HELP FILE AND MANUAL
Version 2.2.9
Revision: 12-Jun-2013

http://www.karma-lab.com

Protected by U.S. Patents:
5,486,647, 5,521,327, 6,084,171, 6,087,578, 6,103,964,
6,121,532, 6,121,533, 6,326,538, 6,639,141, 7,169,997, 7,342,166

Table Of Contents

Using This Help File

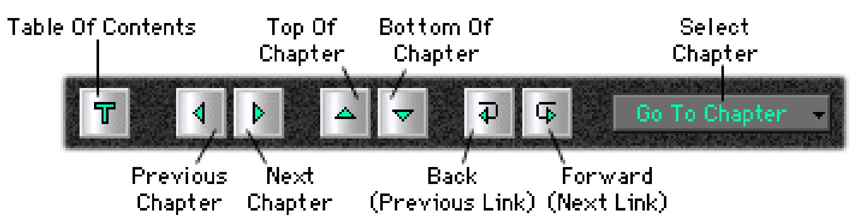
Sections in this chapter:

This Help File can only be accessed through the KARMA application. If KARMA can not locate the file when you request help, it will ask you to locate this file. You should generally not move the file from where it was installed by the Installer or rename it. An Adobe Acrobat® version (.pdf) of this same file was installed on your hard drive and can be used for printing and online searching if desired.

The Help File can be opened in four different ways:
1) by using the main Help Menu, which has several locations in this file preselected for easy access;
2) by pressing the key shortcut Cmnd+H (Mac) or Ctrl+H (Windows), taking you to the Table Of Contents;
3) by pressing the key shortcut Cmnd+H (Mac) or Ctrl+H (Windows) while a popup Tooltip is showing, thereby taking you directly to the parameter associated with the Tooltip; and
4) by choosing the “Help” command from any of the round Menu Buttons that can be found in each window and page of the application (see below).

Navigation Bar

The buttons on the Navigation Bar at the top of the Help Window allow you to move through the Help File. You may also select a chapter directly with the “Select Chapter” popup menu.



Except for the Table Of Contents button, the other buttons may be inactive at various times (greyed out) depending on where you are in the document.

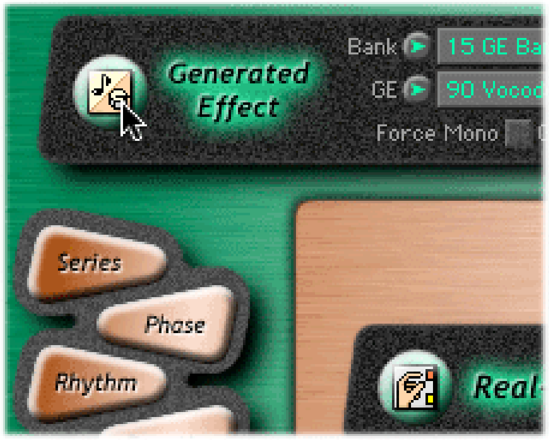
The Help File remembers your current position every time you click on a new hypertext link, or use the buttons to move somewhere else. These positions are assembled into a list of up to 25 links. The Back (Previous Link) and Forward (Next Link) buttons allow you to step backwards or forwards through this list. Each time you close the Help Window, the list is reset to zero, and the buttons will be disabled next time you open the window.

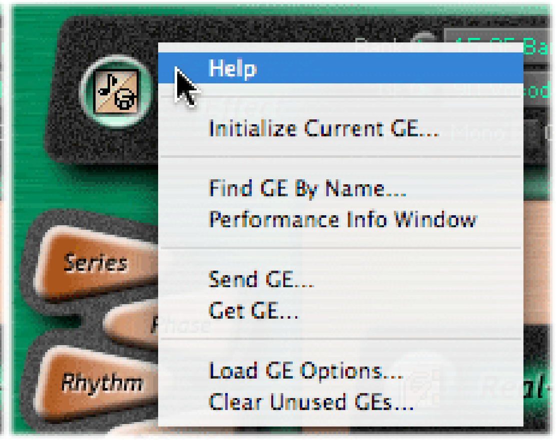
When the Help Window is front most (or when a modal dialog is open in front of it), certain keys on the computer keyboard can also be used to navigate through the file, instead of or in addition to the above buttons:

Movement	Key Command	
Previous Chapter	Left Arrow	
Next Chapter	Right Arrow	
Top Of Chapter	Home	
Bottom Of Chapter	End	
Page Up	Page Up	
Page Down	Page Down	
Scroll Up	Up Arrow	
Scroll Down	Down Arrow	
	Mac	Windows
Back (Previous Link)	cmnd + [	ctrl + [
Forwards (Next Link)	cmnd +]	ctrl +]

Even though a modal dialog may be up, you can still open and access the Help File. You cannot click on it with the mouse, but all of the key commands above let you navigate through it and get information on the modal dialog that is up if desired.

Menu Buttons

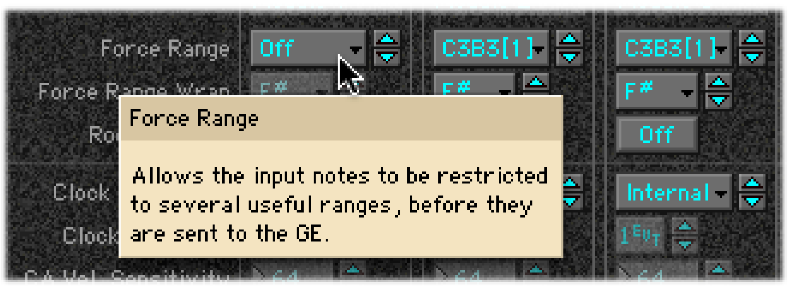




Each of the round “Menu Buttons” next to the window or page titles produce a popup menu when clicked. They each have “Help” as the first item, giving you a direct link to the applicable section of this file. Select “Help” on any of these buttons for immediate access to the chapter containing information about the parameters in that section of the application.

The other commands in each of the Menu Buttons are utility functions that relate to the particular editor or page that the button is associated with. Therefore, these items will vary according to the location of the button. For information on the commands in each of these buttons, consult the chapter that relates to the page or editor that the button is associated with.

Popup Tooltips



Popup Tooltips are short descriptions that popup while holding the mouse cursor over various labels, parameters and objects in the application. Tooltips can be turned on or off globally for the entire application, in addition to having several groups within the tooltip system that can be independently controlled. You can turn them globally on/off from the Help Menu, or also from the Preferences Editor, where other control options such as the delay before they appear can be set. You can control exactly which objects have tooltips and the amount of time delay before they pop up, or only the use of the ‘t’ key to make them pop up. For more information, see **Preferences: Tooltips**.

For example, after you get used to working with KARMA, it may be helpful to set the tooltips to only popup over labels (and not parameters), and have the longest delay time setting. That way, you may never notice they are there during normal speed of working, but if you want a reminder or a hint about some function, you can hold the mouse over a label and it will appear. Or, you may wish to use the option where popping up is completely disabled, but you can still press the ‘t’ key to make a tooltip popup at any time.

When a tooltip is showing, if you press Cmnd+H (Mac) or Ctrl+H (Windows), you will be taken directly to the Help File and the applicable parameter for more information.

To make a tooltip go away when it is showing without moving the mouse off an object, press any key on the computer keyboard. Also, a tooltip will automatically disappear after approximately 15 seconds.

Conventions

--- **Parameters** ---

Parameters and changeable settings are displayed in bold type surrounded by square brackets, with a blue diamond icon like this:

◆ **[Parameter]** (object type) [range]

--- Hypertext Links ---

Hypertext links to other areas of the help file are shown in red and are underlined, like this:

Link To A Different Chapter

Link within the same chapter

As you move the cursor over a link, it will change into a "hand," indicating that you can click on it. You will be taken to the linked item (the examples above do not take you anywhere).

If you are using the Acrobat .pdf version, the main chapter title links in the Index and the Section Dividers work, but the individual links sprinkled throughout the chapters currently do not.

--- Key Commands ---

Key Commands (such as Ctrl+M) are shown in blue type, like this.

--- Notes ---

Notes are presented in brown type like this (with a balloon icon), and present additional information about a particular topic.

--- Important Items ---

Important items are presented in red type like this (with an exclamation point icon), and are important notices concerning various features and functions of KARMA.

--- Tips ---

Tips are presented in magenta type like this (with a light bulb icon), and are suggestions and tricks to help you get the most out of KARMA.

--- Example Performances/Generated Effects ---

Example Performances and GEs are shown in bold green type like this: **Combi Bank A000: Towards The Sun**.

Basic Operations

Sections in this chapter:

Also see **Using The Pattern Grids**

This chapter discusses some basic operations that should be helpful for new users.

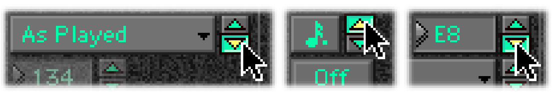
Basic Operations - How To Make It Stop!

The Return Key stops the KARMA function without actually turning it off. You can immediately restart it by playing the keyboard or activating a chord trigger button. You can also use the KARMA On/Off button in the Real-Time Controls Window (or the computer's [F9] function key), which corresponds to the KARMA On/Off button on your M3. But using the Return Key can be more useful since no toggling back and forth is required.

For an in depth review of all key commands in KARMA Software, see **Keyboard Shortcuts**.

Basic Operations - User Interface Objects

Inc/Decs (Tiny Up/Down Arrows)



Next to every numerical (number box) and popup menu in the KARMA software is an "Inc/Dec." Named for the operations "increment/decrement" (meaning to increase or decrease in value), they can be used to increase or decrease the setting in the number box or popup menu. Single clicks increment and decrement by one; on most Inc/Decs, you can hold down the mouse and it will begin scrolling continuously after a short delay.

Numericals (Number Boxes)

The number fields used in all areas of the application are referred to as "Numericals." They can be manipulated or set in several ways:

1) Click the numerical with the mouse. It becomes highlighted and ready to accept input. Enter the value with the computer keys (generally numbers, but in the case of MIDI Note numericals, you may also use letters, such as c4) Press Enter or Return to set the value.

2) Click the numerical with the mouse. It becomes highlighted and ready to accept input. Use the up/down arrow keys on the computer keyboard to increment and decrement the value.

3) Click the numerical but do not release the mouse. By dragging up or down, you can scroll the value contained inside. Press Enter or Return to set the value, or click somewhere else to end the edit.

4) Use the Inc/Dec (tiny up/down arrows) next to the numerical to increment or decrement the value in the associated numerical. Single clicks increment and decrement by one; on most Inc/Decs, you can hold down the mouse and it will begin scrolling continuously after a short delay.

Floating Point Numericals

When scrolling or incrementing/decrementing the value in a floating point numerical, it will shift by amounts determined by the last fractional value manually entered. In other words, if the last value entered was a whole number such as "1" (which is the default), clicking the up arrow once will change to 2, then 3 etc. If the last value entered had one decimal place, such as "1.1," then clicking once would increment to 1.2, then 1.3 etc. If the last value entered had two decimal places, such as "1.11," then clicking once would increment to 1.12, then 1.13 etc. This also applies to scrolling with the mouse or using the up/down arrow keys of the keyboard.

There are currently only a few floating point values in KARMA: the Tempo fields, and the GE Editor: Note Series Page "Replications" parameter.˜

Basic Operations - Moving Windows Without Title Bars

Windows OS only: Many of the windows in the KARMA application do not have conventional title bars. You can still move them simply by moving the mouse cursor up to the top area of the window. It will turn into a "hand" cursor, indicating that you can click and drag the window to a new location. This also works in any Modal Dialog that may be blocking something that you wish to see on the screen, when you don't want to close the dialog. Nearly every window in the KARMA software can be moved this way.

Basic Operations - Dialogs And OK/Cancel Buttons

In many dialogs, the "Cancel" button is represented by a red X, while the "OK/Save/Accept" button is represented by a green checkmark. These buttons are mapped to the following Key Commands:

Cancel Esc (Mac/Win), Cmnd+Period (Mac), Ctrl+Period (Win)
OK Enter, Return (Mac/Win)

If there is a "Don't Save" button, it is mapped to:

Don't Save Cmnd+D (Mac), Ctrl+D (Win)

Some dialogs have an option or checkbox such as "Don't Show Again" or "Don't Show Again This Session." Choosing these options will silence those types of warnings until the next time you launch the application, or in some cases until you reset the warning dialogs in the Preferences.

Other useful chapters to consult now that you've made it this far include:

Using The Pattern Grids

Menu Reference

Keyboard Shortcuts

KARMA Memory Architecture

First Time Setup - KARMA M3

Sections in this chapter:

Before you begin using the software, you must configure KARMA M3 and your Korg M3. The first 4 steps in this Chapter will show you the quickest way to configure your system. In Step 5, we'll discuss the best way to begin using KARMA M3.

You can print this chapter using the PDF version of the Help File, included in your installation.

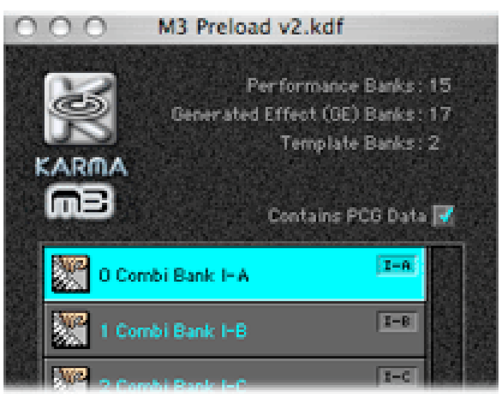
M3 Operating System 2.0 or higher required!

Be sure your M3 is running OS V2.0 (or higher), and has been "XPanded". To verify, look for the "Version 2.x.x" text at the bottom of the welcome screen when you first start your M3 and the red XPanded logo. If you are running an older version, please refer to www.korg.com/m3 to update to the latest version. KM3 will not be able to work completely with earlier versions of the operating system.

Step 1: Start with the correct PCG in your M3

In order to use KARMA M3 "out of the box," you should have the correct PCG data (Programs and Combis) loaded into your M3. KM3 assumes your M3 will be configured with the factory Preload Data for version 2.0 M3 XPanded.

If you already have this set of Factory Data loaded, and then have additional banks of other sounds, that is fine. There is no need to reload in this case. You will learn later how to add those additional banks of sounds to KARMA M3 software.



KARMA M3 ships with a v2.0 Factory Preload KDF File

When KARMA M3 first launches, it will automatically open a data file that we refer to as a KDF File (KARMA Data File).

Since the KDF contains the "factory content" for KARMA M3, you will likely spend most of your time working with this file, at least initially. Therefore, again we stress that it is important to have the correct PCG data loaded, and to configure your Korg M3 to work with the Preload KDF before you begin using KARMA M3.

If you are not sure exactly what is in your M3, and would like to make sure it works properly with KM3 while initially trying it out, we recommend these steps:

1. Backup your entire set of Programs and Combis. If you are familiar with your M3's Media mode, simply do a "Save PCG" with absolutely everything checked, and then you can reload it after working with KM3, restoring your machine to the same state it was in. If you need detailed instructions, please see **Backing Up And Reloading Your M3's PCG Data**.

2. Reload the Factory PRELOAD, either from your Flash Drive (if you have a copy on it), or from the Global Mode of the M3. If you need detailed instructions, please see **Restoring The M3's Factory Data**.

The Preload KDF contains the Programs and Combis from the latest Factory Preload (v2.0) for the Korg M3, including the EXB-PCM Programs/Combis. Specifically, the KDF file contains the following sound banks:

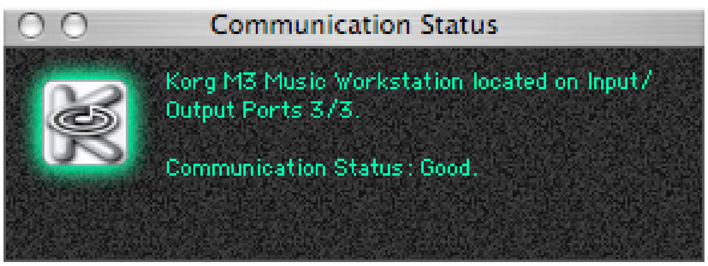
Combi Bank I-A
Combi Bank I-B
Combi Bank I-C
Combi Bank U-E (EXB-PCM Brass & Woodwinds)
Program Bank I-A
Program Bank I-B
Program Bank I-C
Program Bank I-D
Program Bank I-E
Program Bank I-F (Radias)
Program Bank U-A
Program Bank U-B
Program Bank U-C
Program Bank U-D
Program Bank U-E

Since the KARMA M3 software does not directly generate audio data (only MIDI), it must rely on your Korg M3 to generate the audio. Therefore, **KARMA M3 always expects that your M3 is loaded with the proper PCG data (Programs, Combis, etc.) to match the data in the KDF file**. Simply opening a KDF file in KARMA M3 does **not** ensure that the correct sounds will be inside the M3 Keyboard. You must load a matching PCG file.

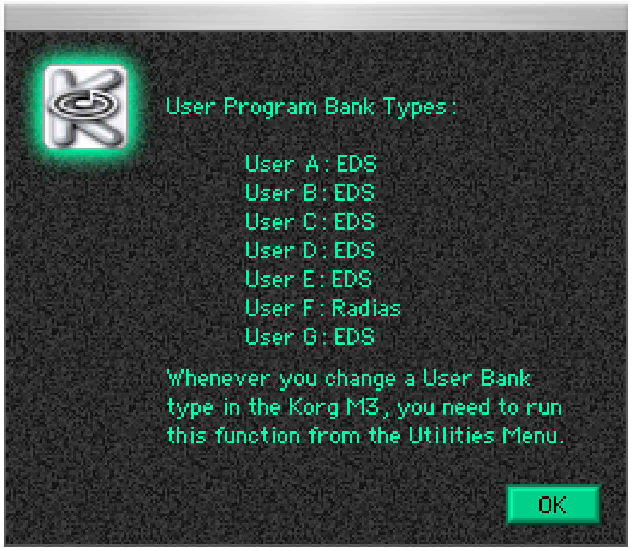
Step 2: Setting the Global In/Out Ports

You must set the KARMA M3 Global In/Out ports to the MIDI ports that are connected to your Korg M3. Although you can use any standard MIDI Interface, it is recommended that you install and use the Korg USB MIDI Driver, and the USB port on the back of your M3. Please consult www.korg.com/m3 > Support to download and install the latest version of the Korg USB MIDI Driver, if you do not already have it.

To automatically setup the Global Ports, simply click the "Run MIDI Setup Assistant" button in the Communication Status Window (shown above). If you do not see the "Setup Assistant" button, then you may be already properly configured. If you do not see the Communication Status Window at all, you can open it by selecting **Windows > Communication Status** from the main menu.



Once your M3 has been detected, the Communication Status window will change to read "Communication Status: Good" and the MIDI port numbers will be displayed (as shown above - yours may be different). At this point, the software will query the M3 about the settings of the User Program Bank Types (whether they are set to EDS or Radias). Within a few seconds, you should see the following dialog displaying the User Program Bank Types:



⚠ IMPORTANT! You need to query the User Program Bank Types every time you change them´in the M3, using the "Update User Program Bank Types" command from the Utilities Menu. Otherwise, the software and the M3 may not agree on the bank types of the user banks, which can present various issues during operation.

At this point, your M3 should change to Combi "A000 Towards The Sun." If you play the keyboard, you will hear the sounds and see the KARMA activity being generated in the Data Display window of KARMA M3. (Choose "Data Display" from the Windows Menu if it is not already open.) Press the Return key on your computer keyboard to stop KARMA.

M3-M Owners: Once communication has been established, it is **extremely important** that you follow the steps provided in **Additional M3-M (Module) Setup** in order to complete your configuration.

If your M3 is **not** located for some reason, you will see the dialog shown above. If you cannot rectify the problem using the suggestions in the dialog, please see **Communication Configuration - KM3 Software** for more detailed information.

Step 3: Configuring the M3

There are a few settings you must make on your M3 in order to allow it to properly "talk" to the KARMA M3 software. (This information is the same as in the appendix **Communication Configuration - M3**.)

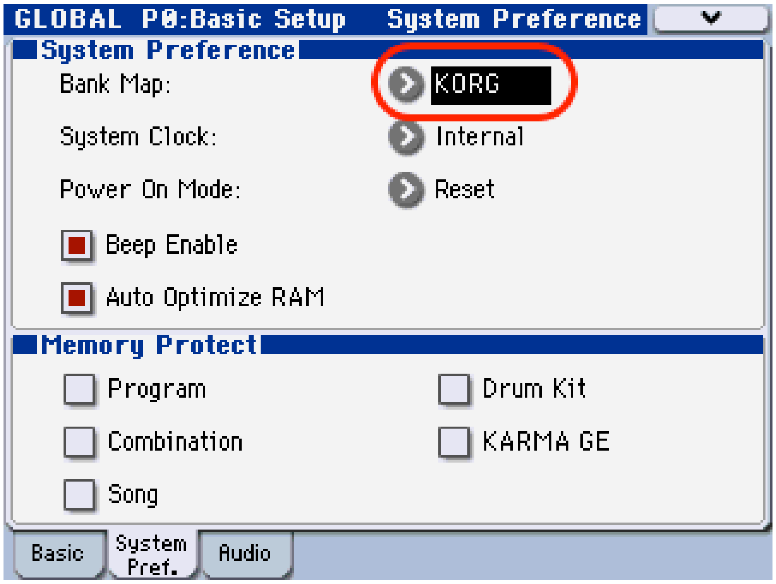
Quick Summary:

1. Global > Basic Setup > System Pref. (Page 0-2)
   Bank Map = KORG
2. Global > MIDI > MIDI Basic (Page 1-1)
   MIDI Channel = 1
   Local Control = Off
   MIDI Clock Mode = Auto
   Receive Ext. Realtime Commands = On

3. Global > MIDI > MIDI Routing (Page 1-2)
MIDI Filter > Enable Exclusive = On
4. Menu Command > Write Global Settings (if desired)

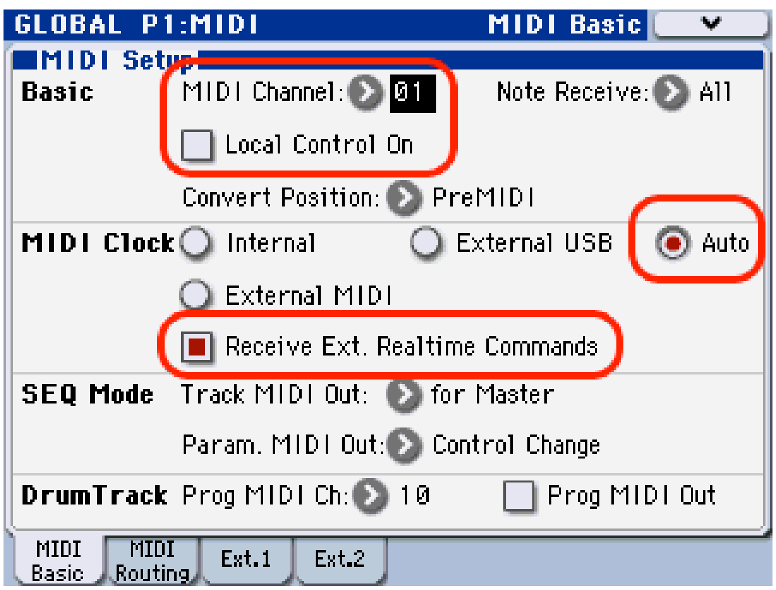
Detailed explanation:

1. By default, KARMA M3 will be configured to work with the "KORG" Bank Map setting. To set the M3 to the same Bank Map setting, press the Global button, press the Page Select button, select Page 0 Basic Setup, choose tab 2 System Pref., and set the System Preferences Bank Map to "KORG," as shown below:



If you prefer to use the GM(2) Bank Map setting, choose "Preferences" from the "Edit" menu in KARMA M3. Select the "MIDI" tab and choose "GM(2)" for the Bank Map. The important thing is to **make sure that Bank Map on the device and in KARMA M3 are identical**.

2. While in Global Mode, select Page 1-1 MIDI > MIDI Basic, and make the settings as shown below:

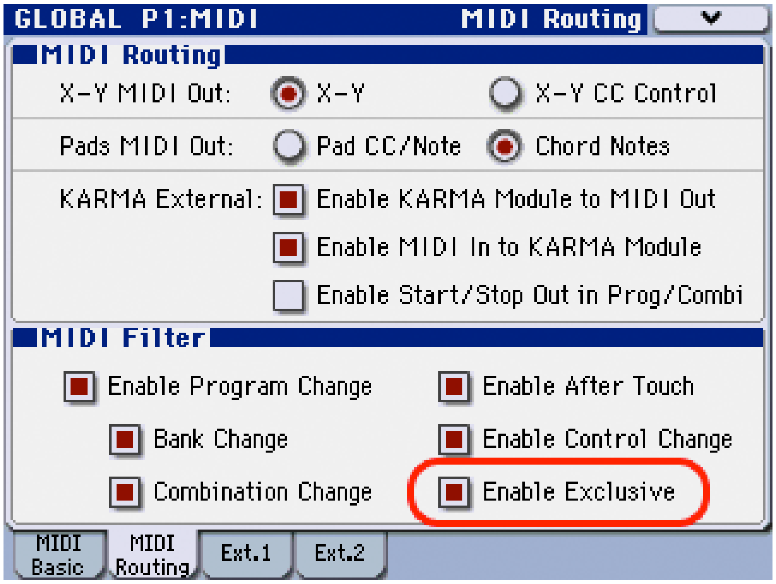


MIDI Channel = 1
(so that the default settings of KM3 will communicate with your M3 - this can be changed later.)

Local Control On = Off (unchecked)
(so that you do not get double notes when you play through KARMA M3. The software will echo the keyboard through. Note that this will be done automatically when the software starts up anyway by a setting in KM3's Preferences - See **Preferences: MIDI - Local Control**.)

MIDI Clock Mode = Auto
Receive Ext. Realtime Commands = On (checked)
(so you can control the Tempo of the M3 properly from the software. This goes along with the settings made automatically in the **Sync Editor** when you run the MIDI Setup Assistant.)

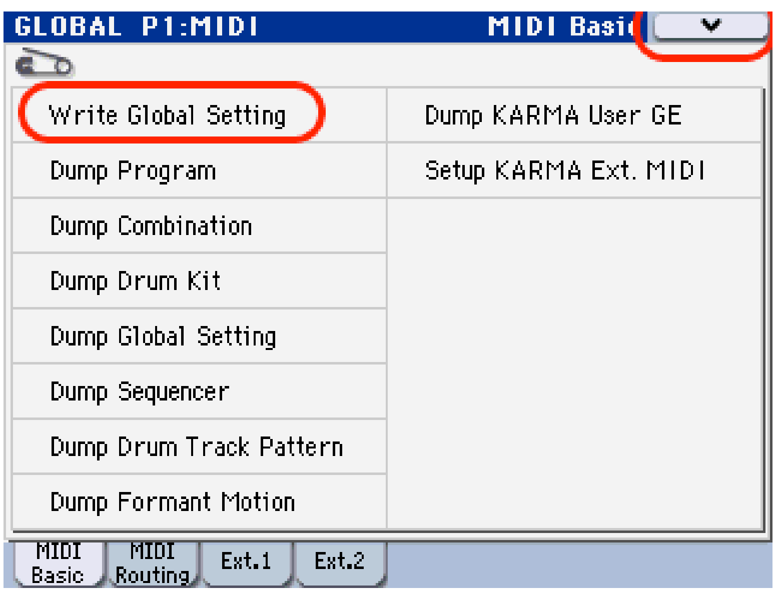
3. While in Global Mode, select Page 1-2 MIDI > MIDI Routing, and make the settings as shown below:



MIDI Filter: Enable Exclusive = On (checked)
(so that the device sends and receives System Exclusive MIDI data.)

To mirror the control surface (synchronize it) with KARMA M3's Real-Time Controls Window, including allowing the Pads to trigger the software's Chord Triggers 1~8, please see the included Tutorial "**Mirroring KM3 and M3.**" It is located in the install folder (Mac), or the Start Menu (Windows).

4. You may wish to write these settings into memory so you don't have to do it every time you turn on the keyboard. Press the Menu Command button (top right corner), and select "Write Global Setting" and answer OK until it's done. Don't forget that if you reload the Factory PRELOAD or any other file containing Global Data, you will overwrite these changes and it may appear that communications between the software and the device no longer work. Just reset them as above in this case. You may wish to save a PCG file containing **only** the Global Data for your sessions with KARMA M3, as an easy way to set all of this.

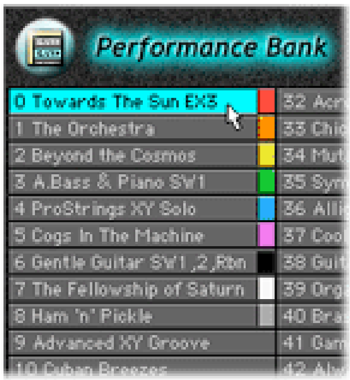


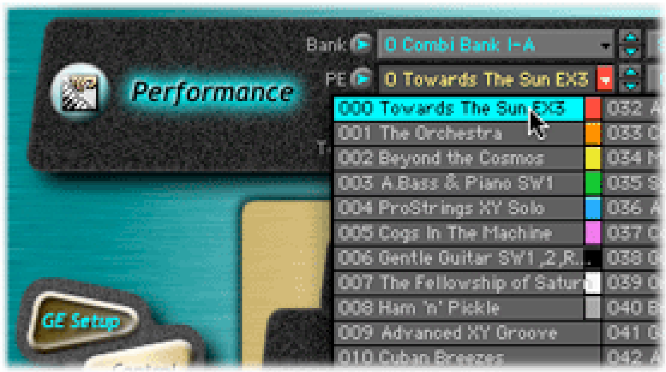
IMPORTANT! If you use the keyboard without the software, and Local Control On is set to OFF, the keyboard will appear to have stopped working (no sound). To use the keyboard without KARMA M3, set Local Control back to On (checked). There is a Preferences setting in KM3 that will automatically turn the Local Control Off and On when you launch and exit the software. See **Preferences: MIDI - Local Control**.

Step 4: Testing Your Setup

(a) Locate the Performance Editor (blue window) inside KARMA M3 – you can open it by choosing "Performance Editor" from the Windows Menu (Cmnd+P [Mac], Ctrl+P [Win]). At the top left of the Performance Editor are the Performance Bank ("Bank") and Performance ("PE") popup menus.

(b) First, verify that the M3 is receiving SysEx and Program Changes properly. With Bank set to its default of "0 Combi Bank I-A," click on the PE menu and select other Combis. You can also do this from the Performance Bank display.





Verify that your M3 changed to the correct Combi. Change Banks with the Bank Menu to another Bank of Combis. Verify that the M3 changed banks as well.

(c) Now, we'll select a Program. Click on the Bank menu and choose "4 Program Bank I-A." Then, click the PE popup and choose various Programs. Ensure that your M3 changed to Program Mode and selected the correct Program as well.

If your M3 is not responding correctly, you may not have your SysEx communications enabled, or your Bank Map setting (in the device's Global Settings) may be incorrect. Please see **Communication Configuration - M3** for more details.

(d) Return to Performance **0 Towards The Sun** in Bank "0 Combi Bank INT A."

(e) Press the [F1] function key on your computer keyboard (which plays Chord Trigger 1/Pad 1). KARMA M3 should begin playing the "Towards The Sun" combi.

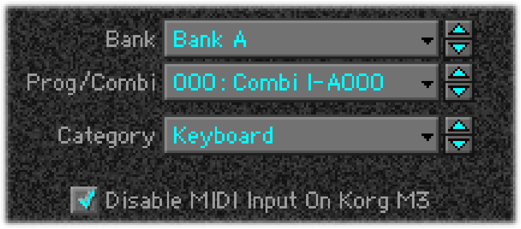
(f) Bring the Data Display Window to the front (Windows Menu: Data Display, Cmnd+D [Mac], Ctrl+D [Win]) and watch the mesmerizing colored light show.

Note to Mac OS X users: If you press [F1] and do not get Chord Trigger 1, but get the image on the screen showing a decrease in screen brightness, please read further: By default, the function keys on a Mac are set to perform the system functions pictured on the keys, such as volume up/down, screen brightness etc. But they are "dual function" keys - you can hold down the "fn" modifier key in the lower left of the keyboard to make them work as normal function keys (which would then work to play the Chord Triggers etc.) To reverse these so that they work for KARMA Mac without needing the "fn" key, you open the System Preferences, choose Hardware > Keyboard & Mouse > Keyboard, and then turn on the checkbox named "Use all F1, F2 etc. keys as standard function keys," and then close the System Preferences. The functioning of the keys will now be reversed - they will all work normally for KARMA Mac (and other applications), and if you want to access the other functions such as volume up/down, screen brightness etc., you use the 'fn' modifier key at the lower left.

Additionally, [F8] and [F9]~[F11] are configured by default to control the Spaces and Expose features of Mac OS X. This can also be handled in the System Preferences dialog, using the sections related to Expose and Spaces (it differs depending whether you are running OS X 10.4 or 10.5.) We recommend using the command key as a modifier for the function keys to bring up Expose and Spaces; then, the normal function keys can work for KARMA's shortcuts.

For all Computer Keyboard Function Key mappings, see **Keyboard Shortcuts: Function Keys and Number Keys**.

