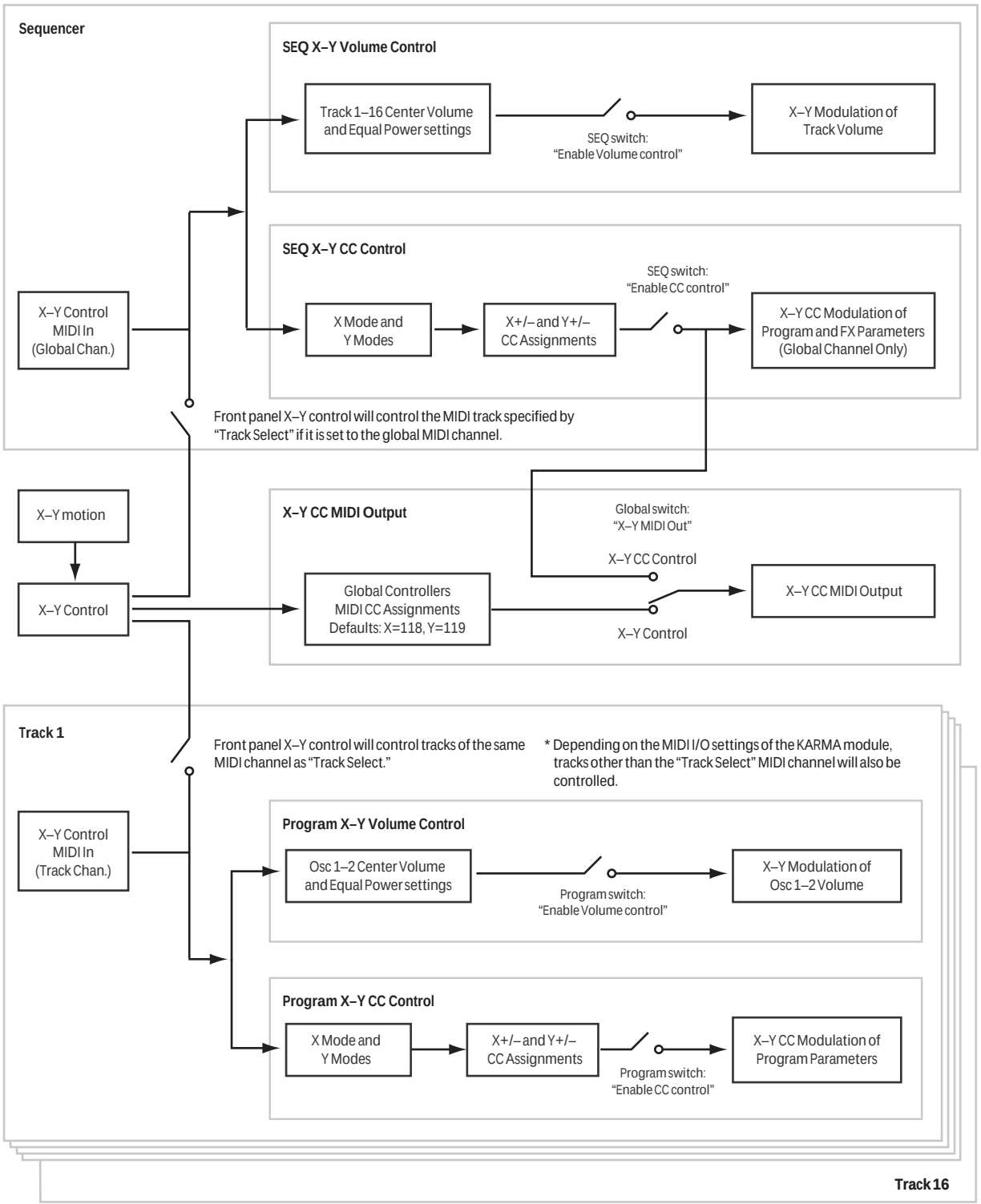
When **Equal Amount** is **On**, the X–Y will fade between all four X–Y axes while maintaining a total amount of 100%. This provides a smooth fade between the different sounds, and is the type of volume control used by classic vector synths.

Note that this will work best when the Programs assigned to each of the four axes have equivalent volumes. For instance, you might create a Song with four Programs, each sounding at the same volume and assigned to a different axis. You could then add a fifth Program, assign it to one of the axes, and then reduce the volumes of both Programs on that axis by 50%–so that their combined volume is the same as any one of the other Programs.

Also, when this is checked, the **Center Volume** parameters will be grayed out, since **Equal Amount** sets them automatically.

When **Equal Amount** is **Off**, the individual Track **Center Volume** parameters determine the way in which X–Y position affects volume.

X–Y Synthesis system, Sequencer mode



Note: For an interesting variation on this effect, turn **Equal Amount Off**, and instead set all of the Track **Center Volumes** to **50%**. The Tracks will still fade together smoothly, but with a more gentle effect towards the extremes of the X–Y axes.

1–2(3)b: X–Y Graphic

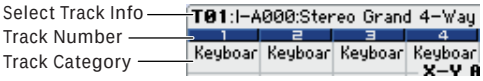
X–Y Graphic

The X–Y graphic is shown if **Equal Amount** is on, or to indicate the way in which volume is changed by the Center Volume setting.

Track Select [01…16]

This selects the track whose data will be shown in the X–Y graph.

1–2(3)c: Track Info



Selected Track Info:

This area displays information about the track selected for editing – **T:** track number / program bank / number / name, **Ch:** MIDI channel number.

Track Number:

This indicates the track number. The various parameters below each track number make settings for the corresponding track.

Track Category:

This shows the abbreviated category name of the Program assigned to the track.

1–2(3)d: X–Y Assign, Center Volume, Enable Program X–Y Volume

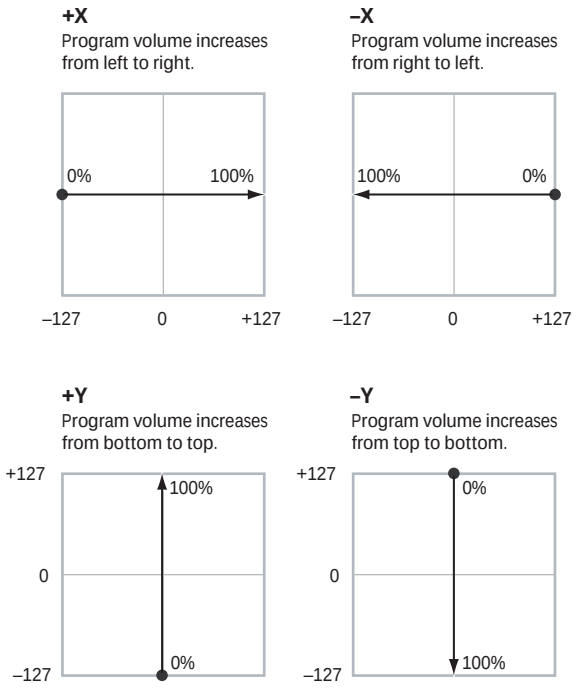
Track 1

X–Y Assign [Off, +X, –X, +Y, –Y]

This assigns an axis of the X–Y to control the Track's volume. See the diagram "X–Y Assign and Program Volume," below, for more details.

Off means that the X–Y position will not affect the Track's volume.

X–Y Assign and Program Volume



Center Volume [0, 25, 50, 75, 100%]

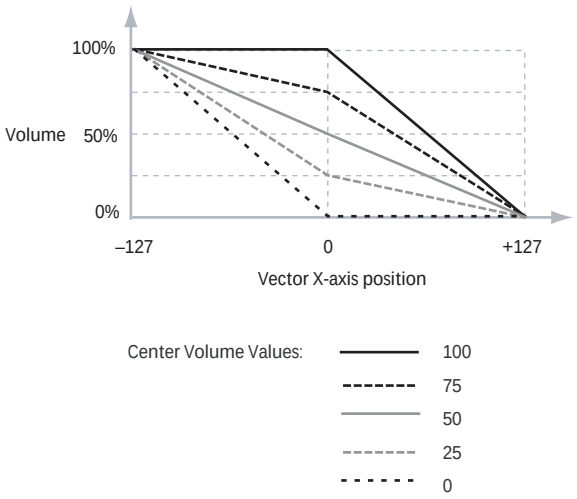
This sets the volume of Track 1 at the center point. It applies only when **Equal Amount**, above, is set to **Off**.

The volumes at the extreme ends of the axis are fixed, depending on the setting of the **X–Y Assign** parameter.

For instance, if **X–Y Assign** is set to –X, the Track will always be at 100% volume on the left side, and 0% (silent) on the right side.

This parameter applies only to the Song X–Y Volume control, and does not change the Program's individual X–Y Volume settings.

Track Center Volume, X–Y Assign = –X



Enable Program X–Y Volume [Off, On]

When this is turned **On**, the Program's X–Y Volume control will function as it does in Program mode, crossfading between Oscillators 1 and 2. The program's X–Y volume setting is controlled by the X–Y position.

When this is turned **Off**, the Program's X–Y Volume control will be disabled.

Track 2...8, 9...16

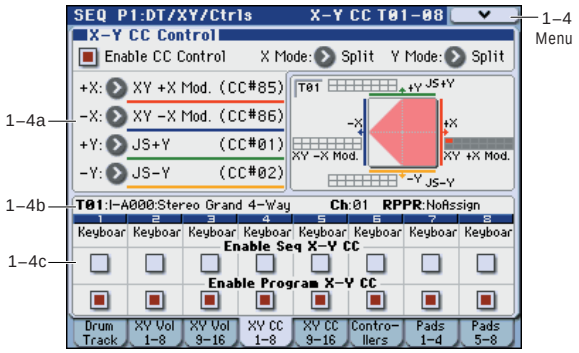
The parameters for Tracks 2–8 and 9–16 are identical to those for Track 01, as described above.

▼1–2(3): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Exclusive Solo** ☞p.107
- 2: **Rename Song** ☞p.271
- 3: **Delete Song** ☞p.271
- 4: **Copy From Song** ☞p.271
- 5: **Load Template Song** ☞p.271
- 6: **Save Template Song (Save as User Template Song)** ☞p.272
- 7: **FF/REW Speed** ☞p.272
- 8: **Set Location (Set Location for Locate Key)** ☞p.272
- 9: **GM Initialize** ☞p.273
- 10: **Copy From Combi (Copy from Combination)** ☞p.273
- 11: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

1–4: X–Y CC T01–08, 1–5: X–Y CC T09–16 (X–Y CC Control T01–08, T09–16)



1–4(5)a: X–Y CC Control

X–Y CC control (X–Y CC) uses X–Y mode (or X–Y motion) to control the track programs and effects.

Each of the four directions of the X–Y can send a different MIDI CC, including left (–X), right (+X), up (+Y), and down (–Y). You can choose between several different patterns combining these four directions by using the X Mode and Y Mode parameters.

The X–Y CCs are also sent to all Global Channel Tracks. These may modulate Program parameters, like any other MIDI CCs, depending on the settings within each individual Program.

Finally, you can optionally send these CCs out to external MIDI instruments. By using the Global parameter **X–Y MIDI Out** with X–Y CC Control, you can turn the X–Y CC control MIDI output on / off. By default, X–Y CC control output is not transmitted.

X–Y control operation of programs and songs

Volume and CC control of each track program in Sequencer mode can be performed according to the X–Y control settings made in Program mode. You can disable the Program’s X–Y Volume and CC control separately for each track, if desired.

Program X–Y CCs affect only their own Program, even if other tracks are set to the same MIDI channel.

There is also a single, separate X–Y control for the entire Song, with its own X–Y Volume and CC control settings. Song X–Y CCs affect all tracks set to the Global channel. As with the Program X–Y, you can disable the Song X–Y and CC control separately for each track.

X–Y control and MIDI

The X–Y control features interact with MIDI in two different ways: through the X–Y Volume, and through the X–Y CC Control.

The **X–Y mode** sends and receives two MIDI controllers: one for the X axis, and the other for the Y axis. In Global mode, you can assign these to any MIDI CC numbers you like. The defaults are CC#118 for the X axis, and CC#119 for the Y axis.

The X–Y mode (or X–Y motion) and its CCs control the X–Y position.

In contrast, X–Y CC control normally controls only the program’s sound and effects, but the generated MIDI control change messages can also be sent to an external MIDI device using **X–Y MIDI Out** (Global 1–2a).

Note that, in Sequencer mode, only the Song's X–Y CCs can be sent to external MIDI instruments; the individual Program's X–Y CCs are only used internally.

Enable CC Control [Off, On]

When this box is **checked**, the X–Y position will control the CCs assigned to +X, –X, +Y, and –Y, as set below.

When this box is **not checked**, the CC assigned to +X, –X, +Y, and –Y will have no effect, but the MIDI CC numbers specified by X (X–Y Mode) and Y (X–Y Mode) in Global P2: Controllers– MIDI CC# Assign can be transmitted and received.

For more information, please see "X–Y control and MIDI," above.

This parameter affects only the Song X–Y CCs. Even if this is turned **Off**, the individual Programs' X–Y CCs will still function normally.

X Mode [Positive, Negative, Xfade, Split]

You can set up the X–Y CCs to send out CCs in several different patterns, as shown in the graphic below. This controls the pattern for the X axis. Also, it applies only to the Song's X–Y CCs, and has no effect on the individual Program X–Y CCs.

Positive sends out only +X, starting at 0 at the far left, and increasing to 127 at the far right. –X is disabled in this mode.

Negative sends out only –X, starting at 0 at the far right, and increasing to 127 at the far left. In this mode, +X is grayed out.

Xfade sends out both +X and –X, overlapping throughout the X axis. As one increases, the other decreases.

Split sends out both +X and –X, with a split in the center. +X is sent when the point moves to the right of the center, and –X is sent when the point moves to the left of center.

+X [Off…MIDI CC#119]

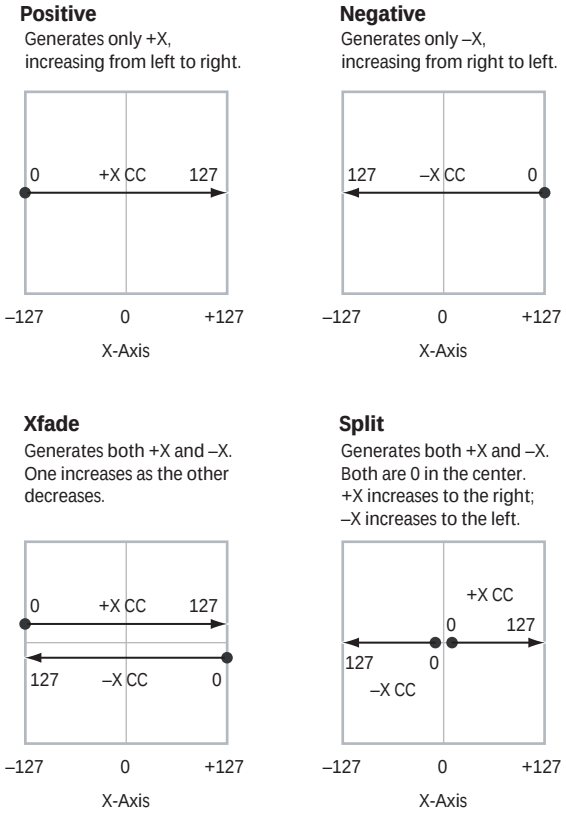
This assigns the controller transmitted by the +X direction. You can use this as an AMS source to control Program parameters, or as a Dmod source to control Effects parameters. It will be grayed out if the **X Mode**, above, is set to Negative.

–X [Off…MIDI CC#119]

This assigns the controller transmitted by the –X direction. It will be grayed out if the **X Mode**, above, is set to Positive.

The selections are the same as for +X, above.

X–Y CC Modes



Y Mode [Position, Negative, Xfade, Split]

This controls the X–Y CC pattern for the Y axis. For more information, please see the description under X Mode, above.

+Y [Off…MIDI CC#119]

This assigns the controller transmitted by the +Y direction. It will be grayed out if the **Y Mode**, above, is set to Negative.

The selections are the same as for +X, above.

–Y [Off…MIDI CC#119]

This assigns the controller transmitted by the –Y direction. It will be grayed out if the **Y Mode**, above, is set to Positive.

The selections are the same as for +X, above.

X–Y Graphic:

X–Y Graphic

The X–Y graph shows a representation of the volume change when using Equal Power mode or the Center Volume setting.

Track Select [01…16]

This selects the track whose data will be shown in the X–Y graph.

1–4(5)b: Track Info

Selected Track Info:

Track Number:

Track Category:

For more information, please see "1–2(3)c: Track Info" on page 218.

1–4(5)c: Enable Combi X–Y CC, Enable Program X–Y CC

Track 01

Enable Seq X–Y CC [Off, On]

This controls whether or not the track will receive the Song's X–Y CCs.

If this is **On**, the track will receive the CCs, and the track's Program will respond to them according to its own AMS settings.

If this is **Off**, the track will not receive the CCs. This can be useful if the Song's X–Y CCs are causing unwanted modulation, or conflicting with the Program's own X–Y CCs.

Enable Prog X–Y CC [Off, On]

This controls whether or not the Program's own X–Y CCs will be active.

If this is **On**, the Program's X–Y CCs will work as AMS sources, just as they did in Program mode. The CCs will not affect any other tracks, even if they are set to the same MIDI channel.

Note that in some cases, the X–Y CCs may have been used for modulating the Program's effects via Dmod. This functionality is not carried into the Song; for modulating the Song's effects, use the Song's X–Y CCs instead.

If Enable Program X–Y CC is **Off**, then the Program's X–Y CCs will have no effect. This can be useful if they are conflicting with the Song's X–Y CCs.

Tracks 02...08, 09...16

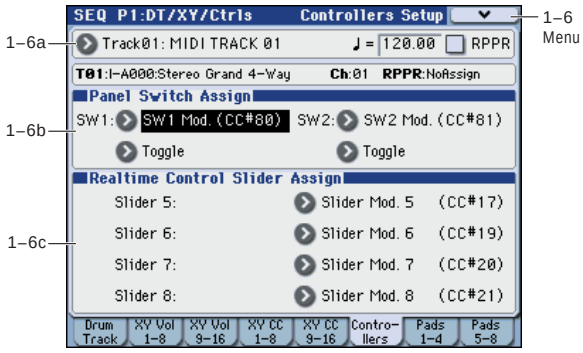
The settings for Tracks 2–8 and 9–16 are identical to those for Track 01, as described above.

▼1–4(5): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Exclusive Solo** ☞p.107
- 2: **Rename Song** ☞p.271
- 3: **Delete Song** ☞p.271
- 4: **Copy From Song** ☞p.271
- 5: **Load Template Song** ☞p.271
- 6: **Save Template Song (Save as User Template Song)** ☞p.272
- 7: **FF/REW Speed** ☞p.272
- 8: **Set Location (Set Location for Locate Key)** ☞p.272
- 9: **GM Initialize** ☞p.273
- 10: **Copy From Combi (Copy from Combination)** ☞p.273
- 11: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

1–6: Controllers Setup



Here you can specify the SW1 and SW2 switch and 5–8 slider functions of the song when Control Assign REALTIME CONTROL is selected.

When you operate these switches and sliders during recording, the MIDI messages assigned to them will be recorded.

Note: SW1 and SW2 can be controlled by the KYBD-61 / 73 / 88's SW1 and SW2 switches.

Note: The Panel Switch Assign setting of the program assigned to each track will have no effect.

1–6a: Track Select, Tempo, RPPR, Track Info, Selected Track Info

Track Select [Track01…16, Master Track]

♩(Tempo) [040.00…300.00, EXT]

RPPR [Off, On]

Here you can select the track, specify the tempo that will control KARMA etc., and turn RPPR on / off.

For more information, please see "0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR" on page 195.

Selected Track Info

This area shows detailed information about its track assignments.

For more information, please see "Selected Track Info" on page 199.

1–6b: Panel Switch Assign

SW (SW1 Assign) [Off, ..., After Touch Lock]

This assigns the function of SW1. For more information, please see "List of SW 1 / 2 assignments" on page 597.

Note: If the KYBD-61 / 73 / 88 is connected, the on / off status of the SW1, SW2 switches is memorized when you save it.

If you change the function setting, the status is reset to off.

Mode (SW1 Mode) [Toggle, Momentary]

This specifies the on / off operation when you press the KYBD-61 / 73 / 88's SW1 switch.

Toggle: The function will alternate between on and off each time you press the SW1 switch.

Momentary: The function will be on only while you continue holding down the SW1 switch.

SW2 (SW2 Assign) **[Off, ..., After Touch Lock]**
Mode (SW2 Mode) **[Toggle, Momentary]**

This assigns the function of SW2. The functions that can be assigned to SW2 are the same as for SW1, with the substitution of SW2 Mod. (CC#81) instead of the SW1's SW1 Mod. (CC#80).

1–6c: Realtime Modulation Slider Assign

Here you can assign the functions (mainly types of control change) that sliders 5–8 will have when Control Assign REALTIME CONTROL is selected. (See "Realtime Control Slider 5–8 Assignments" on page 598)

The functions you assign here are active when you select CONTROL ASSIGN REALTIME CONTROL and operate sliders 5–8.

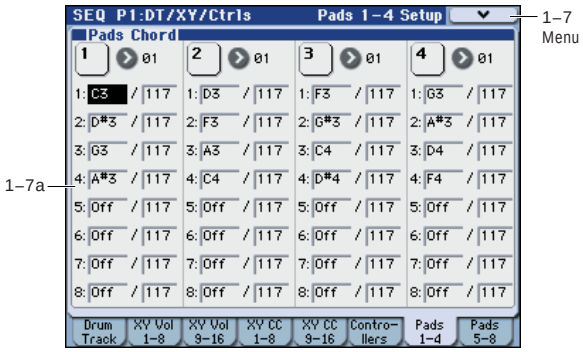
Slider 5 **[Off, ..., MIDI CC#119]**
Slider 6 **[Off, ..., MIDI CC#119]**
Slider 7 **[Off, ..., MIDI CC#119]**
Slider 8 **[Off, ..., MIDI CC#119]**

▼1–6: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

1–7: Pad T01–08, 1–8: Pad T09–16



There are eight velocity-sensitive trigger pads below the display. These look like drum machine pads, and playing drum sounds is certainly one use for them.

However, they can also play up to eight-note chords on any sound–not just drums. The pads even remember the velocities of the individual notes within the chord, as well as the notes themselves. Finally, each Pad can be assigned to a different MIDI channel, if desired.

These settings are stored independently for each Song.

Assigning notes to the pads

You can assign notes to the pads directly from the keyboard and front-panel controls, without using this page at all. Alternatively, you can enter notes and velocities using the parameters on this page. Regardless of how the notes were first assigned, you can edit their values here.

For more information, including step-by-step instructions and usage tips, please see "Drum & Chord Pads" on page 44 of the Operation Guide.

1–7(8)a: Pads Chord

Pad 1:

MIDI Channel **[Ch01...Ch16, Tch]**

This sets the pad's MIDI output channel. You can set this to either a specific channel (1–16), or to follow the channel of the selected Track.

Ch01…Ch16: The pad will transmit on the selected MIDI channel. As shown in the diagram "Pads and MIDI Channel," below, you can:

- Use this in conjunction with the Track **MIDI Channel** (Seq 3–1(2)c) setting, to route a pad to a specific Track.
- Use this with the KARMA Module **In (Input Channel)** (Seq 7–1–1c) setting, to generate a phrase or other KARMA function when you play a specific pad.

Tch: With this setting, the pads will follow the **MIDI Channel** (Seq 3–1(2)c) of the currently selected Track.

Notes 1–8 **[Off, C–1…G9 / 001…127]**

These parameters let you edit the 8 notes assigned to each pad, along with a separate velocity for each note. To play fewer than 8 notes, just set the unwanted notes to **Off**.

Off: Select this to disable the note.

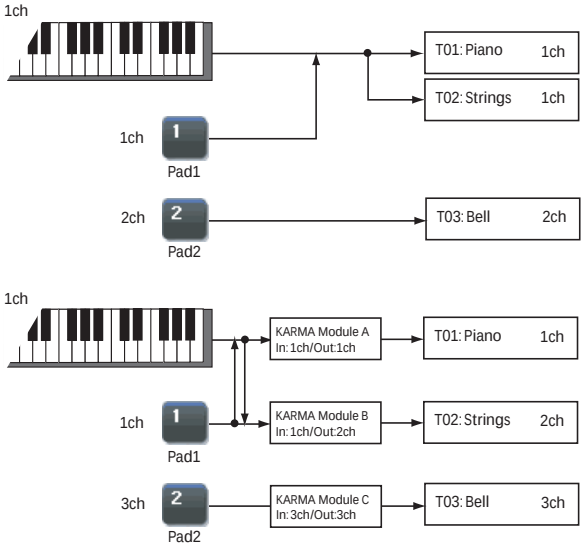
C–1…G9: This sets the note number.

001…127: This sets the note's velocity value. For more information on pads and velocity, please see "1–7(8)a: Pads Chord" on page 36.

Pad 2...4, 5...8

These are the same as for Pad 1, as described above.

Pads and MIDI Channel



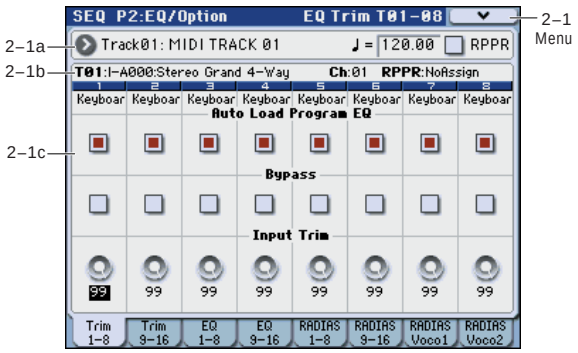
▼1–7(8): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Copy Pad Setup** ☞p.278

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P2: EQ/Option

2–1: Trim T01–08, 2–2: Trim T09–16



Here you can set the signal level that enters the EQ of tracks 1–8 and 9–16.

2–1(2)a: Track Select, Tempo, RPPR

Track Select **[Track01…16, Master Track]**

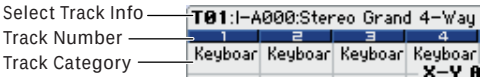
♩ (Tempo) **[040.00…300.00, EXT]**

RPPR **[Off, On]**

Here you can select the track, specify the tempo that will control KARMA etc., and turn RPPR on / off.

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

2–1(2)b: Track Info



Selected Track Info:

This area displays information about the track selected for editing – **T:** track number / program bank / number / name, **Ch:** MIDI channel number.

Track Number:

This indicates the track number. The various parameters below each track number make settings for the corresponding track.

Track Category:

This shows the abbreviated category name of the Program assigned to the track.

2–1(2)c: Trim

Track 01 (Track Number):

Auto Load Prog EQ **[Off, On]**

When you first load a Program into a Track, this parameter determines whether or not the Program’s EQ settings will be loaded as well.

Once the Program has been loaded, you can change any or all of the EQ settings as desired. All such edits are stored in the Song, without affecting the original Program.

Regardless of this setting, subsequent edits to the Program’s EQ in Program mode will not affect the Song.

On: the Program’s EQ settings will be loaded automatically along with the Program. This is the default setting.

Off: the Program’s EQ settings won’t be loaded. Use this if you’ve set up the EQ in a specific way, and then want it to stay unchanged while you try out different Programs.

Bypass **[Off, On]**

If this is **On (checked)**, all of the EQ will be disabled, including **Input Trim**. Bypass can be convenient for comparing the results of the EQ with the original signal.

Input Trim **[00…99]**

This controls the volume level going into the EQ. Note that this parameter uses a linear scale; 50 is equivalent to –6 dB, 25 is the same as –12 dB, and so on.

High settings of the **Low**, **Mid**, and **High Gain** (Seq 2–3(4)a) controls can cause substantial increases in the overall level. You can compensate for this by turning down the input trim.

Track 02...08, 09...16 (Track Number):

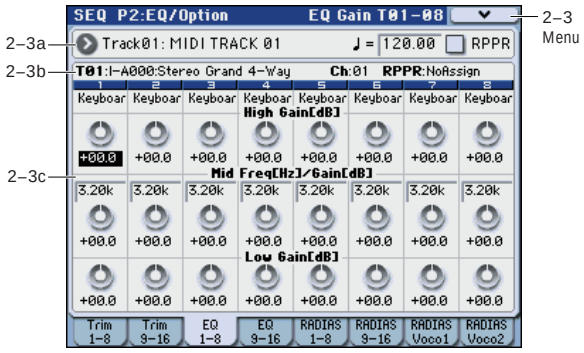
Here you can make settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼2–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

2–3: EQ T01–08, 2–4: EQ T09–16



Here you can make settings for the mid-sweepable three-band EQ for each MIDI track.

2–3(4)a: Track Select, Tempo, RPPR
2–3(4)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

2–3(4)c: 3 Band Parametric EQ

Track 01 (Track Number):

High Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the 10 kHz High Shelf EQ, in increments of 0.5 dB.

Mid Freq [Hz] (Mid Frequency) **[100…10k]**

This sets the center frequency for the Mid sweep EQ.

Mid Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the Mid Sweep EQ, in increments of 0.5 dB.

Low Gain [dB] **[–18.0…+00.0…+18.0]**

This controls the gain of the 80 Hz Low Shelf EQ, in increments of 0.5 dB.

Track 02...08, 09...16 (Track Number):

These parameters adjust the three-band EQ (with sweepable mid range) for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼2–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

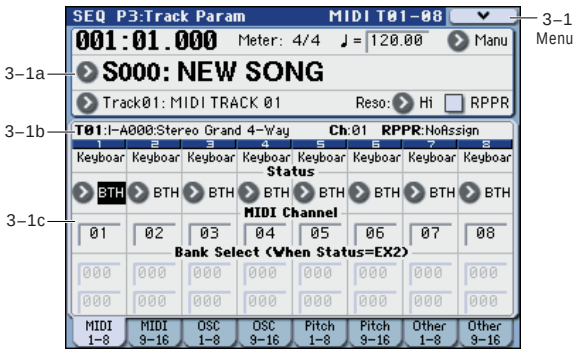
For more information, please see “Sequencer: Menu Command” on page 271.

2–5: RADIAS T01–08, 2–6: RADIAS T09–16, 2–7: RADIAS Vocoder 1, 2–8: RADIAS Vocoder 2

These settings will be available if the EXB-RADIAS option is installed. Please see “EXB-RADIAS for M3 Manual” (PDF) of the option CD-ROM.

SEQ P3: Track Param (Track Parameters)

3–1: MIDI ch T01–08, 3–2: MIDI ch T09–16



Here you can make MIDI-related settings for each MIDI track.

3–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

3–1(2)b: Track Info

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

3–1(2)c: MIDI

Track 01 (Track Number):

Status **[Off, INT, BTH, EXT, EX2]**

This sets whether the Track controls the internal sounds, external MIDI devices, or both.

When controlling external MIDI devices, it also allows you to choose between using the internal Bank Select numbers (as set by the front-panel switches), or using custom Bank Select settings to match the external device.

Off: Use this to disable the Track. With this setting, the Track’s Program will not sound, and MIDI data will not be transmitted.

INT: The track will sound when you play back the performance data recorded on the MIDI track. If you use **Track Select** (Seq 0–1–1(2)a) to select a MIDI track that is set to INT, and operate the controllers of the M3, the M3’s sound generator will produce sound. MIDI data will not be transmitted to an external device.

BTH: The operation of both INT and EXT will be performed. When the musical data recorded in the MIDI track is played back, or when you select a MIDI track that is set to BTH and play the controllers of the M3, the internal tone generator of the M3 will sound, and at the same time MIDI data will also be transmitted to an external device.

EXT: When the musical data recorded in the MIDI track is played back, or when you select a MIDI track that is set to EXT and play the controllers of the M3, MIDI data will be transmitted to an external device, but the internal tone generator of the M3 will not sound.

When you select another song or return to the beginning of the song, the program change, volume, panpot, portamento, sends 1 and 2, post IFX pan, and post IFX sends 1 and 2 of each MIDI track set to EXT will be transmitted via MIDI.

EX2: This enables you to specify a particular MIDI Bank Select message for the Track, instead of automatically using the Bank of the selected M3 Program. Use the parameters below, labeled **Bank Select MSB (When Status =EX2)**, to set the Bank Select message as desired. In other respects this is the same as EXT, described above.

MIDI MIDI data is transmitted and received on the MIDI channel that is specified separately for MIDI track by **MIDI Channel**.

Status	Keyboard, Sequencer, & MIDI In play Internal Sounds	Keyboard & Sequencer Transmit MIDI Out
OFF	No	No
INT	Yes	No
EXT	No	Yes (using the Bank Select message of the track’s Program)
EX2	No	Yes (using the Bank Select message specified on the MIDI tab of the Track Param page)
BTH	Yes	Yes

MIDI Channel **[01…16]**

Specifies the MIDI channel that the MIDI track will use to transmit and receive musical data. The MIDI channel you specify here will be the receive channel when **Status** is INT, the transmit channel when it is EXT or EX2, and the receive/transmit channel when it is BTH. Tracks set to INT which have the same MIDI channel will sound and be controlled identically when they receive MIDI data or data from the sequencer tracks.

Bank Select MSB (When Status=EX2) **[000...127]**

Bank Select LSB (When Status=EX2) **[000...127]**

When **Status** is set to EX2, this sets the bank number that will be transmitted. When **Status** is other than EX2, this setting has no effect.

Track 02...08, 09...16 (Track Number):

These are the MIDI-related settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

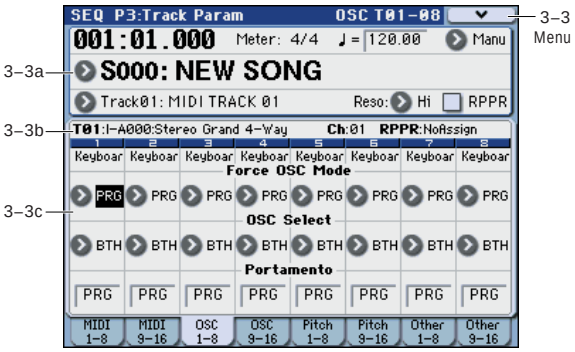
▼3–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272

- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

3–3: OSC T01–08, 3–4: OSC T09–16



These parameters specify how each MIDI track will be sounded.

3–3(4)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

3–3(4)b:Track Info

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

3–3(4)c: OSC

Track 01 (Track Number):

Force OSC Mode [PRG, Poly, MN, LGT]

This lets you override the Program’s stored Voice Assign Mode settings, if desired.

PRG: The Program’s stored Prog P1: Basic / DT / Ctrls–Program Basic **Voice Assign Mode** settings will be used.

Poly: The track will play polyphonically, regardless of the Program’s settings.

MN (Mono): The track will play monophonically, regardless of the Program’s settings.

LGT (Legato): The track program will sound monophonically, and will play legato according to the Program’s **Mode** setting (Prog 1–1b).

With the MN or LGT settings, the Program’s **Priority** setting (Prog 1–1b) will determine the priority of the note that sounds when you play two or more notes.

OSC Select [BTH, OS1, OS2]

Specifies whether the MIDI track’s program will play OSC1, OSC2, or both.

For EDS programs whose **Oscillator Mode** (Prog 1–1a) is Double, this setting lets you specify that only OSC1 or OSC2 will sound.

BTH (Both): OSC1 and 2 will sound as specified by the settings of the program.

OS1: Only OSC1 will sound.

OS2: Only OSC2 will sound. PCM programs will not sound if **Oscillator Mode** is set to Single or Drums.

Portamento [PRG, Off, 001...127]

Make portamento settings for each MIDI track.

The portamento setting you make here will be used when the song is played or recorded from the beginning. If you change the setting while recording, it will be recorded as part of the musical data. (However if you set this to PRG, it will not be recorded.) You can change this setting during playback. However if you come to any Portamento On / Off data or Portamento Time data that was recorded, the settings will change accordingly.

When the track whose **Status** (Seq 3–1(2)c) is INT or BTH, MIDI control change CC#05 (Portamento Time) and CC#65 (Portamento Switch) can be received to control this and change the setting. (If the setting is PRG, CC#05 Portamento Time will not be received.)

When you switch songs or return to the beginning of the song, tracks whose **Status** is BTH, EXT, or EX2 will transmit this setting via MIDI. If this is Off, CC#65 with a value of 0 will be transmitted. If this is 001–127, a CC#65 of 127 and CC#05 of 1–127 will be transmitted.

If this is set to PRG, nothing will be transmitted.

This data is transmitted and received on the MIDI channel specified for each track by **MIDI Channel** (Seq 3–1(2)c).

Track 02...08, 09...16 (Track Number):

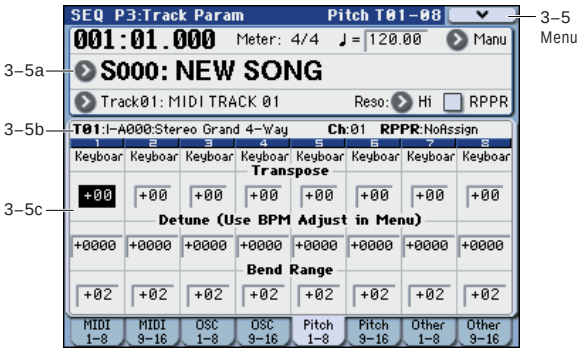
Here you can make OSC settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see "Track 01 (Track Number):," above.

▼3–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

3–5: Pitch T01–08, 3–6: Pitch T09–16



Here you can make pitch-related settings for each MIDI track.

3–5(6)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

3–5(6)b:Track Info

For more information, please see "0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR" on page 195.

For more information, please see "2–1: Trim T01–08, 2–2: Trim T09–16" on page 224.

3–5(6)c: Pitch

Track 01 (Track Number):

Transpose [–60...+00...+60]

Adjusts the pitch of each MIDI track in semitone steps.

12 units equal one octave.

Detune (Use BPM Adjust in Menu) [–1200...+0000... +1200]

Adjusts the pitch of each MIDI track in one-cent units.

+0000: Normal pitch.

Note: You can also use the **Detune BPM Adjust** menu command (see page 188) to automatically make a detune setting from a calculation in BPM units.

MIDI **Transpose** and **Detune** do not affect the notes transmitted via MIDI Out. **Transpose** and **Detune** can be controlled via MIDI RPN messages received on the Track's MIDI channel. The way that this works depends on whether or not the Track uses an EDS Drum Program.

If the Track does not use an EDS Drum Program–for example, if it uses a Single or Double EDS Program, or an RADIAS Program–then MIDI RPN Coarse Tune will control **Transpose**, and RPN Fine Tune will control **Detune**.

If the Track uses an EDS Drum Program, MIDI RPN Coarse Tune and Fine Tune will be combined to control **Detune**. The overall range is ±1 octave for coarse tune and fine tune together.

Bend Range **[PRG, –24...+00...+24]**

Specifies the amount of pitch change that will occur when the pitch bender is operated, in semitone units.

PRG: The pitch range specified by the program will be used.

–24…+24: This setting will be used regardless of the setting in the program.

MIDI As long as this set to something other than PRG, you can control the **Bend Range** using MIDI RPN Pitch Bend Change messages. For more information, please see page 79, and page 164 **P.Bend (Pitch Bend)**.

Track 02...08, 09...16 (Track Number):

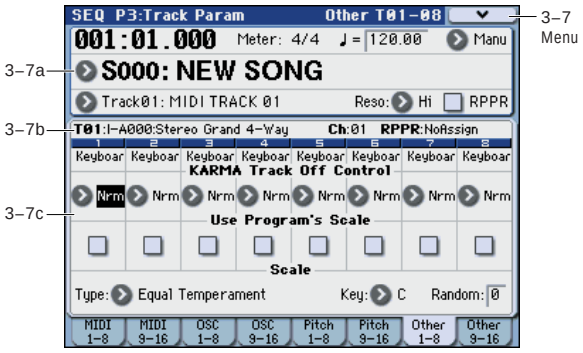
Here you can make pitch-related settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼3–5(6): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273
- 13: **Detune BPM Adjust** ☞p.188

For more information, please see “Sequencer: Menu Command” on page 271.

3–7: Other T01–08, 3–8: Other T09–16



Here you can make settings for the KARMA function and scale for each MIDI track.

3–7(8)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

3–7(8)b: Track Info

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

3–7(8)c: KARMA/Scale

Track 01 (Track Number):

KARMA Track Off Control
[Normal, Track Off by KARMA Off, Track Off by KARMA On]

Nrm (Normal): The KARMA ON / OFF switch will not control whether the track will sound. Usually you will use the Normal setting.

Off (Track Off by KARMA Off): The track will sound as usual when the KARMA ON / OFF switch is on.
The track will not sound when the KARMA ON / OFF switch is off.

Use this when you want a specific track of multiple tracks set to the same MIDI channel to be silent only when KARMA is off.

On (Track Off by KARMA On): The track will not sound when the KARMA ON / OFF switch is on.
The track will sound as usual when the KARMA ON / OFF switch is off.
Use this when you are using a KARMA Module to control multiple tracks that are set to the same MIDI channel, and want a specific track to be silent only when the KARMA function is on.
For example you can use this to play a two-track layer from the keyboard when KARMA is off, and use one track to sound the phrase when KARMA is on.

If the **Status** (Seq 3–1(2)c) of each track is INT, you can use the **KARMA Track Off Control** setting to stop the oscillator of each track from sounding.

If you set **KARMA Track Off Control** to Off or On settings and operate the KARMA ON / OFF switch while real-time-recording a song, you must be aware of the following points.

- In order to control this parameter during playback, operations of the KARMA ON / OFF switch must be recorded in real-time.
- Set **KARMA On/Off** (Global 2–2a) to MIDI CC#14. If this is assigned to MIDI CC#14, operations of the KARMA ON / OFF switch can be recorded in real-time. For more information, please see "2–2a: KARMA Controllers" on page 371.
- Operations will also be recorded if you assign this key to MIDI CC#00–95, but in order to avoid confusion when receiving another CC#, you should use CC#14.
- **KARMA On/Off** (Global 2–2a) will also be set to MIDI CC#14 if you execute the menu command **Reset Controller MIDI Assign** with **To:** set to Default Setting. After executing, turn the assignment Off for other MIDI CC# Assign –KARMA Controllers that you do not need to record.

Use Program's Scale [Off, On]

MIDI track can use the scale that is specified by **Scale** (Prog 1–2b).

On (checked): The scale specified by the program will be used.

Off (unchecked): The scale specified by **Scale** will be used.

Track 02...08, 09...16 (Track Number):

These are the wave sequence and KARMA-related settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see "Track 01 (Track Number):," above.

Scale:

This specifies the scale that the song will use. For more information, please see "1–2b: Scale" on page 27.

Type (Song's Scale) [Equal Temperament...User Octave Scale15]

Selects the scale.

Key [C…B]

Random [0…7]

As this value is increased, an increasingly random deviation will be added to the pitch at each note-on.

MIDI If **Status** (Seq 3–1(2)c) is INT, this setting will affect the pitch produced by the M3. If **Status** is EXT, this setting will affect the note number of the note messages transmitted via MIDI.

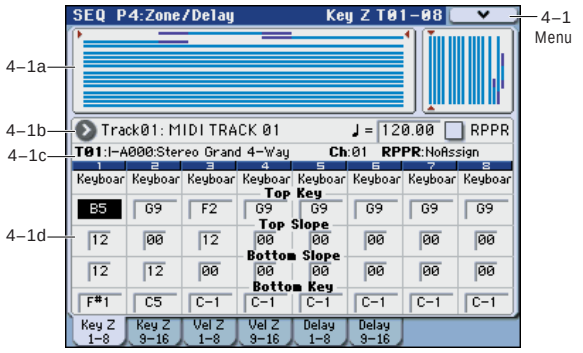
▼3–7(8): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

SEQ P4: Zones/Delay

4–1: Key Z T01–08, 4–2: Key Z T09–16 (Keyboard Zones T01–08, T09–16)



Here you can specify the key zones in which MIDI tracks 1–8 and 9–16 will sound.

The top / bottom key settings specify the zone in which MIDI tracks 1–8 and 9–16 will sound, and the top / bottom slope settings specify the key range over which the volume will change starting from the top / bottom key.

MIDI These settings do not affect MIDI transmission / reception. All note data that is received will be recorded into the internal sequencer, and all note data from the internal sequencer or from the keyboard will be transmitted.

4–1(2)a: Zone Map

This area indicates the note and velocity ranges in which each MIDI track (1–16) will sound.

The display uses lines to indicate the range of notes and velocities that will sound, and show the slope portion in a different color.

4–1(2)b: Track Select, Tempo, RPPR
4–1(2)c: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

4–1(2)d: Keyboard Zones

Track 01 (Track Number):

Top Key **[C–1...G9]**

Specifies the top key (upper limit) of the notes that will sound each MIDI track.

Top Slope **[00, 01, 02, 03, 04, 06, 08, 10, 12, 18, 24, 30, 36, 48, 60, 72]**

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the top key.

0: The volume will be at the original level from the top key.

12: The volume will increase gradually as you play downward, and will reach the original volume one octave below the top key.

72: The volume will increase gradually as you play downward, and will reach the original volume six octaves below the top key.

Bottom Slope **[00, 01, 02, 03, 04, 06, 08, 10, 12, 18, 24, 30, 36, 48, 60, 72]**

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the bottom key.

0: The volume will be at the original level from the bottom key.

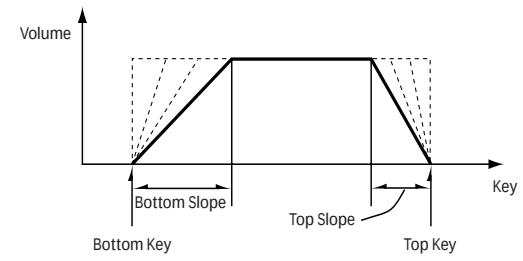
12: The volume will increase gradually as you play upward, and will reach the original volume one octave above the bottom key.

72: The volume will increase gradually as you play upward, and will reach the original volume six octaves above the bottom key.

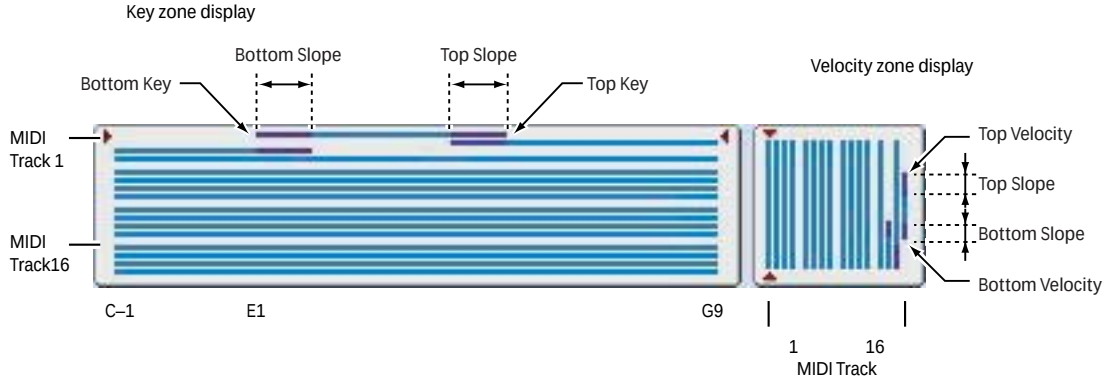
Bottom Key **[C–1...G9]**

Specifies the bottom key (lower limit) of the notes that will sound each MIDI track.

How volume will change according to keyboard location



Zone Map



Top Key and **Bottom Key** settings can also be input by holding down the ENTER switch and playing a note on the keyboard.

It is not possible to set the bottom key above the top key of the same track. Nor is it possible for the top and bottom slopes to overlap.

Track 02...08, 09...16 (Track Number):

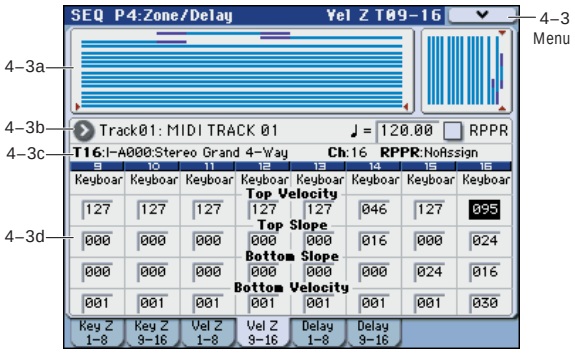
These are the key zone settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see "Track 01 (Track Number):," above.

▼4–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

4–3: Vel Z T01–08, 4–4: Vel Z T09–16 (Velocity Zones T01–08, T09–16)



Here you can set the Top / Bottom Velocity parameters to specify the range of velocities that will be sounded by MIDI tracks 1–8 and 9–16, and Top / Bottom Slope specify the range over which the volume will be adjusted.

These settings do not affect MIDI transmission / reception. All note data that is received will be recorded into the internal sequencer, and all note data from the internal sequencer or from the keyboard will be transmitted.

It is not possible to set the bottom velocity greater than the top velocity for the same track. Nor can the top slope and the bottom slope overlap.

4–3(4)a: Zone Map

This area indicates the note and velocity ranges in which each MIDI track will sound.

For more information, please see "4–1(2)a: Zone Map" on page 231.

4–3(4)b: Track Select, Tempo, RPPR
4–3(4)c: Track Info

For more information, please see "2–1: Trim T01–08, 2–2: Trim T09–16" on page 224.

4–3(4)d: Velocity Zones

Track 01 (Track Number):

Top Velocity **[1...127]**

Specifies the maximum velocity value that will sound each track.

Top Slope **[0...120]**

Specifies the number of velocity steps over which the original volume will be reached, starting from the Top Velocity.

0: The volume will be at the original value from the top velocity.

120: The volume will decrease as the velocity approaches the top velocity.

Bottom Slope **[0...120]**

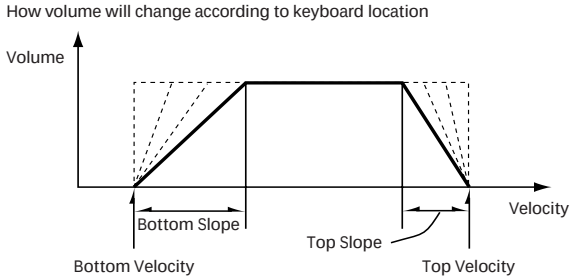
Specifies the number of velocity steps over which the original volume will be reached, starting from the Bottom Velocity.

0: The volume will be at the original value from the bottom velocity.

120: The volume will decrease as the velocity approaches the bottom velocity.

Bottom Velocity [1…127]

Specifies the minimum velocity that will be sounded by each MIDI track 1–16.



Top Velocity and **Bottom Velocity** settings can also be input by holding down the ENTER switch and playing a note on the keyboard.

Track 02...08, 09...16 (Track Number):

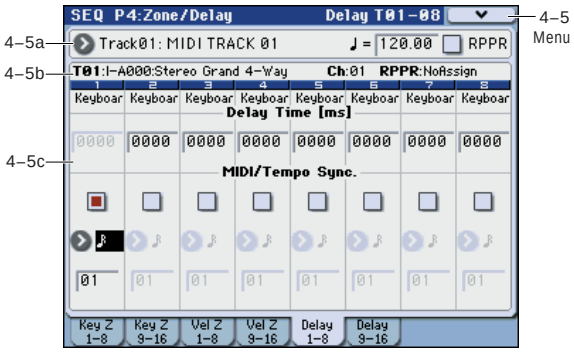
These are the velocity zone settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see "Track 01 (Track Number):," above.

▼4–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

4–5: Delay T01–08, 4–6: Delay T09–16



This specifies the time (delay) from when the MIDI tracks 1–8 and 9–16 receives a note-on until the sound begins.

4–5(6)a: Track Select, Tempo, RPPR 4–5(6)b: Track Info

For more information, please see "2–1: Trim T01–08, 2–2: Trim T09–16" on page 224.

4–5(6)c: Delay

Track 01 (Track Number):

Delay Time [ms] [0000…5000ms, KeyOff]

Specifies the time (delay time) from note-on until the MIDI track begins to produce sound, in units of ms (1/1000th of a second). This setting is available if **MIDI/Tempo Sync.** is set to Off.

KeyOff: The note will begin sounding at note-off. In this case, the sound will not die away if the sustain level of the program's amp EG is other than 0. This setting is used when creating harpsichord sounds.

Normally you will set this to 0000.

MIDI/Tempo Sync. [Off, On]

The time (delay time) from note-on until the track produces sound will be specified in note length units relative to the ♩**(Tempo)**.

On (checked): Specify the delay time in terms of a **Base Note** and **Times** relative to the **Tempo**. For example if **Base Note** = 𝅗𝅥, **Times** = 01, and **Tempo** = 60 BPM, the delay time will be equivalent to 1000 ms.

Off (unchecked): The delay time will be set by the **Delay Time** setting.

Base Note [𝅘𝅥𝅯, 𝅘𝅥𝅯₃, 𝅘𝅥𝅮, 𝅘𝅥𝅮₃, ♪, ♩₃, ♩, 𝅗𝅥₃, 𝅗𝅥, 𝅝]

Times [01...32]

It specifies the time (delay time) from note-on until the track begins to produce sound, in terms of a note value relative to the ♩ **(Tempo)** (Seq 0–1–1(2)a).

Use **Base Note** to specify the desired note value, and use **Times** to extend that note value by the specified multiple.

For example if you set **Base Note** to a quarter note (♩) and **Times** to 02, that track will sound with a delay of a half note (𝅗𝅥). Even if you change ♩ **(Tempo)** (Seq 0–1–1(2)a), the delay time will always be a half note (𝅗𝅥). If you use these parameters to specify a delay of a half note (𝅗𝅥). In this case, a **Tempo** of 60.00 BPM will produce a 2000 ms delay, and a **Tempo** of 120.00 BPM will produce a 1000 ms delay.

Track 02...08, 09...16 (Track Number):

These are the delay time settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼4–5(6): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P5: MIDI Filter

Here you can select whether or not to apply filtering to the MIDI data received by MIDI tracks 1–16. For example even if two tracks are receiving the same MIDI channel, one can be set to respond to damper pedal activity while the other does not.

These MIDI filter settings have no effect on the MIDI messages that have already been recorded.

These settings affect the MIDI messages that are transmitted when you adjust program, pan, volume, portamento and send 1/2 parameters of a track whose **Status** (Seq 3–1(2)c) is set to BTH, EXT, or EX2.

On (checked): Reception of MIDI data is enabled. Tracks whose **Status** (Seq 3–1(2)c) is INT or BTH will receive these types of MIDI messages on their respective channels. The type of effects that are checked will be applied to the program of each track when the M3's controllers are operated or when MIDI data is received. (The effect dynamic modulation function is not affected by these settings.)

Settings that regulate MIDI transmission / reception of the M3 itself are made in MIDI Filter (Global 1–2b).

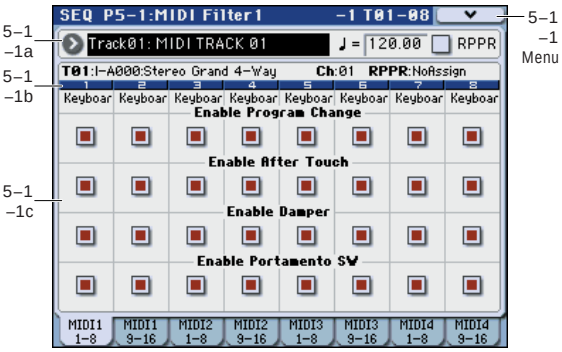
If the user-assignable controllers that can be filtered in the MIDI Filter 1–4 and 2–5 pages are set to MIDI control changes, filtering will be performed for these control changes. In this case, any control change filtering that is being performed in the MIDI Filter 1–1 to 1–3 pages will be given priority. Furthermore, if the same control change is assigned to multiple controllers for which there are filter settings in the MIDI Filter 1–4 and 2–5 pages, checking any one of these will enable that control change.

Off (unchecked): Reception of MIDI data is disabled.

Note: MIDI CC# = MIDI control change message numbers.

SEQ P5–1: MIDI Filter 1

5–1–1: –1 T01–08, 5–1–2: –1 T09–16



5–1–1(2)a: Track Select, Tempo, RPPR
5–1–1(2)b: Track Info

For more information, please see "2–1: Trim T01–08, 2–2: Trim T09–16" on page 224.

5–1–1(2)c: MIDI Filter 1

Track 01 (Track Number):

Enable Program Change **[Off, On]**

Specifies whether or not MIDI program change messages will be received.

Enable After Touch **[Off, On]**

Specifies whether or not MIDI after touch messages will be received.

Enable Damper **[Off, On]**

Specifies whether or not MIDI CC#64 hold (damper pedal) messages will be received.

Enable Portamento SW **[Off, On]**

Specifies whether or not MIDI CC#65 portamento on / off messages will be received.

Track 02...08, 09...16 (Track Number):

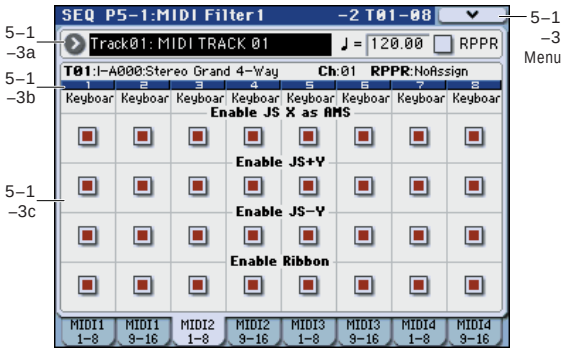
These are the MIDI Filter 1 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see "Track 01 (Track Number):," above.

▼5–1–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see "Sequencer: Menu Command" on page 271.

5–1–3: –2 T01–08, 5–1–4: –2 T09–16



5–1–3(4)a: Track Select, Tempo, RPPR
5–1–3(4)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

5–1–3(4)c: MIDI Filter 2

Track 01 (Track Number):

Enable JS X as AMS **[Off, On]**

Specifies whether or not MIDI pitch bend messages (the X axis of the joystick) will be received to control the AMS effect assigned to JS X. (This is not a filter for MIDI pitch bend message reception.) For more information, please see “Alternate Modulation Sources (AMS)” on page 587.

Enable JS+Y **[Off, On]**

Specifies whether or not MIDI CC#1 (the +Y axis of the joystick, or a Modulation Slider Assign setting) will be received.

Enable JS–Y **[Off, On]**

Specifies whether or not MIDI CC#2 (the –Y axis of the joystick, or a Modulation Slider Assign setting) will be received.

Enable Ribbon **[Off, On]**

Specifies whether or not MIDI CC#16 (the ribbon controller, or specified as the assignment of a realtime modulation Slider) will be transmitted or received.

Track 02...08, 09...16 (Track Number):

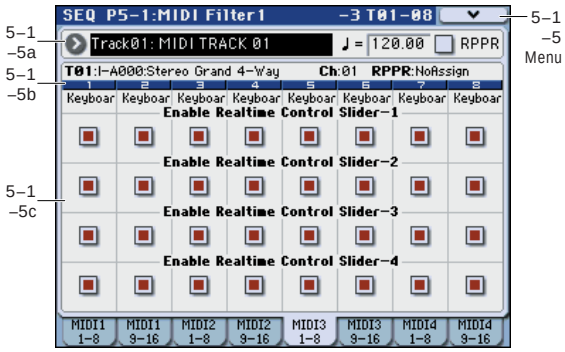
These are the MIDI Filter 2 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼5–1–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

5–1–5: –3 T01–08, 5–1–6: –3 T09–16



Here you can enable transmission for the REALTIME CONTROLS 1–4 sliders. The MIDI control messages of 1–4 sliders are fixed.

5–1–5(6)a: Track Select, Tempo, RPPR
5–1–5(6)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

5–1–5(6)c: MIDI Filter 3

Track 01 (Track Number):

Enable Realtime Control Slider-1 **[Off, On]**

Specifies whether Slider 1 MIDI CC#74 (the M3’s filter cutoff frequency) will be received.

Enable Realtime Control Slider-2 **[Off, On]**

Specifies whether or not Slider 2 MIDI CC#71 (the M3’s filter resonance) will be received.

Enable Realtime Control Slider-3 **[Off, On]**

Specifies whether or not Slider 3 MIDI CC#79 (the M3’s filter EG intensity) will be received.

Enable Realtime Control Slider-4 **[Off, On]**

Specifies whether or not Slider 4 MIDI CC#72 (the M3’s filter / amp EG release time) will be received.

Track 02...08, 09...16 (Track Number):

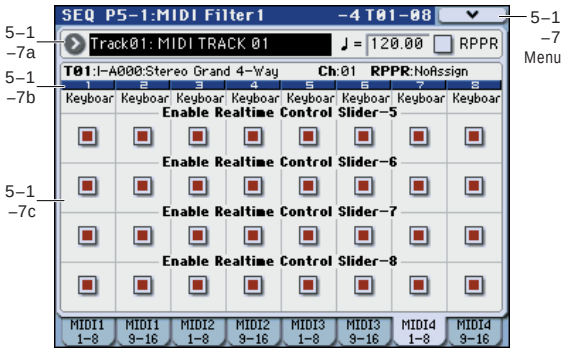
These are the MIDI Filter 3 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼5–1–5(6): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

5–1–7: –4 T01–08, 5–1–8: –4 T09–16



Here you can specify whether the effects of sliders 5–8 will be received when the CONTROL ASSIGN REALTIME CONTROL switch is selected. The function of sliders 5–8 can be assigned in the P1: DT / XY / Ctrls– Controllers Setup page.

5–1–7(8)a: Track Select, Tempo, RPPR
5–1–7(8)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

5–1–7(8)c: MIDI Filter4

Track 01 (Track Number):

Enable Realtime Control Slider-5 **[Off, On]**
Enable Realtime Control Slider-6 **[Off, On]**
Enable Realtime Control Slider-7 **[Off, On]**
Enable Realtime Control Slider-8 **[Off, On]**

These specify whether or not MIDI message will be received for sliders 5–8.

Track 02...08, 09...16 (Track Number):

These are the MIDI Filter 4 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

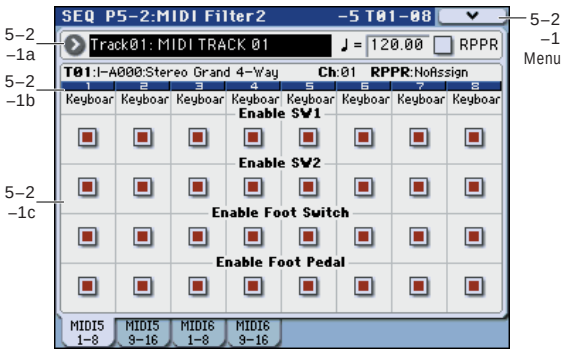
▼5–1–7(8): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P5–2: MIDI Filter 2

5–2–1: –5 T01–08, 5–2–2: –5 T09–16



5–2–1(2)a: Track Select, Tempo, RPPR
5–2–1(2)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

5–2–1(2)c: MIDI Filter

Track 01 (Track Number):

Enable SW1 **[Off, On]**

Enable SW2 **[Off, On]**

Specifies whether or not the effect of the SW1 and SW2 switches will be received.

SW1 and SW2 are controlled by the KYBD-61/73/88’s SW1 and SW2 switches.

The function of these switches is specified in the P1: DT/XY/Ctrls– Controllers Setup page.

These settings are valid if these keys are assigned to SW1 Mod. (CC#80), SW2 Mod. (CC#81), or Portamento SW (CC#65).

Enable Foot Switch **[Off, On]**

Specifies whether or not the effect of the ASSIGNABLE SWITCH will be received. The function is assigned in Global P2: Controllers– Foot Controllers page.
This filter setting is valid when a MIDI control change is assigned.

Enable Foot Pedal **[Off, On]**

Specifies whether or not the effect of the ASSIGNABLE PEDAL will be received. The function is assigned in Global P2: Controllers– Foot Controllers page.
This filter setting is valid when a MIDI control change is assigned.

Track 02...08, 09...16 (Track Number):

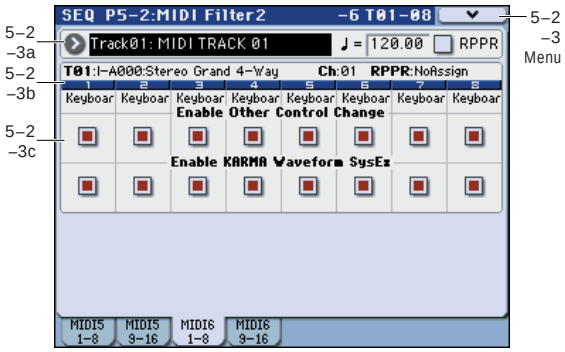
These are the MIDI Filter 5 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

▼5–2–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

5–2–3: –6 T01–08, 5–2–4: –6 T09–16



5–2–3(4)a: Track Select, Tempo, RPPR
5–2–3(4)b: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

5–2–3(4)c: MIDI Filter3

Track 01 (Track Number):

Enable Other Control Change Messages [Off, On]

Specifies whether or not MIDI control messages not covered in the preceding items MIDI Filter will be received.

Enable KARMA Waveform SysEx [Off, On]

This allows you to enable or disable the System Exclusive messages used by KARMA Wave Sequencing.

Track 02...08, 09...16 (Track Number):

These are the MIDI Filter 6 settings for MIDI tracks 2–8 and 9–16. They are the same as for track 1. For more information, please see “Track 01 (Track Number):,” above.

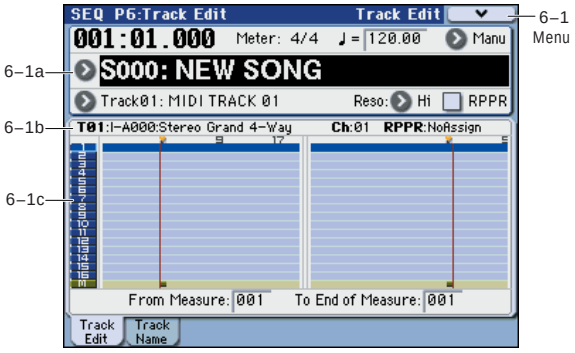
▼5–2–3(4): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Song** ☞p.271
- 4: **Delete Song** ☞p.271
- 5: **Copy From Song** ☞p.271
- 6: **Load Template Song** ☞p.271
- 7: **Save Template Song (Save as User Template Song)** ☞p.272
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **GM Initialize** ☞p.273
- 11: **Copy From Combi (Copy from Combination)** ☞p.273
- 12: **Copy from Program** ☞p.273

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P6: Track Edit

6–1: Track Edit



Here you can edit MIDI tracks 1–16, and the master track.

When editing a MIDI track, you can move, insert, and delete individual note events or control change data, or copy, move, insert, and delete measures or tracks. You can also perform Step Recording in this page.

When editing the master track, you can edit the tempo and the time signature.

Note: To perform track editing (or step editing), use **Track Select** to select the track you want to edit, and use **From Measure** and **To End of Measure** parameters to specify the region that you want to edit. Then choose a command from the menu, and execute the edit. For details on the specific commands, please see “Sequencer: Menu Command” on page 271.

6–1a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

6–1b: Track Info

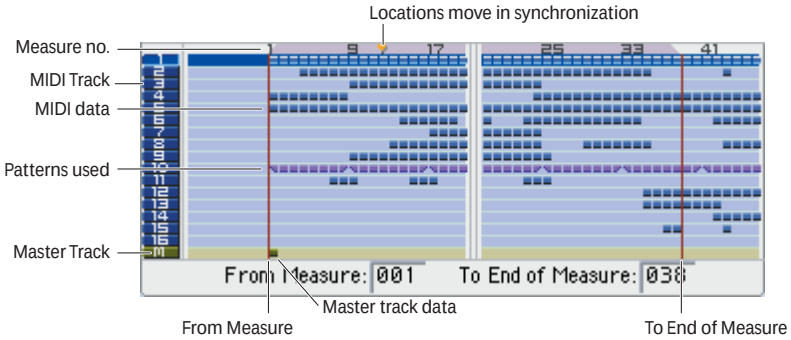
For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

6–1c: Track data Map, From Measure, To End of Measure

Track data Map

This area shows the presence or absence of performance data, and indicates the edit range, etc. The currently selected Track will be highlighted.



From Measure **[001…999]**

To End of Measure **[001…999]**

Specifies the range of measures that you wish to edit (or copy from) or step-record.

Use **From Measure** to specify the starting measure, and **To End of Measure** to specify the ending measure.

▼6–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Step Recording** ☞p.279
- 4: **Event Edit** ☞p.280
- 5: **Set Song Length** ☞p.281
- 6: **Erase Track** ☞p.281
- 7: **Copy Track** ☞p.281
- 8: **Bounce Track** ☞p.281
- 9: **Erase Measure** ☞p.282
- 10: **Delete Measure** ☞p.282
- 11: **Insert Measure** ☞p.283
- 12: **Copy Track** ☞p.281
- 13: **Copy Measure** ☞p.284
- 14: **Move Measure** ☞p.284
- 15: **Create Control Data** ☞p.284
- 16: **Erase Control Data** ☞p.285
- 17: **Quantize** ☞p.285
- 18: **Shift/Erase Note** ☞p.286
- 19: **Modify Velocity** ☞p.287
- 20: **FF/REW Speed** ☞p.272
- 21: **Set Location (Set Location for Locate Key)** ☞p.272

For more information, please see “Sequencer: Menu Command” on page 271.

6–2: Track Name

Here you can assign a name to each track.

6–2a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR

6–2b: Track Info

For more information, please see “0–1–1(2)a: Location, Meter, Tempo, Tempo Mode, Song Select, Track Select, Reso, RPPR” on page 195.

6–2c: Track Names

T01...T16 **[Track name]**

Here you can rename the MIDI tracks.

Press the text edit button to open the dialog box, and input the desired characters. You can enter up to 24 characters. For more information, please see “Editing names” on page 197 of the Operation Guide.

▼6–2: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Step Recording** ☞p.279
- 4: **Event Edit** ☞p.280
- 5: **Set Song Length** ☞p.281
- 6: **Erase Track** ☞p.281
- 7: **Copy Track** ☞p.281
- 8: **Bounce Track** ☞p.281
- 9: **Erase Measure** ☞p.282
- 10: **Delete Measure** ☞p.282
- 11: **Insert Measure** ☞p.283
- 12: **Copy Track** ☞p.281
- 13: **Copy Measure** ☞p.284
- 14: **Move Measure** ☞p.284
- 15: **Create Control Data** ☞p.284
- 16: **Erase Control Data** ☞p.285
- 17: **Quantize** ☞p.285
- 18: **Shift/Erase Note** ☞p.286
- 19: **Modify Velocity** ☞p.287
- 20: **FF/REW Speed** ☞p.272
- 21: **Set Location (Set Location for Locate Key)** ☞p.272

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P7: KARMA

Here you can make settings for the KARMA functions used in Sequencer mode. A Sequencer mode song can use four KARMA Modules (Modules A, B, C, and D).

In Sequencer mode, you can use the KARMA function on song tracks or for pattern real-time recording. The note-on / off and MIDI control data generated by the KARMA Modules can be recorded as events on a track or pattern. If you've selected CONTROL ASSIGN KARMA at this time, you can also use sliders 1–8 and switches 1–8 to control the phrases and patterns in realtime as you record.

When playing back a song or pattern, you can use the KARMA function in real-time on your KYBD-61 / 73 / 88's keyboard playing, or in conjunction with real-time performance using the RPPR function

The data from the internal sequencer is not input to the KARMA Modules. Note data from the internal sequencer cannot be used as triggers to cause the KARMA function to generate phrases.

The state of the KARMA ON / OFF switch, the LATCH switch, SCENE 1 / 5–4 / 8, and the sliders 1–8 and switches 1–8 when CONTROL ASSIGN KARMA is selected can be saved independently for each song.

By using the menu command **Copy KARMA Module**, you can easily copy the KARMA Module settings of a program or combination. Use this when you wish to use Sequencer mode to record the KARMA phrase or pattern of Program mode.

By using the menu command **Copy From Combi**, you can copy the entire settings of a combination, and real-time record a performance that uses the KARMA function (Multi REC).

By using the Auto Song Setup function you can automatically transfer the settings of a program or combination into a song, and then begin recording immediately simply by pressing the START / STOP switch. If you come up with an inspired phrase or song idea while using the KARMA function in Program or Combination mode, you can immediately convert your inspiration into a song. The Auto Song Setup function seamlessly takes you from playing a program or combination into creating a song. For more information, please see "Tip: Auto Song Setup" on page 192.

The tempo of the song and the KARMA function cannot be set independently.

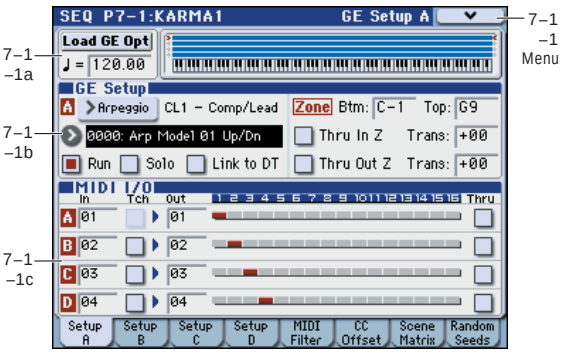
If **MIDI Clock** (Global 1–1b) is set to Internal, you can use the start timing of the internal sequencer to synchronize the KARMA Module.

- If you press the START / STOP switch while the KARMA function is operating, the KARMA function will synchronize to the timing of the sequencer.
- If you then press the START / STOP switch again, the KARMA function will stop playing, as will the sequencer. If you wish to stop only the KARMA function, press the KARMA ON / OFF switch.

If **MIDI Clock** (Global 1–1b) is set to External MIDI, External USB, or Auto, the M3 can be controlled in the same way by MIDI realtime clock commands from a connected external MIDI device. For more information, please see "Synchronizing the KARMA function" on page 182 of the Operation Guide.

SEQ P7–1: KARMA 1

7–1–1: GE Setup A



Here you can select the GE that will be used by each KARMA Module, and specify the Key Zone and MIDI Setup for the four KARMA Modules used by the Sequencer mode song.

In the GE Setup A page you can make settings for KARMA module A. The MIDI input / output channels are specified for each module.

7–1–1a: Load GE Options, Tempo

Load GE Options

These options let you specify whether the values and assignments for the KARMA Sliders 1–8 and Switches 1–8 will be set automatically, be initialized, or be preserved when you select a GE.

For more information, please see "Load GE Options" on page 4.

♩(Tempo) **[040.00…300.00, EXT]**

For more information, please see "♩(Tempo)" on page 195.

7–1–1b: GE Setup

A (Module A):

GE Category

This indicates the category of the GE used by the KARMA module.

GE Category Select **[Arpeggio…Real-Time]**

This lets you select a GE by category, from **Arpeggio** through **Real-Time**.

GE Select [0000: Arp Model 01 Up/Dn…2092: Tempo Env Repeats]

This selects the Module's GE, from among the 2093 presets.

For more information, please see "GE Select" on page 5.

RTC Model [Off, On]

This shows the GE's RTC Model, as specified internally for each preset GE.

For more information, please see "RTC Model" on page 5.

Run [Off, On]

For more information, please see "Run" on page 125.

Solo [Off, On]

For more information, please see "Solo" on page 125.

Link to DT (Link to Drum Track) [Off, On]

For more information, please see "Link to DT (Link to Drum Track)" on page 126.

Zone:

Specify the range of note data (the key zone) that will control each KARMA Module.

Note: In Sequencer mode, MIDI data for the KARMA module is transmitted and received on the **In (Input Channel)** and **Out (Output Channel)** (Seq 7–1–1c) of each module.

For more information, please see "Zone:" on page 77.

Btm (Key Zone Bottom) [C–1…G9]
Top (Key Zone Top) [C–1…G9]
Thru In Z (Thru In Zone) [Off, On]
Trans (Transpose In Zone) [–36…+36]
Thru Out Z (Thru Out Zone) [Off, On]
Trans (Transpose Out Zone) [–36…+36]

Module Zone Display:

The key zone settings of each of the four KARMA Modules are displayed as a solid blue line.

Notes and messages from the MIDI IN connector within this zone will be input to the KARMA Module.

7–1–1c: MIDI I/O

Specifies the MIDI input / output channels for the four KARMA Modules used by a Sequencer mode song.

Note: These settings make it possible to use multiple KARMA Modules, and simultaneously play multiple tracks of different MIDI channels. If you wish to real-time record such a performance, use multi-track recording setup (Seq 0–1–8b: Multi REC).

A, B, C, D (Module A, B, C, D):

In (Input Channel) [01…16, Tch]

Specifies the MIDI input channel for each KARMA Module.

MIDI data from the keyboard or from MIDI IN that matches the specified MIDI channel will be input to the KARMA Module. (**See the diagram below, "KARMA-MIDI Input/ Output Channel."**)

Tch: Automatically match the MIDI channel (Seq 3–1(2)c) of the track selected by **Track Select** (Seq 0–1–1(2)a).

Tch (Tch Also) [Off, On]

This specifies whether the MIDI channel of the MIDI track selected in **Track Select** will be used for MIDI input in addition to the MIDI channel specified by **In (Input Channel)**.

Off (unchecked): Only the MIDI channel specified by **In (Input Channel)** will be used as the MIDI input channel for the KARMA Module.

On (checked): The MIDI channel specified by **In (Input Channel)** and the MIDI channel of the MIDI track selected by **Track Select** will be used as the MIDI input channels for the KARMA Module.

If you check **Tch Also**, you will also be able to control the KARMA function from the keyboard (transmitted on the MIDI channel of the MIDI track selected by **Track Select**).

Note: If you've selected Master Track for **Track Select**, the MIDI channel of the MIDI track shown in **Selected Track Info:** will be used.

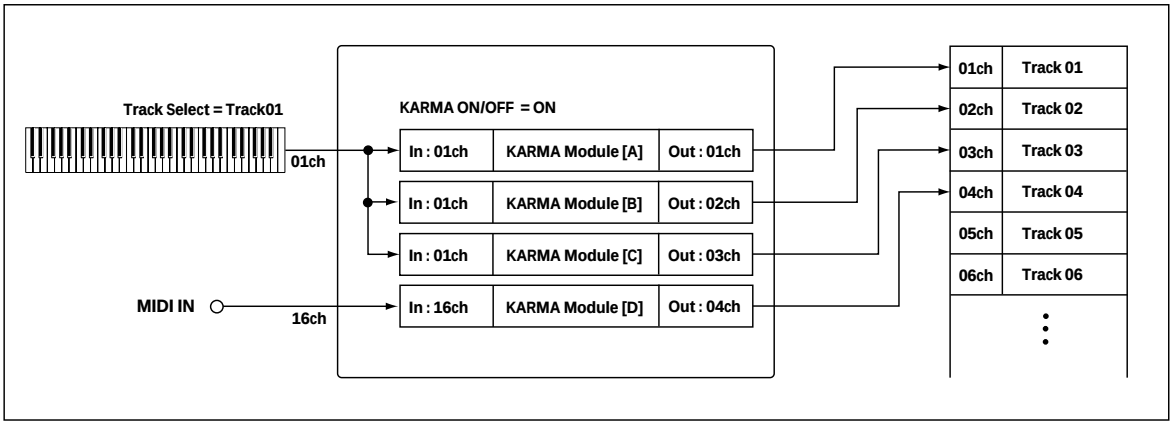
Not available if the Module's **In (Input Channel)** is Tch or the same MIDI channel as the MIDI track selected for **Track Select**.

Out (Output Channel) [01…16, Tch]

Specifies the MIDI output channel for each KARMA Module.

The MIDI data from each KARMA Module will be transmitted on the MIDI output channel specified for that KARMA Module, and will be sounded by tracks with matching channels. For real-time recording, data will be

KARMA - MIDI Input / Output Channel



recorded on tracks with matching channels. (**See the diagram below, "KARMA-MIDI Input/Output Channel."**)

Tch: Automatically match the MIDI channel (Seq 3–1(2)c) of the track selected by **Track Select** (Seq 0–1–1(2)c).

Example 1

With the following settings, switching **Track Select** (the track you play) to change programs will also switch to a different KARMA Module at the same time, causing a different phrase to play. **(See the diagram "Example 1," below.)**

1. Set MIDI Track 1 as follows.

Program Select: a Guitar category program

MIDI Channel: 01

2. Set MIDI Track 2 as follows.

Program Select: a Bass category program

MIDI Channel: 02

3. Set KARMA Module [A] as follows.

GE Select: a riff of GE category Guitar

Input Channel: 01

Output Channel: 01

4. Set KARMA Module [B] as follows.

GE Select: a riff of GE category Bass

Input Channel: 02

Output Channel: 02

5. In Track Select, select T01: Track 01, and play the keyboard. (KARMA function on)

The Guitar riff of KARMA Module [A] will be sounded by the Guitar type program.

6. In Track Select, select T02: Track 02, and play the keyboard. (KARMA function on)

The Bass riff of KARMA Module [B] will be sounded by the Bass type program.

Example 2

With the following settings, switching **Track Select** (the track you play) to change programs will not switch to a different KARMA Module – the same phrase will still be played. **(See the diagram "Example 2," below.)**

1. Set MIDI Track 1 as follows.

Program Select: a Guitar category program

MIDI Channel: 01

2. Set MIDI Track 2 as follows.

Program Select: a Bass category program

MIDI Channel: 02

3. Set KARMA Module [A] as follows.

GE Select: a riff of GE category Guitar

Input Channel: Tch

Output Channel: Tch

4. In Track Select, select T01: Track 01, and play the keyboard.

The Guitar riff of KARMA Module [A] will be sounded by the Guitar type program.

5. In Track Select, select T02: Track 02, and play the keyboard.

The Guitar riff of KARMA Module [A] will be sounded by the Bass type program.

Example 3

With the following settings, switching **Track Select** (the track you play) to change programs will also switch to a different KARMA Module at the same time, causing a different phrase to play. At this time, the rhythm track can be triggered and controlled from either track. (**See the diagram "Example 3," below**)

1. Set MIDI Track 1 as follows.

Program Select: a Guitar category program

MIDI Channel: 01

2. Set MIDI Track 2 as follows.

Program Select: a Bass category program

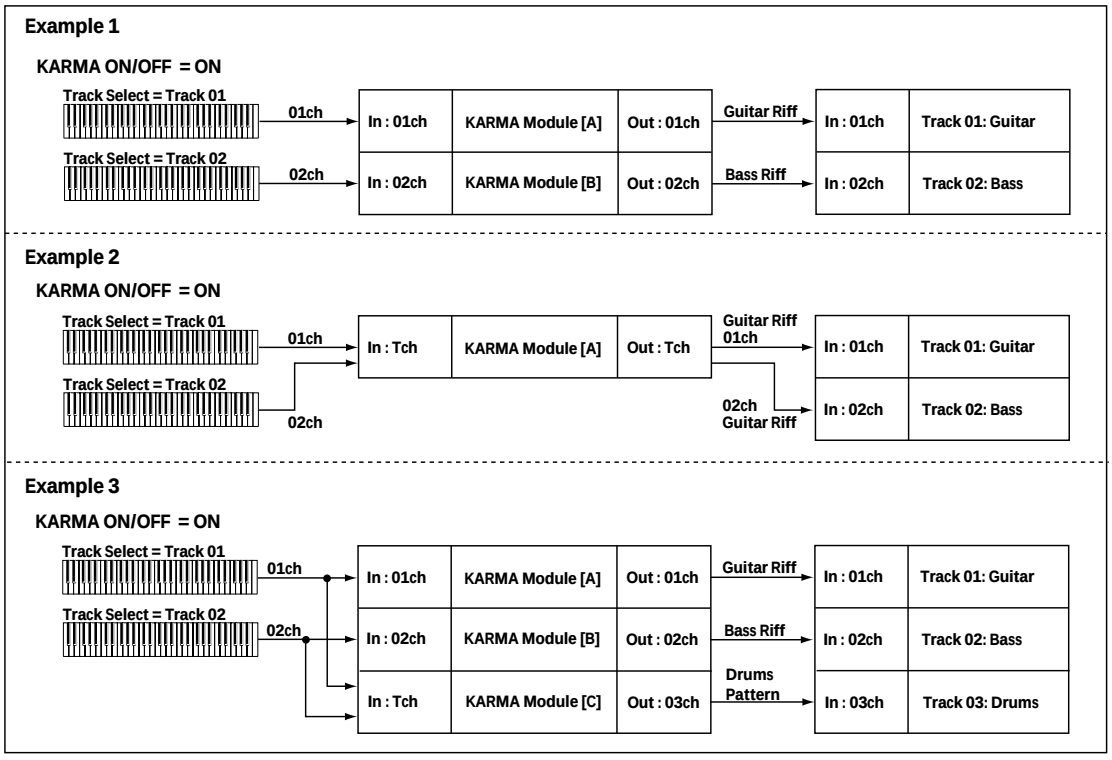
MIDI Channel: 02

3. Set MIDI Track 3 as follows.

Program Select: a drum program (a Drums category program)

MIDI Channel: 03

4. Set KARMA Module [A] as follows.



GE Select: a riff of GE category Guitar

Input Channel: 01

Output Channel: 01

5. Set KARMA Module [B] as follows.

GE Select: a riff of GE category Bass

Input Channel: 02

Output Channel: 02

6. Set KARMA Module [C] as follows.

GE Select: a drum pattern (a pattern of GE category Drums)

Input Channel: Tch

Output Channel: 03

7. In Track Select, select T01: Track 01, and play the keyboard. (KARMA function on)

The Guitar riff of KARMA Module [A] will be sounded by the Guitar type program.

Simultaneously, the drum pattern of KARMA Module [C] will be sounded by the Drums program.

8. In Track Select, select T02: Track 02, and play the keyboard. (KARMA function on)

The Bass riff of KARMA Module [B] will be sounded by the Bass type program.

Simultaneously, the drum pattern of KARMA Module [C] will be sounded by the Drums program.

Track Thru (when KARMA Off) [Off, On]

As an exception, **Track Thru** specifies whether the MIDI data that passes through the KARMA Module will be sent (Thru) to the track when the KARMA ON / OFF switch is off.

Note: **Input Channel** and **Output Channel** settings are normally valid only when the KARMA ON / OFF switch is on.

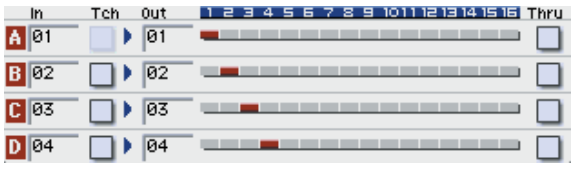
On (checked): MIDI data that passes through the KARMA Module will be sent on the **Output Channel** to the track when the KARMA ON / OFF switch is off.

Off (unchecked): MIDI data that passes through the KARMA Module will not be sent to the track when the KARMA ON / OFF switch is off.

For examples of using this setting, please see “Thru (when KARMA Off)” on page 162.

Module – Track MIDI Display

This shows the MIDI tracks that will be sounded by each KARMA Module, according to the MIDI output channel settings of each KARMA Module and the MIDI channel of each track (Seq 3–1(2)c: **MIDI Channel**).



▼7–1–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.273

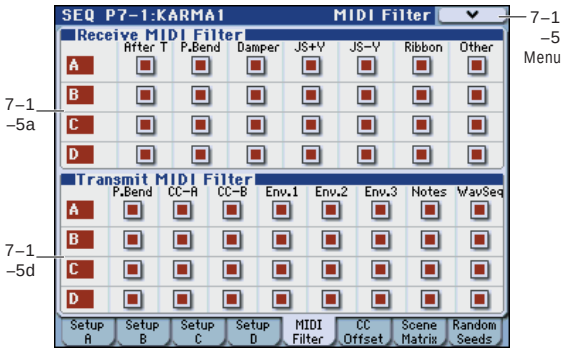
For more information, please see “Sequencer: Menu Command” on page 271.

7–1–2: GE Setup B, 7–1–3: GE Setup C, 7–1–4: GE Setup D

These are the same as “7–1–1: GE Setup A.”

For more information, please see “7–1–1: GE Setup A” on page 243.

7–1–5: MIDI Filter



Here you can make MIDI filter settings for each KARMA module.

7–1–5a: Receive MIDI Filter

These parameters specify whether the MIDI messages received by each KARMA module will be sent unchanged to the sound generator.

On (checked): The corresponding MIDI data will be echoed to the tone generator.

Off (unchecked): The corresponding MIDI data will not be echoed to the tone generator.

For more information, please see “7–1–3a: Receive MIDI Filter” on page 79.

Aft. T (After Touch) **[Off, On]**
P. Bend (Pitch Bend) **[Off, On]**
Damper (CC#64) **[Off, On]**
JS+Y (CC#01) **[Off, On]**
JS-Y (CC#02) **[Off, On]**
Ribbon (CC#16) **[Off, On]**
Other (Other CC) **[Off, On]**

For more information, please see “7–1–3a: Receive MIDI Filter” on page 79.

7–1–5b: Transmit MIDI Filter

For each KARMA Module, specify whether to filter the MIDI control data received by the Module.

On (checked): The corresponding MIDI data will be transmitted from the KARMA Module.

Off (unchecked): The corresponding MIDI data will not be transmitted from the KARMA Module.

For more information, please see “7–1–3a: Receive MIDI Filter” on page 79, and “7–1–5b: Transmit MIDI Filter” on page 164.

P. Bend (Pitch Bend) **[Off, On]**
CC–A, CC–B **[Off, On]**
Env.1–3 (Envelope1–3) **[Off, On]**
Notes (GE Notes) **[Off, On]**
WavSeq (Wave Sequence) **[Off, On]**

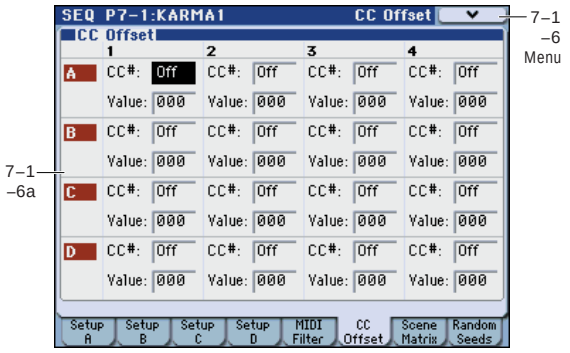
For more information, please see “7–1–3b: Transmit MIDI Filter” on page 79.

▼7–1–5: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

7–1–6: CC Offset



These parameters specify the MIDI control change messages (CC Offset parameters) transmitted when the KARMA function is turned on.

7–1–6a: CC Offset

These settings specify the MIDI control change messages and values that are transmitted from each KARMA Module to the tone generator when you press the KARMA ON / OFF switch to turn on the KARMA function or when you select a song for which the KARMA function is turned on.

These messages will be transmitted on the **Out (Output Channel)** (Seq 7–1–1c) of the KARMA Module.

Note: If the GE also generates the same control change messages as those you specify here, the control change messages generated by the GE will be given priority.

1, 2, 3, 4:

CC# (Number) **[Off, 00...95]**

Value **[000…127]**

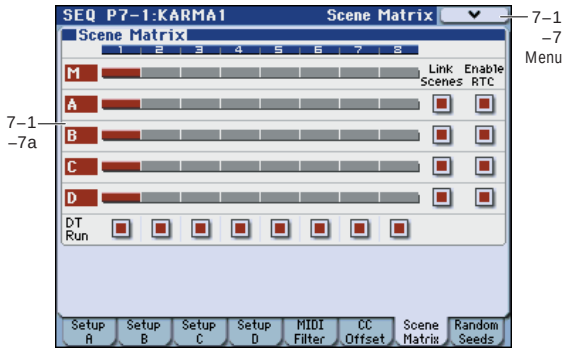
For more information, please see “7–1–4a: CC Offset” on page 80, and “7–1–6a: CC Offset” on page 165.

▼7–1–6: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

7–1–7: Scene Matrix



7–1–7a: Module Control Scene Matrix

Here you can conveniently view and edit the selected Scenes for each of the five Module Control layers at the same time.

There is a row for each Module, with the top row corresponding to the Master setting. Each row has eight buttons corresponding to the eight front panel KARMA Scenes Switches 1 / 5–4 / 8. Therefore, you can select any scene in any layer without changing the MODULE CONTROL switch setting. The grid shows an overview of which Scene is selected in any of the layers at any given time.

M **[1…8]**

A **[1…8]**

B **[1…8]**

C **[1…8]**

D **[1…8]**

Link Scenes (Link Scenes To Master):

A **[Off, On]**

B **[Off, On]**

C **[Off, On]**

D **[Off, On]**

Enable RTC (Enable RTC By Master):

A **[Off, On]**

B **[Off, On]**

C **[Off, On]**

D **[Off, On]**

DT Run (Drum Track Run) 1...8 **[Off, On]**

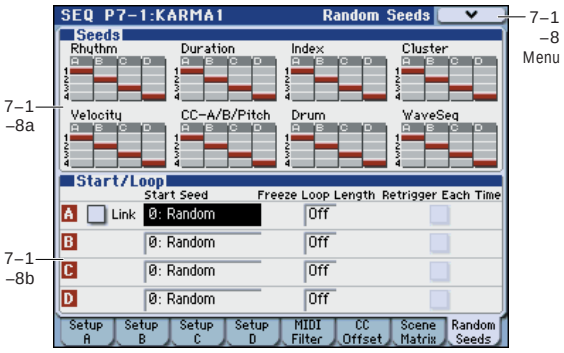
For more information, please see “7–1–7: Scene Matrix” on page 165.

▼7–1–7: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

7–1–8: Random Seeds



The Random Seeds page allows you to control some of the randomizable characteristics of a Module’s GE. Different Modules using the same GE can have various randomizable characteristics “linked” so that they share the same start seeds, generating phrases with the same characteristics.

7–1–8a: Seed

Rhythm, Duration, Index, Cluster, Velocity, CC–A/B, Drum, WaveSeq:

A **[1, 2, 3, 4]**
B **[1, 2, 3, 4]**
C **[1, 2, 3, 4]**
D **[1, 2, 3, 4]**

For more information, please see “7–1–8a: Seed” on page 167.

7–1–8b: Start/Loop

Link (Link to Start Seed) **[Off, On]**
Start Seed
[–2147483648…0: Random…+2147483647]
Freeze Loop Length **[Off, 01…32]**
Retrigger Each Time **[Off, On]**

For more information, please see “7–1–8b: Start/Loop” on page 167.

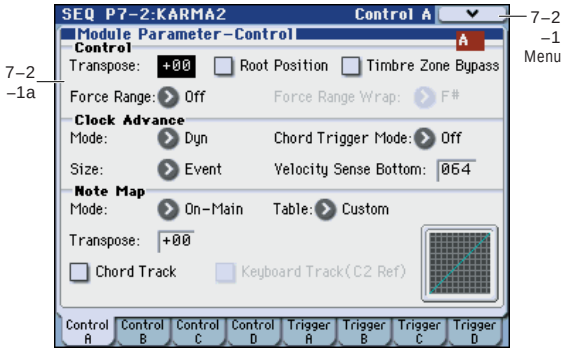
▼7–1–8: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P7–2: KARMA 2

7–2–1: Control A



Here you can set KARMA Module Control parameters. In Combination mode, four KARMA Module A can be used.

For more information, please see “7–2–1: Control A” on page 169.

7–2–1a: Module Parameter-Control

Control:

Transpose **[–36…+36]**
Root Position **[Off, On]**
Force Range
[Off, Lowest, Highest, C3-B3[1], C3-B3[2]]
Force Range Wrap **[C…B]**

For more information, please see “Control:” on page 84.

Timber Zone Bypass **[Off, On]**

For more information, please see “Timbre Zone Bypass” on page 169.

Clock Advance:

Mode **[Auto, Dyn, Auto+Dyn1, Auto+Dyn2]**
Chord Trigger Mode
[Off, 1st, Chord1, Chord2, Chord3]
Size **[𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥, 𝅘𝅥, Event]**
Velocity Sense Bottom **[001…127]**

For more information, please see “Clock Advance:” on page 85.

Note Map:

Mode (Note Map Mode)
[Off, On-Main, On-Repeat, On-All]
Table (Note Map Table)
[Custom, Gtable 1…Gtable 64]
Transpose (Note Map Transpose) **[–12…+12]**
Chord Track (Note Map Chord Track) **[Off, On]**
Keyboard Track (C2 Ref)
(Note Map Keyboard Track) **[Off, On]**
Note Map Display

For more information, please see “Note Map:” on page 86.

▼7–2–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

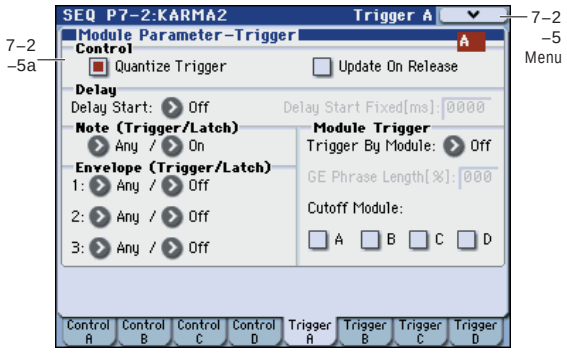
For more information, please see “Sequencer: Menu Command” on page 271.

7–2–2: Control B, 7–2–3: Control C, 7–2–4: Control D

In these pages you can set the parameters (controls) for KARMA modules B, C, and D.

For more information, please see “7–2–1: Control A,” above.

7–2–5: Trigger A



Specifies the trigger conditions and latch on / off for the GE that is selected for KARMA Module A.

7–2–5a: Module Parameter-Trigger

Control:

Quantize Trigger **[Off, On]**
Update On Release **[Off, On]**

For more information, please see “Control:” on page 84.

Delay:

Delay Start **[Off, Fixed, 64T …4x1]**
Delay Start Fixed **[0000ms…5000ms]**

For more information, please see “Delay:” on page 88.

Note (Trigger/Latch):

Note Trigger **[Any, AKR, 1st, Dyn]**
Note Latch **[Off, On]**

Note: In Sequencer mode, this can be turned on / off for each KARMA Module. A KARMA Module for which this is On (checked) will be in a Latch On condition when the LATCH switch is on (LED lit).

For more information, please see “Note (Trigger / Latch):” on page 88.

Envelope (Trigger/Latch):

Envelope1, Envelope2, Envelope3:

Envelope Trigger **[Any, AKR, 1st, Dyn]**
Envelope Latch **[Off, Sus1, Rel1, Sus2, Rel2]**

For more information, please see “Envelope (Trigger / Latch):” on page 89.

Module Trigger:

Trigger By Module **[Off, A, B, C, D]**
GE Phrase Length **[000…100%]**
Cutoff Module A, B, C, D **[Off, On]**

For more information, please see “Module Trigger:” on page 170.

▼7–2–5: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

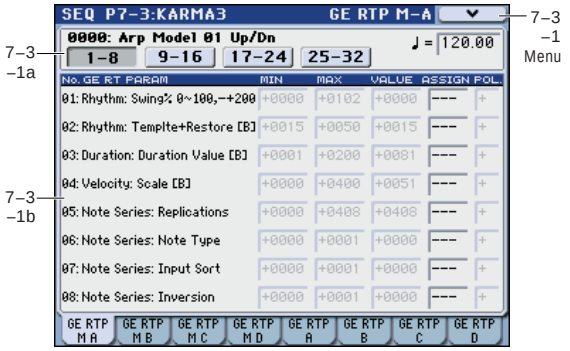
7–2–6: Trigger B, 7–2–7: Trigger C, 7–2–8: Trigger D

In these pages you can set the trigger parameters for KARMA modules B, C, and D.

For more information, please see “7–2–5: Trigger A,” above.

SEQ P7–3: KARMA 3

7–3–1: GE RTP M–A (GE Real-Time Parameters Master A)



Here you can edit the Real-Time Parameters of the GE for each KARMA Module A. In addition, you can assign GE Real-Time Parameters to the KARMA Real-Time Controls so that you can control the phrase or pattern in real-time while you play.

7–3–1a: GE Number & Name, GE RTC Select, Tempo

GE Number & Name

GE RTC Select [1–8, 9–16, 17–24, 25–32]

For more information, please see “7–3–1a: GE Number & Name, GE RTC Select, Tempo” on page 171.

♩(Tempo) [040.00...300.00, EXT]

For more information, please see “♩(Tempo)” on page 195.

7–3–1b: GE Real-Time Parameters for Module Control = Master

GE RT Parm 1–8, 9–16,17–24, 25–32:

GE RT PARAM(GE Real-time Parameter)

MIN (GE Real-time Parameter Minimum Value) [–5000…+5000]

MAX (GE Real-time Parameter Maximum Value) [–5000…+5000]

VALUE (GE Real-time Parameter Value) [–5000…+5000]

ASSIGN (GE Real-time Parameter Assign) [---, SL1…8, SL1s…8s, SW1…8, Dyn1…8]

POL (GE Real-time Parameter Polarity) [+, –]

For more information, please see “GE RT Parm 1–8, 9–16, 17–24, 25–32:” on page 171.

Note: Normally, the **MIN**, **MAX**, **VALUE**, and **POL** parameters of each module are specified in module A, B, C, and D. These parameter settings are possible if you specify **ASSIGN** in Master A, B, C, and D.

For example, if you want to use Slider1 to control the GE REALTIME PARAMETER No.1 of Modules A, B, C, and D when Module Control is set to Master, you would set the Master, A, B, C, and D’s GE REALTIME PARAMETER No.01 **ASSIGN** to Slider1. If these are set to **ASSIGN**, you are able to edit the **MIN**, **MAX**, **VALUE**, and **POL** parameters for Master, A, B, C, and D.

In this way, you can make GE realtime parameter settings independently of Modules A, B, C, and D.

▼7–3–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

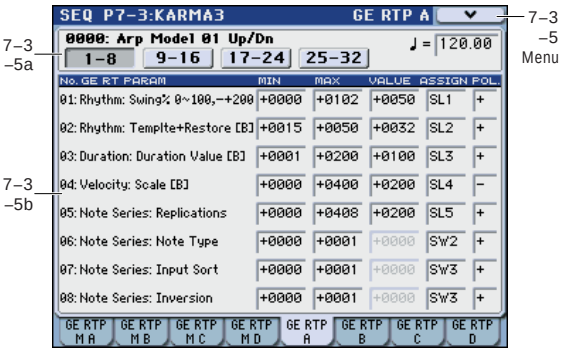
For more information, please see “Sequencer: Menu Command” on page 271.

7–3–2: GE RTP M–B, 7–3–3: GE RTP M–C, 7–3–4: GE RTP M–D (GE Real-Time Parameters Master B, C, D)

Here you can edit the parameters of the GE selected by Module Control=Master for KARMA modules B, C, and D.

For more information, please see “7–3–1: GE RTP M–A (GE Real-Time Parameters Master A),” above.

7–3–5: GE RTP A (GE Real-Time Parameters A)



In KARMA Module A, you can control the GE realtime parameters independently specified for the KARMA module.

7–3–5a: GE No. & Name, GE RTC Select, Tempo

GE Number & Name

GE RTC Select [1–8, 9–16, 17–24, 25–32]

♩ (Tempo) [040.00...300.00, EXT]

For more information, please see “7–2–1a: GE Number & Name, GE RTC Select, Tempo” on page 90.

7–3–5b: GE Real-Time Parameters for Module Control = A, B, C, D

GE RTParm 01…32:

GE PARAM (GE Real-time Parameter)

MIN (GE Real-time Parameter Minimum Value) [–5000…+5000]

MAX (GE Real-time Parameter Maximum Value) [–5000…+5000]

VALUE (GE Real-time Parameter Value) [–5000…+5000]

ASSIGN (GE Real-time Parameter Assign) [---, SL1…8, SL1s…8s, SW1…8, Dyn1…8]

POL (GE Real-time Parameter Polarity) [+, –]

For more information, please see “7–2–1b: GE Real-Time Parameters” on page 90 and “7–3–1b: GE Real-Time Parameters for Module Control = Master” on page 252.

▼7–3–5: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

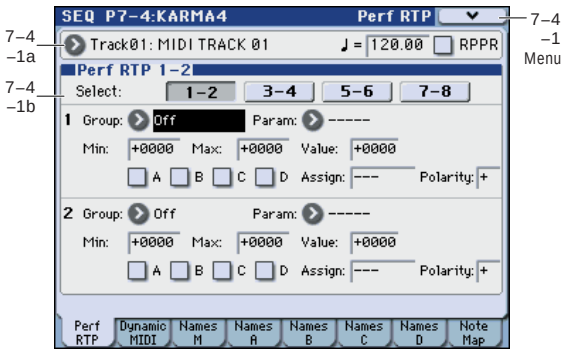
7–3–6: GE RTP B, 7–3–7: GE RTP C, 7–3–8: GE RTP D (GE Real-Time Parameters B, C, D)

In each KARMA modules B, C, and D, you can control the GE realtime parameters independently specified for the KARMA module.

For more information, please see “7–3–5: GE RTP A (GE Real-Time Parameters A),” above.

SEQ P7–4: KARMA 4

7–4–1: Perf RTP (Perf Real-Time Parameters)



Here you can assign controllers to KARMA Performance Real-Time Parameters (Perf. RTP) outside of the GE Real-Time Parameters that control the internal settings of the GE.

By assigning these to KARMA Sliders 1–8 and KARMA Switches 1–8 etc., you can control them in real-time while you play.

Parameters selected in **Group** and **Param** (Global 7–4–1b) and for which **A**/**B**/**C**/**D** is turned on cannot be edited in pages such as the KARMA key zone parameter or KARMA module parameter pages.

7–4–1a: Track Select, Tempo, RPPR

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

7–4–1b: Perf Real-Time Parameters

Select (Perf RTP Select) [1–2, 3–4, 5–6, 7–8]

Perf Real-Time Parameters

Group [Off, PE, Mix, Control, Trigger, Key Zones, Random Seeds]

Param (Parameter) [---, Time Signature... Retrigger Each Time]

Min (Min Value) [–8192…+8191]

Max (Max Value) [–8192…+8191]

Value [–8192…+8191]

A/B/C/D [Off, On]

Assign [---, SL1…8, SL1s…8s, SW1…8, Dyn1…8]

Polarity [+, –]

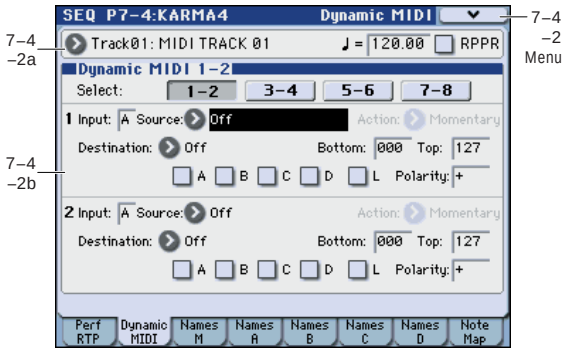
For more information, please see “7–4–1b: Perf Real-Time Parameters” on page 173.

▼7–4–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

7–4–2: Dynamic MIDI



Dynamic MIDI is a function that lets you use this instrument's controllers and MIDI control messages to control specific KARMA functions.

For more information, please see "7–2–3b: Dynamic MIDI" on page 95 and page 174.

7–4–2a: Track Select, Tempo, RPPR

For more information, please see "2–1: Trim T01–08, 2–2: Trim T09–16" on page 224.

7–4–2b: Dynamic MIDI

Select (Perf RTP Select) [1–2, 3–4, 5–6, 7–8]

Input (Dynamic MIDI Input Module) [A…D]

Source (Dynamic MIDI Source)
[Off, JS+Y (CC#01)…Velocity Outside Zone]

Bottom (Dynamic MIDI Range Bottom)
[000…127]

Top (Dynamic MIDI Range Top) [000…127]

Action (Dynamic MIDI Range Action)
[Momentary, Toggle, Continuous]

Destination (Dynamic MIDI Destination)
[Off, RT Params Control…Buffer Latch]

A/B/C/D [Off, On]

L (Last Triggered) [Off, On]

Polarity (Dynamic MIDI Polarity) [+, –, +/–, –/+]

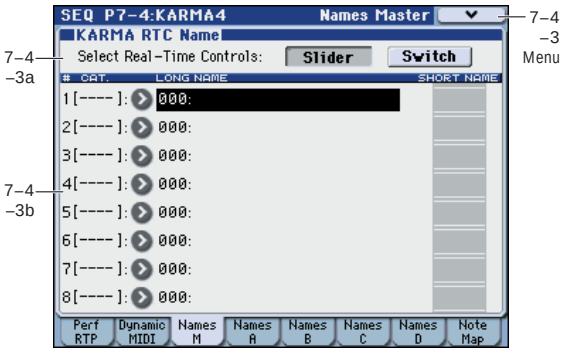
For more information, please see "7–2–3b: Dynamic MIDI" on page 95.

▼7–4–2: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see "Sequencer: Menu Command" on page 271.

7–4–3: Names Master



Here you can select and edit the names of the master KARMA Sliders and Switches.

7–4–3a: KARMA RTC Name

Select Real-Time Controls [Slider, Switch]

For more information, please see "Select Real-Time Controls" on page 175.

7–4–3b: CAT., Names

Slider:

CAT. (Category)

Slider1…Slider8
[000 (no name)...571: Waveform Select [16]]

Switch1…8
[000 (no name)…571: Waveform Select [16]]

For more information, please see "CAT. (Category)" on page 175.

▼7–4–3: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

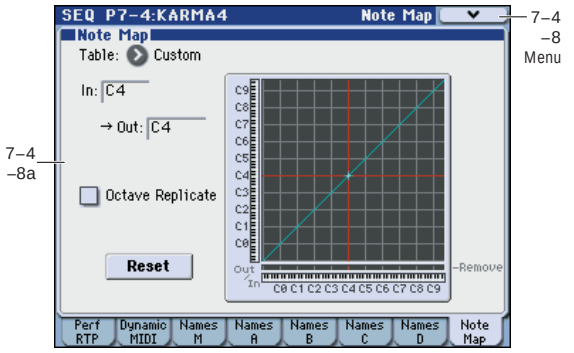
For more information, please see "Sequencer: Menu Command" on page 271.

7–4–4: Name Map A, 7–4–5: Name Map B, 7–4–6: Name Map C, 7–4–7: Name Map D

Here you can select and edit the names of the KARMA Sliders and Switches for modules A, B, C, and D.

For more information, please see “7–4–3: Names Master,” above.

7–4–8: Note Map



Edit the Custom Note Map Table stored with the Sequence.

7–4–8a: Note Map (Custom)

Table **[Custom, Global 1...64]**

In (Note In) **[C–1...G9]**

Out (Note Out) **[Remove, C–1...G9]**

Table Grid

Octave Replicate **[Off, On]**

Reset

For more information, please see “7–2–8a: Note Map” on page 97.

▼7–4–8: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy KARMA Module** ☞p.114
- 4: **Initialize KARMA Module** ☞p.115
- 5: **Copy Scene** ☞p.115
- 6: **Swap Scene** ☞p.115
- 7: **Capture Random Seed** ☞p.116
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272
- 10: **Copy from Program** ☞p.185

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P8: IFX (Insert Effect)

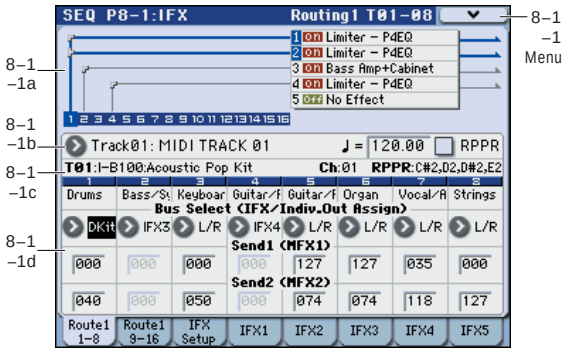
You can also specify the bus routing for the program used by each MIDI track 1–16. For instance, you can:

- Send the output of a track to an insert effect
- Route a sound to an insert effect
- Make detailed settings for insert effects
- Make common LFO settings for effects

For details on Insert Effects, please see “Effect Guide” on page 421.

SEQ P8–1: IFX

8–1–1: Routing1 T01–08, 8–1–2: Routing1 T09–16



Specifies the bus to which the program oscillator(s) used by MIDI tracks 1–8 and 9–16 will be sent. You can also set the send levels to the master effects from this page.

8–1–1(2)a: Routing Map

This area shows the insert effect routing (**Bus Select**), the name of the assigned effect, the on / off status, chaining, and the output bus that follows the insert effect. The type of insert effect, the on / off status, and the chain settings can be edited in the 8–1–3: Insert FX Setup page.

8–1–1(2)b: Track Select, Tempo, RPPR
8–1–1(2)c: Track Info

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

8–1–1(2)d: Routing1

Bus Select (IFX/Indiv. Out Assign) [DKit, L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the output bus for the track’s program oscillator. This parameter can also be edited from the P8–2–1: MIDI Routing 2 page.

L/R: Output to the L / R bus.

IFX1, 2, 3, 4, 5: Output to the IFX1–5 buses.

1, 2, 3, 4: The track will be output in mono from the corresponding AUDIO OUTPUT (INDIVIDUAL) 1, 2, 3, and 4.

1/2, 3/4: The track will be output in stereo according to its pan setting from the corresponding AUDIO OUTPUT (INDIVIDUAL) pairs 1 / 2, or 3 / 4.

Off: The track will not be output from the L / R bus, IFX1–5 buses, or Individual 1–4 buses. Choose the Off setting if you want the program oscillator output of the track to be connected in series to a master effect. Use **Send1 (to MFX1)** and **Send2 (to MFX2)** to specify the send levels.

Tip: You can create a wide variety of routings by using each track’s **Bus Select** and the **Chain to** and **Chain** settings (Seq 8–1–3b) that follow the insert effect.

DKit: You can select this only if the specified program is a drum program (**Oscillator Mode** Drums).

The **Bus Select**, **FX Control Bus**, **Send1**, and **Send2** settings (Global 5–4b) for each key of the selected drum kit will be used. Check this setting if you want to apply an individual insert effect to each drum instrument, or to send individual drum instruments to AUDIO OUTPUT (INDIVIDUAL).

Tip: In most preloaded drumkits, the drum instruments have the same **Bus Select** settings according to their type, as follows.

Snares → IFX1

Kicks → IFX2

Other → IFX3

If you want to edit these routings, use the **DrumKit IFX Patch** menu command. For more information, please see “DrumKit IFX Patch” on page 190.

Send1 (MFX1) [000...127]
Send2 (MFX2) [000...127]

For each track, these parameters set the send level to master effects 1 and 2. These settings are valid when **Bus Select** is set to L / R or Off. When IFX 1–5 are selected, the send levels to master effects 1 and 2 are set by the **Send1** and **Send2** parameters of the IFX page, after the sound has passed through IFX1–5.

If **Bus Select** is set to 1, 2, 3, 4, 1 / 2, or 3 / 4, these settings are ignored.

The Send 1 and 2 setting you specify here are used when playing-back or recording from the beginning of the song. If you modify these settings during recording, your changes will be recorded as performance data; the send amounts will change accordingly during playback. You can also modify these settings during playback. However if Send 1 and 2 data has been recorded, the settings will change according to the recorded data.

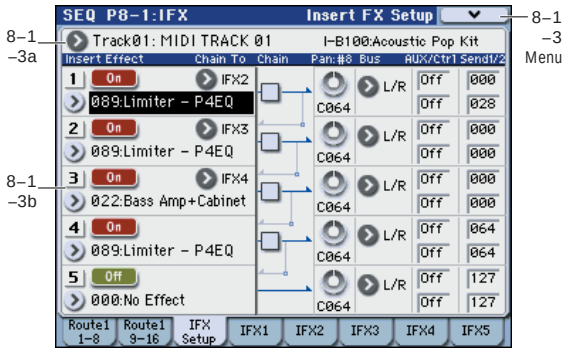
MIDI If **Status** (Seq 3–1(2)c) is either INT or BTH, CC#93 and #91 can be received to control send 1 and 2 respectively and change their settings. When you switch songs or return to the beginning of a song, tracks whose **Status** is EXT, EX2 or BTH will transmit these settings via MIDI. This data will be transmitted on the MIDI channel of each track as set by **MIDI Channel** (Seq 3–1(2)c). The actual send level is determined by multiplying the value of these parameters with the send level settings of the oscillator(s) of the program used by the track (**Send1** and **Send2**, Prog 8–1d).

▼8–1–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Scene** ☞p.115
- 5: **DrumKit IFX Patch** ☞p.190
- 6: **FF/REW Speed** ☞p.272
- 7: **Set Location (Set Location for Locate Key)** ☞p.272
- 8: **Put Effect Setting to Track** ☞p.288

For more information, please see “Sequencer: Menu Command” on page 271.

8–1–3: Insert FX Setup



8–1–3a: Track Select

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

8–1–3b: Insert Effect

Here you can choose the type of each insert effect 1 through 5, its on / off status, chaining, and adjust the post-IFX mixer settings. For insert effects, the direct sound (Dry) is always stereo-in and out. The input / output configuration of the effect sound (Wet) depends on the effect type. For descriptions of the individual effects, please see “Effect Guide,” beginning on page 421.

The following parameters are the same as in Program mode. For more information, please see “8–2: Insert FX Setup” on page 99.

However, unlike in Program mode, insert effect dynamic modulation (Dmod) and the post-IFX **Pan: #8**, **Send 1**, and **Send 2** are controlled on the MIDI channel specified by **Ch** (Seq 8–1–4(5)(6)(7)(8)a). The control changes used are the same as in Program mode.

The pan (CC#8), send 1 and 2 settings you make here will be used when the song is played or recorded from the beginning. If you change the settings while recording a MIDI track, the changes will be recorded as part of the musical data, and the settings will change when the data is played back. You can also change these settings during playback. However if pan (CC#8), send 1, or 2 data has been recorded, the settings will change accordingly.

MIDI If **Status** (Seq 3–1(2)c) is either INT or BTH, CC#8, CC#93, and CC#91 can be received to control the pan following the insert effect, send 1, or send 2 respectively, and change their settings. When you switch songs or return to the beginning of the song, tracks whose **Status** is BTH, EXT, or EX2 will transmit these settings via MIDI. This data will be transmitted on the MIDI channels specified in the IFX 1–5 pages (Seq 8–1–4(5)(6)(7)(8)a).

Insert Effect:

IFX1...4 **[000...170]**
IFX5 **[000...153]**

IFX1...5: IFX On/Off **[Off, On]**

Chain:

IFX1: Chain to **[IFX2...IFX5]**
IFX2: Chain to **[IFX3...IFX5]**
IFX3: Chain to **[IFX4...IFX5]**

IFX1: Chain **[Off, On]**
IFX2: Chain **[Off, On]**
IFX3: Chain **[Off, On]**
IFX4: Chain **[Off, On]**

Pan:#8:

Pan: #8 (Post IFX PanCC#8) **[L000...C064...R127]**

Bus:

Bus (Bus Select) **[Off, L/R, 1...4, 1/2, 3/4]**

AUX/Ctrl:

AUX (AUX Bus) **[Off, 1, 2, 3, 4, 1/2, 3/4]**
Ctrl (FX Control Bus) **[Off, 1, 2]**

Send1/2:

Send1 **[000...127]**
Send2 **[000...127]**

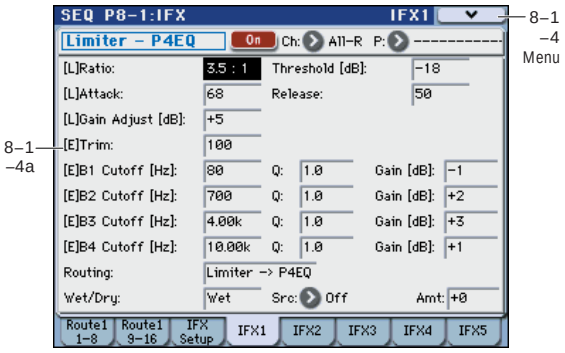
For more information, please see “8–2: Insert FX Setup” on page 99.

▼8–1–3: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Scene** ☞p.115
- 5: **FF/REW Speed** ☞p.272
- 6: **Set Location (Set Location for Locate Key)** ☞p.272
- 7: **Put Effect Setting to Track** ☞p.288

For more information, please see “Sequencer: Menu Command” on page 271.

8–1–4: IFX1



Here you can edit the effect parameters of the insert effect 1 you selected in the P8–1: IFX– Insert FX Setup page.

8–1–4a: Insert Effect 1 (IFX1)

IFX On/Off [Off, On]

Turns the insert effect on / off. This is linked with the On / Off setting in the P8–1: IFX– Insert FX Setup page.

Note: If **Control Assign** is RT Control, you can use switches 1–5 to turn IFX 1–5 On / Off.

Ch (Control Channel) [Ch01...16, All-R]

This specifies the MIDI channel that will control dynamic modulation (Dmod) for the insert effect.

Ch01...Ch16: The insert effect will be controlled on the specified MIDI channel.

All-R: The channel of any track routed through this effect can be used to control the effect. (Channels of each routed track will be indicated by “*”.)

Drum Kits and the MIDI Control Channel

If a Track is using a Drum Kit, and the Track’s **Bus Select (IFX/Indiv. Out Assign)** (Seq 8–1–1(2)d) is **DKit**, this affects the MIDI Control Channel as well. In this case, the Track’s MIDI channel will be used to control any effect whose **Ch** is set to All-R, regardless of the **Bus Select** (Global 5–4b) settings or the settings of the **DrumKit IFX Patch** menu command.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequencer, and Sampling).

Note that edits to effects parameters are automatically stored with the Song–you don’t need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Song, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: Initial Set: These are the default settings that are recalled when you select an effect type in the Insert FX Setup page. You can’t save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You'll see this if you've just selected an effect, written a program, or selected a new Song. Selecting this setting from the menu will not have any effect.

Note: Songs save the effects parameter settings, but they don't save the number of the selected Effect Preset. If you select an Effect Preset, save the Song to media, and then re-load the Song, the Effect Preset setting will revert to "**----------**."

For more details, please see "Using Effect Presets" on page 101.

IFX1 Parameters:

IFX Parameters

Here you can set the effect parameters of the insert effect you chose in the P8–1–3: Insert FX Setup page.

For more details, please see "Insert Effects (IFX1…IFX5)" on page 426.

▼8–1–4: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Scene** ☞p.115
- 5: **DrumKit IFX Patch** ☞p.190
- 6: **FF/REW Speed** ☞p.272
- 7: **Set Location (Set Location for Locate Key)** ☞p.272
- 8: **Put Effect Setting to Track** ☞p.288

For more information, please see "Sequencer: Menu Command" on page 271.

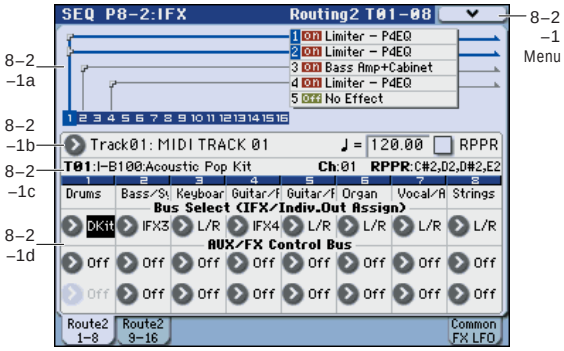
8–1–5: IFX2, 8–1–6: IFX3, 8–1–7: IFX4, 8–1–8: IFX5

Here you can edit the effect parameters for insert effects 2–5 selected in the Insert FX Setup page.

For more information, please see "8–1–4: IFX1," above.

SEQ P8–2: IFX Route 2

8–2–1: Routing2 T01–08, 8–2–2: Routing2 T09–16



Here you can specify the buses, effect control bus, and AUX bus for the outputs of tracks 1–8 and 9–16.

8–2–1(2)a: Routing Map
8–2–1(2)b: Track Select, Tempo, RPPR
8–2–1(2)c: Track Info

For more information, please see “8–1–1(2)a: Routing Map” on page 257 and “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

8–2–1(2)d: Routing2

IFX/Indiv.Out Bus Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

This specifies the output bus for the track’s program oscillator. This is the same parameter as in the 8–1: IFX–Routing 1 T01–08 and T09–16 pages.

For more information, please see “Bus Select (IFX / Indiv. Out Assign)” on page 181.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

These settings send the output of the track to the AUX buses (four mono channels: 1, 2, 3, 4).

In Sequencer mode, a song you play back can be resampled (i.e., mixed-down) to a USB storage device (such as a hard disk) to create a stereo WAVE file, or an audio input signal from AUDIO INPUT can be sampled to RAM (the In-Track Sampling function).

In order to sample, you must use the **AUX Bus** setting to send the drum kit or audio input that you want to sample / resample to the AUX bus(es) of your choice, and set **Source Bus** (Seq 0–1–7b) to AUX 1 / 2.

Off: The signal will not be sent to a AUX bus. Normally you will leave this off.

1, 2, 3, 4: The output of the track will be sent to the corresponding AUX bus. The **Pan** setting (0–1b) of each track will be ignored, and the signal will be sent in monaural.

1/2, 3/4: The output of the track will be sent in stereo to the corresponding pair of AUX buses. The signal is sent in stereo to AUX buses 1 / 2 or 3 / 4 according to the **Pan** setting (0–1b) of each track.

FX Control Bus [Off, 1, 2]

Sends the output of the track to an FX Control bus (two-channel mono FX Ctrl 1 or 2).

Use the FX Control buses when you want a separate sound to control the audio input of an effect. You can use two FX Control buses (each is a two-channel mono bus) to control effects in various ways.

For more information, please see “FX Control Buses” on page 423.

▼8–2–1(2): Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Scene** ☞p.115
- 5: **FF/REW Speed** ☞p.272
- 6: **Set Location (Set Location for Locate Key)** ☞p.272
- 7: **Put Effect Setting to Track** ☞p.288

For more information, please see “Sequencer: Menu Command” on page 271.

8–2–8: Common FX LFO

The two Common FX LFO 1, 2 allow you to synchronize LFO-based modulation for multiple effects, such as phasers, flangers, filters, and so on.

The Common LFOs control only the frequency, MIDI synchronization, and reset options; each individual effect still has its own settings for the LFO waveform and phase.

Within the individual effects, you can choose whether to use one of the Common LFOs, or to use the individual effect's frequency, sync, and / or reset settings instead. This is done via the effect's **LFO Type** parameter; select **Individual** to use the effect's settings, or **Common 1** or **2** to use the Common LFOs.

8–2–8a: Common FX LFO1

Ctrl Ch (Control Channel) **[Ch01...Ch16, Gch]**

Specifies the MIDI channel that will control dynamic modulation (Dmod) for Common LFO 1 and 2.

Gch: The global **MIDI channel** (Global 1–1a) will be used for control. This is the default setting.

Sync (Reset) **[Off, On]**
Source (Dmod Source) **[List of Dmod Sources]**
Frequency **[0.02...20.00 (Hz)]**
MIDI/Tempo Sync **[Off, On]**
BPM **[MIDI, 40.00...300.00]**
Base Note **[𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅮, 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮, 𝅘𝅥, 𝅗𝅥𝅘𝅥𝅘𝅥𝅘𝅥, 𝅗𝅥, 𝅝]**
Times **[01...32]**

These parameters are the same as in Program mode. For more information, please see "8–8a: Common FX LFO1" on page 102.

8–2–8b: Common FX LFO2

These parameters are the same as for Common FX LFO1. For more information, please see "8–2–8a: Common FX LFO1," above.

▼8–2–8: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy Insert Effect** ☞p.117
- 4: **Swap Scene** ☞p.115
- 5: **DrumKit IFX Patch** ☞p.190
- 6: **FF/REW Speed** ☞p.272
- 7: **Set Location (Set Location for Locate Key)** ☞p.272
- 8: **Put Effect Setting to Track** ☞p.288

For more information, please see "Sequencer: Menu Command" on page 271.

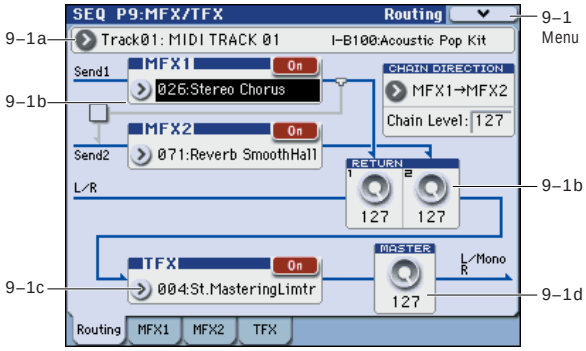
SEQ P9: MFX/TFX (Master/Total Effect)

Here you can make settings for the master effects and total effect. For instance, you can:

- Route a sound to an master effects and total effect
- Make detailed settings for master effects and total effect

For more information, please see “Effect Guide” on page 421.

9–1: Routing



- Here you can specify the type of master effects and total effect, and turn them On / Off.
- The master effects are sent to the L / R bus. The total effect is inserted into the L / R bus.

These parameters are the same as in Program mode. For more information, please see “9–1: Routing” on page 103.

9–1a: Track Select

For more information, please see “2–1: Trim T01–08, 2–2: Trim T09–16” on page 224.

9–1b: MFX1, 2

MFX1:

MFX1 **[000...170]**
MFX1 On/Off **[Off, On]**
Return 1 **[000...127]**

MFX2:

MFX2 **[000...153]**
MFX2 On/Off **[Off, On]**
Return 2 **[000...127]**

Chain:

Chain On/Off **[Off, On]**
Chain Direction **[MFX1→MFX2, MFX2→MFX1]**
Chain Level **[000...127]**

For more information, please see “9–2: MFX1” on page 104.

9–1c: TFX

TFX:

TFX **[000...153]**
TFX On/Off **[Off, On]**

For more information, please see “9–4: TFX” on page 105.

9–1d: Master Volume

Master Volume **[000...127]**

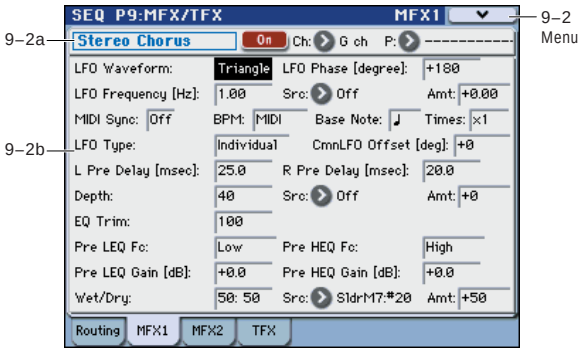
For more information, please see “9–1c: Master Volume” on page 104.

▼9–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118
- 5: **FF/REW Speed** ☞p.272
- 6: **Set Location (Set Location for Locate Key)** ☞p.272
- 7: **Put Effect Setting to Track** ☞p.288

For more information, please see “Sequencer: Menu Command” on page 271.

9–2: MFX1



Here you can edit the parameters of the effect you selected for MFX1 in the P9: MFX / TFX– MFX1 page.

9–2a: MFX1

MFX1 On/Off [Off, On]

This turns master effect 1 on / off. This is linked with the on / off setting in the P9: MFX / TFX– Routing page.

Note: If **Control Assign** is RT Control, MFX1 On / Off can be controlled by switch 6. MFX2 and TFX are controlled by switches 7 and 8, respectively.

Ch (Control Channel) [Ch01...16, G ch]

Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master effect.

Ch01…Ch16: The specified MIDI channel will be used for control.

G ch: The global **MIDI Channel** (Global 1–1a) will be used for control. Normally you will use the G ch setting.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequence, and Sampling).

Note that edits to effects parameters are automatically stored with the Combination–you don't need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Combination, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: Initial Set: These are the default settings that are recalled when you select an effect type in the P9: MFX / TFX– Routing page. You can't save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You'll see this if you've just selected an effect, written a program, or selected a new Song. Selecting this setting from the menu will not have any effect.

For more details, please see "Using Effect Presets" on page 101.

MFX1 Parameters

Here you can set the effect parameters of the effect you chose in the P9: MFX / TFX– Routing page.

For details on the individual effects, please see the "Effect Guide" on page 421.

▼9–2: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Copy MFX/TFX** ☞p.118
- 4: **Swap MFX/TFX** ☞p.118
- 5: **FF/REW Speed** ☞p.272
- 6: **Set Location (Set Location for Locate Key)** ☞p.272
- 7: **Put Effect Setting to Track** ☞p.288

For more information, please see "Sequencer: Menu Command" on page 271.

9–3: MFX2, 9–4: TFX

These pages let you edit the parameters of Master Effect 2 and the Total Effect. To select different effects types, use the P9: MFX / TFX– Routing page.

The parameters of MFX2, TFX are the same as for MFX1. For more information, please see "9–2: MFX1," above.

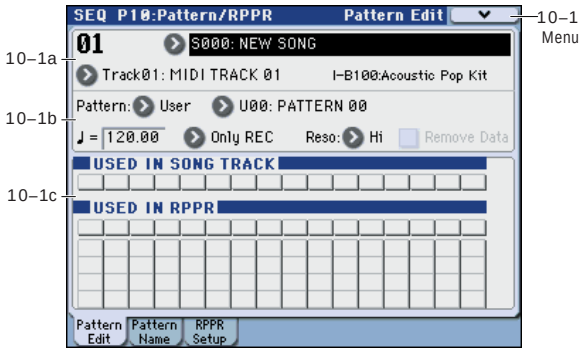
SEQ P10: Pattern/RPPR

Here you can record and edit patterns, assign patterns to tracks of a song, and make RPPR (Realtime Pattern Play / Recording) settings. You can also convert drum track patterns for use in Program mode or other modes.

- You can use preset patterns P00–522, and user patterns U00–99.
  Preset patterns provide patterns that are suitable for drum tracks; you can select these patterns from any song.
  There are one hundred user patterns for each song; you can create and store your own patterns as desired.
- You can create the desired performance data for a track by using the menu commands **Put To Track** or **Copy To Track** to place or copy patterns into a track. For more information, please see “Put To Track” on page 290.
- The RPPR function lets you assign patterns to different keys and then trigger these patterns by pressing notes on the keyboard of the KYBD-61 / 73 / 88, etc., and record the result onto the track in realtime. For more information, please see “10–3: RPPR Setup” on page 267.
- You can create user drum track patterns.
  User patterns in Sequencer mode can be converted using the menu command **Convert to Drum Trk Pattern**. For more information, please see “Convert to Drum Trk Pattern” on page 291.

Note: User patterns in Sequencer mode are not saved internally; you must save them on a USB storage device, and load them each time after powering-on. If you convert user patterns to user drum track patterns, they will be preserved in internal memory even when the power is turned off, meaning that you can manage them along with programs and combinations.

10–1: Pattern Edit



Here you can record and edit patterns, and assign them to tracks of a song. The following types of pattern operations are available.

- User patterns can be recorded in real-time (as well as recorded from performances generated by the KARMA function), step-recorded, or created using the Get From MIDI Track command or Copy Pattern command. You can also copy a preset pattern to a user pattern and edit it. (You can’t directly edit a preset pattern.)
- Preset patterns and user patterns can be placed in or copied into a track.
- You can convert user patterns to drum track patterns.

10–1a: Location, Song Select, Track Select

Location [01...99]

Displays the current measure location of the selected pattern.

Song Select [000...127: name]

Selects a song.

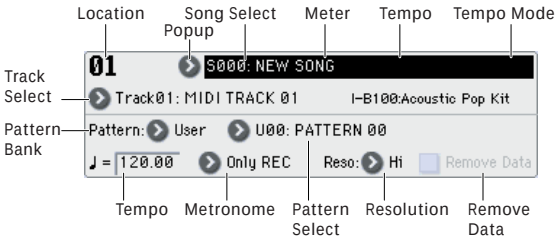
The user pattern will be created in the song you select.

Track Select [Track01...16, Master Track]

Selects the track that will be used to record / play the pattern data. The pattern data will be recorded / played using the settings of the track you select. The area at the right displays the program bank, number, and name for the selected track.

Settings of Master Track will be ignored. The most recently selected Track 01–16 will be used.

10–1b: Pattern, Pattern Select, Tempo, Metronome, Reso, Remove Data



How to record a user pattern

1. **Use Song Select to select the song in which you want to create a user pattern.**
2. **Use Track Select to select the sound that you will record.**

The pattern you record will sound according to your choice in **Track Select**.

3. **Use Pattern Bank and Pattern Select to select User pattern and the desired pattern number.**
4. **Select the menu command Pattern Parameter, and in the dialog box, specify the number of measures and time signature of the pattern.**
5. **Check the tempo in “♩”.**
6. **If you want to record in realtime, set Reso to specify the resolution, and press the SEQUENCER REC/WRITE switch and then the START/STOP switch to begin recording.**

When you finish recording to the end of the measures specified by **Pattern Parameter**, you will return to the first measure, and can continue recording while adding more material. For more information, please see “Loop All Tracks” on page 204.

If you want to perform step recording, select the menu command **Step Recording (Loop Type)** to open the dialog box, and record. For the procedure of step recording, please see “Step Recording” on page 279 and “Step Recording (Loop Type)” on page 289.

7. **After recording, use the menu commands as desired to edit the pattern or the events in the pattern.**

Pattern (Pattern Bank) [Preset, User]

Selects the type of pattern.

If Preset is selected, it will not be possible to record. You will be able to select and execute the **Copy Pattern**, **Bounce Pattern**, **Put To Track**, and **Copy To Track** menu commands.

Pattern Select [P000...522, U00...U99]

Selects a pattern.

User patterns can be renamed in the P10: Pattern / RPPR–Pattern Name page.

♩(Tempo) [040.00...300.00, EXT]

Specifies the playback tempo of the pattern. For more information, please see "♩(Tempo)" on page 195.

Metronome [Only REC, REC & Play, Off]

Specifies whether the metronome will sound during recording or playback. For more information, please see "0–1–8c: Metronome Setup" on page 204.

Reso (Realtime REC Quantize Resolution) [Hi, 𝅘𝅥𝅯 ... ♩]

Specifies how the timing of the data being recorded into the pattern will be corrected. For more information, please see "Reso (Realtime REC Quantize Resolution)" on page 196.

Remove Data [Off, On]

On (checked): Unwanted performance data can be removed during pattern recording. The procedure is the same as explained in **Remove Data** of Loop All Tracks. For more information, please see "Remove Data" on page 204.

10–1c: USED IN SONG TRACK, USED IN RPPR

USED IN SONG TRACK

This area indicates the pattern usage status for the patterns selected for the track.

USED IN RPPR

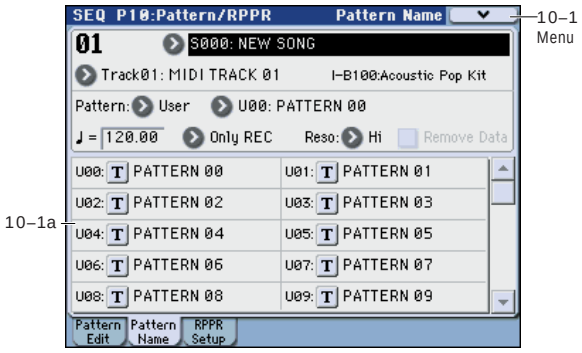
This area indicates the RPPR in which the selected pattern is used. The assigned key and the specified track are shown.

▼10–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Step Recording (Loop Type)** ☞p.289
- 4: **Event Edit** ☞p.289
- 5: **Pattern Parameter** ☞p.289
- 6: **Erase Pattern** ☞p.290
- 7: **Copy Pattern** ☞p.290
- 8: **Bounce Pattern** ☞p.290
- 9: **Get From Track** ☞p.290
- 10: **Put To Track** ☞p.290
- 11: **Copy To Track** ☞p.291
- 12: **Convert to Drum Trk Pattern** ☞p.291
- 13: **Load Drum Track Pattern** ☞p.292
- 14: **Erase Drum Track Pattern** ☞p.292
- 15: **FF/REW Speed** ☞p.272

For more information, please see "Sequencer: Menu Command" on page 271.

10–2: Pattern Name



10–2a: Location, Song Select, Track Select

10–2b: Pattern, Pattern Select, Tempo, Metronome, Reso, Remove Data

For more information, please see "10–1a: Location, Song Select, Track Select" on page 265 and "10–1b: Pattern, Pattern Select, Tempo, Metronome, Reso, Remove Data" on page 265.

10–2c: User Pattern Names

Pattern name [U00...U99]

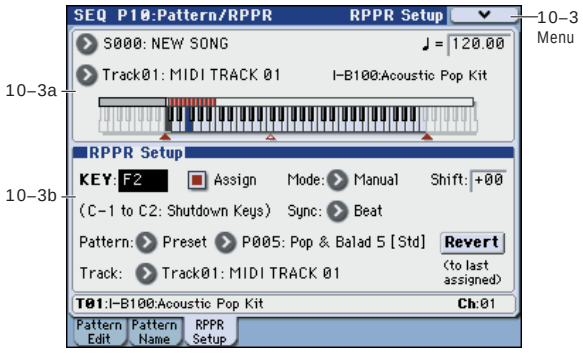
Here you can rename the pattern. Press the text edit button to open the dialog box, and input the name. You can enter up to 24 characters. For more information, please see "Editing names" on page 197 of the Operation Guide.

▼10–2: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Step Recording (Loop Type)** ☞p.289
- 4: **Event Edit** ☞p.289
- 5: **Pattern Parameter** ☞p.289
- 6: **Erase Pattern** ☞p.290
- 7: **Copy Pattern** ☞p.290
- 8: **Bounce Pattern** ☞p.290
- 9: **Get From Track** ☞p.290
- 10: **Put To Track** ☞p.290
- 11: **Copy To Track** ☞p.291
- 12: **Convert to Drum Trk Pattern** ☞p.291
- 13: **Load Drum Track Pattern** ☞p.292
- 14: **Erase Drum Track Pattern** ☞p.292
- 15: **FF/REW Speed** ☞p.272

For more information, please see "Sequencer: Menu Command" on page 271.

10–3: RPPR Setup



Here you can make settings for the RPPR (Realtime Pattern Play / Recording) function. RPPR lets you assign patterns to individual keys, and then playback patterns simply by pressing individual notes on the keyboard. This performance can be recorded in real-time.

For each song, you can assign either a preset pattern or a user pattern to each of the 72 keys in the range C#2–C8. For each key, you can specify the pattern, track number, and how the pattern will be played.

Keys used to play patterns via RPPR cannot be used for the KARMA function. If RPPR is on, keys to which a pattern is not assigned will play the program of the track that's selected in **Track Select**. In this case, the KARMA function will operate if KARMA Module A, B, C, or D is assigned to the track and turned on. Also, notes generated by the KARMA function will not trigger the RPPR function.

When Local Control is OFF (**Local Control On** Global 1–1a), the keyboard will not trigger RPPR pattern playback. Notes received at MIDI IN on the channel of the track currently selected by **Track Select** will trigger patterns. If you have recorded only the trigger notes on an external sequencer and wish to use the playback from the external sequencer to trigger RPPR patterns on M3, set Local Control OFF.
If you want the note data generated by RPPR to be recorded by the external sequencer, set Local Control ON, and turn off the echo back function of the external sequencer. See "Local Control On settings" on page 614.

In the RPPR Setup page, RPPR is turned on automatically. This will be the same result as when the RPPR check box (Seq 0–1–1(2)a) in each page is checked.

10–3a: Song Select, Track Select, Tempo

Song Select [000...127: name]

Selects the desired song. The RPPR settings will be assigned to the song you select here.

♩(Tempo) [040.00...300.00, EXT]

Specifies the playback tempo of the patterns. (Seq 0–1–1(2)a)

Track Select [Track01...16, Master Track]

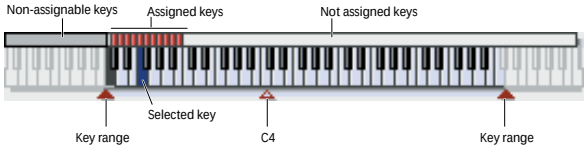
When you play a key that is not assigned to RPPR, it will sound using the settings of the track that's selected in **Track Select**. Use this to select the track that you want to play together with RPPR, or to audition a pattern before you assign it. The program bank, number, and name of the selected track is shown at the right.

Each RPPR pattern will begin playing when you press the assigned key, regardless of the **Track Select** setting. It will sound using the settings of the track selected in **Track Name**.

The Master Track setting is ignored. The last-selected Track 01–16 will be used.

Keyboard & Assigned Graphics

This shows the selected key, and the keys to which a pattern has been assigned by the RPPR function. See diagram below.



10–3b: RPPR Setup

KEY (Key Select) [C#2...C8]

Specifies the key to which you want to assign an RPPR pattern.

The following parameters will apply to the key that you select here.

This can also be selected by holding down the ENTER switch and playing a note on the keyboard.

Assign [Off, On]

On (checked): When you playback the key specified by **KEY**, the pattern selected in **Pattern** will be triggered.

Off (unchecked): That key will sound the currently selected track at the corresponding pitch, just as in normal Sequencer mode.

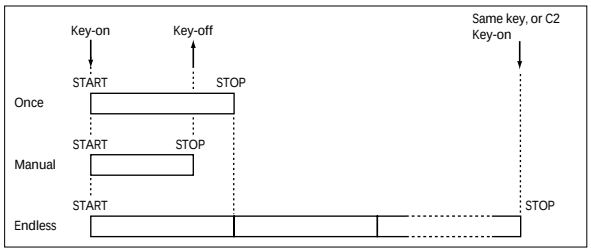
Mode [Once, Manual, Endless]

Specifies the way in which the pattern assigned to the specified **KEY** will be played.

Once: When you press the key, the complete pattern will playback once to the end and then stop.

Manual: The pattern will continue repeating as long as you continue holding the key, and will stop as soon as you release the key.

Endless: The pattern will continue repeating even after you release the key. To stop the pattern playback, press any note below C2, or press the same key once again.



Shift [–12...+12]

Adjusts the playback pitch of the pattern for the specified **KEY** in semitone steps over a range of ±1 octave.

With a setting of 0, the pattern will be played at its original pitch.

Sync [Off, Beat, Measure, SEQ]

Specifies the way in which the pattern playback will be synchronized when you press the specified **KEY**.

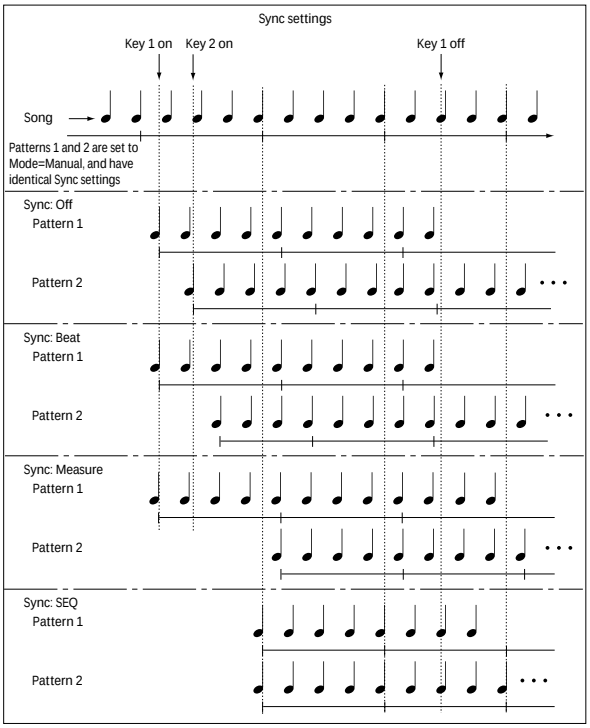
Off: The pattern will begin playing at the moment you press the note.

Beat: The pattern will synchronize to the beats of the pattern that was started by the first key (i.e., the first note-on that occurs from a condition where no notes of the keyboard are

pressed). This setting is suitable when you wish to play phrase patterns in unison.

Measure: The pattern will synchronize to the measures of the pattern that was started by the first key. This setting is suitable for rhythm, bass or drum patterns.

SEQ: The pattern will synchronize to the measures of the sequencer song.



- When Beat or Measure are selected, pattern playback will begin when you press the first key. The second and subsequent patterns that are triggered from the keyboard will synchronize to the pattern that was started by the first key; with a setting of Beat they will synchronize in steps of a beat, and with a setting of Measure they will synchronize in steps of a measure.
- When SEQ is selected, the pattern will playback in synchronization with the measures of the sequencer song. The pattern will synchronize with the currently-playing song, so you must start the song before you play notes on the keyboard.
- Beat, Measure, and SEQ will cause the pattern to start immediately if you play the key within a thirty-second note of the timing of the respective beat or measure, but if you play the key later than this, the start of the pattern will be delayed by a beat.
- Set this to SEQ if you want pattern playback by RPPR to be synchronized to the operating KARMA function.

Pattern Bank [Preset, User]

Pattern [P000...522, U00...99]

Selects the RPPR pattern for the key selected in **KEY**. If the selected user pattern contains no musical data, there will be no sound when you press that key.

Track [Track 01...16]

Selects the track that will be used for the RPPR pattern selected for the **KEY**. When you play the key, the pattern will be played according to the settings of the track you select here. You can make track settings in the P0: Play / REC–P5: MIDI Filter pages.

When you record in realtime with the RPPN function turned on, the data will be recorded on the track you select here. For more information, please see “Using RPPR (Realtime Pattern Play / Record)” on page 97 of the Operation Guide.

Information shows the bank, name, and number of the program that’s selected for **Track**.

Information

This area shows the bank, name, and number of the program that’s selected for the track.

Stopping playback of a RPPR pattern

By pressing C2 (or any note lower than C2), all the patterns being played by RPPR will stop.

The patterns of keys whose **Sync** setting is Off will stop immediately, but the playback of other keys will stop at the beginning of the next beat or measure. Pattern playback of keys whose **Sync**setting is other than On can be stopped immediately by rapidly pressing C2 or any lower note twice in succession.

Revert

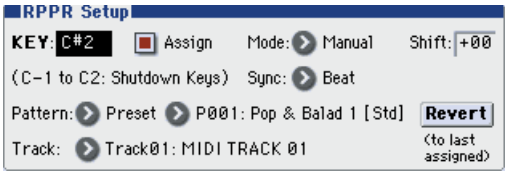
When you press this button, the **Pattern (Pattern Bank)**, **Pattern Select**, and **Track** settings of the last-edited **KEY** for which **Assign** was **checked** will be copied to these parameters of the currently selected **KEY**.

Example): Assigning preset patterns P00, P01, and P02 to KEY

Before you begin, assign a drum program such as track 1.

1. **Set KEY to C#2, and check Assign.**

Set **Pattern (Pattern Bank)** to **Preset**, **Pattern Select** to **P00**, and **Track** to **Track 01**.



2. **Set KEY to D2, and press the Revert button.**

The **Pattern (Pattern Bank)**, **Pattern Select**, and **Track** settings that you specified in step 1 will be copied automatically.

3. **Edit only Pattern Select. Select Pattern Select, and press the Δ switch to select P01: Pop&Balad 1 (Std).**
4. **Set KEY to D#2, and press the Revert button.**

The **Pattern Select P01: Pop&Balad 1 (Std)** you selected in step 3, as well as the **Pattern (Pattern Bank)** and **Track** settings, will be copied automatically.

5. **As you did in step 3, set Pattern Select to P02: Pop&Balad 3/Std.**

By using **Revert** in this way, you can efficiently specify **Pattern (Pattern Bank)**, **Pattern Select**, and **Track** settings for each **KEY** when creating RPPR data. This is particularly convenient when, as in the above example, the patterns that you want to assign to the keys are numbered consecutively (or are nearby each other), and use the same track.

▼10–3: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107

For more information, please see “Sequencer: Menu Command” on page 271.

SEQ P11: Cue List

The cue list allows you to playback multiple songs in succession. You can specify a number of repetitions for each song.

The M3 allows you to create twenty cue lists. In a single cue list you can freely connect up to 99 songs.

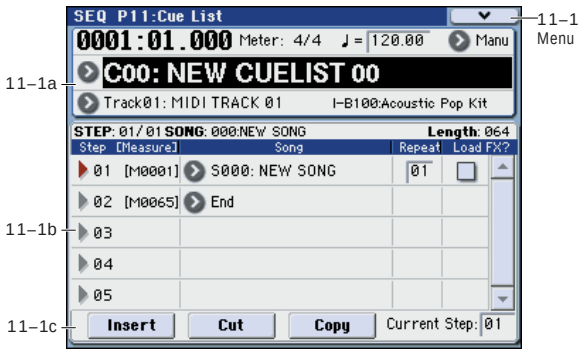
Each unit in a cue list is called a “step,” and you can specify a song number and a repeat (number of repetitions) for each step.

For example you could create each part of a song (intro, melody A, melody B, break, solo backing, ending etc.) as an individual song, and use a cue list to play the intro twice, melody A four times, melody B four times, the break twice, melody A four times ... etc. to produce the entire song. In cases when you wish to change the structure of the song, this Cue List function can help you work more efficiently.

The menu command **Convert to Song** lets you convert the songs in a cue list into a single song.

For example you can use a cue list to create the backing, convert the cue list to a song, and then add solo phrases on unused tracks.

11–1: Cue List



11–1a: Location, Meter, ♩, Tempo Mode, Cue List Select, Track Select

Location [0001:01.000…9999:16.191]

This displays the current location within the selected cue list.

From the left, the numbers indicate the measure, beat, and clock. Each can be set separately, and this will change the current location within the cue list.

The range of the beat and clock will depend on the time signature of the corresponding song.

MIDI When **MIDI Clock** (Global 1–1a) is **Internal**, a Song Position Pointer message will be transmitted each time you change the location within the cue list. If **MIDI Clock** is set to **External MIDI** or **External USB**, and **Receive Ext. Realtime Commands** (Global 1–1a) is turned on, receiving a Song Position Pointer message from the specified source will cause the location to change.
If the location exceeds the allowable data range of a Song Position Pointer message, it will not be transmitted.

Meter (Time Signature) [1/4...16/16]

This displays the time signature of the currently-playing song.

♩(Tempo) [040.00...300.00]

Specifies the tempo at which the song in the cue list will be played). For more information, please see “♩(Tempo)” on page 121.

Tempo Mode [Auto, Manu]

Auto: Playback will follow the tempo specified by each song in the cue list. It will not be possible to change the **♩(Tempo)** setting during playback.

Manu (Manual): Tempo specified in the song will be ignored, and playback will use the tempo specified above for **♩(Tempo)**.

Cue List Select [C00...C19: name]

Selects the cue list that you wish to play.

When using a cue list to play songs, you must first load the necessary data into internal memory, either from media (floppy disk etc.), or by a MIDI data dump from an external sequencer.

MIDI When **MIDI Clock** (Global 1–1a) is **Internal**, selecting a cue list in this page will cause a Song Select message (corresponding to the cue list number) and Song Position Pointer message to be transmitted. When **MIDI Clock** is **External MIDI** or **External USB**, a Song Select message from the specified source will switch cue lists.

Track Select [Track01...Track16: name]

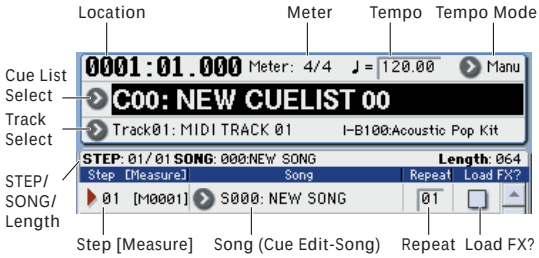
Selects the track that you wish to play manually from the keyboard along with the playback of the cue list.

While a cue list is playing, you can play along using the track settings and musical data of the song selected by the current **Step** (Seq 11–1b).

The track selected here can be specified independently for each song in the cue list.

When you are playing back different songs in succession, and want to play along using the same program on the keyboard, set **Track Select** (Seq 0–1–1(2)a) to the same track and program for each step.

At the right you can view the program bank, program number, and name of the program selected for **Track Select**.



11–1b: Cue List

Selected Step Information

This shows information on the currently selected or playing **Step**.

Step [01...99/01...99]

The selected step number is shown at the left, and the total number of steps (not including the last step) is shown at the right.

Song [000...127]

This shows the number and name of the song for the currently selected step.

Length [000...999]

This shows the number of measures in the song for the currently selected step.

Step, Song, Repeat, Load FX?

Step [Measure] [01...100 (M0001...M9999)]

This displays the step number and its starting measure.

Step indicates each step number. The **Step** indicated by the symbol is the currently-selected or currently-playing step. This can be directly selected by **Song** (Seq 11–1b) or **Current Step** (Seq 11–1c). When stopped, pressing the SEQUENCER START / STOP switch will cause playback to begin from this step.

Measure indicates the starting measure of each step. This cannot be edited.

Song (Cue Edit-Song) [S000...S127: name/End, Continue to Step01]

S000...S127: Specifies a song for each step. This cannot be edited during playback.

End and **Continue to Step01** can be specified only for the last step of the cue list.

End: Playback will stop at the last step of the cue list.

Continue to Step01: At the last step of the cue list, playback will return to **Step 01** and the cue list will continue playing endlessly. To stop, press the SEQUENCER START / STOP switch.

Repeat [01...64, FS]

Specifies the number of times that the song of this step will be repeated.

FS: A foot switch connected to the rear panel can be used to specify the point at which the song will stop repeating. When you press the foot switch, that repetition of the song will finish playing, and then playback will continue to the next step. Set **Foot Switch Assign** (Global 2–1a) to **Cue Repeat Control**.

Load FX? (Cue Edit-Load Fx) [Off, On]

Specifies whether the effects specified by the song assigned to each step will be used.

On (checked): The effect settings of the song specified for the current step will be used. When playback moves to the next step, the effect settings will also change.

Off (unchecked): The effect settings will not change.

Depending on the effect settings, a certain amount of time may be required to switch effects. In this case, playback will not be smooth from song to song.
If you want to transition smoothly from song to song inside of a cue list, check **Load FX?** in **Step 01**. For the remaining steps, do not check **Load FX?**
With these settings, the effects will be set before playback begins, so there will be no time lag to interrupt the smooth transition between songs.
Although it is not possible to change the effect types in the middle of a cue list, you can use the dynamic modulation function or MIDI control changes (effect control) to apply reverb more deeply to certain songs, or raise the LFO speed for other songs, etc.
When using a cue list to construct a song, we recommend this method. When you execute the **Convert to Song** menu command, the effect settings of the **Step 01** song will be specified at the beginning of the song that is created by the conversion.

Even when **Load FX?** is not checked, there may be a time lag in the transition from one song to the next, depending on the musical data in the song. There may also be cases in which the musical data at the transition between songs does not play at the correct timing. To fix this, you can edit the musical data of the song, or convert the cue list to a single song. If you use **Convert to Song** to convert the cue list to a song, there will be no time lag at the transition, and the musical data will play at the correct timing.

11–1c: Insert, Cut, Copy, Current Step

Insert

When you press the **Insert button**, the step data that was temporarily saved in the buffer by the **Copy button** or **Cut button** will be inserted at the **Current Step**. (If copy or cut has not been executed, default data will be inserted.)

Cut

When you press the **Cut button**, the **Current Step** will be cut, and its data will be saved temporarily in the buffer. If you **Insert** immediately after you cut, the data will return the state in which it was before you cut.

Copy

When you press the **Copy button**, the data of the **Current Step** will be saved temporarily in the buffer.

Press the **Insert button** to insert the copied step into the **Current Step**.

Current Step [01...100]

Selects the step that will be inserted, cut or copied.

If you wish to playback from a step in the middle of the cue list, select the desired step here, and press the SEQUENCER START / STOP switch.

For details on creating and editing a cue list, please see "Creating and playing a Cue List" on page 101 of the Operation Guide.

▼11–1: Menu Command

- 0: **Memory Status** ☞p.271
- 1: **Panel–SW Solo Mode On** ☞p.106
- 2: **Exclusive Solo** ☞p.107
- 3: **Rename Cue List** ☞p.292
- 4: **Delete Cue List** ☞p.292
- 5: **Copy Cue List** ☞p.292
- 6: **Convert to Song (Convert Cue List to Song)** ☞p.292
- 7: **Copy Song** ☞p.293
- 8: **FF/REW Speed** ☞p.272
- 9: **Set Location (Set Location for Locate Key)** ☞p.272

For more information, please see "Sequencer: Menu Command" on page 271.

Sequencer: Menu Command

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

Memory Status

This displays the remaining amount of sequencer memory.

Panel–SW Solo Mode On

When you select **Panel–SW Solo Mode On** and add a check mark to the menu item, the MIX PLAY / MUTE 1–8 switches will operate as Solo on / off.

For more information, please see “Panel–SW Solo Mode On” on page 106.

Exclusive Solo

This specifies how the Solo function will operate. Each time you select **Exclusive Solo**, the setting will alternate between multiple solo and exclusive solo. For more information, please see “Exclusive Solo” on page 107.

Rename Song

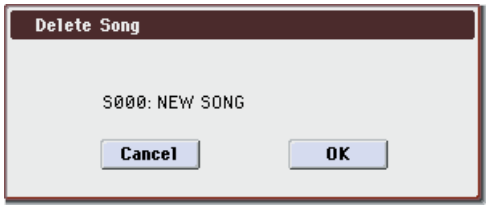
Here you can rename the selected song. A name of up to 24 characters can be input.

For more information, please see “Editing names” on page 197 of the Operation Guide.

Delete Song

This command deletes the currently selected song.

1. **Select “Delete Song” to open the dialog box.**



2. **If you wish to execute the Delete Song command, press the OK button. To cancel, press the Cancel button.**

When you execute this command, the musical data, setting data, and patterns etc. of the currently selected song will be erased, and the memory area allocated to that song will be freed.

Copy From Song

This command copies all of the setting data and musical data from the specified song to the currently selected song.

1. **Select “Copy From Song” to open the dialog box.**

2. **In From, specify the copy source song number.**
3. **Select the data that you wish to copy.**

All: will copy all setting data and musical data (track events and patterns, etc.).

Without Track/Pattern Events: will copy only the setting data of songs, except for Play Loop and RPPR data.

4. **To execute the Copy Song operation, press the OK button. To cancel, press the Cancel button.**

Be aware that if you execute **All**, all setting data and musical data of the currently selected song will be erased and rewritten by the data from the copy source song. If you execute **Without Track/Pattern Events**, song setting data other than Play Loop and RPPR will be rewritten.

Load Template Song

This command loads a template song as a song.

The built-in sequencer contains sixteen different **preset template songs** (P00–15) that contain preset settings for programs and effects appropriate for various musical styles. You are also free to create your own favorite settings for programs, track parameters, and effects, and save them as one of sixteen **user template songs** (U00–15). For more information, please see “Save Template Song (Save as User Template Song)” on page 272.

1. **Select “Load Template Song” to open the dialog box.**

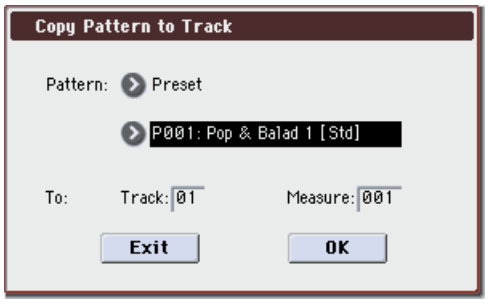
2. **In From, specify the template song that you wish to load.**
3. **If you check Copy Pattern to Track too?, the Copy Pattern To Track dialog box will appear automatically after Load Template Song has been executed.**

If you execute **without checking** this, only the template song you specified in step 2 will be loaded.

4. **To load the template song, press the OK button. To cancel without loading, press the Cancel button.**

When you execute, song settings other than Play Loop and RPPR will be copied.

If in step 3 you checked **Copy Pattern to Track too?** and pressed the OK button, the **Copy Pattern To Track** dialog box will appear.



This dialog box is the same as in the menu command **Copy To Track**.

5. **In To Track, select the copy destination track.**

In **Measure**, specify the beginning measure of the copy destination.

Note: Track 1 of all sixteen preset template contains a drum category program. (In preset template songs P02, P04, P08, and P15 drum category programs are specified for multiple tracks.)

The pattern names of the 522 preset patterns indicate the musical genre and part of the optimal drum category program.

By loading the drum track for these preset template songs and the corresponding preset patterns, you can efficiently set up a drum track that is suited to each preset template song.

6. **To execute, press the OK button.**

When you execute, **Measure** will count up automatically. You may then copy patterns as well. To exit the command, press the **Exit button**.

For details on how to copy preset patterns to a song along with the preset template song, please see “Using template songs” on page 84 of the Operation Guide.

Save Template Song (Save as User Template Song)

This command saves the program selections, track parameters, and effect settings etc. of the current song as a user template song U00–15. The settings you save here can also be loaded in Song Play mode.

1. **Select “Save Template Song” to open the dialog box.**

2. **In To, specify the user template song (U00–15) in which the data will be saved.**
3. **To save the template song, press the OK button. To cancel, press the Cancel button.**

Be aware that when you execute this command, all setting data of the save destination User Template Song will be erased and rewritten with the current settings.

Note: The Play Loop and RPPR settings are not saved. If you want to save these settings and the user patterns, execute **Save SEQ** in Media mode and save them to an external USB storage device.

FF/REW Speed

This allows you to set the speed at which fast-forward or rewind will occur when you press the FF switch or REW switch.

1. **Select “FF/REW Speed” to open the dialog box.**

2. **In Speed, specify the speed (relative to the playback tempo) at which fast-forward and rewind will occur.**

This setting is in multiples of the playback tempo. A setting of 1 is the same speed as the playback tempo. Settings of 2–4 respectively correspond to double, triple, or quadruple speed of the playback tempo.

Note: Fast-forward and rewind speeds may be slower in areas where the performance data is dense. Fast-forward and rewind speeds will differ between areas where the performance data is sparse or sparse.

3. **If Ignore Tempo is checked, the playback tempo and note length will be ignored, and fast-forward and rewind will be performed as fast as possible.**

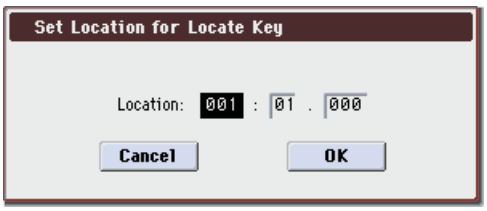
The speed of fast-forward and rewind will differ between sections where the playback data is dense and sections where it is sparse. If this item is **unchecked**, fast-forward and rewind will be performed at the speed you specify for **Speed**.

4. **To execute the settings, press the OK button. To cancel, press the Cancel button.**

Set Location (Set Location for Locate Key)

When you press the LOCATE switch, you will move to the location specified here.

1. **Select “Set Location” to open the dialog box.**



2. **In Location, specify the location to which you will move when you press the LOCATE switch.**

From the left, the values are Measure (001–999), Beat (01–16), and Tick (000–479).

If you specify **001:01.000**, you will move to the beginning of the song when you press the LOCATE switch.

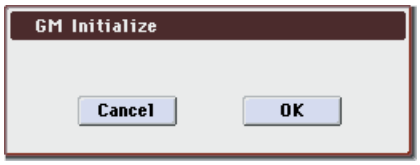
3. **To execute the settings, press the OK button. To cancel, press the Cancel button.**

Note: When this dialog box is not open, you can hold down the ENTER switch and press the LOCATE switch to set the current location as the **Set Location** value.

GM Initialize

This command transmits a GM System On message to the Sequencer mode, resetting all tracks to the GM settings. For more information, please see “GM Initialize List” on page 274.

1. **Select “GM Initialize” to open the dialog box.**



2. **To execute the settings, press the OK button. To cancel, press the Cancel button.**

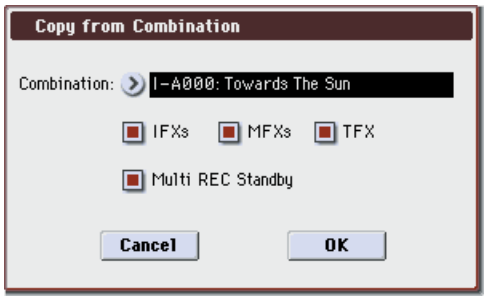
MIDI In Sequencer mode, when a GM System On message is received from an external device, or if a GM System On message is recorded in the sequence data, the M3 will be reset to settings appropriate for GM just as if you had executed this command. However, in these cases, the various P9: Master / Total Effect parameters will not be reset.

Copy From Combi (Copy from Combination)

This command copies the parameters of the specified combination to the setting data of the currently selected song.

Note: Only the timbres used by the combination will be copied. Timbres in the combination whose Status is Off will not be copied. If any timbres are set to Mute, the corresponding tracks of the song will be set to a **Status** of Off.

1. **Select “Copy From Combi” to open the dialog box.**



2. **In Combination, select the copy source destination.**
3. **Use the IFXs, MFXs and TFX check boxes to specify whether you want the effect settings of the combination to be copied as well.**

IFXs: All insert effect settings of the copy-source combination (the contents of the IFX page and the IFX1–5 effect parameters) will be copied.

MFXs: All master effect settings of the copy-source combination will be copied.

TFX: All total effect settings of the copy-source combination will be copied.

4. **Specify the desired Multi REC Standby setting.**

On: The Status will automatically be set to REC for MIDI tracks corresponding to valid timbres in the copy-source combination. In addition, **Multi REC** (Seq 0–1–8b) will automatically be turned on, and **Recording Setup** (Seq 0–1–8b) will be set to Overwrite.

5. **To execute the Copy operation, press the OK button. To cancel, press the Cancel button.**

Copy from Program

This command copies settings from the program you specify to the currently selected song.

This is the same function as in Combination mode; for details, please see “Copy from Program” on page 185.

This command in Sequencer mode differs from its behavior in Combination mode in that the channels assigned to the tracks of the song will be preserved regardless of the **with KARMA** setting of the copy-destination track’s **MIDI Channel**. (See step 4.)

GM Initialize List

	Page	Parameter	Track 1–9, 11–16	Track 10	
P0	Program T01–08, T09–16	Program Select	G001	g(d)001	
		Play/Mute, Solo	-	-	
	Mixer T01–08, 09–16	Pan	C064	C064	
		Volume	100	100	
P2	EQ Trim T01–08, T09–16	Auto Load Prog EQ	On	On	
		Bypass	Off	Off	
		Input Trim	99	99	
	EQ Gain T01–08, T09–16	High Gain [dB]	+00.0	+00.0	
		Mid Frequency [Hz]	3.20k	3.20k	
		Mid Gain [dB]	+00.0	+00.0	
		Low Gain [dB]	+00.0	+00.0	
P3	MIDI T01–08, T09–16	Status	-	-	
		MIDI Channel	-	-	
		Bank Select MSB/LSB	000	000	
	OSC T01–08, T09–16	Force OSC Mode	-	-	
		OSC Select	-	-	
		Portamento	Off	Off	
	Pitch T01–08, T09–16	Transpose	+00	+00	
		Detune	+0000	+0000	
		Bend Range	+02	+02	
	Other T01–08, T09–16	KARMA Track Off Control	Nrm	Nrm	
		Use Program's Scale	-	-	
P4	Key Z T01–08, T09–16		C–1…G9 (Slope=000)	C–1…G9	
	Vel Z T01–08, T09–16		001…127 (Slope=000)	001…127	
	Delay T01–08, T09–16	MIDI Tempo Sync.	Off	Off	
		Time	0000	0000	
P5	MIDI Filter1, 2		On	On	
P7	KARMA	All parameters			-
P8	Routing1 T01–08, T09–16	Bus Select (IFX/Indiv.Out Assign)	L/R	L/R	
		Send1 (MFX1)	0	0	
		Send2 (MFX2)	40	40	
	Insert FX Setup	IFX1…5		-	
		Pan: #8			-
		AUX Bus			-
		FX Control Bus			-
		Send1/2			-
		Other parameter			-
	Routing2 T01–08, T09–16	FX Control Bus	Off	Off	
		AUX Bus	Off	Off	
	Common FX LFO	All parameters			-
P9	Routing	MFX1			Stereo Chorus
		MFX2			Reverb Smooth Hall
		Chain			Off
		Chain Direction			1→2
		Level			127
		Return1			127
		Return 2			50
	Other MFX parameters				-
	TFX				-
	Master Level				-

Copy X–Y Motion

Here's how you can copy the X–Y motion setting from any program, combination, or song, or from Sampling mode.

For more information, please see "Copy X–Y Motion" on page 107.

Optimize RAM

This command optimizes the RAM memory. When you execute this command, unused memory areas will be reorganized, allowing the full amount of remaining to be used.

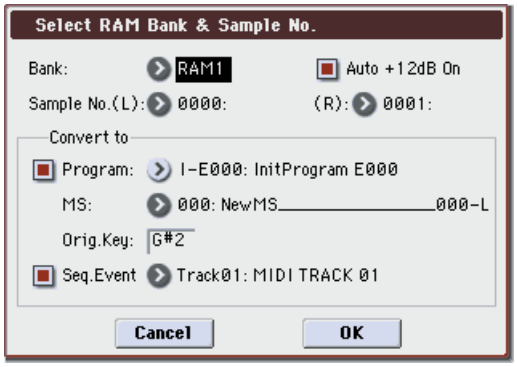
For more information, please see "Optimize RAM" on page 107.

Select Bank & Sample No.

Here you can specify the RAM bank and sample number into which the sample will be written. You can also specify whether the sample will be automatically converted into a program after sampling.

Note: **Select Bank & Sample No.** can be selected if you have chosen RAM for **Save to** (Seq 0–1–7b).

1. **Select "Select Bank & Sample No." to open the dialog box.**



2. **Use Bank to specify the writing-destination RAM bank.**

If the EXB-M256 is installed, you'll be able to select RAM2.

3. **In Sample No., choose a sample number where the sampling will be performed.**

By default, this will be the lowest-numbered of the vacant sample numbers. If you select ----:---No Assign--- or a sample number that already contains data, the sample will automatically be sampled into the lowest-numbered vacant sample number. If you are sampling in stereo, **Sample No.(L)** and **Sample No.(R)** will be created.

4. **Set Auto +12 dB On.**

On (checked): +12 dB (Sampling 2–1d) will automatically be turned on for samples you record. Samples for which **+12 dB** is on will play back approximately +12 dB louder than if this setting were off.

When you resample a performance in Program, Combination, or Sequencer modes, you should normally set **Recording Level** to **about –12.0 (dB)** so that the recording level will be as high as possible without clipping. When you resample, the sound will be recorded at the optimum level for sampled data, but the playback level at playback will not be as loud as it was during the resampling process (if **+12 dB** (Sampling 2–1d) is off). In such cases, you can check the **Auto +12 dB On** check box when you resample, so that **+12 dB** (Sampling 2–1d) will automatically be **on**, making the sample play back at the same level as when it was resampled.

In these modes, the power-on default settings are **Recording Level** at –12.0 (dB) and **Auto +12 dB On**. If you resample a performance in the respective mode with these settings, the sample will play back at the same level at which it was resampled.

If you want to monitor your performance in Program, Combination, or Sequencer mode, while sampling only the external audio signal from AUDIO INPUT etc., we recommend that you set **Recording Level** to **about +0.0 (dB)** and turn **off Auto +12 dB On** when you resample.

The **Auto +12 dB On** setting is made independently for Program, Combination, Sequencer, and Sampling modes.

5. **Convert to lets you specify whether the sample will automatically be converted to a program after sampling.**

You can also specify whether a note event will be created at the time of sampling.

If the **Program** check box is **checked**, the sample will automatically be converted to a program. (Sampling 0–1a)

At the right, use **Program** and **MS** to specify the program number and multisample number of the program that will be created.

Original Key (Sampling 0–1b) specifies the location of the original key. The multisample will be created with an **Index** (Sampling 0–1a) having this key as its **Top Key** (Sampling 0–1b). **Orig.Key** will increment after sampling, so that the next sample will be assigned to the next higher key.

If you check the **Seq.Event** check box, a note event will automatically be created in the track specified by **Track**. Note-on will occur at the location at which sampling began, and note-off will occur at the location at which sampling ended. The note event will be created as in **Recording Setup Overdub** mode (i.e., it will be added without erasing existing events). If you are sampling repeatedly without stopping the song playback, the event(s) will be automatically created when you stop song playback. The **Program Select** (Seq 0–1–1(2)b) of the **Track** you created will automatically will automatically change to the program you specified in **Program**.

Seq.Event is available only if **Program** has been checked.

If you sample with Seq.Event checked in **Convert to**, the multisample and samples will be the object of the Compare function. If you want re-do sampling, you can press the COMPARE switch to return the multisample and samples to the state prior to sampling, and unneeded samples will not remain. The program will not be affected by the Compare operation, and will not return to its prior state.

6. **Press the OK button to apply the settings you made, or press the Cancel button to discard any settings you made after accessing the dialog box.**

Select Directory

This command lets you specify the save-destination media, directory, and filename for the WAVE file that will be created by sampling.

You can also use this **Select Directory** command to listen to audio from a WAVE file that was saved to media.

The **Select Directory** command is available when **Save to** (Seq 0–1–7b) is set to MEDIA.

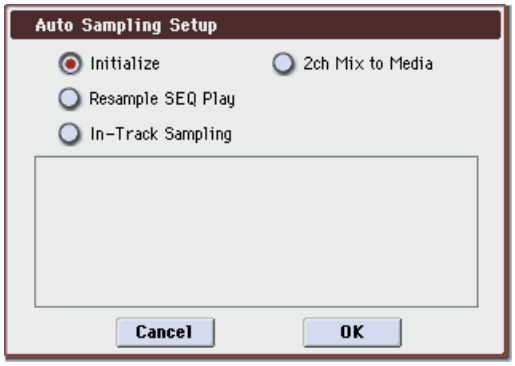
For more information, please see "Select Directory" on page 108.

Auto Sampling Setup

This command automatically makes various parameter settings for Sequencer mode (e.g., in-track sampling) and two-channel mixdown. You will find it convenient to use this command when resampling a song, or when using the song as a guide while sampling an external audio source.

When you execute this operation, the relevant parameters will be set automatically. You cannot use the COMPARE switch to revert to the prior settings.
The settings are automatically made for the most typical applications. After executing the auto setup operation, you can further adjust any of the parameters as described in the paragraphs for each item.

1. **Select "Auto Sampling Setup" to open the dialog box.**



2. **Use the radio buttons to select the type of settings you want to be made automatically.**

Initialize: Set parameters related to sampling to their default values.

Resample SEQ Play: Make settings so that you can resample your keyboard playing in Sequencer mode.

In-Track Sampling: Make settings to sample only an external audio signal using the In-Track Sampling function.

2ch Mix to Media: Make the appropriate settings for resampling a completed song to create a stereo two-channel WAVE file on an external USB storage device (such as a hard disk). (After creating the WAVE file, you can use the Media mode Make Audio CD page to create an audio CD on an external USB CD-R/RW drive.)

3. **The settings for the rest of the procedure will depend on what you selected in step 2. (For details, please see the explanations below.)**

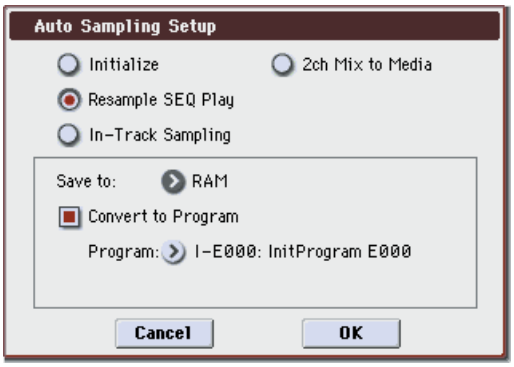
If you selected Initialize:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select Initialize.**
2. **Press the OK button to execute the command. If you decide not to execute, press the Cancel button.**

For the parameters and values that will be set, please see page 278.

If you selected Resample SEQ Play:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select Resample SEQ Play.**



2. **Use "Save to" to select either RAM or MEDIA as the destination to which the resampled data will be written.**

If you select **RAM**, the data will be written to sample memory (RAM). If this is set to MEDIA, the sampled data will be used to create a WAVE file, which will then be saved on an external USB storage device (such as a hard disk). For more information, please see "Save to" on page 12.

3. **If you selected Save to RAM, you can specify whether the data will be automatically converted to a program after sampling.**

If you want the data to be converted, check **Convert to Program** and use the **Program** field to specify the convert-destination program.

4. **Press the OK button to execute Resample SEQ Play, or press the Cancel button if you decide to cancel.**

For the parameters and values that will be set, please see page 278.

Execute the command, and then resample

1. **Press the SAMPLING REC switch and then the SAMPLING START/STOP switch, and then play a note on the keyboard etc.**

Since **Trigger** (Seq 0–1–7b) is set to Note On, sampling will begin at the first note-on.

2. **When you've finished performing, press the SAMPLING START/STOP switch to stop resampling.**

Note: If **Save to** was set to RAM and **Convert to Program** was checked when you executed Resample SEQ Play, and you continue sampling without changing the settings, the samples will automatically be assigned to C#2, D2 ... etc. When you execute **Resample SEQ Play** once again and sample, a new multisample will be created.

Auditioning the sampled data

- If **Save to** was set to RAM and **Convert to Program** was checked when you executed, you can select the program you specified as the conversion-destination, and play the C2 note to hear the result.
  If **Convert to Program** was not checked, select the sample in Sampling mode and audition it.
- If **Save to** was set to MEDIA when you executed, use the menu command **Select Directory** to audition the result.

Note: If you want to change the sample number to be sampled (when **Save to** is RAM), use the menu command **Select Bank & Sample No.** to change it.

Changing the writing destination

If you want to change the destination to which the WAVE file will be saved (when **Save to** is MEDIA), use the menu command **Select Directory** to make the change.

Changing the way in which sampling begins

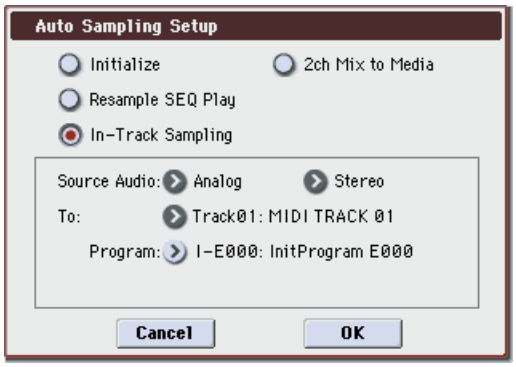
If you want to change the way in which sampling begins, change the **Trigger** setting (Seq 0–1–7b).

Sampling multiple sources simultaneously

If you want to sample an external audio source from AUDIO INPUT etc. simultaneously with the performance of a program, set Sampling / Audio In page Input 1, 2 **Bus Select** to L / R, and **Source Bus** to L / R.

If you selected In-Track Sampling:

1. **Refer to Auto Sampling Setup steps 1 and 2, and select In-Track Sampling.**



2. **Use Source Audio to select the external audio input source.**

If you select **Analog**, the analog audio output from an instrument etc. connected to AUDIO INPUT 1, 2 will be input to the M3.

If you select **S/P DIF**, the digital audio output from an instrument or DAT player etc. connected to the S / P DIF IN jack will be input to the M3. (Seq 0–1–7a **Audio Input**)

Note: If you choose FireWire (when the EXB-FW option is installed), the digital audio output from a computer or other device connected to the FireWire connector will be input to the M3.

3. **Use "Mono-L/Mono-R/Stereo" to specify the input source and whether you are sampling the channel(s) in monaural or in stereo.**

Mono-L: Settings will be made for sampling Input 1 (if you're using Analog) or the S / P DIF L input (if you're using S / P DIF) to L-MONO.

Mono-R: Settings will be made for sampling Input 2 (if you're using Analog) or the S / P DIF R input (if you're using S / P DIF) to R-MONO.

Stereo: Settings will be made for sampling Analog or S / P DIF in stereo.

4. **Use the To field to select the track that you will use for In-Track Sampling.**

Note data will automatically be written to the track you select.

5. **Use Program to specify the program into which the sample will be converted.**

When sampling ends, the entire process of creating a new multisample through converting it to a program and assigning it to a track will be performed automatically.

6. **To execute In-Track Sampling, press the OK button. If you decide not to execute, press the Cancel button.**

For the parameters and values that will be set, please see page 278.

After you've executed this command, use the following procedure to actually perform In-Track Sampling

1. **Use Location to specify the location from which you want the song to play back.**
2. **Press the SAMPLING REC switch to enter sampling-standby mode.**
3. **Press the SEQUENCER START/STOP switch to begin playback.**
4. **At the point where you want to start sampling, press the SAMPLING START/STOP switch. In-Track Sampling will begin.**
5. **Play the instrument etc. that is connected to the AUDIO INPUT jack you selected as the Source Audio setting.**
6. **When you're finished playing, press the SAMPLING START/STOP switch to stop only sampling. If you press the SEQUENCER START/STOP switch, both sampling and song playback will stop.**

Note: If you continue sampling after executing In-Track Sampling, successive samples will automatically be assigned to C#2, D2, ... etc. However if you execute **Auto Sampling Setup** once again and then sample, the samples will be created in a new multisample.

To audition the data you sampled

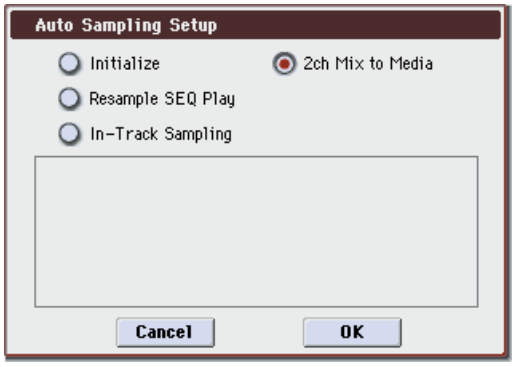
- Set the **Location** back to the appropriate point and press the SEQUENCER START / STOP switch to play back the song.
  Alternatively, use **Track Select** (Seq 0–1–1(2)a) to choose the track you specified in **To** and play the C2 note of the keyboard.

Examples of changing the settings

- If you want to apply an insert effect to the input source, access the Seq P0–1: Play / REC– Sampling / Audio In page and set "Bus Select" to IFX1–IFX5. For the insert effect you're using, set the **AUX** that follows the insert effect to 1 / 2, and set the **Source Bus** to AUX 1 / 2.
- If you want to change the way in which sampling is initiated, change the **Trigger** setting. If you set this to Threshold, resampling will begin when the input level exceeds the specified value.
- To specify the sampling-destination sample, use the menu command **Select Bank & Sample No.**.
- If you selected S / P DIF for **Source Audio**, you can change the **System Clock** (Global 0–2a).

If 2ch MIX to Media is selected:

1. **Select 2ch MIX to Media as described in steps 1 and 2 of Auto Sampling Setup.**



2. **Press the OK button to execute 2ch Mix to Media, or press the Cancel button if you decide to cancel. For the parameters and values that will be set, please see page 278.**

After executing the command, create a two-channel (stereo) WAVE file from the song

1. **Select the song that you want to resample.**
2. **Press the SAMPLING REC switch and then the START/STOP switch (Standby).**
3. **Press the SEQUENCER START/STOP switch. The song will play back, and resampling will begin at the same moment.**
4. **When song playback ends, resampling will stop, and a WAVE file will be created.**

Even if you press the SEQUENCER START / STOP switch during playback, playback and resampling will stop, and a WAVE file will be created.

Auditioning the WAVE file you created

- To audition the WAVE file you created, use the menu command **Select Directory**.

Note: Use the menu command **Select Directory** to specify the location in which the new WAVE file will be created.

Auto Sampling Setup: Automatically-set parameters and their values

		[Initialize]	[Resample SEQ Play]	[In-Track Sampling]	[2ch Mix to Media]
Input (Input Source)*1		Analog	Analog	[Source Audio]*2	Analog
		S/P DIF	S/P DIF		S/P DIF
		FireWire	FireWire		FireWire
Input1	Bus Select	Off	Off	Off	Off
	FX Ctrl Bus	Off	Off	Off	Off
	Aux Bus	Off	Off	1/2	Off
	Send1/2	000	000	000	000
	Pan	L000	L000	L000	L000
	Level	127	127	127	127
Input2	Bus Select	Off	Off	Off	Off
	FX Ctrl Bus	Off	Off	Off	Off
	Aux Bus	Off	Off	1/2	Off
	Send1/2	000	000	000	000
	Pan	R127	R127	R127	R127
	Level	127	127	127	127
Sampling Setup	Source Bus	L/R	L/R	AUX1/2	L/R
	Trigger	Note On	Note On	Sampling START SW	Sequencer START SW
	Metronome Precount	(N/A)	(N/A)	-	(N/A)
	Save to	RAM	[Save to]	[Save to]	MEDIA
	Mode	Stereo	Stereo	[Source Audio]*3	Stereo
	Sample Time(RAM)	Maximum	-	-	(N/A)
	Sample Time(MEDIA)	4 min 59.999 sec	-	-	-
	Rec Level	+0.0	+0.0	+0.0	+0.0
Select Sample	Auto +12dB On	On	On*4	On*4	-
	Convert to Program	Off	[Convert to Program]*5	[Convert to Program]*5	-
	Program	-	[Program]*5	[Program]*5	-
	MS	-	(Create new)*5	(Create new)*5	-
	Original Key	-	(C2)*5	(C2)*5	-
	Seq. Event	-	-	On*5	-
	MIDI Track	-	-	[To]*5	-
Select Directly	-	-	-	-	-
Insert FX	Bus Select (Post IFX)	-	-	-	-

- : Not set automatically

Values enclosed in parentheses [ ] are automatically set according to the settings you make in the dialog box.

*1: [ ] User Global Setting: Edit Program Parameters
[x] User Global Setting: Edit Global Parameters

*2: Set to the input source specified by Source Audio.

*3: Set to Mono-L, R-Mono, or Stereo to match the Source Audio setting.

*4: If **Save to** is RAM.

*5: If **Save to** is RAM and **Convert to Program** is On.

Note: For In-Track Sampling, the Starts parameter will be set to BTH for the MIDI track specified by the To setting.

Copy Tone Adjust

For more information, please see “Copy Tone Adjust” on page 111.

Copy Drum Track

This command copies the drum track settings of the specified Program, Combination, or Song.

For more information, please see “Copy Drum Track” on page 112.

Erase Drum Track Pattern

This erases the drum track pattern you specify.

For more information, please see “Erase Drum Track Pattern” on page 112.

Reset Tone Adjust

For more information, please see “Reset Tone Adjust” on page 111.

Copy Pad Setup

For more information, please see “Copy Pad Setup” on page 112.

Detune BPM Adjust

When the program selected for a track uses a phrase, rhythm loop multisample (or sample that was created to match a specific BPM in Sampling mode in Media mode)

you can use this command to change the BPM of the phrase or rhythm. The BPM can be adjusted by modifying the pitch. This command is available when the **Detune** setting of that track is selected. When you execute this command, the selected **Detune** value will be adjusted.
For more information, please see “Detune BPM Adjust” on page 188.

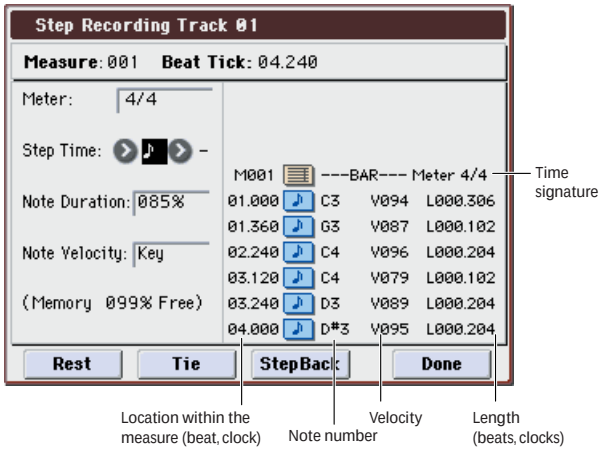
Step Recording

Step recording allows you to specify the length and velocity of each note numerically, and to input the pitches from the keyboard. You can use the **Rest button** and **Tie button** to input a rest or tie.

If you use step recording to input data into a track that already contains sequence data, all data will be erased from the **From Measure** and subsequent measures. If after inputting, you decide to revert to the prior data, use the Compare function.

To input data with a continuously-changing value such as pitch bend, it is best to use **Create Control Data**. To input individual data events such as program changes, use **Event Edit**.

1. **Use Track Select to select the track into which you wish to input data, and use From Measure (Seq 6–1c) to specify the measure at which you wish to begin input.**
2. **Select “Step Recording” to open the dialog box.**



3. **In Meter, set the time signature.**

This will show the time signature that has already been set for the measure.

If you change the time signature setting, the time signature data of the measures you record will change, and all tracks will change to the time signature you specified.

4. **In Step Time, specify the length (in terms of a note value) of the basic interval at which you will input data.**

From the popup menu at the left, select the note length in a range of 𝅝 (whole note) through 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 (32nd note).

If you want the selected note value to be a dotted note or a triplet, use the popup menu at the right to select a dot “**. (Dot)**” or triplet “**3 (Triplet)**.” To use the unmodified value of the selected note, choose “– (Normal).”

The following table shows the number of clocks represented by each **Step Time** selection.

(0:060)	(0:120)	(0:240)	(1:000)	(2:000)	(4:000)
(0:090)	(0:180)	(0:360)	(1:240)	(3:000)	(6:000)
(0:040)	(0:080)	(0:160)	(0:320)	(1:160)	(2:320)

5. **In Note Duration, specify the length that the note will actually be held, relative to the Step Time.**

In general, **100%** will be tenuto, **85%** will be normal, and **50%** will be staccato.

6. **Use Note Velocity to specify the velocity value (keyboard playing strength) of the note data.**

With the PAUSE switch pressed, you can hold down the ENTER switch and play a note on the keyboard to specify the velocity value. If you set this to **Key**, the actual velocity at which you played the key will be input.

7. **Input the note events described below by playing notes on the keyboard or by pressing the buttons in the lower part of the dialog box.**

• Inputting notes

When you press a key on the keyboard, that note number will be input as a note of the length specified in step 4.

When you press a chord on the keyboard, those note numbers will be input as chords of the length specified in step 4. Since each of the note numbers you press before releasing all of the keys will be input at the same location, the notes will be input as a chord even if they are actually played at different times.

Each time you press and release the keyboard, the location will advance by the length specified in step 4.

• Inputting rests

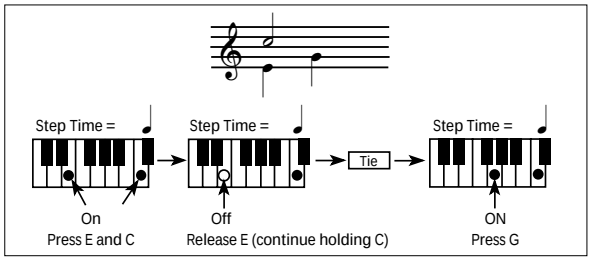
Press the **Rest button** to input a rest of the length specified in step 4.

• Inputting a tie

If you press the **Tie button** without pressing the keyboard, the previously-input note will be tied, and lengthened by the amount specified in step 4.

If you press the **Tie button** while holding down a note, the note you are playing will be tied, and lengthened by the amount specified in step 4.

You can even input notes as shown in the following diagram.



• Deleting a note or rest

To delete a note or rest, press the **StepBack button**. The location will move backward by the amount specified in step 4, and the data in that interval will be deleted.

• Auditioning the next note before input

If you wish to make sure of the next note before you actually input it, press the PAUSE switch (the LED will light). Now when you press a key, you will hear sound but the note will not be input. Press the PAUSE switch once again (the LED will go dark) to cancel the pause mode and resume input.

8. **When you are finished with step recording, press the Done button.**

If you press the COMPARE switch, you will return to the condition of before you began step recording.

Event Edit

Here you can edit individual events of MIDI data that were input.

1. **Use Track Select to select the track that you wish to edit, and use From Measure (Seq 6–1c) field to specify the measure at which you wish to begin editing.**

If you selected **Track 01–16** in **Event Edit**, selecting this command will open the Set Event Filters dialog box.

If you selected **Master Track** in **Track Select**, this dialog box will not appear.

In the **Set Event Filters** dialog box you can select the types of events (musical data) that will appear and can be edited in the event edit window.

For **Note** you can set **Bottom** and **Top** to specify the range of notes available for editing. Normally you will leave these set at **C–1** and **G9**.

Control Change lets you specify the control change number. Normally you will leave this set at **All**.

You can also check various other events (**Pitch Bend**, **Program Change**, **After Touch**, **Poly After Touch**, and **Exclusive**).