(g) Bring the Real-Time Controls Window to the front (Windows Menu: Real-Time Controls, Cmnd+L [Mac], Ctrl+L [Win]). This corresponds to the KARMA GE page and Control Surface KARMA/RT page of the M3 Keyboard (the 8 sliders and 8 switches of the KARMA Section, along with the On/Off and Latch switches, the pads (Chord Triggers) etc). You can set these up to be controlled by the Control Surface of the M3, so that there is complete synchronization between the two, or an external MIDI slider or knob controller. This information can be found in one of the tutorials included in the installation.



IMPORTANT NOTE: As shown above, there is a "Disable MIDI Input On Korg M3" checkbox in each Performance, in the Performance Editor: Korg Page (click the gold-colored triangular button labeled "Korg" to select the Korg Page). KARMA Software is not a sysex editor for the M3 - it is the actual full KARMA Engine in software form. So this checkbox is set by default to "On" (checked). What it does is turn off the MIDI Input to the keyboard's KARMA Function when you load a Performance so that it will not interfere with the KARMA Software-generated sounds. The setting of this checkbox is saved with each Performance, and in case you wanted to get creative and try to use the keyboard's 4 modules at the same time (hey, why not?), you would turn it off. You could conceivably have up to 10 Modules of KARMA using the software and the M3 at the same time!

Step 5: Learning to use KARMA M3

Congratulations! You're now on your way to exploring a whole new world of musical possibilities with KARMA M3.

Tutorials
At this point, we highly recommend that you jump right into the included tutorials.

Windows: You can access the PDF KARMA tutorials directly from the Start Menu (under All Programs > KARMA M3 > Tutorials).

Mac: You will find the PDF KARMA Tutorials inside the KARMA M3 folder (in Applications), in another folder named "Tutorials."

These (and other tutorials as they become available) can be located online at: www.karma-lab.com/km3/tutorials

KARMA Online Help
We highly recommend reading the following chapters in this Help file:

Using This Help File
Explains how to navigate around the help, the popup tooltip system, and some other conventions.

Basic Operations
Explains how some of the user interface objects work, and other basic info that will make your life easier.

Using The Pattern Grids
Explains how to use the pattern-editing grids in many of KARMA's windows, and the key combinations that produce different operations when working with them.

Preferences
Complete description of all global settings in the Preference Dialog, some of which may have a large impact on your user experience.

Menu Reference Part 1
Menu Reference Part 2
Keyboard Shortcuts
Complete description of all menu items and keyboard shortcuts.

Help File PDF Version
There is also a .pdf version of the Help File that you can print or search (using Adobe Acrobat). On the Mac, it is located in the KARMA M3 folder, in another folder named "Help File - PDF Version." On Windows, it is available from the Start Menu, under All Programs > KARMA M3 > Help File (Print, Search). Note: In the .pdf version, not all "hyper-links" are functional the way they are in this online version – it's mainly intended for printing and searching.

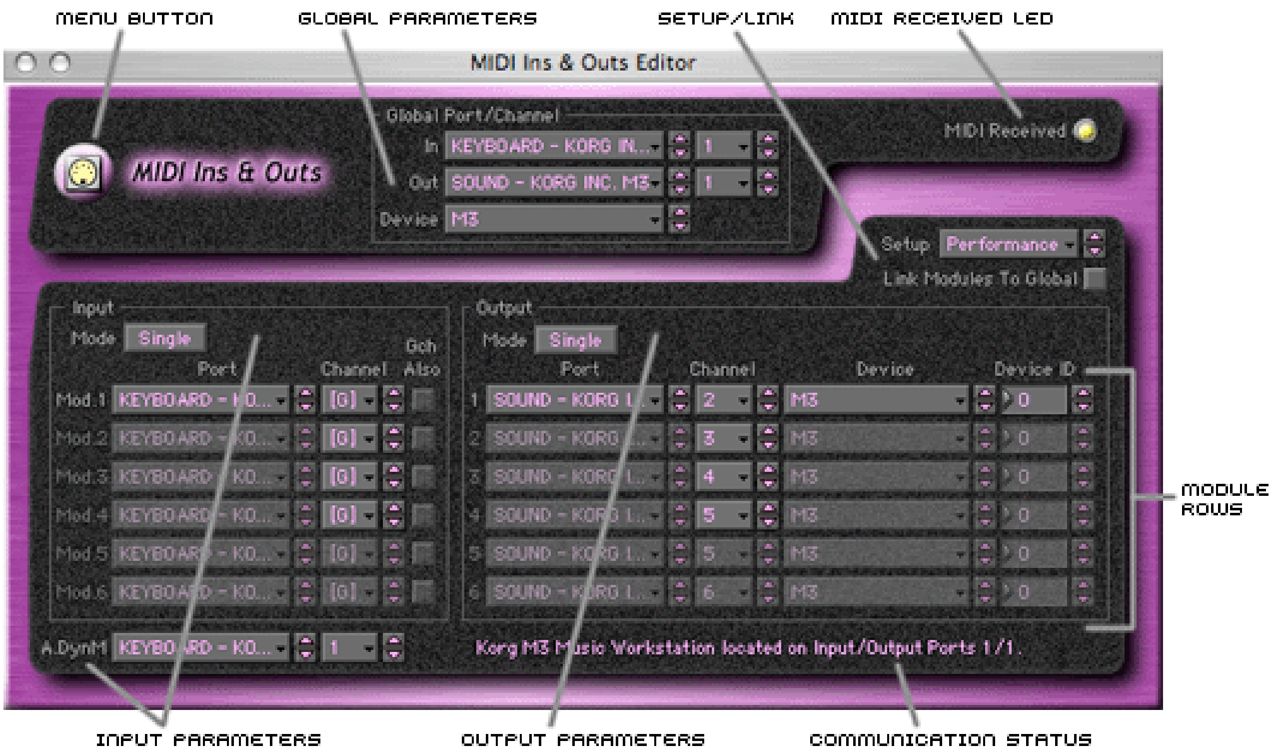
We sincerely hope you have fun making great music with KARMA M3. Enjoy!

Section 1:

MIDI Setup

MIDI Ins & Outs

Sections in this chapter:



MIDI Setup - Overview

The MIDI Ins & Outs Editor is where you set up the MIDI In and Out options for each Performance. These can be stored individually with each Performance, or overridden on a Global level. It can be opened by choosing “MIDI Ins & Outs” from the “Windows” menu, or by using the keyboard shortcut Cmnd+M (Mac) or Ctrl+M (Win). This is where you setup which controllers will send input data to KARMA, and where the data being generated by KARMA will be sent to.

Global Parameters
Settings that affect overall communication between the software and the Korg device.

Setup/Link
Selects one of several modes for changing MIDI Setups when Performances are changed, and whether the Modules have their port settings linked to the Global In/Out.

MIDI Received LED
Flashes whenever MIDI data of any type is received on any MIDI channel or port.

Module Rows
Each row corresponds to one of the six KARMA Modules, providing MIDI In and Out settings for each Module.

Input Parameters
Settings that affect which ports of your MIDI Setup are being used for incoming MIDI Data, for each of the KARMA Modules or the Dynamic MIDI Section.

Output Parameters
Settings that affect which ports of your MIDI Setup are being used for the outgoing MIDI Data generated by each of the KARMA Modules.

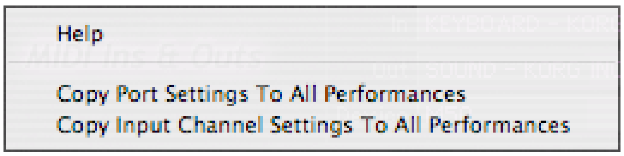
KARMA Communication Status
The current status of communications between the program and the Korg Device is displayed at the bottom of this window and in the separate Communication Status window. KARMA Software requires that the Korg device be located on the Global Ports at all times, although the data being generated can be sent to other MIDI devices on other ports. Possible messages include:

Korg <Product> Workstation located on Input/Output Ports n/n.
Indicates that communication is properly established, and which ports of your MIDI setup are being used by the keyboard. (For example, if it says Input/Output Ports 2/4, this means the second port listed in the Input popup menu, and the fourth port listed in the Output popup menu).

Korg <Product> Workstation not located on Global Ports.
Indicates that the keyboard was not located on the Global In and Out Port at the top of this editor. Please check your MIDI settings and try again.

For more information, also see the chapter **Communication Status Window**.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this editor:



Copy Port Settings To All Performances
Copies the current In and Out Port Settings (but not the channels) to all Performances in the current KDF File. You might use this when you open a file created on some other computer with a different MIDI Setup, and you want to change them all to work on your current setup. In this case, simply set the ports as desired on an example Performance, get it working how you want, and then copy the Port Settings to all other Performances.

This is only needed if you have unchecked Link Modules To Global, and are using the setup stored in each Performance.

Every Performance in KARMA has its own MIDI setup that controls how the six Modules are routed, and on which MIDI Channels. Since the data in a particular KDF File may be stored with a configuration that does not match your computer system, you may find you need to change the MIDI ports of all Performances in a file (if you are not using Link Modules To Global). You may simply find that all of the Ports are set to the wrong selection, or you may receive an error message that “Invalid Port Settings in MIDI Ins & Outs Editor have been adjusted.”

Copy Input Channel Settings To All Performances
Copies the current Input Channel Settings to all Performances in the current KDF.

Note that both of these only change the Performances in RAM. To save these changes to disk, you must choose “Save” or “Save As…” from the File menu and update the KDF File on disk.

MIDI Ins & Outs - Global Parameters

The Global Settings tell KARMA which MIDI ports and channels to use to communicate with the Korg device. This is use to change modes on the keyboard, select corresponding Programs and Combis, dump GE data back and forth via SysEx, etc.

KARMA requires that the appropriate Korg device matching the application be physically located on the Global In and Out Ports and Channels, or it will not generate MIDI.

◆ **[Global Input Port]** (popup menu) [variable, depending on MIDI Interface]

Selects the MIDI Port that KARMA will use to receive communications from your Korg device. The choices in this menu will be determined by your MIDI interface and computer.

◆ **[Global Input Channel]** (popup menu) [0…15: 1…16]

Selects the MIDI Channel that KARMA will use to receive communications from your Korg device. This setting should be the same as the devices’s Global MIDI Channel setting.

◆ **[Global Output Port]** (popup menu) [variable, depending on MIDI Interface]

Selects the MIDI Port that KARMA will use to transmit communications to your Korg device. The choices in this menu will be determined by your MIDI interface and computer.

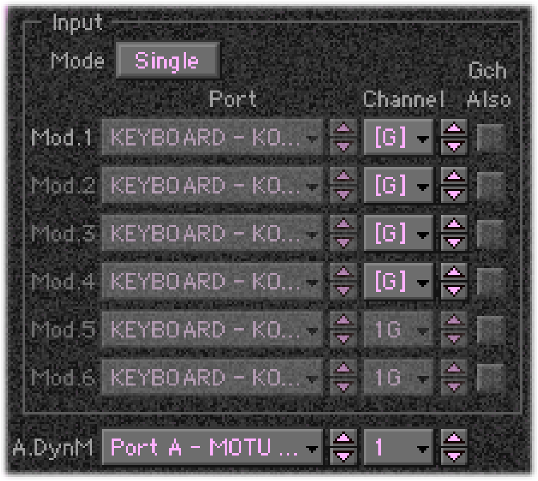
◆ **[Global Output Channel]** (popup menu) [0...15: 1...16]

Selects the MIDI Channel that KARMA will use to transmit communications to your Korg device. This setting should be the same as the device's Global MIDI Channel setting.

◆ **[Global Device Type]** (popup menu) [variable]

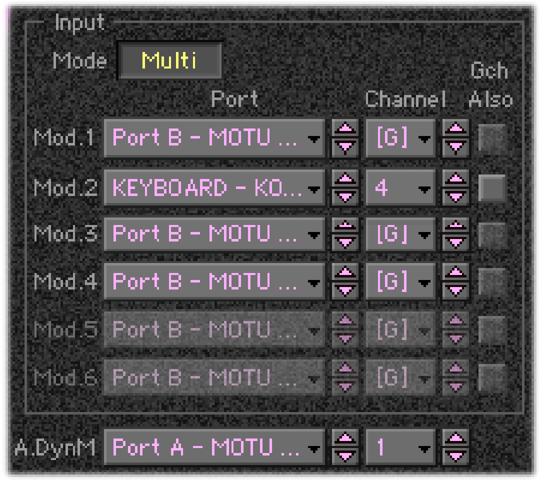
Global Device Type - Sets the overall type of device that you are using the software with. For Korg products, this is preset for you.

MIDI Ins & Outs - Input Parameters



NORMAL USE WITH M3

INPUT MODE = SINGLE
LINK MODULES TO GLOBAL = ON



USED WITH A SECOND KBD CONTROLLER

INPUT MODE = MULTI
LINK MODULES TO GLOBAL = OFF

The settings in this section determine which MIDI Port and Channel each of the six KARMA Modules will receive MIDI data on (the Module's "Source"). This input data can be used to construct, control, and trigger the GE for each Module. The diagram above to the left shows the appearance for normal use with a single M3; the diagram to the right shows an example where an additional MIDI Controller is being used to trigger other Modules.

◆ **[Input Mode]*** (button) [0, 1]

0: Single
Displays only the first Input Port popup (for Module 1), as shown above. This setting is then used for all six Modules. This is the typical setup for using KARMA with a single keyboard. When "Link Modules To Global" is selected, the Input Port will be greyed out and the Global In Port will be used.

1: Multi
Displays a separate Input Port popup for each of the six Modules. This allows each Module to communicate with a different MIDI device if desired.

Not available when the Performance Type is "1 Module" (corresponding to a Program on the M3).

⚠ To export data to that is compatible with your Korg device, this should always be set to "Single."

◆ **[Input Port]*** (popup menu) [variable, depending on MIDI Interface]

Selects the MIDI Port that each Module will receive MIDI data on (the "Source"). The choices in this menu will be determined by your MIDI interface and computer.

When the Input Channel is "[G] Global" and "Link Modules To Global" is selected, the Input Port menu will be grayed out and the Global Input Port and Channel settings will be used. A "G" after any other Channel number (i.e. "2G") indicates that it is currently selected as the Global Input Channel.

◆ **[Input Channel]** (popup menu) [0...15, 16: 1...16, Global]

Selects the MIDI Channel that each Module will receive MIDI data on, from the device selected in the Module's Input Port menu.

◆ **[GCh Also]** (checkbox) [0, 1]

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 Input Channel menu.

0: Off
The selected Module will receive data from the specified Input Channel, and will not receive data from the Global Input Channel.

1: On
The selected Module will receive data from the specified Input Channel and the Global Input Channel. This is useful when using a Chord Trigger button on a specific MIDI Channel to send data into a Module. Turning “GCh Also” On allows a keyboard (sending on the Global Channel) to also control the same Module. Otherwise, the keyboard would not be able to trigger note generation.

Not available unless the Module’s Input Channel menu is set to something other than Global Channel.

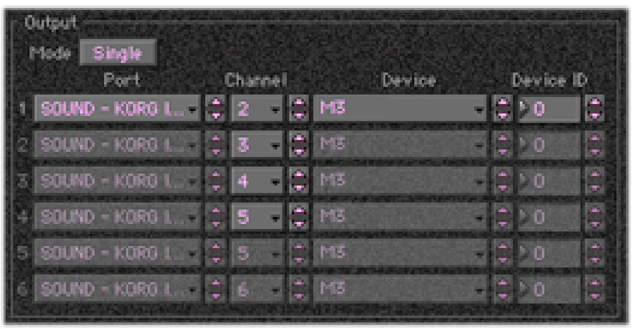
◆ **[Alternate Dyn MIDI Port]*** (popup menu) [variable, depending on MIDI Interface]

Selects an alternate MIDI Port that can be used to control and trigger Dynamic MIDI effects. You might use this with a controller like a Peavey PC-1600. The exact mapping of controllers to effects is determined in the **Dynamic MIDI** page.

◆ **[Alternate Dyn MIDI Channel]*** (popup menu) [0...15, 16: 1...16, Global]

Selects an alternate MIDI Channel that can be used to control and trigger Dynamic MIDI effects. You might use this with a controller like a Peavey PC-1600. The exact mapping of controllers to effects is determined in the **Dynamic MIDI** page.

MIDI Ins & Outs - Output Parameters



NORMAL USE WITH M3

OUTPUT MODE = SINGLE
LINK MODULES TO GLOBAL = ON

ADVANCED USE WITH MULTIPLE DEVICES

OUTPUT MODE = MULTI
LINK MODULES TO GLOBAL = OFF

The settings in this section determine which MIDI Port and Channel each of the six KARMA Modules will send MIDI Data to (the Module’s “Destination”). Data that is being generated for each Module will be sent to this destination. The diagram above to the left shows the appearance for normal use with a single M3; the diagram to the right shows an example where each of the four Modules is being sent to a different port of a multi-port MIDI interface, and driving external devices.

◆ **[Output Mode]*** (button) [0, 1]

0: Single
Displays only the first Output Port, Device Definition, and Device ID settings (for Module 1), as shown above. These settings are then used for all six Modules. Each Module will still have its own Channel setting. This is the typical setup for using KARMA with a single keyboard.

1: Multi
Displays separate Output Port, Device Definition, and Device ID settings for each of the six Modules. This allows each Module to communicate with a different MIDI device if desired. In this case, the Device settings are not important.

Not available when the Performance Type is “1 Module” (corresponding to a Program on the M3).

For exporting data that is compatible with your Korg device, this should always be set to “Single.”

◆ **[Output Port]*** (popup menus) [variable, depending on MIDI Interface]

Selects the MIDI Port that each Module will generate MIDI Data on (the “Destination”). The choices in this menu will be determined by your MIDI interface and computer.

◆ **[Output Channel]** (popup menu) [0...15, 16: 1...16, Global]

Selects the MIDI Channel that each Module will generate MIDI Data on, to be sent to the device selected in the Module’s Output Port menu.

When the Output Channel is “[G] Global” and “Link Modules To Global” is selected, the Input Port menu will be grayed out and the Global Input Port and Channel settings will be used. A “G” after any other Channel number (i.e. “2G”) indicates that it is currently selected as the Global Output Channel.

[Device Definition]* (popup menu) [variable]

This setting is ignored and is preset to the Korg M3. It will be removed in a future version.

[Device ID]* (numerical) [0...255]

This setting is ignored and will be removed in a future version.

MIDI Ins & Outs - Setup

[Setup] (popup menu) [0...2]

Selects one of several modes for how and when the MIDI Setup (settings in this editor) will be changed.

For exporting data that is compatible with your Korg device, this should always be set to “Performance,” indicating each Performance uses its own settings.

0: Performance

Each Performance can store a separate MIDI Setup. Select this option if you want each Performance to change the MIDI Setup when it is loaded.

1: File*

Each KDF File stores one File MIDI Setup that can be used for all the Performances in the entire file. This overrides the MIDI Setup stored with each Performance.

2: Global*

A single Global MIDI Setup exists for the entire program, which is saved in the Preferences file. Choose this option if you want to override any settings stored with the File or with each Performance. This can be useful for setting up a particular MIDI setting for a complex MIDI rig, and then switching to other Performances without disturbing the MIDI setup.

[Link Modules To Global]* (checkbox) [0, 1]

0: Off 1: On

When On, the Input and Output Ports in the lower section will be automatically “linked” to the port settings in the Global section. In other words, regardless of the stored port settings in the Performance, changing to a new Performance will not select them, but the ports will remain set to the same settings as the Global In/Out Port.

The reason for this is to allow you to easily use a KDF file with your Korg device without having to worry about what port settings may be stored in each Performance. Typically, for a new user and a new installation, this should be set to “On.” (The exception to this is when you want to use a different MIDI keyboard as the main controller, or for devices that do not have built-in keyboards, such as the Triton Rack or the M3-M. For more information, see **Additional M3-M (Module) Setup**.)

When Off, and the setup menu is set to “Performance,” each Performance will load its own port settings, allowing you to have the KARMA data sent to different destination devices, and/or to allow different input devices to trigger the KARMA effects.

MIDI Ins & Outs - Korg M3 Special Notes

⚠* In the above descriptions, features or parameters marked with an asterisk (*) are not supported by the Korg M3 Music Workstation:

Not available
* Setup
* Link Modules To Global
* Input Port
* Output Port
* Input Mode
* Output Mode
* Device Definition
* Device ID
* Alternate DynMIDI Port
* Alternate DynMIDI Channel

The parameters on the MIDI Ins & Outs Editor correspond to those found in the M3 as follows:

7-1,2,3,4 [GE Setup] (Combi/Seq)
Input Channel, Output Channel, GCh Also

Sync

Sections in this chapter:

Sync Editor - Overview

Technically part of the MIDI Setup, the Sync Editor controls whether KARMA will use its own internal clock (and send it to external devices), or use an external device's clock for synchronization (and optionally echo that clock to other devices). It can be opened by choosing "Sync Editor" from the Windows Menu, or by using the keyboard shortcut Cmnd+Y (Mac) or Ctrl+Y (Win). You only need to set these choices when synchronizing KARMA to other devices, or synchronizing other devices to KARMA.

Typically for KARMA M3, you will want KARMA Software to be the "master" and the keyboard to be the "slave," so that you can control the tempo of the keyboard from the software and have any beat-synchronized effects sync up to what KARMA is generating. When you run the MIDI Assistant as explained in the First Time Setup Chapter, it automatically sets this Editor correctly, as explained in **Communication Configuration - KM3 Software**.

In the following descriptions, System Realtime Messages refers collectively to MIDI Clock (also known as MIDI Beat Clock), MIDI Start, MIDI Stop, and MIDI Continue messages. KARMA can sync to MIDI Beat Clock, not MTC (MIDI Time Code).

Receiving LED
Flashes when receiving MIDI Clock and other System Realtime Messages.

Parameters
This section contains parameters that let you synchronize KARMA with your external MIDI Devices.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this Editor.

Sync Editor - Parameters

◆ **[Mode]** (button) [0, 1]

Switches between Internal Clock (normal operation or driving external devices in sync) and External Clock (being driven by an external device). The label shown as "Send" in the above diagram will change to "Echo" in External Mode.

0: Internal
KARMA will use its own internal clock, and send System Realtime Messages to external devices when the "Send" checkbox is On (below). System Realtime Messages from external devices are ignored. The Input Parameters section will be disabled, and the Output Parameters section allows KARMA's MIDI Clock to be sent to other devices.

1: External

KARMA will sync to MIDI Clock and System Realtime Messages received from an external device, and echo those messages to external devices when the “Echo” checkbox is On (below). The Input Parameters section will be enabled, and the Output Parameters section allows the messages being received to be echoed (sent) to other devices on other ports.

◆ **[Input Port]** (popup) [variable, depending on MIDI Interface]

Selects the port on which System Realtime Messages from an external device will be received. The choices in this menu will be determined by your MIDI interface and computer.

◆ **[Send/Echo]** (checkbox) [0, 1]

Toggles On/Off the sending or echoing of MIDI Clock and System Realtime Messages to the selected Output Port(s). When the “Mode” setting is “Internal,” the checkbox allows KARMA’s MIDI Clock to be sent to other devices on other ports, and the label displays “Send.” When the “Mode” setting is “External,” the checkbox allows the MIDI Clock being received to be echoed to other devices on other ports, and the label displays “Echo.”

0: Off

MIDI clock and System Realtime Messages (Start/Stop/Continue) will not be sent (or echoed) to the selected Output Port.

1: On

MIDI clock and System Realtime Messages (Start/Stop/Continue) will be sent (or echoed) to the selected Output Port.

◆ **[Output Port]** (popups) [variable, depending on MIDI Interface]

Selects a port on which System Realtime Messages generated (or received(by KARMA will be sent (or echoed) to external devices. The choices in this menu will be determined by your MIDI interface and computer. You can send messages to up to four different devices, and control all of them from the KARMA software. Note that the messages will not be sent unless the “Send/Echo” checkbox next to the Output Port menu is checked.

Sync Editor - Korg M3 Special Notes

In order to control the Tempo of your M3 from the software, you should set the keyboard’s MIDI Clock Mode to “Auto” with “RT” checked in the Global Mode MIDI Page. Then, you must configure the Sync Editor above so that one of the Output Ports is set to the port your M3 is located on (when using the Korg USB MIDI Driver (recommended), it will be “SOUND - KORG INC. M3”), and the “Send” checkbox is turned on.

This way, when you change the Tempo of Combis or Programs inside the software, the beat-synchronized effect settings (IFX/MFX) of the keyboard will stay properly in sync. For more information on setting these options in the hardware devices, see:

Communication Configuration - M3

Communication Status

If you are having difficult establishing communication between the software and your Korg device, please also refer to the following sections:

M3 First Time Setup

Communication Configuration - M3

Communication Configuration - M3 Software

The KARMA Software communicates constantly with the Korg device via System Exclusive messages (often referred to as SysEx for short.) The Communication Status Window shows the current status of the communications between the software and the Korg device. The window can be closed at any time, or you can have it remain open. If it is closed and you wish to open it, you can choose the “Communication Status” item on the Windows Menu.

The images shown here are from KARMA M3 for Mac OS X; for Windows, they will be similar.

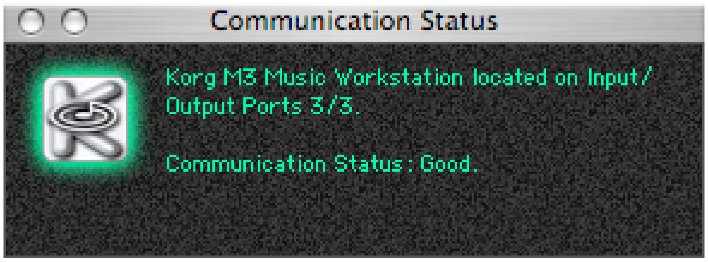


FIG. 1 - Communication Established

The window has two different appearances. When communication is properly established, it will look like the image in FIG. 1. This indicates that the device was located on the Global In/Out Ports at the top of the MIDI Ins & Outs Editor, and shows which ports are in use (based on their position in the lists of ports in the popup menus).

When communications are not established (or have been interrupted), an alert sound will occur and the window will pop open and display the message shown below in FIG. 2. When communications are re-established, an alert sound will occur again and the message will change to that shown in FIG. 1.

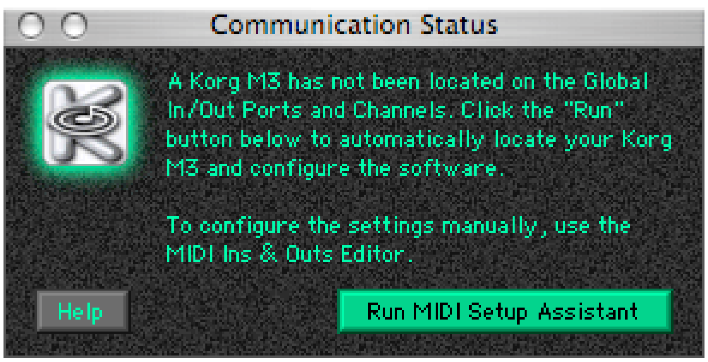


FIG. 2 - Communication Not Established

FIG. 2 indicates that the keyboard was not located on the Global In and Out Port at the top of the MIDI Ins & Outs Editor. The easiest solution is to click the “Run MIDI Setup Assistant” button, which will automatically search all ports of your MIDI Interface to find the required Korg device and try to establish communication. If successful, the dialog will then change to the image in FIG. 1.

◆ **[Help]** (button)

Opens the Help File to this chapter.

◆ **[Run MIDI Setup Assistant]** (button)

Clicking this button will automatically search all ports of your MIDI Interface to find the required Korg device and try to establish communication. If successful, the dialog will then change to the image in FIG. 1. While it is running, it displays the dialog shown in FIG. 3, from which you can cancel at any time (depending on how many ports are connected to your computer, this may take a bit of time):

FIG. 3 - MIDI Setup Assistant While Running

FIG. 4 - Unsuccessful Conclusion To MIDI Setup Assistant

If your Korg device is not located for some reason, you will see the dialog shown above in FIG. 4. If you cannot rectify the problem using the suggestions in the dialog, please see the links at the top of this chapter for more detailed information.

⚠ KARMA M3 requires that a Korg M3 be physically located on the Global In and Out Ports and Channels, or it will not generate MIDI.

Section 2:

Performance Editor

Performance Editor

Sections in this chapter:

Performance Editor - Overview

The Performance Editor (also referred to as the “PE Editor”) allows the Generated Effects for up to six different Modules to be configured as a “Performance.” Additional Module parameters not found in the GEs themselves are edited here, including Key Zones, Midi Controller assignments, Triggering methods, and CC Offsets, among others.

⚠ In Korg Products that contain the KARMA function, a maximum of four Modules may be used at once. A single Module Performance corresponds to a Program, while a four Module Performance directly corresponds to a Combination. However, KARMA Software presently supports a six module design. You may use the other two modules in a Combination while using the software, but any settings related to the fifth and sixth module will not be able to be transfered to the Korg Product’s internal KARMA engine (if applicable).

Performance Management

Allows you to load Performances from banks of stored Performances, and to store changes or new Performances you have created. The overall Performance Tempo, Type and Time Signature are also located here.

Status/Editing

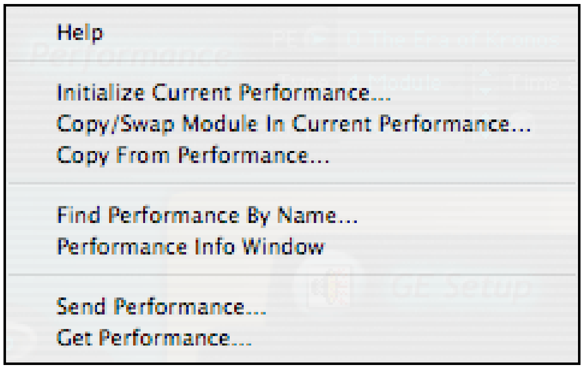
Allows you to mute and solo Modules conveniently from the main window, regardless of which page is showing. Also allows the current Module being edited to be changed (which changes the current edit GE for the GE Editor, described elsewhere).

Info Display

Displays the name of the current KDF File and information about the current edit Module, including Module Name, GE Name and GE Bank.

Page Selection Buttons/Page Display Area
Allow different groupings of parameters (“PE Pages”) to be displayed in the Page Display Area (center window of the screen). Each of the PE Pages has a separate chapter in this manual describing their parameters and features.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this Editor:



Click on the links below for detailed information on the utilities not fully explained here:

Initialize Current Performance...

Copy/Swap Module In Current Performance...

Copy From Performance...

Find Performance By Name...

Performance Info Window

The following commands open the Send or Get Performances SysEx Dialogs, preconfigured to the current Performance (Edit Buffer):

Not available when the SysEx communication has not been established.

Send Performance...

Get Performance...

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **Performance Editor: RT Parms** page for more information.

Performance Editor - Performance Management

- **[Bank]** (popup menu) [0...number of banks in current KDF File-1]

Selects one of the Performance Banks within the current KDF File. The Performance is then loaded, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values.

- **[Performance]** (popup menu) [0...127]

Selects one of many Performances from within the current Performance Bank. The Performance is then loaded, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values.

- **[Show Bank’s KDF File]** (button)

Brings to the front the **KDF Window** that contains the currently selected bank, and selects it in the KDF Window.

- **[Open Performance Bank Display]** (button)

Opens a **Bank Display Window** for the current bank of Performances.

- **[Store]** (button)

Brings up a **Store Dialog** allowing you to name the Performance and store it in a memory location.

◆ **[Clear]** (button)

Brings up a dialog allowing you to clear the selected Performance. You will be given an opportunity to cancel. After clearing, the Performance will disappear from the Performance popup menus.

Storing or clearing only affects the Performance in RAM. To save these changes to disk, you must save the KDF File by choosing “Save,” “Save As…” or “Save All…” from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Performance you can close and reopen the current KDF file.

◆ **[Performance Type]*** (popup menu) [0…5]

Sets the number of Modules used in a Performance. Setting this to other than “6 Modules” will cause parameters for unused to Modules to become grayed out.

In Korg Products that contain the KARMA function, a maximum of four Modules may be used at once. A single Module Performance corresponds to a Program, while a four Module Performance directly corresponds to a Combination. However, KARMA Software presently supports a six module design. You may use the other two modules in a Combination while using the software, but any settings related to the fifth and sixth module will not be able to be transfered to the Korg Product’s internal KARMA engine (if applicable).

◆ **[Time Signature]** (popup menu) [0, 1…48 = GE/TS, 1/4…16/16]

If set to “GE/TS” the individual Time Signatures of the GEs are used in each Module. Other settings override the GEs and set an overall Time Signature for the whole Performance.

If the GE’s Phase Length Mode is not “TS – Time Signature,” then when the Performance Time Signature here is set to anything other than “GE/TS” the GE will function as if it is set to “TS-Time Signature,” since it needs some reference to a time signature to adjust to a new one. In this case, it acts like it has a setting of 4/4 in both Phases, and a Phase Cycle Mode of “E.”

When changing the PE Time Signature to a different Time Signature, the previous setting will be completed before changing to the new one. In other words, if you change to 1/4 in the middle of a measure of 4/4, the measure will complete a full four beats before changing to 1/4.

◆ **[Tempo]** (numerical) [40.0…240.0 BPM]

Sets the overall Tempo for the Performance, in Beats Per Minute (BPM). The Tempo LED next to it flashes according to quarter notes.

Note that each Generated Effect is stored with the tempo that was being used when it was last saved, so that a reference exists for the correct tempo to use it at. However, the Performance Tempo overrides the settings of all the GEs being used by that Performance. When you load a GE using the popup menus, the GE Tempo will not normally affect the Performance Tempo unless the “Loading GE Loads GE Tempo” option in the Options Menu is checked. Therefore, if you are auditioning single GEs and want to hear them at the tempo that they were intended to be used at, you should select this option. Then when the GE is loaded, it will replace the Performance Tempo with the GE Tempo. This only applies to GEs that are loaded using the popup menus in this editor, or the corresponding GE popup menus in the GE Setup page.

The GE Tempo and Performance Tempo settings are “linked,” in that if you adjust the GE Tempo while listening to a GE you will also be changing the Performance Tempo.

Performance Editor - Status/Editing

◆ **[Current Module]** (button grid) [1…6, blue = selected]

Selects the “Current Edit Module” from the active Modules in the Performance. This affects which Module’s information is displayed in the Info Display to the right of this area, as well as which GE can be edited in the **GE Editor**.

◆ **[Run]** (button grid) [1…6, green = On]

Turns on the selected Module(s). When off, the Module(s) may still playing, but they are muted. The Run settings are stored with the Performance.

◆ **[Solo]** (button grid) [1…6, yellow = On]

Solos the selected Module(s), even if their Run button(s) are Off. Solos are NOT stored with the Performance.

Performance Editor - Korg M3 Special Notes

* In the above descriptions, features or parameters marked with an asterisk (*) are not supported by the Korg M3 Music Workstation.

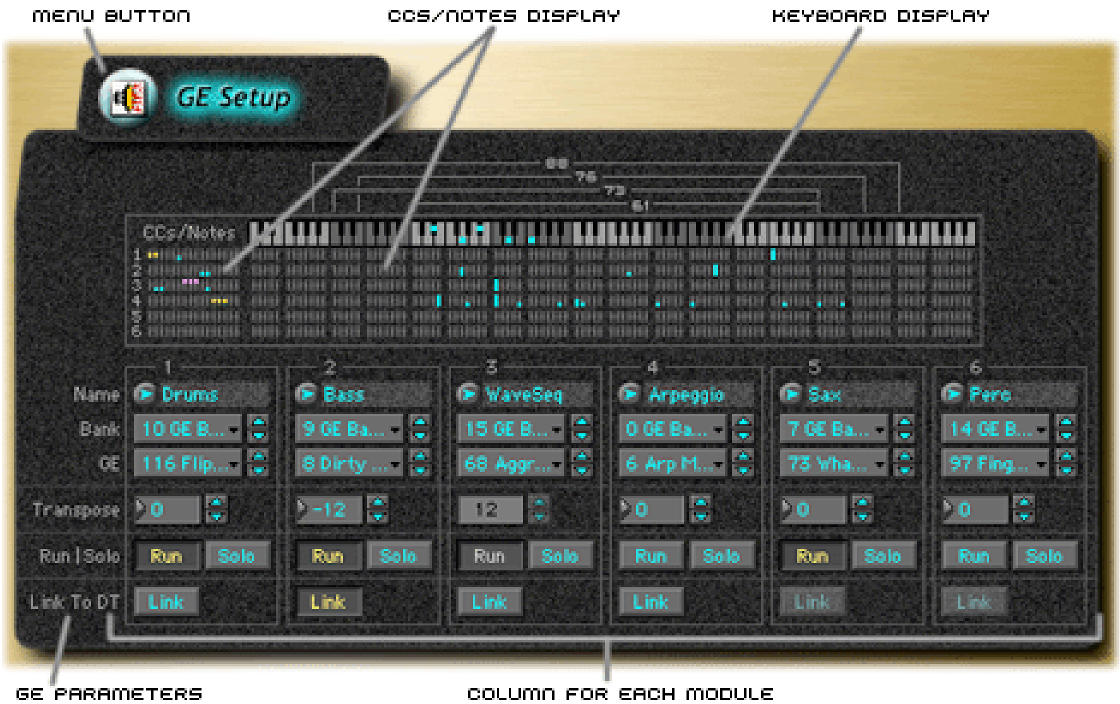
The parameters in the Performance Editor correspond to those found in the M3 as follows:

0-5 [KARMA GE]
7-1-1 [GE Setup] (Program)
7-1-1,2,3,4 [GE Setup] (Combi/Seq)
Tempo, Time Sig, Run, Solo

Not available
* Performance Type

GE Setup

Sections in this chapter:



GE Setup - Overview

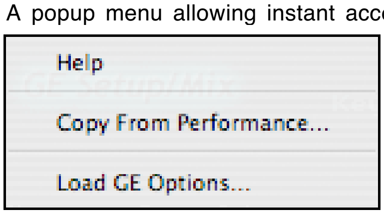
The GE Setup Page controls which Generated Effect is selected for each Module, whether they are off or on (running), and the Module's Transpose setting. A display area shows a real-time display of MIDI information being generated by each Module. A column exists for each Module, which may be grayed out depending on how many Modules are active in the current Performance, according to the Performance Type parameter. The page can be divided into the following areas:

GE Parameters
Allows you to select one of many GEs to be used by the Module, give each Module a name that can be viewed in other pages of the interface, and control the Transposition and On/Off status of each Module.

Keyboard Display
Displays incoming MIDI notes that are used to trigger the KARMA GEs.

CCs/Notes Display
A row displays the various MIDI CC Data and Note Data that is being generated on each Module.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:

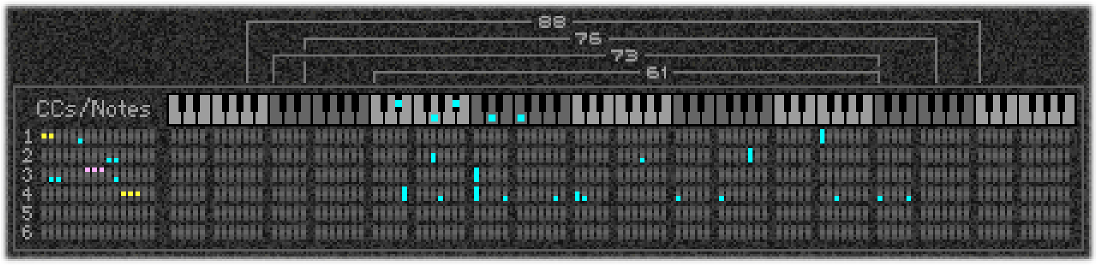


[Copy From Performance...](#)

[Load GE Options...](#)

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **[Performance Editor: RT Parms](#)** page for more information.

GE Setup - CCs/Notes Display



For each of the six Modules, a row displays the various MIDI CC Data and Note Data that is being generated on that particular Module. The sizes of common MIDI keyboards as they relate to the display is shown above the Keyboard Display. Underneath it, the notes being generated are displayed as vertical lines, with longer lines indicating higher velocities. In the CCs area to the right of the Keyboard Display, various CCs (Control Changes) being generated are displayed as follows, with 0...127 being spread out from left to right:

- Expression (CC 11), Volume (CC 07), Pan (CC10) and Balance/Effects Pan (CC08) are displayed in yellow.
- Pitch Bend and Aftertouch are displayed in purple.
- All other CCs are displayed in blue.

GE Setup - GE Parameters

The parameters in this section control which GE is loaded into a particular Module, allow you to give each Module a name that can be viewed in other pages of the interface, and control Transposition and the On/Off status of each Module. It also allows linking the Module to the Drum Track button.

◆ **[Module Name]*** (button)

Allows a descriptive name to be chosen for each Module from a large list of predefined Module Names. By default, in a new Performance the Modules are named Module 1, Module 2, Module 3 etc., but you can choose something that is more appropriate if desired. These names then show up in other pages of the Performance Editor, the top of the GE Editor, and the RT Control Window, making it easier to identify a particular Module.

◆ **[GE Bank]** (popup menu) [0...number of GE Banks in current KDF File - 1]

Selects one of the GE Banks within the current KDF File. The GE is then loaded into that Module, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values. Using this menu is the same as using the GE Bank menu in the Generated Effect Editor, for the Current Edit Module.

◆ **[GE]** (popup menu) [0...127]

Selects one of many GEs from within the current GE Bank for that Module. The GE is then loaded into that Module, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values. Using this menu is the same as using the GE menu in the Generated Effect Editor, for the Current Edit Module.

Selecting a new GE with the Bank or GE popup menus also changes which Module is the "Current Edit Module." This affects which Module's information is displayed in the Info Display at the top of the Performance Editor, as well as which GE can be edited in the **GE Editor**.

GEs can also be selected in several other ways: from the top of the GE Editor, or by choosing a GE in an open GE Bank Display Window. In those cases, the GE is loaded into the Current Edit Module.

◆ **[Transpose]** (numerical) [-36...+36 semitones]

Transposes the input notes up or down in semitones before they create the GE's Note Series or influence the pitch of a GE's Drum Pattern. Therefore, this is a "pre" transpose, which effectively controls the pitch of the phrases or chords produced by the KARMA module. Note that this does not transpose the effective range for soloing when using Direct Indexing. However, the separate "Transpose" parameter in the GE Editor: Direct Index page can be used to transpose the Direct Indexing range with regards to the GE. See **Direct Index: General Parameters**.

◆ **[Run]** (button) [0, 1]

0: Off 1: On
Turns on the selected Module. When off, the Module may still playing, but it is muted. The Run settings are stored with the Performance.

◆ **[Solo]** (button) [0, 1]

0: Off 1: On
Solos the selected Module, even if the Run button is Off. Solos are NOT stored with the Performance.

◆ **[Link To DT (Drum Track)]** (button) [0, 1]

0: Off 1: On
When On, the triggering and control of the Module will be linked to the M3's Drum Track On/Off button (and its counterpart in KARMA's Real-Time Controls Window). This allows the Drum Track On/Off button to start and stop the linked Modules, depending on the setting of other triggering-related parameters. For example, you might want to use a KARMA GE as a second drum groove or percussion groove, and have it activate as if it were part of the Drum Track pattern.

GE Setup - Korg M3 Special Notes

⚠* In the above descriptions, features or parameters marked with an asterisk (*) are not supported by the Korg M3 Music Workstation.

The parameters on the GE Setup Page correspond to those found in the M3 as follows:

0-5 [KARMA GE]
Run, Solo, Link To DT

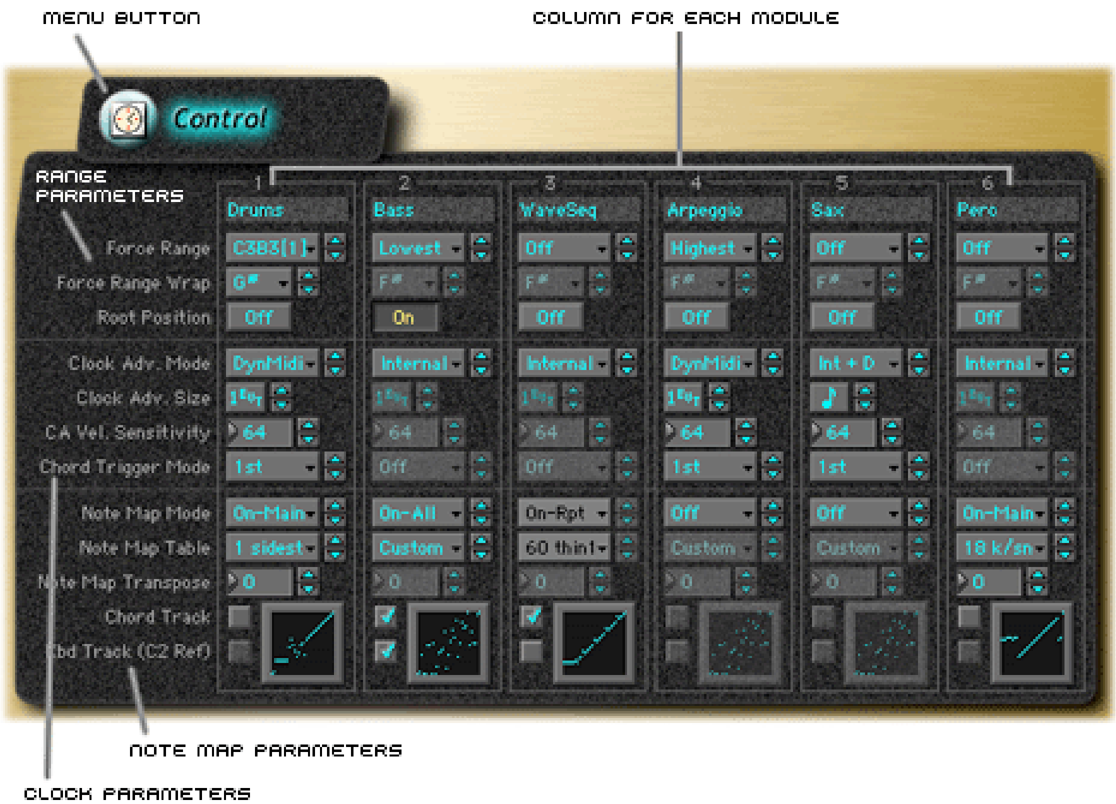
7-1-1 [GE Setup] (Program)
7-1-1,2,3,4 [GE Setup] (Combi/Seq)
GE Bank, GE
Run, Solo, Link To DT

7-1-7 [Control] (Program)
7-2-1,2,3,4 [Control] (Combi/Seq)
Transpose

Not available
* Module Name

Control

Sections in this chapter:



Control - Overview

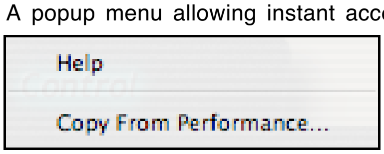
The Control Page contains a number of parameters related to the range of the notes, the tracking of the Modules when you move the input notes around, whether the Modules are driven by the internal clock or the Manual Advance Feature, and whether the notes of a Module are remapped to other notes. A column exists for each of the Modules in a Performance, which may be grayed out depending on how many Modules are active in the current Performance. At the top of each column is the Module Name, which can be edited from the GE Setup Page. Each column is divided into three groupings of parameters:

Range Parameters
Allow control over some overall note range and tracking aspects of the Module.

Clock Parameters
Allow a Module's effect to be "Manually Advanced" by repeated triggers assigned in the Dynamic MIDI page.

Note Map Parameters
Allow a Module's effect to be run through a Note Map Table, where each note may be individually changed to a different note.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy From Performance...

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **Performance Editor: RT Parms** page for more information.

Control - Range Parameters

These three parameters affect some overall operational aspects of the Module. The Module Name displayed at the top of the column can be assigned on the **GE Setup Page**.

◆ **[Force Range]** (popup menu) [0...4]

Allows the input notes to be restricted to several useful ranges, before they are sent to the GE.

0: Off - as played
Input notes are passed on to the GE as played, with no further alteration.

1: Lowest - all notes in same octave as lowest note
The input notes will be forced to a range within one octave of the lowest note, and duplicate pitches are discarded. Useful for eliminating inversions so that a chord voiced in different ways produces identical results. See FIG. 1 below.

2: Highest - all notes in same octave as highest note
The input notes will be forced to a range within one octave of the highest note, and duplicate pitches are discarded. Useful for eliminating inversions so that a chord voiced in different ways produces identical results. See FIG. 1 below.

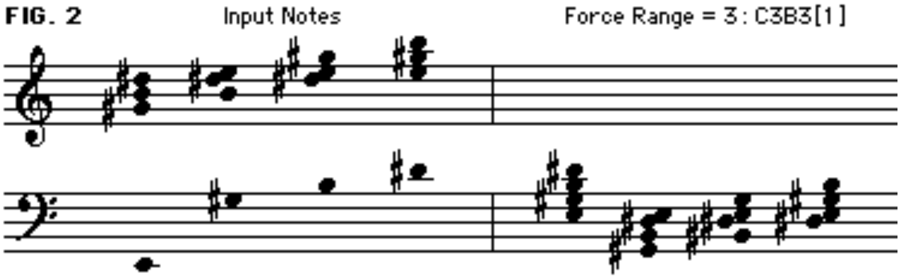
FIG. 1 Input Notes Force Range = 0: Lowest 1: Highest

Played on keyboard:
E2 G#3 E4 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

3: C3B3[1] - all notes near 4th octave (maintain inversion)
The input notes will be forced to a range near the middle octave (C3–B3). 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. 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. See FIG. 2 below.

FIG. 2 Input Notes Force Range = 3: C3B3[1]

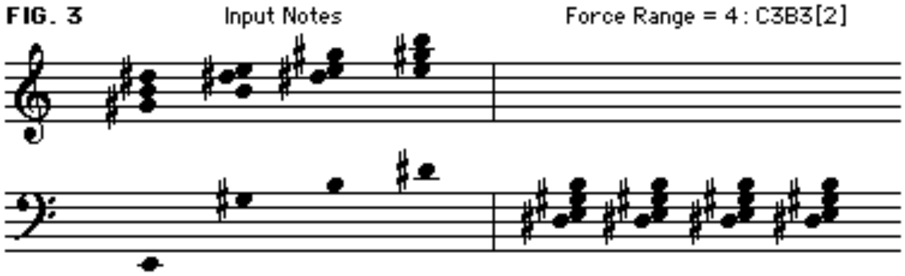


Played on keyboard:
E2 G#4 B4 D#5 (EMaj7 first inversion)
G#3 B4 D#5 E5 (EMaj7 second inversion)
B3 D#5 E5 G#5 (EMaj7 third inversion)
D#4 E5 G#5 B5 (EMaj7 fourth inversion)

Resulting transposed input notes with C3B3[2]:
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)

4: C3B3[2] - all notes in 4th octave (may change inversion)
The input notes will be forced to a range within the middle octave (C3–B3). Since all notes will be forced into the middle octave, the chord inversion may 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. See FIG. 3 below.

FIG. 3



Played on keyboard:
E2 G#4 B4 D#5 (EMaj7 first inversion)
G#3 B4 D#5 E5 (EMaj7 second inversion)
B3 D#5 E5 G#5 (EMaj7 third inversion)
D#4 E5 G#5 B5 (EMaj7 fourth inversion)

Resulting transposed input notes with C3B3[2]:
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)

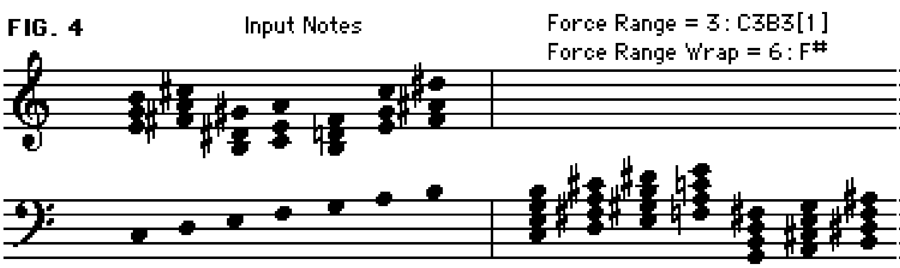
You can further change the octave of the resulting input notes by using the Transpose parameter (Performance Editor: GE Setup page) together with Force Range.

◆ **[Force Range Wrap]** (popup menu) [0...11: C...B]

When Force Range (above) is set to "3: C3B3[1] - all notes near 4th octave (maintain inversion)," 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.

FIG. 4 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 = 6: 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.

FIG. 4



Not available unless Force Range is set to 3: C3B3[1].

◆ **[Root Position]** (button) [0, 1]

0: Off 1: On
Allows the GE Note Series to be created in root position, regardless of the inversion of the input notes, based on chord recognition. Notes generated from the Note Series may then behave more predictably with all inversions of a chord.

In other words, when this is Off, 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 (this assumes also that Note Series Inversion is "0"). By using Root Position set to On, 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.

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. 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, As Played	Notes placed in root position for chord, in octave of lowest note, sorted in down direction
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 is “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 is “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 “Regular” Note Type 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.

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 “Drum-Track Keyboard” is on - see **GE Editor: Drum: Pattern Editing Grid & Associated Parameters**.

In addition, when the GE Type is “Generated-Drum,” if using arpeggiated pitch bending (based on the Note Series), the resulting pitch bend data will also be affected - see **GE Editor: Bend: Drum Parameters**.

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 Destinations**.

Control - Clock Parameters

Here you can make settings for the clock that will operate the KARMA Module (and its GE). The Clock Parameters control whether the effect will be advanced by the Internal/External Clock (automatically generated), or whether certain actions as configured in the Dynamic MIDI page will supply “triggers” to advance the effect manually (Manual Advance). This can be used so that various triggers such as foot pedals or keys in a certain area of the keyboard give the user rhythmic control over when the notes will be generated, while the exact order of the notes as they are generated are controlled by the other settings of the GE.

◆ **[Clock Advance Mode]** (popup menu) [0...4]

Selects one of several different modes for advancing the generation of the GE, including the internal clock, user supplied triggers from Dynamic MIDI, or combinations of both.

0: Internal
Allows the Internal Master Clock (or externally received Midi Clock) to advance the effects. This is most normal, for automatically generated effects. The Rhythm Patterns of the effect decide when the notes will be generated.

1: DynMidi
Allows various actions configured in the Dynamic MIDI page to supply “triggers” to advance the effect. Exactly how the advancing will be performed is determined by the setting of the other Clock Parameters in this section.

2: Int + D - Internal and DynMidi
Allows the Internal Master Clock (or externally received Midi Clock) to advance the effects according to the Rhythm Patterns, while allowing actions configured in the Dynamic MIDI page to supply additional triggers. For example, you could use this to have a normal automatically generated arpeggio and then have the Mod Wheel assigned to “sweep advance” the effect at the same time.

3: Int + DS - DynMidi stops Internal
Same as “Int + D” above, except the Master Clock will be stopped when receiving a trigger from Dynamic MIDI. For example, you can use this to have a normally generated phrase that can be interrupted and “taken over” by user controlled triggers.

The following 4 parameters are not available when Clock Advance Mode is set to “Internal”:

◆ **[Clock Advance Size]** (popup menu) [0...11]

Specifies the unit by which the GE’s Phrase or Pattern will be advanced by triggers supplied through Dynamic MIDI.

0...10: 64th Note Triplet to Quarter Note
Each trigger advances the effect by the chosen rhythmic size, according to the Rhythm Patterns stored in the GE. This can be used so that it takes several triggers to advance the effect, so that when layering several modules using these type of effects, they will not all advance at the same rate. For example, if the GE had a Rhythm Pattern of straight 8th notes and the Size menu was set to “16th Note,” then each trigger would advance the effect by a 16th note, and it would consequently take two received triggers to generate each note or cluster. If the Size menu was “32nd Note,” it would take four received triggers to generate each note or cluster.

11: Event
The Rhythm Patterns stored with the GE are ignored, and each trigger received advances the effect, generating a note or cluster (chord).

◆ **[Clock Advance Velocity Sensitivity]** (numerical) [001...127]

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 generated notes. In other words, if the Dynamic MIDI Source configured to provide the triggers is Note or Velocity, the phrase will be produced by applying the velocity of each Manual Advance trigger to the notes as they are generated, as scaled by this parameter. For example, with a setting of 1, the velocity data will be input to the GE with an unmodified range of 1 ~ 127 (full sensitivity). With a setting of 64, velocity data in the range of 1 ~ 127 will be scaled to the range of 64 ~ 127, and the controller will appear to be half as sensitive.

◆ **[Chord Trigger Mode]** (popup menu) [0...4]

Specifies how a chord will be sounded when input from the keyboard in the input note area. This can be used to allow the input chord to play the first note or chord, after which subsequent triggers continue with Manual Advance.

0: Off
There will be no sound when you input a chord from the keyboard. This is analogous to a guitarist changing the position of the left hand - it prepares a chord for the picking action of the right hand. In other words, when you play a chord on the keyboard, nothing will happen until you start sending triggers by whatever action is selected in the Dynamic Midi page.

1: 1st - play first note
When you input a chord from the keyboard, the first step of the phrase or pattern will sound. When you send in triggers with the controller, the phrase or pattern will continue advancing (from the second step that would normally be generated).

2: Con - play chord and continue
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. The Strum parameter in the **GE Editor: Cluster** page controls an amount of strum for the chord. When triggers are received after this, the effect will continue advancing from where it currently is.

3: Rst - play chord and restart
Same as 2: Con, except subsequently received triggers restart the effect from the beginning.

4: 2nd - play chord and continue from second note
Same as 2: Con, except subsequently received triggers start with what would be the second note of the effect, as if only 1 note had been generated (and not a chord). Useful for certain guitar fingerpicking simulations, by allowing you to create a natural connection between the played chord and the fingerpicking caused by operating the controller.

Control - Note Map Parameters

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.

The black and blue Table Display object shows a tiny version of a portion of the currently selected table. The **Note Map Editor** can be opened by clicking on this representation of the table, allowing you to edit the values in the table. You can also open it from the Windows Menu > Note Map Editor.

Each Performance contains a single user table (named “Custom”). The settings of this single table are stored inside the Performance. Additionally, there are a number of tables stored in global memory, with pre-defined functions, that can be selected for use by any Module in any Performance.

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 Maps, in any combination.

◆ **[Note Map Mode]** (popup menu) [0...3]

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.

0: Off
The table is inactive and no filtering or remapping is done.

1: On-Main Main Notes Only
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.

2: On-Rpt Repeat Notes Only
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.

3: On-All All Notes
The table is used to map or filter all notes being generated by the module.

◆ **[Note Map Table]** (popup menu) [0 = Custom, 1...64 = Global]

Selects the “Custom” table in each Performance, or one of the Global Note Map Tables. The black and blue Table Display object below it shows a tiny version of a portion of the actual table. The **Note Map Editor** can be opened by clicking on this representation of the table, allowing you to edit the values in the table. You can also open it from the Windows Menu > Note Map Editor.

◆ **[Note Map Transpose]** (numerical) [-12...+12]

Allows you to set up a “fixed” Modal Note Map, without “Chord Track” or “Keyboard Track (C2 Ref),” and then apply an offset to transpose it to other keys. In other words, you could 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 in D Mixolydian, etc.

Only available when “Chord Track” is Off.

[Chord Track] (checkbox) [0, 1]

Selects whether the Note Map Table will track your chord changes within the range of a single octave.

0: Off 1: On
The table programming is done with 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 (C4-60 to C5-72). You edit that octave in the note Map Editor to have no 3rd (E4 removed). With Chord Track set to 0: Off, playing a D chord would exhibit no changed notes, because there is no E4 in the arpeggio. With Chord Track set to 1: On, the D chord would sound the same as the C chord (no 3rd), except it would be in the key of D. When On, 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 Kbd Track (C2 Ref) below.

[Kbd Track (C2 Ref)] (checkbox) [0, 1]

Selects whether the Note Map Table will track your chord changes across the entire keyboard, with reference to C2.

0: Off 1: On
When Chord Track is already turned on, setting Kbd Track to 1: On 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.

Not available unless Chord Track is set to 1: On.

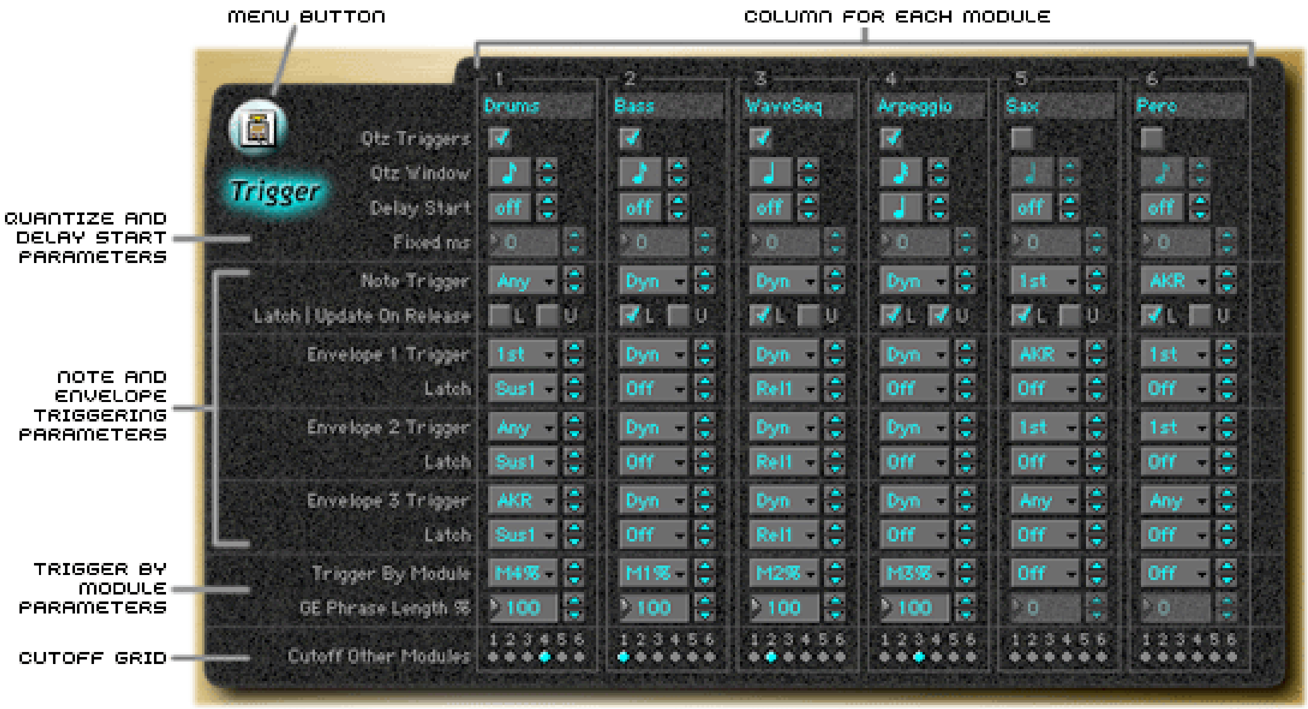
Control - Korg M3 Special Notes

The parameters on the Control Page correspond to those found in the M3 as follows:

7-1-7 [Control] (Program)
7-2-1,2,3,4 [Control] (Combi/Seq)
All parameters on this page
The Transpose Parameter in the M3 is located in the GE Setup Page.

Trigger

Sections in this chapter:



Trigger - Overview

The Trigger Page contains parameters that control different options for how and when the GE contained inside a Module will be triggered. It also specifies whether a Module will cutoff other Modules that may be playing, and whether to delay the start of the Module after it has been triggered. The various envelopes that may be used in a GE may also be individually triggered and controlled.

There are essentially two different “components” of a GE that may be triggered and controlled:

(1) The notes: the actual start of the generation of notes from the Note Series, the restarting from the programmed beginning of the effect, and whether playback continues when keys are released on a keyboard/controller.

(2) The envelopes: each of the 3 envelopes can be individually triggered, with special latching options that permit the envelopes to complete all or portions of their shape when keys are released on a keyboard/controller. The latch options also permit looping of all or portions of the envelope, in conjunction with the **GE Editor: Envelopes** page Loop parameters.

A column exists for each of the Modules in a Performance, which may be grayed out depending on how many Modules are active in the current Performance. The Module Name displayed at the top of the column can be assigned on the GE Setup Page. Each column is divided into seven sections, which can be roughly grouped into four areas:

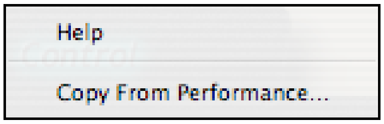
Quantize and Delay Start Parameters
Determines whether the triggering of the Module will be quantized to a specified metric division, and allows the start of a Module’s effect to be delayed by a certain amount once it is triggered.

Note & Envelope Triggering Parameters
Control the triggering, restarting and latching of the notes and envelopes in the effect.

Trigger By Module Parameters
Allow a Module’s effect (both notes and envelopes) to be triggered by a percentage of the length of another Module’s effect, in addition to the other triggering options.

Cutoff Grid
Controls whether the triggering of a Module's effect will stop any other Module's effects that are playing.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



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Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **Performance Editor: RT Parms** page for more information.

Trigger - Quantize and Delay Start Parameters

The parameters in this section control quantization of triggering of the Module, and allow you to program a delay from when it is triggered to when it actually starts. The Module Name displayed at the top of the column can be assigned on the **GE Setup Page**.

◆ **[Quantize Triggers]** (checkbox) [0, 1]

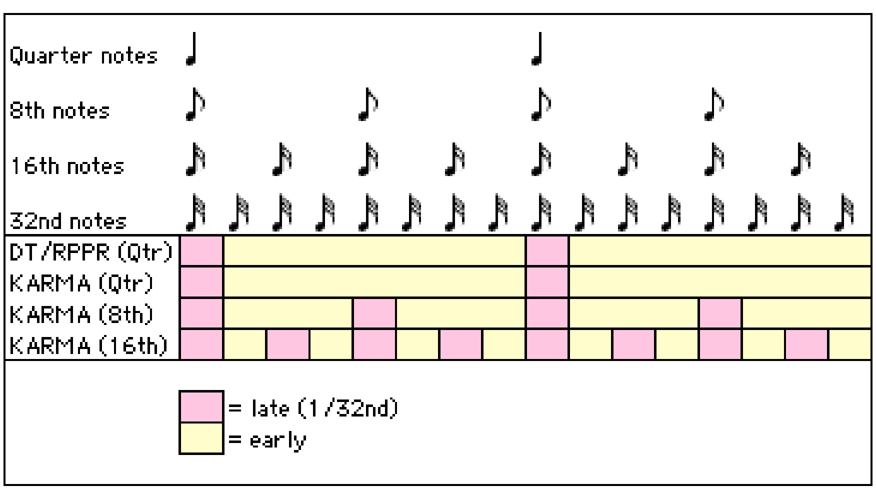
Allows chords and other incoming triggers to be quantized to an already existing beat or groove.

0: Off
No quantization is performed. Triggering will occur instantly at the moment you play the keyboard or activate a trigger through Dynamic MIDI. Most useful for natural glissando and cadenza type effects, where locking to a beat is unnecessary, or there is no beat to lock to.