2. **Press the OK button to open the Event Edit dialog box.**

3. **In the upper part of the dialog box, Measure and Index show the measure that you are editing and the events of the index numbers within the measure.**

You can touch the scroll bar located at the right to move to the event that you wish to edit.

4. **Select the event that you wish to edit, and use the VALUE controller etc. to modify its value(s).**

- By modifying the value of the **Beat Tick** location within the measure, you can move the event within the measure.
- You can edit each event by modifying its data value(s). When you select a note event, it will sound.

5. **You can press the buttons located at the bottom of the dialog box to edit events as follows.**

• Inserting an event

Select the location **Beat Tick** at which you wish to insert an event, and press the **Insert button** to insert an event.

• Deleting an event

Select the event that you wish to delete, and press the **Cut button** to delete the event.

• Moving an event

You can use the **Cut button** and **Insert button** to move an event (by "cut and paste").

Use the **Cut button** to delete the event that you wish to move, then use the **Insert button** to insert it at the desired location.

You can also move an event by modifying its **Beat Tick** value.

• Copying an event

Select the event that you wish to copy, and press the **Copy button**. Then select the copy destination and press the **Insert button** to insert the event at that location.

• Playing back an event

When you press the Play button, a dialog box will open and the song will begin playing. Use this to audition the edits you've made in Event Edit.

- Playback will begin from the measure specified by **Measure**.
- Playback will occur according to the settings of the song. (The song will play back in the same way as in the P01–1: Play / REC page, etc.)
  If you want to play back only the track you're editing, exit "Event Edit" and solo the desired track. Alternatively, mute the other tracks.

Note: If the menu command **Panel–SW Solo Mode On** is checked, switches 1–8 will control solo on / off if you've selected **Control Assign** MIXER T1–8 or T9–16, even while using Event Edit Play.

- If you've edited the **Meter**, the change will not be reflected in the playback until you exit Event Edit.
- When you press the Exit button, playback will stop and you will return to the Event Edit dialog box.

6. **When you are finished event editing, press the Done button. If you press the COMPARE switch you will return the data to the condition in which it was before you began event editing.**

The following table shows the types of musical data that can be edited by **Event Edit** and the range of their values.

BAR (displayed only) (Measure line)		**Meter: 1/4...16/16** *1 **(Time signature)**
C–1...G9 *2 (Note data)	V: 1...127 *2 (Velocity)	L: 000.000...15984.000 (Length: beats, clocks)
PAFT (Polyphonic after touch)	C–1...G9 (Note number)	0...127 (Value)
CTRL (Control change)	C: 0...119 (Control change number)	0...127 (Value)

BAR (displayed only) (Measure line)		Meter: 1/4...16/16 *1 (Time signature)
PROG (Program change)	Bank: I–A…I–F 000...127, G, g(1)...g(9) g(d), - - -, U–A…U–G (Program bank)	P: 0...127, 1...128 (G, g(1)...g(d)) (Program number)
AFTT (After Touch)	0...127 (value)	
BEND (Pitch bend)	–8192...+8191 (value)	
EXCL *3 (Exclusive)		

*1: Be aware that because the time signature is recorded in the master track, modifying it from any track will affect the same measure of all tracks, causing them all to be played in the modified time signature.

Note: *2: Note data and velocity values can also be entered by holding down the ENTER switch and playing a note on the keyboard.

*3: You cannot change Exclusive events into a different type of event (e.g., a Note or Control Change event). Nor can you change any other type of event into an Exclusive event.

Pattern numbers will be displayed in locations in which a pattern has been "put" (placed). At the end of the track there will be an indication of **Track End**.

Set Song Length

This command changes the length of the specified song. When it is executed, the length of the master track will change, and the number of measures played will change.

1. **Select "Set Song Length" to open the dialog box.**

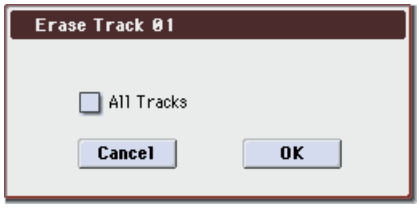
2. **In Length, specify the length of the song.**
3. **To execute the Set Song Length command, press the OK button. To cancel without executing, press the Cancel button.**

All data following the measure specified by **Length** will be deleted.

Erase Track

This command erases the data from the specified track. However, it is not possible to erase the master track by itself.

1. **In Track Select, select the track that you wish to erase.**
2. **Select "Erase Track" to open the dialog box.**



3. **Select the track whose data you want to erase.**

If you don't check **All Tracks,** the data will be erased only from the tracks you specify in **Track Select**.

If you check **All Tracks,** the musical data of all tracks will be erased.

4. **Press the OK button to execute Erase Track. If you decide not to execute, press the Cancel button.**

Copy Track

This command copies musical data from the copy source track to the specified track.

Be aware that the track data of the copy-destination will be erased when you execute the Copy Track operation.

1. **Use Track Select to select the MIDI track (Track 01–16) that you want to copy.**
2. **Select "Copy Track" to open the dialog box.**

3. **Use From to select the copy-source track, and To to select the copy-destination.**

(By default, the track you choose in **Track Select** will be specified for **From**.)

4. **Press the OK button to execute the command. If you decide not to execute, press the Cancel button.**

Bounce Track

This command combines the musical data of the bounce source and bounce destination tracks, and places the combined data in the bounce destination. All musical data in the bounce source will be erased.

If MIDI control data existed in the bounce source track and bounce destination track, unexpected results may occur during playback after the bounce command is executed. To prevent this from happening, use **Event Edit** or **Erase Control Data** to edit the MIDI control data of the two tracks before you use Bounce Track.

1. **Use Track Select to select the MIDI track (Track 01–16) that you want to bounce.**
2. **Select "Bounce Track" to open the dialog box.**

3. **Use From to select the bounce-source track, and To to select the bounce-destination track.**

(By default, the track you choose in **Track Select** will be specified for **From**.)

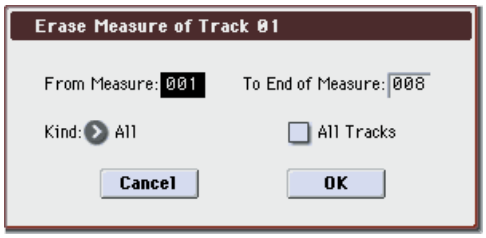
4. **Press the OK button to execute the command. If you decide not to execute, press the Cancel button.**

In the case of **Bounce Track**, the bounce-source track data will be set to "zero".

Erase Measure

This command erases the specified type(s) of musical data from the specified range of measures. The Erase Measure command can also be used to remove only a specific type of data. Unlike the Delete Measure command, executing the Erase Measure command does not cause the subsequent measures of musical data to be moved forward.

1. **Use Track Select to select the MIDI track (Track 01–16), master track that contains the measures of data you want to erase.**
2. **Select "Erase Measure" to open the dialog box.**



3. **In From Measure select the first measure to be erased, and in To End of Measure select the last measure to be erased.**

(By default, **From Measure** and **To End of Measure** will be set to the range that you specified in the Track Edit page.)

4. **If you are erasing MIDI data, use Kind to specify the type of data that will be erased.**

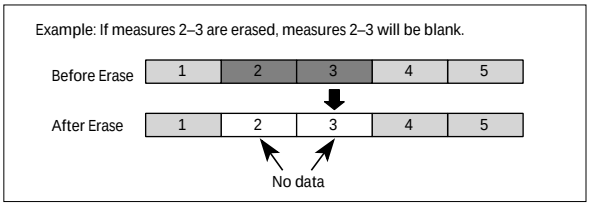
All will erase all types of data in that track, **Note** will erase note data, **Control Change** will erase control change data, **After Touch** will erase both channel pressure and poly key pressure data, **Pitch Bend** will erase pitch bend data, **Program Change** will erase program change data, and **Exclusive** will erase exclusive data.

5. **Specify the track(s) on which you want to execute the command.**

If you execute with **All Tracks** unchecked, the command will be executed only on the data of the track you selected in **Track Select**"

If you check **All Tracks,** the command will be executed on the data of all tracks.

6. **To execute the Erase Measure command, press the OK button. To cancel, press the Cancel button.**



If control data extends across measures that were erased and measures that were not erased, only the data within the range being erased will be erased.

However if note data extends across two or more measures, deleting any of the intervening measures will delete that note data from the following measures as well.

Note: Note data can also be erased using **Shift/Erase Note**. Use this command when you wish to erase a specific range of notes, or to erase notes from a specific **Beat.Tick**.

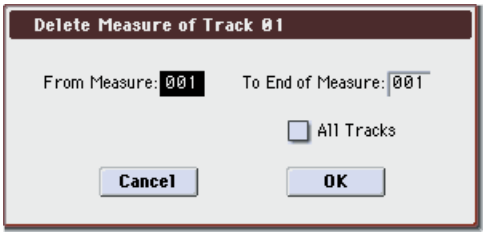
Note: Control Change data can also be erased using **Erase Control Data**. Use this when you wish to erase a specific type of control change, or to erase control change data from a specific **Beat.Tick** range.

Delete Measure

This command deletes the specified measures.

When the Delete Measure command is executed, the musical data following the deleted measures will be moved towards the begining of the sequence.

1. **Use Track Select to select the MIDI track (Track 01–16) that contains the measures you want to delete.**
2. **Select "Delete Measure" to open the dialog box.**



3. **In From Measure select the first measure that you wish to delete, and in To End of Measure select the last measure that you wish to delete.**

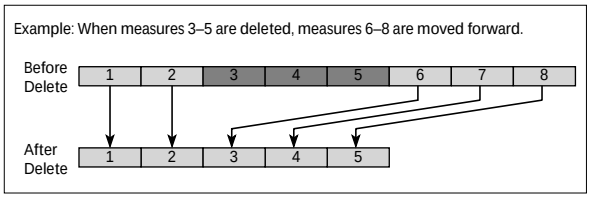
(By default, **From Measure** and **To End of Measure** will be the range that you specified in the Track Edit page.)

4. **Specify the track(s) on which you want to execute the command.**

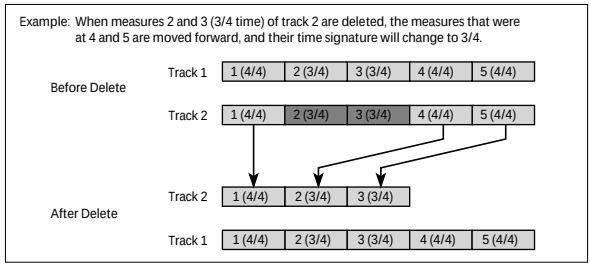
If you execute with **All Tracks** unchecked, the command will be executed only on the data of the track you selected in **Track Select**.

If you check **All Tracks**, the command will be executed on the data of all tracks.

5. **To execute the Delete Measure command, press the OK button. To cancel, press the Cancel button.**



If in step 4 you uncheck **All Tracks** and execute this operation, the measures will not be deleted from the master track. Time signature and tempo data will remain unchanged, and the time signature and tempo of the measures that were moved forward as a result of the Delete operation will change.



If in step 4 you check **All Tracks** and execute this operation, the specified measures of musical data will be deleted from all tracks including the master track, and the time signature and tempo will also move forward by the number of measures that were deleted.

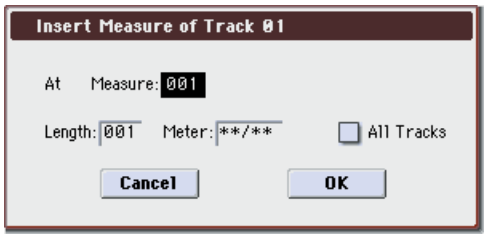
If control data extends across a line between measures that were deleted and measures that were not deleted, only the data within the range being deleted will be erased.

Insert Measure

This command inserts the specified number of measures into the specified track. When you execute the Insert Measure command, the musical data following the insert location will be moved backward.

If you insert measures between note events that are connected by a tie, a note-off will be created immediately before the inserted measure, and the subsequent portion will be deleted.

1. **Use Track Select to select the MIDI track (Track 01–16) that you want to insert data into.**
2. **Select "Insert Measure" to open the dialog box.**



3. **In At Measure, specify the measure location at which the data will be inserted.**

(The measure you specified in Track Edit page **From Measure** will be set as a default.)

4. **In Length, specify the number of measures that will be inserted.**
5. **In Meter, specify the time signature of the measures that will be inserted.**

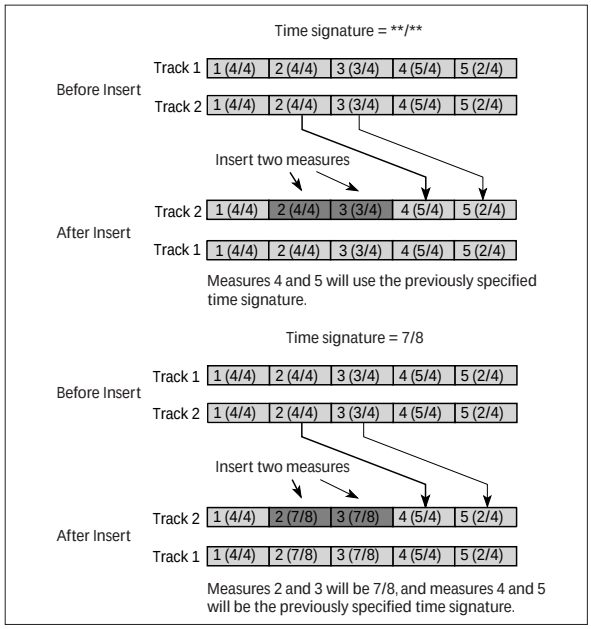
If you want the inserted measures to match the existing time signature, specify **/**. With any setting other than **/**, the time signature of the inserted measures will change, and the specified time signature will apply to all tracks for those measures.

6. **Specify the track(s) for which you want to execute the command.**

If you execute with **All Tracks** unchecked, the measures will be inserted into the track that's selected in **Track Select**. Be aware that at this time, the playback data that follows the insert location will move toward the end of the song according to the number of inserted measures, but the time signature and tempo will not move.

If you check **All Tracks**, the measures will be inserted into all tracks including the Master Track. The playback data in subsequent measures will play just as it did before this command was executed.

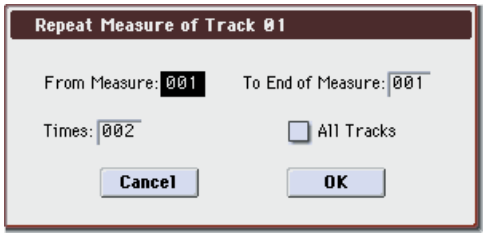
7. **To execute the Insert Measure command, press the OK button. To cancel, press the Cancel button.**



Repeat Measure

This command repeatedly inserts the specified measures for the specified number of times. When you execute the Repeat Measure command, the measures will be inserted following the measure specified by **To End of Measure**, and musical data following the inserted data will be moved backward. It is convenient to use this command when you have a song that you playback with **Track Play Loop** (Seq P0–1–5(6)) turned on, and wish to expand it into musical data.

1. **Use Track Select to select the MIDI track (Track 01–16) that you want to insert data into.**
2. **Select "Repeat Measure" to open the dialog box.**



3. **In From Measure and To End of Measure, specify the range of measures that will be repeated.**

(By default, **From Measure** and **To End of Measure** will be set to the range you specified in the Track Edit page.)

4. **In Times, specify the number of repetitions.**

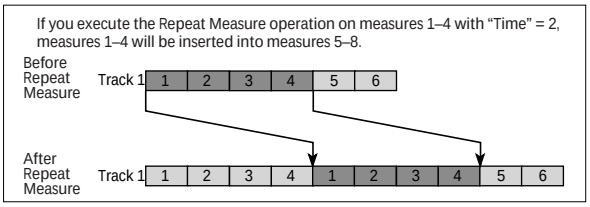
For example if you set **From Measure** to **001**, **To End of Measure** to **004**, and **Times** to **2**, the musical data of measures 1–4 will be inserted into measures 5–8. The result will be that measures 1–4 will be played twice.

5. **Specify the track(s) on which you want to execute the command.**

If you execute with **All Tracks** unchecked, the performance data will be inserted into the track you specified in **Track Select**. Be aware that in this case, the performance data following the insert position will move backward (i.e., toward the end of the song) by the number of inserted measures, but the time signature and tempo will not move.

If you execute with **All Tracks** checked, the performance data will be inserted into all tracks, including the master track. The performance data following the inserted measures will play back in the same way as it did before.

6. **To execute the Repeat Measure command, press the OK button. To cancel, press the Cancel button.**

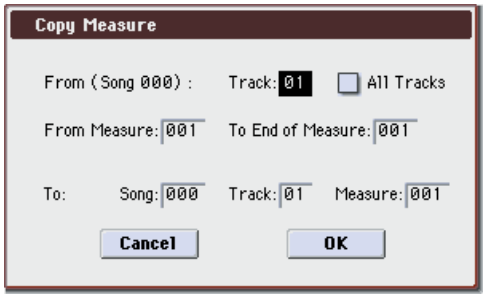


Copy Measure

This command copies the measures of musical data specified as the **From** source to the begining of the measure specified as the **To** location.

When you execute the Copy Measure command, the existing track data at the copy destination will be rewritten.

1. **Select the copy source song.**
2. **Select "Copy Measure" to open the dialog box.**



3. **In From: Track select the copy source track.**

(By default, this will be the track you selected in **Track Select**.)

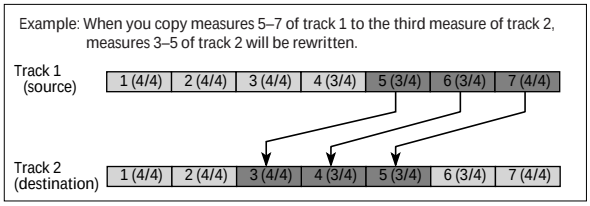
If you execute with **All Tracks** unchecked, only the selected track will be copied. Note that the time signature and tempo will not be copied.

If you check **All Tracks**, the musical data of all tracks including the master track will be copied.

4. **In From Measure and To End of Measure, specify the range of copy source measures.**

(By default, **From Measure** and **To End of Measure** will be the range that you specified in the Track Edit page.)

5. **Use To: "Song" to specify the copy-destination song, "Track" (if All Tracks is unchecked) to specify the copy-destination track, and Measure to specify the starting measure at which the copied data will be inserted.**
6. **To execute the Copy Measure operation, press the OK button. To cancel, press the Cancel button.**

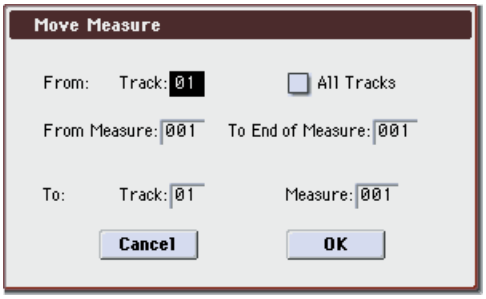


Move Measure

This command moves the specified measures of performance data to another measure.

When you execute the Move Measure command, the performance data following the move-source measures will move forward by the corresponding number of measures, and the performance data following the move-destination will move backward (i.e., later in the song) by the same number of measures.

1. **Select "Move Measure" to open the dialog box.**



2. **In From: Track select the move source track.**

(By default, this will be the track you selected in **Track Select**.)

If **All Tracks** unchecked, only data from the selected track will be moved.

If you check **All Tracks**, musical data of all tracks including the master track will be moved.

3. **In From Measure and To End of Measure, specify the range of measures that will be moved.**

(By default, **From Measure** and **To End of Measure** will be the range that you specified in the Track Edit page.)

4. **In To: Track (if All Tracks is unchecked) to specify the move-destination track, and Measure to specify the measure at which the data will be inserted.**
5. **To execute the Move Measure command, press the OK button. To cancel, press the Cancel button.**

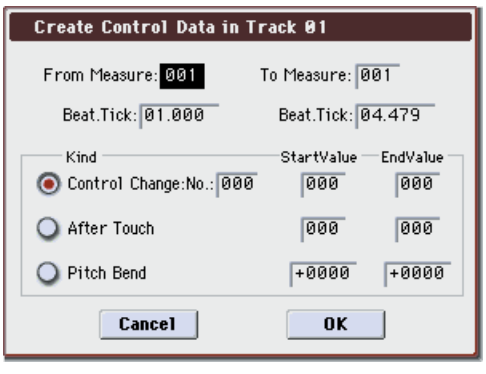
Create Control Data

This command creates the specified type of data (control change, aftertouch, pitch bend, or tempo) in the selected region of a track.

1. **In Track Select, select the MIDI track on which you wish to perform the Create Control Data command.**

If you wish to modify tempo data, select **Master Track** as the track. In this case, the step 4 item **Kind** will be set to **Tempo**.

2. **Select "Create Control Data" to open the dialog box.**



3. **Specify the range into which the control data will be inserted.**

In **From Measure** and **To End of Measure** specify the measures, and in **Beat.Tick** specify the beat and clock. (By default, **From Measure** and **To End of Measure** will be set to the range you specified in the Track Edit page.)

4. **Kind to the type of musical data (event) that you wish to create.**

Control change: Control change data will be inserted. In this case, use "#" to specify the control change number.

After Touch: Aftertouch data will be inserted.

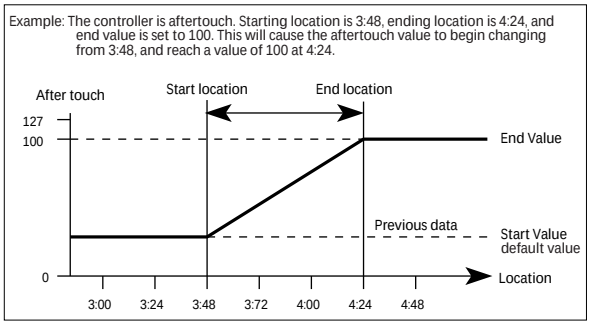
Pitch Bend: Pitch bend data will be inserted.

Tempo: Tempo data will be inserted (if you've selected the master track).

5. **In Start Value, select the starting value of the control data. In End Value, select the ending value of the control data.**

By default, the **Start Value** will be set to the value of the existing data at the start location. If you wish to create control data that changes smoothly from the starting location, you can leave the **Start Value** unchanged, and set only the **End Value**.

6. **To execute the Create Control Data command, press the OK button. To cancel, press the Cancel button.**



When you execute Create Control Data, a large amount of sequencer memory will be consumed. For this reason it may not be possible to execute this command if there is a limited amount of memory remaining. In such cases, first use **Quantize** to quantize the data and remove unnecessary control data. Alternatively, you could quantize the data that was inserted by the Create Control Data command.

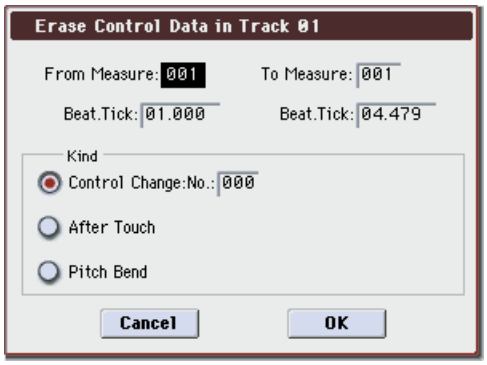
Erase Control Data

This command erases data such as control changes, after touch, pitch bend, or tempo in the specified range.

1. **In Track Select, select the track from which you wish to erase control data.**

If you wish to erase tempo data, select **Master Track**. In this case, the **Kind** item in step 4 will be **Tempo**.

2. **Select "Erase Control Data" to open the dialog box.**



3. **Specify the range from which you wish to erase control data.**

In **From Measure** to **To End of Measure** specify the measures, and in **Beat.Tick** specify the beat and clock. (By default, **From Measure** and **To End of Measure** will be the range that was specified in the Track Edit page.)

4. **"Kind" to the type of musical data (event) that you wish to erase.**

Control change: Control change data will be erased. In this case, use "#" to specify the control change number.

After Touch: Aftertouch data will be erased.

Pitch Bend: Pitch bend data will be erased.

Tempo: Tempo data will be erased. (If you've selected the master track)

5. **To execute the Erase Control Data command, press the OK button. To cancel, press the Cancel button.**

Note: If you wish to erase all control change data from specified measures, you can also use **Erase Measure** and set **Kind** to **Control Change**. However, this **Erase Control Data** command allows you to specify the range using **Beat.Tick**, and also to erase only specific types of control change data.

Quantize

This command corrects the timing of MIDI data of the type you specify (note data, control change, aftertouch, pitch bend, program change, etc.) in the track.

When you execute the Quantize operation, the musical data will be affected as follows:

- When you execute Quantize on note data, the timing of the note-on will be corrected, but the length (duration of the note) will not be affected.
- If the Quantize resolution is set to **Hi**, the timing will be adjusted to units of the base resolution (♩/480), so note data will not be affected. However, continuous controller data such as joystick (KYBD-61/73/88) or after touch which occupies a large amount of memory will be processed so that two or more data events of an identical type existing at a single interval of the timing resolution will be combined into a single event, thus conserving memory.

Similarly, two or more data events of an identical type existing at the identical timing will be combined into one, also conserving memory.

1. **In Track Select, specify the track.**
2. **Select "Quantize" to open the dialog box.**

3. **Specify the range that will be quantized.**

In **From Measure** and **To End of Measure**, specify the measures. In **Beat.Tick** specify the beat and clock. (By default, **From Measure** and **To End of Measure** will be the range that you specified in the Track Edit page.)

4. **In Kind, select the type of musical data (events) that you wish to quantize.**

All: Quantization will be applied to all performance MIDI data.

Note: Quantization will be applied only to note data. Use **Bottom** and **Top** to specify the range of notes. **Bottom** specifies the lowest note that will be affected, and **Top** specifies the highest note. You can use this when you want to quantize only a specific note or notes (for example, just the snare sounds of a drum track). If you want to quantize all notes, set these parameters **C–1** and **G9** respectively.

Control Change: Quantization will be applied to control changes. If you want to quantize only a specific control change, specify the number ("**No.**"). If you want to quantize all control changes, select **All**.

After Touch: Quantize both Channel Pressure and Polyphonic Key Pressure messages.

Pitch Bend: Pitch bend data will be quantized.

Program Change: Program change data will be quantized.

5. **In Resolution, specify the timing resolution to which the data will be corrected.**

By setting a lower resolution you can save more memory, but the timing of the playback may not be acceptable.

6. **In Offset, specify the number of clock ticks by which the data will be moved forward or backward relative to the standard timing.**

A setting of **240** will be ♪, and **120** will be 𝅘𝅥𝅯. Positive (+) settings will adjust the data forward, and negative (–) settings will adjust the data backward. This allows you to simulate "pushing" or "dragging" the beat.

7. **In Intensity, specify the degree of sensitivity to which the timing will be corrected; i.e., how close to the locations specified by steps 5 and 6 the data will be moved.**

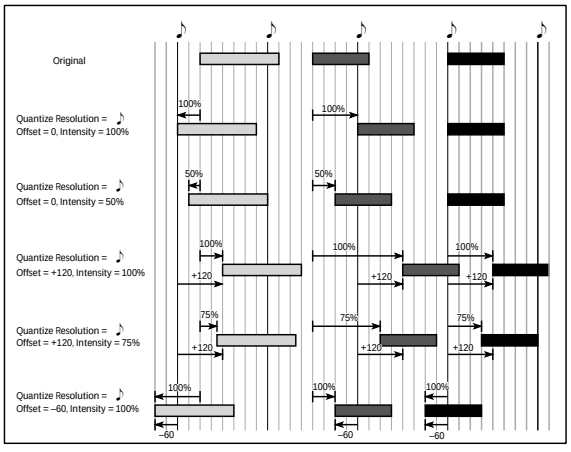
With a setting of **0**, no correction will take place. With a setting of **100**, the data will be moved all the way to the timing intervals specified by steps 5 and 6.

8. **Use Swing to add a sense of swing to the rhythm. For example, this provides an easy way to give a slight shuffle groove to a "square" 16-beat rhythm.**

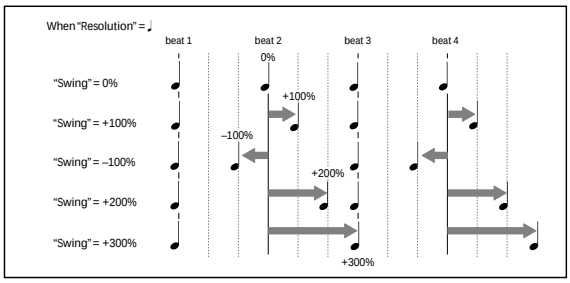
Settings other than 0% will add a sense of swing by adjusting the position of the notes at even-numbered beats relative to the specified **Resolution**. With a setting of **+100%**, these notes will be moved one third of the way toward intervals of the specified **Resolution**. With a setting of **+300%**, notes of even-numbered beats will be moved all the way to the next even-numbered beat.

9. **To execute the Quantize command, press the OK button. To cancel, press the Cancel button.**

* By varying the **Offset** and **Intensity** settings you can create quantize effects such as the following.



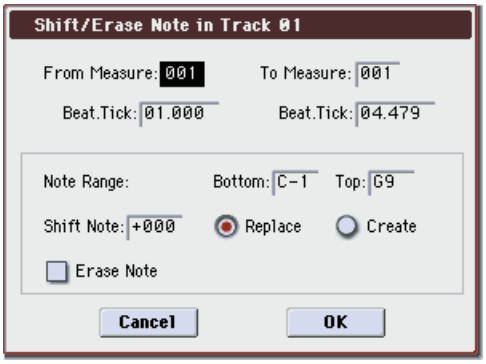
* By varying the **Swing** settings you can create effects such as the following.



Shift/Erase Note

This command shifts (moves) or erases the specified note numbers in a specified track and range of measures.

1. **In Track Select, select the MIDI track on which you wish to execute the Shift/Erase Note command.**
2. **Select "Shift/Erase Note" to open the dialog box.**



3. **Specify the range in which you wish to shift or erase note numbers.**

In **From Measure** and **To End of Measure**, specify the measures. In **Beat.Tick**, specify the beat and clock. (By default, **From Measure** and **To End of Measure** will be the range that you specified in the Track Edit page.)

4. **Specify the range of notes that you wish to shift or erase.**

Note Range: **Bottom** specifies the lower limit, and **Top** specifies the upper limit. If you wish to edit all notes, set **Bottom** to **C–1** and **Top** to **G9**.

• Shifting notes

5. **In Shift Note, specify the amount by which you wish to move the note.**

The amount of shift is set in semitone steps over a range of **–127** to **+127**. **+1** will shift the note a semitone upward.

6. **Select either Replace to move the note numbers, or Create to generate additional notes.**

For example if you are editing a track that uses a drum program, you can use **Replace** to exchange the current snare sound for a different snare sound assigned to a different key, or use **Create** to add a sound effect at a different note # to the snare sound. Alternatively, you can use **Create** to add an octave doubling to an existing guitar phrase, etc.

7. **To execute the Shift Note command, press the OK button. To cancel, press the Cancel button.**

• Erasing notes

8. **Check Erase Note.**

If you wish to erase all note data in the specified range of measures, you can also use the **Erase Measure** command and set **Kind** to **Note**. However, this Shift / Erase Note

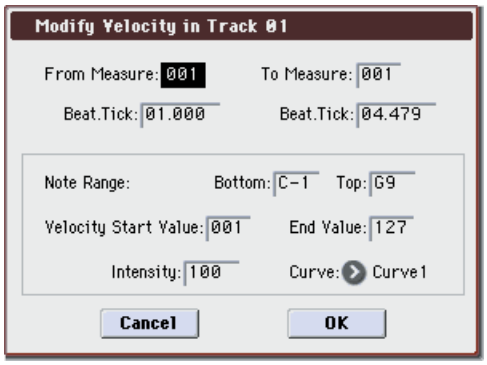
command lets you specify the **Beat.Tick** range, and to erase only specific ranges of note data.

9. **To execute the Erase Note command, press the OK button. To cancel, press the Cancel button.**

Modify Velocity

This command modifies the velocity values of notes in the specified area so that they will change over time according to a selected curve.

1. **In Track Select, specify the track whose velocity will be modified.**
2. **Select "Modify Velocity" to open the dialog box.**



3. **Specify the range in which note velocity will be modified.**

From Measure and **To End of Measure** specify the measure, and **Beat.Tick** specify the beat and clock. (By default, **From Measure** and **To End of Measure** will be set to the range that you specified in the Track Edit page.)

4. **Specify the range of notes that will be affected by the Modify Velocity command.**

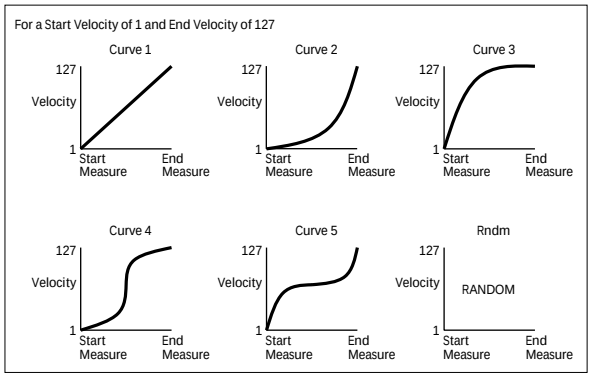
Note Range: Bottom is the lower limit, and **Top** is the upper limit. If you wish to edit all notes, set **Bottom** to **C–1** and **Top** to **G9**.

5. **In Velocity Start Value specify the value at which the velocity data will start, and in End Value specify the final velocity value.**
6. **In Intensity, specify the degree to which the velocity data will be adjusted toward the curve you specify in step 7.**

With a setting of **0** [%], the velocity will not change. With a setting of **100** [%], the velocity will be exactly as described by the curve.

7. **Curve lets you select from six types of curve to specify how the velocity will change over time.**
8. **To execute the Modify Velocity operation, press the OK button. To cancel, press the Cancel button.**

* The six curves are as follows.



Copy KARMA Module

For more information, please see "Copy KARMA Module" on page 114.

Initialize KARMA Module

For more information, please see "Initialize KARMA Module" on page 115.

Copy Scene

For more information, please see "Copy Scene" on page 115.

Swap Scene

For more information, please see "Swap Scene" on page 115.

Capture Random Seed

For more information, please see "Capture Random Seed" on page 116.

Auto Assign RTC Name

For more information, please see "Auto Assign RTC Name" on page 117.

Copy Insert Effect

For more information, please see "Copy Insert Effect" on page 117.

However, the MIDI control channel specified in **Ctrl Ch** of the IFX 1–5 page will not be copied.

Swap Insert Effect

For more information, please see "Swap Insert Effect" on page 118.

However, the MIDI control channel specified in **Ctrl Ch** of the IFX 1–5 page will not be swapped.

DrumKit IFX Patch

For more information, please see "DrumKit IFX Patch" on page 190.

Copy MFX/TFX

For more information, please see "Copy MFX/TFX" on page 118.

However, the MIDI control channel specified in **Ctrl Ch** of the MFX 1–TFX page will not be copied.

Swap MFX/TFX

Note: For more information, please see "Swap MFX/TFX" on page 118.

However, the MIDI control channel specified in **Ctrl Ch** of the MFX 1–TFX page will not be swapped.

Write FX Preset

For more information, please see "Write FX Preset" on page 118.

Put Effect Setting to Track

This command inserts effect settings into a track as exclusive events. You can use this to make the effect settings change during a song.

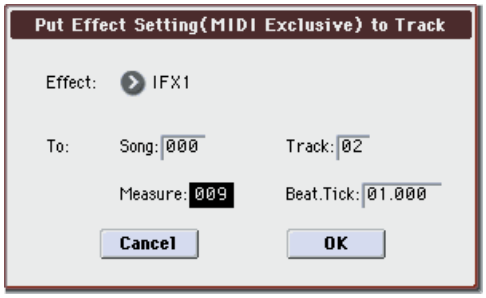
When you use MIDI parameter change system exclusive messages to change effect settings, a certain amount of time will be required for the effect to switch. Also, if a note is sounding, the sound may not change smoothly. You should take into account the timing of the musical data when you specify the location at which the system exclusive messages will be inserted.

Note: If you switch effects during a song, you should also use this command to insert an effect change at the beginning of the track (**Measure** 001, **Beat.Tick** 01.000) to select the effect that will be used from the beginning.

1. **Use P8–1: IFX, P8–2: IFX or P9: MFX/TFX to edit the effect settings that you want to insert (IFX1–IFX5, MFX1, MFX2, TFX), and determine the song, track, measure, beat, and clock at which you will insert the exclusive event.**

The illustration below shows the example of switching IFX4 (used by track 2) at the beginning of measure 9.

2. **Select “Put Effect Setting to Track” to open the dialog box. (The values in the dialog box are settings for the example described in step 1.)**



3. **Use Effect to select the desired effect.**
4. **Use To: Song to specify the song into which the settings will be inserted, Track to specify the insert-destination track, Measure to specify the measure and Beat.Tick to specify the beat and clock at which the settings will be inserted.**
5. **Press the OK button to execute Put Effect Setting to Track. If you decide not to enter, press the Cancel button.**

The inserted events are only the effect type and effect parameters. Settings such as effect on / off and bypass must be realtime-recorded.

Note: Turn back the Location, and play the song to verify that the effect is switched as you intend.
You can also use the P6: Track Edit menu command **Event Edit** to verify that a parameter change system exclusive message (Exclusive) has been inserted.

Note: If a pattern had been inserted at the same location (where you inserted the exclusive data), that pattern will be expanded to note data.

Using “Put Effect Setting to Track” to switch effects

The **Put Effect Setting to Track** menu command inserts effect settings into a track as exclusive event data. We’ll explain this using two methods as examples.

1) Inserting effect settings at the beginning and in the middle of a song

We’ll make settings so that MIDI track 2 uses the insert effect (IFX3) 035: Stereo Phaser from measures 1 through 8, and switches to 032: Stereo Flanger from measure 9.

Use the menu command **Put Effect Setting to Track** to insert a MIDI parameter change system exclusive message.

1. **In P0–1: Play/REC– Program T01–08, select the desired program for MIDI track 2.**

If you set **Track Select** to Track 02, you’ll be able to monitor it.

2. **In P8-1: IFX– Routing T01–08, send MIDI track 2 to IFX3.**
3. **Specify the effect that you want to use from measure 1.**

In P8–1: IFX– Insert FX Setup, select 035: Stereo Phaser for IFX3.

In P8–1: IFX– IFX3, set the parameters as desired.

4. **Make sure that you’ve selected Track 02 in Track Select, and record as desired.**
5. **In the P8–1: IFX page, select the menu command Put Effect Setting to Track to access the dialog box.**
6. **Specify the location at which the exclusive message for the effect will be inserted.**

   Effect: IFX3
   To: **Song**: 000
   Track: 03
   Measure: 001
   Beat.Tick: 01.000

7. **Press the OK button.**
8. **Specify the effect that you want to use for measure 9 and following.**

Go to the P8–1: IFX– Insert FX setup, and choose 032: Stereo Flanger for IFX3.

In the P8–1: IFX– IFX3, set the parameters as desired.

9. **In the P8–1: IFX, choose the Put Effect Setting to Track menu command to open the dialog box.**
10. **Specify the location at which the exclusive message for the effect will be inserted.**

    Effect: IFX3
    To: **Song**: 000
    Track: 03

Measure: 009

Beat.Tick: 01.000

11. **Press the OK button.**
12. **When you play back after executing these commands, the effect on track 3 will change to 032: Stereo Flanger at measure 9.**
13. **If you press the COMPARE switch (it will light) and play back, the playback will occur as it did before you executed Put Effect Setting to Track.**
14. **In the P6: Track Edit– Track Edit page, set Track Select to Track 03, and choose the Event Edit menu command to access the event edit screen. (In the Set Event Filters dialog box, check Exclusive.)**

Notice that a MIDI parameter change system exclusive message is inserted at the beginning and at measure 9 of track 3.

2) Using the song's own effect settings from the beginning of the song, and inserting effect settings from elsewhere into the middle of the song

In this example, we'll apply an insert effect (IFX3) to MIDI track 3, and make settings so that it uses 035: Stereo Phaser from the beginning of the song. At measure 9, we'll insert a MIDI parameter change system exclusive message to make IFX3 switch to the 032: Stereo Flanger effect settings that were created for a different song.

1. **Select a desired program for MIDI track 3, and send it to IFX3.**

Make the following settings for MIDI track 3.

Track Select: Track 03 (P0)

Bus Select (IFX/Indiv.Out Assign): IFX3 (P8)

In the P0–1: Play / REC– Program T01–08 / T09–16 page, assign a program to track 3. Then use the P8: Insert Effect page to route track 3 to the effect, and make effect settings.

2. **Use Track Select to select Track 03, and record on it.**
3. **On a separate song you copied, make the effect settings that you want start using at measure 9.**

1) Create song S001.

2) Use the **Copy From Song** menu command to copy from S000.

In song 001, make the effect settings that you want to use from measure 9. Go to the P8–1: IFX– Insert FX Setup, and choose 032: Stereo Flanger for IFX3.

In the P8–1: IFX– IFX3, set the parameters as desired.

4. **Select "Put Effect Setting to Track" to open the dialog box.**
5. **Insert the effect settings you created in song 001 into song 000.**

Effect: IFX3

To: **Song**: 000

Track: 03

Measure: 009

Beat.Tick: 01.000

6. **Press the OK button to execute the command.**
7. **After execution, select song 000 and play it back. The effect for track 3 will change to 032: Stereo Flanger at measure 9.**
8. **In song 000, you can press the COMPARE switch (it will light) and play back to hear the song as it was before you executed Put Effect Setting to Track.**

You can use the COMPARE switch to compare the state of the track before and after execution.

Note: In the P6: Track Edit– Track Edit page of song 000, set **Track Select** to Track 03 and choose the **Event Edit** menu command to access the Event Edit screen. (In the Set Event Filters dialog box, check **Exclusive**.)

Notice that a MIDI parameter change system exclusive message is inserted at measure 9 of track 3.

Step Recording (Loop Type)

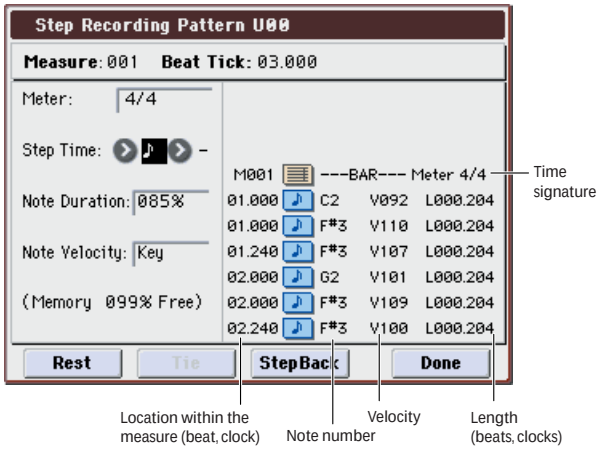
Here you can perform step recording into a pattern.

This is available when a user pattern is selected.

1. **In Pattern and Pattern Select, specify the pattern.**

By default, the pattern length is one measure. If you wish to change the number of measures in the pattern, set the **Pattern Parameter**.

2. **Select "Step Recording (Loop Type)" to open the dialog box.**



3. **The remaining steps are the same as when step recording on a track.**

Refer to steps 3 and following in **Step Recording** (see "Step Recording" on page 279). However, step recording a pattern differs from step recording a track in that when you reach the end of the pattern, you will return to the beginning and continue recording, in this way continuing to add more data.

Event Edit

Here you can edit individual events of the musical data in a pattern.

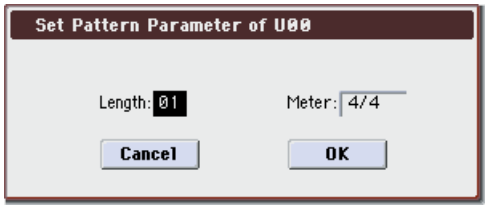
Use **Pattern** and **Pattern Select** to specify the pattern, and then select this command.

The remaining steps are the same as when Event Editing a track. For more information, please see "Event Edit" on page 280.

Pattern Parameter

This command specifies the number of measures and the time signature of the selected pattern.

1. **Use Pattern and Pattern Select to specify the pattern.**
2. **Select "Pattern Parameter" to open the dialog box.**



3. **In Length, specify the number of measures in the pattern.**

4. **In Meter, specify the time signature of the pattern.**

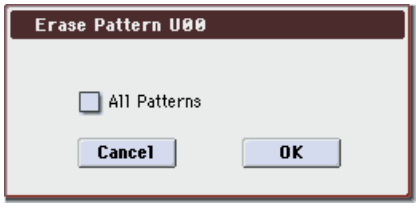
However, this time signature is only temporary, and when you "put" or "copy" the pattern in a track of a song, the pattern will play according to the time signature of that measure.

5. **To execute the Pattern Parameter settings, press the OK button. To cancel, press the Cancel button.**

Erase Pattern

This command erases the data from the selected pattern.

1. **Use Pattern and Pattern Select to specify the pattern.**
2. **Select "Erase Pattern" to open the dialog box.**



3. **If you check All Patterns, all user patterns in the song will be erased.**

If **All Patterns** is **not checked**, only the pattern specified in step 1 will be erased.

4. **To execute the Erase Pattern command, press the OK button. To cancel, press the Cancel button.**

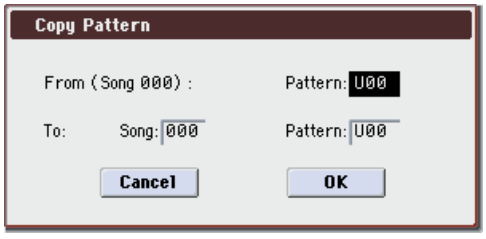
Copy Pattern

This command copies the settings and musical data of the selected pattern to another pattern.

User patterns belong to a particular song, but you can use the Copy Pattern command to use the same pattern in another song.

Also, while preset patterns cannot be edited, you can copy a preset pattern to a user pattern and then edit and save it as a user pattern. Be aware that when you execute the Copy Pattern operation, the pattern settings and musical data of the copy destination will be erased.

1. **Select "Copy Pattern" to open the dialog box.**



2. **In From (Song***): Pattern, specify the copy source pattern. (By default, this will be the song and pattern that was selected in the Pattern Edit page.)**
3. **In To: Song and Pattern, specify the copy destination song and pattern.**

For **Pattern**, only user patterns **U00–U99** can be specified.

4. **To execute the Copy Pattern command, press the OK button. To cancel, press the Cancel button.**

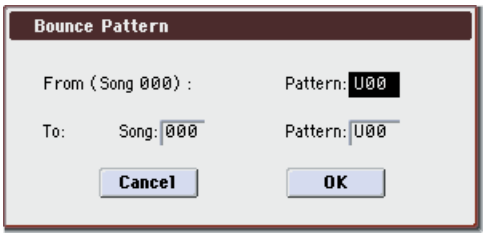
Bounce Pattern

This command combines the musical data of the bounce source pattern and bounce destination pattern, and places the combined musical data in the bounce destination. The time signature and length of the pattern following execution will be according to the settings of the bounce destination.

Unlike the Track Bounce operation, the musical data of the bounce source will not be erased.

If MIDI control data exists in the selected pattern and in the bounce destination pattern, the resulting playback following the bounce operation may produce unexpected results. We recommend that you use **Event Edit** to prepare the MIDI control data of the two patterns before executing the Bounce Pattern command.

1. **Pattern and Pattern Select to specify the bounce source pattern.**
2. **Select "Bounce Pattern" to open the dialog box.**

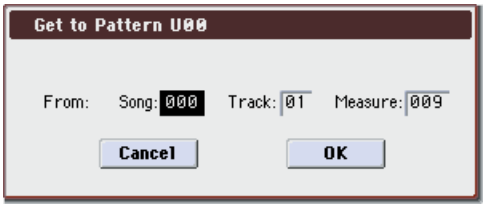


3. **In From (Song***) Pattern, select the bounce source pattern. (By default, the song and pattern that are selected in the Pattern Edit page will be chosen.)**
4. **In To: Song and Pattern, select the bounce destination song and pattern. For Pattern, only user patterns U00–U99 can be specified.**
5. **To execute the Bounce Pattern command, press the OK button. To cancel, press the Cancel button.**

Get From Track

This command takes musical data from a track and loads it into the specified pattern.

1. **Use Pattern and Pattern Select to specify the pattern.**
2. **In Pattern Parameter, specify the pattern length of the "get" destination.**
3. **Select "Get From Track" to open the dialog box.**



4. **In Song, select the "get" source song.**
5. **In Track, select the "get" source track.**
6. **In Measure, specify the first measure of the "get" source.**
7. **To execute the Get From Track command, press the OK button. To cancel, press the Cancel button.**

Put To Track

This command places a pattern into a track.

Unlike the **Copy to Track**, this command only places the pattern number in the song, so that when playback reaches that point, the pattern will be recalled. The musical data of the pattern will not actually exist in the track.

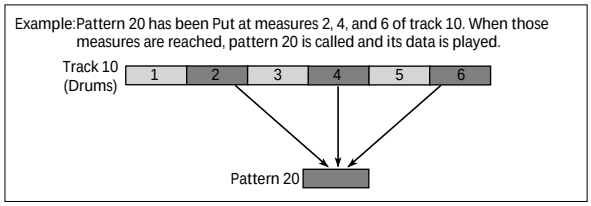
By creating patterns that contain frequently-used phrases or drum patterns, and then placing them on the tracks, you can conserve memory.

Be aware that when you edit a pattern, all locations in the song where that pattern has been placed will be affected.

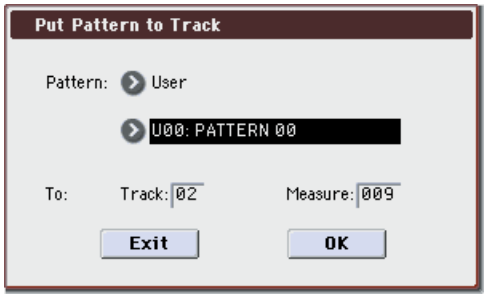
When you execute the Put to Track command, the musical data will be affected as follows.

- Musical data previously existing at the “put” destination will be erased.
- The pattern that you “put” will playback according to the time signature that is specified by the measures of the “put” destination.
- Control data such as pitch bend etc. (but not including volume data) previously existing in the track will be reset immediately before the measure at which the pattern was “put.” If you wish to use control data such as pitch bend in the measures in which a pattern is “put,” you must first write the control data into the pattern.

To delete a pattern that has been placed in a track you can use **Erase Measure**, specifying the area in which the pattern was “put,” and setting **Kind** to **All**.



1. **Select “Put To Track” to open the dialog box.**



2. **In Pattern and Pattern Select, select the “put” source pattern. (By default, this will be the pattern selected in the Pattern Edit page)**
3. **In To: Track, select the “put” destination track.**
4. **In Measure, specify the first measure of the “put” destination.**
5. **To execute the Put to Track command, press the OK button.**

When you execute the command, **Measure** will automatically count up. If you wish to, you can continue “putting” the pattern. To exit the command, press the **Exit button**.

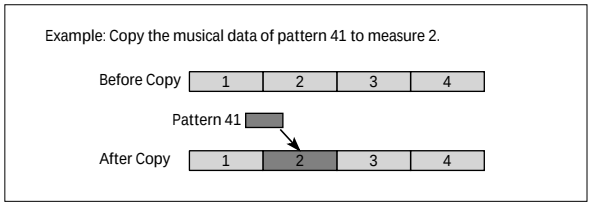
Copy To Track

This command copies the specified area of musical data from the specified pattern to a track as musical data.

Unlike the Put To Track command, this command actually writes the musical data of the pattern into the track, so that you can edit the copied data in the track. Even if you later edit the copy source pattern, the musical data of the song will not be affected.

When you execute the Copy to Track command, the musical data will be affected as follows.

- Musical data previously existing in the copy destination measures will be erased.
- The musical data that is copied will playback according to the time signature specified at the copy destination measures.

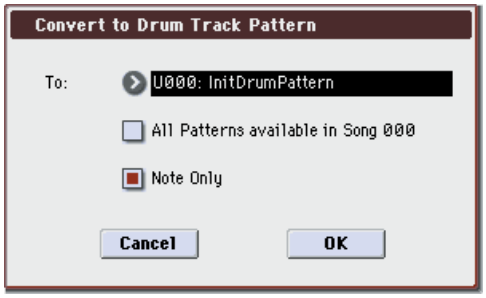


The procedure is the same as for the Put to Track command. For more information, please see “Put To Track” on page 290.

Convert to Drum Trk Pattern

This command converts a user pattern into a user drum track pattern. This conversion lets you use a user pattern in the drum track of the various modes. The drum track pattern you convert here will be preserved in the M3’s memory even when the power is turned off, so you can manage it together with the programs and combinations.

1. **Use Pattern and Pattern Select to select the conversion-source pattern.**
2. **Select “Convert to Drum Trk Pattern” to open the dialog box.**



3. **Use the To Drum Track Pattern Select field to specify the conversion-destination user drum track pattern number. When you execute this command, the data will be overwritten onto the copy-destination number.**
4. **If you check the All Patterns available in Song *** item, all patterns in the song that contain note events will be copied, starting at the number you specified in step 3.**
5. **If you execute with Note Only checked, only the note events will be copied.**
6. **Press the OK button to execute Convert To Drum Track Pattern, or press the Cancel button if you decide not to execute.**

If there is insufficient drum pattern memory or insufficient pattern locations, an error message of “Not enough Drum Track pattern memory” or “Not enough Drum Track pattern locations available” will appear, and the command cannot be executed.

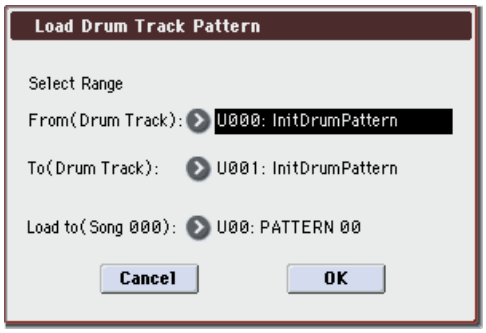
Tip: It’s a good idea to convert drum patterns that you use frequently. Use **Load Drum Track Pattern** to load them.

Load Drum Track Pattern

This command loads a user drum track pattern into a user pattern.

If you want to edit a user drum track pattern, you must first load it into a pattern of the song, and then edit it. After editing, you can use **Convert to Drum Trk Pattern** to save it as a user drum track pattern.

1. **Select “Load Drum Track Pattern” to open the dialog box.**



2. **Use Select Range From (Drum Track) and To (Drum Track) to specify the copy-source user drum track pattern.**

The user drum track patterns between **From** and **To** will be loaded. If you want to load only one pattern, set **From** and **To** to the same number.

When you execute this command, the data will be overwritten onto the copy-destination number.

3. **Use Load to (Song ***) to specify the load-destination user pattern number.**
4. **Press the OK button to execute the Load Drum Track Pattern command, or press the Cancel button if you decide not to execute.**

Erase Drum Track Pattern

This erases the drum track pattern you specify.

For more information, please see “Erase Drum Track Pattern” on page 112.

Rename Cue List

This command renames the selected cue list. A name of up to 24 characters can be input. For more information, please see “Editing names” on page 197 of the Operation Guide.

Delete Cue List

This command deletes the currently selected cue list.

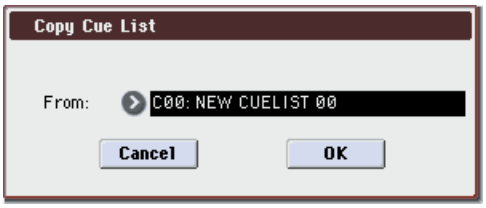
1. **Select “Delete Cue List” to open the dialog box.**

2. **To execute the Delete Cue List command, press the OK button. To cancel, press the Cancel button. When you execute this command, the data of the currently selected cue list will be deleted.**

Copy Cue List

This command copies the settings of another cue list to the currently selected cue list.

1. **Select “Copy Cue List” to open the dialog box.**



2. **In From, specify the copy source cue list.**
3. **To execute the Copy Cue List command, press the OK button. To cancel, press the Cancel button.**

When you execute, the setting data of the selected cue list will be deleted, and replaced by the copy-source data.

Convert to Song (Convert Cue List to Song)

This command converts a cue list consisting of multiple songs to a single song. Although it is not possible to record additional tracks into a cue list, you can convert the cue list to a song, and then record solos etc. onto open tracks.

Also, it will be necessary to convert a cue list to a song if you wish to write it to a USB storage device as SMF data. During the conversion, the track and effect settings of the song specified for **Step 01** will be copied to the beginning of the resulting song, and all track and effect settings of subsequent songs will use the settings of the song for **Step 01**.

1. **Select the cue list (C00–C19) that you want to convert to a song.**
2. **Select “Convert to Song” to open the dialog box.**

3. **In To Song, specify the conversion destination song number.**

If you select a new song, a confirmation dialog box will appear.

Press the OK button to create a new song, into which the cue list will be converted.

4. Press the OK button to execute the conversion, or press the Cancel button to cancel without executing.

If you selected a song that already contains settings and performance data, executing this command will erase the data of that song and replace it with the data that was converted from the cue list. Use this command with caution.

After executing this command, you can press the COMPARE switch to return to the state prior to execution.

The **Convert to Song** command converts a cue list to a song as described below.

- **Song/Track parameter settings for Step 01**

  Song / Track parameters will use the settings of the **Step 01** song.

  The MIDI channel of each track will be according to the settings of the **Step 01** song. If **Step 02** and following songs have different settings, it may not be possible to convert the playback result of the cue list into a song. As far as possible, try to keep the MIDI channel assignments consistent between songs that you intend to use as part of a play list that will be converted into a song.

The following track parameters will not be reflected in the conversion. As with the MIDI channels, we recommend that you keep these settings consistent between all songs in the cue list.

SOLO ON/OFF, Status, MIDI Channel, Bank Select (When Status=EX2), Force OSC Mode, OSC Select, KARMA Track Off Control, Use Program's Scale, MIDI Filter, Key Zone, Velocity Zone, Delay, the various X–Y control settings, and the track EQ settings

- **Converting Song/Track parameters into track events**

  Second and subsequent repeats of the **Step 01** song, and the settings of **Step 02** and following songs will all be converted into track events (musical data).

  The following data will be converted.

Track1–16	Program Select, Pan, Volume, Portamento, Detune, Bend Range
Master Track	Tempo, Meter

  If **Pan** (Seq 0–1–3(4)b) is **RDN**, it will be converted to **C064**. If **Portamento** (Seq 3–3(4)c) is **PRG**, or if **Bend Range** (Seq 3–5(6)c) is **PRG** or a **negative value**, these will not be reflected in the conversion.

  Detune (Seq 3–5(6)c) will be divided into RPN Fine Tuning and Coarse Tuning, and converted into events. For example if the **Detune** setting of **+600**, Fine Tuning will be 00 and Coarse Tuning will be 6. Fine Tuning will modify the playback pitch (Detune). Coarse Tuning will change the notes that are played back (Transpose). For this reason with some programs such as drum programs, the playback result produced by a cue list may not be reproduced when the cue list is converted into a song.

- **PLAY/MUTE (P0–1–1(2): Program T01–08, T09–16 Play/Rec/Mute)**

  The **Play/Mute** track parameters will be reflected in the song. **Solo On/Off** will not be reflected.

- **Track Play Loop (P0–1–5(6): PlyLoop T01–08, T09–16 page)**

  If **Track Play Loop** is on, the area from **Loop Start** to **Loop End** will be expanded as far as the last measure in the master track.

  Example)

  If **Track Play Loop** is **M005–M008**, and the master track contains 10 measures, the data will be expanded from the beginning of the track as **M005**, **6**, **7**, **8**, **M005**, **6**, **7**, **8**, **M005**, **6**.

- **Play Intro (P0–1–5(6): PlyLoop T01–08, T09–16 page)**

  If **Track Play Loop** is on, the data will be developed according to the Play Loop setting until the last measure of the master track.

  If **Play Intro** is checked, the data from the beginning of the track until **Loop End** will be developed, and then the data from **Loop Start** until **Loop End** will be developed until the last measure of the master track.

  For example if **Track Play Loop** is **M005–M008** and the master track ends at measure 10, checking **Play Intro** will cause the data to be developed from the beginning of the track as **M001**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **M005**, **6**, **7**, **8**, **M005**, **6**.

  If **Play Intro** is not checked, please see the example in **Track Play Loop**.

- **Patterns**

  Patterns in the **Step 01** song will be copied as patterns of the converted song.

  If there is a second or subsequent repeat for **Step 01**, or if the tracks of **Step 02** and subsequent songs contain patterns, they will be expanded into track events (musical data).

- **Transpose**

  If the **Transpose** (Seq 3–5(6)c) of the tracks in **Step 02** and subsequent songs differ from the settings of the **Step 01** song, the note numbers of the note data will be shifted.

  Example)

  If **Step 01**, **Transpose** = +1 and **Step 02**, **Transpose –1**, the actual note numbers of the **Step 02** track note data will be shifted downward by 2.

- **Repeat FS (Foot Switch) → "Repeat" 1**

  If **Repeat** is set to **FS (Foot Switch)**, it will be converted as **Repeat 1**.

  When you execute **Convert to Song** to convert a cue list to a song, the repeat settings within the cue list and the pattern and track play loop settings of the songs used by the cue list will all be converted into events such as note data. For this reason, the amount of data will increase significantly, and in some cases there may not be enough internal memory to perform the conversion. In particular if the cue list uses long songs, or if numerous repeats have been specified, or if many patterns are used by the songs, you should try executing the **Convert to Song** command from time to time as you create the cue list, in order to verify the amount of memory that will be required for the conversion.

  A cue list that is longer than 999 measures cannot be converted into a song.

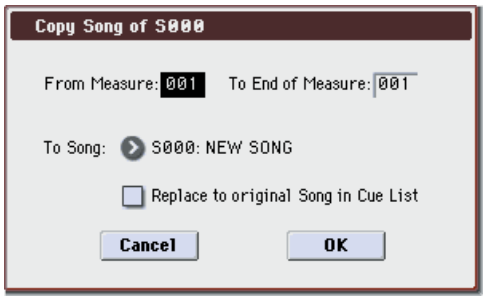
Copy Song

This command copies a portion (a number of measures) of the song specified by **Step**, and makes it into a song. This is convenient when you want to modify the structure or development of the songs in a cue list.

For example if you have an eight-measure song and want to repeat measures 5–8, you can use this command to create a four-measure song out of that portion. Then you can assign the resulting song to a step in a cue list, and repeat it.

1. In Current Step, or Song select the desired step.

2. Select "Copy Song" to open the dialog box.



3. **In From Measure, specify the first measure in the copy source song. In To End of Measure, specify the last measure.**
4. **In To Song, specify the song into which the data will be converted.**

If you select a new song, a dialog box will ask you for confirmation. Press the OK button to create a new song and copy the data to that song.

If you select an existing song that already contains settings and / or musical data, executing this command will erase the data of that song and rewrite it with the data from the copy source. Before you execute, be sure that you will not be losing important data.

5. **If you check Replace to original Song in Cue List and execute this command, the Current Step song will be replaced by the newly created song.**

If you execute **without checking** this box, the newly created song can be selected later for the desired step of the cue list.

6. **To execute the Copy Song operation, press the OK button. To cancel, press the Cancel button.**

System Exclusive events supported in Sequencer mode

You can record and play back System Exclusive events, and edit tracks that contain System Exclusive events.

SysEx messages that can be recorded in real-time

The following exclusive messages can be recorded in real-time:

- Exclusive messages received from an external MIDI device
- Parameter changes in Sequencer mode (see table below)
- Master Volume universal exclusive messages assigned to the foot pedal or a slider

Parameter change messages that you can realtime-record in Sequencer mode

Front panel/Page		Parameter
Front panel	KARMA	ON/OFF, LATCH, MODULE CONTROL switches
	Control Surface	CONTROL ASSIGN, PAD MODE switches
P0: Play/REC	Program, Mixer	Program Select, Pan, Volume, PLAY/MUTE, Solo On/Off *1
	Sampling/Audio In	All "Audio Input" parameters
	Control Surface	All "MIXER," "RT CONTROL," "KARMA SCENE," "KARMA Switch," "KARMA Slider" parameters, "TONE ADJ." – Assign, Value
P1: DT/XY/Ctrls	X–Y Vol	All "X–Y Volume Control" parameters, X–Y Assign, Center Volume, Enable Program X–Y Volume
	X–Y CC	All "X–Y CC Control" parameters, Enable Seq X–Y CC, Enable Program X–Y CC
	Controllers Setup	All "Panel Switch Assign," "Realtime Control Slider Assign" parameters
	Pads Setup	All "Pads Chord" parameters
P2: EQ/Option	EQ Trim	Auto Load Prog EQ, Bypass, Input Trim, High Gain, Mid Frequency, Mid Gain, Low Gain
P3: Track Param	MIDI	
	OSC	Force OSC Mode, OSC Select, Portamento
	Pitch	Transpose, Detune, Bend Range, Other
P4: Zone/Delay	Delay	Mode, Time, Base Note, Times
P7: KARMA	GE Setup	Load GEOptions
	Note Map	All parameters except "Octave Replicate"
P8: IFX	Routing1/2	Bus Select, Send1, Send2, Fx Control Bus, AUX Bus
	Insert FX	IFX, IFX On/Off, Chain to, Chain, Pan, Bus Sel, AUX Bus, Ctrl Bus, Send1, Send2
	IFX 1–5	All effect parameters
	Common FX LFO	All "Common FX LFO 1, 2" parameters
P9: MFX/TFX	Routing	MFX, MFX On/Off, Chain, Chain Direction, Chain Level, Return 1, Return 2, TFX, TFX On/Off, Master Volume
	MFX 1/2	All effect parameters
	TFX	All effect parameters

*1: **Solo On/Off** is always controlled by events in the track, regardless of the play / mute status of that track.

The maximum amount of exclusive data that can be recorded at once is approximately 320 Kbytes. This size will decrease if other events exist within the same measure.

You cannot simultaneously record exclusive messages received from an external MIDI device and parameter changes produced by editing.

The events that will be recorded are controlled by the Global P1: MIDI– MIDI Basic settings SEQ Mode **Param. MIDI Out**. For Control Change, only control change messages will be recorded. For SysEX-Param Change, only parameter changes and exclusive messages will be recorded.

Sampling mode

Sampling Overview

The M3 features Korg's Open Sampling System. This lets you use sampling and resampling not only in Sampling mode but also in Program, Combination, and Sequencer modes, with optimized features for each mode.

- You can perform 48 kHz 16-bit linear mono or stereo sampling.
- A maximum of 1,000 multisamples and 4,000 samples can be created.

If you're sampling to a USB storage device (Sampling Setup **Save to** set to MEDIA), don't disconnect the save-destination USB storage device from the M3 while the SAMPLING REC switch is lit or blinking. Doing so may damage the media file or format.

Sampling to RAM

The M3 contains RAM memory that you can use for user sampling or for loading EX-USB-PCM series data. The amount of available memory is approximately 64 Mbytes. By installing the optional EXB-M256 sampling memory expansion to add an additional 256 Mbytes of memory, bringing the total to approximately 320 Mbytes.

The available sampling times will be as follows.

Free RAM and approximate sampling times

Free RAM	Approximate Sampling Time (min:sec)	
	Mono	Stereo
64 MB	11:39	5:49
256 MB	46:36	23:18

Samples that you sample or resample to RAM memory in Sampling mode or in Program, Combination, and Sequencer modes can be used as sound generator waveforms in a program or drum kit, or used as audio loops or vocal tracks in the sequencer.

Installing the optional EXB-M256

For details on how to install the optional EXB-M256, please see "Specifications and options" on page 222 of the Operation Guide.

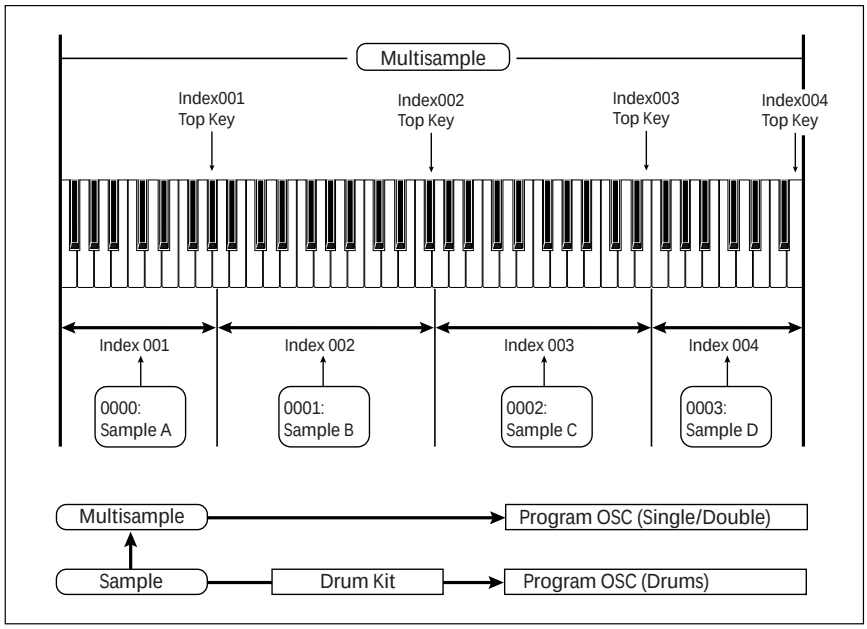
Sampling to a hard disk

You can also sample to a hard disk or other media connected to the USB A connector. Each sample file allows a maximum of 80 minutes of user sampling, whether mono or stereo (equivalent to a file size of approximately 440 Mbytes for mono or 879 Mbytes for stereo.) The sampled data will be created as a WAVE file on the media.

WAVE files that you sample or resample in Sampling mode or in Program, Combination, and Sequencer modes can be loaded into RAM memory and used as sound generator waveforms, audio loops, or vocal tracks. You can also create an audio CD by writing WAVE files to a CD-R/RW drive connected to the USB A connector. "Creating audio CDs" on page 150 of the Operation Guide.

Sampling on the M3

- In Media mode, you can load multisample/sample data from various types of media.
- You can load Korg format or AKAI (S1000/S3000) format sample data, AIFF or WAVE formats, and SoundFont 2.0 format sample files. (Once data has been loaded into the M3, it will all be treated as Korg format sample data.)
- You can export samples created on the M3 as AIFF or WAVE files.
- To the external audio source you're sampling, you can apply five insert effects such as compressor, EQ, or lo-fi, two master effects, and one total effect. For instance, you can use compression, EQ, lo-fi, etc. You can also use



tempo-based LFO or delay effects, which can be very useful when sampling rhythmic loops.

- Sampling can be initiated by the SAMPLING START/STOP switch, note-on, threshold, or the SEQUENCER START/STOP switch. (The available methods will depend on the mode.) Threshold allows you to initiate sampling when the input signal exceeds the threshold level you specify. In Sampling mode, you can also specify a pre-trigger setting.
- The analog audio inputs support mic and line level signals. Digital audio input via S/P DIF IN supports the 48 kHz sample rate.
- You can digitally sample ("rip") audio data from an audio CD in a CD-R/RW drive connected to the USB A connector.
- Sampled data can be converted automatically (or manually, using an easy operation) into a program. Once a multisample/sample has been converted into a program, you can make filter, amp, and effect settings and play it as a program. Such a program can also be used in Combination mode or Sequencer mode.
- Individual samples can also be used in drum kits.

When you turn off the power, all multisample and sample data in RAM memory will be lost. Before you turn off the power, be sure to save important data to USB storage device. When the M3 is turned on, the RAM memory will contain no multisamples or samples, so you will first need to load previously-saved data into RAM before you can edit it or play it back.

If **Auto Optimize RAM** (Global 0–2a) is on, and the writing destination for sampling data is RAM, the RAM memory will automatically be optimized after the data has been written. This is turned on by default, but you may switch it on/off as necessary. For more information, please see "Auto Optimize RAM" on page 359, and "Optimize RAM" on page 334.

Editing in Sampling mode

- In Sampling mode, the sample data you sampled or loaded from various media (including WAVE and AIFF formats) can be assigned to an index (zone) to create a multisample.
- The waveform can be viewed in the display, and edited by a variety of waveform editing commands that include rate convert (down-sampling) and reverse playback.
- Start, loop start, and end addresses can be specified in units of a single sample. Loop tune, reverse playback, and loop lock functions are also supported.
- The Use Zero function automatically searches for zero-cross points, making it easy to find the beginning or end of the waveform, or locations that will not produce noise when the sample is played back.
- The grid function displays a BPM-based grid on the waveform display, helping you to create loops or make waveform edits that match the desired BPM. At this time, you can set the BPM value by pressing TAP TEMPO in rhythm with the sample playback.
- Each multisample allows you to create up to 128 indices. Each index consists of a sample assignment, a key zone, an original key, a playback pitch, and settings such as level.
- The **Keyboard & Index** display lets you edit a multisample while viewing the assignments and zones of each sample.
- Sample names and multisample names of up to 24 characters can be assigned. Sample names and multisample names can also be viewed in Media mode (see "Translation" on page 398).
- The Time Slice function automatically detects the attack portions of a kick or snare etc. in a rhythm loop sample (a looped pattern of drums etc.), and divides it into separate rhythm instrument sounds. A pattern corresponding to the divided samples is created automatically, so that you can immediately use the Sequencer mode RPPR function to play the pattern and adjust the tempo without changing the pitch. You can also do things such as adjusting the pitch of only the snare, replacing it with a different sample, or changing the playback timing on the sequencer, in this way creating a new rhythm loop based on the rhythm loop you started with. (Stereo samples are supported.)
- The Time Stretch function lets you modify the tempo without changing the pitch of a sample. You can select either Sustaining (suitable for sustain-type instruments such as strings or vocals), or Slice (suitable for rhythm loops on decay-type instruments such drums). Stereo samples are supported.
- The Crossfade Loop function is an important looping tool that helps smooth out irregularities in long loops which contain complex material. By executing Crossfade Loop, you can eliminate this problem and create natural-sounding loops.
- The Link (with Crossfade) function allows you to join two samples into a single sample. You can also crossfade the overlapping portion of the samples at this time, so that the volume changes gradually, producing a natural-sounding transition.
- The BPM Adjust function (playback pitch adjust) lets you adjust the playback pitch of each index so that the loop frequency matches the desired BPM value.
- You can use resampling (auto) to automatically apply effects to a sample and create a new sample.
- A multisample you create can easily be converted into a program (**Convert MS To Program (Convert Multisample To Program)**).
- In Sampling mode, the selected multisample or sample will sound when you play the keyboard, allowing you to hear the edited content of that page.

Sampling in Program, Combination, and Sequencer modes

- A performance in Program, Combination, or Sequencer modes can be resampled internally, with all audio remaining in digital form. This lets you resample a performance that uses the M3's filters, effects, KARMA, and sequencer etc.
- External audio sources from the various input jacks can be sampled. A performance played on the M3 can be mixed with the external audio source and sampled, or you can sample just the external audio source while monitoring the performance played on the M3.
- In Sequencer mode when you sample an external audio source while listening to the playback of the song, note data will be automatically created in the track. You can use this In-Track Sampling function to sample vocals or guitar while the sequencer is running.
- The song playback in Sequencer mode can be resampled to a USB storage device (e.g., hard disk) connected to the USB A connector. Then in Media mode you can edit the song order and use a CD-R/RW drive connected to the USB connector to create an audio CD.

Note: Changing velocity on the keyboard or pads

In Sampling mode, you cannot use keyboard or pad velocity (with PAD MODE set to VELOCITY SENSITIVE) to control the loudness of the sound. However, you will be able to use velocity to control effects if you select Velocity as a Dmod Source.

For example, you might make settings as follows.

Bus (IFX/ Output) Select: IFX1 (P8 IFX: Routing)

IFX1: 002: Stereo Limiter, On (P8 IFX: IFX)

Stereo Limiter:

Ratio 1.0: 1

Gain Adjust [dB] –Inf

Source Velocity or Exp Velocity

Amt (Amount) +40

If you are converting a user multisample into a program for use in Program mode, you can raise the Prog P4: Amp / EQ, **Velocity Intensity** value as desired to control the sound.

Sampling Page Select

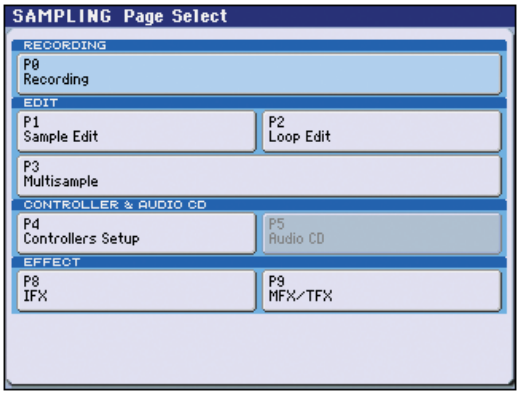
- Press the MODE SAMPLING switch to select Sampling mode.

You can use the following ways to select the pages in Sampling mode.

1. Press the PAGE SELECT switch to access “Page Select.”

“Page Select” shows an abbreviated name for each page.

The page in which you were prior to pressing the PAGE SELECT switch is shown in light blue.



2. Select the desired page in the display.

Other ways to select pages

- Hold down the PAGE SELECT switch and press a numeric keys 0–9 to specify a page number; you will move to the corresponding page.

  For example if you want to access the P3: Multisample page, hold down the PAGE SELECT switch and press numeric key 3.

  Note: For pages that consist of multiple subpages, such as P0–1 and P0–2 or P8–1 and P8–2, the first of these pages (P0–1 or P8–1) will be selected.

- You can press the EXIT switch to return to the P0: Recoding page you selected most recently. Press the EXIT switch once again to return to the Main page.

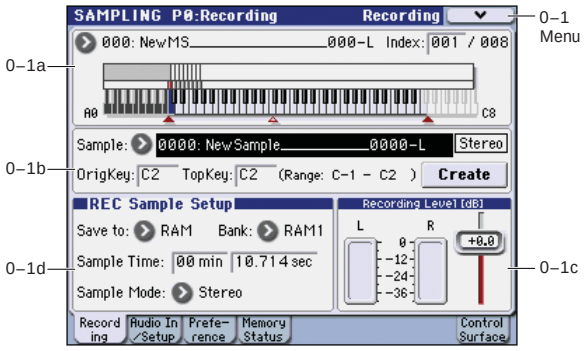
	Page	Main content
RECORDING	P0: Recording	Record (sample) a sample. Select the sample or multisample to be recorded, make detailed settings for recording, make AUDIO INPUT settings, and view the memory status. (☞p.301)
EDIT	P1: Sample Edit	Sample, or edit the waveform etc. of samples you loaded into internal memory using Media mode. (☞p.313)
	P2: Loop Edit	Set playback parameters for samples, such as start, loop start, end address, loop on/off, and reverse playback on/off. Perform editing operations such as Time Slice and Time Stretch. (☞p.315)
	P3: Multisample	Edit multisamples. Edit settings such as sample assignments, zones, and original key. (☞p.317)
CONTROLLER & AUDIO CD	P4: Controllers Setup	Controller settings. (☞p.319)
	P5: Audio CD	Play back or rip from an audio CD. (☞p.321)
EFFECT	P8: IFX	Bus and master effect send level settings. Insert effect routing, selection, and settings. (☞p.323)
	P9: MFX/TFX	Master effect routing, selection, and settings. Total effect selection and settings. (☞p.327)

Sampling P0: Recording

This page is where you make basic settings for recording (sampling), including:

- Creating and editing multisamples and indexes
- Specifying the writing-destination for the samples you record, and selecting either mono or stereo samples
- Specifying the sampling time, loop settings, and +12 dB boost
- Specifying the output destinations for the external audio inputs
- Selecting the source to sample
- Setting the recording level

0–1: Recording



Here you can create and edit multisamples and indexes, specify the writing-destination for the samples you record, and select stereo or mono sampling. You can also specify the sampling time, loop settings, +12 dB boost, and adjust the final level of the input signal.

Note: Normally you will perform sampling while in this page (Recording or P1: Audio In / Setup).

Note: If you have not yet made audio input settings, go to P1: Audio In / Setup page and make these settings before you proceed.

0–1a: Multisample Select (MS)

Multisample Select (MS) [000...999]

Selects the multisample.

Each multisample consists of the samples for one or more indexes (an **Index** is a range or zone of keys).

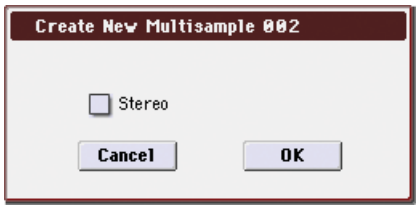
This parameter can also be set from P1–P3.

To create a new multisample,

1. **Press the "Multisample Select" popup button to access the popup menu, and select a number for which the multisample name is blank.**

Alternatively, use the numeric keys 0–9 to specify a new multisample number, and press the ENTER switch.

When you select a new multisample number, the "Create New Multisample" dialog box will appear.



2. **If you wish to create a stereo multisample, check "Stereo."**
3. **To create the multisample, press the OK button. To cancel, press the Cancel button.**

A multisample will be created as follows (example).

Mono type	001: NewMS_ _ _ _ _ _ _ _ _ _ _ _ _001
Stereo type	001: NewMS_ _ _ _ _ _ _ _ _ _ _ _ _001–L
	002: NewMS_ _ _ _ _ _ _ _ _ _ _ _ _001–R

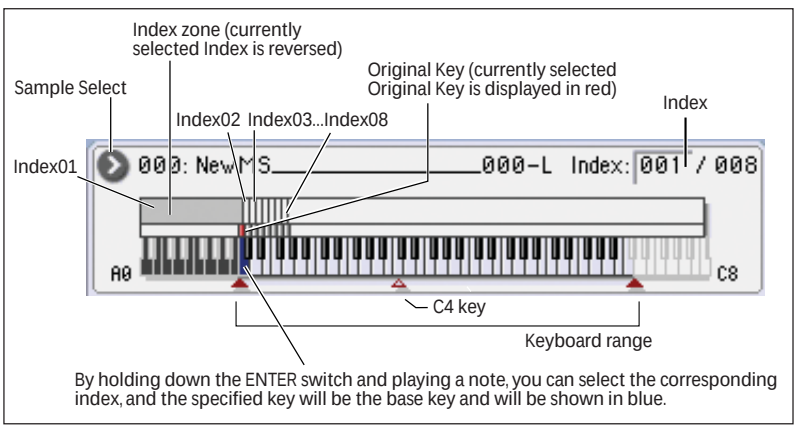
Keyboard & Index

Keyboard: This indicates the index zone of multisample, the original key, and the root key. The red triangles indicate the keyboard range, and the white triangle indicates the C4 key.

***Note:* The base key (displayed in blue)**

- In P1: Sample Edit you can press the SAMPLING START / STOP switch to play the sample of the selected **Index** in one-shot mode from **Start**–**End**. At this time, the sample will sound at the pitch of the base key.
- Playback in the grid display of P1 and P2 will be according to the playback pitch of the base key selected here, and the specified tempo BPM / resolution (set in P1 and P2).
- The **Pitch BPM Adjust** menu command is based on the playback pitch of the base key you specify here.

Keyboard & Index



Index [xxx (001...128)/yyy (001...128)]

Selects the index for which you wish to sample.

Each zone in a multisample is called an **Index**. For example on the 61 note keyboard, a multisample could be divided into six zones of one octave (12 keys) each. Each of these zones is referred to as an **Index**. You will assign a sample to each of these indexes.

xxx: The selected index. Choose the desired index.

yyy: The total number of indexes in the multisample.

Note: You can also select an index by holding down the ENTER switch and playing a note on the keyboard or pad. The index that includes this note will be selected. The key you specify will be the base key, and will be displayed in blue in "Keyboard & Index" (**Keyboard & Index** 0–1a).

This parameter can also be set from P1–P3: Multisample. Sampling and editing in the respective page will apply to the index that you select here.

Immediately after the power is turned on, this will be 001 / 008. This indicates that there are eight indexes, and that currently the first index is selected.

To increase the number of indexes, use **Create** in this page. When you press the Create button, indexes will automatically be added from the left-most zone, as 002 / 002, 003 / 003, … (The position, zone width, and original key location of the index that is created when you press the Create button can be set in Create Zone Preference (0–3a, 3–2a). You are also free to modify the zone width and original key location later.)

Here you can set the sample, original key, and range of the selected index.

0–1b: Sample Select, Original Key, Top Key, Create

Sample Select [----: ---No Assign----, 0000...3999]

Selects a sample that you sampled or loaded in Media mode, and play a note within the index range to sound that sample. The sample you select here is the sample that will be affected by your sampling and editing operations in the various pages. This parameter is also available in P1–P3.

----: ---No Assign----: No sample is assigned to the index. There will be no sound when you play the keyboard.

To record a sample, select a vacant sample such as 0000:. When you record a sample, data will be loaded into the selected sample. The sample name (such as NewSample_0000) will be shown beside the number. This sample name can be modified using the **Rename Sample** menu command.

You can also record a sample even when **----:**---No Assign---- is displayed. In this case, a sample number will be selected automatically.

Even if you record to a sample that already contains data, the selected sample will not be overwritten –the data will automatically be sampled to a vacant sample, and the newly recorded sample will replace the previous sample in the index. If you wish to delete a sample, execute the **Delete Sample** menu command.

OrigKey (Original Key) [C–1...G9]

Specifies the key that will play the sample at its original pitch (i.e., the pitch at which it was recorded). The pitch will change in semitone steps relative to the original key.

For example, suppose that you recorded a sample with **OrigKey** of F2. When the zone of the index is C2–B2, pressing the F2 key would playback the sample at its original pitch. Pressing F#2 would playback the sample a semitone higher. Pressing E2 would playback the sample a semitone lower. The pitch of this sampled sound will change in semitone steps between C2 and B2, centered at F2.

The original key location can also be viewed in "Keyboard & Index."

Note: If **Constant Pitch** (3–1b) is checked, the sample will be sounded at its original pitch by all notes in the zone.

Top Key [C–1...G9]

Specifies the highest key in the zone of the index. The zone is defined by this **Top Key**.

For example, suppose that you set a **Top Key** of B2 for index 001 / 002, and a **Top Key** of B3 for index 002 / 002. This means that the zone of index 001 will be B2 and lower, and the zone of index 002 will be C3–B3.

Range

This indicates the zone (area) that was determined by the **Top Key** setting.

The sample selected by **Sample Select** will sound in this area. The zone for each index can also be viewed in "Keyboard & Index."

Create

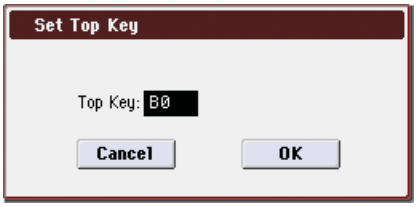
This creates an index. Use this when you wish to add a sample to a multisample.

When you press the Create button, a new index will be created according to the Create Zone Preference (0–3a, 3–2a) parameters **Position**, **Zone Range**, and **Original Key Position**.

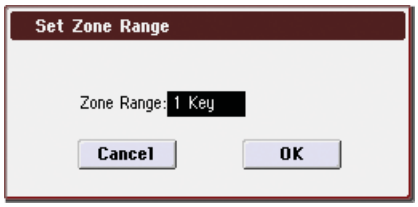
If you wish to delete an index or exchange indexes, use P3: Multisample Edit.

If when you execute **Create** (0–1b, 3–1b) or **Insert** (3–1b) it is not possible to create a new index according to your Create Zone Preference (0–3a, 3–2a) settings, one of the following dialog boxes will appear. If you wish to create a new index, perform the following procedure.

- **Set Top Key:** Select **Index** 001, set **Position** (0–3a, 3–2a) to Left (to Selected Index), and execute **Create** or **Insert** to open the dialog box. So that a new index can be created at the left of index 1, re-set the **Top Key** setting, and press the OK button.



- **Set Zone Range:** If you execute **Create** when it is not possible to create a new index according to the Create Zone Preference settings, the following dialog box will appear. This dialog box will also appear if you execute **Insert** when it is not possible to create a new index with the contents of the **Cut** or **Copy** (3–1b). Re-set the **Zone Range** (0–3a, 3–2a), and press the OK button.



Stereo

A Stereo indication will appear here if you have selected a stereo multisample or sample, or if you recorded a sample with **Sample Mode** (0–1d) set to Stereo.

About stereo multisamples and stereo samples

Stereo multisamples: Under the following conditions, two multisamples will be handled as a stereo multisample.

- If you checked **Stereo** when creating a new multisample (i.e., selected a new multisample in **Multisample Select** 0–1a)
- If you executed the **MS Mono To Stereo** menu command
- If you sampled with **Sample Mode** (0–1d) set to Stereo

In these cases, a stereo multisample will be created automatically using the following criteria.

1) The last two characters of the two multisample names will be –L and –R respectively, and the earlier portion of the names are identical.
2) The two multisamples will have the same number of indexes, and their zone settings are identical.

Stereo samples: Under the following condition, two samples will be handled as a stereo sample.

- When the samples were recorded with a **Sample Mode** (0–1d) setting of Stereo
- If you executed the **Sample Mono To Stereo** menu command

In these cases, a stereo multisample will be created automatically using the following criteria.

1) The last two characters of the sample name will be –L and –R respectively, and the earlier portion of the names are identical.
2) Two samples that satisfy condition 1) for stereo multisamples are selected.

Stereo multisamples and samples are distinguished internally by their names. If you use **Rename MS (Rename Multisample)** or **Rename Sample** menu commands to modify multisample or sample names, please pay attention to the above conditions.

As a condition of a stereo sample, the sampling rates must be identical. You can verify the sampling rate of a sample by using the menu command **Rate Convert**. Be aware that if you use **Rate Convert** to convert the –L and –R samples to differing sampling rates, they will no longer be handled as a stereo sample.

ADC OVERLOAD !

If the signal level from AUDIO INPUT 1, 2 jacks is too high, the “ADC OVERLOAD !” indication will appear. You’ll need to adjust the MIC / LINE gain select switch, the LEVEL knob, or the output level of your external audio source.

0–1c: Recording Level [dB]

Recording Level [–Inf, –72.0...+0.0 ... +18.0]

This adjusts the signal level at the final stage of sampling.

For more information, please see “Setting levels” on page 13, “Tips for eliminating distortion when using the analog inputs” on page 13, and “Avoiding extraneous noise” on page 10.

Level Meter

This adjusts the signal level at the final stage of sampling. This setting can also be made in the P0: Recording– Audio In / Setup page.

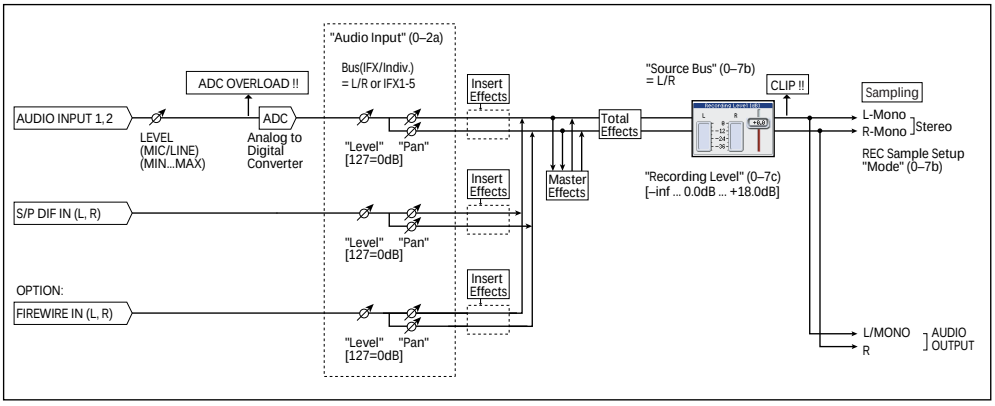
The meter is active only during standby mode (after pressing the SAMPLING REC switch) and recording.

CLIP !

If 0 dB is exceed, the display will indicate “CLIP !” This means that the level of the sampling signal is too high, so adjust the level as described under “Setting levels” on page 13.

Note: If you have sampled at a low input level, you can use the **Normalize/Level Adj.** menu command to amplify the level to the maximum possible without clipping. For more information, please see “Normalize / Level Adj.” on page 339.

Audio input/output



0–1d: REC Sample Setup

Save to [RAM, MEDIA]

Specifies the destination to which the data will be written during sampling.

RAM: The sound will be sampled into RAM memory.

A sample written into RAM memory can be heard immediately in Sampling mode.

Note: You can check the remaining amount of RAM on the main Recording page, under "0–4a: Free Sample Memory," as described on page 308.

Data written into RAM memory will be lost when the power is turned off, so you must save it if you want to keep it.

MEDIA: Sample to an external hard disk etc. connected to the USB A connector.

When you sample, a WAVE file is created on the media. Use the **Select Directory** menu command to specify the writing-destination media and directory.

To open the resulting sample, you can either use Media mode to load the sample into RAM, or use the **Select Directory** menu command to select the file and then press the SAMPLING START / STOP switch.

After connecting a USB device to the USB A connector, execute the menu command **Scan USB device** (see page 419) to mount the device.

You cannot load a media sample (WAVE file) that exceeds the amount of available RAM.

Sample Time [min sec]

Specifies the amount of time that you wish to sample. This can be set in 0.001 second increments.

Immediately after the power is turned on, this parameter indicates amount of remaining RAM memory in the selected memory bank (the available sampling time). If you record a sample in this condition (REC→START→STOP), the change in time will be displayed automatically.

If the writing-destination (**Save to**) is MEDIA, the maximum value is calculated from the amount of remaining space on the media specified by **Select Directory**.

Tip: If you have sufficient RAM memory, it is a good idea to set an ample **Sample Time**, and to use the **Truncate (for Sample Edit)**, **Truncate (for Loop Edit)** menu command after you sample to delete unwanted portions of the sample and reduce it to the minimum size necessary. You can also press the SAMPLING START / STOP switch to manually stop sampling after you have recorded the desired material.

For more details on sampling see "Sampling (Open Sampling System)" on page 107 of the Operation Guide.

If the writing-destination (**Save to**) is RAM, and you continue sampling with the **Optimize RAM** (see page 107) option unchecked, wasted space will develop in memory, decreasing the amount of available RAM memory. In this case, execute "Optimize RAM" on page 334 to recover the wasted space.

Note: "Free Sample Memory" (0–4a) lets you check the remaining amount of RAM.

Bank (RAM Bank) [RAM1, RAM2]

This specifies the destination RAM to which the data will be written when sampling. You can specify this if **Save to** is set to RAM.

By installing the EXB-M256 you can expand the memory to a maximum of 320 Mbytes.

For more information, please see "Free RAM and approximate sampling times" on page 297.

Sample Mode [L–Mono, R–Mono, Stereo]

Specifies the channel(s) that you want to sample, and specify whether a mono or stereo sample will be created. For more information, please see "Source Bus" on page 305.

L-Mono: The L channel of the **Source Bus** will be sampled in mono.

R-Mono: The R channel of the **Source Bus** will be sampled in mono.

Stereo: The L and R channels of the **Source Bus** will be sampled in stereo, creating a stereo multisample.

Example 1)
Sampling a mono source connected to AUDIO INPUT 1 without applying internal effects

If using the Audio Input:
Source Bus: Analog Input 1 / 2 (0–2b)
Resample: Manual (0–2b)
Recording Level [dB]: as desired (0–1c)
Sample Mode: L-Mono (0–1d)

(See "Source Bus = Audio Input 1 / 2" on page 11)

If using the L/R Bus:
Analog Input1 **Bus Select:** L / R (0–2a)
Analog Input1 **Pan:** L000 (0–2a)
Analog Input1 **Level:** 127 (0–2a)
Source Bus: L / R (0–2b)
Resample: Manual (0–2b)
Recording Level [dB]: as desired (0–1c)
Sample Mode: L–Mono (0–1d)

(See "Source Bus = L / R" on page 11)

Example 2)
Applying the internal insert effect IFX1 070: Reverb Hall to a mono source connected to AUDIO INPUT 1, and sampling in stereo

Analog Input1 **Bus Select:** IFX1 (0–2a)
Analog Input1 **Pan:** C064 (0–2a)
Analog Input1 **Level:** 127 (0–2a)
Source Bus: L / R (0–2b)
Resample: Manual (0–2b)
IFX1: select 070: Reverb Hall (P8)
Recording Level [dB]: as desired (0–1c)
Sample Mode: Stereo (0–1d)

(See "Source Bus = L / R" on page 11)

Example 3)
Sampling a stereo source connected to AUDIO INPUT 1 and 2 without applying internal effects

If using the Audio Input:

Source Bus: Audio Input1 / 2 (0–2b)
Resample: Manual (0–2b)
Recording Level [dB]: as desired (0–1c)
Sample Mode: Stereo (0–1d)

(See "Source Bus = Audio Input 1 / 2" on page 11)

If using the L/R Bus:

Analog Input1 **Bus Select:** L / R (0–2a)
Analog Input1 **Pan:** L000 (0–2a)
Analog Input1 **Level:** 127 (0–2a)
Analog Input2 **Bus Select:** L / R (0–2a)
Analog Input2 **Pan:** R127 (0–2a)
Analog Input2 **Level:** 127 (0–2a)
Source Bus: L / R (0–2b)
Resample: Manual (0–2b)
Recording Level [dB]: as desired (0–1c)
Sample Mode: Stereo (0–1d)

(See "Source Bus = L / R" on page 11)

Example 4)
Applying the internal insert effect IFX1 007: St.Graphic 7EQ to a stereo source connected to AUDIO INPUT 1 and 2, and sampling in stereo

Input1 **Bus Select:** IFX1 (0–2a)
Input1 **Pan:** L000 (0–2a)
Input1 **Level:** 127 (0–2a)
Input2 **Bus Select:** IFX1 (0–2a)
Input2 **Pan:** R127 (0–2a)
Input2 **Level:** 127 (0–2a)
Source Bus: L / R (0–2b)
Resample: Manual (0–2b)
IFX1: select 007: St.Graphic 7EQ (P8)
Recording Level [dB]: as desired (0–1c)
Sample Mode: Stereo (0–1d)

(See “Source Bus = L / R” on page 11)

Example 5)
Sampling a digital source connected to S/P DIF without applying internal effects

Source Bus: S / P DIF IN L / R (0–2b)
Resample: Manual (0–2b)
Recording Level [dB]: as desired (0–1c)
Sample Mode: Stereo (0–1d)

(See “Source Bus = S / P DIF IN L / R” on page 11)

Note: By setting the “0–2a: Input” S / P DIF Input 1, 2 parameters appropriately, the above-listed example settings for sampling an analog source connected to AUDIO INPUT 1 and 2 can instead be used for sampling a digital source connected to S / P DIF IN.

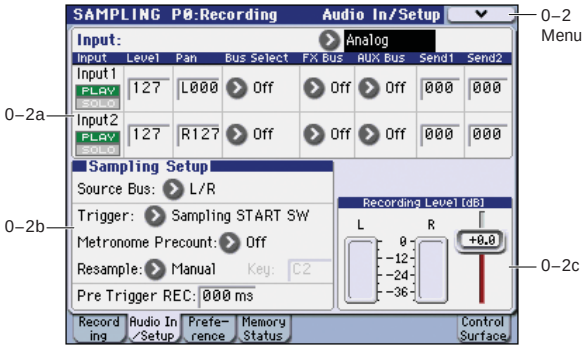
Note: For details on settings for performing resampling, please see “0–2b: Sampling Setup” on page 305.

▼0–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

0–2: Audio In/Setup



Here you can specify the output destination and input level etc. for the external audio signals being input from the INPUT jacks, and you can also specify the source that will be sampled, and specify how sampling will be initiated. You can also specify a metronome count-down before sampling begins.

Using the control surface to adjust Audio Input

You can use the control surface to adjust the Audio Input **PLAY/MUTE**, **Solo On/Off**, and **Level**.

For more information, please see “0–8: Control Surface” on page 14.

0–2a: Input

The settings you make here are valid only in Sampling mode. These settings will also be valid when you move from Sampling mode to Global mode.

For more information, please see “0–7a: Audio Input” on page 9.

Input **[Analog, S/P DIF, (FireWire)]**

Input 1, Input 2:

PLAY/MUTE **[PLAY, MUTE]**
SOLO On/Off **[Off, On]**
Level **[000...127]**
Pan **[L000...C064...R127]**
Bus Select **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
FX Bus (FX Control Bus) **[Off, 1, 2]**
AUX Bus **[Off, 1, 2, 3, 4, 1/2, 3/4]**
Send1 **[000...127]**
Send2 **[000...127]**
ADC OVERLOAD !

For more information, please see “Using the control surface to make audio input settings” on page 8.

0–2b: Sampling Setup

Source Bus
[Analog Input1/2, S/P DIF IN L/R, FireWire IN L/R, AUX1/2, AUX3/4, Indiv.1/2, Indiv.3/4]

For more information, please see “Using the control surface to make audio input settings” on page 8.

Trigger
[Sampling START SW, Note On, Threshold]

Specifies how sampling will be initiated.

Sampling START SW: Pressing the SAMPLING REC switch will cause the M3 to enter sampling-standby mode, and sampling will begin when you press the SAMPLING START / STOP switch.

1. **Press the SAMPLING REC switch to enter sampling-standby mode.**
2. **Use the "Recording Level [dB]" slider to adjust the sampling level.**

Be careful of changes in the monitor volume level. For more information, please see "Recording Level" on page 303.

3. **Sampling will begin when you press the SAMPLING START/STOP switch.**

(If you are using the "Metronome Precount" function, pressing the SAMPLING START / STOP switch will cause sampling to begin after the metronome sounds a count-down. If Metronome Setup **Bus (Output) Select** (0–3c) is set to L / R, the metronome will stop sounding at the moment that sampling begins.)

4. **To stop sampling, press the START/STOP switch once again.**

Sampling will also stop automatically if it continues to the specified **Sample Time** (0–1d).

If you want to apply an effect etc. to an existing sample and automatically create a new sample (Resampling), set **Trigger** to Sampling START SW, and set **Resample** (0–2b) to Auto.

Note On: Press the SAMPLING REC switch and then press the SAMPLING START / STOP switch to enter sampling-standby mode. Sampling will begin when you play the keyboard.

MIDI Sampling will also begin if a MIDI note-on is received (instead of playing the keyboard).

1. **Perform steps 1 and 2 described above.**
2. **Press the SAMPLING START/STOP switch.**
3. **When you play the keyboard or when a MIDI note-on is received, sampling will start automatically.**
4. **To stop sampling, perform step 4, above.**

Threshold: Sampling will begin automatically when the input level exceeds the specified **Level**.

1. **Press the SAMPLING REC switch to enter sampling-standby mode.**
2. **Use the "Recording Level [dB]" slider to adjust the sampling level.**

Be careful of changes in the monitoring volume. For more information, please see "Recording Level" on page 303.

3. **Adjust the Level setting. The red triangles at both sides of the "Recording Level [dB]" level bar display will indicate the Level value.**

Normally you will set this to a low a level as possible without allowing sampling to be triggered by noise.

4. **Press the SAMPLING START/STOP switch. When the input level exceeds the Level you specified, sampling will begin automatically.**
5. **To stop sampling, press the START/STOP switch once again.**

Alternatively, sampling will end automatically if it continues to the time specified for **Sample Time** (0–1d).

Metronome Precount [Off, 4, 8, 3, 6]

This specifies whether the metronome will sound a count-down before sampling begins. This can be set only if **Trigger** is set to Sampling START SW.

Off: Sampling will begin immediately when you press the SAMPLING START / STOP switch from recording-standby mode.

4, 8, 3, 6: When you press the SAMPLING START / STOP switch from recording-standby mode, the metronome will count the specified number of beats at the ♩ **(Tempo)**, and then sampling will begin. If you set this to 4, sampling will begin on the count of 0 after a pre-count of 4–3–2–1–0.

You can specify the tempo, output destination, and level of the metronome sound in "0–3c: Metronome Setup." If **Bus (Output) Select** is set to L / R, the metronome will stop sounding the instant sampling actually begins.

Resample [Manual, Auto]

Specifies how resampling will occur.

This can be set only if **Trigger** is set to Sampling START SW.

The process of sampling a sample (or samples) is called "resampling."

You can apply effects to a sample and then resample it, or resample a performance of samples that you play.

Manual: This is the normal method. Use this when you want to sample an external input sound. If a sample is already assigned, the sample assigned for playing from the keyboard will be resampled together with the external input sound.

Auto: The sample assigned to the index will be resampled automatically. Use this when you want to apply an effect to a sample and resample it.

1. **Set Key to the keyboard location where the sample you that you want to resample is assigned.**

Sampling will not be possible if you specify a key to which a sample has not been assigned.

2. **If you want to apply an insert effect, set the P8: IFX–Routing page Bus Select (8–1b) parameter to IFX1–5, and select the insert effect you want to use.**

If you want to apply a master effect, use the P8: IFX–Routing page (OSC MFX Send) **Send1** and **Send2** parameters to adjust the send levels, and use P9: MFX / TFX to select the master effect(s) you want to use. If you want to apply a total effect, use P9: MFX / TFX to select the total effect you want to use.

3. **Set Source Bus (0–2b) to L/R.**
4. **Press the SAMPLING REC switch to enter record-ready mode.**
5. **When you press the SAMPLING START/STOP switch, the current sample will play back automatically, and the resampling will begin.**

If you play the keyboard at this time, the sound you play will be resampled together with the source sample.

6. **When the sample assigned to the Key has played back for its full length, resampling will end automatically.**

Alternatively, you can stop resampling by pressing the SAMPLING START / STOP switch once again.

Note: When resampling ends, the **Bus Select** (8–1b) setting will automatically be reset to L / R. At the same time, the **MFX1 On/Off**, **MFX2 On/Off**, and **TFX On/Off** ("9–1: Routing") settings will automatically be turned off. These settings are made automatically so that the effect will not be applied again (i.e., a second time) when you play back the sample that was resampled with the effect. Please be aware of this if you want to resample once again. The parameters of the newly created sample will be automatically set the same as the source sample when played back.

Key [C–1...G9]

When **Resample** is set to Auto, this specifies the note to which the sample to be resampled is assigned.

This can be set only if **Trigger** is set to Sampling START SW.

For the resampling procedure, please see **Resample** Auto.

Threshold Level [–63dB...0dB]

When sampling with **Trigger** set to Threshold, this specifies the level at which sampling will begin. This can be set only when **Trigger** is set to Threshold. See step 3 of the **Trigger** Threshold procedure.

Pre Trigger REC [000...500ms]

If you want a portion of sound immediately before the start of sampling to be included in the recorded sample, set this parameter to specify the length.

When sampling with **Trigger** Threshold, sampling will start when the input signal exceeds the **Level** threshold level. However if the **Level** setting causes a portion of the attack to be lost, you can set the **Pre Trigger REC** parameter to capture the early attack as well.

When sampling with **Trigger** Sampling START SW, it is best to use **Metronome Precount** so that the instrumental performance etc. is sampled in tempo. If the performance is ahead of the tempo, this Pre Trigger REC parameter lets you sample without losing any of it.

If you increase this setting, you will always be sampling an unneeded portion ahead of the desired sample. Normally you should set this to 000 ms, and specify the minimum required length when necessary.

0–2c: Recording Level [dB]

Recording Level [–Inf, –72... +0.0 ... +18.0]

Level Meter

CLIP !

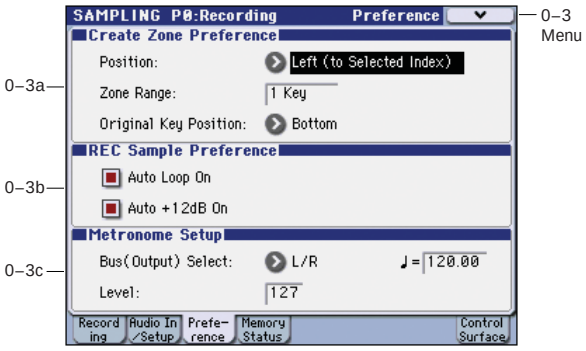
For more information, please see “0–1c: Recording Level [dB]” on page 303.

▼0–2: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

0–3: Preference



0–3a: Create Zone Preference

These settings define the initial state of the indexes that are created when you press the Create button (0–1b, 3–1b). Each new index will be created according to the settings you make here, but you are free to modify the settings later.

Position [Right (to Selected Index), Left (to Selected Index)]

Specifies whether the new index will be created at the right or left of the selected index.

Right (to Selected Index): The new index will be created at the right of the currently selected index.

Left (to Selected Index): The new index will be created at the left of the currently selected index.

Zone Range [1 Key...127 Keys]

Specifies the key range of the newly created index.

1 Key: Each individual note of the keyboard will be an index. The sample of an index will sound at its original key when you play that note.

2 Keys–127 Keys: The sample will change pitch in semitone steps across the specified number of keys, centered on the original key **Orig. Key** (0–1b, 3–1b). If **Constant Pitch** (3–1b) is checked, the pitch will not change.

Original Key Position [Bottom, Center, Top]

Specifies where the original key will be located in the zone (specified by **Zone Range**) for a newly created index.

Bottom: The lowest key in the zone will be the original key.

Center: The middle key in the zone will be the original key.

Top: The top key in the zone will be the original key.

0–3b: REC Sample Preference

Auto Loop On [Off, On]

On (checked): The recorded sample will automatically be played with looping turned on **Loop** (2–1d). When you play back, that sample will loop.

Auto +12dB On [Off, On]

This setting is used when you sample into RAM memory with **Save to** (0–1d) set to RAM. This setting is not used if **Save to** is set to MEDIA.

On (checked): The **+12 dB** (2–1d) setting will automatically be turned on for the samples you record. Samples for which **+12 dB** is on will play approximately +12 dB louder than if the **+12 dB** setting was off.

You will normally turn this **On (checked)** when you sample an external audio source in Sampling mode, or apply insert

effects to a sample and resample it. (In Sampling mode, the power-on default for this setting is On.)

When you are sampling more than one external audio source, or an audio source mixed with your keyboard performance, set **Recording Level** to approximately 0.0 (dB) so that the recording level will be the optimum level that does not cause clipping. This will allow the sampled data to be recorded at the ideal level, but the playback level will be lower than it was during sampling.

In such cases you can check **Auto +12 dB On** when you resample, so that **+12 dB** (2–1d) will be turned on, causing the playback level to be the same as the level during sampling.

Note: The **Auto +12 dB On** setting is set separately for each mode: Program, Combination, Sequencer, and Sampling. For more information, please see page 108, page 186, page 275.

0–3c: Metronome Setup

Bus(Output) Select [L, R, 1...4]

This sets the audio output for the metronome sound played by **Metronome Precount** (0–2b).

L/R: The metronome will be hear d in the main stereo outputs (L / Mono and R), the S / P DIF output, and the headphones.

Indiv.1…4: The metronome will be heard only in the selected individual output.

♩(Tempo) [040.00...300.00]

This sets the tempo of the count-down when **Metronome Precount** (0–2b) is used.

This tempo is also used by the effects, for tempo-synchronized delays and LFOs. You can also set the tempo by using the TEMPO knob or the TAP TEMPO switch.

Level [000...127]

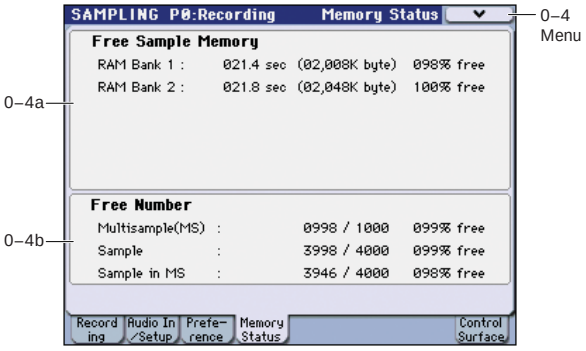
This controls the volume of the metronome sound.

▼0–3: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

0–4: Memory Status



0–4a: Free Sample Memory

RAM [000.0...999.9 sec]

This shows the remaining amount of RAM (the available sampling time, the size of sample files that can be loaded in Media mode, the size that can be used for editing, etc.) as a number of seconds, a number of bytes, and a percentage (%). This indication will depend on the amount of memory that is installed.

The remaining amount of memory will depend on the following conditions:

- The amount of memory that is installed.
- The amount of multisamples and samples that are loaded.
- Whether sampling in stereo or in mono. If **Sample Mode** (0–1d) is set to Stereo, the maximum “Sample Time” will be halved.
- The time specified for **Pre Trigger REC** (0–2b: a function that automatically samples the sound even before you begin sampling) will be subtracted from the amount of memory that actually remains.

0–4b: Free Number

Multisample(MS) [0000...0999/1000]
Samples [0000...4000/4000]
Samples in MS [0000...3999/4000]

This shows the maximum number of multisamples and samples, and the number of samples that can be used in multisamples. The remaining number and percentage (%) relative to this maximum are displayed.

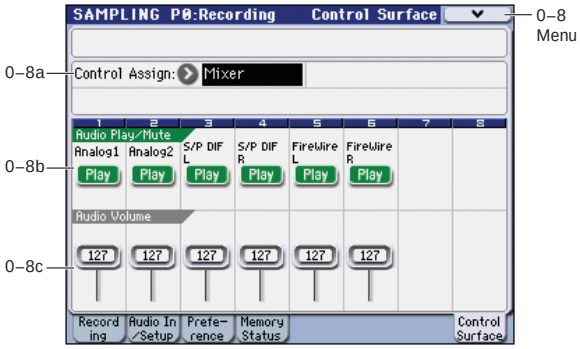
▼0–4: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332

- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

0–8: Control Surface



The control surface refers to the eight sliders and eight switches located on the panel at the left of the display. In addition to normal mixer operation, you can use these in a variety of ways such as editing sounds, operating KARMA, or sending MIDI messages to external devices.

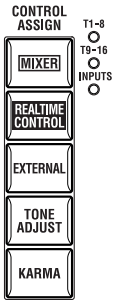
This page shows you the current values for each of the sliders, and switches, along with information about what they are controlling. For instance, you can:

- Adjust the volume of the oscillators (multisamples), and the audio input levels
- Modulate sounds and effects using the sliders and switches
- Use the sliders and switches to control external MIDI devices.

CONTROL ASSIGN switches and parameters

You can use **Control Assign** in the display or the CONTROL ASSIGN switches of the front panel to switch the function of control surface. Since the display and the front panel switches are linked, changing one will change the other correspondingly.

Control Assign switches



In Sampling mode, you can select one of four different functions:

MIXER (Mixer): Adjust the volume of the oscillators (multisamples), and switch the Play / Mute and Solo On / Off status.

MIXER (Mixer Input): The control surface will control the audio input volume, Play / Mute, and Solo On / Off status of the analog inputs, S / P DIF inputs, and FireWire inputs (if the EXB-FW is installed).

REALTIME CONTROL (RT Control): Use the sliders to control the sound or effects. Use the switches to turn effects on / off.

EXTERNAL: Lets you send MIDI messages to external MIDI devices. Use the Global P1: MIDI– External Mode 1 / 2 page to specify the MIDI message that will be transmitted.

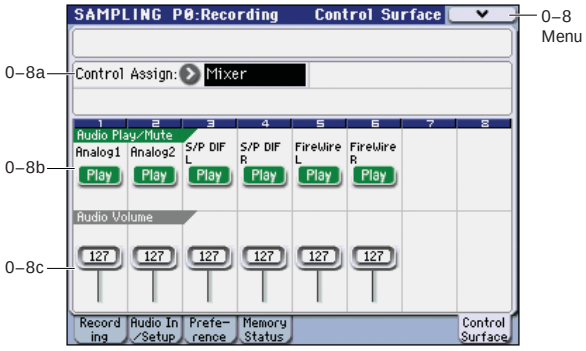
0–8a: Control Assign

Control Assign [Mixer, Mixer Input, RT Control, External]

This selects the items that will be controlled by the control surface. You can also press one of the CONTROL ASSIGN switches to make this selection.

For details on each selection, please see the explanations that follow.

Mixer



0–8b: Mixer

Here you can adjust the volume of the oscillators (multisamples), and switch the Play / Mute and Solo On / Off status.

OSC Play/Mute:

MIX PLAY/MUTE 1 switch

Use the MIX PLAY / MUTE 1 switch to mute the oscillator.

The switch LED will light to indicate Play status, or be dark to indicate Mute status.

OSC Play/Mute [Play, Mute]

Play: Oscillator 1 will sound.

Mute: Oscillator 1 will be muted (silent).

OSC Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1 switch

Use the menu command **Panel-Switch Solo Mode On** to specify whether the MIX PLAY / MUTE 1 switch will control Play / Mute or the Solo On / Off. If **Panel-Switch Solo Mode On** is on (checked), the switches will control Solo On / Off.

Tip: You can turn **Panel-Switch Solo Mode On** on / off by holding down the ENTER switch and pressing numeric key 0.

OSC Solo [Off, On]

Switches the Solo status on / off for oscillator 1.

Note: Solo applies to oscillator 1 and the audio inputs.

Note: The Solo On / Off setting is not saved when you write the sampling.

Exclusive Solo

The menu's **Exclusive Solo** parameter also affects the way that Solo works. If you set **Exclusive Solo** Off (unchecked), Multiple Solo mode will be selected, and you'll be able to turn solo on for multiple items of the oscillator and audio inputs. Each time you press a SOLO button, the solo setting will alternate between on and of.

If **Exclusive Solo** is on (checked), only one of the applicable items can be soloed simultaneously. In this mode, pressing a SOLO button automatically disables any previous solos.

Tip: You can also toggle **Exclusive Solo** by holding **ENTER** switch and pressing numeric key **1**.

OSC Volume:

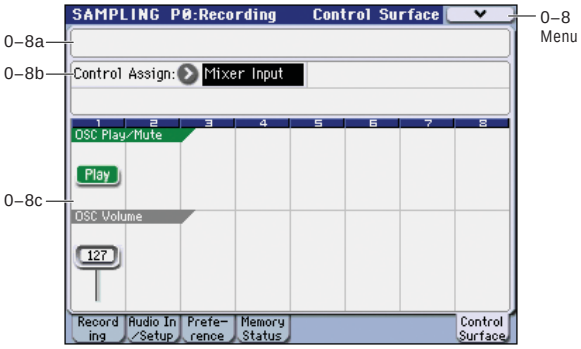
MIX VOLUMES slider 1

Here you can adjust the output level of Oscillator.

OSC Volume [000...127]

This slider adjusts the volume of Oscillator.

Mixer Input



Mixer Input lets you adjust the volume and switch the Play / Mute and Solo On / Off status of the four audio inputs Analog Input 1, 2 and S / P DIF IN L, R

Note: If the EXB-FW option is installed, you'll be able to use FireWire L and R.

Other Audio Input settings

Each audio input can be assigned to up to three busses:

- An Output / IFX Bus
- An FX Control Bus
- An AUX Bus

You can set up these bus assignments on the Prog P0: Play–Sampling / Audio In page. For more information, please see "0–7: Sampling / Audio In" on page 8.

0–8c: Mixer Input

Audio Play/Mute:

MIX PLAY/MUTE 1...4 switches

These switch each audio input between play / muted status. The switch LED will be lit for Play, or dark for Mutes status.

Audio Play/Mute 1...4 [Play, Mute]

Play: The input will be enabled.

Mute: The input will be muted.

Audio Solo:

Panel-Switch Solo Mode On and MIX PLAY/MUTE 1–4 switches

Solo applies to oscillator, and the audio inputs. For more information, please see “OSC Solo:” on page 310.

Exclusive Solo

For more information, please see “OSC Solo:” on page 310.

Audio Solo 1...4 [Play, Mute]

This switches the Solo On / Off setting for each audio input.

Note: The Solo On / Off setting is not preserved when you write.

Audio Volume:

MIX VOLUMES sliders 1...4

Audio Volume 1...4 [000...127]

This adjusts each audio input level.

RT Control (Realtime Control)

Realtime Control lets you use the eight sliders to edit the parameters of a oscillator or effect. The switches will control the effect on / off status.

0–8d: RT Control AMSource

Selected Parameter information

When you select a Slider or Switch, this area shows detailed information about its parameter assignments.

Effect On/Off:

Effect On/Off switches 1...8

These turn each effect on / off. The effect will be enabled if this is on (LED lit).

IFX1...5, MFX1, 2, TFX [Off, On]

These turn each effect on / off.

Realtime Control:

MIDI This will control the timbres of the global MIDI channel.

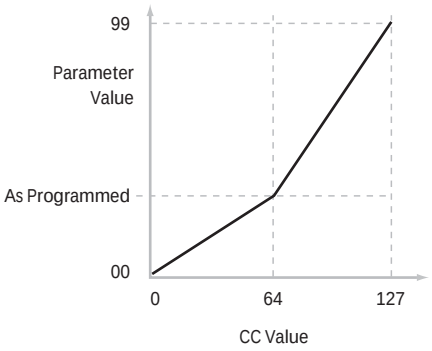
Realtime Control sliders 1...8

Sliders 1–4 all have dedicated functions which correspond to MIDI CCs. Sliders 5–8 can be assigned to a wide variety of functions, many of which also have corresponding MIDI CCs.

When you move a slider, it sends out the corresponding MIDI CC.

Most of these functions adjust (i.e., apply scaling to) various oscillator settings. Unless otherwise noted, “scaling” means that the parameters are at their programmed values when the controller is at 64, at their minimum when the controller is at 0, and at their maximum when the controller is at 127. For another look at this, please see the diagram below.

CC parameter scaling



Slider 1: Flt Fc (Cut Off) [000...127]

This slider scales the cutoff frequencies of Filters A and B, and transmits and receives MIDI CC #74.

Slider 2: Flt Reso (Resonance) [000...127]

This slider scales the resonance of Filters A and B, and transmits and receives MIDI CC #71.

Slider 3: Flt EG (Filter EG Intensity) [000...127]

This slider scales the effect of the Filter EG on the cutoff frequencies of Filters A and B. It also transmits and receives MIDI CC#79.

Slider 4: EG Rel (EG Release) [000...127]

This slider scales the release time of the Filter and Amp EGs, and transmits and receives MIDI CC#72.

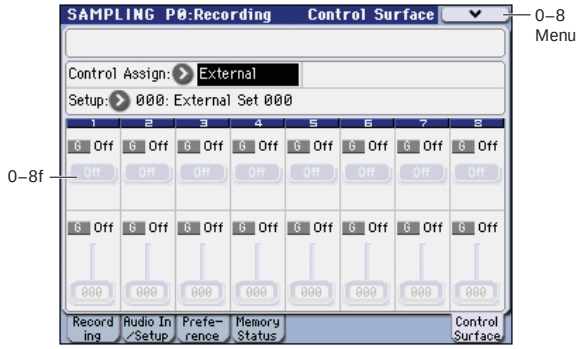
Slider 5–8 [000...127]

This is the current value of the slider and its MIDI CC.

You can set sliders 5–8 to a wide variety of modulation functions, using the P4: Controllers– Setup page.

All of the settings also correspond to MIDI messages– usually CCs.

External



External control lets you transmit MIDI messages to external devices. Each slider and switch will transmit an individually assigned MIDI CC# on its MIDI channel. To the pads as well, you can assign a note or MIDI CC# for transmission on a specified MIDI channel. For more information, please see “External” on page 18.

0–8e: External

Setup **[000…127]**

Switches 1...8

MIDI Channel **[01…16, G]**
CC# Assign **[Off, 000…119]**
Switch On/Off **[Off, On]**

Sliders 1...8

MIDI Channel **[01…16, G]**
CC# Assign **[Off, 000…119]**
Value **[000…127]**

For more information, please see “External” on page 18.

▼0–8: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

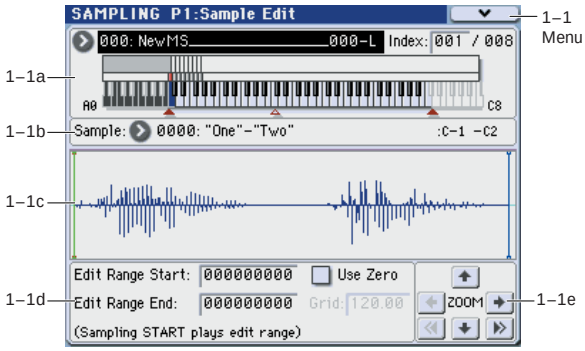
For more information, please see “Sampling: Menu Command” on page 329.

Sampling P1: Sample Edit

In this page you can edit sample data (waveform data). You can make detailed edits while watching the sample waveform display. Here are the main operations you will perform in this page.

- Truncate (delete unwanted regions), copy, paste, move, normalize (boost the level as high as possible without distortion), rate convert (lower the sampling frequency), reverse (backward playback), and link (connect two samples)
- When performing the above operations, you can automatically detect zero-crossing points, or display a grid (vertical lines) and edit according to BPM values or beats

1–1: Sample Edit



1–1a: Multisample Select (MS)

Multisample Select **[000...999]**

Selects the multisample that contains the sample you wish to edit.

Keyboard & Index

For more information, please see “0–1a: Multisample Select (MS)” on page 301.

Index **[xxx (001...128)/yyy (001...128)]**

Selects the index of the sample you wish to edit. Your editing will affect the sample of the index that you select here, and the waveform will appear in the “Sample waveform display” (0–1a).

Note: An index can also be selected by holding down the ENTER switch and playing a note on the keyboard or pad. The index that includes this note will be selected. The key you played will be the base key, and will be displayed in blue in “Keyboard & Index” (0–1a).

1–1b: Sample Select, Range

Sample Select **[----: ---No Assign----, 0000...3999]**

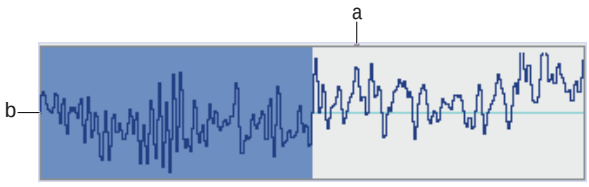
Range **[C–1...B9 — C–1...B9)**

This shows the sample number and name for the selected index, and the range. If you modify **Sample Select**, the sample you specify here will be assigned to this index. The range of the index is shown at the right.

1–1c: Sample waveform display

Sample waveform display

This displays the waveform of the selected sample. The horizontal axis is the sample address (time axis), and the vertical axis is the sample level.



In the following diagram, “a” indicates the portion of the entire sample that is shown in “b”. As you zoom-in on the time axis, this shows you where the magnified portion lies within the overall sample. You can use the ZOOM buttons to magnify (zoom-in) or shrink (zoom-out) the portion shown in the “b” waveform display.

If you have selected a stereo multisample or sample, the L channel and R channel of the sample data will be shown above and below.

1–1d: Edit Range

Edit Range Start **[000000000...]**

Edit Range End **[000000000...]**

This specifies the range (start address and end address) of the sample that will be edited by menu commands. (This is shown in sample address units.)

The range you specify here will be highlighted in the “Sample waveform display.”

To audition the selected range, press the SAMPLING START / STOP switch or Play button. The sample in the area between **Edit Range Start** and **Edit Range End** will sound at the pitch of the currently selected key (displayed in blue) (**Keyboard & Index** 0–1a).

Use Zero **[Off, On]**

On (checked): When setting **Edit Range Start** and **Edit Range End**, it will be possible to select these only to locations where the waveform level is ±0 (i.e., where the waveform crosses the center line of the “Sample waveform display”). You can use the VALUE slider, VALUE dial, and △ / ▽ switches to automatically search for zero-cross addresses. By using the numeric keys 0–9 you can search for the zero-cross address nearest to the value that you input.

Off (unchecked): **Edit Range Start** and **Edit Range End** can be set in increments of one. This is the normal setting.

Grid **[040.00...600.00]**

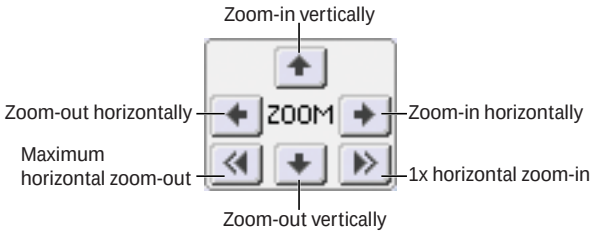
This specifies the spacing of the grid. The grid is determined by the BPM value you specify here and the **Resolution** setting of the menu command **Grid**. For more information, please see “Grid” on page 342.

Tip: If you don’t know the tempo of the sample, set the tempo by pressing the TAP TEMPO switch several times in rhythm with the playback.

1–1e: ZOOM

ZOOM

These buttons let you zoom-in and zoom-out the “Sample waveform display” along the horizontal axis (sample addresses) or vertical axis (sample level).



By zooming-in on the horizontal direction, you can move from the overall display where the waveform is shown as a solid line (1X magnification) to 2X or 4X magnification. (With 1X magnification, the resolution of the display will be the same as the resolution of the sample addresses. For example, if you change the sample address by one, the vertical line on the display that indicates the sample address will move by one pixel.)

In the vertical axis, you can zoom-in from 1X (full range display) to 512X (or 1024X for stereo).

Zoom-In / zoom-out will occur starting at the **Edit Range Start** or **Edit Range End** points you specify. (If a different parameter is selected when you zoom-in or -out, the zoom-in / out will be based on the last-selected point. If you re-select the **Edit Range Start** or **Edit Range End** points when the display is zoomed in or out, the display range will be adjusted so as to show the selected point.)

If the zoom ratio is low (1X or less), the “Sample waveform display” may differ slightly from the displayed waveform before and after waveform editing, but this does not affect the playback sound. If this occurs, raising the zoom ratio will make the display accurate.

▼1–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Truncate** ☞p.335
- 15: **Cut** ☞p.337
- 16: **Clear** ☞p.337
- 17: **Copy** ☞p.337
- 18: **Insert** ☞p.338
- 19: **Mix** ☞p.338
- 20: **Paste** ☞p.338
- 21: **Insert Zero** ☞p.339
- 22: **Normalize/Level Adj.** ☞p.339
- 23: **Volume Ramp** ☞p.340
- 24: **Rate Convert** ☞p.340
- 25: **Reverse** ☞p.341
- 26: **Link** ☞p.341
- 27: **Grid** ☞p.342
- 28: **Select Directory** ☞p.334
- 29: **Keyboard Display** ☞p.334

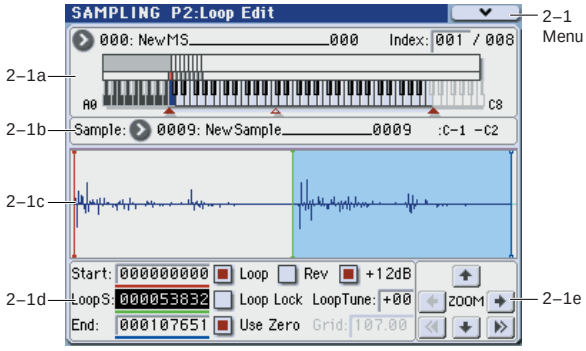
For more information, please see “Sampling: Menu Command” on page 329.

Sampling P2: Loop Edit

In this page you can specify the region of the sample that will play and the portion that will loop. You can edit the waveform down to the level of individual samples while watching the sample waveform display. Here are the main operations you will perform in this page.

- Specify the looping locations (start address, loop start address, end address)
- Truncate (delete unwanted regions), copy, paste, move
- When performing the above operations, you can automatically detect zero-crossing points, or display a grid (vertical lines) and edit according to BPM values or beats
- Make settings for reverse (backward) playback
- Use the Time Slice or Time Stretch functions to automatically edit the sample according to BPM values or beats

2–1: Loop Edit



2–1a: Multisample Select (MS)

Multisample Select [000...999]

Here you can select the multisample to edit.

Keyboard & Index

For more information, please see “0–1a: Multisample Select (MS)” on page 301.

Index [xxx (001...127)/yyy (001...127)]

Selects the index whose loop and other sample parameters you wish to edit. Your edits will apply to the sample of the index selected here, and the waveform will appear in the “Sample waveform display” (0–1a).

You can also select an index by holding down the ENTER switch and playing a note on the keyboard or pad. The index that includes this note will be selected. The note you played will be the base key, and will be shown in blue in “Keyboard & Index.” (**Keyboard & Index** 0–1a)

2–1b: Sample Select, Range

Sample Select [----: ---No Assign----, 0000...3999]

Range (C–1...G9 – C–1...G9)

This selects the sample of the index. If you change “Sample Select,” the sample you specify will be assigned to this index. The sample you select here will appear in the “Sample waveform display.”

The range of the index is displayed at the right.

2–1c: Sample waveform display

Sample waveform display

The waveform of the **Sample Select** is displayed here. For more information, please see “1–1c: Sample waveform display” on page 313.

2–1d: Sample Setup

Start (Start Address) [000000000...]

Specifies the starting address for sample playback (This value is in units of a sample address).

Loop S (Loop S Address) [000000000...]

Specifies the loop start address for sample playback. This is valid when Loop is On. This value is in units of a sample address.

You can’t set **Loop S** before **Start** or beyond **End**. For more information, please see “Ofs (Start Offset)” on page 38.

End (End Address) [000000000...]

Specifies the ending address for sample playback. This value is in units of a sample address.

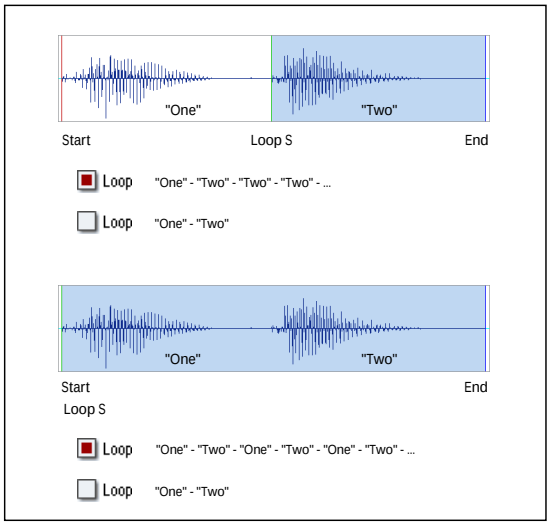
Loop (Loop On) [Off, On]

Specifies whether or not the sample will be looped.

On (checked): When played, the sample will continue looping from **Loop S** to **End**; e.g., **Start**→ **End**→ **Loop S**→ **End**→ **Loop S**→ …

Off (unchecked): The sample will playback once from **Start**→ **End** (one-shot playback).

If you sample with **Auto Loop On** (0–3b) checked, this item will automatically be checked.



Rev (Reverse) [Off, On]

On (checked): The sample will be played backward, from **End** (end address) to **Loop S** (loop start address).

+12dB [Off, On]

On (checked): The sample playback level will be approximately +12 dB louder than if this setting were Off (unchecked).

Off (unchecked): The sample will play back at the normal level. This is the same standard level as the playback level for ROM multisamples and drum samples.

Changing this on / off setting will not affect the sample data that appears in the sample waveform display.

This setting will automatically be turned on if you check **Auto +12 dB On** (see page 108, page 186, and page 275) when you sample.

These settings will be preserved if you save the sample as a Korg format sample file (.KSC, .KMP, .KSF). However, these settings are ignored by Korg-format-compatible devices other than the OASYS, TRITON Extreme and the TRITON STUDIO; i.e., these settings are ignored by the TRITON, TRITON-Rack, TRITON Le, and TRINITY etc. (as of February 2007).

+12 dB will be turned off when you load an AKAI, SoundFont, AIFF, or WAVE format sample in Media mode.
This parameter is ignored when you use the Media mode menu command **Export Smpl AIF/WAV** to export an AIFF or WAVE format sample file.

Loop Lock [Off, On]

This fixes the length of the loop being edited.

On (checked): When the **Loop S** or **End** address is edited, the **End** or **Loop S** will be automatically adjusted so that the distance between **Loop S** and **End** (i.e., the loop length) does not change. This is convenient when you are creating a rhythm loop to match a specific tempo.

Loop Tune [–99...+99]

When looping is on (**Loop** is checked), you can adjust the playback pitch of the loop from **Loop S** to **End** over a range of ±99 cents. When you loop data that was sampled from a musical instrument etc., the pitch of the looped portion may sometimes be incorrect. Use this parameter to compensate for such cases.

Use Zero [Off, On]

On (checked): **Start**, **End** and **Loop S** can be set these only to locations where the waveform level is ±0 (i.e., "zero-cross" addresses where the waveform crosses the center line of the "Sample waveform display"). (1–1d)

Off (unchecked): **Start**, **End** and **Loop S** can be set in steps of one unit. This is the normal setting.

Grid [040.00...600.00]

For more information, please see "1–1d: Edit Range" on page 313.

2–1e: ZOOM

ZOOM

This allows you to zoom-in / out in horizontal and vertical directions of the "Sample waveform display" (1–1e).

▼2–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Truncate** ☞p.342
- 15: **Time Slice** ☞p.343
- 16: **Time Stretch** ☞p.347
- 17: **Crossfade Loop** ☞p.350
- 18: **Grid** ☞p.342
- 19: **Select Directory** ☞p.334
- 20: **Keyboard Display** ☞p.334

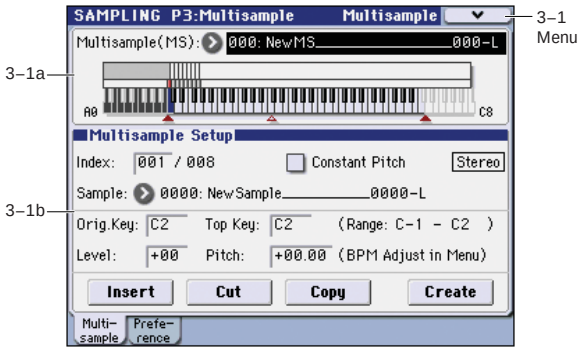
For more information, please see "Sampling: Menu Command" on page 329.

Sampling P3: Multisample Edit

In this page you can edit multisamples. You can create, delete, copy, and paste indexes, and assign samples to indexes. You can also edit detailed settings such as level and pitch for each index. Here are the main operations you will perform in this page.

- Create and edit multisamples and indexes
- Edit the playback level and pitch of samples
- Delete, copy, and paste indexes

3–1: Multisample Edit



3–1a: Multisample Select (MS)

Multisample Select (MS) [000...999]

Select the multisample that you wish to edit.

Keyboard & Index

For more information, please see “0–1a: Multisample Select (MS)” on page 301.

3–1b: Multisample Setup

Index [xxx (001...128)/yyy (001...128)]

Selects the index (the sample key zone within the Multisample) that you wish to edit. (0–1a)

You can also select an index by holding down the ENTER switch and playing a note on the keyboard or pad. The index that includes this note will be selected. The selected key will be the base key, and will be displayed in blue in “Keyboard & Index.”

Constant Pitch

On (checked): All notes in the zone of the index will sound at the pitch of the original key. Use this setting when you have sampled a drum sound or a rhythm loop, and want it to always playback at the original pitch.

Off (unchecked): The pitch will change in semitone steps, based on the original key. Use this setting when you have sampled a musical instrument sound etc. and would like to play it conventionally from the keyboard.

Sample (Sample Select) [----: ---No Assign----, 0000...3999]

This indicates the number and name of the sample that is assigned to the selected index. You can also select the sample here. (0–1b)

Stereo

This area will indicate “Stereo” if a stereo multisample or sample is selected, or if you sampled with a setting of Stereo in **Sample Mode** (0–1d).

Orig.Key (Original Key) [C–1...G9]

Specifies the original key of the sample (0–1b).

Top Key [C–1...G9]

Specifies the highest key in the zone of the index. The zone is defined by this **Top Key** (0–1b).

Range [C–1...G9)

This shows the range of the zone that is determined by the **Top Key** setting. The selected sample data will playback within this area. Zone settings for an index can also be viewed in **Keyboard & Index** (0–1a).

Level [–99...+99]

Adjusts the playback level of the sample. Use this when you need to adjust the level balance between samples within a multisample.

0: Unity level

–: The level will be lowered.

+: The level will be raised.

Since in Sampling mode the playback unity level will normally be the maximum level, adjustments in the + direction will have no effect. If Volume (CC#07) or Expression (CC#11) has been assigned to the ASSIGNABLE PEDAL or as the slider and these controllers have been operated, or if these MIDI messages have been received to lower the playback unity level, then adjustments in the + direction will be valid. (See page 113, Sample Parameters: Level)

Note: The playback level will also be affected by the **+12 dB** (2–1d) setting. If **+12 dB** is on, the sample will play back approximately +12 dB louder.

Pitch (BPM Adjust In Menu) [–64.00...+63.00]

Adjusts the playback pitch of the sample in one-cent steps.

0: The sample will sound at the original pitch when the original key is played.

–: The pitch will be lowered. At a setting of –12.00 the pitch will be one octave lower.

+: The pitch will be raised. At a setting of +12.00 the pitch will be one octave higher.

You can also use **Pitch** to make fine adjustments in the length of a rhythm loop. For example with a setting of +12.00, the playback speed will be doubled, and the loop playback time will be 1/2. (See page 113, Sample Parameters: Pitch)

Note: The **Pitch BPM Adjust** menu command lets you set the playback time in terms of a BPM value.

Insert

This creates an index. When you press the Insert button, a new index will be created according to the **Position** setting (0–3a, 3–2a). At this time, the contents of the index that was cut or copied by **Cut** or **Copy** (i.e., the **Zone Range**, **Original Key Position**, **Level** and **Pitch**) will be assigned at the same time. (The sample will automatically be copied or assigned to a different number.)

If it is not possible to create a new index when you execute **Create** or **Insert**, a dialog box will appear. If this occurs, please see **Create** (0–1b).

If you have not yet executed **Cut** or **Copy**, such as immediately after power-on, the new index will be created according to the Create Zone Preference settings (0–3a, 3–2a) **Position**, **Zone Range**, and **Original Key Position**.

Cut

This deletes the selected index. At the same time, the contents of the deleted index are copied to the **Insert** buffer.

Copy

This copies the content of the selected index to the **Insert** buffer.

Create

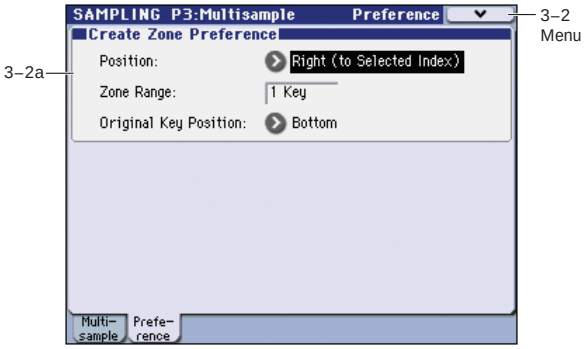
This creates an index. When you press the Create button, a new index will be created according to the settings of **Position**, **Zone Range**, and **Original Key Position** (3–2c, 0–3a) (0–1a).

▼3–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Pitch BPM Adjust** ☞p.351
- 15: **Select Directory** ☞p.334
- 16: **Keyboard Display** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

3–2: Preference



3–2a: Create Zone Preference

Position **[Right (to Selected Index), Left (to Selected Index)]**

Zone Range **[1 Key...127 Keys]**

Original Key Position **[Bottom, Center, Top]**

Here you can specify the default settings for indices that are created by executing **Create** (3–1b, 0–1b). New indexes will be created according the settings you specify here. You are free to modify the settings of an index later. Also, when you execute **Insert** (3–1b), the **Position** setting specified here will be used. For more information, please see “0–3a: Create Zone Preference” on page 307.

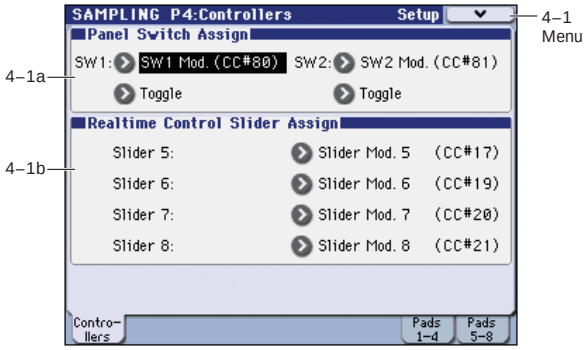
▼3–2: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Pitch BPM Adjust** ☞p.351
- 15: **Select Directory** ☞p.334
- 16: **Keyboard Display** ☞p.334

For more information, please see “Sampling: Menu Command” on page 329.

Sampling P4: Controllers

4–1: Setup



Here you can specify the SW1 and SW2 switch and 5–8 slider functions of the Sampling mode when Control Assign REALTIME CONTROL is selected.

Note: SW1 and SW2 can be controlled by the KYBD-61 / 73 / 88's SW1 and SW2 switches.

In Sampling mode, it is not possible to use AMS to control program parameters.

4–1a: Panel Switch Assign

SW1 (SW1 Assign) [Off, ..., After Touch Lock]

This assigns the function of SW1.For more information, please see "List of SW 1 / 2 assignments" on page 597.

Mode (SW1 Mode) [Toggle, Momentary]

This specifies the on / off operation when you press the KYBD-61 / 73 / 88's SW1 switch.

Toggle: The state will alternate between On and Off each time you press the SW1 switch.

Momentary: The state will remain On only while you continue holding down the SW1 switch.

SW2 (SW2 Assign) [Off, ..., After Touch Lock]

Mode (SW2 Mode) [Toggle, Momentary]

This assigns the function of SW2. The functions that can be assigned to SW2 are the same as for SW1, with the substitution of SW2 Mod. (CC#81) instead of the SW1's SW1 Mod. (CC#80).

4–1b: Realtime Control Slider Assign

Here you can assign the functions (mainly types of control change) that sliders 5–8 will have when Control Assign REALTIME CONTROL is selected. (See "1–6b: Realtime Control Slider Assign" on page 35)

The functions you assign here are active when you select CONTROL ASSIGN REALTIME CONTROL and operate sliders 5–8.

Slider 5 [Off, ..., MIDI CC#95]
Slider 6 [Off, ..., MIDI CC#95]
Slider 7 [Off, ..., MIDI CC#95]
Slider 8 [Off, ..., MIDI CC#95]

Example settings)

In this example, we'll use realtime modulation slider 5 to control the "Wet / Dry" parameter of the 056: Stereo / Cross Delay assigned to IFX1, and use slider 6 to control the post-IFX "Pan." Then we'll sample an audio signal from an external source while controlling these parameters in realtime.

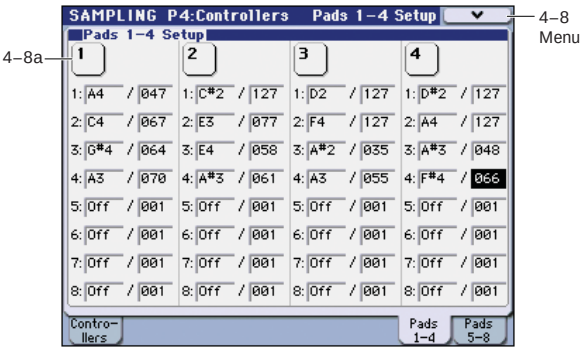
1. **Set Bus Select (0–2a) to IFX1.**
2. **Select 056: Stereo/CrossDelay for "IFX1."**
3. **Set the IFX1 page "Wet/Dry" setting to Dry, "Src (Source)" to Slider M5[+], and "Amt" to +50.**
4. **In the Realime Control Slider Assign area, assign "Slider 5" to Slider Mod.5 (CC#17) and "Slider 6" to Post IFX Pan (CC#08).**
5. **Rotate Sliders 5, 6 and the panning of the delay level and the delay will change. You can sample the sound while you modify it.**

▼4–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see "Sampling: Menu Command" on page 329.

4–7: Pads 1–4 Setup, 4–8: Pads 5–8 Setup



Here you can specify the note numbers (and their velocities) that will be produced by pads 1–8 in Sampling mode. You can assign up to eight note numbers (and their velocities) to each pad.

4–7(8)a: Pads 1

1 [Off, C–1...G9 / 001...127]
2 [Off, C–1...G9 / 001...127]
3 [Off, C–1...G9 / 001...127]
4 [Off, C–1...G9 / 001...127]
5 [Off, C–1...G9 / 001...127]
6 [Off, C–1...G9 / 001...127]
7 [Off, C–1...G9 / 001...127]
8 [Off, C–1...G9 / 001...127]

Off: Choose this if you don't want the pad to play a note.

C–1…G9: Specify the note number you want to play.

001…127: Specify the velocity value.

For details on these settings and how to use the pads, please see "1–7: Pads 1–4 Setup" on page 36 and "Note: Changing velocity on the keyboard or pads" on page 299.

4–7(8)b: Pads 2...8

The parameters are identical to those for Pads 1, as described under "4–7(8)a: Pads 1," above.

▼4–7(8): Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Delete Sample** ☞p.329
- 3: **Copy Sample** ☞p.330
- 4: **Rename Sample** ☞p.330
- 5: **Move Sample** ☞p.330
- 6: **Sample Mono To Stereo (Change Sample Type)** ☞p.331
- 7: **Delete MS (Delete Multisample)** ☞p.331
- 8: **Copy MS (Copy Multisample)** ☞p.332
- 9: **Rename MS (Rename Multisample)** ☞p.332
- 10: **Move MS (Move Multisample)** ☞p.332
- 11: **Convert MS To Program (Convert Multisample To Program)** ☞p.333
- 12: **MS Mono To Stereo** ☞p.333
- 12: **MS Stereo To Mono** ☞p.333
- 13: **Optimize RAM** ☞p.334
- 14: **Select Directory** ☞p.334
- 15: **Keyboard Display** ☞p.334
- 16: **Auto Sampling Setup** ☞p.334

For more information, please see "Sampling: Menu Command" on page 329.

Sampling P5: Audio CD

You can play back an audio CD in a CD-R/RW drive connected to the USB A connector, or rip audio data from an audio CD.

There are two ways to sample from an audio CD.

- If you want to monitor the audio, connect the audio output jacks (or headphone jack) of your CD-R/RW drive to the M3's AUDIO INPUT 1, 2 jacks. Alternatively, you can monitor the audio by connecting your CD-R/RW drive's S/P DIF OUT jack to the M3's S/P DIF IN jack.

  The sampling procedure is the same as when you're sampling an analog audio source connected to the AUDIO INPUT jacks in the conventional way. The sound will play on the M3 according to the **Input** Analog (0–2a) setting. Adjust the Input 1 (L channel) and Input 2 (R channel) settings for **Level**, **Pan**, and **BUS (IFX/Indv.) Select** (normally set to L/R).
- The audio signal of the audio CD will be sampled ("ripped") as digital data. Use the menu command **Destination** (5–1) to execute ripping.

Ripping is not supported for some CD-R/RW drives (drives that do not support reading CD-DA data). In this case, the message "Error in reading from medium" will appear.

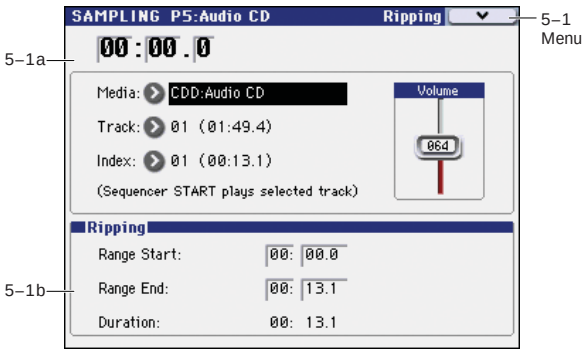
If your drive does not have audio output jacks, a headphone jack, or an S/P DIF OUT jack, you won't be able to monitor the audio.

The audio CD can be controlled by the SEQUENCER switches.

START/STOP switch	Play/Stop
FF>> switch	Fast-forward
<<REW switch	Rewind
PAUSE switch	Pause
LOCATE switch	Return to the beginning of the track

If the cursor is located at **Range Start** or **Range End**, the range of the CD from **Range Start** to **Range End** will be played.

5–1: Ripping



5–1a: Audio CD Play

Location [00:00.0...]

Indicates the current location of the track being played (**Track**). When stopped, this indicates the location at which playback will begin. If you re-select **Track** or **Index**, this will be reset to 00:00.0.

Media (Media Select) [CDD: Name]

Selects the CD-R/RW drive that contains the audio CD that you want to play or sampling.

Drives other than a CD-R/RW drive cannot be selected here.

If you connect a USB device to the USB A connector, use the menu command **Scan USB device** (see page 419) to mount the device.

Track (Track Select) [01...]

Selects the track of the audio CD that you want to play or sampling.

Index [01...]

Selects the index of the audio CD that you want to play or sampling.

This can be selected only if you have selected a track that contains index data.

In the case of some CD-R/RW drives, index information cannot be obtained.

Volume [0...127]

Adjusts the volume of the audio signal that is output from the CD-R/RW drive.

Some CD-R/RW drives do not support this, meaning that this adjustment may not affect the volume.

5–1b: Ripping

Makes settings for ripping data from a CD.

If the cursor is located at **Range Start** or **Range End**, CD playback will occur from **Range Start** to **Range End**.

Ripping is executed in the menu command **Destination**.

Range Start [00:00.0...]

Specify the starting location of the data that will be ripped.

When you re-select **Track** or **Index**, this will be reset to 00:00.0.

Note: If the **Range Start** or **Range End** edit cell is highlighted, you can press the ENTER switch during

playback to set **Range Start** or **Range End** to the timing location at that moment. If you press the ENTER switch more than once, the location of the last press will be used.

If an edit cell other than **Range Start** or **Range End** is highlighted, pressing the ENTER switch once will specify the **Range Start**, and press it once again will specify the **Range End**. If you press the ENTER switch three or more times, the **Range Start** and **Range End** will be set to the locations of the last press and the last-but-one press.

Range End [00:00.0...]

Specifies the ending location of the data that will be ripped.

When you re-select **Track** or **Index**, this will be reset to the ending time of the selected track or index.

Duration [00:00.0...]

Displays the length of time between **Range Start** and **Range End**.

▼5–1: Menu Command

- 0: **Destination** ☞p.351

For more information, please see “Sampling: Menu Command” on page 329.

Sampling P8: IFX (Insert Effect)

Here you can make insert effect settings for use in Sampling mode.

If you want to apply an insert effect IFX1–5 to the external audio signal while you sample it, choose IFX1–5 as the **Bus Select** (0–2a) parameter for Input1, 2 or S/P DIF L, R, and adjust the parameters of the insert effect.

If you want to apply effects to a previously-sampled sample or a sample you loaded, and resample the result, set the P8: Insert Effect page "Bus Select (All OSCs to)" (8–1b) parameter to IFX1–5, and adjust the effect settings. (**Resample** 0–2b)

For instance, you can:

- Send the output of a multisample to an insert effect
- Route a sound to an insert effect
- Make detailed settings for insert effects
- Make common LFO settings for effects

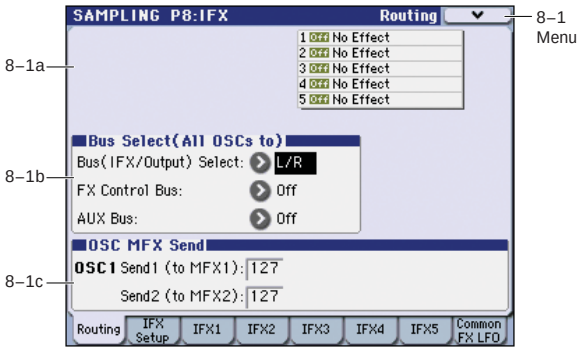
For details on insertion effects, please see "Effect Guide" on page 421.

Insert effect settings for Sampling mode will revert to the default settings when the power is turned off.

Use **Copy Insert Effect** if you want to keep your insert effect settings. Select a program or combination, copy the insert effect settings of Sampling mode, and save them. Write the program or combination to save it in internal memory. Then in Sampling mode, use **Copy Insert Effect** to load the effect settings from the program or combination so that they can be used in Sampling mode.

You can also use the **Write FX Preset** menu command to save effects individually.

8–1: Routing



8–1a: Routing Map

This displays the status of the insert effect settings.

This indicates the input buses being sent to the insert effects, the effects that are assigned, their on/off status, chaining, and the output bus that follows the insert effect.

Use the P8: IFX– Insert FX Setup page to select insert effects, turn them on/off, and make chain settings.

8–1b: Bus Select (All OSCs to)

Bus (IFX/Output) Select [L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

Selects the bus.

If you want to apply an effect to a sample (multisample) that you sampled or loaded, select IFX1–5. (**Resample** 0–2b)

Note: After you resample, L/R will automatically be selected as the **Bus (IFX/Output) Select** setting. These settings are made automatically so that the effect will not be applied again (i.e., a second time) when you play back the sample that was resampled with the IFX. (In the same way, the on/off settings for MFX1, 2 and TFX On/Off will also be turned off.) Be aware of this if you want to sample once again.

FX Control Bus [Off, 1, 2]

This sends the output of the oscillator (multisample) to a FX Control bus (mono 2-channel; FX Ctrl1, 2)

Use the FX Control buses when you want to use a separate sound to control the input of an effect. You can use the two (mono 2-channel) buses to control effects freely.

For more information, please see "FX Bus (FX Control Bus)" on page 305.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

This sends the output of the oscillator (multisample) to the AUX buses (four mono channels; 1, 2, 3, and 4). If you want to resample from the AUX buses, set **Source Bus** to AUX1/2 or AUX3/4.

The AUX buses are internal buses used for sampling etc. in each mode.

Off: The oscillator output will not be sent to the AUX buses. Normally you will leave this Off.

1, 2, 3, 4: The oscillator output will be sent in monaural to the corresponding AUX bus.

1/2, 3/4: The oscillator output will be sent in stereo to the corresponding pair of AUX buses.

8–1c: OSC MFX Send

Send1 (to MFX1) **[000...127]**

Send2 (to MFX1) **[000...127]**

This sets the send levels at which the output of the oscillator (multisample) is sent to the master effects. The master effects are sent to the L / R bus. Set the **Source Bus** to L / R if you want to use master effects while resampling.

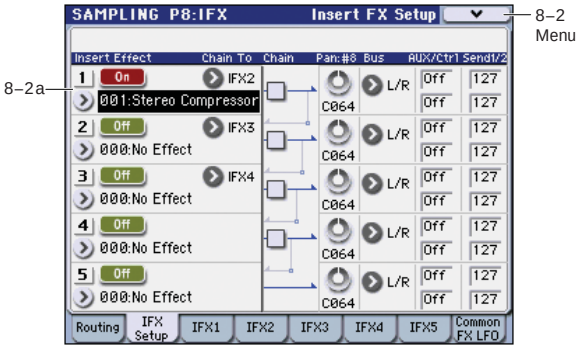
MIDI You can use CC#93 to control the Send1 level and CC#91 to control the Send2 level. The global MIDI channel specified by **MIDI Channel** (Global 1–1a) is used for these messages.

▼8–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy Insert Effect** ☞p.352
- 3: **Swap Insert Effect** ☞p.352

For more information, please see “Sampling: Menu Command” on page 329.

8–2: Insert FX Setup



In this page you can select the effect types for the insert effects, turn them on / off, and make chaining settings.

8–2a: IFX

Here you can choose the type of each insert effect 1 through 5, its on / off status, chaining, and adjust the post-IFX mixer settings. For insert effects, the direct sound (Dry) is always stereo-in and out. The input / output configuration of the effect sound (Wet) depends on the effect type.

For detailed explanations of the individual effects, please see the “Insert Effects (IFX1…IFX5)” on page 426.

The following parameters are the same as in Program mode. For more information, please see “8–2a: Insert Effect” on page 99.

Insert Effect:

IFX1...4 **[000...170]**

IFX5 **[000...153]**

IFX1...5: IFX On/Off **[Off, On]**

Chain:

IFX1: Chain to **[IFX2...IFX5]**

IFX2: Chain to **[IFX3...IFX5]**

IFX3: Chain to **[IFX4...IFX5]**

IFX1: Chain **[Off, On]**

IFX2: Chain **[Off, On]**

IFX3: Chain **[Off, On]**

IFX4: Chain **[Off, On]**

Pan: #8 (Post IFX PanCC#8) **[L000...C064...R127]**

Bus(Bus Select) **[L/R, 1...4, 1/2, 3/4, Off]**

AUX/Ctrl:

AUX (AUX Bus) **[Off, 1, 2, 3, 4, 1/2, 3/4]**

Ctrl (FX Control Bus) **[Off, 1, 2]**

Send 1/2:

Send1 **[000...127]**

Send2 **[000...127]**

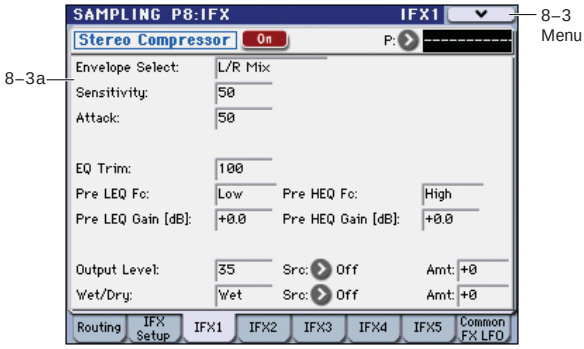
For more information, please see “8–2: Insert FX Setup” on page 99.

▼8–2: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy Insert Effect** ☞p.352
- 3: **Swap Insert Effect** ☞p.352

For more information, please see “Sampling: Menu Command” on page 329.

8–3: IFX1



8–3a: IFX1

Here you can edit the parameters of the insert effect 1 you selected in the P8: IFX– IFX Setup page.

MIDI Effect dynamic modulation (Dmod) is controlled on the global **MIDI Channel** (Global 1–1a). For more information, please see “Dynamic modulation (Dmod) and Tempo Synchronization” on page 422.

IFX1 On/Off [Off, On]

This turns the insert effect on and off. It is linked with the on / off setting in the IFX Setup page.

Note: If **Control Assign** is RT Control, you can use switches 1–5 to turn IFX 1–5 On / Off.

P (Effect Preset)

[P00, P01...15, U00...15, ----------]

This selects the effect preset.

For more information, please see “P (Effect Preset)” on page 101.

IFX1 Parameters:

IFX1 Parameters

Here you can edit the parameters of the insert effect selected in the IFX Setup page.

For details on the insert effects, please see the “Insert Effects (IFX1…IFX5)” on page 426.

▼8–3: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy Insert Effect** ☞p.352
- 3: **Swap Insert Effect** ☞p.352
- 4: **Write FX Preset** ☞p.353

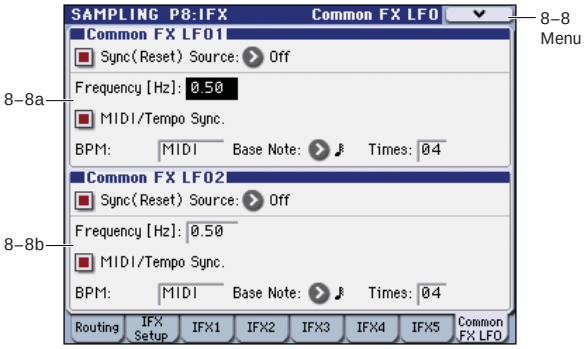
For more information, please see “Sampling: Menu Command” on page 329.

8–4: IFX2,
8–5: IFX3,
8–6: IFX4,
8–7: IFX5

Here you can edit the parameters of the insert effects selected in the P8: IFX– IFX Setup page.

The parameters for IFX2–IFX5 are the same as for IFX1. See “8–3a: IFX1,” above.

8–8: Common FX LFO



The two Common FX LFOs allow you to synchronize LFO-based modulation for multiple effects, such as phasers, flangers, filters, and so on.

The Common LFOs control only the frequency, MIDI synchronization, and reset options; each individual effect still has its own settings for the LFO waveform and phase.

Within the individual effects, you can choose whether to use one of the Common LFOs, or to use the individual effect’s frequency, sync, and / or reset settings instead. This is done via the effect’s **LFO Type** parameter; select **Individual** to use the effect’s settings, or **Common 1** or **2** to use the Common LFOs.

For more information, please see “8–8: Common FX LFO” on page 102.

MIDI Dmod (Dynamic Modulation) is controlled on the global MIDI channel specified in Global mode P1.

8–8a: Common FX LFO1

Sync (Reset) **[Off, On]**
Source (Dmod Source) **[List of Dmod Sources]**
Frequency **[0.02...20.00 (Hz)]**
MIDI/Tempo Sync **[Off, On]**
BPM **[MIDI, 40.00...300.00]**
Base Note **[𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯, 𝅘𝅥𝅯, 𝅘𝅥, 𝅘𝅥𝅘𝅥𝅘𝅥, 𝅘𝅥, 𝅗𝅥]**
Times **[01...32]**

These parameters are the same as in Program mode. For more information, please see “8–8: Common FX LFO” on page 102.

8–8b: Common FX LFO2

The parameters are identical to those for Common FX LFO1.

For more information, please see “8–8: Common FX LFO” on page 102.

▼8–8: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy Insert Effect** ☞p.352
- 3: **Swap Insert Effect** ☞p.352

For more information, please see “Sampling: Menu Command” on page 329.

Sampling P9: MFX/TFX

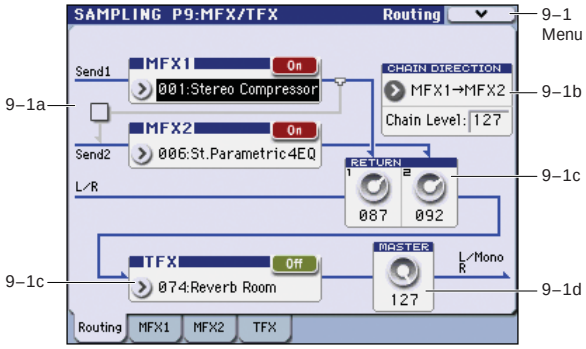
Here you can select the effect types for the master effects and total effect, and turn them on / off.

The master effects are output to the L / R bus. The total effect is inserted in the L / R bus. If you want to use these while sampling, set **Source Bus** to L / R.

For more information, please see the "Effect Guide," beginning on page 421.

Note: When you sample, **MFX1 On/Off**, **MFX2 On/Off**, **TFX On/Off** are automatically turned off. This is done so that the effect will not be applied again (i.e., a second time) when you play back the sample that was resampled with the MFX1 / 2 and TFX. (In the same way, the **Bus Select (All OSCs to)** parameter will automatically be set to L / R.) Be aware of this if you want to sample once again.

9–1: Routing



These parameters are the same as in Program mode.

For more information, please see "9–1: Routing" on page 103.

9–1a: MFX

MFX1:

MFX1 **[000...170]**
MFX1 On/Off **[Off, On]**
Return 1 **[000...127]**

MFX2:

MFX2 **[000...153]**
MFX2 On/Off **[Off, On]**
Return 2 **[000...127]**

Chain:

Chain On/Off **[Off, On]**
Chain Direction **[MFX1→MFX2, MFX2→MFX1]**
Chain Level **[000...127]**

For more information, please see "9–2: MFX1" on page 104.

9–1c: TFX

TFX:

TFX **[000...153]**
TFX On/Off **[Off, On]**

For more information, please see "9–4: TFX" on page 105.

9–1d: Master Volume

Master Volume **[000...127]**

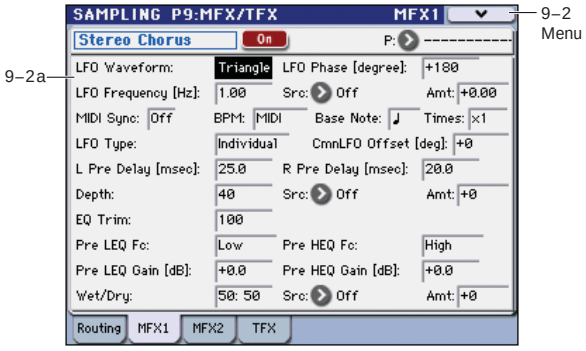
For more information, please see "9–1c: Master Volume" on page 104.

▼9–1: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy MFX/TFX** ☞p.352
- 3: **Swap MFX/TFX** ☞p.353

For more information, please see "Sampling: Menu Command" on page 329.

9–2: MFX1



9–2a: MFX1

Here you can edit the parameters of the effect you choose for MFX1 in the P9: MFX / TFX– Routing page.

MIDI Effect dynamic modulation (Dmod) is controlled on the global **MIDI Channel** (Global 1–1a). For more information, please see “Dynamic modulation (Dmod) and Tempo Synchronization” on page 422.

MFX1 On/Off [Off, On]

This turns master effect 1 on / off. It is linked with the on / off setting in the P9: MFX / TFX– Routing page.

P (Effect Preset) [P00, P01...15, U00...15, ----------]

This lets you select presets for the current effect. For more information, please see “P (Effect Preset)” on page 101.

MFX1 Parameters

Here you can edit the parameters of the master effect selected in the P9: MFX / TFX– Routing page.

For more details, please see “Master Effects (MFX1, 2)” on page 432.

▼9–2: Menu Command

- 0: **Panel–SW Solo Mode On** ☞p.329
- 1: **Exclusive Solo** ☞p.329
- 2: **Copy MFX/TFX** ☞p.352
- 3: **Swap MFX/TFX** ☞p.353
- 4: **Write FX Preset** ☞p.353

For more information, please see “Sampling: Menu Command” on page 329.

9–3: MFX2, 9–4: TFX

These pages let you edit the parameters of Master Effect 2 and the Total Effect. To select different effects types, use the P9: MFX / TFX– Routing page.

The parameters for MFX2, TFX are the same as for MFX1. For more information, please see “9–2: MFX1,” above.

Sampling: Menu Command

ENTER + 0–9: shortcuts for menu commands

Each page has a set of menu commands, which provide access to different utilities, commands, and options, depending on the page you're currently on. You can use the menu commands entirely from the touch-screen, by pressing the menu button in the upper right-hand corner of the screen and then selecting an option from the menu that appears.

Even though each page may have its own unique menu commands, the menus are standardized as much as possible. For instance, WRITE is almost always the first menu item in Program, Combination, and Sequencer modes.

You can take advantage of this standardization by using a shortcut to access any of the first ten menu items:

1. **Hold down the ENTER switch.**
2. **Press a number (0–9) on the numeric keypad to select the desired menu command, starting with 0.**

For instance, press 0 for the first menu command, 1 for the second, and so on.

If the menu command just toggles an option on and off (such as Exclusive Solo), then you're done. If the command calls up a dialog box, the dialog will appear on the display, and you can proceed just as if you'd selected the command from the touch-screen.

The ENTER switch corresponds to the OK button

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

Stereo Remarks on editing stereo samples

- For stereo samples, the L channel and R channel samples are edited simultaneously. If you wish to edit only the L channel or R channel, select a mono multisample, and select either the L channel or R channel sample for editing.
- For stereo samples, the display will indicate "Save to No.(L)" and "(R)." These respectively specify the writing-destination sample numbers for the L and R channels.
- If you **Copy** a mono sample into the buffer, and then **Insert**, **Mix**, or **Paste** it to a stereo sample, the data will be inserted, mixed, or pasted into both the L and R sides. (The result is that a stereo sample will be created.)
  If you **Copy** a stereo sample into the buffer, and then **Insert**, **Mix**, or **Paste** it to a mono sample, the L- and R-side data in the buffer will be mixed to mono, and then inserted, mixed, or pasted. (The result is that a mono sample will be created.)
  You can also use these commands if you wish to mono-mix a stereo sample and use it as a mono sample. However, be aware that once a sample has been mixed to mono, it is no longer possible to return it to a stereo sample.

"Start" and "End" settings

When using the P1: Sample Edit parameters **Truncate** – **Volume Ramp** and the P2: Loop Edit parameter **Truncate** to edit the waveform data of a sample, you must first use **Start** and **End** to specify the region that you want to edit, and then select and execute a menu command.

There is no compare function that lets you return the edited result to the state before editing. If you wish to preserve the unedited sample, uncheck the **Overwrite** item in the dialog box of each menu command before you execute.

Note: To edit the **Start** (start address) location at which the sample data (waveform data) will begin playing, the **Loop S** (loop start address), or **End** (end address), use P2: Loop Edit.

If the above parameters are located within an area of sample addresses that are deleted or moved by your editing, they will automatically be moved.

The **Loop S** and **End** (2–1d) must be at least eight samples apart. If you try to use the **Truncate**, **Cut**, or **Rate Convert** commands, but the results of the commands would cause the **Loop S** and **End** to be separated by less than eight samples, you'll see the error message "Sample length is shorter than minimum." Please set the **Start** and **End** appropriately.

About "Overwrite"

When **"Overwrite" is unchecked**: When the command is executed, the edited sample will be saved in a different sample number. The unedited sample will remain without change.

When **"Overwrite" is checked**: When the command is executed, the edited sample will be overwritten onto the original sample (number). The original sample will be modified.

Note: Normally, you will leave "Save to No." at its default setting, and execute without checking **Overwrite**. When you execute, both the data before and after editing will be preserved, and the sample number of the edited data will be assigned as the sample of that index.

Panel–SW Solo Mode On

When you select **Panel–SW Solo Mode On** and add a check mark to the menu item, the MIX PLAY / MUTE (SOLO) switches will operate as Solo on / off.

For more information, please see "Panel–SW Solo Mode On" on page 106.

Exclusive Solo

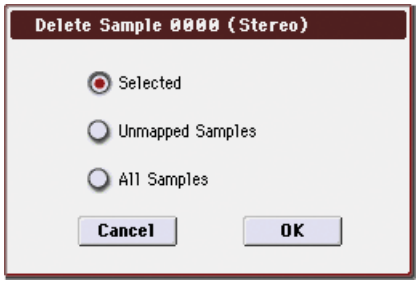
This command is available on every page in Combination mode. When **Exclusive Solo** is **On**, only one Timbre is soloed at a time; when it is **Off**, multiple Timbres can be soloed together.

For more information, please see "Exclusive Solo" on page 107.

Delete Sample

This command deletes all samples, the currently selected sample, or unused samples (samples not mapped to a multisample).

1. **Select "Delete Sample" to open the dialog box.**



2. **Use the radio buttons to specify which samples will be deleted.**

Selected: The currently selected sample will be deleted. The **Sample Select** (0–1b) for **Index** (0–1a) will be **---No Assign---**.

Unmapped Samples: All samples that are not mapped (used) in a multisample or drum kit will be deleted.

All Samples: All samples in memory will be deleted. The sample assignments of all multisamples will change to **---No Assign---**.

3. **To execute the Delete Sample command, press the OK button. To cancel, press the Cancel button.**

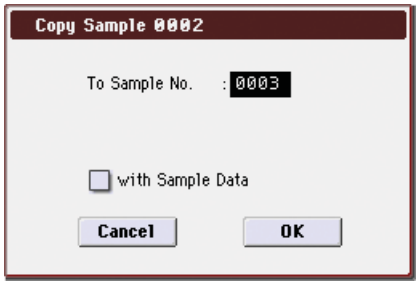
If the sample data (waveform data) of the sample you delete is being used by another sample, the sample data itself will not be deleted. Only the sample will be deleted.

Copy Sample

This command copies the currently selected sample to another sample.

Note: The copy destination sample number will automatically be included in the resulting sample name. If necessary, use the **Rename Sample** menu command to rename it. When doing so, make sure that the name is not identical to any other sample name. For more information, please see "About stereo multisamples and stereo samples" on page 303.

1. **Use Sample Select (0–1b) to select the copy-source sample.**
2. **Select "Copy Sample" to open the dialog box.**



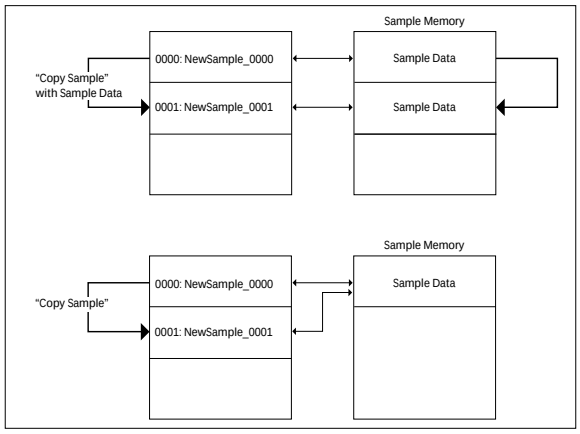
3. **Specify the sample number of the copy destination.**

Stereo When copying a stereo sample, specify both the L and R channels for the copy destination sample number.

4. **If you check "with Sample Data": Executing the copy will simultaneously copy the sample data (waveform data) as well.**

The copy source and copy destination samples will exist as completely independent samples. For example, you would use this when you wish to start with the same sample data, and edit it separately in P1: Sample Edit to create two or more different types of sample.

If you do **not check** "**with Sample Data**": Executing the copy will not copy the sample data (waveform data). The newly created sample will share the sample data of the copy source sample. For example, you would use this when you wish to use P2: Loop Edit to create two or more versions of the same sample data with different loop addresses. Sample memory area will not be consumed by this type of copy. If you use P1: Sample Edit to edit the sample data, the results will affect all samples that share this sample data.

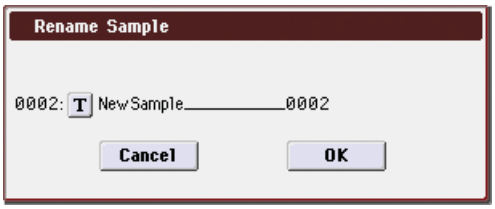


5. **To execute the Copy Sample command, press the OK button. To cancel, press the Cancel button.**

Rename Sample

This command lets you modify the name of the currently selected sample.

1. **Use Sample Select (0–1b) to select the sample whose name you want to edit.**
2. **Select "Rename Sample" to open the dialog box.**



3. **Press the text edit button to open the text edit dialog box, and input the desired sample name (up to 24 characters).**

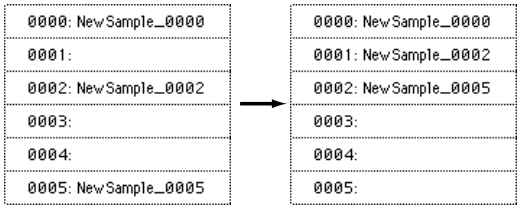
Stereo If the multisample is stereo and a stereo sample is selected, you can input up to 22 characters for the sample name. This is because the last two characters are reserved for –L and –R. If you rename up to 22 characters of the sample of either the L or the R channel, the other sample will automatically be renamed.

4. **To execute the Rename Sample command, press the OK button. To cancel, press the Cancel button.**

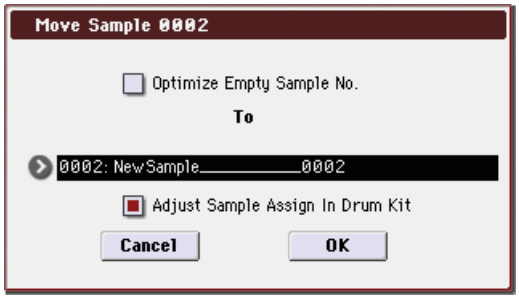
Move Sample

This command lets you move the currently selected sample to the specified number (i.e., to change the sample number), or to rearrange the sample numbers so that they start from 0000 after samples have become discontinuous as a result of creating or editing. (See diagram below)

When you reassign the sample numbers, the sample numbers within the multisamples and drum kits (according to the setting of step 4) that use these sample will also be automatically reassigned. (This means that the samples of the multisamples and drum kits need not be reassigned following this operation.)



1. **Use Sample Select (0–1b) to select the copy source sample.**
2. **Select “Move Sample” to open the dialog box.**



3. **Use To “Sample” to specify the move destination sample number.**

Stereo When moving a stereo sample, you must move the samples individually.

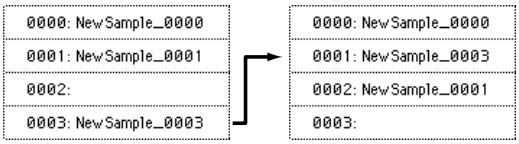
If you wish to reassign (pack) all sample numbers starting at 0000, check **Optimize Empty Sample No.**.

4. **If “Adjust Sample Assign in Drum Kit” is checked, and if the samples being moved are mapped to (used by) a drum kit, those sample numbers will also be automatically modified. Normally you will leave this checked.**

Samples mapped to (used by) multisamples will be automatically changed to the new sample numbers regardless of this setting.

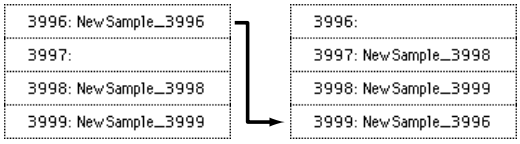
5. **To execute the Move Sample operation, press the OK button. To cancel without executing, press the Cancel button.**

Example)
If data already exists at the move destination sample number, the sample will not be overwritten; instead, all subsequent samples will be renumbered upward.



Move 0003 to 0001

Example)
If there is no empty sample number and forward movement is not possible, samples will be renumbered downward.



Move 3996 to 3999

Sample Mono To Stereo (Change Sample Type)

This command converts a mono sample to stereo. This can be executed when a mono sample is selected.

1. **Use Sample Select (0–1b) to select the sample that you want to change to stereo.**
2. **Select “Sample Mono To Stereo” to open the dialog box.**
3. **To execute the Change Sample Type command, press the OK button. To cancel, press the Cancel button.**

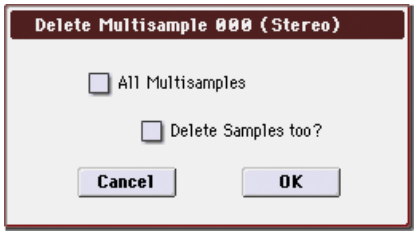
When you execute this command, the sample type will change as follows.

- The selected sample will be changed to stereo. The last two characters of the sample name will be overwritten as “–L”.
- A new sample will be created with the same name except that the last two characters of the sample name will be “–R”.
  Also, if the selected multisample is mono, it will change to stereo.
- The last two characters of the multisample name will be overwritten as “–L”.
- A new multisample will be created with the same name, but whose last two characters are “–R”.
- The stereo sample that was created will be assigned automatically.

Delete MS (Delete Multisample)

This command deletes the currently selected multisample or all multisamples.

1. **Use Multisample Select (MS) (0–1a) to select the multisample that you want to delete.**
2. **Select “Delete MS” to open the dialog box.**



3. **All Multisamples: Check this if you wish to delete all multisamples.**
4. **Delete Samples too?: Check this if you also wish to delete the samples included in the deleted multisample(s).**

However, samples that are mapped to (used by) other multisamples or drum kits will not be deleted.

5. **To execute the Delete Multisample command, press the OK button. To cancel, press the Cancel button.**

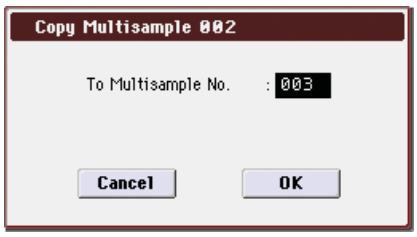
Even if you also choose to delete the samples that are included in the deleted multisample(s), any sample data (waveform data) used by these samples that is shared with other samples will not be deleted. Only the sample itself will be deleted.

Copy MS (Copy Multisample)

This command copies the selected multisample to another multisample.

Note: The copy destination multisample number will automatically be included in the resulting multisample name. If necessary, use the **Rename MS** menu command to rename it. When doing so, make sure that the name is not identical to any other multisample name. For more information, please see "About stereo multisamples and stereo samples" on page 303.

1. **Use Multisample Select (MS) (0–1a) to select the copy-source multisample.**
2. **Select "Copy MS" to open the dialog box.**



3. **Specify the copy destination multisample number.**

Stereo When copying a stereo multisample, copy both the L and R channels of the copy destination multisample number.

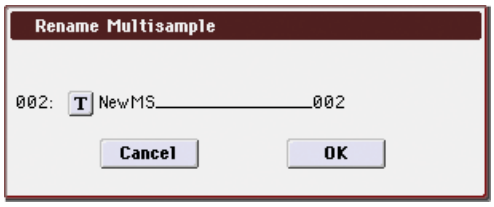
4. **To execute the Copy Multisample command, press the OK button. To cancel, press the Cancel button.**

When a multisample is copied, the samples assigned to the multisample will also be copied at the same time. At this time, they will be automatically copied to vacant sample numbers. The sample data (waveform data) will be shared between the copy source and copy destination. (Additional sample memory area will not be consumed.)

Rename MS (Rename Multisample)

This command modifies the name of the currently selected multisample.

1. **Use Multisample Select (MS) (0–1a) to select the multisample whose name you want to edit.**
2. **Select "Rename MS" to open the dialog box.**



3. **Press the text edit button to move to the text edit dialog box, and input a multisample name of up to 24 characters.**

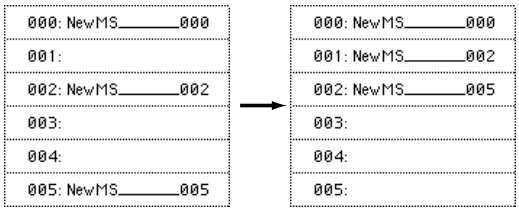
Stereo If the selected multisample is stereo, up to 22 characters can be input as the multisample name. This is because the last two characters are reserved for –L and –R. If you rename up to 22 characters of the multisample of either the L or the R channel, the other multisample name will automatically be renamed.

4. **To execute the Rename Multisample command, press the OK button. To cancel, press the Cancel button.**

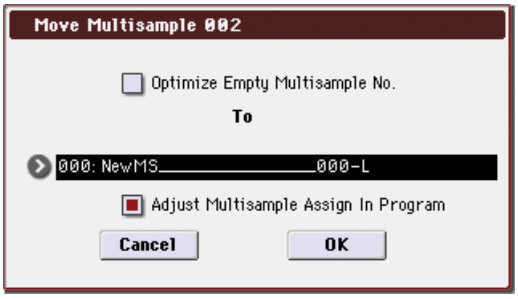
Move MS (Move Multisample)

This command lets you move the currently selected multisample to the specified number (i.e., to change the multisample number), or to rearrange the multisample numbers so that they start from 000 after multisamples have become discontinuous as a result of creating or editing. (See diagram below)

When you reassign the multisample numbers, the multisample numbers within the programs that use these multisamples will also be automatically reassigned (according to the setting of step 4). (This means that you do not need to reselect the multisamples in Program mode following this operation.)



1. **Use Multisample Select (MS) (0–1a) to select the multisample that you wish to move.**
2. **Select "Move MS" to open the dialog box.**



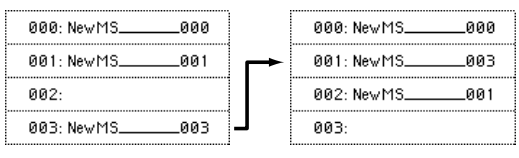
3. **In To "Multisample," specify the move destination multisample number.**

Stereo When moving a stereo multisample, you will need to move each part separately.

If you wish to rearrange all multisamples consecutively, check **Optimize Empty Multisample No.**.

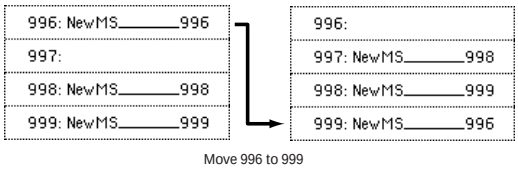
4. **If Adjust Multisample Assign in Program is checked and if the multisamples being moved are used in programs, the multisample numbers of the programs will also be reassigned automatically. Normally you will leave this checked.**
5. **To execute the Move Multisample command, click the OK button. If you decide not to execute, click the Cancel button.**

Example)
If data already exists at the move destination multisample number, the multisample will not be overwritten; instead, all subsequent multisamples will be renumbered upward.



Move 003 to 001

Example)
If there is no empty multisample number and forward movement is not possible, multisamples will be renumbered downward.



Move 996 to 999

Convert MS To Program (Convert Multisample To Program)

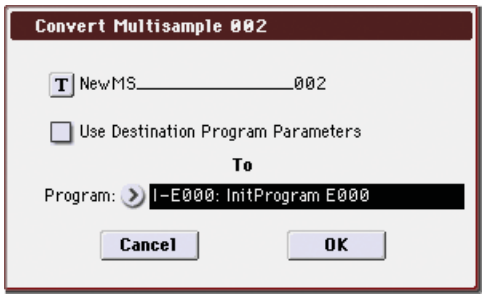
This command converts the selected multisample into a program.

If you have recorded a sample or created a multisample and would like to play it in Program mode, Combination mode, or Sequencer mode, you must create a program that uses that multisample for its oscillator.

If you've created a multisample in Sampling mode and want to use it as a program, go to Prog P2: OSC Pitch and set the OSC1 Multisample / Wave Sequence and OSC2 Multisample / Wave Sequence **Bank** parameters (if **Type** = Multisample) to RAM Mono or RAM Stereo. A multisample that you created in Sampling mode can be used in the program, and then to make program settings to specify how the multisample will be sounded.

However by executing the **Convert MS To Program** command, you can quickly and easily convert the Sampling mode settings into a new program, without having to make any Program mode settings as described above.

1. **Use Multisample Select (MS) (0–1a) to select the multisample that you want to convert to a program.**
2. **Select "Convert MS To Program" to open the dialog box.**



3. **Press the text edit button to open the text edit dialog box, and input a new program name (up to 24 characters).**

By default, the multisample name will be specified automatically.

4. **If Use Destination Program Parameters is unchecked:**

Executing the command will replace the multisample of the convert destination program with the multisample selected here, and will initialize the remaining program parameters.

The multisample will be converted into a program whose **Oscillator Mode** (Prog 1–1b) is Single.

If Use Destination Program Parameters is checked:

Executing this command will replace the multisample of the convert destination program with the multisample selected here, and will not initialize the remaining program parameters. Use this setting if you wish to use the parameter settings of an existing preset program, etc.

If you check **Use Destination Program Parameters**, be aware of the following points.

The **Oscillator Mode** of the convert-destination program must be Single. If you attempt to execute this command when these conditions are not satisfied, a message will indicate "Oscillator Mode conflicts." You will need to change the **Oscillator Mode** setting of the convert destination program.

5. **In To "Program," select the convert destination program.**

When the edit cell is selected, you can use the numeric keys 0–9, the VALUE dial, the VALUE slider, and △ / ▽ switches to make a selection. When you press the popup button, the Program Select menu will appear. Here you can select a program by bank.

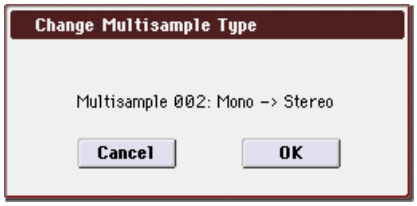
It is recommended that you use I–E as the program bank for Sampling mode.

6. **To execute the Convert Multisample To Program command, press the OK button. To cancel, press the Cancel button.**

MS Mono To Stereo/MS Stereo To Mono (Change Multisample Type)

This command converts a mono multisample to stereo, or a stereo multisample to mono. If the selected multisample is mono, the dialog box will allow you to execute **MS Mono To Stereo**. If the selected multisample is stereo, the dialog box will allow you to execute **MS Stereo To Mono**.

1. **Use Multisample Select (MS) (0–1a) to select the multisample that you want to change to stereo or mono.**
2. **Choose either "MS Mono To Stereo" or "MS Stereo To Mono" to open the dialog box.**



3. **To execute the Change Multisample Type command, press the OK button. To cancel, press the Cancel button.**

When you execute this command, the multisample type and sample assignment will change as follows.

MS Mono To Stereo

- The selected multisample will be converted to stereo. The last two characters of the multisample name will be overwritten as –L.
- An identical multisample will be newly created, but with the last two characters of the multisample name overwritten as –R.
- Mono samples assigned to the original multisample will be assigned to both –L and –R multisamples.
- If samples assigned to the original multisample are part of a stereo pair of samples, the –L and –R samples will be assigned to the –L and –R multisamples.

Stereo: MS Stereo To Mono

- The selected multisample will be converted to mono. The –L or –R at the end of the multisample name will be deleted.
- Multisamples that are stereo pairs of the selected multisample will be deleted.

Optimize RAM

This command optimizes the RAM memory.

When you execute the optimize command, any memory areas containing unused data will be rearranged, allowing you to utilize all of the remaining memory.

If you run out of memory, try executing **Optimize RAM**.

The remaining amount of RAM can be checked under "0–4a: Free Sample Memory," as described on page 308.

1. **Select "Optimize RAM" to open the dialog box.**
2. **Press the OK button to execute the optimize command, or press the Cancel button to cancel without executing.**

Note: If **Auto Optimize RAM** (Global 0–2a) is checked, RAM will be optimized automatically.

Select Directory

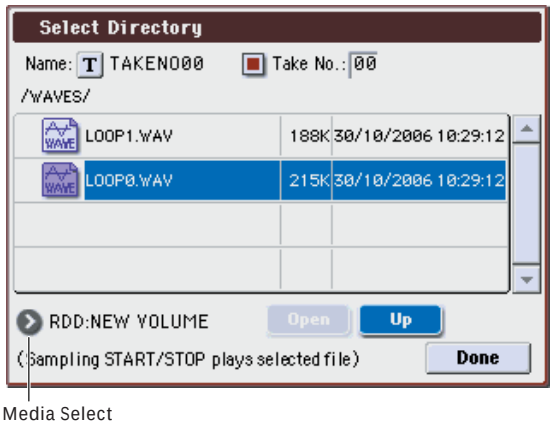
This command lets you specify the save-destination media, directory, and filename for the WAVE file that will be created by sampling.

You can also use this **Select Directory** command to listen to audio from a WAVE file that was saved to media.

The **Select Directory** command is available when **Save to** is set to MEDIA.

Specifying the save-destination for a WAVE file

1. **Select "Select Directory" to open the dialog box.**



2. **Use Media Select to select the media into which the data will be written during sampling.**
3. **Use the Open button and Up button to move between directories.**
4. **In the "Name" field, specify a name for the WAVE file that will be written during sampling.**

If you check **Take No.**, a two digit "take number" will be added at the end of the filename when it is saved. The number will automatically increment each time you sample. When sampling repeatedly, this is convenient since it allows each file to be saved with a different filename.

If **Take No.** is not checked, up to eight characters can be entered in the "Name" field. If **Take No.** is checked, up to six characters can be entered.

5. **Press the Done button to complete the settings.**

Playing back a WAVE file

1. **Select "Select Directory" to open the dialog box.**
2. **Use Media Select, the Open button, and the Up button to select the media and directory, and select the WAVE file that you want to play.**

Note: You can only play 44.1 kHz or 48 kHz WAVE files.

3. **Press the SAMPLING START/STOP switch or Play button.**

The selected WAVE file will play.

4. **Press the SAMPLING START/STOP switch once again to Stop button.**

If the WAVE file is mono, the same sound will be output to L and R.

Keyboard Display

This command selects the range of the keyboard display.

Normally you will select **88Key Normal (A0–C8)**.

1. **Select "Keyboard Display" to open the dialog box.**
2. **Use the radio buttons to select the displayed range.**
3. **To execute the Keyboard Display command, press the OK button. To cancel, press the Cancel button.**

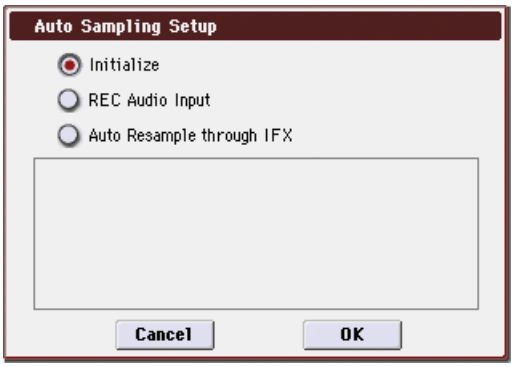
Auto Sampling Setup

This command automatically sets various sampling-related parameters for Sampling mode operations. You can use this command when you want to sample an external audio source, or when you want to apply an effect to a sample and resample it. You can also use this command to initialize the settings.

When you execute this command, the applicable parameters will be set automatically. You cannot use the COMPARE switch to recall the previous settings.

The settings are automatically made for the most typical applications. After executing the auto setup operation, you can further adjust any of the settings to suit your needs as described in the "*Note:*" paragraphs of each section.

1. **Select "Auto Sampling Setup" to open the dialog box.**



2. **Use the radio buttons to select the type of settings you want to make.**

Initialize: Initialize the sampling-related parameters to their default values.

REC Audio Input: Make settings for sampling an external audio source.

Auto Resample through IFX: Make settings for applying an effect to a sample and resampling it.