1: On
Incoming triggers are quantized to a metric division of the beat specified by the Quantize Window setting, relative to the current tempo. This is useful when KARMA is generating grooves and you are trying to lock your chord changes to the beat, or when triggering effects via other means.

◆ **[Quantize Window]** (popup menu) [0...5]
Specifies the metric division by which input note data or Dynamic MIDI Triggers will be quantized before triggering the Module and the start of the phrase. Use larger values for more relaxed triggering.

16th triplet...Quarter:
Specifies the time window as a note value interval relative to the tempo. For triplet-based patterns, you may need to select one of the triplet-based settings if you intend to retrigger "off the beat."



When Quantize Trigger is On (checked), triggering at a timing that is within a 32nd note of the Quantize Window setting will be considered "late" (shown by the pink color in the diagram above), and will cause the playback to begin immediately while bringing the Module into sync with other running Modules or time-based features such as the Drum Track and RPPR. If the trigger is later than this, it will be considered "early" (shown by the yellow color in the diagram above), and playback will start at the next metric division corresponding to the Quantize Window.

◆ **[Delay Start]** (popup menu) [0...25]

Allows the start of a Module's GE to be delayed by a certain amount once it is triggered. For example, this can be used to delay the start of one Module a certain number of beats, while another Module starts immediately. This affects both the triggering of the envelopes and the start/restart of the notes.

0: Off
When a Module receives a trigger, it starts immediately.

1. Fixed ms - (milliseconds)
Makes available the "Fixed ms" field beneath the popup, where an absolute length may then be specified in milliseconds to delay triggering envelopes and starting/restarting the notes. Note that this is independent of any tempo settings. You might use this to delay one module a short period of time from another Module, and have this delay stay constant regardless of the overall tempo of the Performance.

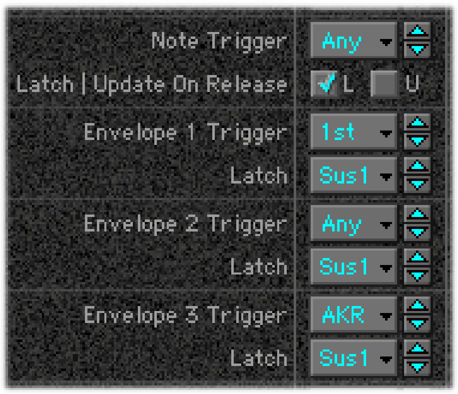
"ms" field not available unless "Fixed ms" is selected in the Delay Start popup menu.

2...25: 64th Note Triplet to 4 Whole Notes (16 beats)
Allows the start of the envelopes and start/restart of the notes to be delayed by the selected note duration. Note that this is tempo dependent, so changing tempos changes the amount of Delay Start and keeps the effect locked to tempo.

◆ **[Fixed ms]** (numerical) [1...5000 milliseconds]

Specifies an absolute amount in milliseconds by which to delay the start of the Module's GE. Note that this is independent of any tempo settings.

Trigger - Note & Envelope Triggering Parameters



The Triggering Parameters control how notes and envelopes in the GE may be triggered (started or restarted). The Latch Parameters control how and when note generation stops when keys are released, and how the envelopes will act when triggered and keys are released.

◆ **[Note Trigger]** (popup menu) [0...3]

Specifies how the notes of the pattern or phrase produced by the GE will start (or restart) in response to a trigger (i.e. a chord on a keyboard). All of the following options also allow a MIDI Controller to perform the triggering as chosen in the **Dynamic Midi** page.

0: Any - any note + Dynamic MIDI
Playing any new chords or notes (even while holding others) will cause the notes to restart at the beginning.

1: AKR - 1st note after key release + Dynamic MIDI
The first note or chord received will trigger the notes. Playing any new notes while still sustaining at least one note will not cause retriggering; all keys must first be released, and then the next chord or note will perform the triggering. By changing the chord you play on the input device while holding at least one note, you can selectively control whether the phrase or pattern starts from the beginning again or not.

2: 1st - 1st only until Module stops + Dynamic MIDI
From a state where KARMA is stopped, only the first note or chord will cause triggering. Subsequent notes will be ignored. Until the actual playback of the effect is stopped, the notes cannot be retriggered. This is typically used with drum effects or long phrases, where you want to play the keyboard after starting without restarting the Module. This is also the way that most auto-accompaniment keyboards operate.

3: Dyn - Dynamic MIDI
Allows only the setting in the Dynamic MIDI Page (such as a footswitch or joystick) to perform the note triggering, and effectively disconnects the notes from the input device (i.e. keys on the keyboard) from triggering. You can use this so that playing a chord on the keyboard sets up the effect in memory, but it will not start until the selected controller is activated.

[Note Latch] (checkbox) [0, 1]

Specifies whether the overall generation of the phrase or pattern will stop when all the input notes have been released.

0: Off 1: On
If the GE Type is one of the "Generated Types," when Note Latch is "On," releasing the keys does not cause note generation to stop. If set to "Off," note generation will stop as soon as the keys are released. If the GE Type = "Real-Time," this acts simply as a latch for all notes received, kind of like an intelligent automatic sustain pedal.

This relates to the overall Latch On/Off button in the Real-Time Controls Window: when the Note Latch setting here in the Module is turned On, the RT Control Latch On/Off button automatically has real-time control over it. In other words, if Note Latch is On, when the Latch On/Off button is also On, the generation of the phrase will continue when the input notes are released. When the Latch On/Off button is Off, generation will stop when the input notes are released. When the Note Latch setting here in the Module is Off, the RT Controls Latch On/Off button has no effect and the Module will always stop when the input notes have been released.

[Update On Release] (checkbox) [0, 1]

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.

0: Off
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.

1: On
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.

[Envelope 1/2/3 Trigger] (popup menu) [0...3]

Specifies how the selected envelope will start (or restart) in response to a trigger (i.e. a chord on a keyboard). If any envelopes have been programmed as part of the effect, you can individually control the way they can be triggered, independent of how the retriggering of the start of the notes is being controlled. Typically, these may be set to the same option as the Notes Trigger menu, but it is possible to find other interesting combinations. For example, you can retrigger a velocity envelope to cause a crescendo/decrescendo, without restarting the notes from the beginning of the effect. All of the following options also allow a MIDI Controller to perform the triggering as chosen in the **Dynamic Midi** page.

0: Any - any note + Dynamic MIDI
Playing any new chords or notes (even while holding others) will cause the envelope to restart at the beginning.

1: AKR - 1st note after key release + Dynamic MIDI
The first note or chord received will trigger the envelope. Playing any new notes while still sustaining at least one note will not cause retriggering; all keys must first be released, and then the next chord or note will perform the triggering. By changing the chord you play on the input device while holding at least one note, you can selectively control whether the envelope starts from the beginning again or not.

2: 1st - 1st only until Module stops + Dynamic MIDI
From a state where KARMA is stopped, only the first note or chord will cause triggering. Subsequent notes will be ignored. Until the actual playback of the effect is stopped, the envelope cannot be retriggered.

3: Dyn - Dynamic MIDI
Allows only the setting in the Dynamic MIDI Page (such as a footswitch or joystick) to perform the envelope triggering, and effectively disconnects the notes from the input device (i.e. keys on the keyboard) from triggering.

[Envelope 1/2/3 Latch] (popup menu) [0...4]

Specifies how the selected envelope's operation will be affected by the release of input notes. In the following explanations, the word "key" or "chord" is used to indicate either keyboard keys, or another type of triggering control as set up in the Dynamic MIDI Page.

0: Off - key release enters release immediately
The envelope will not be latched. Releasing the keys causes any envelopes in use to immediately go into their Release phases. This is "normal" operation for most synthesizer type envelopes. If the envelope is set to loop to the Sustain level, the envelope will loop as long as the key is held - key release will cause the loop to stop (see table below).

1: Sus1 - play to sustain, then use key release, key release ends looping
Once triggered, the envelope will play through the Attack and Decay phases as specified regardless of when the keys are released. If they are released before this has been completed, then when reaching the Sustain level the envelope will

immediately go into the Release phase. If the keys are held until the Sustain Level is reached, then this option is the same as “Off.” This can be used so that playing a chord and releasing it (even a chord with a short duration) will still perform the first part of an envelope as specified, before going into the Release phase. If the envelope is set to loop to the Sustain level, the envelope will loop as long as the key is held - key release will cause the loop to stop (see table below).

2: Rel1 - play entire shape to release (skip sustain), key release ends looping
Once triggered, the envelope will play through the Attack and Decay phases, and upon reaching the Sustain level, immediately enter the Release phase (thus playing the entire envelope shape). The Sustain level will be ignored, even if you are holding the keys when it is reached - the envelope will still go into the Release phase. Therefore, key release has no effect whatsoever on the envelope shape. This can be used so that playing a chord and releasing it will perform the entire shape of the envelope as specified (without stopping at the Sustain level), or so that holding a chord is no different than striking a chord and releasing it quickly. If the envelope is set to loop to one of the Release Level options, the envelope will loop as long as the key is held - key release will cause the loop to stop (see table below). The only difference between this option and “Rel2” below is that key release will stop the envelope if it is looping.

3: Sus2 - play to sustain and stop, ignore key release, loop continuously
Once triggered, the envelope will play through the Attack and Decay phases and stop at the Sustain level. Key release has no effect whatsoever, and the envelope will never enter the Release phase. This can be used so that playing a chord and releasing it will perform the first part of an envelope as specified, but then stop at a predetermined sustain level. If the envelope is set to loop to the Sustain level, releasing the keys will not stop the loop, so this can also be used to continuously loop an envelope without having to hold down any keys (see table below).

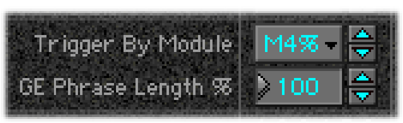
4: Rel2 - play entire shape to release (skip sustain), loop continuously
Once triggered, the envelope will play through the Attack and Decay phases, and upon reaching the Sustain level, immediately enter the Release phase (thus playing the entire envelope shape). The Sustain level will be ignored, even if you are holding the keys when it is reached - the envelopes will still go into the Release phase. Therefore, key release has no effect whatsoever on the envelope shape. If the envelope is set to loop to one of the Release Level options, the envelope will loop continuously (see table below). The only difference between this option and “Rel1” above is that key release does not stop looping.

⚠Important: Note Latch must be set to “On” in order to hear the effects of the Envelope Latch options.

The following table illustrates the relationship between the Envelope Latch Modes described above, and the three Envelope Loop Modes (set in the **GE Editor: Envelopes** page).

	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

Trigger - Trigger By Module Parameters



The Trigger By Module parameters allow a Module’s GE (both notes and envelopes) to be triggered by a percentage of the length of another Module’s GE, in addition to the other triggering options. This is typically used for something like a harp glissando Performance, where each Module is simulating one sweep of the harpist’s hands. Each Module can trigger the start of the next Module a certain percentage through the sweep, allowing a convincing overlap of a portion of the two Modules. As more notes are played on the keyboard, the sweeps will be longer (containing more notes), and therefore the percentage to be played before triggering the next Module will be adjusted accordingly. This is far more realistic than using Delay Start on the Modules, since the delay would not be automatically adjusted according to the number of notes played.

This can also be used to “cycle” back and forth between two or more Modules, since you can trigger a Module by the keyboard and by a percentage of another Module’s GE length at the same time. In the example at the top of this chapter, Module 1 is triggered by the keyboard. Modules 2~4 will not be triggered by the keyboard, since the Note and Envelope Trigger Modes are set to “Dyn” (Dynamic MIDI only). Module 2 is triggered when 100% of Module 1’s effect has been generated, Module 3 is triggered when 100% of Module 2’s effect has been generated, Module 4 is triggered when 100% of Module 3’s effect has been generated, and then Module 1 is retriggered when 100% of Module 4’s effect has been generated. This will continually cycle through all four Modules, once the effect has been triggered from the keyboard. In addition, the Cutoff Grid settings (described below) ensure that when Module 2 is triggered, it shuts off Module 1, when Module 3 is triggered, it shuts off Module 2, etc.

[Trigger By Module] (popup menu) [0...6]

Allows a Module's GE (both notes and envelopes) to be triggered by a percentage of the length of another Module's GE, in addition to the other triggering options.

0: OFF
Trigger By Module not being used.

1: M1% - percentage of Module 1's length
Makes the "Module %" field available below, which allows a certain percentage of Module 1's Generated Effect Length to trigger the start of the selected Module's notes and envelopes. For example, if Module 2 was set to this and 85%, then after Module 1 had completed 85% of its phrase or pattern Module 2 would be triggered.

2: M2% - percentage of Module 2's length
3: M3% - percentage of Module 3's length
4: M4% - percentage of Module 4's length
5: M5% - percentage of Module 5's length *
6: M6% - percentage of Module 6's length *
As described above, except use a percentage of the specified Module's effect.

[Module %] (numerical) [0...100%]

Specifies a percentage of a Module's overall GE 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. The actual overall "length" of a GE is determined by the number of Phase Pattern Steps, the Phase Length Mode, and various other Phase Page settings.

Not available when the Trigger By Module popup menu is "Off."

Setting a Module to be triggered by a percentage of its own riff will have no additional effect.

Trigger - Cutoff Grid

[Cutoff Other Modules] (button grid) [Grey = Off, Blue = On]

Specifies whether the phrase or pattern generated by other Modules will be stopped automatically when this Module is triggered. There is one button for each of the six Modules; when this Module's effect is triggered, it will 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 (as described above under Trigger by Module), with each Module shutting off the previous Module when it is triggered in rotation.

Trigger - Korg M3 Special Notes

* In the above descriptions, features or parameters marked with an asterisk (*) are not supported by the Korg M3 Music Workstation.

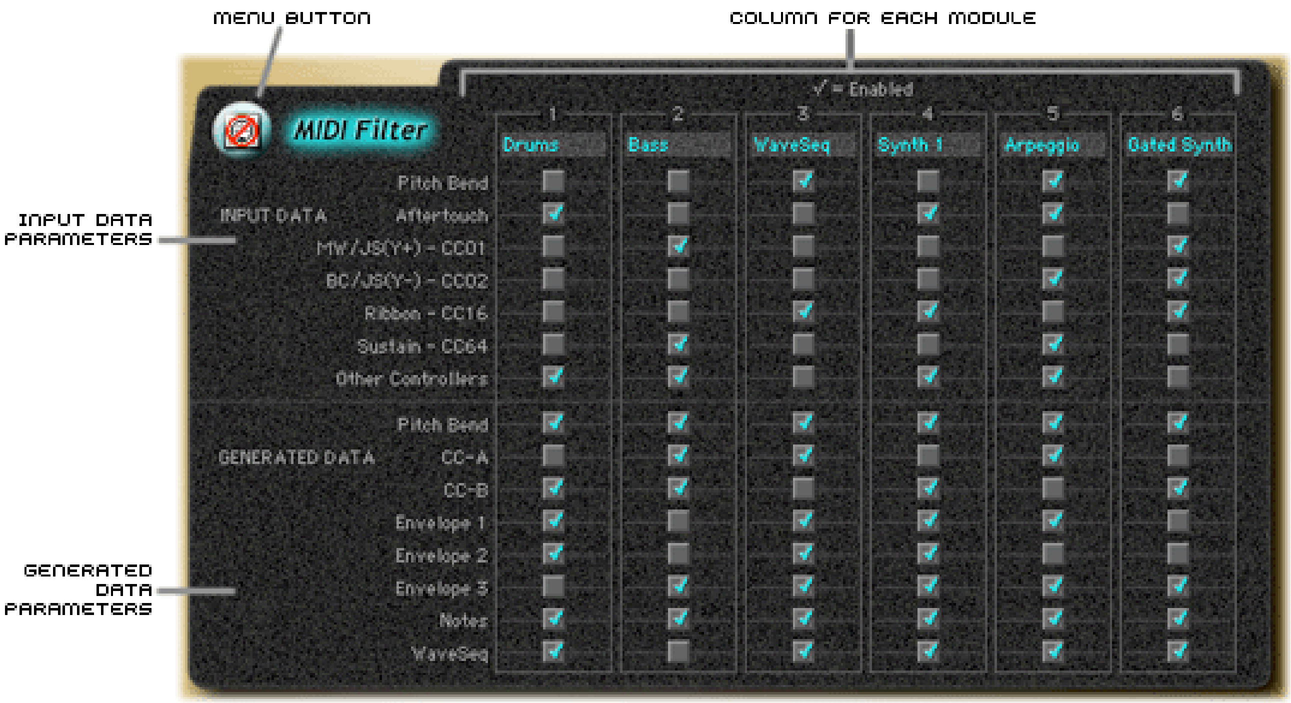
The parameters on the Trigger Page correspond to those found in the M3 as follows:

7-1-8 [Trigger] (Program)
7-2-5,6,7,8 [Trigger] (Combi/Seq)
All parameters on this page

Not available
* Trigger By Module for Modules 5 & 6

MIDI Filter

Sections in this chapter:



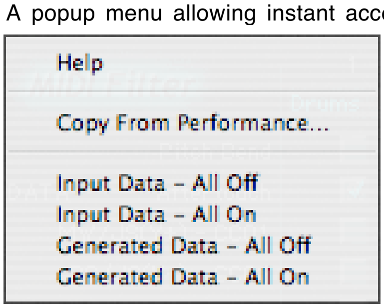
MIDI Filter - Overview

The MIDI Filter Page contains parameters for each Module that control which types of MIDI data are passed through to KARMA, and which types of MIDI data KARMA will generate. A column exists for each of the Modules in a Performance, which may be grayed out depending on how many Modules are active in the current Performance. The Module Name displayed at the top of the column can be assigned on the GE Setup Page. Each column is divided into two sections:

Input Data Parameters
Allows control over which types of MIDI data are passed on to the Modules for processing.

Generated Data Parameters
Allows control over which types of MIDI data are generated by KARMA (and passed on to your destination devices), in addition to a few other Envelope control options.

Help/Utility Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:

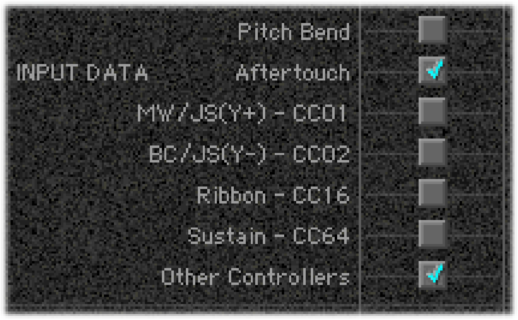


[Copy From Performance...](#)

Input Data - All Off
Input Data - All On
Allows you to quickly turn On or Off all checkboxes in all Modules, in the Input Data section.

Generated Data - All Off
Generated Data - All On
Allows you to quickly turn On or Off all checkboxes in all Modules, in the Generated Data section.

MIDI Filter - Input Data Parameters



The Input Data Parameters allow you to selectively remove certain MIDI Data from the input note and control source(s) before passing it on to the Modules for processing. When checked (enabled), the specified MIDI data is sent through. In many instances it is useful to filter different controllers out by unchecking (disabling) the appropriate checkbox. For example, if you are using the Sustain Pedal to control some aspect of KARMA (through the Dynamic MIDI page), you will probably not want the Sustain Pedal also performing its normal function (for whichever Modules are affected). In this case, you would uncheck the “Sustain - CC64” checkbox for that Module. However, there are times when you will want to set these to “Thru” - for example, to allow the Pitch Bend Wheel of your controller to bend the entire effect of a Module while it is playing. The Module Name displayed at the top of the column can be assigned on the **GE Setup Page**.

◆ **[Pitch Bend]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether MIDI Pitch Bend data from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Pitch Bend data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[Aftertouch]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether MIDI Aftertouch data from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Aftertouch data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[MW/JS(Y+) - CC01]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether MIDI Mod Wheel/Joystick Y+ data (CC 01) from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Mod Wheel/Joystick Y+ data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[BC/JS(Y-) - CC02]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether MIDI Breath Controller/JoyStick Y- data (CC 02) from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Breath Controller/JoyStick Y- data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[Ribbon - CC16]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether Ribbon data (CC 16) from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Ribbon data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[Sustain - CC64]** (checkbox) [0, 1]

0: Off/Filter 1: On/Thru
Specifies whether MIDI Sustain Pedal data (CC 64) from the Input Source is filtered or sent thru to the KARMA Module. When unchecked (disabled) Sustain Pedal data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

◆ **[Other Controllers]** (checkbox) [0, 1]

<u>0: Off/Filter 1: On/Thru</u>
Specifies whether all other MIDI CC data from the Input Source not covered by the other parameters is filtered or sent thru to the KARMA Module. When unchecked (disabled) all other MIDI CC data is removed from the stream going to the selected Module; when checked (enabled) it is passed on unaltered.

MIDI Filter - Generated Data Parameters

The Generated Data Parameters allow you to selectively filter or send various MIDI data that KARMA may be generating. For example, if a GE has had automatic Pitch Bending effects programmed as part of its effect, but you want to disable the pitch bending in a certain module, you would uncheck (disable) the “Pitch Bend” checkbox for that Module. Setting any of the checkboxes to On (enabled) allows the selected parameter to operate normally, as programmed.

If a particular type of data is not being generated by a GE, filtering or sending the data will have no effect.

◆ **[Pitch Bend]** (checkbox) [0, 1]

<u>0: Off/Filter 1: On/Send</u>
Specifies whether the MIDI Pitch Bend data generated by the KARMA Module will be transmitted. When unchecked (disabled) Pitch Bend data being generated by KARMA is not sent to the selected Module; when checked (enabled) it is generated as usual.

This affects any Pitch Bend data being generated by KARMA, whether it comes from the Bend Page, the Envelopes Page, or the CCs Page.

◆ **[CC-A/CC-B]** (checkbox) [0, 1]

<u>0: Off/Filter 1: On/Send</u>
Specifies whether the MIDI Control Change (CC) data generated by the KARMA Module will be transmitted. When unchecked (disabled) Control Change (CC) data being generated by KARMA as “CC-A” or “CC-B” data being generated by KARMA is not sent to the selected Module; when checked (enabled) it is generated as usual. The actual controller number that this refers to is selected in the GE Editor: CCs Page. For example, if CC-A is set to “[10] Pan,” then any Pan data being generated through the use of the CCs Page settings can be selectively removed.

◆ **[Envelope 1, 2, 3]** (checkbox) [0, 1]

<u>0: Off/Filter 1: On/Send</u>
Specifies whether the selected Envelope will function as programmed (checked) or as if it is turned off (unchecked). This applies not only to Envelopes that are sending CCs, but Tempo Envelopes, Velocity Envelopes, and Duration Envelopes. In other words, if a GE is using Envelope 2 to control Velocity, you can “remove” its effect by setting this to “Filter,” and the GE will operate as if the Velocity Envelope is turned off. If Envelope 1 is generating CC 01, you can stop the data from being sent by setting this to “Filter.”

Pitch Bend Envelope(s) are not affected by this setting, but by the “Pitch Bend” Filter above.

◆ **[Notes]** (checkbox) [0, 1]

<u>0: Off/Filter 1: On/Send</u>
Specifies whether the MIDI note-on/note-off messages generated by the KARMA module will be transmitted. When unchecked (disabled), you can 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. When checked (enabled) the notes are generated in the usual fashion according to the settings of the GE.

◆ **[WaveSeq]** (checkbox) [0, 1]

0: Off/Filter 1: On/Send
Specifies whether the multi-sound (waveform) changes generated as SysEx Messages by the KARMA module will be transmitted. When unchecked (disabled), any KARMA WaveSeq messages programmed as part of the GE are not generated and the Program'swaveform will not be changed; when checked (enabled) any KARMA WaveSeq messages that are programmed as part of the GE are generated normally.

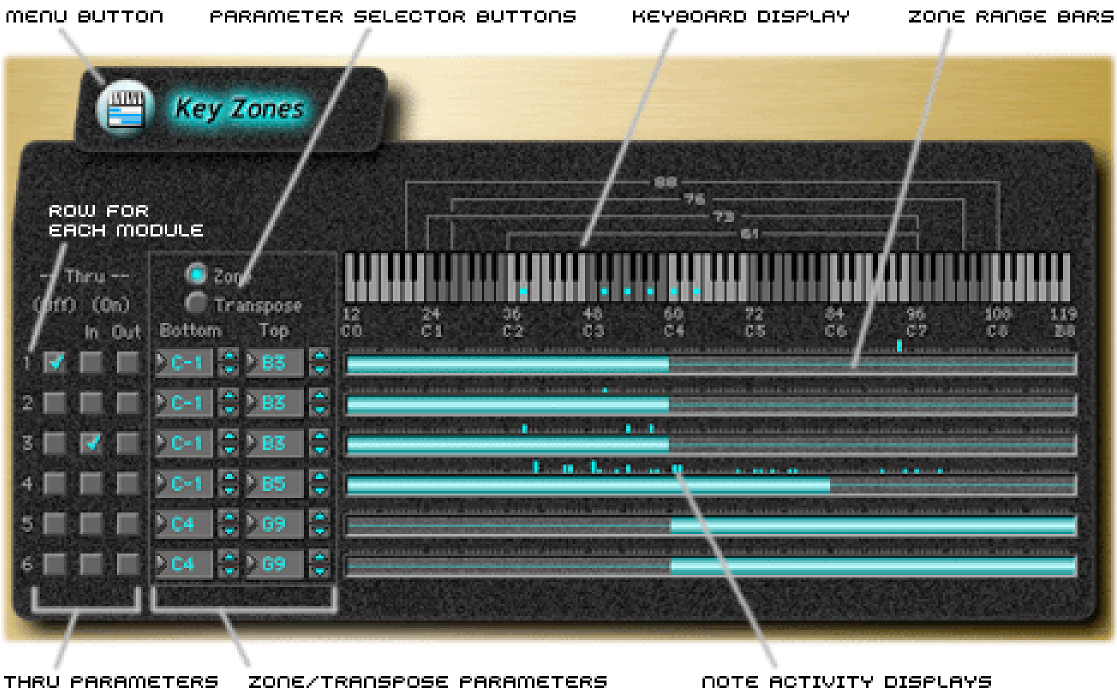
MIDI Filter - Korg M3 Special Notes

The parameters on the Filter Page correspond to those found in the M3 as follows:

7-1-3 [MIDI Filter] (Program)
7-1-5 [MIDI Filter] (Combi/Seq)
All parameters on this page

Key Zones

Sections in this chapter:



Key Zones - Overview

The Key Zones Page allows each of the six Modules to each have their own Key Zone (range for MIDI Input). Only notes received within that range will be allowed thru to the Module as input source material, which allow different areas of the keyboard to trigger and control different effects. Also found here are various “Thru” parameters which control whether notes received as MIDI Input are echoed thru to the Module (while the KARMA Function is On or Off), along with Transpose settings that may be applied to those thru notes independently. A row exists for each of the Modules, which may be grayed out depending on how many Modules are active in the current Performance.

Notes within or outside of a zone also show up as Sources in the **Dynamic MIDI Page**.

Keyboard Display
Displays incoming MIDI notes that are used to trigger the KARMA GEs. The display only shows nine full octaves from C0 (MIDI Note 12) to B8 (MIDI Note 119); notes outside this range are not shown. A graphic above the Keyboard Display shows the ranges of popular sizes of MIDI keyboards within this nine octave range, while Note Names and MIDI Note Numbers are shown beneath the display for reference.

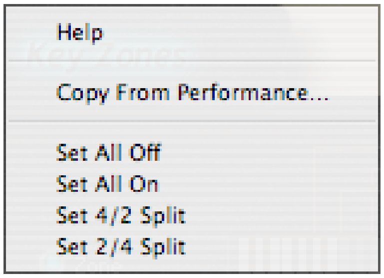
Zone Range Bars
A graphic editor for the Zone of each Module, which displays the current input range in blue. Click and drag to set a new range, or edit the values directly with the Zone Bottom/Top fields.

Note Activity Displays
Displays the Note Data that is being generated on each Module as vertical lines, with longer lines indicating higher velocities.

Parameter Selector Buttons
Switches the area beneath them between displaying the “Zone” Parameters (Key Zone Bottom/Top) and the “Transpose” Parameters (In Zone/Out Zone Transpose).

Thru Parameters and Zone/Transpose Parameters
This area contains the parameters for setting the Key Ranges and the In Zone/Out Zone Thru settings and Transpose settings.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy From Performance...

The following four utilities allow you to quickly configure some useful default Key Zone ranges:

Set All Off
Sets all Key Zones for all Modules to Off (Note 0 ~ 0).

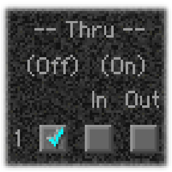
Set All On
Sets all Key Zones for all Modules to On over the whole range (Note 0 ~ 127).

Set 4/2 split
Sets the first four Modules to cover the range of B3 down (0 ~ 59), and the last two Modules to cover the range of Middle C up (60 ~ 127).

Set 2/4 Split
Sets the first two Modules to cover the range of B3 down (0 ~ 59), and the last four Modules to cover the range of Middle C up (60 ~ 127).

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **Performance Editor: RT Parms** page for more information.

Key Zones - Thru Parameters



The Thru parameters control whether or not the notes received as MIDI Input are also echoed directly thru to the Module. There are separate controls for KARMA Off (Timbre Thru (Off), and KARMA On (Thru In Zone, Thru Out Zone).

◆ **[Timbre Thru (Off)]** (checkbox) [0, 1]

Specifies whether or not MIDI data being received on a Module's MIDI In Channel will be sent thru to the MIDI Out Channel when the KARMA Function is Off.

0: Off
When the KARMA Function is turned Off in the Real-Time Controls Window, any MIDI Data being received by the Module will be NOT be sent out (thru) on the specified out channel. The destination device on the Module's MIDI Out Channel will be silent.

1: On
When the KARMA Function is turned Off in the Real-Time Controls Window, any MIDI Data being received by the Module will be sent out (thru) on the Module's MIDI Out Channel. This allows you to "play" the destination device, even when the KARMA Function is Off.

◆ **[Thru In Zone]** (checkbox) [0, 1]

0: Off   1: On
When On, input notes that are within the Key Zone for the Module will be also echoed thru to the output. To hear the actual notes played within the Key Zone in addition to the notes generated by KARMA, turn this On. When Off, only the notes generated by KARMA will be sent to the Module.

◆ **[Thru Outside Of Zone]** (checkbox) [0, 1]

0: Off   1: On
When On, input notes that are outside of the Key Zone for the Module will be also echoed thru to the output. To hear the actual notes played outside of the Key Zone in addition to the notes generated by KARMA, turn this On. When Off, only the notes generated by KARMA will be sent to the Module. This can be used to let one area of the keyboard generate input to KARMA, while the area outside the zone is simply sent through. For example, this could let you solo outside of the Key Zone on top of what KARMA is generating in response to the input from within the Key Zone.

To send all notes thru (when KARMA is On) with no regard for Key Zone, simply turn both checkboxes on for that Module (Inside Zone and Outside Of Zone).

Key Zones - Zone/Transpose Parameters

The Zone and Transpose buttons cause the area beneath them to switch between displaying two different sets of values: “Zone Parameters” and “Transpose Parameters.”

Zone Parameters

The Key Zone Bottom and Top parameters are displayed when the Zone button is selected. Ranges can be set by either clicking and dragging in the Zone Range Bar beneath the Keyboard Display, or directly entering/scrolling values in the Bottom and Top parameter fields. The MIDI Note names shown are the Bottom and Top of the Range. Only notes received within that range will be allowed thru to the Module as input source material. The fields can also be clicked and scrolled to the desired values by clicking and dragging the mouse. To directly enter a note name, click on the field and type a letter followed by a number; i.e. “c3.” Clicking and dragging on the Zone Range Bar to the right will also change these at the same time.

To drag a Key Zone while keeping the relationship between the bottom and top value constant, Cmnd+click (Mac) or Ctrl+click (Win) with the mouse. This will drag the top and bottom values at the same time.

Notes within or outside of a zone also show up as Sources in the **Dynamic MIDI Page**.

◆ **[Key Zone Bottom]** (numerical) [0...127: C-1...G9]

Sets the Bottom of the Key Zone range (lowest note that will be allowed as input to the KARMA Module). Notes lower than this note are considered “Outside Of Zone.”

◆ **[Key Zone Top]** (numerical) [0...127: C-1...G9]

Sets the Top of the Key Zone range (highest note that will be allowed as input to the KARMA Module). Notes higher than this note are considered “Outside Of Zone.”

Transpose Parameters

The Transpose In Zone and Transpose Outside Of Zone parameters are displayed when the Transpose button is selected. They allow you to separately transpose notes that are sent through, either inside the Key Zone or outside of it.

These settings only have an effect on the “Thru” data, so therefore they only work if the corresponding “Thru In Zone” or “Thru Outside Of Zone” checkbox is turned On. These settings do not affect the notes generated by KARMA - to transpose them, you would use the “Transpose” setting on the GE Setup Page.

◆ **[Transpose In Zone]** (numerical) [-36...+36 semitones]

Allows you to set a separate Transpose Value in semitones for notes that are passed through inside the Key Zone for the Module.

◆ **[Transpose Outside Of Zone]** (numerical) [-36...+36 semitones]

Allows you to set a separate Transpose Value in semitones for notes that are passed through outside of the Key Zone for the Module.