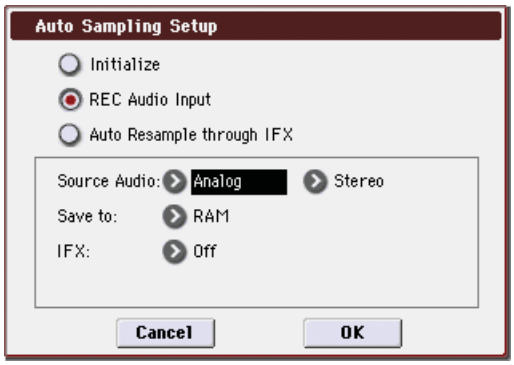
3. **Specify the conditions. These will depend on what you select in step 2.**

If you select Initialize:

Press the OK button to initialize the settings, or press the Cancel button if you decide not to execute.

For more information, please see "Auto Sampling Setup: Automatically-set parameters and their values" on page 336.

If you select REC Audio Input:



1) Use **Source Audio** to select the external audio input source.

Analog: Selects the analog audio source connected to the AUDIO INPUT 1 and AUDIO INPUT 2 jacks.

S/P DIF: Selects the digital audio source connected to the S/P DIF IN jack.

FireWire: If the EXB-FW option is installed, the digital audio output of the computer connected to the FireWire connector can be input to the M3.

2) Use "Mono-L/Mono-R/Stereo" to select the input source, and either mono or stereo as the number of channels that will be sampled.

Mono-L: Settings will be made for sampling to L-MONO from Input 1 (if you've selected Analog).

Mono-R: Settings will be made for sampling to R-MONO from Input 2 (if you've selected Analog).

Stereo: Settings will be made for sampling in stereo from Input 1/2.

Note: If the EXB-FW is installed, FireWire L, R, and L/R will correspond to the above.

3) Use **Save to** to specify the destination to which the sampled data will be written. RAM writes the data into RAM memory. MEDIA creates a WAVE file from the sampled data and saves it to USB storage device (e.g., hard disk).

4) If you want to apply an insert effect to the external audio input source while it is being sampled, use "IFX" to specify the insert effect that you want to use. If you don't want to use an insert effect, set this Off.

5) Press the OK button to execute the REC Audio Input command, or press the Cancel button if you decide not to execute.

For more information, please see "Auto Sampling Setup: Automatically-set parameters and their values" on page 336.

Note: When you are ready to sample (after executing REC Audio Input), press the SAMPLING REC switch and then the SAMPLING START/STOP switch to begin sampling. (This is because **Trigger** is set to Sampling START SW.) When you've finished performing, press the SAMPLING START/STOP switch to stop sampling.

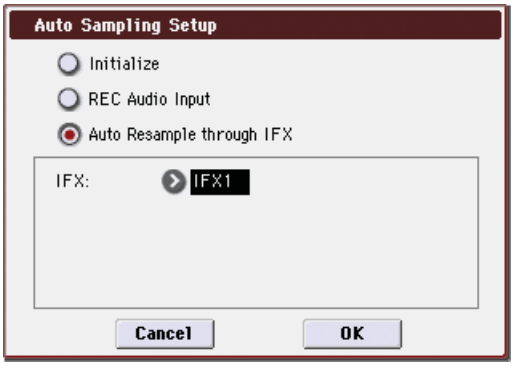
Note: Here's how to check the data you just sampled. If you specified **Save to** RAM, play the C2 note of the keyboard to hear the sample. If you specified **Save to** MEDIA, use the menu command **Select Directory** to hear the sample.

Note: If you specified **Save to** MEDIA and want to change the save-destination for the Wave files, use the menu command **Select Directory**.

Note: If you want to change the way in which sampling is initiated, change the **Trigger** setting.

Note: If you selected S/P DIF for **Source Audio**, use **System Clock** (Global 0–2a) to change the system clock.

If you select Auto Resample through IFX:



1) Use **IFX** to select the effect that you want to apply to the sample.

2) Press the OK button to execute Auto Sampling Setup (Auto Resample through IFX), or press the Cancel button if you decide not to execute. For more information, please see "Auto Sampling Setup: Automatically-set parameters and their values" on page 336.

Note: When you are ready to resample (after executing Auto Resample through IFX), perform the following steps.

1) Use **Key** (0–2b) to specify the switch to which the sample you want to resample is assigned.

2) Use P8: Insert Effect to make effect settings. To hear the sound, play the note you specified in **Key**.

3) To begin resampling, press the SAMPLING REC switch and then the SAMPLING START/STOP switch. (This is because **Trigger** is set to Sampling START SW.) The sample will play, and when playback ends, it will be resampled.

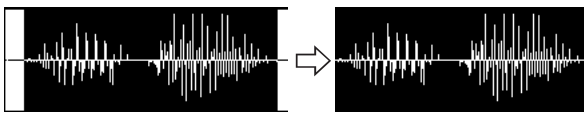
Note: To check the resampled data, play the note you specified in the **Key** parameter.

To prevent the insert effect from being applied "in duplicate" when you listen to the resampled data, **Bus Select (All OSCs to)** (8–1b) will automatically be set to L/R when resampling ends. If you want to apply IFX and resample once again, you will need to change this setting back to the same IFX.

Truncate (for Sample Edit)

This command deletes unwanted data that lies beyond the **Edit Range Start** and **Edit Range End**. Use this command when you wish to delete silence at the beginning or end of the waveform data.

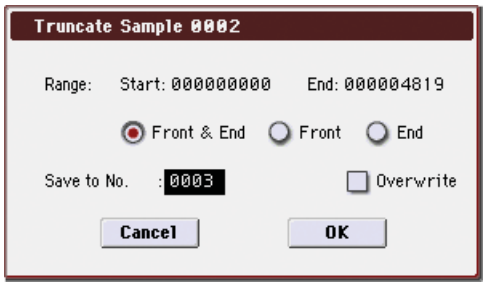
Note: If you wish to delete unneeded (unplayed) sample data after setting the Start Address **Start**, Loop Start Address **Loop S** and End Address **End** (2–1d), use the **Truncate (for Loop Edit)** menu command found in P2: Loop Edit.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use Edit Range Start and Edit Range End to specify the editing range.**

You can press the SAMPLING START/STOP switch or Play button to hear the portion that will be left by the **Truncate** command.

2. **Select "Truncate" to open the dialog box.**



3. **The editing range will be shown in Range "Start" and "End."**
4. **Use the radio buttons to select the portion that will be deleted.**

Front & End: The sample data that lies before the **Start** and after the **End** will be deleted.

Front: The sample data that lies before the **Start** will be deleted.

End: The sample data that lies after the **End** will be deleted.

5. **In Save to No., specify the save destination sample number.**

By default, an unused sample number will be selected.

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

6. **To execute the Truncate command, press the OK button. To cancel, press the Cancel button.**

Auto Sampling Setup: Automatically-set parameters and their values

		[Initialize]	[REC Audio Input]	[Auto Resampling through IFX]
Input (Input Source)*1		Analog S/P DIF FireWire	[Source Audio]*2	Analog S/P DIF FireWire
Input1	Bus Select	Off	[IFX]*3	Off
	FX Ctrl Bus	Off	Off	Off
	AUX Bus	Off	Off	Off
	Send1/2	000	000	000
	Pan	L000	L000	L000
	Level	127	127	127
Input2	Bus Select	Off	[IFX]*3	Off
	FX Ctrl Bus	Off	Off	Off
	AUX Bus	Off	Off	Off
	Send1/2	000	000	000
	Pan	R127	R127	R127
	Level	127	127	127
Sampling Setup	Source Bus	L/R	L/R	L/R
	Trigger	Sampling START SW	Sampling START SW	Sampling START SW
	Metronome Precount	(N/A)	(N/A)	(N/A)
	Pre Trigger REC	–	–	–
	Resample	Manual	Manual	Auto
REC Sample Setup	Save to	RAM	[Save to]	RAM
	Mode	Stereo	[Source Audio]*4	Stereo
	Sample Time(RAM)	maximum	–	–
	Sample Time(MEDIA)	4 min 59.999 sec	–	–
	Rec Level	+0.0	+0.0	+0.0
	Auto +12dB On	On	On*5	On
	Auto Loop On	On	–	–
Select Directly	–	–	–	–
Routing	Bus Select (All OSCs to)	L/R	–	[IFX]*3
	FX Crtl Bus	Off	–	Off
	AUX Bus	Off	–	Off
	Send1/2	127	–	000
Insert FX	Bus Select (Post IFX)	–	L/R*6	L/R*6

–: Not set automatically

[ ]: Set automatically according to the parameter settings in the dialog box

*1: Edit Sampling mode parameters

*2: Uses the input source specified as Source Audio.

*3: If IFX is Off this will be L / R. If IFX1…5 is selected this will be IFX1…5.

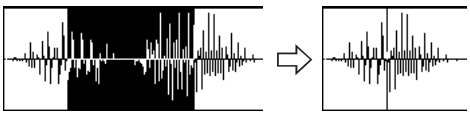
*4: L-Mono if the Source Audio is Mono-L, R-Mono if it is Mono-R, and Stereo if it is Stereo

*5: When Save to=RAM

*6: Specify the BUS Select of that IFX1…5. If effects are chained, specify the last IFX in the chain.

Cut

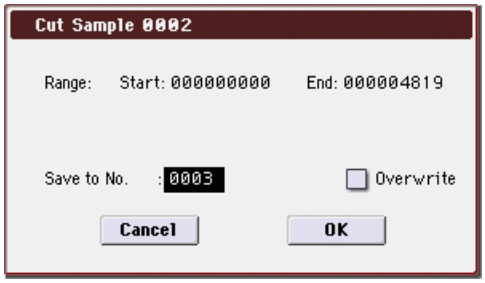
This command deletes the data between the **Edit Range Start–Edit Range End**. Sample data located after the deleted portion will be moved toward the beginning of the sample.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use Edit Range Start and Edit Range End to specify the editing range.**

You can press the SAMPLING START/STOP switch or Play button to hear the portion that will be deleted by the **Cut** command.

2. **Select "Cut" to open the dialog box.**



3. **The range to be edited is shown by Range "Start" and "End."**
4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

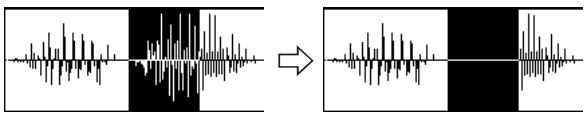
The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

5. **To execute the Cut command, press the OK button. To cancel, press the Cancel button.**

Clear

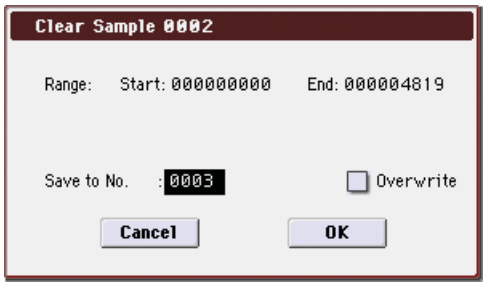
This command converts the data between **Edit Range Start–Edit Range End** to zero values. Sample data before and after the edited range will not move.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use Edit Range Start–Edit Range End to specify the editing range.**

You can press the SAMPLING START/STOP switch or Play button to hear the portion that will be changed to zero-level by the **Clear** command.

2. **Select "Clear" to open the dialog box.**



3. **The range to be edited is shown by Range "Start" and "End."**
4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

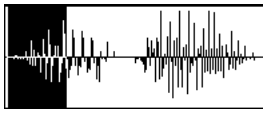
Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

5. **To execute the Clear command, press the OK button. To cancel, press the Cancel button.**

Copy

This command copies the sample data from the area between **Edit Range Start–Edit Range End** into the sample data buffer. This data can then be used by the **Insert**, **Mix** or **Paste** commands.

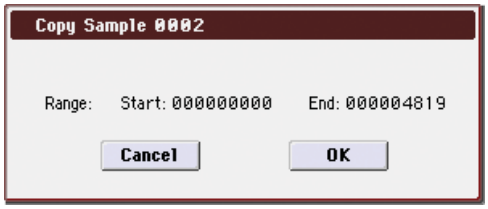
When you execute **Copy**, the data that is copied into the buffer actually consists only of the copy-source sample number, the **Edit Range Start** and **Edit Range End** locations and not the data itself. Do not delete the copy-source sample until you finish executing the **Insert**, **Mix**, or **Paste** command.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use "Start" and "End" to specify the editing range.**

You can press the SAMPLING START/STOP switch or Play button to hear the portion that will be copied by the **Copy** command.

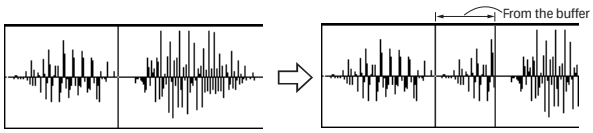
2. **Select "Copy" to open the dialog box.**



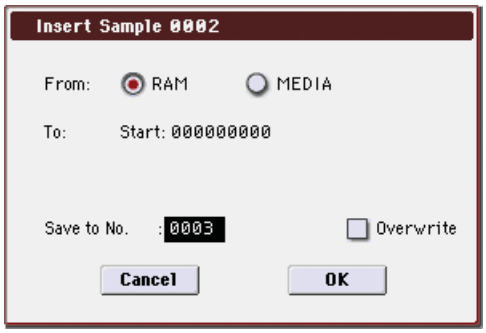
3. **The range to be copied is shown by Range "Start" and "End."**
4. **To execute the Copy command, press the OK button. To cancel, press the Cancel button.**

Insert

When you execute this command, the sample data placed in the buffer by executing **Copy** in the Sampling mode Sample Edit page will be inserted at the **Edit Range Start** address. The data that follows this address will be moved toward the end of the sample.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and set "Start" to specify the starting address. The "End" setting is ignored.**
2. **Select "Insert" to open the dialog box.**



3. **To "Start" will indicate the starting address at which the data will be inserted.**
4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

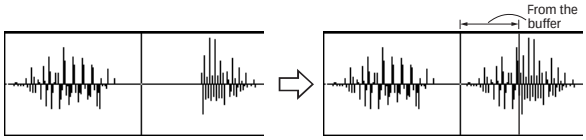
Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

5. **To execute the Insert command, press the OK button. To cancel, press the Cancel button.**

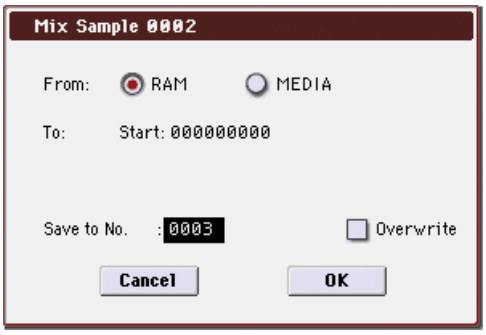
If the buffer into which data was placed by the **Copy** command contains no data, the display will indicate "Source sample is empty."

Mix

When you execute this command, the sample data placed in the buffer by executing **Copy** in the Sampling mode Sample Edit page will be mixed with the selected sample data, starting at the **Edit Range Start** address.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and set "Start" to specify the starting address. The "End" setting is ignored.**
2. **Select "Mix" to open the dialog box.**



3. **To "Start" will indicate the starting address at which the data will be mixed.**
4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

5. **To execute the Mix command, press the OK button. To cancel, press the Cancel button.**

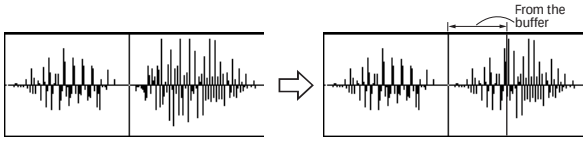
If the buffer into which data was placed by the **Copy** command contains no data, the display will indicate "Source sample is empty."

Paste

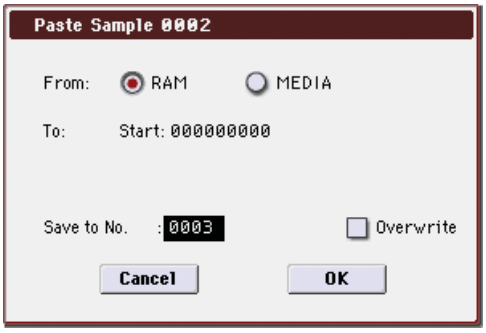
When you execute this command, the sample data placed in the buffer by executing **Copy** in the Sampling mode Sample Edit page will be placed in the sample starting at the **Edit Range Start** address. The original data will be deleted, and overwritten by the sample data from the buffer.

You can also place sample data into a blank sample. This is convenient when you wish to **Copy** part of a sample and create a new sample based on it.

Pasting to a sample that contains sample data



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and set "Start" to specify the starting address. The "End" setting is ignored.**
2. **Select "Paste" to open the dialog box.**



3. **To "Start" will indicate the starting address at which the data will be pasted.**
4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if “Overwrite” is checked. For more information, please see “About “Overwrite”” on page 329.

Stereo For stereo samples, use “Save to No.(L)” and “(R)” to specify the save-destination of the L and R channels.

5. **To execute the Paste command, press the OK button. To cancel, press the Cancel button.**

If the buffer into which data was placed by the **Copy** command contains no data, the display will indicate “Source sample is empty.”

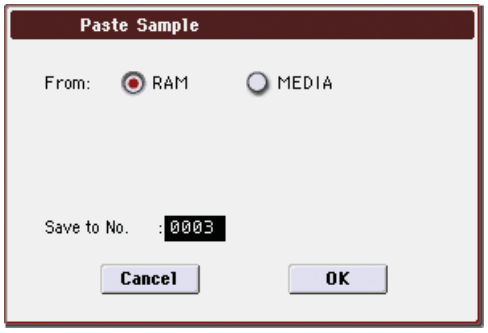
Pasting to a sample that contains no sample data

1. **Select the vacant sample number that you wish to paste.**

If you select **----:---No Assign----** for **Sample Select** and then open the dialog box for this command, a vacant sample number will be selected automatically.

The **Edit Range Start** and **Edit Range End** settings will be ignored, and will have no effect. The beginning of the sample will be placed at address 0.

2. **Select “Paste” to open the dialog box.**



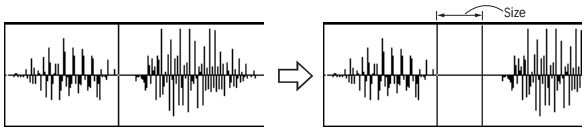
3. **In “Save to No.,” specify the save destination sample number. If you wish to change it, re-specify the desired number.**

Stereo For stereo samples, use “Save to No.(L)” and “(R)” to specify the save-destination of the L and R channels.

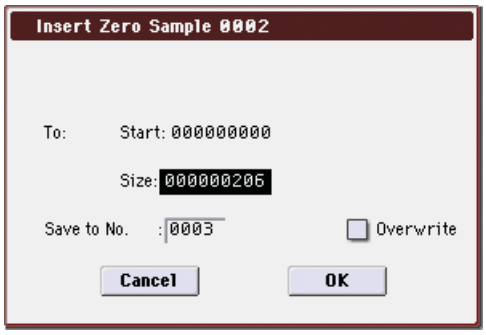
4. **To execute the Paste command, press the OK button. To cancel without executing, press the Cancel button.**

Insert Zero

This command inserts zero-level sample data (silence), beginning at the **Edit Range Start** address. The data that previously occupied that location will be moved toward the end of the sample.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and set Edit Range Start to specify the starting address. The Edit Range End setting is ignored.**
2. **Select “Insert Zero” to open the dialog box.**



3. **To “Start” will indicate the starting address at which the data will be inserted.**
4. **In “Size,” specify the length of the data that will be inserted.**
5. **In “Save to No.,” specify the save destination sample number. By default, an unused sample number will be selected.**

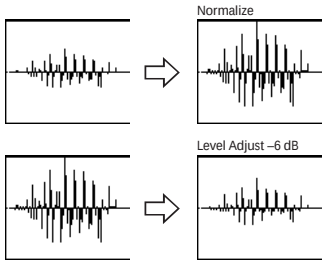
The sample number cannot be specified if “Overwrite” is checked. For more information, please see “About “Overwrite”” on page 329.

Stereo For stereo samples, use “Save to No.(L)” and “(R)” to specify the save-destination of the L and R channels.

6. **To execute the Insert Zero command, press the OK button. To cancel, press the Cancel button.**

Normalize/Level Adj.

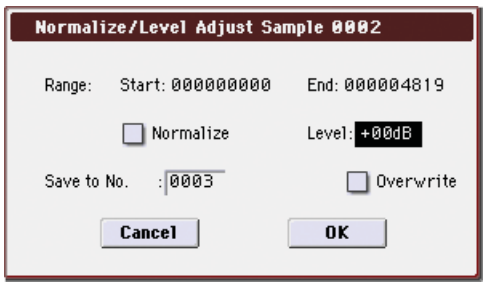
This command uniformly modifies the data values (volume) of the data between the **Edit Range End**. **Normalize** will amplify the level of the sample data as far as possible without allowing it to clip (distort). If the level of the sampled data is too low, you can execute this command to increase the dynamic range. **Level** allows you to raise or lower the level as desired.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use “Start” and “End” to specify the editing range.**

You can press the SAMPLING START / STOP switch or Play button to hear the portion that will be normalized or level-adjusted.

2. **Select “Normalize/Level Adj.” to open the dialog box.**



3. **The range to be edited is shown by Range “Start” and “End.”**

4. **If you check Normalize and execute, the data will be normalized. In this case, the Level setting will be ignored.**

If you wish to specify **Level** to modify the level of the sample data, do not check **Normalize**.

Each increase of +6 dB will approximately double the height of the waveform shown on the display. +12 dB will be an increase of approximately 4X, and +18 dB will be approximately 8X. Conversely, each decrease of –6 dB will halve the level, so that –6 dB will be 1/2X and –12 dB will be approximately 1/4X. Executing the **Level** command with positive (+) settings may cause the sound to clip (i.e., distort at the point that amplification beyond the maximum level is impossible). Once the sample data has been boosted beyond the clipping point, re-executing this command with negative (–) settings of **Level** will simply lower the overall level of the clipped signal –the waveform will remain distorted.
Also, if executing **Level** with negative (–) settings causes any portion of the sample data to reach a zero level, the zero data will not return to its original state even if you re-execute **Level** with positive (+) settings.

5. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

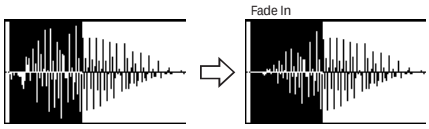
Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

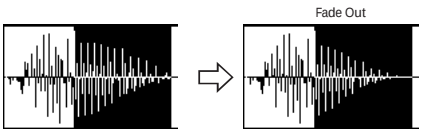
6. **To execute the Normalize/Level Adjust command, press the OK button. To cancel, press the Cancel button.**

Be aware that if sample data of an extremely low level is normalized, any noise included in the sample will also be amplified.

Volume Ramp

This command modifies the data values (volume) between the **Edit Range Start**–**Edit Range End**. You can make the volume gradually increase (Fade In) or decrease (Fade Out) from the **Edit Range Start** to the **Edit Range End**.

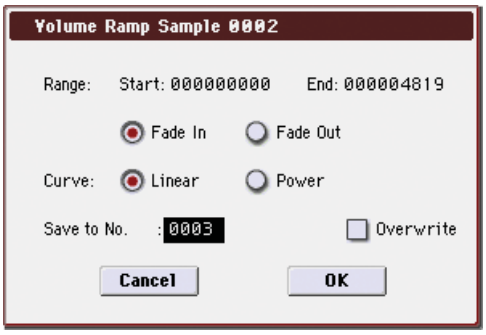




1. **Use Sample Select (1–1b) to select the sample that you wish to edit, and use Edit Range Start and Edit Range End to specify the editing range.**

You can press the SAMPLING START/STOP switch or Play button to hear the portion on which **Volume Ramp** will be executed.

2. **Select "Volume Ramp" to open the dialog box.**



3. **The range to be edited is shown by Range "Start" and "End."**

4. **Use the radio buttons to select the type of volume ramp.**

Fade In: The volume at Range "Start" will be zero, and will gradually increase toward "End."

Fade Out: The volume will gradually decrease from the Range "Start" volume until it reaches zero at "End."

5. **In Curve, specify the way in which the volume will change.**

Linear: The volume will change linearly. For normal fade-in or fade-out, select Linear.

Power: The volume will change non-linearly. When you use the **Mix** menu command to combine a faded-in waveform with a different faded-out waveform (i.e., crossfade), using a Linear fade-in/out may produce an impression that the volume has dropped in the middle of the curve. In such cases, use Power to perform the fade-in/out.

6. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

7. **To execute the Volume Ramp command, press the OK button. To cancel, press the Cancel button.**

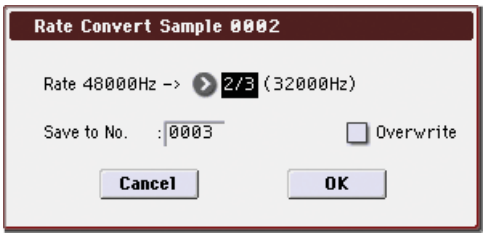
Rate Convert

This command lowers the sampling rate (frequency) of the sampled data by 2/3, 1/2, 1/3, 1/4, or 1/6. You can use this command to create "down-sampling" effects. The sample data is thinned to convert it to the lower sampling frequency.

The **Rate Convert** command is always executed on all waveform data of the selected sample, regardless of the "Start" and "End" settings.

1. **Use Sample Select (1–1b) to select the sample that you wish to edit.**

2. **Select "Rate Convert" to open the dialog box.**



3. **The sampling rate of the selected sample is shown at the right of "Rate." At the right of the "→" you can select the desired amount of the sampling rate conver-**

sion: 2/3, 1/2, 1/3, 1/4 1/6. The sampling rate following conversion will be displayed in Hz.

4. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

5. **To execute the Insert Zero command, press the OK button. To cancel, press the Cancel button.**

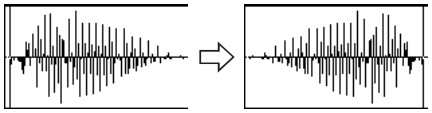
This command cannot be executed on a sample whose sampling rate is 192 Hz or less.

The left and right channels of a Stereo sample must have the same sampling rate. Although it is possible to select mono multisamples for –L and –R and convert their sampling rate separately, the system will then no longer be able to handle the pair as a stereo sample.

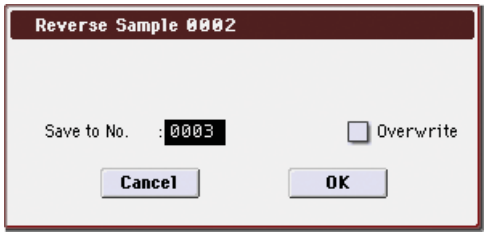
Reverse

This command reverses the sample data (i.e., exchanges the beginning and end).

The **Reverse** command is always executed on all waveform data of the selected sample, regardless of the **Edit Range Start** and **Edit Range End** settings.



1. **Use Sample Select (1–1b) to select the sample that you wish to edit.**
2. **Select "Reverse" to open the dialog box.**



3. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

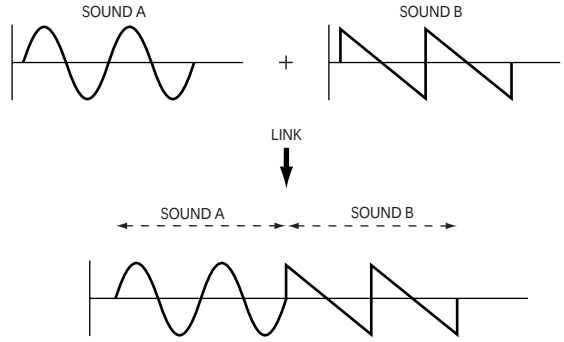
Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

4. **To execute the Reverse command, press the OK button. To cancel, press the Cancel button.**

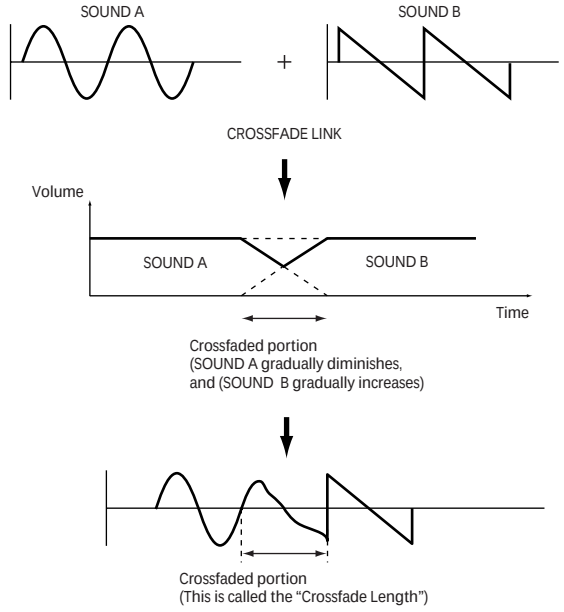
Note: When you execute this command, all of the sample data will be rewritten to reverse its direction. The P2: Loop Edit also contains a **Rev** (2–1d) command, which simply reverses the playback direction without affecting the sample data itself.

Link

This command connects the currently selected sample with another sample.

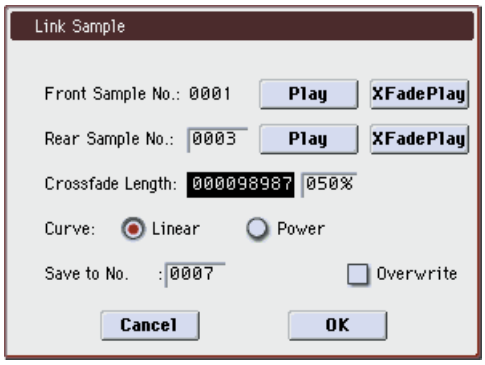


The volume of the two samples can be changed gradually at the transition to gradually mix the samples with each other. This is called crossfade, and can be used to produce a natural-sounding transition between the two sounds.



Link will be executed for all of the selected sample data, regardless of the "Start" and "End" settings.

1. **Use Sample Select (1–1b) to select the sample that will be placed in front by the Link command.**
2. **Select "Link" to open the dialog box.**



3. **The sample number selected for Front Sample No. will be displayed. When the command is executed, this sample will be placed in front.**

Stereo If you select one side of a stereo sample, it will automatically be detected as a stereo sample, and the other side of the sample will also be processed by the Link command.

If the “Front” Sample is mono and the Rear Sample is stereo, the L and R of the “Rear” Sample will be mixed to mono before linking.

If the “Front” Sample is stereo and the “Rear” Sample is mono, the identical sample will be placed in L and R of the “Rear” Sample before linking.

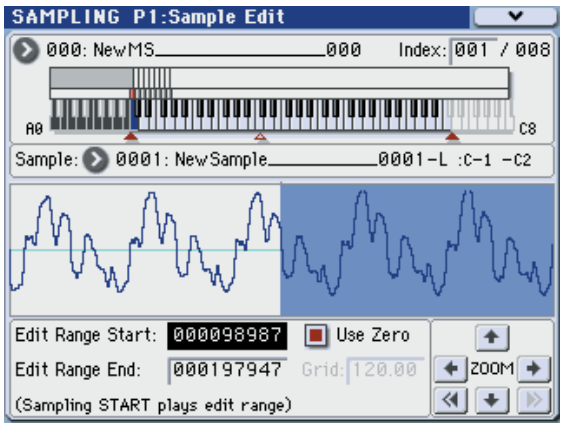
4. **Use Rear Sample No. to select the sample number that will be linked.**

When the command is executed, this sample will be placed in back.

5. **In Crossfade Length, specify the length over which the crossfade will occur.**

If you specify a % value, the proportion in relation to the entire “Front” Sample will be calculated automatically. If you specify 50%, the last half of the “Front” Sample will crossfaded.

If the rear sample is short, the **Crossfade Length** cannot be set any longer than the length of the “Rear”sample. In this case, it will not be possible to specify a value up to 100%.



After selecting a sample in step 1, you can set “Start” and specify the beginning of the crossfade while viewing the waveform. Set “End” to the end of the sample. If you specify these, **Crossfade Length** will indicate the length determined by “Start” and “End.”

6. **In “Curve,” specify how you want the volume to change in the crossfaded portion.**

Linear: The volume will change linearly.

Power: The volume will change non-linearly. In some cases, **Linear** may sound as though the volume diminishes in the middle of the curve. If this occurs, use **Power**.

7. **In “Save to No.,” specify the save destination sample number.**

An unused sample number will be selected by default.

The sample number cannot be specified if “Overwrite” is checked. For more information, please see “About “Overwrite”” on page 329.

Stereo For stereo samples, use “Save to No.(L)” and “(R)” to specify the save-destination of the L and R channels.

8. **To execute the Link command, press the OK button. To cancel without executing, press the Cancel button.**

If you link samples of different sampling rates (such as created by **Rate Convert**), the newly created sample will have the sampling rate of the “Front” sample.

One vacant sample is used in order to execute Link. Be aware that if there are no vacant samples, an error will occur.

Grid

This command displays a grid in the “sample waveform display.”

When you set the **Grid** to **On** and execute this command, vertical dotted lines will appear in the “sample waveform display” according to the specified resolution (**Resolution**) and tempo (**Grid** 1–1d, 2–1d).

Use the grid when you wish to cut the sample data or determine waveform starting locations based on BPM values or beats.

Note: The vertical dotted lines will be shown starting at the **Start** (when Loop is off) or **Loop S** (when Loop is on) (P2: Loop Edit) addresses, and are calculated according to the playback when the sample is played by the currently selected key (displayed in gray) (**Keyboard & Index** 0–1a).

1. **Use Sample Select (1–1b) to select a sample.**
2. **Select “Grid” to open the dialog box.**

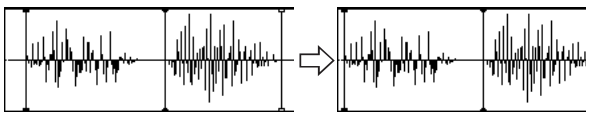
3. **Use the On/Off radio buttons to switch the grid on or off.**
4. **In Resolution, select the desired resolution for the grid.**

The grid that appears will be determined by this setting and by the **Grid** (1–1d, 2–1d) setting in the page.

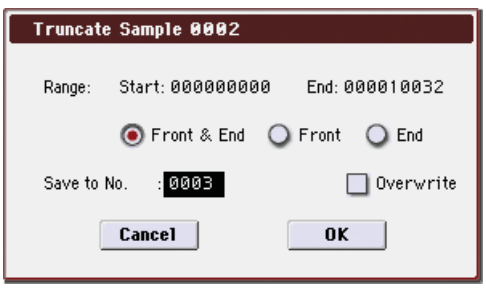
5. **To execute the settings, press the OK button. To cancel, press the Cancel button.**

Truncate (for Loop Edit)

This command deletes unwanted data that lies outside of the **Start (Start Address)**, **Loop S (Loop Start Address)**, and **End (End Address)** (2–1d). After setting the start address, loop start address, and end address of the sample, use this command to delete unwanted sample data.



1. **Use Sample Select (2–1b) to select the sample that you want to edit, and use Start (Start Address) or Loop S (Loop Start Address) and End (End Address) to specify the region that you want to edit.**
2. **Select “Truncate” to open the dialog box.**



3. **Range “Start” and “End” will show the range of data that will be edited.**
4. **Use the radio buttons to select the portion that will be deleted.**

Front & End: The sample data that lies before the Range “Start” (start address or loop start address) and after the Range “End” (end address) will be deleted.

Front: The sample data that lies before the Range “Start” (start address or loop start address) will be deleted.

End: The sample data that lies after the Range “End” (end address) will be deleted.

5. **In “Save to No.,” specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if “Overwrite” is checked. For more information, please see “About “Overwrite”” on page 329.

Stereo For stereo samples, use “Save to No.(L)” and “(R)” to specify the save-destination of the L and R channels.

6. **To execute the Truncate command, press the OK button. To cancel, press the Cancel button.**

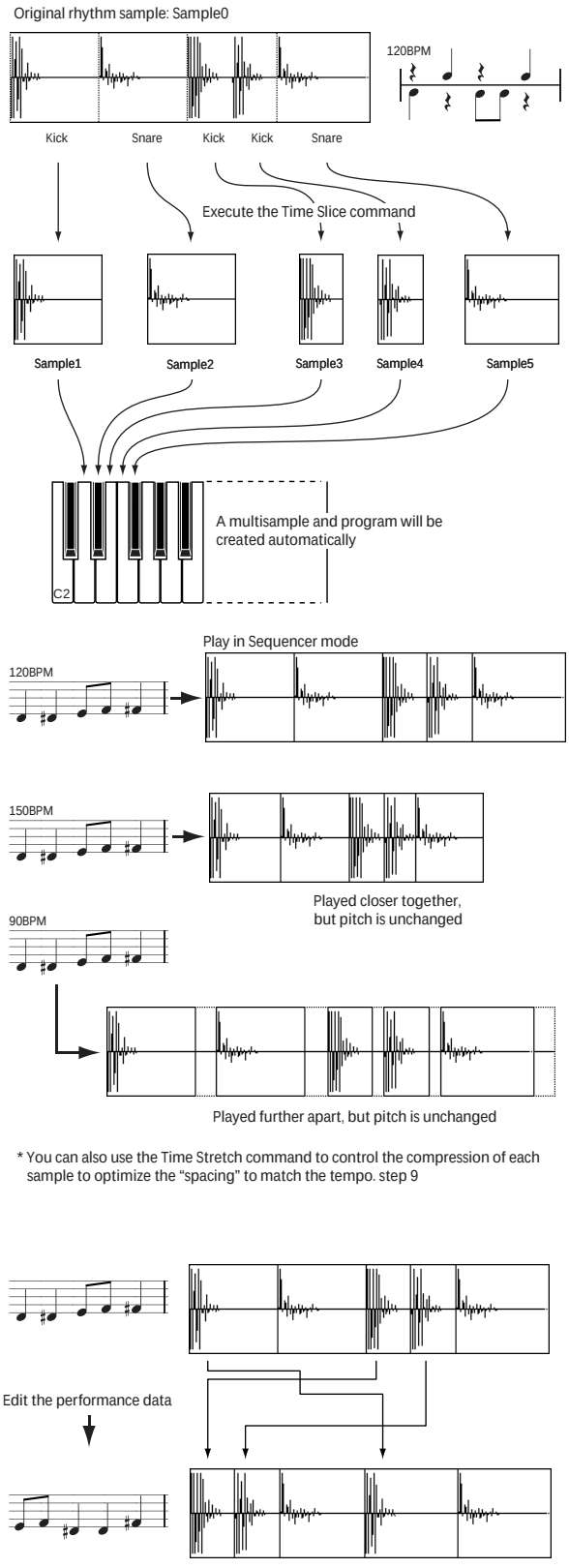
Time Slice

Time Slice lets you convert a mono or stereo rhythmic sample, such as a drum loop, into a set of individual hits and matching sequencer data. You can then:

- Re-create the loop by playing the sequencer data
- Change the tempo of the loop, without altering the pitch
- Change the pitch of the samples, without altering the tempo
- Change the rhythmic feel by altering quantization, swing, etc.
- Change the pattern of the loop by swapping or deleting individual hits, or otherwise editing the sequencer or sample data

In detail, Time Slice does the following:

- Detects the individual beats in the original loop
- Splits each beat into a separate sample
- Creates a Multisample with the original loop on the note C2, and the individual beats on separate keys starting on D2
- Creates a Program which uses the new Multisample
- Creates Sequencer data to re-create the sound of the original loop by playing the individual hits

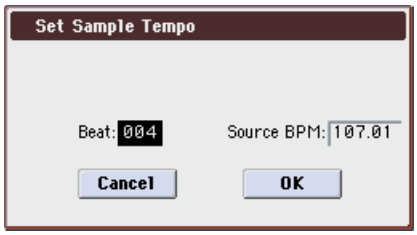


* You can also use the Time Stretch command to control the compression of each sample to optimize the “spacing” to match the tempo. step 9

Note: As an alternative to the **Time Slice** command, the **Time Stretch** menu command is another way to change the tempo of a rhythm loop or similar sample. You may wish to use this if you don’t need to divide the sample and create song performance data for the divided samples.

1. **Select the sample in the Sample Select (2–1b) for which you wish to execute Time Slice.**

2. Select “Time Slice” to open the dialog box.



3. Specify the number of quarter-note beats and tempo of the currently selected sample. If you know the BPM of the original waveform, set Source BPM. If you do not know the BPM, specify Beat and the BPM will be calculated automatically.

The setting you make here will be used as the reference value when detecting the attack, when performing Time Stretch in step 9b, and when saving the sequence data in step 10.

Beat: Specifies the number of quarter-note beats. When you specify **Beat**, the **Source BPM** will indicate the playback BPM at the original key. This BPM value will automatically be calculated from the start address to the end address (if loop is off) or from the loop start address to the end address (if loop is on) of the selected sample. If you know the BPM and it is different than the displayed value, change **Source BPM** to the correct value.

For example in the case of a 120 BPM sample of one measure of 4 / 4 time, set **Beat** to 4. The **Source BPM** will be calculated automatically. If the **Source BPM** is not set to 120.00, due to inaccuracies in the start address (or loop start address) and end address, change the **Source BPM** to 120.00.

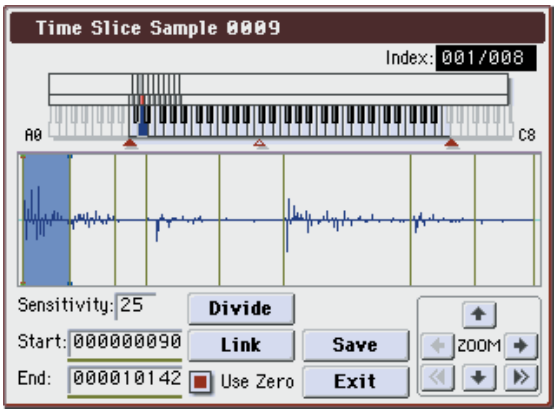
Source BPM: Specifies the tempo at the original key of the source waveform.

4. To execute Time Slice, press the OK button. To cancel without executing, press the Cancel button.

When you press the OK button, the attacks will be detected, the sample will automatically be sliced, and a dialog box will appear.

Stereo In the case of a stereo sample in which L and R have different lengths, silent data will automatically be added to the end of the shorter sample so that the two samples will be the same length.

If you want to re-set **Beat** and **Source BPM** after pressing the OK button, you can do so in step 9a).



5. Listen to the samples that were divided by detecting their attacks.

The sample before slicing is assigned to the C2 note of the keyboard, and the sliced samples are assigned to notes D2 and above. When you change the **Index**, the corresponding display will be highlighted, allowing you to view the sliced waveforms.

You can also select an index by holding down the ENTER switch and pressing a note on the keyboard. The index that is assigned to the note you pressed will be selected.

To hear the sliced sounds, you can either press the corresponding note on the keyboard, or change the index to select the desired sample and then press the SAMPLING START / STOP switch. When you press the SAMPLING START / STOP switch, the sample in the range between the specified “Start” and “End” will be played at the original key.

Keyboard & Index: This shows the multisample that is being used temporarily in this dialog box.

When you play the keyboard, this multisample will sound. It will behave in the same way as in normal pages (such as the Recording page). (0–1a)

Stereo In the case of a stereo sample, a stereo multisample will be temporarily used. The sample at each index will sound in stereo.

Index [Source, xxx(001...090)/yyy(001...090)]:

Selects the sample index.

If this is set to Source, the original waveform before time slicing will be selected.

By selecting xxx / yyy you can specify individual samples that were sliced. xxx indicates the selected sample, and yyy indicates the total number of samples that were sliced. A maximum of 90 samples can be assigned to the keyboard. If more than 90 samples were sliced, this will display 90.

Sample waveform display: Gray lines indicate the locations at which the sample is sliced. Red and blue lines indicate the Start and End addresses respectively. When **Index** is xxx / yyy, the sample of the selected index will be highlighted.

Stereo In the case of a stereo sample, the L channel sample data will be displayed above, and the R channel sample data will be displayed below.

ZOOM: You can zoom in and zoom out in the vertical and horizontal dimensions of the waveform shown in the “Sample waveform display.” (1–1e)

6. If the slice locations are not appropriate, you can adjust “Sensitivity” to change the sensitivity at which the attacks are detected, in order to change the slice locations.

Sensitivity [00...30]:

Adjusts the sensitivity at which the attacks are detected. By increasing this value, you can detect attacks at even lower levels, to create more finite slices.

The **Level** in this case does not necessarily correspond to the "waveform level."

Depending on the sample, the desired slicing may not occur even if you increase the **Sensitivity**. If the attack portion of the following sample has overlapped into the end of the sample, or if the sample contains two sounds, make adjustments in step 7.

7. Make adjustments where the automatic attack detection did not occur correctly.

Change **Index** to select the sample that you wish to adjust. Make adjustments by changing "Start" and "End", and by executing **Divide** or **Link** to adjust the slice location.

Start: Specify the start address for the sample of the currently selected **Index**. At the same time, the end address of the sample for the preceding **Index** will also be adjusted.

End: Specify the end address for the sample of the currently selected **Index**. At the same time, the start address of the sample for the next **Index** will also be adjusted.

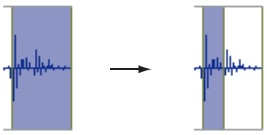
When adjusting the "Start" and "End" addresses of the divided samples, use **ZOOM** to increase the magnification (×1 or more) so that the sample waveform is displayed accurately when you make adjustments. (1–1e)

If **Index** is set to Source, the address of the original waveform will be modified. If you change the start address, the loop start address will also be changed at the same time.

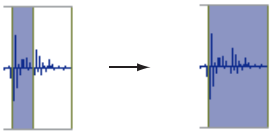
Use Zero: (2–1d)

If you wish to adjust the "Start" or "End" address of a divided sample, it is best to first check **Use Zero**. In general, using zero-cross points to specify sample addresses will make it less likely that clicks or pops will occur, particularly at the end address.

Divide: This splits the sample of the currently selected **Index** into two. Use this when you wish to add another location to slice the sample. Modify "End" or "Start" to adjust the divided sample.



Link: This joins the sample of the currently selected **Index** to the sample of the next **Index**. Use this when you wish to merge together two sliced locations.



When you use Time Slice on a rhythm loop sample, the quality of the playback in Sequencer mode will depend largely on the "cutoff" of each percussion instrument sound that was sliced.

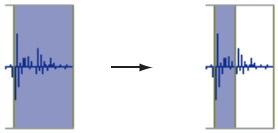
Be aware that if you change the **Sensitivity** after adjusting the slice location, the attacks will be re-detected and the sample will automatically be sliced again.

What kind of slices will produce the best result?

A. Divide the separate percussion instrument notes as finely as possible

For example in the case of a sample where the decay of the kick is overlapped by the hi-hat, the attack sound of the kick and the attack sound of the hi-hat should be sliced to create two samples. If these sounds are left as one sample (containing both kick and hi-hat), their rhythm may become incorrect when the sample is played at a different tempo.

Kick + Hi-hat kick/Hi-hat



If the sample is not sliced appropriately even after you adjust the **Sensitivity**, use **Divide** to divide the sample into halves, and adjust "End" and "Start" as needed.

B. Make sure that each divided sample has a clear attack

The attack portion is vital for percussion sounds. Slice the sample at a point where the attack will be sounded crisply.

C. Avoid the noise that can occur toward the end of each divided sample

For example as shown in the above right illustration, noise can be present at the end of the kick sample. Adjust the end address of the kick sample so that the noise is not obtrusive.

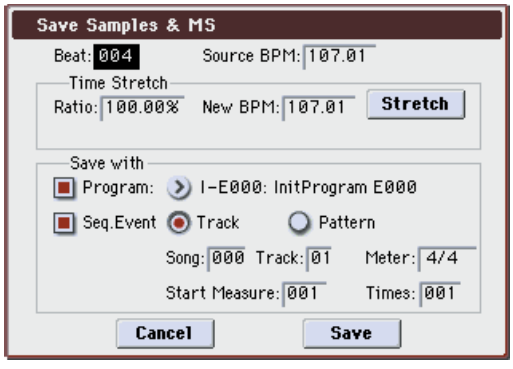
In this case, adjusting the end address will also affect the start address of the hi-hat sample. While listening to the two samples, make adjustments so that the noise at the end of the kick sample is as inconspicuous as possible, and also that the hi-hat attack is heard cleanly.

Pay attention to these points as you adjust **Sensitivity**. If necessary, use the methods described above to edit each sample.

The noise occurring at the end of the sample in "C." will be automatically reduced when you execute steps 8 and following. You should adjust **Sensitivity** while paying particular attention to sections "A" and "B," and then execute step 9. If the noise is still obtrusive, then you can adjust the end address.

8. Save the sliced samples to the multisample to which they have been assigned.

When you press the Save button, the **Save Samples & MS** dialog box will appear.



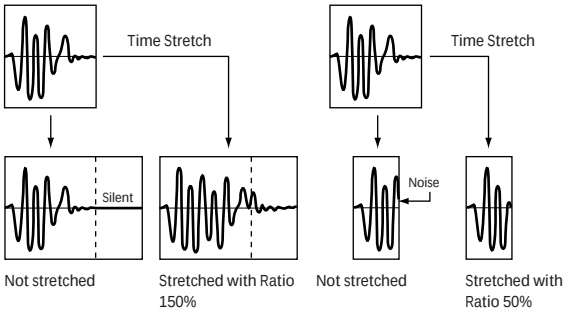
9. Use Time Stretch to adjust the length of the sliced samples.

When you press the Stretch button, Time Stretch (a function that expands or shrinks the length of a sample without affecting its pitch) will be applied to the sliced sample.

If you wish to save the sliced sample as it is, proceed to step 10 without executing Time Stretch.

Sometimes when a sliced sample is played in Sequencer mode and the tempo is slowed down, the silent portion between samples may become obvious or noise may be more apparent, producing an unnatural-sounding result. To

avoid this, you can use Time Stretch to adjust the length of the individual samples. The length of the samples will automatically be optimized according to the **Ratio** and **New BPM** settings.



If you execute Time Stretch at 100%, the sample length will not change but the end of the sample will be faded out, reducing the noise.

a) Set **Beat** and **Source BPM**. The method is the same as in step 3. If you wish to change the value you set in step 3, you can change it here.

b) Specify the length of the sample that will be created by Time Stretch.

- **To specify the length as a ratio**

  Set **Ratio**. The available range is 50.00–200.00%. If you specify 50.00%, the sample length will be halved. (The tempo will double.) If you specify 200.00%, the sample length will double. (The tempo will be halved.)

- **To match an existing BPM tempo value**

  Use **New BPM** to specify the BPM value of the sample you wish to create. The **Ratio** will automatically be calculated from the **Source BPM** and the **New BPM** values.

It is not possible to make settings that would cause **Source BPM** or **New BPM** to exceed the range of 40.00–600.00.

It is not possible to make settings that would cause **Ratio** to exceed the range of 50.00–200.00.

Press the Stretch button to execute Time Stretch. When you execute the command, the time-stretched samples will automatically be assigned to notes D2 and above of the keyboard, allowing you to audition the sound. You can change **Ratio** and **New BPM** as many times as desired and continue auditioning the result.

When you audition the time-stretched samples, the sound you hear is the sound of each divided sample as it will be played in Sequencer mode. If there is obtrusive noise or if the attack is not sound cleanly, return to step 7 and adjust the "Start" and "End" addresses, etc.

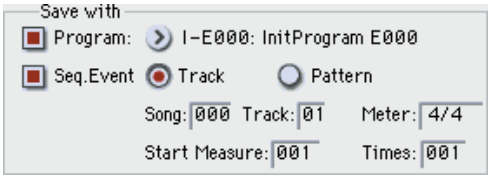
10. Set "Save with" to specify the data that will be created simultaneously when you press the Save button to save the samples

Program: If this check box is checked, the multisample will be converted to a program when you save it. Specify the destination program number.

Seq.Event: If this check box is checked, sequence data to play the sliced samples will automatically be created after the data is saved.

You can specify whether the sequence data to play back the sliced samples will be created as track data or as pattern data. If pattern data is created, you can also assign the pattern to RPPR.

If you choose the Track radio button, track data will be created. Use **Song**, **Track**, and **Meter** to specify the song number, track number, and time signature of the data that will be created.



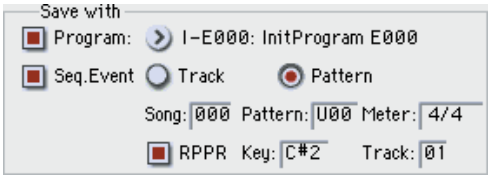
The track data that is created will start at the measure specified by **Start Measure**, and will repeat for the number of times specified by "Time."

When track data is created, any data that had existed within the specified range of measures will be erased. Data outside this range will not be erased.

If you check both **Program** and **Seq.Event** and select the Track, the song parameter **Program Select** (Seq 0–1–1(2)b) will automatically be specified if the **Start Measure** is 001. Also, a program change will be created at the **Start Measure** location. In Sequencer mode you can select the song and play it back to hear the result immediately. Normally you will check both of these boxes.

If you choose the Pattern radio button, pattern data will be created.

Use **Song**, **Pattern**, and **Meter** to specify the song number, pattern number, and time signature of the data that will be created.



RPPR: If you check the check box, pattern data to play the sliced samples will be assigned to RPPR when you save. Use **Key** and **Track** to specify the key and track that will be created.

If **Program**, **Seq.Event**, and **RPPR** are all checked, the song parameters **Program Select** (Seq 0–1–1(2)b) and **RPPR** (Seq 0–1–1(2)a) will both be specified automatically. **RPPR** will be turned on.

In Sequencer mode you can select the song and pattern to play back the results immediately. If **RPPR** is checked, pressing the specified key will play the pattern. Normally you will check both of these boxes.

Note: In some cases, the sample End address setting etc. may increase the number of measures in the pattern, so that it no longer loops precisely. In such cases, re-specify the "Length" in the Sequencer mode **Pattern Parameter** menu command.

Note: If you use **Seq.Event** and **Start Measure** 001, the **Tempo** (Seq 1–1(2)a) of the track data or pattern data that is created will be the value specified by **New BPM** if you executed Time Stretch. If you did not execute Time Stretch, the tempo will be the value specified for **Source BPM**.

If you set **Start Measure** to 001 and create a track, and if a tempo event exists only at the beginning of the master track, the tempo of that event will also be the value that you specified as **New BPM** or **Source BPM**.

If you save to a song that already contains data, the time-sliced samples may not play back in the same way as original sample if the time signature is different. You must set a matching time signature in the master track.

11. If you wish to save, press the Save button. If you decide not to save, press the Cancel button. When you save, the samples and multisample will automatically be saved to vacant samples and multisamples.

Stereo In the case of stereo samples, the samples and multisample will be saved in stereo.

12. By repeating steps 6–11 you can create as many samples and multisamples as desired.

13. Press the Exit button to exit the Time Slice command.

If you exit Time Slice without using the Save button to save the samples and multisamples, be aware that the samples and multisamples you create will be lost.

Before executing Time Slice on a long sample, you should first divide the sample into measures. In some cases, it may not be possible to assign the sample to the keyboard or create sequence data.

Time Slices requires vacant samples, multisamples, and relative parameters in order to execute. Be sure that there is sufficient free area before you execute. If there is insufficient free area, an error will occur.

Note: If you open the Time Slice dialog box on the same sample, it will be sliced in the same way as previously. These slice locations will also be used if you execute Slice in the **Time Stretch** menu command, so that you don't have to make the settings again.

If you wish to detect the attacks again or to re-do the operation, change the **Sensitivity** after you open the dialog box.

Time Stretch

Time Stretch lengthens or shortens a sample without changing its pitch. This is convenient when you wish to change the tempo of a rhythm loop (drums) or a melodic sample (e.g., vocal, strings, winds) to match the tempo of another sample or of the sequencer. The M3 provides two ways in which Time Stretch can be executed.

This command also supports stereo samples.

Sustaining

This type is suitable for sustained sounds such as vocal or instruments. Using it to change the tempo of phrases such as guitar or piano will also produce good results.

Slice

This type is suitable for decay-type instruments such as drums. Using it to change the tempo of drum or percussion loops will produce good results with minimal effect on the attack.

Note: It is possible to change the pitch when you adjust the tempo of a rhythm loop or similar sample, using the **Pitch BPM Adjust (Sampling), Detune BPM Adjust** (Combination, Sequencer) menu commands. You can create interesting effects by raising or lowering the pitch of a drum sound. For more information, please see "Detune BPM Adjust" on page 188, and "Pitch BPM Adjust" on page 351.

Using Time Stretch (Sustaining)

1. Select the sample that you wish to time-stretch using the Sustaining method.

2. Select the Time Stretch command to access this dialog box, where you can select the desired time stretch method.

3. Use the radio buttons to select Sustaining. Then press the OK button to execute, or the Cancel button to cancel without executing.

Stereo If the L and R of a stereo sample are different in length, blank data will automatically be added to the end of the shorter sample so that it matches the longer side.

4. A dialog box for executing Time Stretch will appear.

5. Set Quality to specify the desired audio quality of the sample produce by Time Stretch.

The range is 0–7. Although it will depend on the sample, higher settings will produce better results. However, be aware that higher settings will also require a longer time to execute.

Since you can try this as many times as you like, you should normally start with about 4, and raise or lower the setting gradually.

6. Set the proportional length of the sample that will be created by Time Stretch.

- **To specify the length as a ratio**

Set **Ratio**. The available range is 50.00%–200.00%. If you specify 50.00%, the sample length will be halved. (The tempo will double.) If you specify 200.00%, the sample length will double. (The tempo will be halved.)

- **To match an existing BPM tempo value**

Set **Beat** as the number of quarter-note beats. When you change **Beat**, the **Source BPM** value will be changed automatically.

Source BPM will indicate the playback BPM value at the original key. This BPM value is automatically calculated according to the length from the start address to the end address (if loop is off) or from the loop start address to the end address (if loop is on). If you already know the BPM value and the calculated value is incorrect, change it to the correct value.

Use **New BPM** to specify the BPM value of the sample you wish to create. **Ratio** will automatically be calculated from the **Source BPM** and **New BPM** values.

For example if you have a one-measure 120 BPM sample in 4/4 time, and would like to change it to 150 BPM, you would set **Beat** to 4. The **Source BPM** will be calculated automatically. If the **Source BPM** is not calculated as 120.00 due to inaccuracies in the start address (or loop start address) or end address, adjust **Source BPM** to the correct value of 120.00.

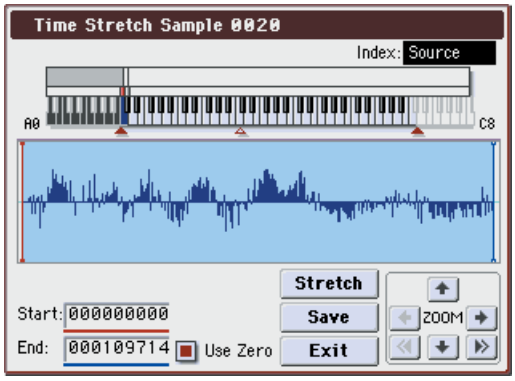
Next, set **New BPM** to 150.00. The **Ratio** will be calculated automatically.

It is not possible to make settings that would cause **Source BPM** or **New BPM** to exceed the range of 40.00–600.00.
It is not possible to make settings that would cause **Ratio** to exceed the range of 50.00–200.00.

Depending on the sample, the length may not be exactly as you specify, due to limitations in processing accuracy.

7. To execute the Time Stretch operation, press the OK button. To cancel without executing, press the Cancel button.

When you press the OK button, the Time Stretch dialog box will appear.



8. Audition the sample that was created by Time Stretch.

The sample before being time-stretched is assigned to the C2 note of the keyboard, and the sample that was time-stretched is assigned to C#2. You can change the **Index** to check the waveform.

Keyboard & Index: This shows the multisample that is used temporarily in this dialog box.

When you play the keyboard, this multisample will sound. It will behave just as in normal pages (e.g., the Recording page). (0–1a)

Stereo In the case of a stereo sample, a stereo multisample will be used temporarily. The sample at each index will sound in stereo.

Index [Source, Result]:

Selects the index for the sample whose waveform you wish to display.

If you select Source, the original waveform before time-stretching will be selected.

If you select Result, the time-stretched sample will be selected.

You can also select the index by holding down the ENTER switch and pressing a note on the keyboard. The index that includes that note will be selected.

Sample waveform display: This shows the waveform of the selected sample. As in P2: Loop Edit, the Start, Loop S, and End addresses are shown by a solid line.

Stereo In the case of a stereo sample, the L channel sample data will be displayed above, and the R channel data below.

ZOOM: This controls horizontal and vertical zoom in/out for the waveform shown in the "Sample waveform display." (1–1e)

Start:

End:

Specify the start address and end address of the sample for the currently selected index.

When you execute Time Stretch, the addresses will be specified automatically, but the playback may be slightly skewed due to inaccuracies in the end address, etc. If this occurs, you can correct the addresses manually.

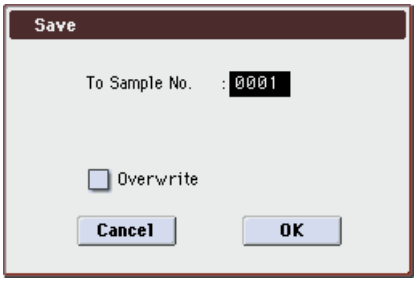
When you change the start address, the loop start address will also be changed simultaneously. If you wish to independently adjust the start address and loop start address, save the data in step 10, and then make settings in the P2: Loop Edit page.

To audition the sound in the specified range, play the keyboard or press the SAMPLING START/STOP switch. When you press the SAMPLING START/STOP switch, the sample in the range specified by "Start" and "End" will sound at the original key.

Use Zero: (2–1d)

9. If you press the Stretch button, the Time Stretch dialog box will appear, and you can re-do the time stretch once again. Execute Time Stretch as described in step 6.

10. Save the sample that you created. Press the Save button, and the Save dialog box will appear.



In **To Sample No.**, specify the save destination sample number. By default, an unused sample number will be selected.

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

To execute the Save operation, press the OK button. To cancel without saving press the Cancel button.

11. By repeating steps 9–10 you can create more samples as desired.

12. Press the Exit button to exit the Time Stretch operation.

The index will specify the last-saved sample number.

Note: If you to use the saved sample in Program mode or Sequencer mode, you can use the **Convert MS To Program (Convert Multisample To Program)** menu command, or you can select that multisample for the "2–1a: OSC1 Multisample" (see page 37) or "2–3: OSC2 Basic" (see

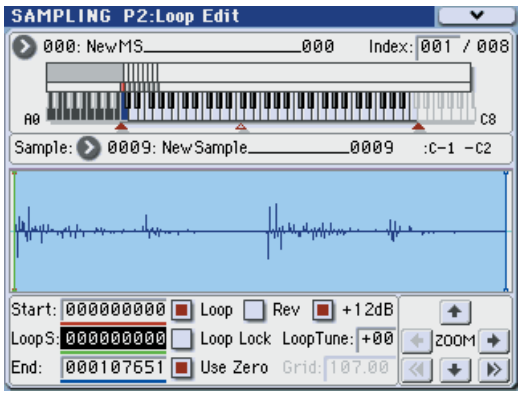
page 42) parameters “MS1”–“M4” (if “Type” = Multisample) and create a program.

Be aware that if you exit Time Stretch without using the Save button then press the OK button to save the sample, the sample(s) you created will be lost.

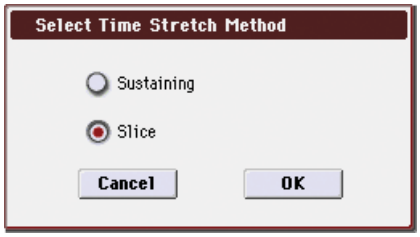
Time Stretch requires vacant samples, multisamples, and relative parameters in order to execute. Before you execute, make sure that there is sufficient free space. If there is not, an error will occur.

To use Time Stretch (Slice)

1. **Select the sample that you wish to time-stretch using the Slice method.**



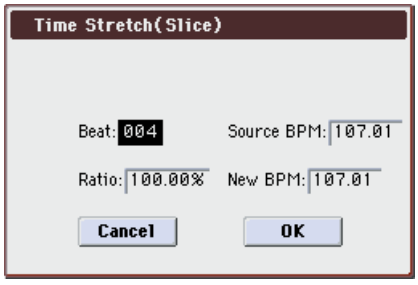
2. **Select the Time Stretch command from the Page Menu to access this dialog box, where you can select the desired time stretch method.**



3. **Use the radio buttons to select Slice. Then press the OK button to execute, or the Cancel button to cancel without executing.**

Stereo If the L and R of a stereo sample are different in length, blank data will automatically be added to the end of the shorter sample so that it matches the longer side.

4. **A dialog box for executing Time Stretch will appear.**



5. **Specify the number of quarter note beats and tempo of the currently selected sample.**

If you already know the BPM value, set **Source BPM**. If you do not know the BPM, setting **Beat** will cause the BPM to be calculated automatically. The settings here are also used as the reference values when detecting the attacks at which the sample is divided.

Beat: Specify the number of quarter note beats. When you change **Beat**, the **Source BPM** will indicate the BPM value for playback at the original key. This BPM value is automatically calculated according to the length from the start address to the end address (if loop is off) or from the loop start address to the end address (if loop is on). If you already know the BPM value and the calculated value is incorrect, change **Source BPM** to the correct value.

For example if you have a one-measure 120 BPM sample in 4/4 time, you would set **Beat** to 4. The **Source BPM** will be calculated automatically. If the **Source BPM** is not calculated as 120.00 due to inaccuracies in the start address (or loop start address) or end address, adjust **Source BPM** to the correct value of 120.00.

Source BPM: Specify the tempo at the original key of the original waveform.

Source BPM cannot be set or displayed outside the range of 40.00–600.00.

6. **Set the proportional length of the sample that will be created by Time Stretch.**

- **To specify the length as a ratio**

  Set **Ratio**. The available range is 50.00%–200.00%. If you specify 50.00%, the sample length will be halved. (The tempo will double.) If you specify 200.00%, the sample length will double. (The tempo will be halved.)

  The tempo of the sample created by execution will be calculated automatically from the **Ratio** and **Source BPM**, and displayed in **New BPM**.

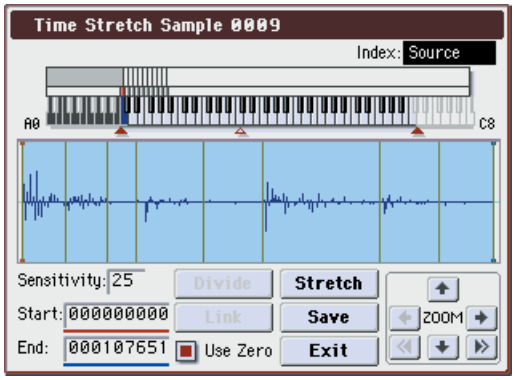
- **To match a desired BPM tempo value**

  Set **New BPM** to the desired BPM value of the sample that will be created. **Ratio** will automatically be calculated from the **Source BPM** and **New BPM** values.

  It is not possible to set or display **New BPM** outside the range of 40.00–600.00. It is not possible to set or display **Ratio** outside the range of 50.00–200.00.

7. **To execute Time Stretch, press the OK button. To cancel without executing, press the Cancel button. When you press the OK button, the attacks will be detected and the sample will be divided automatically, and time stretch will be performed.**

The Time Stretch dialog box will appear.



8. **Audition the results that were created by Time Stretch.**

The sample before being time-stretched is assigned to the C2 note of the keyboard. The time-stretched sample is assigned to C#2. Sliced (divided) samples will be assigned consecutively upward, starting from D2 on the keyboard.

Index [Source, Result, xxx(001...090)/yyy(001...090)]:

Selects the index for the sample whose waveform you wish to display.

If you select Source, the original waveform before time-stretching will be selected.

If you select Result, the time-stretched sample will be selected.

If you set this to xxx / yyy, an individually sliced sample will be selected. xxx is the selected index, and yyy indicates the total number of sliced samples. A maximum of 90 samples can be assigned to the keyboard. If the sample was sliced into more than 90 samples, this will be displayed as 90.

You can also select an index by holding down the ENTER switch and playing a note on the keyboard. The index that includes that note will be selected.

When you execute Time Stretch, the addresses will be specified automatically. However, playback may be slightly offset due to inaccuracies in the end address, etc. If this occurs, set **Index** to Result, and use "Start" and "End" to re-specify the addresses.

Keyboard & Index: This shows the multisample that is temporarily used in this dialog box.

When you play the keyboard, this multisample will sound. It will act in the same way as in normal pages (e.g., the Recording pages). (0–1a)

Stereo In the case of a stereo sample, a stereo multisample will be used temporarily. The sample of each index will sound in stereo.

Sample waveform display: This displays the waveform of the selected sample. If the **Index** is other than Result, the locations at which the sample is sliced will be indicated by a gray-colored line. If **Index** is set to xxx / yyy, the sample of the selected index will be highlighted. If **Index** is other than xxx / yyy, the Start, Loop S, and End addresses will be indicated by red, green, and blue colored lines, respectively.

Stereo In the case of a stereo sample, the L channel sample data will be displayed above, and the R channel sample data will be displayed below.

ZOOM: Here you can zoom in / out vertically and horizontally on the waveform displayed in the "Sample waveform display." (1–1e)

9. If the slice locations are not appropriate, use "Sensitivity" to modify the sensitivity at which the attacks are detected, thus changing the slice locations.

Sensitivity [00...30]:

Start:

End:

Use Zero:

Divide:

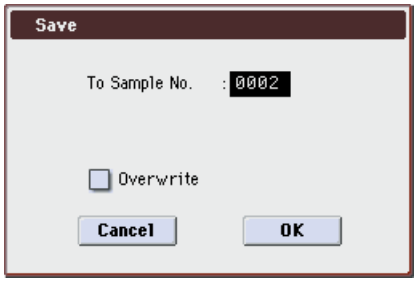
Link:

See "Time Slice" on page 343, steps 6 and 7.

10. When you press the Stretch button, the Time Stretch dialog box will appear, and you can re-do the time stretch.

Execute Time Stretch using the same procedure as in step 5. If the sample slice locations are not appropriate, this will also affect the result of Time Stretch. For details on setting the slice locations, please see "Time Slice" on page 343, steps 6 and 7.

11. Save the sample you created. Press the Save button, and the Save dialog box will appear.



In **To Sample No.**, specify the save destination sample number. By default, an unused sample number will be selected. If **Overwrite** is checked, this cannot be set.

If you wish to delete the original sample data and overwrite it with the edited sample, check **Overwrite**.

If you execute this command with **Overwrite** checked, the original sample data will be deleted, and overwritten by the edited sample data. Thus, in the Time Stretch dialog box that appears after execution, the edited sample data will automatically have its attacks detected and sliced, and displayed in **Index** Source.

Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

To execute the Save, press the OK button. To cancel without executing, press the Cancel button.

12. By repeating steps 10–11 you can create more samples as desired.

13. Press the Exit button to end the Time Stretch operation.

The last-saved sample number will be set for the index.

Note: If you to use the saved sample in Program mode or Sequencer mode, you can use the **Convert MS To Program (Convert Multisample To Program)** menu command, or you can select that multisample for the "2–1a: OSC1 Multisample" (see page 37) or "2–3: OSC2 Basic" (see page 42) parameters "MS1"–"M4" (if "Type" = Multisample) and create a program.

Be aware that if you exit Time Stretch without using the Save button then press the OK button to save the sample, the sample(s) you created will be lost.

Before executing the Slice on a long sample, you should first divide the sample into measures. In some cases, it may not be possible to assign the sample to the keyboard or edit the slice locations.

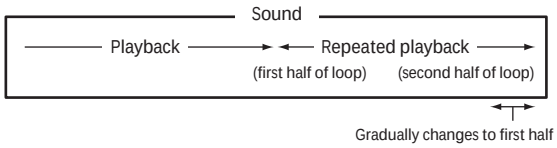
Time Stretch requires vacant samples, multisamples, and relative parameters in order to execute. Before you execute, make sure that there is sufficient free space. If there is not, an error will occur.

Note: If you open the time slice (Slice) dialog box on the same sample, it will be sliced in the same way it previously was. These slice locations will also be used if you use the **Time Slice** menu command, so that you don't have to make the settings again.
If you wish to detect the attacks again or to re-do the operation, change the **Sensitivity** after you open the dialog box.

Crossfade Loop

When looping a pitched instrument sample of a complex sound such as strings or woodwinds to make the sound sustain, it is necessary to create a long loop to preserve the rich character of the sound. Crossfade Loop can be used to minimize the difference in sound between the two regions to create a natural-sounding loop.

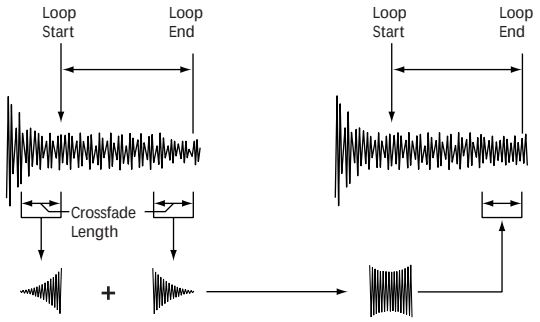
In order to solve such problems, Crossfade Loop causes the sound to change gradually from the end to the beginning of the loop.



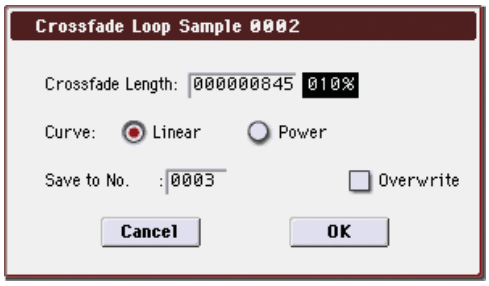
In actuality, the sample data is created as follows.
A specific length (the **Crossfade Length**) of the waveform

immediately before the beginning of the loop is taken and mixed with the end portion.

At this time, the waveform level of the portion immediately before the end (the length specified by **Crossfade Length**) will gradually decrease, and the waveform level immediately before the beginning of the loop will gradually increase as the two are mixed.



1. **Select the sample that you wish to Crossfade Loop.**
2. **Select "Crossfade Loop" to open the dialog box.**



3. **In Crossfade Length, specify the length of the sample that you wish to crossfade.**

If you set this as %, **Crossfade Length** will be calculated automatically. Specify the proportion of the **Crossfade Length** relative to the length between the loop start and loop end. If you set this to 50%, crossfade will be performed on the second half of the region between loop start and loop end.

If the length from the beginning of the sample to the loop start is shorter than the length from the loop start to the loop end, **Crossfade Length** can be set only up to the length from the beginning of the sample to the loop start. In this case, a setting of 100% will not be possible.

4. **Set Curve to specify how the volume will change in the crossfaded region.**

Linear: The volume will change linearly.

Power: The volume will change non-linearly. Sometimes a setting of Linear will produce the impression that the volume has dropped in the middle of the curve. In such cases, use Power.

5. **In "Save to No.," specify the save destination sample number. By default, an unused sample number will be selected.**

The sample number cannot be specified if "Overwrite" is checked. For more information, please see "About "Overwrite"" on page 329.

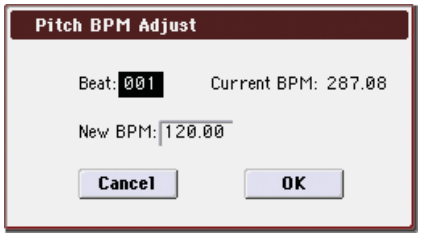
Stereo For stereo samples, use "Save to No.(L)" and "(R)" to specify the save-destination of the L and R channels.

6. **To execute Crossfade Loop, press the OK button. To cancel without executing, press the Cancel button.**

Pitch BPM Adjust

This command sets the **Pitch** (3–1b) of the selected index on the basis of a BPM value. Raising the pitch of sample playback will increase the playback speed. Lowering the pitch will slow down the playback speed. This can be used to match the loop length etc. of the sample to a tempo of the desired BPM value.

1. **Select "Pitch BPM Adjust" to open the dialog box.**



2. **Specify Beat. This is specified in quarter-note beats.**
3. **Current BPM will show the BPM value at the base key (displayed in blue).**

This BPM value is calculated automatically from the start address to the end address of the sample (if looping is off) or from the loop start address to the end address (if looping is on).

For example if the start and end address of the sample are two seconds apart, the original key is specified as the base key, and **Beat** is set to 4, **Current BPM** would be 120.00. If **Beat** is set to 2, the display would indicate **Current BPM** as 60.00.

It is not possible for this display to exceed the range of 40.00–600.00.

4. **In New BPM specify the BPM value that will result from the conversion of the Current BPM value.**
5. **To execute the Pitch BPM Adjust command, press the OK button. To cancel, press the Cancel button.**

When you execute this command, the **Pitch** (3–1b) value will be set automatically. For example if you modify a quarter-note 120 BPM sample to 240 BPM, the **Pitch** will be set to +12.00.

This calculation is performed within the M3's limits of precision. Minor discrepancies may occur in the final BPM calculation.

Destination

Specifies the writing data of the ripped data, and executes ripping.

Ripping will create a stereo 44,100 Hz sample. You can rip to RAM memory, or USB storage device. If you select MEDIA, a WAVE file will be created.

USB CD-R/RW drive and monitor settings

1. **Connect the USB connector of your USB CD-R/RW drive to the M3's USB A connector.**

Into the drive, insert the audio CD from which you want to rip.

Ripping is not supported for some CD-R/RW drives (drives that do not support reading CD-DA data).

2. **Connect the audio outputs or headphone output of your USB CD-R/RW drive to the M3's AUDIO INPUT 1, 2 jacks.**

Set the MIC/LINE switch to the LINE position, and use the LEVEL knob to adjust the input level. Alternatively, you can monitor the sound by connecting the CD-R/RW drive's S/P DIF OUT jack to the M3's S/P DIF IN jack.

If your drive does not have audio output jacks, a headphone jack, or an S/P DIF OUT jack, you won't be able to monitor the audio.

3. **In the Sampling P0: Recording– Audio In/Setup page, make settings so that you'll be able to monitor the audio that you're ripping.**

Make the following settings.

Input Analog

Input1 **Bus Select** L/R, **Level** 127, **Pan** L000
Input2 **Bus Select** L/R, **Level** 127, **Pan** R127

Note: These settings don't affect the ripping.

4. **Access the Sampling P5: Audio CD– Ripping page.**
5. **In "Media (Media Select)," select the drive that contains the audio CD, and use "Track" to select the track that you want to rip.**
6. **Use "Volume" to raise the monitor volume to an appropriate level.**
7. **Press the SEQUENCER START/STOP switch to play back the audio CD track.**

The audio CD can be controlled by the SEQUENCER switches.

START/STOP switch	Play/Stop
FF>> switch	Fast-forward
<<REW switch	Rewind
PAUSE switch	Pause
LOCATE switch	Return to the beginning of the track

If the cursor is located at **Range Start** or **Range End**, the range of the CD from **Range Start** to **Range End** will be played.

Specifying the range to be ripped

Note: Place the edit cell somewhere other than **Range Start** or **Range End**.

1. **During playback, press the ENTER switch at the beginning and end of the range you want to rip.**

This will specify the **Range Start** and **Range End**.

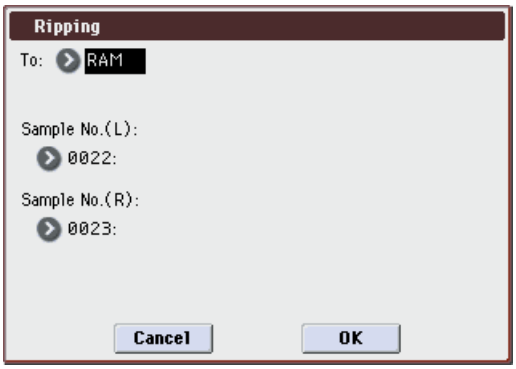
If you press it three or more times, the last point at which you pressed it and the point preceding that point will be assigned as the **Range Start** and **Range End**.

If the edit cell is **Range Start** and **Range End**, the setting will be updated each time you press the ENTER switch.

2. **When you've finished making settings, press the SEQUENCER START/STOP switch to stop the audio CD playback.**
3. **Verify that you've specified the desired range for ripping.**
4. **Select (highlight) Range Start or Range End and press the SEQUENCER START/STOP switch; the CD will play from Range Start to Range End and then stop.**
5. **If you want to make fine adjustments to the range, use the VALUE controller to edit the Range Start or Range End values, or move the cursor somewhere other than Range Start and Range End and then repeat step 1 to make the settings again.**
6. **When you've specified the desired Range Start and Range End, choose the menu command Destination.**

Ripping to RAM memory

1. **Select "Destination" to open the dialog box.**
2. **In the To field, select RAM.**



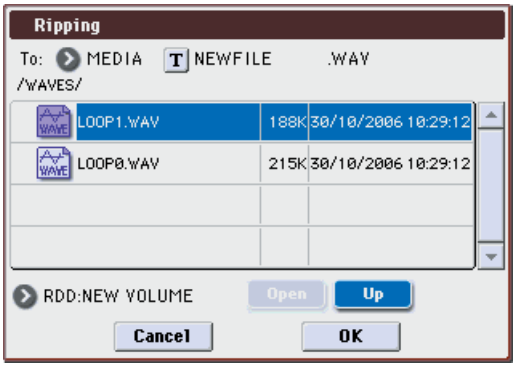
3. **In Sample No.(L) and Sample No.(R), specify the destination to which the stereo sample data created by ripping will be written.**

By default, the lowest-numbered vacant sample will be displayed. Normally you will leave this default setting unchanged.

4. **Press the OK button to execute ripping, or press the Cancel button to cancel without executing.**

Ripping to the USB storage device

1. **Select "Destination" to open the dialog box.**
2. **In the To field, select MEDIA.**



If you connect a USB device to the USB A connector, use the menu command **Scan USB device** (see page 419) to mount the device.

3. **Specify a name for the WAVE file that will be saved.**
4. **In Media Select, select the media to which the data will be saved.**
5. **Use the Open button and Up button to select the save-destination directory.**
6. **Press the OK button to execute ripping, or press the Cancel button to cancel without executing.**

Copy Insert Effect

For more information, please see "Copy Insert Effect" on page 117.

Swap Insert Effect

For more information, please see "Swap Insert Effect" on page 118.

Copy MFX/TFX

For more information, please see "Copy MFX/TFX" on page 118.

Swap MFX/TFX

For more information, please see “Swap MFX/TFX” on page 118.

Write FX Preset

For more information, please see “Write FX Preset” on page 118.

Global mode

In Global mode you can make settings that affect the entire instrument, such as master tuning, MIDI, and memory protect.

You can also edit user scales, and drum kit setups.

If you want the settings you make in Global mode to be backed up when the power is turned off, you must write them into memory. From P5: Drum Kit, you'll be able to select the menu command **Write Drum Kit**. From the other pages of Global mode, you'll be able to select **Write Global Setting**.

The SEQUENCER REC / WRITE switch can also be used to access **Update Global Setting**, and **Update Drum Kit**. Simultaneously, the edited content will be written.

Global Page Select

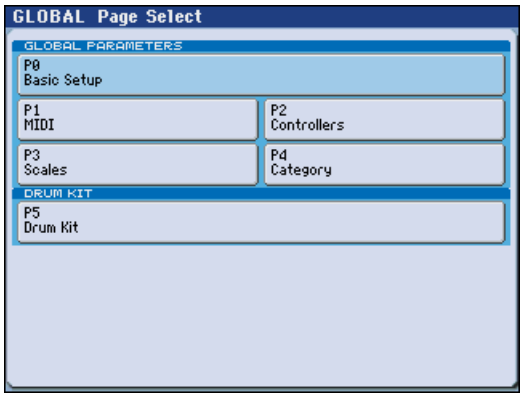
- Press the MODE GLOBAL switch to select Global mode.

You can use the following ways to select the pages in Global mode.

1. Press the PAGE SELECT switch to access "Page Select."

"Page Select" shows an abbreviated name for each page.

The page in which you were prior to pressing the PAGE SELECT switch is shown in light blue.



2. Select the desired page in the display.

Other ways to select pages

- Hold down the PAGE SELECT switch and press a numeric keys 0–9 to specify a page number; you will move to the corresponding page.

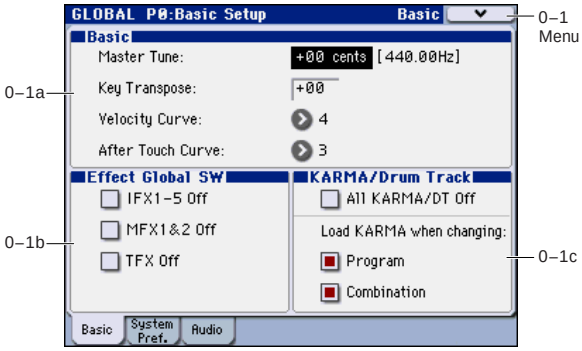
  For example if you want to access the P3: Scales page, hold down the PAGE SELECT switch and press numeric key 3.

- You can press the EXIT switch to return to the P0: Basic Setup page you selected most recently. Press the EXIT switch once again to return to the Basic page.

	Page	Main content
GLOBAL PARAMETERS	P0: Basic Setup	Basic overall settings (☞p.356), and audio input settings used when not in Sampling mode (☞p.356) (for User Global Setting)
	P1: MIDI	MIDI settings for this instrument. (☞p.363) External Mode settings. (☞p.369)
	P2: Controllers	Basic settings for the entire M3, and controller settings such as the pedals connected to the rear panel. (☞p.371) CC# assignments for KARMA, X–Y, and Pad (☞p.371)
	P3: Scales	Scale settings created by the user. You can specify 16 types of octave scale, and one full-range scale. (☞p.373)
	P4: Category	Edit category names for programs and combinations. (☞p.374)
DRUM KIT	P5: Drum Kit	Edit drum kits. (☞p.375)

Global P0: Basic Setup

0–1: Basic



Here you can make master tune settings, turn all effects on / off, and make on / off settings for the KARMA function.

0–1a: Basic

Master Tune
[–50cent (427.47Hz)...+50cent (452.89Hz)]

This adjusts the overall tuning of the entire M3 in one-cent units (semitone = 100 cents) over a range of ±50 cents. With a setting of 0, the frequency of A4 will be 440 Hz.

The A4 pitch given here is when Equal Temperament is selected as the scale. If a different scale is selected, A4 may not be 440 Hz.

Key Transpose [–12...+00...+12]

This adjusts the pitch in semitone steps over a ±1 octave range.

This setting is applied at the location (PreMIDI or PostMIDI) specified by **Convert Position** (Global 1–1a).

MIDI number transmitted by the KYBD-61/73/88

Keys/Transpose	–12	0	+12
61 keys	24…84 (C1…C6)	36…96 (C2…C7)	48…108 (C3…C8)
73 keys	12…84 (C0…C6)	24…96 (C1…C7)	36…108 (C2…C8)
88 keys	9…96 (A–1…C7)	21…108 (A0…C8)	33…120 (A1…C9)

Note: If **Convert Position** is set to PreMIDI, the note numbers transmitted from the M3 will be affected by **Key Transpose** setting.

MIDI **Master Tune** can be controlled by the MIDI universal system exclusive message Master Fine Tuning (F0, 7F, nn, 04, 03, vv, mm, F7: nn=MIDI channel, vv / mm= value).
Key Transpose can be controlled by the MIDI universal system exclusive message Master Coarse Tuning (F0, 7F, nn, 04, 04, vv, mm, F7: nn=MIDI channel, vv / mm=value).

These messages are received on the global MIDI channel specified by **MIDI Channel** (Global 1–1a).

In Program, Combination, and Sequencer modes, MIDI RPN messages can be received to control the tuning and transposition of the program or timbre (Combination mode) or track (Sequencer mode). Incoming MIDI RPN Fine Tune messages will make relative adjustments to the tuning specified by the **Master Tune** setting.

MIDI RPN Coarse Tune messages will make relative adjustments to the pitch specified by the **Key Transpose** setting. In Program mode these messages will be received on the global MIDI channel specified by **MIDI Channel** (Global 1–1a), and in other modes they will be received on the MIDI channel specified for each timbre or track. (**Transpose**, **Detune**, Combi 3–5(6)c, Seq 3–5(6)c)

Velocity Curve [1…9]

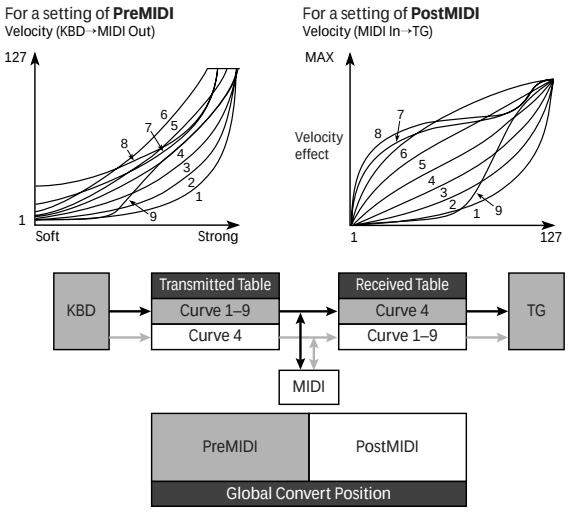
This specifies the way in which the volume and / or tone will change in response to variations in keyboard playing dynamics (velocity).

The curves you can select will depend on the **Convert Position** (Global 1–1a) setting. If the setting is PreMIDI, the curve is applied immediately after the keyboard. If the setting is PostMIDI, the curve is applied immediately before the sound generator.

In the case of PreMIDI, your keyboard playing dynamics are modified as shown by transmission curves 1–9 (lower left diagram), and reception is fixed at curve 4 linear (diagram at lower right).

In the case of PostMIDI, your keyboard playing dynamics are transmitted according to transmission curve 4 linear (lower left diagram), and will be interpreted according to reception curve 1–9 (lower right diagram).

If you're using the M3 as a MIDI sound module and want to adjust the overall brightness of the sound, set **Convert Position** (1–1a) to PostMIDI and select the appropriate velocity curve.



1, 2, 3: An effect will be obtained for strongly-played notes

4 (Normal): The normal curve

5, 6: An effect will be obtained even if you do not play very strongly

7: This curve produces a relatively consistent effect for softly played notes.

8: This curve produces an even more consistent effect.

Each curve has its own characteristics, so you should select the curve that best suits your own playing style and the results you want to obtain.

9: Compared to the standard curve #4, this curve softens the response of gently-played notes. This allows velocity control with broader dynamics for sounds such as acoustic piano. This setting is particularly recommended for the M3-88.

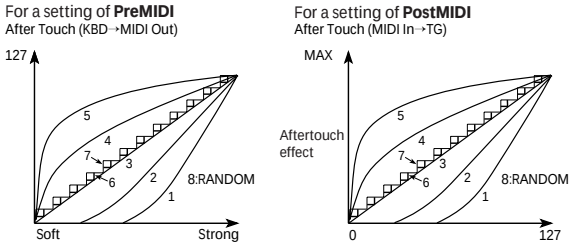
Aftertouch Curve [1…8]

This specifies the way in which the volume and / or tone will change in response to variations in pressure (aftertouch) applied to the keyboard while playing a note.

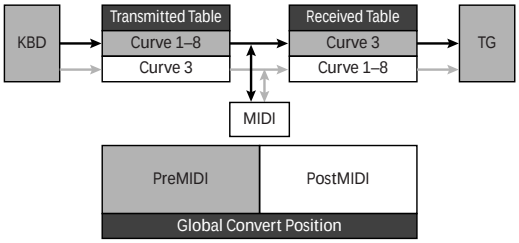
The curves you can select will depend on the **Convert Position** (Global 1–1a) setting. If the setting is PreMIDI, the curve is applied immediately after the keyboard. If the setting is PostMIDI, the curve is applied immediately before the sound generator.

If the setting is PreMIDI, the aftertouch effect produced when you press down on the keyboard will be modified at the source according to transmission curves 1–8, and reception is fixed at curve 3 linear.

If the setting is PostMIDI, the aftertouch effect produced when you press down on the keyboard or when receiving aftertouch data is transmitted according to curve 3, and modified by curve 1–8 at the destination.



The aftertouch curves for the transmitting side and receiving side are shared.



1, 2: This curve produces change when strong aftertouch pressure is applied.

3 (Normal): The normal curve.

4, 5: This curve produces change even when light pressure is applied.

6, 7: These curves produce change in 24 or 12 steps. respectively, and are appropriate for when you are recording aftertouch data on the sequencer and wish to conserve memory. (Set the **Convert Position** to PreMIDI.) Curve number 7 allows change over twelve steps, so when using aftertouch to modify the pitch, you can set the range of modification to one octave, and use aftertouch to vary the pitch in semitone steps.

8: This is a random curve. Use this when you wish to create special effects, or to use aftertouch to apply unpredictable modulation.

MIDI When **Convert Position** (Global 1–1a) is PreMIDI, the setting you make here will be applied immediately after the keyboard, meaning that it will affect the data transmitted via MIDI, but will not affect the received data.

With a setting of PostMIDI, the setting you make here will be applied immediately before the M3's internal tone generator, meaning that it will affect the data received via MIDI, but will not affect the transmitted data.

When you use the M3's keyboard to play the internal sounds, the **Convert Position** setting has no effect.

Note: You can use **After Touch Calibration** (see page 383) to adjust the overall responsiveness of aftertouch.

0–1b: Effect Global SW

IFX 1–5 Off [Off, On]

On (checked): All insert effects IFX1–5 will be off.

Off (unchecked): The P8: Insert Effect settings for each **IFX On/Off** in Program, Combination, Sequencer, and Sampling modes will be valid.

MFX1&2 Off [Off, On]

On (checked): Master Effect1 and 2 (MFX1, 2) will be off.

Off (unchecked): The P9: MFX / TFX setting **MFX1 On/Off**, and **MFX2 On/Off**, in Program, Combination, Sequencer, and Sampling modes will be valid.

TFX Off [Off, On]

On (checked): Total effect (TFX) will be off.

Off (unchecked): The P9: MFX / TFX setting **TFX On/Off**, in Program, Combination, Sequencer, and Sampling modes will be valid.

MIDI When **IFX1–5 On/Off**, **MFX1&2 On/Off**, or **TFX On/Off** settings are switched, control change messages CC#92 (effect control 2), CC#94 (effect control 4), and CC#95 (effect control 5) will be transmitted respectively. The transmitted data will be 0 for off, and 127 for on.

0–1c: KARMA/Drum Track

All KARMA/DT Off [Off, On]

On (checked): All KARMA functionality and the Drum Track function will be off. The KARMA function will not operate even if the KARMA ON / OFF switch is on. The Drum Track function will not operate even if the DRUM TRACK ON / OFF switch is on.

Off (unchecked): The KARMA settings and KARMA ON / OFF switch settings in Program, Combination, and Sequencer modes will be used. The Drum Track function will operate according to the settings in each mode and the state of the DRUM TRACK ON / OFF switch.

Load KARMA when changing:

Program [Off, On]

On (checked): When you switch programs, the KARMA Module settings stored in that program will be used. Normally you will use the On setting.

Off (unchecked): The KARMA Module settings will not change even if you switch programs. Use this setting if you want to switch Program sounds without changing the phrases from the KARMA Module.

Combination [Off, On]

On (checked): When you switch combinations, the KARMA Module settings stored in that combination will be used. Normally you will use the On setting.

Off (unchecked): The KARMA Module settings will not change even if you switch combination. Use this setting if you want only to switch combination sounds without changing the phrases from the KARMA Module.

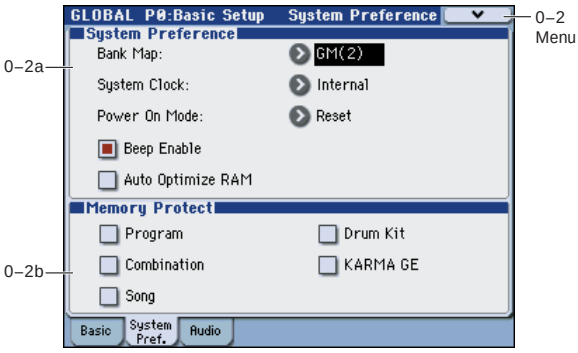
▼0–1: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Load Preload/Demo Data** ☞p.382
- 2: **Set Prog User-Bank Type** ☞p.382
- 3: **Change all bank references** ☞p.383
- 4: **Touch Panel Calibration** ☞p.383

- 5: **Half Damper Calibration** ☞p.383
- 6: **Pad Calibration** ☞p.383
- 7: **After Touch Calibration** ☞p.383
- 8: **Update System Software** ☞p.384

For more information, please see “Global: Menu Command” on page 382.

0–2: System Preference



Here you can make overall settings for the entire system such as bank map, system clock, and memory protect.

0–2a: System Preference

Bank Map [KORG, GM(2)]

This specifies the mapping of programs and combinations relative to Bank Select control change messages (CC#0 upper byte and CC#32 lower byte).

The bank select messages shown in the table below will be received (R) and transmitted (T) for Program banks INT–A – F, G, g(1)…g(9), g(d), USER-A–G and Combination banks INT-A–G, and USER-A–G.

Bank	Bank Map: KORG	Map: GM(2)
INT–A	00. 00 R/T	63. 00 R/T
INT–B	00. 01 R/T	63. 01 R/T
INT–C	00. 02 R/T	63. 02 R/T
INT–D	00. 03 R/T	63. 03 R/T
INT–E	00. 04 R/T	63. 04 R/T
INT–F	00. 05 R/T	63. 05 R/T
INT–G,	121. 00 R/T, 56. 00 R	121. 00 R/T, 56. 00 R, 00. 00 R
g(1)...g(9)	121. 01...09 R/T	121. 01...09 R/T
g(d)	120. 00 R/T, 62. 00 R	120. 00 R/T, 62. 00 R
USER–A	00. 08 R/T	63. 08 R/T
USER–B	00. 09 R/T	63. 09 R/T
USER–C	00. 10 R/T	63. 10 R/T
USER–D	00. 11 R/T	63. 11 R/T
USER–E	00. 12 R/T	63. 12 R/T
USER–F	00. 13 R/T	63. 13 R/T
USER–G	00. 14 R/T	63. 14 R/T

The bank types are as follows.

Bank	Bank Type
INT–A…INT–E	Banks for EDS only
INT–F	Bank for EXB-RADIAS only
INT–G, g(1)…g(9), g(d)	GM2 program banks (EDS) G: GM2 capital programs g(1)…g(9): GM2 variation programs g(d): GM2 drum programs
USER–A…G	Banks selectable for either EDS or EXB-RADIAS (default is EDS)

To specify the type for banks USER-A–G, use the menu command **Set Prog User-Bank Type**.

Be aware that in Media mode if you load data of a differing bank type from a PCG file into USER-A–G bank, the existing data will be overwritten.

When MIDI System Exclusive messages or program data dumps are received, only data of the same bank type is received. Data of a differing bank type will not

be received. Use **Set Prog User-Bank Type** to change the bank type before you receive a data dump.

System Clock [Internal, S/P DIF]

This sets the system clock, or word clock, of the M3.

When connecting multiple digital audio devices–such as the M3, a S/P DIF device–it is important that the word clocks of the devices be locked together. If the clocks are not locked, the audio may be marred by pops and clicks.

The M3 can lock to incoming clocks from any of its digital inputs, or it can generate its own clock.

Internal: The M3 will use its own internal clock. This is the default setting.

S/P DIF: The M3 will use the **S/P DIF IN** as the master clock. 48 kHz word clocks is supported, according to the **S/P DIF Sample Rate** setting.

If **System Clock** is set to **S/P DIF**, but the M3 is not detecting a valid clock signal, you'll see the message "Clock Error!" at the top of the display. More importantly, the M3 will not sound correctly.

If this occurs, check the following:

- Make sure that the word clock settings of all connected devices are set up correctly, and that there is one and only one device configured to be the word clock master.
- Make sure that the device providing the master clock is powered on.
- Make sure that all cables are undamaged, and are connected properly. If possible, try using different cables.

Note: The **System Clock** setting can be stored by the **Write Global Setting** menu command.

Note: The **System Clock** setting is ignored if you are using the EXB-FW option to transmit or receive digital audio.

The data transmitted by the M3 will automatically be adjusted to synchronize with the system clock of the computer to which the M3 is connected. The data received by the M3 or the computer will automatically be adjusted to synchronize with the M3's system clock.

Power On Mode [Reset, Memorize]

Specifies the condition at power-on.

Reset: The M3 will be in Combination mode P0: Play, and Combination INT–A000 will be selected.

Memorize: The location (mode and page) in which you were when you last powered-off the M3 will be recalled. If you were in Program or Combination mode, the program or combination bank/number at power-off will be recalled.

This function does not memorize the contents of any parameters that were edited. Before turning off the power, be sure to write your data or save it in Media mode.

Beep Enable [Off, On]

On (checked): A beep will be heard when you press an object in the display.

Auto Optimize RAM [Off, On]

If RAM is specified as the data writing destination for sampling, this parameter specifies whether the sample memory (RAM) will be optimized after data is written.

Optimization rearranges any unused memory areas so that all of the remaining memory can be used.

On (checked): RAM will automatically be optimized when sampling ends.

With this setting, you will always be able to sample without wasting RAM, but the sound will stop when sampling ends. If a song was playing in Sequencer mode, the playback will stop.

Off (unchecked): RAM will not be optimized when sampling ends. Since the sound will not stop when sampling ends, this setting is convenient when you want to consecutively sample several sections while a song plays or while listening to an input source such as a CD.

If **Auto Optimize RAM** is turned Off (unchecked) and unused areas have accumulated in memory, you can use the menu command **Optimize RAM** to perform the same function manually. For more information, please see "Optimize RAM" on page 107.

The remaining amount of sample memory (RAM) can be checked in Sampling mode. For more information, please see "0–4a: Free Sample Memory" on page 308.

0–2b: Memory Protect

Program [Off, On]

This setting protects the internal program memory.

On (checked): Internal program memory will be protected, and the following write operations cannot be performed.

- Writing a program
- Loading program data from media
- Receiving program data via MIDI data dump

Off (unchecked): Data can be written to internal program memory.

Combination [Off, On]

This setting protects the internal combination memory.

On (checked): Internal combination memory will be protected, and the following write operations cannot be performed.

- Writing a combination
- Loading combination data from media
- Receiving combination data via MIDI data dump

Off (unchecked): Data can be written to internal combination memory.

Song [Off, On]

This setting protects the internal song memory.

However, when the power is turned off, the song data in song memory will be lost regardless of this setting.

On (checked): Internal song memory will be protected, and the following write operations cannot be performed.

- Recording to the sequencer
- Loading song data from media
- Receiving song data via MIDI data dump

Off (unchecked): Data can be written to internal song memory.

Drum Kit [Off, On]

This setting protects the internal drum kit memory.

On (checked): Internal drum kit memory will be protected, and the following write operations cannot be performed.

- Writing a drum kit
- Loading drum kit data from media
- Receiving drum kit data via MIDI data dump

Off (unchecked): Data can be written to internal drum kit memory.

KARMA GE **[Off, On]**

This setting protects the internal KARMA GE memory.

On (checked): The internal KARMA GE memory will be protected, and the following operations will not be possible.

- Loading KARMA GE data from media
- Receiving KARMA GE data via MIDI data dump

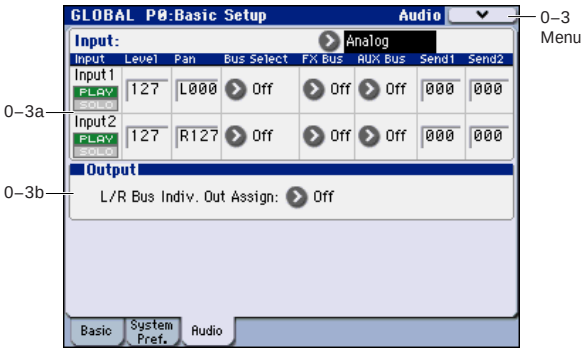
Off (unchecked): You will be able to write to internal KARMA GE memory.

▼0–2: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Load Preload/Demo Data** ☞p.382
- 2: **Set Prog User-Bank Type** ☞p.382
- 3: **Change all bank references** ☞p.383
- 4: **Touch Panel Calibration** ☞p.383
- 5: **Half Damper Calibration** ☞p.383
- 6: **Pad Calibration** ☞p.383
- 7: **After Touch Calibration** ☞p.383
- 8: **Update System Software** ☞p.384

For more information, please see “Global: Menu Command” on page 382.

0–3: Audio



Here you can select the analog / digital audio signal input sources, and specify their input level, bus, and master effect sends.

The settings you make in this page are valid in the following situations:

1. **When this page is open.**
2. **In Program, Combination, and Sequencer modes, if you’ve checked Use Global Setting (Prog/Combi 0–7a, Seq 0–1–7a).**
3. **In other pages of Global mode, if the mode in which you were immediately prior to entering Global mode was in state “2” (above).**
4. **In Media mode, if the mode in which you were immediately prior to entering Media mode was in state “2” (above).**

0–3a: Input

Input **[Analog, S/P DIF, (FireWire)]**

Here you can adjust the settings for inputting external audio sources into the M3.

Note: Separate settings can be made for the **Analog**, **S/P DIF** and **(FireWire)** inputs. First use this **Input** setting to select a source, and then set the various parameters for Input1 and Input2. Multiple external audio sources can be input simultaneously.

Analog: INPUT 1, 2 jacks will input mic-level or line-level signals.

S/P DIF: A digital audio signal from the S / P DIF IN jack will be input. Connect the digital output of your instrument or DAT etc. to the S / P DIF IN jack. The Input 1 setting below assigns the input from S / P DIF L, and the Input 2 setting assigns the input from S / P DIF R. The S / P DIF input / output supports a sample rate of 48 kHz.

If the EXB-RADIAS is installed, please note the following points.

- If a 48 kHz system clock is not detected at the S / P DIF IN jack, the following message will appear, and you won’t be able to switch the System Clock setting to S / P DIF.

  “No 48 kHz clock is detected from S / P DIF Clock master device. The System Clock cannot be changed to S / P DIF.”

  Press EXIT to close the message, and check the connection with the master clock device. Only a 48 kHz system clock is supported.
- Switching S / P DIF will require several seconds. A message is displayed while this is occurring. While this message is displayed, never switch the S / P DIF clock frequency or disconnect the cable.

If you want to use S/P DIF, set **System Clock** (Global 0–2a) to S/P DIF. The sample rate for the FireWire input/output is 48 kHz.

Note: For details on FireWire input, please see "M3 Editor/Plug-In Editor Manual" (PDF).

Input1, Input2:

PLAY/MUTE [Off, On]

This shows whether the external audio signal being input is in PLAY or MUTE status.
You can use the MIX PLAY/MUTE 1–4 switches to change this.

Mute: The input sound will be muted (silent).

Play: The input sound will be heard.

Tip: You can use the control surface to control this parameter. For more information, please see "Using the control surface to make audio input settings" on page 8.

SOLO On/Off

This indicates the SOLO status of each external audio signal input.

With the SOLO On setting, sound will be heard only from whose SOLO setting is On. Other channels will be muted.

The SOLO setting is not preserved as part of the Global Setting data when you save. It is used temporarily as a way to check the audio input status.

Note: In Global mode when you're in pages other than P5: Drum Kit, the M3 will operate and sound in the same state that it did before you entered Global mode. However when you open this page, the settings made here will forcibly be applied to the audio-related parameters. This applies to the PLAY/MUTE, Level, Pan, Bus Select, FX Bus, AUX Bus, and Send 1/2 parameters, and these parameters can be saved by the Write Global Setting command.

On the other hand, the SOLO setting will be as it was immediately before you entered Global mode. You can use the MIX PLAY/MUTE 1–4 switches to temporarily control SOLO on/off, but this will depend on the menu command **Panel-Switch Solo Mode On** which determines whether these keys will control PLAY/MUTE or SOLO, and on the menu command **Exclusive Solo** which specifies the operating mode for solo. These settings will remain as they were when you entered Global mode, and cannot be changed while you're in Global mode.

For example if you moved from Program mode to Global mode, the MIX PLAY/MUTE 1–4 switches function will be according to the state of the Program mode menu command. If you want to change the function, you must return to Program mode and choose the desired menu command.

The "SOLO" setting is not preserved when you save. It is used temporarily as a way to check the audio status. The **Panel-Switch Solo Mode On** On status and **Exclusive Solo** On status can be set in each mode (Program, Combination, Sequencer, Sampling), but will be reset when you switch combinations, programs, or songs, in order to prevent problems such as would occur if the SOLO settings mute the sound of the keyboard performance.

Level [000...127]

Specifies the level of the external audio signal that will be input. Normally you will set this at 127.

The analog audio signals from the AUDIO INPUT 1 and 2 jacks are converted by a AD converter from analog to digital signals. This parameter sets the level of the signal immediately after it has been converted into digital form. If the sound is distorted even though this level setting is very low, it is possible that the sound is distorting earlier than the AD converter. Try adjusting the MIC/LINE gain switch, LEVEL knob or the output level of the external audio source.

If **Bus Select** is set to other than Off, and you raise the **Level** setting, the external audio source will be input to the M3. At this time if audio cables are connected to the AUDIO INPUT 1 and 2 jacks, the noise component will be input via the AD converters into the M3 even if there is no audio input, and depending on the settings, may be output from the AUDIO OUTPUT L/R, 1–4 jacks. If you want to perform using only internal sounds such as programs, combinations, and songs, and are not using external audio inputs, you should set **Bus Select** to Off, or set **Level** to 0.

In the same way, you should set **Bus Select** Off or set **Level** to 0 if you're not inputting a signal from the S/P DIF IN jack (or FireWire connector).
If you're not using **FX Bus** or **AUX Bus**, you should switch them Off as well.

Tip: You can use the control surface to control this parameter. For more information, please see "Using the control surface to make audio input settings" on page 8.

Pan [L000...C064...R127]

This specifies the panning of the external audio input signal. When inputting a stereo audio source, you will normally set the inputs to L000 and R127 respectively.

Bus Select [L/R, IFX1…5, 1...4, 1/2, 3/4, Off]

This specifies the main bus routing for the input signal.

L/R: The input signal will be sent to the L/R bus.

IFX1…5: The input signal will be sent to the IFX1–5 bus. Choose one of these settings if you want to apply an insert effect while sampling.

1, 2, 3, 4: The input signal will be sent to the specified INDIVIDUAL 1, 2, 3, and 4 in monaural. The **Pan** setting will be ignored.

1/2, 3/4: The input signal will be sent in stereo (including the effect of the **Pan** control) to the specified INDIVIDUAL 1/2, 3/4 pair.

Off: The input signal will not be routed directly to the outputs or Insert Effects. However, it may still be routed to an FX Control Bus or AUX Bus.

FX Bus (FX Control Bus) [Off, 1, 2]

This sends the external audio input signal to an FX Control bus (two mono channels; FX Ctrl 1 and 2).

For more information, please see "Ctrl (FX Control Bus)" on page 100.

AUX Bus [Off, 1, 2, 3, 4, 1/2, 3/4]

This sends the external audio input signal to the AUX buses (four mono channels; 1, 2, 3, 4).

Use the AUX buses when you want to sample in various modes. These are dedicated buses for sampling.

Off: The external audio signal will not be sent to the AUX buses. Normally you will use the Off setting.

1, 2, 3, 4: The external audio input signal will be sent to the specified AUX bus. The **Pan** setting is ignored, and the signal is sent in monaural.

1/2, 3/4: The external audio input signal will be sent in stereo to the specified pair of AUX buses. The **Pan** setting sends the signal in stereo to buses 1 and 2 or buses 3 and 4.

Send1 **[000...127]**

Send2 **[000...127]**

These adjust the levels at which the external audio input signal is sent to the master effects.

Send1: Send the signal to master effect 1.

Send2: Send the signal to master effect 2.

This setting is ignored if **Bus Select** is other than L / R or Off.

If **Bus Select** is set to IFX1–5, the send levels to the master effects are set by the post-IFX1–5 **Send1** and **Send2** (Prog / Combi 0–7a, Seq 0–1–7a).

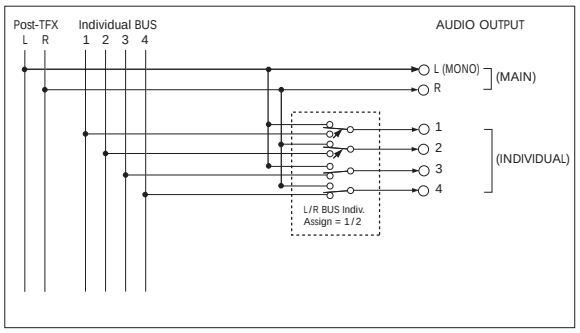
0–3b: Output

L/R Bus Indiv. Assign (Assign to L/R and Indiv.Out) [Off, 1/2, 3/4]

This lets you simultaneously send the L / R output to any pair of individual outputs, in addition to L / R.

Off: The L / R output will be sent only to the AUDIO OUTPUT L (MONO) and R jacks, the HEADPHONE jack, and the S / P DIF OUT jack. This is the normal setting.

1/2, 3/4: The L / R output will be sent to the corresponding pair of INDIVIDUAL OUT 1–4 jacks, as well as to the main L / R outputs, the HEADPHONE jack, and the S / P DIF OUT jack.



Private monitoring

On stage, or in the studio, it can be convenient to audition sounds or make edits without sending the signal to the mixer, or to the main monitors. You can use **L/R Bus Indiv. Assign** to do this:

1. **Connect Individual Outputs 1/2 to the mixer or main monitors. Do not connect the main L/R outputs.**

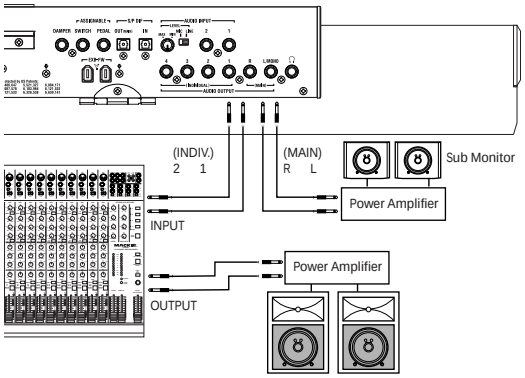
You can actually use any of the two individual output pairs, but we'll talk about 1 / 2 in this example.

2. **While you're auditioning sounds or editing, set L/R Bus Indiv. Assign to Off.**
3. **Use the built-in headphone output for listening to M3 as you select or edit sounds.**

As an alternative, you can connect the main L / R outputs to your personal monitor mixer.

4. **When you're ready for others to hear the results, set L/R Bus Indiv. Assign to 1/2.**

Now, the M3 stereo mix will go to the main board.



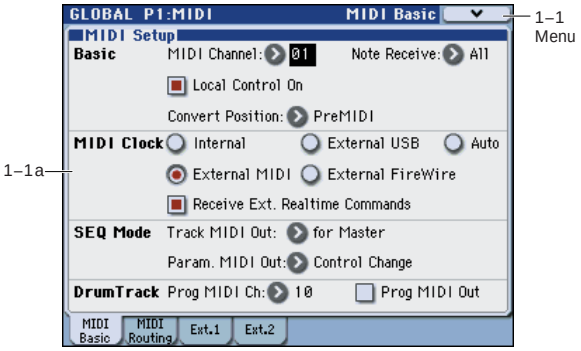
▼0–3: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Load Preload/Demo Data** ☞p.382
- 2: **Set Prog User-Bank Type** ☞p.382
- 3: **Change all bank references** ☞p.383
- 4: **Touch Panel Calibration** ☞p.383
- 5: **Half Damper Calibration** ☞p.383
- 6: **Pad Calibration** ☞p.383
- 7: **After Touch Calibration** ☞p.383
- 8: **Update System Software** ☞p.384

For more information, please see "Global: Menu Command" on page 382.

Global P1: MIDI

1–1: MIDI Basic



Here you can make MIDI-related settings that affect the entire M3.

Note: To transmit MIDI exclusive dump data, you'll use the menu commands of this P1: MIDI page.

1–1a: MIDI Setup

Basic:

MIDI Channel (Global MIDI Channel) [1…16]

Sets the global MIDI channel.

The global MIDI channel is used in the following cases.

- When transmitting and receiving performance data in Program mode (Prog P0: Play) and Sampling mode.
- When selecting combinations via MIDI in Combination mode (Combi P0: Play).
- When triggering the drum track (with **Trigger Mode** set to Wait KBD Trig) in Program or Combination mode.
- When controlling timbres or effects that have been set to Gch in various modes
- When transmitting and receiving system exclusive messages

MIDI received

In Program mode (P0: Play) and Sampling mode, MIDI data is received on the global MIDI channel, but in Combination mode (P0: Play) or Sequencer mode, MIDI data is received on the MIDI channel specified for each timbre or track.

In Combination mode (P0: Play), program changes received on the global MIDI channel will switch the combination (1–2b: MIDI Filter).

Use the global MIDI channel to switch IFX 1–5 (CC#92), MFX1&2 (CC#94) and TFX (CC#95) on / off.

To control the pan following IFX, sends 1 / 2, MFX 1 / 2 and TFX, use the global MIDI channel when in the Program or Sampling mode; while in the Combination, or Sequencer modes, use the channel specified separately by **Ctrl Ch** for IFX1–5, MFX1&2, and TFX. By setting **Ctrl Ch** to Gch, you can control these parameters from the global MIDI channel.

MIDI output when playing M3

In Program mode and Sampling mode, this data will be transmitted on the global MIDI channel. In Combination mode, data will be transmitted simultaneously on the global MIDI channel and on the MIDI channels of timbres whose **Status** (Combi 3–1(2)c) is set to EXT or EX2.

In Sequencer mode, musical data will be transmitted on the channel specified for the currently selected track (Seq 3–1(2)c) (whose **Status** is BTH, EXT, or EX2).

External mode

In each mode when the control surface CONTROL ASSIGN EXTERNAL switch is on, you can use the sliders 1–8, and switches 1–8 to control a connected computer or MIDI device.

The MIDI CC# (control change) messages are transmitted on the MIDI channel specified in the Global P1: MIDI– External Mode1, External Mode2 pages.

Note Receive (Note Receive Filter) [All, Even, Odd]

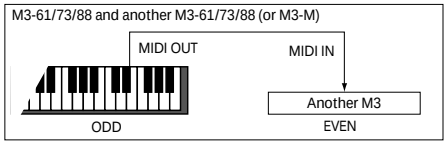
This setting specifies whether even-numbered, odd-numbered, or all note numbers will be sounded when note data is received from the M3's keyboard or from an external MIDI device. By connecting the M3 to another M3 and setting one instrument to Even and the other to Odd, you can effectively double the polyphony by dividing the notes between the two instruments.

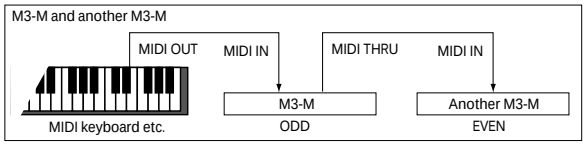
All: All note numbers will be received. Normally you will leave this set to All.

Even: Even-numbered notes (C, D, E, F#, G#, A#) will sound.

Odd: Odd-numbered notes (C#, D#, F, G, A, B) will sound.

MIDI This setting has no effect on the MIDI data that is received.





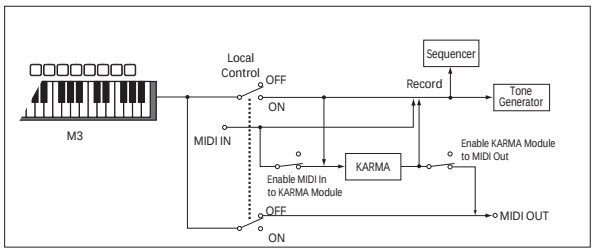
Local Control On [Off, On]

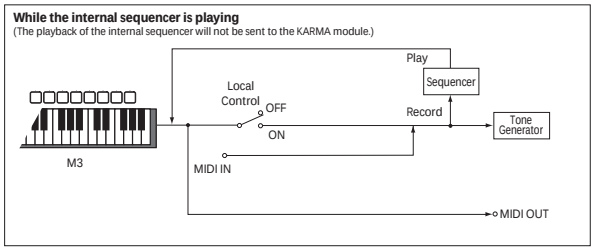
Local Control On (checked): The M3's pads and sliders, and the keyboard, joystick, SW1, and SW2 will control the M3's sound generator. Leave this setting checked if you're playing the M3 by itself.

Local Control Off (unchecked): The M3's pads and sliders, and the keyboard, joystick, SW1, and SW2 will be disconnected from the M3's sound generator.

This means that operating the M3 (playing its pad, keyboard and using the joystick, or playing back the sequencer) will not sound its internal tone generator.

Turn **Local Control** Off if loop-back from an external sequencer causes duplicate notes.





MIDI If **Local Control** is Off, MIDI transmission / reception will occur normally. Playing the keyboard will cause the corresponding note data to be transmitted, and received note data will play the M3's internal sounds.

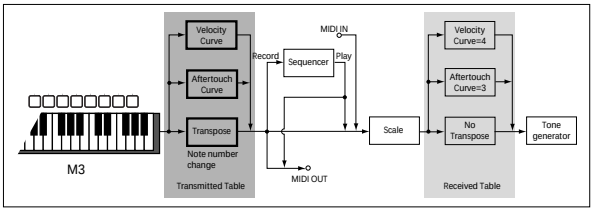
Convert Position [PreMIDI, PostMIDI]

This setting specifies the location at which the Transpose, Velocity Curve, and After Touch Curve settings will be applied. This setting will affect the MIDI data that is transmitted and received, and the data that is recorded on the internal sequencer.

When using the M3's keyboard or pad to play the internal tone generator, the Transpose, Velocity Curve, and After Touch Curve settings will always take effect regardless of this setting.

PreMIDI: Velocity Curve, After Touch Curve, and Transpose will be applied to the data that is transmitted from the M3's keyboard or pad.

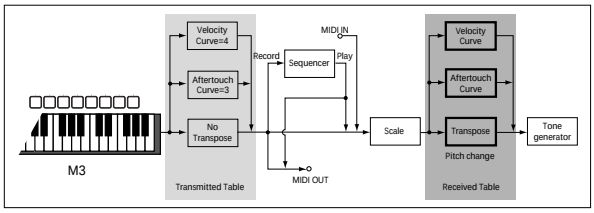
This means that the Velocity Curve, After Touch Curve, and Transpose settings will affect the data that is transmitted from MIDI OUT when the M3's keyboard or pad is played, and the data that is recorded on the internal sequencer. MIDI data received from MIDI IN or the data played back by the internal sequencer will not be affected.



PostMIDI: Velocity Curve, After Touch Curve, and Transpose will be applied to data before it enters the tone generator.

This means that the Velocity Curve, After Touch Curve, and Transpose settings will affect the data that is sent to the internal tone generator when you play the M3's keyboard, when the internal sequencer is played back, or when data is received from MIDI IN.

This setting will not affect the data that is transmitted from MIDI OUT or recorded on the internal sequencer when you play the M3's keyboard, pad or play back the sequence.



MIDI Clock:

MIDI Clock (MIDI Clock Source) [Internal, External MIDI, External USB, (External FireWire), Auto]

Use this setting to synchronize the M3's KARMA function and internal sequencer with an external MIDI device (e.g., sequencer or rhythm machine) and computer.

Internal: The KARMA function and the internal sequencer will operate according to the internal clock.

Select the Internal setting when using the M3 by itself, or when you want the M3 to be the master (controlling device) so that another connected external MIDI device will synchronize to the MIDI Clock messages transmitted from the M3.

External MIDI: The KARMA function and internal sequencer will operate in synchronization with MIDI Clock messages from an external MIDI device connected to the MIDI IN connector.

External USB: The KARMA function and internal sequencer will operate in synchronization with the MIDI Clock from the computer (e.g., DAW application) connected to the USB B connector.

External FireWire: This will be visible and can be selected if the EXB-FW option is installed. The KARMA function and internal sequencer will operate in synchronization with the MIDI Clock from the computer (e.g., DAW application) connected to the EXB-FW connector.

Auto: Normally the operation will be the same as the Internal setting. If external MIDI Clock messages are received from the MIDI IN or USB B connector, the M3 will automatically switch to the same operation as External MIDI and External USB.

Note: If you select Auto when an external MIDI sequencer and computer is connected, the M3 will automatically switch to Internal operation if the external sequencer is not transmitting MIDI Clock messages, allowing the KARMA Modules to operate and parameters for which MIDI / Tempo Sync is turned on to function.

Note: If after receiving a MIDI Clock, Start, or Continue message from the MIDI IN or USB B connector, no new MIDI Clock message is received within an interval of 500 ms, or if you start the M3's sequencer from the front panel without having received a MIDI Clock, Start, or Continue message from the MIDI IN and USB B connector, the M3 will automatically switch to Internal operation.

Receive Ext. Realtime Commands [Off, On]

Off (unchecked): Even if **MIDI Clock** is set to External MIDI, or if set to Auto and the M3 is synchronized to external MIDI Clock messages, MIDI Common messages and Realtime messages (Song Position Pointer, Start, Continue, Stop) will not be received. (Song Select messages will be received.)

Note: Use this setting if the above messages from an external MIDI sequencer are unnecessarily resetting the M3's song settings.

On (checked): The above Common messages (including Song Select) and Realtime messages will be received.

This parameter cannot be set if **MIDI Clock** is Internal.

SEQ Mode:

Track MIDI Out [for Master, for External Sequencer]

This setting specifies what will be transmitted via MIDI when you switch songs in Sequencer mode.

for Master: When you switch songs in Sequencer mode, tracks whose **Status** is EXT or BTH will transmit MIDI messages* such as program changes to set-up an external MIDI sound module.

for External Sequencer: You should choose this if you're using Sequencer mode as an external multi-timbral sound module. When you switch songs on the M3, no track whose **Status** is set to EXT or BTH (i.e., any setting other than INT) will transmit MIDI messages* such as program changes. This prevents echo-back from the tracks of your external MIDI sequencer from overwriting the program and other parameters of tracks that are set to the same MIDI channel.

*** Applicable parameters**

- Program Select: CC#00 bank select (LSB), CC#32 bank select (MSB), program change
- Pan: CC#10 pan
- Volume: CC#7 volume
- Portamento: CC#65 portamento On / Off, CC#5 portamento time
- Send 1 / 2: CC#93 send 1 level, CC#91 send 2 level
- (Post FX) Pan: CC#8 post insert effect pan

Param. MIDI Out [Control Change, SysEx-param Change]

This setting specifies whether control changes or system exclusive messages will be transmitted when you edit a parameter in Sequencer mode.

Control Change: Data for the edited parameter will be transmitted as a control change.

SysEx-param Change: Data for the edited parameter will be transmitted as a parameter change.

Note: For these to operate, **Enable Control Change** or **Enable Exclusive** (Global P1: MIDI– MIDI Routing) must be checked respectively.

*** Applicable parameters**

- Pan: CC#10 pan
- Volume: CC#7 volume
- Send 1 / 2: CC#93 send 1 level, CC#91 send 2 level

Drum Track:

Drum track programs in Program mode will be triggered on the global MIDI channel if **Trigger Mode** is set to Wait KBD Trig. The MIDI transmit channel is specified by the Drum Track **Prog MIDI Ch**. Use the Drum Track **Prog MIDI Out** to specify whether the MIDI note data of the pattern will be transmitted.

Drum track programs do not transmit or receive MIDI program changes.

Prog MIDI Ch [01…16]

This specifies the MIDI channel for drum track transmission and reception in Program mode. If **Prog MIDI Out** is checked, drum pattern note data will be transmitted on this MIDI channel. The default setting is channel 10.

Prog MIDI Out [Off, On]

On (checked): The note data of the drum track pattern will be transmitted on the channel specified by **Prog MIDI Ch**.

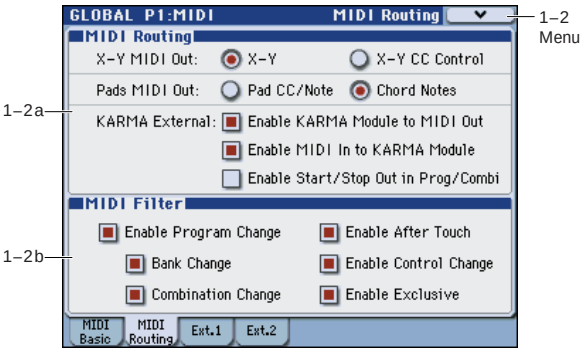
Off (unchecked): The note data of the drum track pattern will not be transmitted.

▼1–1: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Dump Program** ☞p.384
- 2: **Dump Combination** ☞p.384
- 3: **Dump Drum Kit** ☞p.384
- 4: **Dump Global Setting** ☞p.384
- 5: **Dump Sequencer** ☞p.384
- 6: **Dump Drum Track Pattern** ☞p.384
- 7: **Dump Formant Motion** ☞p.384
- 8: **Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)** ☞p.386

For more information, please see "Global: Menu Command" on page 382.

1–2: MIDI Routing



Here you can make MIDI routing and filtering settings for the entire M3.

Note: To transmit MIDI exclusive dump data, you'll use the menu commands of this P1: MIDI page.

1–2a: MIDI Routing

X–Y MIDI Out [X–Y, X–Y CC Control]

These settings specify how MIDI output will occur when you move your finger over the display when X–Y Mode is on, or use the X–Y Motion function to capture such a movement.

X–Y: X–Y Mode or X–Y Motion will transmit the two MIDI control change messages assigned by **X (X–Y Mode)** and **Y (X–Y Mode)** (Global 2–2b). With the default settings, **X (X–Y Mode)** is CC#118, and **Y (X–Y Mode)** is CC#119. Normally you will set this to X–Y. Choose this setting if you want to use movements of X–Y Mode or X–Y Motion to control an external MIDI device or record these movements into the internal sequencer or an external sequencer.

X–Y CC Control: The M3 will transmit the MIDI control change messages specified by the X–Y CC Control "+X," "–X," "+Y," and "–Y" settings in each program, combination, or song. Movements of X–Y Mode or X–Y Motion will transmit MIDI control change messages.

Normally you will use this to control the internal tone generator or effects, but you can also use it to transmit messages to an external MIDI device, or to record these movements on the internal sequencer or an external sequencer.

Pads MIDI Out [Pad CC/Note, Chord Notes]

This setting specifies the MIDI messages that are output when you strike a pad.

Pad CC/Note: When you strike a pad, the MIDI note number or MIDI control change message specified by the Pad **Pad1**–**Pad8** (Global 2–2c) setting will be transmitted. If the setting is off, no MIDI message will be transmitted.

Chord Notes: When you strike a pad, the (up to eight) MIDI note-on / off messages (and velocities) specified by the Pad **Pad1**–**Pad8** (Global 1–4b) setting of each program, combination, or song will be transmitted. If all notes are turned off, no MIDI messages will be transmitted.

KARMA External: Enable KARMA Module to MIDI Out [Off, On]

This setting specifies whether the KARMA Module will transmit MIDI messages.

On (checked): The KARMA Module will transmit MIDI messages.

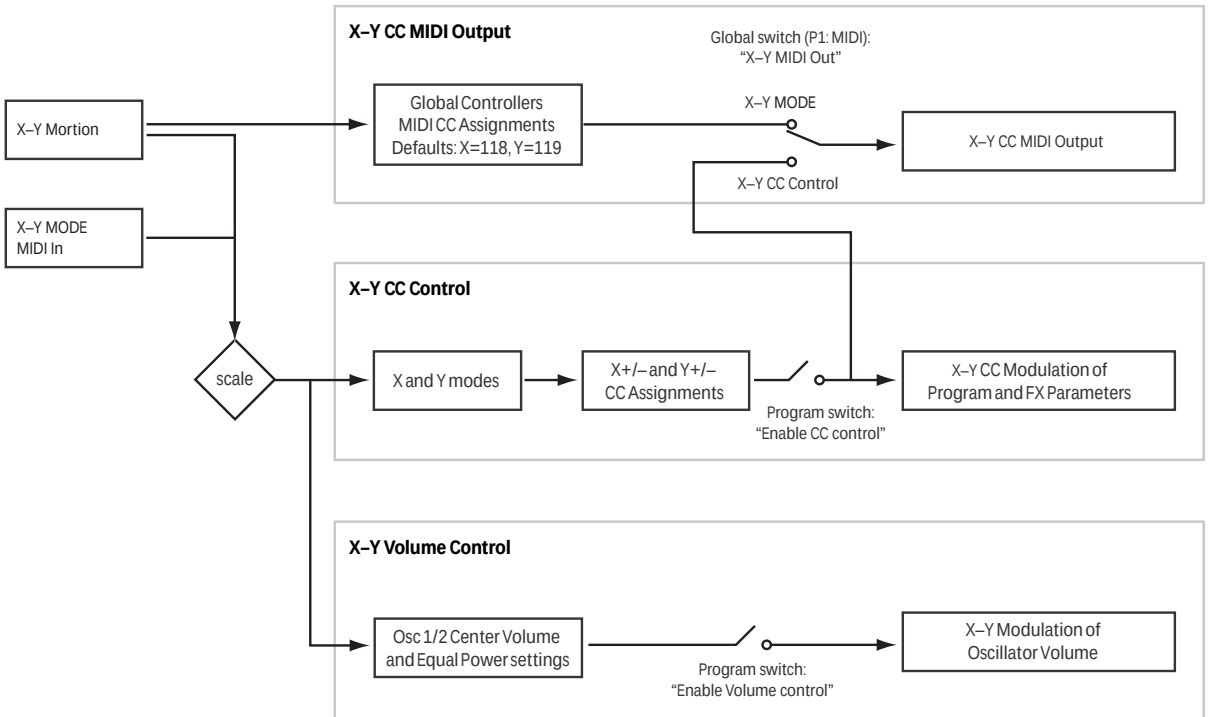
Off (unchecked): The KARMA Module will not transmit MIDI messages. MIDI events generated by the KARMA Module will sound the internal tone generator, but MIDI messages will not be output.

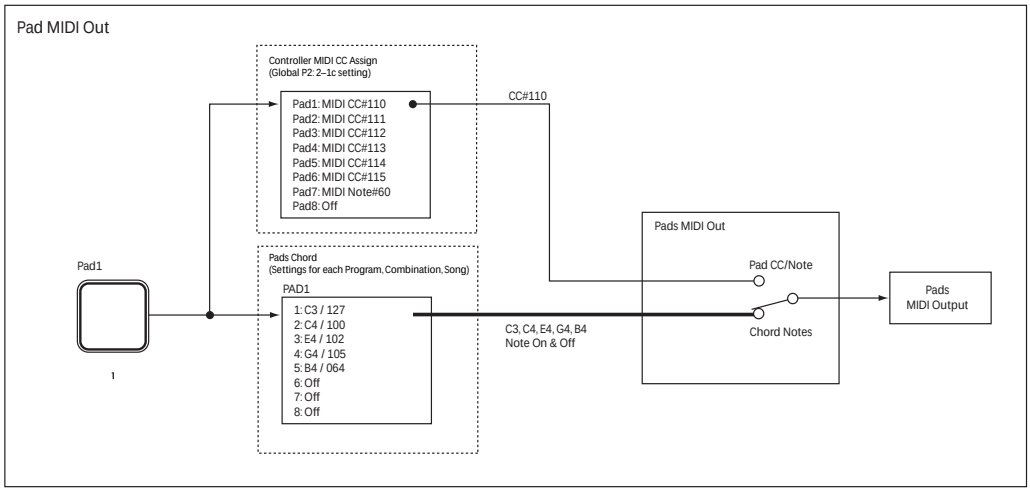
Enable MIDI In to KARMA Module [Off, On]

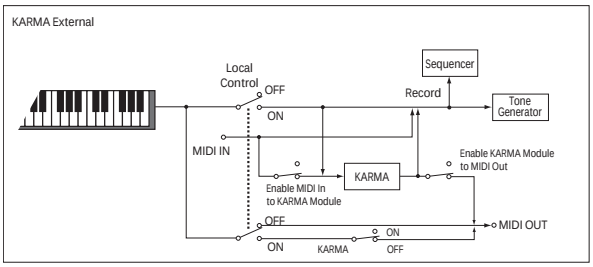
This setting specifies whether MIDI messages from the MIDI IN connector will be sent to the KARMA Module.

On (checked): MIDI messages will be sent to the KARMA Module.

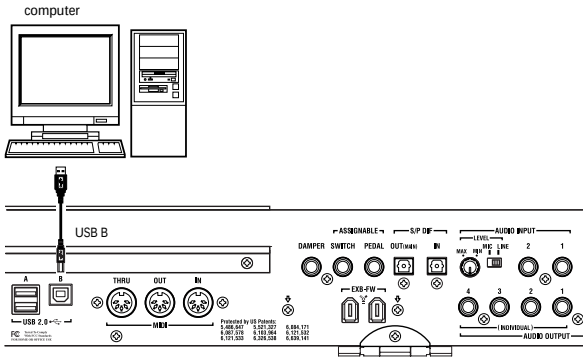
Off (unchecked): MIDI messages will not be sent to the KARMA Module.







Example settings



- If you want phrases etc. generated by the M3's KARMA Module to be sent via MIDI to control an external MIDI device or recorded on an external MIDI sequencer:

  Enable KARMA Module to MIDI Out, On
  Enable MIDI In to KARMA Module, Off
  (**Local Control On**, On)

- If you want MIDI input from an external MIDI device to trigger the KARMA Module

- If you want only the M3 keyboard events that trigger the KARMA Module to be sent from MIDI OUT for recording on an external sequencer, and echo-back or play back these events via MIDI IN to trigger the KARMA Module:

  Enable KARMA Module to MIDI Out, Off
  Enable MIDI In to KARMA Module, On
  (**Local Control On**, Off)

You can also make these settings from the **Setup KARMA Ext. MIDI** menu command.

Enable Start/Stop Out in Prog/Combi [Off, On]

In Program and Combination modes, this function transmits a MIDI start message when you trigger the KARMA function, and a MIDI stop message when you turn it off. This lets you make an external MIDI sequencer or rhythm / groove machine start playing at the moment that the KARMA function begins playing.

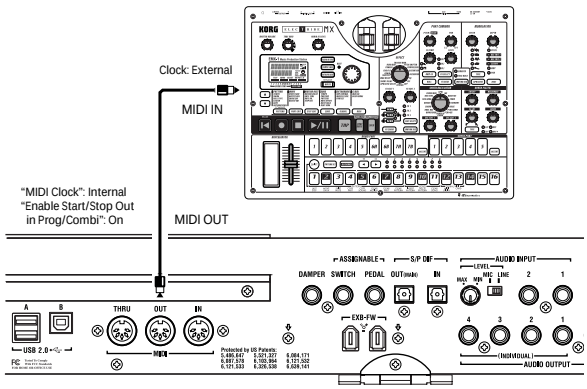
Off (unchecked): Normally you will leave this Off.

On (checked): MIDI system realtime messages "Start" and "Stop" will be transmitted in Program and Combination mode. If **MIDI Clock** (Global 1–1a) is set to Internal or Auto (and operating as Internal), the start and stop messages will be transmitted under the conditions described below. This can be used to simultaneously start an external MIDI sequencer or rhythm / groove machine at the moment the KARMA function begins playing.

Start: If the KARMA ON / OFF switch is on, the MIDI system realtime message "Start" will be transmitted at the moment you use the keyboard or pads 1–8 keys to trigger the GE selected for a KARMA Module.

Note: "Start" will be transmitted at the moment that the GE phrase or pattern is triggered according to the **KARMA Key Zone** (Prog / Combi 7–1–1b) setting for that KARMA Module.

Stop: If "Start" has been previously transmitted, the MIDI system realtime message "Stop" will be transmitted at the moment you turn off the KARMA ON / OFF switch.



For more information, please see "Synchronizing the playback of the KARMA function, Drum Track function or sequencer" on page 622, and OG page 30, page 33, and page 182.

1–2b: MIDI Filter

Enable Program Change [Off, On]

On (checked): Program changes will be transmitted and received.

In Program mode (P0: Play), the program will be switched when a program change message is received on the global MIDI channel specified by **MIDI Channel** (Global 1–1a). When you switch programs, a program change message will be transmitted on the global MIDI channel.

In Combination mode (P0: Play), the combination will be switched when a program change message is received on the global MIDI channel. However, it is possible to set the **Enable Combination Change** parameter so that the combination is not switched. When a program change is received on the channel specified for each timbre by **MIDI Channel** (Combi 3–1(2)c), the program of that timbre will be switched. However, the program changes for each timbre will be affected by the setting of the **Enable Program Change** parameter (Combi 5–1–1(2)c).

When you switch combinations, a program change message will be transmitted on the global MIDI channel, and also transmitted simultaneously on the channel of timbres whose **Status** (Combi 3–1(2)c) is set to EXT or EX2.

In Sequencer mode, incoming program change messages on a channel that corresponds to a track whose **Status** (Seq 3–1(2)c) is set to INT or BTH will switch programs on that track.

When you select a song or playback sequencer data, program changes will be transmitted on the channels of tracks whose **Status** is set to BTH, EXT, or EX2.

Off (unchecked): Program changes will not be transmitted or received.

Bank Change [Off, On]

On (checked): The Bank Select control change message will be transmitted together with program change messages. This is valid when **Enable Program Change** is checked.

Off (unchecked): Bank Select messages will not be transmitted or received.

When recording on the internal sequencer, bank select messages will be recorded regardless of this setting. However for playback, this setting will apply.

Combination Change [Off, On]

On (checked): When in Combi P0: Play, an incoming program change message on the global MIDI channel set by **MIDI Channel** (Global 1–1a) will switch combinations.

This is valid when **Enable Program Change** is checked.

An incoming program change on a channel other than the global MIDI channel will switch the program of any timbre that matches that MIDI channel.

Off (unchecked): An incoming program change message on the global MIDI channel will switch the program of any timbre whose **MIDI Channel** (Combi 3–1(2)c) matches the global MIDI channel. The combination will not be switched.

The program changes for each timbre will be affected by the setting of the **Enable Program Change** parameter (Combi 5–1–1(2)c).

Enable After Touch [Off, On]

On (checked): MIDI after touch messages will be transmitted and received.

Off (unchecked): MIDI after touch messages will neither be transmitted nor received.

When recording sounds that do not require the use of after touch, you can uncheck this parameter to save memory.

This setting has no effect when you use the internal sequencer to playback sequence data that was recorded with after touch data; i.e., after touch will be transmitted via MIDI.

The M3's keyboard transmits only channel after touch; it does not transmit polyphonic after touch. However, since the M3 does support polyphonic after touch as an Alternate Modulation Source (AMS), it can receive polyphonic after touch to control individual notes.

Enable Control Change [Off, On]

On (checked): Control change messages will be transmitted and received.

Off (unchecked): Control change messages will neither be transmitted nor received.

This setting has no effect when you use the internal sequencer to playback sequence data that was recorded with control change data; i.e., the control changes previously recorded into the sequencer will be transmitted via MIDI.

Enable Exclusive [Off, On]

On (checked): System exclusive data will be transmitted and received.

Check this if you want to edit the M3 from a connected computer, or if you want to allow bi-directional editing.

Off (unchecked): System exclusive data will not be transmitted. Normally you will leave this unchecked.

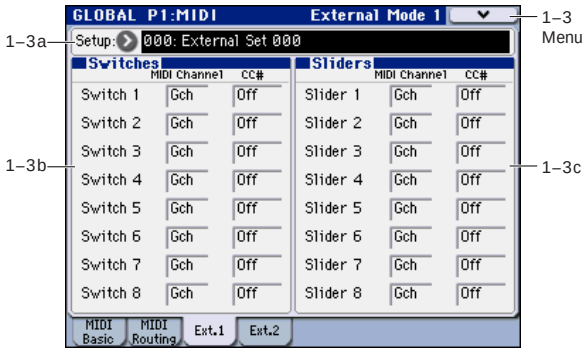
However, system exclusive data will be transmitted and received while the menu commands (**Dump Program**–**Dump Formant Motion**) of this page are displayed.

▼1–2: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Dump Program** ☞p.384
- 2: **Dump Combination** ☞p.384
- 3: **Dump Drum Kit** ☞p.384
- 4: **Dump Global Setting** ☞p.384
- 5: **Dump Sequencer** ☞p.384
- 6: **Dump Drum Track Pattern** ☞p.384
- 7: **Dump Formant Motion** ☞p.384
- 8: **Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)** ☞p.386

For more information, please see "Global: Menu Command" on page 382.

1–3: External Mode 1



In this control assign setup screen you can individually assign the MIDI controller and MIDI channel that will be transmitted by each switch and slider when the control surface CONTROL ASSIGN EXTERNAL switch is on.

For more information, please see “0–8f: External” on page 18.

In this page and the 1–4: External Mode 2 page, you can create up to 128 different external setups. For instance, you might make one setup for controlling several different pieces of MIDI gear on stage, another for controlling a software synthesizer (such as one of Korg’s Legacy Collection synths), and so on.

These External Setups are completely separate from the Program. You can think of External mode as being a separate control surface which just happens to share M3’s sliders, switches, and drum pads.

When you select an External Setup, it stays selected even when you change Programs, or switch to Combination or Sequencer modes. This makes it easy to select different M3 sounds without disrupting any external MIDI control, and vice-versa.

Note: After editing the setups, make sure to save your edits using the menu command **Write Global Setting**. You can also call up this menu command by holding **ENTER** switch and pressing numeric key **0**.

For setup examples, please see “External Control List” (PDF).

1–3a: External Mode Setup

Setup (External Mode Setup) [000…127]

This selects the Global setup to edit.

You can assign a name to each setup. For more information, please see “Rename External Setup” on page 386.

1–3b: Switches

Switch 1–8:

MIDI Channel [ch01…16, Gch]

This sets the MIDI Channel for the switch. Each can send on a different channel, if desired.

When the switch is turned on, it sends a value of 127; when it is turned off, it sends a value of 0.

Gch means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# [Off, 000…119]

This sets the MIDI CC sent by the switch.

1–3c: Sliders

Slider 1–8:

MIDI Channel [ch01…16, Gch]

This sets the MIDI Channel for the slider. Each can send on a different channel, if desired.

Gch means that the slider will transmit on the Global MIDI Channel, as set in Global mode.

CC# [Off, 000…119]

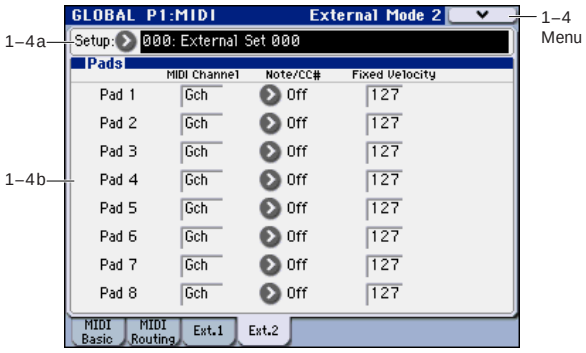
This sets the MIDI CC sent by the slider.

▼1–3: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Dump Program** ☞p.384
- 2: **Dump Combination** ☞p.384
- 3: **Dump Drum Kit** ☞p.384
- 4: **Dump Global Setting** ☞p.384
- 5: **Dump Sequencer** ☞p.384
- 6: **Dump Drum Track Pattern** ☞p.384
- 7: **Dump Formant Motion** ☞p.384
- 8: **Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)** ☞p.386
- 9: **Reset External Setup** ☞p.386
- 10: **Rename External Setup** ☞p.386

For more information, please see “Global: Menu Command” on page 382.

1–4: External Mode 2



This page lets you set up the drum pad assignments for the Control Surface's EXTERNAL mode. Each pad can play a note, or send a Control Change (CC) message, on any of the MIDI channels. For more information, please see "0–8f: External" on page 18.

1–4a: External Mode Setup

Setup (External Mode Setup) [000…127]

This selects the External setup to edit.

You can assign a name to each setup. For more information, please see "Rename External Setup" on page 386.

1–4b: Pad 1–8

MIDI Channel [ch01…16, Gch]

This sets the MIDI Channel for the pad. Each can send on a different channel, if desired.

Gch means that the pad will transmit on the Global MIDI Channel, as set in Global mode. This allows you to re-direct any number of sliders, switches, and pads to a different channel at once, without editing the individual controls.

Note/CC# [Off, C–1…G9, CC#000…119]

Each pad can send either a MIDI note or a MIDI CC message. When assigned to a CC, the pad sends a value of 127 when it is pressed down, and a value of 0 when it is released.

Fixed Velocity [001…127]

The front-panel PAD MODE switches the pads between being velocity sensitive (so that the loudness varies depending on how hard you hit the pad) and playing a single, fixed velocity for each note (handy if you want the same results every time, regardless of how hard you play).

This lets you set the pad's fixed velocity.

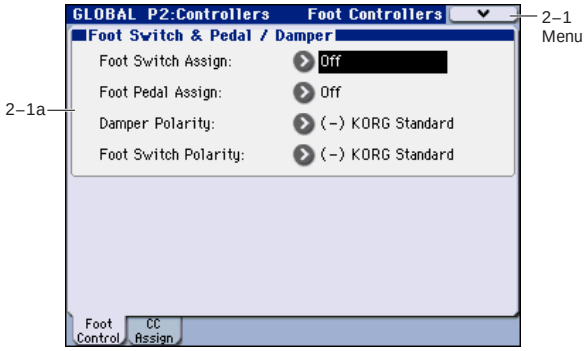
▼1–4: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Dump Program** ☞p.384
- 2: **Dump Combination** ☞p.384
- 3: **Dump Drum Kit** ☞p.384
- 4: **Dump Global Setting** ☞p.384
- 5: **Dump Sequencer** ☞p.384
- 6: **Dump Drum Track Pattern** ☞p.384
- 7: **Dump Formant Motion** ☞p.384
- 8: **Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)** ☞p.386
- 9: **Reset External Setup** ☞p.386
- 10: **Rename External Setup** ☞p.386

For more information, please see "Global: Menu Command" on page 382.

Global P2: Controllers

2–1: Foot Controllers



2–1a: Foot Switch & Pedal/Damper

Foot Switch Assign [List of Foot Switch Assign]

Selects the function that will be controlled by a pedal switch (such as the optional Korg PS-1) connected to the ASSIGNABLE SWITCH jack.

For a complete list of possible assignments, please see “Foot Switch Assignments” on page 599.

Foot Pedal Assign [List of Foot Pedal Assign]

Selects the function that will be controlled by a foot volume pedal (XVP-10 or EXP-2 option [sold separately]) connected to the ASSIGNABLE PEDAL jack.

For a complete list of possible assignments, please see “Foot Pedal Assignments” on page 600.

Damper Polarity [(–) KORG Standard, (+)]

Set this to match the polarity of the damper pedal connected to the DAMPER jack. If the polarity does not match, operating the damper pedal will not produce the correct result. If no damper pedal is connected, set this to (–) KORG Standard.

(–) KORG Standard: Use this setting for “open-type” damper pedals, such as the optional Korg DS–1H.

(+): Use this setting for “closed-type” pedals.

Foot Switch Polarity [(–) KORG Standard, (+)]

Set this to match the polarity of the footswitch connected to the ASSIGNABLE SWITCH jack. If the polarity does not match, operating the damper pedal will not produce the correct result. If no damper pedal is connected, set this to (–) KORG Standard.

(–) KORG Standard: Use this setting for “open-type” footswitches, such as the optional Korg PS–1.

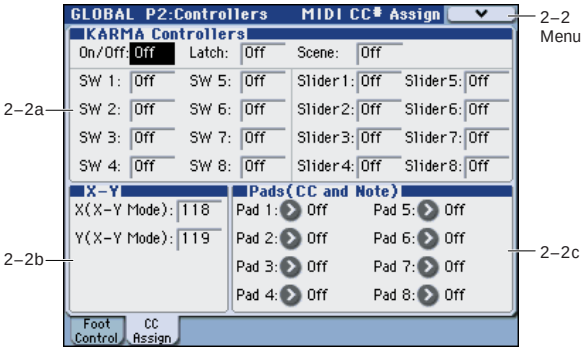
(+): Use this setting for “closed-type” pedals.

▼2–1: Menu Command

- 0: **Write Global Setting** ☞p.382

For more information, please see “Global: Menu Command” on page 382.

2–2: MIDI CC# Assign



2–2a: KARMA Controllers

Here you can assign control change messages to the KARMA switches and sliders.

When you operate a switch or slider, the assigned control change message will be transmitted from the MIDI OUT connector.

The assigned control change messages can also be received from an external MIDI device connected to the MIDI IN connector, and used to control the corresponding KARMA function.

The default settings of each parameter are as shown in the display above.

On/Off [Off, 000...119]

This assigns a control change message to the KARMA ON / OFF switch.

Latch [Off, 000...119]

This assigns a control change message to the KARMA LATCH switch.

Scene [Off, 000...119]

This assigns a control change message to the KARMA SCENE switch.

SW 1 [Off, 000...119]
SW 2 [Off, 000...119]
SW 3 [Off, 000...119]
SW 4 [Off, 000...119]
SW 5 [Off, 000...119]
SW 6 [Off, 000...119]
SW 7 [Off, 000...119]
SW 8 [Off, 000...119]

These assign control change messages to each of the KARMA Switches 1–8.

Slider 1 **[Off, 000...119]**
Slider 2 **[Off, 000...119]**
Slider 3 **[Off, 000...119]**
Slider 4 **[Off, 000...119]**
Slider 5 **[Off, 000...119]**
Slider 6 **[Off, 000...119]**
Slider 7 **[Off, 000...119]**
Slider 8 **[Off, 000...119]**

These assign control change messages to each of the KARMA sliders 1–8.

2–2b: X–Y

X (X–Y Mode) **[Off, 000...119]**
Y (X–Y Mode) **[Off, 000...119]**

These assign control change messages to the X-axis and Y-axis of the X–Y control. For more information, please see “X–Y MIDI Out” on page 366.

2–2c: Pads (CC and Note)

Pad 1 **[Off, C–1...G9, CC#000...CC#119]**
Pad 2 **[Off, C–1...G9, CC#000...CC#119]**
Pad 3 **[Off, C–1...G9, CC#000...CC#119]**
Pad 4 **[Off, C–1...G9, CC#000...CC#119]**
Pad 5 **[Off, C–1...G9, CC#000...CC#119]**
Pad 6 **[Off, C–1...G9, CC#000...CC#119]**
Pad 7 **[Off, C–1...G9, CC#000...CC#119]**
Pad 8 **[Off, C–1...G9, CC#000...CC#119]**

These assign note numbers or control change messages to pads 1–8. For more information, please see “Pads MIDI Out” on page 366.

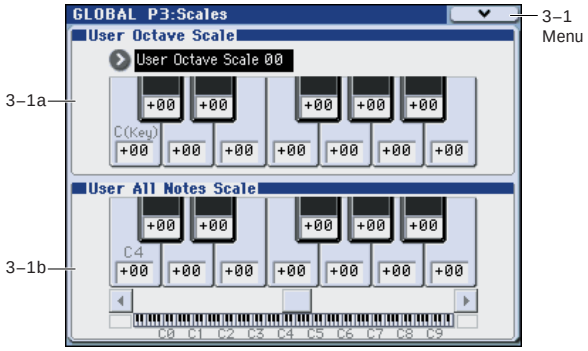
▼2–2: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Reset Controller MIDI Assign** ☞p.387

For more information, please see “Global: Menu Command” on page 382.

Global P3: Scales

3–1: Scales



Here you can make settings for sixteen different User Octave Scales and one User All Notes scale.

The user scales you create here can be selected from the following pages.

- Prog P1: Basic / DT / Ctrls– Key Zone / Scale
- Combi P3: Timbre Param– Other T01–08 / T09–16
- Seq P3: Track Param– Other T01–08 / T09–16

Note: For the optional EXB-RADIAS, use Prog P1: Basic / DT / Ctrls– Program Basic to select the scale.

If you wish to keep an edited user scale after the power is turned off, be sure to write (save) your settings. Use the menu command **Write Global Setting** or press the SEQUENCER REC / WRITE switch to open the dialog box, and write the data.

3–1a: User Octave Scale

User Octave Scale [User Octave Scale 00...15]

Selects the User Octave Scale that you want to edit.

Tune [–99…+99]

Makes pitch settings for each note in the octave.

When you adjust the pitch of each note in the octave (C–B) in one-cent steps, your settings will be applied to all octaves. This adjustment is relative to equal temperament.

A setting of **–99** lowers the pitch approximately a semitone below normal pitch.

A setting of **+99** raises the pitch approximately a semitone above normal pitch.

The note can also be selected by holding down the ENTER switch and playing a note on the keyboard.

By executing the menu command **Copy Scale**, you can copy settings from a preset scale (other than Stretch) or from another user scale.

3–1b: User All Notes Scale

Tune [–99…+99]

Makes independent pitch settings for each of the 128 notes.

Adjust the pitch of each of the 128 notes (C–1 – G9) in one-cent steps. This adjustment is relative to equal temperament.

A setting of **–99** lowers the pitch approximately a semitone below normal pitch.

A setting of **+99** raises the pitch approximately a semitone above normal pitch.

Use the horizontal scroll bar to move to the key range that you want to set, and select the key that you want to specify.

The note can also be selected by holding down the ENTER switch and playing a note on the keyboard.

By executing the menu command **Copy Scale**, you can copy settings from a preset scale (including Stretch) or another user scale.

▼3–1: Menu Command

- 0: **Write Global Setting** ☞p.382
- 1: **Copy Scale** ☞p.387

For more information, please see “Global: Menu Command” on page 382.

Global P4: Category

Programs, Combinations, and KARMA GEs are organized into categories and sub-categories. Categories make it easy to find a particular type of sound, such as keyboards, bass, or drums, or a specific type of KARMA GE, such as arpeggios or gated patterns.

Each main category also has up to 8 sub-categories, for finer degrees of organization. For instance, the Program keyboard category has sub-categories for acoustic pianos, real electric pianos, synth electric pianos, and clavs and harpsichords.

Anywhere that you can select Programs, Combinations, or KARMA GEs by bank and number, you can also select them from the category pop-up.

When shipped from the factory, there are 16 preset Program and Combination categories, with 2 more left open for your use (initially named User16 and User17). There are also 12 preset KARMA GE categories.

On these pages, you can:

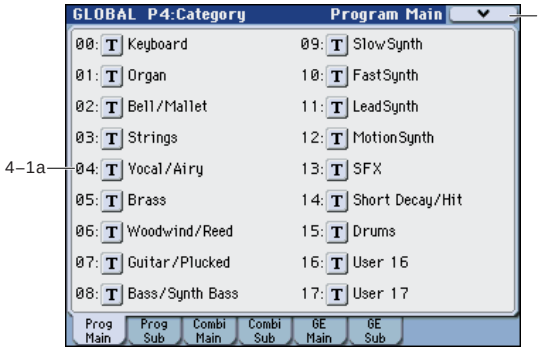
- Change the names of any of the categories and sub-categories, including both the factory and user categories
- Add sub-categories to the factory categories (up to the limit of 8)

You can assign a Program or Combination to a category and sub-category during the Write process. For more information, please see “Write Program” on page 106, and “Write Combination” on page 185.

To save changes to category names, you’ll need to write the Global settings. To do so, use the menu command **Write Global Setting**. For more information, please see “Write Global Setting” on page 382.

Note: Drum track programs in Program mode are selected from programs assigned here to program main category “15” (default setting Drums).

4–1: Program Main



4–1a: Program Main

00...17:

Main Category Edit **[Text Editor]**

Here you can edit the main category names for programs.

Press the text edit button to open the text edit dialog box, and enter a name. You can enter up to 24 characters. (See OG page 197)

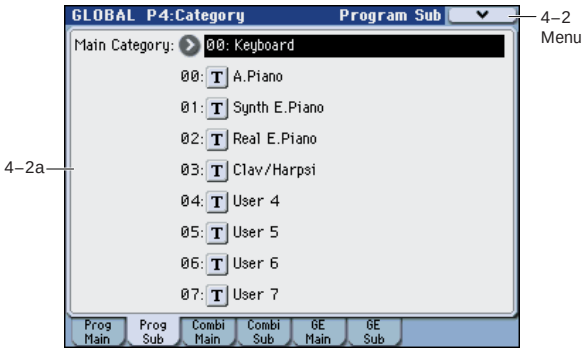
You can name each of the eighteen categories.

▼4–1: Menu Command

- 0: **Write Global Setting** ☞p.382

For more information, please see “Global: Menu Command” on page 382.

4–2: Program Sub



4–2a: Program Sub

Main Category **[00...17]**

Here you can select the main category for which you will edit sub-category names.

00...07:

Sub Category Edit **[Text Editor]**

Here you can edit the sub-category names for programs.

Use **Main Category** to select the main category that includes the sub-category name you want to edit. Then press the text edit button to open the text edit dialog box, and enter a name. You can enter up to 24 characters. (See OG page 197)

You can name each of the eight categories.

▼4–2: Menu Command

- 0: **Write Global Setting** ☞p.382

For more information, please see “Global: Menu Command” on page 382.

4–3: Combination Main, 4–4: Combination Sub, 4–5: KARMA GE Main, 4–6: KARMA GE Sub

This page lets you assign the KARMA main category and sub-category names to Combinations. For more information, please see “4–1: Program Main,” “4–2: Program Sub,” above.

▼4–3, 4, 5, 6: Menu Command

- 0: **Write Global Setting** ☞p.382

For more information, please see “Global: Menu Command” on page 382.

Global P5: Drum Kit

Here you can create drum kits by assigning a drum instrument (drum sample) to each key.

A drum kit you edit here can be used in the same way as a multisample oscillator (when **Oscillator Mode** is Single or Double) and processed through the filter, amp, and effects etc. To do this, set the **Oscillator Mode** to Drums in the Program mode (EDS) P1: Basic / DT / Ctrls– Program Basic page, and selecting the drum kit as an oscillator in the P2: OSC / Pitch– OSC1 Basic page.

When you wish to edit a drum kit, enter Program mode, select a program that uses a drum kit (i.e., whose **Oscillator Mode** is Drums), and then move to this page. A program that uses a drum kit will already have filter, amp, and effect settings etc. suitable for drum sounds. (Programs in the separate "Voice Name List" that use a drum kit are indicated by a symbol.)

You must set **Oct (Octave)** (Prog 2–1a) to **+0[8']**. With any setting other than +0[8'], the key locations and drum sounds will not correspond correctly.

Even if a program with an **Oscillator Mode** of Single or Double is selected in Program mode, the program will sound using its own filter and amp settings etc. Effects will sound according to the settings of the program you selected.

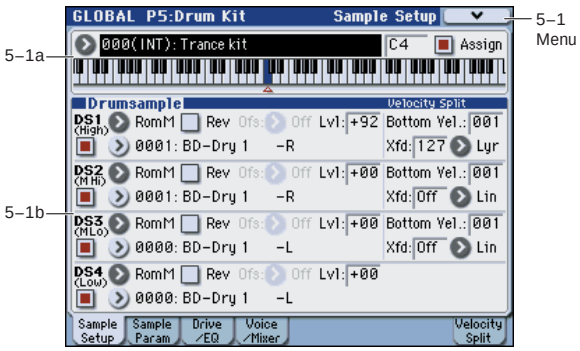
Use **Write Drum Kit** to write an edited drum kit into internal memory. If you turn off the power or select another drum kit before writing, your edits cannot be recovered. When you choose the menu command **Write Drum Kit** or press the SEQUENCER REC / WRITE switch to access the dialog box and save, all of the drum kits will be saved.

Even if you select a different drum kit, your edits will remain. You must save if you want the edited drum kit settings to be backed-up when the power is turned off. Editing a drum kit will affect all programs that use that drum kit.

If **Enable Exclusive** (Global 1–2b) is checked, the drum kit can be edited using exclusive data.

For detailed step-by-step instructions on creating drum kits, please see "Using Drum Kits" on page 135 of the Operation Guide.

5–1: Sample Setup



Here you can select a drum kit and specify DS1–4 (Drumsample 1–4) as the drum samples assigned to each key. Here you can also edit drum sample parameters for each DS.

5–1a: Drum Kit, Key Select, Assign

Drum Kit [000(INT)...143(U-G)]

Selects the drum kit that you wish to edit.

No. (Bank)	Contents
000(INT)...031(INT)	M3 preloaded drum kits
032(U-A)...047(U-A) 048(U-B)...63(U-B) 064(U-C)...79(U-C) 080(U-D)...95(U-D) 096(U-E)...111(U-E) 112(U-F)...127(U-F) 128(U-G)...143(U-G)	User drum kits

KEY [C–1...G9]

Selects the key to which the drum sample (and its settings) will be assigned.

Use the VALUE controller to specify the key. You can also select the key by holding down the ENTER switch and playing a note on the keyboard. You can assign four drum samples (DS1, 2, 3, 4) to each key, and switch between them by velocity.

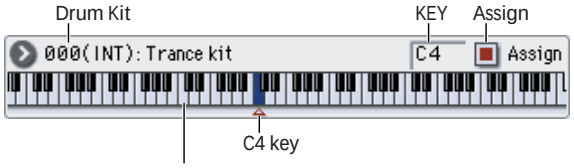
If you check **Assign** for the key you select here, the DS1–4, Voice Assign Mode, and Mixer parameters (see below) will be used.

Assign [Off, On]

On (checked): The drum samples you assigned for DS1–4 will sound. Normally you will check this parameter.

Off (unchecked): The selected drum samples will be invalid, and the drum samples of the key to the right will sound. At this time, the pitch will be a semitone lower than the pitch of the key to the right. Uncheck this parameter when you wish to play a drum sample at differing pitches.

Drum Kit, Key Select, Assign



"KEY": The selected key is shown in blue.
You can select a key by holding down the ENTER switch and playing the desired note.

5–1b: Drumsample

You can specify up to four drum samples. The process is the same as for the Single or Double multisample settings in Program mode (EDS). **Bottom Vel.** and **Xfd** specify the velocity zone in which DS1, 2, 3, and 4 will sound.

DS1 (High): (Drumsample1 High)

These are the settings for the first (High) velocity zone.

If you want to create a simple setup using only one drum sample, make the appropriate settings in DS1, and then set **Bottom Vel.** to 1 and **Xfd** to Off.

DS1(High) On/Off [Off, On]

On (checked): Check this if you want to use DS1 (High). The selected drum sample will sound.

Off (unchecked): DS1 (High) will not be used. The drum sample will not sound.

Note: Normally, you will start by using DS1 (before using DS1–4). If you don't want to switch drum samples by velocity, turn on only DS1. If you're using multiple velocity-switched drum samples, make settings as follows.

One velocity zone
DS1: On, DS2: Off, DS3: Off, DS4: Off

Two velocity zones
DS1: On, DS2: On, DS3: Off, DS4: Off

Three velocity zones
DS1: On, DS2: On, DS3: On, DS4: Off

Four velocity zones
DS1: On, DS2: On, DS3: On, DS4: On

Bank
[RomM, RomS, RamM, RamS, EX * M, EX * S, ...]

Drumsample Select
[List of installed Drumsample]

Specify the DS1 drum sample by bank and drum sample number.

The banks are organized into three main types; Rom, Ram, and EX *. For each type, you can choose either mono or stereo multisamples. However, stereo multisamples use up twice as many voices as mono multisamples.

RomM, RomS: These are the M3's standard preset drum samples.

RamM, RamS: These are user samples. You can choose samples you created in Sampling mode or loaded in Media mode. In Media mode, you can load not only KORG format sample files, but also AKAI S1000 / S3000 format, AIFF format, WAVE format, and Sound Font format data as samples, and use them as drum samples.

EX * M, EX * S: These select drum samples from the PCM expansion series. A unique number is assigned to each bank. The menu will show only the **EX *** banks that are currently loaded.

RomM, RomS Select menu

When you press the **Drumsample Select** popup button a drum sample list will appear, allowing you to choose drum samples from the list.

Use the tabs to choose a category, and then choose a drum sample from within the category. Press the OK button to execute, or press the Cancel button to cancel.

It is not possible to edit the category names of drum samples, or to re-assign the category.

If you choose "Bank" RomM:
Mono drum samples will be displayed. The L-channel or R-channel of the stereo drum samples selectable via Bank: RomS can also be selected as mono drum samples. In these cases, –L or –R is shown following the drum sample of the same name.

If you choose "Bank" RomS:
Only stereo drum samples will be displayed.

RamM, RamS Select menu

When you press the popup button, the one thousand samples that include the currently selected sample will be displayed. Use the VALUE controller to select the thousands digit.

If you choose "Bank" RamM:
Mono drum samples will be displayed. The L-channel or R-channel of stereo drum samples can also be selected as mono drum samples. In these cases, –L or –R is shown following the drum sample of the same name.

If you choose "Bank" RamS:
Only stereo drum samples will be displayed, using the same numbers and names as the mono samples. The same stereo sample will be specified regardless of whether you select –L or –R.

Rev (Reverse) [Off, On]

This lets you play the selected drum sample backwards, without looping. However, you can't select preset drum samples that cannot be reverse-played.

On (checked): The drum sample will play back in reverse.

The location at which reverse playback starts and ends is already specified for each drum sample. In the case of Ram bank samples whose **Start** and **End** (Sampling 2–1d) are specified, the sample will play (backward) from "End" to "Start."

Off (unchecked): The drum sample will play back normally.

This parameter will not change the playback direction of a sample for which **Reverse** (Sampling 2–1d) is checked.

Ofs (Start Offset) [Off, 1st…8th]

In addition to simply starting playback from the beginning, Rom and EX * drum samples can have up to 8 different pre-programmed alternate starting points. However, you can't select drum samples for which start and offset are not specified.

Similarly, Ram drum samples can play either from the beginning of the waveform, or from the loop start point.

Rom and EX * samples

With Rom and EX * drum samples, the Start Offset specifies whether to use the normal start point (**Off**), or to use one of the alternate start points (**1st–8th**).

Some Rom and EX * drum samples may have fewer than 8 pre-programmed points, in which case only the available points can be selected.

Ram samples

With Ram drum samples, only Off and 1st are available. **Off** uses the normal start point, and **1st** uses the loop start instead. **2nd** through **8th** will be grayed out.

Lvl (Amp Level) [–99...+99]

Specifies the volume.

Keys for which a value of **+99** is specified will sound at a volume twice as high as the amp level of the program which uses that drum kit. Keys for which a value of 0 is specified will sound at the volume of the amp level of the program which uses that drum kit. Keys for which a value of **–99** is specified will not sound.

Bottom Vel. (Bottom Velocity) [1...127]

This sets the lowest velocity at which the drum sample will sound. DS1's **Bottom Vel.** can be equal to, but not lower than, than that of DS2.

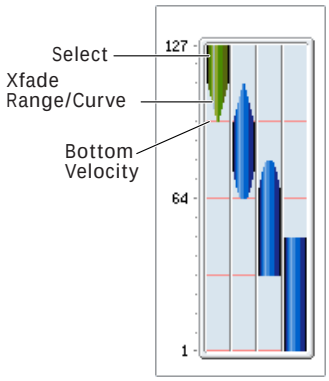
Xfd (Xfade Range) [Off, 1...127]

This specifies the velocity range starting at **Bottom Vel.** over which DS1 will fade-out and DS2 will fade-in.

For instance, if the **Bottom Vel.** is set to 64, and the **Xfd** is set to 20, DS2 will start to fade in at velocities of 84 and below.

When velocities are within the **Xfd**, the Oscillator will use twice as much polyphony as it would normally.

Note: You can only fade between two zones at once.



Xfade Curve [Lin(Linear), Pwr(Power), Lyr(Layer)]

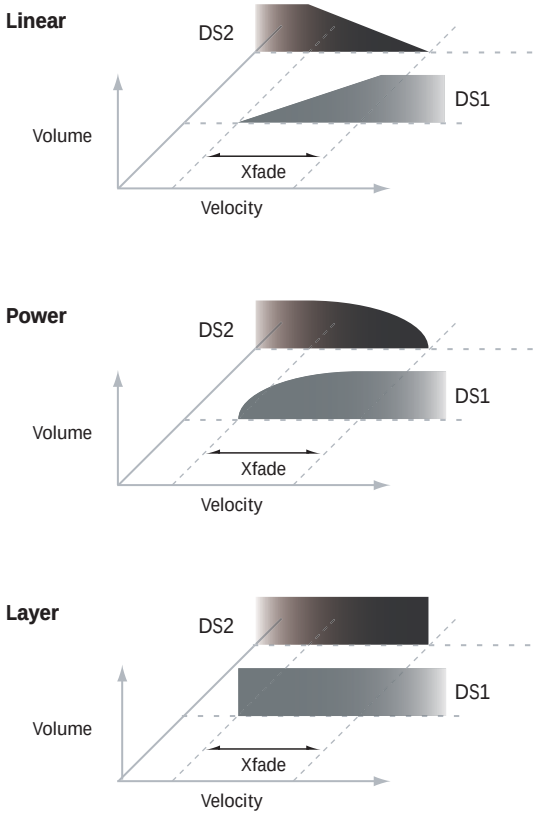
This controls the volume curve of the crossfade. **Lin** and **Pwr** (short for Equal Power) let you fine-tune the way that the two drum samples mix together; one or the other may be more appropriate for a given pair of drum samples. **Lyr** (Layer), true to its name, lets you layer the two drum samples together without any crossfading.

Lin(Linear) means that the two samples will each be at 50% of their full volume in the middle of the crossfade. Sometimes, this may create a dip in the volume level; if so, try using **Pwr(Power)** instead.

Pwr(Power), short for Equal Power, means that the two samples will each be at around 70% of their full volume in the middle of the crossfade. Sometimes, this may create a bump in the volume level, in which case you might try selecting **Lin(Linear)** instead.

Lyr(Layer) means that the two drum samples will be layered together, both at full volume, for the entire range of the crossfade.

Crossfade Curves



Note: The graphic in the Velocity Split page shows the zone and crossfade settings.

DS2(M Hi): (Drumsample2 Mid High)
DS3(M Lo): (Drumsample3 Mid Low)
DS4(Low): (Drumsample4 Low)

These are the settings for the second, third, and fourth velocity zones. The parameters for DS2 (Mid Hi) and DS3 (Mid Lo) are exactly the same as those for DS1, as described above.

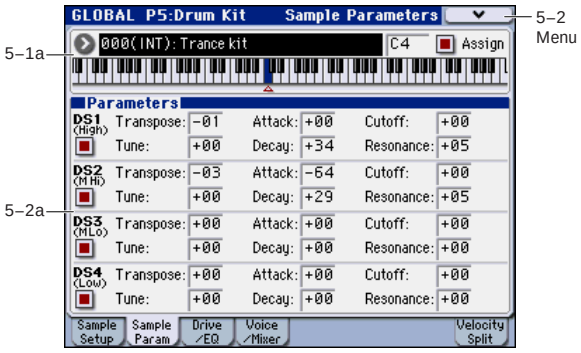
The parameters for DS4 (Low) are also similar to those for DS1, except that DS4 (Low) has no settings for **Bottom Vel.** (which is always fixed at 1), **Xfd**, or **Curve**.

▼5–1: Menu Command

- 0: **Write Drum Kits** ☞p.387
- 1: **Rename Drum Kit** ☞p.387
- 2: **Copy Drum Kit** ☞p.388
- 3: **Copy Key Setup** ☞p.388
- 4: **Swap Key Setup** ☞p.388

For more information, please see “Global: Menu Command” on page 382.

5–2: Sample Parameters



Here you can adjust the transpose, tune, attack, decay, filter cutoff, and resonance settings for each drum sample. These are offsets that are added to the settings of the program.

5–2a: Parameters (Drumsample Parameters)

DS1 (High): (Drumsample 1 High)

DS1(High) On/Off [Off, On]

This parameter is linked with "5–1b: Drumsample" DS1.

On (checked): Check this if you want to use DS1 (High). The selected drum sample will sound.

Off (unchecked): DS1 (High) will not be used. The drum sample will not sound.

Transpose [–64...+63]

Adjusts the pitch in semitone steps.
+12 is one octave up, and **–12** is one octave down.

Tune [–99...+99]

This adjusts the pitch in cents, over a range of ±1 octave. A cent is 1/100 of a semitone.

Attack (Amp EG Attack) [–64...+63]

Adjusts the attack time of the volume (Amplifier). The attack time for each key is determined by adding this value to the amp EG Attack Time of the program that uses this drum kit.

Decay (Amp EG Decay) [–64...+63]

Adjusts the decay time of the volume (Amplifier). The decay time for each key is determined by adding this value to the amp EG Decay Time of the program that uses this drum kit.

Cutoff (Filter Cutoff) [–64...+63]

Adjust the cutoff frequency of the filter. The cutoff frequency for each key and drum sample is determined by adding this value to the filter **Frequency** (Prog 3–1–1b) of the program that uses this drum kit.

Resonance (Filter Resonance) [–64...+63]

This adjusts the filter resonance. This offset value for each key and drum sample is applied to the filter **Resonance** (Prog 3–1–1b) of the programs that use this drum kit.

DS2(M Hi): (Drumsample2 Mid High)
DS3(M Lo): (Drumsample3 Mid Low)
DS4(Low): (Drumsample4 Low)

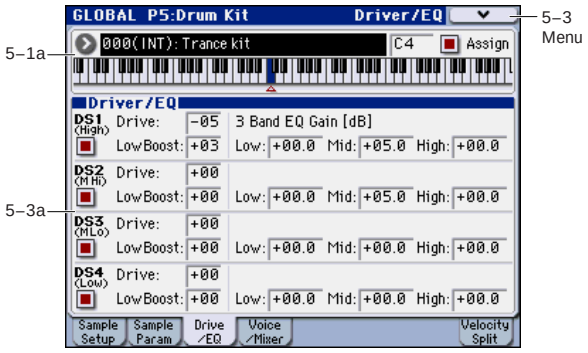
Here you can edit the sample parameters for the second, third, and fourth drum samples. For more information, please see "DS1 (High): (Drumsample 1 High)," above.

▼5–2: Menu Command

- 0: **Write Drum Kits** ☞p.387
- 1: **Rename Drum Kit** ☞p.387
- 2: **Copy Drum Kit** ☞p.388
- 3: **Copy Key Setup** ☞p.388
- 4: **Swap Key Setup** ☞p.388

For more information, please see "Global: Menu Command" on page 382.

5–3: Driver/EQ



Here you can adjust the gain of the three-band EQ for each drum sample. These are offsets that are added to the settings of the program.

5–3a: Driver/EG

DS1 (High): (Drumsample 1 High)

DS1(High) On/Off [Off, On]

This parameter is linked with “5–1b: Drumsample” DS1.

On (checked): Check this if you want to use DS1 (High). The selected drum sample will sound.

Off (unchecked): DS1 (High) will not be used. The drum sample will not sound.

Drive [–99...+99]

This adjusts the drive level. This offset value for each key and drum sample is applied to the driver **Drive** (Prog 4–1a) setting of the programs that use this drum kit.

Low Boost (Driver Low Boost) [–99...+99]

This adjusts the low boost level of the driver. This low boost setting for each key and drum sample is applied to the driver **Low Boost** (Prog 4–1a) setting of the programs that use this drum kit.

3 Band Parametric EQ [dB]

Low [–36.0...+36.0]
Mid [–36.0...+36.0]
High [–36.0...+36.0]

These parameters adjust the gain for each band of the three-band parametric EQ. The gain settings for each key and drum sample are applied to the **LowGain**, **MidGain**, and **HighGain** (Prog 4–8a) settings of the programs that use this drum kit.

DS2(M Hi): (Drumsample2 Mid High)
DS3(M Lo): (Drumsample3 Mid Low)
DS4(Low): (Drumsample4 Low)

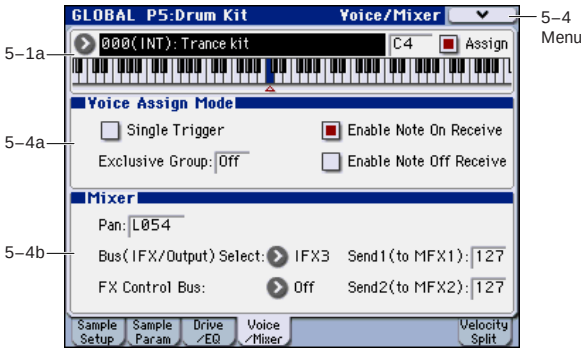
Here you can edit the sample parameters for the second, third, and fourth drum samples. For more information, please see “DS1 (High): (Drumsample 1 High),” above.

▼5–3: Menu Command

- 0: **Write Drum Kits** ☞p.387
- 1: **Rename Drum Kit** ☞p.387
- 2: **Copy Drum Kit** ☞p.388
- 3: **Copy Key Setup** ☞p.388
- 4: **Swap Key Setup** ☞p.388

For more information, please see “Global: Menu Command” on page 382.

5–4: Voice/Mixer



Specify the voice assign, pan, and effect routing etc. for each key of the drum kit.

5–4a: Voice Assign Mode

Single Trigger [Off, On]

On (checked): Even when the same key (note) is played repeatedly, the previous note will be halted before the new note is begun, so that the notes will not overlap. Normally you will leave this unchecked.

Exclusive Group (Exclusive Assign) [Off, 001...127]

001–127: This allows you to assign keys to any of 127 groups. Keys assigned to the same group will be treated as a single group, and will be played monophonically with last-note priority. For example you might assign closed and open hi-hat sounds to the same group so that two or more hi-hat sounds can not sound simultaneously.

Off: Keys will not be grouped. This is the default setting.

Enable Note On Receive [Off, On]

On (checked): Note-on messages will be received. Normally you will check this, but you can uncheck it if you do not want specific notes to sound.

Enable Note Off Receive [Off, On]

On (checked): Note-off messages will be received. Normally you will uncheck this. This parameter is valid when **Hold** (Prog 1–1d) is checked (Hold On). In the case of a drum program, you will normally select Hold On. In this case if **Enable Note Off Receive** is checked, note-off messages will be received, and the sound will stop (the release segment of the EG will begin) when the key is released.

5–4b: Mixer

Drum kits will sound using the settings of the program that is selected in Program mode. **Pan** is valid if **Use DKit Setting** (Prog 4–1c) is checked. **Bus (IFX/Output) Select**, **FX Control Bus**, and **Send 1/2** are valid if **Use DKit Setting** (Prog 8–1c) is checked. Be aware that while editing a drum kit, the edited results will not be reflected unless these settings have been made.

Pan [Random, L001...C064...R127]

Specifies the panning for each key.

L001 places the sound at far left, and **R127** places the signal at far right. With a setting of **Random**, the drum sample will be panned randomly at each note-on.

Bus (IFX/Output) Select [L/R, IFX 1...5, 1...4, 1/2, 3/4, Off]

For each key, specify the bus to which the sound will be sent.

For example, you might send Snare sounds to IFX1 and Kick sounds to IFX2 to apply separate insert effects, and send the remaining sounds to L/R without applying insert effects.

Tip: In most of the preloaded drum kits, the following types of drum instrument have the same **Bus (IFX/Output) Select** settings.

Snares → IFX1
Kicks → IFX2
Other → IFX3

FX Control Bus [Off, 1, 2]

For each key, you can select whether the signal will be sent to FX Control bus (stereo two-channel) FX Ctrl1 or 2.

Normally you will leave this off, but you can use this setting if you want to control an effect by playing a specific key.

You can use this with the following effects:

Vocoders:

156: Vocoder

Compressor and gate-type effects:

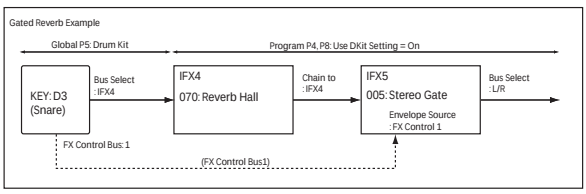
002: Stereo Limiter

005: Stereo Gate

Example: Gated Reverb

This is an example of applying a gated reverb to only a specific snare sound. When using a gate effect on reverb, you may not be able to control the gating timing correctly if you use the extended reverberant sound to control the gate. Normally, you will control the gate using sound from before reverb is applied.

For the key for which you've selected the snare sample, set **Bus (IFX/Output) Select** to IFX4. Also use **FX Control Bus** to send the signal to FX Control Bus 1. In IFX5: Stereo Gate, choose FX Control 1 as the Envelope **Source**. Now you can use a signal other than the input (reverberant sound) to control the gate.



Send1 (to MFX1) **[000...127]**
Send2 (to MFX2) **[000...127]**

For each key, specify the send levels to master effects 1 and 2.

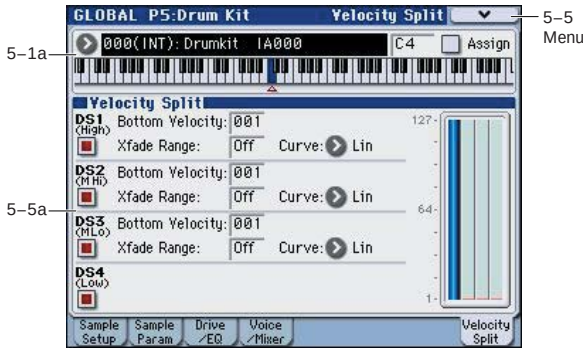
These settings are valid when **Bus (IFX/Output) Select** is set to L / R or Off. If **Bus (IFX/Output) Select** is set to IFX1–5, the send level to master effects 1 and 2 will be determined by the Program, Combination, or Sequencer mode P8: Insert FX page parameters **Send1** and **Send2** which are located after the sound passes through IFX1–5.

▼5–4: Menu Command

- 0: **Write Drum Kits** ☞p.387
- 1: **Rename Drum Kit** ☞p.387
- 2: **Copy Drum Kit** ☞p.388
- 3: **Copy Key Setup** ☞p.388
- 4: **Swap Key Setup** ☞p.388

For more information, please see “Global: Menu Command” on page 382.

5–8: Velocity Split



5–8a: Velocity Split

This page graphically shows the zone and crossfade settings. Edit the drum sample settings while watching both the Sample Setup page and the Velocity Split page.

DS1(High): (Drumsample1 High)

DS1(High) On/Off **[Off, On]**
Bottom Velocity **[001…127]**
Xfade Range **[Off, 001…127]**
Curve **[Lin(Linear), Pwr(Power), Lyr(Layer)]**

In the section “DS1 (High): (Drumsample 1 High)” of “5–1b: Drumsample” on page 376, please see DS1 (High) On / Off, Bottom Vel (Bottom Velocity), Xfd (Xfade Range), and Xfade Curve.

DS2(M Hi): (Drumsample2 Mid High)
DS3(M Lo): (Drumsample3 Mid Low)
DS4(Low): (Drumsample4 Low)

“5–1b: Drumsample” on page 376, please see DS2(M Hi): (Drumsample2 Mid High), DS3(M Lo): (Drumsample3 Mid Low), and DS4(Low): (Drumsample4 Low).

▼5–8: Menu Command

- 0: **Write Drum Kits** ☞p.387
- 1: **Rename Drum Kit** ☞p.387
- 2: **Copy Drum Kit** ☞p.388
- 3: **Copy Key Setup** ☞p.388
- 4: **Swap Key Setup** ☞p.388

For more information, please see “Global: Menu Command” on page 382.

Global: Menu Command

Tip: In each page, you can access (or switch on / off) up to the first ten menu commands by holding down the ENTER switch and pressing the corresponding numeric key 0–9.

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

Write Global Setting

This command writes Global mode settings (except for Drum Kits).

1. **Select "Write Global Setting" to open the dialog box.**

2. **To write the data, press the OK button. To cancel without writing, press the Cancel button.**

You can also use the SEQUENCER REC / WRITE switch to write data in the same way as the **Write Global Setting** command.

Press the SEQUENCER REC / WRITE switch to access the **Update Global Setting** dialog box, and press the OK button to write the data.

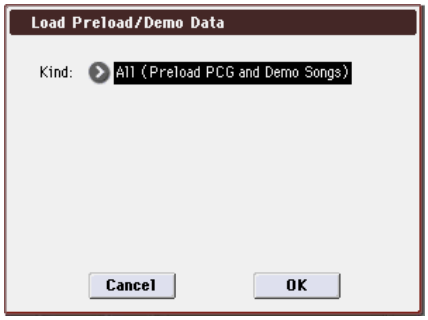
Note: To write a Drum Kits, execute the appropriate menu command. (**Write Drum Kits**)

Load Preload/Demo Data

This command loads the preloaded data and demo song data into the M3.

Before you can load this data, you need to use **Memory Protect** (Global 0–1b) to turn off (un-check) the protect setting for the type of data you want to load. If you execute this operation with the protect setting checked, the display will indicate "Memory Protected," and the data cannot be loaded.

1. **Select "Load Preload/Demo Data" to open the dialog box.**



2. **Use Kind to select the type of data you want to load.**

All (Preload PCG and Demo Songs)	All PCG (program, combination, drum kit, global setting, RADIAS Formant Motion Data: if the EXB-RADIAS is installed) data and demo song data
All Preload PCG	All PCG data
All Demo Songs	All demo song data
Program	Program data
Combination	Combination data
DrumKit	Drum kit data
Global Setting	Global setting data
RADIAS Formant Motion Data*	RADIAS formant motion data

*: You can select RADIAS Formant Motion Data if the EXB-RADIAS option is installed. If RADIAS Formant Motion Data is selected, you'll be able to select All or Single in step 3. Refer to "EXB-RADIAS for M3 owner's manual."

3. **If you selected Program, Combination, Drum Kit, or Arpeggio Pattern as the Kind, specify the range of data that you want to load.**

All: load all data

Bank: load an individual bank

Single: load one item of data

4. **If you're loading Bank or Single, use To to specify the loading-destination.**

5. **Press the OK button to load the data, or press the Cancel button if you decide to cancel the operation.**

If you've selected DrumKit as the **Kind** and execute this with U-A–G selected as the loading destination Bank, drum kits 000–015 will be loaded.

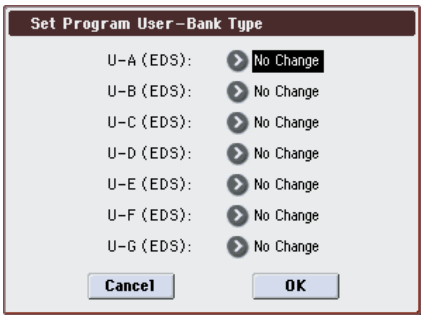
Set Prog User-Bank Type

Here you can assign each program bank USER-A–G for use by either EDS programs or RADIAS programs.

Note: You **can't select RADIAS** if the EXB-RADIAS option is not installed.

Before you execute, uncheck Program in **Memory Protect** (Global 0–1b). If you execute with this item still checked, a message of "Memory Protected" will appear, and the data will not be loaded.

1. **Select "Set Prog User-Bank Type" to open the dialog box.**



This indicates the current type for each user bank.

2. **Specify the bank type for each bank.**

No Change: The bank type will not be changed. The data will remain unchanged.

EDS: The bank type will be set to EDS.

RADIAS: The bank type will be set to RADIAS.

If you execute with a setting other than No Change, all data in that bank will be initialized – even if you have specified the same bank type as before. If you want to keep your data, you must first use **Save All** or "Save PCG" to save it.

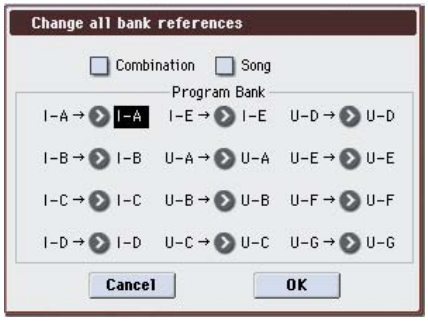
3. **Press the OK button to execute, or press the Cancel button to cancel. A dialog box will ask you to confirm the operation.**

4. **Verify the settings. Then press the OK button to execute, or press the Cancel button to cancel.**

Change all bank references

This command changes all program banks specified for timbres in combinations or tracks of songs.

1. **Select “Change all bank references” to open the dialog box.**



2. **If you wish to change bank references for combinations, check Combination.**

If you wish to change bank references for songs, check **Song**.

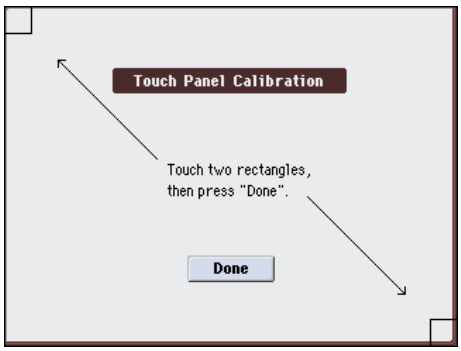
3. **In Program Bank, specify the replacement for each bank.**
4. **To execute the Change All Bank References command, press the OK button. To cancel, press the Cancel button.**

If you change two or more different banks to the same bank, it will not be possible to use this function to change them back to different banks. Be careful that the change destination banks do not overlap.

Touch Panel Calibration

If input via the display does not work as you expect, or if the edit cell moves to a location other than where you pressed the display, use this command to adjust the sensitivity of the display.

1. **Select “Touch Panel Calibration” to open the dialog box.**



2. **If you are unable to select this command from the menu, go to the main Global page as normal, and then hold down the ENTER button and press 4 on the numeric keypad. This will call up the calibration dialog.**
3. **Press the square in the upper left of the display. When your touch has been detected correctly the square will be highlighted.**
4. **Press the square in the lower right of the display. When your touch has been detected correctly the square will be highlighted.**
5. **Press the Done button.**

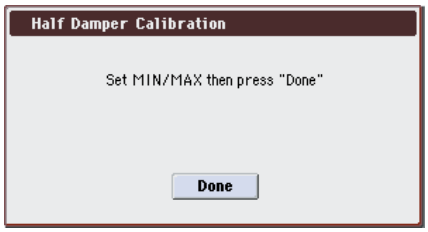
If your touch was not detected correctly, an error message will appear. Please perform the procedure once again.

Half Damper Calibration

If a damper pedal that supports half damper (the DS–1H option) is connected to the DAMPER jack, here’s how you can adjust the sensitivity if the damper effect is not applied appropriately.

Since the half-damper pedal is highly sensitive, please use the optional DS–1H. Other pedals may not produce the appropriate effect, or may be impossible to calibrate correctly.

1. **Connect a half-damper pedal to the DAMPER jack.**
2. **Select “Half Damper Calibration” to open the dialog box.**



3. **Press the half-damper pedal, and then release your foot from the pedal.**
4. **Press the Done button.**

If the adjustment could not be performed correctly, an error message will be displayed. Please perform the procedure once again.

Pad Calibration

This adjusts the velocity sensitivity of the pads.

1. **Select “Pad Calibration” to open the dialog box.**

2. **Press the center of each pad as lightly as possible.**
3. **Press the Done button.**

If the calibration could not be performed correctly, an error message will appear. Please perform the procedure again.

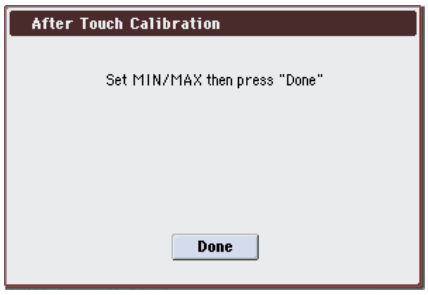
After Touch Calibration

You can adjust the aftertouch sensitivity of M3 (KYBD-61 / 73 / 88) keyboard.

When this instrument is shipped from the factory, the aftertouch sensitivity is adjusted to a standard value. In normal use, you won’t need to perform this calibration again.

However, you may customize the aftertouch sensitivity as described below. Try this if you want the aftertouch to be a bit lighter. Play the keyboard from the same position as when you’re actually performing, so that you can adjust the sensitivity ideally for your own playing style.

1. **Slowly depress any note and verify that the bar indicator moves from left to right.**



2. **Release the note before the bar reaches the right edge; i.e., release the note at the point where you want the maximum aftertouch effect to occur.**
3. **Press the Done button.**

If the adjustment could not be made correctly, an error message will appear. Perform the adjustment once again.

If you want to restore the original setting, perform the following adjustment.

1. **Slowly depress any note until the bar indicator moves all the way to the right edge.**
2. **Press the Done button.**

Note: This sensitivity setting cannot be adjusted for each individual key.

Update System Software

Here you can update the M3 system.

You can download the latest system file onto your computer from the Korg website (http://www.korg.com). For details, please see the Korg website.

Before you begin the system update, you should back up your important data on external USB storage media.

1. **To the M3's USB A connector, connect the USB storage device (e.g., USB flash memory) that contains the system file.**

Note: For details on how to copy the system file to your USB storage device, please see the explanation on the download page of the Korg website.

Only the device containing the system file should be connected to the USB A connector. Disconnect all other devices.

2. **Access the Global P0: Basic Setup page.**
3. **Select "Update System Software" to open the dialog box.**

4. **Press the OK button to execute the update.**

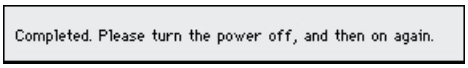
A dialog box will ask you for confirmation. Press the OK button to begin updating the system software.

Note: If an error message of "File/Path not found" appears, press the OK button and proceed again from step 3.

While the system is being updated, do not touch the M3' switches, and never turn off the power. If the power is accidentally turned off while the system is being loaded, the M3 may become inoperable. If this occurs, please contact your local Korg distributor.

5. **When the update has been completed, a dialog box with the following message will appear.**

The system update has now been installed. To complete the process, you must now restart the M3. Please turn the power off, and then on again.



6. **Power-off the M3. Wait approximately ten seconds, and then turn the power on again.**

When you turn the power off and then on again, wait approximately ten seconds before you turn on the power.

The system version number is shown in the lower center of the opening screen. Verify that it is correct.

Dump:

Dump Program

Dump Combination

Dump Drum Kit

Dump Global Setting

Dump Sequencer

Dump Drum Track Pattern

Dump Formant Motion

These commands allow the M3 internal data to be transmitted to another M3, MIDI data filter, or computer in the form of MIDI System Exclusive data.

Select the desired command (please see the following table), and a dialog box will appear. Then, select the bank or timbre etc. of the data to be dumped, and press the OK button.

Dump Program	Programs of all banks, programs of one bank, one program
Dump Combination	Combinations of all banks, combinations of one bank, one combination
Dump Drum Kit	All drum kits, one drum kit
Dump Global setting	Global settings (except for the Drum Kits of Global mode)
Dump Sequencer	All song data and cue list data
Dump Drum Track Pattern	All drum track user pattern, one drum track user pattern
Dump Formant Motion	All formant motion data, one formant motion data

Sending SysEx data dumps

Do not touch the M3's switches or turn off the power while data is being transmitted.

Sending a data dump

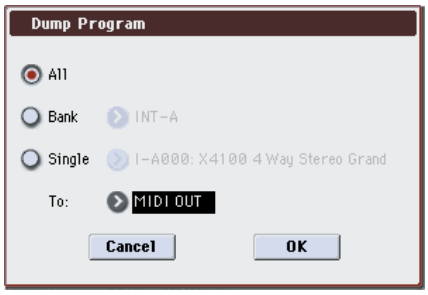
1. **Connect the M3 to the device that will receive the data dump.**

If you want to transmit the data to a computer that is able to receive MIDI exclusive messages, connect the M3's USB B connector to your computer's USB connector. (See page 614)

If you want to transmit the data to another M3 or to a MIDI data filer, connect the M3's MIDI OUT connector to the MIDI IN connector of the receiving device. (See page 614)

2. **Select Global P1: MIDI page.**
3. **The following illustration shows the dialog box that will appear when Dump Program is selected.**

If To dump one bank select **Bank**, or to dump one program select **Single**.



4. Use the To field to select the output connector that will transmit the data.

MIDI OUT: MIDI OUT connector

USB: USB B connector

5. Press the OK button to transmit the data.

While the data is being transmitted, the display will indicate "Now Transmitting MIDI Data."

The size of the data and the time required for transmission will depend on the type of data.

The following table shows the size of each data dump, and the time required (MIDI).

Type of data to be dumped	Data size (Bytes)	Time required (Sec.)
Program All	3077950...8002670	985.0...2560.9
Program Bank (EDS+RADIAS)	615590	197.0
Program Single (EDS)	4829	1.6
Program Single (RADIAS)	4216	1.4
Combination All	15343776	4910.1
Combination Bank	1095984	350.8
Combination Single	8582	2.8
Drum Kit All	2113200	676.3
Drum Kit Single	14675	4.7
Global Setting	31385	10.1
Sequencer	33839...1999036	10.9...639.7
Drum Track Pattern All	47055...787908	15.1...252.2
Drum Track Pattern Single	55...740908	0.1...237.1
RADIAS Formant Motion All*	224872	72.0...152.0
RADIAS Formant Motion Single*	14062	4.5...9.5

Note: More time will be required if the song data contains System Exclusive events, since these must be converted.

When performing a data dump from the M3 onto a MIDI data filer, do not transmit multiple data dumps together. If multiple data is saved together, the M3 will have less than the required time (right column in the table above) to write the data into memory, and will be unable to receive all of the data correctly.

*: RADIAS Formant Motion can be selected and executed only if the EXB-RADIAS option is installed.

Receiving SysEx data dumps

Do not touch the M3's switches or turn off the power while data is being received.

Before receiving MIDI data, we recommend that you close any open dialog box or menu, with the exception of the Media mode menu command **Save Exclusive (Receive and Save MIDI System Exclusive Data)** dialog box.

After a data dump is received, the M3 will require approximately one second to process the data and write it into memory. During this time, the display will show the message, "Now writing into internal memory." While this message is shown, you must under no circumstances turn off the power of the M3. If the power is turned off during this time, the M3 may fail to operate correctly when the power is turned on again.

In this case, hold down the RESET CONTROLS switch together with switches 1 and 2, and turn on the power. However, this will initialize the contents of memory.

Transmission and reception of MIDI data is also impossible during this time. When receiving multiple data dumps in succession, you must allow enough time between each data dump for the message to disappear from the screen. (see table below)

Processing time (MIDI) for writing into memory

Type of data dumped	Processing time for writing into memory
All Programs	Approximately 1 second (each bank received)
All Combinations	Approximately 1 second (each bank received)
All Drum Kits	Approximately 1 second
Global Setting	Approximately 1 second
Sequencer	Approximately 1 second
Drum Track Pattern	Approximately 1 second
RADIAS Formant Motion	Approximately 80 seconds

MIDI cannot be transmitted or received while data is being written into internal memory. Also, transmission of Active Sensing (FEh) from the MIDI OUT connector and USB B connector will be halted.

Caution when receiving Dump Program:

- If the EXB-RADIAS is not installed, RADIAS bank type data will not be received.
- When receiving a single program dump, the data will not be received if the bank type of the received program is different. For U-A–G banks, use Global **Set Prog User-Bank Type** to specify the correct bank type, and then receive the data once again.
- When receiving Program All or Program Bank dumps, be aware that the existing data will be overwritten if data of a different bank type is received into U-A–G.

Receiving a data dump

1. Connect the M3 with the device that will transmit the data dump.

If you're receiving data from a computer that can transmit MIDI exclusive data, connect the M3's USB B connector to your computer's USB connector. (See page 614)

If you're receiving data from another M3 or from a MIDI data filer, connect the M3's MIDI IN connector to the MIDI OUT connector of the transmitting device. (See page 614)

2. Set the MIDI channel of the transmitting device to match the M3's global MIDI channel MIDI Channel (Global 1–1a).

If you want the M3 to receive data that was previously transmitted to a MIDI device, you must set the global MIDI channel of the M3 to the same global MIDI channel that was used when the data was transmitted.

To set the MIDI channel of the transmitting device, please see the owner's manual for that device.

3. Either check Enable Exclusive (Global 1–2b), or display one of the menu commands of this page.

When one of these menu commands is displayed, data dumps can be received regardless of the **Enable Exclusive** setting.

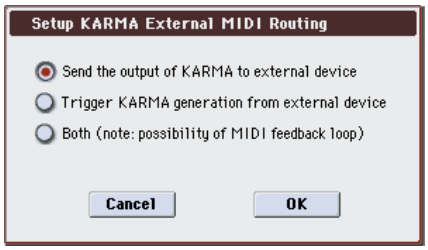
4. Transmit the data from the other device. For the procedure, please see the owner's manual for the device you are using.

While the data is being received, the display will indicate "Now receiving MIDI data."

Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)

When using the KARMA function in conjunction with an external sequencer, you can execute this command with the appropriate setting to automatically make settings for Global mode **Enable KARMA Module to MIDI Out**, **Enable MIDI In to KARMA Module**, and **Local Control On** (Global 1–1a).

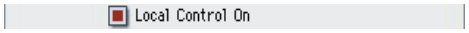
1. **Select "Setup KARMA Ext. MIDI" to open the dialog box.**

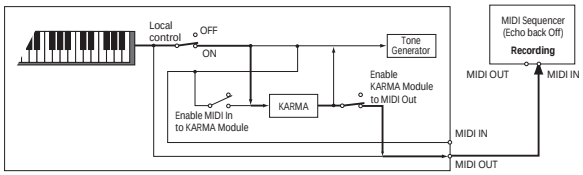


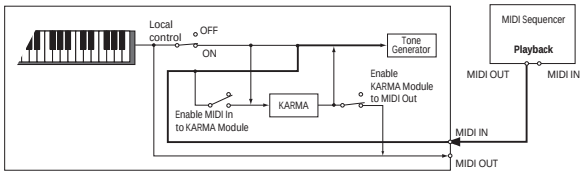
2. **Select the desired routing.**

Send the output of KARMA to external device/sequencer

Choose this if you want the phrases generated by the M3's KARMA Module to be sent via MIDI to control your external MIDI device or to be recorded on your external MIDI sequencer.



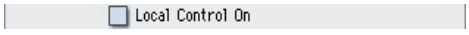


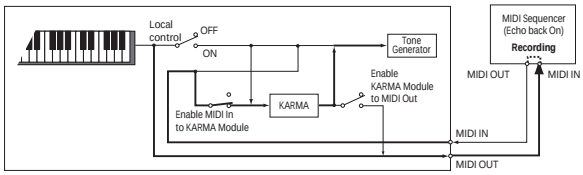


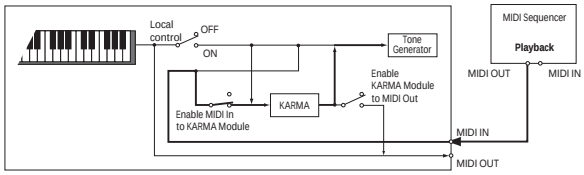
Trigger KARMA generation from external device/ sequencer

Choose this if you want the KARMA Module to be triggered by MIDI input from an external MIDI device or MIDI sequencer.

You can also select this if you want only the M3's keyboard performance that triggers the KARMA Module to be sent as MIDI output and recorded on an external sequencer, and then use the echo-back or playback from the external sequencer etc. to trigger the KARMA Module.







Both (note: possibility of MIDI feedback loop)

Choose this if you want to make both of the above settings.

Be aware that in some cases, the phrases generated by the KARMA Module will pass through the external MIDI device (MIDI sequencer) and re-trigger the KARMA Module – producing a MIDI feedback loop that may cause undesired operation. You will need to manage the MIDI signal routing to ensure that MIDI feedback does not occur, for example by disabling MIDI IN→OUT echo-back in your MIDI sequencer.

3. **Press the OK button to execute the Setup KARMA Ext. MIDI command, or press the Cancel button to cancel.**

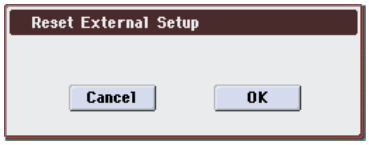
Reset External Setup

This command initializes the external controller settings.

All settings for Switches 1–8, Sliders 1–8, and Pads 1–8 will be initialized for the selected setup number.

Channel = Gch
Assign = Off
Pad Only **Velocity** = 127

1. **Select the setup number "Setup" that you want to reset.**
2. **Select "Rename External Setup" to open the dialog box.**

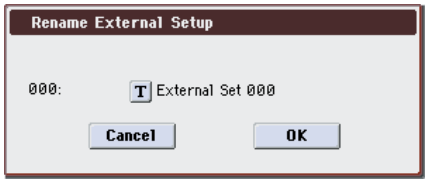


3. **Press the OK button to execute Reset External Setup, or press the Cancel button to cancel.**

Rename External Setup

This lets you rename the external controller setup.

For more information, please see "Editing names" on page 197 of the Operation Guide.



Reset Controller MIDI Assign

This automatically assigns the MIDI control change messages for each controller of the P2: Controllers– MIDI CC# Assign page.

1. **Select “Reset Controller MIDI Assign” to open the dialog box.**

2. **Set the To field to the desired reset method.**

All Off: All settings will be Off.

Default Setting: The KARMA controls and pads will all be set to Off; the X–Y control will be set to its default CCs.

CC Default: The parameters will be reset to the typical settings, including the standard settings for the pads and the KARMA sliders and switches.

If you want to record KARMA controllers in Sequencer mode, or use the controllers to control an external MIDI device, we recommend using this setting.

(You are also free to assign different MIDI control change messages to the controllers, if you wish.)

The default values are shown in the table below.

3. **Press the OK button to execute the reset command, or press the Cancel button to cancel.**

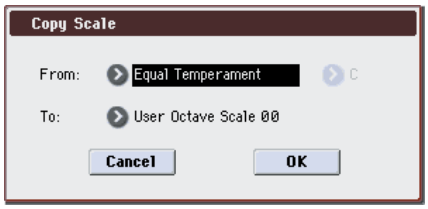
Reset Controller MIDI Assign Default

Controllers \ to		Default Setting	CC Default
KARMA Controllers	On/Off	Off	(CC#14)
	Latch	Off	(CC#31)
	Scene	Off	(CC#30)
	SW 1	Off	(CC#102)
	SW 2	Off	(CC#103)
	SW 3	Off	(CC#104)
	SW 4	Off	(CC#105)
	SW 5	Off	(CC#106)
	SW 6	Off	(CC#107)
	SW 7	Off	(CC#108)
	SW 8	Off	(CC#109)
	Slider 1	Off	(CC#22)
	Slider 2	Off	(CC#23)
	Slider 3	Off	(CC#24)
	Slider 4	Off	(CC#25)
	Slider 5	Off	(CC#26)
	Slider 6	Off	(CC#27)
	Slider 7	Off	(CC#28)
	Slider 8	Off	(CC#29)
X–Y	X (X–Y MODE)	(CC#118)	(CC#118)
	Y (X–Y MODE)	(CC#119)	(CC#119)
Pads (CC and Note)	Pad 1	Off	(CC#110)
	Pad 2	Off	(CC#111)
	Pad 3	Off	(CC#112)
	Pad 4	Off	(CC#113)
	Pad 5	Off	(CC#114)
	Pad 6	Off	(CC#115)
	Pad 7	Off	(CC#116)
	Pad 8	Off	(CC#117)

Copy Scale

This command copies data from a preset scale or between user scales. For details on the preset scales, please see **Type** (Prog 1–2b).

1. **Select “Copy Scale” to open the dialog box.**



2. **Use From to select the copy-source scale.**

If you select Pure Major or Pure Minor, specify the **Key** (located at the right) as well.

Stretch cannot be selected if **To** is User All Notes Scale.

3. **In To, selects the copy destination scale.**
4. **To execute the Copy Scale command, press the OK button. To cancel, press the Cancel button.**

Write Drum Kits

This saves all drum kits 000 (INT)–143 (U–G).

You must write an edited drum kit if you want to keep it. Edited drum kits cannot be recovered if you turn off the power before saving them.

1. **Select “Write Drum Kits” to open the dialog box.**

2. **Press the OK button to execute the Write Drum Kit command, or press the Cancel button to cancel without executing.**

Note: You can also use the SEQUENCER REC / WRITE switch to write in the same way as the **Write Drum Kit** command. Press the SEQUENCER REC / WRITE switch to access the Update Drum Kit dialog box, and write the drum kit. In this case, the data will be written to the currently selected drum kit.

Rename Drum Kit

This renames a drum kit.

For more information, please see “Editing names” on page 197 of the Operation Guide.

Copy Drum Kit

This command copies the settings of another drum kit to the currently-edited drum kit.

Note: Drum kits 144 (GM)–152 (GM) cannot be edited, but you may copy them to another drum kit and then edit them.

1. **Select "Copy Drum Kit" to open the dialog box.**

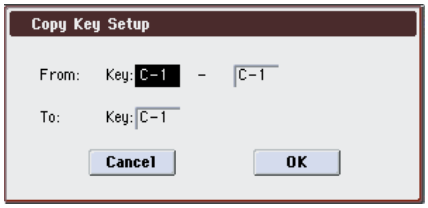
2. **Select the copy source drum kit (From).**
3. **To execute the Copy Drum Kit command press the OK button. To cancel without executing press the Cancel button.**

When you execute **Copy Drum Kit**, the settings of the currently selected drum kit will be overwritten.

Copy Key Setup

This command copies the settings of an individual key to another key. You can also copy settings from two or more contiguous keys at once.

1. **Select "Copy Key Setup" to open the dialog box.**

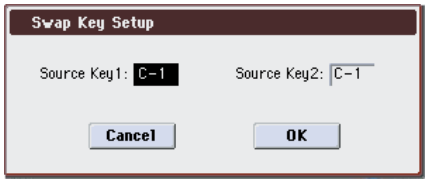


2. **In From Key, select the range of keys that you wish to copy.**
3. **In To Key, select the copy destination key. If you selected two or more keys in From Key, their settings will be copied to the keys starting at To Key and continuing upward.**
4. **To execute the Copy Key Setup command, press the OK button. To cancel, press the Cancel button.**

Swap Key Setup

This command exchanges (swaps) the settings of one key with the settings of another key.

1. **Select "Swap Key Setup" to open the dialog box.**



2. **Use Source Key 1 and Source Key 2 to specify the keys whose settings you want to swap.**
3. **Press the OK button to execute the Swap Key Setup command, or press the Cancel button to cancel.**

Media mode

In this mode you can save internal memory data or user sample RAM data to a connected external USB device, or load data from media into internal memory or user sample RAM. You can also copy or delete files, or format media.

You can also edit WAVE files, or make a list of multiple WAVE files and use them to create an audio CD on a CD-R/RW drive connected to the USB A connector.

The following media can be used.

USB storage devices (e.g., hard disks), removable disks

The M3 supports MS-DOS FAT16 and FAT32 disk formats.

FAT 16 supports up to 4 GB; FAT 32 supports up to 2 Terabytes (2,000 GB).

(For details on connecting USB devices, please see "USB connection and setup" on page 30 of the Operation Guide)

CD-R/RW

The M3 can read and write UDF format CD-R/RW disks. For more information, please see "CD-R/RW disks on the M3" on page 634.

CD-DA (audio data) can be recorded/played, and ISO9660 (level 1) format can be read.

Files, directories, and icons

The M3 manages data on media in a hierarchical manner, using files and directories. The contents of a file (whether it is a file or a directory) are indicated not only by the name but also graphically by an icon. Files and directories have differently shaped icons.

The M3 collectively refers to files and directories recognizable by MS-DOS (readable by a MS-DOS computer), and UDF format and ISO9660 format files and directories as "DOS files" and "DOS directories." Different types of DOS file are distinguished by the extension added to their filename.

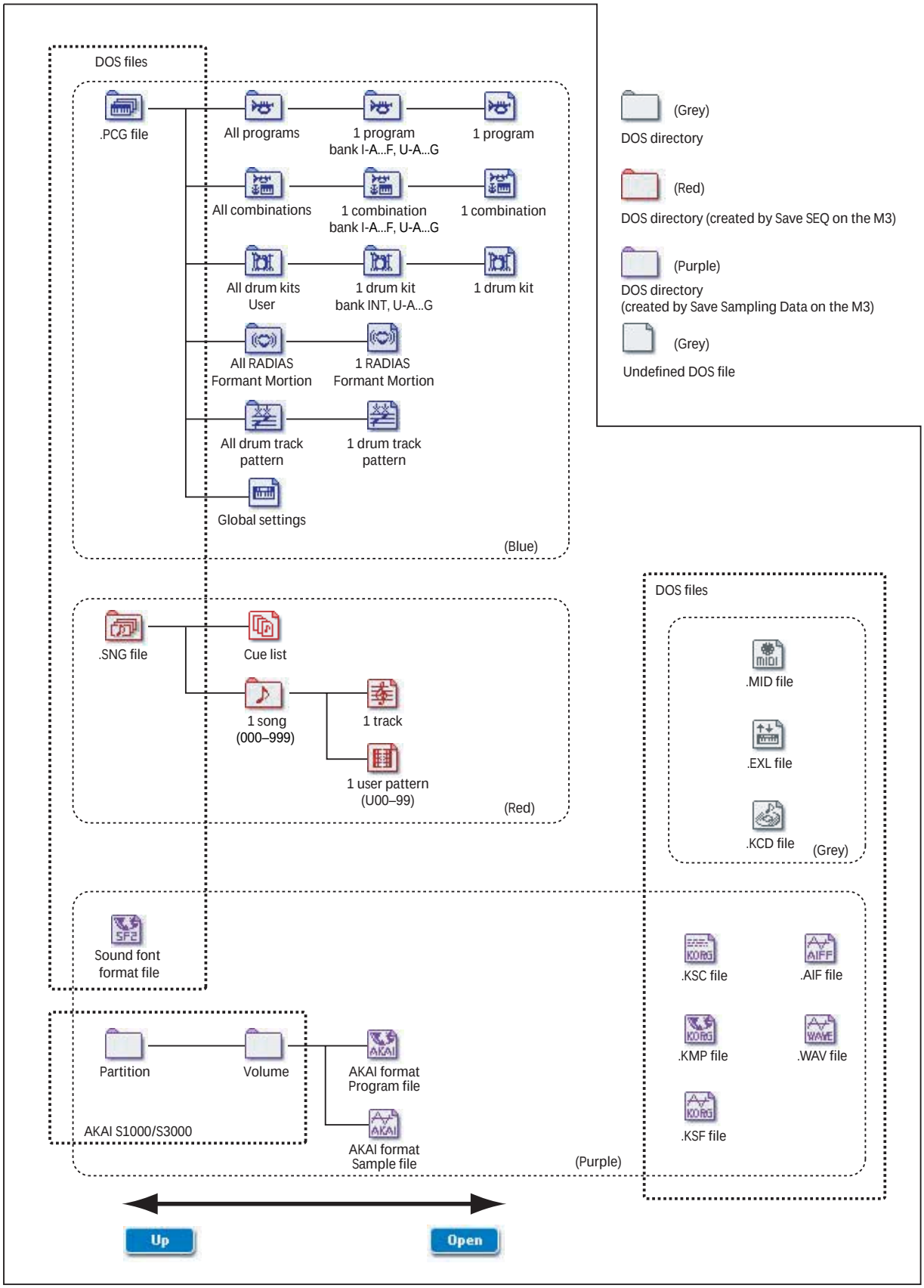
In the case of a DOS file with an extension other than listed below, selecting **Load selected** to access the dialog box will cause the file to be considered to be a Standard MIDI File (SMF). However, you can't load files that are not in SMF format.

Extension	Type
.PCG	Programs, combinations, drum kits, global settings, RADIAS formant motions, drum track patterns (dedicated M3 format)
.SNG	Song, cue list (dedicated M3 format)
.MID	Standard MIDI File (SMF format)
.EXL	MIDI exclusive data
.KMP	Korg Multisample Parameter file (Korg format)
.KSF	Korg Sample file (Korg format)
.KSC	Korg Script file (Korg format)
.AIF	AIFF file
.WAV	WAVE file
.SF2	Sound Font file
.KCD	Audio CD track list (dedicated M3 format)

When M3 data is saved, one of these filename extensions will be added automatically, according to the type of data. If these filename extensions are modified on a computer, the file will be treated as an undefined file when it is reloaded back into the M3, and will be handled as a Standard MIDI File.

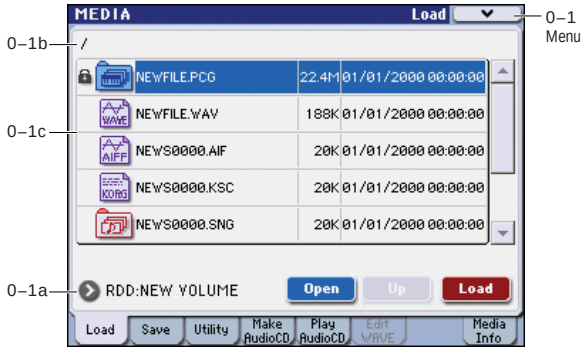
Files handled by the M3 have the shown in the structure (see next page). Since .PCG and .SNG files can be opened to divide their contents, they are displayed as directory icons. Different colors are used to indicate different types of file.

Files that can be loaded



Media: File

0–1: Load



Here you can load the selected file or directory into internal memory or user sample RAM. Use the **Open button** and **Up buttons** to select the desired file or directory, and press the Load button to load it. You can also load data by using the **Load selected** menu command.

0–1a: Media Select, Command buttons

Media Select [CDD, HDD, RDD: name]

Selects the USB media (hard disk, CD, etc.) that you will use for loading / saving.

This shows the type of device connected to the USB A connector, and the volume label that is assigned to the media.

Note: The media of the connected USB device is detected when you power-on the M3. The M3 does not automatically detect the media when you insert media into the USB device after powering-on the M3. You'll need to execute the 0–8: Media Information command "Scan USB device" on page 419 in this case.

Device types:

CDD: CD-ROM, CD-R / RW drive

HDD: Hard disk drive

RDD: Removable disk drive (e.g., magneto-optical)

Volume label:

No Label: Media that has no volume label

Unformatted: Media that has not been formatted

No Disc: Media is not inserted in the CD-ROM or CD-R / RW drive

No Media: Media is not inserted in the USB devices media drive (other than a CD-ROM or CD-R / RW drive)

The volume label display of a CD-R / RW drive will depend on the inserted media and the page.

Blank Disc: Blank media. (If you want to use this disc as a packet-writing-compatible disc, you must format it (see "Format" on page 413). If you want to use this disc to create an audio CD, you do not need to format it.)

Media volume label: Media that contains data

Audio CD: Audio CD

Unfinalized: An audio CD that has not been finalized

Audio CD or **media volume label:** Media that contains both data and audio. In this case, "Audio CD" will be displayed in both the Make Audio CD page and the Play Audio CD page, and the volume label of the media will be displayed in all other pages.

Open

When you press the Open button, the directory will open, and the current directory will move one level downward.

This can be used when a directory has been selected in the directory window.

Up

When you press the Up button, the directory will move one level upward.

Load

This command loads the file or directory that was selected in the "Directory Window" (Media 0–1c) into the internal memory.

When you press the Load button, a dialog box will appear. The specific contents of the dialog box will depend on the file you are loading. This is the same function as the **Load selected** menu command.

For more information, please see "Load selected" on page 398.

PCG Preview

If you selected just a single program, combination, or drum kit from within a .PCG file (i.e., from an opened bank), you can listen to the sound directly from the media without having to load the file. If you've selected a combination, the timbres in the combination will use the M3's internal programs. In the case of a user drum kit, the sound parameters of the program that was selected before entering Media mode will be used.

WAVE Preview

In the Load, Save, and Utility pages, you can select a WAVE file whose sampling rate (frequency) is 44.1 kHz or 48 kHz, and press the SAMPLING START / STOP switch to play back the sample. If you select a WAVE file that can be played back, the display will indicate "Sampling START / STOP plays selected file."

While a WAVE file is playing back, the M3 will not sound in response to its keyboard or to note data received at MIDI IN. The KARMA will also stop.

0–1b: Current Directory

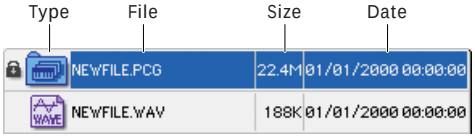
Current Directory

The directory currently selected for processing is referred to as the "current directory."

The display will show the full path name of the directory. A slash " / " character is used as the delimiter between directory levels. To change the current directory, use the Open button and Up button (Media 0–1a).

0–1c: Directory Window

This shows file information for the current directory. You can select a file or directory in this window.



Type

This icon indicates the type of file.

For details on how the icons correspond to the different file types, please see the diagram “Files that can be loaded” on page 390.

Lock [Lock, Unlock]

Files and directories with this symbol are locked, and cannot be overwritten, copied, or deleted. Use the **Lock/Unlock selected** menu command to lock or unlock a file or directory.

File

When the menu command **Translation** is off (not checked), this will show the low-level DOS file names.

When **Translation** is on (checked), you’ll see the full names of the Multisample and Sample files (.KMP and .KSF), instead of the abbreviated DOS names.

Size

This is the size of the file, in bytes.

Date

This is the date and time at which the file was saved. From the left, this is the day, year, hour, minute, and second.

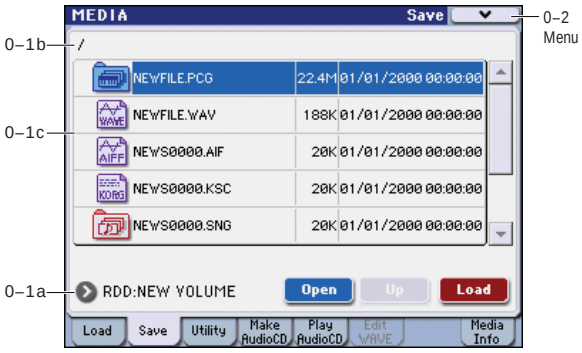
To set the current date and time for the M3 system, use the Utility menu command **Set Date/Time**. For more information, please see “Set Date / Time” on page 413.

▼0–1: Menu Command

- 0: **Hide unknown files** ☞p.398
- 1: **Translation** ☞p.398
- 2: **Lock/Unlock selected** ☞p.398
- 3: **Sort** ☞p.398
- 4: **Load selected** ☞p.398
- 5: **Load PCG (RAM) and Samples** ☞p.407

For more information, please see “Media: Menu Command” on page 398.

0–2: Save



Here you can save various data from internal memory or user sample RAM to a variety of media.

Use the **Open button** and **Up button** to move to the desired directory (i.e., change the current directory), and then select the desired menu command.

When you execute a Save operation, the data will be saved in the same level of the disk hierarchy as the files that are displayed.

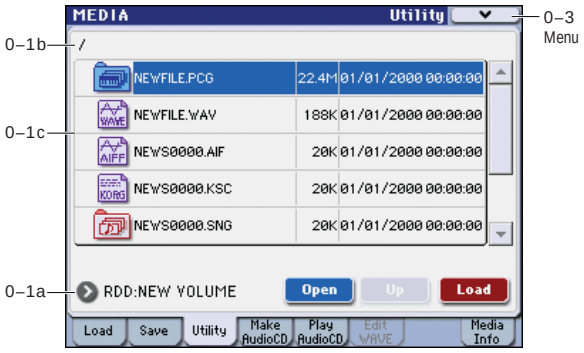
Note: The M3 contains an internal calendar and clock. When you save a file, the date and time will be assigned automatically. The date and time can be set in **Set Data/ Time**.

▼0–2: Menu Command

- 0: **Hide unknown files** ☞p.398
- 1: **Translation** ☞p.398
- 2: **Lock/Unlock selected** ☞p.398
- 3: **Sort** ☞p.398
- 4: **Save All** ☞p.409
- 5: **Save PCG & SEQ** ☞p.409
- 6: **Save PCG** ☞p.409
- 7: **Save SEQ** ☞p.410
- 8: **Save Sampling Data** ☞p.410
- 9: **Save to Standard MIDI File** ☞p.411
- 10: **Save Exclusive** ☞p.411
- 11: **Export Samples as AIF/WAV** ☞p.411
- 12: **Save Audio CD Track List** ☞p.412

For more information, please see “Media: Menu Command” on page 398.

0–3: Utility



Here you can rename, copy, or delete the selected media or file, create a new directory, format, and set the date and time.

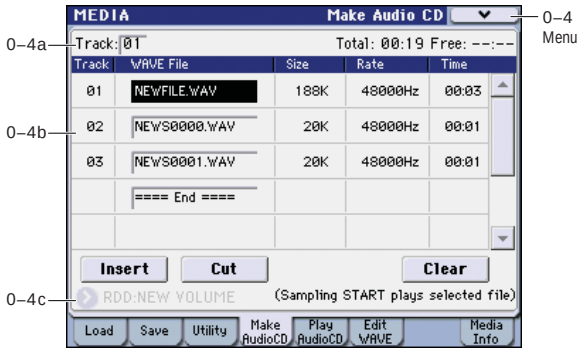
After selecting a media or file, select the desired menu command.

▼0–3: Menu Command

- 0: **Hide unknown files** ☞p.398
- 1: **Translation** ☞p.398
- 2: **Lock/Unlock selected** ☞p.398
- 3: **Sort** ☞p.398
- 4: **Rename** ☞p.412
- 5: **Copy** ☞p.412
- 6: **Delete** ☞p.413
- 7: **Create Directory** ☞p.413
- 8: **Set Date/Time** ☞p.413
- 9: **Format** ☞p.413
- 10: **Convert to ISO9660 Format** ☞p.414
- 11: **Rate Convert** ☞p.414
- 12: **Check Medium** ☞p.414

For more information, please see “Media: Menu Command” on page 398.

0–4: Make Audio CD



Here you can use a CD-R/RW drive connected to the USB A connector to create an audio CD.

You can create an audio CD from WAVE files that you created by resampling the M3’s sequencer playback etc. and saved on an external USB storage device. Use the Insert button and Cut button to arrange your songs in the audio CD track list, and use the menu command **Write to CD** to write them to the CD.

Audio CDs are created from 44.1 kHz or 48 kHz WAVE files.

Note: WAVE files with a sampling frequency of 48 kHz will automatically be converted to 44.1 kHz when written to an audio CD (**Write to CD**).

Note: You can play back a WAVE file by selecting (highlighting) it and pressing the SAMPLING START/STOP switch.

What is Finalize?

In order for an audio CD to be playable on a conventional CD player, or to be played on the M3 (Media 0–5: Play Audio CD page, Sampling P5: Audio CD page), the Finalize operation must be executed after all the desired audio CD tracks have been written to the CD-R/RW disc.

On the M3, the menu command **Write to CD** allows you to simply write the audio CD tracks without finalizing the disc, and this means that other audio CD tracks can be added to that CD-R/RW disc at a later time.

No more audio CD tracks can be added to a disc once that disc has been finalized, so be sure that all desired audio CD tracks have been written before you finalize.

0–4a: Track, Total, Free

Track (Track Select) [01...99, --]

Specifies the track number that will be displayed at the top of the audio CD track list.

If unfinalized media is inserted, this field will indicate the number that follows the last track number on that media. For example if data up to **Track (Track Select) 05** has already been written, this will indicate **06** and following (up to 99).

If “**WAVE file**” **====End====** is at the top, this will indicate **--**. Up to **99** tracks can be registered using the Insert button.

Total [00:00...]

Displays the total time of all WAVE files in the track list.

If the **Total** time is greater than **Free**, writing to CD-R/RW media will not be possible.

Free [00:00..., --:--]

Displays the time that remains on the media inserted in the USB CD-R/RW drive selected by **Media Select**.

If a CD-R/RW drive is not connected, or if it contains no media, or if the inserted media has already been finalized, this will display **--:--**.

0–4b: Audio CD Track List

Track [01...99]

Displays the track numbers of the WAVE files arranged in the audio CD track list. For more information, please see "0–4a: Track, Total, Free" on page 393.

WAVE File

Displays the names of the WAVE files.

To add a WAVE file, place the cursor at the WAVE file of the audio CD track that follows the audio CD track you want to add, and press the Insert button.

To delete an audio CD track, place the cursor at the audio CD track that you want to delete, and press the Cut button.

Note: When you select a WAVE file (highlighted) and press the SAMPLING START/STOP switch, the WAVE file will play back.

Size, Rate, Time

This area displays information on the WAVE files in the audio CD track list.

Size: Data size (bytes)

Rate: Sampling frequency (Hz)

Time: Time (minutes: seconds)

This information will not be displayed if you used **Load .KCD** etc. to load an audio CD track list, and the WAVE file is not found in the specified directory. In this case, use the Cut button to delete that audio CD track, or check whether the media is connected correctly.

0–4c: Media Select, Command buttons

Media Select [CDD: Name]

Selects the USB CD-R/RW drive that contains the media that you will use to create an audio CD.

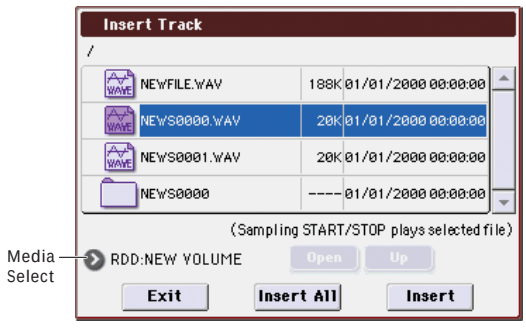
Drives other than a USB CD-R/RW drive cannot be selected here.

Command buttons:

Insert

Adds an audio CD track to the audio CD track list.

Highlight the **WAVE File** edit cell following the audio CD track you want to add, and press the **Insert button** to open the dialog box.



Use **Media Select** to select the media containing the file you want to add, use the Open button and Up button to navigate to the appropriate directory, and select the Wave file.

Insert: Adds the selected (highlighted) WAVE file.

Insert All: Adds all WAVE files in the selected directory whose sampling frequency is 44.1 kHz or 48 kHz. The files will be added in the order in which they are displayed.

When you execute **Insert** or **Insert All**, the WAVE file(s) will be added, and any subsequent audio CD tracks will be moved toward the end of the list.

Note: You can play back a WAVE file by selecting (highlighting) it and pressing the SAMPLING START/STOP switch.

If you press the **Exit button**, the dialog box will close, and no further WAVE files will be added.

You can continue adding as many WAVE files as desired until you press the **Exit button**.

Cut

Deletes the audio CD track.

When you place the cursor at **WAVE File** of the audio CD track that you want to delete, and press the Cut button, that audio CD track will be deleted. Any subsequent audio CD tracks will be moved forward.

Clear

This clears the audio CD track list.

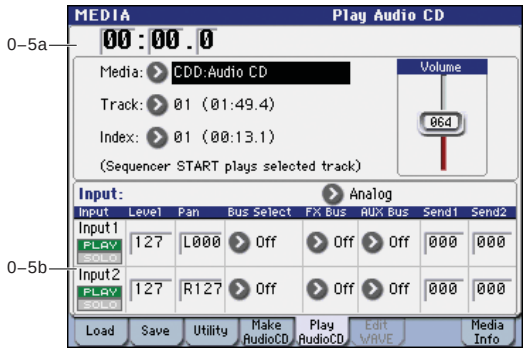
Note: If you want to keep the audio CD track list, use **Save Audio CD Track List** (see page 412) to save the list to the USB storage device.

▼0–4: Menu Command

- 0: **Swap Track** ☞p.415
- 1: **Write to CD** ☞p.415
- 2: **Finalize Audio CD** ☞p.416
- 3: **Erase CD-RW** ☞p.416

For more information, please see "Media: Menu Command" on page 398.

0–5: Play Audio CD



You can use a CD-R/RW drive connected to the USB A connector to play back an audio CD.

It is convenient to use this method to verify a CD that you created in the Make Audio CD page.

If you want to monitor the audio, connect the CD-R/RW drive's audio output jacks (or headphone jack) to the M3's AUDIO INPUT 1,2 jacks. Alternatively, you can monitor the audio by connecting the CD-R/RW drive's S/P DIF OUT jack to the M3's S/P DIF IN jack.

If your drive does not have audio output jacks, a headphone jack, or an S/P DIF OUT jack, you won't be able to monitor the audio.

The audio CD will play back according to the "0–5b: Audio Input" setting.

It is not possible to play back an audio CD that has not been finalized.

The audio CD can be controlled by the SEQUENCER switches.

START/STOP switch	Play/Stop
FF>> switch	Fast-forward
<<REW switch	Rewind
PAUSE switch	Pause
LOCATE switch	Return to the beginning of the track

0–5a: Audio CD Play

Location [(00:00.0...)]

Displays the current location of the audio CD track that is playing. When stopped, this specifies the location at which playback will begin.
When **Track** or **Index** are re-selected, this will be 00:00.0.

Media

Specifies the drive of the audio CD that will be played. Only CD-ROM/R/RW drives can be selected.

Track [01...]

Selects the audio CD track that will be played.

Index [01...]

Specifies the index of the audio CD that will be played. This is valid only if you have selected a track that has index data.

In the case of some CD-R/RW drives, index information cannot be obtained.

Volume [000...127]

Specifies the volume of the audio output from the CD-R/RW drive.

Since some CD-R/RW drives do not support this, the volume may not change when you adjust this setting.

0–5b: Audio Input

Here you can specify the input source, input level, pan, bus, and master effect send level for analog/digital audio devices.

These parameters are linked with Global mode 0–3: Audio. For more information, please see "0–3: Audio" on page 360.

Input **[Analog, S/P DIF, (FireWire)]**

Input1, Input2:

PLAY/MUTE **[PLAY, MUT]**
SOLO On/Off **[Off, On]**
Level **[000...127]**
Pan **[L000...C064...R127]**
Bus Select **[L/R, IFX1...5, 1...4, 1/2, 3/4, Off]**
FX Bus (FX Control Bus) **[Off, 1, 2]**
AUX Bus **[Off, 1, 2, 3, 4, 1/2, 3/4]**
Send1 **[000...127]**
Send2 **[000...127]**

Normally you will set these parameters as follows.

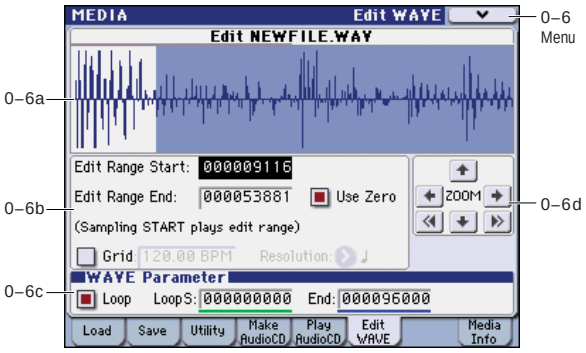
Input1 (L channel):

Level 127, **Pan** L000, **Bus Select** L/R, **Send1**/**Send2** 000

Input2 (R channel):

Level 127, **Pan** R127, **Bus Select** L/R, **Send1**/**Send2** 000

0–6: Edit WAVE



Here you can edit a WAVE file that was saved on a storage device (other than CD-R / RW) connected to the USB A connector. You can also edit a large WAVE file down to a size that can fit in the M3's sample memory (RAM) and then use it in Sampling mode etc.

Size that can be handled in sample memory (RAM)
(at 48 kHz sample rate, mono)

RAM1	33,554,176 samples	11 minutes 39 seconds
RAM2*	134,217,728 samples	46 minutes 36 seconds

* Can be selected if the EXB-M256 is installed

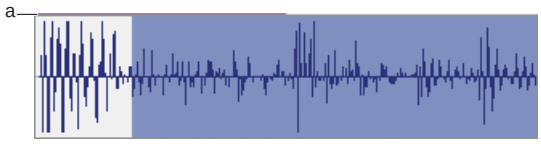
Note: Select the Wave file that you want to edit in either the 0–1: Load, 0–2: Save, 0–3: Utility, or 0–4: Make Audio CD page, and then access this Edit WAVE page.

You cannot edit a WAVE file that exceeds 230,400,000 samples (80 minutes at a sampling rate of 48 kHz).

The sample rates of the WAVE files you can edit are the same as the frequencies supported for KSF files. (See page 631)

0–6a: WAVE file waveform display

This area shows the waveform of the selected WAVE file. The horizontal axis is the address (time axis) and the vertical axis is the level.



The heavy line at the top of the frame (a) indicates which portion of the entire waveform is being displayed. As you zoom-in on the time axis, this line will indicate the portion of the waveform that you zoomed-in on. If you have selected a stereo WAVE file, the L channel is displayed on top, and the R channel below.

If **Edit Range Start** and **Edit Range End** are selected, the region between these two points is displayed in blue. If you've checked **Loop On/Off** in **WAVE Parameter** (Media 0–6c) and have selected **LoopS** and **End**, the **LoopS** is shown as a green vertical line, **End** as a blue vertical line, and the loop region in light blue.

0–6b: Edit Range Start, Edit Range End, Use Zero, Grid

Edit Range Start **[000000000...230399998]**
Edit Range End **[000000001...230399999]**

These parameters define the region (start address and end address) that you are editing. (The units are sample addresses.)

Initially, **Edit Range Start** and **Edit Range End** are set to the values of **LoopS** and **End** if **Loop On/Off** (Media 0–6c) is **On**. If **Loop On/Off** is **Off**, the edit range will be the entire waveform.

The region you specify here is shown in blue in the "WAVE file waveform display." To hear the sound of the selected region, press the **SAMPLING START/STOP** switch. This will play the data of the region specified by **Edit Range Start** and **Edit Range End**.

Only 44.1 kHz or 48 kHz WAVE files can be played back using the SAMPLING START / STOP switch.

Use Zero **[Off, On]**

On (checked): When you set **Edit Range Start**, **Edit Range End**, **LoopS**, or **End** you will only be able to select zero-cross points; i.e., addresses at which the waveform level is at the center ± "zero" line. When you operate the VALUE slider, VALUE dial, or △ / ▽ switches to move to the previous or next zero-cross address. If you use the numeric keys 0–9 to input a value, you will move to the zero-cross point that is nearest that value.

Off (unchecked): You can adjust the **Edit Range Start**, **Edit Range End**, **LoopS**, or **End** address in units of 1. This is the normal mode of operation.

Grid **[Off, On]**
BPM **[000 BPM...480 BPM]**
Resolution **[♩...𝅘𝅥𝅯]**

If **Grid** is **On (checked)**, the "WAVE waveform display" will show grey vertical lines to indicate the tempo (BPM) and resolution (**Resolution**). Use this when you want to cut or copy data or edit a location in units of BPM values or beats.

Note: The grid will start at the beginning of the waveform (if Loop is off) or at the **LoopS** address (if Loop is On).

This has no connection with the setting of the TEMPO knob.

0–6c: WAVE Parameter

Here you can set the **Loop On/Off**, **LoopS**, and **End** setting of the WAVE file. If you edit any of these settings, you must execute the menu command **Save WAVE Parameter**.

Loop On/Off, **LoopS**, and **End** settings are used only when the WAVE file is loaded into sample memory (RAM) in Sampling mode (see "28) Load .WAV" on page 405). This is disabled for WAVE file playback in the 0–1: Load page. In the waveform display of the Edit WAVE page, you can only view the **Loop On/Off**, **LoopS**, and **End** addresses. For more information, please see "0–6a: WAVE file waveform display" on page 396.

Loop On/Off **[Off, On]**

Specifies whether the WAVE file waveform will be looped.

On (checked): The waveform will play repeatedly from **LoopS** to **End**; i.e., "sample start" → **End** → **LoopS** → **End** → **LoopS** ...

Off (unchecked): The waveform will play once from "sample start" → "sample end"; i.e., one-shot playback.

If you change **Loop On/Off** from **Off** to **On**, the "sample start" and "sample end" addresses will be set as the initial values of **LoopS** and **End**.

LoopS **[000000000...]**

End **[000000001...]**

These parameters specify the loop start address and end address that will be used when playing the WAVE file. These points are valid only if Loop is on. The numerical values are sample addresses. The addresses you specify here are shown as vertical gray lines in the "WAVE file waveform display."

Note: If **Loop On/Off** is **On**, the **LoopS** and **End** values will be the initial values of **Edit Range Start** and **Edit Range End**; when you press the SAMPLING START / STOP switch, only the region between **LoopS** and **End** will play back. If you want to check the looping, load the WAVE file into sample memory (RAM) and check it in Sampling mode. If the size of the WAVE file exceeds the capacity of sample memory (RAM) so that you are unable to load it, use the menu command **Truncate** or **Cut** to extract the **LoopS** and **End** region and create a new WAVE file that is small enough to load.

0–6d: ZOOM

Here you can zoom-in or zoom-out on the waveform in the "WAVE file waveform display" in the horizontal axis (address) and vertical axis (level) respectively. (Sampling 1–1e: ZOOM)

Zoom-In / zoom-out will occur starting at the **Edit Range Start**, **Edit Range End**, **LoopS**, or **End** points you specify. (If a different parameter is selected when you zoom-in or -out, the zoom-in / out will be based on the last-selected point. If you re-select the **Edit Range Start**, **Edit Range End**, **LoopS**, or **End** points when the display is zoomed in or out, the display range will be adjusted so as to show the selected point.)

▼0–6: Menu Command

- 0: **Save WAVE Parameter** ☞p.416
- 1: **Truncate** ☞p.416
- 2: **Cut** ☞p.416
- 3: **Clear** ☞p.416
- 4: **Copy** ☞p.416
- 5: **Insert** ☞p.416
- 6: **Mix** ☞p.417
- 7: **Paste** ☞p.417
- 8: **Insert Zero** ☞p.417
- 9: **Normalize/Level Adj.** ☞p.417
- 10: **Volume Ramp** ☞p.417
- 11: **Erase Punch Noise** ☞p.417
- 12: **Time Stretch (Sustaining)** ☞p.418
- 13: **Transfer WAVE To Track** ☞p.419
- 14: **Mono to Stereo** ☞p.419
- 15: **Rate Convert** ☞p.419

For more information, please see "Media: Menu Command" on page 398.

0–8: Media Information

The MEDIA screen shows information about the media selected in **Media Select** (Media 0–1a).

0–8a: Media Information

Volume Label: The volume label of the media.

Drive: This is the specified drive.

Device Type: The type of media.

Product ID: The vendor ID, product, and product version, etc.

Format Type: The type of format. If not formatted, this will indicate "Unformatted."

Total Size: The capacity of the media (in bytes).

Free Size: The free capacity of the media (in bytes).

Write Protect: The write protect status of the media. This will indicate "On" if protected, or "Off" if not protected.

Supports Removable: This will indicate "Yes" if the media of the selected device can be removed (e.g., Compact Flash, CD-R / RW disc, MO disc, removable hard disk). If the media is fixed, this will be "No."

▼0–8: Menu Command

- 0: **Scan USB device** ☞p.419

For more information, please see "Media: Menu Command" on page 398.

Media: Menu Command

Tip: In each page, you can access (or switch on / off) up to the first ten menu commands by holding down the ENTER switch and pressing the corresponding numeric key 0–9.

Tip: While this command is open, the ENTER switch will operate as the OK button and the EXIT switch will operate as the Cancel button.

0–1: Load Menu Command

Hide unknown files

If you select **Hide unknown files**, a check mark will appear at the left of "Hide unknown files." In this state, undefined files will not be shown in the directory window. However, this is valid only if there are DOS files in the current directory.

Translation

When **Translation** is on (checked), you'll see the full names of the Multisamples and Samples on the media, instead of the abbreviated DOS names.

Note that on media, Multisamples are stored as .KMP (Korg Multisample Parameter) files, and Samples are stored as .KSF (Korg Sample Format) files.

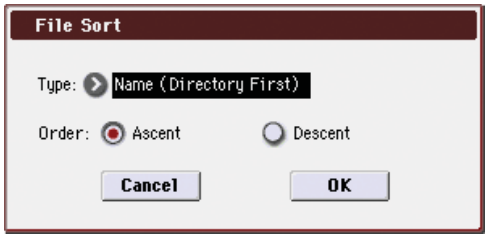
Lock/Unlock selected

This locks / unlocks the file or directory that's selected in the directory window (Media 0–1c). If you lock the file or directory, the lock icon ("**Lock**") will appear, and overwriting, copying, or deleting will not be possible.

1. **In the directory window (Media 0–1c), select the file or directory that you want to lock or unlock.**
2. **Select Lock/Unlock selected; the selected file or directory will alternately be locked or unlocked.**

Sort

This function sorts the files in the current directory.



1. **Use Type to select how the files will be sorted, and use Order to specify the direction.**

Type	Order	
No order	---	Unsorted
Name (Directory First)	Ascent	Sort in alphabetical order, first directories and then files
	Descent	Sort in reverse alphabetical order, first directories and then files
Name	Ascent	Sort alphabetically
	Descent	Sort in reverse alphabetical
Size	Ascent	Sort in ascending order of size
	Descent	Sort in descending order of size
Date	Ascent	Sort in ascending order of date
	Descent	Sort in descending order of date

Load selected

This loads the file or directory selected in the directory window (Media 0–1c) into internal memory.

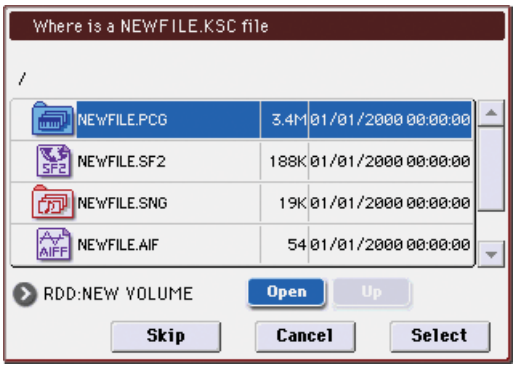
1. **In the directory window (Media 0–1c), select the file or directory that you want to load.**
2. **Select Load selected.**

A dialog box will appear. The dialog box that appears will depend on the file you are loading. For more information, please see page 399.
Specify the various items as necessary.

Note: You can also access the same dialog box by pressing the Load button instead of **Load selected**.

If a file to be loaded cannot be found, or when loading a file that was saved across media

If a necessary file cannot be found in the current directory or in a lower directory when loading multisamples, sample data, .PCG, or .SNG files, a dialog box like the following (Where is a …) will appear.



This dialog box will appear in the following cases.

- If when loading a .KSC file, a .KMP file used by it cannot be found.
- If when loading a .KMP file, a .KSF file cannot be found.
- If when loading an S1000 / S3000 format Program file, a Sample file cannot be found.
- If loading a .KSF file that was larger than the media capacity and was therefore saved on multiple media, when the first media has been loaded and the second media needs to be specified.
- When loading a .PCG file that was split across two or more volumes of media, when the first volume has been loaded and the second media is now required.
- When loading a .PCG file and also simultaneously loading a .SNG file, if the identically-named .SNG file is not found in the current directory after loading the .PCG file.

If this dialog box appears, take the following action.

1. **Select the directory that contains the file indicated by "Where is a…"**

If the specified file is located on another media, exchange media. Then press the directory window in the display to make the M3 recognize the media, and select the appropriate directory.

It is not possible to open .PCG, or .SNG files in the "Where is a …" dialog box. The Open button cannot be used for .PCG, or .SNG files.

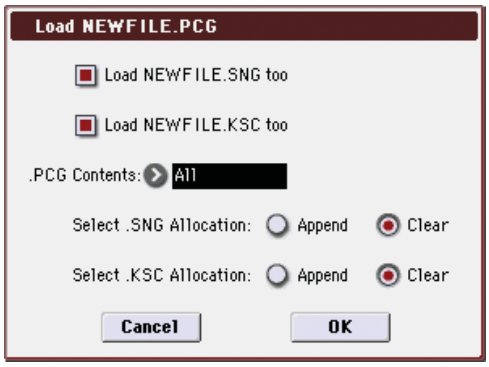
2. **Press the Select button to resume loading.**

Loading will be aborted if you press the Cancel button. If you want to abort the loading process, press the OK button. If you press the Skip button, the indicated file will be skipped, and the next file will be loaded.

Except for special situations such as when the media containing the indicated file has been damaged or cannot be found, you should use the Select button to continue the loading process.

1) Load .PCG

Data in the .PCG file will be loaded.



1. **If a SNG file and .KSC file of the same filename exists in the .PCG, you can select the "Load ******** .SNG too" and "Load ******** .KSC too" check box.**

If this file does not exist in the current directory, load it as described in the above procedure "If a file to be loaded cannot be found, or when loading a file that was saved across media" on page 398.

2. **In ".PCG Contents," specify the data to be loaded.**

All: Load all data from the .PCG file.

Bank I-A–I-G, U-A–U-G: Load data of the specified bank. In this case, use **To** to specify the load destination bank. When you execute the load, the combinations, programs, drum kits, data of only the specified bank will be loaded to the load destination bank. Global settings will not be loaded.

The program banks used by the combinations and the drum kit numbers used by the programs will be adjusted automatically so that they correspond correctly.

Similarly if a .SNG file is loaded simultaneously, the bank of the programs used by tracks of the Song (or if there are track / pattern events, the bank of the program within the event) will be corrected automatically so that they are appropriate.

Note: Program banks I-A–I-E are bank type EDS, and the I–F bank is bank type RADIAS. The bank types for these banks are fixed; you cannot set the **To** field to a bank whose type differs from the data selected for loading.

Program banks U-A–U-G can be freely specified as either EDS or RADIAS (see "Set Prog User-Bank Type" on page 382) You can load .PCG files of a bank type that differs from the M3's current bank type setting. This will also overwrite the bank type.

If data of the specified bank is completely absent from the .PCG file, an error of "No readable data" will be displayed, and the load operation will be halted.

If the program data of the specified bank is not found in the .PCG file, the program banks of the combination or multi timbres / tracks will not be set.

If the drum kits of the specified bank are not in the .PCG file, the program's drum kit numbers will not be automatically set.

3. **If "Load ******** .SNG too" is checked, you can use "Select .SNG Allocation" to specify how song data within the .SNG file will be loaded.**

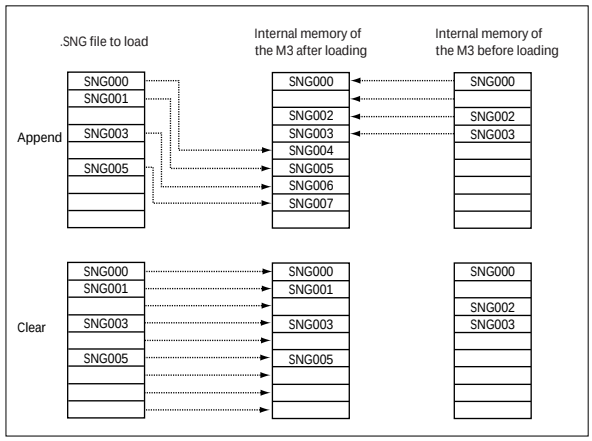
Append: The multi data will be loaded starting at the number that follows the last song data in memory. The song data within the .SNG file that is being loaded will be packed into the available locations. (See diagram below)

Select this method when you wish to load song data from media without erasing the song data that is already in memory. Cue list data will not be loaded.

Clear: Erases all cue list data and song data from internal memory, and load the cue list data together with the state of the song data as it was when saved (See diagram below).

Select this when you want to reproduce the saved state immediately after power-on, etc.

.SNG Allocation



4. **"Select .KSC Allocation" is valid if "Load ********.KSC too" has been checked. You can specify how the multi-samples and samples in the .KSC file will be loaded.**

Append: Samples will be loaded starting at the first unoccupied number following the last multisample or sample that currently exists in memory (i.e., by having been sampled or loaded). At this time, only the valid multisamples or samples will be loaded, and they will be organized in numerical order. (See diagram below)

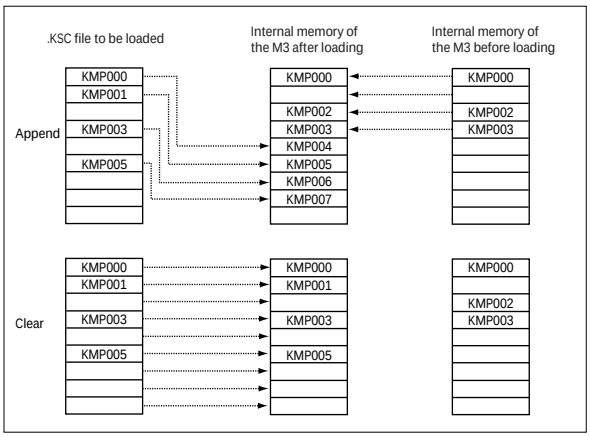
At the same time, programs within the .PCG file that use multisamples from the .KSC file will automatically have the multisample settings for their oscillators rewritten so that each program uses the correct multisample. Drum kits in the .PCG file that use samples from the .KSC file will automatically have the sample settings for the drum kit rewritten so that the drum kit uses the correct samples.

Clear: All multisamples and samples currently in memory will be erased, and the multisamples and samples will be loaded in the same configuration in which they were saved. (See diagram below)

If memory already contains multisamples or samples that you wish to keep, and you wish to load additional multisamples or samples from media, select Append.

If the power has just been turned on, or you want to reproduce the state that was saved, select Clear.

.KSC Allocation



5. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

2) Load Programs

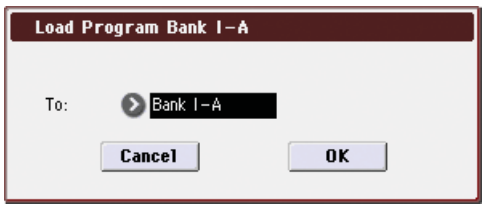
All program data from a .PCG file will be loaded.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

3) Load Program Bank

[Bank I–A...I–F, Bank U–A...U–G]

All program data of the selected bank will be loaded into the bank you specify.



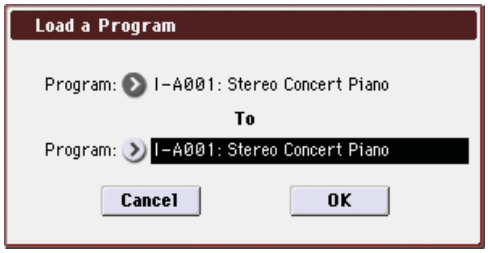
1. **In To, select the loading destination bank.**
2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

Note: Program banks I-A–I-E are bank type EDS, and the I-F bank is bank type RADIAS. The bank types of these banks are fixed; you cannot set the **To** field to a bank whose type differs from the data selected for loading.

Program banks U-A–U-G can be freely specified as either EDS or RADIAS (see “Set Prog User-Bank Type” on page 382) You can load .PCG files of a bank type that differs from the M3’s current bank type setting. This will also overwrite the bank type.

4) Load a Program

Data for the selected program will be loaded into the program number you specify.



1. **If you wish to load a program other than the one already selected, use Program (upper line) to select the program that you wish to load.**

Note: The selected program can be played from the keyboard even before you load it. This is convenient when you want to audition the program to be loaded. For more information, please see “PCG Preview” on page 391.

2. **In To Program, (lower line) select the bank and program into which the data will be loaded. When you press the popup button, the Bank/Program Select window will appear.**

Note: Banks of a bank type that differs from the selected program can’t be selected for the **To** field.

3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

5) Load Combinations

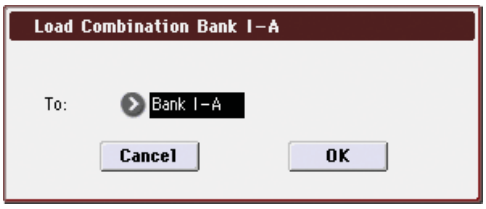
All combinations in the .PCG file will be loaded.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

6) Load Combination Bank

[Bank I–A...I–G, Bank U–A...U–G]

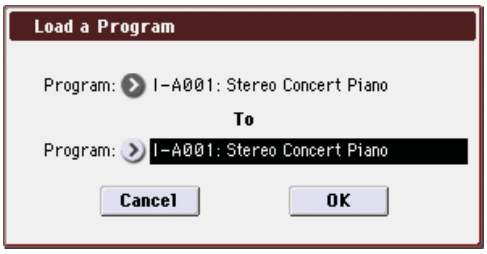
All combinations in the selected bank will be loaded into the bank you specify.



1. **In To, select the loading destination bank.**
2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

7) Load a Combination

This loads the selected Combination into a specified Bank and number in internal memory.



1. **If you wish to load a combination other than the one already selected, use Combination (upper line) to select the combination that you wish to load.**

Note: The selected combination can be played from the keyboard even before you load it. This is convenient when you want to audition the combination to be loaded. For more information, please see “PCG Preview” on page 391.

2. **In “To Combination” (lower line), select the bank and combination into which the data will be loaded.**

When you press the popup button, the “Bank / Combination Select” window will appear.

3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

8) Load Drum Kits

All drum kits in the .PCG file will be loaded.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

9) Load Drum Kit [000–031(INT), 032–047(U–A)...128–143(U–G)]

This command loads all drum kit data from the selected drum kit block into the drum kit block that you specify as the load-destination.

1. **In To, select the loading destination bank.**
2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

If you've selected U-A–U-G as the load-destination for the selected drum kit bank (INT), 000–015 will be loaded. If you've selected INT as the load-destination for U-A–U-G, the data will be loaded into 000–015.

10) Load a Drum Kit

The selected drum kit will be loaded into the drum kit number you specify as the loading destination.

1. **If you wish to load a drum kit other than the one already selected, use Drum Kit (upper line) to re-select the drum kit you wish to load.**

Note: The selected drum kit can be played from the keyboard even before you load it. This is convenient when you want to audition the drum kit to be loaded. For more information, please see "PCG Preview" on page 391.

2. **In To Drum Kit (lower line), select the loading destination drum kit.**
3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

11) RADIAS formant Motion

This command loads all RADIAS formant motion data from a .PCG file.

Note: This dialog box can be displayed if the optional EXB-RADIAS is installed. For details, please see the optional "EXB-RADIAS for M3 Manual" (PDF).

12) Load a RADIAS Formant Motion

This command loads the selected single RADIAS formant motion data into the number that you specify as the load-destination.

Note: This dialog box can be displayed if the optional EXB-RADIAS is installed. For details, please see the optional "EXB-RADIAS for M3 Manual" (PDF).

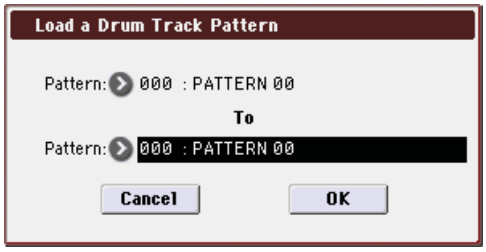
13) Load Drum Track Patterns

This command loads all drum track user patterns from the .PCG file.

1. **Press the OK button to load the data, or press the Cancel button if you decide to cancel.**

14) Load a Drum Track Pattern

This command loads the selected single drum track user pattern data into the drum track user pattern number that you specify as the load-destination.



1. **If you want to load a pattern other than the selected pattern, use "Pattern" (the upper line) to re-select the pattern that you want to load.**
2. **Use the "To Pattern" field (the lower line) to specify the load-destination pattern.**
3. **Press the OK button to load the data, or press the Cancel button if you decide to cancel.**

15) Load Global Setting

Global setting data in the .PCG file will be loaded.

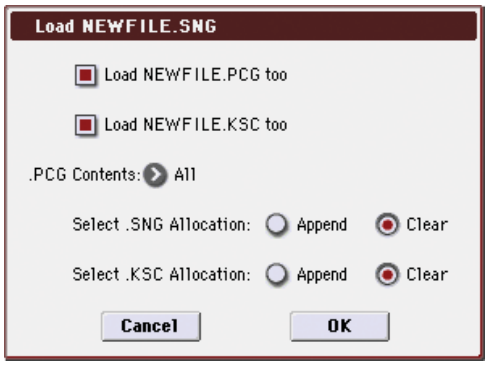
This includes Global mode parameters other than drum kits.

Memory protect and system clock settings will not be loaded.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

16) Load .SNG

All data in the .SNG file will be loaded.



1. **Use Select .SNG Allocation to specify how the song data from the .SNG file will be loaded.**

Append: The song will be loaded after the last song data that already exists in internal memory. At this time, the song data in the .SNG file being loaded will be packed forward. (See diagram in ".SNG Allocation" on page 399)

Select this when you want to add song data from media without erasing the song data that currently exists in internal memory. Cue list data will not be loaded.

Clear: All cue list data and song data currently existing in internal memory will be erased, and the cue list data and the song data in the state in which it was saved will be loaded. (See diagram in ".SNG Allocation" on page 399)

Select this when you want to reproduce the saved state immediately after power-on, etc.

2. **If a .PCG file or .KSC file of the same filename exists in the current directory, you can select the "Load ********.PCG too" check box and "Load ********.KSC too" check box.**

See step 1 of the "1) Load .PCG" on page 399.

- If you check "Load ********.PCG too," use ".PCG Contents" to specify the bank within the .PCG file. See step 2 of the "1) Load .PCG" on page 399.
- If you check "Load ********.KSC too," use "Select .KSC Allocation" to specify how the song data from the .KSC file will be loaded. See step 4 of the "1) Load .PCG" on page 399.

3. **Press the OK button to load the data, or press the Cancel button to cancel without loading.**

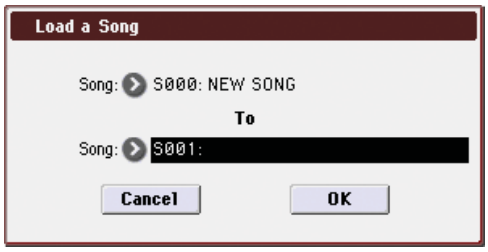
17) Load Cue Lists

The cue list data in the .SNG file will be loaded.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

18) Load a Song

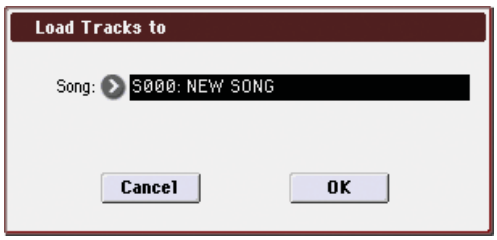
Data for the selected song will be loaded into the song number you specified as the load destination.



1. **If you wish to load a song other than the selected song, use Song (upper line) to re-select the song to be loaded.**
2. **In To Song (lower line), select the loading destination song.**
3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

19) Load Tracks

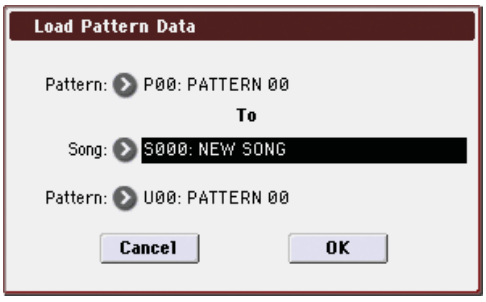
The event data of all tracks in the selected song will be loaded into the song you specify as the loading destination. However, it is not possible to specify an uncreated song as the loading destination.



1. **In Song, specify the loading destination song.**
2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

20) Load Pattern Data

The selected user pattern will be loaded into a user pattern of the selected loading destination song. However, it is not possible to specify an uncreated song as the loading destination.



1. **If you wish to load a user pattern other than the one already selected, use "Pattern" (upper line) to re-select the user pattern that you wish to load.**
2. **In "To Song" and "Pattern" (lower line), select the loading destination song and user pattern.**
3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

21) Load Standard MIDI File

The selected Standard MIDI File will be loaded into the song number you select as the loading destination.

1. **In Song, select the loading destination song.**
2. **If you turn "Exclusive" Off (unchecked), any system exclusive messages or universal exclusive messages included in the SMF data will not be loaded.**

If this is On (checked), system exclusive messages and universal exclusive messages included in the SMF data will be loaded as System Exclusive events.

The GS / XG sound maps and messages are not supported. Depending on the content of the data, it may not play back correctly, but the data itself will be maintained if **Exclusive** is checked.

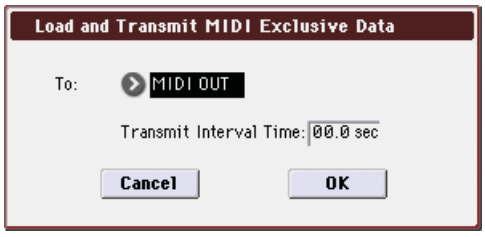
3. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

If you select an undefined file and choose **Load selected**, the file will be assumed to be a Standard MIDI File, and the **Load Standard MIDI File** dialog box will appear. When you execute loading, the file will be loaded into the song that was specified as the loading destination. However if the file format is inappropriate, the operation will be invalid and an error message will be displayed.

The program bank and program numbers loaded into the song will follow the **Bank Map** (Global 0–2a) setting. If **Bank Map** is KORG, bank A will be selected for bank select 00.00 (MSB. LSB). If **Bank Map** is GM(2), bank G will be selected.

22) Load and Transmit MIDI Exclusive Data

All data in the .EXL file will be loaded, and transmitted from MIDI OUT or USB B connector.



1. **If the .EXL file contains two or more exclusive data items, use Transmit Interval Time to specify the time interval that will be inserted between each item of exclusive data.**

If you are transmitting the data to another M3, the required time interval will depend on the type of data. After transmitting all program data, you must allow an interval of approximately 2 seconds. For details please see the Global mode section on **Dump Program–Dump Formant Motion** (see page 384). For other MIDI devices, please see their owner's manual.

2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

23) Load .KCD

The selected .KCD file will be loaded.

1. **Press the OK button to load, or press the Cancel button to cancel without loading.**

The loaded contents will be displayed in the Make Audio CD page (Media 0–4). As the data is being loaded, the WAVE files in the list will be checked, and if a file does not exist, a message of "File / Path not found" will be displayed.

Loading sample data

The paragraphs **24) Load .KSC, 25) Load .KMP, and 26) Load .KSF** which follow explain how Korg format PCM data files are loaded into the sample memory (RAM) of the M3.

About the user sample RAM

When shipped from the factory, the M3 has approximately 64 Mbytes of RAM memory (Bank 1). By installing the optional EXB-256M, you can add 256 Mbytes as Bank 2.

However, Bank 1 and 2 are used separately; the maximum size of sample data that can be loaded into each bank is approximately 64 Mbytes for Bank 1 and 256 Mbytes for Bank 2. You can't load sample data that spans Banks 1 and 2.

Maximum numbers of Samples and Multisamples that can be loaded

- Multisamples: up to 1,000
- Samples: up to 4,000
- Samples used by multisamples: up to 4,000

About Korg format PCM data files

KSC files

Files with an filename extension of KSC (Korg Script) contain the names of .KMP and .KSF files.
When a .KSC file is loaded, the .KMP and .KSF files whose names it contains will also be loaded. This is a convenient way to load multiple multisamples and samples at once.
When saving, a .KSC file and a directory with the same name as the .KSC file will be created. The .KMP files and .KSF files listed in the .KSC file will be saved in this directory.

KMP files

Files with a filename extension of KMP (Korg Multisample Parameter) contain the parameters which make up a single multisample. These parameters also include the filename of the .KSF files that are used by that multisample, so when a .KMP file is loaded, the necessary .KSF files will also be loaded at the same time.
When saving, a .KMP file and a directory with the same name will be created, and the .KSF files used by the multisample will be saved in this directory.

KSF files

Files with a filename extension of KSF (Korg Sample File) contain the parameters and waveform data which make up a single sample.
A .KSF file can be used as one of the samples used by a multisample. A .KSF file can also be selected and used as a drum sample for a drum kit.

Loading multiple files at once

You can use wild cards to specify multiple .KMP, .KSF, .AIF, .WAV, .SF2, AKAI Program, and AKAI Sample files, and load them simultaneously.

In the Load dialog box, press the text edit button to access the text input dialog box.

By specifying "*" or "?" as wild cards in the selected filename, multiple sample files that have the same filename extension (same file format) and exist in the selected directory can be loaded simultaneously.

Example) The folder contains the following files. By selecting "SFX_A_00.WAV" and using the appropriate wildcards, you can load multiple files simultaneously.

PIANO.WAV
SFX_A_00.WAV
SFX_A_01.WAV
SFX_B_00.WAV
SFX_B_01.WAV
SFX_C_00.WAV

Select "SFX_A_00.WAV," and choose **Load selected** to open the dialog box.

Press the text edit button (T) to access the text input dialog box, and specify the desired wildcards. (For the renaming procedure, please see "Editing names" on page 197 of the Operation Guide)

"*" specifies the subsequent characters as a wild card.

"?" specifies only one character as a wild card.

1. **If you specify SFX_A* and execute loading, the following files will be loaded.**

   SFX_A_00.WAV
   SFX_A_01.WAV

2. **If you specify SFX_?_00 and execute loading, the following files will be loaded.**

   SFX_A_00.WAV
   SFX_B_00.WAV
   SFX_C_00.WAV

3. **If you specify SFX_*_00, the result will be the same as if you specify "SFX_*", and the following files will be loaded.**

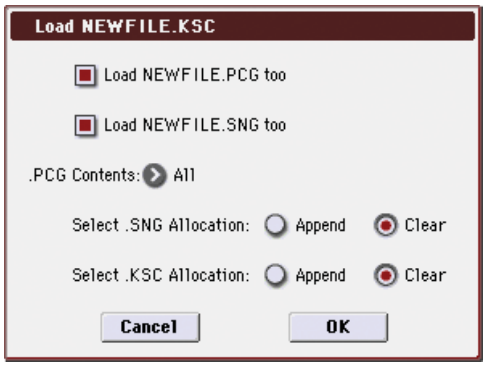
   SFX_A_00.WAV
   SFX_A_01.WAV
   SFX_B_00.WAV
   SFX_B_01.WAV
   SFX_C_00.WAV

4. **If you specify * and execute loading, all of the .WAV files will be loaded as follows.**

   PIANO.WAV
   SFX_A_00.WAV
   SFX_A_01.WAV
   SFX_B_00.WAV
   SFX_B_01.WAV
   SFX_C_00.WAV

24) Load .KSC

The .KMP files and .KSF files listed in the .KSC file will be loaded as multisamples and samples respectively.



The .KMP files and .KSF files listed in the .KSC file are saved in a directory of the same name that is created automatically at the same time as the .KSC file.

1. **Select .KSC Allocation allows you to specify how the multisamples and samples in the .KSC file will be loaded.**

   Append: The data will be loaded into the numbers after the last multisample or sample number currently existing in sample RAM (i.e., that were previously sampled or loaded). In this case, only the valid multisamples and samples will be packed and loaded. (See diagram in ".KSC Allocation" on page 400)

   If "Load ********.PCG too" is checked when you load the data, programs within the .PCG file that use multisamples from the .KSC file will automatically have the multisample settings for their oscillators rewritten so that each program uses the correct multisample. Drum kits in the .PCG file that use samples from the .KSC file will automatically have the sample settings for the drum kit rewritten so that the drum kit uses the correct samples.

   Clear: All multisamples and samples currently existing in sample RAM will be cleared, and the multisamples and samples will be loaded in the same configuration as when they were saved. (See diagram in ".KSC Allocation" on page 400)

   Choose **Append** if sample RAM already contains multisamples and samples that you do not want to erase, and you would like to load additional multisamples and samples from media.
   Choose **Clear** if you want to reproduce the state in which the data had been saved, for example immediately after power-on.

   - If the current directory contains a .PCG file, and .SNG file of the same filename, you can select the "Load ********.PCG too" check box, and the "Load ********.SNG too" check box. See step 1 of the "1) Load .PCG" on page 399.
   - If you check "Load ********.PCG too," the .PCG file of the same name as the .KSC file will also be loaded. See step 2 of the "1) Load .PCG" on page 399.
   - If you check "Load ********.SNG too," the .SNG file of the same name as the .KSC file will also be loaded. See step 3 of the "1) Load .PCG" on page 399.

2. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

If the .KSF files used by the .KMP file are not in the current directory or below it, a dialog box will appear, allowing you to specify the directory. Use the procedure "If a file to be loaded cannot be found, or when loading a file that was saved across media" on page 398 to load the required .KSF files.

Since overflow checking of sample RAM is performed when loading each individual .KSF file, it is possible that an overflow may occur in the middle of the loading process.

25) Load .KMP

The selected .KMP file will be loaded as a multisample. The .KSF files used by the .KMP will also be loaded as samples.

The .KSF files used by the .KMP file will be saved in an identically-named directory that is created automatically when the .KMP file is created.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

Samples will be loaded starting at the first unoccupied number following the last multisample or sample that currently exists in the sample memory. Only valid multisamples or samples will be packed and loaded (Append load).

If the .KSF files used by the .KMP file are not in the current directory or below it, a dialog box will appear, allowing you to specify the directory. Use the procedure "If a file to be loaded cannot be found, or when loading a file that was

saved across media” on page 398 to load the required .KSF files.

Since sample RAM overflow checking is performed when loading each .KSF file, an overflow may occur during the loading process.

26) Load .KSF

The selected .KSF file will be loaded as a sample.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

The sample will be loaded after the last multisample or sample that currently exists in the sample RAM (Append load).

Loading AIFF files and WAVE files

The M3 can load AIFF format or WAVE format files, which are formats used to save audio data on personal computers etc. When this data that has been loaded, it can be used as a sample or a drum sample.

Files with an extension of other than .AIF or .WAV cannot be recognized as AIFF / WAVE files. In this case, use the Utility **Rename** menu command to change the last four characters of the filename to “.AIF” or “.WAV”

If the data that is loaded as a sample contains a loop point, you can set **Ofs (Start Offset)** (see page 38) on the M3 so that the sound will begin from the loop point.

If data whose sample size is 8 bits or less is loaded, it will be converted into 16 bit data inside the M3. This will mean that the amount of internal memory consumed will be approximately twice as large as the file size. The increase in size resulting from this conversion may mean that it is impossible to save that data on a media.

27) Load .AIF

The selected AIFF file will be loaded as a sample.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

The sample will be loaded after the last sample that currently exists in the sample RAM (Append load).

Note: You can load multiple files within the directory. For more information, please see “Loading multiple files at once” on page 403.

28) Load .WAV

The selected WAVE file will be loaded as a sample.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

The sample will be loaded after the last sample that currently exists in the sample RAM (Append load).

Note: You can load multiple files within the directory. For more information, please see “Loading multiple files at once” on page 403.

Loading AKAI S1000/S3000 format Sample files, Program files, or Volumes

The M3 can load AKAI S1000 / S3000 format Sample files, Program files, and Volumes. Sample file data you load can be used as RAM samples.

- When you load Program file data, settings such as key group, key group zone, oscillator, pitch, filter, amp / pan, and EG are supported, and can be converted into a M3 program, or programs and combination.
- When you load a Volume, all Program files and Sample files included in the Volume can be loaded together.
- AKAI S1000 / S3000 format stereo Sample files and Program files whose names end in “–L” and “–R” can be loaded into the M3 as stereo samples and multisamples. When the above files are loaded, “–L” and “–R” will automatically be moved to the end of the sample name or multisample name (the 23rd and 24th characters) so that they can automatically be recognized as stereo samples or multisamples.

29) Load AKAI Sample File

The selected Sample will be loaded as a sample.

1. **To load the data, press the OK button. To cancel without loading, press the Cancel button.**

The sample will be loaded after the last sample that currently exists in the sample RAM by having been sampled or loaded (Append load). If the loaded data is then saved to storage media, it will be saved as a Korg format .KSF file.)

Note: You can load multiple files within the directory. For more information, please see “Loading multiple files at once” on page 403.

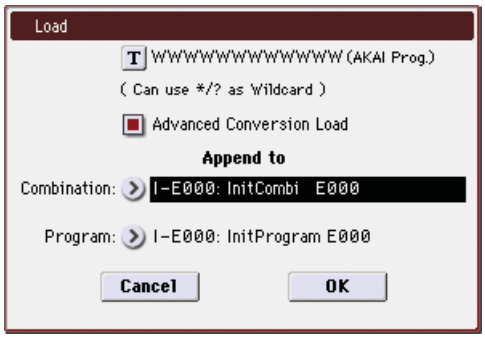
If the data that is loaded as a sample contains a loop point, you can set **Ofs (Start Offset)** (see page 38) on the M3 so that the sound will begin from the loop point.

Sample files

Parameter	AKAI S1000/S3000 format	M3 format after loading
Loop points	Multiple settings possible	Of the multiple loop points, the settings for the first HOLD loop are used. If there is no HOLD loop, the longest loop will be used.
Loop length	Set table with resolution of less than one sample	Resolution of less than one sample is ignored.

30) Load AKAI Program File

The selected Program file will be loaded as a M3 program, or converted and loaded as programs + combination. You also have the option of loading only as multisamples and samples.



1. **In “Advanced Conversion Load,” select how the AKAI Program file will be loaded.**

On (checked): Program file parameters such as key group, key group zone, oscillator, pitch, filter, amp / pan, LFO, and EG will be converted into a M3 program or programs and combination.

Multisamples and samples will also be convert-loaded at the same time.

Off (unchecked): The selected Program file will be loaded as a multisample. Only the keymap-related parameters within the Program file will be loaded to create the multisample. (See “About AKAI Program files” on page 633)

2. **If you checked “Advanced Conversion Load,” use “Append to: Combination” to specify the destination**

bank and number of the combination that will be created by the convert-load operation.

When you execute the command, the combinations that are created will be loaded starting at the bank and number you specify here.

3. **If you checked "Advanced Conversion Load," use "Append to: Program" to specify the destination bank and number of the program that will be created by the convert-load operation.**

When you execute the command, the programs that are created will be loaded starting at the bank and number you specify here.

Note: The multisamples and samples that are loaded will be loaded after the last multisample and sample currently existing in sample RAM. The Program files and Sample files loaded at this time will be packed into available spaces (Append load), loading only the valid data.

Note: If the Sample files used by the Program file are not in the current directory or below it, a dialog box will appear, allowing you to specify the directory. Use the procedure "If a file to be loaded cannot be found, or when loading a file that was saved across media" on page 398 to load the required Sample files.

Since sample RAM overflow checking is performed when loading each sample file, an overflow may occur during the loading process.

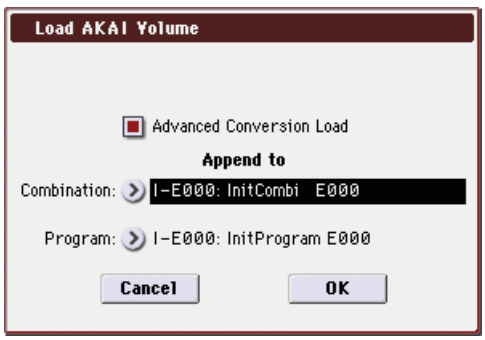
Depending on the structure of the AKAI Program, the data may be converted into two or more programs and one combination when it is loaded. In this case, the number of programs created is limited to a maximum of sixteen (the maximum number of programs usable in a combination), and a message of "Exceeded 16 Programs - some data not loaded" may appear (see OG page 216). Please be aware of this when loading complex AKAI Program data.

If the loading-destination bank and number exceed U–G127, loading will automatically stop.

The data in the locations following the specified bank / number will be rewritten when you load. If you want to keep this data, use **Save All** or **Save PCG** before you load the AKAI Program data.

31) Load AKAI Volume

You can load Program files and Sample files in a single operation from a Volume on an AKAI S1000 / S3000 format sample CD. On AKAI S1000 / S3000 format sample CDs, the Program files and Sample files are organized into Partitions and Volumes (See page 390, diagram)



1. **If you check "Advanced Conversion Load," all Sample files included in the selected volume will be loaded as samples.**

Program file settings such as key group, key group zone, oscillator, pitch, filter, amp / pan, and EG will be converted into a M3 program, or into programs and a combination. (Multisamples will also be convert-loaded.)

If you don't check this, all Sample files included in the selected volume will be loaded as samples, and the Program file will be loaded as a multisample. Only the keymap-related parameters from the Program file will be loaded to create a multisample. (See "About AKAI Program files" on page 633)

2. **If you checked "Advanced Conversion Load," use "Append to: Combination" to specify the destination bank and number of the combination that will be created by the convert-load operation.**

When you execute the command, the combinations that are created will be loaded starting at the bank and number you specify here.

3. **If you checked "Advanced Conversion Load," use "Append to: Program" to specify the destination bank and number of the program that will be created by the convert-load operation.**

When you execute the command, the programs that are created will be loaded starting at the bank and number you specify here.

If the loading-destination bank and number exceed U–G127, loading will automatically stop.

The data in the locations following the specified bank / number will be rewritten when you load. If you want to keep this data, use **Save All** or **Save PCG** before you load the AKAI Program data.

Loading SoundFont 2.0 format files

The M3 can load SoundFont 2.0 format files.

SoundFont 2.0 is a file format that includes sound parameters with the sample data, and is widely supported in the multimedia field as well as by many software synthesizers and software samplers.

SoundFont 2.0 format files may contain data for multiple sounds – not just a single sound. When you load a single SoundFont 2.0 file into the M3, all sound data included in that file will be loaded together.

Note: You can't load individual items of sound data from within the file.

- Sound parameters such as key group, key group zone, oscillator, pitch, filter, amp / pan, LFO, and EG are supported, and will be converted to an M3 program or a combination and programs as they are loaded.
- Sample data will be converted into multisamples and samples, and loaded into user sample RAM.

Note: The loaded samples will automatically be given the names of the sample data within the SoundFont 2.0 file. Convert-loaded multisamples, programs, and combinations will automatically be given the names of the sound data within the SoundFont 2.0 file as follows.

Loading to multisamples or programs

- Samples: sample data name
- Multisamples: sound data name + number
- Programs: sound data name + number

Loading to multisamples, programs, or combinations

- Samples: sample data name
- Multisamples: sound data name + number
- Programs: *sound data name + number
- Combinations: sound data name + number

An asterisk * will be added in front of programs that make up a combination.

SoundFont 2.0 files
If sample data that has the same settings is used in more than one item of sound data in a SoundFont 2.0 file, the sample data will be loaded into the first-loaded

multisample, and will not be loaded into other multisamples. In such cases, please note that the program after loading will be assigned differently-named multisamples.

Note: If a loaded multisample assigns stereo samples, an "–L" and "–R" will be automatically added to the end of the multisample name and sample name (the 23rd and 24th characters).

Note: If two identical multisamples whose file names differ only by ending in "–L" and "–R" are loaded, Sampling mode will recognize them as a stereo multisample.

In some cases depending on the structure of the sound data, the data will be converted into multiple programs and one combination when you load it. In this case, the maximum number of programs following conversion is limited to the sixteen programs that a combination can use, and a message of "Exceeded 16 Programs - some data not loaded" may appear (see OG page 216). Please be of this when loading complex sound data structures.

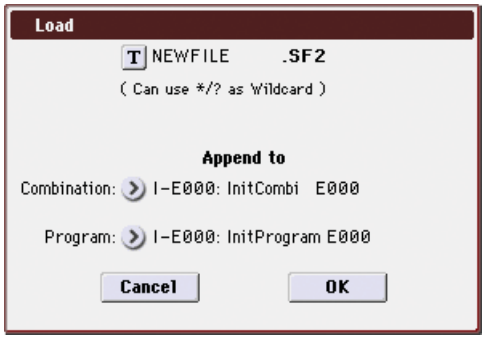
SoundFont 2.0 files may contain sound data that is assigned to use sample data from a specific sound card. In this case, the sample data will not be included in the SoundFont 2.0 file, so that sound data will not play correctly.

SoundFont 2.0 files may contain sound data that is assigned to use effects from a specific sound card or sampler program. These effect settings will not be loaded.

SoundFont 2.0 files may use sample data of a sampling frequency not supported by the M3. In this case, the Pitch parameter for each Index of the multisample will be set automatically in order to correct the playback pitch. Since the Pitch parameter is set in units of a cent, the pitch may not be accurate. If you use the loaded sample in another multisample or drum kit, you must use the multisample's Pitch parameter or the drum kit's Transpose and Tune parameters to adjust the pitch. For details on the sampling frequency of sample files supported by the M3, refer to the appendices (see "About SoundFont 2.0 files" on page 633).

32) Load SoundFont 2.0 File

This command loads the selected SoundFont 2.0 file.



1. **Use the "Append to: Combination" to specify the destination bank and number of the combination that will be created by the convert-load operation.**

When you execute this command, the created combination(s) will be loaded starting at the bank and number you specify here.

2. **Use the "Append to: Program" to specify the destination bank and number of the program that will be created by the convert-load operation.**

When you execute this command, the created program(s) will be loaded starting at the bank and number you specify here.

Note: Multisamples and samples will be loaded following all the multisamples and samples that exist in user sample RAM. The sound data and sample data that is converted at this time will be packed without leaving gaps, loading only the valid data (Append load).

Since an overflow check for the user sample RAM is performed when loading each individual sample file, it is possible for an overflow to occur during the load operation.

Load PCG (RAM) and Samples

Load PCG (RAM) and Samples loads from a .PCG file only the programs, drum kits, combinations, and songs that use RAM samples. This is useful when you are editing programs and combinations that use RAM samples.

The programs and drum kits that use RAM samples and the combinations or songs that use these programs will be loaded from the .PCG file. All programs included in the loaded combinations and songs can also be loaded.

The applicable programs and combinations will automatically be loaded in order from the bank and number you specify. When loading, sample numbers and program numbers will automatically be adjusted so that they correspond correctly.

Content that will be loaded from the .PCG file

1. **Drum Kit: Drum kits for which at least one KEY is set to RAM in "Drumsample DS1, 2, 3, 4 Bank" (Global 5–1b).**
2. **Program: Programs whose Oscillator Mode (Prog 1–1a) is set to Drums and whose Drum Kit (Prog 2–1b) meets the conditions described above in 1.**
3. **Program: Programs whose Oscillator Mode is set to either Single or Double and whose "OSC1/2 Multisample MS1, 2, 3, 4 Bank" (Prog 2–1a) is set to RAM in at least one location.**
4. **Combination: Combinations whose Program Select (Combi 0–1(2)b) is set to a program that meets the conditions described above in 2, or 3.**

Content loaded from the .SNG file

1. **Song: Songs whose Program Select (Seq 0–1–1(2)b) uses programs that meet the conditions described above in paragraphs 2, or 3. of "Content that will be loaded from the .PCG file" will be loaded into vacant numbers starting from the number after the last song data in internal memory.**

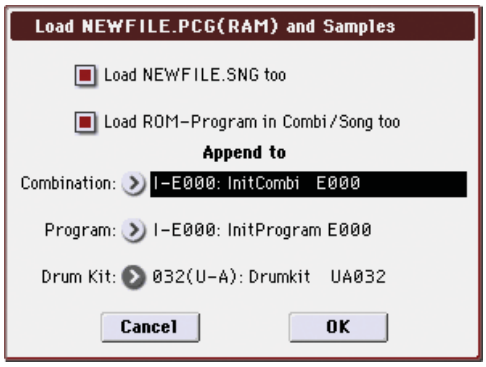
The data will be loaded into vacant locations starting after the last song number. (See ".SNG Allocation" on page 399)

Numbers that will be reassigned after loading so that data references correspond correctly:

- RAM sample numbers used by multisamples
- RAM sample numbers used by drum kits
- RAM multisample numbers used by programs
- Drum kit numbers used by programs
- Program banks / numbers used by combinations
- Program banks / numbers used by songs (if there are pattern events in a track, the program bank / number within the event)

1. **Select a .PCG file in the directory window.**
2. **Select this command to display the dialog box.**

This command will be available only if you've selected a .PCG file.



3. **If you also want to load the .SNG file of the same name as the .PCG file, check the "Load ********.SNG too" check box.**

Note: The .KSC file of the same filename as the .PCG file will be loaded together with the .PCG file. If the file does not exist in the current directory, load the file as described in "If a file to be loaded cannot be found, or when loading a file that was saved across media" on page 398.

4. **If you check "Load ROM-Program in Combi/Song too," ROM-based programs in the .PCG file combinations or .SNG file songs will be loaded together with the RAM-based programs.**

Choose this setting if the combinations or songs being loaded use user programs as well as the preloaded programs.

If you leave this unchecked, only RAM-using programs in the .PCG file combinations and .SNG file songs will be loaded. Normally you will not check this if you are using preloaded programs in addition to RAM-using programs.

Note: All ROM-based programs used by the loaded combinations and songs will be loaded.

Program data whose bank type is RADIAS will not be loaded.

5. **Use "Append to: Combination" to specify the loading-destination bank and number for the combinations in the .PCG file.**

When you execute, only the applicable combinations will be loaded into consecutive numbers starting at the bank and number you specify here.

6. **Use "Append to: Program" to specify the loading-destination bank and number of the programs in the .PCG file.**

When you execute, only the applicable programs will be loaded into consecutive numbers starting at the bank and number you specify here.

If the load-destination bank and number in steps 5 and 6 exceeds U–G127, the load operation will end automatically.

7. **Use "Append to: Drum Kit" to specify the loading-destination number for the drum kits in the .PCG file.**

When you execute, only the applicable drum kits will be loaded into consecutive numbers starting at the number you specify here.

If the load-destination bank and number in step 7 exceeds 143 (U–G) respectively, the load operation will end automatically.

The data in the locations following the specified bank/number will be rewritten when you load. If you want to keep this data, use **Save All** or **Save PCG** before you load the new data.

8. **Press the OK button to load the data. If you decide not to load, press the Cancel button.**

0–2: Save Menu Command

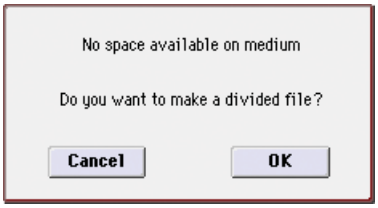
Cautions regarding Save

When saving combinations with **Save All**, **Save PCG & SEQ**, or **Save SEQ**, you should also try to save the programs used by each timbre (and the drum kits used by the programs) at the same time.
Similarly, when saving programs, you should also save the drum kit used by the program at the same time.

If multisamples or samples created in Sampling mode are used in a program or drum kit, we recommend that you save the data as **Save All**.
Also when using **Save PCG** or **Save Sampling Data** to save an individual program, drum kit, or multisample or sample created in Sampling mode, we recommend that you save the data in the same directory with the same filename.
When using **Load PCG (RAM) and Samples** to load a .PCG file, the .KSC file of the same name will be loaded at the same time so that the multisamples/samples that were saved with the program or drum kit will correspond correctly.

If the data being saved does not fit on one volume of media

When saving a .PCG, .KSC, .KMP, or .KSF file, and the data does not fit on one volume of media, the display will ask "No space available on medium".

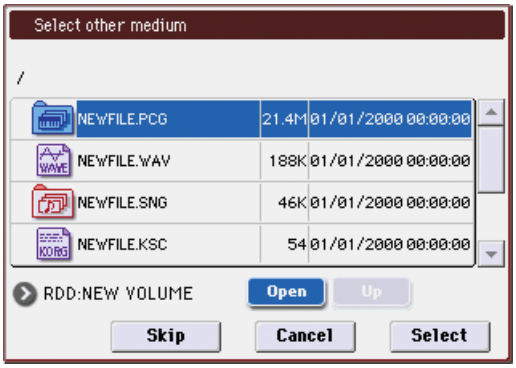


1. **To save the data as a divided file across two or more volumes of media, make sure that you have the required number of discs, and then press the OK button. Saving will begin.**

If you decide that you don't want to save a divided file, press the Cancel button, and save your data to media that has more available space.

2. **If the media runs out of free space during the save operation, the message "Select other medium" will appear.**

Insert the next volume of media and press the display to make the M3 detect the media, or use **Media Select** (Media 0–1a) to specify the save-destination media.



3. **Press the Select button to continue saving. If the "No space available on medium" dialog box appears again, repeat steps 1–3.**

Saving will be halted if you press the Cancel button. If you then want to abort the save operation, press the OK button in the dialog box.

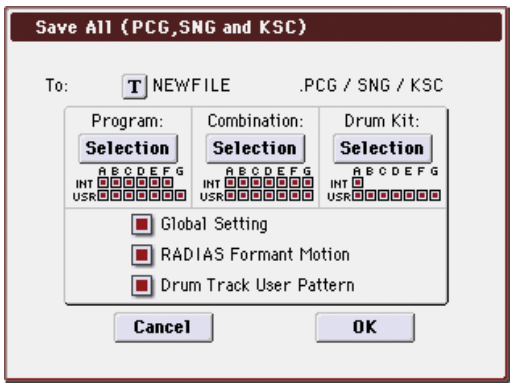
If you press the Skip button, the indicated file will be skipped, and the next file will be saved.

Save All

This command saves all programs, combinations, drum kits, global settings, RADIAS formant motions (if the optional EXB-RADIAS is installed), and drum track user patterns from internal memory to media as a .PCG file. Songs and cue lists are saved to media as a .SNG file, and multisamples and samples created in Sampling mode are saved to media as a .KSC file.

This command is valid only when the current directory is a DOS directory.

1. Select “Save All” to open the dialog box.



2. Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)

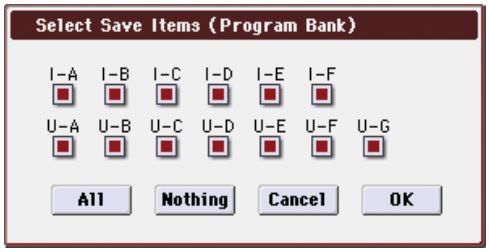
For example if you specify NEWFILE and execute the save command, files named NEWFILE.PCG, NEWFILE.SNG, and NEWFILE.KSC will be saved to the media.

3. Select the bank(s) that you want to save.

Programs, combinations, and drum kits can be saved in units of banks. Information on the bank to be saved is displayed below each Selection button. Banks that are checked will be saved.

If you want to modify the selections, press the Selection button to open the dialog box, and check the check boxes for the data you want to save.

Example: when the Selection button for Program is pressed



If you press the All button, all banks will be checked.

If you press the Nothing button, all banks will be unchecked.

Press the OK button to change the selections as specified, or press the Cancel button to discard your changes.

To specify whether “Global Settings,” “RADIAS Formant Motion” and “Drum Track User Pattern” will be saved, use the check box in step 1.

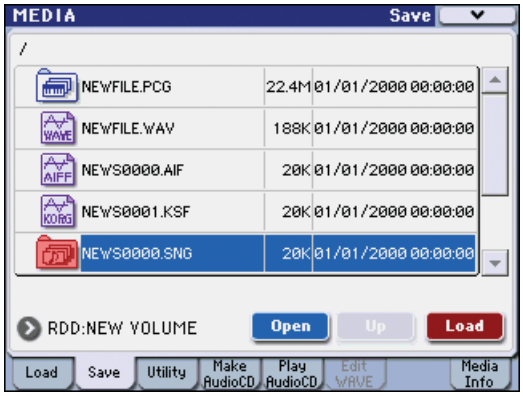
4. To save the data, press the OK button. To cancel without saving, press the Cancel button.

If “No space available on medium” dialog box will appear. See “If the data being saved does not fit on one volume of media” on page 408, and use the procedure given there to save the data.

When you save, files will be created in the current directory. If the data you save extends across two or more media, these files will be divided. In addition to the .PCG, .SNG, and .KSC files that will be created with the specified filename, one directory will also be created. The files listed in NEWFILE.KSC will be saved in this directory.

In addition to the .PCG, .SNG, and .KSC files created with the specified filename, one directories will also be created.

One directory will have the “specified filename” as its directory name, and will contain the files listed in .KSC. (File: purple)

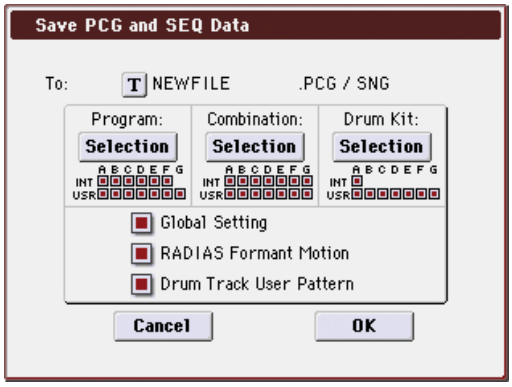


Save PCG & SEQ

This command saves all programs, combinations, drum kits, global settings, RADIAS formant motions (if the optional EXB-RADIAS is installed), and drum track user patterns from internal memory to media as a .PCG file. Songs and cue lists will be saved to media as a .SNG file.

This command is valid only when the current directory is a DOS directory.

1. Select “Save PCG & SEQ” to open the dialog box.



2. Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)

For example if you specify NEWFILE and execute the save command, files named NEWFILE.PCG and NEWFILE.SNG will be saved to the media.

3. Select the bank(s) that you want to save.

For the procedure, please see “0–2: Save All” step 3.

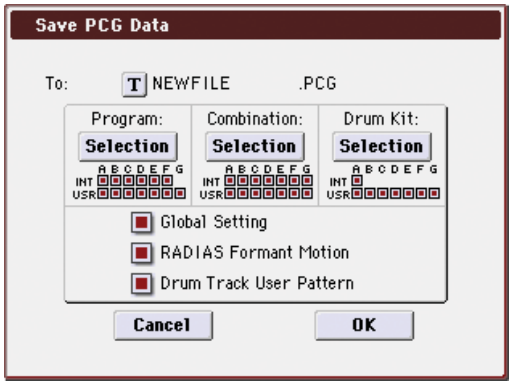
4. To save the data, press the OK button. To cancel without saving, press the Cancel button.

Save PCG

This command saves all programs, combinations, drum kits, global settings, RADIAS formant motions (if the optional EXB-RADIAS is installed), and drum track user patterns from internal memory to media as a .PCG file.

This command is valid only when the current directory is a DOS directory.

1. **Select “Save PCG” to open the dialog box.**



2. **Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)**

For example if you specify NEWFILE and execute the save command, a file named NEWFILE.PCG will be saved to the media.

3. **Select the bank(s) that you want to save.**

For the procedure, please see “0–2: Save All” step 3.

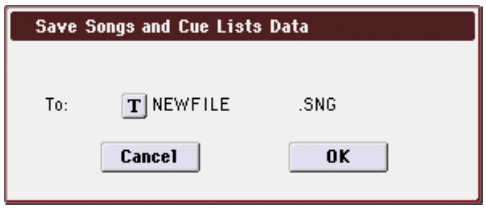
4. **To save the data, press the OK button. To cancel without saving, press the Cancel button.**

Save SEQ

This command saves all songs and cue lists from internal memory as a .SNG file.

This command is valid only when the current directory is a DOS directory.

1. **Select “Save SEQ” to open the dialog box.**



2. **Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)**

For example if you specify NEWFILE and execute the save command, a file named NEWFILE.SNG will be saved to the media.

3. **To save the data, press the OK button. To cancel without saving, press the Cancel button.**

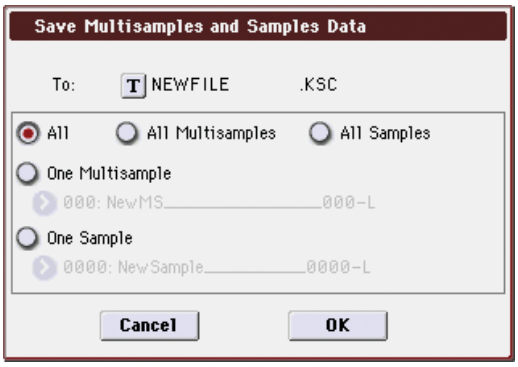
Save Sampling Data

When this command is executed, the following list of multisample and sample data will be saved to media as Korg format .KMP files, .KSF files, and a .KSC file that collects these files.

This is valid only when the current directory is a DOS directory.

- Multisample and sample data recorded or edited
- Multisample and sample data loaded in Media mode
- Multisample and sample data in internal sample memory (RAM)

1. **Select “Save Sampling Data” to open the dialog box.**



2. **Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)**
3. **Use To to specify the contents that will be saved. (All content will be saved in Korg format.)**

Use the following five radio buttons to make your selection.

All: All multisamples and samples from the Sample memory (RAM) will be saved as .KMP files and .KSF files. Simultaneously, a .KSC file and a directory to contain these files will also be created and saved.

The filename will be the .KSC filename and the directory name.

All Multisamples: All multisamples and samples (i.e., samples used by the multisamples) will be saved as .KMP files and .KSF files. Simultaneously, a .KSC file and a directory to contain these files will also be created and saved.

The filename will be the .KSC filename and the directory name.

All Samples: All samples will be saved as .KSF files. Simultaneously, a .KSC and directory to contain these files will also be created and saved.

The filename will be the .KSC filename and the directory name.

One Multisample: The selected multisample will be saved as a .KMP file. Simultaneously, a directory will also be created, and the samples used by the multisample will be saved in that directory.

The filename will be the .KMP filename and the directory name.

Initially, the filename will automatically be set to the first five characters (uppercase) of the 24-character multisample name + the multisample number.

Examples)

000: NewMS_ _ _ _ _ _000 → NEWMS000.KMP

001: 108bpmDrLoop00 → 108BP001.KMP

One Sample: The selected sample will be saved as a .KSF file.

The filename will be the .KSF filename name.

Initially, the filename will automatically be set to the first four characters (uppercase) of the 24-character sample name + the sample number.

Examples)

0000: NewSample_0000 → NEWS0000.KSF

0001: C#3-EGuitar → C#3-0001.KSF

Note: If you wish to export the data in AIFF (.AIF) or WAVE (.WAV) format, select the Utility **Export Samples as AIF/WAV**.

4. **To save the data, press the OK button. To cancel without saving, press the Cancel button.**

Note: If the menu command **Translation** is turned on, the names of .KMP files and .KSF files you save will be displayed as the multisample name or sample name. This is

convenient when you are searching for the desired files on media.

Save to Standard MIDI File

This command saves the selected song from internal memory to storage media as a .MID file (Standard MIDI File).

This command is valid only when the current directory is a DOS directory.

1. **Select "Save to Standard MIDI File" to open the dialog box.**

2. **In Song, so the song that you wish to save.**
3. **If Exclusive is On (checked), system exclusive events and universal exclusive events included in the song data will be saved as exclusive messages.**

If this is **Off (unchecked)**, system exclusive events and universal exclusive events included in the song data will not be saved.

4. **Use the text edit button to move to the text input dialog box, and specify the filename.**

By default, the first eight characters (uppercase) of the song name will be assigned automatically.

5. **Use the radio buttons to specify the format.**

Format 0 will save sixteen channels of MIDI data together in a single track.

Format 1 will save each MIDI channel to a separate track.

6. **To save the data, press the OK button. To cancel, press the Cancel button.**

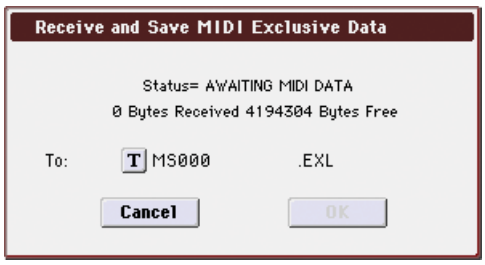
The song data you save here can be played back on a device that supports Standard MIDI Files. However if you intend to playback the data on the M3, we recommend that you use "Save SEQ" to save the data, since this will allow a higher degree of reproducibility.

Save Exclusive

Accumulates the received exclusive data in internal memory, and then save the data to media as an .EXL file.

This command is valid only when the current directory is a DOS directory.

1. **When you select Save Exclusive, the M3 will wait for exclusive data to be received. The following dialog box will appear.**



2. **Transmit the exclusive data that you wish to save to the M3.**

While the data is being received, the display will indicate "Status=RECEIVING MIDI DATA."

When reception ends, the size of the received data and the size of the remaining free area will be rewritten. The display will change to "Status=AWAITING MIDI DATA," and you can continue transmitting exclusive data to the M3. During reception, the Cancel button and the OK button cannot be pressed.

3. **Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)**
4. **To save the data, press the OK button. To cancel without saving, press the Cancel button.**

Export Samples as AIF/WAV

Sample data in Sample memory (RAM) that was recorded or edited in Sampling mode, or loaded in Media mode, can be exported (written) to media as an AIFF or WAVE format sample file.

This is valid only when the current directory is a DOS directory.

Note: Normally, it is recommended that you use Save All or Save Sampling Data to save sample data in Korg format (.KSC, .KMP, .KSF). This will allow you to save the data in a way that preserves the state of the multisamples (and the samples that they use) as they exist in Sample memory (RAM).

Use **Export Samples as AIF/WAV** if you wish to use an AIFF or WAVE format compatible application on your computer to work with samples that were recorded or edited on the M3.

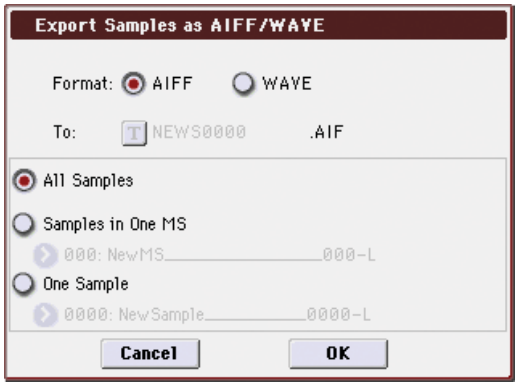
Export Samples as AIF/WAV does not export multisample files. The exported AIFF or WAVE format samples can be reloaded, but if the sample number when saving is different than the sample number when loading, you may need to remake certain settings, such as selecting the sample for each index of a multisample.

Furthermore, the following parameters set in Sampling mode are lost by **Export Samples as AIF/WAV**.

- Sample Name
- Loop Tune (Sampling 2–1d, **Loop Tune**)
- Reverse (Sampling 2–1d, **Rev (Reverse)**)
- +12 dB (Sampling 2–1d, **+12dB**)

Samples that are handled by the M3 as stereo will be exported as two independent L and R files.

1. **Select "Export Samples as AIF/WAV" to open the dialog box.**



2. **In Format, select either AIFF or WAVE as the file format for export.**

3. **Press the text edit button to move to the text dialog box, and specify the filename (See OG page 197).**
4. **In To, specify the content that will be exported.**

All Samples: All samples will be exported.

It will not be possible to specify the filename. The filename will automatically be assigned as the first four characters (uppercase) of the 24-character sample name + the sample number.

Examples)

0000: NewSample_0000→NEWS0000.AIF

0001: C#3-EGuitar→C#3-0001.WAV

Samples in One MS: All samples used by the selected multisample will be exported.

Only five characters of the filename can be specified. The five-character filename + the index number (001–128) in the multisample will be assigned automatically.

Initially, the filename will automatically be set to the MS + the multisample number (000–999).

Examples)

000: NewMS_ _ _ _ _ _000:

Sample selected for index 001 → MS000001.AIF

Sample selected for index 002 → MS000002.AIF

001: 108bpmDrLoop00:

Sample selected for index 001 → MS001001.AIF

Sample selected for index 002 → MS001002.AIF

When exporting **All Samples** or **Samples in One MS**, and all of the sample data does not fit on one volume of media, another dialog box will appear, directing you to specify the next media. (“If the data being saved does not fit on one volume of media” on page 408) However at this time if a single sample is larger than the capacity of the media, the sample cannot be exported. Either specify media with a larger capacity, or press **Skip button** to omit exporting that sample and proceed to exporting the next sample.

One Sample: The single selected sample will be exported.

The filename will be the filename of the .AIF or .WAV file. Initially, the filename will automatically be set to the first four characters (uppercase) of the 24-character sample name + the sample number.

When exporting **One Sample**, it is not possible to export sample data that will not fit on one volume of media.

5. **To export the data, press the OK button. To cancel without exporting, press the Cancel button.**

Save Audio CD Track List

This command saves a track list that you created in the Make Audio CD page. The drive and directory locations that contain each WAVE file, and the names of the WAVE files will be saved.

This command is valid only when the current directory is a DOS directory.

1. **Select “Save Audio CD Track List” to open the dialog box..**

2. **Use the text edit button to move to the text input dialog box, and specify the filename. (See OG page 197)**

For example if you specify NEWFILE and save, NEWFILE.KCD will be saved to the media.

3. **Press the OK button to save, or press the Cancel button to cancel without saving.**

0–3: Utility Menu Command

Rename

This command renames the selected file or directory.

This command is valid only when a DOS file or a DOS directory is selected.

1. **Select the file or directory whose name you want to edit.**
2. **Select “Rename” to open the dialog box.**

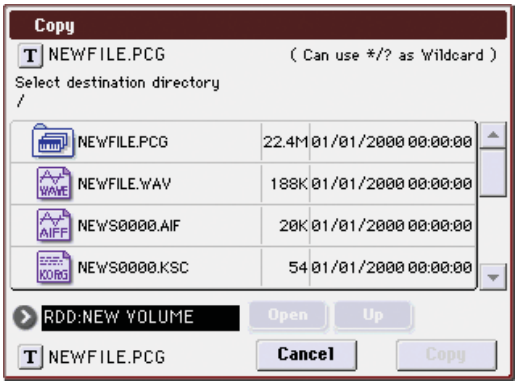
3. **Press the text edit button to access the text input dialog box, and modify the name (See OG page 197).**
4. **To rename the file or directory, press the OK button. To cancel, press the Cancel button.**

Copy

This command copies the selected file or directory.

This command is valid only when a DOS file or a DOS directory is selected.

1. **Select the file or directory that you want to copy.**
2. **Select “Copy” to open the dialog box.**



3. **Copy will show the name of the selected file or directory.**

If you wish to change the file or directory that will be copied, use the text edit button to move to the text input dialog box, and specify the filename that you wish to copy. (See OG page 197)

(Can use */? as Wildcard): When you use the text edit button to access the text input dialog box and specify the name of the file or directory to be copied, you can use “*” and “?” characters as wildcards. For example, if in the above example you specify **PRELOAD1.*** (instead of **PRELOAD1.PCG**), all filenames of PRELOAD1. with any filename extension will be copied at the same time: i.e., PRELOAD1.PCG, PRELOAD1.SNG, PRELOAD1.KSC, ...

Example)

PRELOAD1.* : PRELOAD1.PCG, PRELOAD1.SNG, PRELOAD1.KSC, ...

PRELOAD?.PCG : PRELOAD1.PCG, PRELOAD2.PCG, PRELOAD3.PCG, ...

When wildcards are used, only files will be subject to copying. Directories will not be copied.

4. **Use the Open button and Up button to select the copy destination directory.**

If you wish to specify a different USB device, use **Media Select** (Media 0–1a) to select it.

5. **If you wish to copy the file or directory with a different name, use the text edit button (in the lower line) to access the text input dialog box, and specify the name with which the file or directory will be copied.**

If you're using wildcards to copy multiple files simultaneously, you won't be able to change the file name.

6. **To copy the data, press the OK button. To cancel without copying, press the Cancel button.**

Note: If you decide not to copy, press the **Abort button**.

If the drive that you selected in **Media Select** is removable media (CD-R/RW, MO disc, removable hard disk etc.), it is not possible to copy to different media on the same drive.

Delete

This command deletes the selected file or directory.

This command is valid only if a DOS file or directory is selected.

1. **Select the file or directory that you want to delete.**
2. **Select "Delete" to open the dialog box.**

3. **Delete will indicate the name of the selected file or directory.**

If you wish to change the file or directory that is to be deleted, use the text edit button to access the text input dialog box, and specify the name of the file or directory that you wish to delete. (See OG page 197)

(Can use */? as Wildcard): When you use the text edit button to access the text input dialog box and specify the name of the file to be deleted, you can use the "*" or "?" characters as wildcards. This allows you to simultaneously delete multiple files with identical filenames and different extensions, or files whose names are partially identical (see "Copy" on page 412).

When wildcards are used, only files will be subject to deletion. Directories will not be deleted.

4. **To delete the selected file or directory, press the OK button. To cancel without deleting, press the Cancel button.**

Create Directory

This command creates a new directory within the current directory.

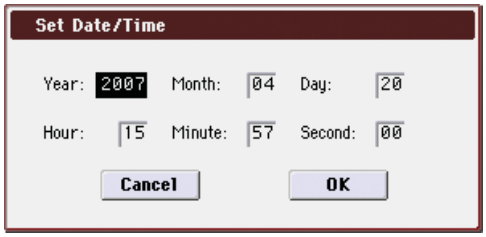
1. **Select "Create Directory" to open the dialog box.**

2. **Use the text edit button to access the text input dialog box, and specify the name of the new directory (See OG page 197).**
3. **To create the directory, press the OK button. To cancel without creating the directory, press the Cancel button.**

Set Date/Time

This command sets the date and time of the M3's internal calendar.

1. **Select "Set Date/Time" to open the dialog box.**



2. **Set each parameter.**

Year	1980–2037
Month	1–12
Day	1–31
Hour	0–23
Minute	0–59
Second	0–59

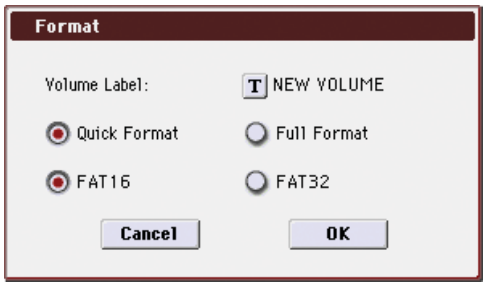
3. **To set the date and time, press the OK button. To cancel, press the Cancel button.**

Format

This command formats the selected media. The volume label (a name for the entire media) you specify will be assigned to the media. The volume label you assign here will be displayed in **Media Select** (Media 0–1a). The volume label can be a maximum of eleven characters.

When you format, all data saved on that media will be erased. If you had used a computer etc. to set up that drive so that it can be used as multiple drives (partitions), this data will also be erased. Be sure to double-check before you format.
After formatting, it is not possible to press the COMPARE switch to return to the previous state.

1. **Make sure that the media you want to format is inserted.**
2. **Use Media Select to select the media that will be formatted.**
3. **Select "Format" to open the dialog box.**



4. **In Volume Label, use the text edit button to access the text input dialog box, and specify the volume label (See OG page 197).**

The previously-specified volume label will be displayed. If no volume label had been specified for the media, or if a non-DOS media was inserted, this will indicate **NEW VOLUME**.

5. **Specify the initialization format.**

Quick Format: Normally you should use Quick Format to initialize the media.

Select this if the media has already been physically formatted, or if you want to format media that has been UDF-formatted by the M3. Since only the system area of the media need be formatted, this will require less time.

Full Format: Select this when formatting media that has not been physically formatted, or media (CD-RW) that has not been UDF-formatted.

Note: Normally, it is not necessary to perform a Full Format on media that has been physically formatted at 512 bytes/block. Execute the Quick Format for such media.

Note: You will normally select Full Format for CD-RW media etc. that has not been UDF-formatted. If an error message of "Media not formatted" appears, execute Full Format. Depending on the capacity of the media, executing Full Format may require a substantial length of time.

6. **Specify the file system.**

FAT16 can format a maximum of 4 Gbyte. If you are using media larger than 4 Gbyte, use **FAT32** format to format it. (In the case of FAT32, the theoretical maximum is 2 TB = 2,000 Gbytes.)

7. **To format the media, press the OK button. To cancel without formatting, press the Cancel button.**

Note: If you want to use a CD-R/RW for writing packet data, you must format it (see page 634). If you will be using it as an audio CD, formatting is not necessary.

Convert to ISO9660 Format

This command converts UDF format CD-R media to ISO9660 format.

If a file that was saved by the M3 to CD-R is to be loaded by another device, you must execute this command to convert it to ISO9660 format.

The memory of the USB storage device (except for a USB CD-R/RW) is used temporarily when performing the conversion. If no such media is connected, you won't be able to select this command. The USB storage device must have 20 Mbytes of free space.

1. **Select "Convert to ISO9660 Format" to open the dialog box.**
2. **Press the OK button to execute the conversion, or press the Cancel button to cancel without executing.**

Even if data is converted into ISO9660 format, some files may not be readable by certain devices.

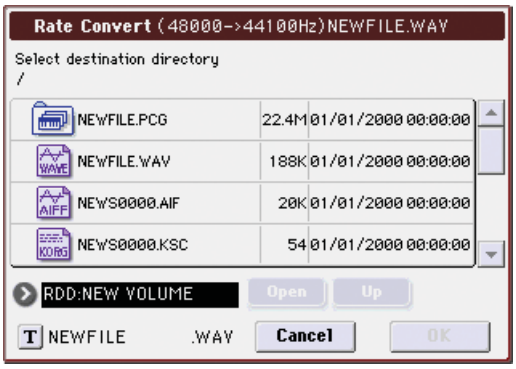
Rate Convert

This command converts the sampling rate (frequency) of the selected WAVE file from 48 kHz to 44.1 kHz or 44.1 kHz to 48 kHz.

This is valid only when a 48 kHz or 44.1 kHz WAVE file is selected.

When you use the Make Audio CD page to write a WAVE file to an audio CD, 48 kHz files will alternatively be converted to 44.1 kHz. This command is useful when you want to audition the sound converted to 44.1 kHz before writing it to CD.

1. **Select the file or directory whose sampling rate (frequency) you want to convert.**
2. **Select "Rate Convert" to open the dialog box.**



"Rate Convert" will indicate the name of the selected file.

3. **Use the Open button and Up button to select the save-destination directory.**

If you want to specify another USB device, use **Media Select** to specify it.

4. **If you want to change the filename for saving, press the text edit button in the lower line to access the text input dialog box, and specify the filename for saving.**
5. **Press the OK button to execute the Rate Convert command, or press the Cancel button to cancel without executing.**

Check Medium

This command checks the selected MS-DOS format media for errors, and corrects them. Execute this command if you frequently experience messages such as "Error in writing to medium" while writing to media, or "Buffer overrun error occurred" while sampling to media.

Note: Executing this command on media that uses flash memory (e.g., CompactFlash or SmartMedia, but not a Microdrive) will have no effect.

1. **Make sure that the media you want to check has been inserted.**
2. **Use Media Select to select the media that you want to check.**
3. **Select "Check Medium" to open the dialog box.**
4. **Press the OK button to execute the check, or press the Cancel button to cancel.**
5. **When checking has been completed, the recovered content will be displayed.**

Note: If you want to stop the checking process before it has been completed, press the Abort button.

The dialog box shows the estimated time that the check will require. This time will change depending on the capacity of the media and the state of the files on the media. This

operation may take longer than estimated if there are numerous defective sectors on the media.

0–4: Make Audio CD Menu Command

Swap Track

This command exchanges (swaps) the order of two audio CD tracks.

1. **Select “Swap Track” to open the dialog box.**

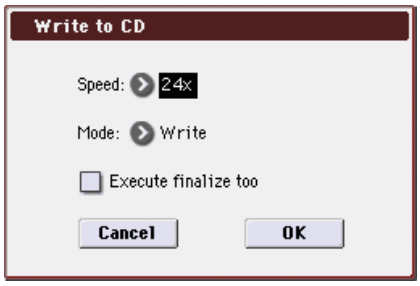
2. **Use Source1 and Source2 to select the two audio CD tracks that you want to exchange.**
3. **Press the OK button to execute the Swap Track operation, or press the Cancel button to cancel without executing.**

Write to CD

When this command is executed, the WAVE files specified in the audio CD track list will be written as audio CD tracks. If desired, you can also finalize the disc at this time.

When writing data to CD-R/RW media, the media containing the Wave files must have free space equal in size to the Wave files you are writing. Before you execute this operation, make sure that the drive containing the Wave files contains enough free space.

1. **Create an audio CD track list, use Media Select to select the CD-R/RW drive, and make sure that CD-R/RW media is inserted in the drive.**
2. **Select “Write to CD” to open the dialog box.**



3. **Use Speed to specify the writing speed.**

The writing speeds supported by your CD-R/RW drive will be displayed.

Be aware that if your system has a slower data transfer rate, using an excessively fast writing speed will produce writing errors. Depending on the drive you are using, problems with the speed may make it impossible to write, but you can perform a test beforehand to identify such problems. It’s a good idea to first perform a test write to CD, and check the maximum writing speed for your drive.

If WAVE files located on a USB 1.1 type hard disk are assigned in the audio CD track list, you may experience writing errors even if you select the slowest writing speed. In such cases, copy the WAVE files to a USB 2.0 type hard disk, and re-assign the copied files in the audio CD track list.

Use **Mode** to specify the writing method.

Test: Tests whether the data can be written correctly. Data will not actually be written to the CD-R/RW media, but all other processing will occur just as if data were actually being written. Use this when you want to check whether writing can be performed correctly. If an error occurs, the display will indicate “Error in writing to medium.”

Test and Write: A test write will be performed, and if the test is successful, the disc will actually be written.
We recommend that you use this method for fast writing speeds.

Write: The media will only be written.

4. **Specify whether the CD-R/RW media will be finalized after the audio CD tracks have been written to it.**

If **Execute finalize too** is checked, the disc will be finalized.

If this is not checked, the disc will not be finalized.

Note: If you want only to finalize the disc, use **Finalize Audio CD**.

5. **Press the OK button to execute writing or test writing to the CD-R/RW media, or press the Cancel button to cancel without executing.**

WAVE files with a 48 kHz sampling frequency will be converted to 44.1 kHz when they are written.
In order for this processing to be performed, free space of approximately the same size as the WAVE file to be converted will be required on the drive that contains the WAVE file. Before executing, please make sure that the drive containing the WAVE file has enough free space.

Note: If the track is shorter than 4 seconds, silence will be automatically added to increase the length to 4 seconds.

Note: Two seconds of silence will be added to the end of each track except the last track.

Finalize Audio CD

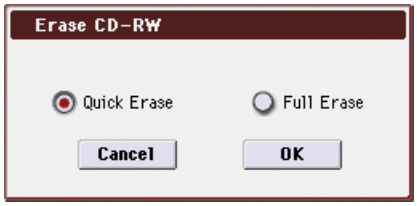
This command finalizes CD-R/RW media to which audio CD tracks have already been written.

1. **Use Media Select to select the drive, and make sure that the drive contains valid media.**
2. **Select "Finalize Audio CD" to open the dialog box.**
3. **Press the OK button to execute the Finalize command, or press the Cancel button to cancel without executing.**

Erase CD-RW

This command erases the audio CD tracks from CD-RW media.

1. **Use Media Select to select the drive, and make sure that it contains data.**
2. **Select "Erase CD-RW" to open the dialog box.**



3. **Select the mode by which the audio CD tracks will be erased.**

Quick Erase: Normally you will select this.

Full Erase: The data will be erased completely. Substantial time will be required for the erasure.

When you execute **Quick Erase**, the files and data will appear to be gone, but the data itself will remain on the disc until it is overwritten. If you want to erase data that should not be seen by someone else, execute **Full Erase** to erase the data completely.

4. **Press the OK button to execute the Erase operation, or press the Cancel button to cancel without executing.**

Note: Files and data other than audio CD tracks will also be erased.

0–6: Edit WAVE Menu Command

Save WAVE Parameter

This command saves the state of the WAVE parameters (Media 0–6b: WAVE Parameter) to the WAVE file. Execute this function after you have edited the WAVE parameters.

The only saved WAVE parameters are **Loop On/Off**, **LoopS**, and **End**. If you load the WAVE file into a device (e.g., an application) that supports these parameters, their settings will be valid.

1. **After editing the WAVE parameters, select "Save WAVE Parameter" to open the dialog box.**

2. **If you want to overwrite the parameters onto the original WAVE file, check Overwrite.WAV.**

Leave this option unchecked if you want to create a new WAVE file. If this is unchecked, a new WAVE file will be created in the same directory as the original file. Normally you will leave **Overwrite.WAV** unchecked when you execute this command.

3. **If you are creating a new Wave file, use "Name" to specify a filename.**
4. **To save the file, press the OK button. If you decide not to save, press the Cancel button.**

Truncate

This is the same function as the Sampling P1: Sample Edit menu command **Truncate**; here performed on a WAVE file. For details on this command and the procedure, please see "Truncate (for Sample Edit)" on page 335.

This command deletes the unwanted data located before and after the **Edit Range Start–Edit Range End** (Media 0–6b) region.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Cut

This is the same function as the Sampling P1: Sample Edit menu command **Cut**; here performed on a WAVE file. For details on this command and the procedure, please see "Cut" on page 337.

This command deletes the data in the **Edit Range Start–Edit Range End** region. Data located after this region will be moved forward.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Clear

This is the same function as the Sampling P1: Sample Edit menu command **Clear**; here performed on a WAVE file. For details on this command and the procedure, please see "Clear" on page 337.

This command sets data values of zero for the data in the **Edit Range Start–Edit Range End** region. The data that precedes and follows this region will not move.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Copy

This is the same function as the Sampling P1: Sample Edit menu command **Copy**; here performed on a WAVE file. For details on this command and the procedure, please see "Copy" on page 337.

This command copies the data from the **Edit Range Start–Edit Range End** region into the buffer. This copied data can be used by the **Insert**, **Mix**, and **Paste** commands. For more information, please see "Insert" on page 338.

Insert

This command inserts the data in the edit buffer (obtained by the **Copy** command) into the waveform at the **Edit Range Start** address. The data originally located at and following this location will move backward. For details on this command and the procedure, please see "Insert" on page 338.

The **From** field in the dialog box lets you select the data that will be inserted. By setting this to **RAM**, you can insert data that you copied from the specified region in the Sampling P1: Sample Edit page. By setting this to **MEDIA**, you can insert data that you copied from the specified region in the Media mode Edit WAVE page.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Mix

This command combines the edit buffer data (obtained by the **Copy** command) with the existing waveform data, beginning at the **Edit Range Start** address. For details on this command and the procedure, please see “Mix” on page 338.

The **From** field in the dialog box lets you select the data that will be mixed. By setting this to **RAM**, you can mix data that you copied from the specified region in the Sampling P1: Sample Edit page. By setting this to **MEDIA**, you can mix data that you copied from the specified region in the Media mode Edit WAVE page.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Paste

This command places the edit buffer data (obtained by the **Copy** command) onto the waveform at the **Edit Range Start** address. The data that had been at that location will be replaced by the pasted data. For details on this command and the procedure, please see “Paste” on page 338.

The **From** field in the dialog box lets you select the data that will be pasted. By setting this to **RAM**, you can paste data that you copied from the specified region in the Sampling P1: Sample Edit page. By setting this to **MEDIA**, you can paste data that you copied from the specified region in the Media mode Edit WAVE page.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Insert Zero

This command performs on a WAVE file the same function as performed by the Sampling P1: Sample Edit menu command **Insert Zero**. For details on this command and the procedure, please see “Insert Zero” on page 339.

This command inserts zero-level data (silence) starting at the **Edit Range Start** address. The data originally located at and following this location will move backward.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Normalize/Level Adj.

This is the same function as the Sampling P1: Sample Edit menu command **Normalize/Level Adj.**; here performed on a WAVE file. For details on this command and the procedure, please see “Normalize / Level Adj.” on page 339.

This command uniformly adjusts the data values (volume) of the **Edit Range Start**–**Edit Range End** region. **Normalize** will boost the volume of the region as high as possible without causing clipping (distortion). By executing Normalize on data that was sampled at a low level, you can increase the dynamic range of the sample data. **Level** will raise or lower the level by the amount you specify.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Volume Ramp

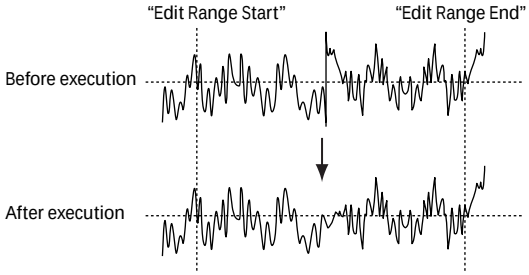
This is the same function as the Sampling P1: Sample Edit menu command **Volume Ramp**; here performed on a WAVE file. For details on this command and the procedure, please see “Volume Ramp” on page 340.

This command modifies the data values (volume) of the **Edit Range Start**–**Edit Range End** region. The volume will be gradually raised (Fade In) or lowered (Fade Out) beginning at the **Edit Range Start** and ending at the **Edit Range End**.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Erase Punch Noise

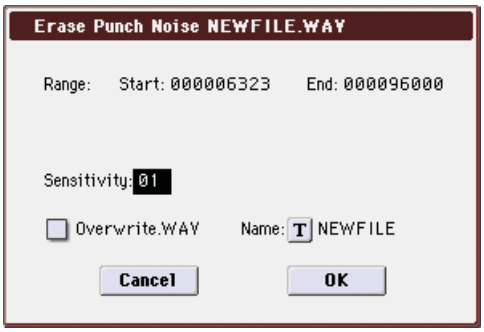
If editing operations have caused obtrusive noise at the transitions between edits, use this command to remove the noise. This command will automatically detect locations that cause noise, and apply a fade to smooth the transition.



1. **In the Media, Utility (or similar) page, select the Wave file that you want to edit, and then enter the Edit WAVE page.**
2. **Set Edit Range Start and Edit Range End to specify the region on which you want to execute the command.**

In order to avoid executing this command on regions that do not contain noise, specify the region tightly if you already know the location of the noise.

3. **Select “Erase Punch Noise” to open the dialog box.**



4. **Use Sensitivity to set the sensitivity at which noise will be detected.**

Higher settings will cause even slight noises to be detected. Normally you should execute the command with a setting of **1**, and increase the setting if the noise has not been removed.

5. **For details on Overwrite. WAV and Name, please see “Save WAVE Parameter” steps 2 and 3.**

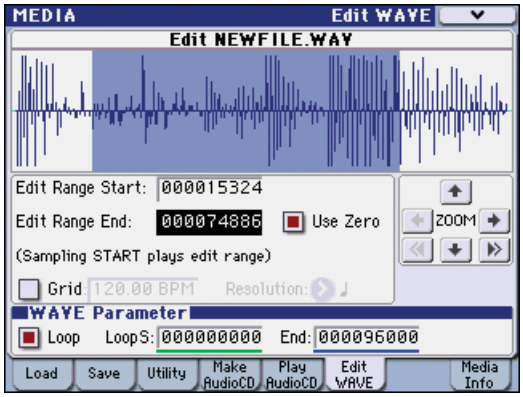
6. **To execute Erase Punch Noise, press the OK button. If you decide to cancel, press the Cancel button.**

Time Stretch (Sustaining)

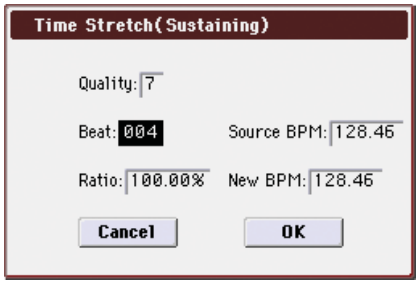
Time Stretch is a function that modifies the tempo by lengthening or shortening the length of the data without affecting the pitch. This lets you change the tempo of a pitched sample (e.g., a vocal, or a string or wind instrument) to match the tempo of other data or the song. You can also execute this command on a stereo sample.

This provides the same functionality as the Sampling mode Sampling P1: Sample Edit menu command **Time Stretch (Sustaining)** for a WAVE file.

1. **In the Media, Utility (or similar) page, select the Wave file that you want to edit, and then enter the Edit WAVE page.**
2. **Set Edit Range Start and Edit Range End to specify the region of data on which you want to execute Time Stretch.**



3. **Select "Time Stretch" to open the dialog box.**



4. **Use Quality to specify the audio quality of the data produced by the Time Stretch command.**

You can set this in a range of **0**–**7**. Although it depends on the data, higher settings will usually produce a better result. However, you should be aware that higher settings will also require a longer processing time.

You can repeat this operation as many times as you like, so start with a lower setting, and gradually adjust the setting as needed.

5. **Specify the length of the data that will be produced by the Time Stretch operation.**

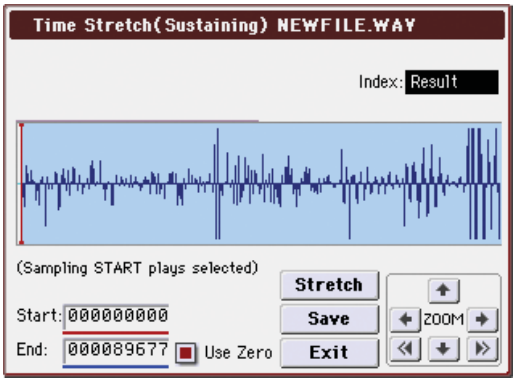
- If you want to specify the length as a ratio
  Specify a **Ratio** in the range of 50.00%–200.00%. With a setting of 50.00% the sample length will be halved (the tempo will be doubled). With a setting of 200.00%, the sample length will be doubled (the tempo will be halved.
- If you want to fit the data into a specific BPM (tempo)
  Specify the desired **Beat** (the number of quarter notes per minute). If you change **Beat**, the **Source BPM** value will change automatically. (See page 347)

You cannot make settings that would cause **Source BPM** or **New BPM** to exceed a range of 40–480.
You cannot make settings that would cause **Ratio** to exceed a range of 50.00–200.00.

Depending on how the data is processed the resulting length may not be exactly as you specified.

6. **To execute the Time Stretch command, press the OK button.**

The Time Stretch dialog box will appear.



7. **Verify the resulting data created by Time Stretch.**

Index [Source, Result]:

Selecting **Source** will display the original waveform prior to Time Stretch. Selecting **Result** will display the waveform after Time Stretch.

Waveform display: Displays the waveform of the WAVE file selected by **Index**.

If the Wave file is stereo, the L channel data is displayed above, and the R channel data below.

ZOOM: Use these buttons to zoom-in or zoom-out the vertical or horizontal axis of the waveform. (Samplig 1–1e: ZOOM)

Start:
End:

These fields specify the start address and end address of the currently selected index.

When you execute Time Stretch, these addresses will be set automatically. However in some cases, the margin of processing error may cause the playback to be slightly shifted. If this occurs, you can re-specify the address here.

To hear the sound of the specified region, press the SAMPLING START / STOP switch. The region specified by **Start** and **End** will play back when you press the SAMPLING START / STOP switch.

8. **If you press the Stretch button, the Time Stretch dialog box will appear, and you can re-do the time stretch once again.**

Execute Time Stretch as described in steps 4 and 5.

9. **Save the time stretched data. Press the Save button to display the Save dialog box.**

10. **For details on Overwrite.WAV and Name, please see "Save WAVE Parameter" steps 2 and 3.**
11. **To save, press the OK button. If you decide not to save, press the Cancel button.**

By repeating steps 8 and 10 you can create more samples as desired.

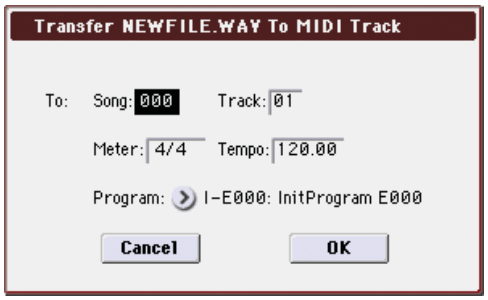
12. Press the Exit button to exit the Time Stretch operation.

Transfer WAVE To Track

The selected Wave file will be placed in a MIDI track of the song in the same way as with In-Track Sampling.

The WAVE file will be loaded into sample memory (RAM), and sample, multisample, and program data will be created automatically. The automatically created program will be assigned to a MIDI track, and note data will be automatically created on that MIDI track. (The following diagram shows.)

1. **In the Media mode, Utility (or similar) page, select the Wave file that you want to edit, and then enter the Edit WAVE page.**
2. **Select "Transfer WAVE To Track" to open the dialog box.**



3. **Specify the destination song number in the Song field, the destination track in Track, and the number of the automatically-created program in Program.**
4. **To execute Transfer WAVE To Track, press the OK button. If you decide to cancel, press the Cancel button.**

The multisample and sample(s) will automatically be created in vacant numbers. A program will be automatically created in the number you specified for **Program**, and assigned to the song track you specified in **Song** and **Track**.

Then the appropriate note data will be automatically created in the track.

You can't execute this command if the remaining total of RAM1 and 2 is less than the size of the WAVE file.

Mono to Stereo

This command performs on a Wave file the same function as performed by the Sampling P0: Recording menu command **Sample Mono To Stereo**. For more information, please see "MS Mono To Stereo / MS Stereo To Mono (Change Multisample Type)" on page 333.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

Rate Convert

This is the same function as the Media 0–3: Utility menu command **Rate Convert**. However, you cannot specify the save-destination. For more information, please see "Rate Convert" on page 414.

For details on the **Overwrite.WAV** and **Name** items shown in the dialog box, please see steps 2 and 3 of **Save WAVE Parameter**.

0–8: Media Information Menu Command

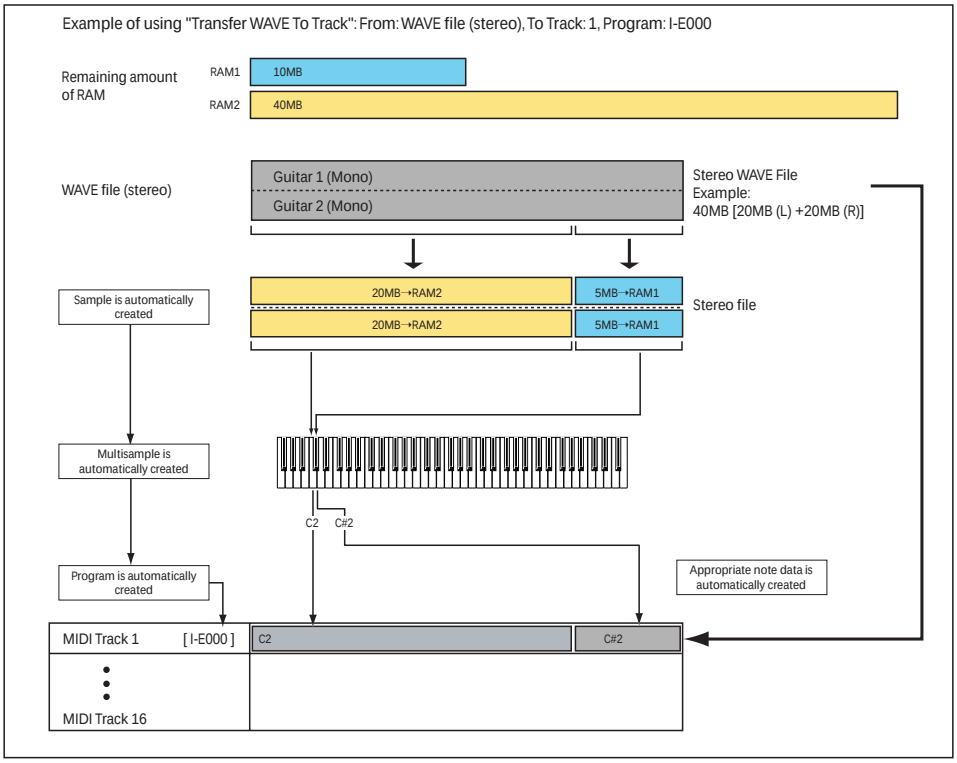
Scan USB device

This command mounts a USB storage device.

1. **Choose "Scan device."**

The currently connected USB devices will be rescanned.

When rescanning has been completed, the USB storage devices that can be connected will be available for selection in **Media Select** (Media 0–1a).



Effect Guide

Overview

The M3 provides five insert effects, two master effects, and a total effect, together with a mixer section that controls the routing of these effects.

For each of these effect processors, you can choose from 170 different types of effects, grouped into the following categories:

Classification of 170 effects

Effect type	Contents
Dynamics: 000...005	Effects which control volume, such as compressors, limiter, and gates
EQ/Filter: 006...017	Effects which control frequency content, such as EQ, multi-mode filter, exciter, and wah
Overdrive/ Amp/Mic: 018...025	Overdrive and amp modeling effects such as guitar/ bass amps and mics
Chorus/ Flanger/Phaser: 026...039	Pitch and phase modulation effects such as chorus and flanger
Modulation/ Pitch Shift: 040...054	Other modulation effects such as tremolo and rotary speaker, and pitch shifters
Delay: 055...069	Delays
Reverb/ER: 070...076	Reverb and early reflections
Mono-Mono Serial: 077...108	Mono & Mono chain effects that internally connect two mono effects in series
Mono//Mono Parallel: 109...153	Mono & Mono parallel effects that allow two mono effects to be applied to L and R independently
Double Size: 154...170	Double size effects

Effect Preset

Effect Presets let you easily store and recall all of the settings for an individual effect. You can store up to 16 user presets for each effect type, in addition to 15 re-writable factory presets.

The same presets appear in all of the modes (Program, Combination, Sequencer, and Sampling).

Note that edits to effects parameters are automatically stored with the Program–you don't need to store them as an Effect Preset. Presets just make it easier to re-use your favorite settings.

For instance, you can save an Effect Preset while working on a particular Program, and then later use the same Effect Preset in a different Program, Combination, or Song.

P00: **Initial Set:** These are the default settings that are recalled when you select an effect type in the Insert FX Setup page. You can't save your own settings here.

P01…P15: These contain preset data that Korg plans to provide in the future. We recommend that you store your settings in U00–U15.

U00…U15: These are areas in which you can store your own settings.

----------: This shows that no Effect Preset has been selected. You'll see this if you've just selected an effect, written a Program, or selected a new Program. Selecting this setting from the menu will not have any effect.

Note: Programs save the effects parameter settings, but they don't save the number of the selected Effect Preset. If you select an Effect Preset, and then save the Program, the Effect Preset setting will revert to "**----------**."

For more information, please see "Using Effect Presets" on page 101.

Effects in each mode

Program mode

With EDS Programs, you can use insert effects to process the final sound in the same way that you use the Filter, Driver, Amplifier, and EQ (equalizer) to process the sound from the oscillators (OSC 1 & 2). Then the master effects are used to create overall ambience such as reverb, and use the total effect to make final adjustments. All of these settings can be made independently for each program.

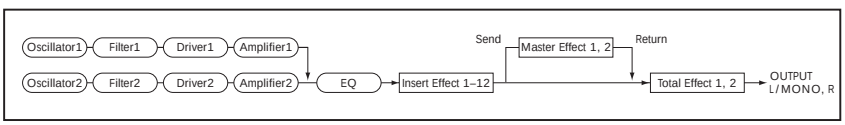
The RADIAS programs of the optional EXB-RADIAS differ in their structure (e.g., filter and amp), but you can apply the insert effects, master effects, and the total effect to the oscillators in the same way as for EDS programs.

Combination, Sequencer mode

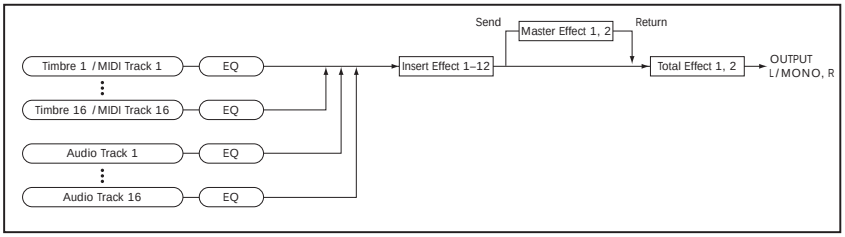
In Combination and Sequencer modes, you can use the track EQ and insert effects to process the program sound of timbre / track. Then you can use the master effects to create overall ambience, and use the total effect to make final adjustments.

In Combination mode you can make these settings for each combination, and in Sequencer mode you can make them for each song.

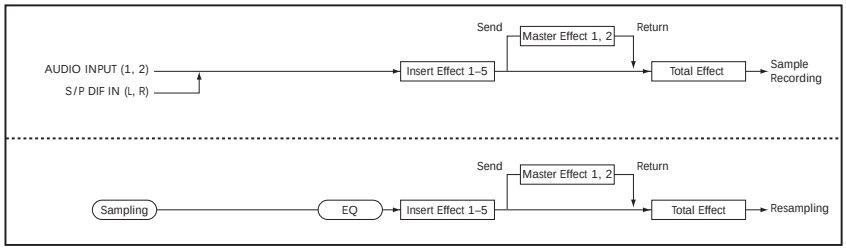
Program mode



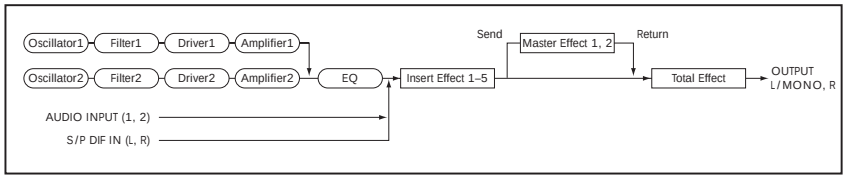
Combination mode, Sequencer mode



Sampling mode



Audio Input (set to Program mode)



In Sequencer mode, you can switch between effects or modify the effect parameters and record these changes, so that effects will switch automatically or effect parameters will be modified automatically as the song plays back.

Sampling mode

In Sampling mode, external audio sources from AUDIO INPUT 1, 2, and S/P DIF IN jacks can be processed by insert effects, master effects, and total effect, and then sampled. Use the P0: Recording– Audio In / Setup page to make audio input settings for Sampling mode. These settings apply only to Sampling mode.

Samples that you've assigned as a multisample can also be processed by the insert effects, master effects, and total effect, and then resampled.

Audio Input

You can also input audio sources from AUDIO INPUT 1, 2, and S/P DIF IN jacks in modes other than Sampling mode (i.e., in Program, Combination, and Sequencer modes).

You can apply the insert effects, master effects, and total effect to external audio sources from these jacks and sample them, or use the M3 as a 4-in (AUDIO INPUT 1, 2, S/P DIF IN L, R) 6-out effect processor. You can also use an external mic input to control a vocoder effect (156: Vocoder) applied to internal sounds. For examples of this, see page 424 and page 515.

Use the P0: Play– Sampling / Audio In page of each mode to make audio input settings. Alternatively, you can check **Use Global Setting** and make these settings in the Global mode P0: Basic Setup– Audio page. Normally you will leave **Use Global Setting** checked. Uncheck this if you want programs and combinations to use their own settings. For example when writing the program as a vocoder effect program.

Note: If the optional EXB-FW is installed, you'll be able to use FireWire input and output. This will give you a total of 6-in and 6-out.

When effects are applied to the external input sound from the AUDIO INPUT 1, 2, and S/P DIF IN jacks, certain effect types or parameter settings may cause oscillation to occur. If this occurs, adjust the input level, output level, or effect parameters. Please be aware of this particularly when using an effect that has a high gain.

Dynamic modulation (Dmod) and Tempo Synchronization

Dynamic modulation (Dmod)

Dynamic modulation lets you control certain effects parameters in real-time, using either the built-in controllers or MIDI. These effect parameters are marked with the logo D-mod.

For more information, please see "Dynamic Modulation Sources (Dmod)" on page 594.

Tempo Synchronization

You can synchronize some effects parameters, such as LFO speeds and delay times, to the system tempo. This lets you sync the effects to Program LFOs, Drum Track, KARMA, the internal sequencer, and external MIDI clocks.

These effects parameters are marked with the logo Sync.

Synchronizing LFOs

Most effects with LFOs, such as 010: Stereo Wah / Auto Wah, can be synchronized to tempo. This applies to the individual effects LFOs, and also the Common FX LFO.

To set up LFOs to synchronize to tempo:

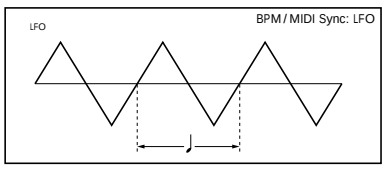
1. **Set MIDI Sync to On.**
2. **Set the BPM as desired.**

To synchronize to the system clock, set **BPM** to MIDI.

To set the LFO to a specific tempo, separate from the system clock, set **BPM** to the desired tempo (between 40.00 and 300.00 BPM).

3. **Use the Base Note and Times (x) parameters to set the rhythmic value of the LFO.**

For instance, if you set **Base Note** to 1/8 and **Times (x)** to 2, each cycle of the LFO will last for a quarter-note (two eighth-notes).



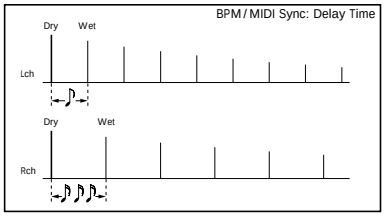
Synchronizing Delay Times

Delays with “BPM” in their title will sync to tempo.

For instance, you might set up effect 065: Stereo BPM Delay as follows:

1. **Set L Delay Base Note to 1/8, and Times (x) to 1**
2. **Set R Delay Base Note to 1/16, and Times (x) to 3**

This means that the left channel will be delayed by an eighth-note, and the right channel will be delayed by a dotted eighth-note (three sixteenth-notes).



3. **Set the BPM as desired.**

To synchronize to the system clock, set **BPM** to MIDI.

To set the delays to a specific tempo, separate from the system clock, set **BPM** to the desired tempo (between 40.00 and 300.00 BPM).

If the combination of the tempo, **Base Note**, and **Times (x)** settings in conjunction would exceed the maximum delay time, a warning such as “Time Over? >OVER!” will appear in the display. If this happens, just reduce the delay time. Note that the maximum delay time depends on which delay effect you’re using. For instance, the maximum delay time for 065: Stereo BPM Delay is 1,360msec, while the maximum delay time for 169: ST. BPM Long Dly is 2,730msec.

Common FX LFOs

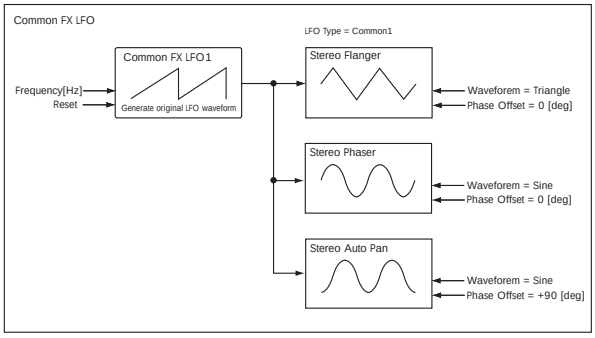
Normally, LFO-based effects–such as choruses, flangers, phasers, filters, and auto-pan–each have their own independent LFO. The M3 effects support this standard mechanism, but add a new one: Common FX LFOs.

The two Common FX LFOs allow you to synchronize multiple LFO-based effects together. They’re available in most LFO-based effects, in addition to the individual LFOs, providing:

- Master sources of frequency and phase for all LFO-based effects
- LFO speed set by either frequency or tempo
- Reset from Dmod sources, for either realtime performance or synchronizing to a down-beat in a sequence

When using the Common FX LFOs, you can still control the LFO phase individually for each effect, and often change the waveform individually as well.

You can edit the Common FX LFO parameters on the P8–Common FX LFO pages of Program, Combination, Sequencer, and Sampling modes.



FX Control Buses

The FX Control Buses lets you create effects “sidechains.” Sidechains let you control an effect with one audio signal (the sidechain), while the effect processes a completely different audio signal.

This is convenient for use with vocoders and limiters, gates, etc.

M3 includes two true- stereo FX Control Buses, which can be used with the following effects:

Vocoder

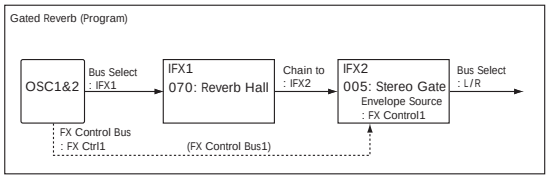
156: Vocoder

Limiter, and gate effects

002: Stereo Limiter
005: Stereo Gate

Example: Gated Reverb (Program mode)

If you process reverberant sound through a gate effect, the gating may not occur as desired since the reverb extends the duration of the sound. Normally, you will use the un-reverberated sound to control the gate, as shown in the diagram. Use **Bus Select** to send OSC1 and 2 to IFX1 and also via **FX Control Bus** to 1. Set the IFX2: Stereo Gate **Envelope Source** to FX Control 1. This lets you control the gate using a different signal than the input (in this example, the reverberated sound).

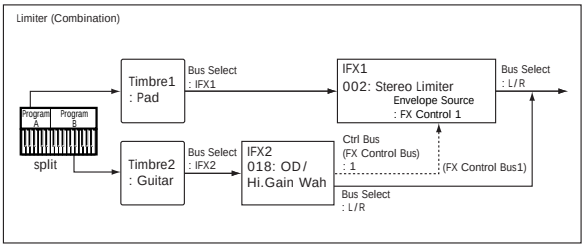


Example: Limiter (Combination)

Compressor-type effects use the level of the audio input to control the level gain of the audio output.

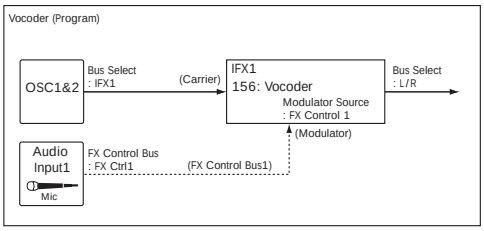
For these effects, the envelope detection source can be either the audio input itself (the usual method) or FX Control Bus 1 or 2.

The example shown in the diagram is of a split combination in which the level of timbre 1 (Pad, played from the low key range) is being controlled by timbre 2 (Guitar, with IFX2 OD / Hi-Gain Wah inserted, played from the high key range). You can make settings so that when you play the guitar sound, the volume of the pad will decrease automatically. Send the post-IFX2 signal via **FX Control Bus** to FX Ctrl1, and set the IFX1: Stereo Limiter **Envelope Source** parameter to FX Control 1.



Example: Vocoder (Program)

Vocoder effects produce their distinctive sound by using an audio signal (the modulator) to modulate a different audio signal (the carrier). In the diagram, the output of OSC1 and 2 are the carrier, and the audio input from a mic is used as the modulator to produce a “speaking instrument” type of effect. Use **Bus Select** to send OSC1 and 2 (the carrier) to IFX1, and set the **FX Bus** (0–7a) to 1 for the mic connected to the AUDIO INPUT, and specify FX Control 1 as the **Modulator Source** for IFX1: Vocoder.

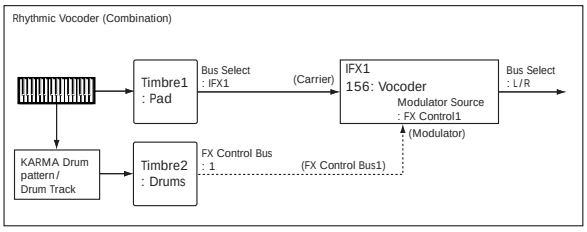


Example: Rhythmic Vocoder (Combination)

Vocoder effects produce their distinctive sound by using an audio signal (the modulator) to modulate a different audio signal (the carrier). Although the most common application of a vocoder is to use audio from a mic as the modulator, you can also use a drum pattern or similar signal as the modulator instead, producing a rhythm vocoder effect.

In the example shown in the diagram, a drum pattern generated by KARMA and Drum Track function is sent to the FX Control bus and used as the modulator for the vocoder.

For timbre 1 (the carrier), set **Bus Select** to IFX1, sending the signal to IFX1: Vocoder. For timbre 2 (the drum program we’re using as the modulator), set **FX Control Bus** to 1, sending the signal to FX Ctrl1 bus. For IFX1: Vocoder, set “Modulator Source” to FX Control 1 so that the timbre 2 signal will be the modulator for the vocoder.



Effect I/O

To achieve the best tonal quality, signals sent to the effects should be at the maximum level below clipping. Also, use the **Wet/Dry** parameter for the Insert Effects, Total Effect and the “Wet / Dry” or “Return 1, 2” parameter for the Master Effects to adjust the effect output level.

If the input level is too low, the SN ratio may decrease. On the other hand, if the input level is too high, clipping may occur.

The following table shows the parameters related to the level settings:

Program mode (EDS)

Input	Control Surface OSC 1/2 Volume (P0)
	OSC1/2 MS1, 2, 3, 4 Level (P2)
	Filter1/2 Trim (P3)
	Filter1/2 Output (P3)
	Driver1/2 Drive (P4)
	Amp1/2 Amp Level (P4)
	EQ Input Trim (P4)
	Send1/2 (P8)
	Effect Trim parameter *1 (P8, P9)
Output	Effect Wet/Dry parameter (P8, P9)
	Return1, 2 (P9)
	Master Volume (P9)

Program mode (optional EXB-RADIAS)

Input	Control Surface OSC Volume (P0)
	OSC Mixer Level (OSC1 (OSC2, Noise) (P2)
	Amp Level (P4)
	Send1/2 (P8)
	Effect Trim parameter *1 (P8, P9)
Output	Effect Wet/Dry parameter (P8, P9)
	Return1, 2 (P9)
	Master Volume (P9)

Combination mode/Sequencer mode

Input	Volume (P0)
	Timbre EQ Input Trim (P2)
	Send1/2 (P8)
	Effect Trim parameter *1 (P8, P9)
Output	Effect Wet/Dry parameter (P8, P9)
	Return1, 2 (P9)
	Master Volume (P9)

Sampling mode

Input	AUDIO INPUT LEVEL on the rear panel
	Audio Input Level (P0)
	Effect Trim parameter *1 (P8, P9)
	Send1/2 (P0, P8)
Output	Effect Wet/Dry parameter (P8, P9)
	Return1, 2 (P9)
	Master Volume (P9)

Audio Input [*2]

Input	AUDIO INPUT LEVEL on the rear panel
	Level (P0)
	Send1/2 (P0)

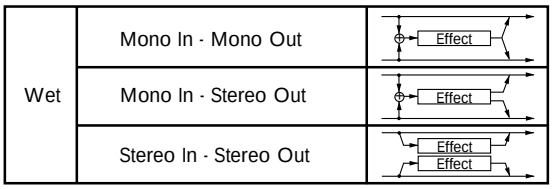
[*1] Some effects may not have these parameters.

[*2] These settings are made separately for programs, combinations, and songs (Sequencer). If “Use Global Setting” is checked, these settings are made in Global mode P0.

Insert Effects (IFX1...IFX5)

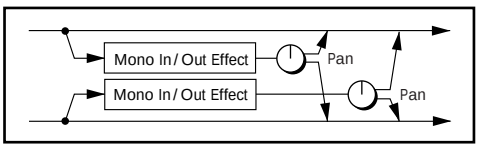
In/Out

Insert Effects (IFX 1–5) have a stereo input and a stereo output. If you set the **Wet/Dry** parameter to Dry (no effect), the input signal will be passed through, in stereo, without being processed by the effect. If you select Wet (effect applied), the processed signal will be output in one of the following ways:



Mono–Mono Parallel Effects

109: P4EQ // P4EQ —153: BPM DI // BPM DI



These effects are typically stereo-in / stereo-out, but they have a special structure. The L channel and R channel of the stereo input each have their own independent mono effect. Each mono output can then be panned to the desired position in the stereo field.

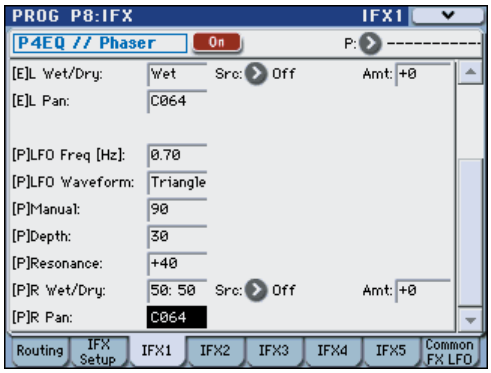
- Track1: Piano, **Pan**=L001, **Bus Select**=IFX1
- Track2: E.Piano, **Pan**=R127, **Bus Select**=IFX1

So that you don't mix the sound of the two tracks that are being input, set the P0: Play / REC **Pan** parameter to L001 and R127 respectively.

Example: IFX1: 116: P4EQ // Phaser

Track 1: Piano is sent to the L channel P4EQ, and Track 2: E.Piano is sent to the R channel Phaser. Use the P8 - IFX page **Pan** parameter to set the output position of each sound. In this example, both are set to C064. See the diagram below.

IFX1: 116: P4EQ // Phaser



Input / output variations for each effect are shown in upper left of the block diagrams starting on page 507.

If you select **000: No Effect**, stereo input signals are output in stereo without being processed.

Pressing the On / Off button of IFX1–IFX5 in the P8– Insert FX Setup pages in each mode will toggle between On and Off. When Off is selected, the effect will be bypassed, and the stereo input signal will be output in stereo without being processed.

MIDI The M3 can also turn IFX1–IFX5 off separately from the setting of the On / Off button by receiving MIDI control change message CC#92. Value 0 will turn them off, and value 1–127 will turn them on.

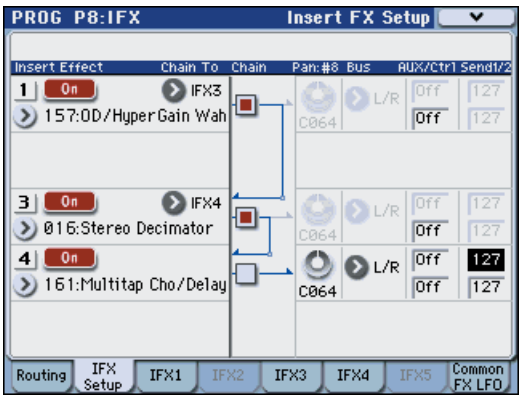
You can also use "Effect Global SW" (Global 0–1b) to turn IFX1–5 on and off. This MIDI control is performed on the global **MIDI channel** (Global 1–1a).

Double-size effects

Double-size effects (154: St.Mltband Limiter – 170: Early Reflections) use twice as much space as other effects.

You can use double-size effects for insert effects IFX1–IFX4 and master effect MFX1. However, the effect of the number that follows it will be unavailable. For example if you've selected a double-size effect for IFX1, you won't be able to use IFX2. If you've selected a double-size effect for MFX1, you won't be able to use MFX2.

An example of when a double-size effect is selected for IFX1 and IFX4



Routing

You can use up to five channels (IFX 1…5) for the Insert Effects in any mode.

Program mode

Use **Bus Select** (Prog 8–1b) to set the destination bus of the oscillator output.

L/R: Send the output to the L / R bus. Instead, it is sent to AUDIO OUTPUT (MAIN) L / MONO and R after the TFX.

IFX1…5: The signal is sent to Insert Effects IFX 1–5.

1…4, 1/2, 3/4: The signal is sent to AUDIO OUTPUT (INDIVIDUAL) 1…4 bus. For more information, please see “Individual Outputs” on page 437.

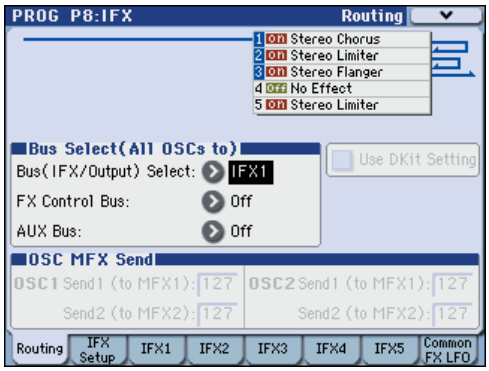
Off: The output will not be sent to the L / R bus, IFX1–5 buses, or Individual 1–4 buses. Choose the Off setting if you want to connect the oscillator output to a master effect in series. Use **Send1 (to MFX1)** and **Send2 (to MFX2)** to adjust the send level.

Use **Send1 (to MFX1)** and **Send2 (to MFX2)** (Prog 8–1d) to specify the send level for the Master Effects. This setting is effective if **Bus Select** (Prog 8–1b) is set to L / R or Off.

If **Bus Select** is set to IFX1–5, use **Send1** and **Send2** (Prog 8–2a) to specify the send level of the post-IFX signal.

MIDI Send1 responds to CC#93, and Send2 responds to CC#91. At this time, the actual send level uses the value of the Send 1 and 2 settings for Oscillators 1 and 2, multiplied by the Send 1 and 2 values received via MIDI.

In the example shown in the next diagram, Oscillators 1 and 2 outputs being sent to IFX1.

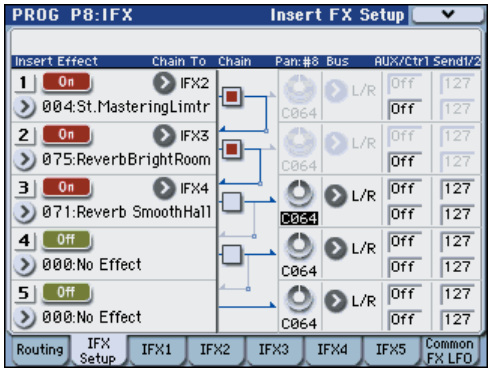


If you are connecting the Insert Effects in series, **check** the **Chain** box (Prog 8–2a). Use **Chain to** (Prog 8–2a) to specify the destination to which the signal will be chained.

If you check the IFX1 checkbox, the output of IFX1 will be sent to the input of the IFX you specify in “Chain to.” Effects can be chained only in ascending order of their number; for example IFX1 can be chained to IFX2 through IFX5, and IFX2 can be chained to IFX3 through IFX5. You can create a chain of up to five insert effects in series, IFX1 through IFX5.

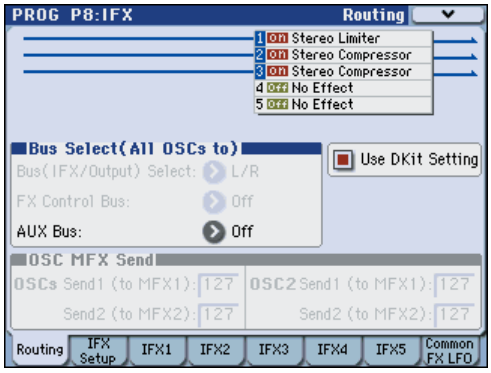
When the Insert Effects are connected in series, the values of the **Pan: CC#8**, **Bus**, **AUX Bus**, **Send1**, and **Send2** parameters for the post-IFX signal will be used.

In the example shown in the next diagram, the **Chain** check box is checked, and each **Chain to** parameter is set to the subsequent effect, creating a series connection of IFX1 → IFX2 → IFX3 → IFX4 → IFX5. The post-IFX5 settings for **Pan: CC#8**, **Bus**, **AUX Bus**, **Send1**, and **Send2** will be used.



Settings for drum programs

If you have selected “Drums” for **Oscillator Mode** (Prog 1–1a) of a Program, the “Use DKit Setting” box (Prog 8–1c) becomes available. For more information, please see next diagram.



If you check this box, **Bus Select**, **FX Control Bus**, **Send1**, and **Send2** (Global 5–4b) for each key of the selected DrumKit becomes effective. For example, you can send a snare sound to IFX1 to apply the Gate effect, a kick sound to IFX2 to apply EQ, and other sounds to AUDIO OUTPUT (MAIN) L / MONO and R without applying any Insert Effects.

Tip: In most of the preloaded drum kits, the following types of drum instrument have the same **Bus Select** settings.

Snares → IFX1
Kicks → IFX2
Other → IFX3

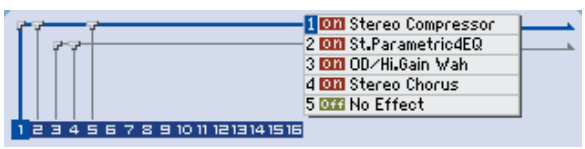
If you de-select the box, all drum instrument outputs are sent to the bus specified by **Bus Select** (Prog 8–1b). You may apply any Insert Effects to all drum instruments, regardless of the DrumKit settings.

Combination and Sequencer modes

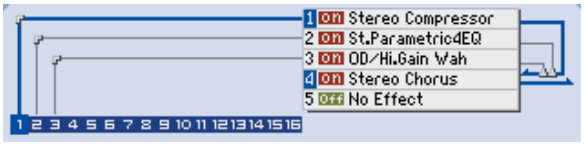
Use **Bus Select** (Combi / Seq 8–1–1(2)d) for timbres (Combination) and tracks (Sequencer) to select an Insert Effect to apply to the corresponding timbres and tracks. You can route multiple timbres and tracks to a single Insert Effect.

Tip: You can use each timbre / track’s **Bus Select**, post-IFX **Chain to** and **Chain** parameters (Combi / Seq 8–1–3b) to create a variety of routings.

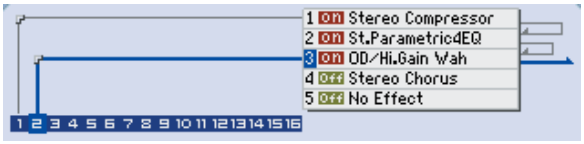
Example: *Inserting one IFX into two or more timbres*



Example: *Inserting a separate IFX into each timbre, and inserting another IFX later*



Example: *Sharing part of a timbre's IFX chain with another timbre*

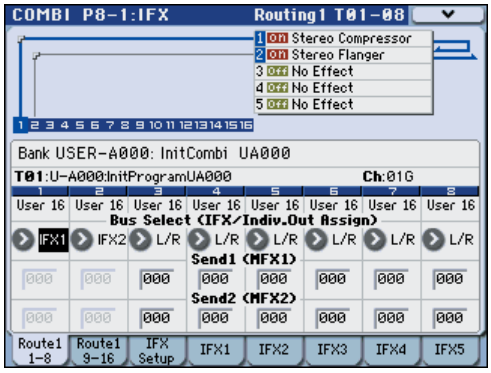


As with Program mode, select L / R, IFX1–5, 1–4, 1 / 2, 3 / 4, or Off for each timbre and track.

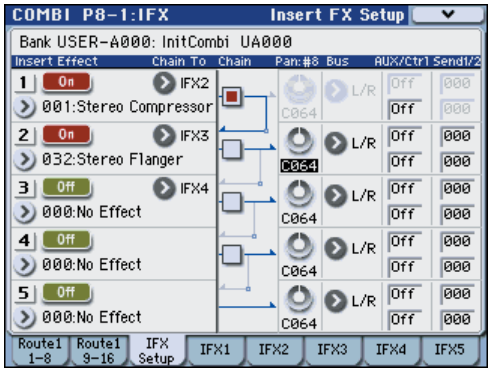
Send1 (to MFX1) and **Send2 (to MFX2)** become available if **Bus Select** has been set to L / R or Off. If you've set **Bus Select** to IFX1–5, use **Send1** and **Send2** (Combi / Seq 8–1) following the insert effect to adjust the send levels.

MIDI Send1 responds to CC#93, and Send2 responds to CC#91. At this time, the actual send level uses the value of the Send 1 and 2 settings for Oscillators 1 and 2 of the Programs (selected for the timbres and tracks), multiplied by the Send 1 and 2 values received via MIDI.

The following diagram shows an example of Combination mode. The Timbre 1 output is sent to IFX1 and the Timbre 2 output is sent to IFX2 according to the **Bus Select** setting. Other timbres are sent to L / R. The output signal passes through the TFX, then goes to AUDIO OUTPUT (MAIN) L / MONO and R.



In the next diagram, IFX1's **Chain** check box is checked and **Chain to** set to IFX2, sending the output of IFX1 to IFX2. Timbre 1 is being processed by IFX1: Stereo Compressor and IFX2: 032: Stereo Flanger effects. Timbre 2 is being processed by the IFX2: 032: Stereo Flanger effect. The Routing Map area of the next diagram shows these settings. (With these settings, IFX3–5 are not being used.)



Drum Programs in Combination and Sequencer modes

If you've selected a drum program (**Oscillator Mode**= Drums) for a timbre (in Combination mode) or track (in Sequencer mode), the DKit setting will be available as a choice for **Bus Select** (see the following diagram).

If **Bus Select** is set to DKit, of each key in the drum kit, letting you specify the bus to which each drum instrument will be sent. For example you can send snare sounds to IFX1, kick sounds to IFX2, and other drum sounds to L / MONO and R.

If this check box is **unchecked**, all drum instruments will be output according to the **Bus Select** setting of each timbre / track (Combi / Seq 8–1–1(2)d). This lets you apply an insert effect to all of the drum instruments in that drum kit.

Drum Kit IFX Patch

If **Bus Select** is set to DKit, you'll be able to select the menu command **DrumKit IFX Patch**.

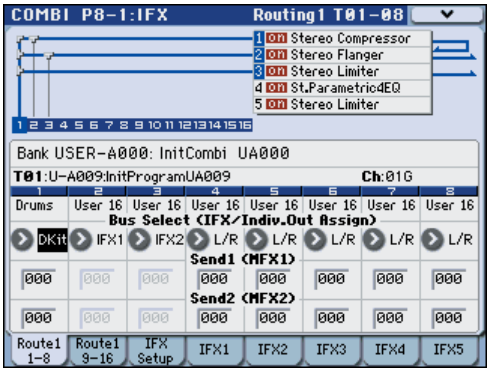
This option allows you to change the routing of the Insert Effects temporarily by changing **Bus Select** for each key.

For example, assume that the DrumKit key assignment is set so that a snare sound is routed to IFX1 and a kick sound is routed to IFX2 etc., IFX1–3. In this case, if you wish to assign IFX 1 and 2 to the Programs used by other timbres and tracks, you can view the routing so that these DrumKit sounds are routed to IFX3 and IFX5 respectively.

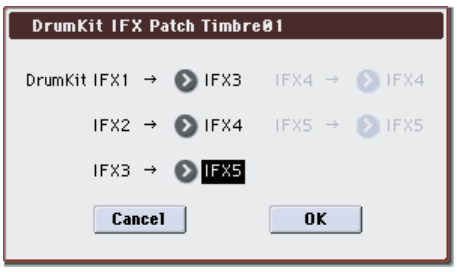
Patching is possible only if the **Bus Select** (Global 5–4b) setting of each key in the drum kit is assigned to an insert effect. The state of these settings is also shown in the Routing Map. Make the desired settings for "DrumKit IFX Patch," and press the OK button to execute.

If you want to revert to the original settings of the drum kit, execute **Drum Kit IFX Patch** with the settings IFX1 → IFX1, IFX2 → IFX2, IFX3 → IFX3, IFX4 → IFX4, and IFX5 → IFX5.

In the following diagram, Drum Program is assigned to Timbre 1, and normal Programs are assigned to Timbres 2 and 3. **Bus Select** is set to DKit for Timbre 1, IFX1 for Timbre 2, and IFX2 for Timbre 3. With Timbre 1, the **Bus Select** (Global 5–4b) for DrumKit setting becomes effective.

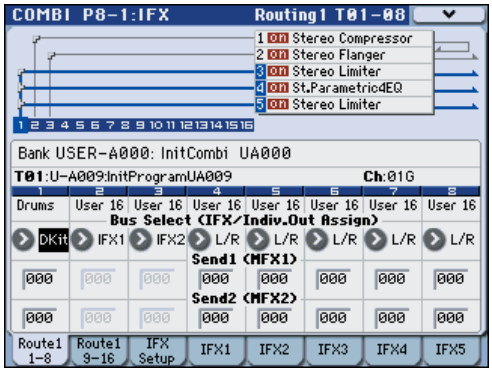


DrumKit IFX Patch dialog



Use the **DrumKit IFX Patch** menu command if you want the drum program to use effects other than timbres 2 and 3. Choose **DrumKit IFX Patch** from the page menu, and

temporarily send the drum kit IFX1 to IFX3, IFX2 to IFX4, and IFX3 to IFX5. Executing with these settings will temporarily change the effects to which the drum kit is being sent (see the following diagram).



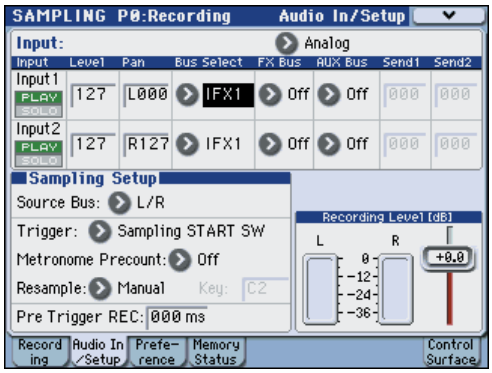
Sampling mode

The external input sounds from the AUDIO INPUT 1, 2, and S/P DIF IN jacks can be processed by the insert effects, master effects, or total effect then sampled. You can also apply insert effects to the samples assigned to a multisample, and resample the result.

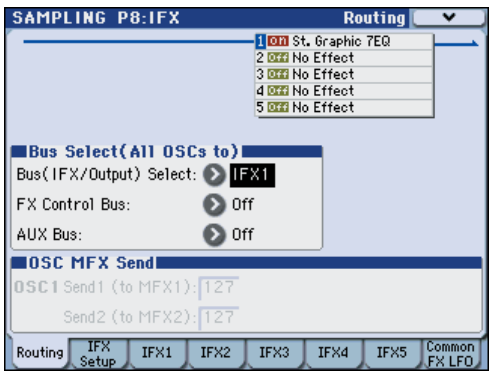
The **Bus Select** (Sampling 0–2a) settings in the P0: Recording– Audio In/Setup page specify the buses to which the external inputs will be sent. You can choose from L/R, IFX1–5, 1–4, 1/2, 3/4, or Off. If you want to apply an insert effect while sampling, choose IFX1–5.

Send1 (to MFX1) and **Send2 (to MFX2)** are available if **Bus Select** is L/R or Off. If you selected IFX1–5, use **Send1** and **Send2** to make settings in the P8– Insert FX Setup page after the sound has passed through the insert effect.

In the example shown in the next diagram, the signal from AUDIO INPUT 1 and 2 is being sent to IFX1. Use the P8: IFX page to select an insert effect, and edit its parameters.



The following diagram shows an example of bus settings in which the samples assigned to a multisample are resampled with IFX1 applied. Set **Bus(IFX/Output) Select** (Sampling 8–1b) to IFX1.



When sampling ends, L/R will automatically be selected as the **Bus Select** setting. Please be aware of this if you continue sampling.

For more details on any of these sampling methods, see “Sampling (Open Sampling System)” on page 107 of the Operation Guide.

Audio Input, S/P DIF IN, FireWire

In Program, Combination, Sequencer, and Media modes, external audio sources from the AUDIO INPUT 1, 2 and S/P DIF IN jacks can be processed by insert effects, master effects, and total effect just as they can in Sampling mode.

You can sample while applying the M3’s effects to the external audio sources from these jacks, or use the M3 as a 4-in (AUDIO INPUT 1, 2, S/P DIF IN L, R) 6-out effect processor. You can also use an external mic input to control a vocoder effect (156: Vocoder) applied to internal sounds. For examples of this, see page 424 and page 515.

In each mode, use “Audio Input” (P0– Sampling/Audio In page) to make settings for external input from the AUDIO INPUT 1, 2, and S/P DIF IN jacks. Alternatively, you can check **Use Global Settings** and use the Global mode “Audio” settings.

For details on **Bus Select**, **Send1 (to MFX1)**, and **Send2 (to MFX2)**, refer to the section on Sampling mode, above.

In Media mode, effects will use the settings of the mode in which you previously were.

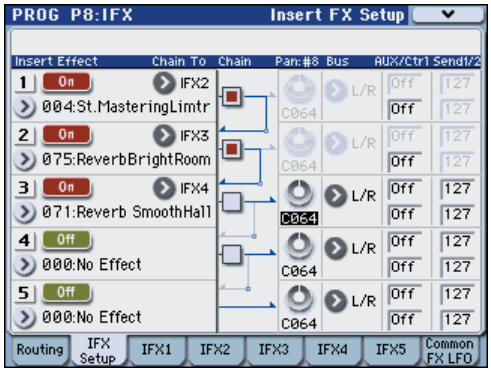
FireWire

If the EXB-FW FireWire Interface (sold separately) is installed, you can transfer audio data and MIDI data between the M3’s FireWire connector and your computer’s FireWire (IEEE 1394) connector from within a host application in which the included M3 Plug-In Editor is running. Effects can be applied to this incoming audio in the same way as to the audio from the AUDIO INPUT 1, 2, and S/P DIF IN connectors. For details, please see “M3 Editor/Plug-In Editor Manual” (PDF).

Mixer

In Program, Combination, and Sequencer modes, the P8–Insert FX Setup page lets you set **Pan: CC#8** (post-IFX panning), **Bus** (Bus Select), **Ctrl Bus** (FX control bus), **AUX Bus**, and **Send1** and **Send2** levels to the master effects.

If you have checked the **Chain** to connect the Insert Effects in series, these parameters **Pan: CC#8** – **Send2** for the post-IFX (last Insert Effect in the chain) signal become effective.



Pan: CC#8

This parameter enables you to set the pan of the post-IFX signal.

If you are using the stereo-in / stereo-out Insert Effects, set this parameter to "C064" to enable the **Pan** settings for the oscillators (Prog 4–1c, 4–5), timbres (Combi 0–3(4)b), tracks (Seq 0–1–3(4)a), and audio inputs (each mode P0).

If you are using mono-in / stereo–out or mono-in / mono–out Insert Effects, the **Pan** settings for the oscillators, timbres, tracks and audio inputs are ignored, and they are set to Center. Use the **Pan: CC#8** parameter (Prog 8–2a, Combi / Seq 8–1–3b) to set the pan. "L000" is hard left, and "R127" is hard right.

- For more about effect types such as stereo-in / stereo-out, see "In / Out" on page 426.

MIDI You can control these parameters via CC#8.

Bus (Bus Select)

This parameter enables you to specify the destination bus for the post-IFX signals.

"**L/R**" is a common setting to send signals to the Total Effect (TFX) before they are routed to the OUTPUT (MAIN) L / MONO and R outputs.

Select 1…4 or 1 / 2, 3 / 4 to route the signals to OUTPUT (INDIVIDUAL) 1–4 ("Individual Outputs"). If this is set to 1–4, the output will be monaural. If set to **1/2, 3/4**, the **Pan: #** (Prog / Sampling 8–2a, Combi / Seq 8–1–3b) settings will be valid, and the output will be stereo. If set to **Off**, the signal will not be sent to the L / R bus or buses **1–4**. Choose this setting if you want to use the **Send1** or **Send2** levels to route the signal through a master effect in series (i.e., not as a send effect).

Ctrl Bus (FX Control Bus)

This specifies the FX Control bus that follows the insert effect. The FX Control buses (FX Control 1, 2) are mono two-channel buses.

The M3 provides two (mono two-channel) effect control buses, giving you a wide range of ways to control effects.

FX Control buses can be used with vocoder, limiter, and gate-type effects.

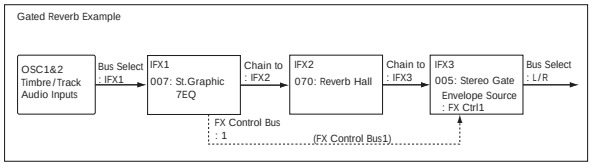
For details on the effects that be used with FX Control buses, see "FX Control Buses" on page 423.

As an example, here's how you can use the FX Control bus following an insert effect.

Example: Gated Reverb

When using a gate effect with reverberant sound, using the reverberant sound to control the gate may not produce the desired results because the reverb extends the duration of the sound. Normally, you will use the un-reverberated sound to control the gate, as shown in the diagram below.

In this example, we send the sound from the OSC etc. to IFX1 and process it through an equalizer. IFX1 is sent via **Chain** to IFX2 and also sent via "Ctrl Bus" (FX Control Bus) to 1. The Envelope **Source** of IFX3: Stereo Gate is set to FX Control 1. This allows the gat to be triggered by a signal other than its input (the reverberant sound).



AUX Bus

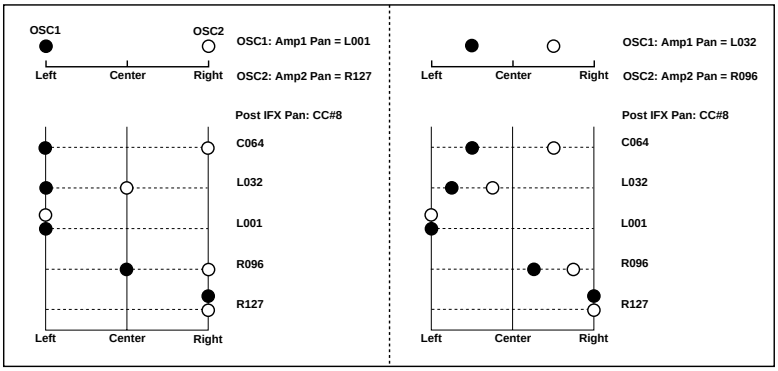
After passing through the insert effects, the audio signal is sent to the AUX bus.

The AUX bus is used for sampling in each mode. If you're not using it for sampling, turn it Off.

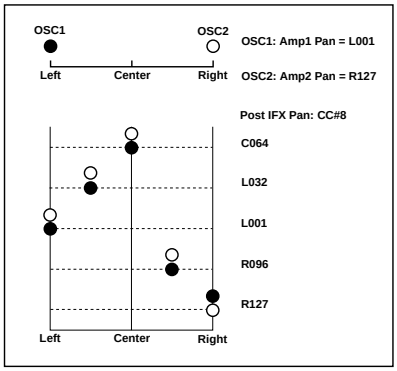
Send1, Send2

These parameters enable you to set the send level of the signals routed to Master Effects MFX1 and MFX2. The signal is sent in stereo to master effects MFX1 and MFX2. This is valid when **Bus (Bus Select)** is L / R or Off.

Insert Effect = Stereo In – Stereo Out



Insert Effect = Mono In - Stereo Out
Mono In - Mono Out



If you are not using any Insert Effects, use **Send1** and **Send2** of the P8: "Routing" page in Program, Combination, Sequencer, and Song play modes to set the Master Effect send level (Use the P0– Sampling / Audio In page in each mode to set the send level for the audio inputs.).

MIDI **Send1** responds to CC#93 and **Send2** responds to CC#91.

Controlling the Insert Effects via MIDI

Using the Dynamic Modulation (Dmod) function enables you to control all effect parameters in real-time during performance from the controllers of the M3 or a connected MIDI sequencer. You can also control the **Pan**: **CC#8**, **Send1**, and **Send2** parameters in the same way.

Program and Sampling modes

You can control the parameters on the global **MIDI channel** (Global 1–1a).

Combination mode

The P8 - IFX1–5 page lets you specify the control channel "Ch" (Control Channel) for IFX1–5. You can choose from CH01–16, Gch, or All-R (All Routed).

Ch01–16: Select this when you want to control each insert effect from a different channel. An "*" symbol will be displayed at the right of the MIDI channel Ch01–16 of the timbre that is routed to each insert effect. If the routed timbres have different MIDI channel settings, this parameter is used to specify the channel that will control the insert effect.

Gch: Select this option if you wish to control the parameters on the global **MIDI channel** (Global 1–1a). This is a common setting.

All-R: Select this option to control the parameters on all the channels (channels 1–16 that have a "*" mark) that are routed to the corresponding Insert Effects.

If you've selected a drum program for a Combination mode timbre or a Sequencer mode track, and set its **Bus Select (IFX/Indiv. Out Assign)** to **DKit** (8–1–1(2)d), the MIDI channel of that timbre / track will be valid if any one of IFX1–5 is set to All-R, regardless of the drum kit's **Bus Select** (Global 5–4b) setting or the menu command **DrumKit IFX Patch** setting.

Sequencer mode

Use "Ch" parameters of the P8– IFX1 – IFX5 pages to set up the control channels for IFX1–5. Select an appropriate option from Ch01–16 and All Routed.

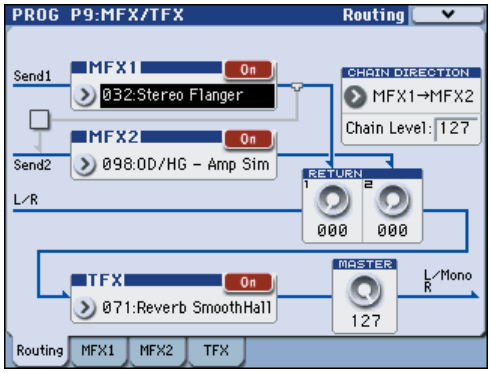
Ch01–16: Select this when you want to control each insert effect from a different channel. An "*" symbol will be displayed at the right of the MIDI channel Ch01–16 of the track that is routed to each insert effect. If two or more tracks with differing MIDI channels Ch01–16 are being sent to a single insert effect, this parameter is used to specify the one track that will control the insert effect.

All R: Select this option to control the parameters on all the channels (channels 1–16 that have a "*" mark) that are routed to the corresponding Insert Effects. **All R** is a typical option. If you wish to control the parameters on a single channel, you may select it from Ch01–16.

Note: Since Sequencer mode lets you record and play exclusive messages and edit tracks that include System Exclusive events, you can use them to switch effects or modify effect parameter values during song playback.

Master Effects (MFX1, 2)

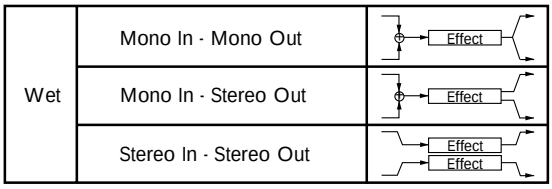
In/Out



The I/Os of Master Effects MFX1 and MFX2 are stereo-in/stereo-out. **Send1** and **Send2** determine the send level to the Master Effects. (For Send1 and 2, see "Routing" and "Mixer.")

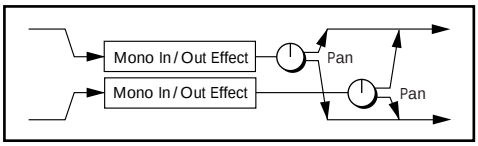
Master effects will not output the Dry (unprocessed) signal specified in **Wet/Dry** (P9– MFX1, 2 page). Only the Wet (processed) signal will be output. The output signals from the Master Effects are routed to the L/R bus with the output level specified by **Return1** and **Return2**. These output signals are mixed with the output signals from the bus specified by **Bus** (P8: "Routing" page in each mode) L/R, or with the output signals from the bus specified by **Bus Select** ("Insert FX Setup" page in each mode) L/R, then routed to the Master EQ.