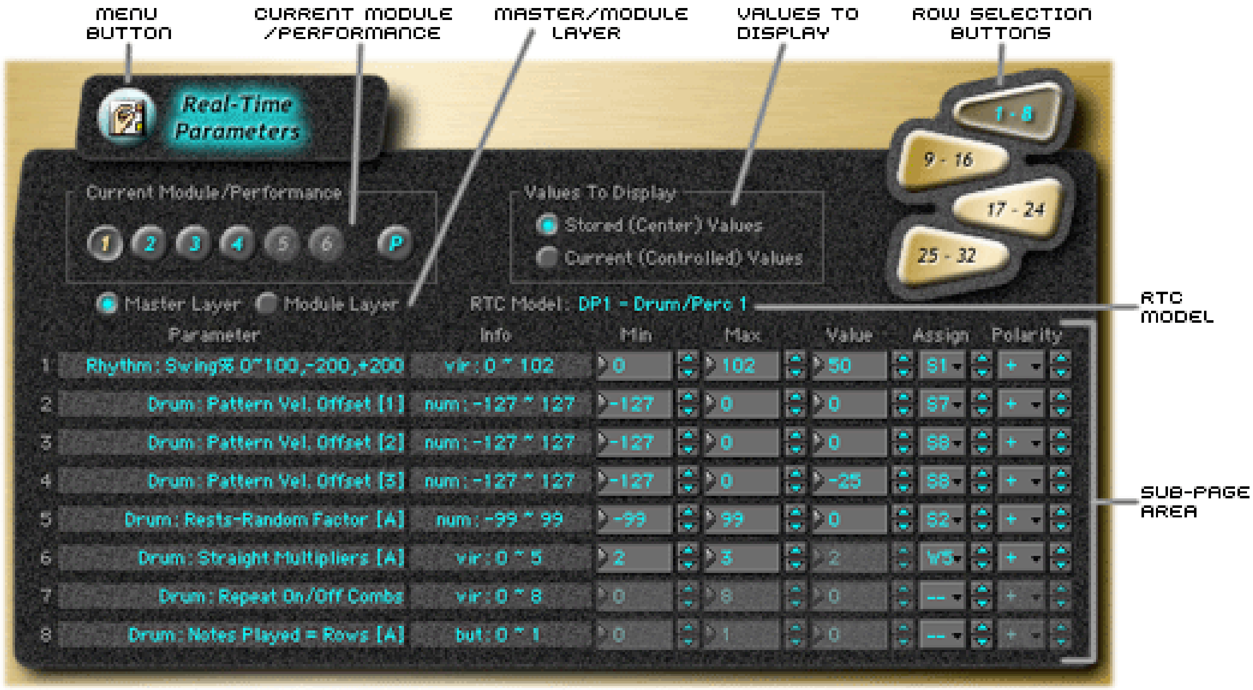
Key Zones - Korg M3 Special Notes

The parameters on the Key Zones Page correspond to those found in the M3 as follows:

7-1-1 [GE Setup] (Program)
7-1-1,2,3,4 [Setup A,B,C,D] (Combi/Seq)
All parameters on this page

RT Parms (Real-Time Parameters)

Sections in this chapter:



RT Parms - Overview

Real-Time Parameters (RT Parms or RTP for short) indicate any of the parameters within KARMA that are assigned to be varied in real-time by operating a controller of some sort. Each GE can have up to 32 RTP assigned within the GE from the hundreds of GE parameters. Up to 8 Performance Parameters can also be assigned from the many Performance and Module parameters. The Performance RT Parms Page has seven sub-pages for viewing the GE RTP for each Module, and the PE (Performance) RTP, as described below.

GE RTP are stored as part of the GE, and are selected from the hundreds of GE parameters in the **GE Editor: RT Parms Page**.

Current Module/Performance

Selects from seven different sub-pages, depending on how many active Modules are in the current Performance. Buttons [1 ~ 6] display the GE RTP for each Module, while the [P] Sub-Page displays the RTP that may have been assigned on the Performance Level.

Clicking one of the Module Buttons [1 ~ 6] also changes which Module is the “Current Edit Module.” This affects which Module’s information is displayed in the Info Display at the top of the Performance Editor, as well as which GE can be edited in the **GE Editor**.

Master/Module Layer

When a Module is selected for editing, switches between the Master Layer and Module Layer assignments. The same 32 GE RTP can be assigned to various controllers in both the Module and Master Layers of the Control Layer. Each Module has its own dedicated Control Layer, in addition to potentially being controlled by the Master Layer as well. Not available in Program Mode (Single Module Performances).

Values To Display

Switches between displaying the actual Stored (Center) Values, and the Current (Controlled) Values that may be modified by the positions of any assigned Real-Time Controls. See below: About Values To Display.

Stored (Center) Values
Displays the stored settings in the Value fields. These are editable, and reflect the “center” position of any assigned controller.

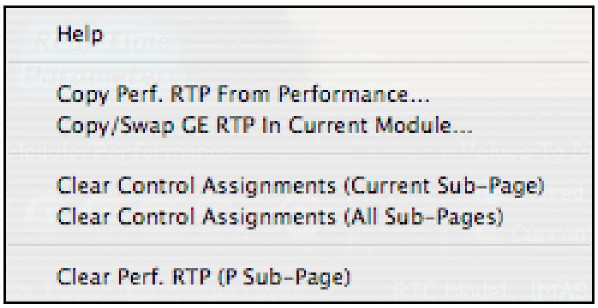
Current (Controlled) Values
Displays the actual current settings in the Value fields. These are not editable, but represent the Value as modified by any assigned controller.

Row Selection Buttons
Only shown when a Module’s RTP are being displayed. Switches the sub-page area between rows 1~8, 9~16, 17~24, or 25~32.

RTC Model
This label displays the RTC Model type for the GE loaded into a particular Control Layer, or [MASTER] when displaying the Master Layer in a multi-module Performance.

Sub-Page Area
Depending on which sub-page is being displayed (selected with the Current Module/Performance buttons), this area shows either the GE RTP for the selected Module or the Performance RTP. If showing a Module’s RTP, the area displays RTP 1~8, 9~16, 17~24, or 25~32, depending on the Row Selection Buttons. If showing the Performance RTP, there are only 8 rows and the Row Selection Buttons are hidden.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Perf. RTP From Performance...
Opens the Copy From Performance Dialog with the proper options already set.

Copy/Swap GE RTP In Current Module...
Opens the Copy/Swap GE RT Parms Dialog, for operating on RT Parms within the current Edit Module.

Clear Control Assignments (Current Sub-Page)
Clears all “Assign” settings on the currently showing sub-page (Module or Performance) by setting them to Off.

Clear Control Assignments (All Sub-Pages)
Clears all “Assign” settings in all sub-pages [1 ~ 6, P] by setting them to Off.

Clear Perf. RTP (P Sub-Page)
Clears all parameter settings from the “P” (Performance) Sub-Page, leaving empty rows. Grayed out unless you are on the Performance Sub-Page.

RT Parms - GE RT Parms

When the Current Module/Performance buttons are displaying one of the Modules (1 ~ 6), the sub-page area displays the GE RT Parms for that Module. Each GE can have up to 32 preset parameters that are suitable for controlling the phrase or pattern in real-time. The GE parameters displayed will depend on the selected GE. Up to a maximum of 32 GE RT Parms can be assigned, but there may be fewer. Empty parameter “locations” will be grayed out.

◆ **[Parameter]** (label)

Displays the GE parameter that is assigned to this location in the GE for the current Module. For a complete list of all GE Parameters within each group, see the Appendix **RT Parms Reference**.

This is only a label, and cannot be edited. To edit the GE RT Parms, you must use the **GE Editor: RT Parms Page**.

If you see asterisks (**) in this parameter label, it indicates a programming error where the assigned RT Parm is configured incorrectly. Check the GE RT Parm Min/Max settings and the Phase/Env/Drum assignment.

[Info] (label)

This non-editable label displays the “type” of user interface object associated with the selected parameter, and the overall available Min/Max Range. You can limit the range using the Min/Max parameters below if desired. This information is mainly for help in programming the desired response.

pop: the parameter is a popup menu object
num: the parameter is a numerical object
but: the parameter is a button object, or button grid
rng: the parameter is a range bar object
vir: the parameter is a “virtual parameter” not associated with any other UI object

When a parameter is first assigned, if it exists in more than one module, the info popup will remind you to make an assignment in the Module button grid discussed below by displaying “** select mod ->.”

If you see asterisks (**) in this parameter label, it indicates a programming error where the assigned RT Parm is configured incorrectly. Check the GE RT Parm Min/Max settings and the Phase/Env/Drum assignment.

Many ranges and values in KARMA are “zero relative.” In other words, a popup menu might show 64 items, which would be referred to as a range of “0 ~ 63.”

[Minimum] (numerical) [-5000…+5000]

Specifies the Minimum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected parameter. When a GE is first loaded into a Module, the Min/Max fields will show the settings programmed into the GE; you can override them here in the Performance.

[Maximum] (numerical) [-5000…+5000]

Specifies the Maximum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected parameter. When a GE is first loaded into a Module, the Min/Max fields will show the settings programmed into the GE; you can override them here in the Performance.

[Value] (numerical) [varies depending on Min/Max range above]

Sets the Value of the GE Parameter. The range of this parameter will vary depending on the settings for the RT Parm Min/Max fields above. When you load a GE into a Module, the default values that are preset for each GE will be loaded. Using the Value field here, you can edit the default values and store those settings with the Performance.

The value you specify here will be the center value when a KARMA RT Control Slider is assigned and used to control this parameter. To view the actual modified value, and not the stored center value, switch the “Value To Display” buttons to “Current (Controlled) Values.” When a Switch or Slider As Switch is assigned, the Value field will be disabled and is not used. See About Values To Display.

[Assign] (popup menu) [0…32]

Assigns the selected GE Parameter to a controller, such as the Sliders and Switches in the Real-Time Controls Editor or Dynamic MIDI.

If you hold down the Cmnd Key (Mac) or Ctrl Key (Win) while selecting an assignment from the popup menu, it will automatically adjust the Value field so that it is the “Center” of the Min/Max Range.

0: -- (Off)
No assignment.

1…8: S1…S8 (Slider 1 ~ 8)
Assigns the parameter to the Real-Time Controls Editor Slider 1 ~ 8. The slider will continuously adjust the Value, between the RT Parm Min/Max stored in the GE using the Value setting as the “center” of the range. See The Effect Of The Stored (Center) Value.

For KARMA M3, this corresponds to Sliders 1 ~ 8 of the control surface in KARMA Mode.

9…16: A1…A8 (Slider w/Switch Action 1 ~ 8)
Assigns the parameter to Real-Time Controls Editor Slider 1 ~ 8, but with a “switch action.” The slider will switch the value between minimum and maximum only, with no in between values. The left range of the slider is off, and the center and right is on.

For KARMA M3, this corresponds to Sliders 1 ~ 8 of the control surface in KARMA Mode.

17…24: W1…W8 (Switch 1 ~ 8)
Assigns the parameter to the Real-Time Controls Editor Switch 1 ~ 8. The Value will be controlled between the minimum and maximum values.

For KARMA M3, this corresponds to Switches 1 ~ 8 of the control surface in KARMA Mode.

25...32: D1...D8 (DynMidi)
This corresponds to the Dynamic MIDI Page, rows 1 ~ 8. Select this if you wish to control a GE RT Parm using the controller selected for "Source" in the Dynamic MIDI Page (Set the Dynamic MIDI "Destination" to RT Parms Control Assign.) For example, you can use this to control a GE RT Parm with the Joystick or Foot Switch. See **Dynamic MIDI Page**.

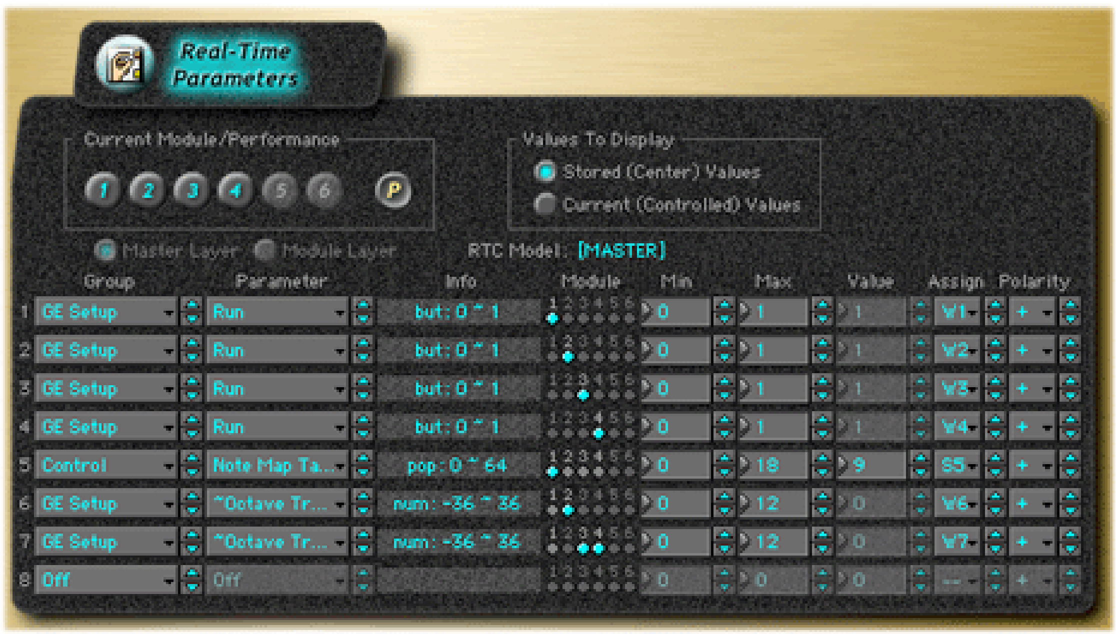
◆ **[Polarity]** (button) [0, 1]

Specifies the polarity (the direction the Value moves in) when you operate the assigned KARMA Real-Time Control.

0: + (plus)
In the case of Slider 1 ~ 8, moving to the left of center will lower the Value, and moving to the right will raise it.
In the case of Slider w/Switch Action 1 ~ 8, the left side will be off, and the center and right side will be on.
In the case of Switch 1 ~ 8, the parameter will be on when the LED is lit (Switch is on).

1: - (minus)
In the case of Slider 1 ~ 8, moving to the left of center will raise the Value, and moving to the right will lower it.
In the case of Slider w/Switch Action 1 ~ 8, the left side will be on, and the center and right side will be off.
In the case of Switch 1 ~ 8, the parameter will be on when the LED is dark (Switch is off).

RT Parms - Performance RT Parms



When the [P] button is clicked in the Current Module/Performance area, the sub-page area changes to display the eight Performance Real-Time Parameters (PE RT Parms). As shown above, there are eight rows for eight possible parameter assignments. Unused rows will be grayed out. The Master/Module Layer buttons are grayed out, since Performance RTP can only be assigned to the Master Layer.

◆ **[Group]** (popup menu) [0...6]

Selects the group of Performance Parameters that you wish to assign. Groups correspond to five of the Pages in the Performance Editor and the main Performance Editor itself. Each Group contains some (but not necessarily all) of the parameters that can be found in that page or editor. For a complete list of all Performance Parameters within each group, see the Appendix **RT Parms Reference**.

0: Off
No assignment. The rest of the parameters in the row will be grayed out.

1: PE
2: GE Setup
3: Control
4: Trigger
5: Key Zones
6: Random Seeds

[Parameter] (popup menu) [varies depending on Group (above)]

Depending on the Group setting (above), certain parameters from within the various PE Pages and PE Editor will appear in this menu. Selecting one assigns that parameter to be controlled by the Value field, and any assigned RT Control.

Once a parameter is assigned as an RT Parm, it will have a grayed out appearance in its normal location. If you click on it to edit it, If you try to edit such a parameter, it will present you with the **RT Parm Warning Dialog** and not allow editing unless you hold down the Cmnd Key (Mac) or Ctrl Key (Win) when clicking the parameter. Once it is assigned, editing the Value field in this Page or moving an assigned RT Control will change that value in place.

[Info] (label)

This non-editable label displays the "type" of user interface object associated with the selected parameter, and the overall available Min/Max Range. You can limit the range using the Min/Max parameters below if desired. This information is mainly for help in programming the desired response.

pop: the parameter is a popup menu object
num: the parameter is a numerical object
but: the parameter is a button object, or button grid
rng: the parameter is a range bar object
vir: the parameter is a "virtual parameter" not associated with any other UI object

When a parameter is first assigned, if it exists in more than one module, the info popup will remind you to make an assignment in the Module button grid discussed below by displaying "** select mod ->."

If you see asterisks (**) in this info label, it indicates a programming error where the assigned RT Parm is configured incorrectly. Check the Min/Max settings and the Module assignment.

Many ranges and values in KARMA are "zero relative." In other words, a popup menu might show 64 items, which would be referred to as a range of "0 ~ 63."

[Module] (button grid) [1…6]

Specifies the Module(s) to which the settings of the selected RT Parm will apply. A single RT Parm can therefore affect multiple Modules at the same time.

[Minimum] (numerical) [-8192..+8192]

Specifies the Minimum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected Parameter. When the Parameter is selected, the Minimum parameter value (displayed in the Info Label) will be set as the default.

[Maximum] (numerical) [-8192..+8192]

Specifies the Maximum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected Parameter. When the Parameter is selected, the Maximum parameter value (displayed in the Info Label) will be set as the default.

[Value] (numerical) [varies depending on Min/Max range above]

Sets the Value of the selected Performance RT Parameter. The range of this parameter will vary depending on the settings for the RT Parm Min/Max fields above. When you select a parameter and assign a Module, the Value displayed here initially will be set to the current Value of the parameter. If you add other Modules to it, they will all be set to the same value. If you remove Modules, they will be restored to their previous settings.

The value you specify here will be the center value when a KARMA RT Control (Slider/Switch) is assigned and used to control this parameter. To view the actual modified value, and not the stored center value, switch the "Value To Display" buttons to "Current (Controlled) Values." See About Values To Display.

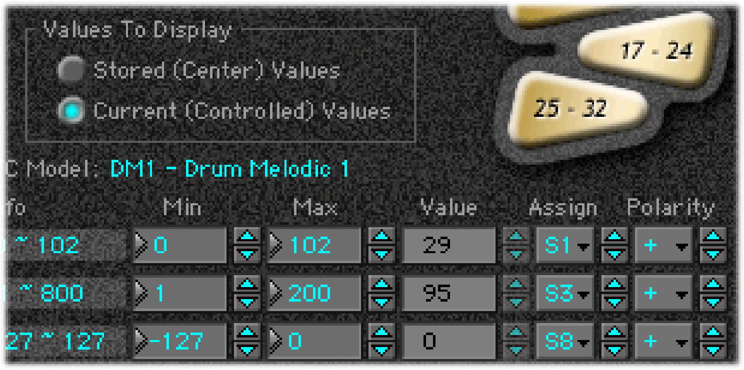
[Assign] (popup menu) [0…32]

Assigns the selected Performance Parameter to a controller, such as the Sliders and Switches in the Real-Time Controls Editor or Dynamic MIDI. See the description above for Assign under RT Parms Page - GE RT Parms.

[Polarity] (button) [0, 1]

Specifies the polarity (the direction the Value moves in) when you operate the assigned KARMA Real-Time Control. See the description above for Polarity under RT Parms Page - GE RT Parms.

RT Parms - About Values To Display



As shown above, when the Values To Display button is changed to “Current (Controlled) Values,” the Value fields become grayed out and are not editable. However, in this mode they display the actual current values as they may be modified by the positions of the assigned controllers, and not the stored center values. In other words, in the example above, RT Parm #1 is assigned to Slider 1. While the actual range of the parameter might be 0 ~ 102, and the stored center value 50, it presently displays the current value of 29 since the slider is about 25% from the left (corresponding to bottom in the M3).

To experiment with this, select any Performance, switch the Values To Display to “Current (Controlled) Values,” and move the Sliders in the Real-Time Controls Editor. Watch the values of the parameters here that are assigned to the Sliders and Switches change to reflect the actual setting as based on the position of the controller.

RT Parms - Effects Of The Stored (Center) Value

This only relates to a Continuous Controller (Slider, Knob, etc.). Has no effect on a Switch or Slider As Switch.

For example, let’s assume that the RT Parm has a Min/Max range of +0000...+0100.

If you set Value = +0050, Assign = S1 (Slider 1), and Polarity = + (plus):

Slider 1 at the center position will produce a value of +0050. At far left the value will be +0000, and at far right the value will be +0100. Moving the slider from center toward the left will control the value from +0050...+0000, and moving it from center toward the right will control the value from +0050...+0100. This is known as a linear response, since both sides of the control have the same range.

```
0       32      64      96      127    Controller Value
'______'______'______'______'
0       25      50      75      100    RT Parm (linear)
0<----------->50<--------->100
```

If you set Value = +0080, Assign = S1 (Slider 1), and Polarity = + (plus):

Slider 1 at the center position will produce a value of +0080. At far left the value will be +0000, and at far right the value will be +0100. Moving the slider from center toward the left will control the value from +0080...+0000, and moving it from center toward the right will control the value from +0080...+0100. This is known as a non-linear response, since one side of the control has a larger variation than the other.

```
0       32      64      96      127    Controller Value
'______'______'______'______'
0       40      80      90      100    RT Parm (non-linear)
0<----------->80<--------->100
```

RT Parms - Korg M3 Special Notes

The parameters on the RT Parms Page correspond to those found in the Korg M3 Music Workstation as follows:

7-2-1 [GE RTP] (Program)
7-3-1...8 [GE RTP] (Combi, Seq)
All GE RTP on this page (Module Layer, Master Layer)

7-2-2 [Perf RTP] (Program)
7-4-1 [Perf RTP] (Combi, Seq)
All Performance RTP on this page

Dynamic MIDI

Sections in this chapter:

Dynamic MIDI - Overview

The Dynamic MIDI Page allows various MIDI Controllers and other actions to be used to control various aspects of KARMA in real time. Up to eight "Sources" can be used to control eight different "Destinations."

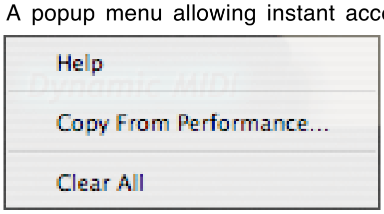
Input Parameters
Parameters that select the "Source" action or controller, how it operates, and its range.

Output Parameters
Parameters that select the "Destination" to be controlled, which Module(s) it affects, and the Polarity (direction) it operates in.

Row For Each Assignment
Each row is a separate Source/Destination routing for a single Dynamic MIDI Effect. If Destination is "RT Parms Control Assign," the row numbers are available as Control Assignments in the RT Parms Page "Assign" parameters.

Setup
Selects one of several modes for changing Dynamic MIDI Setups when Performances are changed (see Setup section below).

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy From Performance...

Clear All
Clears all assignments from all eight rows.

Dynamic MIDI - Input Parameters

The Input Parameters select a MIDI Controller or other action to control various functions of KARMA.

◆ **[Input Port/Channel]** (popup menu) [0...7]

Selects one of the Ports and Channels that are specified in the MIDI Ins & Outs Editor. If the Source involves using the Module's Key Zone, that is also applied.

0 ~ 5: Module x's Port/Chan/KeyZone (x = 1 - 6, for each Module)
The MIDI data stream going to the selected Module is used. In other words, if "2 - Module 2's Port/Chan/KeyZone" is selected, then whatever Port and Channel has been selected for Module 2 in the Input section of the MIDI Ins & Outs Editor is used here as a source of MIDI Data. Furthermore, in the case of using some specialized Sources with the word "Zone" such as "Note # Inside Zone," the settings for the Module's Key Zone in the Key Zone Page also have an effect. Note that this is only for Note Numbers and Velocities; other controller data is not effected by the Key Zone settings.

6: D - Dynamic MIDI Port/Chan*
The MIDI Data stream selected as the Alternate Dynamic MIDI Port/Channel in the MIDI Ins & Outs Editor is used as a source of MIDI Data.

7: K - Kbd Dynamic MIDI Port/Chan*
The MIDI Data stream selected as the Keyboard Dynamic MIDI Port/Channel in the MIDI Ins & Outs Editor is used as a source of MIDI Data.

For information on setting Ports and Channels, see the **MIDI Ins & Outs Editor**.

◆ **[Source]** (popup menu) [0...67]

Chooses a MIDI Controller or other action from the selected Input Port/Channel to control the Destination. For a complete description of the currently available Sources, see the Appendix **Dynamic MIDI Sources**.

◆ **[Action]** (popup menu) [0...2]

Selects one of three different ways the Source can operate on the Destination.

0: M - Momentary Switch
Selecting this option makes the Source function as a momentary switch. For example, if a Sustain Pedal was set to Momentary Switch, pressing it turns the Destination On, and releasing it turns the Destination Off. Note that this can be used with Continuous Controllers also, in which case the values set in the Bottom and Top fields are used to switch On/Off.

1: T - Toggle Switch
Selecting this option makes the Source function as a toggle. For example, if a Sustain Pedal was set to Toggle Switch, then pressing and releasing it once will turn the Destination On, and pressing and releasing it again will turn the Destination Off. Note that this can be used with Continuous Controllers also, in which case the values set in the Bottom and Top fields are used to toggle On/Off.

2: C - Continuous
Selecting this option makes the Source function as a Continuous Controller. For example, if the Mod Wheel was the Source, this will send the full range of 0 ~ 127 (or the portion specified by the Bottom/Top fields) to the selected Destination (which may or may not make sense, depending on the Destination).

◆ **[Bottom/Top (Range)]** (numericals) [0...127]

Sets an overall range of operation for the selected Source. Depending on the Source and what the Action menu is set to, they can have different functions. With Continuous Controllers, they can specify only a portion of the full range to be used. With Note # and Velocity Sources, they can be used to set note or velocity windows so that only certain areas of the keyboard or velocity range will trigger the Destination, for example. The Polarity menu in the Destination Parameter area can effectively reverse these fields. For more information, see the Appendix **Dynamic MIDI Sources**.

Dynamic MIDI - Output Parameters

The Output Parameters control which Destination is affected by the Source Controller or action, which Module(s) it affects, and the Polarity (direction) it operates in.

[Module] (button grid) [0...6]

Chooses a Module or Modules to control. For certain Destinations such as “Global Tempo,” the Module area is grayed out.

0 ~ 5: Module x (x = 1 - 6, for each Module)
Only the selected Module(s) will be affected. For example, if the Destination selected was “Module Stop” and Module 3’s button is On, then the specified action would only stop Module 3’s effect.

6: L - Last Triggered Module
Only the Last Triggered Module will be affected. For example, this allows you to assign different Modules to be triggered from different parts of the keyboard, and depending which one was last triggered, route a Dynamic MIDI effect to it, such as Direct Indexing.

[Destination] (popup menu) [0...22]

Selects a KARMA function/feature to control with the selected Source. For a complete description of the currently available Destinations, see the Appendix **Dynamic MIDI Destinations**.

If Destination is “RT Parms Control Assign” the row numbers are available as Controller Assignments in the RT Parms Page “Assign” parameter.

[Polarity] (popup menu) [0...3]

Affects the direction the selected Source will operate in. This may also be affected by the Bottom and Top settings in the Source Parameters section.

0: (+) Positive
Controller acts as usual: 0 ~ 127 = 0 ~ 127.

1: (-) Negative
Inverts the polarity: 0 ~ 127 = 127 ~ 0.

2: (+/-) Positive/Negative
Useful with Pitch Bend Wheel: Center = 0; Center ~ Top = 0 ~ 127; Center ~ Bottom = 0 ~ 127;

3: (-/+) Negative/Positive
The reverse of 2: Center = 0; Center ~ Top = 127 ~ 0; Center ~ Bottom = 127 ~ 0;

Dynamic MIDI - Setup

[Setup] (popup menu) [0...2]

Selects one of several modes for changing Dynamic MIDI Setups when Performances are changed.

For KARMA MW, this should always be set to “Performance,” indicating each Performance uses its own settings.

0: Performance
Each Performance can store a separate Dynamic MIDI Setup. Choose this option if you want each Performance to use its own routing setup.

1: File*
Each KDF File stores one Global Dynamic MIDI Setup which can be used for all the Performances in the entire file. This overrides the MIDI Setup stored with each Performance.

2: Global*
A single Global Dynamic MIDI Setup exists for the entire program, which is saved in the Preferences file. Choose this option if you want to override any settings stored with the File or with each Performance.

Dynamic MIDI - Korg M3 Special Notes

* In the above descriptions, features or parameters marked with an asterisk (*) are not supported by the Korg M3 Music Workstation.

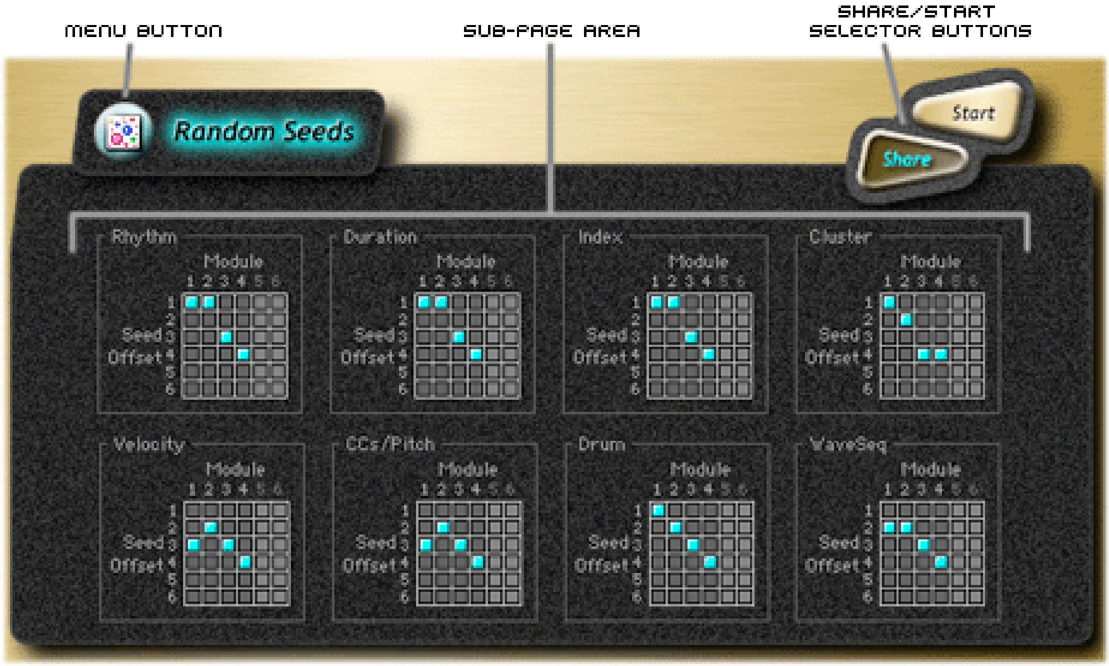
The parameters on the Dynamic MIDI Page correspond to those found in the M3 as follows:

7-2-3 [Dynamic MIDI] (Program)
7-4-2 [Dynamic MIDI] (Combi/Seq)
All parameters on this page

Not available:
Modules 5~6
Setup (File, Global) - always use Performance

Random Seeds

Sections in this chapter:



Random Seeds - Overview

The Random Seeds Page allows you to control some aspects of how a KARMA GE's randomizations are performed. For the GE selected for each KARMA Module, you can often control the sequence of randomizations for various parameter groups such as Rhythm, Duration, Velocity etc. The random calculations are performed based on initial starting values, known as "seeds."

One of the main intentions of this feature is to allow the same randomized GE to be used in more than one Module at the same time, and have all or parts of the randomizations stay in sync between the Modules. This can be used to have two different instruments play the same randomized line in unison or in harmony. For example, if a GE was programmed using Random Rhythms, Random Indexes, and Random Velocities, you might set two Modules to use the same GE and share the same Random Seeds for Rhythm and Index, but not for Velocity (so that two different "musicians" play the same rhythm and notes, but with different randomized velocities).

It is important to note that the actual settings for whether or not randomizations are used are made in the GE itself. This page only allows you to determine whether different Modules using the same GE will share various sequences of random numbers. If two Modules are using different GEs, setting them to use the same seeds will likely cause no audible effect, unless they have portions that are identical, such as the Rhythm Pattern, Velocity Pattern, etc.

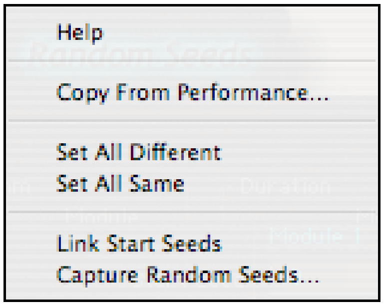
⚠ Changing these settings will not have any effect for GEs that were not designed to utilize the various random capabilities.

Share/Start Selection Buttons
Switches between two different Sub-Pages in the Sub-Page Area.

Sub-Page Area
When the Share Button is selected, displays the "Share Parameters" (Seed Offset/Module Grids) as shown above. When the Start Button is selected, displays the "Start Parameters" (Start Seed, Freeze Loop Length, Retrigger Each Time).

Menu Button

A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy From Performance...

Set All Different

Set All Same

Allows you to quickly set the Seed Offset/Module Grids to one of two different configurations: “All Different” (a diagonal line) and “All Same” (all Seed Offsets set to 1).

Not available unless the Share Parameters are being display in the Sub-Page Area, and there is more than one active Module in the Performance.

Link Start Seeds

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.

When this is turned on, a checkmark appears next to the item in the popup menu. This setting is ignored while “Capture Random Seeds...” is being executed.

Not available unless the Start Parameters are being display in the Sub-Page Area, and there is more than one active Module in the Performance.

Capture Random Seeds...

Brings up a dialog allowing you to capture the internal seed settings to the “Start Seed” field. See later in this chapter: Capture Random Seeds Dialog

Not available unless the Start Parameters are being display in the Sub-Page Area.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **Performance Editor: RT Parms** page for more information.

Random Seeds - How KARMA Generates Random Numbers

KARMA creates its randomizations using what is known as “pseudo-random” numbers. (Actually, all computer-based randomizations are pseudo-random in nature. There is no way to actually calculate truly random choices. But that discussion is beyond the scope of this help file.) A pseudo-random number generator starts a string of calculations with a number known as a “seed.” A randomized number is generated by performing a special mathematical operation on the seed. When the next random number is needed, the same operation is performed on the previous random number and so on, with all randomizations in a sequence descending from the initial seed (“start seed”). Therefore, it is possible to repeat exactly a sequence of randomizations if you start with the same seed. Different seeds yield completely different sequences of randomized numbers. Since KARMA bases its choices for rhythms, durations, notes etc. on these sequences of random numbers, totally random-based phrases and patterns can be recalled, stored, and repeated at any time, and shared between Modules!

Random Seeds - Example: Two Randomized Modules In Harmony

Theory:

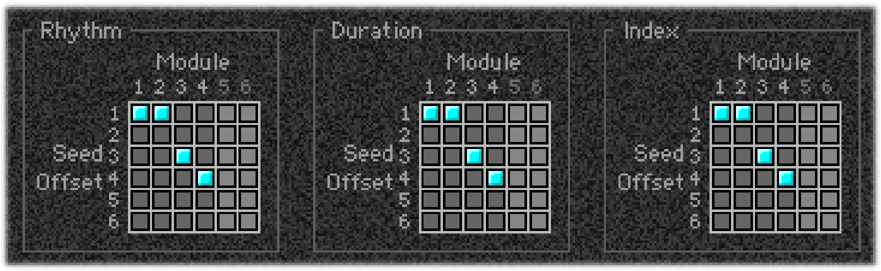
To make two modules play the same randomized GE in harmony, set up the same GE into both modules (using one that is programmed for randomizations), and set them to share the Random Seeds that apply to the characteristics that you want to stay in sync. For example, if using the same GE on Module 1 and 2 with random rhythms, set Module 1 & 2 Rhythm Seed Offsets to the same row. It doesn’t really matter which row, as long as they are the same. The picture below shows an example where Modules 1 & 2 are both set to use Seed Offset 1 for Rhythm, Duration and Index. Note that it is not necessary to use the same seed across different musical attributes; having Module 1 & 2 sharing Seed Offset 1 for Rhythm and sharing Seed Offset 2 for Index will have the same effect as if they were all using Seed Offset 1. They must only share the same offset within a particular grid. You could then do the same thing for the Velocity Seed Offset, if you wanted them to play with the same velocities; or leave that one set diagonally, so that the two musicians play with different “velocity feeling.”

Then change the GE Editor > Note Series "Inversion" parameter for the second module, i.e. Module 1 Inversion = 0, Module 2 Inversion = 4 (usually assigned to a GE RTP in the GE's RTC Model, so edit in the Performance Editor). This way, when each GE's Note Series Index moves through the two Note Series and picks notes to generate, they will be in the same location, but offset from each other by the Inversion parameter. This creates a harmony effect.

Example for Korg M3:
1. Select an Init Combi
2. Set Timbres 1 and 2 (on channels 1 and 2) to two different program sounds, i.e. flute and trumpet
3. Load into both Modules 1 and 2 **GE 0270 Improv Lead 1** (GE Bank 2, #14)
4. Set Random Seeds Share grids as shown below, with Modules 1 and 2 sharing the same Start Seeds for at least Rhythm, Duration and Index grids
3. In Performance Editor > RT Parms, for Module 2's Module Control Layer, set RTP #8 Note Series Inversion Minimum to something other than the default of 0, such as +2

This is sometimes a very tricky feature to use. If you wanted to set up the same, randomized GE in two modules, and have them play in harmony, you must make sure that they have the same Note Series length. Depending on certain other parameters (such as Note Type, Filter Dupes, etc.), changing the Inversion parameter will actually cause the Note Series to be recreated with a different number of notes than the other Module's GE. In this case, it may be impossible for the two Modules to "stay in sync," even though they are set to share the same Random Seeds. This might be because one GE changes Phases earlier than the other, or has to cycle back at the end of a Phase when the other does not, etc.

Random Seeds - Share Parameters



[Seed Offset/Module Grid] (grid)

For each of the "Musical Attributes" that utilize randomization in KARMA, a grid is available. These grids relate to the associated pages in the GE Editor: Rhythm, Duration, Index, Cluster, Velocity, CCs, WaveSeq and Drum. The X-axis of each grid is the Module Number, while the Y-axis is one of six Start Seed Offsets. Each row corresponds to one of six Start Seed Offsets, while each column corresponds to one of up to six Modules. Inactive Modules will be grayed out. The cell selected in a particular row and column indicates which Start Seed Offset is being used by a particular Module.

It is important to note that this is an offset, and not an absolute ID of a seed value. KARMA chooses its Start Seeds from billions of variations (or from the specific value you enter in the Start Seed field), so this does not imply there are only six Start Seeds. Rather, think of it as Offset 1 is a randomly specified start Seed from billions of possibilities at a given moment in time, while Offset 2 is a second variation based on that number, and Offset 3 is a third variation etc.

For example, if you select Rhythm Seed Offset 1 for two KARMA Modules, running the same GE under the same conditions will cause the randomness of the rhythms to be identical. If different types of randomness are being used, such as Duration, Velocity etc., setting all the seed offsets to the same value within each grid (for those two Modules) will cause the resulting phrases to be identical.

Conversely, if you select Rhythm Seed Offset 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 different types of randomness are being used, such as Duration, Velocity etc., setting all the seed offsets to the different values within each grid will cause the resulting phrases to be completely different.

Normally, you will select different values for each module (a diagonal line being an example). Select identical values if you want two or more KARMA Modules to play the same GE in unison or harmony with the same randomizations. For an example of how to do this, see above: Example: Two Randomized Modules In Harmony.

There is no connection between the grids. Setting all Rhythm Seeds to 1 and all Duration Seeds to 1 has no special meaning, and audibly would act the same as setting all Rhythm Seeds to 1 and all Duration Seeds to 6. Rather, it is the sharing of the seeds within a particular grid that has significance.

When the Duration Pattern Advance Mode is set to "Lock (R/S) - Lock to Rhythm Pattern, Synchronize Randomization," the Duration Pattern uses the Rhythm Seeds Grid, and the Duration Seeds Grid has no effect.

The sharing of the Start Seeds relates to the programming of Random Pools (and/or Random Ties/Rests where applicable) within the Pattern Grids of the above pages. Furthermore, this also relates to how the randomizations are being restarted in the Phase page. If there are no randomizations programmed, sharing Start Seeds will have no effect.

Random Seeds - Start Parameters

Choosing “Start” with the Share/Start Selector Buttons displays the Start Parameters Sub-Page. An area exists for each of the Modules. The Module Name displayed at the top of the each area can be assigned on the **GE Setup Page**.

◆ **[Start Seed]** (numerical) [-2147483648…0: Random…+2147483647]

Specifies the “Start Seed” that is used by the KARMA Module to generate a sequence of random numbers, from within a range of over four billion possibilities. This value will be used each time a trigger occurs.

This Start Seed is used to calculate a number of other internal Start Seeds for each of the musical attributes such as Rhythm, Duration, Velocity etc. It is these other internal Start Seeds that are shared according to the “Seed Offset/Module Grids” explained earlier in this chapter. See Share Parameters.

0: Random:
A different phrase will be generated each time the trigger occurs. Internally within the KARMA Module, a different “Start Seed” value is chosen randomly each time the trigger occurs.

Any value other than Random:
The same phrase will 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.

When experimenting with the example above, try entering your birthday in Module 1’s Start Seed field for fun (i.e. 12/24/64 = 122464) - you may be surprised by the results! Notice that each time you trigger the phrase, it repeats the same series of notes, even though it is randomized.

◆ **[Freeze Loop Length]** (numerical) [0:Off, 1…32 Bars]
◆ **[~Freeze LoopLen + Reset]** (available as a virtual RT Parm option)

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. If you set this Off, the phrase will not be repeated.

The table below and the explanations that follow describe how various combinations of “Start Seed” and “Freeze Loop Length” settings will affect the phrase or control data that is randomly generated by the KARMA Module each time triggering occurs, according to the GE settings you are using.

Example	“Start Seed”	“Freeze Loop Length”
(1)	0: Random	Off
(2)	any value	Off
(3)	0: Random	1…32
(4)	any value	1…32

(1) “Start Seed”: 0: Random, “Freeze Loop Length”: 0: 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”: 0: 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 (e.g., F-E-D-C, F-E-D-C, F-E-D-C, …). When you trigger it again, a different phrase will loop (e.g., D-D-C-C, D-D-C-C, D-D-C-C,…). Also see "Retrigger Each Time" below.

(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, the exact same phrase will loop every time. The phrase that is looped will be different if you change the "Start Seed" value. 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 (e.g., C-C-E-E, C-C-E-E, C-C-E-E, …) will loop. Also see "Retrigger Each Time" below.

When assigning Freeze Loop Length as a Real-Time Parameter, an additional option is available: "Freeze LoopLen + Reset." 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 LoopLen + 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] (checkbox) [0, 1]

Specifies whether the phrase will retrigger each time it completes the specified Freeze Loop Length, or retrigger according to the GE's internal settings.

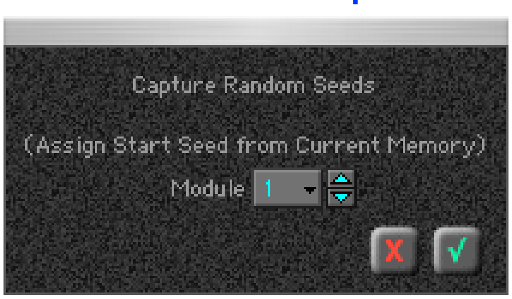
1: On
Every time the specified loop length is completed, the Phase Pattern, Envelopes, and Indexes will retrigger as if the keyboard itself was retriggered. This means that the notes in the phrase will be restarted according to the Note Trigger settings in the Trigger page and the applicable internal settings of the GE. Any envelopes will be retriggered according to the Envelope Trigger/Latch settings in the Trigger page likewise.

0: Off
The overall length of the internal GE Phase Pattern controls when the loop will be retriggered. For example, if the Phase Pattern is 8 bars, and the "Freeze Loop Length" is set to 2 bars, then the randomizations will reset every 2 bars (controlling the rhythm and movement of notes, for example), but the melody and envelopes may not trigger from the beginning until every 8 bars is completed.

Not available unless "Freeze Loop Length" is set to something other than 0: Off.

In some cases, the two settings may sound identical depending on the GE's internal settings.

Random Seeds - Capture Random Seeds Dialog



When the Start Parameters are being displayed in the Sub-Page Area, the "Capture Random Seeds..." utility is enabled on the Menu Button. Selecting it opens the above dialog.

Use this when KARMA has been randomizing a GE's performance, and you hear an effect you would like to "lock in." When you execute this command, the "Start Seed" setting (which is the source of the randomness of the phrase generated by the KARMA Module) will automatically be set to the "Seed" value that is being internally used by the KARMA Module at that moment. 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.

◆ **[Module]** (popup menu) [depends on number of active Modules]

If you are in a Performance using more than one KARMA Module, this selects the Module for which you want to capture the seed value. This popup menu will have only the applicable number of Modules inside, with the last item being "All." If you select a single Module, the seed value will be captured for that KARMA Module only. If you select "All," the seed values will be captured for all active KARMA Modules.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing the operation. The OK Button (green checkmark) closes the dialog and executes the Random Capture.

⚠ It is not possible to use this function on a Module when it has the Start Seed parameter assigned as an RT Parm in the RT Parms page. In this case, an error message will be displayed.

Random Seeds - Korg M3 Special Notes

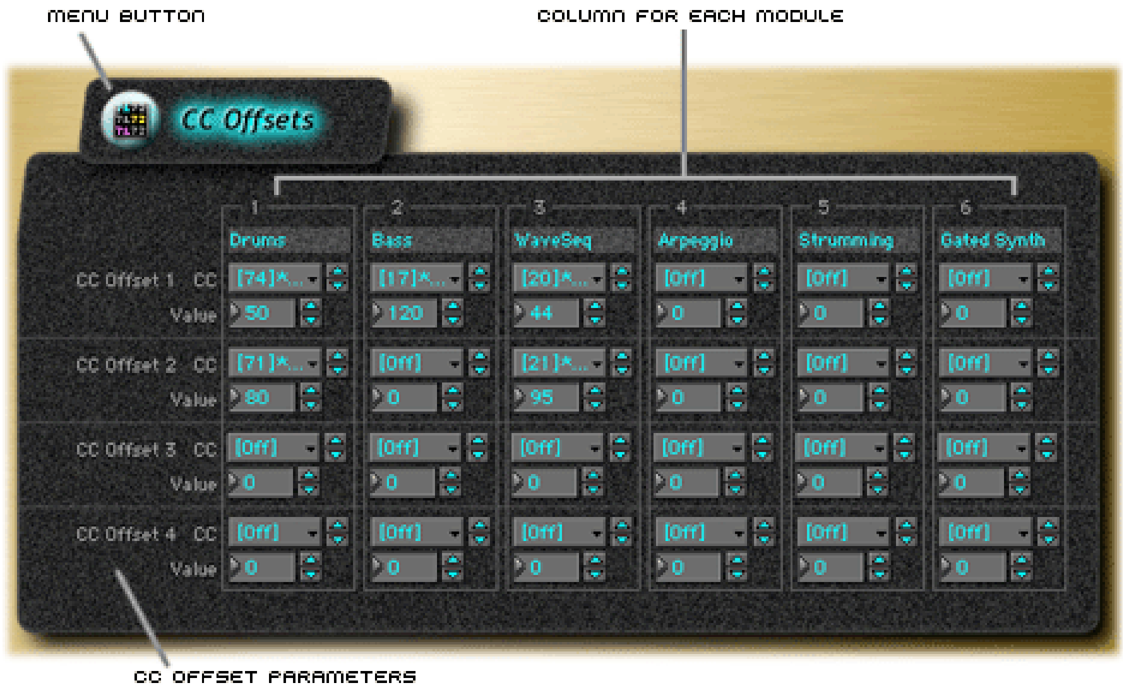
The parameters on the Random Seeds Page correspond to those found in the Korg Kronos as follows:

7-1-8 [Random Seeds]
All parameters on this page

Not available:
Modules 5~6

CC Offsets

Sections in this chapter:



CC Offsets - Overview

The CC Offsets Page provides four “CC Offsets” for each of the six Modules. Each CC Offset is comprised of a MIDI Control Change (CC) Number and a Value for the MIDI CC. These Values are sent out when a Performance is loaded, provided the KARMA Function is On in the Real-Time Controls Editor. Alternatively, they are sent out when the KARMA Function is turned On, and then reset to default “Off Values” when the KARMA Function is turned Off. A column exists for each of the six Modules, which may be grayed out depending on how many Modules are active in the current Performance. The Module Name displayed at the top of the column can be assigned on the GE Setup Page.

Since most synths have ways of controlling tonal characteristics through MIDI CCs, this can be used to further modify the programs on the destination device to respond differently to KARMA when it is On, yet return to a previous state when it is Off. In addition, these can be used to switch on and off other functions of a device, such as the effect sections.

Unlike the CCs generated by KARMA from the GE, which can be continuously changing or can be generated with each note, this is a “one-time” setting that is broadcast when the Performance is loaded, or when the KARMA Function is turned On. (When the KARMA Function is turned Off, any CCs that are assigned here will be reset to a default “Off Value,” such as 0, 64, or 127 depending on the CC Number).

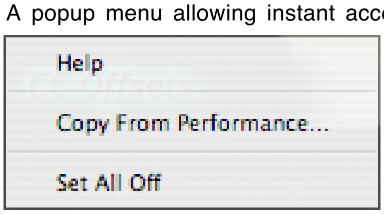
These can be used to adjust many parameters of the Korg OASYS Music Workstation, including the eight Realtime Sliders and the two switches over the Joystick, among others.

CC Offset Parameters

Four rows corresponding to CC Offsets 1 ~ 4. Each CC Offset is comprised of a MIDI Control Change (CC) Number and a Value for the MIDI CC.

Menu Button

A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy From Performance...

Set All Off
Resets all CC Offsets in all six Modules to Off, with a Value of 0. If the KARMA Function is On, will reset any CCs that may be assigned before turning them off.

CC Offsets - CC Offset Parameters

Each CC Offset is comprised of a MIDI Control Change (CC) Number and a Value for the MIDI CC. The message is transmitted when the Performance is loaded, provided the KARMA Function is On in the Real-Time Controls Editor. Alternatively, they are sent out when the KARMA Function is turned On, and then reset to default “Off Values” when the KARMA Function is turned Off. The Module Name displayed at the top of the column can be assigned on the **GE Setup Page**.

[CC Number] (popup menu) [0: Off...126]

Selects the MIDI Control Change Message that will be transmitted, with the specified Value. The popup menu displays some common names for various controllers.

For KARMA M3, the CC names shown in the popup menu relate directly to the Korg M3 Sound Engine.

[CC Value] (numerical) [0...127]

Sets the Value for the specified MIDI Control Change Message, which is then transmitted.

The CC Values will only be transmitted if the KARMA Function is turned On in the Real-Time Controls Editor.

CC Offsets - Korg M3 Special Notes

The parameters on the CC Offsets Page correspond to those found in the M3 as follows:

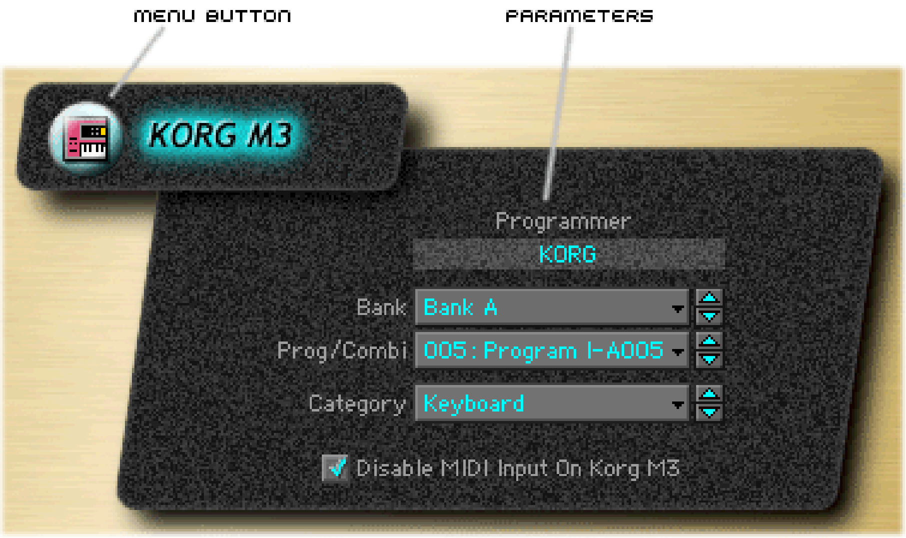
7-1-4 [CC Offset] (Program)
7-1-6 [CC Offset] (Combi/Seq)
All parameters on this page

KORG M3

Sections in this chapter:

Overview

Parameters

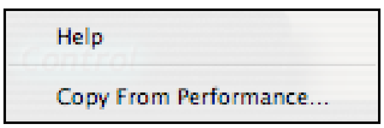


KORG M3 - Overview

The KORG M3 Page contains some special parameters related to controlling and interacting with your Korg M3.

Parameter Area
Parameters related to controlling the Korg M3 are located here.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



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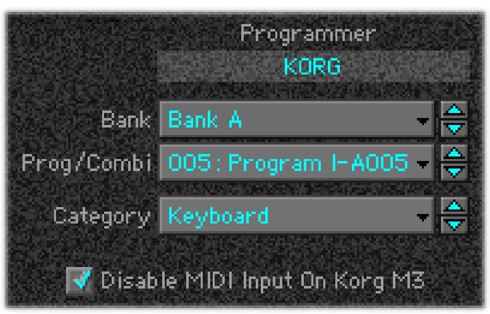
KORG M3 - Parameters



◆ **[Programmer]** (label)

Displays the name of the programmer and/or copyright information stored with the Performance. To edit this, click on the label. A dialog will open allowing you to edit the name.

⚠ The Programmer Name is only stored in the KDF file. This data is not kept as part of a PCG file. Therefore, when exporting or sending PCG data via SysEx, this setting will be lost. When receiving PCG data via SysEx, it will be reset to a default value (unless you use the Merge option).

◆ **[Bank]** (popup menu) [Program: 0...16, Combi 0...5]

Selects one of the M3's Program or Combi Banks, depending on the Performance Type. Some banks may be disabled depending on which version of KARMA software you are using (Kronos, M50, M3, OASYS etc.). When the Performance is loaded, a bank change message is sent to the device to select the corresponding bank.

[Prog/Combi] (popup menu) [0...127]

Selects one the M3's Programs or Combis. When the Performance is loaded, a program change message is transmitted to the device to select the corresponding Program or Combi location.

The names that are displayed in the Program and Bank Menus are simply numbered identifiers at this time. They cannot be changed to other names (a future version may allow this). However, they are sufficient to make sure you have the corresponding patch selected on the device. In other words, the names are not important and are only a convenience; what matters is the Program/Combi number.

While it is possible to set these to any Bank and Program and have it work inside KARMA M3, this relationship will NOT be exported when you try to export a PCG file or send the data via SysEx. The PCG Data will maintain a physical relationship to the actual Performance Number and the Performance Bank Type (Combi Bank A, Combi Bank B, etc.). In other words, if you select Performance A000 in the Bank for Combi Bank A, it has these menus set by default to Combi Bank A and 000. You could change them to some other Combi such as B015, and save it into the KDF File. Then when that Performance was loaded it would call up Combi B015 on the M3. However, if you send that as SysEx PCG Data to the M3, it will remain in location A000 and have no reference to B015. Therefore, when using the keyboard and the software together to create and edit sounds, it is not recommended to change the default associations unless you are absolutely sure of what you are doing. If you want to create a KARMA Performance to go along with a specific location in the M3 Keyboard, you should use the location that corresponds to the location in the keyboard. For example, if you want to make a KARMA Performance to go with Combi location B015, use KARMA M3 location B015 also.

[Category] (popup menu) [0...15]

Selects one of 16 different categories for the current Performance. When the Performance Type is "1 Module" (indicating you are inside a Program Bank), the Korg M3 Program Categories will be displayed inside the popup menu. When the Performance Type is "4 Module" (indicating that you are inside a Combi Bank), the Korg M3 Combination Categories will be displayed instead. This setting will be exported to a PCG file or sent via SysEx.

[Disable MIDI Input On Korg M3] (checkbox) [0, 1]

When On, disables all MIDI Input to the KARMA function on the keyboard, so that you can use the KARMA M3 software instead and not have to keep turning it off on the keyboard.

Since KARMA M3 is not just an editor, but is actually a software embodiment of the same KARMA function that exists in the keyboard, when using the software and the hardware at the same time they can conflict with each other. There are two ways in which you might conceivably want to use them together:

(1) You want to use the software to essentially "play" and edit the internal KARMA-fied sounds, or create new ones. In this case, you want to use KARMA M3 to generate MIDI, and essentially use the M3 Workstation as a tone Module, with the KARMA function disabled.

(2) You want to use the software and the hardware at the same time, and try to get up to ten KARMA Modules going at the same time. In this case, you want both KARMA functions operating.

The "Disable MIDI Input On Korg M3" checkbox allows you to comfortably perform either of these operations. By default, it is turned On in all Performances, so that the more common operation of (1) above is the default. However, you can set it to Off in any Performances where you want to use them both at the same time, as in (2).

1: On
A special SysEx message is sent that internally disables the KARMA function on the keyboard for that Performance (it basically disables any MIDI Input to the KARMA function in the keyboard). This way you can use the computer to generate the KARMA effects, and still leave the KARMA function On/Off button in the On position on the keyboard (which may be required for proper sound).

0: Off
A special SysEx message is sent that restores MIDI Input to the KARMA function on the keyboard, so that it operates as it normally would. In this case, it is possible to be playing both the KARMA function from the keyboard and the KARMA function from the software at the same time.

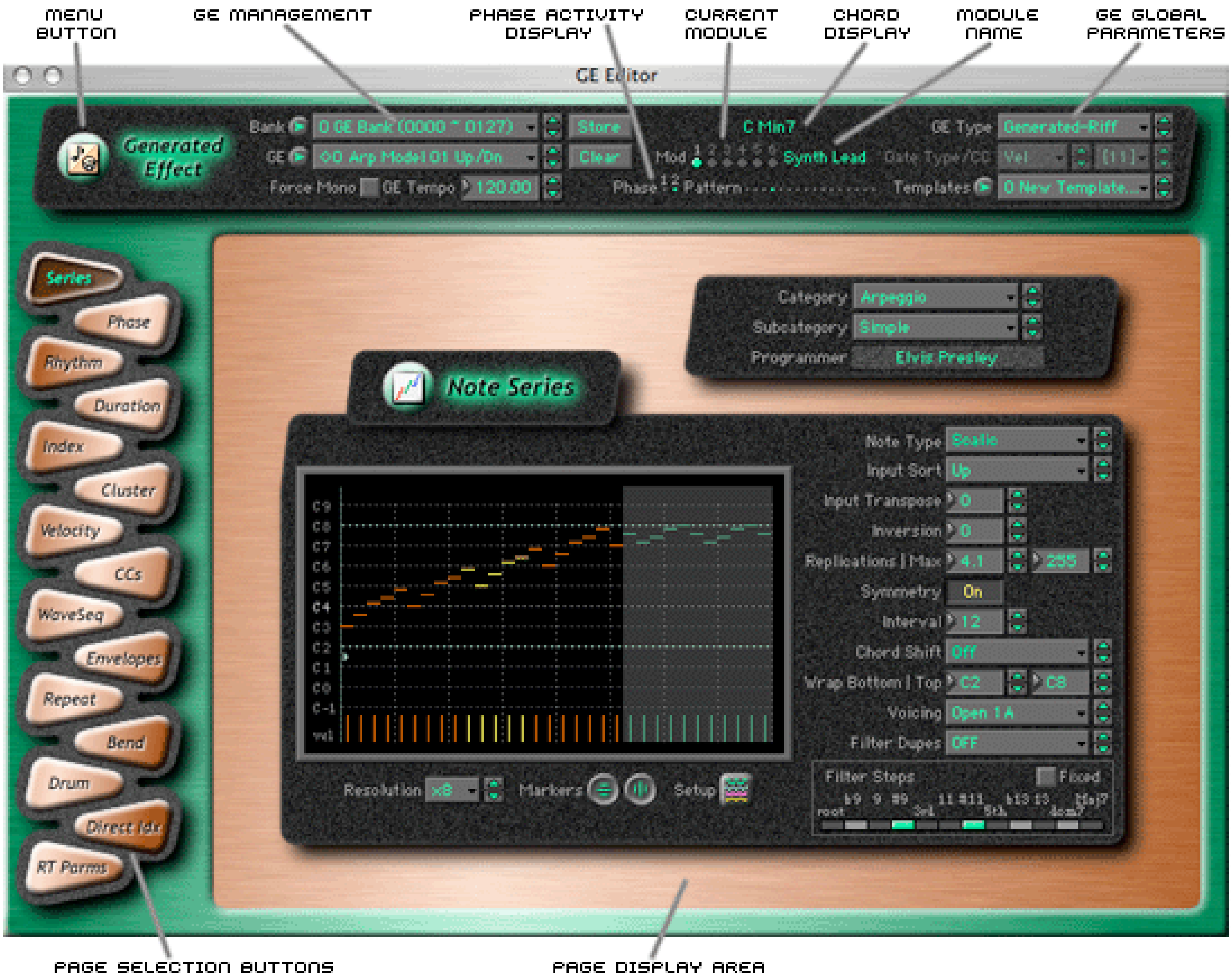
Once the special SysEx message is sent that disables MIDI Input to the keyboard, the only way to restore it is to send the Off message by unchecking the checkbox, or by quitting (exiting) the KARMA M3 application, which will reset it. If you disconnect the MIDI Cables, or your computer crashes, or something else happens that prevents the reset being sent to the keyboard, the KARMA function will no longer work. In this case, you can restore normal operations by turning the keyboard off and back on.

Section 3:

GE (Generated Effect) Editor

GE (Generated Effect) Editor

Sections in this chapter:



GE Editor - Overview

A Generated Effect (GE) is a single collection of parameters specifying a complete algorithmic MIDI Effect to be generated. The Generated Effect Editor (also referred to as the "GE Editor") gives you access to the hundreds of parameters comprising a GE, allowing you to edit existing GEs or create new ones. You can only edit one GE at a time - the "current edit GE." This is selected using the Current Module buttons at the top, or the Current Module command in the Windows Menu. The current edit GE can also be changed from the Performance Editor.

GE Management

Allows you to load GEs from banks of stored GEs, and to store changes or new GEs you have created. The GE Tempo setting and Force Mono setting is also in this area.

GE Global Parameters

The basic type of the GE is set here, along with options related to GE Type "Generated-Gated," and the GE's Template Bank, described below.

Current Module

Allows the current Module being edited to be changed, which changes the current edit GE. The Module's name is displayed to the right (which can be assigned on the Performance Editor: GE Setup Page.

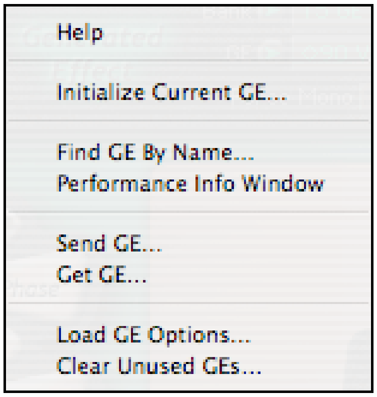
Phase Activity Display

Shows the current Phase and Step of the Phase Pattern while the GE is playing. The Phase Pattern is selected and controlled through the **Phase** page.

Chord Display
Shows the currently analyzed chord type from the notes received as input source material.

Page Selection Buttons
Allow different groupings of parameters ("GE Pages") to be displayed in the Page Display Area (center window of the screen). Each of the GE Pages has a separate chapter in this manual describing their parameters and features.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this editor:



Click on the links below for detailed information on the utilities not fully explained here:

Initialize Current GE...

Find GE By Name...

Performance Info Window

The following commands open the Send or Get GE SysEx Dialogs, preconfigured to the current GE (Edit Buffer).

Send GE...

Get GE...

Load GE Options...
Opens the Preferences Dialog to the General tab, where the Load GE Options settings can be found.

Clear Unused GEs...
Clears all GEs from a KDF file that are not being used in at least one Performance. You will be given an opportunity to cancel. This is mainly for developer use.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

GE Editor - GE Global Parameters

◆ **[GE Type]** (popup menu) [0...3]

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 Pages.

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 page. 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 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]** (popup menu) [0...5]

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 = "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 chosen, an additional popup to the right becomes available where you select a MIDI Control Change Message (CC). 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. However, the Velocity Pattern can be used to control the value of each CC that is generated for a note-on, and the Duration Pattern can be used to control the duration of each "slice."

Other CCs can produce other interested stepped and wave-sequence like effects, depending on how your tone module responds to different CCs. For example, using a CC 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 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 Phase 1
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 Phase 2
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] (popup menu) [0...127]

Selects which CC will be transmitted instead of the note-ons and note-offs of the generated notes. For example, for "chopping" effects, set to 12 (CC 11).

0: Off
No MIDI CCs are generated.

1 ~ 127: MIDI CC 000 ~ 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")

[Open Template Bank Display] (button)

Opens a **Bank Display Window** for the current bank of Templates.

[Template Bank] (popup menu) [number of Template Banks in current KDF File]

Selects one of the Template Banks in the current KDF File to be used by the GE for any Templates required. Templates are predefined collections of certain pattern-related settings for the Rhythm, Duration, Index, Cluster, Velocity, CC, WaveSeq and Drum pages. For more on Templates, see the Template Management sections of the chapters dedicated to those pages.

GE Editor - GE Management

[Bank] (popup menu) [number of GE Banks in current KDF File]

Selects one of the GE Banks within the current KDF File. The GE is then loaded into that Module, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values. Using this menu is the same as using the GE Bank menu in the Performance Editor: GE Setup page, for the Current Edit Module.

[GE] (popup menu) [0...127]

Selects one of many GEs from within the current GE Bank for that Module. The GE is then loaded into that Module, replacing the previous settings, and the parameters in the various editing windows change to reflect the new values. Using this menu is the same as using the GE menu in the Performance Editor: GE Setup page, for the Current Edit Module.

[Show Bank's KDF File] (button)

Brings to the front the **KDF Window** that contains the currently selected bank, and selects it in the KDF Window.

[Open GE Bank Display] (button)

Opens a **Bank Display Window** for the current bank of GEs.

[Store] (button)

Brings up a **Store Dialog** allowing you to name the GE and store it in a memory location.

[Clear] (button)

Brings up a dialog allowing you to clear the selected GE. You will be given an opportunity to cancel. After clearing, the GE will disappear from the GE popup menus in other places in the application.