Selecting "000: No Effect" will mute the output. The processed signal will be output in one of the following ways, according to the type of effects 001–170.



Mono–Mono Parallel

109: P4EQ//P4EQ–153: BPM DI//BPM DI



These effects are typically stereo-in/stereo-out, but they have a special structure. The L channel and R channel of the stereo input each have their own independent mono effect. Each mono output can then be panned to the desired position in the stereo field. Normally, you will use these as insert effects, but you can also use them as master effects. For details, see "Mono–Mono Parallel Effects" on page 426.

Input/output variations for each effect are shown in upper left of the block diagrams starting on page 507.

Pressing the On/Off button for MFX1 and 2 of the P9: Routing page in each mode will toggle between On and Off. When Off is selected, the output signals will be muted.

MIDI Separately from the setting of this On/Off button, MFX1 and MFX2 can be switched off by receiving a MIDI control change CC#94. Value 0 will turn them off, and value 1–127 will turn them on. You can also use **Effect Global SW** (Global 0–1b) to turn MFX1 and 2 on and off. This MIDI control is performed on the global **MIDI channel** (Global 1–1a).

Double-size effects

Double-size effects (154: St.Mltband Limiter – 170: Early Reflections) use twice as much space as other effects.

You can use a double-size effect for master effect MFX1. If you've selected a double-size effect, MFX2 won't be available for use.

Routing

If you are not using any Insert Effects in any mode, the Master Effects send levels are determined by the **Send1 (to MFX1)** and **Send2 (to MFX2)** parameters specified independently for the oscillators (Program / Sampling mode), timbres (Combination mode), tracks (Sequencer mode), and audio inputs (in all modes).

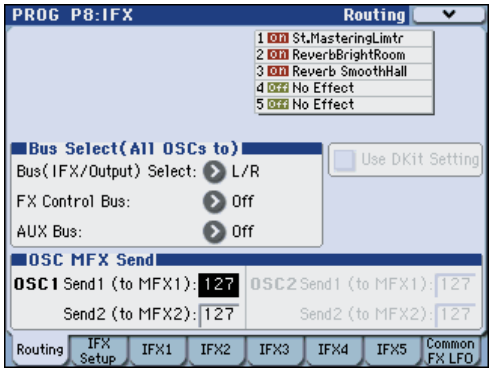
For example, since you can adjust the master effect send levels for each timbre / track, you can make settings so that reverb is applied deeply to the piano, lightly to the strings, and not at all to the bass.

If you're using insert effects, use the post-IFX **Send1** and **Send2** to adjust the send amounts.

Program mode

Use the **Send1 (to MFX1)** and **Send2 (to MFX2)** parameters of the P8– Routing page, or the **Send1** and **Send2** parameters of the P8– Insert FX Setup page for the post-IFX1–5 signals, to set the Master Effect send level.

If you have set **Bus Select** to L / R or Off, **Send1 (to MFX1)** and **Send2 (to MFX2)** of the "Routing" page are effective. These parameters can be set for oscillators 1 and 2 individually.



If you have set **Bus Select** to IFX1–5, **Send1** and **Send2** of the "Insert FX" page for the post-P8– IFX1–5 signals are effective. If you are using the Insert Effects in chain (series), the **Send1** and **Send2** parameters for the post-IFX (last IFX) are effective.

If you have set **Bus Select** to 1–4, or 1 / 2, 3 / 4, the oscillator signals are output directly to AUDIO OUTPUT (INDIVIDUAL) 1–4.

In this case the Send 1 and Send 2 settings are ignored, and the Master Effects will not be applied.

MIDI Send1 responds to CC#93 and Send2 responds to CC#91 on the global **MIDI channel** (Global 1–1a). At this time, the actual send level uses the value of the Send 1 and 2 settings for Oscillators 1 and 2, multiplied by the Send 1 and 2 values received via MIDI.

If you have selected "Drums" for **Oscillator Mode** (Prog 1–1a) of a Program, the "Use DKit Setting" box (Prog 8–1c) becomes available. If you check this box, Send1 and Send2 levels for each key of the selected DrumKit become effective. If **Bus Select** (Global 5–4b) is set to L / R or Off for a drum instrument key, **Send1 (to MFX1)** and **Send2(toMFX2)** (Global 5–4b) become effective.

If **Bus Select** is set to IFX1–5, the post-IFX1–5 **Send1** and **Send2** (Prog 8–5a) become effective.

If this is unchecked, **Send1 (to MFX1)** and **Send2 (to MFX2)** (Prog 8–1d), and the post IFX1–5 **Send1** and **Send2** (Prog 8–2a) will be valid for all drum instruments, in the same way as when **Oscillator Mode** is Single or Double.

Combination and Sequencer modes

Use **Send1 (to MFX1)** and **Send2 (to MFX2)** (P8: "Routing" page) for timbres (Combination) and tracks (Sequencer) to set the Send1 and 2 levels for each timbre and track. As with Program mode, if **Bus Select** is set to L / R or Off, **Send1 (to MFX1)** and **Send2 (to MFX2)** become effective.

The actual levels use these Send1 and 2 level values, multiplied by the send level values of oscillators 1 and 2 of the Program P8: "Routing" page.

Send level

For example if you set the program's OSC1 **Send1 (to MFX1)** to 127, **Send2 (to MFX2)** to 064, OSC2 **Send1 (to MFX1)** to 064, **Send2 (to MFX2)** to 127, and the combination's **Send1 (to MFX1)** to 064 and **Send2 (to MFX2)** to 127, the actual send levels of the combination will be as follows.

OSC1 Send1=127 (100%) *064 (50%)=064 (50%)

OSC1 Send2=064 (50%) *127 (100%)=064 (50%)

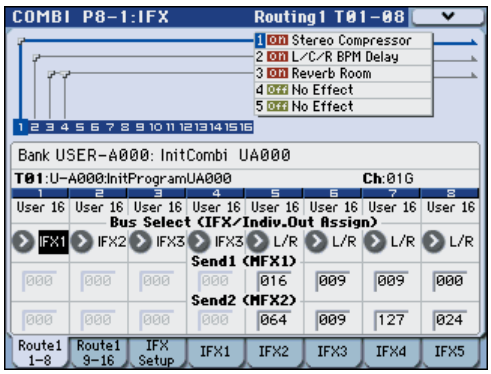
OSC2 Send1=064 (50%) *064 (50%)=032 (25%)

OSC2 Send2=127 (100%) *127 (100%)=127 (100%)

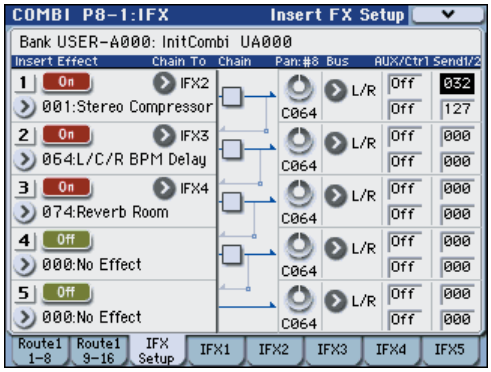
If IFX1–5 is selected for **Bus Select**, use the **Send1** and **Send2** parameters for the post-IFX signals. If 1–4, or 1 / 2, 3 / 4 is selected instead, these Send1 and 2 settings are ignored and the Master Effect is not applied.

MIDI Send1 responds to CC#93, and Send2 responds to CC#91. If **Send1 (to MFX1)** and Send2 (MFX2)" for each timbre / track are effective, the parameter will be controlled on the MIDI channels set for the corresponding timbres and tracks. If the **Send1** and **Send2** parameters for the post-IFX1–5 signals are effective, they can be controlled on the MIDI channels assigned to IFX1–5.

An example for Combination mode is given below. In the following diagram, **Bus Select** is set so that Timbre 1 is routed to IFX1, Timbre 2 to IFX2, Timbres 3 and 4 to IFX3, Timbres 5–16 to L / R.



In this case, use **Send1** and **Send2** for the post-IFX1 (001: Stereo Compressor) signal to set the send level of the Timbre 1 routed to the Master Effect. (In this example they are set to 032 and 127.) In the same way, use **Send1** and **Send2** for the post-IFX2 signal to set the send levels of Timbres 2, and use the **Send1** and **Send2** parameters for the post-IFX3 signal to set the send levels of Timbres 3 and 4. For Timbres 5–8, the settings of **Send1 (to MFX1)** and **Send2 (to MFX2)** will be effective (for Timbres 9–16, use the Routing 1 T09–16 page). (At this time, the actual send levels use these Send 1 and 2 values multiplied by the Send1 and 2 settings for Program oscillators 1 and 2.)



"Bus Select DKit" is valid if you've selected a drum track for a Timbre (Combination) or Track (Sequencer).

If you select **DKit**, the **Bus Select** (Global 5–4b) settings for each key become effective, and each drum instrument sound will be routed to the corresponding buses. At this time, the actual send levels use these Send 1 and 2 values, multiplied by the Send1 and 2 settings for each DrumKit key.

If a drum kit's **Bus Select** is set to L / R or Off, the levels will be these Send 1 and 2 settings multiplied by the send levels you specify in Program P8: Routing page for OSC1 **Send1 (to MFX1)** and **Send2 (to MFX2)** (Prog 8–1d), just as in other cases (**Oscillator Mode** Single or Double).

If **Bus Select** is set to IFX1–5, use **Send1** and **Send2** for the post-IFX signal. If **Bus Select** is set to 1–4, or 1 / 2, 3 / 4, the Send 1 and 2 settings will be ignored.

Sampling mode

You can apply insert effects, master effects, and total effect to an external audio source from the AUDIO INPUT 1, 2, or S / P DIF IN jacks, and sample the result. You can also apply insert effects, master effects, and total effect to samples assigned to a multisample, and resample the result.

Use the P0– Audio Input page to make settings for external audio sources from the AUDIO INPUT 1, 2, or S / P DIF IN jacks.

The **Bus Select** setting for each jack specifies the bus to which the external input source will be sent. You can choose from L / R, IFX1–5, 1–4, 1 / 2, 3 / 4, or Off. If **Bus Select** is set to L / R or Off, use **Send1 (to MFX1)** and **Send2 (to MFX2)** to adjust the send levels to the master effects. If **Bus Select** is set to IFX1–5, use the post-IFX **Send1** and **Send2** to adjust the send levels to the master effects.

If you want to apply the master effects to the samples of a multisample and play or resample the result, use the P8 - Routing page settings **Send1 (to MFX1)** and **Send2 (to MFX2)** or the P8– Insert FX Setup page settings post-IFX1–5 **Send1** and **Send2** settings to adjust the send levels to the master effects.

MIDI Send1 can be controlled by receiving CC#93, and Send2 by receiving CC#91. These parameters are controlled on the global **MIDI channel** (Global 1–1a).

Audio Input, S/P DIF IN, FireWire

In Program, Combination, Sequencer, and Media modes, external audio sources from the AUDIO INPUT 1, 2, and S / P DIF IN jacks can be processed by insert effects, master effects, and total effect just as they can in Sampling mode.

In the P0– Sampling / Audio In page of each mode, the **Use Global Settings** parameter makes settings for external input from the AUDIO INPUT 1, 2, 3, 4, and S / P DIF IN jacks.

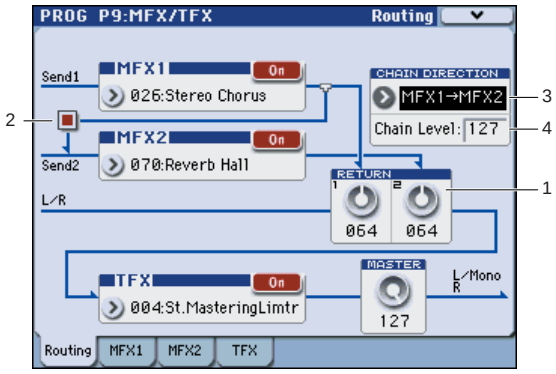
Set **Bus Select** to specify the bus to which the external audio input will be sent. You can select L / R, IFX1–5, 1–4, 1 / 2, 3 / 4, or Off. If **Bus Select** is set to L / R or Off, adjust the send levels to the master effects using **Send1 (to MFX1)** and **Send2 (to MFX2)**. If **Bus Select** is set to IFX1–5, use the post-IFX **Send1** and **Send2**. If this is set to 1–4 or 1 / 2, 3 / 4, the signal will not be sent to the master effects.

In Media mode, effects will use the settings of the mode in which you previously were.

For details on the optional EXB-FW, please see "FireWire" on page 429.

Mixer

The input levels to the master effects are determined by the send levels. In the P9– Routing page of each mode, you can specify the output level and chaining (series connection) between the two master effects.



1. Return1, Return2

These adjust the amount of signal that is returned from the master effects MFX1 and MFX2 outputs to the L / R bus.

The left-side value of the **Wet/Dry** parameter for the MFX1 or 2 effect is the output level of that master effect. (In other words if **Wet/Dry** is 25:75, the output level is 75%. It is 100% if Wet, and 0% if Dry.) The **Wet/Dry** value multiplied by the **Return1** or **Return2** value is sent to the L / R bus and mixed with the P8 - Routing page **Bus Select** L / R or Insert FX Setup page **Bus** L / R output.

For example, with MFX1 **Wet/Dry** set to 50:50 (50%) and **Return1** set to 64 (50%), the resultant effect level will be 25%. The effect level is maximum (100%) when **Wet/Dry** is set to "Wet" and **Return1** is set to 127.

2. Chain check box

Press this box to chain MFX1 and MFX2 to each other.

In the example shown in the preceding page, the output of MFX1:026: Stereo Chorus is added to the input of MFX2:070: Reverb Hall.

3. Chain Direction

If you have checked the **Chain** box, you can set the direction of the connection here. You can also visually confirm the direction on the display.

4. Chain Level

This parameter determines the level of signals routed from one MFX to the other MFX in a chain connection.

Controlling the Master Effects via MIDI

In the same way as for insert effects, parameters of the master effects can also be controlled in realtime via Dynamic Modulation (Dmod) from the M3's controllers or an external MIDI device during performance or from the sequencer.

Program and Sampling modes

Effect parameters are controlled on the global **MIDI channel** (Global 1–1a).

Combination and Sequencer modes

In Combination and Sequencer modes, the control channel for MFX1 and MFX2 are specified by the "Ch" (Control Channel) setting in the MFX1 and 2 pages. You can choose Ch01–16 or Gch.

Ch01–16: Select this option if you wish to control the parameters for each Master Effect on different channels.

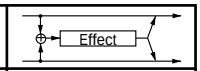
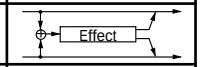
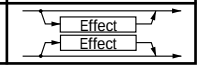
Gch: Select this option if you wish to control the parameters on the global **MIDI channel** (Global 1–1a). This is the normal setting.

Note: Since Sequencer mode lets you record and play exclusive messages and edit tracks that include System Exclusive events, you can use them to switch effects or modify effect parameter values during song playback.

Total Effect (TFX)

In/Out

The total effect TFX is stereo-in and stereo-out. The Dry (unprocessed) side of the **Wet/Dry** parameter sends the stereo input sound directly to the stereo output. The way in which the Wet (processed) side is output depends on the type of effect, as follows.

Wet	Mono In - Mono Out	
	Mono In - Stereo Out	
	Stereo In - Stereo Out	

Mono–Mono Parallel

109: P4EQ // P4EQ —153: BPM DI // BPM DI

For more information, please see “Mono–Mono Parallel Effects” on page 426.

If you select 000:No Effect, the stereo input will be passed to the stereo output without any processing.

Input / output variations for each effect are shown in upper left of the block diagrams starting on page 507.

You can switch the effects on / off using the MFX1 or 2 ON / OFF buttons or the P9– Routing settings in each mode. When off, the effect will be bypassed. The stereo input will be passed to the stereo output without any processing, just as if 000:No Effect is selected.

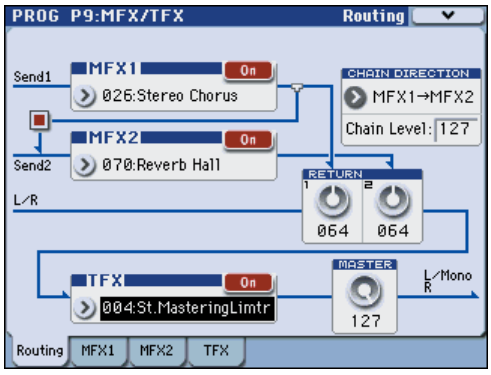
MIDI Separately from this On / Off button, MIDI control change CC#95 can be received to turn TFX off. A control change value of 0 turns them off, and a value of 1–127 restores them to the prior setting. You can also use **Effect Global SW** (Global 0–1b) to turn off TFX in the same way. This is controlled on the global **MIDI channel** (Global 1–1a).

Double-size effects

Double-size effects (154: St.Mltband Limiter – 170: Early Reflections) can’t be used for the total effect.

Routing

The total effect TFX ia placed immediately before the AUDIO OUTPUT (MAIN) L / MONO and R outputs. Effect (TFX) is available in all modes.



If the **Bus Select** setting for an oscillator (Program / Sampling modes), timbre (Combination mode), track (Sequencer mode), or audio input (in all modes) or the post-insert **Bus Select** is set to L / R, the signal will be output from the AUDIO OUTPUT (MAIN) L / MONO and R jacks.

The sound from MFX1 and 2 is routed through TFX, and then output to AUDIO OUTPUT (MAIN) L / MONO and R.

Mixer

MASTER (Master Volume)

This sets the level of the final output after passing through the total effect.

Using MIDI to control the Total Effect

In the same way as for Insert and Master Effects, the Total Effect can be controlled in realtime via Dynamic Modulation (Dmod). You can use either the built-in M3’s controllers or an external MIDI device, during live performance or from a sequencer.

Program and Sampling modes

Effect parameters are controlled on the global **MIDI channel** (Global 1–1a).

Combination and Sequencer modes

In Combination and Sequencer modes, the control channel for TFX is specified by the “Ch” (Control Channel) setting in the TFX page. You can choose Ch01–16 or Gch.

Ch01–16: Choose from these settings if you want to control each total effect on a separate channel.

Gch: Choose this setting if you want to control the total effect on the global **MIDI channel** (Global 1–1a).

Note: In Sequencer mode, you can record and play back exclusive messages, and edit tracks that include System Exclusive events. This lets you switch effects or vary the value of effect parameters while a song plays.

Outputs

Main Outputs

The main L / MONO and R outputs of the M3 are output from the AUDIO OUTPUT (MAIN) L / MONO and R jacks, the S / P DIF OUT (MAIN) jack, and the headphone jack.

Individual Outputs

The M3 is equipped with four individual audio outputs, which can be used as individual mono outputs, stereo pairs, or any combination of the two. Almost any signal source can be routed to these outputs, including:

- Each note in a Drum Kit
- Insert Effect outputs
- Each Program in a Combination or Song
- Audio inputs

You can use these to isolate or group together sounds for recording, or for complex live performance setups.

If the signal is going through one or more insert effects, the output is set at the last IFX in the chain, via the **Bus Select** parameter on the P8– Insert FX Setup page.

If a Program, Timbre, or Track is not going through any insert effects, the output is set using the **Bus Select** parameters on the P8– Routing page.

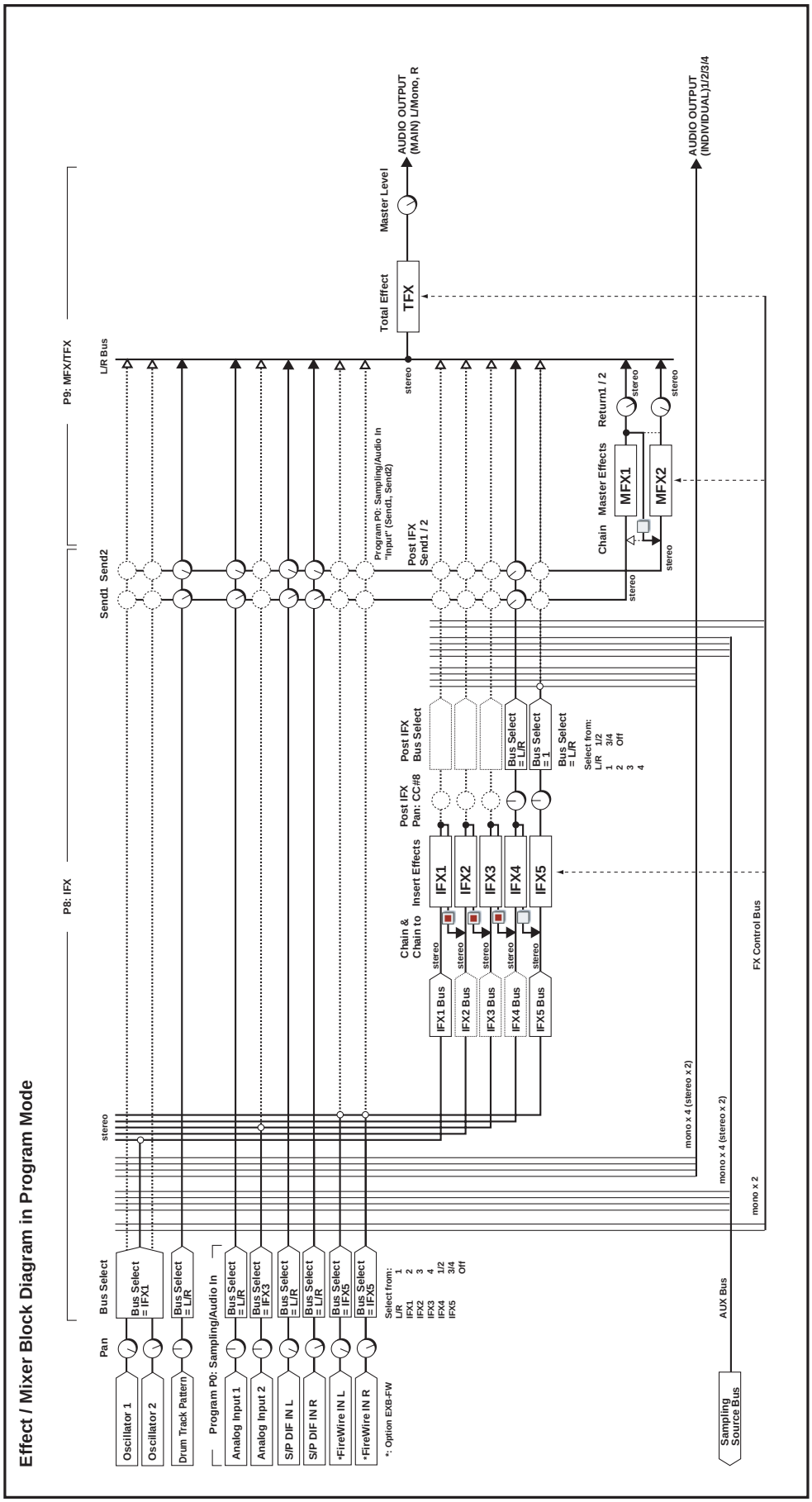
To assign audio inputs directly to outputs, use **Bus Select** parameters in the P0– Sampling / Audio In page.

In Global mode, the Audio page **L/R Bus Indiv. Assign (Assign to L/R and Indiv.Out)** (Global 0–3b) setting lets you mirror the MAIN stereo L / R output on any pair of individual outputs. You can use this to create a private monitoring setup in live and studio environments. For more information, please see “0–3b: Output” on page 362.

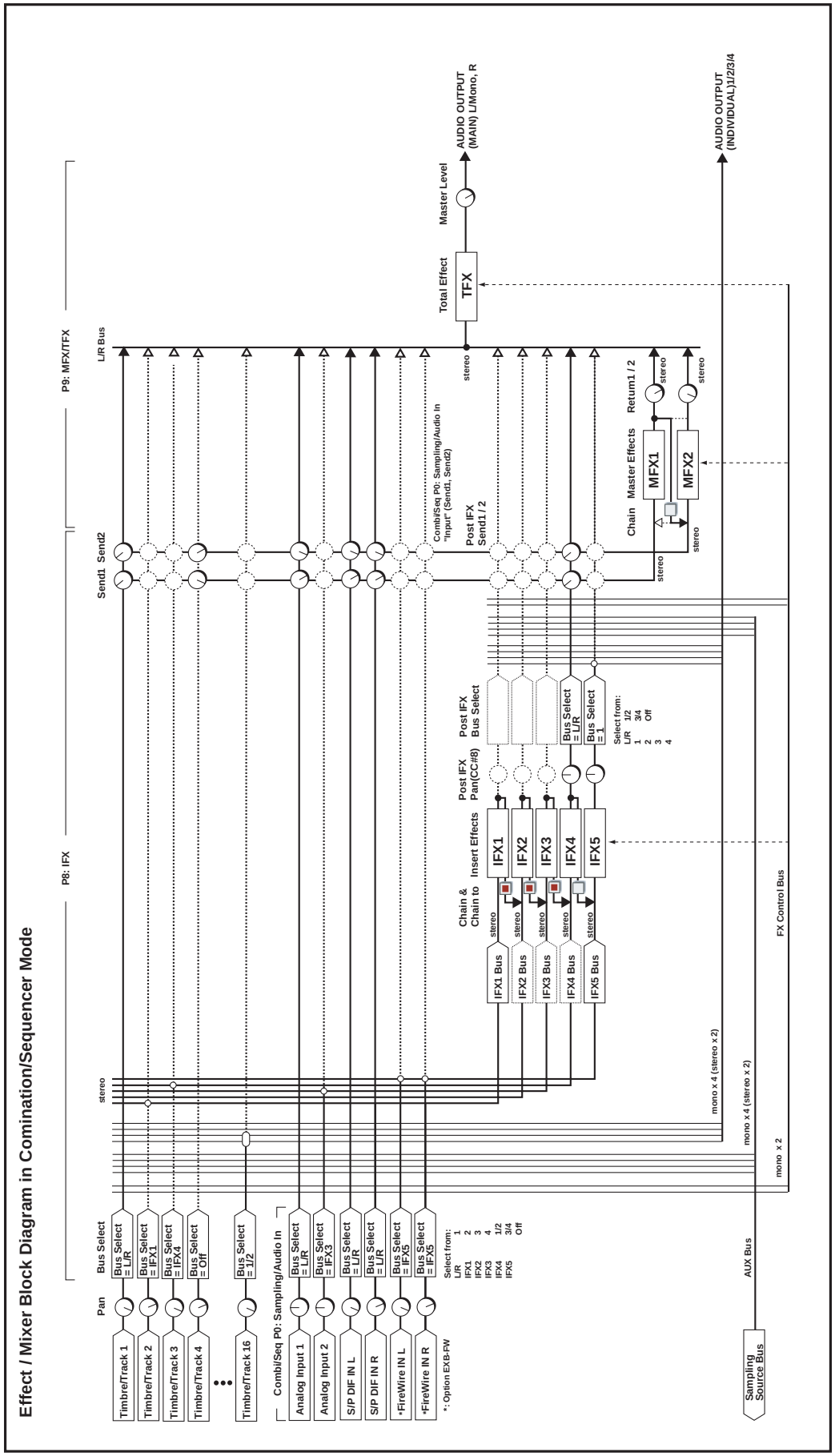
Note: You can’t use the VOLUME slider to adjust the volume of the individual outputs.

Effect/Mixer Block Diagrams

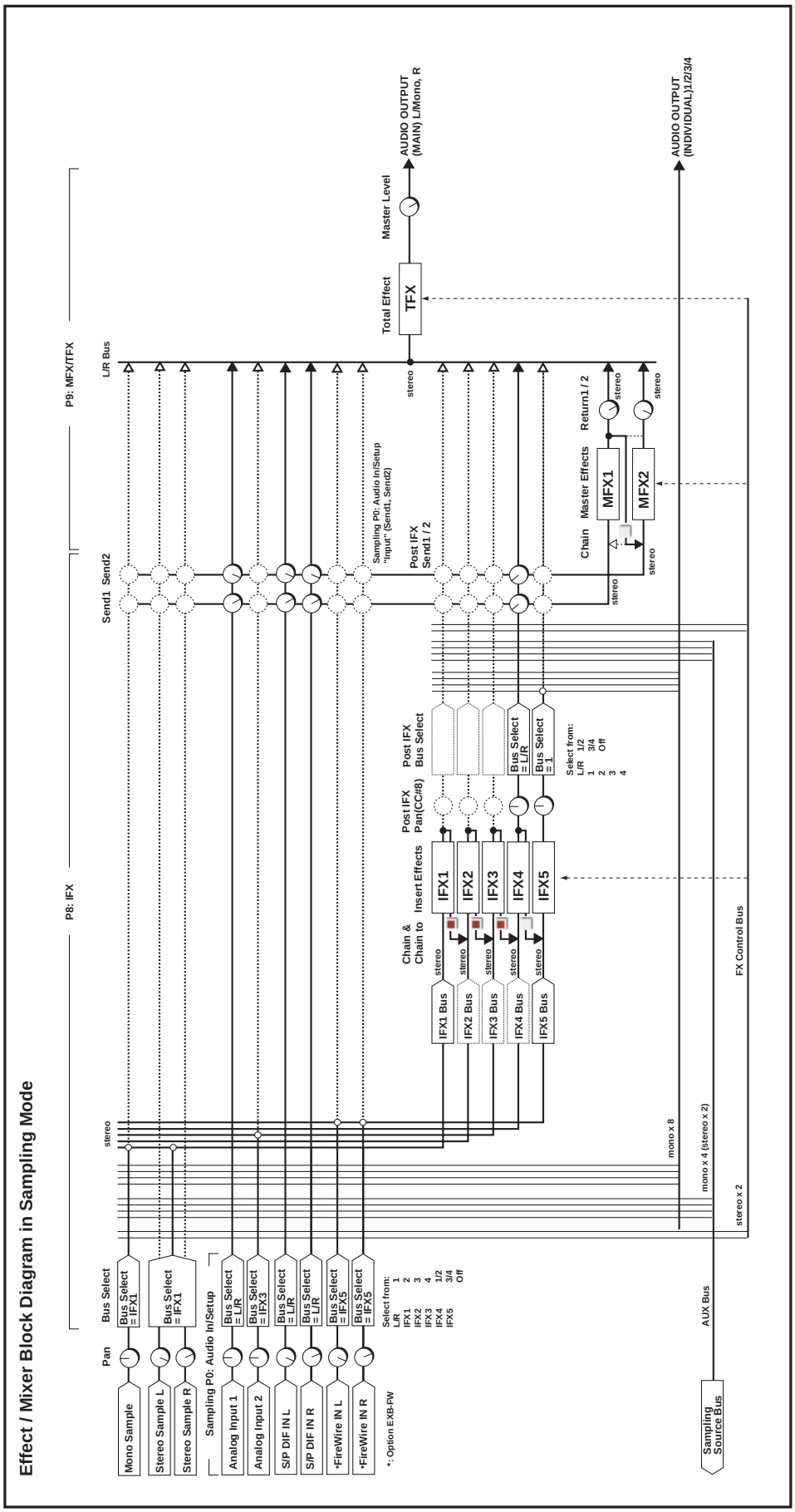
Program mode



Combination mode, Sequencer mode



Sampling mode



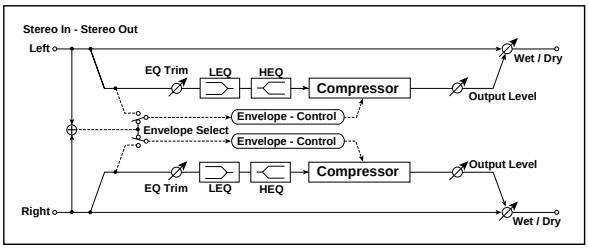
Dynamics (Dynamic)

000: No Effect

Select this option when you do not use any effects. The Insert Effect / Total Effect section outputs unprocessed signals and the Master Effect section mutes the output.

001: Stereo Compressor

This effect compresses the input signal to regulate the level and give a "punchy" effect. It is useful for guitar, piano, and drum sounds. This is a stereo compressor. You can link left and right channels, or use each channel separately.



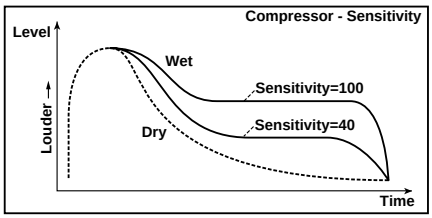
a	Envelope Select	L/R Mix, L/R Individually	Determines whether the left and right channels are linked or used separately p.441	
b	Sensitivity	1...100	Sets the sensitivity p.441	
c	Attack	1...100	Sets the attack level p.441	
d	EQ Trim	0...100	Sets the EQ input level	
e	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
f	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of the Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of the High EQ	
g	Output Level	0...100	Sets the output level of the compressor p.441	D-mod
	Src	Off...Tempo	Selects the modulation source for the compressor output level	
	Amt	–100...+100	Sets the modulation amount for the compressor output level	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Envelope Select

This parameter selects whether the left and right channels are linked to control both signals simultaneously, or whether each channel is controlled independently.

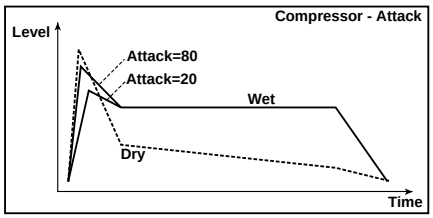
b: Sensitivity
g: Output Level

The **Sensitivity** parameter sets the sensitivity of the compressor. If this parameter is set to a higher value, lower level sounds will be boosted. With a higher Sensitivity, the overall volume level is higher. To adjust the final volume level, use the **Output Level** parameter.



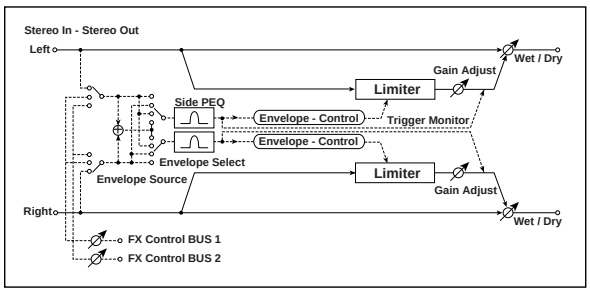
c: Attack

This parameter controls the attack level.



002: Stereo Limiter

The Limiter regulates the input signal level. It is similar to the Compressor, except that the Limiter compresses only signals that exceed the specified level to lower unnecessary peak signals. The Limiter applies a peaking-type EQ to the trigger signal (which controls the degree of the Limiter effect), allowing you to set any band width to be covered. This effect is a stereo limiter. You can link left and right channels, or use each channel individually.



a	Envelope Source	Input, FX Control 1, FX Control 2	Selects the trigger source to use: the input signal, FX Control Bus 1, or FX Control Bus 2 p.442	
	FX Ctrl Trim	0...100	Sets the trigger input level from FX Control Bus 1/2	
b	Envelope Select	L/R Mix, L Only, R Only, L/R Individually	Selects from linking both channels, controlling only from left channel, only from the right channel, or controlling each channel individually p.442	
c	Ratio	1.0 : 1… 50.0 : 1, Inf : 1	Sets the signal compression ratio p.442	
d	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.442	
e	Attack	1...100	Sets the attack time p.442	
	Release	1...100	Sets the release time p.442	
f	Gain Adjust [dB]	–Inf, –38...+24	Sets the output gain p.442	D-mod
	Src	Off...Tempo	Selects the modulation source for the output gain	
	Amt	–63...+63	Sets the modulation amount of the output gain	
g	Side PEQ Insert	Off, On	Toggles between on/off of the trigger signal's EQ p.442	
	Trigger Monitor	Off, On	Switches between effect output monitor and trigger signal monitor p.442	

h	Side PEQ Cutoff [Hz]	20...12.00k	Sets the EQ center frequency for the trigger signal p.442	
	Q	0.5...10.0	Sets the EQ bandwidth for the trigger signal p.442	
	Gain [dB]	–18.0...+18.0	Sets the EQ gain for the trigger signal p.442	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Envelope Source

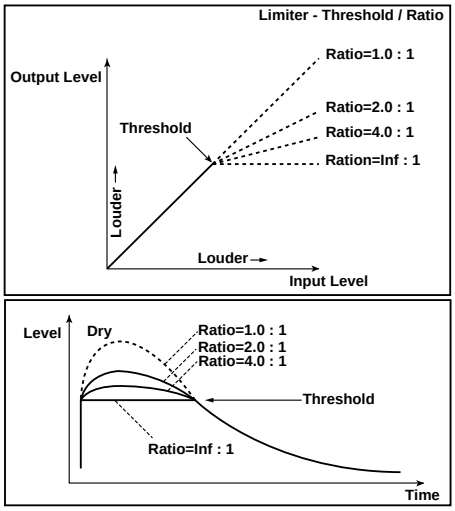
By selecting FX Control 1 or FX Control 2 you can use the signal of FX Control Bus 1 or 2 as the trigger signal.
For instance, you might use a different, unprocessed sound as the trigger, or apply a limiter triggered by a different timbre (Combination) or track (Sequence). For more information, please see “FX Control Buses” on page 423.

b: Envelope Select

When L / R Mix is selected for this parameter, the left and right channels are linked to control the Limiter using the mixed signal. If L Only (or R Only) is selected, the left and right channels are linked, and the Limiter is controlled via only the left (or right) channel.
With L / R individually, the left and right channels control the Limiter individually.

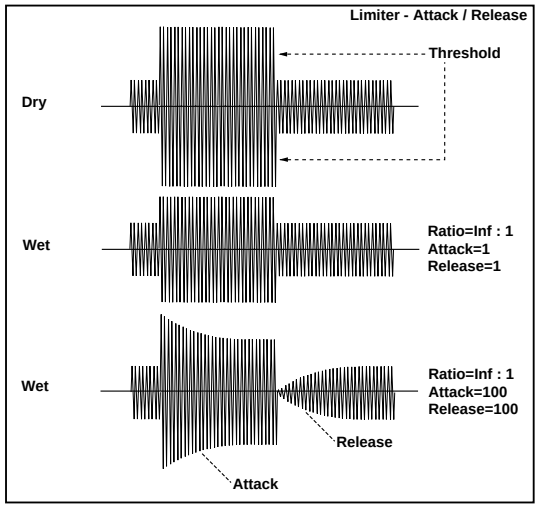
c: Ratio
d: Threshold [dB]
f: Gain Adjust [dB]

This parameter sets the signal compression **Ratio**.
Compression is applied only when the signal level exceeds the **Threshold** value.
Adjust the output level using the **Gain Adjust** parameter, since compression causes the entire level to be reduced.



e: Attack
e: Release

These parameters set the attack time and release time. A higher attack time will cause the compression to be applied more slowly.



g: Trigger Monitor

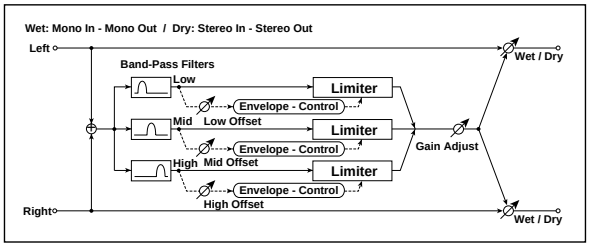
Setting this parameter On will cause the trigger signal to be output, instead of the effect sound. Use this parameter to check the trigger signal with EQ applied.
Usually, set this to Off.

g: Side PEQ Insert
h: Side PEQ Cutoff [Hz]
h: Q
h: Gain [dB]

These parameters are used to set the EQ applied to the trigger signal.
The Limiter determines whether the compression is applied or not, based on the post-EQ trigger signal. Setting the equalizer allows you to set the Limiter to respond to any frequency band.

003: Multiband Limiter

This effect applies the Limiter to the low range, mid range, and high range of the input signal. You can control dynamics for each range to adjust the sound pressure of the low range, mid range, and high range in a different way from the EQ.



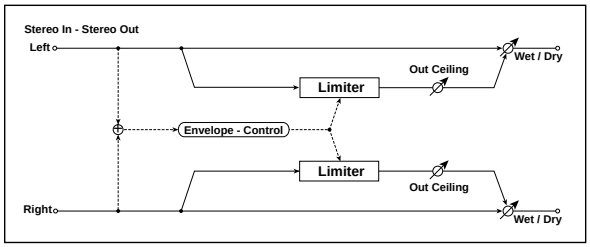
a	Ratio	1.0 : 1...50.0 : 1, Inf : 1	Sets the signal compression ratio p.442	
b	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.442	
c	Attack	1...100	Sets the attack time p.442	
d	Release	1...100	Sets the release time p.442	
e	Low Offset [dB]	–40...0	Gain of the low-range trigger signal p.443	
f	Mid Offset [dB]	–40...0	Gain of the mid-range trigger signal p.443	
g	High Offset [dB]	–40...0	Gain of the high-range trigger signal p.443	
h	Gain Adjust [dB]	–Inf, –38...+24	Sets the output gain p.442	D-mod
	Src	Off...Tempo	Selects the modulation source for the output gain	
	Amt	–63...+63	Sets the modulation amount of the output gain	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

e: Low Offset [dB]
f: Mid Offset [dB]
g: High Offset [dB]

These parameters set the gain of the trigger signal.
For example, if you do not want to apply compression to the high range, reduce the **High Offset** value down below the **Threshold** level. In this way, the high range limiter will not respond, and compression will not be applied.

004: St.MasteringLimtr (Stereo Mastering Limiter)

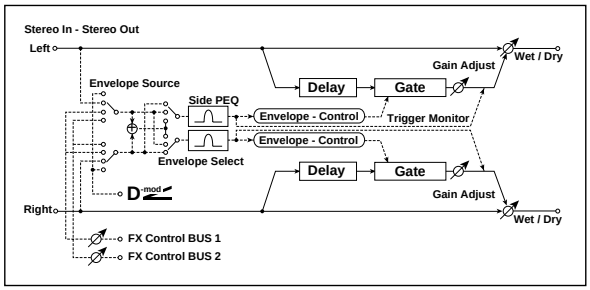
This is a stereo limiter that is optimized for mastering songs.



a	Threshold [dB]	–30.0...0.0	Sets the level above which the compressor is applied p.442	
b	Out Ceiling [dB]	–30.0...0.0	Sets the output gain	
c	Release [msec]	0.50...1000.0	Sets the release time p.442	
d	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

005: Stereo Gate

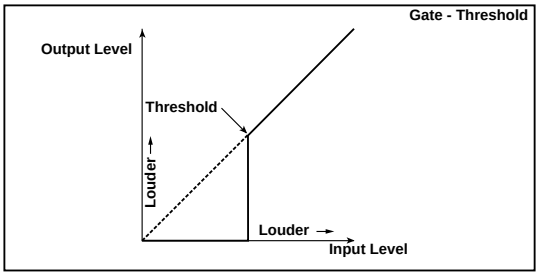
This effect mutes the input signal when it falls below a specified level. You can also invert the on / off status of the gate, or use note-on / off messages to turn the gate on / off directly.

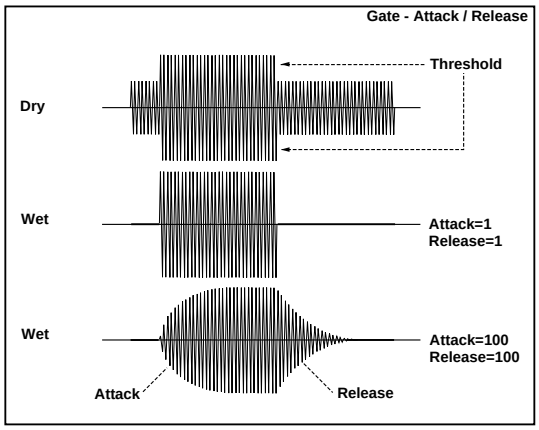


a	Envelope Source	D-mod, Input, FX Control 1, FX Control 2	Selects the source to control the gate: D-mod control, or use the input signal or FX Control Bus 1 or 2 as a trigger p.442	
	Fx Ctrl Trim	0...100	Sets the trigger input level from FX Control Bus 1/2	
b	Envelope Select	L/R Mix, L Only, R Only	Selects the control signal: left and right linked, left only, or right only p.442	
	Src	Off...Tempo	Selects the source that will control the gate when Envelope Src = D-mod	D-mod
c	Threshold	0...100	Sets the level at which gating is applied p.444	
	Polarity	+, –	Switches the polarity of gating p.444	
d	Attack	1...100	Sets the attack time p.444	
	Release	1...100	Sets the release time p.444	
e	Delay Time [msec]	0...100	Sets the delay time for the gate input p.444	
f	Side PEQ Insert	Off, On	Switches the trigger signal equalizer on/off p.442	
	Trigger Monitor	Off, On	Switches between monitoring the effect output and the trigger signal p.442	
g	Side PEQ Cutoff [Hz]	20...12.00k	Sets the center frequency of the equalizer for the trigger signal p.442	
	Q	0.5...10.0	Sets the bandwidth of the equalizer for the trigger signal p.442	
	Gain [dB]	–18.0...+18.0	Sets the gain of the equalizer for the trigger signal p.442	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

c: Threshold
d: Attack
d: Release

Threshold specifies the level at which gating occurs when **Envelope Select** is set to L / R Mix, L Only, or R Only. **Attack** and **Release** specify the attack time and release time of the gate.





c: Polarity

This inverts the polarity of the gate on / off operation. With the "–" setting, the gate will close when the input signal exceeds the specified level. The direction in which the modulation source opens or closes the gate will also be reversed.

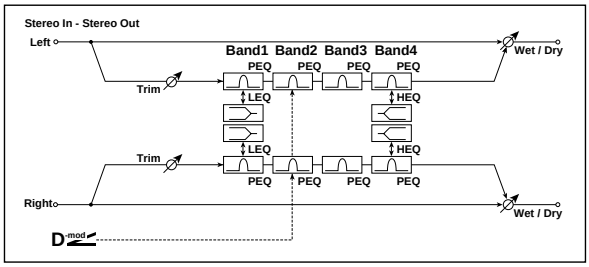
e: Delay Time [msec]

This sets the delay time for the input to the gate. When using shorter Attack Time settings, you can lengthen the Delay Time so that the sound is input after the gate opens.

EQ and Filters (EQ/Filter)

006: St.Parametric4EQ (Stereo Parametric 4-Band EQ)

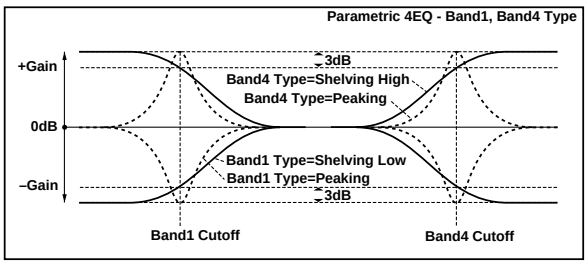
This is a stereo 4-band parametric equalizer. You can select peaking type or shelving type for Band 1 and 4. The gain of Band 2 can be controlled by dynamic modulation.

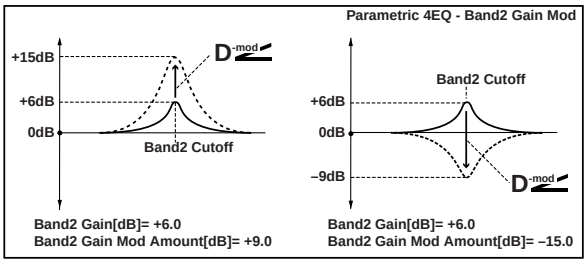


a	Trim	0...100	Sets the input level	
b	Band1 Type	Peaking, Shelving-Low	Selects the type of Band 1 p.445	
c	Band4 Type	Peaking, Shelving-High	Selects the type of Band 4 p.445	
d	Band2 Dynamic Gain Src	Off...Tempo	Selects the modulation source of the Band 2 gain p.445	
	Amt [dB]	–18.0...+18.0	Sets the modulation amount of Band 2 gain p.445	
e	Band1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 1	
f	Band2 Cutoff [Hz]	50...10.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 2	D-mod
g	Band3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 3	
h	Band4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 4	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b: Band1 Type
c: Band4 Type

Selects a filter type for Band 1 and 4.





e, f, g, h: Q

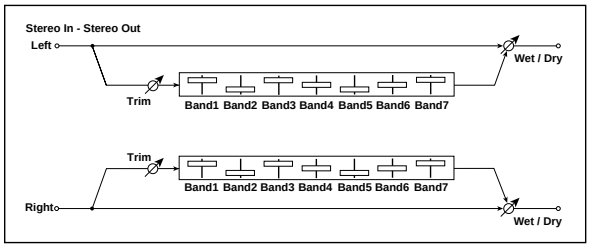
These parameters set the bandwidth of each equalizer. The higher the value, the narrower the band becomes.

d: Band2 Dynamic Gain Src
d: Amt [dB]

You can control the gain of Band 2 using the modulation source.

007: St. Graphic 7EQ (Stereo Graphic 7-Band EQ)

This is a stereo 7-band graphic equalizer. The bar graph of the gain setting for each band gives you a clear, visual idea of frequency responses. You can select a center frequency setting for each band from twelve types, according to the sound.



a	Type	1:Wide 1, 2:Wide 2, 3:Wide 3, 4:Half Wide 1, 5:Half Wide 2, 6:Half Wide 3, 7:Low, 8:Wide Low, 9:Mid, 10:Wide Mid, 11:High, 12:Wide High	Selects a combination of center frequencies for each band p.445	
b	Trim	0...100	Sets the input level	
c	Band1 [dB]	–18.0...+18.0	Sets the gain of Band 1	
d	Band2 [dB]	–18.0...+18.0	Sets the gain of Band 2	
e	Band3 [dB]	–18.0...+18.0	Sets the gain of Band 3	
f	Band4 [dB]	–18.0...+18.0	Sets the gain of Band 4	
g	Band5 [dB]	–18.0...+18.0	Sets the gain of Band 5	
h	Band6 [dB]	–18.0...+18.0	Sets the gain of Band 6	
i	Band7 [dB]	–18.0...+18.0	Sets the gain of Band 7	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

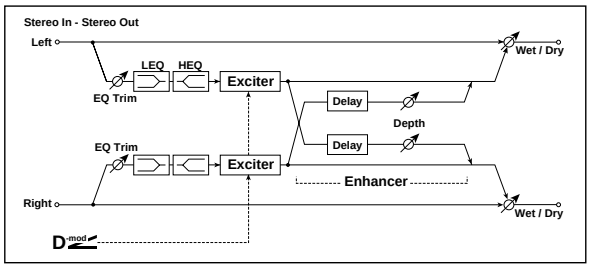
a: Type

This parameter selects a combination of center frequencies for each band. The center frequency of each band is shown in the right of the screen.

You can configure a 21-Band Graphic EQ ranging from 80 Hz to 18 kHz if you route three Graphic 7-Band EQ effects in series, with a setting of 7:Low, 9:Mid, and 11:High for each EQ.

008: St.Exciter/Enhncr (Stereo Exciter/Enhancer)

This effect is a combination of the Exciter, which adds a punch to the sound and the Enhancer, which adds spread and presence.



a	Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	D-mod
	Src	Off...Tempo	Selects the modulation source of the Exciter intensity	
	Amt	–100...+100	Sets the modulation amount of the Exciter intensity	
b	Emphasis Point	0...70	Sets the frequency to be emphasized p.446	D-mod
	Src	Off...Tempo	Selects the modulation source of the frequency to be emphasized	
	Amt	–70...+70	Sets the amount of modulation of the frequency to be emphasized	
c	Enhancer Delay L [msec]	0.0...50.0	Sets the delay time for the Enhancer left channel p.446	
d	Enhancer Delay R [msec]	0.0...50.0	Sets the delay time for the Enhancer right channel p.446	
e	Enhancer Depth	0...100	Sets the determines to what degree the Enhancer effect is applied	D-mod
	Src	Off...Tempo	Selects the modulation source of the Enhancer width	
	Amt	–100...+100	Sets the modulation amount of the Enhancer width	
f	EQ Trim	0...100	Sets the 2-band EQ input level	
g	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
h	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of the Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of the High EQ	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Exciter Blend

This parameter sets the depth (intensity) of the Exciter effect. Positive values give a frequency pattern (to be emphasized) different from negative values.

b: Emphasis Point

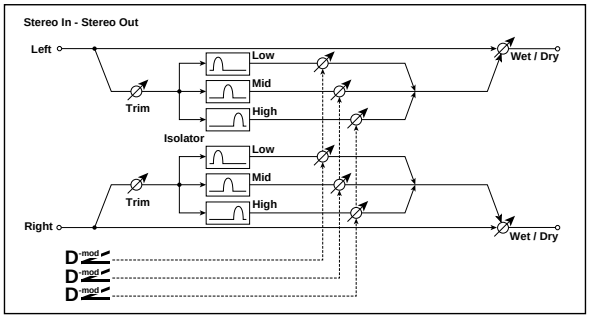
This parameter sets the frequency to be emphasized. Higher values will emphasize lower frequencies.

c: Enhancer Delay L [msec]
d: Enhancer Delay R [msec]

These parameters set the delay time for the Enhancer left and right channel. Specifying a slightly different delay time for the left and right channel will add a stereo image, depth, and width to the sound.

009: Stereo Isolator

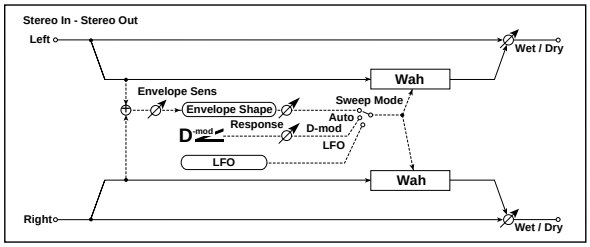
This is a stereo effect that separates the input signal into low, mid, and high-frequency bands, and controls the volume of each band independently. For example you can separately boost or cut the kick, snare, and hi-hat sounds from a drum signal in realtime.



a	Trim	0...100	Sets the input level	
b	Low/Mid [Hz]	100...500	Sets the frequency at which the low and mid bands are divided	
c	Mid/High [Hz]	2000...6000	Sets the frequency at which the mid and high bands are divided	
d	Low Gain [dB]	–Inf, –59...+12	Sets the low-frequency gain	D-mod
	Src	Off...Tempo	Selects the source that will modulate low-frequency gain	
	Amt	–72...+72	Sets the amount by which the low-frequency gain will be modulated	
e	Mid Gain [dB]	–Inf, –59...+12	Sets the mid-frequency gain	D-mod
	Src	Off...Tempo	Selects the modulation source for mid-frequency gain	
	Amt	–72...+72	Sets the amount by which the mid-frequency gain will be modulated	
f	High Gain [dB]	–Inf, –59...+12	Sets the high-frequency gain	D-mod
	Src	Off...Tempo	Selects the modulation source for high-frequency gain	
	Amt	–72...+72	Sets the amount by which the high-frequency gain will be modulated	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

010: St. Wah/Auto Wah (Stereo Wah/Auto Wah)

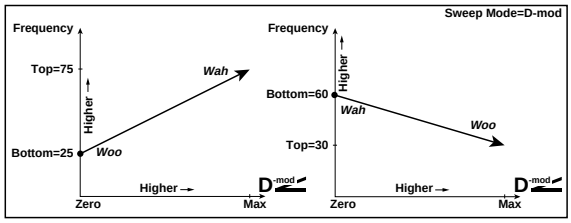
This stereo wah effect allows you to create sounds from vintage wah pedal simulation to auto-wah simulation, and much broader range settings.

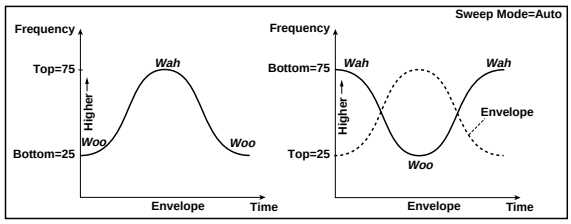


a	Frequency Bottom	0...100	Sets the lower limit of the wah center frequency p.448	
	Frequency Top	0...100	Sets the upper limit of the wah center frequency p.448	
b	Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO p.448	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
	Respns	0...100	Sets the response speed when Sweep Mode = Auto or D-mod	
c	Envelope Sens	0...100	Sets the sensitivity of auto-wah p.448	
	Envelope Shape	–100...+100	Sets the sweep curve of auto-wah p.448	
d	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.448	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
e	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	MSync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
f	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	IFX Common
g	Resonance	0...100	Sets the resonance amount	
	Low Pass Filter	Off, On	Switches the wah low pass filter on and off	
h	Output Level	0...100	Sets the output level of the effect sound	D-mod
	Src	Off...Tempo	Selects the modulation source that will control the effect output level	
	Amt	–100...+100	Sets the modulation amount of the effect output level	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Frequency Bottom
a: Frequency Top

The sweep width and direction of the wah filter are determined by the **Frequency Top** and **Frequency Bottom** settings.





b: Sweep Mode

This parameter changes the wah control mode. Setting **Sweep Mode** to Auto will select an auto-wah that sweeps according to envelope changes in the input signal level. Auto-wah is frequently used for funk guitar parts and clav sounds.

When **Sweep Mode** is set to D-mod, you can control the filter directly via the modulation source in the same way as a wah pedal.

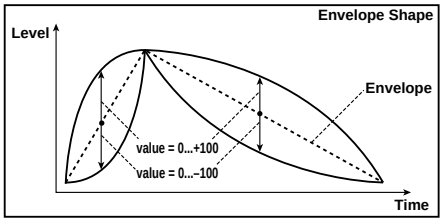
When **Sweep Mode** is set to LFO, the effect uses LFO to sweep in cycle.

c: Envelope Sens

This parameter sets the sensitivity of auto-wah. Increase the value if the input signal is too low to sweep. Reduce the value if the input signal is so high that the filter is stopped temporarily.

c: Envelope Shape

This parameter determines the sweep curve for auto-wah.



d: LFO Frequency [Hz]
e: MIDI Sync

When **MIDI Sync**=Off, the LFO speed uses the LFO Frequency parameter setting. When **MIDI Sync**=On, the LFO speed follows the **BPM**, **Base Note**, and **Times** settings.

e: BPM
e: Base Note
e: Times

One cycle of LFO sweep is obtained by multiplying the length of a note (𝅘𝅥𝅯…𝅝) (selected for **Base Note**, in relation to the tempo specified in **BPM**, or the MIDI Clock tempo if **BPM** is set to MIDI) by the number specified in the Times parameter.

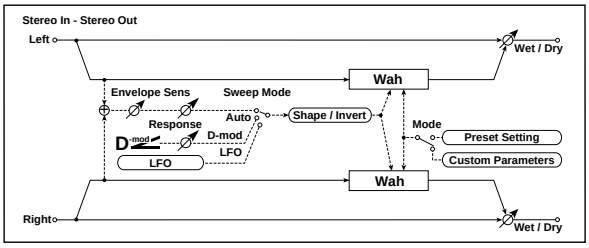
f: LFO Type
f: CmnLFO Offset [deg]

If **Type** is set to Common 1 or Common 2, modulation will be applied using the Common FX LFO rather than the LFO within the effect itself. Since this lets you use the same LFO for multiple effects, it's useful when you want to apply various types of modulation in synchronization.

CmnLFO Offset specifies the phase difference relative to the Common FX LFO. For more information, please see "Common FX LFOs" on page 423.

011: St. Vintage Wah (Stereo Vintage/Custom Wah)

This effect simulates the tonal character of a vintage wah pedal. You can customize the tone and range settings.



a	Mode	Preset, Custom	Selects either preset or custom settings p.449	
	Shape	–100...+100	Sets the curve of the sweep p.449	
	Invert	Off, On	Inverts the polarity of the sweep	
b	Frequency Bottom	0...100	Sets the lower limit of the wah center frequency when Mode = Custom p.449	
	Frequency Top	0...100	Sets the upper limit of the wah center frequency when Mode = Custom p.449	
c	Resonance Bottom	0...100	Sets the lower limit of resonance amount when Mode=Custom p.449	
	Resonance Top	0...100	Sets the upper limit of resonance amount when Mode=Custom p.449	
d	Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO p.448	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
	Manual	0...100	Sets the center frequency when Sweep Mode=D-mod and Source=Off	
e	Envelope Sens	0...100	Sets the auto-wah sensitivity	
	Response	0...100	Sets the speed of response when Sweep Mode=Auto or D-mod	
f	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.448	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
g	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	

h	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
i	Output Level	0...100	Sets the output level of the effect sound	D-mod
	Src	Off...Tempo	Selects the modulation source that will control the effect output level	
	Amt	–100...+100	Sets the modulation amount of the effect output level	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Shape

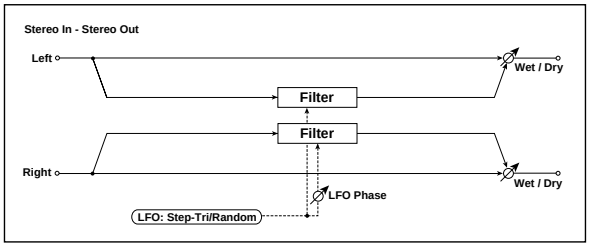
This parameter specifies the sweep curve of the wah. It applies to all control via auto-wah, modulation source, and LFO, and lets you adjust subtle nuances of the wah effect.

a: Mode
b: Frequency Bottom
b: Frequency Top
c: Resonance Bottom
c: Resonance Top

If Mode=Preset, this simulates a vintage wah pedal. In this case, internally fixed values are used for Frequency Bottom / Top and Resonance Bottom / Top, and these settings will be ignored. The settings for Frequency Bottom / Top and Resonance Bottom / Top are valid if Mode=Custom.

012: St. Random Filter (Stereo Random Filter)

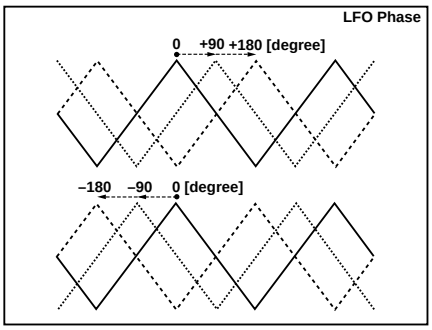
This stereo band pass filter uses a step-shape waveform and random LFO for modulation. You can create a special effect from filter oscillation.



a	LFO Waveform	Step-Tri, Random	Selects the LFO Waveform p.449	
	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects the modulation source used for both LFO speed and step speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
c	LFO Step Freq [Hz]	0.05...50.00	Sets the LFO step speed (speed that changes in steps p.449	D-mod
	Amt	–50.00... +50.00	Sets the modulation amount of LFO step speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.450	
	Base Note		Selects the type of notes that specify the LFO speed p.450	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.450	
e	Step Base Note		Selects the type of notes to specify the LFO step speed p.450	Sync
	Times	x1...x32	Sets the number of notes to specify the LFO step speed p.450	
f	LFO Type (Step)	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 to control the LFO step speed p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
g	Manual	0...100	Sets the filter center frequency	
	Src	Off...Tempo	Selects the modulation source for the filter center frequency	
	Amt	–100...+100	Sets the modulation amount for the filter center frequency	
h	Depth	0...100	Sets the modulation depth of filter center frequency	D-mod
	Src	Off...Tempo	Selects the modulation source of filter modulation	
	Amt	–100...+100	Sets the modulation amount of filter modulation	
i	Resonance	0...100	Sets the resonance amount	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

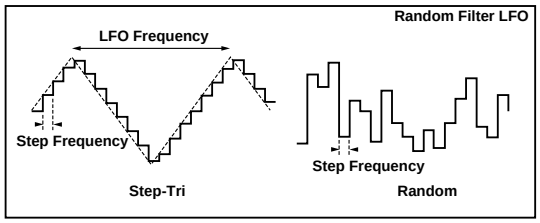
a: LFO Phase [degree]

Offsetting the left and right phases alters how modulation is applied to the left and right channels, creating a swelling affect.



a: LFO Waveform
b: LFO Frequency [Hz]
c: LFO Step Freq [Hz]

When **LFO Waveform** is set to Step-Tri, LFO is a step-shape, triangle waveform. The **LFO Frequency** parameter sets the original triangle waveform speed. Changing the **LFO Step Freq** parameter enables you to adjust the width of the steps. When **LFO Waveform** is set to Random, the **LFO Step Freq** parameter uses a random LFO cycle.



d: BPM

e: Step Base Note

e: Times

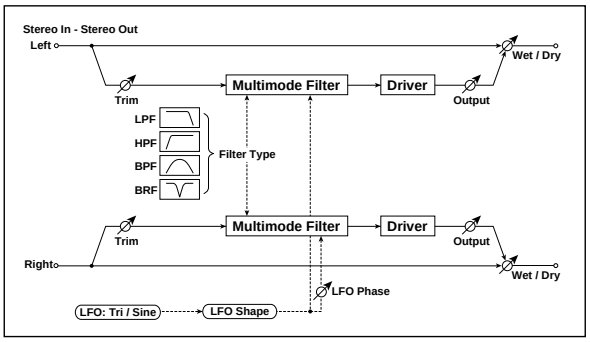
The width of an LFO step, or a cycle of random LFO, is obtained by multiplying the length of a note (𝅘𝅥𝅯…𝅝) (selected for **Step Base Note**, in relation to the tempo specified in **BPM**, or the MIDI Clock tempo if **BPM** is set to MIDI) by the number specified in the **Times** parameter.

i: Wet/Dry

The effect sound's phase will be reversed when you set this parameter in the range of values from –Wet to –1:99.

013: Multi Mode Filter (Stereo Multi Mode Filter)

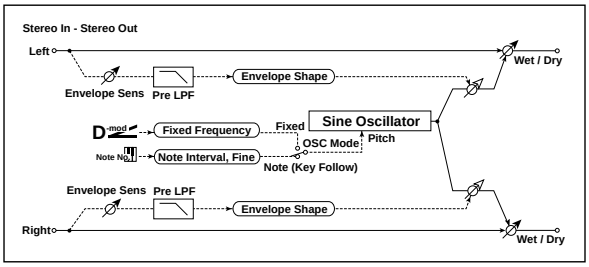
This is a multi-mode filter with four types; low pass, high pass, band pass, and band reject. You can use LFO or dynamic modulation to vary the cutoff frequency or resonance.



a	Type	LPF, HPF, BPF, BRF	Selects the type of filter	
	Trim	0...100	Sets the input level	
b	Cutoff	0...100	Sets the cutoff frequency (center frequency)	D-mod
	Src	Off...Tempo	Selects the modulation source of the cutoff	
	Amt	–100...+100	Sets the modulation amount of the cutoff	
c	Resonance	0...100	Sets the resonance amount	D-mod
	Src	Off...Tempo	Selects the source that will modulate the amount of resonance	
	Amt	–100...+100	Sets the amount by which the resonance will be modulated	
d	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
	Depth	0...100	Sets the depth to which the LFO will modulate the cutoff frequency	
e	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
f	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
g	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
h	Drive SW	Off, On	Switches distortion on/off within the filter	
	Output Level	0...100	Sets the output level	
i	Drive Gain	0...100	Sets the distortion amount	
	Low Boost	0...100	Sets the amount of low-range boost	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

014: St. Sub Oscillator (Stereo Sub Oscillator)

This effect adds very low frequencies to the input signal. It is very useful when simulating a roaring drum sound or emphasizing powerful low range. This effect is different from the equalizer in that you can add very low range harmonics. You can also adjust the oscillator frequency to match a particular note number, for use as an octaver.



a	OSC Mode	Note (Key Follow), Fixed	Determines whether the oscillator frequency follows the note number or whether it is fixed p.451	
b	Note Interval	–48...0	Sets the pitch difference from the note number when OSC Mode=Note (Key Follow) p.451	
	Note Fine	–100...+100	Fine adjustment of the oscillator frequency p.451	
c	Fixed Frequency [Hz]	10.0...80.0	Sets the oscillator frequency when OSC Mode=Fixed	D-mod
	Src	Off...Tempo	Selects the modulation source for the oscillator frequency when OSC Mode=Fixed	
	Amt	–80...+80	Sets the oscillator frequency modulation amount when OSC Mode=Fixed	
d	Envelope Pre LPF	1...100	Sets the upper limit of the frequency range for which very low harmonics are added p.451	
e	Envelope Sens	0...100	Sets the sensitivity with which very low harmonics are added	
	Envelope Shape	–100...+100	Sets the oscillator's volume envelope curve	

f	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: OSC Mode
b: Note Interval
b: Note Fine

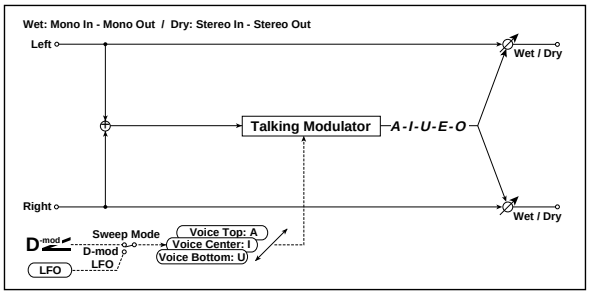
The **OSC Mode** parameter selects the oscillator operation mode. When Note (Key Follow) is selected, the oscillator's frequency is determined based on the note number, allowing you to use it as an octaver. The **Note Interval** parameter sets the pitch offset from the original note number by semitone steps. The **Note Fine** parameter allows you to fine-tune in steps of cents.

d: Envelope Pre LPF

This parameter sets the upper limit of the frequency range to which very low harmonics are added. Adjust this parameter if you do not want to add lower harmonics to the higher range.

015: Talking Modulator

This effect adds an unusual character, like a human voice, to the input signal. Modulating the tone via dynamic modulation, you can create an interesting effect that sounds as if the guitar or synthesizer is talking.



a	Sweep Mode	D-mod, LFO	Switches between modulation source control and LFO control	
b	Manual Voice Control	Bottom, 1...49, Center, 51...99, Top	Voice pattern control	
	Src	Off...Tempo	Selects the modulation source that controls the voice pattern	D-mod
c	Voice Top	A, I, U, E, O	Selects a vowel sound at the top end of control p.451	
d	Voice Center	A, I, U, E, O	Selects a vowel sound in the center of control p.451	
e	Voice Bottom	A, I, U, E, O	Selects a vowel sound at the bottom end of control p.451	
f	Formant Shift	–100...+100	Sets the frequency to which the effect is applied p.451	
	Resonance	0...100	Sets the Level of resonance of the voice pattern p.451	
g	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.448	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
h	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note		Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
i	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

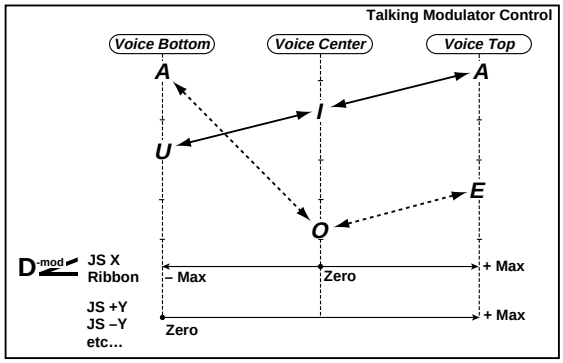
c: Voice Top
d: Voice Center
e: Voice Bottom

These parameters assign vowels to the top, center, and bottom position of the controller.

E.g.: When "Voice Top"=A, "Voice Center"=I, and "Voice Bottom"=U:

If **Sweep Mode** is set to D-mod and Ribbon is selected as the modulation source, moving your finger from the right to left of the ribbon controller will change the sound from "a" to "i," then "u."

If Sweep Mode is set to LFO, the sound will change cyclically from "a" to "i," "u," "i," then "a."



f: Formant Shift

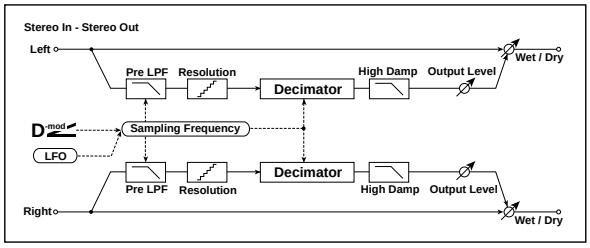
This parameter adjusts the frequency level to which the effect is applied. If you wish to apply the effect to a higher-range sound, set this parameter to a higher value; to apply the effect to a lower-range sound, set this to a lower value.

f: Resonance

This parameter sets the intensity of resonance for the voice pattern. A larger value will add more character to the sound.

016: Stereo Decimator

This effect creates a rough sound like a cheap sampler by lowering the sampling frequency and data bit length. You can also simulate noise unique to a sampler (aliasing).



a	Pre LPF	Off, On	Selects whether the harmonic noise caused by a decrease in sampling frequency is generated or not p.452	
	High Damp [%]	0...100	Sets the ratio of cut of the high range	
b	Sampling Freq [Hz]	1.00k... 48.00k	Sets the sampling frequency	D-mod
	Src	Off...Tempo	Selects the modulation source of the sampling frequency	
	Amt	–48.00k... +48.00k	Sets the modulation amount of the sampling frequency	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency	MIDI Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect	
	Base Note	𝅘𝅥𝅯... 𝅝	Selects the type of notes that specify the LFO speed	
	Times	x1...x32	Sets the number of notes that specify the LFO speed	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Depth	0...100	Sets the depth of the sampling frequency LFO modulation	D-mod
	Src	Off...Tempo	Selects the LFO modulation source of the sampling frequency	
	Amt	–100...+100	Sets the LFO modulation amount of the sampling frequency	
g	Resolution	4...24	Sets the data bit length p.452	
h	Output Level	0...100	Sets the output level p.452	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–100...+100	Sets the modulation amount of the output level	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Pre LPF

If a sampler with a very low sampling frequency receives very high-pitched sound that could not be heard during playback, it could generate pitch noise that is unrelated to the original sound. Set **Pre LPF** to On to prevent this noise from being generated.

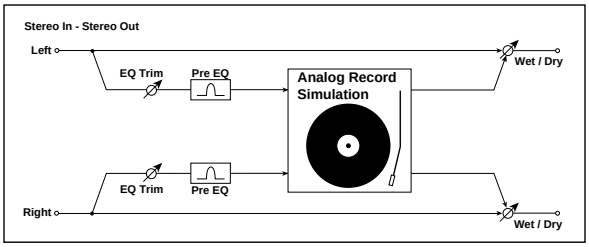
If you set the **Sampling Freq** to about 3 kHz and set **Pre LPF** to Off, you can create a sound like a ring modulator.

g: Resolution
h: Output Level

If you set a smaller value for the **Resolution** parameter, the sound may be distorted. The volume level may also be changed. Use **Output Level** to adjust the level.

017: St. Analog Record (Stereo Analog Record)

This effect simulates the noise caused by scratches and dust on analog records. It also reproduces some of the modulation caused by a warped turntable.



a	Speed [RPM]	33 1/3, 45, 78	Sets the r.p.m. of a record	
b	Flutter	0...100	Sets the modulation depth p.452	
c	Noise Density	0...100	Sets the noise density	
	Noise Tone	0...100	Sets the noise tone	
d	Noise Level	0...100	Sets the noise level	D-mod
	Src	Off...Tempo	Selects the modulation source for the noise level	
	Amt	–100...+100	Sets the modulation amount of the noise level	
e	Click Level	0...100	Sets the click noise level p.452	D-mod
	Src	Off...Tempo	Selects the modulation source for the click noise level	
	Amt	–100...+100	Sets the modulation amount of the click noise level	
f	EQ Trim	0...100	Sets the EQ input level	
g	Pre EQ Cutoff [Hz]	300...10.00k	Sets the EQ center frequency	
	Q	0.5...10.0	Sets the EQ band width	
	Gain [dB]	–18.0...+18.0	Sets the EQ gain	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b: Flutter

This parameter enables you to set the depth of the modulation caused by a warped turntable.

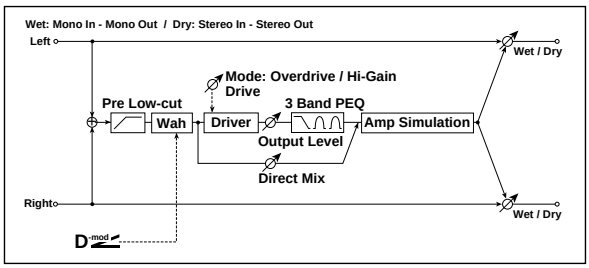
e: Click Level

This parameter enables you to set the level of the click noise that occurs once every rotation of the turntable. This simulation reproduces record noise, and the noise generated after the music on a vinyl record finishes.

Overdrive, Amp models, and Mic models (OD Amp Mic)

018: OD/Hi.Gain Wah (Overdrive/Hi.Gain Wah)

This distortion effect utilizes an Overdrive mode and a Hi-Gain mode. Controlling the wah effect, the 3-band EQ, and the amp simulation will allow you to create versatile distortion sounds. This effect is suitable for guitar and organ sounds.



a	Wah	Off, On	Switches Wah on/off p.453	D-mod
	Src	Off...Tempo	Selects the modulation source that switches the Wah on and off	
	Sw	Toggle, Moment	Selects the switching mode for the modulation source that switches the Wah on and off p.453	
b	Wah Sweep Range	–10...+10	Sets the range of Wah p.453	
	Wah Sweep Src	Off...Tempo	Selects the modulation source that controls the Wah p.453	
c	Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and hi-gain distortion	
d	Drive	1...100	Sets the degree of distortion p.453	
	Pre Low-cut	0...10	Sets the low range cut amount of the distortion input p.453	
e	Output Level	0...50	Sets the output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–50...+50	Sets the modulation amount of the output level	
f	Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
g	Mid1Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
h	Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
i	Direct Mix	0...50	Sets the amount of the dry sound mixed to the distortion	
	Speaker Simulation	Off, On	Switches the speaker simulation on/off	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Wah

The Wah parameter switches the wah effect on / off.

a: Sw

This parameter sets how the wah effect is switched on and off via the modulation source.

When **Sw** = Moment, the wah effect is usually turned off. It is turned on only when you press the pedal or operate the joystick.

MIDI When a value for the modulation source is less than 64, "off" speed is selected, and when the value is 64 or higher, "on" is selected.

When **Sw** = Toggle, the wah effect is switched between on and off each time you press the pedal or operate the joystick.

MIDI The switch will be turned on / off each time the value of the modulation source exceeds 64.

b: Wah Sweep Range
b: Wah Sweep Src

This parameter sets the sweep range of the wah center frequency. A negative value will reverse the direction of sweep. The wah center frequency can be controlled by the modulation source specified in the **Wah Sweep Src** parameter.

d: Pre Low-cut

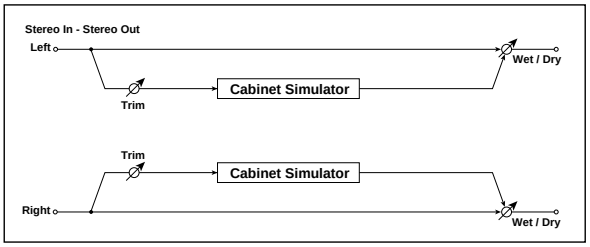
Cutting the signal in the low range before it is input to the Distortion will create a sharp distortion.

d: Drive
e: Output Level

The degree of distortion is determined by the level of input signal and the setting of **Drive**. Raising the **Drive** setting will cause the entire volume level to increase. Use the **Output Level** parameter to adjust the volume level. The **Output Level** parameter uses the signal level input to the 3-Band EQ. If clipping occurs at the 3-Band EQ, adjust the **Output Level** parameter.

019: St. Guitar Cabinet (Stereo Guitar Cabinet)

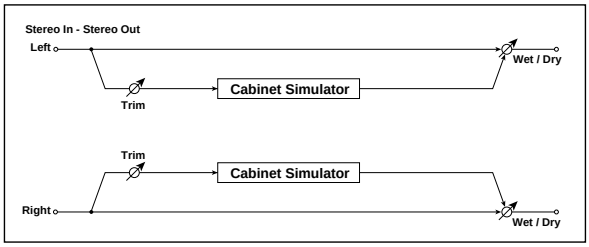
This simulates the acoustical character of a guitar amp's speaker cabinet.



a	Trim	0...100	Sets the input level	
b	Type		Selects the type of the cabinet	
		TWEED - 1x12	Open-back cabinet with one 12" speaker, typically used for blues	
		TWEED - 4x10	Open-back cabinet with four 10" speakers	
		BLACK - 2x10	Open-back cabinet with two 10" speakers	
		BLACK - 2x12	American open-back cabinet with two12" speakers	
		VOX AC15 - 1x12	Vox AC15 open-back cabinet with one 12" "Blue" speaker	
		VOX AC30 - 2x12	Vox AC30 open-back cabinet with two 12" "Blue" speakers	
		VOX AD412 - 4x12	VOX AD412 closed-back cabinet with four 12" speakers	
		UK H30 - 4x12	Closed-back classic cabinet with four 30W 12" speakers	
		UK T75 - 4x12	Closed-back cabinet with four 75W 12" speakers	
		US V30 - 4x12	Closed-back cabinet with four 30W 12" speakers	
c	Air	0...100	Sets the mic position	
d	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

020: St. Bass Cabinet (Stereo Bass Cabinet)

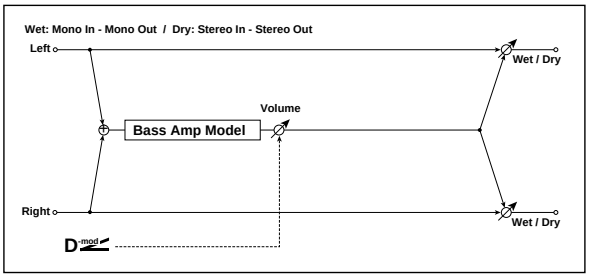
This simulates the acoustical character of a bass amp's speaker cabinet.



a	Trim	0...100	Sets the input level	
b	Cabinet Type		Selects the cabinet type	
		LA - 4x10	Four 10" speakers / LA sound cabinet	
		MODERN - 4x10	Four 10" aluminum-cone speakers / modern cabinet	
		METAL - 4x10	Four 10" aluminum-cone speakers / modern cabinet	
		CLASSIC - 8x10	Eight 10" speakers / classic cabinet	
		UK - 4x12	Four 12" speakers / UK-manufactured cabinet	
		STUDIO - 1x15	One 15" speaker / studio combo cabinet	
		JAZZ - 1x15	One 15" speaker / jazz combo cabinet	
		VOX AC100 - 2x15	Two 15" speakers / cabinet for Vox AC100	
		US - 2x15	Two 15" speakers / US-manufactured cabinet	
		UK - 4x15	Four 15" speakers / UK-manufactured cabinet	
		LA - 1x18	One 18" speaker / LA sound cabinet	
		COMBI - 1x12 & 1x18	One 12" and one 18" speaker combination cabinet	
c	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

021: Bass Amp Model

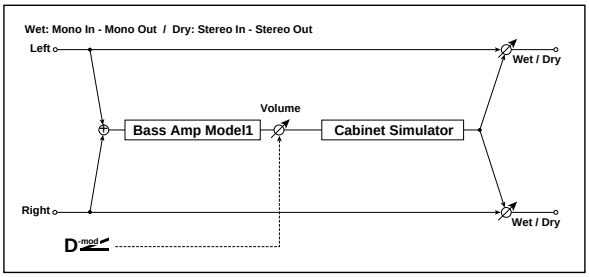
This simulates a bass amp.



a	Amp Type		Selects the amplifier type	
		LA STUDIO	An amp that is typical of the LA sound.	
		JAZZ	A combo amp favored by jazz bassists.	
		GOLD PANEL	An amp distinctive for its eye-catching gold panel and clean sound.	
		SCOOPED	An amp typical of 80's sounds.	
		VALVE2	A tube amp suitable for rock.	
		VALVE	A tube amp with the ULTRA LO switch turned ON.	
		CLASSIC	A tube amp whose basic character changes according to the setting of the value dial.	
b	Volume	0...100	Sets the output level	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–100...+100	Sets the modulation amount of the output level	
c	Bass	0...100	Sets the bass (low range) level	
d	Middle	0...100	Sets the middle (mid range) level	
	Mid Range	0...4	Sets the mid-frequency range	
e	Treble	0...100	Sets the treble (high range) level	
f	Presence	0...100	Sets the presence (high-frequency tone)	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

022: Bass Amp+Cabinet (Bass Amp Model+Cabinet)

This simulates a bass amp and speaker cabinet.



a	Amp Type	LA STUDIO, JAZZ, GOLD PANEL, SCOOPED, VALVE2, VALVE, CLASSIC	Selects the type of the amplifier p.455	
b	Volume	0...100	Sets the output level	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–100...+100	Sets the modulation amount of the output level	
c	Bass	0...100	Sets the bass (low range) level	
d	Middle	0...100	Sets the middle (mid range) level	
	Mid Range	0...4	Sets the mid-frequency range	
e	Treble	0...100	Sets the treble (high range) level	
f	Presence	0...100	Sets the presence (high-frequency tone)	
g	Cabinet Simulater	Off, On	Switches the cabinet simulator on/off	
h	Cabinet Type	LA - 4x10, MODERN - 4x10, METAL - 4x10, CLASSIC - 8x10, UK - 4x12, STUDIO - 1x15, JAZZ - 1x15, VOX AC100 - 2x15, US - 2x15, UK - 4x15, LA - 1x18, COMBI - 1x12 & 1x18	Selects the cabinet type p.454	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Amp Type
h: Cabinet Type

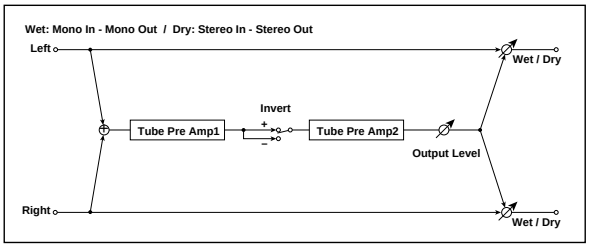
Recommended Combinations of Bass Amp Models and Cabinets:

Amp Type	Cabinet Type
LA STUDIO	LA - 4x10, LA - 1x18
JAZZ	JAZZ - 1x15
GOLD PANEL	MODERN - 4x10
SCOOPED	METAL - 4x10
VALVE2	CLASSIC - 8x10
VALVE	CLASSIC - 8x10
CLASSIC	COMBI - 1x12 & 1x18

Note: It is convenient to use the Effect Preset function to preset your favorite pairings of amp model and cabinet. (☞p.101)

023: Tube PreAmp Model (Tube PreAmp Modeling)

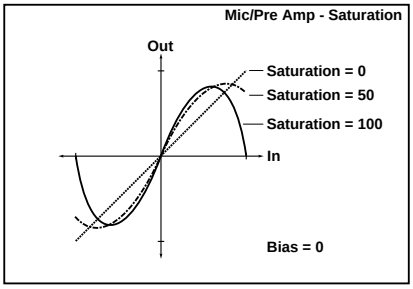
This effect simulates a two-stage vacuum tube preamp. You can make individual settings for two vacuum tubes connected in series. This lets you create the warm sound typical of vacuum tubes.



a	Tube1 Low Cut [Hz]	Thru, 21...8.00k	Sets the cutoff frequency for the low cut filter of stage 1	
	High Cut [Hz]	53...20.00k, Thru	Sets the cutoff frequency for the high cut filter of stage 1	
b	Tube1 Gain [dB]	–24.0...+24.0	Sets the input gain for stage 1	
	Saturation [%]	0...100	Sets the input/output response for stage 1 p.456	
c	Tube1 Bias	0...100	Sets the bias voltage for stage 1 p.456	
d	Tube1 Phase	Normal, Wet Invert	Turns phase reversal on/off p.456	
e	Tube2 Low Cut [Hz]	Thru, 21...8.00k	Sets the cutoff frequency for the low cut filter of stage 2	
	High Cut [Hz]	53...20.00k, Thru	Sets the cutoff frequency for the high cut filter of stage 2	
f	Tube2 Gain [dB]	–24.0...+24.0	Sets the input gain for stage 2	
	Saturation [%]	0...100	Sets the input/output response for stage 2 p.456	
g	Tube2 Bias	0...100	Sets the bias voltage for stage 2 p.456	
h	Tube2 Output Level [dB]	–48.0...+0.0	Sets the output level	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

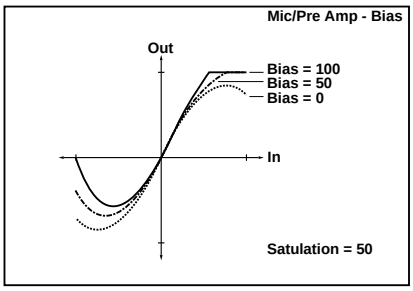
b, f: Saturation [%]

With higher settings of this value, the waveform will change at high gain levels, tending to cause distortion. Lower settings of this value will produce linear response.



c: Tube1 Bias

This expresses the effect that changes in vacuum tube bias have on the distortion of the waveform. Higher settings of this value will produce distortion even at low gain levels. Since this will also change the overtone structure, you can use it to control the tonal character.

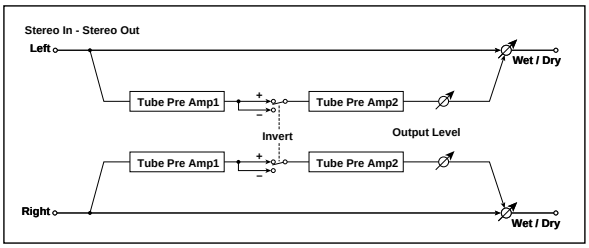


d: Tube1 Phase

With the Wet Invert setting, the phase of the signal will be inverted between stage 1 and stage 2. Since “Bias” is applied to the inverted signal in stage 2, this will change the tonal character.

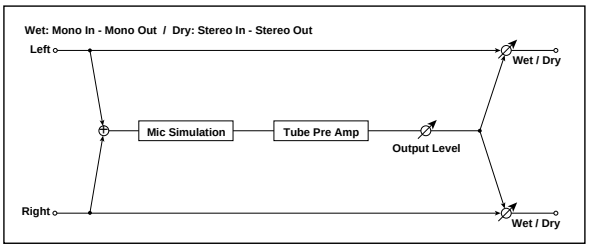
024: St. Tube PreAmp (Stereo Tube PreAmp Modeling)

This is a stereo vacuum tube preamp simulator (see p.456, 023: Tube PreAmp Model (Tube PreAmp Modeling)).



025: Mic Model+PreAmp (Mic Modeling + PreAmp)

This effect simulates a mic and vacuum tube preamp. You can choose from various types of mic and positions to create differing sonic characters.



a	Mic Type	Vintage Dynamic, Multi Condenser, Percussion Condenser, Drums Dynamic, Vocal Dynamic, Multi Dynamic, Vocal Condenser, Vocal Tube, Kick Dynamic	Selects the type of mic	
b	Mic Position	Close, On, Off, Far	Sets the mic placement distance p.457	
c	Tube Low Cut [Hz]	Thru, 21...8.00k	Sets the frequency of the low cut filter	
	High Cut [Hz]	53...20.00k, Thru	Sets the frequency of the high cut filter	
d	Tube Gain [dB]	–24.0...+24.0	Sets the input gain to the vacuum tube preamp	
	Saturation [%]	0...100	Sets the input/output response of the preamp p.456	
e	Tube Bias	0...100	Sets the bias level of the preamp p.456	
f	Tube Output Level [dB]	–48.0...+0.0	Sets the output level of the preamp	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

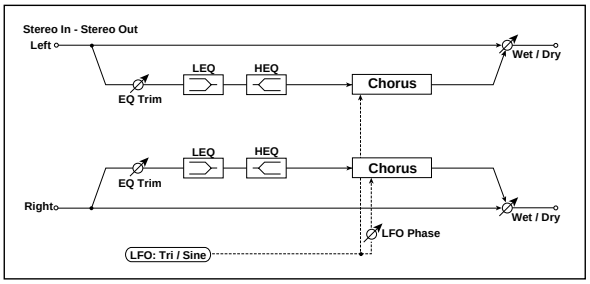
b: Mic Position

This expresses the effect that the mic position has on the sound. The Close setting is the closest mic position, and the Far setting is the farthest.

Chorus, Flanger, and Phaser (Cho/Fln Phaser)

026: Stereo Chorus

This effect adds thickness and warmth to the sound by modulating the delay time of the input signal. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.

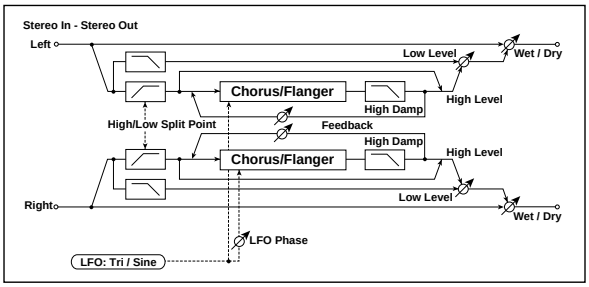


a	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
c	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
d	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
e	L Pre Delay [msec]	0.0...50.0	Sets the delay time for the left channel p.458	
	R Pre Delay [msec]	0.0...50.0	Sets the delay time for the right channel p.458	
f	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source for the LFO modulation depth	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation depth	
g	EQ Trim	0...100	Sets the EQ input level	
h	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
i	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of the Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of the High EQ	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

e: L Pre Delay [msec]
e: R Pre Delay [msec]
Setting the left and right delay time individually allows you to control the stereo image.

027: St.HarmonicChorus (Stereo Harmonic Chorus)

This effect applies chorus only to higher frequencies. This can be used to apply a chorus effect to a bass sound without making the sound thinner. You can also use this chorus block with feedback as a flanger.



a	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
c	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
d	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
e	Pre Delay [msec]	0.0...50.0	Sets the delay time from the original sound	
f	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of the LFO modulation depth	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation depth	
g	High/Low Split Point	1...100	Sets the frequency split point between the low and high range p.459	
h	Feedback	–100...+100	Sets the feed back amount of the chorus block p.459	
	High Damp [%]	0...100	Sets the high range damping amount of the chorus block	
i	Low Level	0...100	Sets the low range output level	
	High Level	0...100	Sets the high range (chorus) output level	

j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

g: High/Low Split Point

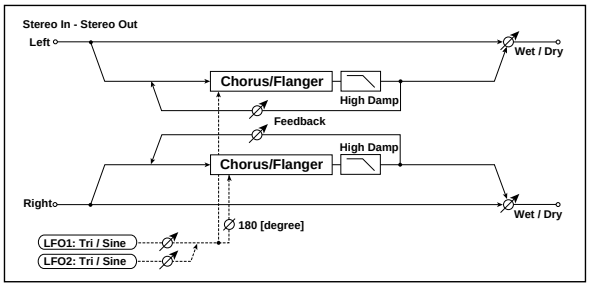
This parameter sets the frequency that splits the high and low range. Only the high range will be sent to the chorus block.

h: Feedback

Sets the feedback amount of the chorus block. Increasing the feedback will allow you to use the effect as a flanger.

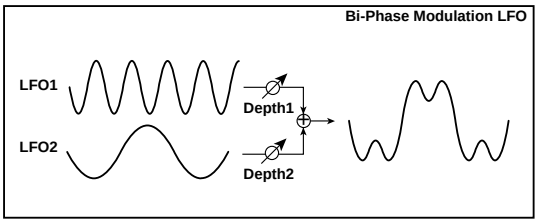
028: St. Biphase Mod. (Stereo Biphase Modulation)

This stereo chorus effect adds two different LFOs together. You can set the Frequency and Depth parameters for each LFO individually. Depending on the setting of these LFOs, very complex waveforms will create an analog-type, unstable modulated sound.



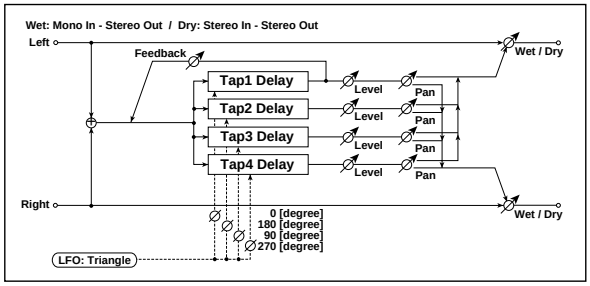
a	LFO1 Waveform	Triangle, Sine	Selects LFO1 waveform	
	LFO2	Triangle, Sine	Selects LFO2 waveform	
	Phase Sw	0 deg, 180 deg	Switches the LFO phase difference between left and right	
b	LFO1 Frequency [Hz]	0.02...30.00	Sets the LFO1 speed	D-mod
	Src	Off...Tempo	Selects the modulation source of LFO1&2 speed	
	LFO1 Amt	–30.00... +30.00	Sets the modulation amount of LFO1 speed	
c	LFO2 Frequency [Hz]	0.02...30.00	Sets the LFO2 speed	D-mod
	Amt	–30.00... +30.00	Sets the modulation amount of LFO2 speed	
d	LFO1 Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when LFO1 Type = Common 1 or Common 2 p.448	
e	LFO2 Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when LFO2 Type = Common 1 or Common 2 p.448	
f	Depth1	0...100	Sets the depth of LFO1 modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of LFO1&2 modulation depth	
	Amt	–100...+100	Sets the modulation amount of LFO1 modulation depth	
g	Depth2	0...100	Sets the depth of LFO2 modulation	D-mod
	Amt	–100...+100	Sets the modulation amount of LFO2 modulation depth	

h	L Pre Delay [msec]	0.0...50.0	Sets the delay time for the left channel p.458	
	R Pre Delay [msec]	0.0...50.0	Sets the delay time for the right channel p.458	
i	Feedback	–100...+100	Sets the feedback amount p.459	
	High Damp [%]	0...100	Sets the damping amount in the high range	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	



029: Multitap Cho/Delay (Multitap Chorus/Delay)

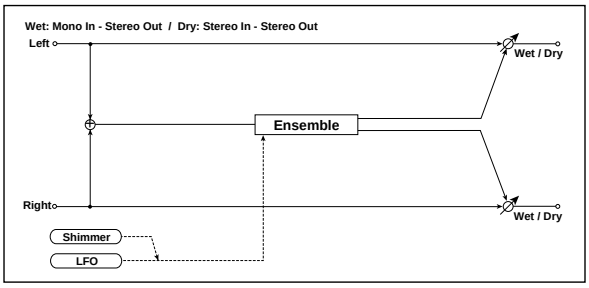
This effect has four chorus blocks with a different LFO phase. You can create a complex stereo image by setting each block's delay time, depth, output level, and pan individually. You can also fix some of the chorus blocks to combine the chorus and delay effects.



a	LFO Frequency [Hz]	0.02...13.00	Sets the speed of the LFO	
b	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
c	Tap1 (000) [msec]	0...1000	Sets the Tap1 (LFO phase=0 degrees) delay time	
	Depth	0...30	Sets the Tap1 chorus depth	
	Level	0...30	Sets the Tap1 output level	
	Pan	L6...L1, C, R1...R6	Sets the Tap1 stereo image	
d	Tap2 (180) [msec]	0...1000	Sets the Tap2 (LFO phase=180 degrees) delay time	
	Depth	0...30	Sets the Tap2 chorus depth	
	Level	0...30	Sets the Tap2 output level	
	Pan	L6...L1, C, R1...R6	Sets the Tap2 stereo image	
e	Tap3 (090) [msec]	0...1000	Sets the Tap3 (LFO phase=90 degrees) delay time	
	Depth	0...30	Sets the Tap3 chorus depth	
	Level	0...30	Sets the Tap3 output level	
	Pan	L6...L1, C, R1...R6	Sets the Tap3 stereo image	
f	Tap4 (270) [msec]	0...1000	Sets the Tap4 (LFO phase=270 degrees) delay time	
	Depth	0...30	Sets the Tap4 chorus depth	
	Level	0...30	Sets the Tap4 output level	
	Pan	L6...L1, C, R1...R6	Sets the Tap4 stereo image	
g	Tap1 Feedback	–100...+100	Sets the Tap1 feedback amount	D-mod
	Src	Off...Tempo	Selects the modulation source of Tap1 feedback amount and effect balance	
	Amt	–100...+100	Sets the Tap1 feedback amount and modulation amount	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

030: Ensemble

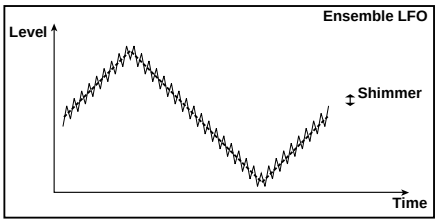
This Ensemble effect has three chorus blocks that use LFO to create subtle shimmering, and gives three dimensional depth and spread to the sound, because the signal is output from the left, right, and center.



a	Speed	1...100	Sets the speed of the LFO	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–100...+100	Sets the modulation amount of LFO speed	
b	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of the LFO modulation depth	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation depth	
c	Shimmer	0...100	Sets the amount of shimmering of the LFO waveform p.460	
d	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

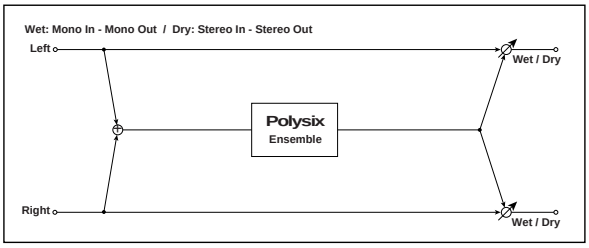
c: Shimmer

This parameter sets the amount of shimmering of the LFO waveform. Increasing this value adds more shimmering, making the chorus effect more complex and richer.



031: Polysix Ensemble

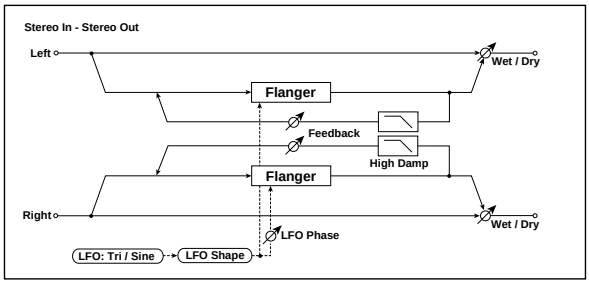
This models the ensemble effect built into the classic Korg PolySix programmable polyphonic synthesizer.



a	Depth	0...100	Sets the depth of the effect	D-mod
	Src	Off...Tempo	Selects the modulation source that will control the effect depth	
	Amt	–100...+100	Sets the amount by which the effect depth will be modulated	
b	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

032: Stereo Flanger

This effect gives a significant swell and movement of pitch to the sound. It is more effective when applied to a sound with a lot of harmonics. This is a stereo flanger. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.



a	Delay Time [msec]	0.0...50.0	Sets the delay time from the original sound	
b	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
c	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
d	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
e	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
f	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
g	Depth	0...100	Sets the depth of LFO modulation	
h	Feedback	–100...+100	Sets the feedback amount p.461	
	High Damp [%]	0...100	Sets the feedback damping amount in the high range p.461	
i	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.461	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

h: Feedback
i: Wet/Dry

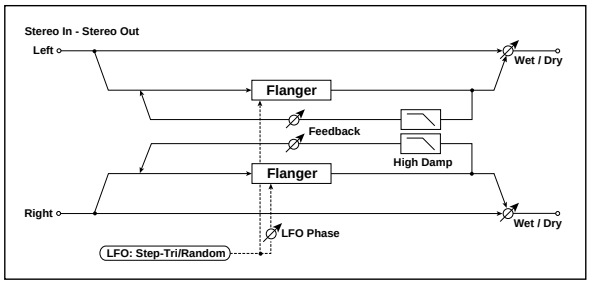
The peak shape of the positive and negative **Feedback** value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound if you set a positive value for both **Feedback** and **Wet/Dry**, and if you set a negative value for both **Feedback** and **Wet/Dry**.

h: High Damp [%]

This parameter sets the amount of damping of the feedback in the high range. Increasing the value will cut high-range harmonics.

033: St. Random Flanger (Stereo Random Flanger)

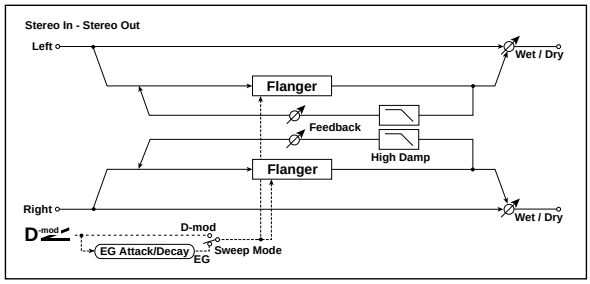
The stereo effect uses a step-shape waveform and random LFO for modulation, creating a unique flanging effect.



a	Delay Time [msec]	0.0...50.0	Sets the delay time from the original sound	
b	LFO Waveform	Step-Tri, Random	Selects the LFO Waveform p.449	
	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects the modulation source used for both LFO speed and step speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	LFO Step Freq [Hz]	0.05...50.00	Sets the LFO step speed (speed that changes in steps)	D-mod
	Step Amt	–50.00... +50.00	Sets the modulation amount of LFO step speed	
e	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
f	Step Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the LFO step speed p.450	Sync
	Times	x1...x32	Sets the number of notes to specify the LFO step speed p.450	
g	LFO Type (Step)	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
h	Depth	0...100	Sets the depth of LFO modulation	
i	Feedback	–100...+100	Sets the feedback amount p.461	
	High Damp [%]	0...100	Sets the feedback damping amount in the high range p.461	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.461	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

034: St. Env. Flanger (Stereo Envelope Flanger)

This Flanger uses an envelope generator for modulation. You will obtain the same pattern of flanging each time you play. You can also control the Flanger directly using the modulation source.



a	L Dly Bottom [msec]	0.0...50.0	Sets the lower limit of the left-channel delay time	
	L Dly Top [msec]	0.0...50.0	Sets the upper limit of the left-channel delay time	
b	R Dly Bottom [msec]	0.0...50.0	Sets the lower limit of the right-channel delay time	
	R Dly Top [msec]	0.0...50.0	Sets the upper limit of the right-channel delay time	
c	Sweep Mode	EG, D-mod	Determines whether the flanger is controlled by the envelope generator or by the modulation source p.462	
	Src	Off...Tempo	Selects the modulation source that triggers the EG (when Sweep Mode = EG), or the modulation source that causes the flanger to sweep (when Sweep Mode = D-mod) p.462	D-mod
d	EG Attack	1...100	Sets the EG attack speed p.462	
	EG Decay	1...100	Sets the EG decay speed p.462	
e	Feedback	–100...+100	Sets the feedback amount p.461	
f	High Damp [%]	0...100	Sets the feedback damping amount in the high range p.461	
g	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.461	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

c: Sweep Mode
c: Src

This parameter switches the flanger control mode. With **Sweep Mode** = EG, the flanger will sweep using the envelope generator. This envelope generator is included in the envelope flanger, and not related to the Pitch EG, Filter EG, or Amp EG.

The **Src** parameter selects the source that starts the envelope generator. If you select, for example, Gate, the envelope generator will start when the note-on message is received. When **Sweep Mode** = D-mod, the modulation source can control the flanger directly. Select the modulation source using the **Src** parameter.

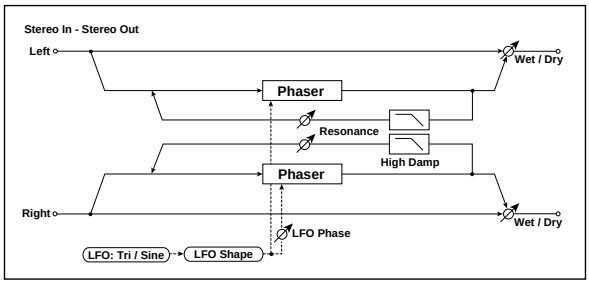
MIDI The effect is off when a value for the modulation source specified for the **Src** parameter is smaller than 64, and the effect is on when the value is 64 or higher. The Envelope Generator is triggered when the value changes from 63 or smaller to 64 or higher.

d: EG Attack
d: EG Decay

Attack and Decay speed are the only adjustable parameters on this EG.

035: Stereo Phaser

This effect creates a swell by shifting the phase. It is very effective on electric piano sounds. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.



a	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
b	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.448	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	♪...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Manual	0...100	Sets the frequency to which the effect is applied	D-mod
	Src	Off...Tempo	Selects the modulation source for the LFO modulation	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation	
j	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source for the LFO modulation depth	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation depth	
h	Resonance	–100...+100	Sets the resonance amount p.463	
	High Damp [%]	0...100	Sets the resonance damping amount in the high range p.463	
i	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.463	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

h: Resonance
i: Wet/Dry

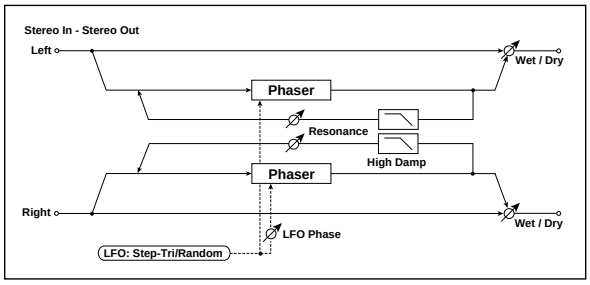
The peak shape of the positive and negative Feedback value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound, if you set a positive value for both **Resonance** and **Wet/Dry**, and if you set a negative value for both **Resonance** and **Wet/Dry**.

h: High Damp [%]

This parameter sets the amount of damping of the resonance in the high range. Increasing the value will cut high-range harmonics.

036: St. Random Phaser (Stereo Random Phaser)

This is a stereo phaser. The effect uses a step-shape waveform and random LFO for modulation, creating a unique phasing effect.

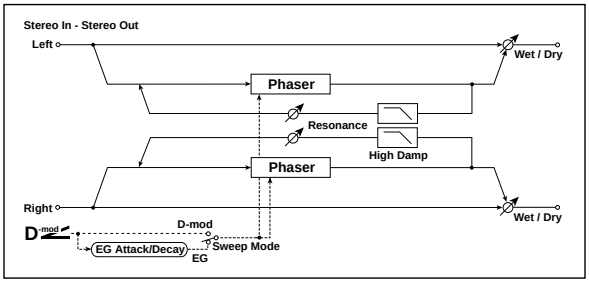


a	LFO Waveform	Step-Tri, Step-Sin, Random	Selects the LFO Waveform p.449	
	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.448	D-mod
	Src	Off...Tempo	Selects the modulation source commonly used for LFO speed and step speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
c	LFO Step Freq [Hz]	0.05...50.00	Sets the LFO step speed p.449	D-mod
	Amt	–50.00... +50.00	Sets the modulation amount of LFO step speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	♪...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	Step Base Note	♪...𝅝	Selects the type of notes to specify the LFO step speed p.448	Sync
	Times	x1...x32	Sets the number of notes to specify the LFO step speed p.448	
f	LFO Type (Step)	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
g	Manual	0...100	Sets the frequency to which the effect is applied	
	Src	Off...Tempo	Selects the modulation source for the LFO modulation	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation	
h	Depth	0...100	Sets the depth of LFO modulation	

i	Resonance	–100...+100	Sets the resonance amount p.463	
	High Damp [%]	0...100	Sets the resonance damping amount in the high range p.463	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.463	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

037: St. Env. Phaser (Stereo Envelope Phaser)

This stereo phaser uses an envelope generator for modulation. You will obtain the same pattern of phasing each time you play. You can also control the Phaser directly using the modulation source.

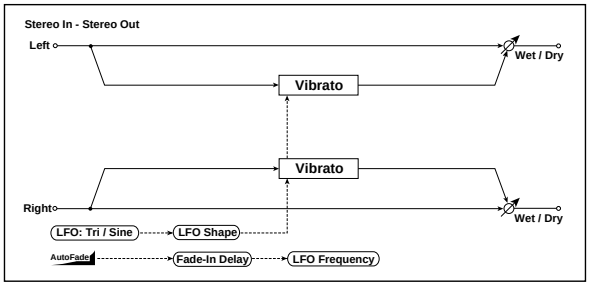


a	L Manu Bottom	0...100	Sets the lower limit of the frequency range for the effect on the left channel	
	L Manu Top	0...100	Sets the upper limit of the frequency range for the effect on the left channel	
b	R Manu Bottom	0...100	Sets the lower limit of the frequency range for the effect on the right channel	
	R Manu Top	0...100	Sets the upper limit of the frequency range for the effect on the right channel	
c	Sweep Mode	EG, D-mod	Determines whether the flanger is controlled by the envelope generator or by the modulation source p.462	
	Src	Off...Tempo	Selects the modulation source that triggers the EG (when EG is selected for Sweep Mode), or modulation source that causes the flanger to sweep (when D-mod is selected for Sweep Mode) p.462	D-mod
d	EG Attack	1...100	Sets the EG attack speed p.462	
	EG Decay	1...100	Sets the EG decay speed p.462	
e	Resonance	–100...+100	Sets the resonance amount p.463	
f	High Damp [%]	0...100	Sets the resonance damping amount in the high range p.463	
g	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.463	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

Modulation and Pitch Shift (Mod./P.Shift)

038: Stereo Vibrato

This effect causes the pitch of the input signal to shimmer. Using the AutoFade allows you to increase or decrease the shimmering speed.



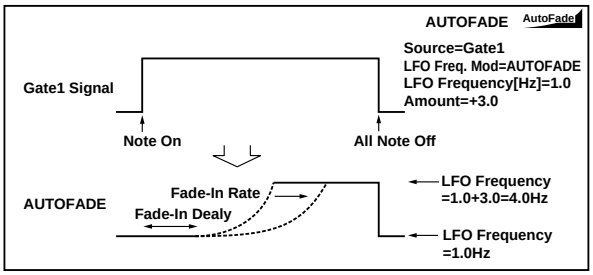
a	AUTOFADE Src	Off...Tempo	Selects the modulation source that starts AutoFade p.465	D-mod
b	Fade-In Delay [msec]	00...2000	Sets the fade-in delay time p.465	
	Fade-In Rate	1...100	Sets the rate of fade-in p.465	
c	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
d	LFO Frequency Mod	D-mod, AUTOFADE	Switches between D-mod and AUTOFADE for the LFO frequency modulation p.465	
e	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
f	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
g	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
h	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of the LFO modulation depth	
	Amt	–100...+100	Sets the modulation amount of the LFO modulation depth	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: AUTOFADE Src
b: Fade-In Delay [msec]
b: Fade-In Rate
d: LFO Frequency Mod

When **LFO Frequency Mod** is set to AUTOFADE, you can use the modulation source selected in **AUTOFADE Src** as a trigger to automatically fade in the modulation amount. When **MIDI Sync** is set to On, you cannot use this.
The **Fade-In Rate** parameter specifies the rate of fade-in. The **Fade-In Delay** parameter determines the time from AutoFade modulation source On until the fade-in starts.

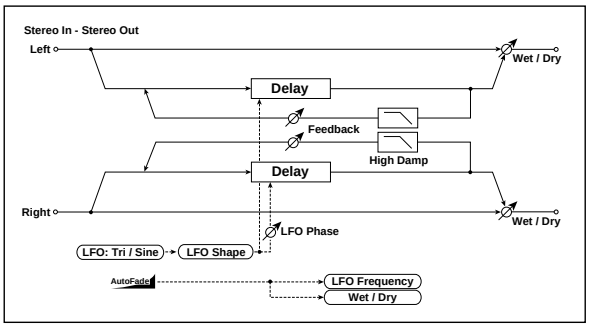
The following is an example of fade-in where the LFO speed is increased from "1.0Hz" to "4.0Hz" when a note-on message is received.
AUTOFADE Src=Gate1, LFO Frequency Mod=AUTOFADE, LFO Frequency [Hz]=1.0, Amt=3.0

MIDI The effect is off when a value for the dynamic modulation source specified for the **AUTOFADE Src** parameter is smaller than 64, and the effect is on when the value is 64 or higher. The AutoFade function is triggered when the value changes from 63 or smaller to 64 or higher.



039: St. Auto Fade Mod. (Stereo Auto Fade Modulation)

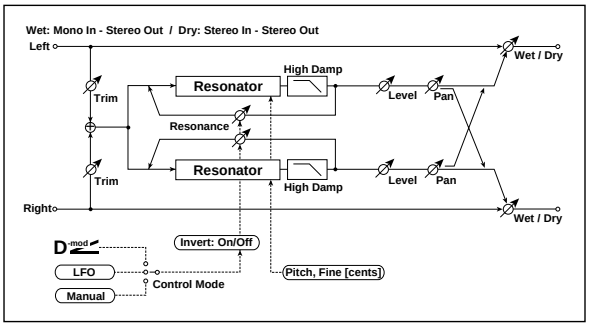
This stereo chorus / flanger effect enables you to control the LFO speed and effect balance using auto fade, and you can spread the sound by offsetting the phase of the left and right LFOs from each other.



a	AUTOFADE Src	Off...Tempo	Selects the modulation source that starts AutoFade p.465	D-mod
	Fade-In Delay [msec]	00...2000	Sets the fade-in delay time p.465	
	Rate	1...100	Sets the rate of fade-in p.465	
b	LFO Frequency Mod	D-mod, AUTOFADE	Switches between D-mod and AUTOFADE for the LFO frequency modulation p.465	
	Wet/Dry Mod	D-mod, AUTOFADE	Switches between D-mod and AUTOFADE for the effect balance modulation p.465	
c	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
d	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.449	
e	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
f	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
g	L Delay Time [msec]	0.0...500.0	Sets the left channel delay time	
	R Delay Time [msec]	0.0...500.0	Sets the right channel delay time	
h	Depth	0...200	Sets the depth of LFO modulation	
i	Feedback	–100...+100	Sets the feedback amount p.461	
	High Damp [%]	0...100	Sets the feedback damping amount in the high range p.461	
j	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450, p.461	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

040: 2Voice Resonator

This effect resonates the input signal at a specified pitch. You can set the pitch, output level, and pan settings for two resonators individually. You can control the resonance intensity via an LFO.



a	Control Mode	Manual, LFO, D-mod	Switches the controls of resonance intensity p.467	
	LFO/D-mod Invert	Off, On	Reverses the Voice 1 and 2 control when LFO/D-mod is selected p.467	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	D-mod Src	Off...Tempo	Selects the modulation source that controls resonance intensity	D-mod
c	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	MIDI Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
d	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
e	Mod. Depth	–100...+100	Sets the amount of resonance intensity control via LFO/D-mod	
	Trim	0...100	Sets the input level at the resonator	
f	Voice1: Pitch	C0...B8	Sets the voice1 Pitch for resonance p.467	
	Fine [cents]	–50...+50	Fine-adjusts the voice 1 pitch for resonance p.467	
	Level	0...100	Sets the Voice1 output level	
g	Voice1: Resonance	–100...+100	Sets the intensity of resonance when Control Mode = Manual p.467	
	High Damp [%]	0...100	Sets the damping amount of resonant sound in the high range p.467	
	Pan	L6...L1, C, R1...R6	Sets the Voice1 stereo image	
h	Voice2: Pitch	C0...B8	Sets the voice 2 Pitch for resonance p.467	
	Fine [cents]	–50...+50	Fine-adjusts the voice 2 pitch for resonance p.467	
	Level	0...100	Sets the Voice2 output level	
i	Voice2: Resonance	–100...+100	Sets the intensity of resonance when Control Mode = Manual p.467	
	High Damp [%]	0...100	Sets the damping amount of resonant sound in the high range p.467	
	Pan	L6...L1, C, R1...R6	Sets the Voice2 stereo image	

j	Wet/Dry	Dry, 1 :99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Control Mode
g: Voice 1: Resonance
i: Voice 2: Resonance

This parameter determines the resonance intensity.
When **Control Mode** = Manual, the **Resonance** parameter sets the intensity of resonance. If the **Resonance** parameter has a negative value, harmonics will be changed, and resonance will occur at a pitch one octave lower.
When **Control Mode** = LFO, the intensity of resonance varies according to the LFO. The LFO sways between positive and negative values, causing resonance to occur between specified pitches an octave apart in turn.
When **Control Mode** = D-mod, the resonance is controlled by the dynamic modulation source. If JS X or Ribbon is assigned as the modulation source, the pitch an octave higher and lower can be controlled, similar to when LFO is selected for Control Mode.

a: LFO/D-mod Invert

When **Control Mode** = LFO or D-mod, the controlled phase of either Voice 1 or 2 will be reversed. When the resonance pitch is set for Voice 1 (Resonance has a positive value), Voice 2 will resonate at a pitch an octave below (Resonance has a negative value).

f: Voice 1: Pitch
f: Fine [cents]
h: Voice 2: Pitch
h: Fine [cents]

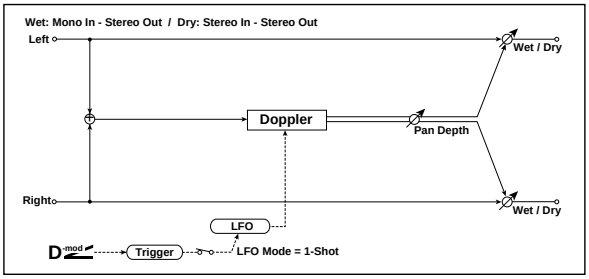
The Pitch parameter specifies the pitch of resonance by note name. The **Fine** parameter allows for fine adjustment in steps of cents.

g: High Damp [%]
i: High Damp [%]

This sets the amount of damping amount for the high frequencies of the resonant sound. Lower values create a metallic sound with a higher range of harmonics.

041: Doppler

This effect simulates the “Doppler effect” of a moving sound with a changing pitch, similar to the siren of an passing ambulance. Mixing the effect sound with the dry sound will create a unique chorus effect.



a	LFO Mode	Loop, 1-Shot	Switches LFO operation mode p.467	
	Src	Off...Tempo	Selects the modulation source of LFO reset p.467	D-mod
b	LFO Sync	Off, On	Switches between LFO reset on and off when LFO Mode is set to Loop p.467	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Pitch Depth	0...100	Sets the pitch variation of the moving sound p.467	D-mod
	Src	Off...Tempo	Selects the modulation source of pitch variation	
	Amt	–100...+100	Sets the modulation amount of pitch variation	
g	Pan Depth	–100...+100	Sets the panning of the moving sound p.467	D-mod
	Src	Off...Tempo	Selects the modulation source of panning	
	Amt	–100...+100	Sets the modulation amount of panning	
h	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: LFO Mode
a: Src
b: LFO Sync

The **LFO Mode** parameter switches LFO operation mode. When Loop is selected, the Doppler effect will be created repeatedly. If **LFO Sync** is set to On, the LFO will be reset when the modulation source specified with the **Src** parameter is turned on.
When **LFO Mode** is set to 1-Shot, the Doppler effect is created only once when the modulation source specified in the **Src** field is turned on. At this time if you do not set the **Src** parameter, the Doppler effect will not be created, and no effect sound will be output.

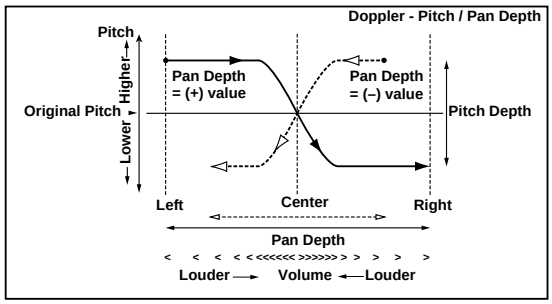
MIDI The effect is off when a value for the modulation source specified for the **Src** parameter is smaller than 64, and the effect is on when the value is 64 or higher. The Doppler effect is triggered when the value changes from 63 or smaller to 64 or higher.

f: Pitch Depth

With the Doppler effect, the pitch is raised when the sound approaches, and the pitch is lowered when the sound goes away. This parameter sets this pitch variation.

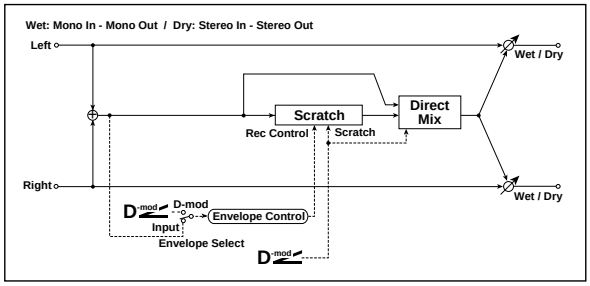
g: Pan Depth

This parameter sets the width of the stereo image of the effect sound. With larger values, the sound seems to come and go from much further away. With positive values, the sound moves from left to right; with negative values, the sound moves from right to left.



042: Scratch

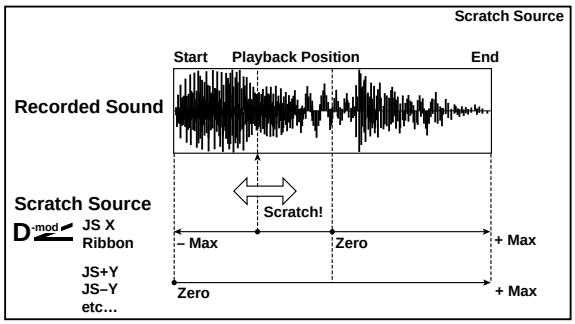
This effect is applied by recording the input signal and moving the modulation source. It simulates the sound of scratches you can make using a turntable.



a	Scratch Source	Off...Tempo	Selects the modulation source for simulation control p.468	D-mod
b	Response	0...100	Sets the speed of the response to the Scratch Src p.468	
c	Envelope Select	D-mod, Input	Selects whether the start and end of recording is controlled via the modulation source or the input signal level p.468	
	Src	Off...Tempo	Selects the modulation source that controls recording when Envelope Select is set to D-mod p.468	D-mod
d	Threshold	0...100	Sets the recording start level when Envelope Select is set to Input p.468	
e	Response	0...100	Sets the speed of the response to the end of recording p.468	
f	Direct Mix	Always On, Always Off, Cross Fade	Selects how a dry sound is mixed p.468	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Scratch Source
b: Response

The Scratch Source parameter enables you to select the modulation source that controls simulation. The value of the modulation source corresponds to the playback position. The Response parameter enables you to set the speed of the response to the modulation source.



c: Envelope Select
c: Src
d: Threshold

When **Envelope Select** is set to D-mod, the input signal will be recorded only when the modulation source value is 64 or higher.
When **Envelope Select** is set to Input, the input signal will be recorded only when its level is over the Threshold value. The maximum recording time is 2,730msec. If this is exceeded, the recorded data will start being erased from the top.

e: Response

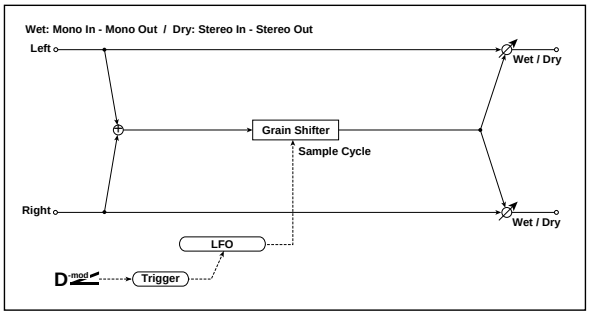
This parameter enables you to set the speed of the response to the end of recording. Set a smaller value when you are recording a phrase or rhythm pattern, and set a higher value if you are recording only one note.

f: Direct Mix

With Always On, a dry sound is usually output. With Always Off, dry sounds are not output. With Cross Fade, a dry sound is usually output, and it is muted only when scratching.
Set Wet / Dry to Wet to use this parameter effectively.

043: Grain Shifter

This effect cuts extremely short samples (“grains”) from the input signal waveform and plays them repeatedly, giving a mechanical character to the sound.



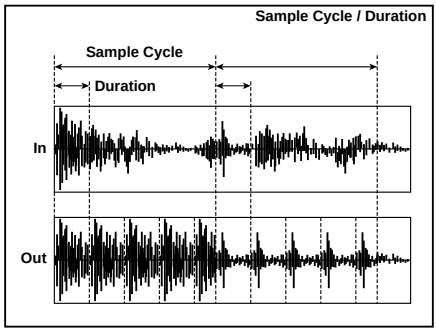
a	Duration	0...100	Sets the duration of the grain p.469	D-mod
	Src	Off...Tempo	Selects the source that will modulate the duration of the grain	
	Amt	–100...+100	Sets the amount by which the grain duration will be modulated	
b	LFO Sync Src	Off...Tempo	Selects the modulation source that will reset the LFO	D-mod
c	LFO Sample Cycle [Hz]	0.02...20.00	Sets the frequency at which the grain will be switched p.469	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	

d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	♪...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Wet/Dry	Dry, 1: 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Duration

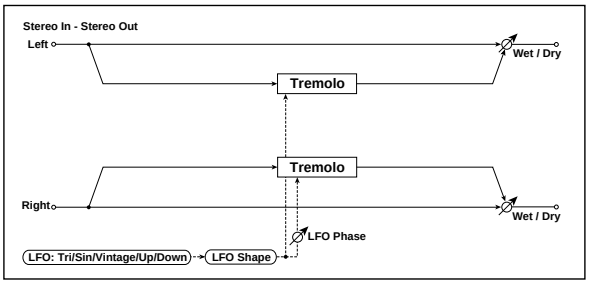
c: LFO Sample Cycle [Hz]

Duration sets the length of the sampled grain, and the **LFO Sample Cycle** controls how often a new grain is sampled. In between Sample Cycles, the current grain is repeated continuously.



044: Stereo Tremolo

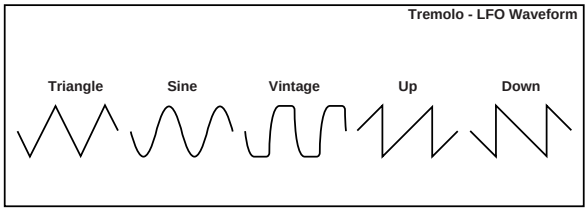
This effect modulates the volume level of the input signal. The effect is stereo, and offsetting the LFO of the left and right phases from each other produces a tremolo effect between left and right.



a	LFO Waveform	Triangle, Sine, Vintage, Up, Down	Selects the LFO Waveform p.469	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
b	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.469	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	♪...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of the depth of modulation	
	Amt	–100...+100	Sets the modulation amount of the depth of modulation	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: LFO Waveform

This parameter sets the basic shape of the LFO. The **Vintage** waveform models classic guitar-amp tremolo.

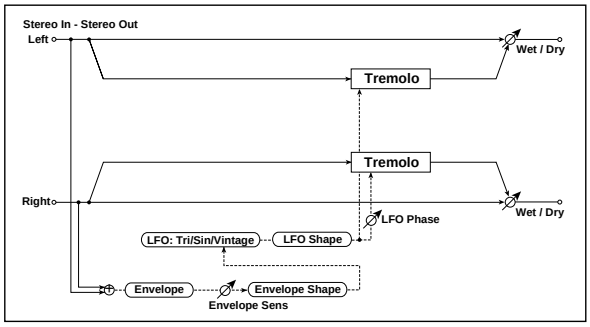


b: LFO Phase [degree]

This parameter determines the difference between the left and right LFO phases. A higher value will simulate the auto-pan effect in which the sound is panned between left and right.

045: St. Env. Tremolo (Stereo Envelope Tremolo)

This effect uses the input signal level to modulate a stereo tremolo (LFO volume modulation). For instance, you can create a tremolo effect that becomes deeper and faster as the input gets more quiet.

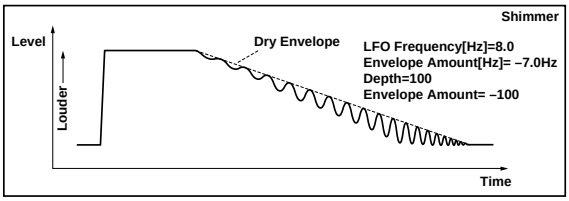


a	Envelope Sens	0...100	Sets the envelope's sensitivity to the input signal	
	Envelope Shape	–100...+100	Sets the envelope's curvature	
b	LFO Waveform	Triangle, Sine, Vintage	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
c	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.469	
d	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.470	
	Envelope Amount [Hz]	–20.00... +20.00	Sets the amount added to or subtracted from the Frequency when the envelope is at maximum p.470	
e	Depth	0...100	Sets the initial amount of tremolo p.470	
	Envelope Amount	–100...+100	Sets the amount added to or subtracted from the Depth when the envelope is at maximum p.470	
f	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

d: LFO Frequency [Hz]
d: Envelope Amount [Hz]
e: Depth
e: Envelope Amount

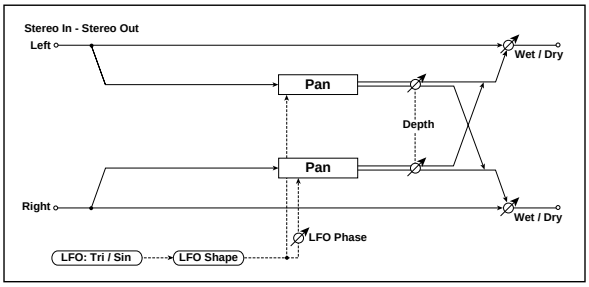
The graphic below shows an example of tremolo modulation with negative modulation of both **Depth** and **Frequency**. At the start of the note, the input is at maximum volume. This slows down the LFO **Frequency** to **1.0Hz**, but also modulates the **Depth** to **0**–so the tremolo doesn't have any effect.

As the input volume dies down, the **Frequency** speeds up; the **Depth** also increases, making the tremolo effect increasingly audible. When the input volume approaches silence, the **Depth** is at its maximum (**100**) and **Frequency** is at **8Hz**.



046: Stereo Auto Pan

This is a stereo-in, stereo-out auto-panner. The Phase and Shape parameters lets you create various panning effects, such as making the left and right inputs seem to chase each other around the stereo field.



a	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.470	
b	LFO Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.470	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Depth	0...100	Sets the depth of LFO modulation	D-mod
	Src	Off...Tempo	Selects the modulation source of the depth of modulation	
	Amt	–100...+100	Sets the modulation amount of the depth of modulation	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

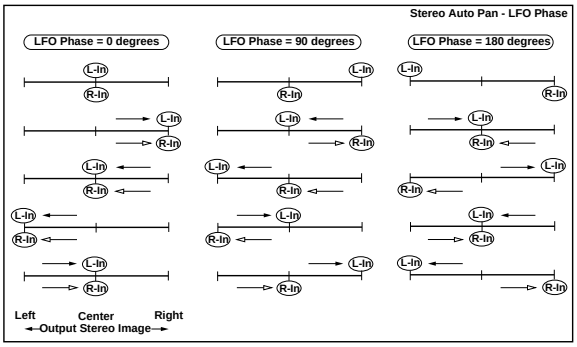
a: LFO Shape

You can change the panning curve by modifying the LFO's **Shape**.

b: LFO Phase [degree]

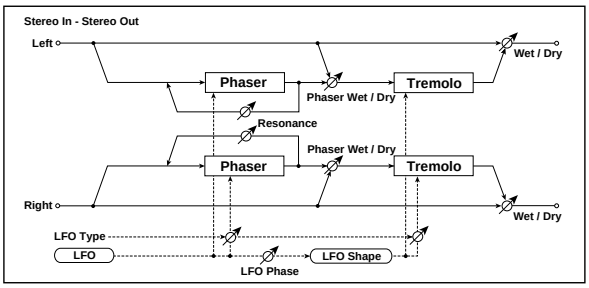
This determines the phase difference between the left and right LFOs. When you gradually change the value away from 0, the sounds from the left and right channels will seem to chase each other around. If you set the parameter to +180 or –180, the sounds from each channel will cross over each other.

You'll only hear the effect of this parameter if the input is true stereo, with different signals in the left and right channels.



047: St. Phaser + Trml (Stereo Phaser + Tremolo)

This effect combines a stereo phaser and tremolo, with linked LFOs. Swelling phaser modulation and tremolo effects synchronize with each other, creating a soothing modulation effect particularly suitable for electric piano.



a	Type	Phs - Trml, ... Phs LR - Trml LR	Selects the type of the tremolo and phaser LFOs p.471 Phaser - Tremolo, Phaser - Tremolo Spin, Phaser - Tremolo LR, Phaser LR - Tremolo, Phaser LR - Tremolo Spin, Phaser LR - Tremolo LR	
	LFO Phase [degree]	–180...+180	Sets the phase difference between the tremolo and phaser LFOs p.471	
b	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the LFO speed modulation amount	
c	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
d	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
e	Phaser Manual	0...100	Sets the phaser frequency range	
	Resonance	–100...+100	Sets the phaser resonance amount	
f	Phaser Depth	0...100	Sets the phaser modulation depth	D-mod
	Src	Off...Tempo	Selects the modulation source for the phaser modulation depth	
	Amt	–100...+100	Sets the modulation amount for the phaser modulation depth	
g	Phaser Wet/ Dry	–Wet, –2 : 98...Dry... 2 : 98, Wet	Sets the balance between the phaser effect and dry sounds p.471	
h	Tremolo Shape	–100...+100	Sets the degree of the tremolo LFO shaping	
i	Tremolo Depth	0...100	Sets the tremolo modulation depth	D-mod
	Src	Off...Tempo	Selects the modulation source for the tremolo modulation depth	
	Amt	–100...+100	Sets the modulation amount of the tremolo modulation depth	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input p.471	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Type
a: LFO Phase [degree]

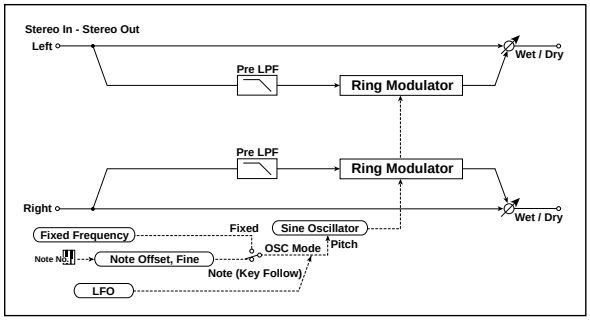
Select the type of phaser LFO and tremolo LFO for the **Type** parameter. How the effect sound moves or rotates depends on the type of LFO. Selecting **LFO Phase** enables you to offset the timing of the phaser peak and control a subtle movement and rotation of the sound.

g: Phaser Wet/Dry
j: Wet/Dry

PHASER Wet/Dry sets the balance between the phaser output and the dry sound. **OUTPUT Wet/Dry** sets the balance between the final phaser and tremolo output level and the dry sound.

048: St. Ring Modulator (Stereo Ring Modulator)

This effect creates a metallic sound by applying the oscillators to the input signal. Use the LFO or Dynamic Modulation to modulate the oscillator to create a radical modulation. Matching the oscillator frequency with a note number will produce a ring modulation effect in specific key ranges.



a	OSC Mode	Fixed, Note (Key Follow)	Switching between specifying the oscillator frequency and using a note number p.472	
	Pre LPF	0...100	Sets the damping amount of the high range input to the ring modulator p.472	

b	Fixed Frequency [Hz]	0...12.00k	Sets the oscillator frequency when OSC Mode is set to Fixed p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the oscillator frequency when OSC Mode is set to Fixed	
	Amt	–12.00k... +12.00k	Sets the modulation amount of the oscillator frequency when OSC Mode is set to Fixed	
c	Note Offset	–48...+48	Sets the pitch difference from the original note when OSC Mode is set to Note (Key Follow) p.472	
	Note Fine	–100...+100	Fine-adjusts the oscillator frequency p.472	
d	Direct Mix	0...100	Direct signal (after passing through the pre-low-pass filter) mixed into the ring modulation output	
d	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
e	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	MIDI Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
f	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
g	LFO Depth	0...100	Sets the depth of LFO modulation for the oscillator frequency	D-mod
	Src	Off...Tempo	Selects the modulation source of the depth of modulation	
	Amt	–100...+100	Sets the modulation amount of the depth of modulation	
h	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: OSC Mode

This parameter determines whether or not the oscillator frequency follows the note number.

a: Pre LPF

This parameter enables you to set the damping amount of the high range sound input to the ring modulator. If the input sound contains lots of harmonics, the effect may sound dirty. In this case, cut a certain amount of high range.

b: Fixed Frequency [Hz]

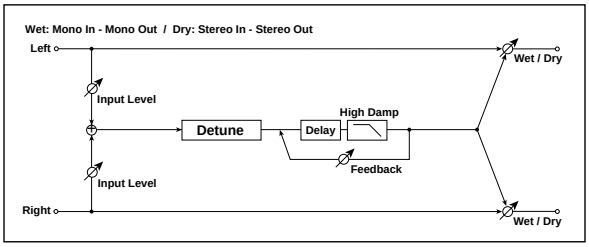
This parameter sets the oscillator frequency when **OSC Mode** is set to Fixed.

c: Note Offset
c: Note Fine

These parameters for the oscillator are used when **OSC Mode** is set to Note (Key Follow). The **Note Offset** sets the pitch difference from the original note in semitone steps. The **Note Fine** parameter fine-adjusts the pitch in cent steps. Matching the oscillator frequency with the note number produces a ring modulation effect in the correct key.

049: Detune

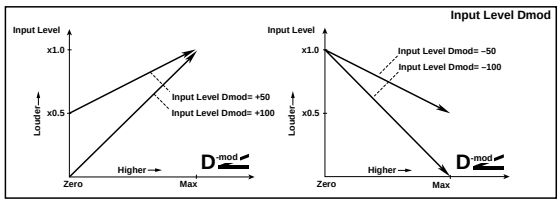
Using this effect, you can obtain a detune effect that offsets the pitch of the effect sound slightly from the pitch of the input signal. Compared to the chorus effect, a more natural sound thickness will be created.



a	Pitch Shift [cents]	–100...+100	Sets the pitch difference from the input signal	D-mod
	Src	Off...Tempo	Selects a modulation source for pitch shift	
	Amt	–100...+100	Sets the modulation amount for pitch shift	
b	Delay Time [msec]	0...1000	Sets the delay time	
c	Feedback	–100...+100	Sets the feedback amount	
	High Damp [%]	0...100	Sets the damping amount in the high range	
d	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
e	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

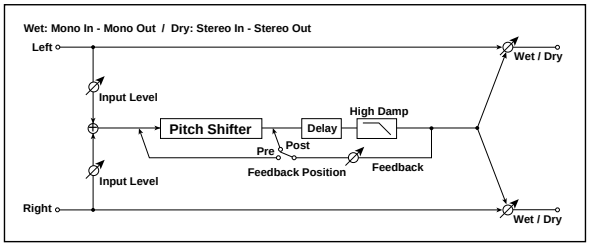
d: Input Level Dmod [%]
d: Src

This parameter sets the dynamic modulation of the input level.



050: Pitch Shifter

This effect changes the pitch of the input signal. You can select from three types: Fast (quick response), Medium, and Slow (preserves tonal quality). You can also create an effect in which the pitch is gradually raised (or dropped) using the delay with feedback.



a	Mode	Slow, Medium, Fast	Switches Pitch Shifter mode p.473	
b	Pitch Shift [1/2tone]	–24...+24	Sets the pitch shift amount by steps of a semitone p.473	D-mod
	Src	Off...Tempo	Selects the modulation source of pitch shift amount p.473	
	Amt	–24...+24	Sets the modulation amount of pitch shift amount p.473	
c	Fine [cents]	–100...+100	Sets the pitch shift amount by steps of a cent p.473	D-mod
	Amt	–100...+100	Sets the modulation amount of pitch shift amount p.473	
d	Delay Time [msec]	0...2000	Sets the delay time	
e	Feedback Position	Pre, Post	Switches the feedback connection p.473	
f	Feedback	–100...+100	Sets the feedback amount p.473	
	High Damp [%]	0...100	Sets the damping amount in the high range	
g	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Mode

This parameter switches the pitch shifter operating mode. With Slow, tonal quality will not be changed too much. With Fast, the effect becomes a Pitch Shifter that has a quick response, but may change the tone. Medium is in-between these two. If you do not need to set too much pitch shift amount, set this parameter to Slow. If you wish to change the pitch significantly, use Fast.

b: Pitch Shift [1/2tone]
b: Src
b: Amt
c: Fine [cents]
c: Amt

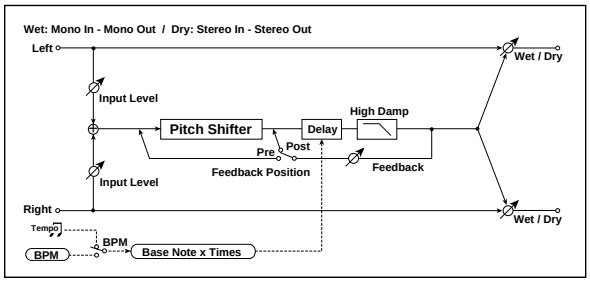
The amount of pitch shift will use the value of the **Pitch Shift** plus the **Fine** value. The amount of modulation will use the b: Amt value plus the c: Amt.
The same Modulation Source is used for both **Pitch Shift** and **Fine**.

e: Feedback Position
f: Feedback

When **Feedback Position** is set to **Pre**, the pitch shifter output is again input to the pitch shifter. Therefore, if you specify a higher value for the Feedback parameter, the pitch will be raised (or lowered) more and more each time feedback is repeated.
If **Feedback Position** is set to **Post**, the feedback signal will not pass through the pitch shifter again. Even if you specify a higher value for the **Feedback** parameter, the pitch-shifted sound will be repeated at the same pitch.

051: Pitch Shifter BPM

This pitch shifter enables you to set the delay time to match the song tempo.



a	Mode	Slow, Medium, Fast	Switches Pitch Shifter mode p.473	
b	Pitch Shift [1/2tone]	–24...+24	Sets the pitch shift amount in steps of a semitone p.473	D-mod
	Src	Off...Tempo	Selects the modulation source of pitch shift amount p.473	
	Amt	–24...+24	Sets the modulation amount of pitch shift amount p.473	
c	Fine [cents]	–100...+100	Sets the pitch shift amount in steps of one cent p.473	D-mod
	Amt	–100...+100	Sets the modulation amount of pitch shift amount p.473	
d	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over?	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.473	
e	Delay Base Note	♪	Selects the type of notes to specify the delay time p.473	
	Times	x1...x32	Sets the number of notes to specify the delay time p.473	
f	Feedback Position	Pre, Post	Switches the feedback connection p.473	
g	Feedback	–100...+100	Sets the feedback amount p.473	
	High Damp [%]	0...100	Sets the damping amount in the high range	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

d: BPM
e: Delay Base Note
e: Times

The delay time is the duration of **Times** number of **Delay Base Note** note values at the **BPM** tempo (or if **BPM** is set to MIDI, the tempo determined by MIDI Clock).

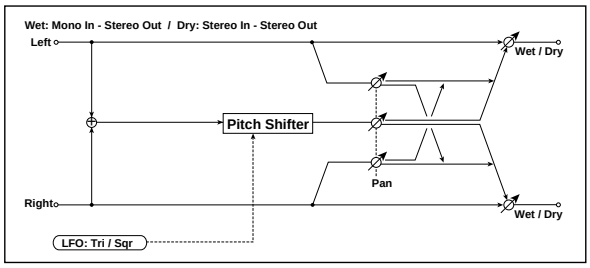
d: Time Over?

You can set the delay time up to 5,290msec. If the delay time exceeds this limit, the error message “OVER!” appears on the display. Set the delay time parameters so that this

message will not appear. **Time Over?** is only a display parameter.

052: Pitch Shift Mod. (Pitch Shift Modulation)

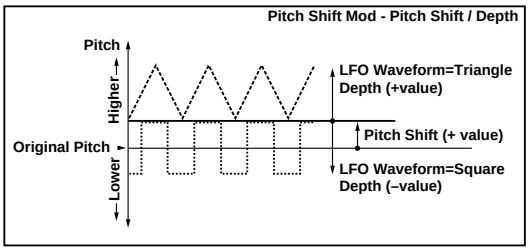
This effect modulates the detuned pitch shift amount using an LFO, adding a clear spread and width to the sound by panning the effect sound and dry sound to the left and right. This is especially effective when the effect sound and dry sound output from stereo speakers are mixed.



a	Pitch Shift [cents]	–100...+100	Sets the pitch difference from the input signal p.474	
b	LFO Waveform	Triangle, Square	Selects the LFO Waveform	
c	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	D-mod
	Src	Off...Tempo	Selects a modulation source for LFO speed	
	Amt	–20.00... +20.00	Sets the modulation amount of LFO speed	
d	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
e	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
f	Depth	–100...+100	Sets the LFO modulation depth for pitch shift amount p.474	D-mod
	Src	Off...Tempo	Selects the modulation source of the depth of modulation	
	Amt	–100...+100	Sets the modulation amount of the depth of modulation	
g	Pan	L, 1 : 99...99 : 1, R	Sets the panning effect sound and dry sound separately p.474	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input p.474	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Pitch Shift [cents]
f: Depth

These parameters set the amount of pitch shift and amount of modulation by means of the LFO.

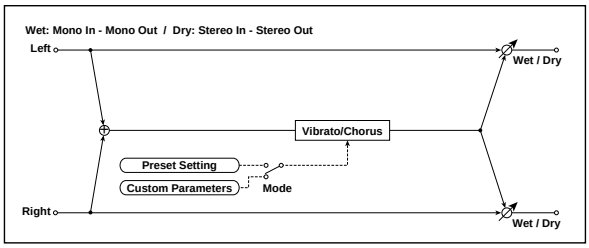


g: Pan
h: Wet/Dry

The Pan parameter pans the effect sound and dry sound to the left and right. With L, the effect sound is panned left, and the dry sound is panned right. With a Wet / Dry = Wet setting, the effect and dry sound will be output in a proportion of 1:1.

053: Organ Vib/Chorus (Organ Vibrato/Chorus)

This effect simulates the chorus and vibrato circuitry of a vintage organ. The modulation speed and depth can be customized.



a	Input Trim	0...100	Sets the input level	
b	Control Mode	Preset, Custom	Selects either preset or custom settings p.475	
c	Preset Type	V1, C1, V2, C2, V3, C3	Selects the effect type when Mode=Preset V1/V2/V3 are variations of vibrato, and C1/C2/C3 are variations of chorus p.475	D-mod
	Src	Off...Tempo	Selects the modulation source that will change the effect type	
	Amt	–5...+5	Sets the modulation amount for changing the effect type p.475	
d	Custom Mix	Vibrato, 1:99...99:1, Chorus	Sets the mix level of the direct sound when Mode=Preset p.475	D-mod
	Src	Off...Tempo	Selects the modulation source that will control the mix level of the direct sound	
	Amt	–100...+100	Sets the modulation amount for controlling the mix level of the direct sound	
e	Custom Depth	0...100	Sets the vibrato depth p.475	D-mod
	Src	Off...Tempo	Selects the modulation source that will control vibrato depth	
	Amt	–100...+100	Sets the modulation amount for controlling the vibrato depth	
f	Custom Speed [Hz]	0.02...20.00	Sets the vibrato speed p.475	D-mod
	Src	Off...Tempo	Selects the modulation source for controlling the vibrato speed	
	Amt	–20.00... +20.00	Sets the modulation amount for controlling the vibrato speed	

g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b: Control Mode
c: Preset Type
d: Custom Mix
e: Custom Depth
f: Custom Speed [Hz]

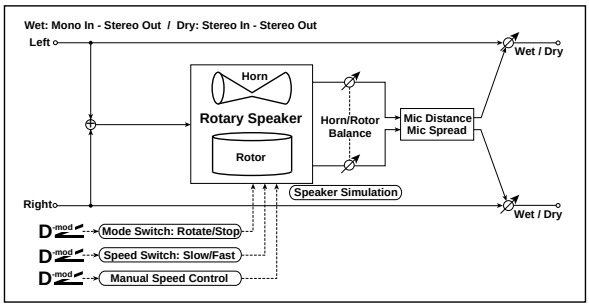
If Control Mode=Preset, you can use c: Preset Type to select the effect. In this case, the Custom Mix / Depth / Speed settings are ignored. If Control Mode=Custom, the Custom Mix / Depth / Speed settings are valid, and the c: Preset Type setting is ignored.

c: Amt

If Preset Type=V1 and Src=JS+Y, you can set this to +5 and move JS +Y to control the effect in the order of V1→C1→V2→C2→V3→C3.

054: Rotary Speaker

This effect simulates a rotary speaker, and obtains a more realistic sound by simulating the rotor in the low range and the horn in the high range separately. The effect also simulates the stereo microphone settings.



a	Mode Switch	Rotate, Stop	Switches between speaker rotation and stop	D-mod
	Src	Off...Tempo	Selects a modulation source for Rotate/Stop	
	Mode	Toggle, Moment	Sets the switch mode for Rotate/Stop modulation p.475	
b	Speed Switch	Slow, Fast	Switches the speaker rotation speed between slow and fast p.475	D-mod
	Src	Off...Tempo	Selects a modulation source for Slow/Fast	
	Mode	Toggle, Moment	Sets the switch mode for Slow/Fast modulation p.475	
c	Manual Speed Ctrl	Off...Tempo	Sets a modulation source for direct control of rotation speed p.475	D-mod
d	Horn Acceleration	0...100	How quickly the horn rotation speed in the high range is switched p.475	
	Horn Ratio	Stop, 0.50...2.00	Adjusts the (high-range side) horn rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	
e	Rotor Acceleration	0...100	Determines how quickly the rotor rotation speed in the low range is switched p.475	
	Rotor Ratio	Stop, 0.50...2.00	Adjusts the (low-frequency) rotor speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	
f	Horn/Rotor Balance	Rotor, 1...99, Horn	Sets the level balance between the high-frequency horn and low-frequency rotor	
g	Mic Distance	0...100	Sets the distance between the microphone and rotary speaker p.475	
	Mic Spread	0...100	Sets the angle of left and right microphones p.475	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Mode

This parameter sets how the modulation source switches between rotation and stop.
When **Mode** = **Toggle**, the speaker rotates or stops alternately each time you press the pedal or move the joystick. Via MIDI, rotation will switch between start and stop each time the modulation amount exceeds 64.
When **Mode** = **Moment**, the speaker rotates by default, and stops only when you press the pedal or move the joystick. Via MIDI, modulation values above 64 make the speaker rotate, and values below 64 make it stop.

b: Speed Switch

This parameter controls how the rotation speed (slow and fast) is switched via the modulation source.
When **Mode** = **Toggle**, the speed will switch between slow and fast each time you press the pedal or move the joystick. Via MIDI, the speed will switch each time the modulation amount exceeds 64.
When **Mode** = **Moment**, the speed is usually slow. It becomes fast only when you press the pedal or move the joystick. Via MIDI, modulation values above 64 set the speed to **Fast**, and values below 64 set it to **Slow**.

c: Manual Speed Ctrl

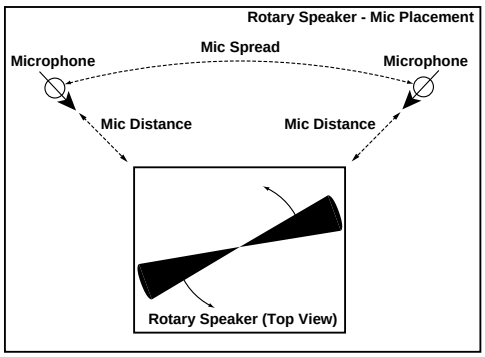
If you wish to control the rotation speed manually, instead of switching between Slow and Fast, select a modulation source in the **Manual Speed Ctrl** parameter. If you don't want to use manual control, set this to **Off**.

d: Horn Acceleration
e: Rotor Acceleration

On a real rotary speaker, the rotation speed accelerates or decelerates gradually after you switch the speed. The **Horn** and **Rotor Acceleration** parameters set the transition times between fast and slow speeds.

g: Mic Distance
g: Mic Spread

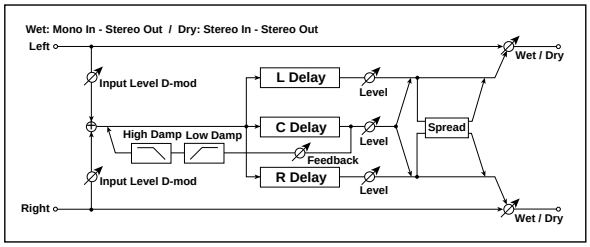
This is a simulation of stereo microphone settings.



Delay

055: L/C/R Delay

This multitap delay outputs three Tap signals to the left, right, and center respectively. You can also adjust the left and right spread of the delay sound.



a	L Delay Time [msec]	0...2730	Sets the delay time of TapL	
	Level	0...50	Sets the output level of TapL	
b	C Delay Time [msec]	0...2730	Sets the delay time of TapC	
	Level	0...50	Sets the output level of TapC	
c	R Delay Time [msec]	0...2730	Sets the delay time of TapR	
	Level	0...50	Sets the output level of TapR	
d	Feedback (C Delay)	–100...+100	Sets the feedback amount of TapC	D-mod
	Src	Off...Tempo	Selects the modulation source of the TapC feedback amount	
	Amt	–100...+100	Sets the modulation amount of the TapC feedback amount	
e	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
f	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
g	Spread	0...50	Sets the width of the stereo image of the effect sound p.476	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

e: High Damp [%]
e: Low Damp [%]

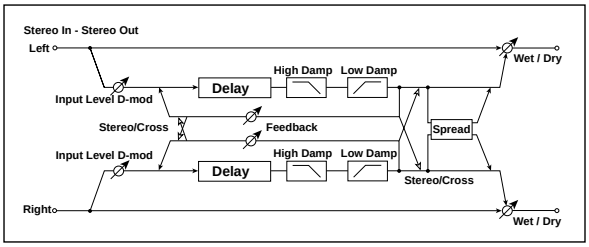
These parameters set the damping amount of high range and low range. The tone of the delayed sound becomes darker and lighter as it feeds back.

g: Spread

This parameter sets the pan width of the effect sound. The stereo image is widest with a value of 50, and the effect sound of both channels is output from the center with a value of 0.

056: Stereo/CrossDelay

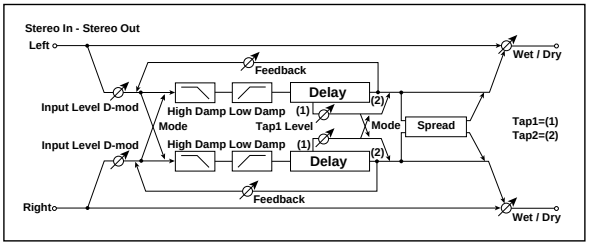
This is a stereo delay, and can by used as a cross-feedback delay effect in which the delay sounds cross over between the left and right by changing the feedback routing.



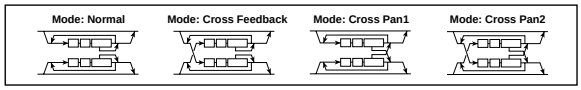
a	Stereo/Cross	Stereo, Cross	Switches between stereo delay and cross-feedback delay	
b	L Delay Time [msec]	0.0...1360.0	Sets the delay time for the left channel	
c	R Delay Time [msec]	0.0...1360.0	Sets the delay time for the right channel	
d	L Feedback	–100...+100	Sets the feedback amount for the left channel	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt L	–100...+100	Sets the modulation amount of the left channel feedback	
e	R Feedback	–100...+100	Sets the feedback amount for the right channel	D-mod
	Amt R	–100...+100	Sets the modulation amount of the right channel feedback	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Spread	–50...+50	Sets the width of the stereo image of the effect sound p.476	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

057: St. Multitap Delay (Stereo Multitap Delay)

The left and right Multitap Delays have two taps respectively. Changing the routing of feedback and tap output allows you to create various patterns of complex effect sounds.



a	Mode	Normal, Cross Feedback, Cross Pan1, Cross Pan2	Switches the left and right delay routing p.477	
b	Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
c	Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
d	Tap1 Level	0...100	Sets the Tap1 output level p.477	
e	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	D-mod
	Src	Off...Tempo	Selects the modulation source of the Tap2 feedback amount	
	Amt	–100...+100	Sets the modulation amount of the Tap2 feedback amount	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Spread	–100...+100	Sets the width of the stereo image of the effect sound p.476	D-mod
	Src	Off...Tempo	Selects the modulation source of the effect sound's stereo image width	
	Amt	–100...+100	Sets the modulation amount of the effect sound's stereo image width	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	



a: Mode

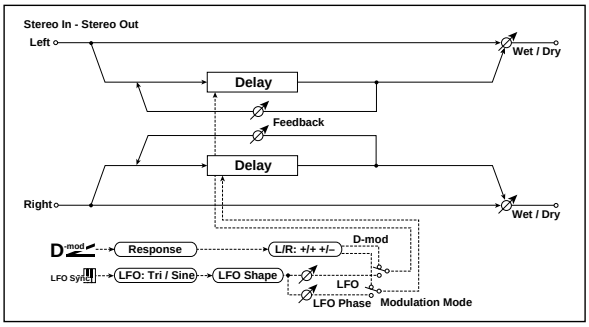
You can change how the left and right delay signals are panned by modifying the routing of the left and right delay as shown in the figure above. You need to input different sounds to each channel in order for this parameter to be effective.

d: Tap1 Level

This parameter sets the output level of Tap1. Setting a different level from Tap2 will add a unique touch to a monotonous delay and feedback.

058: St. Mod Delay (Stereo Modulation Delay)

This stereo delay uses an LFO to sweep the delay time. The pitch also varies, creating a delay sound which swells and shimmers. You can also control the delay time using a modulation source.



a	Modulation Mode	LFO, D-mod	Switches between LFO modulation control and modulation source control	
b	D-mod Modulation	L/R:+/+, L/R:+/–	Reversed L/R control by modulation source p.478	
	Src	Off...Tempo	Selects the modulation source that controls delay time	D-mod
	Response	0...30	Sets the rate of response to the modulation source	
c	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
d	LFO Sync	Off, On	Switches LFO reset off/on p.478	
	Src	Off...Tempo	Selects the modulation source that resets the LFO	D-mod
e	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	
f	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅗𝅥..𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
g	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
h	L LFO Phase [deg]	–180...+180	Sets the phase obtained when the left LFO is reset p.478	
	L Depth	0...200	Sets the depth of the left LFO modulation	
i	R LFO Phase [deg]	–180...+180	Sets the phase obtained when the right LFO is reset p.478	
	R Depth	0...200	Sets the depth of the right LFO modulation	
j	L Delay Time [msec]	0.0...1000.0	Sets the delay time for the left channel	
	L Feedback	–100...+100	Sets the feedback amount of left delay	
k	R Delay Time [msec]	0.0...1000.0	Sets the delay time for the right channel	
	R Feedback	–100...+100	Sets the feedback amount of right delay	

l	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b: D-mod Modulation

When the modulation source is used for control, this parameter reverses the left and right modulation direction.

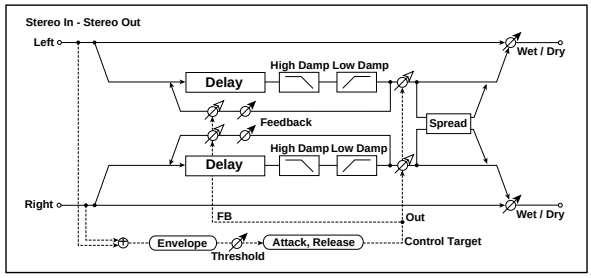
d: LFO Sync
d: Src
h: L LFO Phase [deg]
i: R LFO Phase [deg]

If **LFO Sync** is On, the LFO will be reset by the modulation source that is received.
The **Src** parameter sets the modulation source that resets the LFO. For example, you can assign Gate as a modulation source so that the sweep always starts from the specified point.
L LFO Phase and **R LFO Phase** set the phase obtained when the left and right LFOs are reset. In this way, you can create changes in pitch sweep for the left and right channels individually.

MIDI The effect is off when a value of the modulation source specified in the **Src** parameter is 63 or smaller, and the effect is on when the value is 64 or higher. The LFO is triggered and reset to the **L LFO Phase** and **R LFO Phase** settings when the value changes from 63 or smaller to 64 or higher.

059: St. Dynamic Delay (Stereo Dynamic Delay)

This stereo delay controls the level of delay according to the input signal level. You can use this as a ducking delay that applies delay to the sound only when you play keys at a high velocity or only when the volume level is low.



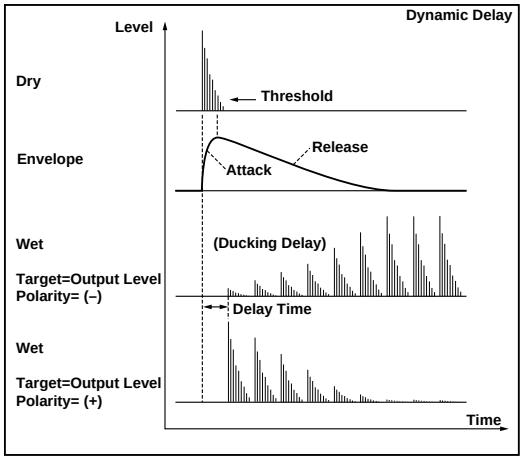
a	Control Target	None, Out, FB	Selects from no control, output, and feedback p.478	
	Polarity	+, –	Reverses level control p.478	
b	Threshold	0...100	Sets the level to which the effect is applied p.478	
	Offset	0...100	Sets the offset of level control p.478	
c	Attack	1...100	Sets the attack time of level control p.478	
d	Release	1...100	Sets the release time of level control p.478	
e	L Delay Time [msec]	0.0...1360.0	Sets the delay time for the left channel	
f	R Delay Time [msec]	0.0...1360.0	Sets the delay time for the right channel	
g	Feedback	–100...+100	Sets the feedback amount	
h	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
i	Spread	–100...+100	Sets the width of the stereo image of the effect sound p.476	
j	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Control Target

This parameter selects no level control, delay output control (effect balance), or feedback amount control.

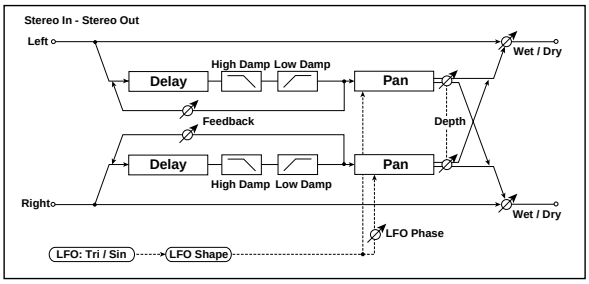
a: Polarity
b: Threshold
b: Offset
c: Attack
d: Release

The **Offset** parameter specifies the value for the **Control Target** parameter (that is set to None), expressed as the ratio relative to the parameter value (the **Wet/Dry** value with **Control Target** = Output Level, or the **Feedback** value with **Control Target** = Feedback).
When **Polarity** is positive, the **Control Target** value is obtained by multiplying the parameter value by the **Offset** value (if the input level is below the threshold), or equals the parameter value if the input level exceeds the threshold.
When **Polarity** is negative, Control Target value equals the parameter value if the input level is below the threshold, or is obtained by multiplying the parameter value by the **Offset** value if the level exceeds the threshold.
The **Attack** and **Release** parameters specify attack time and release time of delay level control.



060: St. AutoPanningDly (Stereo Auto Panning Delay)

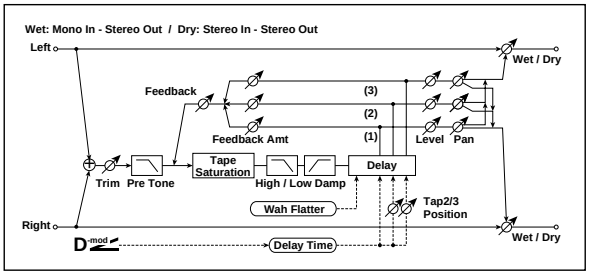
This stereo delay effect pans the delay sound left and right using the LFO.



a	L Delay Time [msec]	0.0...1360.0	Sets the delay time for the left channel	
	L Feedback	–100...+100	Sets the feedback amount for the left channel	
b	R Delay Time [msec]	0.0...1360.0	Sets the delay time for the right channel	
	R Feedback	–100...+100	Sets the feedback amount for the right channel	
c	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
d	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
e	Phase [degree]	–180...+180	Sets the LFO phase difference between the left and right p.470	
f	Panning Freq [Hz]	0.02...20.00	Sets the panning speed	
g	MIDI Sync	Off, On	Switches between using the frequency of the panning speed and using the tempo and notes p.448	iSync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time for the panning speed p.448	
	Times	x1...x32	Sets the number of notes to specify the delay time for the panning speed p.448	
h	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
i	Panning Depth	0...100	Sets the panning width	D mod
	Src	Off...Tempo	Selects the modulation source for the panning width	
	Amt	–100...+100	Set the modulation amount of the panning width	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

061: Tape Echo

This effect simulates a tape echo unit with three playback heads. The distortion and tonal change typical of magnetic tape are also reproduced.



a	Delay (Tap1) [msec]	0...2700	Sets the delay time (tap1) p.480	D-mod
	Src	Off...Tempo	Selects the modulation source of the delay time p.480	
	Amt	–2700... +2700	Sets the modulation amount of delay time p.480	
b	Tap2 Position [%]	0...100	Sets the position of Tap 2 relative to the Tap 1 delay time the depth of pitch variation p.480	
c	Tap3 Position [%]	0...100	Sets the position of Tap 3 relative to the Tap 1 delay time the depth of pitch variation p.480	
d	Tap1 Level	0...100	Sets the Tap1 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap1	
	FB Amt	–100...+100	Sets the Tap1 feedback amount p.480	
e	Tap2 Level	0...100	Sets the Tap2 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap2	
	FB Amt	–100...+100	Sets the Tap2 feedback amount p.480	
f	Tap3 Level	0...100	Sets the Tap3 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap3	
	FB Amt	–100...+100	Sets the Tap3 feedback amount p.480	
g	Feedback	0...100	Sets the amount of feedback for Taps 1, 2, and 3 p.480	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt	–100...+100	Sets the feedback amount	
h	High Damp [%]	0...100	Sets the damping amount in the high range	
	Low Damp [%]	0...100	Sets the damping amount in the low range	
i	Saturation	0...100	Sets the distortion amount	
j	Input Trim	0...100	Sets the input gain	
	Pre Tone	0...100	Sets the tone of the input	
k	Wow Flutter [Hz]	0.02...1.00	Sets the frequency at which pitch variation will occur	
	Wow Flutter depth	0...100	Sets the depth of pitch variation	
l	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Delay (Tap1) [msec]
a: Src
a: Amt
b: Tap2 Position [%]
b: Tap3 Position [%]

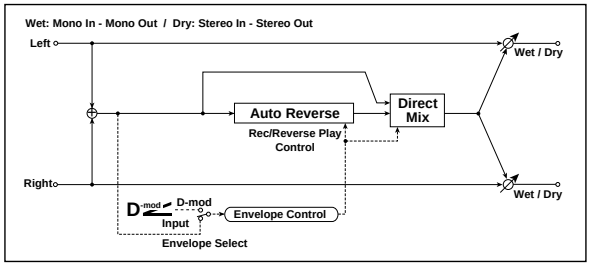
The delay time for Tap 2 and 3 is specified as a proportion (%) relative to **Delay (Tap1)**. Even if you use dynamic modulation to control **Delay (Tap1)**, Tap 2 and 3 will change at the same proportion.

d: FB Amt
e: FB Amt
f: FB Amt
g: Feedback

The feedback output from Tap 1, 2, and 3 is mixed according to the **FB Amt**, and then the final amount of feedback is specified by **Feedback**.

062: Auto Reverse

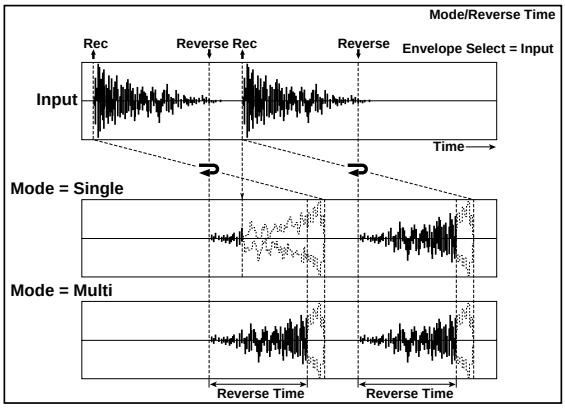
This effect records the input signal and automatically plays it in reverse (the effect is similar to a tape reverse sound).



a	Rec Mode	Single, Multi	Sets the recording mode p.480	
b	ReverseTime [msec]	20...2640	Sets the maximum duration of the reverse playback p.480	
c	Envelope Select	D-mod, Input	Selects whether the start and end of recording is controlled via the modulation source or the input signal level p.481	
	Src	Off...Tempo	Selects the modulation source that controls recording when Envelope Select is set to D-mod p.481	D-mod
d	Threshold	0...100	Sets the recording start level when Envelope Select is set to Input p.481	
e	Response	0...100	Sets the speed of the response to the end of recording p.468	
f	Direct Mix	Always On, Always Off, Cross Fade	Selects how a dry sound is mixed p.468	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Rec Mode
b: Reverse Time [msec]

When **Rec Mode** is set to Single, you can set up to 2,640msec for **Reverse Time**. If recording starts during the reverse playback, the playback will be interrupted.
When **Rec Mode** is set to Multi, you can make another recording during the reverse playback. However, the maximum Reverse Time is limited to 1,320msec.
If you wish to record a phrase or rhythm pattern, set **Rec Mode** to Single. If you record only one note, set **Rec Mode** to Multi.
The **Reverse Time** parameter specifies the maximum duration of the reverse playback. The part in excess of this limit will not be played in reverse. If you wish to add short pieces of the reverse playback of single notes, make the **Reverse Time** shorter.



c: Envelope Select
c: Src
d: Threshold

These parameters select the source to control the start and end of recording.

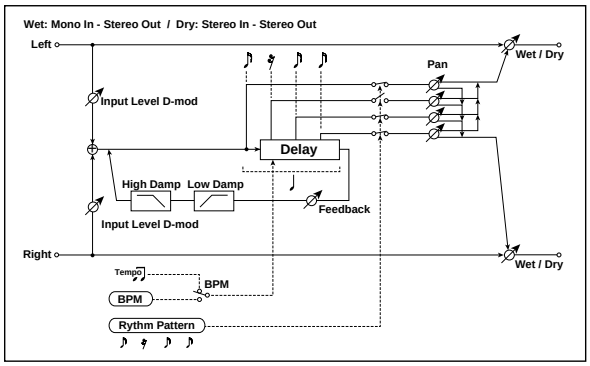
When **Envelope Select** is set to D-mod, the input signal will be recorded only when the value of the modulation source selected by the Src parameter is 64 or higher.

When **Envelope Select** is set to Input, the input signal will be recorded only when its level exceeds the Threshold level.

When recording is completed, reverse playback starts immediately.

063: Sequence BPM Dly (Sequence BPM Delay)

This four-tap delay enables you to select a tempo and rhythm pattern to set up each tap.



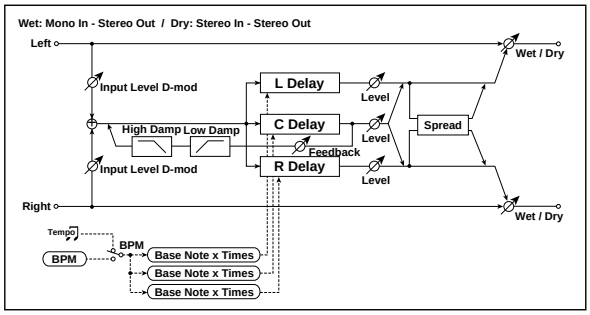
a	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.481	
b	Rhythm Pattern		Selects a rhythm pattern p.481	
c	Tap1 Pan	L, 1...99, R	Sets the panning of Tap1	
	Tap2 Pan	L, 1...99, R	Sets the panning of Tap2	
	Tap3 Pan	L, 1...99, R	Sets the panning of Tap3	
	Tap4 Pan	L, 1...99, R	Sets the panning of Tap4	
d	Feedback	–100...+100	Sets the feedback amount	
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt	–100...+100	Sets the feedback amount	
e	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
f	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: BPM
b: Rhythm Pattern

With the tempo specified by the **BPM** parameter (or the MIDI Clock tempo if **BPM** is set to MIDI), the length of one beat equals the feedback delay time, and the interval between taps becomes equal. Selecting a rhythm pattern will automatically turn the tap outputs on and off. When **BPM** is set to MIDI, the lower limit of the **BPM** is 44.

064: L/C/R BPM Delay

The L / C / R delay enables you to match the delay time with the song tempo. You can also synchronize the delay time with the arpeggiator or sequencer. If you program the tempo before performance, you can achieve a delay effect that synchronizes with the song in real-time. Delay time is set by notes.



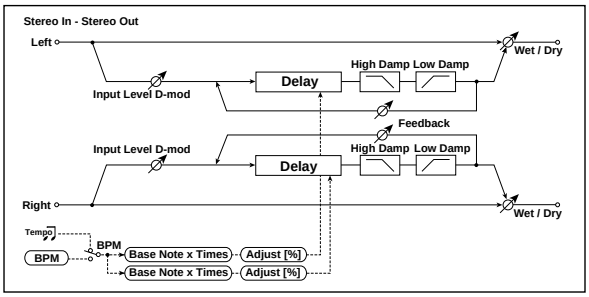
a	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over?	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.482	
b	L Delay Base Note	♪...𝅝	Selects the type of notes to specify the delay time for TapL p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapL p.473	
	Level	0...50	Sets the output level of TapL	
c	C Delay Base Note	♪...𝅝	Selects the type of notes to specify the delay time for TapC p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapC p.473	
	Level	0...50	Sets the output level of TapC	
d	R Delay Base Note	♪...𝅝	Selects the type of notes to specify the delay time for TapR p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapR p.473	
	Level	0...50	Sets the output level of TapR	
e	Feedback (C Delay)	–100...+100	Sets the feedback amount of TapC	D-mod
	Src	Off...Tempo	Selects the modulation source for the TapC feedback	
	Amt	–100...+100	Sets the modulation amount of the TapC feedback	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
g	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
h	Spread	0...50	Sets the width of the stereo image of the effect sound p.476	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Time Over?

You can set the delay time up to 5,460msec. If the delay time exceeds this limit, the error message “OVER!” appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

065: Stereo BPM Delay

This stereo delay enables you to set the delay time to match the song tempo.



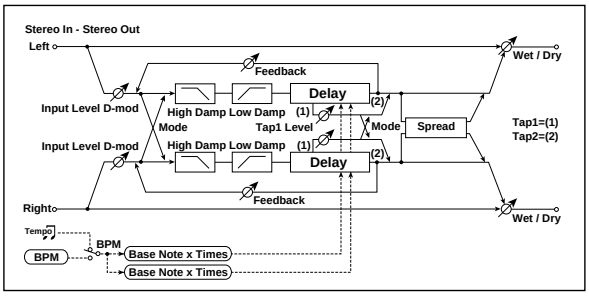
a	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over? L	---, OVER!	Display the error message if the left channel delay time exceeds the upper limit p.482	
	R	---, OVER!	Display the error message if the right channel delay time exceeds the upper limit p.482	
b	L Delay Base Note	♪...𝅝	Selects the type of notes to specify the left channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the left channel delay time p.473	
	Adjust [%]	–2.50...+2.50	Fine-adjust the left channel delay time	
c	R Delay Base Note	♪...𝅝	Selects the type of notes to specify the right channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the right channel delay time p.473	
	Adjust [%]	–2.50...+2.50	Fine-adjust the right channel delay time	
d	L Feedback	–100...+100	Sets the feedback amount for the left channel	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt L	–100...+100	Sets the modulation amount of the left channel feedback	
e	R Feedback	–100...+100	Sets the feedback amount for the right channel	
	Amt R	–100...+100	Sets the modulation amount of the right channel feedback	D-mod
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Time Over? L, R

You can set the delay time up to 2,730msec. If the delay time exceeds this limit, the error message “OVER!” appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

066: St.BPM Mtap Delay (Stereo BPM Multitap Delay)

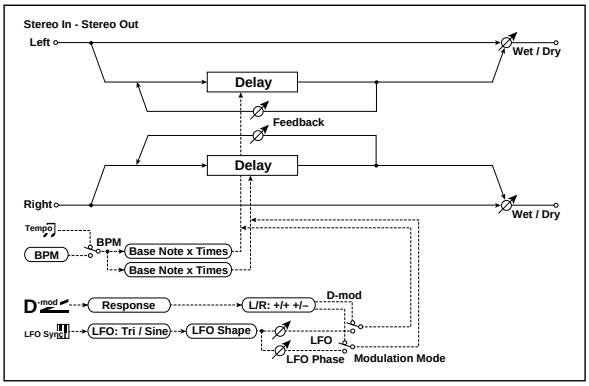
This is a stereo multi-tapped delay that lets you set the delay time to match the tempo of the song.



a	Mode	Normal, Cross Feedback, Cross Pan1, Cross Pan2	Switches the left and right delay routing p.477	
b	BPM	MIDI, 40.00...300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over? 1	---, OVER!	Displays an error message when the delay time for Tap1 exceeds the upper limit p.482	
	2	---, OVER!	Displays an error message when the delay time for Tap2 exceeds the upper limit p.482	
c	Tap 1 Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time for Tap1 p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for Tap1 p.473	
d	Tap 2 Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time for Tap2 p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for Tap2 p.473	
e	Tap1 Level	0...100	Sets the Tap1 output level p.477	
f	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	D-mod
	Src	Off...Tempo	Selects the modulation source of the Tap2 feedback amount	
	Amt	–100...+100	Sets the modulation amount of the Tap2 feedback amount	
g	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Spread	–100...+100	Sets the width of the stereo image of the effect sound p.476	D-mod
	Src	Off...Tempo	Selects the modulation source of the effect sound's stereo image width	
	Amt	–100...+100	Sets the modulation amount of the effect sound's stereo image width	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

067: St.BPM Mod. Delay (Stereo BPM Modulation Delay)

This is a stereo modulation delay that lets you synchronize the delay time to the tempo of the song.



a	Modulation Mode	LFO, D-mod	Switches between LFO modulation control and modulation source control	
b	D-mod Modulation	L/R:+/+, L/R:+/–	Reversed L/R control by modulation source p.478	
	Src	Off...Tempo	Selects the modulation source that controls delay time	D-mod
	Response	0...30	Sets the rate of response to the modulation source	
c	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
d	LFO Sync	Off, On	Switches LFO reset off/on p.478	
	Src	Off...Tempo	Selects the modulation source that resets the LFO	D-mod
e	LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO p.449	
f	MIDI Sync	Off, On	When this is on, the LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00...300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes that specify the LFO speed p.448	
	Times	x1...x32	Sets the number of notes that specify the LFO speed p.448	
g	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
h	L LFO Phase [deg]	–180...+180	Sets the phase obtained when the left LFO is reset p.478	
	Depth	0...200	Sets the depth of the left LFO modulation	
i	R LFO Phase [deg]	–180...+180	Sets the phase obtained when the right LFO is reset p.478	
	Depth	0...200	Sets the depth of the right LFO modulation	
j	BPM(Delay)	MIDI, 40.00...300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over? L	---, OVER!	Display the error message if the left channel delay time exceeds the upper limit p.484	
	R	---, OVER!	Display the error message if the right channel delay time exceeds the upper limit p.484	

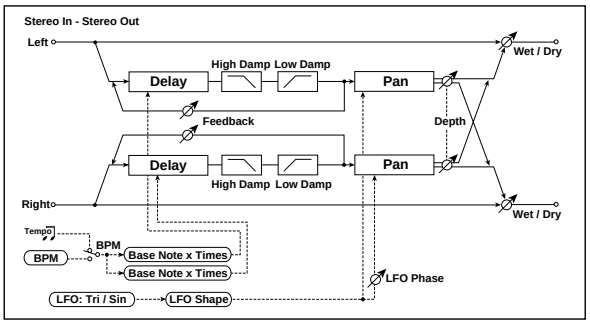
k	L Delay Base Note	♪...𝅝	Selects the type of notes to specify the left channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the left channel delay time p.473	
	Feedback	–100...+100	Sets the feedback amount of left delay	
l	R Delay Base Note	♪...𝅝	Selects the type of notes to specify the right channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the right channel delay time p.473	
	Feedback	–100...+100	Sets the feedback amount of right delay	
m	Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input p.450	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

j: Time Over? L, R

You can set the delay time up to 2,550msec. If the delay time exceeds this limit, the error message "OVER!" appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

068: St.BPMAutoPanDly (Stereo BPM Auto Panning Delay)

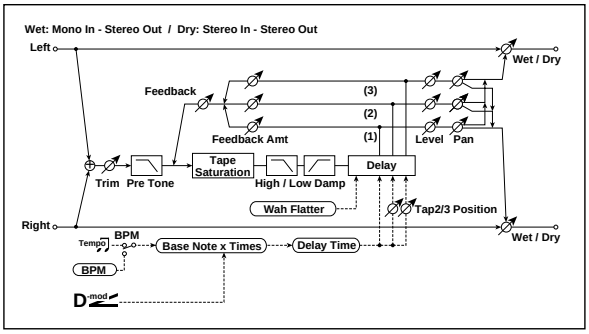
This stereo auto panning delay enables you to set the delay time to match the song tempo.



a	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over? L	---, OVER!	Display the error message if the left channel delay time exceeds the upper limit p.482	
	R	---, OVER!	Display the error message if the right channel delay time exceeds the upper limit p.482	
b	L Delay Base Note	♪...𝅝	Selects the type of notes to specify the left channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the left channel delay time p.473	
	Feedback	–100...+100	Sets the feedback amount for the left channel	
c	R Delay Base Note	♪...𝅝	Selects the type of notes to specify the right channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the right channel delay time p.473	
	Feedback	–100...+100	Sets the feedback amount for the right channel	
d	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
e	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
	Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
	LFO Phase	–180...+180	Sets the LFO phase difference between the left and right p.469	
f	Panning Freq [Hz]	0.02...20.00	Sets the panning speed p.448	
g	MIDI Sync	Off, On	When this is on, the pan LFO speed is set by BPM, Base Note, and Times, instead of Frequency p.448	Sync
	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.448	
	Base Note	♪...𝅝	Selects the type of notes to specify the delay time for the panning speed p.448	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for the panning speed p.448	
h	LFO Type	Individual, Common1, Common2	Selects either (individual) LFO, Common FX LFO1, or Common LFO2 p.448	FX Common
	CmnLFO Offset [deg]	–180...+180	Sets the phase offset when Type = Common 1 or Common 2 p.448	
i	Panning Depth	0...100	Sets the panning width	D-mod
	Src	Off...Tempo	Selects the modulation source for the panning width	
	Amt	–100...+100	Set the modulation amount of the panning width	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

069: Tape Echo BPM

This is a tape echo that lets you synchronize the delay time to the tempo of the song.



a	BPM (Delay)	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Tap1 Dmod Src	Off...Tempo	Selects the modulation source of the delay time p.485	D-mod
b	Tap1 Delay Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time (tap1) p.473, p.485	D-mod Sync
	Times	x1...x32	Sets the number of notes to specify the delay time (tap1) p.473, p.485	
	Time Over?	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.485	
c	Tap1 Dmod Note	𝅘𝅥𝅯...𝅝	Selects the note value used to specify the delay time when the modulation is at maximum p.485	D-mod Sync
	Times	x1...x32	Specifies the number of notes used to specify the delay time when the modulation is at maximum p.485	
d	Tap2 Position [%]	0...100	Sets the position of Tap 2 relative to the Tap 1 delay time the depth of pitch variation p.480	
e	Tap3 Position [%]	0...100	Sets the position of Tap 3 relative to the Tap 1 delay time the depth of pitch variation p.480	
f	Tap1 Level	0...100	Sets the Tap1 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap1	
	FB Amt	–100...+100	Sets the Tap1 feedback amount p.480	
g	Tap2 Level	0...100	Sets the Tap2 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap2	
	FB Amt	–100...+100	Sets the Tap2 feedback amount p.480	
h	Tap3 Level	0...100	Sets the Tap3 output level	
	Pan	L, 1...99, R	Sets the stereo image of tap3	
	FB Amt	–100...+100	Sets the Tap3 feedback amount p.480	
i	Feedback	0...100	Sets the amount of feedback for Taps 1, 2, and 3 p.480	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt	–100...+100	Sets the depth by which feedback amount will be modulated	
j	High Damp [%]	0...100	Sets the damping amount in the high range	
	Low Damp [%]	0...100	Sets the damping amount in the low range	
k	Saturation	0...100	Sets the distortion amount	
l	Input Trim	0...100	Sets the input gain	
	Pre Tone	0...100	Sets the tone of the input	
m	Wow Flutter [Hz]	0.02...1.00	Sets the frequency at which pitch variation will occur	
	Wow Flutter depth	0...100	Sets the depth of pitch variation	
n	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Tap1 Dmod Src
b: Tap1 Delay Note
b: Times
c: Tap1 Dmod Note
c: Times

If **Tap1 Dmod Src** is Off or the selected modulation is at 0, the delay time will be the length specified by **Tap1 Delay Note** and **Times**.
If **Tap1 Dmod Src** is other than Off, the delay time will change so that it will be as specified by **Tap1 Dmod Note** and **Times** when the maximum modulation is reached.

b: Time Over?

You can set the delay time up to 5,400msec. If the delay time exceeds this limit, the error message “OVER!” appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

Reverb and Early Reflections (Reverb ER)

070: Reverb Hall

This hall-type reverb simulates the reverberation of mid-size concert halls or ensemble halls.

071: Reverb SmoothHall

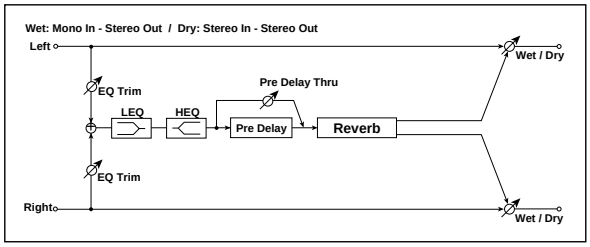
This hall-type reverb simulates the reverberation of larger halls and stadiums, and creates a smooth release.

072: Reverb Wet Plate

This plate reverb simulates warm (dense) reverberation.

073: Reverb Dry Plate

This plate reverb simulates dry (light) reverberation.



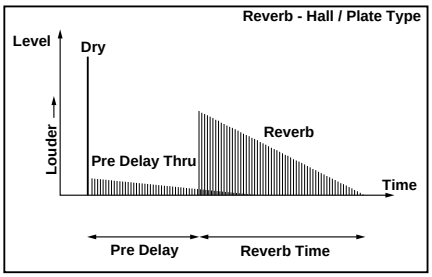
a	Reverb Time [sec]	0.1...10.0	Sets the reverberation time	
	High Damp [%]	0...100	Sets the damping amount in the high range	
b	Pre Delay [msec]	0...200	Sets the delay time from the dry sound p.486	
	Pre Delay Thru [%]	0...100	Sets the mix ratio of non-delay sound p.486	
c	EQ Trim	0...100	Sets the EQ input level	
d	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
e	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of High EQ	
f	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b: Pre Delay [msec]

b: Pre Delay Thru [%]

The **Pre Delay** sets the delay time to the reverb input, allowing you to control spaciousness.

Using the **Pre Delay Thru** parameter, you can mix the dry sound without delay, emphasizing the attack of the sound.

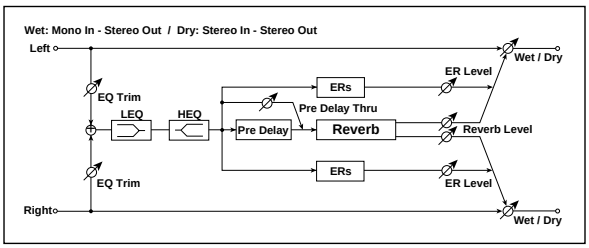


074: Reverb Room

This room-type reverb emphasizes the early reflections that make the sound tighter. Changing the balance between the early reflections and reverb sound allows you to simulate nuances, such as the type of walls of a room.

075: Reverb BrightRoom

This room-type reverb emphasizes the early reflections that make the sound brighter.



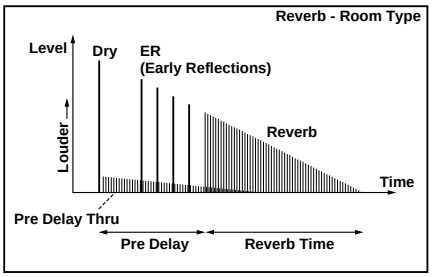
a	Reverb Time [sec]	0.1...3.0	Sets the reverberation time	
	High Damp [%]	0...100	Sets the damping amount in the high range	
b	Pre Delay [msec]	0...200	Sets the delay time from the dry sound p.486	
	Pre Delay Thru [%]	0...100	Sets the mix ratio of non-delay sound p.486	
c	ER Level	0...100	Sets the level of early reflections p.486	
d	Reverb Level	0...100	Sets the reverberation level p.486	
e	EQ Trim	0...100	Sets the EQ input level	
f	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
g	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of High EQ	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

c: ER Level

d: Reverb Level

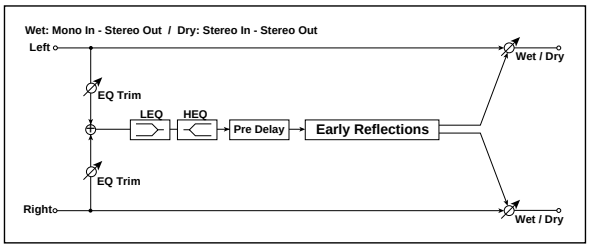
These parameters set the early reflection level and reverb level.

Changing these parameter values allows you to simulate the type of walls in the room. That is, a larger **ER Level** simulates a hard wall, and a larger **Reverb Level** simulates a soft wall.



076: Early Reflections

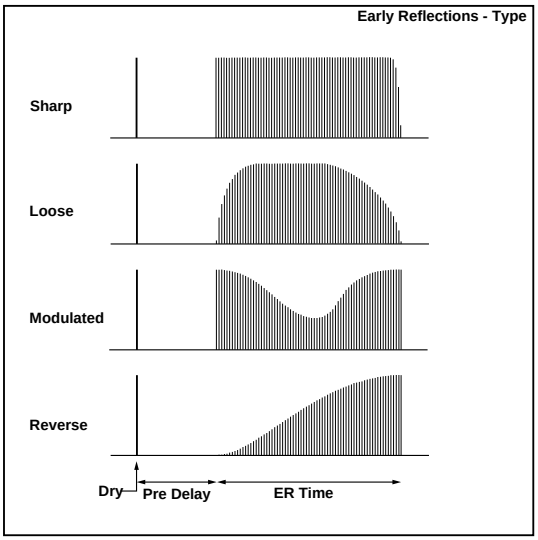
This effect is only the early reflection part of a reverberation sound, and adds presence to the sound. You can select one of the four decay curves.



a	Type	Sharp, Loose, Modulated, Reverse	Selects the decay curve for the early reflection p.487	
b	ER Time [msec]	10...800	Sets the time length of early reflection	
c	Pre Delay [msec]	0...200	Sets the time taken from the original sound to the first early reflection	
d	EQ Trim	0...100	Sets the input level of EQ applied to the effect sound	
e	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
f	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of the Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of the High EQ	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Type

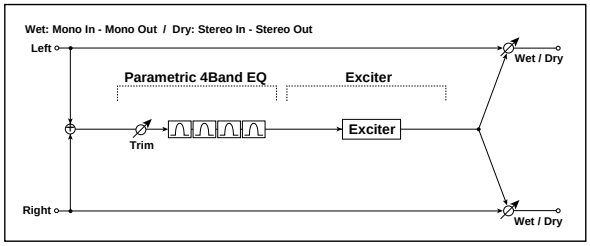
This parameter selects the decay curve for the early reflection.



Mono-Mono Serial (Mono-Mono)

077: P4EQ - Exciter (Parametric 4-Band EQ - Exciter)

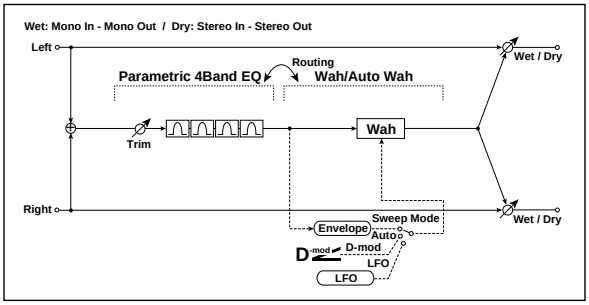
This effect combines a mono four-band parametric equalizer and an exciter.