⚠ Storing or clearing only affects the GEs in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As…" or "Save All…" from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a GE you can close and reopen the current KDF file.

About ROM Banks:

⚠ When you attempt to Store or Clear a GE in one of the Banks corresponding to the Factory ROM Banks, you will receive a warning and be given an opportunity to Cancel. Except in very special circumstances, you should not be replacing, editing, or deleting the ROM GEs as it may affect your ability to transfer your work to the Korg M3 and have it work the same way in the keyboard.

[Force Mono] (checkbox) [0, 1]

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.

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.

Force Mono and Rhythm page: 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.

Force Mono and Cluster page: Strum
When Force Mono is 1: On, the effects of the Strum parameter are removed, since no clusters can be generated.

[GE Tempo] (numerical) [40.0...240.0 BPM]

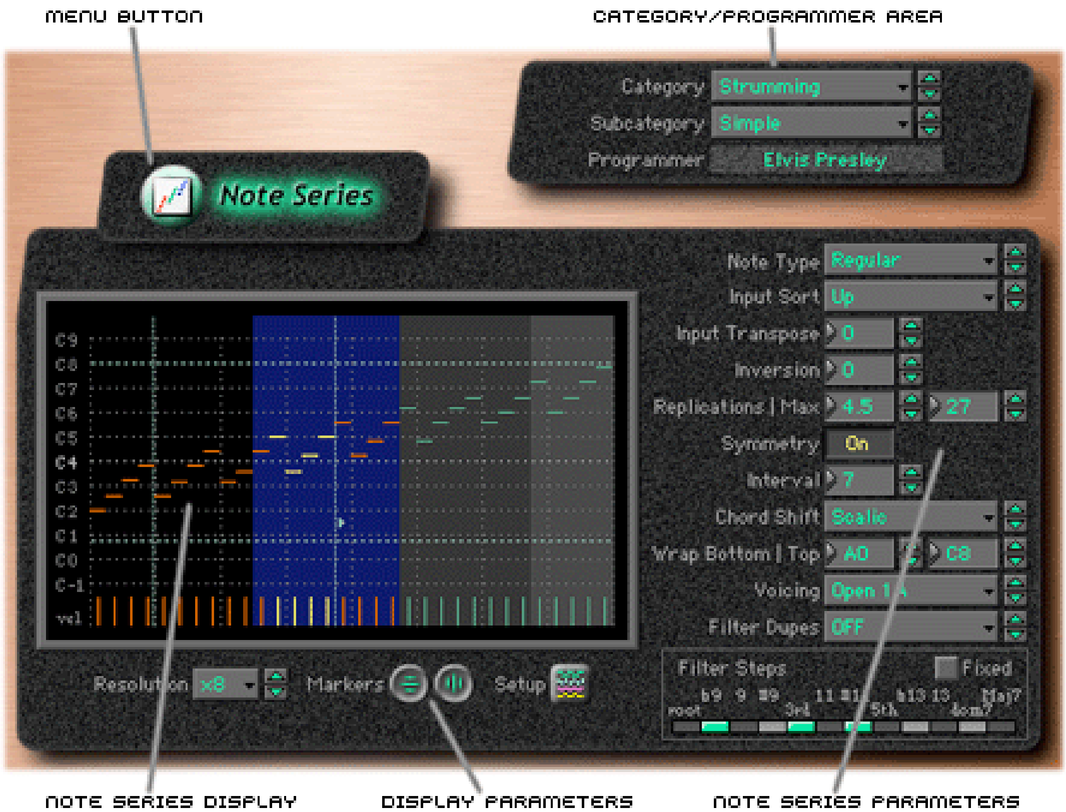
Each Generated Effect is stored with the tempo that was being used when it was last saved, so that a reference exists for the correct tempo to use it at. However, the overall Performance Tempo overrides the settings of all the GEs being used by that Performance. When you load a GE using the popup menus, the GE Tempo will be displayed here in the GE Editor, but will not normally affect the Performance Tempo (which is displayed in the Performance Editor) unless the "Loading GE Loads GE Tempo" option in the Options Menu is checked. Therefore, if you are auditioning single GEs and want to hear them at the tempo that they were intended to be used at, you should select this option. Then when the GE is loaded, it will replace the Performance Tempo with the GE Tempo.

The GE Tempo and Performance Tempo settings are "linked," in that if you adjust the GE Tempo while listening to a GE you will also be changing the Performance Tempo.

When you save a GE, it will be saved with the current GE Tempo value, not the Performance Tempo. That means that when creating GEs, you should use the GE Tempo field to adjust the tempo; once you have it as you like it and save it, it will have the correct reference tempo. Then you can use it in other Performances and it will retain its tempo, even if you resave it inside a Performance with a different tempo. For example, if you load a GE that was created at 100 BPM, set the Performance Tempo to 150 BPM and save the GE (perhaps because you have tweaked some other parameter), the GE Tempo will still remain 100 BPM. If you want to save it with the new Performance's tempo, you must manually set the GE Tempo to be the same as the Performance Tempo. Saving a Performance does not affect the stored GE Tempos of the individual GEs in any way.

Note Series

Sections in this chapter:



Note Series - Overview

The Note Series Page 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.

Note Series Display
Displays the current contents of the Note Series and various markers that change as the effect is generated.

Display Parameters
Parameters that change the characteristics of the Note Series Display.

Note Series Parameters
Parameters that actually create and change the Note Series.

Category/Programmer Area
An optional section that may be hidden or displayed using the “Display Category/Programmer In Note Series Page” item from the Options Menu. See Category/Programmer Area.

Menu Button

A popup menu allowing instant access to this help chapter and the following utilities associated with this page:

Open Note Series Display In Separate Window

Opens a separate window (the Note Series Display, also available from the Windows Menu) showing the current Note Series. It is identical to the Note Series Display in this Page. When editing parameters in other pages of the GE Editor, such as the Cluster Page or the Index Page, you may wish to watch the effect on the Note Series without switching back to the Note Series Page. See **Note Series Display**.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Note Series - Note Series Parameters

This section contains the Parameters that actual create and change the Note Series.

When GE Type = “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 Page and Bend Page, or “Note Series -> Length” is being used in the Drum Page.

The following three parameters will have an effect on when Phases change if the Phase Length Mode is set to “Actual”: Replications, Filter Steps, and Filter Dupes. See **Phase Page**.

◆ **[Note Type]** (popup menu) [0...9]

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 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 four 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: WholeTone
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.

◆ **[Input Sort]** (popup menu) [0...3]

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 “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 “Actual” will result in a different order than “Up” or “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]** (numerical) [-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]** (numerical) [-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 “Up” or “Down.” The effect of this parameter when Input Sort is “Actual” or “Random” is less predictable, although potentially useful for some effects.

◆ **[Replications]** (numerical) [0.0...40.0]

Sets how many times the input notes will be replicated according to the Interval. For example, 3.0 Replications with an Interval of 12 will give you a 3 octave arpeggio. Decimal places create only a portion of the last replication. Note that if GE Type = “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).

When this parameter is assigned as an RT Parm, the value is represented as being x100 - so 3.5 here would be represented as 350 in the RT Parm setting, 4.75 would be represented as 475, etc.

For information related to using the associated Inc/Dec (up/down arrows) with a floating point numerical, see **Basic Operations**.

◆ **[Max]** (numerical) [1...255]

Sets an overall "final index" 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 that 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]** (button) [0, 1]

When turned on, additional notes are extrapolated at the end of the Note Series beyond the number specified by the Replications setting. These are accessed when clusters are generated in that area of the Note Series, or when the Index Page Double/Invert parameters 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 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 Page will also be wrapped around at the top of the Note Series when this is off.

<u>0: Off</u>
The notes determined by the Repetitions setting (described above) are used as the range within which to generate notes.

<u>1: On</u>
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]** (numerical) [-24...24]

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.

◆ **[Voicing]** (popup menu) [0...8]

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.

<u>0: Closed</u>
The Note Series is created with no further modification from this setting.

<u>1...8: Open 1A ~ 4B</u>
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 the Note Sort menu. These can be used to create different types of wider voiced chords for simulating guitar or string section voicings. For a complete description of the different effects, see the Appendix **Open Voicing Reference**.

◆ **[Chord Shift]** (popup menu) [0...2]

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.

<u>0: Off</u>
The Note Series is created with no further modification from this setting.

<u>1: Scalic</u>
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: Scalic," described above.

<u>2: Scalic 2</u>
Same as Scalic (above), except that the note tables used to shift the notes are the same as the ones used in "Note Type: Scalic 2," described above. Scalic 2 is more modal in nature and has more passing tones than Scalic.

◆ **[Wrap Bottom/Top]** (numericals) [0...127: C-1...G9]

Sets an overall range for the pitches in the Note Series. Notes created beyond this range are lowered or raised an octave (depending on which end). Mainly intended to limit the Note Series to useable ranges, these settings can also be used creatively to force a riff to cycle around inside a certain range.

◆ **[Filter Dupes]** (popup menu) [0...2]

Allows duplicate notes in the Note Series to be removed in several different ways.

<u>0: Off</u>
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 = "Generated - Gated."

◆ **[Filter Steps]** (editing grid) [0...11]

A 12 button grid corresponds to the 12 scale tones, with regards to a current key that is determined by chord analysis of the input source material. For example, if the key is determined to be "C," then the grid steps 0 through 11 correspond to C, C#, D to B; if the key is determined to be "E," then steps 0 through 11 correspond to E, F, F# to D#. Clicking on a step creates a green button indicating the step is selected. 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, all occurrences of E would be removed from the Note Series. For example, this is useful for creating complex grooves where several modules are all supplied with the same source material, where 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. These settings can also be modified by several "virtual" RT Parms. See Note Series Page: RT Parm Virtual Parameters.

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 the "Fixed" checkbox (described below).

Not available if GE Type = "Generated - Gated."

◆ **[Fixed]** (checkbox) [0, 1]

0: Off 1: On
When the "Filter Steps" grid is used above, allows the resulting tonality of the Note Series to be "fixed" in relation to the key of C. For example, assume that Note Type is set to "Chromatic" and Chord Shift is "Off," so that the Note Series is essentially a chromatic scale. If you play a single "C" (and Inversion is set to "0"), you will get a chromatic scale starting with C. If you then set up the Filter Steps grid so that you are filtering steps {1,3,6,8,10}, you would have a C Major diatonic scale. With Fixed set to "Off," if you then play a "D" on the keyboard, the whole scale will shift to become a D Major diatonic scale. With Fixed set to "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 Performance GE Setup Page Transpose parameter to do so. 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 = "Generated - Gated."

Note Series - RT Parm Virtual Parameters

The following parameters are not true parameters, but "virtual" parameters for RT Parm control. In other words, they do not physically exist on the Note Series Page, but perform a modifying function on one or more of the other parameters. They can be found in the Note Series Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual).

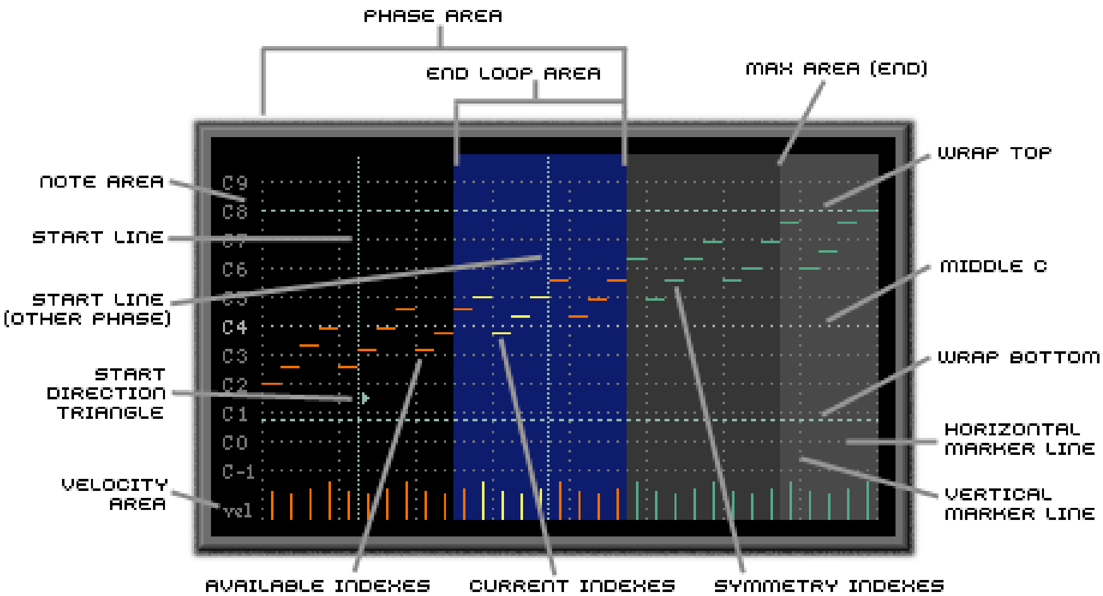
◆ **[~Filter Template]** (virtual) [0...77]

Allows the entire Filter Steps grid 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 Templ + Restore]** (virtual) [-1...77]

Operates the same as "Filter Template" (above), with the difference that when the RT Parm is set to the minimum value specified by the RT Parm range parameters, 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 Templ + Restore" as an RT Parm, 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 -1 indicating "Restore," or only a portion of the range, and still have the ability to restore the original internal settings.

Note Series - Note Series Display



The Note Series Display shows the current state of the Note Series, along with various range markers and other indicators that may shift as the effect is generated. The colors of the various items may be specified as described in the Display Setup Dialog.

Available Indexes
When the Note Series is created, the indexes that are potentially available for generation of notes are displayed in a specified color (orange, in the example above). Note that if "Symmetry" is turned off (described above), this will be all of the indexes in the Note Series.

Current Indexes
As notes are generated during playback of the effect, the indexes being chosen are shown in a specified color (yellow, in the example above).

Symmetry Indexes
When "Symmetry" is turned on (described above), additional indexes beyond the available indexes are added to the Note Series, so that clusters may utilize these additional notes as the effect is generated. They will be displayed in a specified color (light green, in the example above).

Note Area
The top 90% of the display, where each note in the Note Series is shown as a small horizontal bar (index).

Velocity Area
The bottom 10% of the display, where the velocity of each note in the Note Series is shown as a vertical line, representing a velocity of 1 to 127.

Start Line
A vertical line displaying the index at which the effect will start when it is triggered (in the first Phase only). This is controlled by the setting of the "Start %" parameter in the Phase Page. Depending on the setting of the "Start Mode" (also in the Phase Page), there may be an additional Start Line present, showing the start of the other Phase.
See **Phase Page - General Parameters**.

Start Line (Other Phase)
Depending on the setting of the "Start Mode" parameter in the Phase Page, there may be an additional Start Line present, showing the start of the other Phase.
See **Phase Page - General Parameters**.

Start Direction Triangle
A small triangle to either side of the Start Line that displays the general direction of movement through the Note Series when the effect is first triggered. This is controlled by the setting of the "Direction" parameter for the first Phase in the Phase Page.
See **Phase Page - Phase Specific Parameters**.

Phase Area
The portion of the Note Series specified for use in the current Phase is displayed in a specified background color (black, in the example above). As the effect is generated, this will shift to display the useable area in each Phase. This is controlled by the settings of the “Beginning/End Offset” parameters for each Phase in the Phase Page.
See **Phase Page - Phase Specific Parameters**.

End Loop Area
The portion of the Note Series specified for use when an End Loop is being used is displayed in a specified background color (blue, in the example above). As the effect is generated, this will shift to display the useable area when an End Loop is entered. If an End Loop is not being used, this color will not be displayed. This is controlled by the settings of the “End Loop” parameters in the Phase Page.
See **Phase Page - End Loop Parameters**.

Max Area (End)
The portion of the Note Series beyond which indexes will never be chosen is displayed in a specified background color (dark gray, in the example above). This area starts with the first index (beginning of the Note Series) and ends with the index specified by the “Max” parameter (described above).

Wrap Top/Wrap Bottom
Horizontal lines that display in a specified color the current settings of the Wrap Bottom/Top parameters (described above). As the Note Series is created, notes above or below these boundaries will be shifted to remain within the specified range.

Horizontal/Vertical Marker Lines
Vertical and horizontal marker lines may be displayed in a specified color in the background, dividing the display into octaves and groups of 4 indexes. These may be turned off and on with the Markers buttons in the Display Parameters area (described below).

Middle C
A horizontal line displaying the location of Middle C in the Note Series.

Note Series - Display Parameters

These parameters allow some aspects of the Note Series Display to be changed.

◆ **[Resolution]** (popup menu) [range x1...x8]

Sets the width (in pixels) that each index in the Note Series will be displayed with. For most situations, a setting of x6 to x8 should be adequate; if many Replications are set up, the smaller resolutions can be used to display the longer Note Series.

◆ **[Markers]** (buttons)

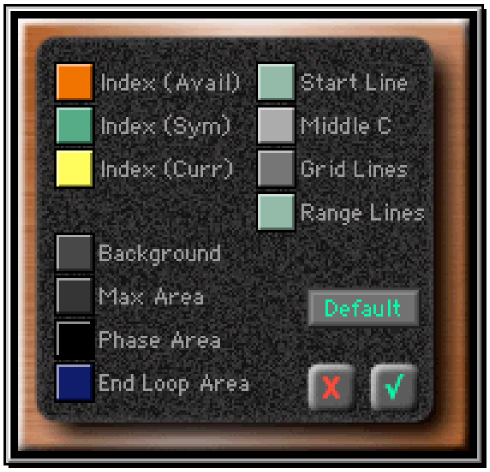
Horizontal
Allows the horizontal marker lines (grid lines) to be turned on and off.

Vertical
Allows the vertical marker lines (grid lines) to be turned on and off.

◆ **[Setup]** (button)

Opens the Display Setup Dialog (discussed below), allowing the colors for various parts of the Note Series Display to be customized.

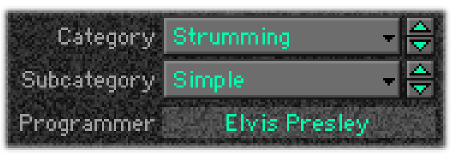
Note Series - Display Setup Dialog



The Note Series Display Setup Dialog can be opened by clicking on the “Setup” button underneath the Note Series Display. It allows you to customize the colors of the display if desired.

Click on the color squares to change any of the colors (see the description of Note Series Display above for a description of the different areas or items the colors refer to). Changes will be displayed in the Note Series Display. Click OK (green checkmark) to save your changes, or Cancel (red X) to cancel your changes. The “Default” button returns the colors to the default settings shown here.

Note Series - Category/Programmer Area



The Category/Programmer Area shows the Cateogry, Subcategory, and Programmer name related to the Current Edit GE.

◆ **[Category]** (popup menu) [0...12]

Selects one of 12 different categories for the current GE being edited. Changing this will display “** Not Defined **” in the Subcategory menu, indicating that a Subcategory needs to be assigned as well.

This can be useful when searching for GEs by category type in the Korg Products incorporating KARMA.

◆ **[Subcategory]** (popup menu) [0...n]

Selects one of several different subcategories for the current GE being edited, the number will vary depending on the category.

This can be useful when narrowing your search for GEs by subcategory type in the Korg Products incorporating KARMA.

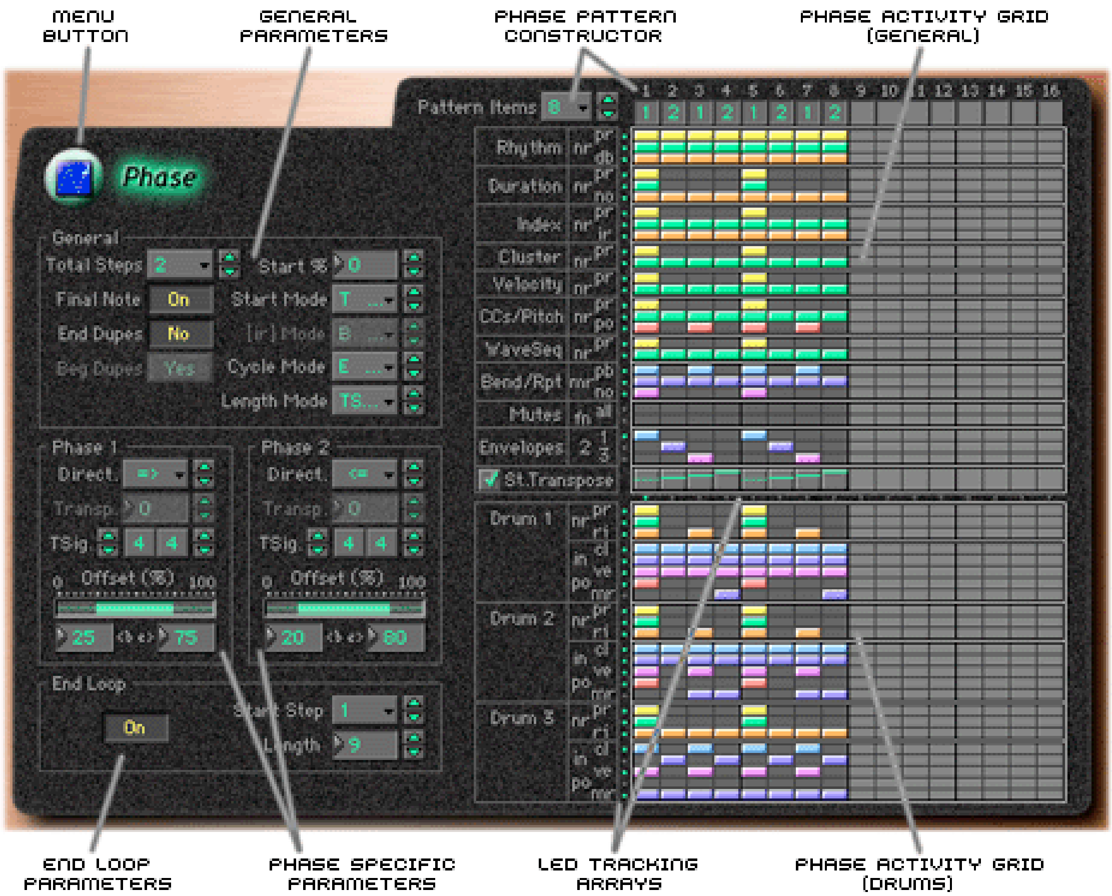
◆ **[Programmer]** (label)

Displays the name of the programmer stored with the GE. To edit this, click on the label. A dialog will open allowing you to edit the name.

Phase (Part 1)

Sections in this chapter:

Sections in **Part 2**:



Phase - Overview

A Generated Effect has two different “Phases.” Each of them is a separate collection of certain parameters including Rhythm, Duration, Index, Cluster, Velocity, WaveSeq and CCs/Pitch 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 Page 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, various settings and actions that may be selectively activated while switching between the Phases, and whether or not a portion will be looped.

General Parameters
Parameters that affect the playback of the entire effect.

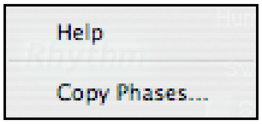
Phase Specific Parameters
An identical group of parameters for each Phase that affect playback within that Phase.

Phase Pattern Constructor
Allows a pattern of switching between the two Phases to be constructed.

Phase Activity Grids (General/Drums)
Allow certain types of behavior to be initiated or controlled as each step of the Phase Pattern is executed.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grids, with one or more green dots displaying the current activity and the current step of the Phase Pattern.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings of the Phase Pattern indicate a particular Phase is not being used, the Phase Specific Parameters for that Phase will not be available.

For an overview of Phases, see also: **KARMA Memory Architecture**

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Phase - Pattern Constructor

The Phase Pattern Constructor allows a pattern of switching between the two 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: seven times through Phase 1 followed by once through Phase 2. After completing the eight steps, execution may loop back to step one. 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.

◆ **[Pattern Items]** (popup menu) [1...16]

Sets the number of steps in the Phase Pattern. This will make available a certain number of columns here and below in the two Pattern Activity Grids.

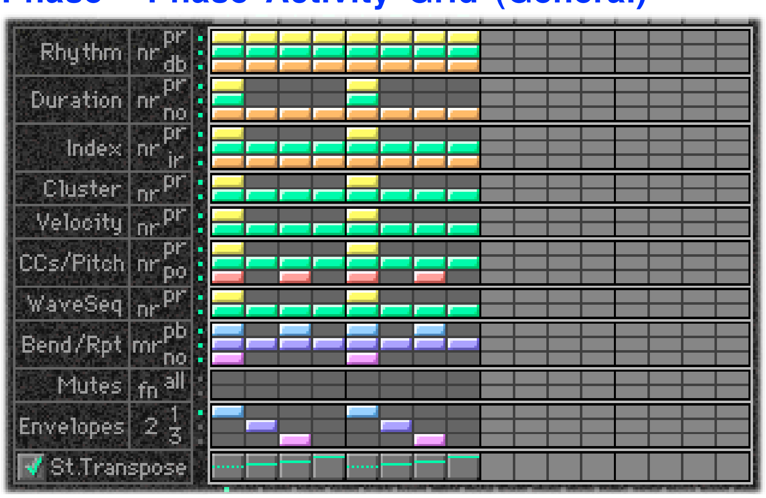
To "replicate" (copy) a number of steps into more steps, hold down the option key (Mac) or alt key (Win) when selecting a larger value from the popup menu. For example, say you have a four step Phase Pattern all set up the way you want in the grid, and you want to double it to an eight step pattern without setting all the buttons manually. Hold down the option/alt key and select "8," and the grid will automatically be filled in. You can also use option-click (Mac) or alt-click (Win) with the mouse to do the same thing.

◆ **[Pattern Step "n"]** (numericals) [1, 2]

Sets which Phase 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 value may be set to either Phase 1 or Phase 2. These parameters can also be controlled by several "virtual" RT Parms. See **Phase Page: RT Parm Virtual Parameters**.

When this parameter is assigned as an RT Parm, the values are represented [0, 1] as 0: Phase 1 and 1: Phase 2.

Phase - Phase Activity Grid (General)



The Phase Activity Grid (General) is always available, regardless of the GE Type. Depending on the number of Phase Pattern Items set in the Phase Constructor section above, a corresponding number of columns will be enabled here. As shown in the example above, eight steps have been chosen, so the first eight columns have been enabled; the last eight columns are disabled showing a lighter gray color. Each row in the grid performs a specific function; all of them relate to something that happens as each step in the Phase Pattern (column) is executed during playback of the effect. The intersection of each row and column can have a button turned on.

The rows are divided into ten distinct sections, each of which deals with a separate group of parameters. We will discuss the top nine sections here (the Step Transpose row is a special case that is discussed in a following section Phase Page - Step Transpose Parameters.

Due to limitations of size, two and three letter abbreviations have been chosen to indicate the function of each row in the upper nine sections; they should be easy to remember once you learn what they indicate. The following table indicates what each row's function is:

		As playback of the step begins, if the button is...	
		On	Off
Rhythm	**[pr]** pattern restart	The Rhythm Pattern will restart from the beginning.	The Rhythm Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Rhythm Pattern is using any random pools, a new sequence of random numbers will be generated.	If the Rhythm Pattern is using any random pools, the same sequence of random numbers will be generated.
	[db] force down beat	If the previous step's Rhythm Pattern would cause a tie into the current step, force a downbeat.	If the previous step's Rhythm Pattern would cause a tie into the current step, allow the tie.
Duration	**[pr]** pattern restart	The Duration Pattern will restart from the beginning.	The Duration Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Duration Pattern is using any random pools, a new sequence of random numbers will be generated.	If the Duration Pattern is using any random pools, the same sequence of random numbers will be generated.
	[no] no overlap	Cutoff any durations (sustaining notes) which may overlap into this step.	Allow durations (sustaining notes) to overlap into this step.
Index	**[pr]** pattern restart	The Index Pattern will restart from the beginning.	The Index Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Index Pattern is using any random pools or random types, a new sequence of random numbers will be generated.	If the Index Pattern is using any random pools or random types, the same sequence of random numbers will be generated.
(note1)*	**[ir]** index restart	Restart the index at the bottom, top, or Start % of the Note Series, as determined by the other applicable parameters.	Continue pitch movement from an index adjacent to the last index of the previous step.
Cluster	**[pr]** pattern restart	The Cluster Pattern will restart from the beginning.	The Cluster Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Cluster Pattern is using any random pools, a new sequence of random numbers will be generated.	If the Cluster Pattern is using any random pools, the same sequence of random numbers will be generated.
Velocity	**[pr]** pattern restart	The Velocity Pattern will restart from the beginning.	The Velocity Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Velocity Pattern is using any random pools, a new sequence of random numbers will be generated.	If the Velocity Pattern is using any random pools, the same sequence of random numbers will be generated.
CCs/Pitch	**[pr]** pattern restart	The CC Pattern will restart from the beginning.	The CC Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the CC Pattern is using any random pools, a new sequence of random numbers will be generated.	If the CC Pattern is using any random pools, the same sequence of random numbers will be generated.
	[po] use pitch offsets	Apply Pitch Offsets during this Phase (if using CC Mode "CC A Both Phases, Pitch Offsets")	Ignore Pitch Offsets during this Phase (if using CC Mode "CC A Both Phases, Pitch Offsets")
WaveSeq	**[pr]** pattern restart	The WaveSeq Pattern will restart from the beginning.	The WaveSeq Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the WaveSeq Pattern is using any random pools, a new sequence of random numbers will be generated.	If the WaveSeq Pattern is using any random pools, the same sequence of random numbers will be generated.

Bend/ Repeat	**[pb]** pitch bend	Allow Auto-Bending throughout this step according to the Bend parms.	Do not allow Auto-Bending in this step of the Phase Pattern.
(note2)*	**[mr]** melodic repeat	Allow Melodic Repeat throughout this step according to the Melodic Repeat parameters.	Do not allow Melodic Repeat in this step of the Phase Pattern.
(note3)*	**[no]** no overlap	If using Melodic Repeat, stop (turn off) any repeats from the previous step which may overlap into this step.	If using Melodic Repeat, allow repeats from the previous step to overlap into this step of the Phase Pattern.
Mutes	**[all]**	Mute playback throughout the entire step of the Phase Pattern.	Do not mute playback during this step of the Phase Pattern.
(note4)*	**[fn]** all except first note	Mute playback throughout the entire step of the Phase Pattern except for the first note or cluster.	Do not mute playback during this step of the Phase Pattern.
Envelopes	**[1]** envelope 1	Trigger or retrigger the start of Envelope 1.	Do not trigger or retrigger the start of Envelope 1.
	[2] envelope 2	Trigger or retrigger the start of Envelope 2.	Do not trigger or retrigger the start of Envelope 2.
	[3] envelope 3	Trigger or retrigger the start of Envelope 3.	Do not trigger or retrigger the start of Envelope 3.

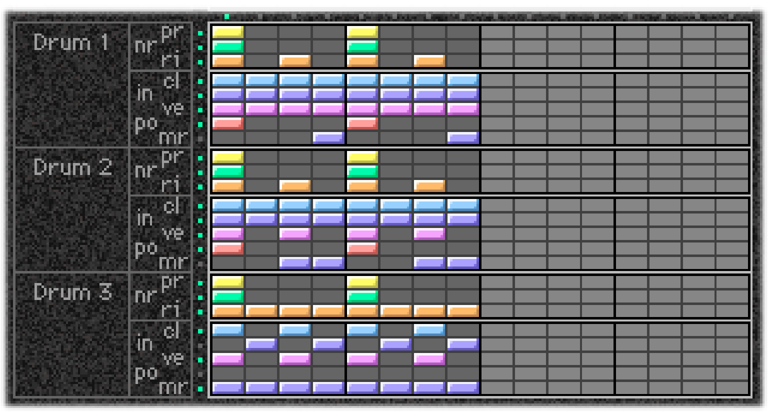
*note1 - When [ir] (index restart) is on, will continue from an adjacent index only if that is possible given the settings of the Phase Beginning and End Offsets. When using End Loop, this only has an effect on the step during which the End Loop is entered. This means that if the button is on and the End Loop is entered, it will switch to one end of the Phase, depending on the Phase Pattern. If the button is off, the End Loop will be adjacent to the last index of the previous step. After the End Loop has started, the note pitch buttons have no other effect.

*note2 - The [mr] (melodic repeat) row has no effect when the GE Type is "Generated - Drum," since each Drum Pattern has its own [mr] row - see Phase Activity Grid (Drums) below.

*note3 - setting [no] (no overlap) for Melodic Repeat in the first step only causes them to be shut off when the Phase Pattern plays through and re-enters the first step. This has no effect on repeated notes that are still being generated when you first trigger the effect. To cause them to stop when the effect is triggered, use the Melodic Repeat Stop Mode parameter in the Melodic Repeat Page.

*note4 - The two Mute choices are mutually exclusive - only one may be used at a time.

Phase - Phase Activity Grid (Drums)



The Phase Activity Grid (Drums) is only available when the GE Type is "Generated - Drum." It controls different effects that may be applied to the Drum Patterns that are being used at the time. Depending on the number of Phase Pattern Items selected in the Phase Constructor section above, a corresponding number of columns will be enabled here. As shown in the example above, eight steps have been chosen, so the first eight columns have been enabled; the last eight columns are disabled showing a lighter gray color. Each row in the grid performs a specific function; all of them relate to something that happens as each step in the Phase Pattern (column) is executed during playback of the effect. The intersection of each row and column can have a button turned on.