P4EQ				
a	[E]Trim	0...100	Sets the parametric EQ input level	
b	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
c	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
d	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
e	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
EXCITER				
f	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
g	[X]Emphasis Point	0...70	Sets the frequency range to be emphasized p.446	
h	Wet/Dry	Dry,1 : 99... 99 : 1,Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

078: P4EQ - Wah (Parametric 4-Band EQ - Wah/Auto Wah)

This effect combines a mono four-band parametric equalizer and a wah. You can change the order of the connection.

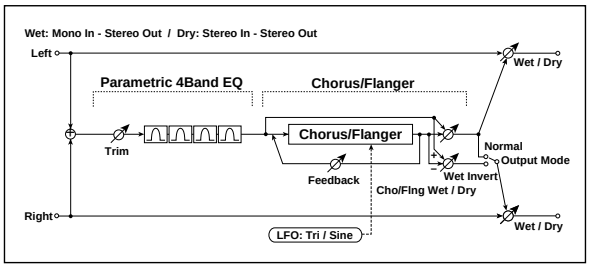


P4EQ				
a	[E]Trim	0...100	Sets the parametric EQ input level	
	Routing	P4EQ → Wah, Wah → P4EQ	Changes the order of the parametric equalizer and wah connection	
b	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
c	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
d	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
e	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
WAH				
f	[W]Frequency Bottom	0...100	Sets the lower limit of the wah center frequency p.448	
	Frequency Top	0...100	Sets the upper limit of the wah center frequency p.448	
g	[W]Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO p.448	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
h	[W]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	Resonance	0...100	Sets the resonance amount	
	LPF	Off, On	Switches the wah low pass filter on and off	
i	[W]Wet/Dry	Dry,1 : 99... 99 : 1, Wet	Sets the wah effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the wah	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the wah	

j	Wet/Dry	Dry,1 : 99... 99 : 1,Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

079: P4EQ - Cho/Flng (Parametric 4-Band EQ - Chorus/Flanger)

This effect combines a mono four-band parametric equalizer and a chorus / flanger.



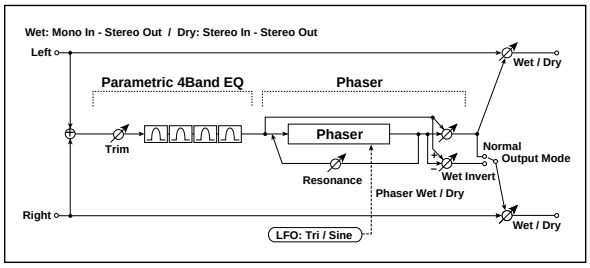
P4EQ				
a	[E]Trim	0...100	Sets the parametric EQ input level	
b	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
c	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
d	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
e	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
CHORUS/FLANGER				
f	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
g	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
h	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
i	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.489	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

i: [F]Output Mode

When Wet Invert is selected, the right channel phase of the chorus / flanger effect sound is inverted. This creates pseudo-stereo effects and adds spread.
However, if a mono-input type effect is connected after this effect, the left and right sounds may cancel each other, eliminating the chorus / flanger effects.

080: P4EQ - Phaser (Parametric 4-Band EQ - Phaser)

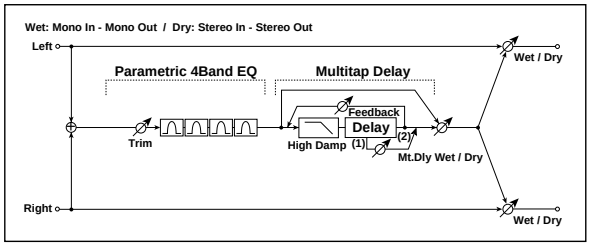
This effect combines a mono four-band parametric equalizer and a phaser.



P4EQ				
a	[E]Trim	0...100	Sets the parametric EQ input level	
b	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
c	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
d	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
e	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
PHASER				
f	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
g	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
h	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the phaser	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the phaser	
i	[P]Output Mode	Normal, Wet Invert	Selects the phaser output mode p.492	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

081: P4EQ - Mt. Delay (Parametric 4-Band EQ - Multitap Delay)

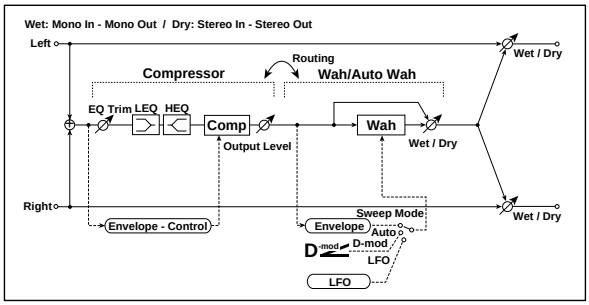
This effect combines a mono four-band parametric equalizer and a multitap delay.



P4EQ				
a	[E]Trim	0...100	Sets the parametric EQ input level	
b	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
c	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
d	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
e	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
MULTITAP DELAY				
f	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
g	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	
h	[D]High Damp [%]	0...100	Sets the damping amount in the high range	
i	[D]Mt.Delay Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the multitap delay	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the multitap delay	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

082: Comp - Wah (Compressor - Wah/Auto Wah)

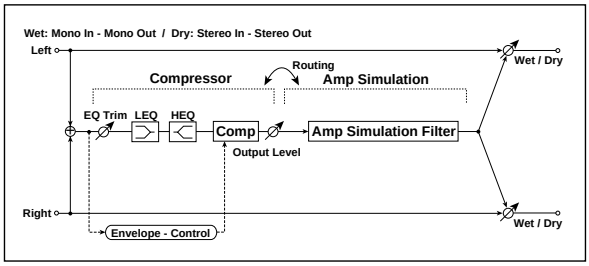
This effect combines a mono compressor and a wah. You can change the order of the connection.



COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
c	[C]EQ Trim	0...100	Sets the EQ input level	
d	[C]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
WAH				
e	[W]Frequency Bottom	0...100	Sets the lower limit of the wah center frequency p.448	
	Frequency Top	0...100	Sets the upper limit of the wah center frequency p.448	
f	[w]Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
g	[W]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	Resonance	0...100	Sets the resonance amount	
	LPF	Off, On	Switches the wah low pass filter on and off	
h	[W]Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the wah effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the wah	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the wah	
i	Routing	Comp → Wah, Wah → Comp	Switches the order of the compressor and wah	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

083: Comp - Amp Sim (Compressor - Amp Simulation)

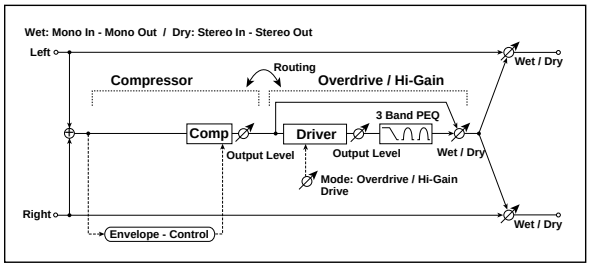
This effect combines a mono compressor and an amp simulation. You can change the order of the effects.



COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
c	[C]EQ Trim	0...100	Sets the EQ input level	
d	[C]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
AMP SIM				
e	[A]Amplifier Type	SS, EL84, 6L6	Selects the type of guitar amplifier	
f	Routing	Comp → Amp, Amp → Comp	Switches the order of the compressor and amp simulation	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

084: Comp - OD/HiGain (Compressor - Overdrive/Hi.Gain)

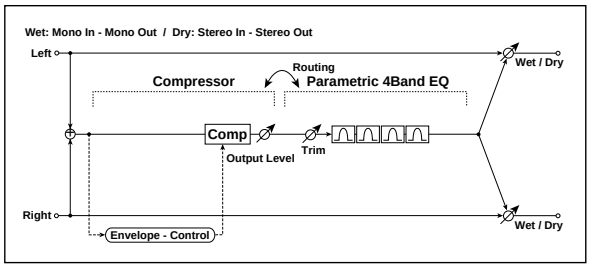
This effect combines a mono compressor and an overdrive / high-gain distortion. You can change the order of the effects.



COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
OD/HI-GAIN				
c	[O] Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
d	[O]Output Level	0...50	Sets the overdrive output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the overdrive output level	
	Amt	–50...+50	Sets the modulation amount of the overdrive output level	
e	[O]Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
f	[O]Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
g	[O]Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
h	[O]Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the overdrive effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the overdrive	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the overdrive	
i	Routing	Comp → OD/HG, OD/ HG → Comp	Switches the order of the compressor and overdrive	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

085: Comp - P4EQ (Compressor - Parametric 4-Band EQ)

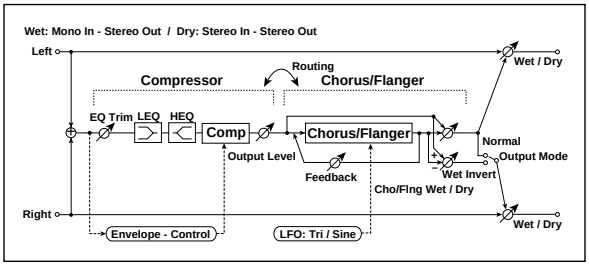
This effect combines a mono compressor and a four-band parametric equalizer. You can change the order of the effects.



COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
P4EQ				
c	[E]Trim	0...100	Sets the parametric EQ input level	
d	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
e	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
f	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
g	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
h	Routing	Comp → P4EQ, P4EQ → Comp	Switches the order of the compressor and parametric EQ	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

086: Comp - Cho/Flng (Compressor - Chorus/Flanger)

This effect combines a mono compressor and a chorus / flanger. You can change the order of the effects.



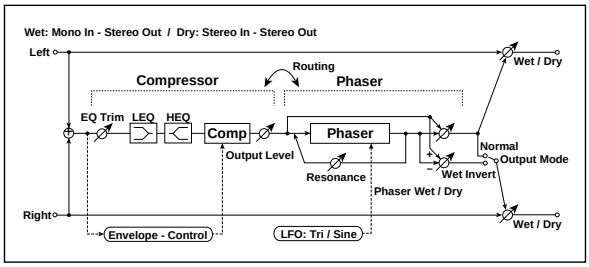
COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
c	[C]EQ Trim	0...100	Sets the EQ input level	
d	[C]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
CHORUS/FLANGER				
e	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
f	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
g	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
h	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.492	
i	Routing	Comp → Flanger, Flanger → Comp	Switches the order of the compressor and chorus/flanger p.492	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

h: [F]Output Mode
i: Routing

When Wet Invert is selected, the right channel phase of the chorus / flanger effect sound is inverted. This creates pseudo-stereo effects and adds spread.
However, if a mono-input type effect is connected after this effect, the left and right sounds may cancel each other, eliminating the chorus / flanger effects.
When **Routing** is set to Flanger→Comp, **[F]Output Mode** will be set to Normal.

087: Comp - Phaser (Compressor - Phaser)

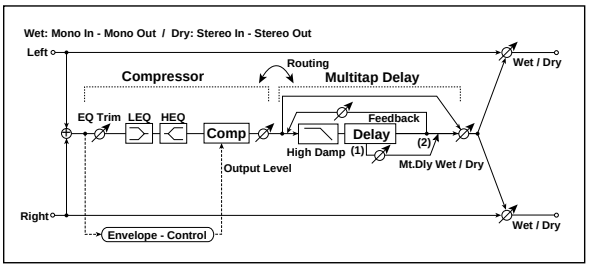
This effect combines a mono compressor and a phaser. You can change the order of the effects.



COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
c	[C]EQ Trim	0...100	Sets the EQ input level	
d	[C]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
PHASER				
e	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
f	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
g	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the phaser	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the phaser	
h	[F]Output Mode	Normal, Wet Invert	Selects the phaser output mode p.489	
i	Routing	Comp → Phaser, Phaser → Comp	Switches the order of the compressor and phaser p.492	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

088: Comp - Mt. Delay (Compressor - Multitap Delay)

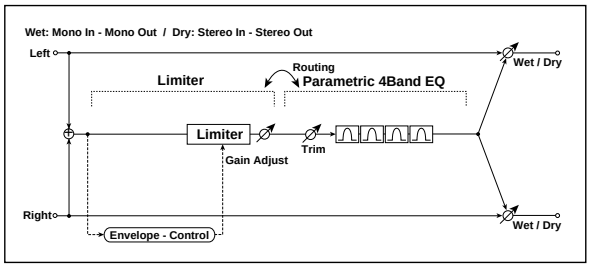
This effect combines a mono compressor and a multitap delay. You can change the order of the effects.



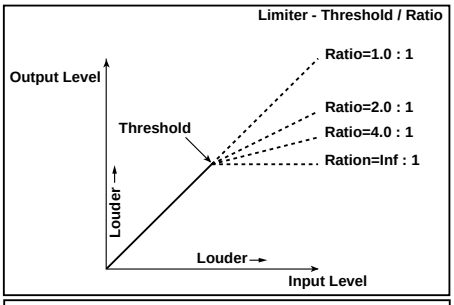
COMPRESSOR				
a	[C] Sensitivity	1...100	Sets the sensitivity p.441	
b	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
c	[C]EQ Trim	0...100	Sets the EQ input level	
d	[C]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
MULTITAP DELAY				
e	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
f	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	
g	[D]High Damp [%]	0...100	Sets the damping amount in the high range p.476	
h	[D]Mt.Delay Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the multitap delay	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the multitap delay	
i	Routing	Comp → Mt.Delay, Mt.Delay → Comp	Switches the order of the compressor and multitap delay	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

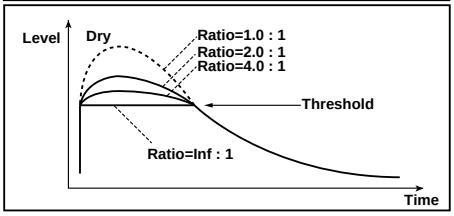
089: Limiter - P4EQ
(Limiter - Parametric 4-Band EQ)

This effect combines a mono limiter and a four-band parametric equalizer. You can change the order of the effects.



LIMITER				
a	[L]Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
b	[L]Attack	1...100	Sets the attack time	
	Release	1...100	Sets the release time	
c	[L]Gain Adjust [dB]	–Inf, –38...+24	Sets the limiter output gain p.494	
P4EQ				
d	[E]Trim	0...100	Sets the parametric EQ input level	
e	[E]B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
f	[E]B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
g	[E]B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band 3 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
h	[E]B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18...+18	Sets the gain of Band 4	
i	Routing	Limiter → P4EQ, P4EQ → Limiter	Switches the order of the limiter and parametric EQ	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	





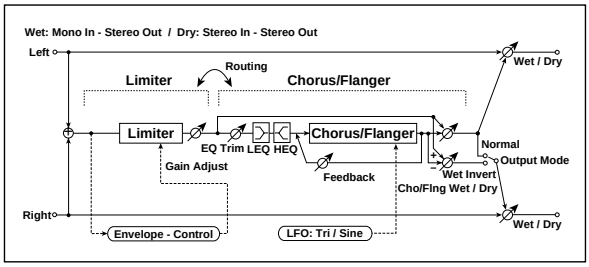
a: [L]Ratio
a: Threshold [dB]
c: [L]Gain Adjust [dB]

This parameter sets the signal compression **[L]Ratio**. Compression is applied only when the signal level exceeds the **Threshold** value.

Adjust the output level using the **Gain Adjust** parameter, since compression causes the entire level to be reduced.

090: Limiter - Cho/Flng (Limiter - Chorus/Flanger)

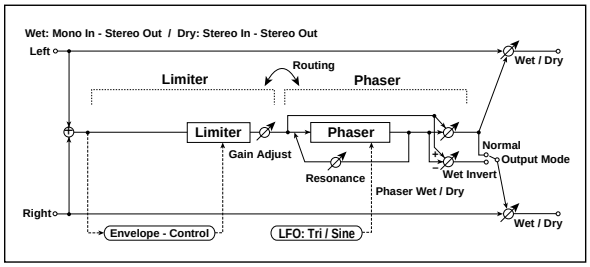
This effect combines a mono limiter and a chorus / flanger. You can change the order of the effects.



LIMITER				
a	[L]Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
b	[L]Attack	1...100	Sets the attack time	
	Release	1...100	Sets the release time	
c	[L]Gain Adjust [dB]	–Inf, –38...+24	Sets the limiter output gain p.494	
CHORUS/FLANGER				
d	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
e	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
f	[F]EQ Trim	0...100	Sets the EQ input level	
g	[F]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
h	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
i	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.492	
	Routing	Limiter → Flanger, Flanger → Limiter	Switches the order of the limiter and chorus/flanger	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

091: Limiter - Phaser

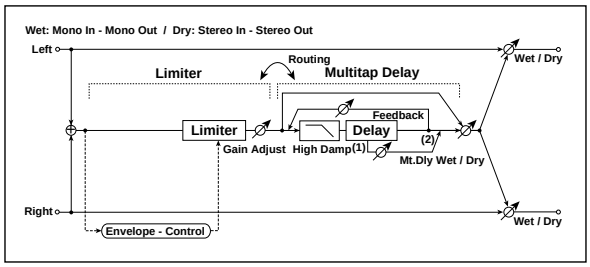
This effect combines a mono limiter and a phaser. You can change the order of the effects.



LIMITER				
a	[L]Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
b	[L]Attack	1...100	Sets the attack time	
	Release	1...100	Sets the release time	
c	[L]Gain Adjust [dB]	–Inf, –38...+24	Sets the limiter output gain p.494	
PHASER				
d	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
e	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
f	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	D-mod
	Src	Off...Tempo	Selects the phaser's Wet/Dry modulation source	
	Amt	–100...+100	Sets the phaser's Wet/Dry modulation amount	
g	[P]Output Mode	Normal, Wet Invert	Selects the phaser output mode p.489	
h	Routing	Limiter → Phaser, Phaser → Limiter	Switches the order of the limiter and phaser p.492	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

092: Limiter - Mt.Delay (Limiter - Multitap Delay)

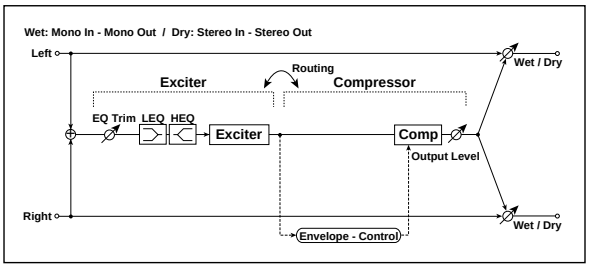
This effect combines a mono limiter and a multitap delay. You can change the order of the effects.



LIMITER				
a	[L]Ratio	1.0 : 1...50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
b	[L]Attack	1...100	Sets the attack time	
	Release	1...100	Sets the release time	
c	[L]Gain Adjust [dB]	–Inf, –38...+24	Sets the limiter output gain p.494	
MULTITAP DELAY				
d	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
e	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback	–100...+100	Sets the Tap2 feedback amount	
f	[D]High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	[D]Mt.Delay Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the multitap delay's Wet/Dry modulation source	
	Amt	–100...+100	Sets the multitap delay's Wet/Dry modulation amount	
h	Routing	Limiter → Mt.Delay, Mt.Delay → Limiter	Switches the order of the limiter and multitap delay	
i	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

093: Exciter - Comp (Exciter - Compressor)

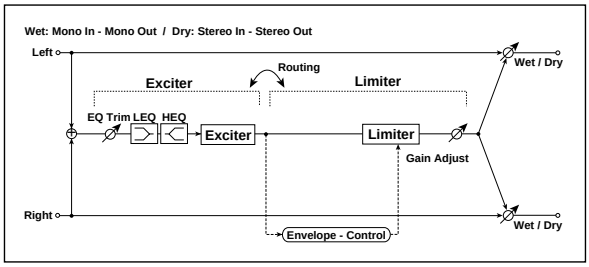
This effect combines a mono exciter and a compressor. You can change the order of the effects.



EXCITER				
a	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	[X]Emphasis Frequency	0...70	Sets the frequency range to be emphasized p.446	
c	[X]EQ Trim	0...100	Sets the EQ input level	
d	[X]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
COMPRESSOR				
e	[C] Sensitivity	1...100	Sets the sensitivity p.441	
f	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
g	Routing	Exciter → Comp, Comp → Exciter	Switches the order of the exciter and compressor	
h	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

094: Exciter - Limiter

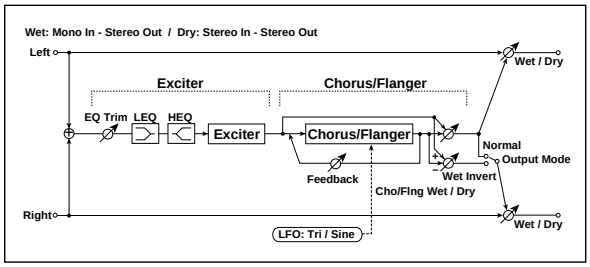
This effect combines a mono exciter and a limiter. You can change the order of the effects.



EXCITER				
a	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	[X]Emphasis Frequency	0...70	Sets the frequency range to be emphasized p.446	
c	[X]Trim	0...100	Sets the EQ input level	
d	[X]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
LIMITER				
e	[L]Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
f	[L]Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
g	[L]Attack	1...100	Sets the attack time	
	Release	1...100	Sets the release time	
h	[L]Gain Adjust [dB]	–Inf, –38...+24	Sets the limiter output gain p.494	
i	Routing	Exciter → Limiter, Limiter → Exciter	Switches the order of the exciter and limiter	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

095: Exciter - Cho/Flng (Exciter - Chorus/Flanger)

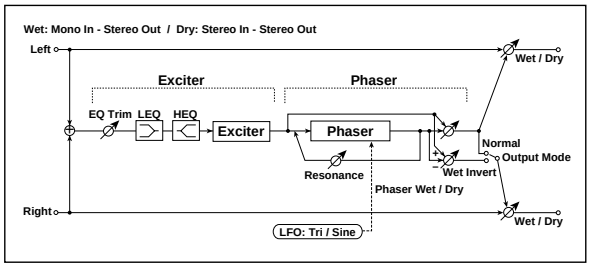
This effect combines a mono limiter and a chorus / flanger.



EXCITER				
a	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	[X]Emphasis Frequency	0...70	Sets the frequency range to be emphasized p.446	
c	[X]Trim	0...100	Sets the EQ input level	
d	[X]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
CHORUS/FLANGER				
e	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
f	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
g	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
h	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.489	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

096: Exciter - Phaser

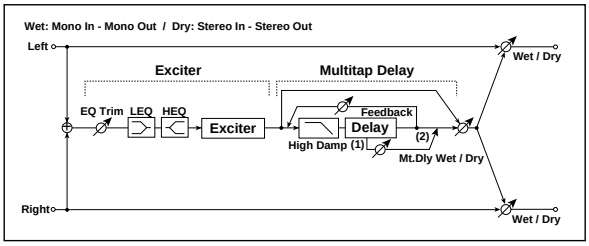
This effect combines a mono limiter and a phaser.



EXCITER				
a	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	[X]Emphasis Frequency	0...70	Sets the frequency range to be emphasized p.446	
c	[X]Trim	0...100	Sets the EQ input level	
d	[X]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
PHASER				
e	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
f	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
g	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the phaser	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the phaser	
h	[P]Output Mode	Normal, Wet Invert	Selects the phaser output mode p.489	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

097: Exciter - Mt.Delay (Exciter - Multitap Delay)

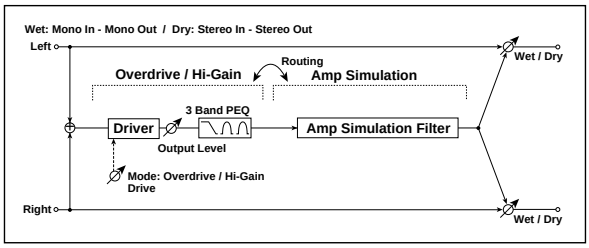
This effect combines a mono exciter and a multitap delay.



EXCITER				
a	[X]Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	[X]Emphasis Frequency	0...70	Sets the frequency range to be emphasized p.446	
c	[X]Trim	0...100	Sets the EQ input level	
d	[X]Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
MULTITAP DELAY				
e	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
f	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	
g	[D]High Damp [%]	0...100	Sets the damping amount in the high range p.476	
h	[D]Mt.Delay Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the multitap delay	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the multitap delay	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

098: OD/HG - Amp Sim (Overdrive/Hi.Gain - Amp Simulation)

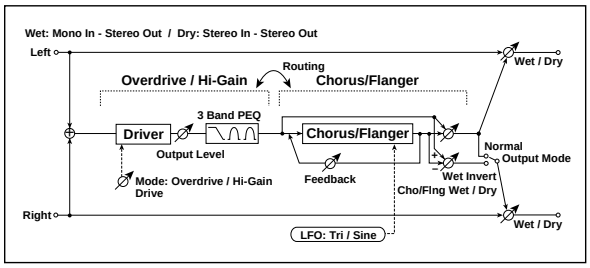
This effect combines a mono overdrive / high-gain distortion and an amp simulation. You can change the order of the effects.



OD/HI-GAIN				
a	[O]Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
b	[O]Output Level	0...50	Sets the overdrive output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the overdrive output level	
	Amt	–50...+50	Sets the modulation amount of the overdrive output level	
e	[O]Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
f	[O]Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
g	[O]Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
AMP SIM				
h	[A]Amplifier Type	SS, EL84, 6L6	Selects the type of guitar amplifie	
i	Routing	OD/HG → Amp, Amp → OD/HG	Switches the order of the overdrive and amp	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

099: OD/HG - Cho/Flng (Overdrive/Hi.Gain - Chorus/Flanger)

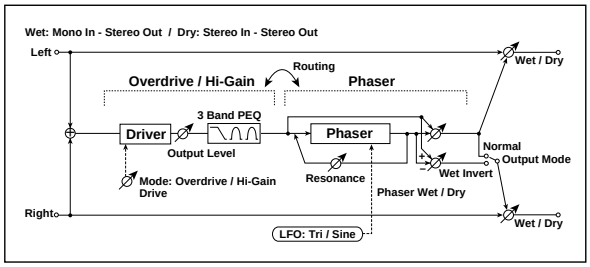
This effect combines a mono overdrive / high-gain distortion and a chorus / flanger. You can change the order of the effects.



OD/HI-GAIN				
a	[O]Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
b	[O]Output Level	0...50	Sets the overdrive output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the overdrive output level	
	Amt	–50...+50	Sets the modulation amount of the overdrive output level	
e	[O]Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
f	[O]Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
g	[O]Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
CHORUS/FLANGER				
h	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
i	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
j	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
k	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.492	
	Routing	OD/HG → Flanger, Flanger → OD/HG	Switches the order of the overdrive and chorus / flanger	
l	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

100: OD/HG - Phaser (Overdrive/Hi.Gain - Phaser)

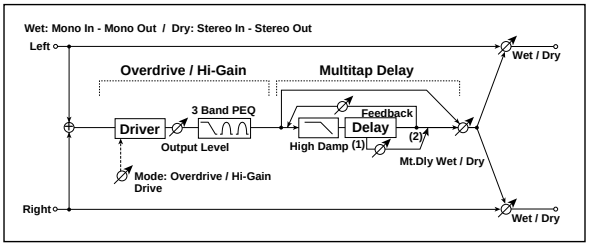
This effect combines a mono overdrive / high-gain distortion and a phaser. You can change the order of the effects.



OD/HI-GAIN				
a	[O]Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
b	[O]Output Level	0...50	Sets the overdrive output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the overdrive output level	
	Amt	–50...+50	Sets the modulation amount of the overdrive output level	
e	[O]Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
f	[O]Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
g	[O]Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
PHASER				
h	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
i	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
j	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the phaser	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the phaser	
k	[P]Output Mode	Normal, Wet Invert	Selects the phaser output mode p.492	
	Routing	OD/HG → Phaser, Phaser → OD/HG	Switches the order of the overdrive and phaser p.492	
l	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

101: OD/HG - Mt.Delay (Overdrive/Hi.Gain - Multitap Delay)

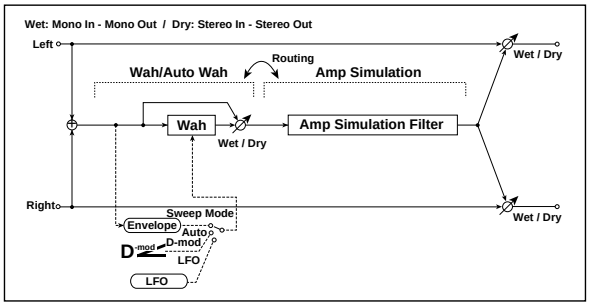
This effect combines a mono overdrive / high-gain distortion and a multitap delay.



OD/HI-GAIN				
a	[O]Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
b	[O]Output Level	0...50	Sets the overdrive output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the overdrive output level	
	Amt	–50...+50	Sets the modulation amount of the overdrive output level	
e	[O]Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
f	[O]Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
g	[O]Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/ High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
MULTITAP DELAY				
h	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
i	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback	–100...+100	Sets the Tap2 feedback amount	
j	[D]High Damp [%]	0...100	Sets the damping amount in the high range p.476	
k	[D]Mt.Delay Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the multitap delay	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the multitap delay	
l	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

102: Wah - Amp Sim (Wah - Amp Simulation)

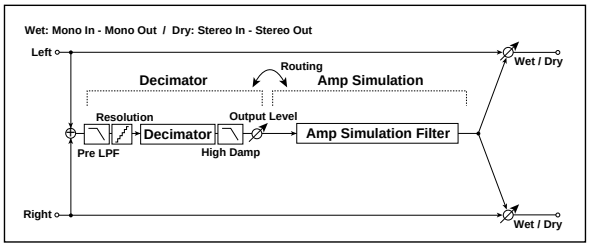
This effect combines a mono wah and an amp simulation. You can change the order of the effects.



WAH				
a	[W] Frequency Bottom	0...100	Sets the lower limit of the wah center frequency p.448	
	Frequency Top	0...100	Sets the upper limit of the wah center frequency p.448	
b	[W]Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO p.448	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
c	[W]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	Resonance	0...100	Sets the resonance amount	
	LPF	Off, On	Switches the wah low pass filter on and off	
d	[W]Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the wah effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the wah	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the wah	
AMP SIM				
e	[A]Amplifier Type	SS, EL84, 6L6	Selects the type of guitar amplifier	
f	Routing	Wah → Amp, Amp → Wah	Switches the order of the wah and amp simulation	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

103: Decimator - Amp (Decimator - Amp Simulation)

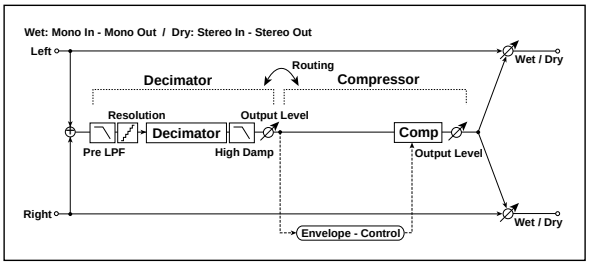
This effect combines a mono decimator and an amp simulation. You can change the order of the effects.



DECIMATOR				
a	[D]Pre LPF	Off, On	Turn the harmonic noise caused by lowered sampling on and off p.452	
	High Damp [%]	0...100	Sets the ratio of high-range damping	
b	[D]Sampling Freq [Hz]	1.00k...48.00k	Sets the sampling frequency	
	Resolution	4...24	Sets the data bit length p.452	
c	[D]Output Level	0...100	Sets the decimator output level p.452	
AMP SIM				
d	[A]Amplifier Type	SS, EL84, 6L6	Selects the type of guitar amplifier	
e	Routing	Decimator → Amp, Amp → Decimator	Switches the order of the decimator and amp simulation	
f	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

104: Decimator - Comp (Decimator - Compressor)

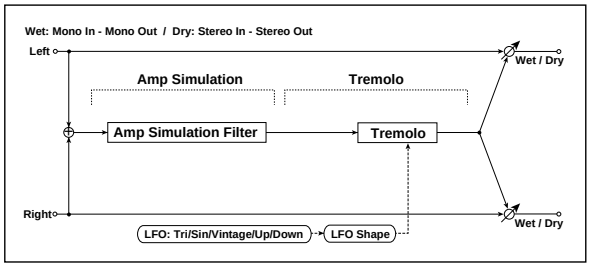
This effect combines a mono decimator and a compressor. You can change the order of the effects.



DECIMATOR				
a	[D]Pre LPF	Off, On	Turn the harmonic noise caused by lowered sampling on and off p.452	
	High Damp [%]	0...100	Sets the ratio of high-range damping	
b	[D]Sampling Freq [Hz]	1.00k...48.00k	Sets the sampling frequency	
	Resolution	4...24	Sets the data bit length p.452	
c	[D]Output Level	0...100	Sets the decimator output level p.452	
COMPRESSOR				
d	[C] Sensitivity	1...100	Sets the sensitivity p.441	
e	[C]Attack	1...100	Sets the attack level p.441	
	Output Level	0...100	Sets the compressor output level p.441	
f	Routing	Decimator → Comp, Comp → Decimator	Switches the order of the decimator and compressor	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

105: AmpSim - Tremolo (Amp Simulation- Tremolo)

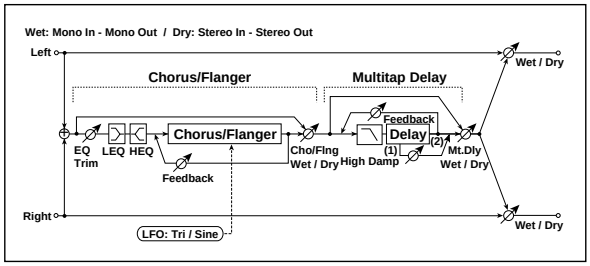
This effect combines a mono amp simulation and a tremolo.



AMP SIM				
a	[A]Amplifier Type	SS, EL84, 6L6	Selects the type of guitar amplifier	
TREMOLO				
b	[T]LFO Waveform	Triangle, Sine, Vintage, Up, Down	Selects the LFO Waveform p.469	
	LFO Shape	–100...+100	Changes the curvature of the LFO Waveform p.449	
c	[T]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
d	[T]Depth	0...100	Sets the depth of LFO modulation	
e	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

106: Cho/Flng - Mt.Dly (Chorus/Flanger - Multitap Delay)

This effect combines a mono chorus / flanger and a multitap delay.

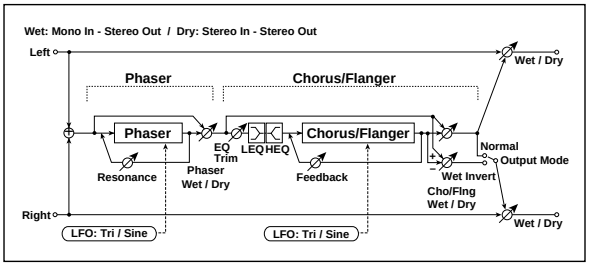


CHORUS/FLANGER				
a	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
b	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
c	[F]EQ Trim	0...100	Sets the EQ input level	
d	[F]PreLEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	PreHEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
e	[F]Cho/Flng Wet/Dry	–Wet...–1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	

MULTITAP DELAY				
a	[D]Tap1 Time [msec]	0.0...1360.0	Sets the Tap1 delay time	
	Tap1 Level	0...100	Sets the Tap1 output level p.477	
b	[D]Tap2 Time [msec]	0.0...1360.0	Sets the Tap2 delay time	
	Feedback	–100...+100	Sets the Tap2 feedback amount	
c	[D]High Damp [%]	0...100	Sets the damping amount in the high range p.476	
d	[D]Mt.Delay Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the multitap delay effect balance	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the multitap delay	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the multitap delay	
e	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

107: Phaser - Cho/Flng (Phaser - Chorus/Flanger)

This effect combines a mono phaser and a chorus / flanger.

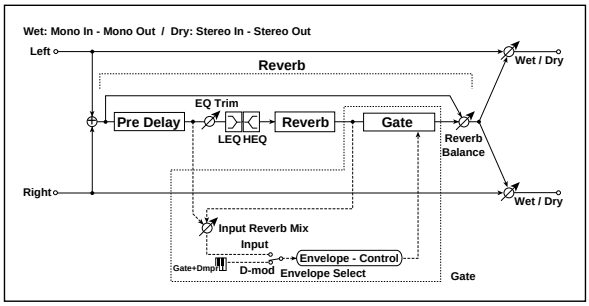


PHASER				
a	[P]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
b	[P]Manual	0...100	Sets the frequency to which the effect is applied	
	Depth	0...100	Sets the depth of LFO modulation	
	Resonance	–100...+100	Sets the resonance amount p.463	
c	[P]Phaser Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the phaser effect balance p.450, p.463	
CHORUS/FLANGER				
d	[F]LFO Frequency [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
e	[F]Delay Time [msec]	0.0...1350.0	Sets the delay time	
	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
f	[F]EQ Trim	0...100	Sets the EQ input level	
g	[F]PreLEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	PreHEQ Gain [dB]	–15...+15	Sets the gain of High EQ	

h	[F]Cho/Flng Wet/Dry	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the effect balance of the chorus/flanger p.450, p.461	D-mod
	Src	Off...Tempo	Selects the Wet/Dry modulation source for the chorus/flanger	
	Amt	–100...+100	Sets the Wet/Dry modulation amount for the chorus/flanger	
i	[F]Output Mode	Normal, Wet Invert	Selects the output mode for the chorus/flanger p.489	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

108: Reverb - Gate

This effect combines a mono reverb and a gate.



REVERB				
a	[R]Reverb Time [sec]	0.1...10.0	Sets the reverberation time	
	High Damp [%]	0...100	Sets the damping amount in the high range	
b	[R]Pre Delay [msec]	0...200	Sets the delay time of the reverb sound and gate control signal	
c	[R]EQ Trim	0...100	Sets the EQ input level	
	Reverb Balance	Dry, 1 : 99... 99 : 1, Wet	Sets the reverb effect balance	
d	[R]PreLEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
e	[R]PreLEQ Gain [dB]	–15.0...+15.0	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of High EQ	
GATE				
f	[G]Envelope Select	D-mod, Input	Switches between modulation source control and input signal control p.503	
	Src	Off...Tempo	Selects the modulation source that controls the gate when Envelope Select is set to D-mod p.503	D-mod
g	[G]Input Reverb Mix	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the dry and reverb sounds of the gate control signal p.503	
	Threshold	0...100	Sets the gate threshold level p.503	
h	[G]Polarity	+, –	Switches between non-invert and invert of the gate on/off state p.444	
i	[G]Attack	1...100	Sets the attack time p.444	
	Release	1...100	Sets the release time p.444	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

f: [G]Envelope Select
f: Src
g: [G]Input Reverb Mix
g: Threshold

The **[G]Envelope Select** parameter enables you to select whether turning the gate on and off is triggered by the input signal level or controlled directly by the modulation source. You can select from Off to Gate2+Dmpr for the Src parameter to specify the modulation source.

When **[G]Envelope Select** is set to Input, the gate is controlled by the level of signals that are the combination of the dry sound and the reverb sound. When the signal level exceeds the threshold, the gate opens and the reverb sound is output.

Normally, set **[G]Input Reverb Mix** to Dry (the gate is controlled only by the dry sound). If you wish to extend the gate time, set the **[G]Input Reverb Mix** value higher and adjust the **Threshold** value.

Mono/Mono Parallel (Mono//Mono)

109: P4EQ / / P4EQ (Parametric 4-Band EQ / / Parametric 4-Band EQ) through 153: BPM Dl / / BPM Dl (Multitap BPM Delay / / Multitap BPM Delay) are parallel effects.
The pan and effect balance of each effect can be set independently.
In the screen, the L-side is shown as [1], and the R-side as [2].
These provide various combinations of 4-band EQ, Compressor, Limiter, Exciter, Overdrive, Wah, Chorus/Flanger, Phaser, and Multitap Delay., as described below.

P4EQ (4-band EQ)

P4EQ				
a	Trim	0...100	Sets the input level	
b	B1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets the bandwidth of Band 1 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 1	
c	B2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets the bandwidth of Band 2 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 2	
d	B3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets the bandwidth of Band3 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 3	
e	B4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets the bandwidth of Band 4 p.445	
	Gain [dB]	–18.0...+18.0	Sets the gain of Band 4	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

Comp (Compressor)

COMPRESSOR				
a	Sensitivity	1...100	Sets the sensitivity p.441	
b	Attack	1...100	Sets the attack level p.441	
c	Output Level	0...100	Sets the output level	
d	EQ Trim	0...100	Sets the EQ input level	
e	Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
f	L Wet/Dry (R Wet/Dry)	Dry,1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

Limiter

LIMITER				
a	Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
b	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
c	Attack	1...100	Sets the attack time	
d	Release	1...100	Sets the release time	
e	Gain Adjust [dB]	–Inf, –38...+24	Sets the output gain p.494	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000... C064...R127	Sets the stereo image	

Exciter

EXCITER				
a	Exciter Blend	–100...+100	Sets the intensity (depth) of the Exciter effect p.446	
b	Emphasis Point	0...70	Sets the frequency range to be emphasized p.446	
c	Trim	0...100	Sets the EQ input level	
d	Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
e	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

0D/HG (Overdrive)

OD/HI GAIN				
a	Drive Mode	Overdrive, Hi-Gain	Switches between overdrive and high-gain distortion	
	Drive	1...100	Sets the degree of distortion p.453	
b	Output Level	0...50	Sets the output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–50...+50	Sets the modulation amount of the output level	
c	Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
d	Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
e	Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

Wah

WAH				
a	Freq Bottom	0...100	Sets the lower limit of the wah center frequency p.448	
	Freq Top	0...100	Sets the upper limit of the wah center frequency p.448	
b	Sweep Mode	Auto, D-mod, LFO	Selects the control from auto-wah, modulation source, and LFO p.448	
	Src	Off...Tempo	Selects the modulation source for the wah when Sweep Mode=D-mod	D-mod
c	LFO Freq [Hz]	0.02...20.00	Sets the speed of the LFO	
d	Resonance	0...100	Sets the resonance amount	
e	Low Pass Filter	Off, On	Switches the wah low pass filter on and off	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

Cho/Flng (Chorus / Flanger)

CHORUS/FLANGER				
a	LFO Freq [Hz]	0.02...20.00	Sets the speed of the LFO	
	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
b	Delay [msec]	0.0...1350.0	Sets the delay time	
c	Depth	0...100	Sets the depth of LFO modulation	
	Feedback	–100...+100	Sets the feedback amount p.461	
d	EQ Trim	0...100	Sets the EQ input level	
e	Pre LEQ Gain [dB]	–15...+15	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15...+15	Sets the gain of High EQ	
f	L Wet/Dry (R Wet/Dry)	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

Phaser

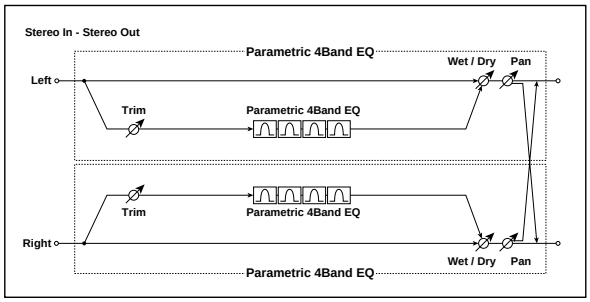
PHASER				
a	LFO Freq [Hz]	0.02...20.00	Sets the speed of the LFO	
b	LFO Waveform	Triangle, Sine	Selects the LFO Waveform	
c	Manual	0...100	Sets the frequency to which the effect is applied	
d	Depth	0...100	Sets the depth of LFO modulation	
e	Resonance	–100...+100	Sets the resonance amount p.463	
f	L Wet/Dry (R Wet/Dry)	–Wet... –1 : 99, Dry, 1 : 99...Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

BPM Dly (Multi-tap BPM Delay)

MULTITAP BPM DELAY				
a	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	iSync
	Time Over? L	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.482	
	Time Over? R	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.482	
b	Tap1 Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time for the Tap1 p.473	iSync
	Times	x1...x32	Sets the number of notes to specify the delay time for the Tap1 p.473	
c	Tap2 Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time for the Tap2 p.473	iSync
	Times	x1...x32	Sets the number of notes to specify the delay time for the Tap2 p.473	
d	Tap1 Level	0...100	Sets the Tap1 output level	
	Feedback (Tap2)	–100...+100	Sets the Tap2 feedback amount	
e	High Damp[%]	0...100	Sets the damping amount in the high range p.476	
f	L Wet/Dry (R Wet/Dry)	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	
g	L Pan (R Pan)	L000...C064... R127	Sets the stereo image	

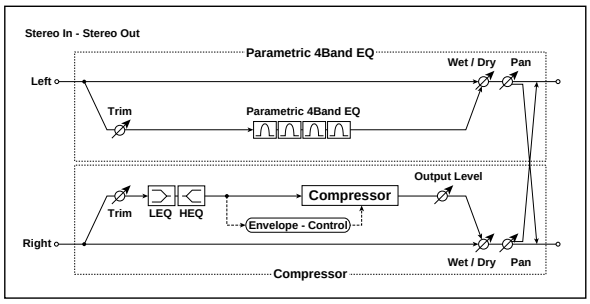
109: P4EQ // P4EQ (Parametric 4-Band EQ // Parametric 4-Band EQ)

This effect connects two four-band EQ (p.504) units in parallel.



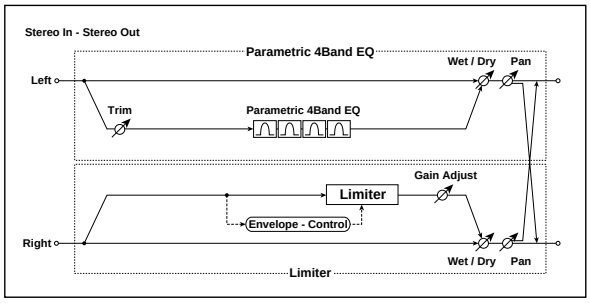
110: P4EQ // Comp (Parametric 4-Band EQ // Compressor)

This effect connects a four-band EQ (p.504) and a compressor (p.504) in parallel.



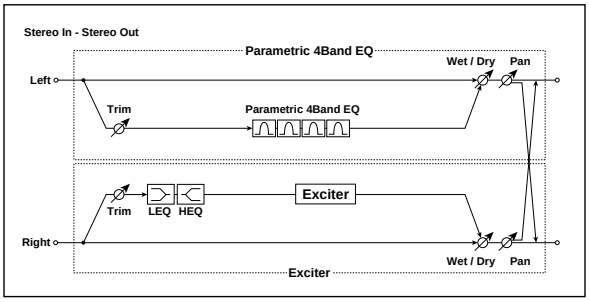
111: P4EQ // Limiter (Parametric 4-Band EQ // Limiter)

This effect connects a four-band EQ (p.504) and a limiter (p.504) in parallel.



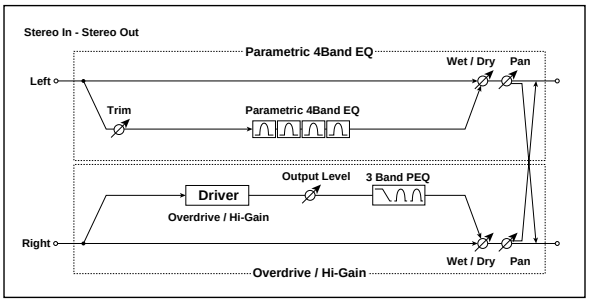
112: P4EQ // Exciter (Parametric 4-Band EQ // Exciter)

This effect connects a four-band EQ (p.504) and an exciter (p.504) in parallel.



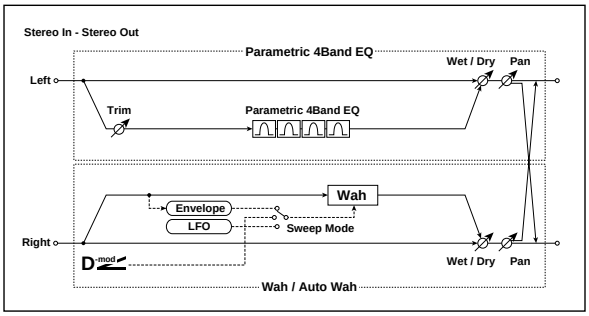
113: P4EQ // OD/HG (Parametric 4-Band EQ // Overdrive/Hi.Gain)

This effect connects a four-band EQ (p.504) and an overdrive (p.504) in parallel.



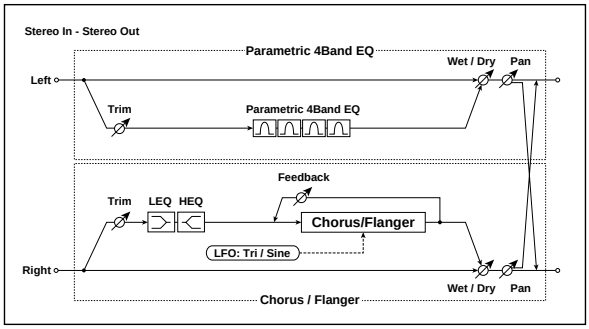
114: P4EQ // Wah (Parametric 4-Band EQ // Wah)

This effect connects a four-band EQ (p.504) and a wah (p.505) in parallel.



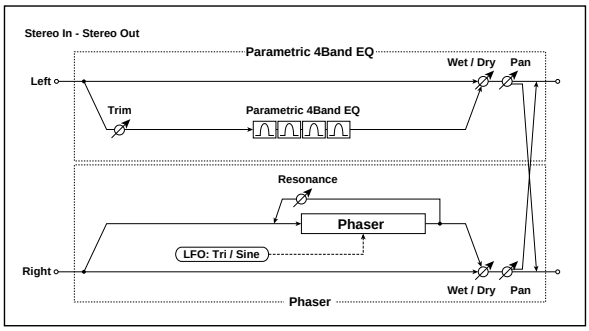
115: P4EQ // Cho/Flng (Parametric 4-Band EQ // Chorus/Flanger)

This effect connects a four-band EQ (p.504) and a chorus / flanger (p.505) in parallel.



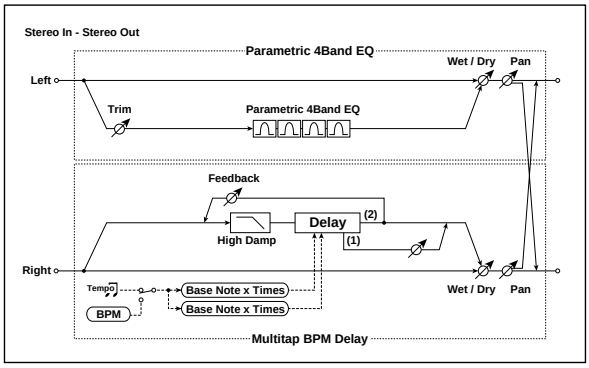
116: P4EQ // Phaser (Parametric 4-Band EQ // Phaser)

This effect connects a four-band EQ (p.504) and a phaser (p.505) in parallel.



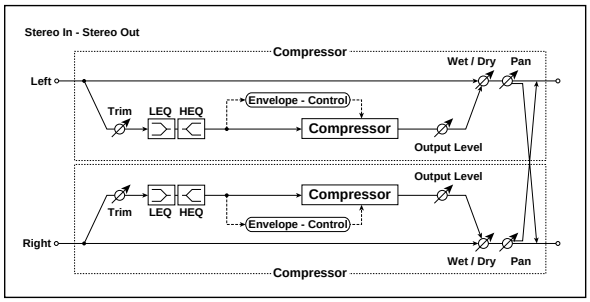
117: P4EQ // BPM Dly (Parametric 4-Band EQ // Multitap BPM Delay)

This effect connects a four-band EQ (p.504) and a multitap BPM delay (p.505) in parallel.



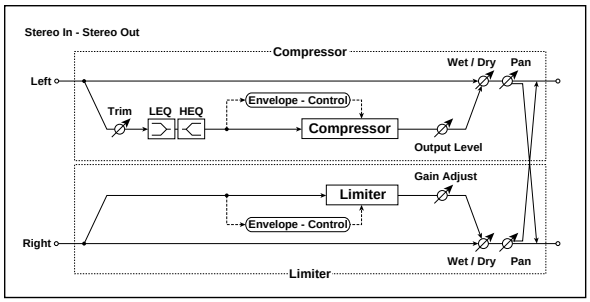
118: Comp // Comp (Compressor // Compressor)

This effect connects two compressor (p.504) units in parallel.



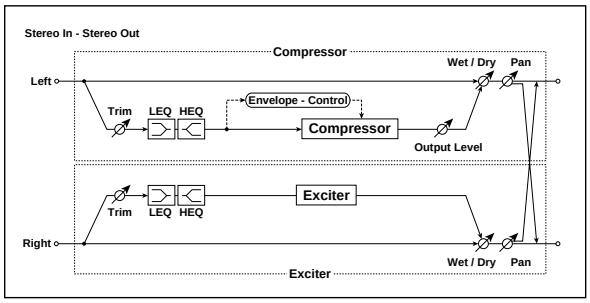
119: Comp // Limiter (Compressor // Limiter)

This effect connects a compressor (p.504) and a limiter (p.504) in parallel.



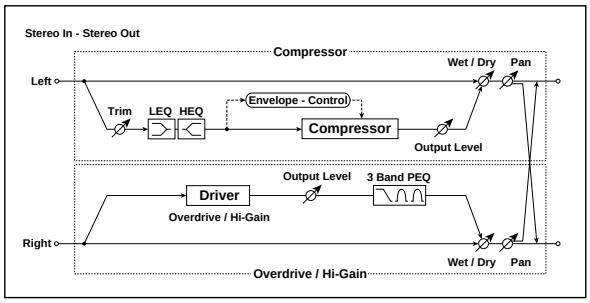
120: Comp // Exciter (Compressor // Exciter)

This effect connects a compressor (p.504) and an exciter (p.504) in parallel.



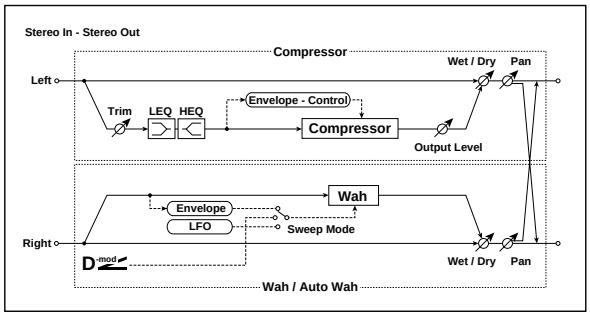
121: Comp // OD/HG (Compressor // Overdrive/Hi.Gain)

This effect connects a compressor (p.504) and an overdrive (p.504) in parallel.



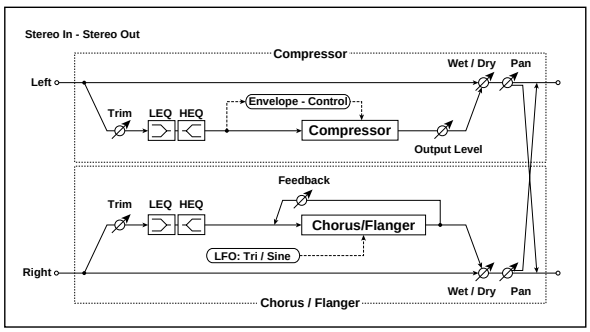
122: Comp // Wah (Compressor // Wah)

This effect connects a compressor (p.504) and a wah (p.505) in parallel.



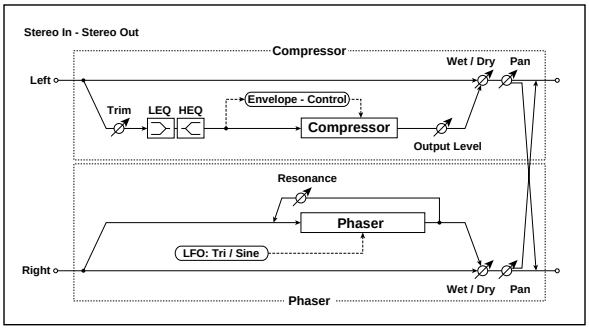
123: Comp // Cho/Flng (Compressor // Chorus/Flanger)

This effect connects a compressor (p.504) and a chorus / flanger (p.505) in parallel.



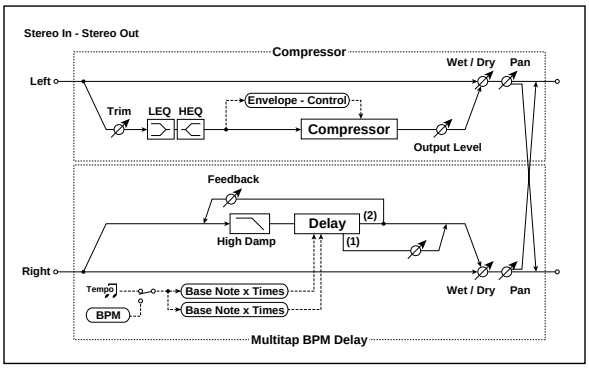
124: Comp // Phaser (Compressor // Phaser)

This effect connects a compressor (p.504) and a phaser (p.505) in parallel.



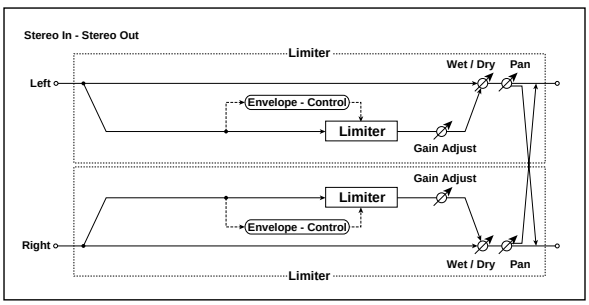
125: Comp // BPM Dly (Compressor // Multitap BPM Delay)

This effect connects a compressor (p.504) and a multitap BPM delay (p.505) in parallel.



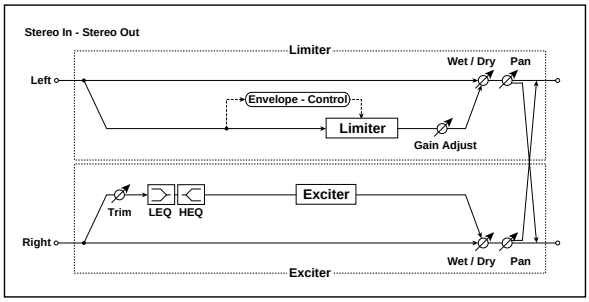
126: Limiter // Limiter

This effect connects two limiter (p.504) units in parallel.



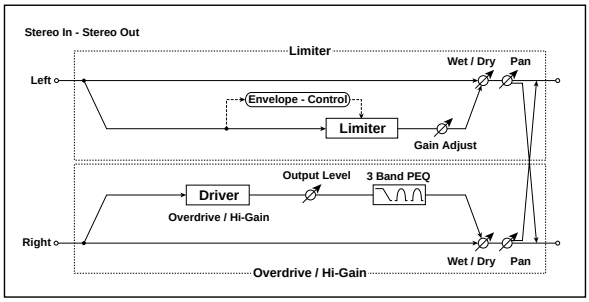
127: Limiter // Exciter

This effect connects a limiter (p.504) and an exciter (p.504) in parallel.



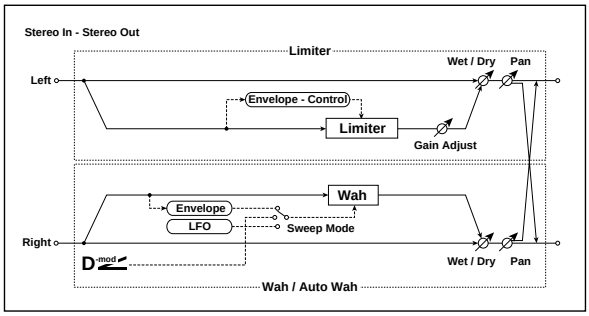
128: Limiter // OD/HG (Limiter // Overdrive/Hi.Gain)

This effect connects a limiter (p.504) and an overdrive (p.504) in parallel.



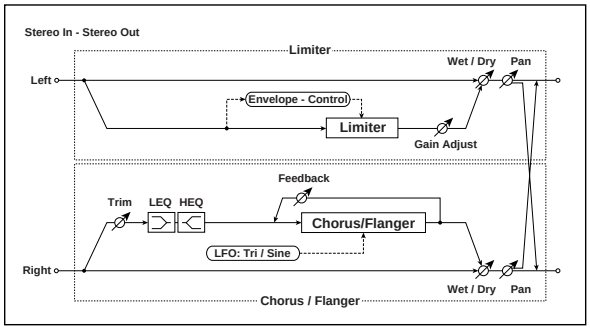
129: Limiter // Wah

This effect connects a limiter (p.504) and a wah (p.505) in parallel.



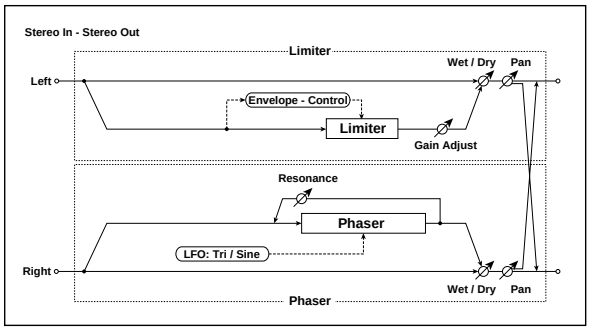
130: Limiter // Cho/Fl (Limiter // Chorus/Flanger)

This effect connects a limiter (p.504) and a chorus / flanger (p.505) in parallel.



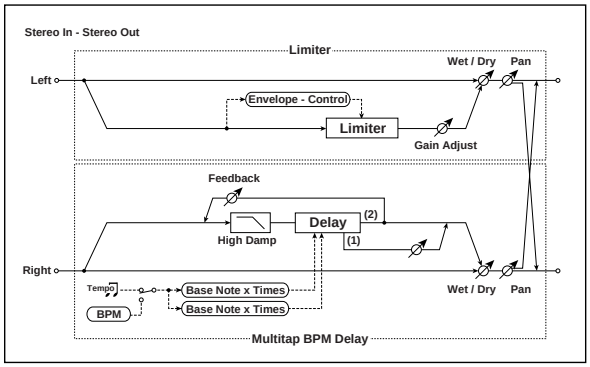
131: Limiter // Phaser

This effect connects a limiter (p.504) and a phaser (p.505) in parallel.



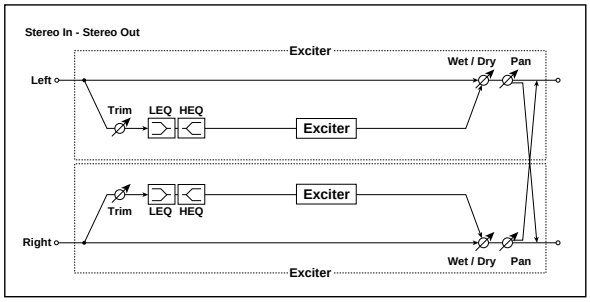
132: Limiter // BPM Dl (Limiter // Multitap BPM Delay)

This effect connects a limiter (p.504) and a multitap BPM delay (p.505) in parallel.



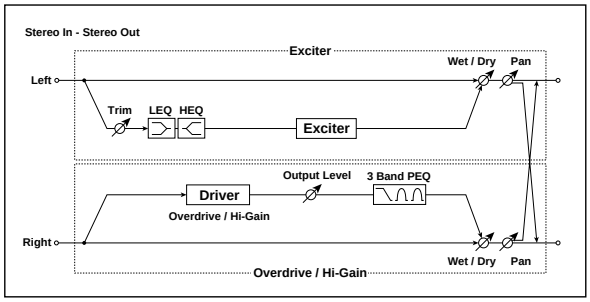
133: Exciter // Exciter

This effect connects two exciter (p.504) units in parallel.



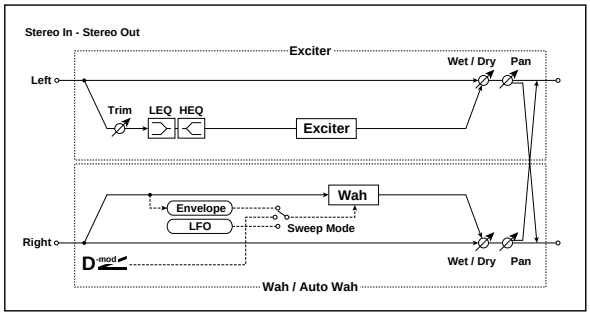
134: Exciter // OD/HG (Exciter // Overdrive/Hi.Gain)

This effect connects an exciter (p.504) and an overdrive (p.504) in parallel.



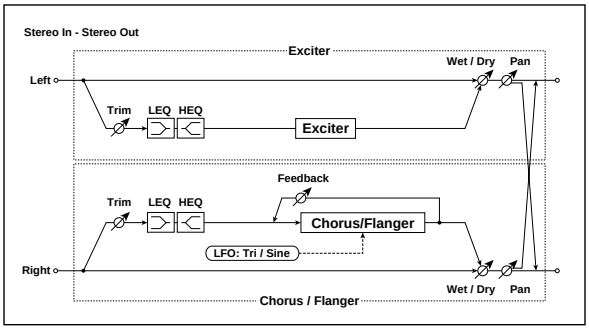
135: Exciter // Wah

This effect connects an exciter (p.504) and a wah (p.505) in parallel.



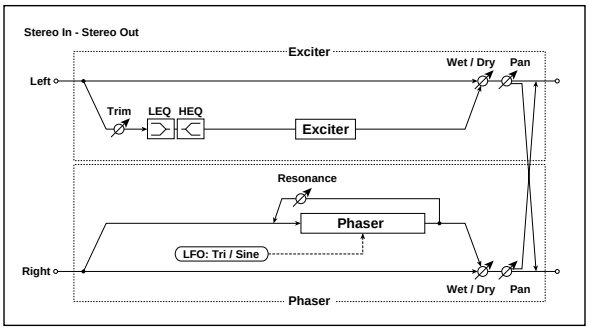
136: Exciter // Cho/Fl (Exciter // Chorus/Flanger)

This effect connects an exciter (p.504) and a chorus / flanger (p.505) in parallel.



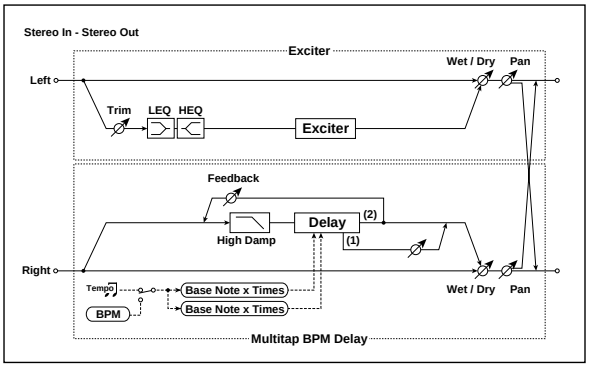
137: Exciter // Phaser

This effect connects an exciter (p.504) and a phaser (p.505) in parallel.



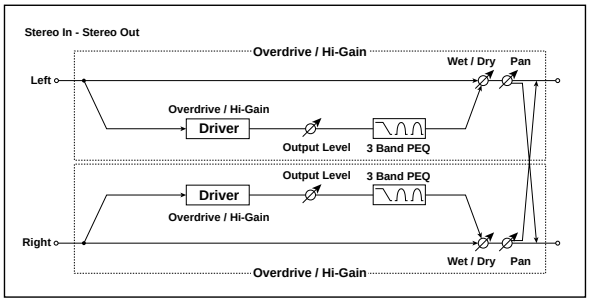
138: Exciter // BPM Dl (Exciter // Multitap BPM Delay)

This effect connects an exciter (p.504) and a multitap BPM delay (p.505) in parallel.



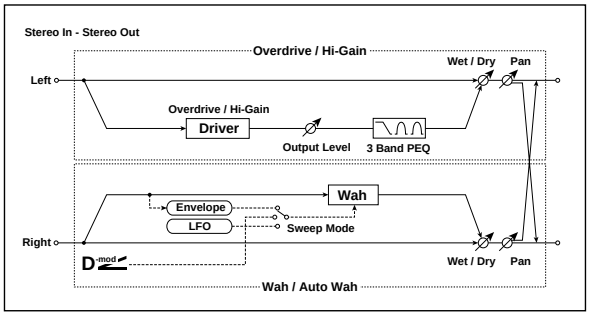
139: OD/HG // OD/HG (Overdrive/Hi.Gain // Overdrive/Hi.Gain)

This effect connects two overdrive (p.504) units in parallel.



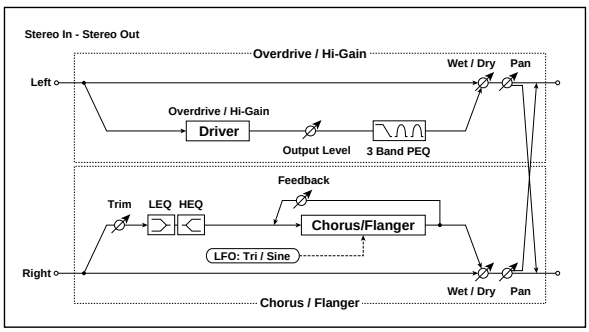
140: OD/HG // Wah (Overdrive/Hi.Gain // Wah)

This effect connects an overdrive (p.504) and a wah (p.505) in parallel.



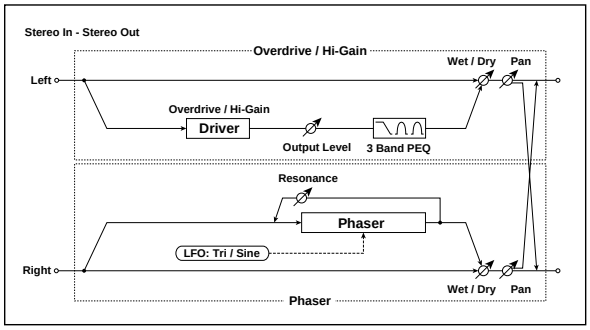
141: OD/HG // Cho/Fln (Overdrive/Hi.Gain // Chorus/Flanger)

This effect connects an overdrive (p.504) and a chorus / flanger (p.505) in parallel.



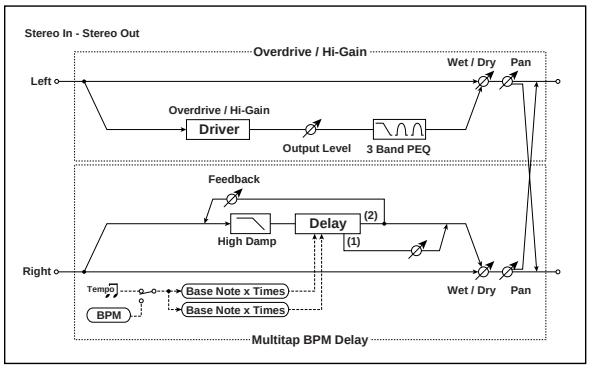
142: OD/HG // Phaser (Overdrive/Hi.Gain // Phaser)

This effect connects an overdrive (p.504) and a phaser (p.505) in parallel.



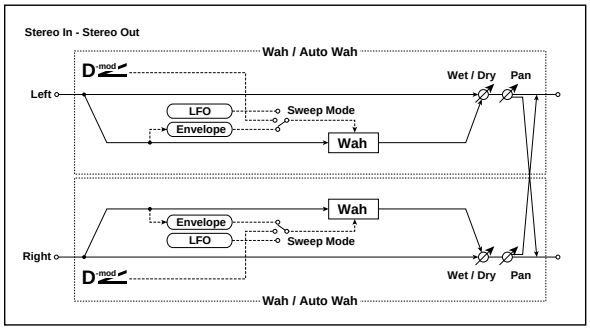
143: OD/HG // BPMDly (Overdrive/Hi.Gain // Multitap BPM Delay)

This effect connects an overdrive (p.504) and a multitap BPM delay (p.505) in parallel.



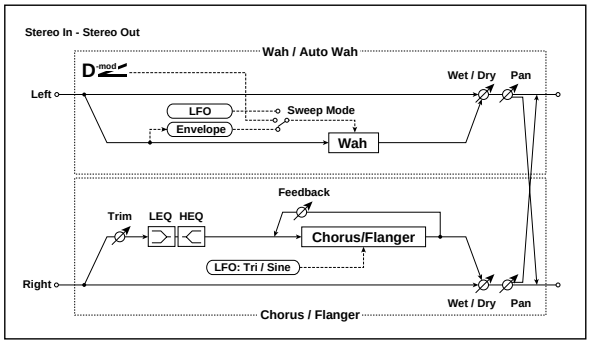
144: Wah // Wah

This effect connects two wah (p.505) units in parallel.



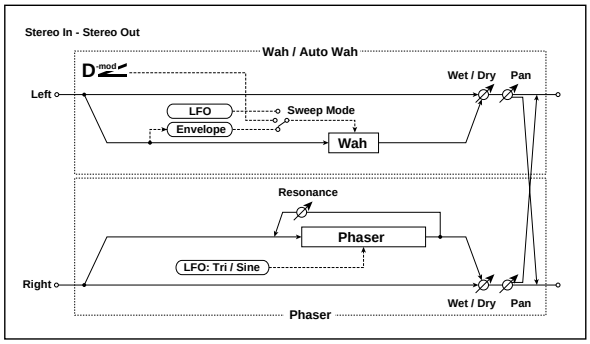
145: Wah // Cho/Flng (Wah // Chorus/Flanger)

This effect connects a wah (p.505) and a chorus / flanger (p.505) in parallel.



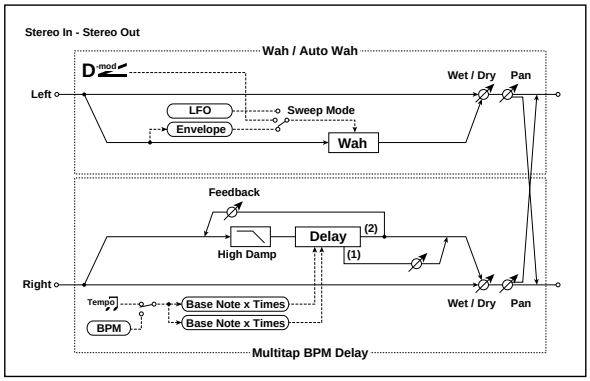
146: Wah // Phaser

This effect connects a wah (p.505) and a phaser (p.505) in parallel.



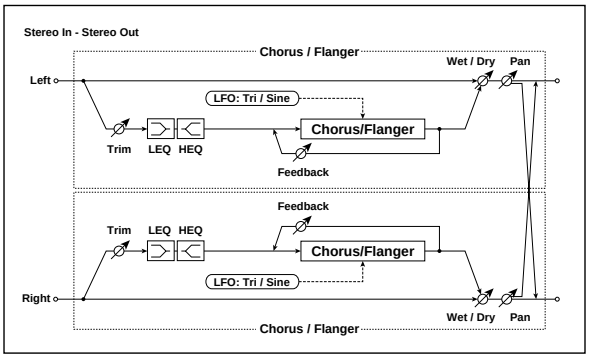
147: Wah // BPM Dly (Wah // Multitap BPM Delay)

This effect connects a wah (p.505) and a multitap BPM delay (p.505) in parallel.



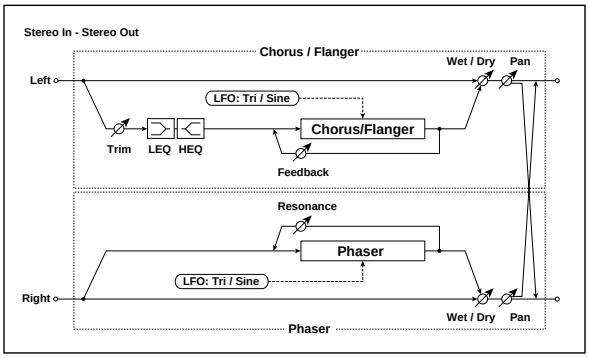
148: Cho/Fl // Cho/Fl (Chorus/Flanger // Chorus/Flanger)

This effect connects two chorus / flanger (p.505) units in parallel.



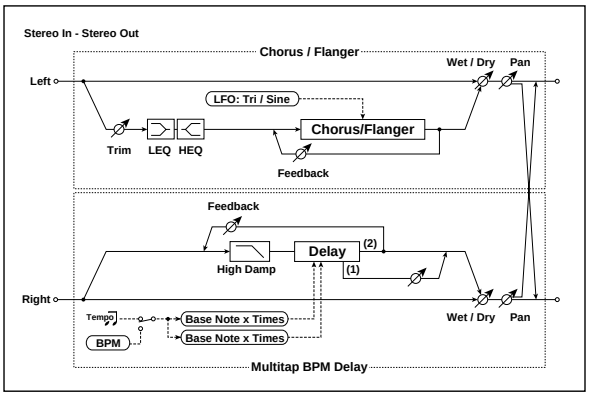
149: Cho/Fl // Phaser (Chorus/Flanger // Phaser)

This effect connects a chorus / flanger (p.505) and phaser (p.505) in parallel.



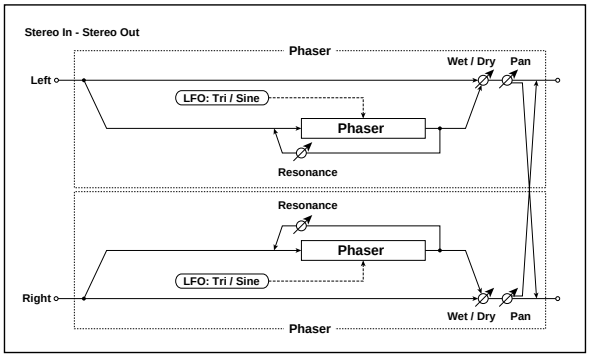
150: Cho/Fl // BPMDly (Chorus/Flanger // Multitap BPM Delay)

This effect connects a chorus / flanger (p.505) and a multitap BPM delay (p.505) in parallel.



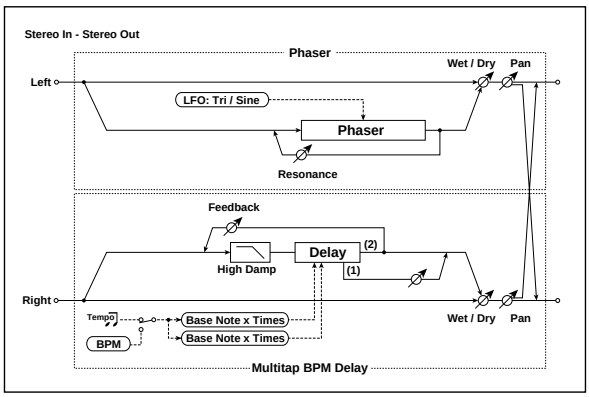
151: Phaser // Phaser

This effect connects two phaser (p.505) units in parallel.



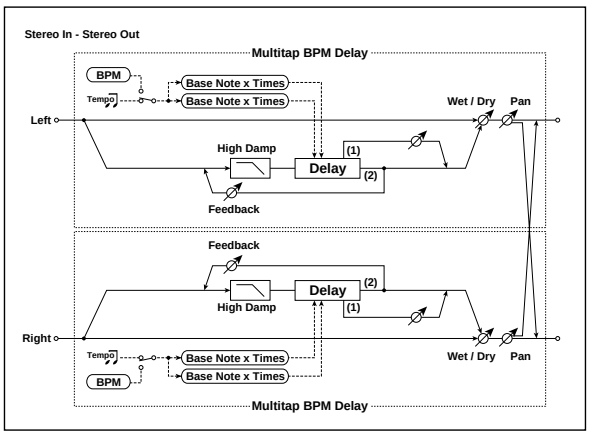
152: Phaser // BPMDly (Phaser // Multitap BPM Delay)

This effect connects a phaser (p.505) and a multitap BPM delay (p.505) in parallel.



153: BPM Dl // BPM Dl (Multitap BPM Delay // Multitap BPM Delay)

This effect connects two multitap BPM delay (p.505) units in parallel.

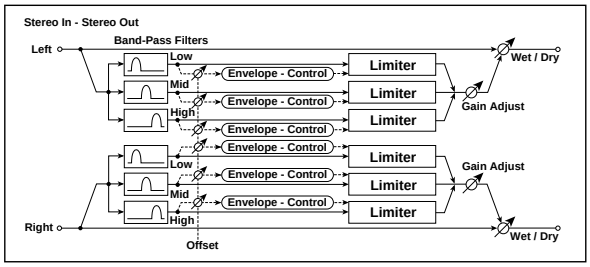


Double Size

Double-size effects can be used only with insert effects IFX1, 2, 3, 4 and master effect MFX1.

154: St. Mltband Limiter (Stereo Multiband Limiter)

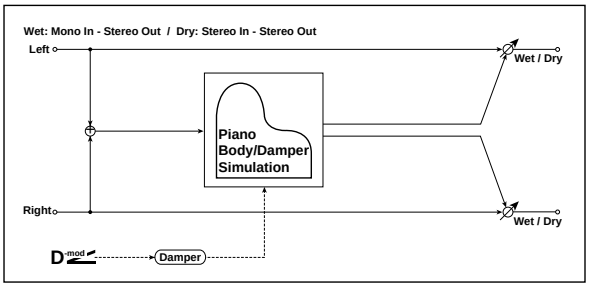
This is a stereo multiband limiter.



a	Ratio	1.0 : 1... 50.0 : 1, Inf : 1	Sets the signal compression ratio p.494	
b	Threshold [dB]	–40...0	Sets the level above which the compressor is applied p.494	
c	Attack	1...100	Sets the attack time	
d	Release	1...100	Sets the release time	
e	Low Offset [dB]	–40...0	Sets the low range gain of trigger signal p.443	
f	Mid Offset [dB]	–40...0	Sets the mid range gain of trigger signal p.443	
g	High Offset [dB]	–40...0	Sets the high range gain of trigger signal p.443	
h	Gain Adjust [dB]	–Inf, –38...+24	Sets the output gain p.494	D-mod
	Src	Off...Tempo	Selects the modulation source for the output gain	
	Amt	–63...+63	Sets the modulation amount of the output gain	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

155: PianoBody/Damper (PianoBody/Damper Simulation)

This effect simulates the resonance of the piano sound board caused by the string vibration, and also simulates the resonance of other strings that are not being played when you press the damper pedal. It will create a very realistic sound when applied to acoustic piano sounds.



a	Sound Board Depth	0...100	Sets the intensity of resonance of the sound board p.514	
b	Damper Depth	0...100	Sets the intensity of the string resonance created when the damper pedal is pressed p.514	D-mod
	Src	Off...Tempo	Selects the modulation source of damper effect p.514	
c	Tone	1...100	Sets tonal quality of effect sound p.514	
d	Mid Shape	0...36	Sets the mid range of tonal quality p.514	
e	Tune	–50...+50	Fine tuning p.514	
f	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Sound Board Depth

This parameter sets the intensity of resonance of the piano sound board.

b: Damper Depth

b: Src

This parameter sets the resonance intensity of the other strings created when the damper pedal is pressed. The **Src** parameter selects the modulation source from which the damper effect is applied. Usually, select Damper #64 Pdl (Damper pedal).

MIDI The effect is off when a value for the modulation source specified for the **Src** parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

c: Tone

d: Mid Shape

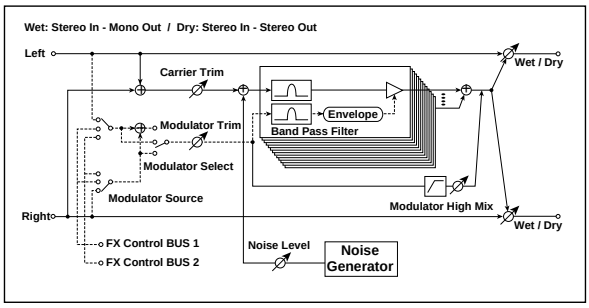
These parameters control the tonal quality of the effect sound.

e: Tune

Since this effect simulates the resonance of the strings, the sound varies depending on the pitch. If you have changed tuning using the **Master Tune** (Global P0), adjust this parameter value.

156: Vocoder

This effect applies the timbral character of a different signal (the modulator) to the input signal (the carrier).
A common use of this effect is to produce the sound of various instruments by inputting a voice to the Modulator via a microphone. A special effect is also achieved by using rhythm or effect sounds. Strings or distortion guitar sounds with a lot of harmonics are suitable as Carrier signals.



a	Carrier Trim	0...100	Sets the Carrier input level	
b	Modulator Trim	0...100	Sets the Modulator input level	
c	Modulator Source	Input, FX Control 1, FX Control 2	Selects the modulator input	
d	Modulater Select	L/R Mix, L Only, R Only	Selects whether to use the left/right mix, only left, or only right of the modulator input	
e	Formant Shift	–2...+2	Sets the height of the frequency for the vocoder effect p.515	
f	Response	0...100	Sets the speed of the response to the modulator input	
g	Noise Level	0...100	Sets the noise mix level to the Carrier p.515	D-mod
	Src	Off...Tempo	Selects the modulation source for the noise mix level	
	Amt	–100...+100	Sets the modulation amount for the noise mix level	
h	Modulator High Mix	0...100	Sets the high-range output level of the modulator p.515	
i	Low Gain [dB]	–12...+12	Sets the low-range output level of the vocoder	
	High Gain [dB]	–12...+12	Sets the high-range output level of the vocoder	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

e: Formant Shift

By offsetting the Carrier filter, you can adjust the height of the frequency range to which the vocoder effect is applied. The tonal quality will change significantly.

g: Noise Level

This parameter enables you to mix white noise with the Carrier.

h: Modulator High Mix

This parameter sets the high-range output level of the modulator sound. If the modulator is a human voice, it will make the words more clear.

Using the vocoder with microphone input

To use a voice from a microphone as a modulator:

1. Set **Modulator Source** to FX Control Bus 1.
2. Make Input settings in **Audio** (Global P0: Basic Setup).

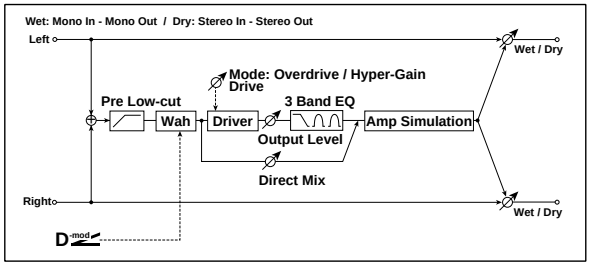
Note: If **Use Global setting** is on for a program, combination, or song, the setting made in Global will be used. If **Use Global setting** is off, and in Sampling mode, the setting for each program / combination or song, or the Sampling mode setting, will be used.

3. Connect a mic to Audio Input 1 or 2, and set the LEVEL switch to MIC.
4. Temporarily set the Bus Select to L / R for the **Audio Input** to which the mic is connected, and speak into the mic while you use the LEVEL knob to adjust the level as high as possible without allowing distortion to occur. Set **Bus Select** to Off, and set **FX Ctrk Bus Select** to 1.

With these settings, the sound from the mic will be used as the modulator. While you play, speak into the mic; it will sound as though the instrument is talking.
If the effect sound is distorted, adjust the **Carrier Trim** and **Modulator Trim**.

157: OD/HyperGain Wah (Overdrive/Hyper Gain Wah)

This distortion effect has two modes: overdrive and hyper-gain that produces a strong distortion. A higher high-gain setting is required for this effect relative to a normal-size effect.

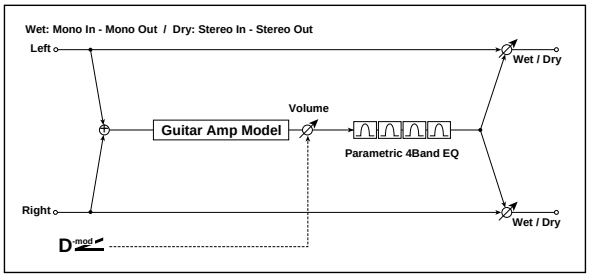


a	Wah	Off, On	Switches Wah on/off p.453	D-mod
	Src	Off...Tempo	Selects the modulation source that switches the Wah on and off p.453	
	Sw	Toggle, Moment	Selects the switching mode for the modulation source that switches the Wah on and off p.453	
b	Wah Sweep Range	–10...+10	Sets the range of Wah p.453	
	Wah Sweep Src	Off...Tempo	Selects the modulation source that controls the Wah p.453	D-mod
c	Drive Mode	Overdrive, Hyper-Gain	Switches between overdrive and hi-gain distortion	
d	Drive	1...120	Sets the degree of distortion p.453	
	Pre Low-cut	0...10	Sets the low range cut amount of the distortion input p.453	
e	Output Level	0...50	Sets the output level p.453	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–50...+50	Sets the modulation amount of the output level	
f	Low Cutoff [Hz]	20...1.00k	Sets the center frequency for Low EQ (shelving type)	
	Gain [dB]	–18...+18	Sets the gain of Low EQ	
g	Mid1 Cutoff [Hz]	300...10.00k	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 1 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 1	
h	Mid2 Cutoff [Hz]	500...20.00k	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	0.5...10.0	Sets the band width of Mid/High EQ 2 p.445	
	Gain [dB]	–18...+18	Sets the gain of Mid/High EQ 2	
i	Direct Mix	0...50	Sets the amount of the dry sound mixed to the distortion	
	Speaker Simulation	Off, On	Switches the speaker simulation on/off	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

158: GuitarAmp + P4EQ (Guitar Amp Model + Parametric 4-Band EQ)

This combines a guitar amp simulation (which even faithfully replicates the distortion and tone control circuitry) with a four-band equalizer.

By using this in conjunction with “019: St. Guitar Cabinet (Stereo Guitar Cabinet)” on p.454, you can obtain an even more realistic guitar sound that simulates a guitar amp + speaker cabinet.



a	Amp Type	VOX AC15, VOX AC15TB, VOX AC30, VOX AC30TB, UK BLUES, UK 70'S, UK 80'S, UK 90'S, UK MODERN, US MODERN, US HIGAIN, BOUTIQUE OD, BOUTIQUE CL, BLACK 2x12, TWEED - 1x12, TWEED - 4x10	Selects the type of the amplifier p.517	
	Drive Gain	0...100	Sets the input gain	
b	Volume	0...100	Sets the output level	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–100...+100	Sets the modulation amount of the output level	
c	Bass	0...100	Sets the bass (low range) level	
	Middle	0...100	Sets the middle (mid range) level	
d	Treble	0...100	Sets the treble (high range) level	
	Presence	0...100	Sets the presence (high-frequency tone) p.517	
e	Post P4EQ	Thru, On	Selects through or on for the equalizer p.517	
f	Band1 Cutoff [Hz]	20...1.00k	Sets the center frequency of Band 1	
	Q	0.5...10.0	Sets Band 1's bandwidth	
	Gain [dB]	–18...+18	Sets the gain of Band 1	
g	Band2 Cutoff [Hz]	50...5.00k	Sets the center frequency of Band 2	
	Q	0.5...10.0	Sets Band 2's bandwidth	
	Gain [dB]	–18...+18	Sets the gain of Band 2	
h	Band3 Cutoff [Hz]	300...10.00k	Sets the center frequency of Band 3	
	Q	0.5...10.0	Sets Band 3's bandwidth	
	Gain [dB]	–18...+18	Sets the gain of Band 3	
i	Band4 Cutoff [Hz]	500...20.00k	Sets the center frequency of Band 4	
	Q	0.5...10.0	Sets Band 4's bandwidth	
	Gain [dB]	–18...+18	Sets the gain of Band 4	

j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Amp Type
d: Presence

If the Amp Type is VOX AC15...VOX AC30TB, this sets the attenuation of the high-frequency range. For other types, this sets the boost of the high-frequency range.
This corresponds to the Cut knob control of amps made by the VOX Corporation.

e: Post P4EQ

By chaining this with 19: St.Guitar Cabinet you can simulate the combination of a guitar amp and speaker cabinet. In this case, we recommend that you set **Post P4EQ** to "Thru," but if necessary you can turn it "On" and adjust the tone.

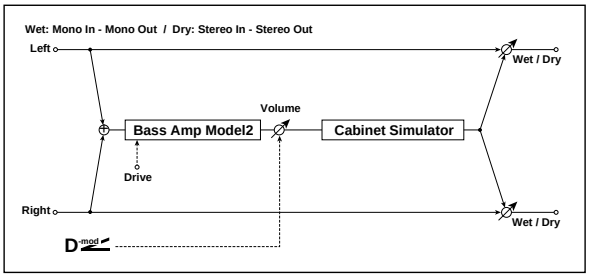
Recommended Combinations of Guitar Amp Models and Cabinet Simulators:

Amp Type	Cabinet Type
VOX AC15	VOX AC15 - 1x12
VOX AC15TB	VOX AC15 - 1x12
VOX AC30	VOX AC30 - 2x12
VOX AC30TB	VOX AC30 - 2x12
UK BLUES	UK H30 - 4x12
UK 70'S	UK H30 - 4x12
UK 80'S	UK T75 - 4x12
UK 90'S	UK T75 - 4x12
UK MODERN	UK T75 - 4x12, US V30 - 4x12
US MODERN	US V30 - 4x12
US HIGAIN	US V30 - 4x12, UK T75 - 4x12
BOUTIQUE OD	UK H30 - 4x12
BOUTIQUE CL	UK H30 - 4x12
BLACK 2x12	BLACK - 2x12
TWEED - 1x12	TWEED - 1x12
TWEED - 4x10	TWEED - 4x10

Note: It is convenient to use the Effect Preset function to preset your favorite pairings of amp model and cabinet. (☞p.101)

159: BassTubeAmp+Cab. (Bass Tube Amp Model + Cabinet)

This simulates a bass amp (with gain and drive) and speaker cabinet.



a	Amp Type	STUDIO COMBO VOX AC100 UK MAJOR	Selects the type of the amplifier p.517 A tube combo ideal for the Motown sound A 100W tube amp AC100 made by Vox A 200W tube amp made in the UK	
b	Drive Gain	0...100	Sets the input gain	
c	Volume	0...100	Sets the output level	D-mod
	Src	Off...Tempo	Selects the modulation source for the output level	
	Amt	–100...+100	Sets the modulation amount of the output level	
d	Bass	0...100	Sets the bass (low range) level	
e	Middle	0...100	Sets the middle (mid range) level	
f	Treble	0...100	Sets the treble (high range) level	
g	Presence	0...100	Sets the presence (high-frequency tone)	
h	Cabinet Simulator	Off, On	Switches the cabinet simulator on/off	
i	Cabinet Type	LA - 4x10, MODERN - 4x10, METAL - 4x10, CLASSIC -8x10, UK - 4x12, STUDIO - 1x15, JAZZ - 1x15, VOX AC100 - 2x15, US - 2x15, UK - 4x15, LA - 1x18, COMBI - 1x12 & 1x18	Selects the cabinet type p.455, p.517	
j	Wet/Dry	Dry, 1 : 99...99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Amp Type
i: Cabinet Type

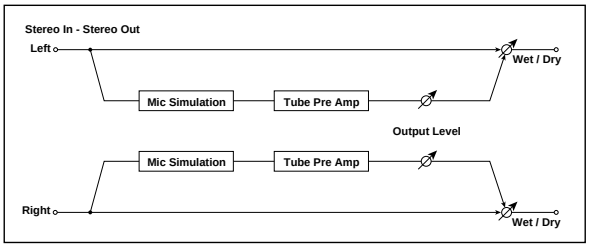
Recommended Combinations of Bass Amp Models and Cabinets:

Amp Type	Cabinet Type
STUDIO COMBO	STUDIO - 1x15
AC100	VOX AC100 - 2x15
UK MAJOR	UK - 4x15, UK - 4x12

Note: It is convenient to use the Effect Preset function to preset your favorite pairings of amp model and cabinet. (☞p.101)

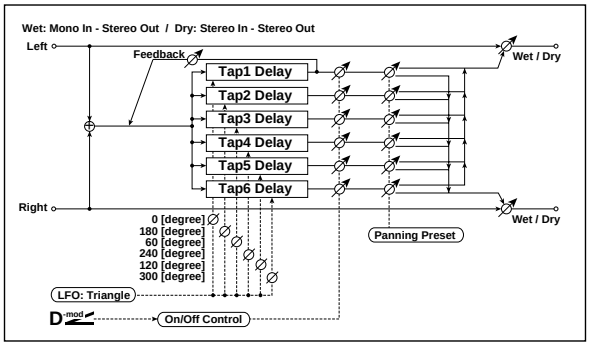
160: St. Mic + PreAmp (Stereo Mic Modeling + PreAmp)

This is a stereo mic and preamp simulator (see p.457, 025: Mic Model+PreAmp (Mic Modeling + PreAmp)). For example you might use this to simulate micing of a stereo source such as a rotary speaker.



161: Multitap Cho/Delay (Multitap Chorus/Delay)

This effect has six chorus blocks with different LFO phases. You can produce a complex stereo image by setting a different delay time and depth for each block. You can control the delay output level via a modulation source.



a	LFO Frequency [Hz]	0.02...13.00	Sets the speed of the LFO	
b	Tap1 (000) [msec]	0...2000	Sets the Tap1 (LFO phase=0 degrees) delay time	
	Depth	0...30	Sets the Tap1 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap1 output p.518	
c	Tap2 (180) [msec]	0...2000	Sets the Tap2 (LFO phase=180 degrees) delay time	
	Depth	0...30	Sets the Tap2 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap2 output p.518	
d	Tap3 (060) [msec]	0...2000	Sets the Tap3 (LFO phase=60 degrees) delay time	
	Depth	0...30	Sets the Tap3 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap3 output p.518	
e	Tap4 (240) [msec]	0...2000	Sets the Tap4 (LFO phase=240 degrees) delay time	
	Depth	0...30	Sets the Tap4 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap4 output p.518	
f	Tap5 (120) [msec]	0...2000	Sets the Tap5 (LFO phase=120 degrees) delay time	
	Depth	0...30	Sets the Tap5 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap5 output p.518	
g	Tap6 (300) [msec]	0...2000	Sets the Tap1 (LFO phase=300 degrees) delay time	
	Depth	0...30	Sets the Tap6 chorus depth	
	Status	Always On, Always Off, On→Off (Dm), Off→On (Dm)	Selects on, off, or modulation source for the control of Tap6 output p.518	
h	Panning Preset	1:L123456R, 2:L135246R, 3:L135246R, 4:L145632R	Selects the stereo panning pattern for each tap p.518	
i	Tap1 Feedback	–100...+100	Sets the Tap1 feedback amount	D-mod
	Src	Off...Tempo	Selects the modulation source for the Tap output level, feedback amount, and effect balance	
	Amt	–100...+100	Sets the modulation amount of Tap1 feedback amount	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

b, c, d, e, f, g: Status

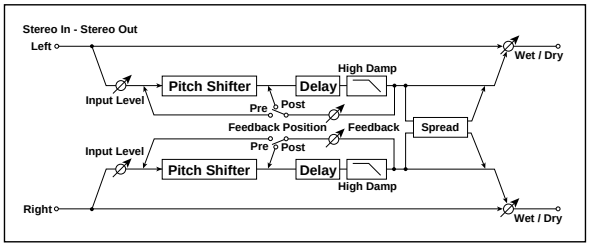
These parameters set the output status of each Tap.
Always On: Output is always on. (No modulation)
Always Off: Output is always off. (No modulation)
On→Off (dm): Output level is switched from on to off depending on the modulation source.
Off→On (dm): Output level is switched from off to on depending on the modulation source.
Combining these parameters, you can change from 4-phase chorus to two-tap delay by crossfading them gradually via the modulation source during a performance.

h: Panning Preset

This parameter selects combinations of stereo images of the tap outputs.

162: St. Pitch Shifter (Stereo Pitch Shifter)

This is a stereo pitch shifter. The pitch shift amount for the left and right channels can be reversed from each other.



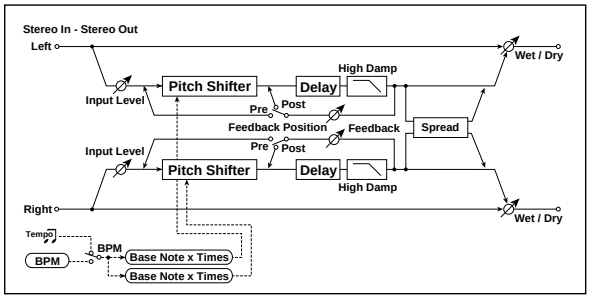
a	Mode	Slow, Medium, Fast	Switches Pitch Shifter mode p.475	
	L/R Pitch	Normal, Up/Down	Determines whether or not the L/R pitch shift amount is inverted p.519	
b	Pitch Shift [1/2tone]	–24...+24	Sets the pitch shift amount in steps of a semitone p.473	D-mod
	Src	Off...Tempo	Selects the modulation source of pitch shift amount p.473	
	Amt	–24...+24	Sets the modulation amount of pitch shift amount p.473	
c	Fine [cents]	–100...+100	Sets the pitch shift amount in steps of one cent p.473	D-mod
	Amt	–100...+100	Sets the modulation amount of pitch shift amount p.473	
d	L Delay [msec]	0...2000	Sets the delay time for the left channel	
e	R Delay [msec]	0...2000	Sets the delay time for the right channel	
f	Feedback	–100...+100	Sets the feedback amount p.473	
	High Damp [%]	0...100	Sets the damping amount in the high range	
g	Feedback Position	Pre, Post	Switches the feedback connection p.473	
	Spread	–100...+100	Sets the width of the stereo image of the effect sound p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: L/R Pitch

When you select Up / Down for this parameter, the pitch shift amount for the right channel will be reversed. If the pitch shift amount is positive, the pitch of the left channel is raised, and the pitch of the right channel is lowered.

163: St. PitchShift BPM (Stereo Pitch Shifter BPM)

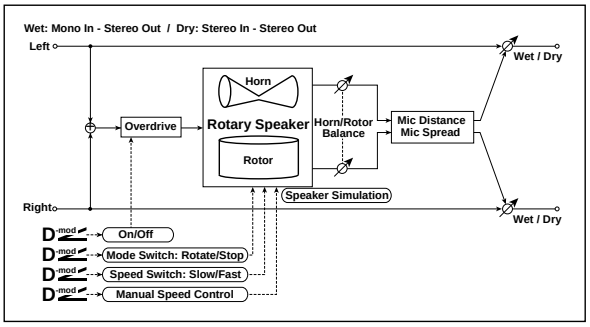
This stereo pitch shifter enables you to set the delay time to match the song tempo.



a	Mode	Slow, Medium, Fast	Switches Pitch Shifter mode p.473	
	L/R Pitch	Normal, Up/Down	Determines whether or not the L/R pitch shift amount is inverted p.519	
b	Pitch Shift [1/2tone]	–24...+24	Sets the pitch shift amount in steps of a semitone p.473	D-mod
	Src	Off...Tempo	Selects the modulation source of pitch shift amount p.473	
	Amt	–24...+24	Sets the modulation amount of pitch shift amount p.473	
c	Fine [cents]	–100...+100	Sets the pitch shift amount in steps of one cent p.473	D-mod
	Amt	–100...+100	Sets the modulation amount of pitch shift amount Sets the modulation amount of pitch shift amount p.473	
d	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	tSync
	Time Over? L	---, OVER!	Display the error message if the left channel delay time exceeds the upper limit p.473	
	R	---, OVER!	Display the error message if the right channel delay time exceeds the upper limit p.473	
e	L Delay Base Note	𝅘𝅥𝅯..𝅝	Selects the type of notes to specify the left channel delay time p.473	tSync
	Times	x1...x32	Sets the number of notes to specify the left channel delay time p.473	
f	R Delay Base Note	𝅘𝅥𝅯..𝅝	Selects the type of notes to specify the right channel delay time p.473	tSync
	Times	x1...x32	Sets the number of notes to specify the right channel delay time p.473	
g	Feedback Position	Pre, Post	Switches the feedback connection p.473	
	Spread	–100...+100	Sets the width of the stereo image of the effect sound	
h	Feedback	–100...+100	Sets the feedback amount p.473	
	High Damp [%]	0...100	Sets the damping amount in the high range	
i	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

164: Rotary SpeakerOD (Rotary Speaker Overdrive)

This is a stereo rotary speaker effect. It has an internal speaker simulator that simulates overdrive (recreating the amp distortion) and characteristics of the rotary speaker, producing a very realistic rotary speaker sound.



a	Overdrive	Off, On	Switches overdrive on/off	
	Src	Off...Tempo	Selects a modulation source to switch overdrive on/off	
	Sw	Toggle, Moment	Sets the switch mode for overdrive on/off modulation p.520	
b	Overdrive Gain	0...100	Determines the degree of distortion	
	Overdrive Level	0...100	Sets the overdrive output level	
c	Overdrive Tone	0...15	Sets the tonal quality of the overdrive	
	Speaker Simulator	Off, On	Switches the speaker simulation on/off	
d	Mode Switch	Rotate, Stop	Switches between speaker rotation and stop	D-mod
	Src	Off...Tempo	Selects a modulation source for Rotate/Stop	
	Sw	Toggle, Moment	Sets the switch mode for Rotate/Stop modulation p.475	
e	Speed Switch	Slow, Fast	Switches the speaker rotation speed between slow and fast	D-mod
	Src	Off...Tempo	Selects a modulation source for Slow/Fast	
	Sw	Toggle, Moment	Sets the switch mode for Slow/Fast modulation p.475	
f	Horn/Rotor Balance	Rotor, 1...99, Horn	Sets the volume balance between the high-range horn and low-range rotor	
	Manual SpeedCtrl	Off...Tempo	Sets a modulation source for direct control of rotation speed p.475	D-mod
g	Horn Acceleration	0...100	Sets how quickly the horn rotation speed changes p.475	
	Horn Ratio	Stop, 0.50...2.00	Adjusts the (high-frequency) horn rotation speed. Standard value is 1.00. "Stop" stops the rotation	
h	Rotor Acceleration	0...100	Sets how quickly the rotor speed changes p.475	
	Rotor Ratio	Stop, 0.50...2.00	Adjusts the (low-frequency) rotor rotation speed. Standard value is 1.0. "Stop" stops the rotation	
i	Mic Distance	0...100	Distance between the microphone and rotary speaker p.475	
	Mic Spread	0...100	Angle of left and right microphones p.475	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Sw

This parameter determines how to switch on / off the overdrive via a modulation source.
When **Sw** = Toggle, overdrive is turned on / off each time the pedal or joystick is operated.

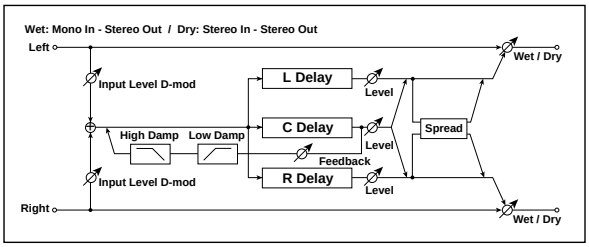
MIDI Overdrive will be switched on / off each time the value of the modulation source exceeds 64.

When **Sw** = Moment, overdrive is applied only when you press the pedal or operate the joystick.

MIDI Only when the value for the modulation source is 64 or higher, the overdrive effect is applied.

165: L/C/R Long Delay

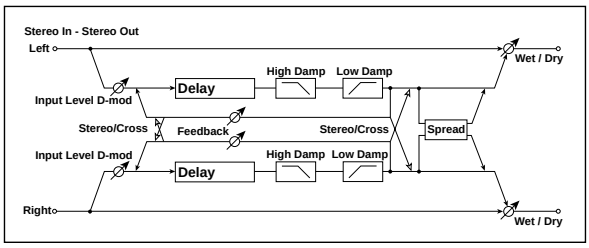
This multitap delay outputs three Tap signals to left, right and center respectively. You can set a maximum of 5,460msec for the delay time.



a	L Delay Time [msec]	0...5460	Sets the delay time of TapL	
	Level	0...50	Sets the output level of TapL	
b	C Delay Time [msec]	0...5460	Sets the delay time of TapC	
	Level	0...50	Sets the output level of TapC	
c	R Delay Time [msec]	0...5460	Sets the delay time of TapR	
	Level	0...50	Sets the output level of TapR	
d	Feedback (C Delay)	–100...+100	Sets the feedback amount of TapC	D-mod
	Src	Off...Tempo	Selects the modulation source for the TapC feedback	
	Amt	–100...+100	Sets the modulation amount of the TapC feedback	
e	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
f	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
g	Spread	0...50	Sets the width of the stereo image of the effect sound p.476	
h	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

166: St/Cross Long Delay (Stereo/Cross Long Delay)

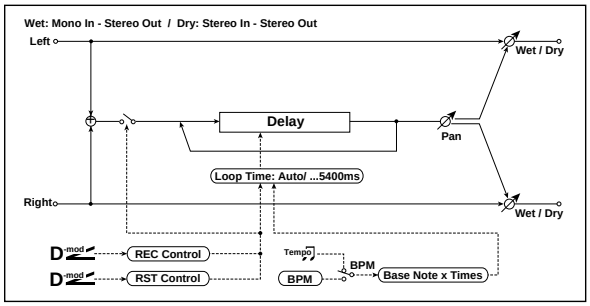
This is a stereo delay, and can by used as a cross-feedback delay effect in which the delay sounds cross over between left and right by changing the feedback routing. You can set a maximum of 2,730msec for the delay time.



a	Stereo/Cross	Stereo, Cross	Switches between stereo delay and cross-feedback delay	
b	L Delay Time [msec]	0.0...2730.0	Sets the delay time for the left channel	
c	R Delay Time [msec]	0.0...2730.0	Sets the delay time for the right channel	
d	L Feedback	–100...+100	Sets the feedback amount for the left channel	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	Amt	–100...+100	Sets the modulation amount of the left channel feedback	
e	R Feedback	–100...+100	Sets the feedback amount for the right channel	D-mod
	Amt	–100...+100	Sets the modulation amount of the right channel feedback	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Spread	–50...+50	Sets the width of the stereo image of the effect sound p.476	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

167: Hold Delay

This effect records the input signal and plays it back repeatedly. You can control the start of recording and reset via a modulation source. Easy to use for real-time performances.



a	Loop Time [msec]	Auto, 1...10800	Sets Automatic loop time setup mode or specifies loop time p.521	
b	Loop BPM Sync	Off, On	Specifies whether delay time is set in milliseconds, or as a note value relative to tempo p.522	Sync
c	BPM	MIDI, 40.00... 300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.522	
	Time Over?	---, OVER!	An error indication that appears if delay time exceeds the upper limit when MIDI/Tempo Sync=On	
d	Loop Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the delay time p.522	
	Times	x1...x32	Sets the number of notes to specify the delay time p.522	
e	REC Control Src	Off...Tempo	Selects control source for recording p.522	D-mod
f	RST Control Src	Off...Tempo	Selects control source for reset p.522	D-mod
g	Manual REC Control	REC Off, REC On	Sets the recording switch p.522	
h	Manual RST Control	Off, RESET	Sets the reset switch p.522	
i	Pan	L100...L1, C, R1...R100	Sets the stereo image of the effect	D-mod
	Src	Off...Tempo	Selects the modulation source of stereo image of the effect	
	Amt	–100...+100	Sets the modulation amount of stereo image of the effect	
j	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Loop Time [msec]

With Auto, the loop time is automatically set. Otherwise, you can specify the loop time.
When Auto is selected, the Loop Time is automatically set to the time it takes for a performance recorded while the Modulation Source or **Manual REC Control** is on. However, if the time length exceeds 10,800msec, the loop time will be automatically set to 10,800msec.

c: Time Over?

You can set the delay time up to 10,800msec. If the delay time exceeds this limit, the error message “OVER!” appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

b: Loop BPM Sync
c: BPM
d: Loop Base Note
d: Times

If **Loop BPM Sync** is on, the **Times** setting is ignored; the loop time is determined by **BPM**, **Loop Base Note**, and **Times**. Even in this case, the delay time cannot exceed 10,800 msec.

"Hold" procedure (when Loop Time = Auto)

1. "**Rec Src**" JS +Y: #01
   "**Reset Src**" JS –Y: #02
   "**Manual REC Control**" REC Off
   "**Manual RST Control**" RESET
   "**Loop Time [msec]**" Auto
   "**MIDI/Tempo Sync**" Off
   It should be noted that all recordings will be deleted while Reset is On.
2. "**Manual RST Control**" Off
   Reset is cancelled and the unit enters Rec ready mode.
3. Push the joystick in the +Y direction (forward) and play a phrase you wish to hold. When you pull the joystick to its original position, the recording will be finished and the phrase you just played will be held.
   Loop Time is automatically set only for the first recording after resetting. If the time length exceeds 10,800msec, Loop Time will be automatically set to 10,800msec. (If you have set **Times** to 1–10,800msec, the specified loop time will be used regardless of the time taken from pushing the joystick forward until it is pulled back. However, the recording method remains the same. The phrase being played while the joystick is pushed forward will be held.)
4. If you made a mistake during recording, pull the joystick in the –Y direction (back) to reset. In this way, the recording will be erased. Repeat step 3. again.
5. The recorded phrase will be repeated again and again. You can use this to create an accompaniment.
6. By pushing the joystick in the +Y direction (forward), you can also overdub performances over the phrase that is being held.

e: REC Control Src
g: Manual REC Control

REC Control Src selects the modulation source that controls recording.
If this modulation is on, or if **Manual REC Control** is set to On, you can record the input signal. If a recording has already been carried out, additional signals will be overdubbed.

MIDI The effect is off when a value for the modulation source specified for the **REC Control Src** parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

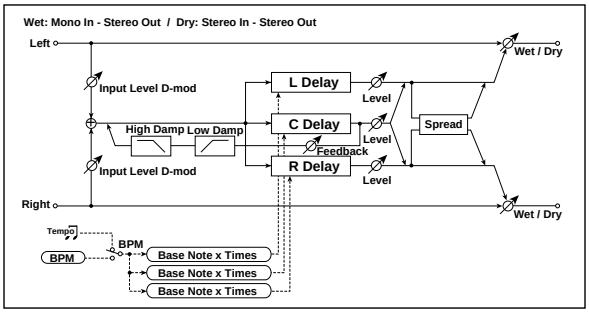
f: RST Control Src
h: Manual RST Control

The **RST Control Src** parameter specifies the modulation source that controls the reset operation.
When you set this modulation source to On, or **Manual RST Control** to RESET, you can erase what you recorded. If the Loop Time parameter has been set to Auto, the loop time is also reset.

MIDI The effect is off when a value for the modulation source specified for the **RST Control Src** parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

168: LCR BPM Long Dly (L/C/R BPM Long Delay)

The L / C / R delay enables you to match the delay time with the song tempo.



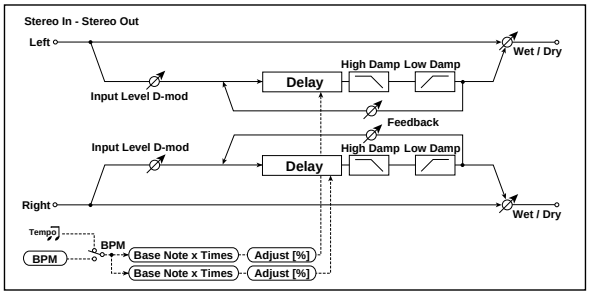
a	BPM	MIDI, 40.00...300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over?	---, OVER!	Displays an error message when the delay time exceeds the upper limit p.522	
b	L Delay Base Note	𝅘𝅥𝅯..., 𝅝	Selects the type of notes to specify the delay time for TapL p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapL p.473	
	Level	0...50	Sets the output level of TapL	
c	C Delay Base Note	𝅘𝅥𝅯..., 𝅝	elects the type of notes to specify the delay time for TapC p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapC p.473	
	Level	0...50	Sets the output level of TapC	
d	R Delay Base Note	𝅘𝅥𝅯..., 𝅝	Selects the type of notes to specify the delay time for TapR p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the delay time for TapR p.473	
	Level	0...50	Sets the output level of TapR	
e	Feedback (C Delay)	–100...+100	Sets the feedback amount of TapC	D-mod
	Src	Off...Tempo	Selects the modulation source for the TapC feedback	
	Amt	–100...+100	Sets the modulation amount of the TapC feedback	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
g	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
h	Spread	0...50	Sets the width of the stereo image of the effect sound p.476	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Time Over?

You can set the delay time up to 10,920msec. If the delay time exceeds this limit, the error message "OVER!" appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

169: St. BPM Long Dly (Stereo BPM Long Delay)

The stereo delay enables you to match the delay time with the song tempo.



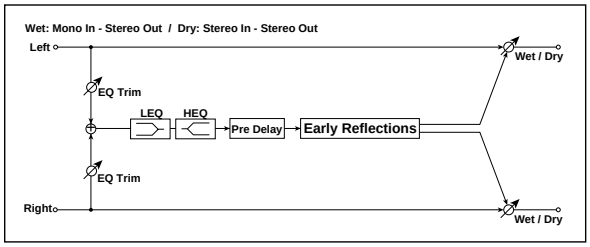
a	BPM	MIDI, 40.00...300.00	MIDI syncs to the system tempo; 40–300 sets the tempo manually for this individual effect p.473	Sync
	Time Over? L	---, OVER!	Display the error message if the left channel delay time exceeds the upper limit p.523	
	R	---, OVER!	Display the error message if the right channel delay time exceeds the upper limit p.522	
b	L Delay Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the left channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the left channel delay time p.473	
	Adjust [%]	–2.50...+2.50	Fine-adjust the left channel delay time	
c	R Delay Base Note	𝅘𝅥𝅯...𝅝	Selects the type of notes to specify the right channel delay time p.473	Sync
	Times	x1...x32	Sets the number of notes to specify the right channel delay time p.473	
	Adjust [%]	–2.50...+2.50	Fine-adjust the right channel delay time	
d	L Feedback	–100...+100	Sets the feedback amount for the left channel	D-mod
	Src	Off...Tempo	Selects the modulation source of feedback amount	
	L Amt	–100...+100	Sets the modulation amount of the left channel feedback	
e	R Feedback	–100...+100	Sets the feedback amount for the right channel	D-mod
	R Amt	–100...+100	Sets the modulation amount of the right channel feedback	
f	High Damp [%]	0...100	Sets the damping amount in the high range p.476	
g	Low Damp [%]	0...100	Sets the damping amount in the low range p.476	
h	Input Level Dmod [%]	–100...+100	Sets the modulation amount of the input level p.472	D-mod
	Src	Off...Tempo	Selects the modulation source for the input level p.472	
i	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

a: Time Over? L, R

You can set the delay time up to 5,460msec. If the delay time exceeds this limit, the error message "OVER!" appears in the display. Set the delay time parameters so that this message will not appear. **Time Over?** is only a display parameter.

170: Early Reflections

This early reflection effect has more precise early reflections with twice the maximum length of a normal-size effect (see p.487, 076: Early Reflections). You can create a very smooth and dense sound.



a	Type	Sharp, Loose, Modulated, Reverse	Selects the decay curve for the early reflection p.487	
b	ER Time [msec]	10...1600	Sets the time length of early reflection	
c	Pre Delay [msec]	0...200	Sets the time taken from the original sound to the first early reflection	
d	EQ Trim	0...100	Sets the input level of EQ applied to the effect sound	
e	Pre LEQ Fc	Low, Mid-Low	Selects the cutoff frequency (low or mid-low) of the low-range equalizer	
	Pre HEQ Fc	High, Mid-High	Selects the cutoff frequency (high or mid-high) of the high-range equalizer	
f	Pre LEQ Gain [dB]	–15.0...+15.0	Sets the gain of Low EQ	
	Pre HEQ Gain [dB]	–15.0...+15.0	Sets the gain of High EQ	
g	Wet/Dry	Dry, 1 : 99... 99 : 1, Wet	Sets the balance between the effect and the dry input	D-mod
	Src	Off...Tempo	Selects a modulation source for Wet/Dry	
	Amt	–100...+100	Sets the modulation amount for Wet/Dry	

KARMA GE guide

About the KARMA GE guide

This section of the manual explains the GE parameters of the KARMA function built into the M3, organized according to the groups that make up the Generated Effects.

The M3 provides **more than two thousand preset GEs (Generated Effects)**. For each GE, up to thirty-two of the more than four hundred internal GE parameters have been selected for optimal control from the M3.

The GE parameters and ranges that can be controlled will differ for each GE.

Some GE parameters are related to other parameters, and are affected by them. In this case, the parameters that are producing the effect may not always be displayed, since they may already be preset for that GE.

Furthermore, the KARMA-related parameters in P7 of each mode may also function differently, or not at all, depending on the settings of these GE parameters.

Some of the internal parameters of each GE are displayed in the Voice Name List. (☞VNL)

In order to explain the GEs, some of the examples in this document mention these internal parameters, even though they cannot be viewed or changed on the M3.

Illustrations in the GE guide

Some of the illustrations in this document contain items, such as pattern grids, that do not actually appear on the M3's display.

How to read the "GE Guide"

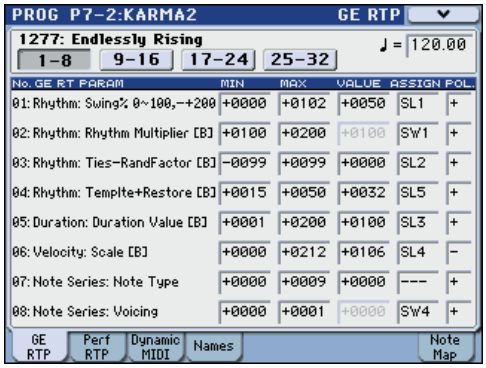
The GEs (Generated Effects) are organized into fifteen groups. Each group has GE parameters. For more information, please see "KARMA Architecture (Diagram)" on page 528.

In Program mode, the 7–2–1: GE RTP page shows the group name, parameter name, and parameter value of the GE parameters.

You can use the 7–2–1: GE RTP page to check the group name and parameter name of the GE parameter you wish to look up, and then find it in the KARMA GE Guide.

Here's an example from Program mode.

Access the Prog 7–2–1: GE RTP page, and view the GE parameters on the display. For more information, please see "7–2–1: GE RTP (GE Real-Time Parameters)" on page 90.



The GE parameters shown on the display include the group name and parameter name.

For example in the case of 01. Rhythm: Swing %, the group is Rhythm Group and the parameter is "Swing %."

The explanation for "Swing %" is given on Rhythm Group: "Swing %" on page 539.

The parameter value is displayed by "Value" at the right of the parameter name.

The "Real-Time Control Range" (minimum and maximum values that the parameter can be varied between by real-time control or direct editing) is displayed by "Min" and "Max" next to the "Value" field.

When loading a GE, the default value and editing range of the parameter is preset for each GE. Depending on the selected GE, the same GE parameter may have a different default value and a different editing range.

How GE parameter names are displayed

For some GE parameters, the following information is shown in addition to the parameter name.

Parameter name [Phase]

This is shown for most GE parameters within the following groups (some that are not related to phases will not show this information):

Phase Group

Rhythm Group

Duration Group

Index Group

Cluster Group

Velocity Group

CCs Group

WaveSeq Group

Display example

Rhythm: Template [B]
[Phase]

[1]: Phase 1 is controlled

[2]: Phase 2 is controlled

[B]: Both phases 1 and 2 are controlled

CCs: parameter name #No. #No.

Parameters of the CCs Group also indicate the MIDI message that are controlled by CC-A and CC-B.

Display example

CCs: Fixed/On [B] 010 074
[Phase] #No. #No.

000…125: CC#000…CC#125

PB: Pitch Bend

Env: parameter name [Env] #No. #No. #No.

Parameters of the Env (Envelope) Group also indicate the being controlled by that GE parameter, and indicate the parameter or MIDI message that is controlled by the Envelope.

Display example

Env: Env On/Off [3] 010
[Env] #No.

[Env]:

[1]: Envelope 1 is controlled

[2]: Envelope 2 is controlled

[3]: Envelope 3 is controlled

[1, 2]: Envelopes 1 and 2 are controlled

[2, 3]: Envelopes 2 and 3 are controlled

[1, 3]: Envelopes 1 and 3 are controlled

[A]: Envelopes 1, 2 and 3 are controlled

#No.:

VE: Velocity

TA: Tempo-Absolute

TR: Tempo-Relative

PB: Pitch Bend

DU: Duration

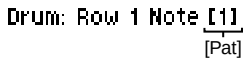
RT: Repeat Time

000…121: CC#000…121

Drum: parameter name [Pat]

Parameters of the Drum Group also indicate the drum pattern being controlled by that GE parameter. (Some parameters in the Drum Group that are not related to the individual Drum Patterns will not display this information.)

Display example



[1]: Pattern 1 is controlled

[2]: Pattern 2 is controlled

[3]: Pattern 3 is controlled

[1, 2]: Patterns 1 and 2 are controlled

[2, 3]: Patterns 2 and 3 are controlled

[1, 3]: Patterns 1 and 3 are controlled

[A]: All patterns are controlled

[B]: Patterns 1 and 2 (displayed only for Link to Next) are controlled

About KARMA

Overview

KARMA stands for **K**ay **A**lgorithmic **R**ealtime **M**usic **A**rchitecture, named after its inventor, Stephen Kay.

The KARMA function generates MIDI data, using many different complex algorithms seamlessly integrated to provide a powerful "music generation engine". Based on the notes and chords you play, **KARMA** generates phrases and patterns in real-time, generating not just notes but MIDI control data as well. The **KARMA** architecture allows the various algorithms to be reconfigured and varied in realtime, as you play them.

For example, you can create spectacular cascades of complex interweaving notes, techno arpeggios and effects, dense rhythmic and melodic textures, natural sounding glissandos for acoustic instrument programs, guitar strumming and finger-picking simulations, random effects, auto-accompaniment effects, gliding and swooping portamento and pitch bend effects, and new sound design possibilities. **KARMA** lets you produce phrases and patterns far beyond the level provided by conventional arpeggiators or pattern playback functions.

Theory Of Operation

A performance of a musical phrase can be thought of as having many different "attributes" which determine the overall effect of the resulting music. For example, a musical phrase has a "rhythm" attribute, which is the rhythm with which the notes are being played. The number of notes ("chords") being played at the same time in various places of the musical phrase could be called a "cluster" attribute. The velocity (accent) with which the notes are played is a "velocity" attribute. The spatial location in a stereo field where the notes are played is a "pan" attribute, etc.

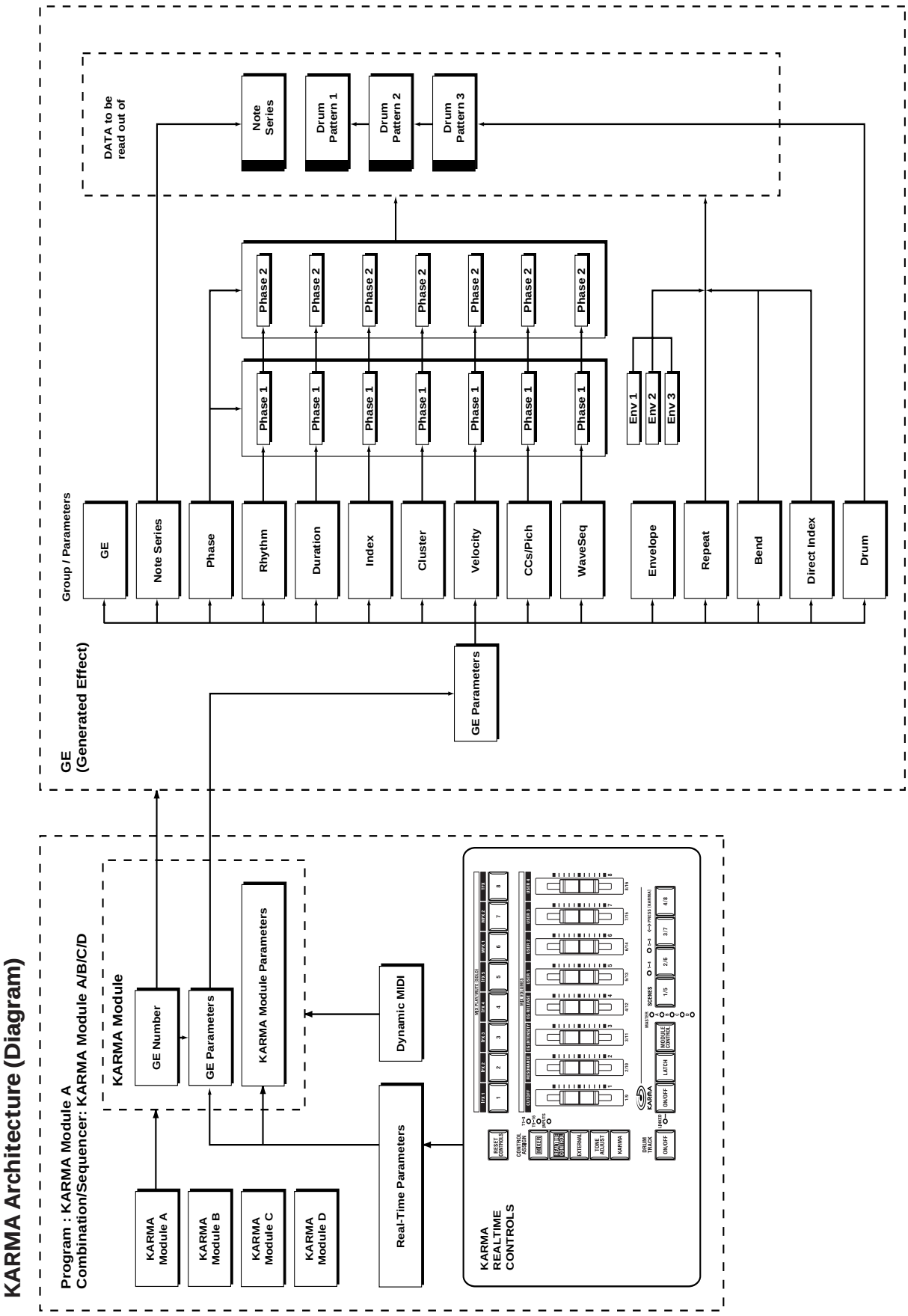
Typically, music that has been recorded or sequenced has all of these attributes predetermined and fixed in relation to each other. A specific note is to be played with a specific rhythmic value for a specific period of time, at a specific volume level, at a specific location in a stereo field, with the sound of a specific musical instrument, and these relationships remain fixed no matter how many times you play back the performance. For example, in most if not all auto-accompaniment instruments, to achieve a variation in the accompaniment pattern the instrument essentially switches to a different pre-recorded sequence of musical events (again with specific relationships that are fixed in the data).

In **KARMA**, every aspect of a musical phrase has been separated into independently controllable attributes. Each of these attributes is controlled by a separate group of parameters, which can be individually varied or changed in groups by the user in real-time as the music is being generated; or changed all at once with the selection of a program or combination.

KARMA can also be used to generate infinitely variable randomized grooves and accompaniment backings. Up until now there have been two basic types of backing track generation. The traditional method used in all auto-accompaniment keyboards is a system which analyzes notes played on a keyboard (chord recognition) and then plays back patterns stored in memory through transposition tables. The second method is the one used by some algorithmic software products that create new patterns each time the algorithm is called. In general, the first method is static and repetitive, while the second method cannot be modified in real-time.

KARMA combines the algorithmic diversity of the second method with the real-time control and immediate access of the first method to create a new form of interactive groove generation, where the user is in more direct control, since what is produced is directly related to which notes are pressed. Furthermore, extensive aspects of the rhythm, velocity, chord size and other parameters can be randomly varied in real-time to allow the user to control the complexity and density of the resulting performance.

Whether you are playing programs or combinations, performing with the **KARMA** Controls sliders, switches, and drum / chord pads, giving a live performance, or recording new music using the onboard sequencer, you can take full advantage of the **KARMA** function at any time.


KARMA Architecture (Diagram)
Program : KARMA Module A
Combination/Sequencer: KARMA Module A/B/C/D
KARMA Module A
KARMA Module B
KARMA Module C
KARMA Module D
KARMA Module
GE Number
GE Parameters
KARMA Module Parameters
Real-Time Parameters
Dynamic MIDI
KARMA REALTIME CONTROLS
GE
(Generated Effect)
GE Parameters
Group / Parameters
GE
Note Series
Phase
Rhythm
Duration
Index
Cluster
Velocity
CCs/Pich
WaveSeq
Envelope
Repeat
Bend
Direct Index
Drum
Phase 1
Phase 2
Env 1
Env 2
Env 3
DATA to be read out of
Note Series
Drum Pattern 1
Drum Pattern 2
Drum Pattern 3

GE (Generated Effect) Group

Overview

The phrases and patterns produced by a KARMA module are generated by a **GE (Generated Effect)**.

Based on note data from the keyboard or external MIDI device, the GE uses various internal parameters to control how the note data will be developed, and how rhythm, chord structure, and velocity etc. will be controlled to generate a phrase or pattern. MIDI control changes and pitch bend data can also be generated in synchronization with the phrase or pattern, making it possible to create phrases and patterns in which the tone color and note pitches change independently.

This instrument contains over 2000 **preset GEs** that can be used with a wide range of instruments, playing styles, and musical genres

GE Global Parameters

GE Type [0…3]

0: Generated-Riff **2: Generated-Drum**

1: Generated-Gated **3: Real-Time**

Selects one of several different overall algorithm configurations for the current Generated Effect. This setting determines some basic modes of operation, and which parameters are available within the various GE Groups.

0: Generated-Riff

Produces riffs, arpeggios, and chord clusters based on the notes given as input source material. The notes are expanded, transposed, replicated, and otherwise altered to form a Note Series by the parameters in the Note Series Group. Effects are generated based on the Rhythm Pattern as it relates to the clock source or tempo envelope.

1: Generated-Gated

A Note Series is created as in **0: Generated–Riff** above, but only a portion of the Note Series is retriggered according to the parameters. Effects are generated based on the Rhythm Pattern as it relates to the clock source or tempo envelope. The notes themselves can be generated repetitively in several different ways, or as a sustained set of notes which is then “sliced and diced” by a selected controller value. This can be used to simulate several types of popular techno effects, such as gating a synth pad with a hi-hat track and an external audio gate / compressor. This GE Type can also be used to simulate the Korg Triton Arpeggiator, along with “Gate Type” = **Vel CP**, explained below.

2: Generated-Drum

Uses special patterns of predetermined pitches rather than the Note Series to generate notes. These can be used not only to create Drum Patterns, but also to create controlled musical patterns. Effects are generated based on the Rhythm Pattern as it relates to the clock source or tempo envelope. Riffs based on the notes in the Note Series can be applied as pitch bend, to create wave-sequence and other unique effects, and also to control other things such as the length of Phases.

3: Real-Time

Different from the previous types in that the actual notes given as input source material are used as a starting point, from which effects are generated over time according to time calculations. Examples include glissandos and arpeggios which start with the note(s) given as input (Melodic Repeat), and Auto-Bending an input note a certain amount or to another note.

Gate Type [0…4]

0: Vel - retrigger ALL input notes with Velocity

1: Vel CP - retrigger Cluster Pattern notes with Velocity

2: CC [T]-sustain notes; retrigger only if Phase Transpose is different

3: CC [1]-sustain notes; retrigger when entering Phase1

4: CC [2]-sustain notes; retrigger when entering Phase2

5: CC [A]-sustain notes; retrigger when entering any Phase

Selects one of several different Gate Type settings. Two “Vel” options retrigger the notes repeatedly, while the “CC” options allow sustained notes to be chopped or stepped with CC Values.

Available only when “GE Type” = **1: Generated-Gated**.

0: Vel - retrigger ALL input notes with Velocity

The actual notes given as input source material (all of them) are generated repetitively as note-ons and note-offs according to the parameters. In other words, if you play eight notes, all eight notes will be repeatedly generated at once. This produces a “gated” effect where each cluster of notes possesses the attack portion of the program being used, as if someone was repeatedly striking a keyboard very quickly. A Velocity Pattern can be used to impart different velocities to the clusters of notes. The Cluster Pattern Grid is disabled and has no effect on how many notes are generated.

1: Vel CP - retrigger Cluster Pattern notes with Velocity

The Cluster Pattern Grid is used to indicate which notes are to be generated from a portion of the Note Series corresponding to the number of input notes played. In other words, the ten rows of the Value portion of the Cluster Pattern grid allow you to specify which of up to ten notes you may have played are to be generated. If a step of the Cluster Pattern has rows 0, 2 and 4 selected, then the first, third, and fifth notes in the Note Series will be generated at that step. What these notes actually are will be influenced by the Note Series and Input Sort settings. This can be used to simulate the operation of the Korg Triton Arpeggiator, for example. Note that filling all ten rows of each column is essentially the same as using **0: Vel above**.

2…5: CC - 4 different CC Gate Types

When one of the four “CC Gate Types” is chose, the “Gate CC Number” parameter specifies a MIDI Control Change Message (CC) to be used in place of note-ons and note-offs. The actual notes given as input source material are then generated as note-ons only once at the beginning of the effect; the rest of the note-ons are turned into the specified CC controller value with the same value as the velocity of the note-on; the note-offs are turned into CC values of 0. Essentially, this means that a pad will be sustained, having the attack portion triggered only once. For example, if the selected CC was **#11 (Expression)** or **#07 (Volume)**, the pad will be repeatedly turned on and off, simulating the popular techno effect of gating a synth pad with a hi-hat track and an

external audio gate / compressor. In KARMA however, the Velocity Pattern can be used to control the value of each CC that is generated for a note-on (the volume of each "slice"), and the Duration Pattern (☞p.543) can be used to control the duration of each "slice."

Other CCs can produce other interesting stepped and wave-sequence like effects. For example, using CC#74 to control Filter Cutoff Frequency can produce interesting "Sample & Hold" effects.

2: CC [T]-sustain notes; retrigger only if Phase Transpose is different

When this first CC option is chosen, the "pad" will only be triggered manually (i.e. when you strike the keyboard), or only if there is a Phase Change and the Phase Transpose (☞p.536) is different, requiring that the generated notes be transposed. Therefore, if the Phase Transposes are the same, the "pad" will never retrigger unless you trigger it manually.

3: CC [1]-sustain notes; retrigger when entering Phase1

Same as CC [T] above, with the exception that the "pad" will be retriggered when striking the keyboard, and every time that the Phase Pattern enters a step containing Phase 1. You can use this to have the notes retriggered occasionally while moving through the Phase Pattern.

4: CC [2]-sustain notes; retrigger when entering Phase2

Same as CC [T] above, with the exception that the "pad" will be retriggered when striking the keyboard, and every time that the Phase Pattern enters a step containing Phase 2. You can use this to have the notes retriggered occasionally while moving through the Phase Pattern.

5: CC [A]-sustain notes; retrigger when entering any Phase

Same as CC [T] above, with the exception that the "pad" will be retriggered when striking the keyboard, and every time that the Phase Pattern causes a Phase Change. You can use this to have the notes retriggered occasionally while moving through the Phase Pattern.

Gate CC Number [–1, 0…126]

–1: Off **0…126: MIDI CC #00…126**

Select which CC will be transmitted instead of the note-ons and note-offs of the generated notes. For example, for "chopping" effects, set to **11: 11 (CC#11).**

–1: Off

No MIDI CCs are generated.

0…126: MIDI CC #00…126

The specified MIDI CC is generated in place of the Module's note-ons and note-offs. Note-offs are generated as a value of "0," while note-ons are generated as a value equal to the velocity of the note-on.

Available only when "Gate Type" is **one of the 4 CC options**.

Force Mono [0, 1]

0: Off **1: On**

Selects whether the GE will operate polyphonically according to its other internal settings, or whether the generation of more than one note at a time and overlapping durations will be suppressed.

0: Off

Notes will be generated as expected according to the internal settings of the GE. Polyphonic clusters of notes may be generated according to the Cluster Pattern, repeated notes may be generated on top of other notes, and the durations of notes may overlap according to Duration settings.

1: On

The normal behavior of certain aspects of the GE will be overridden, suppressing the generation of multiple notes at the same time. Any clusters being generated will be removed, essentially generating what would be the single lowest note in the cluster. Any notes from Melodic Repeat that happen to be generated on top of another note will be suppressed. Multiple repeated notes happening at the same instance will only play one of them. Durations of generated notes will not be allowed to overlap, but may only extend up until the next note to be generated. Any note will cut off the previous note's duration if it is sustaining. The result is that only one note at a time will be generated or sustaining at any given moment.

Note: When polyphonic GEs are applied to monophonic programs, the results may be strange due to the overlapping notes and durations. By turning on "Force Mono," any GE can be applied to a monophonic program and made to sound good. However, it can also sound good as an effect on polyphonic programs, because it can simplify a dense GE in an interesting sounding way. For example, you can turn a comping keyboard part into a single note bass line.

Note: "Force Mono" and Rhythm Group: "Humanize"

When "Force Mono" is **1: On**, the effects of Rhythm: "Humanize" are removed if Melodic Repeat is being used at the same time. A GE can be stored with a normal amount of "Humanize," so that it can be used that way with the "Force Mono" parameter off, and then "Force Mono" can be turned on in real-time. The reason for this is that the "Force Mono" effect uses the first note arriving within a section of time (i.e. 16th notes) to window out the rest of the notes. If the underlying main notes are slightly late as a result of "Humanize," it is possible for overlapping repeated notes to arrive slightly before them, and then the main notes get masked out while the repeated notes take precedence. Since "Humanize" is a randomly varied amount, this results in a completely unpredictable sequence of notes in this case, that cannot produce consistent results. By removing the "Humanize" amount when "Force Mono" is on with Melodic Repeat, the result is consistent and predictable.

With drums, when "Force Mono" is **1: On**, Humanize is removed even if not using repeats. This is because each note in a column of a drum pattern is affected individually by the Humanize parameter, and the "Force Mono" effect requires them to all line up on the same instant in order to allow only one of them to be produced.

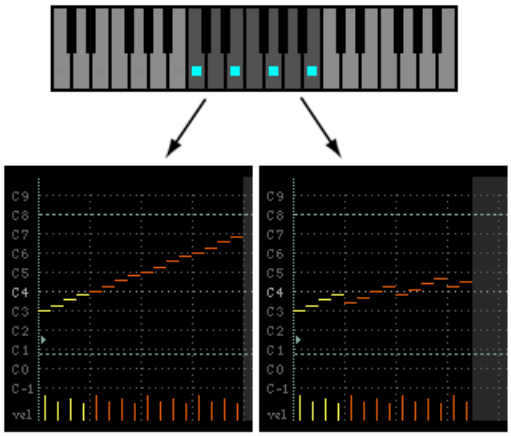
Note: "Force Mono" and Cluster Group: "Strum"

When "Force Mono" is **1: On**, the effects of the "Strum" parameter are removed, since no clusters can be generated.

Note Series Group

Overview

The **Note Series Group** controls the creation of a "**Note Series**" in memory, which is the foundation of a large percentage of Generated Effects. The Note Series is a collection of pitches and corresponding velocities, created from initial notes coming from input source material (i.e. a keyboard, or sequence data which is being used as input). The various parameters control how these initial notes are replicated, shifted, sorted, filtered, and otherwise arranged into the Note Series. The Note Series is then used as the basic collection of pitches and velocities from which notes are generated, as controlled by most of the other parameters of the Generated Effect.



The diagram on the left shows "Replications" (☞p.532) of **400** (4.0) with an "Interval" (☞p.532) of **+12**, producing a 16-note Note Series from the four input notes (4 x 4.0 =16). Each Replication of the original four notes is shifted by +12 semitones from the previous Replication, yielding a four octave arpeggio.

The diagram on the right shows "Replications" of **350** (3.5) with an "Interval" of **+5**, producing a 14-note Note Series from the four input notes (4 x 3.5 = 14). Each Replication of the original four notes is shifted by +5 semitones from the previous Replication, with the two notes at the end being produced by a half Replication.

Parameters

The following parameters create and change the Note Series.

When "GE Type" (☞p.529) = **2: Generated-Drum**, the effect of changing most of these parameters is only apparent if the Note Series is being applied as pitch bend in the Phase Group / Bend Group, or riff length is being used in the Drum Group.

The following 3 parameters will have an effect on when Phases change if the Phase "Length Mode" (☞p.534) is set to **0: AC-Actual**: "Replications" (☞p.532), "Filter Steps" (Filter Template), and "Filter Dupes". See Phase Group.

Note Type [0...9]

0: Regular	**4: Whole Tone**	**8: Tritones**
1: Scalic	**5: Diminished**	**9: Fifths**
2: Scalic 2	**6: Augmented**	
3: Chromatic	**7: Fourths**	

Selects one of several modes for supplying the initial notes from which the Note Series is created.

0: Regular

The Note Series created in memory will be produced based on the actual notes given as input source material (i.e. a keyboard, or sequence data which is being used as input).

1: Scalic

The Note Series created in memory will be produced based on chord analysis of the input source material; then a group of notes corresponding to the analyzed chord will be used instead of the actual notes. The initial octave is based on the lowest note received as input source material. This can be used so that one finger chords produce scalic riffs, or to supply notes that are not present in the source material.

2: Scalic 2

Same as **1: Scalic** (above), except an attempt is made to keep a seven note scale for each chord type. In other words, there will be more passing tones, and it will sound more "modal" in nature. For a good example of the difference, play a 4 note diminished chord with each one. This can be of use for creating a bass line that is more predictable when changing chords, or jazzy soloing kinds of effects.

3: Chromatic

The 12 steps of a chromatic scale will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

4: Whole Tone

The 6 steps of a whole tone scale will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

5: Diminished

The 4 steps of a diminished chord will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

6: Augmented

The 3 steps of an augmented chord will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

7: Fourths

3 steps of stacked fourths will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

8: Tritones

2 steps of a tritone (augmented fourth) will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

9: Fifths

2 steps (root and fifth) will be used as input source material. The first note of the Note Series is based on the lowest note received as input source material.

Note: If "Root Position" is On, then the pitches of the Note Series will be shifted so that different inversions of the same chord produce the same set of pitches. For more information, please see "Root Position" on page 85.

Input Sort [0…4]

0: Up **1: Down** **2: Actual** **3: Random**

Sets how the notes (and corresponding velocities) from the input source material are arranged prior to creating the Note Series.

0: Up
Notes are arranged from lowest to highest.

1: Down
Notes are arranged from highest to lowest.

2: Actual
Notes are left in the order received. With a "Note Type" of 0: Regular, the Note Series will therefore be capable of being created in many different orders, since the order of the input notes can vary. With any other type, the input notes are not actually used and a scale is substituted instead (as explained above). For these Note Types, using "2: Actual" will result in a different order than "0: Up" or "1: Down," but it will be the same order each time for each chord type.

3: Random
Notes are randomly arranged. This guarantees the initial order will be different each time.

Input Transpose [–48…+48]

Allows the input notes to be shifted by a specified number of semitones prior to the creation of the Note Series. The transposed input notes are then replicated and shifted according to the other parameters described below. This can be used, in conjunction with other Note Series Parameters, to shift and flip the Note Series into other configurations or inversions in real-time.

Inversion [–24…+24]

Allows different "inversions" of the input notes (after they are sorted) prior to creation of the Note Series. For example, if the notes **{C, E, G, B}** were received in that order as a chord and Inversion was 1, then the notes would be shifted to **{E, G, B, C 8va}** before creation of the Note Series (thus playing the 1st inversion). This is especially useful for setting multiple modules to play different inversions of the same effect, such as natural harp glissandos or riffs in harmony. Normally used with Input Sort set to **0: Up** or **1: Down**. The effect of this parameter when Input Sort is **2: Actual** or **3: Random** is less predictable, although potentially useful for some effects.

Replications [0…4000]

0…4000: 0.0…40.0

Sets how many times the input notes will be replicated according to the Interval. For example, **3** "Replications" with an "Interval" of **+12** will give you a **3 octave arpeggio**. Can be a fraction to achieve only a portion of the last replication. The value is represented as being x100 - so **350** is **3.5**, **475** is **4.75**, etc. Note that if "GE Type" (☞p.529) = **1: Generated-Gated**, this has no audible effect on the pitches of the Generated Effect; however this still affects the overall range of the available notes for Direct Indexing of the Note Series (described elsewhere).

Max [1…255]

Sets an overall "final place" in the Note Series, beyond which indexes will never be chosen during playback, even if other settings might allow it. This is a playback only parameter which does not affect the creation of the Note Series. This is one way to change the overall length of the Note Series in real-time.

Symmetry [0, 1]

0: Off **1: On**

When set to **1: On**, additional notes are extrapolated at the end of the Note Series beyond the number specified by the "Replications" setting, which are accessed when clusters are generated in that area of the Note Series, or when the Index Group "Double / Invert" parameters (☞p.548) are used. This primarily allows different cluster sizes to be used without affecting the length and shape of the resulting riff. This interacts with Cluster Patterns and the Index Pattern Cluster Advance Mode, discussed elsewhere. Note that when this is **0: Off**, clusters will "wrap around" at the end of a phase, or cause Phase Changes or cycling. Doubled notes caused by the use of the "Double" parameter in the Index Group will also be wrapped around at the top of the Note Series when this is off.

0: Off
The notes determined by the Repetitions setting (described above) are used as the range within which to generate notes.

1: On
Extra notes may be extrapolated at the end of the range depending on the cluster size at that point. The result will be a widening of the apparent range of the riff.

Interval [–24…+24]

Sets the number of semitones to offset each replication of the input notes by. For example, if set to **+12** or **–12**, the Arpeggio will repeat in octaves (most normal). If set to **2**, and "Replications" to **3**, then playing a **CMaj {C, E, G}** will produced a CMaj, then **DMaj {D, F#, A}**, then **EMaj {E, G#, B}** as each replication is shifted by a whole-tone. Settings other than multiples of 12 are extremely useful in conjunction with "Chord Shift," described below, so that atonal notes are shifted to musically correct pitches.

Chord Shift [0…2]

0: Off **1: Scalic** **2: Scalic2**

Allows notes in the Note Series that may be atonal (out of a chord's scale) to be shifted to tonal notes, using one of several different tables.

0: Off
The Note Series is created with no further modification from this setting.

1: Scalic
Chord analysis is performed on the input source material, and as the Note Series is created, notes which may be "atonal" based on the analyzed chord (due to being shifted by non-octave values of "Interval") are shifted to tonal notes. Especially useful when "Interval" (discussed above) is set to something other than multiples of 12. The note tables used to shift the notes are the same as the ones used in "Note Type" (☞p.531): **1: Scalic**, described above.

2: Scalic2
Same as **1: Scalic** (above), except that the note tables used to shift the notes are the same as the ones used in "Note Type": **2: Scalic2**, described above. **Scalic2** is more modal in nature and has more passing tones than **1: Scalic**.

Wrap Bottom [0…127]

Wrap Top [0…127]

0…127: range C–1…G9

Sets an overall range for the pitches in the Note Series. Notes created beyond this range are wrapped around (dropped or raised an octave, depending on which end). Mainly intended to limit the Note Series to usable ranges, these

settings can also be used creatively to force a riff to cycle around inside a certain range.

Voicing [0…8]

0: Closed **3: Open2A** **6: Open3B**
1: Open1A **4: Open2B** **7: Open4A**
2: Open1B **5: Open3A** **8: Open4B**

Selects one of several options for "spreading out" the input notes before creating the Note Series. This can be used to widen the voicing, create guitar-like voicings, or produce interesting variations.

0: Closed
The Note Series is created with no further modification from this setting.

1: Open 1A…8: Open4B
The Note Series has certain notes shifted up by an octave as it is created, then may be re-ordered according to the setting of "Input Sort" (☞p.532). Can be used to create different types of wider voiced chords for simulating guitar or string section voicings.

Filter Dupes [0…2]

0: Off **1: Adjacent** **2: All**

Allows duplicate notes in the Note Series to be removed in several different ways.

0: Off
The Note Series is created with no further modification from this setting.

1: Adjacent
As the Note Series is being created, notes that are the same as the immediately preceding note are discarded.

2: All
After the Note Series has been created, any notes that are duplicates of any others are removed.

Not available if "GE Type" (☞p.529) = **1: Generated-Gated**.

Filter Fixed [0, 1]

0: Off **1: On**

When Filter Steps is used (described below), allows the resulting tonality of the Note Series to be "Fixed" in relation to the key of **C**. For example, assume that "Note Type" (☞p.531) is set to **3: Chromatic** and "Chord Shift" is **0: Off**, so that the Note Series is essentially a chromatic scale. If you play a single **C** (and "Inversion" is set to **0** ☞p.532), you will get a chromatic scale starting with **C**. If you then set up Filter Steps so that you are filtering steps **{1, 3, 6, 8, 10}** you would have a **C Major diatonic scale**. With "Filter Fixed" set to **0: Off**, if you then play a **D** on the keyboard, the whole scale will shift to become a **D Major diatonic scale**. With "Filter Fixed" set to **1: On**, the scale stays fixed to the key of **C**, but you are starting on the **D**; essentially, you have a **D minor scale**. You will be playing different modal scales starting with different pitches. Note that this is always related to the key of **C**; so if you want to put the resulting filtered, fixed Note Series into another key, you can use the Transpose KARMA Module parameter to do so. For more information, please see "Transpose" on page 84. For example, if you set the transpose to **+4**, you would still play notes in the key of **C**, but the resulting generated notes would be in the key of **E**. In the above example, playing a **C** would result in a **E diatonic scale**, playing a **D** results in an **F# minor scale** (F# Dorian mode) and so on.

Not available if "GE Type" = **1: Generated-Gated**. For more information, please see "GE Type" on page 529.

Filter Template [0…77]

Allows the entire Filter Steps grid (☞ About Filter Steps) to be changed to one of 78 different settings. Template **0** is all steps off (no steps filtered), while Template **77** is all steps on except the root (only the root is allowed in the Note Series). As the Templates proceed from 0 to 78, more and more steps are filtered out, in different combinations.

Filter Temp + Restore [–1…77]

Operates the same as "Filter Template" (above), with the difference that when the GE RTP is set to the minimum value specified by the GE RTP page range parameters (see "MIN (GE Real-Time Parameter Minimum Value)" on page 90), the internal setting of the GE for the Filter Steps grid will be restored. In other words, you can have a certain Filter Steps setting already set up on the grid. Using "Filter Temp + Restore" as a GE RTP, you specify a range where the Min value restores the internal settings, and the rest of the range selects Templates, replacing the internal settings. So if the "Min Value" was **5** and the "Max Value" was **10**, choosing **5** would restore the internal settings, and **6** through **10** would select the corresponding Filter Steps Template. You can use this to keep the internal settings of the GE, while still allowing a wide variety of Filter Templates to be substituted. In this case, the available range is –1 – 77. You can assign the full range of all 77 Templates, with indicating "Restore," or only a portion of the range, and still have the ability to restore the original internal settings.

About Filter Steps

Step	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Key: C	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
Key: E	E	F	F#	G	G#	A	A#	B	C	C#	D	D#

A 12 step grid corresponds to the scale tones with regard to a current "key," which is determined by Chord Analysis of the input source material. For example, if the key is determined to be **C**, then the steps 1 through 12 correspond to **C**, **C#**, **D** to **B**; if the key is determined to be "**E**," then steps 1 through 12 correspond to **E**, **F**, **F#** to **D#**. After the Note Series is created, notes belonging to the chosen steps are removed, thus "filtering" them out. For example, if **{C, E, G, B}** was the input material, **CMaj7** would be the analyzed chord; if step #4 "3rd" was selected on the grid (as shown in the above diagram), all occurrences of **E** would be removed from the Note Series. Useful for creating complex grooves where several modules are all supplied with the same source material, where for example you might not want the bass line to play the 3rd even if it is supplied from the keyboard, might want to remove all chance of 7ths from a comping guitar part, etc.

Selecting all steps to be filtered will result in a single note in the Note Series, determined by the settings of other parameters such as "Input Sort," "Inversion," etc.

To "fix" the resulting filtered collection of notes with regards to a specific key, use "Filter Fixed" (described above).

Not available if "GE Type" (☞p.529) = **1: Generated-Gated**.

Phase Group

Overview

A Generated Effect has two different “Phases.” Each of them is a separate collection of certain parameters including Rhythm, Velocity, Cluster, Pan and Index Patterns, among others. As the effect is generated, a Phase Pattern controls switching between the two Phases, so that completely different collections of parameters can be used for a period of time. The Phase Group contains parameters that control the length, direction, and various other attributes of each Phase, the number of times and in what order the Phases will play, and whether or not a portion will be looped.

About Phase Patterns

Phase Pattern = 8

Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1/2	1	1	1	1	1	1	1	2								

The Phase Pattern allows a pattern of switching between the 2 Phases of a Generated Effect to be constructed. The resulting Phase Pattern may have a minimum of 1 step and a maximum of 16 steps. The example above shows an eight step Phase Pattern: 7 times through Phase 1 followed by once through Phase 2. After completing the eight steps, execution may loop back to Step 1. Note that the actual number of steps performed and whether it loops back at the end will be determined by other settings described in this chapter.

General Parameters

This group of parameters affects some overall characteristics of Phase performance.

Total Steps [0…32]

0: (∞) **1…32: number of steps**

Sets the total number of steps of the Phase Pattern that will be played before stopping. The infinity sign 0: (infinity) sets it to loop forever; otherwise the setting represents a number of steps of the selected Phase Pattern. For example, if the Phase Pattern is a simple two-step pattern of **{1, 2}**, and the Total Steps menu is **{4}**, then four Phases would be played in the following order before stopping: **{1, 2, 1, 2}**.

Start % [0…100 (%)]

Controls the location in the Note Series at which the effect will start when it is triggered. Closer to 0% starts nearer the beginning while closer to **100%** starts nearer the end; beginning / end relates to highest / lowest depending on the Phase “Direction” ☞p.536) setting. This can be applied just once when first triggering the effect, or as various steps of the Phase Pattern are entered, in conjunction with the Start Mode described below.

Not available when “GE Type” (☞p.529) = **1: Generated-Gated**. If **2: Generated-Drum**, the Note Series can be applied as pitch bend, discussed elsewhere.

Start Mode [0…3]

0: T-only when Triggered

1: 1-when entering Phase1

2: 2-when entering Phase2

3: A-when entering any Phase

Controls how the “Start %” described above is applied to the effect as it is being generated (whether it’s only used when first triggered, or at other times during the Phase Pattern.)

0: T-only when Triggered

The “Start %” is applied only when the effect is triggered, i.e. from the keyboard or through Dynamic MIDI. When other steps of the Phase Pattern are entered during subsequent playback, the Note Series will reset to either the top or bottom depending on the Phase “Direction” setting.

1: 1-when entering Phase1

Each time that playback of a Phase Pattern step containing Phase 1 begins, the “Start %” will be applied. This can be used to start a phase somewhere in the middle of the Note Series from which the indexes can be chosen in either direction according to the Index Pattern.

2: 2-when entering Phase2

Each time that playback of a Phase Pattern step containing Phase 2 begins, the “Start %” will be applied. This can be used to start a phase somewhere in the middle of the Note Series from which the indexes can be chosen in either direction according to the Index Pattern.

3: A-when entering any Phase

Each time that playback of any Phase Pattern step begins, either Phase 1 or Phase 2, the “Start %” will be applied. This can be used to start a phase somewhere in the middle of the Note Series from which the indexes can be chosen in either direction according to the Index Pattern.

Not available when “GE Type” (☞p.529) = **1: Generated-Gated**. If **2: Generated-Drum**, the Note Series can be applied as pitch bend, discussed elsewhere.

Length Mode [0…2]

0: AC-Actual **1: TS-Time Signature** **2: EV-Events**

Selects one of several modes for determining when a Phase Change from the current step to the next step of the Phase Pattern will occur. Note that this has a certain interaction with the Cycle Mode parameter, described below.

0: AC-Actual

Causes the Phase Change to be completely dependent on the length of the Note Series and the Phase “Beginning / End Offsets %.” The portion of the Note Series to be used as specified by the Phase “Beginning / End Offsets %” (described below) is referred to as the “playback portion” of the Note Series. The notes are generated by moving through the Note series according to the Index Group settings; when either end of the playback portion has been reached, a Phase Change occurs. Therefore, if more or less notes are played, the Phases will change sooner or later and bear no relation to any time signatures or specific number of events. This is useful for GEs that model the behavior of most simple arpeggiators.

Not available if “GE Type” (☞p.529) = **1: Generated-Gated**.

1: TS-Time Signature

Makes the Time Signature parameters ("Tsig Numerator / Denominator" ☞p.537) available in the Phase Specific Parameter area of each Phase (described below). These allow setting each Phase to various time signatures, which cause the Phase to playback a certain number of beats regardless of any other circumstances that might trigger a Phase Change. When moving through the Note Series, if either end of the playback portion is reached (specified by the Phase "Beginning / End Offsets %" ☞p.537) before the amount of beats specified has occurred, then the movement either freezes, generates silence, wraps around, or cycles back and continues (depending on the setting of the "Cycle Mode" parameter, described below). Useful for groove generation and constraining effects to certain time signatures.

2: EV-Events

Makes the "Events" parameter available in the Phase Specific Parameter area of each Phase (described below). This is used to set the Phase to perform a certain number of events before changing Phases (an event being a note or cluster). When moving through the Note Series, if either end of the playback portion is reached (specified by the Phase "Beginning / End Offsets %" ☞p.537) before the number of events specified has occurred, then the movement either freezes, generates silence, wraps around, or cycles back and continues (depending on the setting of the "Cycle Mode" parameter, described below). Useful for constraining effects to a certain number of specific events, such as 4 strums per Phase.

Cycle Mode [0…3]

0: S-replace with silence

1: F-fill with top/bottom note

2: R-restart at other end of Phase

3: W-wrap at either end of Phase

4: B-cycle back from beginning of Phase

5: E-cycle back from end of Phase

6: BE-cycle back from beginning & end of Phase

Determines what will happen when either end of the playback portion of the Phase (specified by the Phase "Beginning / End Offsets %" (☞p.537) and / or the length of the Note Series) is reached during note generation. If the "Length Mode" is **1: TS - Time Signature** or **2: EV - Events**, cycling can be allowed to occur. This has a different effect depending on the setting of the Phase "Length Mode" (above).

Not available if Phase "Length Mode" (above) = **0: AC-Actual**. Not available if "GE Type"= **1: Generated-Gated**, unless "Gate Type" (☞p.529) = **1:Vel CP.** If **"GE Type" = 2: Generated-Drum,** the Note Series can be applied as pitch bend, discussed elsewhere.

0: S-replace with silence

If note generation would extend beyond either end of the playback portion of the Phase, those notes are skipped and replaced with silence. Once the specified number of events (including silent notes) or beats of a time signature are generated, a Phase Change occurs. This can be used to simulate the Triton Arpeggiator setting "Arpeggio Type": **As Played**.

1: F-fill with top/bottom note

If note generation would extend beyond either end of the playback portion of the Phase, those notes are limited and replaced with the bottom or top note of the Phase. Once the specified number of events or beats of a time signature are generated; a Phase Change occurs. Settings of the Index Pattern or Cluster Pattern which would cause movement beyond that point have no effect. This can be used to simulate the Triton Arpeggiator setting "Arpeggio Type": **As Played (Fill)**.

2: R-restart at other end of Phase

If note generation would extend beyond either end of the playback portion of the Phase, those notes are replaced by notes within the playback portion, as if the riff restarted at the other end. (For the more technically oriented, the index is kept within range using modulo division.) Once the specified number of events or beats of a time signature are generated, a Phase Change occurs. This can be used to simulate the Triton Arpeggiator setting "Arpeggio Type": **Running Up**.

3: W-wrap at either end of Phase

If note generation would extend beyond either end of the playback portion of the Phase, those notes are replaced by notes within the playback portion, as if the riff is being "wrapped around" the end point. (For the more technically oriented, the index is kept within range by inverting it.) Once the specified number of events or beats of a time signature are generated, a Phase Change occurs. This can be used to simulate the Triton Arpeggiator setting "Arpeggio Type": **Up&Down.**

4: B-cycle back from beginning of Phase

Allows "cycling" to occur at the beginning of the playback portion of the Phase. For example, if the movement specified by the Index Pattern causes the index to go backwards beyond the beginning of the playback portion, "cycling" will occur (the index will automatically be jumped back into the playback portion by a calculated amount). If the Phase "Length Mode" is **0: AC-Actual**, no cycling is performed and a Phase Change will immediately occur.

5: E-cycle back from end of Phase

Allows "cycling" to occur at the end of the playback portion of the Phase. For example, if the movement specified by the Index Pattern causes the index to go forwards beyond end of the playback portion, "cycling" will occur (the index will automatically be jumped back into the playback portion by a calculated amount). If the Phase "Length Mode" is **0: AC-Actual**, no cycling is performed and a Phase Change will immediately occur.

6: BE-cycle back from beginning & end of Phase

Allows the behavior described above at both ends of the playback portion of the Phase.

Phase Specific Parameters

For each of the two Phases, a group of Phase Specific Parameters allow control of some performance characteristics within each Phase. If settings of the Phase Pattern indicate a particular Phase is not being used, the Phase Specific Parameters for that Phase will not be operable.

Direction [0, 1]

0: Forward **1: Backward**

Selects the basic direction for movement through the Note Series in a particular phase. Works in conjunction with the parameters in the Index Group, which control how the index(es) move through the Note Series. For example, when the Direction is **0: Forward**, the Index Pattern values are added to the index to move it through the Note Series from left to right; when Direction is **1: Backward**, the Index Pattern values are subtracted to move the index through the Note Series from right to left.

Not available when "GE Type" (☞p.529) = **1: Generated-Gated**. If **2: Generated-Drum**, the Note Series can be applied as pitch bend, discussed elsewhere.

Phase Transpose [–36…+36 (semitones)]

Allows each Phase to be transposed individually.

This applies to each time the Phase occurs in the overall Phase Pattern, unlike the Step Transpose Value. Has no effect on Direct Indexing effects, which have a separate Transpose parameter (see Direct Index Group) or when "GE Type"(☞p.529) = **2: Generated-Drum**.

Note: The Phase Transpose value is cumulative with the Step Transpose value discussed above. For example, if a Step Transpose Value is **–12**, and the Phase Transpose Value for the Phase in use during that step is **+24**, the overall transpose would be **+12**.

Octave Phs. Transpose [–36…+36]

Allows the Phase's Transpose value to be quantized to the nearest octave, so that when being changed in real-time, only transposition by octaves is possible. In this case, the value of the parameter changes by semitones, but the actual transpose value will only change at certain points within the range:

–36 to –31	=	**–36**	(–3 octaves)
–30 to –19	=	**–24**	(–2 octaves)
–18 to –7	=	**–12**	(–1 octave)
–6 to +5	=	**0**	(no transpose)
+6 to +17	=	**+12**	(+1 octave)
+18 to +29	=	**+24**	(+2 octaves)
+30 to +36	=	**+36**	(+3 octaves)

Oct/5th Phs. Transpose [–36…+36]

Allows the Phase's Transpose value to be quantized to the nearest octave or fifth, so that when being changed in real-time, only transposition by octaves or fifths is possible. In this case, the value of the parameter changes by semitones, but the actual transpose value will only change at certain points within the range:

–36 to –33	=	**–36**	(–3 octaves)
–32 to –27	=	**–29**	(–3 octaves +5th)
–26 to –21	=	**–24**	(–2 octaves)
–20 to –15	=	**–17**	(–2 octaves +5th)
–14 to –9	=	**–12**	(–1 octave)
–8 to –3	=	**–5**	(–1 octave +5th)
–2 to +3	=	**0**	(no transpose)
+4 to +9	=	**+7**	(+5th)
+10 to +15	=	**+12**	(+1 octave)
+16 to +21	=	**+19**	(+1 octave +5th)
+22 to +27	=	**+24**	(+2 octaves)
+28 to +33	=	**+31**	(+2 octaves +5th)
+34 to +36	=	**+36**	(+3 octaves)

Step Transpose Value [–48…0…+48]

Allows a separate Transpose Value to be used in each step of the Phase Pattern (**–48…+48 semitones**) that affects all notes that are generated during that step.

The Step Transpose Value is cumulative with the Phase Transpose Value discussed below. For example, if a Step Transpose Value is **–12**, and the Phase Transpose Value for the Phase in use during that step is **+24**, the overall transpose would be **+12**. While this value is not directly accessible in each Phase Pattern Step as a GE RT Parameter, it may be set as part of a GE and varied by the following two GE RT Parameters:

Step Transpose On/Off [0, 1]

0: Off **1: On**

Allows the effect of the Step Transpose Values in each Phase Pattern Step to be turned on or off for the entire Phase Pattern.

Step Transp. Template [0…17]

Allows one of 18 different templates for the 16 steps of a Phase Pattern to be chosen and applied to the current Phase Pattern. These 18 templates provide a wide variety of switching between octaves in various orders and amounts, and correspond to various settings of the Triton Arpeggiator "Octave" and "Octave Motion" parameters (refer to table at the bottom). They can be used to simulate Triton Arpeggio performances, in addition to other useful applications.

Template for emulating the operation of the TRITON series arpeggiator parameters "Octave" and "Octave Motion"

	1	2	3	4	5	6	7	8	9	19	11	12	13	14	15	16	Octave	Octave Motion*
0:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	U D B
1:	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	2	U B
2:	12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0	2	D
3:	0	12	24	0	12	24	0	12	24	0	12	24	0	12	24	0	3	U
4:	24	12	0	24	12	0	24	12	0	24	12	0	24	12	0	24	3	D
5:	0	12	24	12	0	12	24	12	0	12	24	12	0	12	24	12	3	B
6:	0	12	24	36	0	12	24	36	0	12	24	36	0	12	24	36	4	U
7:	36	24	12	0	36	24	12	0	36	24	12	0	36	24	12	0	4	D
8:	0	12	24	36	24	12											4	B
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	U D B (x2)
10:	0	0	12	12	0	0	12	12	0	0	12	12	0	0	12	12	2	U B (x2)
11:	12	12	0	0	12	12	0	0	12	12	0	0	12	12	0	0	2	D (x2)
12:	0	0	12	12	24	24	0	0	12	12	24	24	0	0	12	12	3	U (x2)
13:	24	24	12	12	0	0	24	24	12	12	0	0	24	24	12	12	3	D (x2)
14:	0	0	12	12	24	24	12	12	0	0	12	12	24	24	12	12	3	B (x2)
15:	0	0	12	12	24	24	36	36	0	0	12	12	24	24	36	36	4	U (x2)
16:	36	36	24	24	12	12	0	0	36	36	24	24	12	12	0	0	4	D (x2)
17:	0	0	12	12	24	24	36	36	24	24	12	12	0	0	12	12	4	B (x2)

* = Up, D = Down, B = Both

Events [1...96]

TSig Numerator [0...31]

0...31: 1...32

TSig Denominator [0...4]

0: 16 **1: 12** **2: 8** **3: 6** **4: 4**

The parameters for determining when a Phase Change should occur vary according to the setting of the Phase "Length Mode" (☞p.534), described in General Parameters above. When the Phase "Length Mode" is **1: TS-Time Signature**, "TSig Numerator" and "TSig Denominator" are available which allow you to specify various time signatures for each Phase. A certain number of beats is then performed in the Phase, regardless of any other circumstances which might trigger a Phase Change. When the Phase "Length Mode" is **2: EV-Events**, a events is available which allows you to specify a certain number of events (an event being a note or cluster of notes). The specified number of events is then performed in each Phase, regardless of any other circumstances which might trigger a Phase Change. When the Phase "Length Mode" is **0: AC-Actual**, then these parameters are not available. The Phases will then change according to the movement through the Note Series.

0: AC-Actual not available when GE Type (☞p.529) = **1: Generated-Gated**.

Beginning Offset % [0...100 (%)]

End Offset % [0...100 (%)]

Sets an overall beginning and end range in the Note Series for note generation within the Phase. Even though settings in the Note Series Group may have created a very long Note Series, these can be used to select just a portion of the Note Series from which to generate notes over the length of a particular Phase.

For example, if the "Beginning Offset" is **25%** and the "End Offset" is **75%**, note generation within the Phase would be restricted to coming from the portion of the Note Series 1/4 to 3/4 of the way from the beginning.

Not available when "GE Type" (☞p.529) = **1: Generated-Gated**, unless "Gate Type" (☞p.529) = **1: Vel CP**. If **2: Generated-Drum**, the Note Series can be applied as pitch bend, discussed elsewhere.

End Loop Parameters

Determines whether a portion of the effect will loop, after a certain number of steps of the Phase Pattern have been completed. Note that once the loop has started, it continues using the Phase Pattern, and current Phase "Length Mode".

End Loop On/Off [0, 1]

0: Off **1: On**

Enables / disables this feature, and the following two parameters.

End Loop Start Step [1...17]

Selects a total number of Phase Pattern steps to complete before entering the End Loop. For example, if the Phase Pattern was set to a 2 step pattern of **{1, 2}** and the Start Step menu to **4**, the loop would be entered after the 2nd time through the Phase Pattern, at the end of the 4th step in total. Not available if the "End Loop On / Off" is set to **0: Off**.

End Loop Length [1...96]

1...96: events

Determines how many events (notes or clusters) will be moved forward / backward while looping, according to various other parameters such as the Index Pattern. Not available if the "End Loop On / Off" is set to **0: Off**.

Pattern Parameters

Pattern Items [1…16 (steps)]

Sets the number of steps in the Phase Pattern.

Pattern Step1…16 [0, 1]

0: Phase1 1: Phase2

Sets which phase (Phase 1 or Phase 2) will be used for generating data when a specific step of the Phase Pattern is entered during playback. For each step that is enabled, the step may be set to either Phase 1 or Phase 2.

Note: If the number of steps in the Phase Pattern (Pattern Items) is less than the step being edited, this will produce no audible results.

Template Parameters [0…15]

Selects one of 16 templates (each having 4 steps) that can be applied to all or parts of the Phase Pattern. They specify 16 different combinations of Phase 1 and Phase 2 within a 4 step section:

0: 1-1-1-1	**6: 1-2-1-1**	**12: 1-2-2-2**
1: 2-2-2-2	**7: 2-1-1-1**	**13: 2-2-2-1**
2: 1-2-1-2	**8: 1-1-2-2**	**14: 2-2-1-2**
3: 2-1-2-1	**9: 1-2-2-1**	**15: 2-1-2-2**
4: 1-1-1-2	**10: 2-2-1-1**	
5: 1-1-2-1	**11: 2-1-1-2**	

Template (All Steps)

The chosen template is applied to all steps of the Phase Pattern, regardless of how many there are. For example, if you selected **6: 1-2-1-1** (Template 6), then the following would happen to the Phase Pattern:

If the Phase Pattern had 1 steps: **1**
If the Phase Pattern had 2 steps: **1-2**
If the Phase Pattern had 4 steps: **1-2-1-1**
If the Phase Pattern had 7 steps: **1-2-1-1 1-2-1**
If the Phase Pattern had 16 steps: **1-2-1-1 1-2-1-1 1-2-1-1 1-2-1-1**

Template Steps 1…4

Applies the selected template only to the first 4 steps of the Phase Pattern.

If there are more steps, they will remain unchanged.

Template Steps 5…8

Applies the selected template only to steps 5–8 of the Phase Pattern. If there are more steps, they will remain unchanged. Steps 1–4 will remain unchanged.

Template Steps 9…12

Same as above, except for steps 9–12.

Template Steps 13…16

Same as above, except for steps 13–16.

Note that if the number of steps in the Phase Pattern (Pattern Items) is less than the steps for which Templates are being changed, these will produce no audible results.

Rhythm Group

Overview

The **Rhythm Group** controls the rhythmic characteristics of the Generated Effect. It can also have an influence when "Auto Bend" pitch bending effects (set up on the Bend Group) are generated.

About Rhythm Patterns

Rhythm Patterns control the timing with which notes will be generated. A value derived from a Rhythm Pattern is the size of the step between each generated note. Choices can be made from "Random Pools" (☞p.541) of values as described in detail later on. Furthermore, values can be tied to each other; the ties can be absolute or random.

Rhythm Patterns may be multiplied by the "Rhythm Multiplier," which gives them many more variations, in addition to providing easy ways to experiment with fractal and poly-rhythmic effects. A Rhythm Pattern of **{8th, 16th, 16th}** with a "Rhythm Multiplier" (☞p.542) of **200%** will play **{Quarter, 8th, 8th}**.

A Rhythm Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or the Phase Pattern has been configured to restart it at the beginning of certain Phases. This means that a four step Rhythm Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Global Parameters

The Global Parameters section contains parameters that relate to shifting the overall timing of the notes that are generated. The Humanize parameter allows subtle randomizations of timing, while the other four Swing-related RT Parameters deal with adding a "swing" or "hip-hop" feel to the rhythms.

The four Swing-related RT parameters will not be available if Swing On / Off is set to "Off."

Humanize [0…255 (ms)]

Sets a range in milliseconds within which each note / cluster may be randomly shifted in time. For example, if set to **10 ms**, then each cluster or note as it is generated has a possibility of a random offset in time of between 0 to 10 ms. This affects all of the notes in the cluster at the same time. This can be used to impart a more "human," less machine-like precision to generated notes. This can also be used to totally destroy the timing!

Swing Note Value [0…3]

0: 32th note **2: 8th note**

1: 16th note **3: 4th note**

Selects the base note value to be used in calculating swing. For example, if you want to add a swing feel to a steady string of 16th notes, you would select a **1: 16th note.** Straight 8th notes would exhibit no change with this setting, since they do not swing in such a feel unless they are syncopated. On the other hand, if you swing 16th notes with a **2: 8th note** Swing Note selected, the 16th notes are swung in an 8th note feel. While this is not necessarily natural "swing," interesting shiftings of timings can be produced. Note that the setting of this parameter can be modified by the "Swing Use Multiplier" parameter, explained below.

Swing % [–200…200 (%)]

Sets the percentage of swing / hip-hop feeling to be applied. **0%** = no swing, **50%** = triplets, while **100%** pushes the swung notes all the way to the next value of half the note length set by the "Swing Note Value" (☞p.539). For example, if swinging straight **1: 16th notes**, **100%** would push the swung notes to 32nds. **200%** would push the swung notes all the way to the next 16th. **Negative values** push the swung notes the other direction. Note that triplet rhythm values may not be affected by swing, depending on internal settings of the GE.

Triplets may or may not be swung depending on the setting of the "Swing Triplets" parameter below.

Swing % 0–100,101,102 [0…100, 101, 102]

0…100: 0…+100%

101: 200%

102: –200%

This special variation of the Swing % parameter allows only the most useful settings to be applied as a GE RT Parameter, for assigning to a Real-Time Control. A setting of 0…100 corresponds to 0…100% swing factor, while a value of **101** selects +200%, and a value of **102** selects –200%. Using this ensures that the most useful settings will be available over the widest range of the assigned control, while allowing the useful ±200% values to still be selected.

Swing Use Multiplier [0…3]

0: Off **2: P1-Phase1**

1: Ind-Independently **3: P2-Phase2**

The "Rhythm Multiplier" (explained later on in this chapter) causes the values in the Rhythm Pattern to be increased or decreased by a percentage. The "Swing Use Multiplier" specifies several options for selectively applying (or not applying) the Rhythm Multiplier(s) to the "Swing Note Value" also, thereby affecting the resulting swing feel.

0: Off-do not use Multipliers for Swing

The "Rhythm Multipliers" in each Phase do not have any affect on the "Swing Note Value". For example, if generating 16th notes with a "Rhythm Multiplier" of **100%** and "Swing Note Value" set to **1: 16th note**, the resulting **16th notes** will be swung with a 16th note feel. If the "Rhythm Multiplier" is changed to **50%**, the resulting **32nd notes** will still be swung with a **16th note feel**. If the "Rhythm Multiplier" is changed to **200%**, the resulting **8th notes** will also be swung with a 16th note feel, resulting in no perceptible swing (unless the rhythm is syncopated).

1: Ind-independently use each Phase's Multiplier

Each Phase's "Rhythm Multiplier" (☞p.542) will independently affect swing calculations while generating rhythms within that Phase. In other words, the "Swing Note Value" will also have the "Rhythm Multiplier" applied to it. For example, if generating 16th notes with a "Rhythm Multiplier" of 100% and "Swing Note Value" set to **1: 16th note**, the resulting **16th notes** will be swung with a 16th note feel. If the "Rhythm Multiplier" is changed to **50%**, the resulting **32nd notes** will be swung with a **32nd note feel**. If

the “Rhythm Multiplier” is changed to **200%**, the resulting **8th notes** will be swung with an **8th note feel**. With this setting, it is possible to swing with different note values in the two Phases, such as swinging with an 8th note feel in one phase and swinging with a 16th note feel in the other.

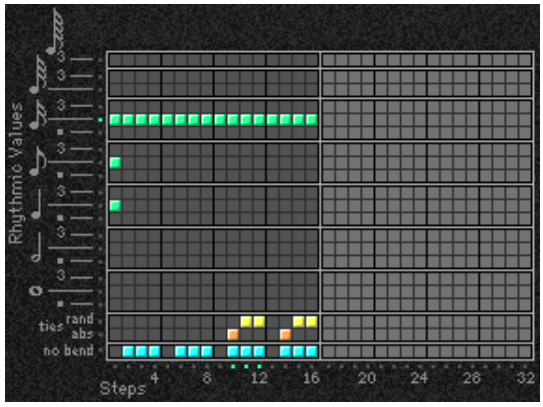
2: P1-always use Phase1’s Multiplier

Same as 1: Ind above, except that Phase 1’s “Rhythm Multiplier” will always be used, regardless of which Phase is currently generating rhythms. This allows the Rhythm Multiplier to be varied in Phase 1 while affecting the overall swing settings for the whole effect. For example, if generating 16th notes in both phases with both Phase’s “Rhythm Multipliers” set to **100%** and “Swing Note Value” set to **1: 16th note**, the resulting 16th notes will be swung with a **16th note feel**. If Phase 1’s “Rhythm Multiplier” is changed to **200%**, the resulting **8th notes** in Phase 1 and 16th notes in Phase 2 will all be swung with an **8th note feel**. If the “Rhythm Multiplier” in Phase 1 is **100%** and changed to **50%** in Phase 2, the resulting 16th notes in Phase 1 and 32nd notes in Phase 2 will all be swung with a **16th note feel**.

3: P2-always use Phase2’s Multiplier

Same as 2: P1 described above, except utilizing Phase 2’s “Rhythm Multiplier.”

Pattern Grid & Associated Parameters



Rhythm Pattern

A Rhythm Pattern controls the rhythm that the notes are generated with according to a grid of rhythmic values. It has any number of steps up to 32, with each step being represented by one column on the grid. The first column always contains at least one value; unused columns appear disabled. The top part of the grid corresponds to 18 different rhythmic values; the bottom 3 rows are special purpose rows:

[ties: rand] - Random Tie: randomly ties the rhythmic value in the same column to the previous column’s rhythmic value. For example, a 16th note in the first column followed by a 16th note and a random tie in the 2nd column yields either an 8th note or two 16th notes. When at least one random tie has been selected, a weighting curve is available which allows choices to be slanted towards more ties or less ties, as described later.

[ties: abs] - Absolute Tie: always ties the rhythmic value in same column to the previous column’s rhythmic value. For example, a 16th note in the first column followed by a 16th note and an absolute tie in the 2nd column yields an 8th note. The 2 tie rows are mutually exclusive; only one at a time can be used in any given column.

[no bend] - No Bend: affects when Automatic Pitch Bending effects can occur, as set up in the Bend Group. These effects will normally be triggered with every single generated note or cluster; by using the “no bend” row, bends can be prevented from occurring on various steps of the Rhythm Pattern.

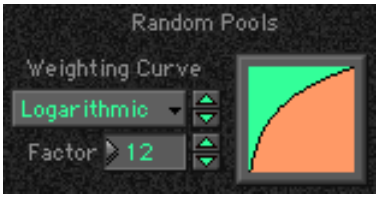
Pattern grids cannot be viewed or edited on the M3.

Random Weighting Parameters - Pools

The Random Weighting Parameters - Pools are made available when at least one step (column) in the Rhythm Pattern has multiple rhythmic values selected (constituting a "random pool" of values).

Whenever a random pool is encountered in playing through the pattern, a random choice is made from the values in that step. Certain areas of the random pool can be favored by the use of a weighting table, with various shaped curves. Using the curves, you can influence certain choices to be made more or less often than others, allowing very musical real-time control of the randomness.

Whether or not a certain random sequence will repeat for a number of times is controlled by settings in the Phase Pattern.



Pools-Random Factor [–99…+99]

Controls the degree of slope to the Weighting Curve. 0= a Linear Curve with any Weighting Curve. **Negative values** not only invert but rotate the curve. When the value is either **+99** or **–99**, the choices are "locked" to the highest or lowest values in the columns, and there are no random choices at all. (The only exception to this is an S-shaped curve with a value of **–99**. In this case, a random choice will be made between the highest and lowest values only.) For more information, please see the Appendices: "Random Weighting Curves." (☞p.584)

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**

1: Logarithmic **3: Log-S**

4 different shapes are available, which act to favor certain areas of the pool over others when each random choice is made. For more information, please see "Random Weighting Curves" on page 584.

0: Exponential

With a **positive Factor (+)**, choices will be exponentially weighted towards the shorter rhythms. With a **negative Factor (–)**, choices will be exponentially weighted towards the longer rhythms.

1: Logarithmic

With a **positive Factor (+)**, choices will be logarithmically weighted towards the shorter rhythms. With a **negative Factor (–)**, choices will be logarithmically weighted towards the longer rhythms.

2: Exp-S (Exponential S)

With a **positive Factor (+)**, choices will be exponentially weighted towards the middle rhythms, and away from the shorter and longer rhythms. With a **negative Factor (–)**, choices will be exponentially weighted towards the shorter and longer rhythms, and away from the middle rhythms.

3: Log-S (Logarithmic S)

With a **positive Factor (+)**, choices will be logarithmically weighted towards the middle rhythms, and away from the shorter and longer rhythms. With a **negative Factor (–)**, choices will be logarithmically weighted towards the shorter and longer rhythms, and away from the middle rhythms.

A Factor of **0** with any shaped curve yields a linear table (straight diagonal line), and each of the values in the pool will have an equal chance of being chosen.

Note: While exponential and logarithmic curves may seem to have a similar shape, they have slight differences which can affect the outcome of the random choices. For more information, please see "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Rhythm Pools:

Rhythm Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**longer**	**shorter**
Exp-S / Log-S	**middle**	**shorter/longer**

Random Weighting Parameters - Ties

The Random Weighting Parameters - Ties are made available when at least one step in the Rhythm Pattern contains a Random Tie. Whenever this step is encountered in playing through the pattern and a random choice must be made, the likelihood of a tie occurring can be favored by the use of a weighting table.

Ties-Random Factor [–99…+99]

Controls the degree of slope to the Weighting Curve. **0** = a Linear Curve with any Weighting Curve. Negative values not only invert but rotate the curve. When the value is **+99**, the choices are "locked" to no ties whatsoever; when the value is **–99**, the choices are "locked" to ties always (and the effect is the same as if absolute ties were selected). For more information, please see "Random Weighting Curves" on page 584.

Ties-Weighting Curve [0, 1]

0: Exponential **1: Logarithmic**

2 different shapes are available, which affect the likelihood of a tie occurring when a random choice is made. For more information, please see "Random Weighting Curves" on page 584.

0: Exponential

With a **positive Factor (+)**, choices will be exponentially weighted towards rhythm values more often. With a **negative Factor (–)**, choices will be exponentially weighted towards ties more often.

1: Logarithmic

With a **positive Factor (+)**, choices will be logarithmically weighted towards the rhythm values more often. With a **negative Factor (–)**, choices will be logarithmically weighted towards the ties more often.

Note: While exponential and logarithmic curves may seem to have a similar shape, they have slight differences which can affect the outcome of the random choices. For more information, please see "Random Weighting Curves" on page 584.

A Factor of **0** with any shaped curve yields a linear table (straight diagonal line), and a random tie or a rhythm value in the pool will have an equal chance of getting chosen.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random ties:

Values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**less ties**	**more ties**

Associated Parameters

Rhythm Multiplier [1…800 (%)]

Multiplies the selected Rhythm Pattern by the percentage. Useful for poly-rhythmic and fractal effects, such as using the same Rhythm Pattern at different multiplications. For example, if a Pattern is **{16th, 8th, 8th}**, then using a "Rhythm Multiplier" of **50%** changes it to **{32nd, 16th, 16th}**; using a "Multiplier" of **200%** changes it to **{8th, Quarter, Quarter}**; using a "Multiplier" of **136%** changes it to **{8th triplet, Qtr triplet, Qtr triplet}**; and using a "Multiplier" of **150%** changes it to **{dotted 8th, dotted Qtr, dotted Qtr}**.

Straight Multipliers [0…5]

0: 25% **2: 100%** **4: 400%**
1: 50% **3: 200%** **5: 800%**

Selects from a quantized set of "straight" values for the Rhythm Multiplier field. In other words, when applied to a Rhythm Pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc.

Straight/Trip Mults [0…10]

0: 25% **4: 100%** **8: 400%**
1: 34% **5: 136%** **9: 544%**
2: 50% **6: 200%** **10: 800%**
3: 68% **7: 272%**

Selects from a quantized set of "straight & triplet" values for the Rhythm Multiplier field. In other words, when applied to a Rhythm Pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc. or various triplet values.

Strt/Dot/Trip Mults [0…15]

0: 25% **4: 68%** **8: 150%** **12: 400%**
1: 34% **5: 75%** **9: 200%** **13: 544%**
2: 37% **6: 100%** **10: 272%** **14: 600%**
3: 50% **7: 136%** **11: 300%** **15: 800%**

Selects from a quantized set of "straight, triplet & dotted" values for the Rhythm Multiplier field. In other words, when applied to a Rhythm Pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc., various triplet values, or various dotted values.

Template Parameters

The two Template Parameters select from 63 or 64 different Rhythm Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

A Rhythm Pattern Template consists of:

- the configuration of the Rhythm Pattern Grid
- Random Weighting Parameters - Pools
- Random Weighting Parameters - Ties

Template [1…63]

The internal settings of the GE for the set of parameters corresponding to the chosen Template are never used; rather they are always replaced by one of the selected Templates from within the Min / Max range specified for the GE RTP page ("MIN (Min Value)" and "MAX (Max Value)" ☞p.90). In this case, available range is **1–63**.

Template + Restore [0: [As Stored]…63]

Similar to the above setting; however, the internal settings of the GE can be restored and used as part of the real-time Template operation. In this case, the Min setting of the Template Range actually does not select that Template; rather, it causes the internal settings of the GE to be restored for that Template's set of parameters. In other words, you can have a complex pattern already set up. When "Template + Restore" is being assigned as a GE RTP, you specify a range where the "Min Value" restores the internal settings, and the rest of the range selects Templates, replacing the internal settings. So if the "Min value" was **5** and the "Max value" was **10**, choosing **5** would restore the internal settings, and **6** through **10** would select the corresponding Rhythm Template. You can use this to keep the internal settings of the GE, while still allowing a wide variety of Templates to be substituted for various groups of parameters. In this case, the available range is **0–63**. You can assign the full range of all 63 Templates, or only a portion of the range, and still have the ability to restore the original internal settings.

Duration Group

Overview

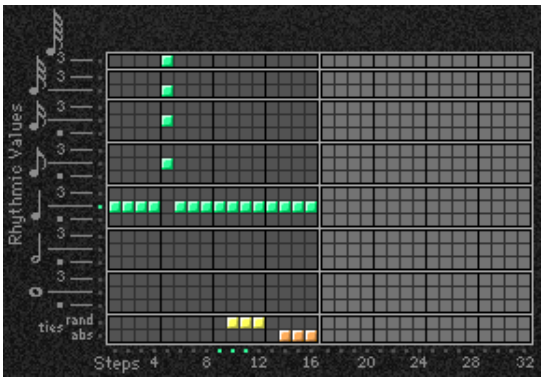
The **Duration Group** contains the parameters that control the duration of the notes in a Generated Effect.

About Duration Patterns

Duration Patterns control the duration of notes for each "rhythm event" that is generated according to the settings in the Rhythm Group. Choices can be made from "Random Pools" of values as described in detail later on. Furthermore, values can be tied to each other; such ties can be absolute or random.

A Duration Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or the Phase Pattern has been configured to restart it at the beginning of certain Phases. That means that a four step Duration Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Pattern Grid & Associated Parameters



Duration Pattern

A Duration Pattern controls the durations that the notes are generated with according to a grid of rhythmic values. It has any number of steps up to 32, with each step being represented by one column on the grid. The first column always contains at least one value; unused columns appear disabled. The top part of the grid corresponds to 18 different rhythmic values; the bottom 2 rows are special purpose rows:

[ties: rand] - Random Tie: randomly ties the rhythmic value in the same column to the previous column's rhythmic value. For example, a 16th note in the first column followed by a 16th note and a random tie in the 2nd column yields either an 8th note or two 16th notes. When at least one random tie has been selected, a weighting curve is available which allows choices to be slanted towards more ties or less ties, as described later.

[ties: abs] - Absolute Tie: always ties the rhythmic value in same column to the previous column's rhythmic value. For example, a 16th note in the first column followed by a 16th note and an absolute tie in the 2nd column yields an 8th note.

The 2 tie rows are mutually exclusive; only one at a time can be used in any given column.

If the "Duration Mode" is **3: Timed**, **4: Rhythm Overlap**, or **5: Rhythm %**, the Duration Pattern Grid is not utilized.

Pattern grids cannot be viewed and edited in the M3.

Associated Parameters

Duration Mode [0…7]

0: Poly Extend	**4: Rhythm Overlap**
1: Poly Extend/Damped	**5: Rhythm %**
2: Mono Extend	**6: Pattern Overlap**
3: Timed	**7: Pattern %**

Selects one of several modes of operation for generating durations in the current Phase:

Based on the current setting, the Duration Pattern Grid, and Random Weighting Parameters may not be available.

0: Poly Extend

Each note will sustain until the next generation of the same note, or until that note is no longer a part of the Note Series (caused by playing a new chord, for example). For example, if the notes to a CMaj chord are sustaining and the chord is changed to a C Minor, only the Es will be damped. Especially useful for finger-picked and strummed guitar effects. Certain steps may be "damped" by using the Duration Pattern to indicate a duration value shorter than the current Rhythm Pattern value. The "Duration Value" parameter is used to specify a percentage of the Duration Pattern value, making it shorter or longer by a certain amount. For example, if the Rhythm Pattern is generating quarter notes, any step in the Duration Pattern (as modified by the Duration Value) that is shorter than a quarter note will cause the notes (and all sustaining notes at that time) to have the specified duration. This is useful for simulating the technique of strumming and damping certain chords within the progression. Any value in a Duration Pattern step (as modified by the Duration Value) that is longer than the current Rhythm Pattern value will be ignored, and the notes will sustain as described above. The "Duration Value" specifies a percentage of the overall value (1–800%) - therefore, values less than 100% will shorten the duration represented by the Pattern Step, and values greater than 100% will lengthen it.

1: Poly Extend/Damped

The same as above, except all sustaining notes will be damped when the chord changes, not just notes that are no longer in the Note Series.

2: Mono Extend

The same as above, except each note or cluster is sustained until the next note or cluster (of any pitch or pitches) is generated.

3: Timed ("Duration Value": 1…5000 ms)

The "Duration Value" parameter is used to specify the duration of the generated notes, in milliseconds (1–5000 ms).

All notes will therefore have the same length. Note that this is independent of the current tempo - if it is set to **50 ms**, it will always be 50 ms, regardless of tempo.

4: Rhythm Overlap ("Duration Value": –500…+500 ms)

The "Duration Value" parameter is used to specify an amount by which each note or cluster will overlap or be separated from the next note or cluster, in milliseconds (-500 – 500 ms). Note that this relates to the Rhythm Pattern values. **Positive values** cause overlapping; **negative values** cause separation. For example, a setting of **–20** ensures that all notes will extend and be separated from the next notes by 20 ms regardless of the actual rhythm the notes are generated with, or the current tempo. Note that while the Rhythm Pattern values themselves are relative to tempo, the value specified here is not. Using the example setting of **–20**, there will always be a gap of 20 ms between notes regardless of the tempo.

5: Rhythm % ("Duration Value": 1…800%)

The "Duration Value" parameter is used to specify a percentage of the rhythmic value a note is generated with to use as a duration (1–800%). Note that this relates to the Rhythm Pattern values. The actual time is then calculated on the fly, taking into account the current tempo. For example, with a setting of **50%**, if the Rhythm Pattern specifies a string of **8th notes**, they will appear to be generated as a string of **16th notes** separated by **16th note rests** (each 8th note will have the duration of a 16th note, or 50%). Note that this value is therefore relative to tempo.

6: Pattern Overlap ("Duration Value": –500…+500 ms)

The Duration Pattern is used to construct a Duration Pattern, in a similar fashion to the Rhythm Pattern. Each step in the pattern indicates the duration for notes that are currently to be generated. The "Duration Value" parameter is used to specify amount by which to increase or decrease the pattern values, in milliseconds (-500 – 500 ms). This can be used to set up a certain Duration Pattern, and then vary in real-time the "gate-time" of each note in the pattern simultaneously. For example, if the Duration Pattern is generating **16th–8th** at a tempo of **120 BPM**, the notes would have the durations of **125 ms**, **250 ms**, etc. If the "Duration Value" parameter, is –20, they would be generated as **105 ms**, **230 ms**, etc. Note that while the Duration Pattern values themselves are relative to tempo, the value specified here is not. Using the example setting of **–20**, the notes will always be **20 ms** shorter regardless of the tempo.

7: Pattern % ("Duration Value": 1…800%)

The Duration Pattern is used to construct a Duration Pattern, in a similar fashion to the Rhythm Pattern. Each step in the pattern indicates the duration for notes that are currently to be generated. The "Duration Value" parameter is used to specify a percentage by which to increase or decrease the pattern values (1–800%). This can be also be used to set up a certain Duration Pattern, and then vary in real-time the "gate-time" of each note in the pattern simultaneously, similar to the previous option. For example, if the Duration Pattern is generating **16th–8th** at a tempo of **120 BPM**, the notes would have the durations of **125 ms**, **250 ms**, etc. If the "Duration Value" is **80%**, they would be generated as **100 ms**, **200 ms**, etc. Note that this value is therefore

Duration Value [–500…+5000]

The range and function of this parameter depend on the setting of "Duration Mode."

See the descriptions above under "Duration Mode." When the "Duration Mode" is changed, this value will be set to a default value appropriate for the mode. (if it is out of range.)

Not available if "Duration Mode" = **0: Poly Extend**, **1: Poly Extend/Damped**, or **2: Mono Extend**.

Use Rhythm Multiplier [0, 1]

0: Off **1: On**

When **1: On**, the durations of the generated notes will be affected by the current setting of the Rhythm Group "Rhythm Multiplier" (☞p.542). For example, if the Duration Pattern specifies a duration of a 16th note, and the "Rhythm Multiplier" is set to **200%** in the current Phase, the actual resulting duration will be an 8th note. This is useful when you want to vary the Rhythm Multiplier in real-time and have the Duration Pattern also lengthen the notes appropriately.

Random Weighting Parameters - Pools

The Random Weighting Parameters - Pools are made available when at least one step (column) in the Duration Pattern has multiple rhythmic values selected (constituting a "random pool" of values).

☞p.541 "Rhythm Group": "Random Weighting Parameters - Pools"

Pools-Random Factor [–99…+99]

☞p.541 "Rhythm Group": "Pools-Random Factor".

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**

1: Logarithmic **3: Log-S**

☞p.541 "Rhythm Group": "Pools-Weighting Curve".

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Duration Pools:

Duration Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**Longer**	**shorter**
Exp-S / Log-S	**middle**	**shorter/longer**

Random Weighting Parameters - Ties

☞p.541 “Rhythm Group”: “Random Weighting Parameters - Ties”.

Ties-Random Factor [–99…+99]

☞p.541 “Rhythm Group”: “Ties-Random Factor”.

Ties-Weighting Curve [0, 1]

0: Exponential 1: Logarithmic

☞p.541 “Rhythm Group”: “Ties-Weighting Curve”.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random ties:

Values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**less ties**	**more ties**

Associated Parameters

Template Parameters

The two Template Parameters select from 63 or 64 different Duration Pattern Templates, and load the parameters into the current Phase’s Pattern Grid and associated parameters.

A Duration Pattern Template consists of:

- the configuration of the Duration Pattern Grid
- Random Weighting Parameters - Pools
- Random Weighting Parameters - Ties

Template [1…63]

☞p.542 “Rhythm Group”: “Template Parameters”.

Template + Restore [0: [As Stored]…63]

☞p.542 “Rhythm Group”: “Template + Restore”.

Index Group

Overview

The **Index Group** controls the order of the pitches as they are generated from the Note Series, and some other characteristics that can affect the number of notes generated at a time.

About Index Patterns

Index Patterns describe a way of moving through the Note Series in memory and consequently control the order of the pitches as they are generated. The Note Series has an index associated with it that indicates the current position, and the next Index to be generated. The Index Pattern values indicate how the index will be moved after generating the Index at the current position. A positive value moves forward from the current position; a negative value moves backwards; a value of **0** repeats a Index. Choices can be made from "Random Pools" of values as described in detail later on. When the Phase "Direction" is set to **1: Backwards**, the values operate in inverted fashion.

Since the first value in the Index Pattern is not used until after the first Index has been generated, a Index Pattern of **{1, 1, 1, –2}** will cause the generation of the first four notes in the Notes Series, after which it jumps back to the 2nd note in the Note Series and so on.

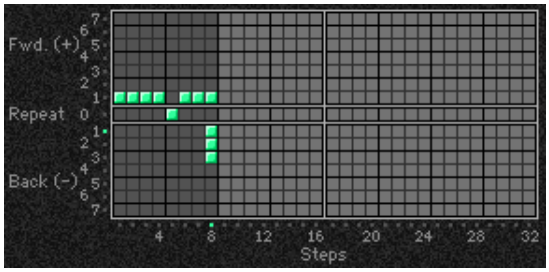
Note Series:	C4	→	E4	→	G4	→	B4	....	
Index Pattern:	→	1	→	1	→	1	→		
			←	←	–2	←	←		
Note :	**C4**	→	**E4**	→	**G4**	→	**B4**	→	**E4** ...

Note that it is possible to create Index Patterns that will not move ahead or will actually move backwards, given that you can start from a position that is somewhere in the middle of a Note Series by using either the "Start %" (☞p.534) or "Beginning / End Offset %" parameters (☞p.537) in the Phase Group. If you do create a Index Pattern that simply stays in one place (i.e. **{1, –1}**, or **{0}**), a Phase Change will only occur if the Phase "Length Mode" (☞p.534) is not set to **0: AC-Actual**, since in this mode it waits for the end of the Note Series to be reached, and this will never happen if there is no forward movement.

A Index Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or the Phase Pattern has been configured to restart it at the beginning of certain Phases. This means that a four step Index Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Besides using Index Patterns, several other means of moving through the Note Series are provided. These options are controlled with the Index Pattern Type parameter, as described below.

Pattern Grid & Associated Parameters



Index Pattern

A Index Pattern has any number of steps up to 32, with each step being represented by one column on the grid. The first column always contains at least one value; unused columns appear disabled. The 15 rows represent forward and backward movement from the current index as each note or cluster of notes is generated.

Pattern girds cannot be viewed or edited on the M3.

Associated Parameters

Index Mode [0…2]

0: Pattern **1: Random** **2: Random Walk**

0: Pattern

Movement through the Note Series will be controlled by a Index Pattern constructed in the pattern grid.

1: Random

Causes the pitches to be chosen at random from the applicable portion of the Note Series. Unlike most arpeggiators, the random algorithm used here does not allow notes to happen twice in a row, which sounds less machine-like and more musical. Once a note has been chosen, future choices of that note will not occur until all other notes in the applicable portion have been chosen.

2: Random Walk ("Random Walk Max Step": 1…9)

Makes available the "Random Walk Max Step" parameter.

Causes the pitches to meander from the start pitch in a random fashion, with the largest step that can be taken in any direction controlled by the "Random Walk Max Step" parameter. For example, if "Random Walk Max Step" is set to **2**, then the "pool" of possible choices for movement from the current Index is **{–2, –1, 1, 2}**. Note that **{0}** is not allowed as a possible choice. This is good for creating riffs which sound a bit like improvisation, especially when you use the Phase Group to ensure that random phrases will be repeated a number of times before new ones are chosen.

If you want the possibility of the same notes happening twice or more in a row, you can use 0: Pattern, and configure the Index Pattern to have pools of values including "0," instead of using Random or Random Walk.

Random Walk Max Step [1…9]

Sets the largest step that can be taken when Index Pattern Type is set to **2: Random Walk**, as described above. The value relates to movement of the Index through the Note Series, not a particular musical interval.

Not available unless Index "Pattern Type" is **2: Random Walk**.

Random Weighting Parameters

The Random Weighting Parameters are made available when at least one step in the Index Pattern has multiple values selected (constituting a "random pool" of values).

☞p.541 "Rhythm Group": "Random Weighting Parameters - Pools".

Pools-Random Factor [–99…+99]

☞p.541 "Rhythm Group": "Pools-Random Factor".

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**

1: Logarithmic **3: Log-S**

For more information, please see "Rhythm Group" on page 539, "Pools-Weighting Curve" on page 541, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Index Pattern Pools:

Index Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**higher in grid**	**lower in grid**
Exp-S / Log-S	**middle**	**higher/lower**

Associated Parameters

Cluster Mode [0, 1]

0: Single **1: Multi**

Sets the way that clusters affect the advancement through the Index Pattern. When set to Multi, a cluster will advance by as many steps as notes in the cluster, depending on other internal settings.

0: Single-1 Step per Cluster

Each time a note, cluster of notes, or group of drum notes is generated one Index Pattern Value will be chosen for the resulting note or cluster of notes, after which the Index Pattern advances to the next value. For example, a cluster of six notes will all be generated from the next six adjacent notes in the Note Series (or Drum Pattern) and advance the pattern by one to the next step. In other words, when a cluster is about to be generated, the index in the Note Series will first move an amount determined by the previous Step's Index Pattern Value; then all the notes in the cluster will be generated from adjacent indexes, after which the Pattern will again advance by one. This is useful for creating clusters of notes which jump around following the Index Pattern exactly; the bottom note of each cluster essentially follows the path that would be taken by a cluster size of 1, with the effect that cluster size has no effect on how quickly the Index Pattern moves through the Note Series and Phase (or Drum Pattern). Also useful for randomizing Drum Patterns, since it will cause the index into the Drum Pattern to jump around and not move forward in a linear fashion.

Index Pattern= **2**, Cluster Size = **6**

Note Series:	C2	E2	G2	B2	C3	E3	G3	B3	C4	E4	G4	B4
Step1:	C2	E2	G2	B2	C3	E3						
Step2:			G2	B2	C3	E3	G3	B3				
Step3:					C3	E3	G3	B3	C4	E4		
Step4:							G3	B3	C4	E4	G4	B4

1: Multi-1 Step For Each Note In Cluster

When the internal GE parameter "Advance Mode" is 0: Independent:

For every note in a cluster or group of drum notes generated simultaneously, a separate Index Pattern Value will be chosen after which the Index Pattern advances to the next value. For example, a cluster of six notes will be generated with the next six Index Pattern Values (with a net advance of six steps). This means that each note in the cluster will not necessarily be the adjacent note in the Note Series (or Drum Pattern), but a certain distance from the previous note as specified by the pattern value. This is useful for creating clusters of notes with different voicings, or randomizing Drum Patterns in a manner different than above. Another effect of this is that after each cluster, the next cluster starts where the previous cluster left off, in effect advancing through the Phase and the Note Series (or Drum Pattern) much more quickly.

Index Pattern= **2**, Cluster Size= **6**

Note Series:	C2	E2	G2	B2	C3	E3	G3	B3	C4	E4	G4	B4	C5	E5	G5	B5	C6	E6	G6	B6 …
Step1:	C2		G2		C3		G3		C4		G4									
Step2:													C5		G5		C6		G6 …	

When the internal GE parameter "Advance Mode" is 1: Lock (R) or one of the Drum Lock options:

The Index Pattern is using the other pattern's index; therefore, it is not possible for it to advance with each note. So it works slightly differently: the Index Value at the current step is used for each note in the cluster. So a cluster of six notes will be generated with the same distance between each index, as specified by the current Index Pattern Value. This value also indicates where the next cluster will start. For example, with an Index Pattern value of {3}, a cluster of 3 notes will have the indexes spaced by 3 and the next cluster will start 3 indexes away from the last generated note.

Index Pattern = **{3 2 1}**, Cluster Size = **3**

Advance Mode: **1: Lock (R)**, Cluster Mode: **1: Multi**

Note Series:	C2	E2	G2	B2	C3	E3	G3	B3	C4	E4	G4	B4	C5	E5	G5	B5	C6	E6	G6	B6 …
Step1:	C2		B2		G3															
Step2:								E2		B4		E5								
Step3:																B5	C6	E6 …		

When the "GE Type" (☞p.529) is **0: Generated-Riff**, setting this to **1: Multi** will have no effect unless there is a Cluster Pattern containing values of more than just 1.

When the "GE Type" is **2: Generated-Drum**, setting this to **1: Multi** will have no effect unless at least one Drum Pattern has the "[c] (clusters)" button turned on in the Phase Pattern and there is a Cluster Pattern containing values of more than just 1.

Invert [0, 1]

0: Off **1: On**

When **1: On**, the index will be inverted with regards to the overall Note Series (taking into consideration the "Beginning and End Offsets" in the Phase Group) and generated again, thereby generating twice as many notes at a time. This will also cause any clusters to be inverted.

0: Off

Index Pattern= **2**, Cluster Size= **2**

Note Series:	**C2**	**E2**	**G2**	**B2**	**C3**	**E3**	**G3**	**B3**
Step1:	**C2**	**E2**						
Step2:			**G2**	**B2**				
Step3:					**C3**	**E3**		
Step4:							**G3**	**B3**

1: On

Index Pattern= **2**, Cluster Size= **2**

Note Series:	**C2**	**E2**	**G2**	**B2**	**C3**	**E3**	**G3**	**B3**
Step1:	**C2**	**E2**					**G3**	**B3**
Step2:			**G2**	**B2**	**C3**	**E3**		
Step3:			**G2**	**B2**	**C3**	**E3**		
Step4:	**C2**	**E2**					**G3**	**B3**

Double [0, 1]

0: Off **1: On**

When **1: On**, the "Double Amount" parameter becomes available, and the index will be doubled by the interval indicated and generated again, thereby generating twice as many notes at a time. This will also cause any clusters to be doubled.

Note: When using "Double" and "Invert" at the same time, four times as many notes will be generated.

Double Amount [0…12]

0: Auto **1…12: Index**

This parameter becomes available when "Double" is **1: On**. The index will be doubled by the interval indicated and generated again, thereby generating twice as many notes at a time. When set to **0: Auto**, an optimal interval is automatically calculated depending on the number of notes in the Note Series. The other settings specify exact distances from the current index (forward) within the Note Series (not semitones).

"Double": **1: On**, "Double Amount": **2**

Note Series:	**C2**	**E2**	**G2**	**B2**	**C3**	**E3**	**G3**	**B3**	**C4**	**E4**	**G4**	**B4**
Step1:	**C2**		**G2**									
Step2:		**E2**		**B2**								
Step3:			**G2**		**C3**							
Step4:				**B2**		**E3**						

Inv/Dbl Vel. Offset [0…200%]

Sets an amount by which the velocity of any inverted and doubled notes will be offset from the original notes. This allows you to make them a bit softer or louder than the original notes. The value is a percentage of the original note's velocity, so values **less than 100** will produce softer inverted and doubled notes, while values **greater than 100** will produce louder inverted and doubled notes. A value of **0%** will effectively stop the generation of inverted and doubled notes.

Not available unless "Double" or "Invert" (☞p.548) is set to **0: On**.

Template Parameters

The two Template Parameters select from 63 or 64 different Index Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

An Index Pattern Template consists of:

- the configuration of the Index Pattern Grid
- Random Weighting Parameters

Template [1…63]

☞p.542 "Rhythm Group": "Template".

Template + Restore [0: [As Stored]…63]

☞p.542 "Rhythm Group": "Template + Restore".

Cluster Group

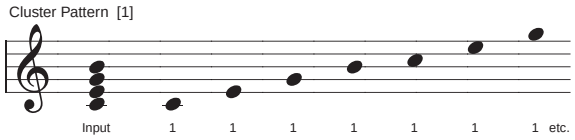
Overview

The **Cluster Group** contains the parameters that control the "clustering" characteristics of the Generated Effect (the number of notes generated simultaneously each time a rhythm event occurs, thereby creating chords and polyphonic phrases). Also controlled from here is the degree of strumming on a cluster, and the direction in which a cluster is strummed.

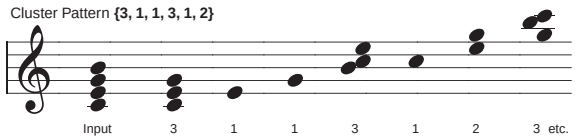
About Cluster Patterns

A "cluster" is a group of notes that will be generated at the same time, with a size ranging from 1 to 10. Cluster Patterns control how many notes at a time will be generated each time the Rhythm Pattern determines that it is time to produce some notes (each "rhythm event"). This can be used to cause chords to be generated at certain times; the resulting chords may optionally strummed or skewed in several ways, with differing degrees of looseness. Random choices of cluster sizes can be made from "Random Pools" of values as described in detail later on.

If the Cluster Pattern is 1, then single notes are produced (when "GE Type" (☞p.529) = **0: Generated-Riff**). A CMaj7 as input source material might produced the following Riff:



If the Cluster Pattern was **{3, 1, 1, 3, 1, 2}** (and the Index Pattern "Cluster Mode" **0: Single** ☞p.547), then the following result would be produced by the same input notes:



Note that the number of notes in a cluster can be effectively doubled or quadrupled if "Invert," "Double" (☞p.548) or both are being used in the Index Group.

A Cluster Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or unless the Phase Pattern has been configured to restart it at the beginning of certain Phases. This means that a four step Rhythm Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

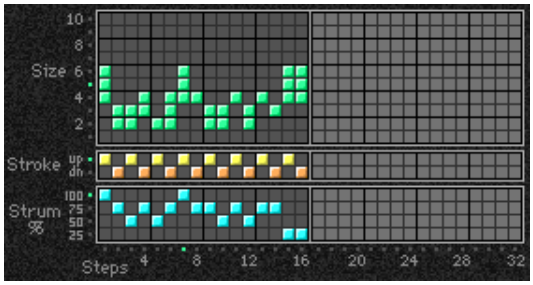
Strum [0…1000 (ms)]

Sets the value in milliseconds that each cluster will be "strummed" (quickly arpeggiated or flammed). Note that a single note cannot be strummed, so this only has an effect on cluster sizes greater than 1. This is the total time for each cluster, so each note in a cluster of 5 notes will be closer together than a cluster of 3 notes with the same strum value. This maintains a proper degree of "looseness" while changing cluster sizes.

Strums are presently alternated in the up and down direction. By setting this to high values (so there are not really strums, but arpeggiations happening), interesting overlappings of each cluster over subsequent clusters can be made to occur.

Not available if "GE Type" (☞p.529) = **2: Generated-Drum**. Not available if "GE Type" = **1: Generated-Gated** and "Gate Type" = **Expression**.

Pattern Grid & Associated Parameters



Cluster Pattern

A Cluster Pattern represents a series of values indicating the size of clusters of notes to be generated (chords). It has any number of steps up to 32, with each step being represented by one column on the grid. The first column always contains at least one value; unused columns appear disabled. The 10 rows represent the number of notes to be generated at a time, from 1 to 10.

Pattern grids cannot be viewed or edited on the M3.

Random Weighting Parameters

The Random Weighting Parameters are made available when at least one step (column) in the Cluster Pattern has multiple values selected (constituting a "random pool" of values).

For more information, please see "Rhythm Group" on page 539, and "Random Weighting Parameters - Pools" on page 541.

Pools-Random Factor [–99…+99]

For more information, please see "Rhythm Group" on page 539, and "Pools-Random Factor" on page 541.

Pools-Weighting Curve [0…3]

0: Exponential	**2: Exp-S**
1: Logarithmic	**3: Log-S**

For more information, please see "Rhythm Group" on page 539, and "Pools-Weighting Curve" on page 541, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Cluster Pattern Pools:

Cluster Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**larger**	**smaller**
Exp-S / Log-S	**middle**	**smaller/larger**

Associated Parameters

Template Parameters

The two Template Parameters select from 63 or 64 different Cluster Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

A Cluster Pattern Template consists of:

- the configuration of the Cluster Pattern Grid
- Random Weighting Parameters.

Template [1…63]

☞p.542 "Rhythm Group": "Template".

Template + Restore [0: [As Stored]…63]

☞p.542 "Rhythm Group": "Template + Restore".

Velocity Group

Overview

The **Velocity Group** controls most of the aspects that affect the velocities of the notes in the Generated Effect.

About Velocity Patterns

A Velocity Pattern represents amounts to be subtracted from the initial velocities of notes as they are about to be generated. This can therefore be used to provide patterns of accents in the generated notes, while retaining some of the original velocity information if desired. Choices can be made from "Random Pools" of values as described in detail later on.

Initial velocity is determined by the setting of the "Velocity Mode," and how hard the notes are played when providing input notes. If "Velocity Mode" was set to **Constant - 124**, then all of the generated notes would have an Initial Velocity of 124. Playing them with a Velocity Pattern of **{0, –20, –40}** would produce the following accented velocities:
124, **104**, **84**, **124**, **104**, **84**, etc.

Velocity Patterns are additive to Velocity Envelopes, and are compressed to the degree that the envelope approaches zero. In other words, a wide Velocity Pattern will become less wide as the envelope approaches zero to prevent notes from disappearing.

Velocity Patterns may be scaled by the "Velocity Scale" parameter, yielding precise control over how a Velocity Pattern affects an instrument, and additional variations.

A Velocity Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or the Phase Pattern has been configured to restart it at the beginning of certain Phases. That means that a four step Note Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Global Parameters

Velocity Mode [0…2]

0: Actual **1: Average** **2: Constant**

Controls how the actual velocities of the notes received as input source material affect the velocities of the notes as they are generated.

When the "Velocity Mode" is **0: Actual** or **1: Average**, the Velocity Range Bottom / Top parameters are available. When the Velocity Mode is **2: Constant**, the Velocity Value parameter is available.

0: Actual

The actual velocities received are used as the "Initial Velocity" for each note as they are generated. Loud notes (and their generated counterparts) will play loud, and vice versa. The Velocity Range Bottom and Top parameters are operable, allowing you to scale the amount of sensitivity.

1: Average

The notes received as input have their velocities averaged, and this is then used as the Initial Velocity at which to generate notes. The Velocity Range Bottom and Top parameters become operable, allowing you to scale the amount of sensitivity.

Using this mode allows the velocities received as input to control the overall volume of the resulting effect. For example, you might use this mode so that playing chords hard made the strumming of a guitar a bit louder overall, but where the resulting velocities in each note of a cluster are the same.

2: Constant

The velocities of the notes received as input are ignored; the Velocity Value parameter becomes operable and specifies directly the initial velocity value at which to generate the notes. For example, entering **124** will generate all notes with an initial velocity of **124**.

Velocity Value [1…127]

Sets the Initial Velocity value at which to generate notes. For example, entering "124" will generate all notes with an initial velocity of 124. The Pattern Values and Velocity Scale are then factored in to yield the actual generated velocities.

Not available unless "Velocity Mode"= **2: Constant**.

Velocity Range Bottom [1…127]
Velocity Range Top [1…127]

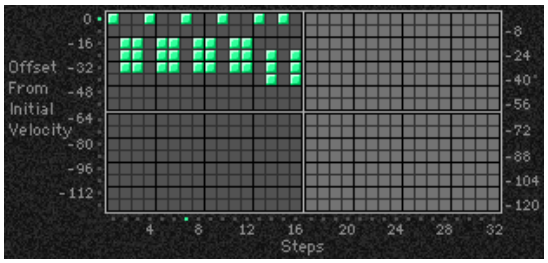
Sets the overall velocity sensitivity range for input notes, which yields the Initial Velocity to which the Pattern Values and Velocity Scale is applied. Setting **Bottom** / **Top** to 1 / 127 will provide full sensitivity (any input note with a velocity of 1–127 will go into KARMA as played). Moving the bottom value up decreases the overall sensitivity while making the notes gradually louder - for example, with a setting of 64 / 127, an input velocity of 64 would enter KARMA as 96 (velocities in the range 1–127 are scaled into the range 64–127, or 50% louder). Moving the top value down decreases overall sensitivity while making the notes gradually softer - for example, with a setting of 1 / 64, an input velocity of 64 would enter KARMA as 32 (velocities in the range 1–127 are scaled into the range 1–64, or 50% softer).

Note: Setting the two values to the same value creates a constant value, and would be the same as using "Velocity Mode"= **2: Constant**. For example, setting the Mode to Average with a range of 64 / 64 is the same as Constant with "Velocity Value"= 64.

Randomize Bottom [–12…+12]
Randomize Top [–12…+12]

Sets a range of randomization to be applied to each note's velocity as it is generated. Note that this can be used to make the velocity of each note in a cluster slightly different, while using the Velocity Pattern to generate random velocities applies to each cluster as a whole. Useful for more human-sounding effects, with less machine-like precision.

Pattern Grid & Associated Parameters



Velocity Pattern

A Velocity Pattern has any number of steps up to 32, with each step being represented by one column on the grid. The first column always contains at least one value; unused columns appear disabled. From the top, the 16 rows represent increasing amounts of velocity offsets to be subtracted from the Initial Velocity of the input notes (as determined by the Velocity Mode). It is important to note that the reason the pattern operates with negative, subtractive values rather than absolute positive values is so that it can be applied to the actual initial velocities of the input source material, thereby superimposing a pattern of accents while not destroying already existing velocity nuances (if desired).

Pattern grids cannot be viewed or edited on the M3.

Random Weighting Parameters - Pools

The Random Weighting Parameters are made available when at least one step (column) in the Velocity Pattern has multiple values selected (constituting a "random pool" of values).

☞p.541 "Rhythm Group": "Random Weighting Parameters - Pools"

Pools-Random Factor [–99…+99]

☞p.541 "Rhythm Group": "Pools-Random Factor"

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**

1: Logarithmic **3: Log-S**

For more information, please see "Rhythm Group" on page 539, "Pools-Weighting Curve" on page 541, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Velocity Pools:

Velocities that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**louder**	**softer**
Exp-S / Log-S	**middle**	**louder/softer**

Associated Parameters

Cluster Mode [0, 1]

0: Single-1 Step Per Cluster

1: Multi-1 Step For Each Note In Cluster

0: Single-1 Step Per Cluster

Each time a note, cluster of notes, or group of drum notes is generated one Velocity Pattern Value will be chosen for the current step, after which the Velocity Pattern advances to the next step. For example, a cluster of six notes will all be generated with the same velocity and advance the Velocity Pattern by one to the next step. This is useful for creating very noticeable "accented patterns" within effects using large clusters of notes such as gated techno effects.

1: Multi-1 Step For Each Note In Cluster

For every note in a cluster or group of drum notes generated simultaneously, a separate Velocity Pattern Value will be chosen after which the Velocity Pattern advances to the next value. For example, a cluster of six notes will be generated with the next six Velocities indicated by the pattern, with a net advance of six steps. This means that each note in a cluster or each note of a drum pattern that is generated simultaneously can be given its own velocity. This is useful for more subtly shifting accents within clusters of notes, and adding more human-like velocity randomness to drum patterns.

When the "GE Type" (☞p.529) is **0: Generated-Riff**, setting this to **1: Multi** will have no effect unless there is a Cluster Pattern containing values of more than just one.

When the "GE Type" is **1: Generated-Gated**, the number of notes being generated is considered the Cluster Size, and setting this to **1: Multi** will cause the pattern to advance by the number of notes being generated.

When the "GE Type" is **2: Generated-Drum**, setting this to **1: Multi** will have no effect unless at least one Drum Pattern has the "[c] (clusters)" button turned on in the Phase Pattern and there is a Cluster Pattern containing values of more than just 1, or more than one drum note is being generated at a time (by using Drum Patterns in "Poly" mode).

Scale [–999…+999 (%)]

Sets a percentage by which the chosen Velocity Pattern is scaled before being applied. Notes can be made to disappear or drop out using large positive values; large negative values with a very soft initial velocity can create interesting "reversed" effects.

Note that this can be used to "increase the resolution" of the Velocity Pattern Grid; for example, at **+100%** the offsets match the values displayed on the vertical axis; at **+50%** the offsets would be divided by two, for a difference of four between each value rather than eight and an overall range of **0 to –60**; at **+25%** the offsets would be divided by four for a difference of two between each value and an overall range of **0 to –30**. Conversely, at **+200%** the offsets would be multiplied by two, for a difference of sixteen between each value and an overall range of **0 to –240**, meaning that some notes will drop out and leave "holes" in the sequence of notes (since any note with a velocity less than 1 is not generated).

Not available if "GE Type" (☞p.529) = **2: Generated-Drum**; each pattern in the Drum Group has a separate Velocity Scaling parameter.

Template Parameters

The two Template Parameters select from 63 or 64 different Velocity Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

A Velocity Pattern Template consists of:

- the configuration of the Velocity Pattern Grid
- Random Weighting Parameters.

Template [1…63]

☞p.542 "Rhythm Group": "Template".

Template + Restore [0: [As Stored]…63]

☞p.542 "Rhythm Group": "Template + Restore".

CCs/Pitch Group

Overview

The **CCs/Pitch Group** allows the editing of parameters that control generation of **CC (Control Change) messages**. For example, this can control the panning (CC #10) of the notes in the Generated Effect (stereo placement left to right). Any other CC data may also be generated to control any MIDI controllable characteristic of your synthesizer, such as resonance, filter frequency, vibrato, etc. You may also use the CC Pattern to generate stepped Pitch Bend messages, technically not a "CC." Depending on internal settings of the GE, the CC Pattern may also be used to specify "Pitch Offsets" that will be applied as Transpose Values to each note as it is generated. This can be used to simulate the Triton Arpeggiator Pitch Offset value for each step, in addition to providing other interesting and useful effects.

About CC/Bend/Pitch Patterns

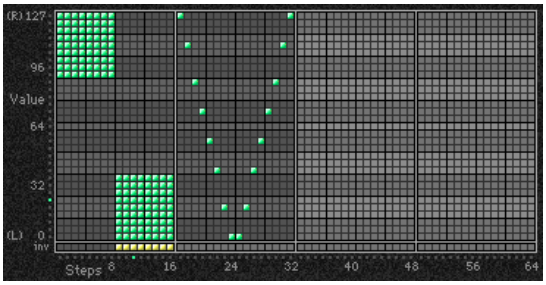
A value derived from a CC / Bend Pattern is a MIDI Control Change value from **0–127** (or Pitch Bend, or Pitch Transpose Values, if selected). The values are sent out as each note or cluster of notes is generated. Choices can be made from "Random Pools" of values as described in detail later on.

If the selected CC is **10** (Pan) for example, a CC Pattern such as **{0, 127}** would cause every other note to pan to the opposite side of the stereo spectrum. A CC Pattern of **{0, 0, 0, 0, 127, 127, 127, 127}** would play four notes left, then four notes right. A CC Pattern may be inverted at any time (caused to go in the opposite direction, **127–0**) by using the **Polarity** Parameter, which is an easy way to reverse the direction of the pattern.

A CC Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or unless the Phase Group has been configured to restart it at the beginning of certain Phases. This means that a four step CC Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Pattern Grid & Associated Parameters

CC grid when being used for CCs or Pitch Bend

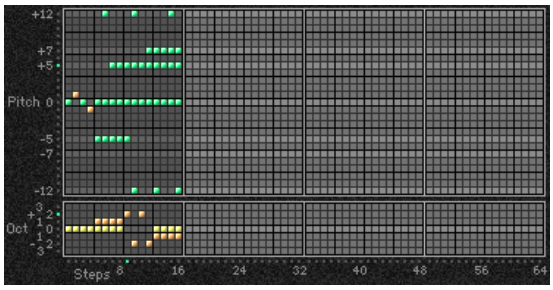


CC Pattern

A CC Pattern represents a series of values indicating a MIDI Control Change (or Pitch Bend) value to be generated. It may have any number of steps up to 64, and loop independently of other patterns being used at the same time. Each step is represented by one column on the grid. The first column always contains at least one value. Each row represents a CC or Pitch Bend value in multiples of **four (0, 4, 8, 12 etc.)**. The special bottom row ("inv") indicates whether or not to invert the Random Weighting Curve (discussed later on) for any pools within that column.

Depending on internal settings of the GE, the Phase 2 CC Pattern may be used to specify "Pitch Offsets" for notes as they are generated. In this case, the grid is split into two portions: the top portion (Pitches) contains 25 rows, corresponding to a Transpose value of –12 to +12 semitones. The bottom portion (Octaves) contains 7 rows, corresponding to a Transpose value of –3 to + 3 octaves. By combining the two Transpose values, any offset from –48 to +48 can be achieved. This can be used to simulate the Triton Arpeggiator Pitch Offset value for each step, in addition to providing other interesting and useful effects.

CC grid when being used for Pitch Offsets



Pattern grids cannot be viewed or edited on the M3.

Associated Parameters

Fixed On [0…128]

0…127: fixed CC value **128: Pattern**

When set to **128**, the Pattern Grid becomes operative, and the Pattern is sent out. When set to any other value, a single CC or Pitch Bend value corresponding to the fixed value is sent, and the Pattern Grid becomes inoperative. This allows you to override the Pattern with a fixed value.

Not available in Phase 2 when Pitch Offsets are being used.

Pattern Type [0…5]

0: Pattern **3: Index to 32…96**
1: Index to 0…127 **4: Index to 0…64**
2: Index to 24…108 **5: Index to 64…127**

When "Pattern" is selected, the Pattern Grids will be used to generate the assigned CC / Bend. The "Index" options allow the data to be generated based on the position of the index in the Note Series from left to right.

Not available in Phase 2 when Pitch Offsets are being used.

0: Pattern

When **0: Pattern** is selected, the Pattern Grids will be used to generate the assigned CC / Bend.

Index

The 1–5: Index to options allow the data to be generated based on the position of the index in the Note Series from left to right. For example, when set to **1: Index to 0…127**, the index of the note in the Note Series (about to be generated) is compared to the minimum and maximum indexes that will be generated according to the current settings and scaled into a value from **0–127** so that the first index to be used generates 0 and the last **127**, with indexes in between being scaled accordingly. The **Polarity** button can invert this for the opposite effect (127–0). Can be useful for simulating stereo miking of an instrument like a piano or harp (with Pan data CC 10), or for simply tracking the movement of the indexes with any other CC data. The Pattern Grid described above will not be available.

1: Index to 0…127
Scales generated notes into CC or Pitch Bend values **0–127**.

2: Index to 24…108
Scales generated notes into CC or Pitch Bend values **24–108**.

3: Index to 32…96
Scales generated notes into CC or Pitch Bend values **32–96**.

4: Index to 0…64
Scales generated notes into CC or Pitch Bend values **0–64**.

5: Index to 64…127
Scales generated notes into CC or Pitch Bend values **64–127**.

Polarity [0, 1]

0: Regular (+) **1: Inverted (–)**

0: Regular (+)
The CC Pattern is sent out as originally created.

1: Inverted (–)
The CC Pattern is inverted; i.e. 0 is sent out as **127**, 127 is sent out as **0**, 96 is sent out as **32**, etc. This allows the same pattern to be used in two different directions.

Random Weighting Parameters

The Random Weighting Parameters are made available when at least one step (column) in the CC Pattern has multiple values selected (constituting a "random pool" of values).

For more information, please see "Rhythm Group" on page 539 and "Random Weighting Parameters - Pools" on page 541.

Pools-Random Factor [–99…+99]

For more information, please see "Rhythm Group" on page 539 and "Pools-Random Factor" on page 541.

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**
1: Logarithmic **3: Log-S**

For more information, please see "Rhythm Group" on page 539, "Pools-Weighting Curve" on page 541, "Appendices" on page 582, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the CC Pools:

CC Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**higher in grid**	**lower in grid**
Exp-S / Log-S	**middle**	**higher/lower**

Note: Turning on the Weighting Curve Inversion Row button causes the opposite behavior specified above (in that step).

Pitches-Random Factor [–99…+99]

Controls the shape of the weighting curve being applied to the top part of the CC Pattern Grid (Pitches).

For more information, please see "Rhythm Group" on page 539 and "Random Weighting Parameters - Pools" on page 541.

This is valid only if the GE settings make the Phase 2 CC pattern specify Pitch Offset values.

Pitches-Weighting Curve [0…3]

0: Exponential **2: Exp-S**
1: Logarithmic **3: Log-S**

Chooses a weighting curve shape for the top part of the CC Pattern Grid (Pitches).

For more information, please see "Rhythm Group" on page 539, "Random Weighting Parameters - Pools" on page 541, and "Random Weighting Curves" on page 584.

This is valid only if the GE settings make the Phase 2 CC pattern specify Pitch Offset values.

Octaves-Random Factor [–99…+99]

Controls the shape of the weighting curve being applied to the bottom part of the CC Pattern Grid (Octaves).

For more information, please see "Rhythm Group" on page 539 and "Pools-Random Factor" on page 541.

This is valid only if the GE settings make the Phase 2 CC pattern specify Pitch Offset values.

Octaves-Weighting Curve [0…3]

0: Exponential **2: Exp-S**
1: Logarithmic **3: Log-S**

Chooses a weighting curve shape for the bottom part of the CC Pattern Grid (Octaves).

For more information, please see "Rhythm Group" on page 539, "Pools-Weighting Curve" on page 541, and "Random Weighting Curves" on page 584.

This is valid only if the GE settings make the Phase 2 CC pattern specify Pitch Offset values.

Global Parameters

CC-A **[–1…126]**

CC-B **[–1…126]**

–1: Off **96…125: [N/A]**

0…95: CC#00…CC#95 **126: Pitch Bend**

Selects one of the supported Control Change messages, in addition to **126: Pitch Bend**.

Note: CC-A and CC-B may be generated simultaneously, with the same or different values, in alternation, and other variations depending on internal settings of the GE.

Even if CC-A or CC-B are properly activated, you may not be hearing any effects if the "Transmitted MIDI Filter: "CC-A / CC-B" parameters (☞p.80) have been set to filter out the data that KARMA is generating.

Associated Parameters

Cluster Mode **[0, 1]**

0: Single-1 Step Per Cluster

1: Multi-1 Step For Each Note In Cluster

0: Single-1 Step Per Cluster

Each time a note, cluster of notes, or group of drum notes is generated one CC Pattern Value will be chosen for the current step, after which the CC Pattern advances to the next value. For example, a cluster of 6 notes will be generated with a single CC value preceding it, and advance the pattern by 1 to the next step.

1: Multi-1 Step For Each Note In Cluster

For every note in a cluster or group of drum notes generated simultaneously, a separate CC Pattern Value will be chosen after which the CC Pattern advances to the next value. For example, a cluster of 6 notes will be generated with each note preceded by the next 6 CC values indicated by the pattern, with a net advance of 6 steps. This means that each note in a cluster or each note of a drum pattern that is generated simultaneously can be given its own CC value - but only if your synth supports this type of behavior.

This will also affect the "Note Number" Pattern Type options. If **0: Single**, a cluster of notes will be preceded by one CC value according to the pitch of the first note; if **1: Multi**, each note will get a corresponding CC value. For example, if generating pan data, this can be used to pan each note of a cluster across the selected range according to its pitch (but only if your synth supports this type of behavior).

When the "GE Type" (☞p.529) is **1: Generated-Gated**, the number of notes being generated is considered the Cluster Size.

When the "GE Type" is **0: Generated-Riff**, setting this to **1: Multi** will have no effect unless there is a Cluster Pattern containing values of more than just 1.

When the "GE Type" is **2: Generated-Drum**, setting this to **1: Multi** will have no effect unless at least one Drum Pattern has the "[c] (clusters)" button turned on in the Phase Pattern and there is a Cluster Pattern containing values of more than just 1, or more than one drum note is being generated at a time (by using more than one Drum Pattern, or by using a single Drum Pattern in "Poly" mode).

Pitch Offsets On/Off **[0, 1]**

0: Off **1: On**

When **On: 1**, the Pitch Offset pattern specified by the Phase 2 CC Pattern grid is applied as transpose values to notes as they are generated. This allows the effect of the pattern to be switched on and off in realtime. This will not have any effect unless internal settings of the GE specify that Pitch Offsets are being used.

P.Offset Chord Shift **[0…2]**

0: Off **1: Scalic1** **2: Scalic2**

0: Off

The Pitch Offsets are applied with no further modification from this setting.

1: Scalic1

Chord analysis is performed on the input source material, and as the Pitch Offset values are applied to transpose the generated notes, notes that may be "atonal" based on the analyzed chord are shifted to tonal notes. Useful for creating complex chromatic Pitch Offset Patterns and ensuring that the results stay in a certain key or chord. The note tables used to shift the notes are the same as the ones used in Note Series Group "Note Type": **1: Scalic**. For more information, please see "Note Type" on page 531.

2: Scalic2

Same as 1: Scalic (above), except that the note tables used to shift the notes are the same as the ones used in "Note Series Group "Note Type": **2: Scalic2**. Scalic2 is more modal in nature and has more passing tones than 1: Scalic.

Will not have any effect unless internal settings of the GE specify that Pitch Offsets are being used.

Template Parameters

The two Template Parameters select from 63 or 64 different CC / Pitch Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

A CC / Pitch Pattern Template consists of:

- the configuration of the CC Pattern Grid
- Random Weighting Parameters
- **Polarity**

Template **[1…63]**

For more information, please see "Rhythm Group" on page 539, and "Template" on page 542.

Template + Restore **[0: [As Stored]…63]**

For more information, please see "Rhythm Group" on page 539, and "Template + Restore" on page 542.

WaveSeq Group

Overview

The WaveSeq Group controls a set of parameters that allow the waveforms of the M3's programs to be varied in real-time, creating popular "wave-sequence" style effects.

In an EDS Program, the Wave-Sequence messages directly call up corresponding Multisounds. The RADIAS Oscillator can also respond to KARMA Wave-Sequencing messages, but it works differently: they control the DWGS Wave Select parameters for Control 2, selecting from within the 64 DWGS waveforms only.

If the RADIAS Oscillator is set to a non-DWGS choice (i.e. Saw, Square, etc.), KARMA's Wave-Sequencing messages will change it to the DWGS choice, and wave-sequencing can then occur. When KARMA's Wave-sequencing is deactivated, the Oscillator will be reset to the previous non-DWGS setting.

About WaveSeq Patterns

WaveSeq Patterns control the waveforms of the synth programs that are being used to generate notes. Here you can sequence a pattern of up to 32 different waveforms (16 in each phase). A value derived from a WaveSeq Pattern is the ID of a specific waveform. Choices can be made from "Random Pools" of values. The waveforms change with each note (although you can specify a number of steps containing the same waveform, of course, so that it repeats the same waveform for a number of notes.)

You can set up effects that more resemble traditional wave sequences by setting the Index Group or the Note Series to only repeat a single pitch, or by using "GE Type" = **1: Generate-Gated**, with "Gate Type" = **0: Vel**, instead of generating notes all over the place. Then you can concentrate on just changing waveforms, and the notes remain static.

On the other hand, part of the beauty of KARMA wave sequencing is having the notes change in a sequenced fashion, while the waveforms are also changing.

Presently, it is not possible to have the waveforms change while notes are sustaining, so you cannot use "GE Type" = **1: Generate-Gated**, with "Gate Type" = **CC type** (for chopped pads.)

Alternately, you can have it generate just waveform changes, without actually generating any notes. For example, you can have it randomly pick a new Multisample (from a group you've defined) with each note you play on the keyboard. Or you can assign a range of Multisamples to a Real-Time Control and select the one you want to use, in real-time.

One of the most interesting features is the ability to offset the entire waveform map that you've set up, either by varying the "Wave Offset" parameter, or by tracking it with the keyboard. Since the results are totally dependent on the destination synth's waveform order, completely unexpected and unplanned results can be achieved that would be impossible to get any other way. For example, a WaveSeq Pattern of mallet-like sounds could be shifted instantly into a group of guitar or industrial noise waveforms, radically modifying the resulting timbre of the phrase.

A WaveSeq Pattern will loop as long as note generation continues. It normally will not reset to the beginning of the Pattern unless a new Trigger is received, or the Phase Group has been configured to restart it at the beginning of certain Phases. This means that a four step WaveSeq Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

Pattern grids cannot be viewed and edited in the M3.

Global Parameters

Wave Pattern On/Off [0, 1]

0: Off **1: On**

An overall switch for turning the WaveSeq effect On / Off. Setting to **0: Off** will return the program to normal operation (and may optionally reset the waveforms to their original values, if your synth supports this behavior). In the M3, this allows you to activate the WaveSeq effect in real-time, where turning it Off sets the timbres being affected back to their original waveforms.

Oscillator Mode [0…4]

0: Osc1 In Both Phases

1: Osc2 In Both Phases

2: Alternate (Osc1 Phase 1, Osc2 Phase 2)

3: Split (Osc1 Phase 1, Osc2 Phase 2, simultaneously)

4: Both (Osc1 & Osc2 same, simultaneously)

Specifies several ways that two different oscillators in the destination program(s) can be controlled, with regards to the two different Phases of a GE.

0: Osc1 In Both Phases

The specified waveforms will be selected according to the switching of the Phase Pattern, but only for Oscillator 1. During steps utilizing Phase 1, the Phase 1 Pattern will be used to change the waveforms, and during steps utilizing Phase 2, the Phase 2 Pattern will likewise be used. Oscillator 2 (if used in the program) will not be affected.

This setting will have no effect on a single-oscillator or drum program.

1: Osc2 In Both Phases

The specified waveforms will be selected according to the switching of the Phase Pattern, but only for Oscillator 2. During steps utilizing Phase 1, the Phase 1 Pattern will be used to change the waveforms, and during steps utilizing Phase 2, the Phase 2 Pattern will likewise be used. Oscillator 1 will not be affected.

This setting will have no effect on a single-oscillator or drum program.

2: Alternate (Osc1 Phase 1, Osc2 Phase 2)

During playback of Phase 1, Oscillator 1 waveform changes will be generated. During playback of Phase 2, Oscillator 2 waveform changes will be generated. Therefore, the Phase 1 Pattern and parameters are associated with Oscillator 1, and the Phase 2 Pattern and parameters are associated with Oscillator 2. When in Phase 1, Osc 2 will remain on the last sent waveform change of Phase 2, and when in Phase 2, Osc 1 will remain on the last sent waveform change of Phase 1. This creates an "alternating" sort of effect between the two

oscillators, where one oscillator will change for a period of time, then the other, but not at the same time.

The Phase 2 parameters will have no effect on a single-oscillator or drum program.

3: Split (Osc1 Phase 1, Osc2 Phase 2, simultaneously)

The Phase 1 Pattern and parameters are associated with Oscillator 1, and the Phase 2 Pattern and parameters are associated with Oscillator 2. However, they generate waveform changes simultaneously, ignoring the Phase Pattern settings. For example, this means the Pattern Grid in Phase 1 can be used to generate a wave-sequence pattern for Osc 1, at the same time that the Pattern Grid in Phase 2 can be used to generate a completely different wave-sequence pattern for Osc 2. The switching of Phases which normally occurs according to the Phase Pattern is ignored, and they both generate waveform changes for their respective oscillators simultaneously, all the time.

The Phase 2 parameters will have no effect on a single-oscillator or drum program.

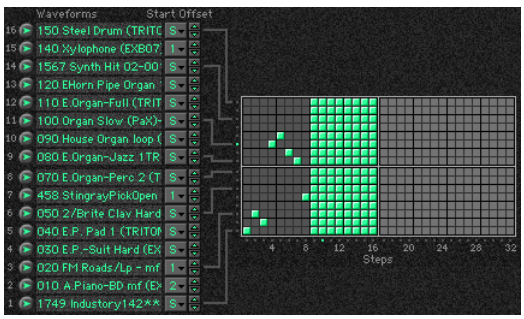
4: Both (Osc1 Phase & Osc2 same, simultaneously)

The two oscillators are controlled in tandem. The Phase Pattern switching between Phases is used as normal, but both Osc 1 & 2 are changed as specified by the Pattern (with the same values). For example, you can set up a complex pattern of up to 16 waveforms in Phase 1, and a different complex pattern with different waveforms in Phase 2, and let the Phase Pattern control switching between them. Every time Osc 1 is changed, Osc 2 will also change to the same waveform.

Note: For the RADIAS, since KARMA has the ability to specify messages for a two oscillator structure, and the RADIAS only has the first oscillator with selectable DWGS waveforms, messages sent to Osc2 from KARMA will affect Osc1, the same as messages sent to Osc1. If the KARMA GE is sending both Osc1 and Osc2 messages at the same time, Osc2 messages will have priority, and Osc1 messages will appear to be ignored.

Pattern Grid & Associated Parameters

A WaveSeq Pattern specifies a sequence of waveform select messages to be sent, thereby changing the waveform of the sound with each note (if desired).



A WaveSeq Pattern may have any number of steps up to 32, and loop independently of other patterns being used at the same time. Each step is represented by one column on the grid. The first column must always contain at least one value; unused columns appear disabled.

More than one value can be entered in any given column, which then becomes a "random pool" from which choices will be made at random, subject to the use of a weighting curve as described later on. The weighting curve becomes available when there is at least one random pool selected. The example above shows a pattern of 8 single waveform choices in the first 8 steps, after which waveform choices are made at random from the entire group of 16 waveforms for an additional 8 steps. Whether or not the random choices will be different each time through the Phase is controlled in the Phase Group; you can choose to repeat the same random sequence a number of times or always generate new random sequences of choices.

Also controlled in the Phase Group is whether or not the WaveSeq Pattern will start from the beginning each time a Phase starts. For example, assume the pattern contained ten items and a Phase only used eight of them before changing to a different Phase. If the pattern was not set to restart in the Phase Group, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern.

Pattern grids cannot be viewed or edited on the M3.

Row 1…16 Waveform [0000...1027]

Selects a waveform for the corresponding row of the Pattern Grid.

Note: When used with the RADIAS Oscillator, the value will be "wrapped around" within the range of 0–63 DWGS waveforms. So a value of 64 will again be 0, 65 will be 1, 66 will be 2, 128 will be 0, etc. This allows GEs that specify a wide range of values to be applied to RADIAS Oscillators and still achieve interesting results.

Row 1…16 Start Offset [0…8]

0: Sample Start

1…8: 1st…8th

Chooses one of the available start offset points for the selected waveform.

The actual value will be limited internally to the available number of Start Offsets for the specified waveform, which may be different from the full range of 0…8.

Waveform Type [0, 1]

0: MultiSound

1: WaveSequence

Specifies whether the messages sent will change the program's oscillator(s) to different Multisamples, or different Wave Sequences.

Available in the OASYS, not available in the M3.

0: MultiSound

The choices indicated by the pattern values will cause various Multisamples to be selected for the specified oscillators.

1: WaveSequence

The choices indicated by the pattern values will cause various Wave Sequences to be selected for the specified oscillators.

Waveform Offset [–1027...1027]

Offsets the entire group of 16 Waveform Choices by the specified amount (each waveform has the specified number added to it.) This can be a quick way to transform a pattern into a completely unexpected result. Waveforms will be limited to the first and last waveforms if the offset causes them to go out of range.

Keyboard Track (C2) [0, 1]

0: Off **1: On**

When **1: On**, allows the specified 16 Waveform Choices to track the keyboard (lowest note played, with reference to C2 - Note# 36). In other words, the 16 waveforms will be used exactly as specified when the lowest input note played is a C2. If the lowest note is higher or lower than C2, the number of steps that it is higher / lower will be added to or subtracted from each waveform, offsetting the entire group. This provides a completely different resulting wave-sequence depending on where the input notes are played.

Pattern Length [1…32]

Specifies the number of steps of the Waveform Pattern that will be used during note generation. This allows you to loop a smaller portion of the entire pattern. For example, if the Waveform Pattern grid has been set up with a 20 step pattern, and "Pattern Length" = 3, then only the first three steps of the pattern will be used to generate notes. Those three steps will loop continuously as the GE generates notes, and the other steps will not be used. To use all steps of any Waveform Pattern that is loaded, even when changing Waveform Templates, set this to 32.

Random Weighting Parameters

The Random Weighting Parameters are made available when at least one step (column) in the WaveSeq Pattern Grid contains multiple values selected (constituting a "random pool" of values). Whenever a random pool is encountered in playing through the pattern, a random choice is made from the values in that step. Certain areas of the random pool can be favored by the use of a weighting table, with various shaped curves. Using the curves, you can influence certain choices to be made more or less often than others, allowing very musical real-time control of the randomness.

Whether or not a certain random sequence will repeat for a number of times is controlled by the Phase Group.

For more information, please see "Rhythm Group" on page 539, and "Random Weighting Parameters - Pools" on page 541.

Pools-Random Factor [–99…+99]

For more information, please see "Rhythm Group" on page 539, and "Pools-Random Factor" on page 541.

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**

1: Logarithmic **3: Log-S**

For more information, please see "Rhythm Group" on page 539, "Pools-Weighting Curve" on page 541, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the WeveSeq Pools:

WaveSeq Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**higher in grid**	**lower in grid**
Exp-S / Log-S	**middle**	**higher/lower**

Associated Parameters

Template Parameters

The two Template Parameters select from 63 or 64 different WaveSeq Pattern Templates, and load the parameters into the current Phase's Pattern Grid and associated parameters.

A WaveSeq Pattern Template consists of:

- the configuration of the Pattern Editing Grid
- the sixteen "Waveform Choice" values, and the corresponding "Start Offset" values.
- Random Weighting Parameters

Template [1…63]

For more information, please see "Rhythm Group" on page 539, and "Template" on page 542.

Template + Restore [0: [As Stored]…63]

For more information, please see "Rhythm Group" on page 539, and "Template + Restore" on page 542.

Envelope Group

Overview

Each Generated Effect has **3 envelopes** which can be applied to various options such as Velocity, Tempo, Pitch Bend, Duration, Repeat Time, and any CC (Control Change).

About Envelopes

For those of you familiar with synthesizer envelopes, these are standard **ADSR** Envelopes, with the addition of a Start Level. For those who are not, ADSR stands for "**A**ttack, **D**ecay, **S**ustain, **R**elease". When the envelope is triggered in some fashion like a key being depressed, the envelope starts at the Start Level and moves to the Attack Level in the amount of time specified by Attack Time. This is the "Attack Phase" of the envelope. Once the envelope reaches the Attack Level, it then immediately continues to the Sustain Level in the amount of time specified by Decay Time. This is the "Decay Phase". When it reaches the Sustain Level, it will remain there until some event causes it to enter the "Release Phase," typically a key being released. The envelope then moves to the Release Level in the amount of time specified by Release Time.

An envelope simply describes the shape of some function, and the time that it takes. In the case of KARMA GE, the function is either a crescendo / decrescendo of the velocity levels of the notes in the phrase, an accelerando / ritard of the speed at which the notes are generated, an overall sweeping of the pitch, a continuous varying of a selected CC (MIDI Control Change), etc.

Note that in the case of Velocity Envelopes, the envelope's shape is subtractive to the Initial Velocity Level generated according to the "Velocity Mode" Parameter. (☞p.551) The loudest value the envelope will produce is the Initial Velocity received. However, when low Initial Velocities are received, the Envelope is automatically scaled so that a consistent shape is maintained regardless of the value. In other words, the Envelope will be compressed to the degree that the Initial Velocity is less than 127. For more information on Initial Velocity, see Velocity Group / "Velocity Mode."

When and how the Envelopes will be triggered is determined by the Envelope Trigger Parameters (Envelope1, Envelope2, Envelope3: "Trigger") in the KARMA Module parameters. (☞p.89)

In addition to being triggered by the keyboard, the envelopes can also be selectively triggered at Phase Changes according to settings in the Phase Group.

Parameters

The parameters are the same for all three of the envelopes, and are discussed below.

On/Off (Envelope On/Off) [0, 1]

0: Off **1: On**

Turns on the corresponding envelope, and makes its parameters operative.

Note: Even if the envelope is properly activated, you may not be hearing any effect if the "Transmit MIDI Filter: "Env.1, Env.2, Env.3" parameters (☞p.80) have been set to filter out the data that KARMA is generating.

Envelope Type [0…127]

0: [VE] Velocity

1: [TA] Tempo-Absolute

2: [TR] Tempo-Relative

3: [PB] Pitch Bend

4: [DU] Duration

5: [RT] Repeat Time

6…100: [#00…#95] CCs (Control Changes)

101…127: [N/A]

Selects the function that the envelope performs. The first six settings are specific predetermined types, while the others allow any MIDI CC Message to be sent by the envelope.

0: [VE] Velocity

Controls the crescendo and decrescendo of the Riff, much like an Amplitude Envelope controls the volume on a synthesizer. The envelope's range of **0–99** is scaled into **0–127**, which is then combined with the actual velocities of the notes being generated, to impart an overall velocity shape while maintaining the accents within the individual notes.

1: [TA] Tempo-Absolute

Controls the speed of the Riff, for accelerando and ritard effects. When active, the effect does not sync to the Internal Master Clock or External Sync, but runs on its own clock, controlled by the Tempo Envelope. This means that the envelope is in absolute control of the tempo, and changing the KARMA Tempo has no effect.

2: [TR] Tempo-Relative

Controls the speed of the Riff, for accelerando and ritard effects. When active, the effect does not sync to Internal or External MIDI Clock, but runs on its own clock, controlled by the Tempo Envelope. However, this option takes into account the KARMA Tempo, so if the tempo is slower the Tempo Range of the envelope will also be slower. Note that this does not mean the time over which the envelope operates, which is a different option discussed below under the "Tempo Relative" parameter. (☞p.562)

3: [PB] Pitch Bend

Controls an overall pitch bend on the entire effect. Note that the overall range of the Pitch Bend can be set in either the Bend Group.

4: [DU] Duration

Controls an overall shortening of durations of generated notes. In other words, the normal calculated duration of the note becomes the maximum duration length, and the shape

of the envelope scales the durations between **0–100%** of the minimum duration length and that value. The minimum and maximum duration values depend on the "Duration Mode" setting in the Duration Group. For more information, please see "Duration Group" on page 543.

5: [RT] Repeat Time

Controls an overall shortening of the repeat time that is selected for use in the Melodic Repeat Group. In other words, the normal calculated repeat time becomes the maximum time, and the shape of the envelope scales the repeat time between **0–100%** of 1 ms and that value. For example, if the Repeat Rhythm Value was set to a 16th note at 120 BPM, the repeat time would be 125 ms for each note. A Repeat Time Envelope would vary the envelope's range of **0–99** between 1 ms and 125 ms. This can provide interesting "bouncing" delay effects with repeats of the same pitch on drum and perc sounds, among other unique effects.

Poly Extend, Poly Extend/Damped, Mono Extend:

The Duration Envelope only affects notes that have durations shorter than the current Rhythm Pattern value (as specified by the Duration Pattern Grid), since the other notes will be auto-extending to the next note or next occurrence of the same note. For the shorter notes, the length of the Duration Pattern Value represents the maximum duration, and the envelope's **0–99** range represents **0–100%** of that value, with 1 ms being the minimum duration. To adjust the minimum duration, you would adjust the envelope's level settings to only move between the higher values, i.e. **50–99**.

Timed
(Duration Value range: 1…5000 ms)

The Duration Value represents the maximum duration in milliseconds, and the envelope's **0–99** range represents 0–100% of that value. For example, if the Duration Value field is set to 250 ms, then the envelope shapes the durations from 1 ms to 250 ms over its **0–99** range. To make the durations go from 125 ms to 250 ms, you would adjust the envelope's level settings so that it moves from **50–99 (50%–100%)**.

Rhythm Overlap, Pattern Overlap
(Duration Value range: –500…500 ms)

The Duration Value represents the maximum overlap or gap (in milliseconds) between successive notes, and the envelope's **0–99** range represents **0–100%** of that value. For example, if the Duration Value field is set to **+20**, then the envelope shapes the durations from **–500 ms** to **+20 ms** over its **0–99** range. To adjust the minimum duration, you would adjust the envelope's level settings to only move between the higher values, i.e. **50–99**.

Rhythm %, Pattern %
(Duration Value range: 1…800 %)

The Duration Value represents the maximum percentage of the current Rhythm Pattern Value, and the envelope's **0–99** range represents **0–100%** of that value. For example, if the Duration Value field is set to **50%**, then the envelope shapes the durations from **1%** to **50%** of the Rhythm Pattern Value over its 0–99 range. To make the durations go from **25%** to **50%**, you would adjust the envelope's level settings so that it moves from **50–99 (50%–100%)**.

6…100: [#00…#95] CCs (Control Change)

Send the selected CC value according to the shape of the envelope - the envelope's range of **0–99** is scaled into **0–127** and sent as the selected controller. This is especially useful when you loop the envelopes to get slow, sweeping LFO effects, for controlling various tone generation characteristics on synthesizers and effects devices that support this type of control. Note that for looping to work, you must set the **Loop On** and Envelope Latch modes (see "Envelope Latch" on page 89) properly - see the "Loop Mode" parameter below.

The following Level and Time parameters may also be controlled in various combinations by parameters discussed later on in this section.

Start Level [0…99]

The level at which the envelope begins when triggered.

Attack Time [0…99]

The time it will take to reach the "Attack Lvl (Attack Level)." This is a portion of the overall time setting specified in the "Time Scale" parameter described below.

Attack Level [0…99]

The first level which the envelope reaches in the amount of time specified by "Attack Time."

Decay Time [0…99]

The time it will take to reach the "Sustain Lev (Sustain Level)" from the Attack Level. This is a portion of the overall time setting specified in the "Time Scale" parameter described below.

Sustain Level [0…99]

The second level which the envelope reaches in the amount of time specified by "Decay Time." The envelope will remain at this level until the keys depressed on the keyboard are released, or some other function causes the envelope to enter the Release Phase.

Release Time [0…99]

The time it will take to reach the "Rel. Level (Release Level)" once the Release Phase is triggered. This is a portion of the overall time setting specified in the "Time Scale" parameter described below.

Release Level [0…99]

The final level the envelope reaches in the amount of time specified by "Rel. Time (Release Level)."

Amplitude Amount [0…99]

Represents the maximum level that the envelope will reach. The rest of the envelope is scaled accordingly. For example, if this is set to **50**, the envelope's output will be half what the other parameter specify.

Time Scale [0…10]

0: R-Riff Length

1…10: 1 to 10 seconds in 1 second increments

Specifies the overall amount of time that each segment will take when set to its maximum value. The envelopes in KARMA GE are 3 segment envelopes; they have an attack segment, decay segment, and release segment. For example, if the attack segment time ("Attack time") was set to **99** and the "Time Scale" to **1 second**, the attack segment will take **1000 ms**; if "Attack time" was set to **50**, then the attack segment will take **500 ms**. If the times of all 3 segments were set to **99**, the total time of the envelope would be approximately 3 seconds (not taking into account any time spent at the sustain level). When set to **0: R-Riff Length**, the Time Scale is automatically scaled to the length of the Generated Effect. This can be useful for such things as harp glissandos, where supplying more / less notes as input will cause the resulting envelopes to be slower / faster. Note that if the Phase "Length Mode" is set to **1: TS-Time Signature**, then the length of a Phase is determined by the Time Signature and not the number of notes played, so the results of setting this to **0: R-Riff Length** may not be noticeable in that case.

Attack Smooth [0, 1]

0: Off **1: On**

When set to **0: Off**, retriggering an envelope will start it at its preset Start Level regardless of its current position.

When set to **1: On**, the envelope will restart from its current position, not the Start Level. This can be used to "smooth" the repeated retriggerings of the envelope.

Loop Mode [0…3]

0: Off

1: S-Start Level ↔ Sustain Level

2: R-Start Level ↔ Release Level

3: A-Attack Level ↔ Release Level

Selects one of several methods of causing the envelope to loop continuously from one point back to another.

0: Off

The envelope will proceed through all its segments in a normal fashion.

1: S-Start Level ↔ Sustain Level

Upon reaching the Sustain Level, the envelope will loop back to the Start Level and start over. Requires Envelope Latch Mode (see "Envelope Latch" on page 89) to be set to **Off**, **Sus1**, or **Sus2**. For continuous looping after key release, you must have **Sus2** selected - see the table below.

2: R-Start Level ↔ Release Level

Upon reaching the Release Level, the envelope will loop back to the Start Level and start over. Requires Envelope Latch Mode (see "Envelope Latch" on page 89) to be set to **Rel1** or **Rel2**. For continuous looping after key release, you must have **Rel2** selected - see the table below.

3: A-Attack Level ↔ Release Level

Upon reaching the Release Level, the envelope will loop back to the Attack Level and start over. Requires Envelope Latch Mode (see "Envelope Latch" on page 89) to be set to **Rel1** or **Rel2**. For continuous looping after key release, you must have Rel2 selected - see the table below.

The following table illustrates the relationship between the 3 Envelope Loop Modes described above, and the Envelope Latch Modes (see "Envelope Latch" on page 89).

	Envelope Latch Mode				
Envelope Loop Mode	Off	Sus1	Rel1	Sus2	Rel2
[S] Start Level <-> Sustain Level	key release ends loop	key release ends loop	n/a	loop continously	n/a
[R] Start Level <-> Release Level	n/a	n/a	key release ends loop	n/a	loop continuously
[A] Attack Level <-> Release Level	n/a	n/a	key release ends loop	n/a	loop continuously

Tempo Relative [0, 1]

0: Off **1: On**

When **1: On**, makes the selected envelope's time scale relative to tempo. This means that the envelope can **Track** the notes being generated, or a particular length of time. If you have it set to make a particular shape over 1 bar of 4/4, then changing the tempo will maintain this relationship by scaling the tempo range of the envelope accordingly.

For example, assume you have an envelope timed to produce a sweep over 1 bar of 4/4 at 120 BPM. If you change the tempo to **60** and the "Tempo Reltv" parameter is **0: Off**, the envelope will still operate for the same length of time, therefore sweeping over 1/2 of the bar of 4/4. If you set tempo to **240**, it would sweep over 2 measures of 4/4.

With "Tempo Reltve" **1: On**, the time scale of the envelope is changed according to the tempo. Therefore, it will always sweep over 1 bar of 4/4 regardless of the tempo.

Note that you can use this with the **2: [TR] Tempo - Relative** Envelope Type (described above), so that it not only has a range that is influenced by the tempo, but its "Time Scale" is also influenced by the tempo.

Note Trigger [0, 1]

0: Off **1: On**

Allows an envelope to be triggered with every single note. When set to **0: Off**, the envelope is triggered normally as specified by the settings of the Envelope Trigger in the KARMA Module parameters, Dynamic MIDI, and the Envelope Triggering settings of the Phase Pattern. For more information, please see "Envelope Latch" on page 89.

When set to **1: On**, every single note that is generated will retrigger the selected envelope. For example, this can be useful for adding Vibrato to individual notes (using an envelope set to **CC #01 (Mod Wheel)**), or fading in/out individual notes (using an envelope Type of **CC #07 (Volume)** or **CC #11 (Expression)**).

Level Combinations

Sta/Att Level (Start/Attack Level) [0…99]

Controls an Envelope's Start and Attack Levels at the same time - both will be set to the same value.

Sta/Sus Level (Start/Sustain Level) [0…99]

Controls an Envelope's Start and Sustain Levels at the same time - both will be set to the same value.

Sta/Rel Level (Start/Release Level) [0…99]

Controls an Envelope's Start and Release Levels at the same time - both will be set to the same value.

Att/Sus Level (Attack/Sustain Level) [0…99]

Controls an Envelope's Attack and Sustain Levels at the same time - both will be set to the same value.

Att/Rel Level (Attack/Release Level) [0…99]

Controls an Envelope's Attack and Release Levels at the same time - both will be set to the same value.

Sus/Rel Level (Sustain/Release Level) [0…99]

Controls an Envelope's Sustain and Release Levels at the same time - both will be set to the same value.

Sta/Att/Sus Level (Start/Attack/Sustain Level) [0…99]

Controls an Envelope's Start, Attack and Sustain Levels at the same time - all will be set to the same value.

Sta/Att/Rel Level (Start/Attack/Release Level) [0…99]

Controls an Envelope's Start, Attack and Release Levels at the same time - all will be set to the same value.

Sta/Sus/Rel Level (Start/Sustain/Release Level) [0…99]

Controls an Envelope's Start, Sustain and Release Levels at the same time - all will be set to the same value.

Att/Sus/Rel Level (Attack/Sustain/Release Level) [0…99]

Controls an Envelope's Attack, Sustain and Release Levels at the same time - all will be set to the same value.

All Levels [0…99]

Controls an Envelope's Start, Attack, Sustain and Release Levels at the same time - all will be set to the same value.

Time Combinations

Att/Dec Time (Attack/Decay Time) [0…99]

Controls an Envelope's Attack and Decay Times at the same time - both will be set to the same value.

Att/Rel Time (Attack/Release Time) [0…99]

Controls an Envelope's Attack and Release Times at the same time - both will be set to the same value.

Dec/Rel Time (Decay/Release Time) [0…99]

Controls an Envelope's Decay and Release Times at the same time - both will be set to the same value.

All Times [0…99]

Controls an Envelope's Attack, Decay and Release Times at the same time - all will be set to the same value.

Repeat (Melodic Repeat) Group

Overview

Melodic Repeat allows any note to be repeated in a delay-like fashion, with many additional features and enhancements. When the GE Type is one of the "Generated" types (i.e. **0: Generated - Riff**), the notes as they are generated may each start sequences of repeating notes. When the GE Type is **3: Real-Time**, the actual input notes may each start sequences of repeating notes.

Based on a familiar technique know as "**MIDI Delay**," MIDI notes are repeated at certain time intervals while their velocities decrease, thus imitating the effect of delay in an external effects processor. However, as typically implemented, this causes severe polyphony problems, and the creative options are few. In KARMA, many sophisticated enhancements and improvements have been added, including:

- Slow down the Master Tempo and the repeated notes can remain in time with the original notes.
- Use a Tempo envelope to create drastic accelerandos and ritards and then lock the repeated notes to the envelope.
- Use a Repeat Time envelope to modulate the time between each repeat, for unique rhythmic effects.
- Unique "Duration Modes" not only save polyphony, but create interesting performance options.
- Delayed pitches may be transposed and melodically shifted using Chord Recognition.
- Transposed notes may be rebounded or wrapped around within a range. The range may be an absolute range, or a "sliding" range that tracks the input notes.
- Only notes within a certain velocity range can trigger repeated notes, while others will not.
- The Rhythm Patterns, Index Patterns, Velocity Patterns, etc. may be used to control when and how the repeated notes are generated.

When the "GE Type" (☞p.529) is one of the Generated types (i.e. **0: Generated-Riff**), the notes as they are generated may each start strings of repeating notes. When the "GE Type" is **3: Real-Time**, the actual input notes may each start strings of repeating notes.

Repeats can not be generated when "GE Type" = **1: Generated-Gated** and "Gate Type" (☞p.529) is one of the CC Types, since notes are not actually generated in this mode, but a sustained set of notes is manipulated by a selected CC, i.e. "chopped" by **CC #11 (Expression)**.

General Parameters

Rhythm [0…25]

0: None (Instant)	10: 8th triplet	20: Whole
1: 64th triplet	11: 8th	21: Whole Dotted
2: 64th	12: 8th Dotted	22: 2 bars
3: 64th Dotted	13: Quarter triplet	23: 3 bars
4: 32th triplet	14: Quarter	24: 4 bars
5: 32th	15: Quarter Dotted	25: Pattern
6: 32th Dotted	16: Half triplet	
7: 16th triplet	17: Half	
8: 16th	18: Half Dotted	
9: 16th Dotted	19: Whole triplet	

Sets the rhythm (repeat time) for each repeated note (16th note, dotted 16th, etc.). All rhythms chosen here lock to the Global Tempo, or to the Tempo Envelope if "Tempo Env. Lock" is on, described below.

0: None

The repeated notes are put out simultaneously with the generated / input notes, without any delay. This can be used to generate clusters of notes, while using Repeat "Transpose" (☞p.565) to change the pitch intervals between them, for creating harmonies and other effects.

1…24: Note Values

Selects a rhythmic value to use for each repeated note (16th note, dotted 16th, etc.) When one of these Note Values is chosen, the same rhythmic value is used for each repeated note.

25: Pattern

The Rhythm Pattern in the Rhythm Group is used), so that repeated notes can have different rhythms.

Straight Rhythms [0…11]

0: None (Instant)	4: 8th	8: 2 Wholes
1: 64th	5: Quarter	9: 3 Wholes
2: 32nd	6: Half	10: 4 Wholes
3: 16th	7: Whole	11: Rhythm Pattern

Selects a setting for the "Rhythm Value" parameter from a subset of the entire range. The subset consists of the straight values (no triplets or dotted values) along with **0: None** and **11: Rhythm Pattern**. This is used to provide real-time control of the "Rhythm Value" parameter while excluding certain of the in-between values.

Dotted Rhythms [0…8]

0: None (Instant)	3: 16th Dotted	6: Half Dotted
1: 64th Dotted	4: 8th Dotted	7: Whole Dotted
2: 32nd Dotted	5: Quarter Dotted	8: Rhythm Pattern

Selects a value for the "Rhythm Value" parameter from a subset of the entire range. The subset consists of the dotted values along with **0: None** and **8: Rhythm Pattern**. This is used to provide real-time control of the "Rhythm Value" parameter while excluding certain of the in-between values.

Triplet Rhythms [0…8]

0: None (Instant)	**3: 16th Triplet**	**6: Half Triplet**
1: 64th Triplet	**4: 8th Triplet**	**7: Whole Triplet**
2: 32nd Triplet	**5: Quarter Triplet**	**8: Rhythm Pattern**

Selects a setting for the "Rhythm Value" parameter from a subset of the entire range. The subset consists of the triplet values along with **0: None** and **8: Rhythm Pattern**. This is used to provide real-time control of the "Rhythm Value" parameter while excluding certain of the in-between values.

Selected Rhythms [0…13]

0: None (Instant)	**5: 8th Dotted**	**10: 2 Wholes**
1: 64th	**6: Quarter**	**11: 3 Wholes**
2: 32nd	**7: Quarter Dotted**	**12: 4 Wholes**
3: 16th	**8: Half**	**13: Rhythm Pattern**
4: 8th	**9: Whole**	

Same as "Straight Rhythm Values," except adds the two most musically useful dotted values also.

Selected Rhythms2 [0…18]

0: None (Instant)	**7: 16th**	**14: Whole**
1: 64th Triplet	**8: 8th Triplet**	**15: 2 Wholes**
2: 64tht	**9: 8th**	**16: 3 Wholes**
3: 64th Dotted	**10: 8th Dotted**	**17: 4 Wholes**
4: 32nd Triplet	**11: Quarter**	**18: Rhythm Pattern**
5: 32nd	**12: Quarter Dotted**	
6: 16th Triplet	**13: Half**	

Specially created for Drum GEs, providing the same subset as Selected Rhythm Values (above), with the addition of the most useful short note values.

Time Offset (ms) [–127…+127]

Allows a positive or negative millisecond offset to be applied to very short repeat times, making them slightly shorter or longer. One use is to "tune" to a certain key resonant delay effects created with short repeat times.

Only operable when one of the first three settings of the Rhythm menu are selected (None, 64th triplet, or 64th). For example, you can use it to adjust a short Rhythm setting, and then switch to a longer setting via GE RT Parameter control, and the offset will be ignored, allowing the longer rhythms to stay in sync.

Use Swing [0, 1]

0: Off **1: On**

Sets whether the repeated notes will take on the swing feel that is set in the Rhythm Group. If **0: Off**, the generated notes may be swung but the repeated notes will not be. Note that triplet rhythm values are not affected by swing.

When the Rhythm Group "Swing %" parameter (☞p.534) is **0**, this parameter has no effect.

Repetitions [0…100, 101: ∞]

The maximum number of repeated notes to generate. Note that due to other settings and circumstances, not all of them may actually be generated. A setting of **101: ∞** causes the notes to repeat indefinitely, unless something else stops them.

Decay [–126…+126]

The amount by which each successive repeated note changes in velocity. **Negative numbers** cause the delayed notes to decrease in volume (more common), while **positive numbers** cause the delayed notes to increase in volume. Interesting effects can be created by a combination of a **high negative** "Initial Velocity" (i.e. **–120**) and a **small positive** "Decay" (i.e. **+4**). Note that this operates in conjunction with the Velocity Pattern specified in the Velocity Group.

Initial Velocity [–126…+126]

The velocity above or below the original note that the first repeated note is generated at, after which the "Decay" parameter is added to them with each successive repetition. Note that this operates in conjunction with the Velocity Pattern specified in the Velocity Group.

Transpose [–24…25]

–24…24: –24…+24 semi-tones

25: Index Pattern

The amount by which each successive repeated note is transposed in pitch. When one of the semitone values is selected, the same value is used for each repeated note. When the Pattern option is selected, the **25: Index Pattern** in the Index Group is used, so that each repeated note can transpose a different amount from the previous repeated note. Depending on the input notes, anything other than 0 or multiples of **12** may produce atonal results; these can be shifted to tonal results using "Chord Shift," described below.

Chord Shift [0…2]

0: Off **1: Scalic** **2: Scalic2**

When repeated notes are being transposed in pitch, atonal results may occur depending on the "Transpose" setting. When "Chord Shift" is **0: Off**, no change occurs in the transposition. Setting "Chord Shift" to **1: Scalic** or **2: Scalic2** causes chord recognition algorithms to shift the notes to musically correct ones, even in pending repeated notes that haven't yet sounded.

Even when the Transpose setting is **0**, this can be used to make the pending repeated notes conform to the new chord, which is impossible with outboard analog / digital delays. For example, if "Chord Shift" is **0: Off** and you strike a BMaj chord which will repeat 10 times, and then play a C Major chord before they have all repeated, the still to be generated repeats will be BMaj repeats overlapping CMaj repeats (dissonant). With "Chord Shift" is **1: On**, the still to be generated repeats will shift to the new chord and blend with the new repeats.

Note: A certain area of the keyboard may need to be assigned as a Control Area for Chord Scan (in the Dynamic MIDI) to produce the desired results.

0: Off

The transposed notes are repeated with no further modification from this setting.

1: Scalic

As the notes are repeated, notes which may be "atonal" based on the analyzed chord (due to being transposed) are shifted to tonal notes. Especially useful when "Transpose" (discussed above) is set to something other than **0** or multiples of **12**. The note tables used to shift the notes have fewer passing tones than **2: Scalic2** (described below), and therefore may produce results that are more pleasing.

2: Scalic2
Same as **1: Scalic** (above), except that the note tables used to shift the notes have more passing tones for each chord; therefore, **2: Scalic2** sounds more modal in nature.

Stop Mode [0…3]

0: Off

1: Any-Any Note

2: AKR-1st Note After Key Release

Allows pending repeated notes which haven't sounded yet to be discarded (stopped) by various actions, such as playing the keyboard.

0: Off
Playing new chords or notes do not affect pending repeated notes - they will continue repeating as the parameters specify. This allows previously started repeats to overlap newly started repeats.

1: Any-Any Note
Playing any new chords or notes will cause all pending repeated notes to be discarded, and only the new notes will be repeated.

2: AKR-1st Note After Key Release
Playing any new notes while still sustaining at least one note will not cause damping; all keys must first be released, and then the next chord / note will discard any pending repeated notes.

Note: A MIDI Controller can also be assigned to perform the stopping of repeats by using the "Repeat Stop" Dynamic MIDI Destination (☞p.601). When a Dynamic MIDI destination (7–2–3b: Dynamic MIDI "Destination") is set to "Trigger Notes" or "Trigger Notes & Envs," Stop Mode also applies to whether the repeats will be stopped when triggered by the Dynamic MIDI action.

Rebound Mode [0…2]

0: Off **1: Wrap** **2: Rebound**

When using "Transpose" (☞p.565) with repeated notes and many repetitions, eventually the pitches of the repeated notes may go beyond a certain range. This can be an absolute overall range, or a small range designed to track the hands around the keyboard. The range and functioning of it is determined by the settings of the "Range Mode" and "Range Bottom / Top" parameters described below. When the pitches of the repeated notes goes beyond this range, the "Rebound Mode" setting determines whether the repeats will end or continue in a modified fashion.

0: Off
When repeated notes go beyond the specified range, they will cease to repeat, regardless of the number of repetitions left.

1: Wrap
When repeated notes go beyond the specified range, they will drop up or down an algorithmically determined interval (depending on which end of the range they exceed) and continue until the required number of repetitions have been generated. This will cause an up / down back-and-forth "cycling" effect at the top or bottom of the range.

2: Rebound
When repeated notes go beyond the specified range, they will reverse their direction (essentially by inverting the current Transpose values) and continue in the opposite direction until the required number of repetitions have been generated. This will cause an up / down back-and-forth "cycling" effect over the entire range.

Tempo Env. Lock [0, 1]

0: Off **1: Lock**

When a Tempo Envelope is being used (in the Envelope Group), setting this to **1: Lock** causes the repeated notes to lock their size to the Tempo Envelope; i.e. as the Tempo Envelope speeds up the times between them get smaller. Setting this to **0: Off** causes the size to remain relative to the KARMA Tempo; even though the Tempo Envelope may be speeding up or slowing down the effect, the repeat times remain the same.

When a Tempo Envelope is **0: Off** or not in use, this parameter has no effect.

Range Parameters

These parameters affect the pitch range of the repeating notes as they transpose, and what happens when they go outside of the range. They also control a range for triggering by velocity.

Range Mode [0…3]

0: Absolute

1: Lowest Note Relative

2: Highest Note Relative

3: Lowest/Highest Note Relative

Selects one of several options for how the "Wrap Bottom" and "Wrap Top" values are used, which specify a range within which repeated notes will be maintained. This can be either an "absolute range," or a "sliding range" that tracks your hands around the keyboard. When notes go beyond this range, they will either stop repeating, wrap around or rebound, as determined by the "Rebound" setting.

0: Absolute
The "Range Bottom (abs)" and "Range Top (abs)" parameters are used, specifying Note Number values for the absolute bottom and top of the pitch range for repeated notes. For example, **36** is C2 and **72** is C5.

1: Lowest Note Relative
The "Range Bottom (rel)" and "Range Top (rel)" parameters are used, defining a "sliding range" with regards to the lowest note played, represented as +/– semitones. For example, if you set bottom to **–12** and top to **+12**, this means that the notes will be kept in range from an octave below the lowest note played to an octave above the lowest note played.

2: Highest Note Relative
The same as above, but relates to the highest note played.

3: Lowest/Highest Note Relative
The "Range Bottom (rel)" parameter relates to the lowest note played, and the "Range Top (rel)" parameter relates to the highest note played. Therefore, you control the overall range according to the spread of the notes that are played. For example, if you set both the bottom and top to **0** in this mode, then repeated notes would never be generated outside of the range of the lowest to highest note that were provided as input.

Range Bottom (Abs) [0…127: C–1…G9]
Range Top (Abs) [0…127: C–1…G9]

Specifies an absolute pitch range within which to keep repeated notes that are being transposed. The Bottom and Top values are Note Numbers in the range 0–127 / C-1–G9.

When the pitches of repeated notes exceed this range, the setting of the "Rebound" parameter comes into effect.

Note: These settings are only effective when the "Range Mode" parameter is **0: Absolute**.

Range Bottom (Rel) [–64…+63 semitones]

Range Top (Rel) [–64…+63 semitones]

Specifies a relative (sliding) pitch range within which to keep repeated notes that are being transposed, based on the position of input notes played on the keyboard. The Bottom and Top values are semitone offsets in the range **–64–+63**. When the pitches of repeated notes exceed this range, the setting of the "Rebound" parameter comes into effect.

Note: These settings only have an effect when the "Range Mode" parameter is one of the 1.3: Relative settings.

Vel. Range Bottom [1…127]

Vel. Range Top [1…127]

Specifies a Velocity Range for initiating the generation of repeated notes. Input notes with velocities outside of this range will not generate repeats.

When "GE Type" (☞p.529) is **3: Real-Time**, these specify a velocity range within which input notes will trigger the generation of repeated notes. Notes outside of the velocity range will not generate repeats. This is an easy way to allow the velocity with which you play to control the triggering of repeated notes.

When "GE Type" is any of the other options, these specify a velocity range within which generated notes (such as notes from the Note Series, or Drum Pattern notes) will trigger the generation of repeated notes. Notes outside of the velocity range will not generate repeats. This allows only certain notes within certain velocity ranges to trigger the generation of repeated notes, while others will not.

Repeats can not be generated when "GE Type" (☞p.529) = **1: Generated-Gated** and "Gate Type" (☞p.529) is one of the CC Types, since notes are not actually generated in this mode, but a sustained set of notes is manipulated by a selected CC, i.e. "chopped" by **CC#11 (Expression)**.

GE Mode = Real-Time Parameters

If the "GE Type" is **3: Real-Time**, these additional parameters are also available.

Duration Mode (RT) [0…4]

0: As Played

1: Fixed

2: As Played-No Overlap

3: Fixed-No Overlap

4: As Played-Delay No Overlap

Chooses one of 5 different modes for the durations of the repeated notes, which not only can greatly reduce problems with polyphony, but also provide some interesting performance options.

0: As Played

Each delayed note will have the same duration as the initial note, with the exception that if "Transpose" (☞p.565) is **0**, then notes of the same pitch will not overlap. If "Transpose" is **other than 0**, and many notes are sustained, this can quickly eat up a lot of the polyphony of your sound modules.

1: Fixed

The original note will have the duration as played, but each repetition will have a fixed length, set by the "Duration Value (RT)" parameter, in milliseconds. This can be used so that holding long notes will have repeated notes with short durations, saving polyphony or creating useful effects.

2: As Played-No Overlap

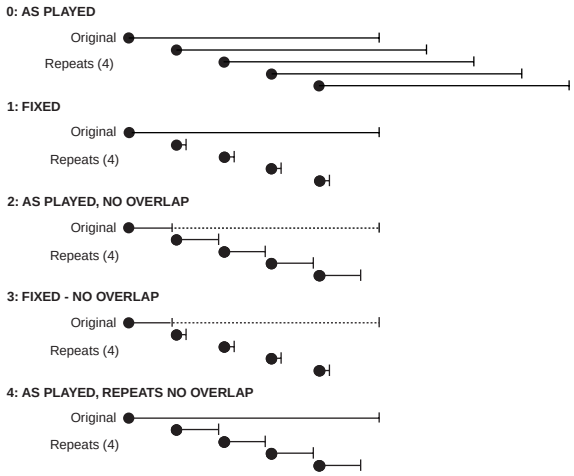
If the original note is shorter than the repeat time, each delayed note will have the same duration as the initial note. If the original note is longer than the repeat time, it will be cut-off by the first repeat, and each repeat will cut-off the preceding one. Therefore, all notes including the original one will not have a duration longer than the repeat time.

3: Fixed-No Overlap

If the original note is longer than the repeat time, it will be cut-off by the first repeated note. Furthermore, each repeated note will have a fixed value in milliseconds, set by the "Duration Value (RT)" parameter.

4: As Played-Delay No Overlap

The original note will have the duration as played, and so will the delays, as long as they are shorter than the repeat time. If the original note is longer than the repeat time, it will not get cut-off, but the delays will limit their lengths to the repeat time.



Duration Value (RT) [2…5000 (ms)]

Specifies the length of the durations of the repeated notes (in milliseconds).

Only available when the "Duration Mode (RT)" is **1: Fixed** or **3: Fixed-No Overlap**.

Key Mode (RT) [0, 1]

0: Down **1: Up**

Selects whether the repeated notes start immediately upon receiving a "key down" event, or wait until notes are released ("key up").

0: Down (Key down)

Generation of the repeated notes starts immediately upon receiving a note according to the settings of the parameters.

1: Up (Key up)

Generation of the repeated notes is not started until the input source note(s) are released. This allows you to trigger the start of a repeated effect with the release of the keys.

Chord Quantize (RT) [0, 1]

0: Off **1: On**

Causes one of two different types of behavior, depending on the setting of the "Key Mode (RT)" parameter above.

When "Key Mode (RT)" is 0: Down

When a chord is played on the keyboard, there is a certain amount of "slop" associated with hitting the keys: the fingers arrive at slightly different times, there is a built in amount of MIDI timing inaccuracy, etc. When using **Melodic Repeat** to repeat the chord a number of times, you will hear the same slop it was received with repeated exactly. This corresponds to the "Chord Quantize (RT)" setting of **0: Off**. This may or may not be desirable; sometimes you may want it, other times you may not. When "Chord Quantize (RT)" is set to **1: On**, the notes in the first repeat of the chord will be hard quantized so that they generate simultaneously. All subsequent repeats will be based on those quantized notes, and therefore will also be quantized.

When "Key Mode (RT)" is 1: Up

The repeats will be triggered when the key(s) are released, so they will be quantized together at that point to occur simultaneously anyway, with no "slop." But depending where you released them overall in time, they may be "out of sync" with the rhythm or groove that may be being generated. This corresponds to the "Chord Quantize (RT)" setting of **0: Off**. When "Chord Quantize (RT)" is set to **1: On**, the release (and generation of the first repeats) will be quantized to correspond to the nearest rhythmic division of note generation. This will either be a 16th note, or the rhythm value chosen in the "Rhythm Value" parameter, whichever is longer.

Bend Group

Overview

The **Bend Group** allows various shapes of automatic pitch bending to be applied to individual notes as they are generated. It also allows a special "arpeggiated bending" option to be applied to Drum Patterns.

However, no bending will actually occur unless the Phase Pattern has been configured to allow it. This allows effects to be set up where bending only occurs in one or more steps of the Phase Pattern, while other steps have no bending.

Bending is also affected by the Rhythm Pattern's "no bend" row. Bending will normally be triggered with every single generated note or cluster within a Phase Pattern step where bending is activated; by using the "no bend" row, you can specify that bends will not occur on various notes (single steps) of the Rhythm Pattern. For more information, please see Rhythm Group: "Pattern Grid & Associated Parameters" on page 540.

Note that even if bending is properly activated, you may not be hearing any bending effects if the 7–2b: Transmitted MIDI Filter: "Pitch Bend" parameter (☞p.80) has been set to filter out the pitch bend that KARMA is generating.

General Parameters

On/Off [0, 1]

0: Off **1: On**

Allows the bending effects to be turned on or off. While there are several other ways to disable bending effects, this is mainly provided to allow the RT Parms to control this in real-time. Note that this has no effect if there are no Phase Pattern Steps with bending enabled, or every step of the Rhythm Pattern has a "no bend" row activated.

Amount [–12…18]

0: Random
–12…12: –12…+12 semitones
13: Next Note
14: Next Note +1
15: Next Note +2
16: Prev Note
17: Prev Note –1
18: Prev Note –2

Sets the size in semitones of the bends, or selects one of several special bending options. Note that the actual resulting size of the bend also depends on the setting of the "Bend Range" parameter, described later on. The following descriptions apply when the "Bend Range" (☞p.571) value is **12** (an octave). If the "Bend Range" was **6**, the semitones would actually be half-semitones; if the "Bend Range" was **24**, the semitones would actually be whole tones.

0: Random (–12…12)
Each bend selects a random semitone size from **-12 – 12** (excluding 0).

–12…12: –12…+12 semitones
Bends each note the selected semitone size.

13: Next Note
Bends each note to what will be the next note. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the C will bend to the **E**, the **E** will bend to the **G**, etc. This is very useful for simulation of portamento, or effects like sliding from one bass note to another within a phrase.

14: Next Note +1
Bends each note to what will be the note 2 notes from the current note. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the **C** will bend to the **G**, the **E** will bend to the **B**, etc.

15: Next Note +2
Bends each note to what will be the note 3 notes from the current note. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the **C** will bend to the **B**, the **E** will bend to the second **C**, etc.

16: Prev Note
Bends each note to what was the previous note. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the E would bend to the **C**, the **G** would bend to the **E**, the **B** would bend to the **G**, etc. In this case, if **C** was the first note to be generated, a bend to **E** would be calculated since there is no actual "previous" note.

17: Prev Note –1
Bends each note to the note that was two notes previous. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the **G** will bend to the **C**, the **B** will bend to the **E**, etc.

18: Prev Note –2
Bends each note to the note that was three notes previous. For example, if the notes to be generated were **{C, E, G, B, C…}**, then the **B** will bend to the **C**, the second **C** will bend to the **E**, etc.

For the 3 Previous Note settings, when no notes have yet been played, KARMA extrapolates what it thinks the bends would have been for the first few notes, based on various settings. Most of the time this will produce a **"musical-sounding"** bend.

For the Next and Previous Note settings, a bend of 0 is not allowed, even if the next or previous notes to be generated are the same pitch. In this case, a bend to the next or previous note in the Note Series will be used, in order to preserve the illusion of continuous bending. If all possibilities are exhausted, a bend of an octave (12) will be used.

13, 14, 15, 17 & **18** not available when "GE Type" ("GE Type" on page 529) is **3: Real-Time**.

Force Bend If Zero [0, 1]

0: Off **1: On**

When using next or previous note bending, if the two pitches to be bent between are adjacent, a bend of zero can result (no bend). When Force Bend If Zero is **1: On**, a bend will be created anyway, with an appropriate automatically calculated amount. This allows each note to have an audible bend, even if it technically shouldn't, thereby maintaining an illusion of continuous bending (useful for synth bass lines, for example). When **0: Off**, no bends will be created between notes of the same pitch (useful for acoustic and electric bass lines, for example).

Not available unless Amount is set to one of the Next or Previous Note settings.

Shape [0…2]

0: Bend **1: Hammer** **2: Hammer Bend**

Selects one of Three different overall shapes for the resulting bend. **0: Bend** is a single bend to a destination pitch, while the "Hammer" settings bend to the pitch and back. See the Appendices: "Using Auto Bend". (☞p.582)

0: Bend

Bends the current note to whichever note or by whichever semitone size is selected in the "Amount" parameter. The timing and length of the bend is determined by the "Length," "Start %" and "End %" parameters. (☞p.570) Useful for portamento simulation and ethnic bending effects, among others.

1: Hammer

Bends the current note to whichever note or by whichever semitone size is selected in the "Amount" parameter, then back to the current pitch. The timing and length of the bend is determined by the "Length," "Start %" and "End %" parameters, and the "Width %" parameter. Useful for guitar hammer-on effects, among others.

2: Hammer Bend

Bends the current note to whichever note or by whichever semitone size is selected in the "Amount" parameter (☞p.569), then back to the current pitch, then again to the note or pitch selected in the "Amount" parameter. The timing and length of the bend is determined by the "Length," "Start %" and "End %" parameters, and the "Width %" parameter. Useful for ethnic bending effects, among others.

Alternation [0, 1]

0: Off **1: Alternating**

When set to **1: Alternating**, causes alternate bends to flip back and forth between the + and –. For example, if the "Amount" parameter is set to **+12**, then the bends produced with a series of notes will be **{+12, –12, +12, –12…}** etc. When **Next/Previous Note** Bending is selected, it will alternate between Next and Previous. For example, if **13: Next Note** is selected in the size Menu, then the bends will be **{Next, Prev, Next, Prev…}** etc.

Step Mode [0…12]

0: Smooth **1…12: 1 ST…12 ST**

Sets whether the bends will be smooth (continuous) or divided into steps (glissando bends).

0: Smooth

Bends will be continuous, with a value sent out every "n" milliseconds as specified by the Rate parameter.

1…12: 1 ST…12 ST (semitones)

Bends will be quantized to the semitone step size selected, producing "glissando" bends. For example, if the "Amount" parameter is set to **12** and Step Mode is set to **2: 2 ST**, then the resulting bend will be **quantized to 6 steps of 2 semitone**s each (a Whole tone scale.)

When one of the Semitone settings is selected, the Rate parameter is not available.

1 ST	Chromatic	7 ST	Fifth
2 ST	Whole Tone	8 ST	Aug. Fifth
3 ST	Diminished	9 ST	Sixth
4 ST	Augmented	10 ST	Dom. 7th
5 ST	Fourth	11 ST	Maj. 7th
6 ST	Tritone	12 ST	Octave

Length [0…25]

0: 64th triplet	**9: 8th triplet**	**18: Whole triplet**
1: 64th	**10: 8th**	**19: Whole**
2: 64th Dotted	**11: 8th Dotted**	**20: Whole Dotted**
3: 32th triplet	**12: Quarter triplet**	**21: 2 bars**
4: 32th	**13: Quarter**	**22: 3 bars**
5: 32th Dotted	**14: Quarter Dotted**	**23: 4 bars**
6: 16th triplet	**15: Half triplet**	**24: Fixed-ms**
7: 16th	**16: Half**	**25: Note Duration**
8: 16th Dotted	**17: Half Dotted**	

Specifies an overall length for a "**bend window**" within which the bend will take place, based on the "Start %" and "End %" parameters. See the Appendices: "Using Auto Bend". (☞p.582)

0…23: Note values

Sets the overall length of each bend window to the selected rhythm value; each bend will therefore be the same length. Note that this is tempo dependent, so changing tempo changes the length of the bend and keeps the effect locked to tempo. If the length of the bend is longer than the actual duration of the note with which it is generated, part or all of the bend will not be heard.

24: Fixed-ms

Makes available the "Fixed-ms" parameter. A length of absolute time may then be specified in milliseconds for each bend window. Note that this is independent of any tempo settings. You might use this to keep the same length and speed of a bend regardless of the tempo.

25: Note Duration

The duration of the note as it is generated is used as the bend window, with the "Start %" and "End %" parameters specifying where in the note's duration the bend will start and end. Each bend may therefore be a different length, depending on the durations of the notes. A 16th note duration will have a bend that is half the length and twice as fast as an 8th note duration. If the duration is varied in real-time, the length of the bends will also be varied.

Not available when "GE Type" (☞p.529) is **3: Real-Time, since** the duration of the note is determined by actually playing the keyboard. If selected, this setting will act the same as **7: 16th** note.

Fixed-ms [10…5000 (ms)]

A fixed length of absolute time may be specified in milliseconds for each bend window. Note that this is independent of any tempo settings. You might use this to keep the same length and speed of a bend regardless of the tempo. Has no effect unless the **24: Fixed-ms** setting is selected for the "Length" parameter

Start % [0…100 (%)]

Specifies the start point of the bend in the overall bend window (set by the "Length" parameter). The value is a percentage of the overall bend window. For example, if **0%**, the bend will start as soon as the note begins to play; other values will cause a certain "delay" before the start of the bend.

End % [0…100 (%)]

Specifies the end point of the bend in the overall bend window (set by the "Length" parameter). The value is a percentage of the overall bend window. For example, if **100%**, the bend will extend all the way to the end of the bend window; other values will cause the bend to reach the destination pitch and "hang there" for a period of time.

Width % [0…100 (%)]

Specifies the width of the "**hammer**" when the **1: Hammer** or **2: Hammer Bend** shape is selected. This controls the amount of bend at each end of the hammer (the "back-and-forth" bend). For example, **0%** creates a triangle wave shape, and **100%** creates a square wave shape, with other values somewhere in between. Width also controls the length of the final bend when the Hammer Bend shape is selected. See the Appendices: "Using Auto Bend." (☞p.582)

Has no effect when **0: Bend** is selected in the "Shape" parameter.

Drum Bend Mode [0, 1]

0: Generated **1: Arpeggiated**

Selects one of two different bending techniques for Drum GEs: "Generated" according to the parameters on this Group, or "Arpeggiated" using the current Note Series settings.

Note: If the "GE Type" (☞p.529) is **2: Generated-Drum**, the "Drum Bend Mode" parameter specifies one of two different bending effects:

0: Generated-generate shape for each note

Causes bending to be generated for each drum note the same as with any other "GE Type". All of the parameters described above operate as described.

1: Arpeggiated-use Note Series for stepped bends

Disables most of the other bend parameters, and instead uses the pitches of the notes in the Note Series to generate stepped "pitch bend sequences." The riff or arpeggio that would normally be being produced if the "GE Type" was **0: Generated-Riff** is still being generated internally, even though the Drum Pattern(s) are being played. This internal riff or arpeggio can be applied to the resulting drum rhythms as Pitch Bend values. The Index Pattern controls the order of the pitch bend values, which are selected from within the Note Series, just as if the "GE Type" was **0: Generated-Riff**. This results in "**Wave-Sequencing**" effects and other unique sounds.

Not available when "GE Type" is not **2: Generated-Drum**.

Bend Range [0…24 (semitones)]

Sets the overall bending range of the whole GE. This also affects pitch bend envelopes, CC-A / CC-B if generating pitch bend, etc. Note that this must be set to **12** for the semitone-related bend parameters described above to actually be semitones.

Note: The EXB-RADIAS Option is not capable of responding to KARMA Bend Range Messages outside of the range of 0 to +12 Semitones. Values outside of that range will be limited to stay within that range.

GE Mode = Real-Time Parameters

If the "GE Type" is **3: Real-Time**, the following parameters will also be available.

Key Mode (RT) [0, 1]

0: Down **1: Up**

Selects whether the bend will be initiated when the keys are pressed (MIDI note-ons are received) or when the keys are released (MIDI note-offs are received).

0: Down

The bend window specified by the "Length" (☞p.570) setting starts immediately upon receiving a note according to the settings of the parameters.

1: Up

The bend window is not started until the input source note is released. Note that for this kind of bend effect to be audible, you must either be using a synth program with a long release, or set the "Rel. Delay Length (RT)" parameter below to something other than **24: Off**.

Direction (RT) [0, 1]

0: From **1: To**

Selects whether the pitch is bent from the note to the destination (**1: To**) or from the destination to the note (**0: From**.) This most often relates to which Bend Shape is selected.

0: From

The bend starts at a pitch offset equal to the Amount setting, and ends at the current pitch (i.e. Joystick center). For example, if "Amount" = **–12** and "Shape" = **0: Bend**, it would be the same as starting a note with the Joystick all the way in the pitch down position, and then moving it to the center.

1: To

The bend starts at the current pitch (i.e. Joystick center), and ends at a pitch offset equal to the Amount setting. For example, if "Amount" = **–12** and "Shape" = **0: Bend**, it would be the same as starting a note with the Joystick in the center position, and then moving it all the way to the pitch down position.

For more information on practical uses for this, see the Appendices "Using Auto Bend: Next / Previous Note Bending: Realtime." (☞p.582)

Rel. Delay Length (RT) [0…24]

0: 64th triplet	**9: 8th triplet**	**18: Whole triplet**
1: 64th	**10: 8th**	**19: Whole**
2: 64th Dotted	**11: 8th Dotted**	**20: Whole Dotted**
3: 32th triplet	**12: Quarter triplet**	**21: 2 bars**
4: 32th	**13: Quarter**	**22: 3 bars**
5: 32th Dotted	**14: Quarter Dotted**	**23: 4 bars**
6: 16th triplet	**15: Half triplet**	**24: Off**
7: 16th	**16: Half**	
8: 16th Dotted	**17: Half Dotted**	

Allows the release (note-offs) of notes to be delayed by certain amounts (various rhythmic durations at the current tempo). This is mainly to allow bends to be produced when you release the keys (with "Key Mode (RT)" set to **1: Up**). When **24: Off**, no delay is added.

Rel. Delay Damping (RT) [0, 1]

0: Off **1: On**

When **1: On**, starting new notes while others are still sustaining (because of a delayed note-off from the "Rel. Delay Length (RT)" parameter above) will shut the sustaining notes off. This is useful for creating monophonic style bending effects using "Key Mode (RT)" and "Rel. Delay Length (RT)". When **0: Off**, the notes are allowed to overlap.

Vel. Range Bottom (RT) [1…127]
Vel. Range Top (RT) [1…127]

Specifies a Velocity Range for triggering the generation of pitch bend effects. Input notes with velocities outside of this range will not trigger the bending. This is an easy way to allow the velocity with which you play to control the triggering of pitch bending effects.

Drum Group

Overview

The **Drum Group** allows up to three different **Drum** or **Melodic Patterns** (of equal or different lengths) to be created, edited, and simultaneously looped, while being separately modified by various other parameters. Many of these modifications are controlled by settings in the Phase Group. This allows you to set up effects where various things happen only on certain steps of the Phase Pattern; such as a four bar Drum Pattern which is randomized with a Cluster Pattern every fourth time through (bars 13–16).

About Drum Patterns

A Drum Pattern is a special type of "fixed" pattern that contains Note Numbers. These can be used to construct Drum and Percussion Patterns, or Melodic Patterns of a more fixed nature than what is generated by using the Note Series Group. Although you can create Drum Patterns with any mixture of notes you desire, a basic concept used throughout the available GEs was to have the three patterns (and three Drum Template Banks) follow these basic rules:

Pattern 1/Bank 1: Kick, Snare, and Tom Notes

Pattern 2/Bank 2: Hi-Hat, Ride, and Cymbal Notes

Pattern 3/Bank 3: Percussion Notes

This allows you to mix and match Kick/Snare Patterns with different Hi-Hat Patterns and Percussion Patterns, allowing great flexibility and variation.

Drum Patterns with more than one sound turned on in a column can operate either "polyphonically" (generating more than one drum note at a time) or as random "pools," where a random choice will be made from one of the drum sounds in the column. The bottom row of each grid allows a rest to be placed as a step, or added to the pools for the possibility of a rest.

A Drum Pattern consists of only Note Numbers and rests; there are no durations, no velocities, no rhythms. The other information is supplied by the Rhythm, Velocity, Cluster, and other Patterns. It helps to think in terms of straight 16ths (or 32nds) while constructing new patterns. You can of course later play the Drum Patterns with Rhythm Patterns different values, for more variations.

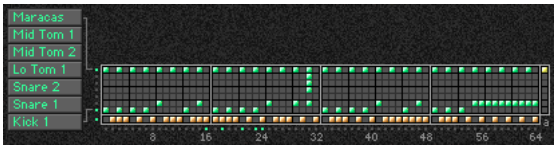
A Drum Pattern will loop as long as note generation continues. The 3 separate Patterns are independently loopable, so they can be of different lengths; a 4 bar Kick/Snare Pattern can be used with a 2 bar Hi-hat Pattern and a 3 bar Percussion Pattern, etc. They normally will not reset to the beginning of the Pattern unless a new Trigger is received, or unless the Phase Pattern has been configured to restart them at the beginning of certain Phases. This also means that a sixty-four step Drum Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

The riff or arpeggio that would normally be being produced if the "GE Type" (☞p.529) was **0: Generated-Riff** is still being generated internally. Therefore, if Index Patterns, Cluster Patterns, or Velocity Patterns are being used by the GE, these can be applied to the Drum Patterns with very interesting results, causing randomization and quasi-improvisational effects. You can use the Drum RTC Model's "Randomize/Improvise" slider to control this effect.

These randomizations are controlled by settings in the Phase Pattern. This allows effects where various things happen only on certain steps of the Phase Pattern; such as a four bar Drum Pattern which is randomized with a Velocity Pattern every fourth time through (bars 13–16).

Also, the same riff or arpeggio can be applied to the resulting drum rhythms as Pitch Bend values, on the Bend Group. This results in "Wave-Sequencing" effects and other unique sounds. You can use the Drum RTC Model's Switch 6 to control this function. Each step in the Phase Pattern can have Pitch Bend activated for that particular step. This means that you can do something like have no Pitch Bend through three steps and then have Pitch Bend on the fourth step.

Pattern Editing Grid & Associated Parameters



Drum Pattern

A Drum Pattern is a grid of 8 rows by 64 columns. The bottom row of the grid is the "Rest" row; the other 7 rows correspond to 7 Drum Sounds or Notes that have been chosen to construct the pattern. A Drum Pattern may have any number of steps up to 64, with each step being represented by one column on the grid; unused columns appear disabled.

The example above shows a kick, snare, toms and maracas pattern, where the bottom two rows in the top part of the grid have their corresponding Drum Sound menus set to kick and snare. The bottom row of rests are interleaved with the kick and snare choices to form a groove to be played with a straight 32nd note Rhythm Pattern. Therefore, the entire grid represents a 2 bar phrase of 4/4 time, with every 8 columns representing 8 32nd notes (1 quarter note).

Also shown above is a 65th column, known as the "Always Column" and indicated by the abbreviation "a" underneath it. When a row is selected in this column, it will cause any values in that row of the Drum Pattern to always be played, regardless of any randomization that is going on, or regardless of the "Poly/Pools" setting (discussed later on).

Pattern grids cannot be viewed or edited on the M3.

Associated Parameters

Play On/Off [0, 1]

0: Off **1: On**

When **1: On**, the Drum Pattern is played during Note Generation. When **0: Off**, the Grid may contain values but will not be played during Note Generation. This can be used to temporarily "mute" one or more patterns during playback.

On/Off Combinations [0…7]

Controls all 3 Drum Pattern On / Off at the same time, in various combinations. The values **0–7** select one of 8 different combinations, shown in the following table:

Value	Pattern 1	Pattern 2	Pattern 3
0	Off	Off	Off
1	**On**	Off	Off
2	Off	**On**	Off
3	Off	Off	**On**
4	**On**	**On**	Off
5	Off	**On**	**On**
6	**On**	Off	**On**
7	**On**	**On**	**On**

Row1…7 Note [0…127]

0…127: C–1…G9

Selects a Drum Sound / MIDI Note Number for each of the 7 rows of the selected Drum pattern.

Row1…7 Vel. Offset [–127…+127]

Allows the velocity for notes from that row only to be offset with regards to other rows. For example, you can use this to make a snare softer overall than a kick. Note that this is subtractive / additive: "0" leaves velocities at the Initial Velocity they would normally be generated with based on the Velocity Group settings. So setting positive amounts may interfere with the Velocity control that you have specified elsewhere. One example is controlling the velocity sensitivity of the Drum Pattern with the keyboard. Regardless of your Velocity Group settings, if the Row Velocity Offset here was a large positive value, you would get no apparent velocity sensitivity from the keyboard for this row, since this value would be added and effectively cancel out the effects of the Velocity Mode and Value.

Rhythm Multiplier [1…800 (%)]

Multiplies the current Rhythm Pattern. Note that this is entirely independent of the same parameter in the Rhythm Group. This means that each Drum Pattern can have a different "Rhythm Multiplier." (☞p.542) For example, if you set the Rhythm Pattern to 32nds, you could drive one Drum Pattern with a "Rhythm Multiplier" of **100%** at 32nd note speed, and another Drum Pattern at **200%** for 16th note speed. If they were the same number of steps, it would take twice as long to perform the entire 16th-based pattern as the 32nd-based pattern. This also means that the Rhythm Pattern driving the underlying Riff (that may be applied as Pitch Bend or used to randomize the Drum Patterns) can be operating at a different rhythmic relationship. For example, if the Rhythm Pattern was set to 16ths, and the Drum Pattern "Rhythm Multiplier" to **50%**, the Drum Pattern would be generated as 32nd-based, while any arpeggiated pitch bend would be 16th-note based, or 1 bend every 2 steps of the Drum Pattern.

Straight Multipliers [0…5]

0: 25% **2: 100%** **4: 200%**
1: 50% **3: 200%** **5: 800%**

Selects from a quantized set of "straight" values for the "Rhythm Multiplier" field of the associated Drum Pattern(s). In other words, when applied to a Rhythm pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc.

Straight/Trip Mults [0…10]

0: 25% **3: 68%** **6: 200%** **9: 544%**
1: 34% **4: 100%** **7: 272%** **10: 800%**
2: 50% **5: 136%** **8: 400%**

Selects from a quantized set of "straight & triplet" values for the "Rhythm Multiplier" field of the associated Drum Pattern(s). In other words, when applied to a Rhythm pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc. or various triplet values.

Strt/Dot/Trip Mults [0…15]

0: 25% **4: 68%** **8: 150%** **12: 400%**
1: 34% **5: 75%** **9: 200%** **13: 544%**
2: 37% **6: 100%** **10: 272%** **14: 600%**
3: 50% **7: 136%** **11: 300%** **15: 800%**

Selects from a quantized set of "straight, triplet & dotted" values for the "Rhythm Multiplier" field of the associated Drum Pattern(s). In other words, when applied to a Rhythm pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc., various triplet values, or various dotted values.

Pattern Vel. Offset [–127…+127]

Subtracts or adds a constant amount to the velocities for each Drum Pattern. Allows a Pattern's relative volume to be raised or lowered with regard to the other Patterns. Note that this is subtractive / additive: **0** leaves velocities at the Initial Velocity they would normally be generated based on the Velocity Group settings.

Setting positive amounts may interfere with the Velocity control that you have specified elsewhere. One example is controlling the velocity sensitivity of the Drum Pattern with the keyboard. Regardless of your Velocity Group settings, if the Pattern Velocity Offset here was a large positive value, you would get no apparent velocity sensitivity from the keyboard, since this value would be added and effectively cancel out the effects of the Velocity Mode and Value.

Pattern Vel. Scale [–999…+999 (%)]

Specifies a percentage by which the Velocity Pattern selected in the Velocity Group is scaled before being used to generate notes from the Drum Pattern, if this feature has been assigned in the Phase Group. Notes can be made to disappear or drop out using large positive values; large negative values with a very soft Initial Velocity can create interesting "reversed" effects. The same field in the Velocity Group itself is disabled for Drum Effects, since each Pattern here has its own "Velocity Scale."

Pattern Transpose [–36…+36]

Allows each Drum Pattern to be individually transposed in semitones. This is additive to the transpose in the KARMA Module. For more information, please see "7–1–7a: Module Parameter-Control" on page 84.

Octave Transpose [–36…+36]

Allows the Drum Pattern Transpose value to be quantized to the nearest octave, so that when being changed by a KARMA Realtime Control, only transposition by octaves is possible. In this case, the value of the parameter changes by semitones, but the actual transpose value will only change at certain points within the range:

–36 to –31 = **–36** (–3 octaves)
–30 to –19 = **–24** (–2 octaves)
–18 to –7 = **–12** (–1 octave)
–6 to +5 = **0** (no transpose)
+6 to +17 = **+12** (+1 octave)
+18 to +29 = **+24** (+2 octaves)
+30 to +36 = **+36** (+3 octaves)

Oct/5th Transpose [–36…+36]

Allows the Drum Pattern Transpose value to be quantized to the nearest octave or fifth, so that when being changed by a KARMA Real-time Control, only transposition by octaves or fifths is possible. In this case, the value of the parameter changes by semitones, but the actual transpose value will only change at certain points within the range:

–36 to –33 = **–36** (–3 octaves)
–32 to –27 = **–29** (–3 octaves +5th)
–26 to –21 = **–24** (–2 octaves)
–20 to –15 = **–17** (–2 octaves +5th)
–14 to –9 = **–12** (–1 octave)
–8 to –3 = **–5** (–1 octave +5th)
–2 to +3 = **0** (no transpose)
+4 to +9 = **+7** (+5th)
+10 to +15 = **+12** (+1 octave)
+16 to +21 = **+19** (+1 octave +5th)
+22 to +27 = **+24** (+2 octaves)
+28 to +33 = **+31** (+2 octaves +5th)
+34 to +36 = **+36** (+3 octaves)

Note Series → Length [0, 1]

0: Off **1: On**

When **1: On**, the Pattern uses the GE's actual Note Series Length as the length of the Drum Pattern. For example, if the Note Series Group was set to "Replications" (☞p.532) **4.0** with "Symmetry" (☞p.532) **0: Off**, and 4 notes were played, a **16 note** Note Series would normally be created. The Drum Pattern would restart after **16 steps** of it have been played. Playing 1 note would changed the Note Series Length to 4, and the Drum Pattern would restart after **4 steps**. This can be used to change the apparent length or time signature of the groove or phrase in real-time. When this is **0: Off**, the Drum Pattern loops through its full length.

Random Weighting Parameters - Pools

The Random Weighting Parameters - Pools are made available when at least one step (column) in the Drum Pattern Grid contains multiple buttons turned on in the upper 7 rows (not counting the "rest" row), and the "pools" button is on. This step then constitutes a "random pool" of Drum Sounds / Notes.

For example, you can influence whether a tom will be played at a certain step more often than a snare.

For more information, please see "Rhythm Group" on page 539, and "Random Weighting Parameters - Pools" on page 541.

Pools-Random Factor [–99…+99]

For information on this parameter, see "Rhythm Group" on page 539 and "Pools-Random Factor" on page 541.

Pools-Weighting Curve [0…3]

0: Exponential **2: Exp-S**
1: Logarithmic **3: Log-S**

For more information, please see "Pools-Weighting Curve" on page 541, and "Rhythm Group" on page 539.

See also "Appendices" on page 582, and "Random Weighting Curves" on page 584.

The following table summarizes the effect of the various Weighting Curves and the Factor field on Drum Sound choices:

Drum Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**higher in grid**	**lower in grid**
Exp-S / Log-S	**middle**	**higher/lower**

Random Weighting Parameters - Rests

The Random Weighting Parameters - Rests are made available when at least one column in the grid has a rest and at least one other Drum Sound turned on. This will happen with either the **1: Pool** or **2: Poly** selected, since you can have random rests in both modes; they just operate differently (see the description under "Pools / Poly," below).

Whenever this step is encountered in playing through the pattern and a random choice must be made, the likelihood of a rest occurring can be favored by the use of a separate weighting curve.

Rests-Random Factor [–99…+99]

Controls the degree of slope to the Weighting Curve. **0** = **a Linear Curve** with any Weighting Curve. Negative values not only invert but rotate the curve. For examples, see "Random Weighting Curves" on page 584.

Rests-Weighting Curve [0, 1]

0: Exponential **1: Logarithmic**

2 different shapes are available, which affect the likelihood of a rest occurring when a random choice is made. For more information, please see "Random Weighting Curves" on page 584.

0: Exponential

With a positive **Factor (+)**, choices will be exponentially weighted towards the Drum Sounds / Notes more often. With a negative **Factor (–)**, choices will be exponentially weighted towards the rests more often.

1: Logarithmic

With a positive **Factor (+)**, choices will be logarithmically weighted towards the Drum Sounds / Notes more often. With a negative **Factor (–)**, choices will be logarithmically weighted towards the rests more often.

A Factor of **0** with any shaped curve yields a linear table (straight diagonal line), and each of the values in the pool will have an equal chance of getting chosen.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random rests:

Values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**less rests**	**more rests**

Associated Parameters

Pools/Poly [0, 1]

0: Poly **1: Pools**

Chooses one of 2 modes of operation for the entire grid when columns contain more than one Drum Sound and / or a rest.

0: Poly

If there is more than one Drum Sound selected in a column (and no rest), then all of the Drum Sounds at that step will be played; if you had a kick, snare, and hi-hat in the same column, all 3 would be played when that step was reached. This is the typical operation of most grid-based rhythm pattern software. However, if a rest is also selected, then there will be a random possibility of a rest or a Drum Sound for each of the Drum Sounds; in other words, if you had a kick, snare, hi-hat and rest in the same column, for each of the 3 Drum Sounds a choice between the sound and the rest would be made (subject to the Random Rest Weighting Curve described previously). This would result in one of 8 possible combinations:

kick, snare, hi-hat	→	kick, snare, hi-hat
(rest), snare, hi-hat	→	snare, hi-hat
kick, (rest), hi-hat	→	kick, hi-hat
kick, snare, (rest)	→	kick, snare
(rest), snare, (rest)	→	snare
(rest), (rest), hi-hat	→	hi-hat
kick, (rest), (rest)	→	kick
(rest), (rest), (rest)	→	rest (nothing)

1: Pools

If there is more than one Drum Sound selected in a column, then those sounds form a "pool" of choices from which only one will be chosen at random. If a rest is also selected, then there will be a possibility of a rest or only one of the Drum Sounds. For example, if you had a kick, snare, hi-hat and rest in the same column, there would first be a choice of one of the 3 Drum Sounds (subject to the Random Pool Weighting Curve described previously), then a choice as to whether to play the single chosen Drum Sound or a rest (subject to the separate Random Rest Weighting Curve described previously). This would result in one 4 possible choices:

kick
snare
hi-hat
rest

Keyboard Track [0, 1]

0: Off **1: On**

Allows the Drum Pattern to track the input notes if desired, thereby changing keys depending on the chord. **0: Off** is normal for Drum Patterns while **1: On** is normal for Melodic Patterns.

0: Off

The Drum or Melodic Pattern is "fixed" - it doesn't matter what notes you play on the keyboard. The pattern will always produce the same pitches, according to the settings of the Drum Sound / Note settings. This is most typical for Drum Patterns.

1: On

The pitches of the notes generated "track" the lowest key played on the keyboard (or other input device), related to **C2 (MIDI Note #36)**. This is most useful for Melodic Patterns. In other words, when you play a **C2**, the pattern will be produced using the Note Numbers as specified by the Drum Sound / Note settings, and any other applicable parameters. If you then play an **E2**, the notes being generated will be transposed up by **4 steps**. Assuming the Notes that are assigned are in the **key of C**, this puts the resulting pattern in the **Key of E**. This is often useful in conjunction with the "NTT - Note Table Transposition" parameter, described next.

Note: The "Root Position" parameter (☞p.85) can be used to cause different inversions of the same chord to always transpose the notes as if the chord was played in root position.

NTT On/Off (Note Table Transposition) [0, 1]

0: Off **1: On**

Mainly for use with Melodic Patterns, this allows the chords received to shift certain pitches in the Drum Pattern to notes that fit the analyzed chord. Often used in conjunction with Keyboard Track.

0: Off

The different chords played on the keyboard (or other input device) have no effect on the pitches of the notes.

1: On

The Chord Analysis is performed on the input chord, and certain pitches as they are generated may be shifted to other notes to fit the chord. This is useful in conjunction with the "Keyboard Track" parameter described above. If you have created a Melodic pattern that is being transposed, you can also have the tonality of the pattern shift to match different chords as you play them, similar to popular auto-accompaniment keyboards. In other words, you can write a pattern that plays a musical phrase in a major key, and have it change to a minor key when you play minor chords, automatically.

Note: The "Root Position" parameter (☞p.85) can be used to cause different inversions of the same chord to always transpose the notes as if the chord was played in root position.

Link To Next [0, 1]

0: Off **1: On**

The 3 Drum Patterns can be linked together to form longer Drum Patterns; in this case, they do not play simultaneously,

but “back-to-back.” Drum Pattern 1 can be linked to Drum Pattern2. Drum Pattern 2 can be linked to Drum Pattern 3. If both Drum Pattern 1 and 2 are linked, then all 3 are linked. This can be used to create lengthy drum grooves or melodic phrases, have drum kits change for parts of a phrase, have melodic patterns change to using different pitches or octaves, etc.

Notes Played = Rows [0, 1]

0: Off **1: On**

1: On

The number of keys pressed on the keyboard determines which rows of the 3 Drum Patterns are played. If only one key is pressed, then only the notes indicated by the first row of the Drum Pattern (lowest row of the 7 rows specifying drum notes) are generated. If 3 keys are pressed, then only the notes specified by the lowest three rows are generated. This can be used to simulate the Korg Triton Arpeggiator setting “Fixed Tone Mode”: **Trigger As Played**.

Wrap Bottom [0…127]
Wrap Top [0…127]

0…127: C–1…G9

Sets an overall range within which notes from all 3 Drum Patterns will be limited. Notes going beyond the range will be transposed by however many octaves necessary to keep them within the specified range. This is mainly intended for use with melodic patterns that are being transposed by using the Keyboard Track feature.

Repeat On/Off Pattern [0…2]

Allows an individual Drum Pattern to have its Melodic Repeat settings in the Phase Pattern set to one of three states:

0: Off

Melodic Repeat will be turned off in each step of the Phase Pattern, for the specified Drum Pattern.

1: On

Melodic Repeat will be turned on in each step of the Phase Pattern, for the specified Drum Pattern.

2: As Stored

Melodic Repeat will be set to the internally stored settings of the GE, for each Phase Pattern Step. This means that repeats can be on in some steps, and off in others, such as just generating repeated notes in the last bar of a four bar pattern.

Repeat On/Off Combs (Combinations) [0…8]

Allows all three Drum Patterns to have their Melodic Repeat settings in the Phase Pattern controlled at the same time, in various combinations. This allows you to use a single RT Control (such as a slider in the Real-Time Controls Editor) to control all three Patterns at the same time. The values 0–8 select one of 9 different combinations, shown in the following table:

Value	Pattern 1	Pattern 2	Pattern 3
0	Off	Off	Off
1	**On**	Off	Off
2	Off	**On**	Off
3	Off	Off	**On**
4	**On**	**On**	Off
5	Off	**On**	**On**
6	**On**	Off	**On**
7	**On**	**On**	**On**
8	As Stored	As Stored	As Stored

Off

Melodic Repeat will be turned off in each step of the Phase Pattern, for the specified Drum Patterns.

On

Melodic Repeat will be turned on in each step of the Phase Pattern, for the specified Drum Patterns.

As Stored

Melodic Repeat will be set to the internally stored settings of the GE, for each Phase Pattern Step. This means that repeats can be on in some steps, and off in others, such as just generating repeated notes in the last bar of a four bar pattern.

Resync Index Templates [–1: As Stored, 0…13]

Controls the selection of one of 12 Resync Index Template settings, which apply different values to each step of the Resync Index Rows [ri] of the Phase Pattern, in the specified Drum Pattern’s section of the Phase Pattern Drum Activity Grid. This causes the Drum Pattern’s playback indexes to resynchronize at various steps of the Phase Pattern.

Index Pattern settings may be used to modify a specified Drum Pattern’s playback, often with randomized results, according to settings in the Phase Group and Index Group. When doing so, the use of the Index Pattern can cause playback of the various steps of the Drum Pattern to skip around and play out of order, creating new variations, often with a “free-form” improvisational feel. While quite useful, this can often feel “too syncopated,” as the pattern can become completely disconnected from its original placement.

However, as playback of the Phase Pattern enters a particular step, if the Resync Index button [ri] is On, then the selected Drum Pattern’s playback index will be reset to the position that it normally would be in if it wasn’t being modified by the application of the Index Pattern. This can “resynchronize” the Drum Pattern back to the downbeat every four beats, or every two beats, etc., while allowing it to then begin skipping around again.

As playback of the Phase Pattern enters a particular step, if the Resync Index button [ri] is Off, no resetting of the Drum Pattern’s index is performed, and the generation of the Drum Pattern continues from wherever it may be.

The following table illustrates the various values loaded into the Phase Pattern when a Resync Index Template is loaded for a particular Drum Pattern:

	Phase Pattern Steps																
Value	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
-1	as stored																as stored
0																	all off
1	×								×								every 8
2	×				×				×				×				every 4
3	×		×		×		×		×		×		×		×		every 2
4	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	every step
5	×	×			×	×			×	×			×	×			4 step 1
6	×			×	×			×	×			×	×			×	4 step 2
7	×	×		×	×	×		×	×	×		×	×	×		×	4 step 3
8	×	×	×		×	×	×		×	×	×		×	×	×		4 step 4
9	×						×						×				every 6
10	×			×			×			×			×			×	every 3
11	×	×		×	×		×	×		×	×		×	×		×	3 step 1
12	×		×	×		×	×		×	×		×	×		×	×	3 step 2
13	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	every step

–1: As Stored

The Resync Index settings for the specified Drum Pattern will be set to whatever values they are stored to internally in the GE. They could be all On or all Off, or any combination of On and Off.

0…4: Templates based on 2 and 4

5…8: Templates based on 2 and 4 (alternate)

9…13: Templates based on 3

The Resync Index settings for the specified Drum Pattern will be set to one of the various patterns of On and Off values, causing the Drum Pattern playback indexes to resynchronize at various steps of the Phase Pattern.

Template Parameters

The two Template Parameters select from one of three banks of Drum Pattern Templates within the current selected Template Bank (shared by all three Drum Patterns), and load the parameters into the selected Drum Pattern Editing Grid and associated parameters. Each Drum Template Bank contains 63 or 64 different Drum Pattern Templates.

A Drum Pattern Template consists of:

- the configuration of the Drum Pattern Grid
- “Poly / Pools” setting
- the 7 choices in the Drum Sounds menus
- Random Weighting Parameters - Pools (if applicable)
- Random Weighting Parameters - Rest (if applicable)
- the setting of the “Always Column”

Template Bank 1…3 [1…63]

☞p.542 “Rhythm Group”: “Template”.

Template Bank 1…3 + Restore [0: [As Stored],1…63]

☞p.542 “Rhythm Group”: “Template + Restore”.

Direct Index Group

Overview

Direct Index means to take a controller and map it into the Note Series directly, so that notes can be directly indexed and generated in real-time. One use is to take an area of a keyboard and map it into the Note Series, so that when you play the keys you are not generating the true note, but are selecting notes from within the Note Series. You can set up one area of the keyboard to supply the input notes to the Note Series, and another area to perform the Direct Indexing. This can allow you to "solo" with musically correct notes, without really thinking about what you are doing. Another use is to take a controller like a Joystick and map it into the Note Series, so that sweeping the controller sweeps through the Note Series and generates glissandos and flurries of notes. This can be done in addition to the normal effect that the GE may be programmed to generate.

Note that to perform Directing Indexing, a controller must be selected as a **Source** in Dynamic MIDI page, and one of two different options selected as a "Destination":

- Direct Index
- D.Index & MdlStop (Direct Index & Module Stop)

For more information, please see "Dynamic MIDI Sources & Destinations" on page 601.

General Parameters

The parameters in this section affect the overall Direct Indexing effect in general.

Index Shift [0…3]

0: Top	**2: Center**
1: Bottom	**3: Skip**

Selects one of several options for shifting the indexes coming from the controller, if the Note Series at any given time is longer than the range of the selected controller. For example, if you specified an octave of keys (12 keys) as a controller, and there were 24 notes in the Note Series, those 12 potential indexes can be directed to different areas of the Note Series.

If the number of steps in the range of the selected controller is less than or equal to the number of notes in the Note Series, this parameter has no effect and KARMA automatically maps the indexes to the proper notes. If the number of steps is equal, there will be a predictable one-to-one correspondence between the controller and the Direct Index notes. If there are fewer notes in the Note Series than, KARMA automatically maps the indexes in a way that prevents adjacent controller indexes from selecting the same note. In addition, in the case of using a CC to sweep through the Note Series, values that would cause duplicate notes will be filtered out. This means you can comfortably use a CC with a range of **0–127** to sweep through a 15 note Note Series.

0: Top

If the length of the Note Series is greater than the range of the selected controller, the indexes will be shifted to the top, so that the highest Direct Index note will be the highest note in the Note Series.

1: Bottom

If the length of the Note Series is greater than the range of the selected controller, the indexes will be shifted to the bottom, so that the lowest Direct Index note will be the lowest note in the Note Series.

2: Center

If the length of the Note Series is greater than the range of the selected controller, the indexes will be centered around the middle note of the Note Series.

3: Skip

If the length of the Note Series is greater than the range of the selected controller, the indexes will be scaled into the Note Series so that the lowest Direct Index note will be the lowest note in the Note Series, the highest Direct Index note will be the highest note in the Note Series, and the other indexes will be spread out over the Note Series, resulting in one or more notes in the Note Series being skipped (cannot be indexed from the controller).

Trill Mode [0…5]

0: Off	**3: 3 Note Or More**
1: 1 Note Or More	**4: 4 Notes Or More**
2: 2 Notes Or More	**5: 5 Notes Or More**

Selects one of several options for producing an automatic randomized trill / arpeggio. When holding down a certain number of Direct Index notes, an automatic randomized trill / arpeggio can be produced. The rate at which the notes are generated is automatically calculated based on the tempo. This can be used to simulate fast soloing riffs while performing Direct Indexing.

0: Off/DynMIDI

No trill effect will be introduced, no matter how many Direct Indexing notes are held down simultaneously.

1…5: 1 Note Or More…5 Notes Or More

Specifies the required number of notes that must be held down before the trill / arpeggio starts. When set to "**1 Note Or More**," playing even a single note causes it to start repeating at the automatically calculated rate. Other notes may then be added to become part of the trill / arpeggio.

Held Note Trig Mode [0…3]

0: Off	**2: Retrigger**
1: Bend/Retrigger	**3: Mute**

Selects one of several options for deciding what happens when Direct Index notes are being sustained, and the chord is changed so that the sustained note(s) no longer "fit" with that chord (i.e. are no longer are part of the Note Series). Part of the concept with this parameter is to allow soloing only within a "correct" key or Note Series.

0: Off

Nothing is done. The note(s) remain sustained, even if they are "wrong."

1: Bend/Retrigger

If only one Direct Index note is being sustained, it is bent (with pitch bend) down to the nearest pitch in the new Note Series (if it is no longer present in the Note Series). If more than one note is being sustained, they will all be changed to the nearest notes in the new Note Series and retriggered. If several are sustained, and only one is "incorrect," they will all be retriggered.

2: Retrigger

All sustaining Direct Index notes will be changed to the nearest notes in the new Note Series and retriggered. If several are sustained, and only one is "incorrect," they will all be retriggered.

3: Mute

Any sustaining Direct Index notes not present in the new Note Series will be shut off.

Transpose [–36…+36 (semitones)]

Transposes the pitch of the Direct Indexing notes as they are selected from the Note Series. This separate setting allows you to choose the octave for Direct Indexing independent of where the rest of the current GE is designed to work. Note that this is completely separate from the "Transpose" setting in the KARMA module parameters, so changing the octave there will have no effect on Direct Indexing.

Vel. Sensitivity (Kbd) [1…127 – bottom of range]

Specifies the lower limit of a scaled velocity range ('n' to 127). Triggers being provided by a velocity sensitive controller will be scaled according to this before being applied to the Note Series. This controls the velocities of the Direct Index notes as they are generated. For example, if the value is 1, then the velocities would be exactly as played with an unmodified range of **1–127** (full sensitivity). If the value is 64, the velocities would be half as sensitive, because any velocity received from **1–127** will be scaled into the range of **64– 127**. Note that if the controller is a CC such as a joystick, there is no velocity associated with moving it, so the last received keyboard velocity is used, or a default.

Vel. Offset (CCs) [0…200%]

When a CC such as a joystick or ribbon is being used as a Direct Index controller, there is no velocity associated with moving it, so the last received keyboard velocity is used, or a default. Velocity Offset (CCs) specifies an amount by which the velocity of the indexed notes will be offset from the GE's internal velocity setting. This allows you to make them a bit softer or louder than generated notes from the same GE, for example. The value is a percentage of the initial velocity, so values **less than 100** will produce softer indexed notes, while values **greater than 100** will produce louder notes. A value of **0%** will effectively stop the generation of indexed notes.

Duration Parameters

The parameters in this section affect the durations of the Direct Index notes. You can be in control of them yourself from the keyboard, or select several different options for automatically generating the durations.

Duration Control [0…2]

0: GE **1: Kbd-Poly** **2: Kbd-Mono**

Determines whether the durations of the Direct Index notes will be controlled by the other parameters in this section, or by the user (through the controller doing the Direct Indexing). The notes that may be generated normally by the GE are still independently controlled by the settings in the Duration Group.

0: GE

Direct Index notes will have the duration specified by the other two parameters in this section, the "Duration Mode" and the "Duration ms" (if applicable). The actual duration of the controller keys are not taken into account. For example, you might set up an effect with a short duration which then uses Melodic Repeat to generate further notes; setting this to "GE" ensures that the user's release of a key has no effect on the actual durations.

1: Kbd-Poly

Direct Index notes will have the actual duration of the controller keys - pressing a key starts a note and releasing it ends a note. The "Duration Mode" and "Duration ms" become unavailable. This allows the user to control the duration, especially useful for simulating soloing. The controller will act polyphonically - multiple notes can be played and held down simultaneously.

2: Kbd-Mono

Same as **1: Kbd - Poly** above, except the keys act monophonically - you cannot play more than one note at a time. Useful for certain types of simulations such as saxophone and synthesizer solos.

Duration Mode [0…3]

0: Poly Extend **2: Mono Extend**

1: Poly Extend/Damped **3: Timed**

Selects one of several modes of operation for controlling durations of the Direct Index notes, when the "Duration Control" parameter is set to **0: GE**.

Not available if "Duration Control" is not set to **0: GE**.

0: Poly Extend

Each note will sustain until the next generation of the same note, or until that note is no longer a part of the Note Series (caused by playing a new chord, for example). For example, if the notes to a CMaj chord are sustaining and the chord is changed to a CMinor, only the Es will be shut off.

1: Poly Extend/Damped

The same as above, except all sustaining notes will be damped when the chord changes, not just notes that are no longer in the Note Series.

2: Mono Extend

Each note is sustained until the next note (of any pitch) is generated.

3: Timed (1…5000 ms)

Makes available the "Duration ms" parameter, where you specify in milliseconds the duration of the generated notes. All notes will therefore have the same length. Note that this is independent of the current tempo - if it is set to **50 ms**, it will always be **50 ms**, regardless of tempo.

Duration ms [1…5000 (ms)]

When the "Duration Mode" above is 3: Timed, specifies in milliseconds the duration of the generated notes. All notes will therefore have the same length. Note that this is independent of the current tempo - if it is set to **50ms**, it will always be **50ms**, regardless of tempo.

Not available if "Duration Control" is not set to **0: GE**, or Mode is not set to **3: Timed**.

Repeat Parameters

Melodic Rpt On/Off [0, 1]

0: Off **1: On**

Allows Melodic Repeat to be independently controlled for Direct Indexing. When this is **1: On**, the Direct Index notes will have Melodic Repeat according to the settings of the parameters in the Melodic Repeat Group. This allows you to have a GE set up where the normally generated effect has Melodic Repeat while Direct Indexing does not, and vice versa, or other variations.

Bend Parameters

This section controls automatic pitch bending effects that may be applied to the Direct-Indexed notes. Most of the following parameters have the same functionality as those described in the Bend Group. However, the bend specified here will only happen for Direct Indexing notes. This means that a GE can have one type of Auto Bend effect for notes that are being generated, and a different Auto Bend effect for Direct Index notes. Alternatively, Direct Indexing notes can have bending while notes generated automatically by the same GE do not, etc.

There are several differences between Direct Index Auto Bend and Auto Bend for generated notes (set in the Bend Group):

- It is not possible for the length of the bend to be set to "Note Duration" since in most cases the duration is not known ahead of time. Therefore, this option is not available in the Bend Group "Length" parameter.
- The **Next and Prev Note** bending options are replaced with **Next and Prev Index** options. The difference is that when notes are being generated, it is possible to calculate ahead of time what will be the next note. With Direct Indexing, it is impossible to know what the next note is since you chose it yourself. Therefore, when set to **Next Index**, it will bend from the currently chosen index in the Note Series to the next adjacent index in the Note series. The same difference applies for **Prev Index**. These differences are explained further below.

Bend On/Off [0, 1]

0: Off **1: On**

When set to **0: Off**, Direct Index notes will have no bending, but the GE can still generate Auto Bend according to the Bend Group settings when triggered normally. When set to **1: On**, Direct Index notes will have bending according to the parameters in this Group - the settings in the Bend Group do not affect them (other than Bend Range).

Bend Amount [–12…18]

0: Random
–12…12: –12…+12 semitones
13: Next Index
14: Next Index+1
15: Next Index+2
16: Prev Index
17: Prev Index–1
18: Prev Index–2

☞p.569 "Bend Group": "Amount".

0: Random

☞p.569 "Bend Group": "Amount".

–12…12: –12…+12 semitones

☞p.569 "Bend Group": "Amount".

13: Next Index

Bends each note to the next index in the Note Series (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **E** is Direct Indexed it will bend to the **G**.

14: Next Index+1

Bends each note to the index in the Note Series that is 2 indexes forward (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **E** is Direct Indexed it will bend to the **B**.

15: Next Index+2

Bends each note to the index in the Note Series that is 3 indexes forward (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **E** is Direct Indexed it will bend to the second **C**.

16: Prev Index

Bends each note to the previous index in the Note Series (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **B** is Direct Indexed it will bend to the **G**.

17: Prev Index–1

Bends each note to the index in the Note Series that is 2 indexes backward (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **B** is Direct Indexed it will bend to the **E**.

18: Prev Index–2

Bends each note to the index in the Note Series that is 3 indexes backward (note that this may be an up or down bend depending on how the Note Series is constructed and sorted). For example, if the Note Series contains **{C, E, G, B, C…}**, then when the **B** is Direct Indexed it will bend to the first **C**.

Bend Shape [0…2]

0: Bend **1: Hammer** **2: Hammer Bend**

☞p.569 "Bend Group": "Shape"

Bend Alternation [0, 1]

0: Off **1: Alternating**

☞p.570 "Bend Group": "Alternation"

Bend Step [0, 1]

0: Smooth **1…12: 1 ST…12 ST**

☞p.570 "Bend Group": "Step Mode"

Bend Length **[0…25]**

0: 64th triplet	**9: 8th triplet**	**18: Whole triplet**
1: 64th	**10: 8th**	**19: Whole**
2: 64th dotted	**11: 8th dotted**	**20: Whole dotted**
3: 32th triplet	**12: Quarter triplet**	**21: 2 bars**
4: 32th	**13: Quarter**	**22: 3 bars**
5: 32th dotted	**14: Quarter dotted**	**23: 4 bars**
6: 16th triplet	**15: Half triplet**	**24: Fixed (ms)**
7: 16th	**16: Half**	**25: Note Duration**
8: 16th dotted	**17: Half dotted**	

☞p.570 “Bend Group”: “Length”

Bend Fixed-ms **[10…5000 (ms)]**

☞p.570 “Bend Group”: “Fixed-ms”

Bend Start % **[0…100 (%)]**

☞p.570 “Bend Group”: “Start %”

Bend End % **[0…100 (%)]**

☞p.570 “Bend Group”: “End %”

Bend Width % **[0…100 (%)]**

☞p.571 “Bend Group”: “Width %”

Appendices

Using Auto-Bend

Auto-Bend refers to a feature of KARMA that can generate a bend along with every generated note. It can be used to create gliding effects between notes (simulating portamento), to automatically bend each note to a preset step size, to produce guitar "hammer-on" effects (where a fret is pressed with a finger to a new note after the note has already been picked, without restriking the note), ethnic bending, and other unique effects.

Note: There are several other ways of producing Pitch Bend data in KARMA, including using Pitch Bend Envelopes, and generating stepped Pitch Bend with the CCs / Pitch Group. This chapter does not apply to those additional methods.

Next Note/Previous Note Bends

Generated

When the "GE Type"(☞p.529) is **0: Generated-Riff** or **1: Generated-Gated**, **Next Note Bending** allows the current note to bend to what will be the next note, the note two away, or the note three away. Previous Note Bending allows the current note to bend to what was the previous note, the note two notes previous, or the note three notes previous.

When beginning a riff with **Previous Note bends** selected, since the first notes have not actually been played yet, KARMA extrapolates what they would have been based on the settings of various parameters. Most of the time this will produce a correct bend.

When using **Next Note bend** with Random Modes, KARMA actually does know what the next Note(s) will be, even though they are "Random".

If the note to be bent to is the same note as the current note (a bend of **0**) KARMA automatically chooses a bend to another note nearby to maintain the illusion of continuous bending.

Note: The maximum bend size is controlled by the Bend Range setting (usually **12** semitones), even if the next / previous note is farther away.

Also, although KARMA knows what the next notes will be while it is playing a riff, it can't know when you are going to change a chord and start a new riff. Therefore, the last notes before a chord change may not bend to the correct notes at the start of a new riff, since they will bend to what would be the next note if you hadn't changed chords. Most of the time this is not a problem and still sounds musically correct.

When using **Next/Prev Note Bending** with Clusters, Clusters will appear to bend from their bottom note to whatever the next / previous note is.

Real-Time

When the "GE Type"(☞p.529) is **3: Real-Time**, only **Previous Note bending** is available, since KARMA cannot know which note you will play next. However, by using the Bend Direction parameter, you can bend either "To" the previous note, or "From" the previous note to the one you are playing now. The Bend Shape you are using probably determines which one makes more sense. For example, for Hammer-ons you will probably want to bend "To" the previous note (because the Hammer Shape bends it back afterwards); while for the Bend Shape, you will probably want to bend "From" the previous note to the one you have played now, since that is where the bend will end up to the ear. However, it's up to you!

Length Of Bends

"GE Type" 0: Generated-Riff, 1: Generated-Gated or 2: Generated-Drum

Bend Group "Length" is 0…23: Note Values

The bend length is determined by the chosen note value and will be the same regardless of the actual duration or rhythm of the notes. For example, if the Bend Group "Length" is **7: 16th**, then the overall Bend will be within a 16th note, even if you are generating a pattern with quarter notes, eighth notes, and 16th notes mixed together. This allows each bend to be the same length, yet maintain a relationship to tempo, since slowing down the tempo will also lengthen the bend, for example. This also allows the durations of the notes to be varied in real-time without changing the position or length of the bends.

Bend Group "Length" is 24: Fixed-ms

The overall bend is determined by a fixed value in milliseconds, and will be the same length regardless of the tempo setting. For example, this allows an absolute bend length to be determined that does not change with the tempo, so that a guitar line with a bend in it will play slower at a slower tempo, but not bend any slower. This also allows the durations of the notes to be varied in real-time without changing the position or length of the bends.

Bend Group "Length" is 25: Note Duration

The length of the bend is a percentage of the note's duration. Therefore, if you have the Duration Group parameters set to produce very short durations, then very short bends (almost inaudible) will be produced. However, with normal length durations, using this mode allows the bend to be scaled with each note - longer notes get longer bends, shorter notes get shorter bends, etc. Changing the durations of the notes in real-time changes the length and position of the bends.

Note that a bend will never be longer than the rhythm of the generated note itself, even if you are creating overlapping notes. In other words, the start of a new note stops the current bend, and potentially starts another one. The diagram in the next section illustrates the resulting bend when the shape is "Bend," and shows the difference between using Note Duration and one of the other "Bend Length" settings.

"GE Type" 3: Real-Time

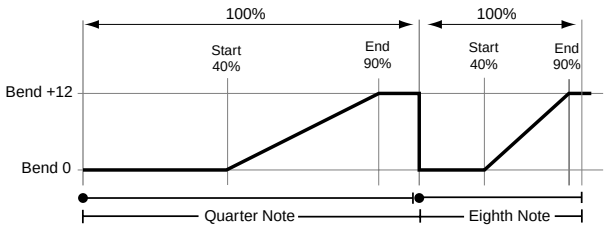
Since the duration of the note is determined by actually playing the keyboard, Bend Group "Length" **25: Note Duration** is not available for this GE Type, and will act the same as **7: 16th** if selected. The other Bend Length settings operate as described above.

The Different Bend Shapes

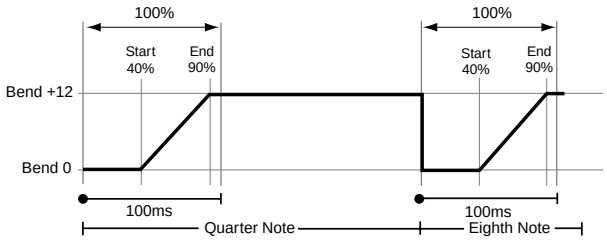
Bend

When the "Bend" Shape is selected in the Shape Parameter, the Start Parameter specifies where in the note's duration the bend will start, and the End Parameter specifies where in the note's duration the bend will end. The following diagram illustrates the resulting bend when the shape is "Bend," and also the difference between Note Duration and Fixed / Note Values settings.

+12 Bend with Note Duration



+12 Bend with Note Value/Fixed (ms) Duration 100ms



Hammer, Hammer Bend

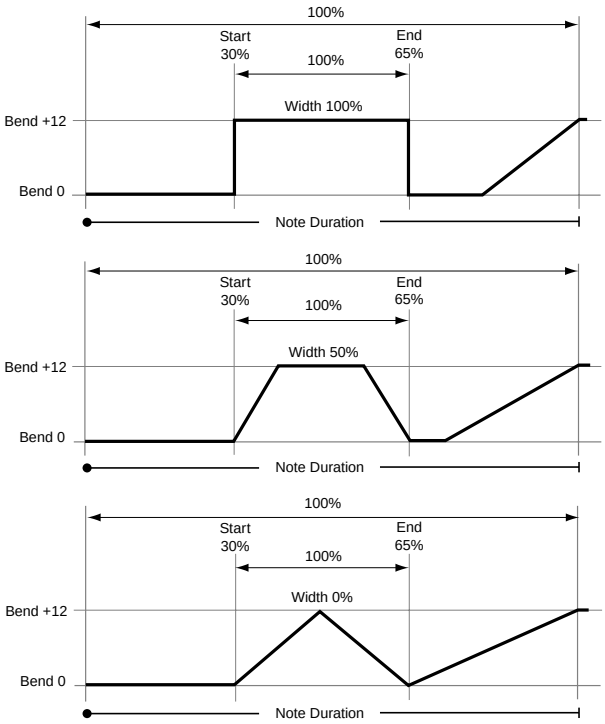
When the “Hammer” or “Hammer Bend” Shape is selected, the Start and End Parameters function a bit differently. Start specifies where in the note’s duration the 1st bend will start and go to the bend’s highest value (Hammer-On), and End specifies where in the note’s duration the 2nd bend will start and return to zero (Hammer-Off). Additionally, a 3rd bend is generated for Hammer Bends.

Also, when the “Hammer” or “Hammer Bend” Shape is selected, the Width Parameter is available. Width is a percentage of the amount of time between the Start and End points, and therefore controls how long the Hammer-On and Hammer-Off bends will be. You can also think of Width as being the amount of time the bend stays at it’s highest value before returning to zero. A Width of **100%** gives you a Square Shape, while a Width of **0%** gives you a Triangle Shape.

In a **Hammer Bend**, the 3rd bend starts at a point in the note’s duration following the End setting, and is determined by a ratio of the Width. Even when Width is at **100%** and the Hammer-On and Hammer-Off Bends are instantaneous, the final 3rd bend will still be an audible bend.

The following diagrams illustrate the shape of a Hammer Bend. A Hammer is the same thing, without the final 3rd bend at the end. Hammers and Hammer Bends follow the same behavior with Duration as discussed in the previous section Length Of Bends.

+12 Bend Hammer Bend with various Widths

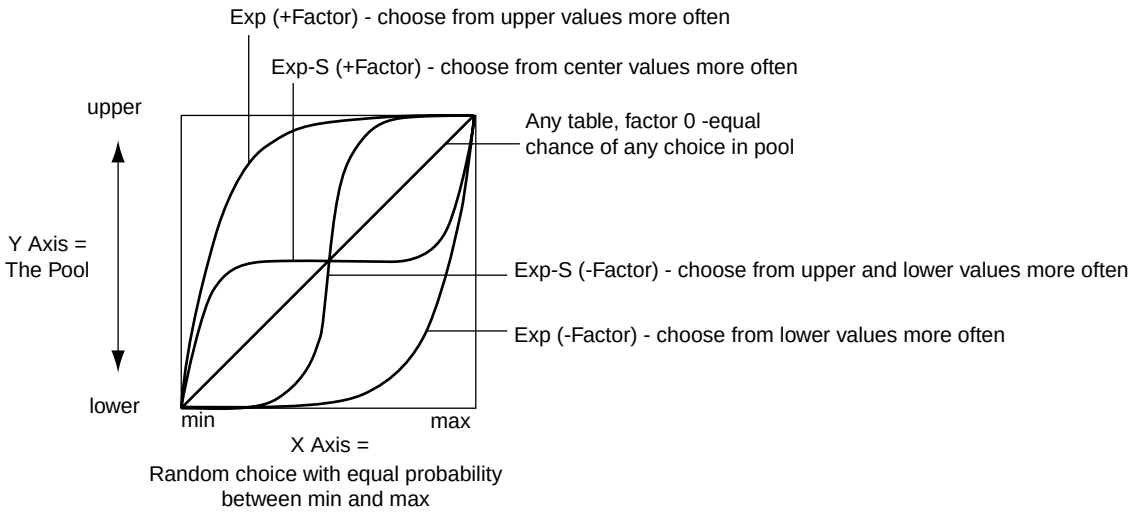


Random Weighting Curves

Weighting Curve Shapes and Their Effects

When using the various grid-based Patterns, more than one value selected in a column creates a "pool" of random choices. Different areas of the pool may be selectively favored using a Weighting Curve. 4 different shapes are available, which act to favor certain areas of the pool over others when each random choice is made. The actual shape of the curve depends on the setting of the "Factor" parameter.

Exponential Curves with Positive/Negative Factors



Exponential (Exp)

With a **positive Factor (+)**, choices will be exponentially weighted towards the upper values in the pool. With a **negative Factor (–)**, choices will be exponentially weighted towards the lower values in the pool.

Logarithmic (Log)

With a **positive Factor (+)**, choices will be logarithmically weighted towards the upper values in the pool. With a **negative Factor (–)**, choices will be exponentially weighted towards the lower values in the pool.

Exponential S (Exp-S)

With a **positive Factor (+)**, choices will be exponentially weighted towards the center values in the pool, and away from the lower and upper values in the pool. With a **negative Factor (–)**, choices will be exponentially weighted towards the lower and upper values in the pool, and away from the values in the center of the pool.

Logarithmic S (Log-S)

With a **positive Factor (+)**, choices will be logarithmically weighted towards the center values in the pool, and away from the lower and upper values in the pool. With a **negative Factor (–)**, choices will be logarithmically weighted towards the lower and upper values in the pool, and away from the values in the center of the pool.

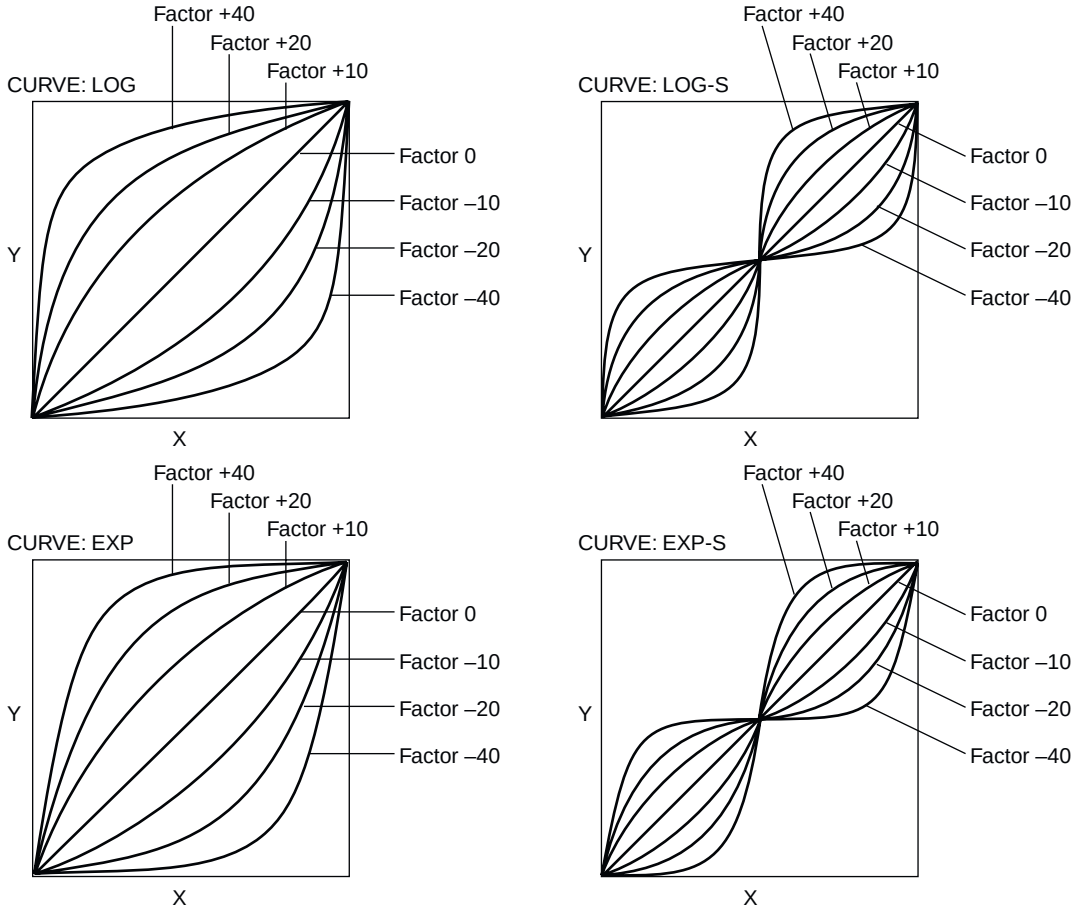
Using negative Factors not only inverts but rotates the curve.

The following table summarizes the effect of the Factor field on the curves and the pools:

Pool values that receive priority:		
Weighting Curve	Factor	
	+ (positive)	– (negative)
Exp / Log	**upper**	**lower**
Exp-S / Log-S	**center**	**lower/upper**

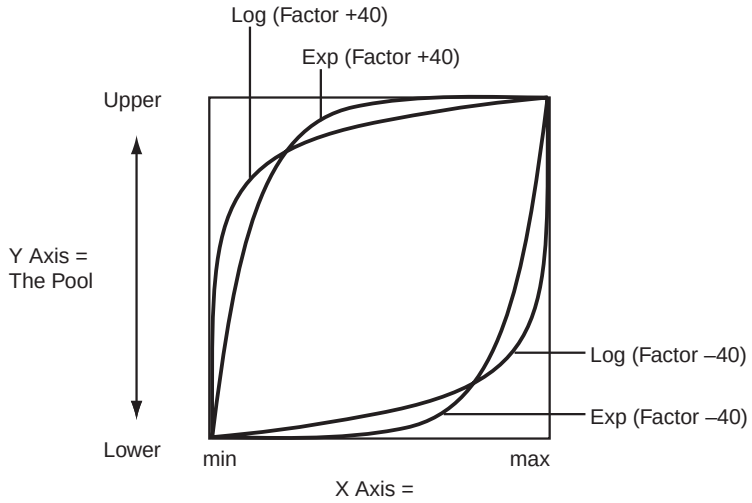
Comparison of Exponential and Logarithmic Curves

Exponential Curves and Logarithmic Curves have similar shapes. They are different, however, as the following diagram illustrates:



X Axis = random choice with equal probability between min and max. Y Axis = the Pool.

This characteristic can be used to even more finely tune the effect you are trying to achieve. For example, the top and bottom curves in both the Log and Exp diagrams (Factor 40 and –40) above are shown together below:



With a Positive Factor (+40):

Exponential Curve (Exp)

75% chance of a choice from the upper 10% of the pool;

25% chance of a choice from the lower 90% of the pool.

Logarithmic Curve (Log)

90% chance of a choice from the upper 25% of the pool;

10% chance of a choice from the lower 75% of the pool.

In general, as the positive factor increases, the Exp Curve will produce choices more from the very highest part of the pool, with a choice from the remaining portion more likely to occur than with the Log Curve. In contrast, the Log Curve will produce choices more from the mid high to highest part of the pool, with a choice from the remaining portion less likely to occur than with the Exp Curve.

Therefore, while both curves will weight the random choices toward the upper values in the pool, the Log Curve provides less of a chance of the lower and center values ever occurring, while allowing a more even distribution among the upper values. The Exp Curve provides more certainty that the highest values will be chosen, while still allowing a more even distribution among the center and lower values than the Log Curve.

With a Negative Factor (–40):

Exponential Curve (Exp)

75% chance of a choice from the lower 10% of the pool;

25% chance of a choice from the upper 90% of the pool.

Logarithmic Curve (Log)

90% chance of a choice from the lower 25% of the pool;

10% chance of a choice from the upper 75% of the pool.

In general, as the negative factor decreases, the Exp Curve will produce choices more from the very lowest part of the pool, with a choice from the remaining portion more likely to occur than with the Log Curve. In contrast, the Log Curve will produce choices more from the mid low to lowest part of the pool, with a choice from the remaining portion less likely to occur than with the Exp Curve.

Therefore, while both curves will weight the random choices toward the lowest values in the pool, the Log Curve provides less of a chance of the higher and center values ever occurring, while allowing a more even distribution among the lower values. The Exp Curve provides more certainty that the lowest values will be chosen, while still allowing a more even distribution among the center and upper values than the Log Curve.

A Factor of **0** with any shaped curve yields a linear table (straight diagonal line), and each of the values in the pool will have an equal chance of getting chosen.

Appendices

Alternate Modulation Sources (AMS)

Alternate Modulation Overview

Alternate Modulation lets you use controllers, envelopes, LFOs, etc. to modulate Program parameters. You can use one controller to modulate multiple parameters simultaneously. You can also create complex modulation setups in which (for example) an envelope modulates the frequency of an LFO, and that LFO is then used to modulate a filter.

EDS Programs provide 48 types (88 destinations) for alternate modulation.

Alternate Modulation Sources

You can use the sources listed on the following page to control Alternate Modulation. If you select two or more Alternate Modulation destinations for control by the same AMS, a single source will apply modulation to each of the specified destinations.

Frequently used assignments such as using Joystick X to control pitch are provided as special parameters, so it is not necessary to use Alternate Modulation to accomplish this.

AMS Mixers

The AMS Mixers combine two AMS sources into one, or process an AMS source to make it into something new.

For instance, they can add two AMS sources together, or use one AMS source to scale the amount of another. You can also use them to change the shapes of LFOs and EGs in various ways, modify the response of realtime controllers, and more.

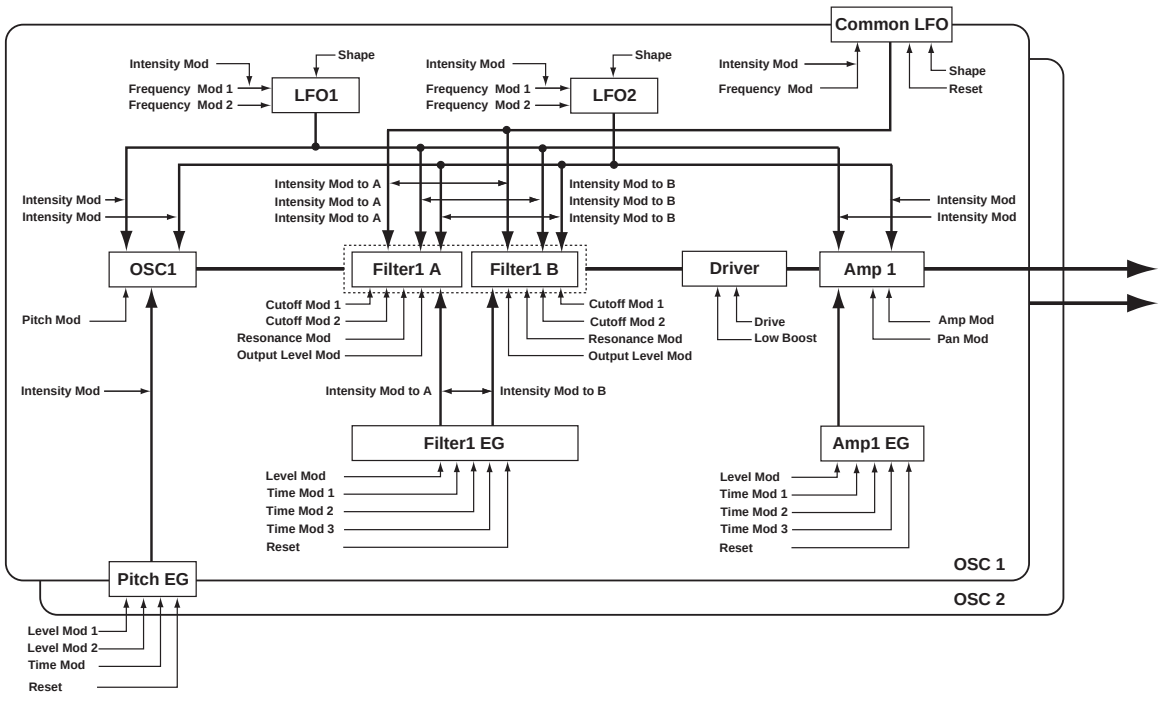
The AMS Mixer outputs appear in the list of AMS sources, just like the LFOs and EGs.

The original, unmodified inputs to the AMS Mixers are still available as well. For instance, if you use LFO 1 as an input to a AMS Mixer, you can use the processed version of the LFO to control one AMS destination, and the original version to control another.

Finally, you can cascade two or more AMS Mixers together, by one as an input to another.

For more information, please see “6–1: OSC1 AMS Mix1” on page 70, and “Using the AMS Mixers” on page 55 of the Operation Guide.

Alternate Modulation - EDS Enhanced Definition Synthesis Type



AMS (Alternate Modulation Source) List

Physical and MIDI controllers

Off

This means that no modulation source is selected.

Note Number

This is the note's MIDI note number, from 0 (C-2) to 127 (G9).

Velocity

This is the note's MIDI note-on velocity.

Exp. Velocity (Exponential Velocity)

This is MIDI note-on velocity through an exponential curve. The curve means that low velocities won't have very much effect, and the difference between two lower velocity values won't be very noticeable.

On the other hand, high velocities produce increasingly greater effects, and the difference between any two higher velocity values will be more pronounced.

Poly After

Polyphonic aftertouch allows a different aftertouch value for each note. This can be received from external MIDI devices or generated by the internal sequencer. The M3 keyboard itself does not generate poly aftertouch, however.

After Touch

This receives MIDI Aftertouch, as well as aftertouch generated by pressing down on the M3 keyboard.

JS X

This is the horizontal movement of the main joystick. It also receives MIDI Pitchbend.

JS+Y: CC#01

This is the vertical movement of the main joystick, upwards from the center. It also receives MIDI CC#01 (mod wheel).

JS–Y: CC#02

This is the vertical movement of the main joystick, downwards from the center. It also receives MIDI CC#02 (breath controller).

JS +Y & AT/2 (Joy Stick +Y & After Touch/2)

The effect will be controlled by the joystick +Y (Vertical upward) and by aftertouch. In this case, the effect of aftertouch will be only half of the specified intensity.

JS –Y & AT/2 (Joy Stick –Y & After Touch/2)

The effect will be controlled by the joystick –Y (Vertical downward) and by aftertouch. In this case, the effect of aftertouch will be only half of the specified intensity.

Pedal: CC#04 (Foot Pedal: CC#04)

This AMS source receives MIDI CC#04. It can also be generated by a foot pedal connected to the rear-panel ASSIGNABLE PEDAL input, if the Global **Foot Pedal Assign** parameter is set to Foot Pedal (CC#04). For more information, please see "Foot Pedal Assignments" on page 600.

Ribbon: CC#16

This is the side-to-side movement of the ribbon controller, which corresponds to MIDI CC#16.

ValueSldr: #18 (Value Slider: CC#18)

You can use the value slider as a modulation source, but only when the following are true:

- You're on the Prog P0: Play page, and the big Program name is selected, or
- You're on the Combi P0: Play page, and the big Combination name is selected.

In these cases only, the value slider sends MIDI CC#18, and can be used as a modulation source.

SldrMod5: #17 (Slider Modulation5: CC#17)

This AMS source always responds to MIDI CC#17. A MIDI value of 0 causes the maximum negative modulation; 64 (center) means no modulation; and 127 causes the maximum positive modulation. (You can invert this response, if desired, by using a negative AMS intensity.)

It also usually corresponds to Slider 5 (USER 1) on the Controllers Setup page but this depends on the Realtime Control Slider Assign settings for each individual Program, Combination, and Song.

Basically, there are two separate things: a physical slider named Slider 5, and an AMS source named "Slider Mod.5: #17." This provides a great deal of flexibility–but's it's also easy to link the two together. To do so:

1. **Go to the current mode's Controllers page.**
2. **Set Slider 5's Realtime Control Slider Assign to Slider Mod.5: #17.**

For more information, please see "1–6: Controllers Setup" on page 35, and "Realtime Control Slider 5–8 Assignments" on page 598.

SldrMod6: #19 (Slider Modulation6: CC#19)

This AMS source always responds to MIDI CC#19, and will usually also correspond to Slider 6 (USER 2). For more information, please see "SldrMod5: #17 (Slider Modulation5: CC#17)" on page 588.

SldrMod7: #20 (Slider Modulation7: CC#20)

This AMS source always responds to MIDI CC#20, and will usually also correspond to Slider 7 (USER 3). For more information, please see "SldrMod5: #17 (Slider Modulation5: CC#17)" on page 588.

SldrMod8: #21 (Slider Modulation8: CC#21)

This AMS source always responds to MIDI CC#21, and will usually also correspond to Slider 8 (USER 4). For more information, please see "SldrMod5: #17 (Slider Modulation5: CC#17)" on page 588.

SldrMod5[+] (Realtime Control Slider5[+])

SldrMod6[+] (Realtime Control Slider6[+])

SldrMod7[+] (Realtime Control Slider7[+])

SldrMod8[+] (Realtime Control Slider8[+])

With these AMS sources, the slider position and the direction of the resulting change are different than SldrMod5: #17–SldrMod8: #21. If AMS intensity is set to a positive (+) value, the AMS result will be zero when the slider is lowered. Raising the slider will apply change only in the positive direction. (If the intensity is set to a negative value, the result will be the opposite.)

Damper: #64

This is the Damper pedal, also sometimes called the sustain pedal. It corresponds to MIDI CC#64.

When using Korg's optional half-damper pedal, the DS-1H, this AMS source is continuous–not just on / off.

Porta.SW: #65

This is the MIDI portamento switch (CC#65), which also enables and disables portamento.

Sostenuto: #66

This is the MIDI sostenuto pedal (CC#66).

Soft: CC#67

This is the MIDI oft pedal (CC#67).

SW 1: CC#80 (SW 1 Modulation: CC#80)

This is CC#80, which is the default for assignable front-panel switch 1 (SW1). To use SW1 and SW2 as AMS sources:

1. **Go to the Controllers Setup page.**

2. Under Panel Switch Assign, assign SW1 to SW1 Mod. (CC#80) and SW2 to SW2 Mod. (CC#81).

These assignments are stored separately for each Program, Combination, and Song.

For more information, please see “SW1/2 Assignments” on page 597.

SW 2: CC#81 (SW 2 Modulation: CC#81)

This isCC#81, which is the default for assignable front-panel switch 2 (SW2). For more information, please see “SW 1: CC#80 (SW 1 Modulation: CC#80),” above.

Foot SW: #82 (Foot SW: CC#82)

This AMS source receives MIDI CC#82. It can also be generated by a foot switch connected to the rear-panel ASSIGNABLE SWITCH input, if the Global **Foot Pedal Assign** parameter is set to Foot SW (CC#82). For more information, please see “Foot Switch Assignments” on page 599.

MIDI: CC#83

MIDI control change (CC#83)

XY +X: CC#85 (X–Y Mode Modulation +X: CC#85)

This is MIDI CC#85, which is the default assignment for horizontal movement of the X–Y control, to the right of the center point.

To use the X–Y control as an AMS source, go to the X–Y CC Control page or X–Y CC page for each program, combination, or song, and set the **X–Y CC Control** parameters as below:

+X: XY +X Mod. (CC#85)

–X: XY –X Mod. (CC#86)

+Y: XY +Y Mod. (CC#87)

–Y: XY –Y Mod. (CC#88)

Note: If “X–Y X/Y Mode” is Positive or Negative, you’ll be able to use either + or –, not both.

Modulation will be applied when you turn on X–Y MODE and operate X–Y control.

X–Y CC Control “+X,” “–X,” “+X” and “–Y” settings can be made in the Prog P1– X–Y Setup page and in the Combi/Seq P1– X–Y CC T01–08/T09–16 page.

XY –X: CC#86 (X–Y Mode Modulation –X: CC#86)

This is the horizontal movement of the X–Y control, to the left of the center point. It corresponds to MIDI CC#86.

For more information, please see “XY +X: CC#85 (X–Y Mode Modulation +X: CC#85),” above.

XY +Y: CC#87 (X–Y Mode Modulation +Y: CC#87)

This is the vertical movement of the X–Y control, upwards from the center point. It corresponds to MIDI CC#87.

For more information, please see “XY +X: CC#85 (X–Y Mode Modulation +X: CC#85),” above.

XY –Y: CC#88 (X–Y Mode Modulation –Y: CC#88)

This is the vertical movement of the X–Y control, downwards from the center point. It corresponds to MIDI CC#87.

For more information, please see “XY +X: CC#85 (X–Y Mode Modulation +X: CC#85),” above.

Tempo

This lets you use the system tempo as a modulation source. 120 is the center, for a value of 0; 60BPM is –99, and 240BPM is +99.

Note that this is different from actually syncing to tempo; for that purpose, use the dedicated synchronization functions for the LFOs, effects, etc.

Gate1

Gate1+Damper

Gate 1 is triggered by a new note after all notes have been released, such as at the beginning of a phrase. Gate 1+Damper is similar, except that it is triggered by a new note-on after all notes and the damper are released.

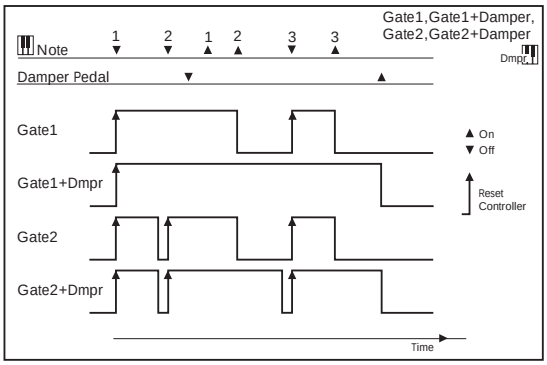
You can use this to reset the Common LFO. For instance, to create an effect similar to the per-voice LFO and Step Sequencer’s **Key Sync Off** setting, use **Gate 1 + Damper** as the reset source.

Gate2

Gate2+Damper

Gate 2 is similar to Gate 1, but it triggers with every new note-on, even in the middle of a legato phrase. Gate2+Damper includes the damper pedal in the equation, as shown in the diagram below.

Note: When used as a reset controller for Common LFO, Gate2 and Gate2+Damper will have the same effect.



EDS

The EDS supports all of the “Physical and MIDI controllers,” as described on page 588, in addition to the AMS sources below.

AMS Mixer1&2

These are the outputs of the oscillator’s AMS Mixers. For more information, please see “6–1: OSC1 AMS Mix1” on page 70.

Pitch EG

This is the output of the Pitch EG, which is shared between both oscillators. For more information, please see “2–8: Pitch EG” on page 43.

Filter EG

This is the output of the oscillator’s Filter EG. For more information, please see “3–1–5: EG” on page 54.

Amp EG

This is the output of the oscillator’s Amp EG. For more information, please see “4–3: Amp1 EG” on page 62.

LFO1 &2

These are the outputs of the oscillator’s two LFOs. For more information, please see “5–1: OSC1 LFO1” on page 66.

Common LFO

This is the output of the Common LFO, which is shared by all voices of both oscillators. For more information, please see “5–8: Common LFO” on page 69.

Filter KTrk (Filter Key Track)

This is the output of the oscillator’s Filter Key Track generator. For more information, please see “3–1–2: Keyboard Track” on page 49.

Amp KTrk (Amp Key Track)

This is the output of the oscillator's Amp Key Track generator. For more information, please see "4–2: Amp1 Modulation" on page 59.

Common KTrk1 & 2 (Common Key Track1&2)

These are the outputs of the two Common Key Track generators, which are shared between both oscillators. For more information, please see "6–7: Common KeyTrk 1 (Common Keyboard Track 1)" on page 75.

Alternate Modulation settings

When you operate an AMS (Alternate Modulation Source), the modulation destination will be affected as shown in the table below.

By using alternate modulation, you can create complex systems of modulation in which EG, LFO, keyboard tracks, and controllers work together.

- You can apply complex change to an LFO or EG, for example by using the pitch / filter / amp EG to control the frequency or intensity of an LFO that modulates the pitch / filter / amp, or by using LFO2 to control the frequency of LFO1.
- The tone, EG, and LFO etc. can be controlled not only by velocity or joystick, but also from a switch, or pedal etc.
- Panning can be controlled in realtime from a controller, EG, or LFO etc.
- You can use the filter EG to control pitch or volume at the same time that it controls the filter.
- Controllers etc. can be used to control EG levels or times. This lets you shape the EG in realtime.
- Filter / amp keyboard tracking or note number can be used to control the EG or LFO according to the keyboard pitch that is played.
- Pitch, tone, EG or LFO can be controlled by the tempo of the KARMA or sequencer.

AMS source & value range		Amp EG 0...+99	Pitch & Filter EGs –99...0...+99	LFO1 & 2 –99...0...+99	Common LFO –99...0...+99	Filter & Amp Key Track –99...0...+99	Common Key Track 1 & 2 –99...0...+99	Note Number C–1...C4...C9	EXT(+/–) *1 –Max...0...+Max EXT (Tempo) *2 ♩=...60...120...240...	EXT(+) *3 0...127
Parameter	**AMS Intensity**									
Pitch *4	(+12.00)	0...+1 Octave	–1…0…+1 Octaves (Filter EG as AMS; dedicated parameter for Pitch EG)	Dedicated parameter	–1...0...+1 Octaves	–		Dedicated parameter	–1...0...+1 Octaves	0...+1 Octave
Pitch EG Int.	(+12.00)	–	Dedicated parameter for Pitch EG	–	–1...0...+1 Octaves			–1...0...+1 Octaves		0...+1 Octave
Pitch LFO1/ 2 Int.	(+12.00)	0...+1 Octave	–1...0...+1 Octaves	–	–1...0...+1 Octaves					0...+1 Octave
Filter Frequency	(+99)	0...+10 Octaves	–10…0…+10 Octaves (Pitch EG as AMS; dedicated parameter for Filter EG)	Dedicated parameter		Dedicated parameter for Filter KTrk	–10…0…+10 Octaves	–	–10…0…+10 Octaves	0...+10 Octaves
Filter Resonance	(+99)	0...+99	–99...0...+99							0...+99
Filter EG Int.	(+99)	–	Dedicated parameter for Filter EG	–	–99...0...+99	–	–99...0...+99	–	–99...0...+99	0...+99
Filter LFO1/2 Int.	(+99)	0...+99	–99...0...+99	–	–99...0...+99					0...+99
Filter Output Level A/B	(+99)	0...+99	–99...0...+99							0...+99
Drive	(+99)	0...+99	–99...0...+99							0...+99
Low Boost	(+99)	0...+99	–99...0...+99							0...+99
Amp	(+99)	Dedicated parameter	0...1x...8x	Dedicated parameter	0...1x...8x	Dedicated parameter for Amp KTrk	–	–	0...1x...8x	1x...8x
Amp LFO1/2 Int.	(+99)	0...+99	–99...0...+99	–	–99...0...+99					0...+99
Pan	(+50)	0...+63	–63...0...+63							0...+63
EG Level	(+66)	–			–99...0...+99					0...+99
EG Time	(+49)	–			1/64x...1x...64x					1x...64x
LFO 1 Frequency *5	(+99)	1x...64x		1/64x... 1x...64x (LFO2 only)	1/64x...1x...64x					1x...64x

AMS source & value range Parameter / AMS Intensity	Amp EG 0...+99	Pitch & Filter EGs –99...0...+99	LFO1 & 2 –99...0...+99	Common LFO –99...0...+99	Filter & Amp Key Track –99...0...+99	Common Key Track 1 & 2 –99...0...+99	Note Number C–1...C4...C9	EXT(+/–) *1 –Max...0...+Max EXT (Tempo) *2 ♩=...60...120...240...	EXT(+) *3 0...127
LFO 2 Frequency *5 (+99)	1x...64x		–	1/64x...1x...64x					1x...64x
Common LFO Frequency *5 (+99)	–					1/64x...1x...64x			1x...64x
LFO 1 Shape (+99)	0...+99		–99...0...+99 (LFO2 only)	–99...0...+99					0...+99
LFO 2 Shape (+99)	0...+99		–	–99...0...+99					0...+99
Common LFO Shape (+99)	–					–99...0...+99			0...+99

Notes for the table

***1** EXT(+–): JS X, Ribbon:CC#16, SldrMod5:#17, SldrMod6: #19, SldrMod7:#20, SldrMod8:#21

***2** When Tempo is selected as an AMS source, the base value is ♩=120.
For example if the Pitch AMS is set to Tempo, and Intensity is set to 12.00, doubling the tempo value (♩=120 → 240) will raise the pitch one octave, and halving the tempo (♩=120 → 60) will lower the pitch one octave. The stated modulation results are for tempo values between 60bpm and 240bpm. As the tempo decreases from 60 to 0bpm, AMS modulation will have increasingly negative effects; as it increases from 240 to 250bpm, modulation will have increasingly positive effects.

***3** EXT(+): Velocity, Exp. Velocity, Poly After, After Touch, JS+Y:CC#01, JS–Y:CC#02, JS+Y & AT / 2, JS–Y & AT / 2, Pedal:CC#04, ValueSldr:#18, SldrMod5[+], SldrMod6 [+], SldrMod7[+], SldrMod8[+], Damper:CC#64, Porta.SW:CC#65, Sostenuto:CC#66, Soft:CC#67, SW1:CC#80, SW2:CC#81, MIDI:CC#83, XY +X:CC#85, XY –X:CC#86, XY +Y:CC#87, XY –Y:CC#88.

***4** A dedicated parameter is also provided for controlling Pitch from the Ribbon.

***5** It is possible to control LFO **Frequency** by using Tempo **AMS** and **Intensity**. However if you use the Frequency MIDI / Tempo Sync function (Prog 5–1c), the LFO frequency can be synchronized to the tempo and note value.

The effects of AMS on various parameters, and example applications

We'll describe some examples of using alternate modulation.

Pitch (Prog 2–2a)

Pitch can be controlled by the Common LFO, filter / amp EG, controllers, or tempo etc.

- If you select Filter EG or Amp EG as the **AMS** and set **Intensity** to +12.00, the pitch will change up to ±1 octave in synchronization with the EG.
- If you select Tempo as the **AMS** and set **Intensity** to +12.00, doubling the tempo (based on ♩=120) will raise the pitch one octave, and halving the tempo will lower the pitch one octave.

Pitch EG (Prog 2–2b)

Pitch EG intensity can be controlled by the Common LFO, keyboard tracking, controllers, or tempo.

- If you select JS +Y:CC#01 as the **AMS** and set **Intensity** to +12.00, moving the joystick in the +Y direction will gradually increase the effect of the Pitch EG to a maximum of ±1 octave. If **Intensity** has a negative value, the effect of the Pitch EG will be inverted.

LFO 1/2 (Prog 2–2d)

Pitch modulation intensity of the LFO1 / 2 can be controlled by the Common LFO, an EG, keyboard tracking, controllers, or tempo etc.

- If you select EG as the **AMS**, the pitch change width of LFO modulation etc. can be controlled in synchronization with the level changes of the EG. With positive (+) settings of **Intensity**, the vibrato effect will gradually deepen as the EG level rises, or gradually lessen as the EG level decreases. With negative (–) settings of "Intensity," the LFO phase will be inverted.
- If you select a controller such as SW1 or 2 as the **AMS**, you can press the SW1 or SW2 switch when desired to turn on the vibrato effect.

Filter (Cutoff) Frequency (Prog 3–1–1b)

The cutoff frequency of filter A / B can be controlled by the pitch / amp EG, Common keyboard tracking, controllers, or tempo. Set **AMS** and **Intensity** for Filter A or B.

- If you select JS X or Ribbon: CC#16 as the **AMS** and set **Intensity** to a positive (+) value, moving the joystick or ribbon controller toward the right will raise the cutoff frequency, and moving it toward the left will lower the cutoff frequency. Negative (–) settings will have the opposite effect.
- If you select the same controller as an **AMS** and set separate intensities for Filter A (Low Pass Filter) **Intensity** and Filter B (High Pass Filter) **Intensity**, you can operate a single controller to simultaneously control the cutoff frequencies of both filters.

Resonance (Prog 3–1–1b)

You can use the EG, LFO, keyboard tracking, controllers, or tempo etc. to control the resonance level.

- If you select Filter KTrack or Amp KTrack as the **AMS**, you can use the filter or amp keyboard tracking settings to control the resonance level. For example if the amp keyboard tracking parameters **Ramp BtmLo** and **Ramp HiTop** are set to positive (+) values, Amp KTrack is selected as the **AMS**, and **Intensity** it set to a positive (+) value, playing toward either end of the keyboard will cause amp keyboard tracking to increase the volume, and **AMS** to raise the resonance level.
- You can select a controller as the **AMS**, and apply resonance when desired by operating the controller.
- You can select Common LFO, LFO1 or 2 as the **AMS**, and use the LFO to control the resonance level.

Output (Prog 3–1–1b)

You can use the EG, LFO, keyboard tracking, controllers, or tempo etc. to control the output level of Filter A / B.

- Set the Filter Routing to Parallel, and specify the desired Type and other settings for Filter A and Filter B. Set the **AMS** to LFO for Filter A and Filter B, and set the LFO to +99 and –99 respectively. The output of Filter A and Filter B will be cyclically faded-in / out by the LFO.

Filter EG Intensity (Prog 3–1–3a)

Filter EG intensity can be controlled by the Common LFO, Common keyboard tracking, a controller or tempo etc. You can use **Intensity to A** and **Intensity to B** to independently specify the intensity for Filter A and B.

- If you select JS –Y (CC#02) as the **AMS** and set **Intensity to A** and **Intensity to B** to a positive (+) value, moving the joystick in the –Y direction will gradually increase the effect of the Filter EG. If you set **Intensity to A** and **Intensity to B** to a negative (–) value, the effect of the Filter EG will be inverted.
- If you select Ribbon:CC#16 as the **AMS** and set **Intensity to A** and **Intensity to B** to a positive (+) value, operating the ribbon controller toward the right will gradually increase the effect of the Filter EG. Operating the ribbon controller toward the left will gradually increase the effect of the Filter EG with an inverted phase.

Filter LFO1/2 Intensity (Prog 3–1–4a)

The LFO 1/2 filter modulation intensity can be controlled by the EG, Common LFO, keyboard tracking, controller, or tempo etc. You can use **Intensity to A** and **Intensity to B** to independently specify the intensity for Filter A and B.

- If you select EG as the **AMS**, the auto-wah effect produced by LFO modulation will be controlled by the changes in EG level. If you set **Intensity to A** and **Intensity to B** to a positive (+) value, the wah effect will deepen as the EG level rises, and will lessen as the EG level falls. With negative (–) values of **Intensity to A** and **Intensity to B**, the phase of the LFO will be inverted.
- If you use a controller such as SW1 or 2 as the **AMS**, you can apply the auto-wah effect when desired by pressing the SW1 or SW2 switch.

Filter Common LFO1/2 (Prog 3–1–4b)

You can use the EG, LFO, keyboard tracking, controllers, or tempo etc. to control the Common LFO filter modulation intensity. You can use **Intensity to A** and **Intensity to B** to specify the intensity separately for Filter A and B.

- You can set **AMS** to a controller, and operate the controller only when desired to control the depth of the filter sweep produced by the Common LFO.

Driver Drive (Prog 4–1a)
Driver Low Boost (Prog 4–1a)

You can use the EG, LFO, keyboard tracking, controllers, and tempo etc. to control the driver's boost and low boost. Although you can use separate AMS to control these two parameters, it is also effective to control them simultaneously by using controllers such as the sliders etc. (It is particularly effective to control the filter resonance at the same time. This is also nice for synth bass sounds.)

- If you choose SldrMod5:#17 as **AMS**, set **Intensity** to a positive (+) value, and move Realtime Control slider 5 upward from the middle position, the drive and low boost level will rise. Conversely, lowering the slider will lower the level. If the **Intensity** is set to a negative value, the result will be the opposite.
- If you set **AMS** to Common LFO, LFO 1, or 2, the drive amount will be controlled cyclically by the LFO.

Amp (Prog 4–2b)

The volume can be controlled by the pitch / filter EG, Common LFO, controllers, or tempo etc.

- If an EG or controller that changes with a positive (+) value (EXT(+)) is selected as the **AMS**, setting the "Intensity" to +99 will allow you to increase the volume to a maximum of eight times that of the current volume.
- If an EG, LFO, or controller that changes with a ± value (Pitch EG, Filter EG, LFO, KT, EXT(+–) is selected as the **AMS**, setting the "Intensity" to +99 will allow you to increase the volume to a maximum of eight times that of the current volume (for positive (+) changes of the **AMS**), or to decrease the volume to zero (for negative (–) changes of the **AMS**).
- In addition to the time-variant changes in volume produced by the amp EG, you can also make the volume change in synchronization with the pitch / filter EG. Select Pitch EG or Filter EG as the **AMS**, and adjust "Intensity." If you wish to cancel the effect of the Amp EG and use the pitch / filter EG to control the volume, set all levels of the Amp EG to +99.

Amp LFO1/2 Intensity (Prog 4–2b)

The amp modulation intensity of LFO 1 / 2 can be controlled by the EG, Common LFO, keyboard tracking, controllers, or tempo etc.

- If you select EG as the **AMS**, the depth of the tremolo effect produced by LFO modulation will change in synchronization with the changes in EG level. If you set "Intensity" to a positive (+) value, the tremolo effect will deepen as the EG level rises, and lessen as the EG level falls. If "Intensity" is set to a negative (–) value, the phase of the LFO will be inverted.
- If select a controller such as SW1 or 2 as the **AMS**, you can apply the tremolo effect by pressing the SW1 or SW2 switch when desired.

Pan (Prog 4–1c)

The oscillator pan can be controlled by the EG, LFO, keyboard tracking, controllers, or tempo etc.

- If you select Note Number as the **AMS** and set "Intensity" to +50, panning will be controlled by the keyboard position: center at the C4 note, far right at C9 or above, and far left at C–1 or below.
- If EG is selected as the **AMS**, the oscillator pan will be controlled in synchronization with the changes in EG level. If "Intensity" is set to a positive (+) value, the pan will move toward the right as the EG level increases, and toward the left as the EG level decreases. If "Intensity" is set to a negative (–) value, the opposite effect will occur.

EG Reset —
Pitch EG (Prog 2–8a)
Filter EG (Prog 3–1–5a)
Amp EG (Prog 4–3a)

You can use the EG, LFO, keyboard tracking, controllers, or tempo etc. to control EG Reset. Use the Threshold setting to specify the AMS value at which result will occur.

- By setting **AMS** to Common LFO, you can reset the envelope cyclically at the interval of the Common LFO. The result is just as if the shape specified by the envelope were being used as a special LFO.
- You can reset the envelope by setting **AMS** to a controller such as JS+Y, and operating the controller when desired, producing a one-shot filter envelope sweep.

EG Level —
Pitch EG (Prog 2–8c)
Filter EG (Prog 3–1–5c)
Amp EG (Prog 4–3c)

EG levels can be controlled by the Common LFO, keyboard tracking, controllers, or tempo etc.

You can specify an **Intensity** value for each EG segment ("Start," "Attack," "Break"). If you set the **Intensity** value to +66, you will be able to control the respective level over a maximum range of ±99.

- Set **AMS** to Velocity for Amp EG Level Modulation, Intensity "Start" to +00, "Attack" to +66, and "Break" to –66.
  Set all Amp EG levels to +00. As you play with

increasing velocity, the EG levels will change more greatly. At the maximum velocity, the Start Level will stay at +00, but the Attack Level will change to +99 and the Break Level will change to –99.

EG Time —
Pitch EG (Prog 2–8c)
Filter EG (Prog 3–1–5c)
Amp EG (Prog 4–3d)

EG times can be controlled by the Common LFO, keyboard tracking, controllers, or tempo etc.

You can specify an "Intensity" value for each EG segment ("Attack," "Decay," "Slope," "Release"). EG times are determined by the Alternate Modulation value when the preceding point is reached. For example, the Alternate Modulation value at the moment the envelope reaches the attack level will determine the decay time.

If "Intensity" is set to a value of 8, 17, 25, 33, 41, or 49, the corresponding time can be multiplied by a maximum of 2, 4, 8, 16, 32, or 64 times (or divided by 1/2, 1/4, 1/8, 1/16, 1/32, 1/64).

- Select JS +Y:CC#01 for "AMS," and set "AMS Intensity" to +8, "At" to +, "Dc" to –, and "Sl" and "Rl" to 0. When you move the joystick in the +Y direction, the Attack Time will be lengthened by a maximum of 2 times. The Decay Time will be shortened by a maximum of 1/2. The Slope and Release times will not change.

LFO Frequency (Prog 5–1a)

The frequency of LFO 1, 2 or Common LFO can be controlled by the EG, keyboard tracking, controllers, or tempo etc.
You can also use the LFO2 frequency to modulate LFO1, or use the Common LFO frequency to modulate LFO 1/2.

If **Intensity** is set to a value of 16, 33, 49, 66, 82, or 99, the corresponding frequency can be multiplied by a maximum of 2, 4, 8, 16, 32, or 64 times (or divided by 1/2, 1/4, 1/8, 1/16, 1/32, 1/64).

- Select JS +Y:CC#01 for **AMS**, and set **Intensity** to +16. When you move the joystick in the +Y direction, the LFO frequency will be increased by a maximum of 2 times. If you set **Intensity** to –16 and move the joystick in the +Y direction, the LFO frequency will be decreased by up to 1/2.

LFO Frequency AMS Intensity (Prog 5–1b)

You can use the EG, keyboard tracking, controllers, or tempo etc. to control the intensity of the AMS that controls the frequency of the LFO 1, 2, or Common LFO.

For example if you're using the pitch EG to modulate the LFO frequency, you could use a separate AMS to control the depth of this effect.

- Set **AMS** to a controller such as SW 1 or 2, so that the pitch EG will lightly control the LFO frequency when the switch is off, and more deeply when the switch is on.

LFO Shape (Prog 5–1a)

You can use a EG, keyboard tracking, controllers, or tempo etc. to control the shape of the LFO 1, 2, or Common LFO waveform. You can also use the LFO2 frequency to modulate LFO1, or use the Common LFO frequency to modulate LFO 1/2.

- You can control the LFO waveform by setting **AMS** to a controller such as JS+Y, and operating the controller when desired.

Common LFO Reset (Prog 5–8a)

You can use a controller or tempo etc. to reset the Common LFO.

- By setting **AMS** to Gate 1, you can make the Common LFO reset when a note is played from a state in which all notes are off. For example, this will ensure that a filter sweep always starts from the same place.
- You can set **AMS** to a controller such as JS+Y: CC#01, and operate the controller when you want to reset the LFO.

Dynamic Modulation Sources (Dmod)

You can control certain effect parameters using the joystick, X–Y, ribbon controller, etc. “on the fly.”

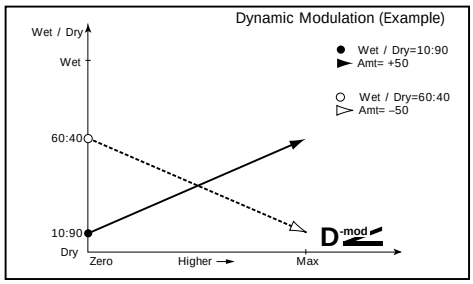
These parameters can also be controlled by KARMA, the X–Y control and EG, or the sequencer.

Controlling effects in this way is referred to as Dynamic Modulation. For example, you can use After Touch to speed up the LFO of the chorus and flanger, or you can use the ribbon controller to sweep a wah effect. This lets you take full advantage of the effects as part of the expressive potential of your instrument.

Most of the parameters for dynamic modulation consist of parameter values for **Source** and **Amount**. The **Source** field selects the modulation source, and **Amount** sets the modulation intensity. When the **Source** is at its maximum value (for instance, when JS+Y is moved all the way up), the actual degree of the effect will be the parameter value plus the **Amount**.

For example, let’s say that **Wet/Dry** = 10:90, **Source** = After Touch, and **Amount** = +50.

With no After Touch, the wet / dry balance is 10:90 (mostly dry). As you apply After Touch, the balance will change to include more of the effect sound, and less of the dry sound. When After Touch is at its maximum, the wet / dry balance will be 60:40 (more wet than dry).



See the individual effects descriptions for explanations of other dynamic modulation parameters. Parameters which can be controlled through dynamic modulation are marked by the D-mod symbol.

Dmod and MIDI

MIDI In Program and Sampling modes, dynamic modulation is always controlled via the global MIDI Channel.

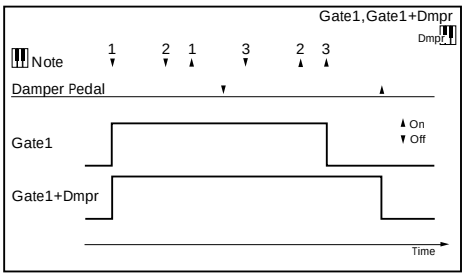
In Combination and Sequencer modes, dynamic modulation is controlled via the MIDI channel independently specified by the “Ch” for IFX1–5, MFX1, 2, and TFX.

Dynamic Modulation Source List

Off	dynamic modulation is not used
Gate1	note on/off ☞p.595
Gate1+Dmpr	note on + damper on/off ☞p.595
Gate2	note on/off (retrigger) ☞p.595
Gate2+Dmpr	note on + damper on/off (retrigger) ☞p.595
Note Numbr	note number
Velocity	velocity
Exp Velocity	exponential velocity ☞p.595
After Touch	aftertouch (Channel After Touch)
JS X	joystick X (horizontal) direction
JS+Y: #01	joystick +Y (Vertical upward) direction (CC#01)
JS–Y: #02	joystick –Y (Vertical downward) direction (CC#02)
Pedal: #04	assignable foot pedal (CC#04) ☞p.595
FXCtrl1: #12	MIDI effect control 1 (CC#12)
FXCtrl2: #13	MIDI effect control 2 (CC#13)
Ribbon: #16	ribbon controller (CC#16)
ValSldr: #18	value slider (CC#18) ☞p.595
SldrM5: #17	realtime control slider 5 (slider modulation 5 CC#17) ☞p.595
SldrM6: #19	realtime control slider 6 (slider modulation 6 CC#19) ☞p.595
SldrM7: #20	realtime control slider 7 (slider modulation 7 CC#20) ☞p.595
SldrM8: #21	realtime control slider 8 (slider modulation 8 CC#21) ☞p.595
SldrM5 [+]	realtime control slider 5 [+] ☞p.595
SldrM6 [+]	realtime control slider 6 [+] ☞p.595
SldrM7 [+]	realtime control slider 7 [+] ☞p.595
SldrM8 [+]	realtime control slider 8 [+] ☞p.595
Damper: #64	damper pedal (CC#64)
PrtaSW: #65	portamento switch (CC#65)
Sostenu: #66	sostenuto pedal (CC#66)
Soft: #67	soft pedal (CC#67)
SW 1: #80	assignable panel switch 1 (SW1 modulation CC#80) ☞p.597
SW 2: #81	assignable panel switch 2 (SW2 modulation CC#81) ☞p.597
FootSW: #82	assignable foot switch (CC#82) ☞p.598
MIDI: CC#83	MIDI Control Change (CC#83)
XY +X: #85	X–Y Mode +X (X–Y Mode modulation +X CC#85) ☞p.595
XY -X: #86	X–Y Mode –X (X–Y Mode modulation –X CC#86) ☞p.595
XY +Y: #87	X–Y Mode +Y (X–Y Mode modulation +Y CC#87) ☞p.595
XY -Y: #88	X–Y Mode –Y (X–Y Mode modulation –Y CC#88) ☞p.595
Tempo	tempo (internal clock or external MIDI clock tempo data) ☞p.595

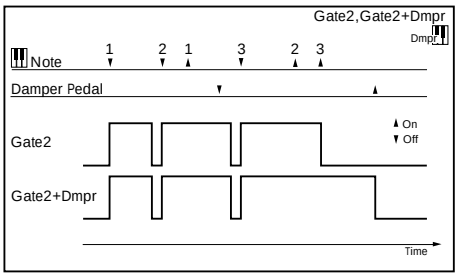
Gate1, Gate1+Dmpr (Gate1, Gate1+Damper)

The effect is at maximum during note-on, and will stop when all keys are released. With Gate1 + Damper, the effect will remain at maximum even after the keys are released, as long as the damper (sustain) pedal is pressed.



Gate2, Gate2+Dmpr (Gate2, Gate2+Damper)

This is essentially the same as for Gate 1 or Gate 1 + Dmpr. However when Gate 2 or Gate 2 + Damper are used as a dynamic modulation source for the EG of 034: St. Env. Flanger etc. or the AUTOFADE of 038: Stereo Vibrato, a trigger will occur at each note-on. (In the case of Gate 1 and Gate 1 + Dmpr, the trigger occurs only for the first note-on.)



Exp Velocity (Exponential Velocity)

Modulation will be applied exponentially according to the velocity value. Weak velocity values will produce little effect, but the effect will increase rapidly as the velocity values rise.

Pedal: #04 (Foot Pedal: CC#04)

If you wish to use the assignable foot pedal as a dynamic modulation source, set "Foot Pedal Assign" (Global P2: Controller 2–1a) to Foot Pedal (CC#04). (See "Foot Pedal Assignments" on page 600)

A foot controller etc. connected to the ASSIGNABLE PEDAL jack can be used to control an effect.

ValSldr: #18 (Value Slider: CC#18)

When Program mode P0: Play– Main "Program Select" or Combination mode P0: Play– Main "Combination Select" are selected, the VALUE slider will function as a controller corresponding to CC#18.

SldrM5: #17 (Slider Modulation5: CC#17)
SldrM6: #19 (Slider Modulation6: CC#19)
SldrM7: #20 (Slider Modulation7: CC#20)
SldrM8: #21 (Slider Modulation8: CC#21)

If you want to use Realtime Control Slider 5–8 as AMS, set the Controllers Setup page "Realtime Control Slider Assign" parameters to assign "Slider5" to Slider Mod.5 (CC#17), "Slider6" to Slider Mod.6 (CC#19), "Slider7" to Slider Mod.7 (CC#20), and "Slider8" to Slider Mod.8 (CC#21) (see "Realtime Control Slider 5–8 Assignments" on page 598) for each program, combination, song, or for Sampling mode.

You can control the effect by operating Realtime Control Slider 5–8.

If the slider is set to the center position, the resulting effect as a dynamic modulation source will be zero. If the "Amount" is a positive (+) value, raising the slider will apply positive change, and lowering it will produce negative change. (With negative values, the result will be the opposite.)

SldrM5 [+] (Slider Modulation5 [+])
SldrM6 [+] (Slider Modulation6 [+])
SldrM7 [+] (Slider Modulation7 [+])
SldrM8 [+] (Slider Modulation8 [+])

The slider position and the direction of the resulting change are different than Slider Mod5 (CC#17)–Slider Mod8 (CC#21). If "Amount" is set to a positive (+) value, the result as a dynamic modulation source will be zero when the slider is lowered all the way. Raising the slider all the way will apply change only in the positive direction. (If the "Amount" is set to a negative value, the result will be the opposite.)

SW 1: #80 (Switch Modulation 1: CC#80)
SW 2: #81 (Switch Modulation 2: CC#81)

If you wish to use the SW1 or SW2 switch as a dynamic modulation source, make settings in Program, Song, or Sampling modes to set the Controllers Setup page parameter **Panel Switch Assign** to the following values respectively: "SW1" to SW1 Mod. (CC#80), or "SW2" to SW2 Mod. (CC#81) ("SW1/2 Assignments" on page 597).

The effect will be controlled when you operate the SW1 or SW2 switch.

FootSW: #82 (Foot Switch: CC#82)

If you wish to use an assignable foot switch as a dynamic modulation source, set **Foot Switch Assign** (Global 2–1a) to Foot SW (CC#82) ("Foot Switch Assignments" on page 599).

The effect will be controlled when you operate a foot switch etc. connected to the ASSIGNABLE SWITCH jack.

XY +X: #85 (X–Y Mode Modulation +X: CC#85)
XY –X: #86 (X–Y Mode Modulation –X: CC#86)
XY +Y: #87 (X–Y Mode Modulation +Y: CC#87)
XY –Y: #88 (X–Y Mode Modulation –Y: CC#88)

If you want to use the X–Y control as a dynamic modulation source, go to the X–Y CC Control page for each program, combination, or song, and set the **X–Y CC Control** parameters "+X," "–X," "+Y," and "–Y" respectively to XY +X Mod. (CC#85), XY –X Mod. (CC#86), XY +Y Mod. (CC#87), and XY –Y Mod. (CC#88). (If "X Mode" or "Y Mode" is Positive or Negative, you'll be able to use either + or –, not both.)

Modulation will be applied when you turn on X–Y MODE and operate X–Y control.

X–Y CC Control "+X," "–X," "+X" and "–Y" settings can be made in the Prog P1– X–Y Setup page and in the Combi/Seq P1– X–Y CC T01–08/T09–16 page.

Note: Dynamic modulation via the X–Y Mode is not available in Sampling mode.

Tempo

The resulting modulation will be zero at 120 BPM, the maximum positive value at 240 BPM, and the maximum negative value at 60 BPM.

Controller Assignments

X–Y CC Control

X–Y CC control lets you use movements of the X–Y position in X–Y MODE (or X–Y Motion) as an AMS source to control the parameters of a program or as a Dmod source to control an effect.

Each of the four directions of the X–Y can send a different CC, including left (–X), right (+X), up (+Y), and down (–Y). You can choose between several different patterns combining these four directions by using the **X Mode** and **Y Mode** parameters.

X–Y CC Control assignments are saved separately with each Program, Combination, and Song. For more information, see:

- Programs: "1–5: X–Y Setup" on page 31
- Combinations: "1–4: X–Y CC T01–08, 1–5: X–Y CC T09–16" on page 142
- Sequencer mode: "1–4: X–Y CC T01–08, 1–5: X–Y CC T09–16 (X–Y CC Control T01–08, T09–16)" on page 219

MIDI The X–Y control features interact with MIDI in two different ways: through the X–Y Volume, and through the X–Y CC Control.
The **X–Y mode** sends and receives two MIDI controllers: one for the X axis, and the other for the Y axis. In Global mode, you can assign these to any MIDI CC numbers you like. The defaults are CC#118 for the X axis, and CC#119 for the Y axis.
The X–Y mode (or X–Y motion) and its CCs control the X–Y position.
In contrast, X–Y CC control normally controls only the program's sound and effects, but the generated MIDI control change messages can also be sent to an external MIDI device using **X–Y MIDI Out** (Global 1–2a).

Note that, in Combination mode, only the Combi's X–Y CCs can be sent to external MIDI instruments; the individual Program's X–Y CCs are only used internally.

List of X–Y CC Control

Off
This setting disables the switch.

XY +X Mod. (CC#85)
XY –X Mod. (CC#86)
XY +Y Mod. (CC#87)
XY–Y Mod. (CC#88)
These settings let you use the X–Y CC control as an AMS or Dmod source. Note that you'll also need to assign the X–Y CC control to control the desired parameter within the Program or Effect.

JS+X
Joystick X (right horizontal) direction

JS-X
Joystick X (left horizontal) direction

JS+Y (CC#01)
Joystick +Y (Vertical upward) direction (CC#01)

JS-Y (CC#02)
Joystick –Y (Vertical downward) direction (CC#02)

Ribbon (CC#16)
Ribbon controller (CC#16)

ValueSlider (CC#18)
value slider (CC#18)

Sldr Mod. 5 (CC#17)
Realtime control slider 5 (slider modulation 5 CC#17)

Sldr Mod. 6 (CC#19)
Realtime control slider 6 (slider modulation 6 CC#19)

Sldr Mod. 7 (CC#20)
Realtime control slider 7 (slider modulation 7 CC#20)

Sldr Mod. 8 (CC#21)
Realtime control slider 8 (slider modulation 8 CC#21)

Porta. Time (CC#05)
This controls the portamento time (CC#05).

Volume (CC#07)
Controls the volume, and transmits CC#7.

PostIFXPan (CC#08)
Controls the panning after the last Insert Effect in the chain, and transmits CC#8.

Pan (CC#10)
Controls stereo pan, and transmits CC#10.

Expression (CC#11)
Expression is a secondary volume control, which you can use to scale level without affecting the main volume settings or CC#7 values.

FX Ctrl 1 (CC#12)
FX Ctrl 2 (CC#13)
These assignments are intended for Effect Dynamic Modulation (Dmod). Note that you'll also need to assign **FX Control 1** or **2** to control the desired parameter within the Effect.

Cutoff (CC#74)
This scales the cutoff frequency of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Resonance (CC#71)
This scales the resonance of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Fltr EG Int.(CC#79)
This scales the effect of the Filter EG on the cutoff frequency. It affects all of the filters at once; for instance, in the EDS, it affects both Filters A and B.

F/A Attack (CC#73)
This scales the attack times of the Filter and Amp EGs, along with other related parameters.

F/A Decay (CC#75)
This scales the decay and slope times of the Filter and Amp EGs.

F/A Sustain (CC#70)
This scales the sustain levels of the Filter and Amp EGs.

F/A Release (CC#72)
This scales the release times of the Filter and Amp EGs.

P.LFO1 Spd (CC#76)
This scales LFO1's frequency.

P.LFO1 Dep (CC#77)
This scales the effect of LFO1 on the Pitch.

P.LFO1 Dly (CC#78)
This scales LFO1's fade-in time.

SW1 Mod. (CC#80)
SW2 Mod. (CC#81)
Normally, these are used for the two assignable switches - but you can assign them to the sliders instead, if you like.

Foot Switch (CC#82)

You can use this general-purpose controller as an AMS or Dmod source. Note that you'll also need to assign **FootSW (CC#82)** to control the desired parameter within the Program or Effect.

MIDI #83 (CC#83)

You can use this general-purpose controller as an AMS or Dmod source. Note that you'll also need to assign **MIDI CC#83** to control the desired parameter within the Program or Effect.

MFX Send 1 & 2 (CC#s 93 & 91)

These control the send levels to Master Effects 1 and 2, respectively.

CC#s 93 and 91 actually control send levels in two different places: the sends directly from the Program OSC or RADIAS, and the send levels of the last Insert Effect in the chain which matches the CC's MIDI channel.

MIDI CC#00–95 and 102–119

These settings let you transmit any MIDI CC, except for registered and non-registered parameters (CCs 96-101). If you choose a CC which is used by AMS, Dmod, or the standard CC routings, then it will affect the corresponding M3 parameters.

SW1/2 Assignments

Switch assignments are saved separately with each Program, Combination, and Song. In Sampling mode, assignments apply to the entire mode. For more information, see:

- Programs: "1–6: Controllers Setup" on page 35
- Combinations: "1–6: Controllers Setup" on page 144
- Sequencer mode: "1–6: Controllers Setup" on page 221
- Sampling mode: "4–1: Setup" on page 319

List of SW 1/2 assignments

The following functions can be assigned to SW1 and SW2.

Off

This setting disables the switch.

SW1 Mod. (CC#80) (SW1 Modulation: CC#80)
SW2 Mod. (CC#81) (SW2 Modulation: CC#81)

This lets you use the switch as an AMS or Dmod source. Note that you'll also need to assign SW1 Mod or SW2 Mod to control the desired parameter within the Program or Effect.

Each time the switch is turned on or off, it transmits the corresponding MIDI CC (80 or 81); Off is 0, and On is 127.

Porta.SW (CC#65) (Portamento SW: CC#65)

This turns Portamento on and off. When the LED is lit, Portamento is on.

Each time the switch is turned on or off, it transmits MIDI CC#65; Off is 0, and On is 127.

With single Programs, this simply enables and disables Portamento, regardless of the of the Program's stored **Portamento Enable** setting.

With double Programs, it's slightly more complex. If Portamento is either enabled for both OSC 1 and 2, or off for both, then the Portamento Switch controls both OSC.

If Portamento is enabled for only one of the two, only that element will be affected by the switch; for the other element, Portamento will always be off.

Octave Down

When the switch is on (LED lit), the pitch will be transposed down by one octave.

Octave Up

When the switch is on (LED lit), the pitch will be transposed up by one octave.

Lock functions

The Lock functions let you use SW1 or SW2 to "lock" the current position of the joystick or ribbon controller, or the current aftertouch value. This leaves your hands free to play on the keyboard, or to use other controllers.

For instance, let's say that JS+Y is assigned to create a filter sweep, and that SW2 is assigned to JS+Y Lock. You can then:

1. **Move the joystick to open up the filter.**
2. **Press SW2 to turn on JS+Y Lock.**
3. **Release the joystick.**

Since SW2 is locking JS+Y, the filter remains open, even though the joystick has physically snapped back to its center position.

Note that Lock affects only the physical controls. Even if Lock is On, incoming MIDI messages can still change the joystick, ribbon, and aftertouch values.

For more information, please see "Using the Lock function" on page 41 of the Operation Guide.

JS X Lock

Locks the effect of the joystick X axis.

JS Y Lock

Locks the effect of the joystick Y axis (both + and – directions).

JS+Y Lock

Locks the effect of the joystick +Y direction.

JS–Y Lock

Locks the effect of the joystick –Y direction.

Ribbon Lock

Locks the effect of the ribbon controller.

JS X & Ribbon Lock

Simultaneously locks the effects of the joystick X direction and the ribbon controller.

JS Y & Ribbon Lock

Simultaneously locks the effects of the joystick Y direction and the ribbon controller.

JS+Y & Ribbon Lock

Simultaneously locks the effects of the joystick +Y direction and the ribbon controller.

JS–Y & Ribbon Lock

Simultaneously locks the effects of the joystick –Y direction and the ribbon controller.

After Touch Lock

Locks the effect of aftertouch.

Realtime Control Slider 5–8 Assignments

Slider assignments are saved separately with each Program, Combination, and Song. In Sampling mode, assignments apply to the entire mode. For more information, see:

- Programs: “1–6: Controllers Setup” on page 35
- Combinations: “1–6: Controllers Setup” on page 144
- Sequencer mode: “1–6: Controllers Setup” on page 221
- Sampling mode: “4–1: Setup” on page 319

Sliders and MIDI CCs

Some of the assignments include MIDI CCs, which are transmitted whenever the slider is moved. Note that the MIDI CCs can still be received even if they are not assigned to a physical controller.

List of Slider 5–8 assignments

The following functions can be assigned to Realtime Control Slider 5–8.

Off

This setting disables the slider.

Slider Mod. 5–8 (CC#s17, 19, 20, 21)

These settings let you use the slider as an AMS or Dmod source. Note that you’ll also need to assign the slider to control the desired parameter within the Program or Effect.

Master Volume

This controls the overall volume, and transmits the Universal System Exclusive Master Volume message [F0H, 7FH, nn, 04, 01, vv, mm, F7H]. You can use this to adjust the volumes of all Tracks or Timbres at the same time, while preserving their relative balance.

Portamento Time (CC#05)

This controls the portamento time. Note that a different controller, CC#65, turns Portamento on and off; see “Porta.SW (CC#65) (Portamento SW: CC#65)” on page 597.

Volume (CC#07)

Controls the volume, and transmits CC#7.

Post IFX Pan (CC#08)

Controls the panning after the last Insert Effect in the chain, and transmits CC#8.

Pan (CC#10)

Controls stereo pan, and transmits CC#10.

Expression (CC#11)

Expression is a secondary volume control, which you can use to scale level without affecting the main volume settings or CC#7 values.

When used one at a time, MIDI Volume and Expression affect level in exactly the same way: a MIDI value of 127 is equal to Program’s main Level setting, and lower values reduce the volume.

If both CC#7 and CC#11 are used simultaneously, the one with the lower value determines the maximum volume, and the one with the higher value scales down from that maximum.

FX Control 1 & 2 (CC#s12 & 13)

These assignments are intended for Effect Dynamic Modulation (Dmod). Note that you’ll also need to assign **FX Control 1** or **2** to control the desired parameter within the Effect.

Cutoff (CC#74)

This scales the cutoff frequency of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Resonance (CC#71)

This scales the resonance of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Filter EG Int. (CC#79)

This scales the effect of the Filter EG on the cutoff frequency. It affects all of the filters at once; for instance, in the EDS, it affects both Filters A and B.

F/A Attack (CC#73)

This scales the attack times of the Filter and Amp EGs, along with other related parameters.

When the CC value is above 64, this also affects the Amp EG’s Start and Attack Levels, Start Level AMS, and Attack Time AMS, as described below:

Between values of 65 and 80, the Start Level, Start Level AMS, and Attack Time AMS will change from their programmed values to 0. Over the same range, the Attack Level will change from its programmed value to 99.

F/A Decay (CC#75)

This scales the decay and slope times of the Filter and Amp EGs.

F/A Sustain (CC#70)

This scales the sustain levels of the Filter and Amp EGs.

F/A Release (CC#72)

This scales the release times of the Filter and Amp EGs.

Pitch LFO1 Spd (CC#76)

This scales LFO1’s frequency.

Pitch LFO1 Dep (CC#77)

This scales the effect of LFO1 on the Pitch.

Pitch LFO1 Dly (CC#78)

This scales LFO1’s fade-in time.

SW 1 Mod. & SW 2 Mod (CC#s 80 & 81)

Normally, these are used for the two assignable switches - but you can assign them to the sliders instead, if you like.

Foot Switch (CC#82)

You can use this general-purpose controller as an AMS or Dmod source. Note that you’ll also need to assign **FootSW (CC#82)** to control the desired parameter within the Program or Effect.

MIDI CC#83 (CC#83)

You can use this general-purpose controller as an AMS or Dmod source. Note that you’ll also need to assign **MIDI CC#83** to control the desired parameter within the Program or Effect.

MFX Send 1 & 2 (CC#s 93 & 91)

These control the send levels to Master Effects 1 and 2, respectively.

CC#s 93 and 91 actually control send levels in two different places: the sends directly from the Program OSC or RADIAS, and the send levels of the last Insert Effect in the chain which matches the CC’s MIDI channel.

MIDI CC#00–95 and 102–119

These settings let you transmit any MIDI CC, except for registered and non-registered parameters (CCs 96-101). If you choose a CC which is used by AMS, Dmod, or the standard CC routings, then it will affect the corresponding M3 parameters.

Sliders 1–4

Realtime Control Slider 1–4 have preset assignments, as below:

Slider1: CUTOFF (Filter Cutoff: CC#74)
This scales the cutoff frequency of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Slider2: RESONANCE (Filter Resonance: CC#71)
This scales the resonance of all of the filters at once. For instance, in the EDS, it affects both Filters A and B.

Slider3: EG INTENSITY (Filter EG Intensity: CC#79)
This scales the effect of the Filter EG on the cutoff frequency. It affects all of the filters at once; for instance, in the EDS, it affects both Filters A and B.

Slider4: EG RELEASE (Filter, Amplifier EG Release: CC#72)
This scales the release times of the Filter and Amp EGs.

Foot Switch Assignments

You can connect a footswitch (such as the optional Korg PS-1) to the rear-panel ASSIGNABLE SWITCH input, and then use it to control a wide variety of functions, as described below.

This setting is made globally, on the Global P2: Controllers–Foot Controllers page.

Foot Switch and MIDI CCs
Some of the assignments include MIDI CCs, which are transmitted each time the switch is turned on or off (Off = 0, and On = 127). Note that the MIDI CCs can still be received even if they are not assigned to a physical controller.

RT Sliders 1–8 and SW1/2 are special cases, since these can themselves be assigned to different MIDI CCs. If the footswitch is assigned to duplicate these controls, it will also use their CC assignments.

List of Foot Switch assignments

Off
This setting disables the switch.

Foot Switch (CC#82)
This lets you use the switch as an AMS or Dmod source. Note that you'll also need to assign Foot SW (CC#82) to control the desired parameter within the Program or Effect.

Portamento SW (CC#65)
This controls portamento on/off. For more information, please see "Porta.SW (CC#65) (Portamento SW: CC#65)" on page 597.

Sostenuto (CC#66)
This controls the sostenuto effect, which holds only the notes being played at the moment that the footswitch is turned on.

Soft (CC#67)
Turns the soft pedal effect on and off.

Damper (CC#64)
Turns the damper pedal effect on and off.

Program Up
This lets you use the switch to increment the current Program or Combination number, for hands-free patch changes. Note that this is only active while on the Prog P0: Play or Combi P0: Play pages, respectively.

When you use this control, the M3 will also transmit the corresponding MIDI Program Change and Bank Select messages.

Program Down
This decrements the current Program or Combination number, for hands-free patch changes. For more information, please see "Program Up," above.

Value Inc
Operating the foot switch will produce the same operation as pressing the △ (INC) switch. For more information, please see "Using a footswitch to select Programs" on page 39 of the Operation Guide.

Value Dec
Operating the foot switch will produce the same operation as pressing the ▽ (DEC) switch.

Song Start/Stop
The foot switch will control sequencer start/stop. Simultaneously, a MIDI Start or Stop message will be transmitted.

Song Punch In/Out
If Seq P0: Preference "Recording Setup" (0–1–8b) is set to Manual Punch In, the switch can be used to punch-in and punch-out when recording on the sequencer.

Cue Repeat Control
This is valid if the "Repeat" setting for each step in Seq P11: Cue List is set to FS (11–1b). If you press the pedal switch while a step is repeating, this will be the trigger to proceed to the next step.

Tap Tempo
This duplicates the function of the front-panel TAP TEMPO switch, for setting the system tempo in real-time.

KARMA ON/OFF
The foot switch will turn the KARMA function on/off.

KARMA LATCH
The foot switch will turn KARMA LATCH on/off.

KARMA SCENE
The foot switch will cycle through KARMA scenes. The next scene will be selected each time you press the foot switch.

D.TRACK ON/OFF
The foot switch will turn the Drum Track on/off.

X–Y MODE
The foot switch will turn the X–Y Mode on/off.

X–Y MOTION
The foot switch will turn the X–Y Motion start/stop.

JS+Y (CC#01)
The switch will control the effect produced by joystick movement in the +Y direction (Vertical upward).

JS–Y (CC#02)
The switch will control the effect produced by joystick movement in the –Y direction (Vertical downward).

Ribbon (CC#16)
The switch duplicates the effect of the ribbon controller.

Value Slider (CC#18)
The switch will control the effect of the VALUE slider.

RT Slider1–8
The switch duplicates the function of the selected Realtime Control Slider. (On is equivalent to fully raising the slider, and Off is equivalent to fully lowering the slider.)

SW1, 2
The footswitch duplicates the function of the selected front-panel switch.

KARMA Slider1–8
The foot switch will control the effect of the KARMA slider.

KARMA Switch–8
The foot switch will control the effect of the KARMA switches.

PAD1–8

This lets you trigger any of the Pads from the foot switch. When playing notes, the footswitch triggers the pad as if it had been hit at maximum velocity.

Foot Pedal Assignments

You can connect a pedal (such as the optional Korg XVP-10 or EXP-2) to the rear-panel ASSIGNABLE PEDAL input, and then use it to control a wide variety of functions, as described below.

This setting is made for the entire M3, on the Global P2: Controllers– Foot Controllers page.

A note on MIDI CCs

Some of the assignments include MIDI CCs, which are transmitted whenever the slider is moved. Note that the MIDI CCs can still be received even if they are not assigned to a physical controller.

If you select RT Slider 1–8, the MIDI control change message specified by the Realtime Control Slider Assign settings in each mode will be transmitted by each on / off operation. (Off: 0, On: 127)

List of Foot Pedal assignments

Off

This setting disables the pedal.

Master Volume

This controls the overall volume, and transmits the Universal System Exclusive Master Volume message [F0H, 7FH, nn, 04, 01, vv, mm, F7H]. You can use this to adjust the volumes of all Tracks or Timbres at the same time, while preserving their relative balance.

Foot Pedal (CC#04)

You can use this general-purpose controller as an AMS or Dmod source. Note that you'll also need to assign **Foot Pedal (CC#04)** to control the desired parameter within the Program or Effect.

Portamento Time (CC#05)

Controls the speed at which portamento will change the pitch.

Volume (CC#07)

Control the volume of a Program, Combination, or of a MIDI track in Sequencer modes.

Post IFX Pan (CC#08)

Control the pan after passing through the Insert Effect.

Pan (CC#10)

Control the pan of a Program, of a timbre in a Combination, or of a MIDI track in Sequencer modes.

Expression (CC#11)

Expression is a secondary volume control, which you can use to scale level without affecting the main volume settings or CC#7 values. For more information, please see "Expression (CC#11)" on page 598.

FX Control 1 & 2 (CC#s12 & 13)

These assignments are intended for Effect Dynamic Modulation (Dmod). Note that you'll also need to assign **FX Ctrl1** or **2** to control the desired parameter within the Effect.

MFX Send 1 & 2 (CC#s 93 & 91)

These control the send levels to Master Effects 1 and 2, respectively.

CC#s 93 and 91 actually control send levels in two different places: the sends directly from the Program OSC or RADIAS, and the send levels of the last Insert Effect in the chain which matches the CC's MIDI channel.

JS+Y (CC#01)

This duplicates the function of JS+Y. Whatever JS+Y is assigned to control, the pedal will control as well.

JS–Y (CC#02)

This duplicates the function of JS–Y. Whatever JS–Y is assigned to control, the pedal will control as well.

Ribbon (CC#16)

This duplicates the function of the ribbon controller. Whatever the ribbon is assigned to control, the pedal will control as well.

Value Slider (CC#18)

Pedal operation will control the effect of the VALUE slider.

RT Slider 1–8

This duplicates the function of the selected Realtime Control Slider. Whatever the slider is assigned to control, the pedal will control as well.

KARMA Slider 1–8

This duplicates the function of the selected KARMA slider. Whatever the slider is assigned to control, the pedal will control as well.

Dynamic MIDI Sources & Destinations

Dynamic MIDI Sources

The sources (Dynamic MIDI Sources) are organized into the following groups

JS +Y #01…JS X: Controller group

Short Note…Black Note: Note group

Velocity…Vel Out Z: Velocity Group

Depending on the combination of source and destination (Dynamic MIDI Destinations), the selected destination may not function as you intend. Refer to the explanations of combining sources and destinations in each section of "Dynamic MIDI Destinations," and make sure to select sources and destinations that are appropriate for each other.

Off

No source will be selected.

Controller Group:

For the Controller Group, the Range Bottom and Top fields will be available. The Range fields can be used to chose only a portion of the normal 0–127 range if desired. This depends on whether the actual Source is a continuous controller or a switch. For example, if you choose JS+Y (CC#01) and set the range to be 110–127, then only when the joystick reaches the farthest position away from yourself would the selected Destination be affected. In most cases, you should leave them set to 0–127 for normal operation, unless you are trying to achieve a special calculated effect in only a portion of the controller's range.

The following Controller Group Sources correspond to the KARMA ON / OFF switch, KARMA LATCH switch, KARMA SCENE 1–8, KARMA SLIDERS 1–8, KARMA SWITCH 1–8, Pads 1–8, and the CCs they are set to respond to in the Global 2–1: Controller / Scale. Shown are the default CC settings. If the Global 1–1b: MIDI Filter "Enable Control Change" is checked and a MIDI CC Message is received on the assigned controller, it will control the Dynamic MIDI Assignment as well as the associated control.

Two settings are "special," in that they refer to groups of controls: KARMA Scene-Any, and Pads-Any. When these are selected, the operation of any KARMA SCENE switch or any Pads 1–8 respectively can be intercepted and used as a Dynamic MIDI Source.

While all of the Real-Time Controls are able to be assigned in their normal operation to do various things, there are times where using them through Dynamic MIDI can be useful. For example, the KARMA SCENE switches can be used to retrigger the groove at a scene change, stop any melodic repeats so that they don't overlap the scene change, or change a parameter value in the Real-Time Parameters of a GE, etc. Pads can be set to repeatedly trigger modules each time they are pressed, yet the module can be in "1st" Trigger Mode, so that playing the keyboard doesn't retrigger the start of the groove. And the Latch switch could be used to change the Key Zone range or the Latch Mode for a module's envelopes.

Furthermore, by running a KARMA SLIDER through Dynamic MIDI and into Real-Time Parameter Control, rather than assigning it to an Real-Time Parameter directly, you can choose only a portion of the slider's range to affect the parameter. For example, if you selected KARMA SLIDER 1 as a Dynamic MIDI Source, and set the Bottom / Top to 110 / 127, then only at the end of the slider will the slider's values affect any destination parameters assigned through Real-Time Parameters Control.

JS+Y (CC#01)

The +Y direction (away from yourself) of the joystick (CC#01) will be the source.

JS-Y (CC#02)

The –Y direction (toward yourself) of the joystick (CC#02) will be the source.

Pedal (CC#04)

The assignable foot pedal (CC#04) will be the source.

The function of the assignable pedal connected to the ASSIGNABLE PEDAL jack must be assigned as Foot Pedal (CC#04) for the Global P2– Foot Controllers page **Foot Pedal Assign** parameter.

Damper (CC#64)

The damper pedal will be the source.

Porta. SW (CC#65)

The portamento switch (CC#65) will be the source.

Foot Switch (CC#82)

The assignable foot switch (CC#82) will be the source.

The function of the assignable foot switch connected to the ASSIGNABLE SWITCH jack must be assigned as Foot Switch (CC#82) for the Global P2– Foot Controllers page **Foot Switch Assign** parameter.

MIDI (CC#83)

MIDI control change (CC#83) will be the source.

Ribbon (CC#16)

The ribbon controller (CC#16) will be the source.

XY Mode X (CC#118)

The X (horizontal) direction of the X–Y Mode (CC#118) will be the source.

Note: If you want to use the ±X axis of the X–Y Mode as a source, set the Global P2– MIDI CC# Assign parameter X–Y "X (X–Y Mode)" to CC#118.

XY Mode Y (CC#119)

The Y direction (vertical) of the X–Y Mode (CC#119) will be the source.

Note: If you want to use the ±X axis of the X–Y Mode as a source, set the Global P2– MIDI CC# Assign parameter X–Y "Y (X–Y Mode)" to CC#119.

XY +X Mod. (CC#85)

The +X direction (the left direction) of the X–Y Mode (CC#85) will be the source.

Note: If you want to use the +X axis of the X–Y Mode as a source, set the X–Y CC Control parameter "+X" to CC#85 for the desired program, combination, or song. (These settings are made in the Prog P1– X–Y Setup or Combi / Seq P1– X–Y CC T01–08 / T09–16 pages of the respective mode.)

XY –X Mod. (CC#86)

The –X direction (the right direction) of the X–Y Mode (CC#86) will be the source.

Note: If you want to use the –X axis of the X–Y Mode as a source, set the X–Y CC Control parameter "–X" to CC#86 for the desired program, combination, or song.

XY +Y Mod. (CC#87)

The +Y direction (away from yourself) of the X–Y Mode (CC#87) will be the source.

Note: If you want to use the +Y axis of the X–Y Mode as a source, set the X–Y CC Control parameter "+Y" to CC#87 for the desired program, combination, or song.

XY –Y Mod. (CC#88)

The -Y direction (toward from yourself) of the X–Y Mode (CC#88) will be the source.

Note: If you want to use the –Y axis of the X–Y Mode as a source, set the X–Y CC Control parameter "–Y" to CC#88 for the desired program, combination, or song.

KARMA On/Off*

The KARMA ON / OFF switch will be the source.

KARMA Latch*

The corresponding KARMA LATCH switch will be the source.

KARMA Slider 1…8*

The corresponding KARMA Slider 1–8 will be the source.

KARMA Switch 1…8*

The KARMA Switch 1–8 will be the source.

KARMA Scene 1…8, KARMA Scene-Any*

The KARMA SCENE 1–8 will be the source.

If you choose KARMA Scene-Any, the switch you operated will be the source.

*****_Note:_ If a MIDI control change is assigned in the Global P2–MIDI CC# Assign page, this will be controlled by reception of the assigned MIDI control change.

Pad 1…8, Pad-Any

The Pads 1–8 will be the source.

If you choose Pad-Any, the pad you operated will be the source.

Note: If a MIDI control change or Note Number is assigned in the Global P2– MIDI CC# Assign page, this will be controlled by reception of the assigned MIDI control change or Note Number. The default values are shown.

After Touch

Aftertouch (channel aftertouch) will be the source.

JS X

The X (horizontal) direction of the joystick will be the source.

For JS X, **Polarity** (Prog 7–2–3b) allows you to select + / – or – / + in addition to the usual + or – operations.

When the controller is moved all the way to the left or right (or top or bottom), the value will change as follows. The example shown below is for when Tempo is selected as the destination. (Original tempo is ♩=100 BPM, "Bottom / Top": 000 / 127)

+: Far left (0) → far right (maximum)
100 BPM → 200 BPM

–: Far left (0) → far right (maximum)
100 BPM → 50 BPM

+/–: Far left (minimum) → center (0) → far right (maximum)
50 BPM → 100 BPM → 200 BPM

–/+: Far left (maximum) → center (0) → far right (minimum)
200 BPM → 100 BPM → 50 BPM

Note Group:

When using the Note Group Sources, **Bottom** and **Top** (Prog 7–2–3b) refer to MIDI Note Numbers C–1…G9:

000: **C–1**…012: **C0**…024: **C1**…036: **C2**…

045: **C3**…060: **C4**…072: **C5**…084: **C6**…

096: **C7**…108: **C8**…120: **C9**…127: **G9**

Short Note

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the range of note numbers. Only notes within the specified range with a duration of less than 45 ms between note-on and note-off will be the source.

Note

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the range of note numbers. Notes within the specified range will be the source. (☞Short Note)

Note Inside Zone

Notes within the key zone of the KARMA module (Prog / Combi / Seq 7–1–1b) will be the source.

In Combination / Sequencer modes, use **Dynamic MIDI** (Combi / Seq 7–4–2b) **Input** to specify the corresponding KARMA module.

Note Outside Zone

Notes outside the key zone of the KARMA module (Prog / Combi / Seq 7–1–1b) will be the source.

In Combination / Sequencer modes, use **Dynamic MIDI** (Combi / Seq 7–4–2b) **Input** to specify the corresponding KARMA module.

White Note

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the range of note numbers. Only the white notes (C, D, E, F, G, A, B) within the specified range will be the source.

Black Note

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the range of note numbers. Only the black notes (C#, D#, F#, G#, A#) within the specified range will be the source.

Velocity Group:

Velocity

Velocity values will be the source. Use **Bottom** and **Top** (Prog 7–2–3b) to specify the velocity range.

Velocity Inside Zone

Velocity values of notes within the key zone of the KARMA module (Prog / Combi / Seq 7–1–1b) will be the source.

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the velocity range. In Combination / Sequencer modes, use **Dynamic MIDI** (Combi / Seq 7–4–2b) **Input** to specify the corresponding KARMA module.

Velocity Outside Zone

Velocity values of notes outside the key zone of the KARMA module (Prog / Combi / Seq 7–1–1b) will be the source.

Use **Bottom** and **Top** (Prog 7–2–3b) to specify the velocity range. In Combination / Sequencer modes, use **Dynamic MIDI** (Combi / Seq 7–4–2b) **Input** to specify the corresponding KARMA module.

Dynamic MIDI Destinations

The KARMA function allows you to hook up nearly any Source to any Destination. Depending on the combination of source and destination, the selected destination may not function as you intend. Refer to the explanations of combining sources and destinations in each of the following sections, and make sure to select sources and destinations that are appropriate for each other.

The Momentary, Toggle, Continuous indication shown at the right of each destination name indicate the source operating modes ("Action") that are valid for each destination function. (See "7–2–3b: Dynamic MIDI" on page 95, "Action")

Off

No function

RT Parms Control [Momentary, Toggle, Continuous]

Use this when using a source to control GE Real-Time Parameters (7–2–1) or Perf Real-Time Parameters (7–2–2). Set the "Assign" of GE Real-Time Parameters or Perf Real-Time Parameters to Dyna1…Dyna8, which indicates the row of the Dynamic MIDI page that is to be used.
(See "7–2–1b: GE Real-Time Parameters" on page 90, "Assign" Dyna1…Dyna8)
(See "7–2–2b: Perf RTP 1–2, 3–4, 5–6, 7–8 (Perf Real-Time Parameters)" on page 91, "Assign" Dyna1…Dyna8)

Note: You should normally select a source from the JS+Y (CC#01)…JS X controller group.

This will operate irrespective of the module. The Combination and Sequencer mode, Perf Real-Time Parameters "A / B / C / D" (7–4–1b) settings will be ignored.

Setting examples

Joystick operations in the +Y direction will control GE Parameter1. (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**JS+Y (CC#01**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Continuous**
Dynamic MIDI 1 **Destination** (7–2–3b):	**RTParm Ctrl**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
GE RT Parameter 1 **Assign** (7–2–1b)	**Dyn1**

Tempo [Momentary, Toggle, Continuous]

Control the KARMA tempo.

Note: You will normally select the JS+Y (CC#01)…JS X controller group as the source.

This will operate irrespective of the module. The Combination and Sequencer mode, Perf Real-Time Parameters "A / B / C / D" (7–4–1b) settings will be ignored.

- When **Polarity** is +, you can use the controller to speed up the tempo.
  When the value of the controller selected as the source is at the value specified for "Bottom," the tempo will be at the regular specified setting.
  When the value of the controller selected as the source is at the value specified for "Top," the tempo will be double the regular tempo. (The tempo will not be faster than the maximum tempo of ♩=300 BPM.)
- When **Polarity** is –, you can use the controller to slow down the tempo.
  When the value of the controller selected as the source is at the value specified for "Bottom," the tempo will be at the regular specified setting.
  When the value of the controller selected as the source is at the value specified for "Top," the tempo will be half the regular tempo. (The tempo will not be slower than the minimum tempo of ♩=35 BPM.)

Note/Env Latch [Momentary, Toggle]

Control "Note Latch" of the KARMA module.

When you select Note / Env Latch as the **Destination** and turn **A/B/C/D** (7–2–2: Perf Real-Time Parameters) On (checked), you will be able to use the damper pedal etc. to control note latch independently of the **Note Latch** (7–1–8a) setting of each KARMA module, or the setting of the LATCH SWITCH.

Note: You will normally select the JS+Y (CC#01)…JS X controller group as the source.

Note: If you turn latch on using this setting, the operation of Envelope 1, 2, and 3 will also be affected. Regardless of the Envelope **Latch** (7–1–8a) settings for each KARMA module, you can use a damper pedal etc. to turn latch on so that the currently-operating Envelope1, 2, or 3 will continue to be held even after you release the keyboard or the Pad 1–8.

Examples of use

Setting 1 (Program mode)

Note Latch (7–1–8a):	**On (normally leave this On for a program)**
Dynamic MIDI 1 **Source** (7–2–3b):	**Damper (CC#64)**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Note/Env Latch**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**

When the KARMA LATCH switch is on, latch will always be on.

When the KARMA LATCH switch is off, pressing the connected damper pedal will turn latch on, and releasing it will turn latch off.

Setting 2 (Combination mode)

[A] Note **Latch** (7–2–5a):	**On**
[B] Note **Latch** (7–2–5a):	**Off**
Dynamic MIDI 1 **Source** (7–4–2b):	**Damper (CC#64)**
Dynamic MIDI 1 **Bottom** (7–4–2b):	**000**
Dynamic MIDI 1 **Top** (7–4–2b):	**127**
Dynamic MIDI 1 **Action** (7–4–2b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–4–2b):	**Note/Env Latch**
Dynamic MIDI 1 **A** (7–4–2b):	**On (checked)**
Dynamic MIDI 1 **B** (7–4–2b):	**On (checked)**
Dynamic MIDI 1 **Polarity** (7–4–2b):	**+**

When the KARMA LATCH switch is on, latch will be on for KARMA module [A], and latch will be off for KARMA module [B].

When the KARMA LATCH switch is off, pressing the connected damper pedal will turn latch on for both modules [A] and [B], and releasing the pedal will turn latch off for both modules [A] and [B].

Auto Transp On/Off (Auto Transpose On/Off [Momentary]

Controls on / off of the auto transpose function.

Note: You will normally select the JS+Y (CC#01)…JS X controller group as the source.

Auto Transp Range (Auto Transpose Range [Continuous]

Controls the amount of transposition for the auto transpose function.

When "Auto Transpose On / Off" is **on**, playing chord data for each KARMA module within the keyboard range specified as the "Auto Transpose Range" source will automatically transpose the current chord, rather than enter a new chord.

Note: Select the source from the Short Note…Black Note note group. The **Polarity** (7–4–2b) setting will be ignored. If you select a source from the JS+Y (CC#01)…JSX controller group or the Velocity…Velocity Outside Zone velocity group, it will not be possible to control the transpose amount of the auto transpose function.

Examples of use

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**KARMA Switch 1**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–2–3b):	**AutoTranspose On/Off**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
Dynamic MIDI 2 **Source** (7–2–3b):	**Note**
Dynamic MIDI 2 **Bottom** (7–2–3b):	**000 (C–1)**
Dynamic MIDI 2 **Top** (7–2–3b):	**060 (C4)**
Dynamic MIDI 2 **Action** (7–2–3b):	**Continuous**
Dynamic MIDI 2 **Destination** (7–2–3b):	**AutoTranspose Range**
Dynamic MIDI 2 **Polarity** (7–2–3b):	**+**

1. **Turn on the KARMA function, and play the keyboard. Play a Cmaj7 chord.**

   The KARMA function will generate a phrase according to the selected GE and the settings of the KARMA module.

2. **Turn on KARMA SWITCH 1.**

   The auto transpose function will be turned **on**. The **Cmaj7** chord will be remembered.

3. **When you play a note number in the range specified by Bottom and Top (7–2–3b), the Cmaj7 chord will be transposed with that note as the root.**

   If you play **D3**, the KARMA function will generate a phrase based on **Dmaj7**. If you play **E3**, the phrase will be based on Emaj7.

4. **Turn off KARMA SWITCH 1. The auto transpose function will be turned off, and the KARMA function will resume normal operation.**

Module Stop [Momentary]

Controls KARMA module stop.

Operating the selected source controller when the KARMA function is operating will stop the playback of the KARMA Module. (The KARMA function will remain on.) When you apply a trigger (for example by playing the keyboard), the module will resume functioning.

Melodic Repeat Stop [Momentary]

Allows additional notes generated by the "Melodic Repeat" feature to be stopped. This is valid only when the GE selected by the KARMA module uses the "Melodic Repeat" function.

Examples of use

Some GEs (but not all of them) utilize "Melodic Repeat" to generate additional repeated notes from the notes that are generated. The repeated notes created by "Melodic Repeat" will normally continue playing their specified number for repeats even when you turn off the KARMA ON / OFF switch.

If you want the repeated notes to stop immediately when you turn the KARMA function off, use the KARMA ON / OFF switch to control Repeat Stop.

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**KARMA On/Off**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Repeat Stop**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**–**

Module & Repeat Stop [Momentary]

Combines the effects of Module Stop and Melodic Repeat Stop (above), so that all note generation from the assigned module(s) will be immediately terminated.

Note: You can use a source from any of the three groups, but typically it will be the Controller Group.

Module Pause [Momentary, Toggle]

Operating the selected source controller when the KARMA function is operating will pause the playback of the KARMA Module.

When the KARMA module parameter **Run** (Combi / Seq 7–1–1b) is turned Off (unchecked), the KARMA module will continue operating internally without pausing. This means that when **Run** is turned On (checked), the phrase or pattern will not resume from where the phrase or pattern had stopped, bur rather the phrase or pattern will continue playing from the moment at which the setting was turned On. In contrast, Dynamic MIDI Module Pause makes the phrase or pattern resume playing from where it was stopped.

Examples of use

Move the joystick in the +Y direction to pause and then resume the phrase produced by the currently-operating KARMA module.

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**JS+Y (CC#01)**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 2 **Destination** (7–2–3b):	**Module Pause**
Dynamic MIDI 2 **Polarity** (7–2–3b):	**+**

When you move the joystick all the way in the +Y direction, the phrase will pause. When you return the joystick to the center, the phrase will resume playing.

Chord Scan [Continuous]

Control the chord analysis that controls the phrase or pattern generated by the KARMA module.

Normally, each KARMA module detects chords by notes that are input in the key zone (Prog / Combi / Seq 7–1–1b) specified for each module. Instead of this key zone, you can control chord detection using the note range specified by the **Bottom** and **Top** (7–2–3b) of the source.

Chord analysis affects the operation of the following GE parameters. (☞GE Guide)

- Note Series Group: "Chord Shift"
- Note Series Group: "Note Type" Scalic or Scalic 2
- Note Series Group: "Filter Notes"
- CCs / Pitch Group: "Chord Shift"
- Repeat Group: "Chord Shift"

- Drum Group: "NTT (Note Table Transposition) On / Off"

For KARMA modules affected by the Chord Scan specified here, the key zone note input specified for each module will not be used for chord detection on that module.

Note: Select the Note, Note Inside Zone, or Note Outside Zone note group as the source. The **Polarity** (7–2–3b) setting will be ignored. Chord analysis cannot be controlled if you select a source from the JS+Y (CC#01)…JS X controller group, a note group other than the above, or the Velocity…Velocity Outside Zone Velocity group.

Examples of use

Select a GE of "GE Type" Real-Time (☞VNL), and use the keyboard to input the chord that will control the phrase or notes being played by Melodic Repeat.

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**Note Outside Zone**
Dynamic MIDI 1 **Action** (7–2–3b):	**Continuous**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Chord Scan**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
KeyZone **Btm** (7–1–1b):	**C4**
KeyZone **Top** (7–1–1b):	**G9**

Play the high range of the keyboard above C4 (specified as the key zone) to trigger phrases and notes produced by the KARMA function. At this time, play the lower range of the keyboard to control the chord of the phrase or notes in realtime. (Playing the lower range of the keyboard will not produce sound, but will only control the chord.) This allows you to play the lower range of the keyboard to vary the chord while "Melodic Repeat" is producing an extended phrase, letting you control the development of the phrase.

Smart Scan [Continuous]

As with Chord Scan, this controls the chord analysis that controls the phrase or pattern generated by the KARMA module.

Normally, each KARMA module will detect chords from notes that are input in the key zone specified for each module (Prog / Combi / Seq 7–1–1b). Instead of this key zone, you can use notes in the range specified by the source **Bottom** and **Top** (7–2–3b) to control chord detection.

Note input by key zone or chord detection by Chord Scan requires one or more notes, while Smart Scan requires three or more notes to be input in a given area. In general when you perform using both hands, the chord will change when you play three or more notes in either hand. For example if you press C4 for key zone note input or Chord Scan, the chord will be detected as C maj. In contrast, Smart Scan will not detect a chord when you press C4, but will (for example) detect C Maj when you simultaneously press C4 / E4 / G4.

In addition, Smart Scan takes into consideration the keyboard location and number of notes that are played, allowing more sophisticated and intuitive control of the timing of chord detection and the bass note handling.

Note input in the key zone specified for each module will not be used for normal chord detection on KARMA modules for which Smart Scan is operating. If Smart Scan and Chord Scan are specified simultaneously, the Chord Scan note range will also be handled as the Smart Scan note range.

Note: Select a source from the Note, Note Inside Zone, or Note Outside Zone note group. The **Polarity** (7–2–3b) settings will be ignored. Chord analysis can not be controlled if you select the source from the JS+Y (CC#01)…JS X controller group, a note group other than listed above, or the Velocity…Velocity Outside Zone Velocity group.

Examples of use

Play a chord in either the left hand or right hand to control the phrase or pattern generated by the KARMA module. In this example, we will use the right hand to play a solo phrase, and the left hand to play a bass riff etc. in realtime without changing the chord. This example assumes a GE is setup full-range over the entire keyboard, with Thru In Zone turned on.

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**Note**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Continuous**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Smart Scan**

Using your left hand, play three or more notes to control the chord. If you wish to use your right hand to play a solo part in the high keyboard range, the chord will not change as long as you keep a certain distance from the left hand and play only two notes or less.

In the same way, use your right hand to play three or more notes in the upper range of the keyboard to control the chord. You can use your left hand to play a bass line in the lower range of the keyboard without changing the chord.

Chord detection will not occur while the KARMA module is receiving damper on. When you press the damper pedal, chord detection will be locked, and notes you add while the damper is on will not change the chord.

Clock Advance [Momentary, Toggle, Continuous]

This lets you use a controller such as the joystick or note-on / off operations to trigger the clock by which the KARMA function operates, thus using Manual Advance to advance the phrase or pattern.

Set the **Clock Advance Mode** (7–1–7a) of the KARMA module being controlled to Dyn, Auto+Dyn1, or Auto+Dyn2.

Note: If you select the source from the Short Note…Black Note note group or Velocity…Velocity Outside Zone Velocity group, set **Action** (7–2–3b) to Continuous. (See page 95)

Examples of use

Setting 1 (Program mode)

Control by joystick operations.

Dynamic MIDI 1 **Source** (7–2–3b):	**JS+Y (CC#01)**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Clock Advance**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
Clock Advance **Mode** (7–1–7a):	**Dyn**

Setting 2 (Program mode)

Use note-on / off played in the upper range of the keyboard to advance the phrase generated by playing chords in the lower range of the keyboard (specified by the key zone).

Dynamic MIDI 1 **Source** (7–2–3b):	**Note Outside Zone**
Dynamic MIDI 1 **Action** (7–2–3b):	**Continuous**
Dynamic MIDI 1 **Destination** (7–2–3b):	**Clock Advance**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
Clock Advance **Mode** (7–1–7a):	**Dyn**
KeyZone **Btm** (7–1–1b):	**C–1**
KeyZone **Top** (7–1–1b):	**B3**
KeyZone **Thru In Z** (7–1–1b):	**Off (unchecked)**
KeyZone **Thru Out Z** (7–1–1b):	**Off (unchecked)**

Trigger Notes & Envs [Momentary, Toggle, Continuous]

Trigger Notes [Momentary, Toggle, Continuous]

Trigger Env 1 [Momentary, Toggle, Continuous]

Trigger Env 2 [Momentary, Toggle, Continuous]

Trigger Env 3 [Momentary, Toggle, Continuous]

Control triggering of GE phrases and / or Envelopes 1 / 2 / 3 of the KARMA module. With Trigger Notes & Envs, GE phrases and Envelopes 1 / 2 / 3 will all be triggered. Other settings allow these to be triggered individually.

If you are using a GE that does not use envelopes, the envelope-related settings made here will be ignored. (☞VNL)

Direct Index [Continuous]

Direct index is a function that uses controllers or notes to specify which notes of the GE Phrase will be generated.

Note: Normally you will select a source from the JS+Y (CC#01)…JS X controller group or the Short Note…Black Note note group.

The GE uses note data from the keyboard to internally create a "Note Series" from which phrases and patterns are generated according to a variety of internal parameter settings. You can use a controller to "sweep" the Note Series directly, or directly index any note in it with the note-on / off operation assigned here.

D. Index & Module Stop (Direct Index & Module Stop) [Continuous]

Simultaneously with controlling **Direct Index** (described above), this also controls the Module Stop function. The currently-running KARMA module will stop when the first Direct Indexed note is generated.

Note: Normally you should select a source from the JS+Y (CC#01)…JS X controller group or the Short Note…Black Note note group.

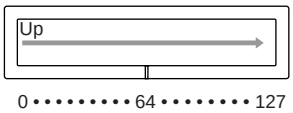
Use this when you wish to stop the phrase or pattern played by the KARMA module and simultaneously switch to realtime note generation by Direct Index.

Direct Index 1 Way [Continuous]

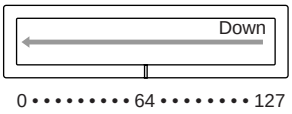
The same as Direct Index (above), but only functions in one direction of the selected controller. In other words, if you were to assign a joystick to the normal Direct Index setting above, the notes would sweep as you move the joystick in one direction, and then sweep back again as you return the joystick in the other direction. With Direct Index 1 Way, the release does not cause any note generation in the return direction - it only indexes in one direction of movement. This is also quite useful with the Ribbon #16 setting, since unless "Ribbon Lock" is turned on, releasing the finger at one end of the ribbon will "snap back" to the center value, creating spurious notes on release (unless this setting is used).

The **Polarity** setting choose which direction it operates in. The following example shows the Dynamic MIDI Source set to "Ribbon #16". (Moving in the opposite direction from what is shown produces no action.)

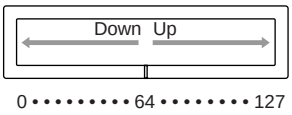
Polarity = +:



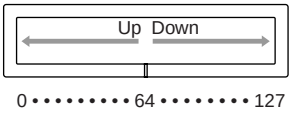
Polarity = –:



Polarity = + / –:



Polarity = – / +:



Note: Normally you should select a source from the JS+Y (CC#01)…JS X controller group.

D.Idx 1 Way & Mdl Stop (Direct Index 1 Way & Module Stop) [Continuous]

Simultaneously with controlling Direct Index 1 Way (described above), this also controls the Module Stop function. The currently-running KARMA module will stop when the first Direct Indexed note is generated.

Note: Normally you should select a source from the JS+Y (CC#01)…JS X controller group,

Use this when you wish to stop the phrase or pattern played by the KARMA module and simultaneously switch to realtime note generation by Direct Index.

Buffer Latch [Momentary, Toggle]

When on, allows input notes to be added to the group of input notes that is causing the KARMA phrase to be generated, even if you release the notes while playing them.

Note: Normally you should select a source from the JS+Y (CC#01)…JS X controller group.

Normally, playing a single C4 note will input just C4 to the KARMA module, controlling the phrase or pattern. If you release the C4 and then play a single B4 note, just B4 will be input to the KARMA module. However, if you turned Buffer Latch on when you played the single C4 note, the KARMA module will maintain the C4 even when you release the keyboard, so that when you play a single B4 note, the B4 will be added. C4 and B4 will be input to the KARMA module, controlling the phrase or pattern.

Examples of use

Settings (Program mode)

Dynamic MIDI 1 **Source** (7–2–3b):	**Damper(CC#64)**
Dynamic MIDI 1 **Bottom** (7–2–3b):	**000**
Dynamic MIDI 1 **Top** (7–2–3b):	**127**
Dynamic MIDI 1 **Action** (7–2–3b):	**Momentary**
Dynamic MIDI 1 **Destination** (7–2–3b):	**BufferLatch**
Dynamic MIDI 1 **Polarity** (7–2–3b):	**+**
Receive MIDI Filter **Damper (CC#64)** (7–1–3a):	**Off (unchecked)**

1. **With the KARMA function on, play the keyboard. Hold down the damper pedal, and play C4. The chord will be detected as Cmaj, and a phrase based on Cmaj will be played.**
2. **While continuing to hold down the damper pedal, play B4. The chord will be detected as Cmaj7. If you were not using Buffer Latch, the chord would be detected as Bmaj.**

3. **Notes will be added until you release the damper pedal and play the keyboard.**

   Since Receive MIDI Filter “Damper (CC#64)” is turned **Off (unchecked)** in this example, the damper pedal will not produce the conventional damper effect when the KARMA function is **on**.

Use this when you want to add notes in this way to modify the phrase or pattern.

MIDI transmission when the M3's controllers are operated

The following tables show the relation between the MIDI messages that are transmitted when the M3's controllers are operated, and the AMS (alternate modulation source) or DMS (dynamic modulation source) that correspond to each MIDI message.

# indicates a fixed function, and * indicates an assignable function.

MIDI Messages and physical controllers

MIDI messages			Joystick	Ribbon	X–Y Mode	X–Y CC Control	Value Slider	Realtime Slider 1…4	Realtime Slider 5…8	SW1, 2	KARMA On/Off	KARMA Latch	KARMA Scene	KARMA SW 1…8	KARMA Slider 1…8	Pad 1…8	Damper	Foot Switch	Foot Pedal	Available for AMS	Available for Dmod
		Note-off																			
		Note-on (note number)																		*	*
		Note-on (velocity)																		*	*
		Poly aftertouch																		*	
CC#	0	Bank select (MSB)			*	*			*		*	*	*	*	*	*					
	1	Modulation 1	#(+Y)		*	*			*		*	*	*	*	*	*		*	*	*	*
	2	Modulation 2	#(–Y)		*	*			*		*	*	*	*	*	*		*	*	*	*
	3	–			*	*			*		*	*	*	*	*	*					
	4	Foot controller			*	*			*		*	*	*	*	*	*			*	*	*
	5	Portamento time			*	*			*		*	*	*	*	*	*			*		
	6	Data entry (MSB)			*	*			*		*	*	*	*	*	*					
	7	Volume			*	*			*		*	*	*	*	*	*			*		
	8	Post Insert Effect panpot			*	*			*		*	*	*	*	*	*			*		
	9	–			*	*			*		*	*	*	*	*	*					
	10	Panpot			*	*			*		*	*	*	*	*	*			*		
	11	Expression			*	*			*		*	*	*	*	*	*			*		
	12	Effect control 1			*	*			*		*	*	*	*	*	*			*		*
	13	Effect control 2			*	*			*		*	*	*	*	*	*			*		*
	14	KARMA On/Off control			*	*			*		[*]	*	*	*	*	*		*(1)			
	15	–			*	*			*		*	*	*	*	*	*					
	16	Ribbon controller		#	*	*			*		*	*	*	*	*	*		*	*	*	*
	17	Slider modulation 5			*	*			*		*	*	*	*	*	*				*	*
	18	Controller (CC#18)			*	*	#		*		*	*	*	*	*	*		*	*	*	*
	19	Slider modulation 6			*	*			*		*	*	*	*	*	*				*	*
	20	Slider modulation 7			*	*			*		*	*	*	*	*	*				*	*
	21	Slider modulation 8			*	*			*		*	*	*	*	*	*				*	*
	22	KARMA Slider 1			*	*			*		*	*	*	*	[*] (SL1)	*		*(1)	*(1)		
	23	KARMA Slider 2			*	*			*		*	*	*	*	[*] (SL2)	*		*(1)	*(1)		
	24	KARMA Slider 3			*	*			*		*	*	*	*	[*] (SL3)	*		*(1)	*(1)		
	25	KARMA Slider 4			*	*			*		*	*	*	*	[*] (SL4)	*		*(1)	*(1)		
	26	KARMA Slider 5			*	*			*		*	*	*	*	[*] (SL5)	*		*(1)	*(1)		
	27	KARMA Slider 6			*	*			*		*	*	*	*	[*] (SL6)	*		*(1)	*(1)		
	28	KARMA Slider 7			*	*			*		*	*	*	*	[*] (SL7)	*		*(1)	*(1)		
	29	KARMA Slider 8			*	*			*		*	*	*	*	[*] (SL8)	*		*(1)	*(1)		
	30	KARMA SCENE 1–8 control			*	*			*		*	*	[*]	*	*	*		*(1)			
	31	KARMA LATCH On/Off control			*	*			*		*	[*]	*	*	*	*		*(1)			
	32	Bank select (LSB)			*	*			*		*	*	*	*	*	*					
	33...37	–			*	*			*		*	*	*	*	*	*					
	38	Data entry (LSB)			*	*			*		*	*	*	*	*	*					
	39...63	–			*	*			*		*	*	*	*	*	*					
	64	Damper			*	*			*		*	*	*	*	*	*	#	*		*	*
	65	Portamento On/Off			*	*			*	*	*	*	*	*	*	*		*		*	*
	66	Sostenuto			*	*			*		*	*	*	*	*	*		*		*	*
	67	Soft pedal			*	*			*		*	*	*	*	*	*		*		*	*
	68...69	–			*	*			*		*	*	*	*	*	*					
	70	Sustain level			*	*			*		*	*	*	*	*	*					
	71	Filter resonance level			*	*		# (Slider2)	*		*	*	*	*	*	*		*	*		
	72	Release time			*	*		# (Slider4)	*		*	*	*	*	*	*		*	*		
	73	Attack time			*	*			*		*	*	*	*	*	*					
	74	Filter cutoff frequency			*	*		# (Slider1)	*		*	*	*	*	*	*		*	*		
	75	Decay time			*	*			*		*	*	*	*	*	*					
	76	LFO1 speed			*	*			*		*	*	*	*	*	*					
	77	LFO1 depth (pitch)			*	*			*		*	*	*	*	*	*					
	78	LFO1 delay			*	*			*		*	*	*	*	*	*					
	79	Filter EG intensity			*	*		# (Slider3)	*		*	*	*	*	*	*		*	*		
	80	SW1 modulation On/Off			*	*			*	* (SW1)	*	*	*	*	*	*				*	*
	81	SW2 modulation On/Off			*	*			*	* (SW2)	*	*	*	*	*	*				*	*
	82	Foot switch On/Off			*	*			*		*	*	*	*	*	*		*		*	*
	83	Controller (CC#83)			*	*			*		*	*	*	*	*	*				*	*
	84	–			*	*			*		*	*	*	*	*	*					
	85	X–Y modulation +X			*	*			*		*	*	*	*	*	*				*	*
	86	X–Y modulation –X			*	*			*		*	*	*	*	*	*				*	*
	87	X–Y modulation +Y			*	*			*		*	*	*	*	*	*				*	*
	88	X–Y modulation –Y			*	*			*		*	*	*	*	*	*				*	*
	89...90	–			*	*			*		*	*	*	*	*	*					
	91	Effect depth 1 (send 2 level)			*	*			*		*	*	*	*	*	*			*		
	92	Effect depth 2 (Insert Effect 1–5 On/Off)			*	*			*		*	*	*	*	*	*					
	93	Effect depth 3 (send 1 level)			*	*			*		*	*	*	*	*	*			*		
	94	Effect depth 4 (master effect 1, 2 On/Off)			*	*			*		*	*	*	*	*	*					
	95	Effect depth 5 (total effect On/Off)			*	*			*		*	*	*	*	*	*					
	96	Data increment			*	*			*		*	*	*	*	*	*					
	97	Data decrement			*	*			*		*	*	*	*	*	*					
	98	NRPN(LSB)			*	*			*		*	*	*	*	*	*					
	99	NRPN(MSB)			*	*			*		*	*	*	*	*	*					
	100	RPN(LSB)			*	*			*		*	*	*	*	*	*					
		0: Bend range			*	*			*		*	*	*	*	*	*					
		1: Fine tune			*	*			*		*	*	*	*	*	*					
		2: Coarse tune			*	*			*		*	*	*	*	*	*					
	101	RPN(MSB) 0			*	*			*		*	*	*	*	*	*					
	102	KARMA SW1			*	*			*		*	*	*	[*] (SW1)	*	*		*(1)			
	103	KARMA SW2			*	*			*		*	*	*	[*] (SW2)	*	*		*(1)			
	104	KARMA SW3			*	*			*		*	*	*	[*] (SW3)	*	*		*(1)			
	105	KARMA SW4			*	*			*		*	*	*	[*] (SW4)	*	*		*(1)			
	106	KARMA SW5			*	*			*		*	*	*	[*] (SW5)	*	*		*(1)			
	107	KARMA SW6			*	*			*		*	*	*	[*] (SW6)	*	*		*(1)			
	108	KARMA SW7			*	*			*		*	*	*	[*] (SW7)	*	*		*(1)			
	109	KARMA SW8			*	*			*		*	*	*	[*] (SW8)	*	*		*(1)			
	110	PAD1 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD1)					
	111	PAD2 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD2)					
	112	PAD3 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD3)					
	113	PAD4 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD4)					
	114	PAD5 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD5)					
	115	PAD6 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD6)					
	116	PAD7 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD7)					
	117	PAD8 trigger velocity			*	*			*		*	*	*	*	*	[*] (PAD8)					
	118	X–Y Mode X			[*] (X)	*			*		*	*	*	*	*	*					
	119	X–Y Mode Y			[*] (Y)	*			*		*	*	*	*	*	*					

MIDI messages		Joystick	Ribbon	X–Y Mode	X–Y CC Control	Value Slider	KARMA: Realtime Slider 1…4	KARMA: Realtime Slider 5…8	KARMA: SW1, 2	KARMA: On/Off	KARMA: Latch	KARMA: Scene	KARMA: SW 1…8	KARMA: Slider 1…8	Pad 1…8	Damper	Foot Switch	Foot Pedal	Available for AMS	Available for Dmod
	Program change																			
	Channel aftertouch																		*	*
	Pitch Bend	# (X)																	*	*
Universal exclusive																				
	Master volume							*										*		
	Master balance																			
	Master fine tune																			
	Master coarse tune																			

(1):When a KARMA controller is assigned to a CC# indicated by [*] (Global P2: Controllers– MIDI CC# Assign)

*: Assignable

[*]:The X–Y, KARMA Controllers, and Pads controllers can be assigned to CC#00–119. CC#s indicated by [*] will be assigned automatically when you execute the Global P2–MIDI CC# Assign menu command **Reset Controller MIDI Assign** with the CC Default setting.

The CC Default settings are the CC#s recommended as the CC# for each of these controllers. Normally you should use these settings when assigning CC#s.

When one of the M3's controllers is operated, the corresponding or the assigned control change will be transmitted.

If you choose KARMA Slider 1–8, KARMA Switch 1–8, or PAD 1–8, its MIDI control change message will be transmitted according to the settings in Global P2– MIDI CC# Assign.

The following sections describes operation in each mode.

Program mode

When one of the M3's controllers is operated, a control change message will be transmitted on the global MIDI channel (**MIDI Channel** Global 1–1a).

f the Realtime Control Slider 1–8 or the assignable pedal has been set to **Master Volume**, the universal system exclusive message Master Volume will be transmitted.

Combination mode

When one of the M3's controllers is operated, a control change message will be transmitted on the global MIDI channel (**MIDI Channel** Global 1–1a).

Simultaneously, the message will also be transmitted on the MIDI channel (**MIDI Channel** Combi 3–1(2)c) of any timbre whose **Status** (Combi 3–1(2)c) is EXT or EX2.

When one of the M3's controllers is operated, its effect will apply to any timbre whose **Status** is INT and whose **MIDI Channel** setting is either Gch or the same as the global MIDI channel.

In the case of Master Volume, the universal exclusive message Master Volume will be transmitted only on the global MIDI channel.

You can make settings for MIDI Filter (Combi P5) to enable or disable control changes and controllers for each timbre. When checked, the above operations will be enabled.

Effect dynamic modulation can be controlled when the **Ch** (Combi 8–1–4a, 9–2a) setting for IFX1–5, MFX1, 2, or TFX is either set to Gch or to the same channel as the global MIDI channel. (In the case of All Routed, control is possible on the MIDI channel of any routed timbre.)

KARMA modules A, B, C, and D can be controlled if the **In (Input Channel)** and **Out (Output Channel)** (Combi 7–1–1c) settings specified for each module are Gch or match the global channel.

Sequencer mode

When one of the M3's controllers is operated, its effect will apply to the MIDI track 1–16 that is selected by **Track Select** (Seq 0–1–1(2)a).

If the **Status** (Seq 3–1(2)c) of the track selected by **Track Select** is EXT, EX2, or BTH, a control change message will be transmitted on the MIDI channel specified by **MIDI Channel** (Seq 3–1(2)c).

If the **Status** is INT or BTH, operating one of the M3's controllers will affect only that MIDI track. Simultaneously, the same effect will also apply to any MIDI track with the same **MIDI Channel** setting.

In the case of Master Volume, the universal exclusive message Master Volume will be transmitted.

You can make settings for MIDI Filter (Seq P3) to enable or disable control changes and controllers for each track. When checked, the operations effective for a **Status** of INT or BTH will be enabled. Tracks whose **Status** is EXT, EX2, or BTH will transmit control changes regardless of this setting.

Effect dynamic modulation can be controlled when the **Ch** (Seq 8–1–4a, 9–2a) setting for IFX1–5, MFX1, 2, or TFX matches the MIDI channel of the track selected by **Track Select**. (In the case of All Routed, control is possible on the MIDI channel of all routed tracks.)

If one of the M3's controllers is operated during realtime recording, the corresponding or assigned control change will be recorded.

KARMA modules A, B, C, and D can be controlled if the **In (Input Channel)** and **Out (Output Channel)** (Seq 7–1–1c) settings specified for each module are Tch or match the MIDI channel of the MIDI track selected by Track Select.

Sampling mode

When one of the M3's controllers is operated, a control change message will be transmitted on the global MIDI channel (**MIDI Channel** Global 1–1a).

In the case of Master Volume, the universal exclusive message Master Volume will be transmitted.

It is not possible to make AMS settings in Sampling mode.

M3 and MIDI CCs

Responses to standard MIDI controllers

The following table shows how the M3 responds to MIDI control change messages, and the relation between settings and controller movements on the M3.

CC#				
	0	Bank select (MSB)	0…127	bank select message MSB *1
	1	Modulation 1	0…127	corresponds to joystick movement in the +Y direction (Vertical upward)
	2	Modulation 2	0…127	corresponds to joystick movement in the –Y direction (Vertical downward)
	3	–	–	–
	4	Foot controller	0…127	corresponds to when the assignable pedal function is set to Foot Pedal
	5	Portamento time	0…127	portamento time
	6	Data entry (MSB)	0…127	MSB of RPN and NRPN data *2
	7	Volume	0…127	volume *3
	8	Post Insert Effect panpot	0…127	pan after the Insert Effect
	9	–	–	–
	10	Panpot	0…127	pan
	11	Expression	0…127	volume *3
	12	Effect control 1	0…127	corresponds to effect dynamic control source FX Control1
	13	Effect control 2	0…127	corresponds to effect dynamic control source FX Control2
	14	KARMA ON/OFF control	0…63(Off), 64…127(On)	equivalent to on/off when CC#14 is assigned to the KARMA ON/OFF switches *7
	15	–	–	–
	16	Ribbon controller	0…127	corresponds to ribbon controller operation
	17	Slider modulation 5	0…127	corresponds to when Slider Mod.5 is assigned as the realtime control slider 5–8
	18	Controller (CC#18)	0…127	for control of Alternate Modulation or Effect Dynamic Modulation *8
	19	Slider modulation 6	0…127	corresponds to when Slider Mod.6 is assigned as the realtime control slider 5–8
	20	Slider modulation 7	0…127	corresponds to when Slider Mod.7 is assigned as the realtime control slider 5–8
	21	Slider modulation 8	0…127	corresponds to when Slider Mod.8 is assigned as the realtime control slider 5–8
	22	KARMA Slider 1	0…127	equivalent to when CC#22 is assigned to KARMA realtime control slider 1 *7
	23	KARMA Slider 2	0…127	equivalent to when CC#23 is assigned to KARMA realtime control slider 2 *7
	24	KARMA Slider 3	0…127	equivalent to when CC#24 is assigned to KARMA realtime control slider 3 *7
	25	KARMA Slider 4	0…127	equivalent to when CC#25 is assigned to KARMA realtime control slider 4 *7
	26	KARMA Slider 5	0…127	equivalent to when CC#26 is assigned to KARMA realtime control slider 5 *7
	27	KARMA Slider 6	0…127	equivalent to when CC#27 is assigned to KARMA realtime control slider 6 *7
	28	KARMA Slider 7	0…127	equivalent to when CC#28 is assigned to KARMA realtime control slider 7 *7
	29	KARMA Slider 8	0…127	equivalent to when CC#29 is assigned to KARMA realtime control slider 8 *7
	30	KARMA SCENE 1–8 control	0…7(Scene1…8), 8…127(invalid)	equivalent to when CC#14 is assigned to the KARMA SCENE 1–8 switches *7
	31	KARMA LATCH On/Off control	0…63(Off), 64…127(On)	equivalent to on/off when CC#14 is assigned to the KARMA LATCH switch *7
	32	Bank select (LSB)	0…127	LSB of bank select message *1
33…	37	–	–	–
	38	Data entry (LSB)	0…127	LSB of RPN or NRPN data *2
39…	63	–	–	–
	64	Damper	0…127	damper effect
	65	Portamento On/Off	0…63(Off), 64…127(On)	turn the portamento effect on/off
	66	Sostenuto On/Off	0…63(Off), 64…127(On)	turn the sostenuto effect on/off
	67	Soft	0…127	soft pedal effect
68…	69	–	–	–
	70	Sustain level	0…127	sustain levels of the filter EG and amp EG *4
	71	Filter resonance level	0…127	resonance level of the filter *4
	72	Release time	0…127	cutoff frequency of the high pass filter *4
	73	Attack time	0…127	release times of the filter EG and amp EG *4
	74	Filter cutoff frequency	0…127	cutoff frequency of the low pass filter *4
	75	Decay time	0…127	decay times/slope times of the filter EG and amp EG *4
	76	LFO1 speed	0…127	LFO1 speed *4
	77	LFO1 depth	0…127	pitch LFO1 intensity *4
	78	LFO1 delay	0…127	LFO1 delay *4

79	Filter EG intensity	0…127	filter EG intensity	*4
80	SW1 modulation On/Off	0…63(Off), 64…127(On)	corresponds to on/off when the SW1 function is set to SW1 Mod.	
81	SW2 modulation On/Off	0…63(Off), 64…127(On)	corresponds to on/off when the SW2 function is set to SW2 Mod.	
82	Foot switch On/Off	0…63(Off), 64…127(On)	corresponds to on/off when the function of the assignable foot switch is set to Foot SW	
83	Controller (CC#83)	0…127	for controlling AMS or Dmod	
84	–	–	–	
85	X–Y modulation +X	0…127	equivalent to when the X–Y CC control function is set to XY +X Mod	
86	X–Y modulation –X	0…127	equivalent to when the X–Y CC control function is set to XY –X Mod	
87	X–Y modulation +Y	0…127	equivalent to when the X–Y CC control function is set to XY +Y Mod	
88	X–Y modulation –Y	0…127	equivalent to when the X–Y CC control function is set to XY –Y Mod	
89…90	–	–	–	
91	Effect depth 1 (send 2 level)	0…127	send 2 level	
92	Effect depth 2 (Insert Effect 1–5 On/Off)	0…63(Off), 64…127(On)	turn Insert effect 1…5 on/off	*5
93	Effect depth 3 (send 1 level)	0…127	send 1 level	
94	Effect depth 4 (master effect 1, 2 On/Off)	0…63(Off), 64…127(On)	master effect 1, 2 on/off	*5
95	Effect depth 5 (total effect On/Off)	0…63(Off), 64…127(On)	total effect on/off	*5
96	Data increment	0		
97	Data decrement	0		
98	NRPN(LSB)	–	LSB of NRPN	
99	NRPN(MSB)	–	MSB of NRPN	
100	RPN(LSB)	0	selects the pitch bend range	*2
		1	controls Fine Tune	*2
		2	controls Coarse Tune	*2
101	RPN(MSB)	0	MSB of RPN	
102	KARMA realtime control SW1 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#102 is assigned to KARMA realtime control SW1	*7
103	KARMA realtime control SW2 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#103 is assigned to KARMA realtime control SW2	*7
104	KARMA realtime control SW3 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#104 is assigned to KARMA realtime control SW3	*7
105	KARMA realtime control SW4 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#105 is assigned to KARMA realtime control SW4	*7
106	KARMA realtime control SW5 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#106 is assigned to KARMA realtime control SW5	*7
107	KARMA realtime control SW6 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#107 is assigned to KARMA realtime control SW6	*7
108	KARMA realtime control SW7 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#108 is assigned to KARMA realtime control SW7	*7
109	KARMA realtime control SW8 On/Off	0…63(Off), 64…127(On)	equivalent to on/off when CC#109 is assigned to KARMA realtime control SW8	*7
110	PAD1 trigger velocity	0…127	equivalent to when CC#110 is assigned to PAD 1	*7
111	PAD2 trigger velocity	0…127	equivalent to when CC#111 is assigned to PAD 2	*7
112	PAD3 trigger velocity	0…127	equivalent to when CC#112 is assigned to PAD 3	*7
113	PAD4 trigger velocity	0…127	equivalent to when CC#113 is assigned to PAD 4	*7
114	PAD5 trigger velocity	0…127	equivalent to when CC#114 is assigned to PAD 5	*7
115	PAD6 trigger velocity	0…127	equivalent to when CC#115 is assigned to PAD 6	*7
116	PAD7 trigger velocity	0…127	equivalent to when CC#116 is assigned to PAD 7	*7
117	PAD8 trigger velocity	0…127	equivalent to when CC#117 is assigned to PAD 8	*7
118	X–Y Mode X	0…127	equivalent to when CC#118 is assigned to the X–Y Mode X-axis	*8
119	X–Y Mode Y	0…127	equivalent to when CC#119 is assigned to the X–Y Mode Y-axis	*8

You can assign any control change number (CC#00–119) to the Realtime Control Slider 5–8 or X–Y CC control. In this case, the transmitted values will all be 0…127.

You can assign any control change number (CC#00–119) to the KARMA Realtime Control switches and sliders. In this case, sliders 1–8 will transmit values of 0…127, scenes will transmit values of 0…7, and others will transmit values of 0 (Off) or 127 (On).

*1 In the M3 sequencer, bank select messages are normally specified as program change events (“MIDI Event Edit” Sequencer P4). However in some cases this will be insufficient when you wish to change banks on an external device. In such cases, you can use CC#00 and CC#32 to specify the banks.
For information on the relation between bank select numbers and the banks of your external device, refer to the owner’s manual for your external device.

*2 Unlike conventional control changes, pitch bend range, fine tune, and coarse tune settings are made using RPC (Registered Parameter Control) messages. In Program, Combination, Sequencer, and Sampling modes, you can use RPC messages to control the bend range and tuning for each program, Timbre (Combination), or Track (Sequencer).

The procedure is to use an RPN (Registered Parameter Number) message to select the parameter that you wish to edit, and then use Data Entry to input a value for that parameter. To select the parameter, use CC#100 (with a value of 00…02) and CC#101 (with a value of 00). use CC#06 and CC#38 to enter the data.

The data entry values for each parameter and the corresponding settings are as follows.

RPN=0 (Pitch bend range)

CC#06	CC#38	Parameter value (Semitone steps)
00	00	0
01	00	+ 1
⋮	⋮	⋮
12	0	+12

RPN=1 (Fine tune)

CC#06	CC#38	Parameter value (1 cent steps)
32	00	–50
⋮	⋮	⋮
48	00	–25
⋮	⋮	⋮
64	00	0
⋮	⋮	⋮
96	00	+50

RPN=2 (Coarse tune)

CC#06	CC#38	Parameter value (Semitone steps)
40	00	–24
⋮	⋮	⋮
52	00	–12
⋮	⋮	⋮
64	00	0
⋮	⋮	⋮
88	00	+24

For example, if in Sequencer mode you wish to set a MIDI track that is receiving channel 1 to a transpose (coarse tuning) value of –12, you would first transmit [B0, 64, 02] (64H=CC#100) and [B0, 65, 00] (65H=CC#101) to the M3 to select the RPN coarse tune. Then you would set this to –12 by transmitting [B0, 06, 34] (06H=CC#6), 34H=52 (corresponds to –12), and [B0, 26, 00] (26H=CC#38, 00H=0).

*3 The volume of the M3 is determined by multiplying the Volume (CC#07) with the Expression (CC#11). In Sequencer mode when you stop the song playback and return the location to the beginning of the track, the Volume will be set to the starting value, and the Expression will be set to the maximum value (127).

*4 A value of 64 will correspond to the value specified by the program parameter. 0 is the minimum, and 127 is the maximum. Changing from 63–1 or from 65–126 will adjust the effect from the program parameter setting toward the minimum value or maximum value.

- For details about the specific parameters controlled by these CCs, please see “Parameters controlled by MIDI CCs #70-79” on page 613.

*5 Controlled on the global MIDI channel.

*6 Corresponds to the operation of the VALUE slider as a controller when you’ve selected Prog P0 “Program Select” or Combi P0 “Combination Select.”

*7 When you assign a CC# to a KARMA CONTROLS slider or switch and operate that controller of the M3, the specified CC# will be transmitted and the M3 will be controlled at the same time. When this CC# is received, the result will be the same as if you operated the M3 itself.

The CC# settings for each slider and switch are made in the Global P2– MIDI CC# Assign page. Normally you will turn this Off. Use these settings if you need to assign control change messages, for example when you want to record KARMA CONTROLS slider or switch operations on the internal sequencer or an external MIDI sequencer, or to control the KARMA function from an external MIDI device.

Each slider and switch can be assigned to any desired MIDI control change message CC#00–119, but normally you will choose the Global P2– MIDI CC# Assign menu command **Reset Controller MIDI Assign** and use the CC Default settings.

This table shows the operations for the CC Default settings. The CC Default settings are the CC#s recommended for use with these controllers. Normally, you will assign these CC#s.

*8 The X-axis and Y-axis of the X–Y Mode can each be assigned a desired CC#. These settings are made in the Global P2– MIDI CC# Assign page. You can assign them to any desired MIDI control change message CC#00–119, but normally you will use CC#118 and CC#119 which are the default settings. Choose the Global P2– MIDI CC# Assign menu command **Reset Controller MIDI Assign** and use the CC Default settings.

When you assign the desired CC# to the X-axis and Y-axis of the X–Y Mode and operate it, the specified CC# will be transmitted and the M3 will be controlled at the same time. When this CC# is received, the result will be the same as if you operated the M3 itself.

This table shows the operations for the default settings of CC#118 and CC#119. The CC Default settings are the CC#s recommended for use with these controllers. Normally, you will assign these CC#s.

Note: The above operations are for when Global P1– MIDI Routng page “X–Y MIDI Out” is X–Y. If “X–Y MIDI Out” is Vector CC Control, the CC# specified here will not be transmitted. Nor will the M3 respond when this CC# is received. Instead, the CC# specified by the X–Y CC Control function for +X, –X, +Y, and –Y will be transmitted. (See “X–Y MIDI Out” on page 366)

Parameters controlled by MIDI CCs #70-79

In Program mode, when CC#70–79 is received on the global MIDI channel, or when a Realtime Control Slider 1–4 is operated in Realtime Control Slider 5–8 when the function is assigned to CC#70–79, the corresponding Program parameter(s) will be edited temporarily.

In most cases, you can use the **Write Program** menu command to save the edited values, over-writing the previous Program settings.

In Sampling mode, these CCs will temporarily edit the Program parameters, just as in Program mode. You can use **Convert MS to Program** menu command to save that state as a program (except for some parameters).

In Combination and Sequencer modes, you can use these CCs to temporarily edit the parameters for all Timbres or Tracks on a given MIDI channel. However, edits made in this way cannot be saved back into a Program.

CC#	Internal parameters controlled by the CC
70 (Sustain level)	Filter EG 1/2 Sustain (see page 54) Amp EG 1/2 Sustain (see page 62)
71 (Filter resonance)	Filter A/B, 1/2 Resonance (see page 48)
72 (Release time)	Filter EG 1/2 Release (see page 54) Amp EG 1/2 Release (see page 62)
73 (Attack time)	EG Times: Filter EG 1/2 Attack (see page 54) Amp EG 1/2 Attack (see page 62) Amp EG 1/2 Time Modulation: Attack (see page 63) EG Levels: Amp EG 1/2 Level Start (see page 62) Amp EG 1/2 Level Attack (see page 62) Amp EG 1/2 Level Modulation: Start (see page 63)
74 (Filter cutoff frequency)	Filter A/B, 1/2 Frequency (see page 48)
75 (Decay time)	Filter EG 1/2 Decay (see page 55) Filter EG 1/2 Slope (see page 55) Amp EG 1/2 Decay (see page 62) Amp EG 1/2 Slope (see page 62)
76 (LFO1 speed)	LFO 1 Frequency (see page 66)
77 (LFO1 Pitch intensity)	Pitch LFO1 Intensity (see page 41)
78 (LFO1 delay)	LFO 1 Delay (see page 67)
79 (Filter EG intensity)	Filter EG 1/2 Intensity to A (see page 52) Filter EG 1/2 Intensity to B (see page 52)

MIDI applications

About MIDI

MIDI stands for Musical Instrument Digital Interface, and is a world-wide standard for exchanging various types of musical data between electronic musical instruments and computers. When MIDI cables are used to connect two or more MIDI devices, performance data can be exchanged between the devices, even if they were made by different manufacturers.

Settings when connected to a MIDI device or computer

For connection examples, see "Connecting a computer" on page 30 of the Operation Guide and "Connecting MIDI devices" on page 33 of the Operation Guide.

Here we will explain the settings you'll make on the M3 when connecting it to another device.

The "Convert Position" setting

On the M3, **Key Transpose**, **Velocity Curve** and **After Touch Curve** (Global 0–1a) allow you to transpose the pitch, adjust the velocity sensitivity, and adjust the aftertouch sensitivity.

The effect that these settings will have on the internal sequencer and on the MIDI data that is transmitted and received will depend on **Convert Position** (Global 1–1a) setting.

- If you want to control an external MIDI tone generator from the M3, set **Convert Position** to PreMIDI. The various settings listed above will be reflected in the MIDI data that is transmitted. These settings will also be reflected in the data that is recorded on the internal sequencer.

  Incoming MIDI data will be handled with settings equivalent to **Key Transpose** 0, **Velocity Curve** 4, and **After Touch Curve** 3.
- When controlling the M3's tone generator from an external MIDI device, select PostMIDI. The above-listed settings will affect the MIDI data that is received. These settings will also affect the data that is played back from the internal sequencer.

  Outgoing MIDI data will be handled with settings equivalent to **Key Transpose** 0, **Velocity Curve** 4, and **After Touch Curve** 3.

Local Control On settings

If you've connected the M3 to a computer or external MIDI sequencer and want to use the "echo-back" from that device to play the M3, turn echo-back on for your external MIDI sequencer or computer (so that the data it receives at MIDI IN will be retransmitted from MIDI OUT), and turn off the M3's local control setting (so that the M3's keyboard section and sound generator will be internally disconnected).

When you play the keyboard of the M3, the musical data will be transmitted to the external MIDI sequencer or computer, and then echoed back to play the M3's tone generator. In other words, by turning Local Control OFF, you can prevent notes from being sounded in duplicate, as would otherwise occur if a note were sounded by the M3's own keyboard and again by the data that was echoed-back.

To turn off Local Control, press the **Local Control On** (Global 1–1a) check box to uncheck it.

When using the M3 by itself, leave Local Control turned on. (If this is off when the M3 is used by itself, playing the keyboard will not produce sound.)

When using the KARMA function, the Global P1: MIDI menu command **Setup KARMA External MIDI Routing** settings and the local control on / off setting will determine how the function is controlled, as follows. For more information, please see "Setup KARMA Ext. MIDI (Setup KARMA External MIDI Routing)" on page 386.

Here are the settings to use if you want an external MIDI sequencer or computer to record only the notes that trigger the KARMA function, and control the KARMA function using the notes that are echoed-back during recording or playback.

When the KARMA function is turned on, playing the M3's keyboard will not trigger the KARMA function; the notes you play on the keyboard will only be transmitted. The KARMA function will operate only on the notes that are echoed-back and received at MIDI IN. This prevents the KARMA function from being applied in duplicate, and ensures that it will operate correctly.

Note: You can also make these settings by using the menu command **Setup KARMA External MIDI Routing** = Send the output of KARMA to external device.

Here are the settings to use if you want the note data generated by the KARMA function to be transmitted via MIDI and recorded on your external sequencer or computer.

Note: You can also make these settings by using the menu command **Setup KARMA External MIDI Routing** = Trigger KARMA generation from external device.

Messages transmitted and received by the M3

In the text below, […] indicates hexadecimal notation.

MIDI channels

MIDI messages can be exchanged when the transmitting and receiving devices are set to the same MIDI channel. MIDI uses sixteen channels, numbered 1–16. The way in which channels are handled will differ depending on the mode.

Program mode and Sampling mode

- Program selections, effect on / off, and exclusive data is transmitted and received on the global MIDI channel.

  The global MIDI channel is the basic channel that the M3 uses for MIDI transmission / reception, and is set by **MIDI Channel** (Global 1–1a).
- The KARMA function in Program mode will transmit and receive on the global MIDI channel.
- The Drum Track function in Program mode will transmit and receive on the following MIDI channels.

  Receive: Global MIDI channel.

  Transmit: The MIDI channel specified by the Drum Track **Prog MIDI Out** (Global 1–1a) setting (default: channel 10).

  Note: Transmission is enabled if Drum Track **Prog MIDI Out** (Global 1–1a) is checked. By default, this is off (unchecked).

Combination mode

- The global MIDI channel is used to transmit / receive messages for selecting a combination and turning effects on / off, and to transmit / receive exclusive data.
- Each timbre will transmit / receive MIDI data on the **MIDI Channel** (Combi 3–1(2)c) that is specified for that timbre.
- The KARMA function will transmit and receive on the **In (Input Channel)** and **Out (Output Channel)** specified for each module. You will normally set **In (Input Channel)** to Gch so that the KARMA function will receive messages from the M3's keyboard and controllers.
- The Drum Track function will transmit and receive on the following MIDI channels.

  Receive: Global MIDI channel. The M3's keyboard will control triggering.

  Transmit: The MIDI channel specified by the Drum Pattern **Output** (Combi 1–1a) setting of each combination. Set this to match the MIDI channel of a timbre to which a drum program is assigned.
- The **Ch** MIDI channel specified for each effect (Combi 8–1–4a, 9–2a) is used to control dynamic modulation of the insert / master / total effect, the pan following the insert effect, and send 1 and 2.
- When you operate the keyboard or controllers of the M3, messages will be transmitted on the global MIDI channel, and will also be transmitted on the MIDI channel of any timbre whose **Status** (Combi 2–1a) is set to EXT or EX2.
- Channel messages will be received if they match the MIDI channel of a timbre whose **Status** is set to INT (Combi 3–1(2)c).

Sequencer mode

- The global MIDI channel is used to transmit / receive exclusive data and for messages that switch effects on / off.
- MIDI data transmission / reception for each MIDI track will occur on the MIDI channel specified for each MIDI track by **MIDI Channel** (Seq 3–1(2)c).
- The KARMA function will transmit and receive on the **In (Input Channel)** and **Out (Output Channel)** specified for each module. You will normally set this to the channel of the MIDI track you want to record using the KARMA function.
- The Drum Track function will transmit and receive on the following MIDI channels.

  Receive: The MIDI channel specified by the Drum Pattern **Input** (Seq 1–1a) setting of each song. You will normally set this to Tch and use the M3's keyboard to control triggering.

  Transmit: The MIDI channel specified by the Drum Pattern **Output** (Seq 1–1a) setting of each song. Set this to match the MIDI channel of the MIDI track to which a drum pattern is assigned.
- The MIDI channel specified for each effect by the **Ch** parameter (Seq 8–1–4a, 9–2a) is used to control dynamic modulation of the insert / master / total effect, the pan following the insert effect, and send 1 and 2.
- When you operate the keyboard or controllers of the M3, messages will be transmitted on the MIDI channel selected by **Track Select** (Seq 0–1–1(2)a). However, messages will be transmitted only if the selected MIDI track has a **Status** of BTH, EXT, or EX2. For more information, please see "Track Select" on page 196.
- When the sequencer is played back, musical data of MIDI tracks whose **Status** is BTH, EXT, or EX2 will be transmitted on the specified MIDI channels.
- MIDI tracks whose **Status** is INT or BTH will receive channel messages of the matching MIDI channel. For more information, please see "Status" on page 226, and "MIDI Channel" on page 226.

Note on/off

Note-on [9n, kk, vv]
Note-off [8n, kk, vv]

(n: channel, kk: note number, vv: velocity)

When you play a note on the M3's keyboard, it will transmit note-on / off messages.

While the KARMA function is operating, the note-on / off data generated by the KARMA function will be transmitted. (See "Local Control On settings" on page 614)

If the Drum Track **Prog MIDI Out** setting (Global 1–1a) is checked, the drum track pattern will transmit note-on / off messages while the drum track function is operating.

However, most instruments do not receive or transmit note-off velocity, and neither does the M3.

Program Change/Bank Select

Changing the program/bank

Program change [Cn, pp]

(n: channel, pp: program number that allows 128 sounds to be selected)

- Programs 000–127 in banks I-A–I-F and banks U-A–U-G correspond to program changes [Cn, 00]–[Cn, 7F].

- Programs 001–128 in banks G, g(1), g(2), g(3), g(4), g(5), g(6), g(7), g(8), g(9), and g(d) correspond to program changes [Cn, 00]–[Cn, 7F].

Bank select MSB (CC#0) [Bn, 00, mm]
Bank select LSB (CC#32) [Bn, 20, bb]

(n: channel, mm: bank number upper byte, bb: bank number lower byte)

- The internal banks that correspond to each bank select number will depend on the **Bank Map** setting (Global 0–2a). KORG is the default setting. For more information, please see "Bank Map" on page 358.

Simply receiving a Bank Select message will not cause the program or bank to change. The program or bank will actually change when a Program Change message is received.

Program mode

- In Prog P0: Play, these messages will transmit and receive program change and bank select operations. They will not be received in P1–P9.

Note: Drum track programs do not support transmission or reception of program change or bank select messages.

Combination, Sequencer modes

- Program change and bank select messages can be received on the MIDI channel specified for each timbre / MIDI track to select programs on that timbre / track.
- When you select a combination, program change and bank select messages will be transmitted by timbres whose **Status** is EXT or EX2.

  In Sequencer mode, program change or bank select messages will be transmitted by tracks whose **Status** is BTH, EXT, or EX2 when you select the **Program Select** parameter (0–1–1(2)b), when you select a song, or when you return to the beginning of a measure. For more information, please see "Program Select" on page 197.
- In Combination and Sequencer modes, transmission / reception can be switched on / off for each timbre / track. See "Enable Program Change" on page 157, and page 235.

Selecting combinations

You can use program change and bank select messages to select combinations in the same way that you select programs.

- Combinations 000–127 in banks I-A–I-G and U-A–U-G correspond to program changes [Cn, 00]–[Cn, 7F].
- Similarly as for program banks, the internal banks that correspond to each bank select number will depend on the **Bank Map** setting (Global 0–2a). For more information, please see "Bank Map" on page 358.
- In Combi P0: Play, program change and bank select messages are transmitted / received on the global MIDI channel. They are not received in P1– P9.

Note: All program changes can be turned off in **MIDI Filter** (Global 1–2b)

As needed, you can independently turn all program changes on / off, specify whether or not incoming messages will be able to change combinations, and turn reception / transmission of bank select messages on / off.

- If **Combination Change** (Global 1–2b) is unchecked, the combination will not change even if a program change on the global MIDI channel is received in Combi P0: Play. In this case, the program of the timbre that matches the MIDI channel of the received message will change.
- If **Bank Change** (Global 1–2b) is unchecked, bank select messages will not be transmitted or received.

Aftertouch

Channel aftertouch [Dn, vv]

(n: channel, vv: value)

When you apply pressure to the keyboard after playing a note, an aftertouch effect will be applied, and Channel After Touch messages will be transmitted. When these messages are received, an aftertouch effect will be applied.

- Aftertouch for the entire instrument can be turned on / off in **Enable After Touch** (Global 1–2b).
- In Combination and Sequencer modes, aftertouch can be switched on / off independently for each timbre / track (**Enable After Touch** Combi / Seq 5–1–1(2)c).

Polyphonic aftertouch [An, kk, vv]

(n: channel, kk: note number, vv: value)

There is another type of aftertouch called Polyphonic Key Pressure, which allows aftertouch to be applied independently for individual keys. This message can be used as an alternate modulation source, but cannot be transmitted by the M3's keyboard. In order to use this message, it will have to be received from an external device, or recorded on your sequencer.

The aftertouch mentioned in this manual refers to Channel After Touch.

Pitch bend

Pitch bend change [En, bb, mm]

(n: channel, bb: lower byte of the value, mm: upper byte of the value, together expressing a value of 16,384 steps where 8,192 [bb, mm = 00H, 40H] is the center value)

When the M3's joystick is moved in the X axis (left / right), a pitch bend effect will be applied, and pitch bender messages will also be transmitted. When these messages are received, a pitch bend effect will be applied.

The range of pitch change that is produced by pitch bend messages can also be adjusted via MIDI. (See "Changing the pitch bend range" on page 621)

Control change

[Bn, cc, vv]

Transmitted and received as (n: channel, cc: control change no., vv: value)

For more information, please see "Dynamic MIDI Sources & Destinations" on page 601, "MIDI transmission when the M3's controllers are operated" on page 608, and "M3 and MIDI CCs" on page 610.

- Control changes can be turned on / off as a whole in **Enable Control Change** (Global 1–2b).
- In Combination and Sequencer modes, the P3: MIDI Filter settings allow transmission / reception of control changes to be individually turned on / off for each timbre / track. For the assignable controllers (SW1, SW2, Realtime Control Slider 1–8, Foot Pedal / Switch), MIDI filter settings will apply to the control change number to which each controller is assigned. **Other Control Change** applies to control changes that are not covered by the items of the other check boxes.

Note: You can select MIDI CC#00–CC#119 for "Realtime Control Slider 5–8" and for "X–Y CC control."

Although you can select MIDI CC#00–CC#119 for the KARMA controllers and the X–Y Mode, you will normally use the default settings that are assigned when you execute the menu command **Reset Controller MIDI Assign** with Default Setting, and leave KARMA Controllers turned Off,

X–Y Mode “XY Mode X” at CC#118, and “XY Mode Y” at CC#119.

If you assign a CC# to KARMA controllers, use the same CC#s as when “Reset Controller MIDI Assign” is executed with the CC Default setting.

Selecting program/combination banks

Bank select (CC#00, CC#32)

Technically, Bank Select is a controller. In practice, however, it is a component of Program Change. For more information, please see “Program Change / Bank Select” on page 615)

Using the joystick to apply modulation

Modulation 1 depth (CC#01) [Bn, 01, vv]

When you move the M3’s joystick in the +Y direction (Vertical upward), Modulation 1 Depth messages will be transmitted. When these messages are received, the same effect will be applied as when the M3’s joystick is operated. Normally this will apply a vibrato effect (pitch LFO).

- In Combination and Sequencer modes, transmission / reception can be switched on / off for each timbre / track (**Enable JS+Y** Combi / Seq 5–1–3(4)c).

Modulation 2 depth (CC#02) [Bn, 02, vv]

When you move the M3’s joystick in the –Y direction (Vertical downward), Modulation 2 Depth messages will be transmitted. When these messages are received, the same effect will be applied as when the M3’s joystick is operated. Normally this will apply a wah effect (filter LFO).

- In Combination and Sequencer modes, transmission / reception can be switched on / off for each timbre / track (**Enable JS–Y** Combi / Seq 5–1–3(4)c).

Other manufacturers use this message for other purposes (e.g., breath controller, etc.)

Controlling portamento

Portamento time (CC#05) [Bn, 05, vv]

If you assign the above CC# to a Realtime Control Slider 5–8 or as the X–Y CC control function, rotating that slider will transmit Portamento Time messages, and will modify the speed at which the portamento pitch changes. When this message is received, the result will be the same as when the controller is operated.

Portamento switch (CC#65) [Bn, 41, vv]

When the above CC# is assigned to SW1, SW2 or the ASSIGNABLE SWITCH, operating that switch will transmit vv=127 [7F] for ON or vv=0 [00] for OFF, and the portamento effect will be switched on / off. When this message is received, the result will be the same as when the controller is operated. (vv of 63 [3F] or less will be OFF, and 64 [40] or greater will be ON.) (See “SW1 / 2 Assignments” on page 597)

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track (**Enable Portamento SW** Combi 5–1–1(2)c / Seq 3–1a).
- In Sequencer mode, portamento time / switch messages will be transmitted by each track whose **Status** is BTH, EXT, or EX2 when you set **Portamento** (Seq 3–3(4)c), re-select a song or SMF, or return to the beginning of a measure. For more information, please see “Portamento” on page 228.

Controlling volume

Volume (CC#07) [Bn, 07, vv]

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Volume messages, and the volume will change. When this message is received, the result will be the same as when the controller is operated.

Expression (CC#11) [Bn, 0B, vv]

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Expression messages, and the volume will change. When this message is received, the result will be the same as when the controller is operated.

The volume of the M3 is determined by multiplying the value of the Volume message with the value of the Expression message.

If adjusting the Volume message does not increase the volume as you expect, or if there is no sound, transmit MIDI messages from an external device to reset the value of the Expression message (set vv to 127).

Note: In Sequencer mode, this will be reset when the **Location** of the song is moved to 001:01.000.

- In Combination mode, Volume messages will be transmitted by each timbre whose **Status** is EXT or EX2 when you re-select the combination.
- When you change the **Volume** setting (Seq 0–1–3(4)b) in Sequencer mode, or when you re-select the song or return to the beginning of the song in Sequencer mode, volume messages will be transmitted by each track whose **Status** is BTH, EXT, or EX2.

Note: If you’ve used the CONTROL ASSIGN MIXER switch to select 1–8 / 9–16, operating the sliders will transmit volume data to control the volume.

Note: Regardless of the **Status** settings, re-selecting a song, or returning to the beginning will reset the internal Volume value to the value specified by each track (the starting settings), and will reset the Expression value to the maximum.

Note: This message can be used to control the volume of each MIDI track. Normally, you will include a Volume message in the MIDI track setting data (the settings at the beginning of the track) to set the initial volume, and use Expression to create changes in dynamics as the song progresses.

By using the universal exclusive Master Volume message, you can adjust the overall volume without changing the volume balance between timbres or tracks. (“About system exclusive messages” on page 621)

Controlling pan (stereo position)

Pan (CC#10) [Bn, 0A, vv]

(vv: value, where 00 is far left, 64 is center, and 127 is far right)

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Pan messages, and the panning will change. When this message is received, the result will be the same as when the controller is operated.

- When you set the **Pan** (Seq 0–1–3(4)b) in Sequencer mode, or when you re-select the song or return to the beginning of the measure in Sequencer mode, Panpot messages (except for RND) will be transmitted by each

track whose **Status** is BTH, EXT, or EX2. For more information, please see “Pan” on page 199.

Post insert effect pan (CC#08) [Bn, 08, vv]

(vv: value, where 00 is far left, 64 is center, and 127 is far right)

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Post Insert Effect Panpot messages, and the panning of the sound following the insert effect will change. When this message is received, the result will be the same as when the controller is operated.

- In Program mode and Sampling mode, this message is transmitted / received on the global MIDI channel. In Combination, and Sequencer modes, this message is transmitted / received on the MIDI channel specified for each insert effect.
- When you set **Pan: #8** (Seq 8–1–3b) in Sequencer mode, or when you re-select the song or return to the beginning of the measure in Sequencer mode, Post Insert Effect Panpot messages will be transmitted by each track whose **Status** is BTH, EXT, or EX2. For more information, please see “8–1–3b: Insert Effect” on page 258.

Controlling effects

Effect control 1 (CC#12) [Bn, 0C, vv]
Effect control 2 (CC#13) [Bn, 0D, vv]

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Effect Control 1 / 2 messages, and the specified dynamic modulation will be controlled. When this message is received, the result will be the same as when the controller is operated.

Although various types of control change can be selected as dynamic modulation sources, Effect Control 1 (CC#12) and 2 (CC#13) are dedicated for dynamic modulation.

Effect 1 depth (Send 2) (CC#91) [Bn, 5B, vv]
Effect 3 depth (Send 1) (CC#93) [Bn, 5D, vv]

When the above CC# is assigned to the Assignable Pedal or as the Realtime Control Slider 5–8 or as the X–Y CC control function, operating that controller will transmit Effect 1 Depth (Send 2) or Effect 3 Depth (Send 1) messages, and the send level 1 or 2 to the master effects MFX1 or MFX2 will be controlled respectively. When this message is received, the result will be the same as when the controller is operated.

On the corresponding MIDI channels, this will simultaneously control the timbre / track setting as well as the setting following the Insert Effect.

- In Combination, and Sequencer modes, the actual send level of the timbre / track is determined by multiplying this value with the send 1 / 2 settings for each oscillator (Prog 8–1d). (See “Send 1 (MFX1),” “Send 2 (MFX2)” on page 178, page 257)
- When you adjust “Send 1 (MFX1)” or “Send 2 (MFX2)” (Sequencer 8–1b) in Sequencer mode, or when you re-select a song or return to the beginning of the measure in Sequencer mode, Send 1 / 2 will be transmitted by each track whose **Status** is BTH, EXT, or EX2. (See “Send1 (MFX1)” on page 257).

Effect 2 depth (IFX1–5 on/off) (CC#92) [Bn, 5C, vv]
Effect 4 depth (MFX1, 2 on/off) (CC#94) [Bn, 5E, vv]
Effect 5 depth (TFX on/off) (CC#95) [Bn, 5F, vv]

Separately from the effect on / off settings in each mode, **Effect Global SW** (Global 0–1b) allows you to turn off insert effects IFX1–5 and master effects MFX1, 2 and total effect TFX.

If you check “IFX1–5 Off,” “MFX1&2 Off” or “TFX Off,” the corresponding message will be transmitted with vv=0 [00]. If you uncheck these settings, the corresponding message will be transmitted with vv=127 [7F]. If you check these settings, the corresponding effect(s) will be turned off as a group. If you uncheck these settings, the on / off settings of each mode will be used. The same applies to reception. (vv of 00 is off, and 01 or greater is the original setting.) These messages are transmitted / received on the global MIDI channel. (“IFX 1–5 on / off” - “MFX 1, 2 on / off” - “TFX on / off” on page 99, page 103)

Note: These messages are defined simply for use in adjusting the effect levels, and may not have the same function on another instrument connected to the M3.

Using various controllers

Here we will explain typical ways to use the various controllers. You can choose from MIDI CC#00–CC#119 for “Realtime Control Slider 5…8” and “X–Y CC control.”

Foot controller (CC#04) [Bn, 04, vv]

If the above CC# is assigned as the Assignable Pedal function, this message will be transmitted when the controller is operated.

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track (**Enable Foot Pedal/Switch** Combi / Seq 5–2–1(2)c).

Ribbon controller (CC#16) [Bn, 10, vv]

This message will be transmitted when the M3’s ribbon controller is operated.

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track (**Enable Ribbon** Combi 5–1–3(4)c / Seq 5–1–3(4)a).

Controller (CC#18) [Bn, 12, vv]

This message will be transmitted when the M3’s VALUE slider is operated.

This is valid in “Program Select” (Prog 0–1a) and “Combination Select” (Combi 0–1(2)a) when the program or combination number / name is selected (highlighted).

Slider modulation 5, 6, 7, 8 (CC#17, 19, 20, 21) [Bn, 11, vv], [Bn, 13, vv], [Bn, 14, vv], [Bn, 15, vv]

If the above CC# are assigned to the Realtime Control Slider 5–8, these messages will be transmitted when the sliders are operated.

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track (**Enable Realtime Control Slider1, 2, 3, 4, 5, 6, 7, 8** Combi 5–1–7(6)c / Seq 5–1–7(8)a).

X–Y modulation +X, –X, +Y, –Y [Bn, 55, vv], [Bn, 56, vv], [Bn, 57, vv], [Bn, 58, vv]

If you assign the above CC#s as the X–Y CC control functions, these messages will be transmitted when you operate the M3’ controllers.

They will be transmitted if Global P1– MIDI Routng page “X–Y MIDI Out” is set to X–Y CC Control.

Controller (CC#83) [Bn, 53, vv]

If you assign the above CC# to a Realtime Control Slider 5–8 or as the X–Y CC control function, this message will be transmitted when you operate the corresponding controller of the M3.

Damper pedal (CC#64) [Bn, 40, vv]

This message is transmitted when you operate a damper pedal (optional DS-1H) connected to the DAMPER jack, and the damper effect will be turned on / off. If the DS-1H is used, a half-damper effect can be applied.

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track (**Enable Damper** Combi / Seq 5–1–1(2)c).

SW1 modulation (CC#80) [Bn, 50, vv]
SW2 modulation (CC#81) [Bn, 51, vv]

If the above CC# are assigned as the function of SW1 or SW2, operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF.

- In Combination and Sequencer modes, transmission / reception of these messages can be turned on / off independently for each timbre / track (**Enable SW1**, **Enable SW2** Combi / Seq 3–3a)

Foot switch (CC#82) [Bn, 52, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF.

- In Combination and Sequencer modes, transmission / reception of this message can be turned on / off independently for each timbre / track ("Enable Foot Switch" Combi / Seq 3–3a).

Sostenuto (CC#66) [Bn, 42, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF, and the sostenuto effect will be turned on / off. When this message is received, the result will be the same as when the controller is operated (OFF for vv=63 [3F] or below, and ON for vv=64 [40] or above).

Soft pedal (CC#67) [Bn, 43, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, operating the switch will transmit, and the soft pedal effect will be turned on. When this message is received, the result will be the same as when the controller is operated.

When "Foot controller (CC#04)"–"Soft pedal (CC#67)" are operated on the M3, the specified alternate modulation or dynamic modulation etc. will be controlled. When these messages are received, the result will be the same as if the controller had been operated. For "SW1 modulation (CC#80)"–"Soft pedal (CC#67)," vv of 63 [3F] or less will be OFF, and 64 [3F] or greater will be ON.

Controlling Program tone & envelope shapes

CC#70–79 control specific parameters of a program.
For details on the program parameters that correspond to each control change, and how the M3 will respond in each mode when these are received, refer to "M3 and MIDI CCs" on page 610.

Filter cutoff (CC#74) [Bn, 4A, vv]
Resonance level (CC#71) [Bn, 47, vv]
Filter EG intensity (CC#79) [Bn, 4F, vv]
Release time (CC#72) [Bn, 48, vv]

These messages are transmitted when you operate the M3's Realtime Control Slider 1–4. (They can also be set as Slider 5–8 functions.)

Sustain level (CC#70) [Bn, 46, vv]
Attack time (CC#73) [Bn, 49, vv]
Decay time (CC#75) [Bn, 4B, vv]

LFO 1 speed (CC#76) [Bn, 4C, vv]
LFO 1 depth (pitch) (CC#77) [Bn, 4D, vv]
LFO 1 delay (CC#78) [Bn, 4E, vv]

These messages are transmitted when assign the above CC# to the Realtime Control Slider 5–8 or as the X–Y CC control function.

When you operate these, the corresponding program parameters will be controlled, and the sound and envelope will change. When these messages are received, the result will be the same as when the controller is operated. (When the message has a value vv=64 [40], the setting will have the value that was set by the program parameter.)

- In Combination and Sequencer modes, transmission / reception can be turned on / off independently for each timbre / track (**Enable Realtime Controls Slider 1…8** Combi 5–1–5(6)c, 5–1–7(8)c / Seq 5–1–5(6)c, 5–1–7(8)a).

Note: In Program mode, the corresponding program parameters will be temporarily edited by these messages. You can Write the program to save the modified state (except for certain parameters). The Write operation can also be performed by a MIDI System Exclusive Program Write Request message, in addition to the usual method of using the M3's switches. When you write the data, the values of the corresponding program parameters will be rewritten.

Note: The results of receiving these messages will depend on the instrument. The operation may be different when a device other than the M3 is connected.

X–Y Mode control

If you assign the following CC#s to the X-axis and Y-axis of the X–Y Mode, the specified CC# will be transmitted when you operate the M3, and the M3 itself will be controlled simultaneously. When this message is received, the result will be the same as if you operated the M3 itself.

You can use this to record X–Y Mode operations on the internal sequencer or an external MIDI sequencer, or to control the X–Y Mode from an external MIDI device.

The CC# settings for the X–Y Mode are made in the Global P2– MIDI CC# Assign page. Although you can select any MIDI control change CC#00–CC#119 for the X–Y Mode, you will normally use the default settings that are assigned when you execute the menu command **Reset Controller MIDI Assign** with Default Setting. For more information, please see "Reset Controller MIDI Assign" on page 387.

These messages are transmitted and received if Global P1– MIDI Routng page **X–Y MIDI Out** is set to X–Y. If Global "X–Y MIDI Out" is set to X–Y CC Control, the CC# specified for X–Y CC Control in each program, combination, or song will be transmitted. Normally you will use the X–Y setting.

The operations described below are for these default settings.

X–Y Mode X (CC#118) [Bn, 76, vv]
X–Y Mode Y (CC#119) [Bn, 77, vv]

When you move the M3' X–Y Mode in the X direction, X–Y Mode X will be transmitted (vv: 00:left…7F:right). When you move it in the Y direction, X–Y Mode Y will be transmitted (vv: 00:toward yourself…7F:away). The same result will occur when these messages are received.

KARMA function control

If you assign the following CC#s to the KARMA CONTROLS sliders and switches, the specified CC# will be transmitted when you operate the M3, and the M3 itself will be controlled simultaneously. When these messages are

received, the result will be the same as if you operated the M3 itself.

The CC# settings for each slider and switch are made in the Global P2– MIDI CC# Assign page. Normally you will leave these Off. However, you can use these settings if you need to assign MIDI control change messages to these controllers, such as when you want to record the operations of the KARMA CONTROLS sliders and switches on the internal sequencer or an external MIDI sequencer, or to control the KARMA function from an external MIDI device.

Although you can select any MIDI control change CC#00–CC#119 for each slider and switch, you will normally use the default settings that are assigned when you execute the menu command **Reset Controller MIDI Assign** with CC Default. For more information, please see "Reset Controller MIDI Assign" on page 387.

The operations described below are for these CC Default settings. The messages will be transmitted when you operate the corresponding controller of the M3. When these messages are received, the result will be the same as if you operated the controller on the M3 itself.

KARMA ON/OFF (CC#14) [Bn, 0E, vv]

This corresponds to the KARMA ON / OFF switch. It transmits vv=127 [F7] when turned on, or vv=127 [7F] when turned off.

KARMA Slider1 (CC#22) [Bn, 16, vv]
KARMA Slider2 (CC#23) [Bn, 17, vv]
KARMA Slider3 (CC#24) [Bn, 18, vv]
KARMA Slider4 (CC#25) [Bn, 19, vv]
KARMA Slider5 (CC#26) [Bn, 1A, vv]
KARMA Slider6 (CC#27) [Bn, 1B, vv]
KARMA Slider7 (CC#28) [Bn, 1C, vv]
KARMA Slider8 (CC#29) [Bn, 1D, vv]

These correspond to KARMA CONTROLS sliders 1–8.

KARMA SCENE (CC#30) [Bn, 1E, vv]

This corresponds to the KARMA SCENE switches. (vv: value; 00: Scene 1, 01: Scene 2, 02: Scene 3, 03: Scene 4, 04: Scene 5, 05: Scene 6, 06: Scene 7, 07: Scene 8, 08…7F: invalid)

KARMA LATCH (CC#31) [Bn, 1F, vv]

This corresponds to the KARMA LATCH switch. It transmits vv=127 [7F] when turned on, or vv=127 [7F] when turned off.

KARMA SW1 (CC#102) [Bn, 66, vv]
KARMA SW2 (CC#103) [Bn, 67, vv]
KARMA SW3 (CC#104) [Bn, 68, vv]
KARMA SW4 (CC#105) [Bn, 69, vv]
KARMA SW5 (CC#106) [Bn, 6A, vv]
KARMA SW6 (CC#107) [Bn, 6B, vv]
KARMA SW7 (CC#108) [Bn, 6C, vv]
KARMA SW8 (CC#109) [Bn, 6D, vv]

This corresponds to the KARMA SWITCH 1–8. It transmits vv=127 [7F] when turned on, or vv=127 [7F] when turned off.

Pad 1–8 control

If you assign the following CC#s to Pads 1–8, the specified CC# will be transmitted when you operate the M3, and the M3 itself will be controlled simultaneously. When these messages are received, the result will be the same as if you operated the M3 itself.

The CC# settings for the pads are made in the Global P2–MIDI CC# Assign page. Normally you will leave these Off. However, you can edit these settings if you need to assign MIDI control change messages to the pads, such as when you want to record pad operations on the internal sequencer or an external MIDI sequencer, or to control the pads from an external MIDI device.

These messages are transmitted and received if the Global P1– MIDI Routing page parameter **Pads MIDI Out** is set to Pad CC / Note. If **Pads MIDI Out** is set to Chord Notes, the "Pad Chords" setting made in each program, combination, song, or in Sampling mode will be transmitted.

Each pad can be assigned any MIDI control change CC#00–CC#119, or a desired MIDI note number. However, you will normally use the default settings that are assigned when you execute the menu command **Reset Controller MIDI Assign** with CC Default. For more information, please see "Reset Controller MIDI Assign" on page 387.

The operations described below are for these CC Default settings.

PAD1 trigger velocity (CC#110) [Bn, 6E, vv]
PAD2 trigger velocity (CC#111) [Bn, 6F, vv]
PAD3 trigger velocity (CC#112) [Bn, 70, vv]
PAD4 trigger velocity (CC#113) [Bn, 71, vv]
PAD5 trigger velocity (CC#114) [Bn, 72, vv]
PAD6 trigger velocity (CC#115) [Bn, 73, vv]
PAD7 trigger velocity (CC#116) [Bn, 74, vv]
PAD8 trigger velocity (CC#117) [Bn, 75, vv]

(n: channel, vv: pad velocity)

These correspond to pads 1–8. When you strike one of the M3' pads, the PAD 1–8 trigger velocity will be transmitted. The same result will occur when these messages are received.

Silencing all notes on a specific channel

All note off (CC#123) [Bn, 7B, 00] (value 00)

When this is received, all currently-sounding notes on that channel will be turned off (as though the keys had been released). However, the release portion of the notes will remain.

All sound off (CC#120) [Bn, 78, 00] (value 00)

When this is received, all currently-sounding notes on that channel will be silenced. While the All Note Off message allows the release portion of the notes to remain, the All Sound Off message will silence the notes immediately.

However, these messages are provided for emergency use, and are not something that you will use while performing.

Resetting all controllers on a specific channel

Reset all controllers (CC#121) [Bn, 79, 00] (value 00)

When this is received, the value of all controllers on that channel will be reset.

Using RPN (Registered Parameter Numbers)

RPN (Registered Parameter Numbers) are a type of message that allow settings to be made in a way that is common between instrument manufacturers. (NRPN (Non-registered Parameter Numbers) and exclusive messages can be freely used in non-compatible ways by different manufacturers and models of instrument.)

RPN messages can be used for editing with the following procedure.

1. **Use RPN MSB (CC#101) [Bn, 65, mm] and RPN LSB (CC#100) [Bn, 64, rr] (n: channel, mm, rr: upper and lower bytes of the parameter number) messages to select the parameter.**
2. **Use data entry MSB (CC#6) [Bn, 06, mm] and data entry LSB (CC#38) [Bn, 26, vv] (n: channel, mm, vv: upper and lower bytes of the value, together expressing 16,384 levels) to specify the value.**

3. **You can use data increment (CC#96) [Bn, 60, 00] or data decrement (CC#97) [Bn, 61, 00] (n: channel, value is fixed at 00) to change the value in steps of one.**

The M3 can receive the following three RPN messages (tuning, transpose, and pitch bend range).

Tuning

RPN fine tune [Bn, 65, 00, 64, 01]

This RPN message can be used to adjust the detuning for a program or timbre (in Combination mode), or for a track (in Sequencer mode).

The procedure is as follows.

1. **[Bn, 65, 00, 64, 01]: Select RPN parameter 01.**
2. **[Bn, 06, mm, 26, vv]: Use data entry to set the value. A value of 8192 [mm, vv=40, 00] is center, 0 [mm, vv=00, 00] is -100 cents, and 16383 [mm, vv=7F, 7F] is +99 cents.**

Note: You can use the universal exclusive Fine Tune message to adjust the overall tuning that corresponds to the **Master Tune** (Global P0: 0–1a) parameter. (See "About system exclusive messages" on page 621)

Transposing

RPN coarse tune [Bn, 65, 00, 64, 02]

This RPN message can be used to adjust the transposition for a program or timbre (in Combination mode), or for a track (in Sequencer mode).

The procedure is as follows.

1. **[Bn, 65, 00, 64, 02]: Select RPN parameter 02.**
2. **[Bn, 06, mm, 26, vv]: Use data entry to set the value. Normally only the upper byte is used.**

A value of 8192 [mm, vv=40, 00] is center, 6656 [mm, vv=34, 00] is –12 semitones, and 9728 [mm, vv=4C, 00] is +12 semitones.

Note: You can use the universal exclusive Coarse Tune message to adjust the overall tuning that corresponds to the **Key Transpose** (Global P0: 0–1a) parameter. (See "About system exclusive messages" on page 621)

Changing the pitch bend range

RPN pitch bend range [Bn, 64, 00, 65, 00]

This RPN message can be used to adjust the pitch bend range for a program or timbre (in Combination mode) or for a track (in Sequencer mode).

The procedure is as follows.

1. **[Bn, 65, 00, 64, 00]: Select RPN parameter 00.**
2. **[Bn, 06, mm, 26, vv]: Use data entry to set the value. Normally only the upper byte is used.**

A value of 0 [mm, vv=00, 00] is +00, and a value of 1536 [mm, vv=0C, 00] is +12 (one octave). Although it is possible to set a negative value for a timbre / track, only positive values can be set using RPN messages.

About system exclusive messages

Since the way in which these messages are used is left up to each manufacturer, they are mainly used to transmit and receive sound data and editing data for parameters that are unique to a particular instrument. The M3's system exclusive message format is [F0, 42, 3n, 70, ff, …. F7]

F0: exclusive status

42: Korg ID

3n: [n=0–F] global MIDI channel 1–16

mm: Future model ID (05: M3-61,0E: M3-73, 17: M3-88, M3-M: 1C)

ff: function ID (type of message)

:

:

F7: end of exclusive

Note: To obtain a copy of the "MIDI Implementation" which includes MIDI System Exclusive format information, please contact your Korg distributor.

Universal system exclusive

Certain of the system exclusive messages are publicly defined for a specific use, and these are called universal system exclusive messages.

The M3 uses the following six universal system exclusive messages.

Inquiry message request [F0, 7E, nn, 06, 01, F7]
Inquiry message [F0, 7E, nn, 06, 02, (nine bytes), F7]

When an inquiry message request is received, the M3 will respond by transmitting an inquiry message that means "I am a Korg M3, with system version …"

GM system on [F0, 7E, nn, 09, 01, F7]

When this message is received in Sequencer mode, the M3 will be initialized for GM playback.

Master volume [F0, 7F, nn, 04, 01, vv, mm, F7]

(vv: lower byte of the value, mm: upper byte of the value, together indicating 16384 steps)

This message is transmitted if you assign Master Volume as the function of the Assignable Pedal or as a Realtime Control Slider 5–8 and operate the controller. This will adjust the overall volume balance without changing the relative volume balance between timbres / tracks. When this message is received, the result will be the same as when the controller is operated.

Master balance [F0, 7F, nn, 04, 02, vv, mm, F7]

(vv: lower byte of the value, mm: upper byte of the value, together indicating 16384 steps, where 8192 is the default position, and lower values will move the sound toward the left)

When this is received, the overall panning will be adjusted without changing the relative panning between timbres / tracks.

Master fine tuning [F0, 7F, nn, 04, 03, vv, mm, F7]

(A value of 8192 [mm, vv=40, 00] is center, 4096 [mm, vv=20, 00] is –50 cents, and 12288 [mm, vv=60, 00] is +50 cents.)

When this is received, the "Master Tune" (Global P0: 0–1a) parameter will be set.

Master coarse tuning [F0, 7F, nn, 04, 04, vv, mm, F7]

(Normally only the upper byte mm is used. A value of 8192 [mm, vv=40, 00] is center, 6656 [mm, vv=34, 00] is –12 semitones, and 9728 [mm, vv=4C, 00] is +12 semitones.)

When this is received, the **Key Transpose** (Global 0–1a) parameter will be set.

Transmitting sound settings data (Data Dump)

Data for programs, combinations, drum kits, global settings, and sequencer data can be transmitted as MIDI System Exclusive messages. The operation of sending this system exclusive data to an external device is called a "data dump."

By performing a data dump, you can store the M3's sounds and settings on an external device, or rewrite the sounds and settings of another M3.

There are the following two types of data dump.

- When you use the **Dump** (Global P1) menu command to dump data, various types of internal memory data will

be transmitted. If this data is received by the M3, the data will be written directly into internal memory, and it will not be necessary to perform the Write operation. (See “Sending SysEx data dumps” on “Receiving SysEx data dumps” on page 385)

- If the **Enable Exclusive** (Global 1–2b) setting is checked, data will also be dumped in response to a Dump Request message. This data is transmitted and received on the global MIDI channel.

  When the M3 receives this data, the data will be written into the edit buffer. If you want to save the data into internal memory, you’ll have to execute the Write operation. This can be done either by executing the Write operation (See “Writing to internal memory” on page 140 of the Operation Guide) on the M3 itself, or by a MIDI System Exclusive program write request, combination write request, drum kit write request, or global setting write request.

Cautions regarding data dumps and sound editing

- After MIDI System Exclusive data has been received and processed, a Data Load Completed message will be transmitted. The control master device must not transmit the next message until this message is received (or until a sufficient interval of time has elapsed).
- When you change use parameter changes to edit, the changes will affect the data in the edit buffer and will not be stored in internal memory unless you Write, so that the changes will be lost if you re-select the program or combination. The Write operation can be performed by a MIDI System Exclusive Program Write Request or Combination Write Request message, in addition to the usual method of using the M3’s switches. For more information, please see “Writing to internal memory” on page 140 of the Operation Guide.

Editing sounds via SysEx

By using various MIDI System Exclusive data dumps, you can rewrite all programs or an individual program. By using parameter change messages, you can edit individual parameters as follows.

Parameter changes

- In Program mode, all parameters other than the program name can be edited.
- In Combination mode, parameters other than the combination name can be edited.
- In Sequencer mode, you can edit the track parameters in P0, 1, 2, 3, 4, and 5, and the P7: KARMA, P8: Insert Effect, and P9: Master / Total Effect parameters. (See “System Exclusive events supported in Sequencer mode” on page 295)

Drum kit parameter change

In Global mode, you can edit drum kit.

Since the other global parameters or Sequencer mode musical data cannot be edited, you will use data dumps to transfer this data.

Data dumping of Sampling mode data is not supported.

The global MIDI channel is used to transmit and receive this data.

First check the **Enable Exclusive** (Global 1–2b) setting to enable transmission and reception of exclusive data. When you switch modes on the M3, a mode change will be transmitted. When you edit individual parameters, parameter change messages will be transmitted.

When these messages are received, the same editing operation will be performed as on the transmitted device.

If notes are “stuck”

If for some reason, notes become “stuck” and will not stop sounding, you can usually stop the sound by changing the mode. If notes played via MIDI are stuck, you can disconnect the MIDI cable.

MIDI transmits a message called Active Sensing [FE] at regular intervals. A device that receives this message will be aware that an external MIDI device is transmitting to it. Subsequently, if no MIDI messages are received for a certain interval of time, the receiving device will decide that the connection has been broken, and will turn off any notes that had been sounded via MIDI and reset its controller values.

Playing the M3 multi-timbrally from an external device

The M3 can be connected to an external device and played multi-timbrally in the following ways.

- MIDI messages from the external device can play a combination (16-part multi-timbral performance). You can change the overall settings (programs, levels, and effects) by using program change messages to switch combinations.
- MIDI messages from the external device can be used to play a song (16-part multi-timbral performance). Overall settings (programs, levels, effects etc.) can be changed by using a Song Select message to switch songs. (Song Select messages can be received if “MIDI Clock”: Global 1–1a is set to External MIDI.)
- MIDI Clock messages from the external device can be used to make the M3 playback a song (set “MIDI Clock” to External MIDI, and run the M3’s sequencer). (“Synchronizing the playback of the KARMA function, Drum Track function or sequencer”) You can change the overall settings (programs, levels, effects) by using song select messages to switch songs.

Note: **MIDI Clock** External USB will operate in the same way as External MIDI. With the Auto setting, an external MIDI clock received at the MIDI IN connector or the USB B connector will automatically cause the M3 to switch to the same method of operation as External MIDI or External USB.

Synchronizing the playback of the KARMA function, Drum Track function or sequencer

The choice of whether the M3 will be the master (the controlling device) or the slave (the controlled device) is made by **MIDI Clock** (Global 1–1a).

Note: When MIDI Clock is set to Auto, the M3 will normally operate in the same way as for the Internal setting. When an external MIDI clock is received from the MIDI IN or USB B connector, the M3 will automatically operate as for the External MIDI setting.

Using the M3 as master and the external MIDI device as slave

Connect the M3’s MIDI OUT connector to the MIDI IN connector of the external MIDI device. Connect the M3’s USB B connector to your computer’s USB port.

- When you set **MIDI Clock** to Internal, the M3 will be the master device, and will transmit MIDI timing clock messages.

  KARMA function and Drum Track function: The tempo can be controlled from the M3.

Performance data will be transmitted via MIDI. (Performance data from the drum track will be transmitted in Program mode if the Drum Track **Prog MIDI Ch** setting (Global 1–1a) is checked. Performance data from the KARMA function and the drum track function in Combination or Sequencer mode will be transmitted from timbres or MIDI tracks whose **Status** is BTH, EXT, or EX2.) An external tone generator connected to MIDI OUT or USB B will sound, and the tempo of an external sequencer can be controlled.

Sequencer: The musical data can be played back and controlled on the M3.

Simultaneously, the sequencer playback will be transmitted via MIDI from MIDI tracks whose **Status** is BTH, EXT, or EX2. An external tone generator connected to MIDI OUT or USB B will sound, and the tempo of an external sequencer can be controlled.

Using the external MIDI device as master and the M3 as slave

Connect the M3's MIDI IN connector to the MIDI OUT connector of the external MIDI device. Connect the M3's USB B connector to your computer's USB port.

- If you use the MIDI connectors to make connections, set **MIDI Clock** to External MIDI. If you use the USB B connector to make connections, set it to External USB. The M3 will be the slave.

  KARMA function and Drum Track function: The tempo will follow the MIDI timing clock. If you playback the external sequencer, the M3's KARMA function or Drum Track function will synchronize to the external timing clock.

  Even if **MIDI Clock** is External MIDI or External USB and the M3 is being controlled from the external device, the performance of the KARMA function or Drum Track function will still be transmitted via MIDI. (Performance data from the drum track will be transmitted in Program mode if the Drum Track **Prog MIDI Ch** setting (Global 1–1a) is checked. Performance data from the KARMA function and the drum track function in Combination or Sequencer mode will be transmitted from timbres or MIDI tracks whose **Status** is BTH, EXT, or EX2.)

  Sequencer: The M3 will not be able to control the performance data; it will be controlled by the external MIDI device connected to MIDI IN or the computer connected to USB B. If you wish to playback the external sequencer to make the M3's sequencer playback in synchronization to the external timing clock, you must first set the same time signature and starting measure locations on both devices.

  Even if **MIDI Clock** is set to External MIDI or External USB and the M3 is being controlled from an external device, musical data will be transmitted by tracks whose **Status** is BTH, EXT, or EX2.

Recording musical data from an external device

There are two ways in which you can play back an external sequencer and record its playback on the M3.

- Set **MIDI Clock** (Global 1–1a) to Internal, begin recording, and then start the external sequencer. With this method, the MIDI messages will be recorded without the two devices being synchronized. Since the incoming musical data will simply be recorded, this method allows the performance to be reproduced faithfully, but since measure divisions etc. will not be kept track of, this method is not suitable if you intend to edit the data later.
- If you set **MIDI Clock** to External MIDI or External USB, the start of recording and the tempo etc. will all be under the control of the external sequencer.
  Since the two devices will be synchronized during the recording process, measure divisions etc. will be accurately preserved. (You will need to set the time signature before recording.) For more information, please see "Multi (multitrack recording)" on page 87 of the Operation Guide.

Recording the MIDI output of the M3's controllers, KARMA function, Drum Track function and internal sequencer to an external sequencer/computer

If you wish to record the MIDI output of the M3's controllers, KARMA function, Drum Track function, and internal sequencer on an external sequencer or computer and use the M3 as the monitoring and playback tone generator while you record, you must turn off the M3's Local Control setting ("Local Control On" Global 1–1a), and set your external sequencer / computer for echo-back (a function by which the data received at MIDI IN is retransmitted without change from MIDI OUT) so that the data from the M3's controllers, KARMA function, Drum Track function and internal sequencer will not be applied in duplicate to the tone generator.

Using an external MIDI sequencer/computer to record performance data from the Drum Track function

Turn off the M3's local control setting. In Program mode, the Drum Track function will transmit performance data if the Drum Track **Prog MIDI Ch** setting (Global 1–1a) is on (checked). By default, this is off (unchecked), so you'll need to turn it on.

In your external sequencer / computer, turn the echo-back setting on. With these settings, the sound generator won't produce duplicate notes, and recording and playback will occur correctly.

Using the Realtime Control Slider 1–8 to record MIDI control changes on an external MIDI sequencer/computer

Set the M3 to Local Control Off. Set the external MIDI sequencer / computer to Echo Back On. With these settings, recording and playback will occur correctly, and the control changes will not be applied to the tone generator in duplicate.

Recording the KARMA function or RPPR function on an external MIDI sequencer/computer

When the KARMA function is on, playing the keyboard or operating the controllers of the M3 will operate and control the KARMA function.

In the same way, the KARMA function will be controlled by MIDI messages received from MIDI IN (if **Enable MIDI In to KARMA Module** in Global 1–2a is turned on).

Notes transmitted from MIDI OUT (USB B) by the KARMA function are controlled as follows, according to the local control setting (**Local Control On** Global 1–1a) and the **Enable KARMA Module to MIDI Out** (Global 1–1b) setting.

In Sequencer mode, when the RPPR function is on, playing the keyboard will cause RPPR to operate. Similarly, the RPPR function will also operate in response to notes received on the MIDI channel of the track selected by **Track Select** (Seq 0–1–1(2)a). Notes will be transmitted by RPPR from MIDI OUT according to the local control setting (**Local Control On**) as described below.

Local Control On: Notes from the KARMA function or RPPR will be transmitted from MIDI OUT (USB B). However, MIDI transmission from the KARMA module is valid only if "Enable KARMA Module to MIDI Out" is on. Normally you will use this setting.

Local Control Off: Notes from the KARMA function or RPPR will not be transmitted from MIDI OUT (USB B). The M3 will sound only in response to MIDI messages received at MIDI IN, or generated by the KARMA function or RPPR.

Setting example 1

Record the note messages generated by the KARMA or RPPR function on the external MIDI sequencer/computer.

Turn on this instrument's KARMA or RPPR function. Set this instrument to Local Control On. Make the following **KARMA External** Routing settings (Global 1–2a).

On your external sequencer or computer, turn the echo back setting Off. When you're recording a performance generated by the KARMA function or RPPR, this setting will prevent duplicate notes from being sounded by the echo-back. (Turn the RPPR function off for playback.)

Setting example 2

Use the external MIDI sequencer/computer to record only the notes that trigger the KARMA or RPPR function, and operate this instrument's KARMA or RPPR function for monitoring while recording, and during playback.

Turn on the M3's KARMA or RPPR function. Set the M3 to Local Control Off. Make the following **KARMA External** Routing settings (Global 1–2a).

Notes generated by the KARMA function or RPPR will not be output. On your external MIDI sequencer or computer, turn the echo back setting On. This allows recording to occur correctly, without the KARMA function or the RPPR function being applied in duplicate.

About GM (General MIDI)

The M3 supports the GM standard. It also supports the GM2 sound map (including bank select) with 256 programs and 9 drum programs provided in ROM banks G, g(1)–g(9), and g(d). (Banks g(1)–g(9) are GM2 variation programs, and g(d) contains drum programs.)

GM is a standard that ensures basic compatibility of sounds and controllers between GM-compatible instruments made by different manufacturers. When using GM with M3, be aware of the following.

- GM System On is supported in Sequencer mode. For more information, please see "GM Initialize" on page 273.
- When you wish to play a GM sequence, or load GM data into a song, set **Bank Map** (Global 0–2a) to GM(2).

About standard MIDI files

Standard MIDI files (SMF) make it possible for different computer programs or musical instruments made by different manufacturers to exchange time-based MIDI data. Each standard MIDI file contains one song. The M3 supports format 0 (type 0) in which all of the MIDI data is combined into one track, and format 1 (type 1) in which the data is separated by track.

When a SMF is loaded into a song in Media mode, the program bank that is selected will differ depending on the **Bank Map** (Global 0–2a) setting. When playing / loading SMF data that conforms to the GM specifications, set "Bank Map" to GM(2).

Sequencer mode

In Media mode when you convert a song into a Standard MIDI File and save it, you can choose either format 0 or format 1.

- If M3 song data that was saved as a format 1 SMF file is loaded into another device, the track configuration may be different than it was before being saved. This is because MIDI tracks that contain no musical data are omitted, and the remaining tracks are moved into the unused tracks. This will not affect the playback itself.
- If song data that was saved by another device as a format 1 SMF file is loaded into the M3, the track configuration may be different than it was before being saved. This is because tracks that contain no musical data are omitted, and the remaining tracks are moved into the unused tracks. This will not affect the playback itself.

When exchanging sequence data between two M3, we recommend that you save the sequence data in the M3's native format ("Save SEQ").

When sequence data is saved in the M3's native format, all of the settings and patterns unique to the M3 will be saved, which will ensure a higher level of reproducibility than when the data is saved as a Standard MIDI File ("Save to Std MIDI File").

Parameter changes and other recorded data is included in the song data as System Exclusive events, so it can be saved to or loaded from media as usual. Exclusive messages can also be loaded or saved as SMF (Standard MIDI File) data ("Load Standard MIDI File," "Save Song as Standard MIDI File"). This allows recorded System Exclusive events to be saved as SMF data, or exclusive messages included in SMF data to be converted into song data.

During playback, this data can be transmitted to an external MIDI device, or used to control track parameters or effect parameters of the song.

M3 MIDI IMPLEMENTATION

12, Jan, 2007

Consult your local Korg dealer for more infomation on MIDI System Exclusive implementation.

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H]	Third [D]	Description	(Transmitted by ....)		ENA
8n	kk (kk)	40	(64)	Note Off	(Key Off)	*1	A
9n	kk (kk)	vv	(vv)	Note On (vv)=1-127	(Key On)	*1	A
An	kk (kk)	vv	(vv)	Poly Key Pressure	(Sequence data)		T,Q
Bn	00 (00)	mm	(mm)	Bank Select(MSB)	(BANK keys, Prog/Combi change)	*2	PB
Bn	01 (01)	vv	(vv)	Modulation1	(Joystick +Y, XY/ASW/Pdl)		C
Bn	02 (02)	vv	(vv)	Modulation2	(Joystick -Y, XY/ASW/Pdl)		C
Bn	04 (04)	vv	(vv)	Foot Pedal	(Pdl = Foot Pedal)		C
Bn	05 (05)	vv	(vv)	Portamento Time	(Sldr/XY/Pdl = Porta.Time, S Chg)		C
Bn	07 (07)	vv	(vv)	Volume	(Sldr/XY/Pdl = Volume, S/C Chg)		C
Bn	08 (08)	vv	(vv)	Post IFX Panpot	(Sldr/XY/Pdl = IFX Pan, S Chg)		C
Bn	0A (10)	vv	(vv)	Panpot	(Sldr/XY/Pdl = Pan, S Chg)		C
Bn	0B (11)	vv	(vv)	Expression	(Sldr/XY/Pdl = Expression)		C
Bn	0C (12)	vv	(vv)	Effect Control 1	(Sldr/XY/Pdl = FX Control1)		C
Bn	0D (13)	vv	(vv)	Effect Control 2	(Sldr/XY/Pdl = FX Control2)		C
Bn	0E (14)	vv	(vv)		(KARMA ON/OFF, ASW)		C
Bn	10 (16)	vv	(vv)	Multi Purpose Ctrl1	(Ribbon Controller, XY/ASW/Pdl)		C
Bn	11 (17)	vv	(vv)	Multi Purpose Ctrl2	(Sldr = Slider Mod5, XY)		C
Bn	12 (18)	vv	(vv)	Multi Purpose Ctrl3	(Value Slider, XY/ASW/Pdl)		C
Bn	13 (19)	vv	(vv)	Multi Purpose Ctrl4	(Sldr = Slider Mod6, XY)		C
Bn	14 (20)	vv	(vv)		(Sldr = Slider Mod7, XY)		C
Bn	15 (21)	vv	(vv)		(Sldr = Slider Mod8, XY)		C
Bn	16 (22)	vv	(vv)		(KARMA Slider1, ASW/Pdl)	*3	C
Bn	17 (23)	vv	(vv)		(KARMA Slider2, ASW/Pdl)	*3	C
Bn	18 (24)	vv	(vv)		(KARMA Slider3, ASW/Pdl)	*3	C
Bn	19 (25)	vv	(vv)		(KARMA Slider4, ASW/Pdl)	*3	C
Bn	1A (26)	vv	(vv)		(KARMA Slider5, ASW/Pdl)	*3	C
Bn	1B (27)	vv	(vv)		(KARMA Slider6, ASW/Pdl)	*3	C
Bn	1C (28)	vv	(vv)		(KARMA Slider7, ASW/Pdl)	*3	C
Bn	1D (29)	vv	(vv)		(KARMA Slider8, ASW/Pdl)	*3	C
Bn	1E (30)	vv	(vv)		(KARMA SCENE, ASW)	*3	C
Bn	1F (31)	vv	(vv)		(KARMA LATCH, ASW)	*3	C
Bn	20 (32)	bb	(bb)	Bank Select(LSB)	(BANK keys, Prog/Combi change)	*2	PB
Bn	40 (64)	vv	(vv)	Hold1	(Damper)		C
Bn	41 (65)	00/7F	(00/127)	Portamento Off/On	(SW1/SW2/ASW = Porta.SW, S Chg)		C
Bn	42 (66)	00/7F	(00/127)	Sostenuto Off/On	(ASW = Sostenuto)		C
Bn	43 (67)	vv	(vv)	Soft Pedal	(ASW = Soft)		C
Bn	46 (70)	vv	(vv)	Sound Controller 1	(Sldr/XY = F/A Sustain)		C
Bn	47 (71)	vv	(vv)	Sound Controller 2	(Sldr2, Sldr/XY = Resonance, ASW/Pdl)		C
Bn	48 (72)	vv	(vv)	Sound Controller 3	(Sldr4, Sldr/XY = F/A Release, ASW/Pdl)		C
Bn	49 (73)	vv	(vv)	Sound Controller 4	(Sldr/XY = F/A Attack)		C
Bn	4A (74)	vv	(vv)	Sound Controller 5	(Sldr1, Sldr/XY = Filter Cutoff, ASW/Pdl)		C
Bn	4B (75)	vv	(vv)	Sound Controller 6	(Sldr/XY = F/A Decay)		C
Bn	4C (76)	vv	(vv)	Sound Controller 7	(Sldr/XY = Pitch LFO1 Spd)		C
Bn	4D (77)	vv	(vv)	Sound Controller 8	(Sldr/XY = Pitch LFO1 Dep)		C
Bn	4E (78)	vv	(vv)	Sound Controller 9	(Sldr/XY = Pitch LFO1 Dly)		C
Bn	4F (79)	vv	(vv)	Sound Controller 10	(Sldr3, Sldr/XY = Filter EG Int, ASW/Pdl)		C
Bn	50 (80)	00/7F	(00/127)	Multi Purpose Ctrl5	(SW1/Sldr/XY = SW1 Mod.)		C
Bn	51 (81)	00/7F	(00/127)	Multi Purpose Ctrl6	(SW2/Sldr/XY = SW2 Mod.)		C
Bn	52 (82)	00/7F	(00/127)	Multi Purpose Ctrl7	(ASW/Sldr/XY = Foot SW)		C
Bn	53 (83)	vv	(vv)	Multi Purpose Ctrl8	(Sldr/XY = MIDI CC#83)		C
Bn	55 (85)	vv	(vv)		(XY = XY +X Mod.)		C
Bn	56 (86)	vv	(vv)		(XY = XY -X Mod.)		C
Bn	57 (87)	vv	(vv)		(XY = XY +Y Mod.)		C
Bn	58 (88)	vv	(vv)		(XY = XY -Y Mod.)		C
Bn	5B (91)	vv	(vv)	Effect 1 Depth	(Sldr/XY/Pdl = MFX Send2, S Chg)		C
Bg	5C (92)	00/7F	(00/127)	Effect 2 Depth	(All Insert FX Off/On)		C
Bn	5D (93)	vv	(vv)	Effect 3 Depth	(Sldr/XY/Pdl = MFX Send1, S Chg)		C
Bg	5E (94)	00/7F	(00/127)	Effect 4 Depth	(Master FX1/2 Off/On)		C
Bg	5F (95)	00/7F	(00/127)	Effect 5 Depth	(Total FX Off/On)		C
Bn	66 (102)	vv	(vv)		(KARMA SW1, ASW)	*3	C
Bn	67 (103)	vv	(vv)		(KARMA SW2, ASW)	*3	C
Bn	68 (104)	vv	(vv)		(KARMA SW3, ASW)	*3	C
Bn	69 (105)	vv	(vv)		(KARMA SW4, ASW)	*3	C
Bn	6A (106)	vv	(vv)		(KARMA SW5, ASW)	*3	C
Bn	6B (107)	vv	(vv)		(KARMA SW6, ASW)	*3	C
Bn	6C (108)	vv	(vv)		(KARMA SW7, ASW)	*3	C
Bn	6D (109)	vv	(vv)		(KARMA SW8, ASW)	*3	C
Bn	6E (110)	vv	(vv)		(Pad1, ASW)	*3	C
Bn	6F (111)	vv	(vv)		(Pad2, ASW)	*3	C
Bn	70 (112)	vv	(vv)		(Pad3, ASW)	*3	C
Bn	71 (113)	vv	(vv)		(Pad4, ASW)	*3	C
Bn	72 (114)	vv	(vv)		(Pad5, ASW)	*3	C
Bn	73 (115)	vv	(vv)		(Pad6, ASW)	*3	C
Bn	74 (116)	vv	(vv)		(Pad7, ASW)	*3	C
Bn	75 (117)	vv	(vv)		(Pad8, ASW)	*3	C
Bn	76 (118)	vv	(vv)		(X-Y Control Mode X)	*3	C
Bn	77 (119)	vv	(vv)		(X-Y Control Mode Y)	*3	C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(Sequencer data)		Q
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(Sldr = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(XY CC = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(KARMA RTC = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(Pads = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(External Mode = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-119	(KARMA GE data = MIDI CC#00-119)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-95	(KARMA CC Offset = MIDI CC#00-95)	*4	C
Cn	pp (pp)	--	--	Program Change	(Prog/Combi change)	*2	P
Dn	vv (vv)	--	--	Channel Pressure	(After Touch)		T
En	bb (bb)	bb	(bb)	Bender Change	(Joy Stick X)		C

```
Pdl  :    Assignable Pedal
ASW  :    Assignable Switch
Sldr :    Realtime Slider5,6,7,8
XY   :    X-Y CC Control

S Chg :   Transmitted when change a Song No.(Seq. mode). (Status = EXT,EX2,BTH)
C/S Chg : Transmitted when change a Combination or Song No.(Seq. mode). (Status = EXT,EX2 or BTH)

n :       MIDI Channel No. (0 - 15) •••••• Usually Global Channel.
          When in Combination/Sequencer mode, each timbre's/track's channel. (Status = EXT,EX2 or BTH)
g :       Always Global Channel No. (0 - 15)
ENA = A : Always Enabled.
      C : Enabled when Enable Control Change in Global mode is checked.
      P : Enabled when Enable Program Change in Global mode is checked.
      PB: Enabled when Enable Program and Bank Change in Global mode is checked.
      T : Enabled when Enable After Touch in Global mode is checked.
      Q : Enabled when Sequencer is playing(transmit), recording(receive)


*1 : kk = 24 - 108 : M3 61Keys (61keys + Transpose)
       = 12 - 108 : M3 73Keys (73keys + Transpose)
       = 09 - 120 : M3 88Keys (88keys + Transpose)
       = 00 - 127 : Sequencer and KARMA Module


*2 : Program          Combination          MIDI Out[Hex]  (Bank Map is KORG)    (Bank Map is GM(2))
Bank INT-A 000 - 127 : Bank INT-A 000 - 127 : mm,bb,pp      = 00,00,    00 - 7F   = 3F,00,    00 - 7F
     INT-B 000 - 127 :      INT-B 000 - 127 :                 00,01,    00 - 7F     3F,01,    00 - 7F
     INT-C 000 - 127 :      INT-C 000 - 127 :                 00,02,    00 - 7F     3F,02,    00 - 7F
     INT-D 000 - 127 :      INT-D 000 - 127 :                 00,03,    00 - 7F     3F,03,    00 - 7F
     INT-E 000 - 127 :      INT-E 000 - 127 :                 00,04,    00 - 7F     3F,04,    00 - 7F
     INT-F 000 - 127 :      INT-F 000 - 127 :                 00,05,    00 - 7F     3F,05,    00 - 7F
                     :      INT-G 000 - 127 :                 00,06,    00 - 7F     3F,06,    00 - 7F

       GM 001 - 128 :                                        79,00,    00 - 7F     79,00,    00 - 7F
 g(1)-(9) 001 - 128 :                                        79,01-09, 00 - 7F     79,01-09, 00 - 7F
    g(d) 001 - 128 :                                        78,00,    00 - 7F     78,00,    00 - 7F

   USER-A 000 - 127 :    USER-A 000 - 127 :                 00,08,    00 - 7F     3F,08,    00 - 7F
   USER-B 000 - 127 :    USER-B 000 - 127 :                 00,09,    00 - 7F     3F,09,    00 - 7F
   USER-C 000 - 127 :    USER-C 000 - 127 :                 00,0A,    00 - 7F     3F,0A,    00 - 7F
   USER-D 000 - 127 :    USER-D 000 - 127 :                 00,0B,    00 - 7F     3F,0B,    00 - 7F
   USER-E 000 - 127 :    USER-E 000 - 127 :                 00,0C,    00 - 7F     3F,0C,    00 - 7F
   USER-F 000 - 127 :    USER-F 000 - 127 :                 00,0D,    00 - 7F     3F,0D,    00 - 7F
   USER-G 000 - 127 :    USER-G 000 - 127 :                 00,0E,    00 - 7F     3F,0E,    00 - 7F
```

*3 : When CC# by "CC Default" is assigned to the KARMA Controllers, X-Y Mode X, Y and Pads in Global Mode.

Reset Controller MIDI Assign = CC Default

KARMA ON/OFF	:CC#14
KARMA Slider1	:CC#22
KARMA Slider2	:CC#23
KARMA Slider3	:CC#24
KARMA Slider4	:CC#25
KARMA Slider5	:CC#26
KARMA Slider6	:CC#27
KARMA Slider7	:CC#28
KARMA Slider8	:CC#29
KARMA SCENE	:CC#30
KARMA LATCH	:CC#31
KARMA SW1	:CC#102
KARMA SW2	:CC#103
KARMA SW3	:CC#104
KARMA SW4	:CC#105
KARMA SW5	:CC#106
KARMA SW6	:CC#107
KARMA SW7	:CC#108
KARMA SW8	:CC#109
Pad1	:CC#110
Pad2	:CC#111
Pad3	:CC#112
Pad4	:CC#113
Pad5	:CC#114
Pad6	:CC#115
Pad7	:CC#116
Pad8	:CC#117
X-Y Mode X	:CC#118
X-Y Mode Y	:CC#119

*4 : Transmitted when turn KARMA On.
Transmitted when change a GE. (KARMA ON/OFF = On)
Transmitted when change a Program, Combination ot Song No.(Seq. mode) (KARMA ON/OFF = On)

1-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Transmitted when)
F2	ss (ss)	tt (tt)	Song Position Pointer ss : Least significant [LSB] *5 tt : Most significant [MSB] *5
F3	ss (ss)		Song Select (Song or Cue List is selected) ss : Song(0-127)

Transmits Song Position Pointer message when in Sequencer mode. (Internal Clock)
Transmits Song Select message when in Sequencer mode. (Internal Clock)

*5 : For example, if time signature is 4/4 or 8/8, tt,ss = 00,10 means one measure.

1-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description	(Transmitted when ...)	
F8	Timing Clock	(Always in Prog/Combi/Seq mode)	*6
FA	Start	(START in Seq mode)	*6
		(Trigger KARMA in Prog/Combi mode)	*6, *7
FB	Continue	(Continue START in Seq mode)	*6
FC	Stop	(STOP in Seq mode)	*6
		(Trigger KARMA in Prog/Combi mode)	*6, *7
FE	Active Sensing	(Always)	

*6 Transmits these messages when MIDI Clock in Global mode is Internal.
*7 Transmits these messages when Enable Start/Stop Out in Prog/Combi in Global mode is Enabled.

1-4 SYSTEM EXCLUSIVE

1-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUlRY REPLY (Transmits when received a INQUIRY MESSAGE REQUEST)
[F0,7E,0g,06,02,42,75,00,mm,00,vv,ww,xx,00,F7]

3rd byte	g	: Global Channel
6th byte	42	: KORG ID
7th byte	75	: M3 series ID
9th byte	mm	: M3 61Keys member code mm = 05
		M3 73Keys member code mm = 0E
		M3 88Keys member code mm = 17
		M3 Module member code mm = 1C
11th byte	vv	: System Version 1st (1 -)
12th byte	ww	: System Version 2nd (0 -)
13th byte	xx	: System Version 3rd (0 -)

(i.e. Version 1.0.2: vv=01, ww=00, xx=02)

1-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume
[F0,7F,0g,04,01,vv,mm,F7]

3rd byte	g	: Global Channel
6th byte	vv	: Value(LSB)
7th byte	mm	: Value(MSB)
	mm,vv = 00,00 - 7F,7F	: Min - Max

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H]	Third [D]	Description (Use .....)	ENA
8n	kk (kk)	xx	(xx)	Note Off	A
9n	kk (kk)	00	00)	Note Off	A
9n	kk (kk)	vv	(vv)	Note On (vv) = 1-127	A
An	kk (kk)	vv	(vv)	Poly Key Pressure (as AMS)	T,Q
Bn	00 (00)	mm	(mm)	Bank Select(MSB) (for Prog/Combi change) *1	P
Bn	01 (01)	vv	(vv)	Modulation1 (as Joy Stick +Y)	C
Bn	02 (02)	vv	(vv)	Modulation2 (as Joy Stick -Y)	C
Bn	04 (04)	vv	(vv)	Foot Pedal (as AMS & FX Dmod Src = Foot Pedal)	C
Bn	05 (05)	vv	(vv)	Portamento Time	C
Bn	06 (06)	vv	(vv)	Data Entry (MSB) (for RPC edit)	C
Bn	07 (07)	vv	(vv)	Volume	C
Bn	08 (08)	vv	(vv)	Balance Control (for Post IFX Panpot control) *2	C
Bn	0A (10)	vv	(vv)	Panpot	C
Bn	0B (11)	vv	(vv)	Expression	C
Bn	0C (12)	vv	(vv)	Effect Control 1 (as FX Dmod Src = Fx Control1)	C
Bn	0D (13)	vv	(vv)	Effect Control 2 (as FX Dmod Src = Fx Control2)	C
Bn	0E (14)	vv	(vv)	(as KARMA ON/OFF) *4	C
Bn	10 (16)	vv	(vv)	Multi Purpose Ctrl1 (as Ribbon Controller)	C
Bn	11 (17)	vv	(vv)	Multi Purpose Ctrl2 (as AMS & FX Dmod Src = Slider Mod5)	C
Bn	12 (18)	vv	(vv)	Multi Purpose Ctrl3 (as Value Slider)	C
Bn	13 (19)	vv	(vv)	Multi Purpose Ctrl4 (as AMS & FX Dmod Src = Slider Mod6)	C
Bn	14 (20)	vv	(vv)	(as AMS & FX Dmod Src = Slider Mod7)	C
Bn	15 (21)	vv	(vv)	(as AMS & FX Dmod Src = Slider Mod8)	C
Bn	16 (22)	vv	(vv)	(as KARMA Slider1) *4	C
Bn	17 (23)	vv	(vv)	(as KARMA Slider2) *4	C
Bn	18 (24)	vv	(vv)	(as KARMA Slider3) *4	C
Bn	19 (25)	vv	(vv)	(as KARMA Slider4) *4	C
Bn	1A (26)	vv	(vv)	(as KARMA Slider5) *4	C
Bn	1B (27)	vv	(vv)	(as KARMA Slider6) *4	C
Bn	1C (28)	vv	(vv)	(as KARMA Slider7) *4	C
Bn	1D (29)	vv	(vv)	(as KARMA Slider8) *4	C
Bn	1E (30)	vv	(vv)	(as KARMA SCENE1...8 Control) *4	C
Bn	1F (31)	vv	(vv)	(as KARMA LATCH) *4	C
Bn	20 (32)	bb	(bb)	Bank Select(LSB) (for Prog / Combi change) *1	P
Bn	26 (38)	vv	(vv)	Data Entry (LSB) (for RPC edit)	C
Bn	40 (64)	vv	(vv)	Hold1 (as Damper)	C
Bn	41 (65)	≤3F/≥40	(≤63/≥64)	Portamento Off/On	C
Bn	42 (66)	≤3F/≥40	(≤63/≥64)	Sostenuto Off/On	C
Bn	43 (67)	vv	(vv)	Soft Pedal	C
Bn	46 (70)	vv	(vv)	Sound Controller 1 (for Sustain Level control)	C
Bn	47 (71)	vv	(vv)	Sound Controller 2 (for Resonance control)	C
Bn	48 (72)	vv	(vv)	Sound Controller 3 (for Release Time control)	C
Bn	49 (73)	vv	(vv)	Sound Controller 4 (for Attack Time control)	C

Status [Hex]	Second [H] [D]	Third [H]	Third [D]	Description (Use .....)		ENA
Bn	4A (74)	vv	(vv)	Sound Controller 5	(for Filter Cutoff control)	C
Bn	4B (75)	vv	(vv)	Sound Controller 6	(for Decay Time control)	C
Bn	4C (76)	vv	(vv)	Sound Controller 7	(for LFO1 Speed control)	C
Bn	4D (77)	vv	(vv)	Sound Controller 8	(for LFO1 Pitch Depth control)	C
Bn	4E (78)	vv	(vv)	Sound Controller 9	(for LFO1 Delay control)	C
Bn	4F (79)	vv	(vv)	Sound Controller 10	(for Filter EG Intencity control)	C
Bn	50 (80)	vv	(vv)	Multi Purpose Ctrl5	(as AMS & FX Dmod Src = SW 1)	C
Bn	51 (81)	vv	(vv)	Multi Purpose Ctrl6	(as AMS & FX Dmod Src = SW 2)	C
Bn	52 (82)	vv	(vv)	Multi Purpose Ctrl7	(as AMS & FX Dmod Src = Foot Switch)	C
Bn	53 (83)	vv	(vv)	Multi Purpose Ctrl8	(as AMS & FX Dmod Src = CC#83)	C
Bn	55 (85)	vv	(vv)		(as AMS & FX Dmod Src = XY Mod +X)	C
Bn	56 (86)	vv	(vv)		(as AMS & FX Dmod Src = XY Mod -X)	C
Bn	57 (87)	vv	(vv)		(as AMS & FX Dmod Src = XY Mod +Y)	C
Bn	58 (88)	vv	(vv)		(as AMS & FX Dmod Src = XY Mod -Y)	C
Bn	5B (91)	vv	(vv)	Effect 1 Depth	(for Send 2 Level control)	C
Bg	5C (92)	00/≠00	(00/≠000)	Effect 2 Depth	(for All Insert FX Off/On)	C
Bn	5D (93)	vv	(vv)	Effect 3 Depth	(for Send 1 Level control)	C
Bg	5E (94)	00/≠00	(00/≠000)	Effect 4 Depth	(for Master FX1,2 Off/On)	C
Bg	5F (95)	00/≠00	(00/≠000)	Effect 5 Depth	(for Total FX Off/On)	C
Bn	60 (96)	00	(00)	Data Increment	(for RPC edit)	C
Bn	61 (97)	00	(00)	Data Decrement	(for RPC edit)	C
Bn	64 (100)	0r	(0r)	RPN Param No. (LSB)	(for RPN select) *3	C
Bn	65 (101)	00	(00)	RPN Param No. (MSB)	(for RPN select) *3	C
Bn	66 (102)	≤3F/≥40	(≤63/≥64)		(as KARMA SW1) *4	C
Bn	67 (103)	≤3F/≥40	(≤63/≥64)		(as KARMA SW2) *4	C
Bn	68 (104)	≤3F/≥40	(≤63/≥64)		(as KARMA SW3) *4	C
Bn	69 (105)	≤3F/≥40	(≤63/≥64)		(as KARMA SW4) *4	C
Bn	6A (106)	≤3F/≥40	(≤63/≥64)		(as KARMA SW5) *4	C
Bn	6B (107)	≤3F/≥40	(≤63/≥64)		(as KARMA SW6) *4	C
Bn	6C (108)	≤3F/≥40	(≤63/≥64)		(as KARMA SW7) *4	C
Bn	6D (109)	≤3F/≥40	(≤63/≥64)		(as KARMA SW8) *4	C
Bn	6E (110)	vv	(vv)		(as Pad1 (vv) = 1-127 Velocity) *4	C
Bn	6F (111)	vv	(vv)		(as Pad2 (vv) = 1-127 Velocity) *4	C
Bn	70 (112)	vv	(vv)		(as Pad3 (vv) = 1-127 Velocity) *4	C
Bn	71 (113)	vv	(vv)		(as Pad4 (vv) = 1-127 Velocity) *4	C
Bn	72 (114)	vv	(vv)		(as Pad5 (vv) = 1-127 Velocity) *4	C
Bn	73 (115)	vv	(vv)		(as Pad6 (vv) = 1-127 Velocity) *4	C
Bn	74 (116)	vv	(vv)		(as Pad7 (vv) = 1-127 Velocity) *4	C
Bn	75 (117)	vv	(vv)		(as Pad8 (vv) = 1-127 Velocity) *4	C
Bn	76 (118)	vv	(vv)		(as XY Control Mode X) *4	C
Bn	77 (119)	vv	(vv)		(as XY Control Mode Y) *4	C
Bn	cc (cc)	vv	(vv)	Control data	(for Seq. recording (cc) = 0-119)	C,Q
Bn	78 (120)	00	(00)	All Sound Off		C
Bn	79 (121)	00	(00)	Reset All Controllers		C
Bn	7A (122)	00/7F	(00/127)	Local Control Off/On		A
Bn	7B (123)	00	(00)	All Notes Off		A
Bn	7C (124)	00	(00)	Omni Mode Off	(as All Notes Off)	A
Bn	7D (125)	00	(00)	Omni Mode On	(as All Notes Off)	A
Bn	7E (126)	≤10	(≤16)	Mono Mode On	(as All Notes Off)	A
Bn	7F (127)	00	(00)	Poly mode On	(as All Notes Off)	A
Cn	pp (pp)	--	--	Program Change	(for Prog/Combi change) *1	P
Dn	vv (vv)	--	--	Channel Pressure	(as After Touch)	T
En	bb (bb)	bb	(bb)	Bender Change		C

AMS : Alternate Modulation Source
FX Dmod Src : Effect Dynamic Modulation Source

n : MIDI Channel No. (0 - 15) •••••• Usually Global Channel.
When in Combination/Sequencer mode, each timbre's/track's channel.(Status is INT or BTH)
For KARMA Module input in Combination/Sequencer mode, Input Channel of each KARMA Module
g : Always Global Channel No. (0 - 15)
x : Random
ENA : Same as Transmitted data

*1 : When Bank Map in Global mode is KORG;

MIDI In mm,bb,pp =	[Hex]		Program	Combination
	00,00,	00 - 7F	: Bank INT-A 000 - 127	: Bank INT-A 000 - 127
	00,01,	00 - 7F	: INT-B 000 - 127	: INT-B 000 - 127
	00,02,	00 - 7F	: INT-C 000 - 127	: INT-C 000 - 127
	00,03,	00 - 7F	: INT-D 000 - 127	: INT-D 000 - 127
	00,04,	00 - 7F	: INT-E 000 - 127	: INT-E 000 - 127
	00,05,	00 - 7F	: INT-F 000 - 127	: INT-F 000 - 127
	00,06,	00 - 7F	:	: INT-G 000 - 127
	00,08,	00 - 7F	: USER-A 000 - 127	: USER-A 000 - 127
	00,09,	00 - 7F	: USER-B 000 - 127	: USER-B 000 - 127
	00,0A,	00 - 7F	: USER-C 000 - 127	: USER-C 000 - 127
	00,0B,	00 - 7F	: USER-D 000 - 127	: USER-D 000 - 127
	00,0C,	00 - 7F	: USER-E 000 - 127	: USER-E 000 - 127
	00,0D,	00 - 7F	: USER-F 000 - 127	: USER-F 000 - 127
	00,0E,	00 - 7F	: USER-G 000 - 127	: USER-G 000 - 127
	79,00,	00 - 7F	: G 001 - 128	
	79,01-09,	00 - 7F	: g(1)-g(9) 001 - 128	
	78,00,	00 - 7F	: g(d) 001 - 128	
	38,00,	00 - 7F	: G 001 - 128	
	3E,00,	00 - 7F	: g(d) 001 - 128	

When Bank Map in Global mode is GM(2);

MIDI In [Hex] mm,bb,pp =			Program	Combination
	3F,00,	00 - 7F	: Bank INT-A 000 - 127	: Bank INT-A 000 - 127
	3F,01,	00 - 7F	: INT-B 000 - 127	: INT-B 000 - 127
	3F,02,	00 - 7F	: INT-C 000 - 127	: INT-C 000 - 127
	3F,03,	00 - 7F	: INT-D 000 - 127	: INT-D 000 - 127
	3F,04,	00 - 7F	: INT-E 000 - 127	: INT-E 000 - 127
	3F,05,	00 - 7F	: INT-F 000 - 127	: INT-F 000 - 127
	3F,06,	00 - 7F	:	: INT-G 000 - 127
	3F,08,	00 - 7F	: USER-A 000 - 127	: USER-A 000 - 127
	3F,09,	00 - 7F	: USER-B 000 - 127	: USER-B 000 - 127
	3F,0A,	00 - 7F	: USER-C 000 - 127	: USER-C 000 - 127
	3F,0B,	00 - 7F	: USER-D 000 - 127	: USER-D 000 - 127
	3F,0C,	00 - 7F	: USER-E 000 - 127	: USER-E 000 - 127
	3F,0D,	00 - 7F	: USER-F 000 - 127	: USER-F 000 - 127
	3F,0E,	00 - 7F	: USER-G 000 - 127	: USER-G 000 - 127
	79,00,	00 - 7F	: G 001 - 128	
	79,01-09,	00 - 7F	: g(1)-g(9) 001 - 128	
	78,00,	00 - 7F	: g(d) 001 - 128	
	00,00,	00 - 7F	: G 001 - 128	
	38,00,	00 - 7F	: G 001 - 128	
	3E,00,	00 - 7F	: g(d) 001 - 128	
	3F,7F,	00 - 7F	: Mute (KORG MUTE)	

*2 : When in Program/Sampling mode, Global channel.
When in Combination/Sequencer mode, each IFX's channel.

*3 : r = 0 : Pitch Bend Sensitivity (Bend Range)
= 1 : Fine Tune (Detune)
= 2 : Coarse Tune (Transpose)

For drum program, both of Fine Tune and Coase Tune affect to Detune.
Data Entry LSB value has no effect for Pitch Bend Sensitivity and Coarse Tune.

*4 : When CC# by "CC Default" is assigned to the KARMA Controllers, XY Mode X, Y and Pads in Global Mode.

n : When in Program/Combination mode, Global channel.
When in Sequencer mode, current selected track's channel.

2-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Use for .....)
F2	ss (ss)	tt (tt)	Song Position Pointer (Location) *6 ss : Least significant [LSB] tt : Most significant [MSB]
F3	ss (ss)		Song Select (Song or Cue List select) ss : Song(0-127) No.

Receive when in Sequencer mode.

2-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Use for.....)
F8	Timing Clock (Tempo, AMS & FX Dmod Src) *5
FA	Start (Seq Start & KARMA Control) *6
FB	Continue (Seq Continue start & KARMA Control) *6
FC	Stop (Seq Stop & KARMA Control) *6
FE	Active Sensing (MIDI Connect check)

*5 Receive when MIDI Clock in Global mode is External MIDI.
*6 Receive when MIDI Clock in Global mode is External MIDI
and Receive Ext. Realtime Commands in Global mode is checked.

2-4 SYSTEM EXCLUSIVE

2-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

```
DEVICE INQUlRY ( When received this message, transmits INQUlRY MESSAGE REPLY )
[ F0,7E,nn,06,01,F7 ] 3rd byte nn : Channel = 0 - F : Global Channel
                                          = 7F    : Any Channel

GM System On ( Receive when in Sequencer mode )
[ F0,7E,nn,09,01,F7 ] 3rd byte nn : Channel = 0 - F : Global Channel
                                          = 7F    : Any Channel
```

2-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

```
Master Volume
[ F0,7F,0g,04,01,vv,mm,F7 ] 3rd byte  g : Global Channel
                            6th byte vv : Value(LSB)
                            7th byte mm : Value(MSB)
                                    mm,vv = 00,00 - 7F,7F : Min - Max

Master Balance
[ F0,7F,0g,04,02,vv,mm,F7 ] 3rd byte  g : Global Channel
                            6th byte vv : Value(LSB)
                            7th byte mm : Value(MSB)
                            mm,vv = 00,00:Left, 40,00:Center, 7F,7F:Right

Master Fine Tune ( Control Master Tune(cent) in Global )
[ F0,7F,0g,04,03,vv,mm,F7 ] 3rd byte  g : Global Channel
                            6th byte vv : Value(LSB)
                            7th byte mm : Value(MSB)
                                    mm,vv = 20,00:-50, 40,00:+00, 60,00:+50

Master Coarse Tune ( Control Transpose (chromatic step) in Global )
[ F0,7F,0g,04,04,vv,mm,F7 ] 3rd byte g : Global Channel
                            6th byte vv : Value(LSB)
                            7th byte mm : Value(MSB)
                                    mm,vv = 34,00:-12, 40,00:+00, 4C,00:+12
```

Media mode information

AIFF and WAVE format details: importing

AIFF files

When data is loaded into the M3, the following four chunks are referenced: Common chunk, Sound Data chunk, Marker chunk, and Instrument chunk. Other chunks are ignored.

Restrictions on the parameters in each chunk are described below.

Common chunk

Only one (mono) or two (stereo) channels are supported. Sample sizes of 1–16 bits are supported.

If the sample data is 8 bits or less, it will be loaded as 16 bit data with the lower 8 bits always at 0.

Sound Data chunk

Offset and block size are ignored. (Block-Aligning Sound Data is not supported.)

Marker chunk

Up to eight markers are supported. The ninth and subsequent markers will be ignored.

Instrument chunk

If the loop play mode is ForwardBackwardLooping, this will be handled as ForwardLooping.
baseNote, detune, lowNote, highNote, lowVelocity, highVelocity, gain, and releaseLoop will be ignored.

WAVE files

When loading, the M3 references the Format Chunk, Sample Chunk, and Wave Data. Limitations are discussed below.

Format chunk

Standard PCM format is the only format category that is supported.

Only one (mono) or two (stereo) channels are supported.

Sample sizes of 1–16 bits are supported. If the sample data is 8 bits or less, it will be loaded as 16 bit data with the lower 8 bits always at 0.

Sample Chunk

Only the loop data is referenced. If there is multiple loop data, the loop with the greatest number of loop playback times (Play Count) will be used. Even if the Type is Alternating or Backward, it will be handled as Forward Loop.

Wave data

The Wave List chunk is not supported.

AIFF and WAVE format details: exporting

AIFF files

When exporting, the M3 will use the Common Chunk, Sound Data Chunk, Marker Chunk, and Instrument Chunk.

Limitations on the parameters within each chunk are discussed below.

Common Chunk

The number of channels is fixed at 1 (mono).

The sample size is fixed at 16 bits.

Marker Chunk

Two markers are used as Loop Start Address and End Address respectively.

Instrument Chunk

The loop play mode is fixed at Forward Looping.

Zone data of the multisamples will not be exported.

WAVE files

When exporting, the M3 will use the Format Chunk, Sample Chunk, and Wave Data. Restrictions are given below.

Format Chunk

The format category is fixed at standard PCM format.

The number of channels is 1 (mono) or 2 (stereo), and is fixed at 1 (mono) for export.

The sample size is fixed at 16 bits.

Sample Chunk

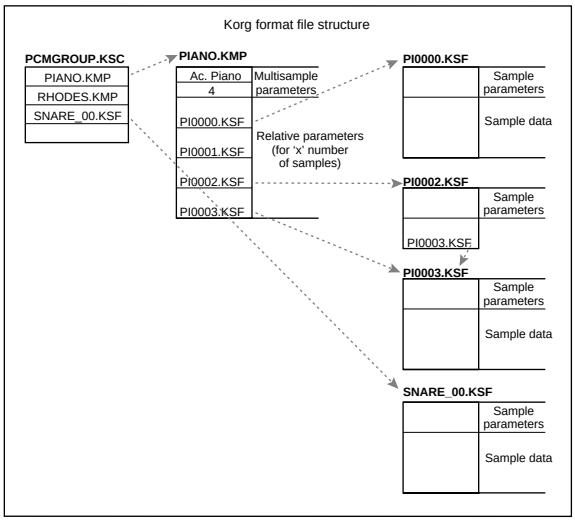
The Type is fixed at Forward Loop.

Zone data of the multisamples will not be exported.

About KORG format files

KORG format file structure

There are three types of sample-related Korg-format files: .KMP files for multisamples, .KSF files for samples, and .KSC files which handle the first two as a collection. Similar to the AIFF format, .KMP / .KSF files consist of chunks.



Unless stated otherwise, all data is Big Endian.

- **When a Korg format file saved on the M3 is loaded by the TRINITY,**
- Of the parameters for each song, the following parameters are ignored. (The chunk that includes the parameter is given in parentheses)

Filter cutoff	(RLP1 chunk)
Transpose	(RLP2 chunk)
Resonance	(RLP2 chunk)
Attack	(RLP2 chunk)
Decay	(RLP2 chunk)
Drive	(RLP3 chunk)
Boost	(RLP3 chunk)
LowEQLevel	(RLP3 chunk)
MidEQLevel	(RLP3 chunk)
HighEQLevel	(RLP3 chunk)

- Of the parameters for each sample, reverse playback and loop off settings (included in the attribute parameters of the SMD1 chunk) will be ignored, and will be handled respectively as forward playback and loop on. Only the twelve types of sampling frequency supported by the Trinity will be loaded correctly, and if the frequency is unsupported, the next lowest frequency will be selected.
- Split sample files cannot be loaded.
- **When a Korg format file saved on the TRINITY is loaded into the M3,**
- Compressed sample files cannot be loaded.
- Multisamples that use internal samples of the Trinity will be assigned identically-numbered RAM samples.
- **When loading a Korg-format file saved on the M3 into a Triton**
- Of the parameters for each song, the following parameters are ignored (the chunk that includes the parameter is given in parentheses)

Drive	(RLP3 chunk)
Boost	(RLP3 chunk)
LowEQLevel	(RLP3 chunk)
MidEQLevel	(RLP3 chunk)
HighEQLevel	(RLP3 chunk)

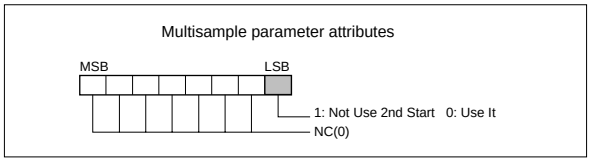
KMP (KORG Multisample Parameter) files

These consist of the following chunks.

- **Multisample parameter chunk**

Chunk ID ('MSP1')	[4 bytes]
Chunk size (fixed at 18)	[4 bytes]
Multisample name	[16 bytes]
Number of samples in the multisample	[1 byte]
Attributes	[1 byte]

- Attributes



- **Multisample name chunk**

Chunk ID ('NAME')	[4 bytes]
Chunk size (fixed at 24)	[4 bytes]
Multisample name	[24 bytes]

- **Relative parameter chunk 1**

Chunk ID ('RLP1')	[4 bytes]
Chunk size (18 × number of samples in the multisample)	[4 bytes]
Original key	[1 byte]
MSB 1: Non Transpose 0: Transpose	
bits 6–0 original key	
Top key (0–127)	[1 byte]
Tune (–99…+99 cents)	[1 byte]
Level (–99…+99 cents)	[1 byte]
Pan (0–127 currently unused)	[1 byte]
Filter cutoff (–99…+99 currently unused)	[1 byte]
KSF filename (including period and extension)	
[12 bytes] × number of samples in the multisample	

If the .KSF filename is "SKIPPEDSAMPL", it will be treated as a sample skipped during loading.

If the .KSF filename is "INTERNALnnnn", internal samples will be used.

- **Relative parameter chunk 2**

Chunk ID ('RLP2')	[4 bytes]
Chunk size (4)	[4 bytes]
Transposing (–64…+63)	[1 byte]
Resonance (–99…+99)	[1 byte]
Attack (–99…+99)	[1 byte]
Decay (–99…+99)	[1 byte]

- **Relative parameter chunk 3**

Chunk ID ('RLP3')	[4 bytes]
Chunk size (fixed at 6)	[4 bytes]
Drive (–99…+99)	[1 byte]
Boost (–99…+99)	[1 byte]
LowEQLevel (–99…+99)	[1 byte]
MidEQLevel (–99…+99)	[1 byte]
HighEQLevel (–99…+99)	[1 byte]
unused	[1 byte]

- **Multisample number chunk**

Chunk ID('MNO1')	[4 bytes]
Chunk size (4)	[4 bytes]
Multisample number (0–)	[4 bytes]

KSF (KORG Sample File) files

There are four types of structure for these files. One consists of a Sample Parameter chunk1, Sample Parameter chunk2, Sample Data chunk, Sample Number chunk and Sample name (SMP1 + SMP2 + SMD1 + SNO1 + NAME). Another consists of a Sample Parameter chunk1, Sample Parameter chunk2, Sample Data chunk, Sample Filename chunk, Sample Number chunk, and Sample name chunk (SMP1 + SMP2 + SMD1 + SMF1 + SNO1 + NAME). The latter structure is in the case where the sample data of the Sample chunk is empty, and uses the sample data of the .KSF file specified by the Sample Filename chunk (shared sample data).

When saving to a floppy disk and a single media cannot accommodate all of the data, it is possible to automatically divide the file and continue the save operation.

When a .KSF file is created in this way, the first file will consist of the Sample Parameter chunk1, Sample Parameter chunk2, Sample Number chunk, and Sample name a divided Sample Parameter chunk, and a divided Sample Data chunk (SMP1 + SMP2 + SNO1 + NAME + SPD1 + SDD1), and the second and subsequent files will consist of a divided Sample Data chunk (SDD1).

- **Sample parameter chunk1**

Chunk ID (‘SMP1’)	[4 bytes]
Chunk size (32)	[4 bytes]
Sample name	[16 bytes]
Start address	[4 bytes]
2nd start address	[4 bytes]
Loop start address	[4 bytes]
Loop end address	[4 bytes]

Note: Sample parameter chunk 1 is used by the TRINITY series, TRITON series, and TR.

- **Sample parameter chunk2**

Chunk ID (‘SMP1’)	[4 bytes]
Chunk size (32)	[4 bytes]
Sample name	[16 bytes]
Start address	[4 bytes]
2nd start address	[4 bytes]
Loop start address	[4 bytes]
Loop end address	[4 bytes]

Note: Sample parameter chunk 2 is used by the OASYS, TRITON series, and M3.

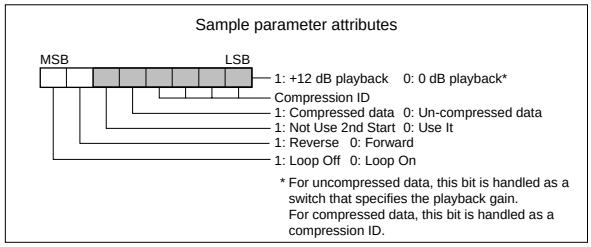
- **Sample data chunk**

Chunk ID (‘SMD1’)	[4 bytes]
Chunk size (12 + number of sample databytes)	[4 bytes]
Sampling frequency	[4 bytes]

Sample rates of sample files supported by the M3:
48000 / 47619 / 44100 / 32000 / 31746 / 31250 / 29400 / 24000 / 23810 / 22254 / 22050 / 21333 / 21164 / 20833 / 19600 / 16000 / 15873 / 15625 / 14836 / 14700 / 14222 / 14109 / 13889 / 13067 / 12000 / 11905 / 11127 / 11025 / 10667 / 10582 / 10417 / 9891 / 9800 / 9481 / 9406 / 9259 / 8711 / 8000 / 7937 / 7813 / 7418 / 7350 / 7111 / 7055 / 6945 / 6534 / 6000 / 5953 / 5564 / 5513 / 5333 / 5291 / 5208 / 4945 / 4900 / 4741 / 4703 / 4630 / 4356 / 4000 / 3968 / 3906 / 3709 / 3675 / 3556 / 3527 / 3472 / 3267 / 3000 / 2976 / 2782 / 2756 / 2667 / 2646 / 2604 / 2473 / 2450 / 2370 / 2352 / 2315 / 2178 / 2000 / 1984 / 1855 / 1838(Hz)

Attributes	[1 byte]
Loop tune (–99…+99 cents)	[1 byte]
Number of channels (1)	[1 byte]
Sample size (8 / 16)	[1 byte]
Number of samples	[4 bytes]
Sample data	variable length

- Attributes



- **Sample number chunk**

Chunk ID (‘SNO1’)	[4 bytes]
Chunk size (4)	[4 bytes]
Sample number (0–)	[4 bytes]

- **Sample name chunk**

Chunk ID (‘NAME’)	[4 bytes]
Chunk size (fixed at 24)	[4 bytes]
Sample name	[24 bytes]

- **Sample filename chunk**

Chunk ID (‘SMF1’)	[4 bytes]
Chunk size (12)	[4 bytes]
KSF filename	[12 bytes]

If the .KSF filename is “SKIPPEDSAMPL”, it will be treated as a sample skipped during loading.

If the .KSF filename is “INTERNALnnnn”, internal samples will be used.

- **Divided sample parameter chunk**

Chunk ID (‘SPD1’)	[4 bytes]
Chunk size (12)	[4 bytes]

The following up to the sample size is the same as in the SMD1 chunk

Sampling frequency	[4 bytes]
Attributes	[1 byte]
Loop tune	[1 byte]
Number of channels	[1 byte]
Sample size	[1 byte]
Number of samples	[4 bytes]

Total number of samples in all divided files

- **Divided sample data chunk**

Chunk ID (‘SDD1’)	[4 bytes]

KSC (Korg SCript) files

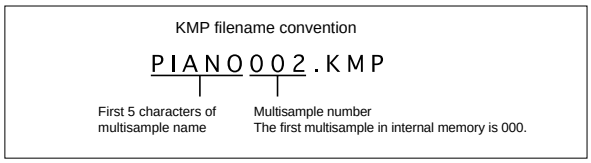
These files are text files which contain a list of filenames for .KMP / .KSF files which are to be handled together.

Lines beginning with # are ignored as comment lines.

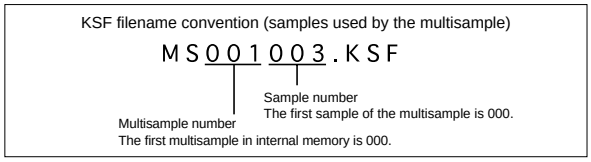
The first line of the file must begin with “#KORG Script Version 1.0” and subsequent lines (except for comment lines) consist only of filename. Only files with an extension of KMP / KSF are processed.

Filename conventions

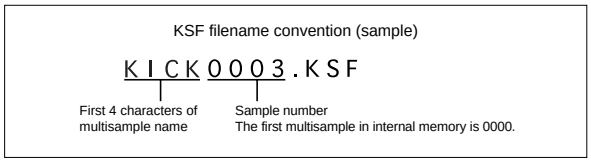
.KMP filename for “Save All” or “Save All Multisamples”



When data is saved using “Save All,” “Save All Multisample” or “Save One Multisample,” the individual .KSF files used by the Multisample (the .KMP file) are automatically given filenames according to the following convention.



Likewise, when data is saved using “Save All” or “Save All Samples,” the individual .KSF files are automatically given filenames according to the following convention.



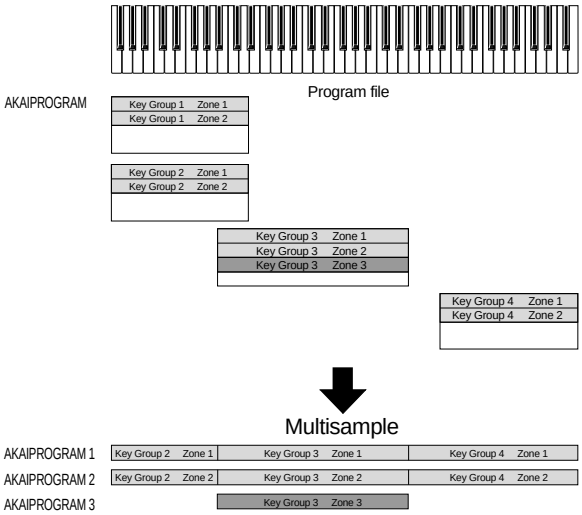
About AKAI Program files

AKAI format uses the concept of “key groups.” For each key zone, up to four samples can be assigned, and these four can be switched or crossfaded by velocity. Key zones can also be crossfaded.

If you load an AKAI Program file into the M3 with “Advanced Conversion Load” unchecked, a single sample will correspond to each key zone, meaning that a maximum of four multisamples will be used to create a key map in the velocity order of each key group. Also, key zones will not be crossfaded.

Example:

An AKAI format Program file “AKAIPROGRAM” consists of four key groups, and each key group consists of up to three velocity zones. Key groups 1 and 2 are a layer whose low range is the same. When this is loaded into the M3, three multisamples will be created, collected by velocity zone, and the numerals 1, 2, and 3 will be appended to each multisample name. At this time, the top key will be determined by the bottom key of the sample that is assigned at the right, and if the bottom key is the same (key groups 1 and 2 in the diagram), the higher-numbered key group will be used.



If you load with “Advanced Conversion Load” checked, Program file parameters such as key group, key group zone, oscillator, pitch, filter, amp / pan, LFO, and EG will be converted into a M3 program or programs + combination as they are loaded.

Multisamples and samples will also be convert-loaded at the same time. For the loading procedure, see page 405.

About SoundFont 2.0 files

The M3 can load SoundFont 2.0 format files.

SoundFont 2.0 is a file format that includes sound parameters with the sample data, and is widely supported in the multimedia field as well as by many software synthesizers and software samplers.

For the content that is loaded, the procedure, and items you need to be aware of, see “Loading SoundFont 2.0 format files” on page 406.

Sample rates of sample files supported by the M3:
48000 / 47619 / 44100 / 32000 / 31746 / 31250 / 29400 / 24000 / 23810 / 22254 / 22050 / 21333 / 21164 / 20833 / 19600 / 16000 / 15873 / 15625 / 14836 / 14700 / 14222 / 14109 / 13889 / 13067 / 12000 / 11905 / 11127 / 11025 / 10667 / 10582 / 10417 / 9891 / 9800 / 9481 / 9406 / 9259 / 8711 / 8000 / 7937 / 7813 / 7418 / 7350 / 7111 / 7055 / 6945 / 6534 / 6000 / 5953 / 5564 / 5513 / 5333 / 5291 / 5208 / 4945 / 4900 / 4741 / 4703 / 4630 / 4356 / 4000 / 3968 / 3906 / 3709 / 3675 / 3556 / 3527 / 3472 / 3267 / 3000 / 2976 / 2782 / 2756 / 2667 / 2646 / 2604 / 2473 / 2450 / 2370 / 2352 / 2315 / 2178 / 2000 / 1984 / 1855 / 1838(Hz)

If you use sample data of a sample rate other than those listed above, the Pitch parameter of each Index in the multisample will be automatically adjusted to correct the pitch that is sounded.

CD-R/RW disks on the M3

UDF and packet-writing

The M3 lets you use USB CD-R/RW disks like you would a floppy disk or a removable hard disk. You can save individual files to a disk, over-write them, add new folders, and so on, without needing to "burn" an entire disk at once.

It does so by using UDF (Universal Disk Format) version 1.5 and packet writing, as described below, as its native CD-R/RW data format. Note that there are some considerations when reading these disks on computers or other equipment, as described under "Reading M3 CDs on other devices," below.

You can also create audio CDs, which use the standard audio CD format (CD-DA). For more information, please see "0–4: Make Audio CD" on page 393, and "Creating audio CDs" on page 150 of the Operation Guide.

About packet writing

Packet writing is a method of dividing data into small units, called "packets."This makes it possible to write individual files to CD-R/RW disks, as opposed to writing an entire disk at once.

Compatible media

Before writing data to a CD-R/RW disk, you must format the disk using the M3.

CD-R media

- 650 MB and 700 MB CD-R media (up to 48× write speed)

CD-RW media

- 650 MB and 700 MB CD-RW media (up to 4×/10× write speeds)

Formatting

Before using CD-R/RW disks, you need to format them. To do so, insert the blank or previously-formatted media into the drive, go to the Media Utility page, and select the **Format** menu command.

Cautions when formatting

CD-R media

Quick Format takes less than a minute.

Full Format applies only to CD-RW media, and so it can't be selected for CD-R disks.

Re-formatting: Data that has been written to CD-R cannot be erased as it can on a floppy disk. This means that re-formatting previously-formatted media will not increase the free space; instead, approximately 20 MB of space will be used to add a new session.

CD-RW media

Quick Format: Use this option to erase the contents of a previously formatted CD-RW. This cannot be used with blank CD-RW media. It takes about two minutes to complete.

Full Format: Use this option to format blank media, or media which has been formatted as a non-UDF disk.

You can also use **Full Format** if writing errors occur frequently when writing to the media.

Full Format takes about fifteen minutes for 10x CD-RW media, and about thirty minutes for 4x CD-RW media. (Depending on the condition of the disk, it may take substantially longer.)

Formatting takes up some of the space on the disk, so that 650 MB/700 MB media will have approximately 530 MB/570 MB of available space, respectively.

Re-formatting: Like floppy disks and hard drives, CD-RW disks can be formatted to erase any previous contents, and re-formatting frees up space on the disk.

Deleting and updating files

CD-R media

With CD-R media, deleting a file merely hides it from view; the file still exists on the disk, and no space is freed by the deletion.

Similarly, when you save a new version of a file, the previous version is hidden but not actually removed from the disk. Each version of the file will take up additional space on the disk.

CD-RW media

CD-RW disks work the same way as hard drives. Deleting files frees up space on the disk, and saving a new version of a file (with the same name as the previous one) will overwrite the original file.

Writing to CD media may take time

Writing to a CD-R/RW will generally be slower than writing to a hard disk. The time it takes to write will depend on the speed of the CD-R/RW drive, and on the writing speed supported by the media.

Reading M3 CDs on other devices

CD-R media

You can read native M3 CDs, in UDF packet-writing format, on computers with packet-writing software installed.

For maximum compatibility, you can convert CD-Rs (not CD-RWs) into ISO9660. This makes it possible for the data to be read by other KORG devices that support the ISO9660 format, or by computers which do not have packet writing software. For more information, please see "Convert to ISO9660 Format" on page 414.

Note: This conversion adds ISO9660 session data, which consumes approximately 20 MB of space.

CD-RW media

CD-RW disks cannot be converted into ISO9660 format, and so they can only be read by devices or computers which support UDF and packet-writing.

KORG devices which support ISO9660 format (level 1)

- TRITON/TRITON pro/TRITON proX/TRITON-Rack/TRITON Le/TR (*1)
- D1600/D12/D16/D1200mkII/D1600mkII/D16XD/D32XD

* As of April 2007

*1: Only the first session can be read.

KORG devices which support UDF version 1.5

- TRITON STUDIO/TRITON Extreme/OASYS

Divided files

If data has to be read or processed while writing to a CD-R/RW, the resulting files may not be contiguous on the disk. Operations which can cause this include:

- Coping files larger than 1.9 MB from another CD-R/RW (or other media with a slow access speed)
- Using the **Rate Convert** (Media Utility page), **Save to Std MIDI File** (Media SAVE page), or similar commands to save directly to a CD-R/RW

If a disk in this state is converted into ISO9660 format, it will be in the divided file format supported by ISO9660 level 3.

Such disks cannot be read by devices that do not support ISO9660 level 3, such as the original TRITON line and some older computer operating systems. These disks can be read on newer computer operating systems, as long as you can install software which supports ISO9660 level 3 or packet writing.

Troubleshooting converted CD-Rs

If your computer is unable to read a CD-R converted to ISO 9660 format, you may be able to read it using the following methods.

Disable packet writing (UDF) software

You may be unable to read the data if packet writing software is installed on your computer. If so, temporarily disable that software or uninstall it.

Macintosh OS9

On Macintosh OS9, you may be unable to read the data if the UDF Volume Access function extension is enabled. If so, use the following procedure to disable **UDF Volume Access**.

1. **From the "Apple menu," choose "Control Panel" and open the "Extensions Manager."**
2. **In the "Extensions Manager," uncheck "UDF Volume Access."**
3. **Restart your Macintosh.**

IMPORTANT NOTICE TO CONSUMERS

This product has been manufactured according to strict specifications and voltage requirements that are applicable in the country in which it is intended that this product should be used. If you have purchased this product via the internet, through mail order, and/or via a telephone sale, you must verify that this product is intended to be used in the country in which you reside.
WARNING: Use of this product in any country other than that for which it is intended could be dangerous and could invalidate the manufacturer's or distributor's warranty.
Please also retain your receipt as proof of purchase otherwise your product may be disqualified from the manufacturer's or distributor's warranty.

KORG INC.
4015-2 Yanokuchi, Inagi-city, Tokyo 206-0812 Japan

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