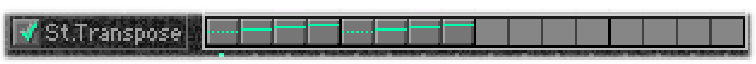
The rows are divided into six distinct sections: there are two sections for each of the three Drum Patterns, each of which deals with a separate group of parameters. Due to limitations of size, two letter abbreviations have been chosen to indicate the function of each row in the seven sections; they should be easy to remember once you learn what they indicate. The following table indicates what each row's function is (Drum Pattern 1 shown; Drum Patterns 2 and 3 are identical):

		As playback of the step begins, if the button is...	
		On	Off
Drum 1	**[pr]** pattern restart	The Drum Pattern will restart from the beginning.	The Drum Pattern will continue from its last position in that Phase.
	[nr] new random sequence	If the Drum Pattern is using any random pools or random rests, new sequences of random numbers will be generated.	If the Drum Pattern is using any random pools or random rests, the same sequences of random numbers will be generated.
(note1*)	**[ri]** resynch indexes	Move the index of the drum pattern to the location it would normally be if not being jumped around by Index and Cluster Patterns.	Do not move the index, let it continue from from wherever it may be.
	[cl] use cluster pattern	Apply the effects of the Phase's Cluster Pattern to the playback of the Drum Pattern during this Step.	Cluster Pattern settings have no effect during this Step of the Phase Pattern.
	[in] use index pattern	Apply the effects of the Phase's Note Pattern to the playback of the Drum Pattern during this Step.	Note Pattern settings have no effect during this Step of the Phase Pattern.
	[ve] use velocity pattern	Apply the effects of the Phase's Velocity Pattern to the playback of the Drum Pattern during this Step.	Velocity Pattern settings have no effect during this Step of the Phase Pattern.
	[po] use pitch offsets	Apply Pitch Offsets during this Phase (if using CC Mode "CC A Both Phases, Pitch Offsets")	Ignore Pitch Offsets during this Phase (if using CC Mode "CC A Both Phases, Pitch Offsets")
(note2*)	**[mr]** melodic repeat	Allow Melodic Repeat throughout this Step according to the Melodic Repeat parameters (Drum 1 only).	Do not allow Melodic Repeat in this Step of the Phase Pattern.

*note1 - For a more complete description of [r] Resynchronize Index, see the Drum (Part 2) Chapter.

*note2 - The [mr] (melodic repeat) button in the upper Phase Activity Grid (General) has no effect, but is replaced by these.

Phase - Step Transpose Parameters



The Step Transpose row of the Phase Activity Grid (General) is a special case - you cannot edit the values in the grid directly. They are only a graphical representation of the Step Transpose Values that are accessed through a separate dialog. Clicking on the "St.Transpose" label, or the row itself in the Phase Activity Grid (General) opens the Step Transpose Dialog shown below.

Here you can set a Transpose Value for each of the 16 steps of the Phase Pattern. The "Reset" button sets all 16 value fields to "0." The Cancel button (red X) closes the dialog and restores the previous values, discarding any edits you may have made, while the OK button (green √) closes the dialog and saves the edits into the Phase Pattern.

◆ **[Step Transpose Value]** (numerical) [-48...+48 semitones]

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 16 value fields in the dialog shown above correspond to the 16 available steps in a Phase Pattern, and may be grayed out depending on the length of the Phase Pattern.

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.

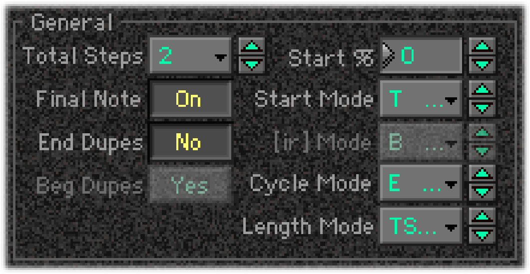
While these values are not directly accessible as GE RT Parms, they may be set as part of a GE and varied by the following 2 GE RT Parameters:

Step Transpose On/Off
Step Transpose Template (discussed in the section **Phase Page: RT Parm Virtual Parameters**).

[Step Transpose On/Off] (checkbox) [0, 1]

O:Off 1: On
The checkbox next to the label allows the effect of the Step Transpose Values in each Phase Pattern Step to be turned on or off for the entire Phase Pattern.

Phase - General Parameters



This group of parameters affects some overall characteristics of Phase performance.

[Total Steps] (popup menu) [0 = ∞, 1...32]

Sets the total number of steps of the Phase Pattern that will be played before stopping. The infinity sign "∞" 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}.

[Final Note] (button) [0, 1]

0: Off 1: On
Operates in conjunction with the Total Steps menu above. When this is On and generation stops, the first note from what would be the next Phase is played, essentially adding a downbeat at the end. However, for more predictable results, the note/cluster is played with the current Phase's Cluster, Rhythm, Duration and Velocity Pattern Values.

Not available when the Total Steps menu is set to infinity "∞".

[Start %] (numerical) [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 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 = "Generated - Gated." If "Generated - Drum," the Note Series can be applied as pitch bend, discussed elsewhere.

[Start Mode] (popup menu) [0...3]

Controls how the Start % setting 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 (and the status of the [ir] (index restart) buttons in the Index section of the Phase Activity Grid).

1: 1 - when entering Phase 1 (if [ir] button on in grid)
Each time that playback of a Phase Pattern step containing Phase 1 begins, the Start % will be applied (but only if the [ir] (index restart) button is on in the Index section of the Phase Activity Grid). 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 Phase 2 (if [ir] button on in grid)
Each time that playback of a Phase Pattern step containing Phase 2 begins, the Start % will be applied (but only if the [ir] (index restart) button is on in the Index section of the Phase Activity Grid). 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 (if [ir] button on in grid)
Each time that playback of any Phase Pattern step begins, either Phase 1 or Phase 2, the Start % will be applied (but only if the [ir] (index restart) button is on in the Index section of the Phase Activity Grid). 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.

With options 1, 2, or 3, if the first step of the Phase Pattern has the [ir] button off, triggering the effect will not use the Start %. This allows you to trigger the effect starting at the bottom or top of the Note Series, but have subsequent Phase Pattern steps start somewhere in the middle.

Not available when GE Type = “Generated - Gated.” If “Generated - Drum,” the Note Series can be applied as pitch bend, discussed elsewhere.

[[ir] Mode] (popup menu) [0...1]

Index Restart Mode selects one of two ways of continuing from an adjacent index at the beginning of a Phase, when there is a cluster generated as the last event of the previous Phase, and the [ir] button is off in the new Phase Step. When the [ir] button is off, it means to continue the indexing of the Note Series from an adjacent index, rather than starting at the beginning or end of the phase. However, when a cluster is generated as the last note(s) of the previous Phase, there are two ways that the indexing could continue from an adjacent index:

0: B - if [ir] is Off, continue from bottom note of previous Cluster

1: T - if [ir] is Off, continue from top note of previous Cluster

Not available unless at least one Phase Pattern Step has the [ir] button turned off.

[End Dupes] (button) [0, 1]

0: No 1: Yes
Makes an attempt to eliminate duplicate pitches at Phase Changes; also has an effect on how the cycling back is performed when the end of the Note Series is reached before a time signature or number of events has been completed. The easiest way to hear what this does is to set an effect to play a simple forward/backward arpeggio, with the Phase Length Mode set to “AC - Actual.” With this set to Yes, the top and bottom notes will repeat when the Phase changes, which can be used to simulate some typical arpeggiator behavior. However, in some other situations the effect of this may not be immediately apparent. For example, if only using a single phase in the Phase Pattern, this has no effect. It only has an effect when switching phases from a forward to backward Phase Direction (up/down).

Not available when GE Type = “Generated - Gated.” If “Generated - Drum,” the Note Series can be applied as pitch bend, discussed elsewhere.

[Beg Dupes] (button) [0, 1]
0: No 1: Yes
When set to No, if the first note in a new phase would be a duplicate of the last note in a previous phase, the note will be adjusted to an adjacent index (next note in Note Series), preventing duplicates. When set to “Yes,” a duplicate will be allowed to occur. However, this only has an effect when at least one Phase’s Index Pattern Type is “Random” or “Random Walk.”

Not available unless at least one Phase’s Index Pattern Type is “Random” or “Random Walk.” Not available when GE Type = “Generated - Gated.” If “Generated - Drum,” the Note Series can be applied as pitch bend, discussed elsewhere.

[Phase Length Mode] (popup menu) [0...2]

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 Page 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 can be used to simulate traditional arpeggiator behavior.

Not available if GE Type = “Generated - Gated.”

1: TS - Time Signature
Causes popup menus to appear 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) 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
Causes a numerical field to appear 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) 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 four strums per Phase.

[Phase Cycle Mode] (popup menu) [0...6]

Determines what will happen when either end of the playback portion of the Phase (specified by the Phase Beginning/End Offsets and/or the length of the Note Series) is reached during note generation. If the Phase Length Mode parameter is "TS - Time Signature" or "EV - Events," "cycling" can be allowed to occur.

Not available if Phase Length Mode (above) = "Actual." Not available if GE Type = "Generated-Gated" unless Gate Type = "Vel CP." If GE Type = "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 Korg Triton/M50 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/M50 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/M50 Arpeggiator setting "Arpeggio Type: Running Up."

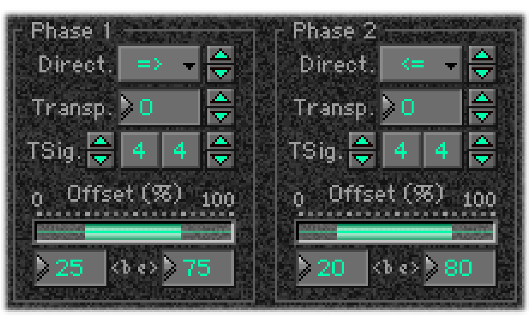
3: W-wrap at either end of Phase
If note generation would extend beyond either end of the playback portion of the Phase, those notes are replaced by notes within the playback portion, as if the riff is being "wrapped around" the end point. (For the more technically oriented, the index is kept within 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/M50 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). I

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).

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 - Phase Specific Parameters



For each of the two Phases, a group of Phase Specific Parameters allows 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 available.

◆ **[Direction]** (popup menu) [0, 1]

0: Forward 1: Backwards

Selects the basic direction for movement through the Note Series in a particular Phase. Works in conjunction with the parameters in the Index Page, which control how the index(es) move through the Note Series. For example, when the Direction is “=> (Forwards),” the Index Pattern values are added to the index to move it through the Note Series from left to right; when Direction is “<= (Backwards),” the Index Pattern values are subtracted to move the index through the Note Series from right to left.

Not available when GE Type = “Generated - Gated.” If “Generated - Drum,” the Note Series can be applied as pitch bend, discussed elsewhere.

◆ **[Beginning/End Offset]** (numericals/range bar) [0...100%]

Sets an overall beginning (b) and end (e) percentage range for note generation within the Phase. Even though settings in the Note Series Page 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. During playback, the Note Series Display will show the adjusted ranges displayed in the chosen colors.

You can edit these by entering values in the fields, clicking and scrolling the numericals, or clicking and dragging on the Range Bar.

To drag the range bar while keeping the relationship between the bottom and top value constant, Cmnd+click (Mac) or Ctrl+click (Win) with the mouse. This will drag the top and bottom values at the same time.

Not available when GE Type = “Generated - Gated” unless Gate Type = “Vel CP.” If “Generated - Drum,” the Note Series can be applied as pitch bend, discussed elsewhere.

◆ **[Transpose]** (numerical) [-36...+36 semitones]

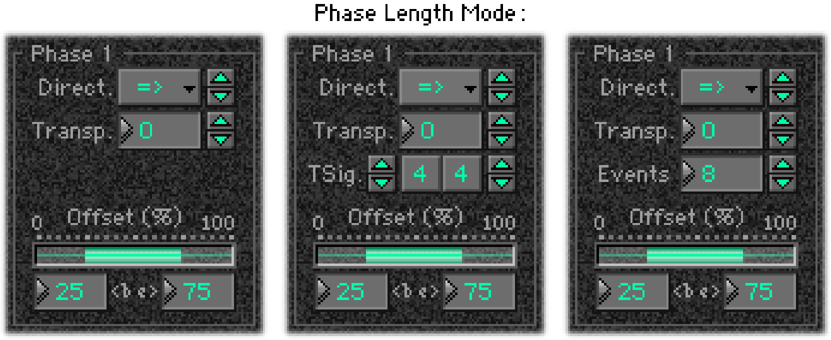
Allows each Phase to be transposed individually. This applies to each time the Phase occurs in the overall Phase Pattern, unlike the Step Transpose Value. Has no effect on Direct Indexing effects, or when GE Type = “Generated - Drum.” This parameter can also be controlled by several “virtual” RTParms. See **Phase Page: RT Parm Virtual Parameters**.

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. Not available when GE Type = “Generated - Drum.”

◆ **[Time Numerator]** (popup menu) [0...31 = 1...32]
◆ **[Time Signature Denominator]** (popup menu) [0...3 = 16, 8, 4, 2]
◆ **[Events]** (numerical) [1...96]

The parameters in this particular area vary according to the setting of the Phase Length Mode, described in General Parameters above. When the Phase Length Mode is “TS - Time Signature,” popup menus are available which allow you to specify various time signatures for each Phase. The required number of beats is then performed in the Phase, regardless of any other circumstances that might trigger a Phase Change. When the Phase Length Mode is “EV - Events,” a numerical 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 that might trigger a Phase Change. When the Phase Length Mode is “AC - Actual,” then no parameters are available and this area is blank. The Phases will then change according to the movement through the Note Series. The following diagram illustrates the three different appearances, for Phase 1 only:

Phase Length Mode:



AC - Actual TS - Time Signature EV - Events

Phase - End Loop Parameters

Determines whether a portion of the effect will loop (an “End Loop”), after a certain total 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]** (button) [0, 1]

0: Off 1: On
Enables/disables this feature, and the following two parameters.

◆ **[End Loop Start Step]** (popup menu) [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 two step pattern of {1, 2} and the End Loop 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 {1, 2, 1, 2 [enter loop] 1, 2, etc.}. Not available if End Loop On/Off is set to “Off.”

◆ **[End Loop Length]** (numerical) [1...96]

Determines how many events (notes or clusters) will be moved forward/backward while looping, according to various other parameters such as the Index Pattern and the Phase Pattern Length Mode. Not available if End Loop On/Off is set to “Off.”

Phase (Part 2)

Sections in this chapter:

Sections in **Part 1**:

Phase - RT Parm Virtual Parameters

The following parameters are not true parameters, but "virtual" parameters for RT Parm control. In other words, they do not physically exist on the Phase Page, but perform a modifying function on one or more of the other parameters. They can be found in the Phase Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual).

◆ **[~Octave Transpose]** (virtual) [-36...+36 semitones]

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 virtual 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]** (virtual) [-36...+36 semitones]

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 virtual 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 =   0  (+5th)
 10 to  15 =  12  (+1 octave)
 16 to  21 =  17  (+1 octave  +5th)
 22 to  27 =  24  (+2 octaves)
 28 to  33 =  31  (+2 octaves +5th)
 34 to  36 =  36  (+3 octaves)
```

◆ [~Template (All Steps)] (virtual) [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 - 1111
1 - 2222
2 - 1212
3 - 2121
4 - 1112
5 - 1121
6 - 1211
7 - 2111
8 - 1122
9 - 1221
10 - 2211
11 - 2112
12 - 1222
13 - 2221
14 - 2212
15 - 2122

With "Templates (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 "Template 6" (1211), then the following would happen to the Phase Pattern:

If the Phase Pattern had 1 step: 1
If the Phase Pattern had 2 steps: 12
If the Phase Pattern had 4 steps: 1211
If the Phase Pattern had 7 steps: 1211 121
If the Phase Pattern had 16 steps: 1211 1211 1211 1211

◆ [~Template Steps 1-4] (virtual) [0…15]

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] (virtual) [0…15]

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] (virtual) [0…15]

Same as above, except for steps 9~12.

◆ [~Template Steps 13-16] (virtual) [0…15]

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.

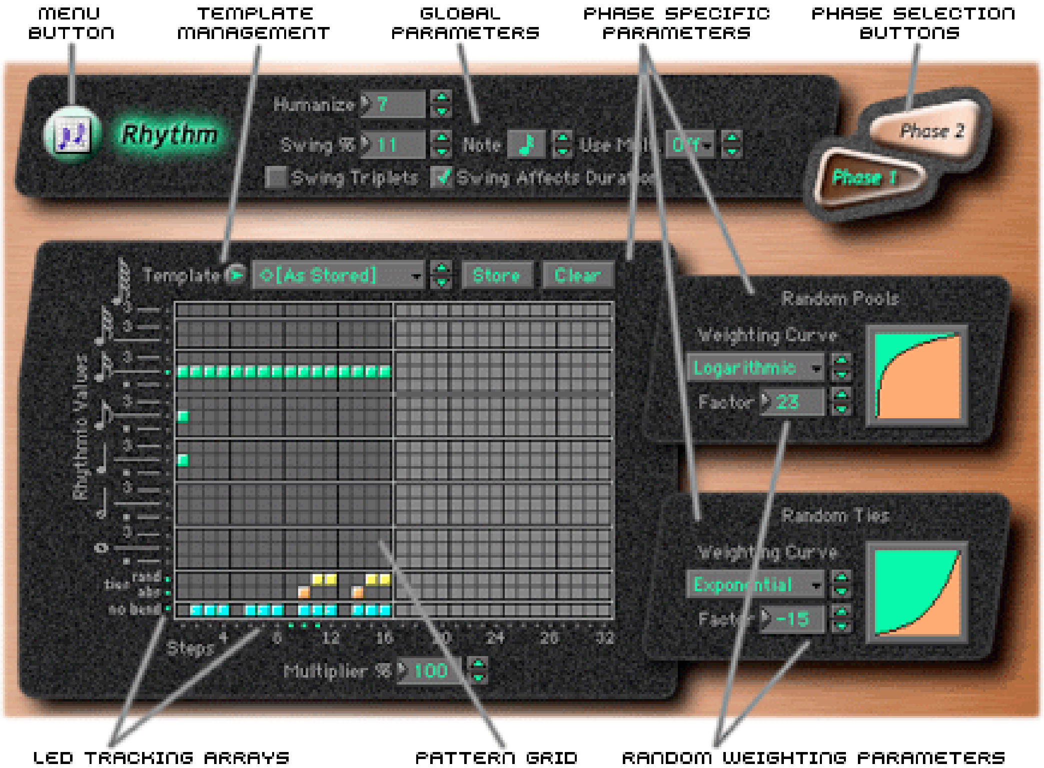
[~Step Transpose Template] (virtual) [0…17]

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 correspond to various settings of the Korg Triton Arpeggiator “Octave” and “Octave Motion” parameters, and can be used to simulate Triton Arpeggio performances.

```
                                                                  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]  0 12 24 36 24 12  0 12 24 36               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)
* U = Up, D = Down, B = Both
```

Rhythm

Sections in this chapter:



Rhythm - Overview

The Rhythm Page controls the rhythmic characteristics of the Generated Effect. It can also have an influence on when “Auto Bend” pitch bending effects (set up on the Bend Page) are generated.

Global Parameters
Parameters that affect rhythmic/bend characteristics during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the rhythmic/bend characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

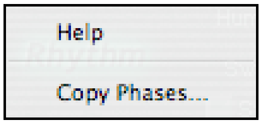
Pattern Grid
Allows Rhythm Patterns to be constructed in various ways, which then control the rhythm of the notes as they are generated. The “no bend” row affects when Auto Bend effects are generated.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grid. There is a separate section for allowing weighting curves to be applied to random ties within the pattern.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and rhythm values (rows).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing Rhythm Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

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” 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 polyrhythmic effects. A Rhythm Pattern of {8th 16th 16th} with a Rhythm Multiplier 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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart] buttons. 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.

Rhythm - 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 five Swing-related parameters deal with adding a “swing” or ”hip-hop” feel to the rhythms.

◆ **[Humanize]** (numerical) [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 ~ 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 %]** (numerical) [-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 popup. For example, if swinging straight 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.

Triplets may or may not be swung depending on the setting of the “Swing Triplets” parameter below.

◆ **[~Swing % 0~100,101,102]** (numerical) [0...100 = 0...+100%, 101 = +200%, 102 = -200%]

This special "virtual" variation of the Swing % parameter allows only the most useful settings to be applied as an RT Parm, 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 Note]** (popup menu) [0...3: 32nd, 16th, 8th, Qtr notes]

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 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 an 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 menu can be modified by the "Use Multiplier Mode" parameter, explained below.

◆ **[Use Multiplier Mode]** (popup menu) [0...3]

The Rhythm Multiplier (explained later in this chapter) causes the values in the Rhythm Pattern to be increased or decreased by a percentage. The Use Multiplier Mode 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 set to "16th," 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 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 set to "16th," 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 Phase 1's Multiplier
Same as "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 set to "16th," 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 Phase 2's Multiplier
Same as "P1" described above, except utilizing Phase 2's Rhythm Multiplier.

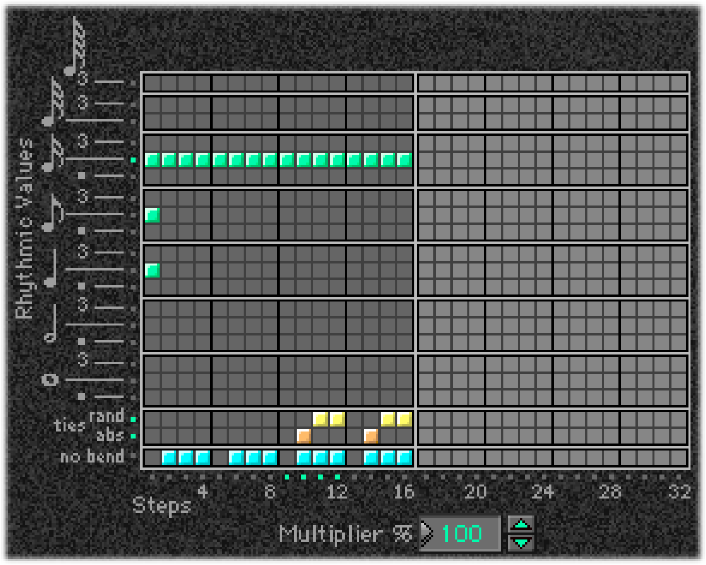
◆ **[Swing Triplets]** (checkbox) [0, 1]

0: Off   1: On
When Off, any natural triplets within the rhythm will not be swung, but other straight notes will. This is more natural for jazz and swing feels. When On, triplets will also be affected by the swing settings, which may produce interested results. When the rhythm pattern is all triplets, swing can be used to create a sort of 6/8 or 3/4 swing. This also can be used to simulate the Korg Triton Arpeggiator, which adds the swing feel to all notes.

◆ **[Swing Affects Duration]** (checkbox) [0, 1]

0: Off   1: On
When On, the shifting of notes caused by the swing effect will also shorten and lengthen the durations appropriately. This is more natural for most situations, but you may want to disable it in certain cases.

Rhythm - Pattern Grid & Associated Parameters



◆ **[Pattern Grid]** [21 rows x 32 steps]

A Rhythm Pattern controls the rhythm that the notes are generated with according to a grid of rhythmic values. Note that this only controls when the notes are generated; it does not necessarily affect the actual durations of the notes, which is controlled by the settings in the Duration Page.

A Rhythm 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Grids**.

The top part of the grid corresponds to 18 different rhythmic values; the bottom three rows are special purpose rows. The first two are “tie” rows allowing values in the upper part of the grid to be tied together. The two tie rows are mutually exclusive; only one at a time can be used in any given column.

[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. If the first column had a 16th note, and the next three columns all had 16th notes and random ties, then one of potentially seven different rhythmic combinations would be generated, always occupying the space of a quarter note. The buttons are shown in orange. When at least one random tie has been selected, a weighting curve becomes available to the right of the grid that allows choices to be slanted towards more ties or less ties, as described later.

[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 buttons are shown in yellow.

[no bend] - No Bend:
The final row is the “no bend” row - the buttons are shown in light blue. It affects when Automatic Pitch Bending effects can occur, as set up on the Bend Page. These effects will normally be triggered with every single generated note or cluster. By using the “no bend” row, you can specify that bends will not occur on various steps of the Rhythm Pattern. Note that these have no effect if the [pb] (pitch bend) row of the Phase Activity Grid in the Phase Page does not have some buttons turned on, so that bending can occur throughout various steps of the Phase Pattern.

If the first column contains a tie, then when the effect is started a “rest” will be generated, and further entries into the Phase will have the option of tieing over depending on the setting of the [d] (downbeat) row in the Phase Activity Grid in the Phase Page. Note that tieing over the end of Phases into the next Phase (as controlled by the Phase Pattern) is tricky. If the [d] (downbeat) button for a Phase is not turned on in the Phase Activity Grid of the Phase Page, that a tie can not only cross over into the next Phase, but wrap around and tie into the beginning of the current Phase’s Rhythm Pattern if it happens to be the last Pattern value in the Phase.

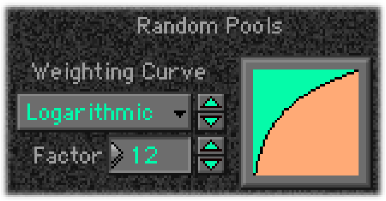
More than one value can be entered in any given column (in the top 18 rows corresponding to rhythmic values) by using the [shift] key. These then become a "random pool" from which choices will be made at random, subject to the use of a weighting curve as described later on. The weighting curve becomes available when there is at least one random pool selected. The example above shows a random choice from a 16th, 8th, or Quarter, followed by seven 16th notes, followed by a 16th note absolutely tied to the next 16th note (an 8th note), then randomly tied to the next two 16ths, etc. Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; you can choose to repeat the same random sequence a number of times or always generate new random sequences of choices.

The Rhythm Pattern can start from the beginning each time a Phase change occurs, or can continue from where it previously left off. This is also controlled in the Phase Page, with the [pr] (pattern restart) row of the Phase Activity Grid. For example, assume the pattern contained 10 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

◆ **[Rhythm Multiplier]** (numerical) [1...800%]

Multiplies the selected Rhythm Pattern by the percentage. Useful for polyrhythmic 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}. This parameter can also be controlled by several "virtual" RT Parms. See **Rhythm Page: RTParm Virtual Parameters**.

Rhythm - Random Weighting Parameters (Pools)



The Random Weighting Parameters (Pools) are made available when at least one step in the Rhythm Pattern Grid contains multiple buttons turned on in the top 18 rows of rhythmic values (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the "Factor" field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (-), choices will be exponentially weighted towards the shorter rhythms (pool values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the longer rhythms (pool values lower in the grid column).

1: Logarithmic
With a positive Factor (-), choices will be logarithmically weighted towards the shorter rhythms (pool values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the longer rhythms (pool values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the middle rhythms (pool values towards the center of each pool), and away from the shorter and longer rhythms. With a negative Factor (-), choices will be exponentially weighted towards the shorter and longer rhythms (pool values lower and higher in the grid column), and away from the middle rhythms.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the middle rhythms (pool values towards the center of each pool), and away from the shorter and longer rhythms. With a negative Factor (-), choices will be logarithmically weighted towards the shorter and longer rhythms (pool values lower and higher in the grid column), and away from the middle rhythms.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

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	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	longer	shorter
Exp-S/Log-S	middle	shorter/longer

◆ **[Factor]** (numerical) [-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 also 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.)

Rhythm - Random Weighting Parameters (Ties)

The Random Weighting Parameters (Ties) are made available when at least one step (column) in the Rhythm Pattern Grid 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 also be favored by the use of a weighting table.

Whether or not a certain random sequence will repeat for a number of Phases is controlled by the [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**

◆ **[Weighting Curve]** (popup menu) [0...1]

Selects one of two different curves that affect the likelihood of a tie occurring when a random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor the rhythmic choices more often than the ties, while a curve arced towards the bottom will cause the occurrence of more ties. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

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.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random ties:

Values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	less ties	more ties

◆ **[Factor]** (numerical) [-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 also 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).

Rhythm - Template Management

Certain of the parameters in the Rhythm Page can be saved as a “Template.” This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a Rhythm Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Pool Weighting Parameters (Weighting Curve and Factor);
- the Random Ties Weighting Parameters (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

◆ **[Open Template Bank]** (button)

Opens a Template Bank Display Window for the current bank of Rhythm Pattern Templates.

◆ **[Template]** (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Rhythm Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase’s Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using “Template + Restore” as a GE RT Parm, 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 (the same as selecting “0 [As Stored]”), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display “As Stored.” If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display “As Stored.” This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

◆ **[Store]** (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory. After storing a Template, it will then be available in the Template popup menus for both Phases.

◆ **[Clear]** (button)

Brings up a dialog allowing you to clear the selected Template. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

⚠ Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing “Save,” “Save As...” or “Save All...” from the File menu.

💡 Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

Rhythm - RT Parm Virtual Parameters

The following parameters are not true parameters, but “virtual” parameters for RT Parm control. In other words, they do not physically exist on the Rhythm Page, but perform a modifying function on one or more of the other parameters. They can be found in the Rhythm Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual). They allow you to select from one of three different quantized sets of values for the Rhythm Multiplier field, without getting all of the in between values, plus provide a special variation for the Swing % setting.

◆ **[~Straight Multipliers]** (virtual) [0...5]

{0, 1, 2, 3, 4, 5} = {25, 50, 100, 200, 400, 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]** (virtual) [0...10]

{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10} = {25, 34, 50, 68, 100, 136, 200, 272, 400, 544, 800}

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.

◆ **[~Str/Dot/Trip Mults]** (virtual) [0...15]

{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10} =
{25, 34, 37, 50, 68, 75, 100, 136, 150, 200, 272, 300, 400, 544, 600, 800}

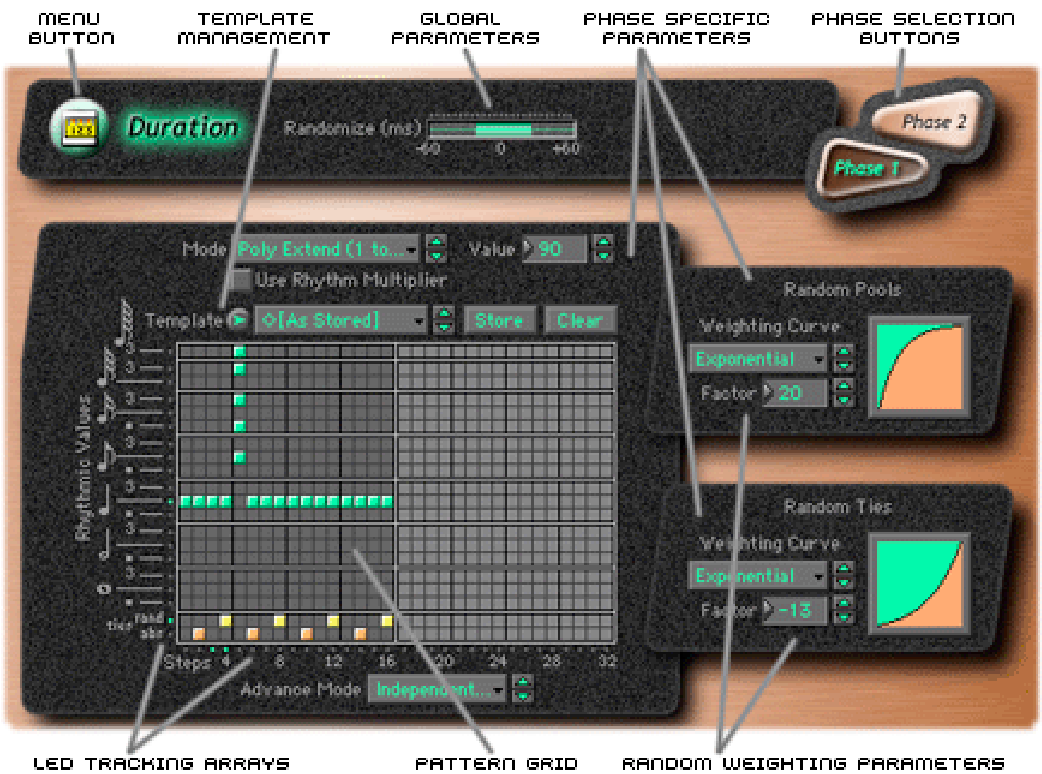
Selects from a quantized set of “straight, triplet & dotted” values for the Rhythm Multiplier field. In other words, when applied to a Rhythm pattern containing values such as 16th notes, the resulting rhythmic values will be straight values such as 8th notes, quarter notes, etc., various triplet values, or various dotted values.

◆ **[~Swing % 0~100,101,102]** (numerical) [0...100 = 0...+100%, 101 = +200%, 102 = -200%]

See the description in the Global Parameters section.

Duration

Sections in this chapter:



Duration - Overview

The Duration Page contains the parameters that control the duration of the notes in a Generated Effect.

Global Parameters
Parameters that affect duration characteristics during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the duration characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

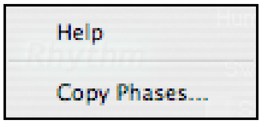
Pattern Grid
Allows Duration Patterns to be constructed in various ways, which then control or affect the duration of the notes as they are generated, depending on the Duration Mode.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grid. There is a separate section for allowing weighting curves to be applied to random ties within the pattern.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and duration values (rows).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing Duration Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons.

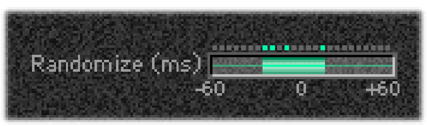
Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

About Duration Patterns

Duration Patterns control the duration of notes for each “rhythm event” that is generated according to the settings in the Rhythm Page. 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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart] buttons. This 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.

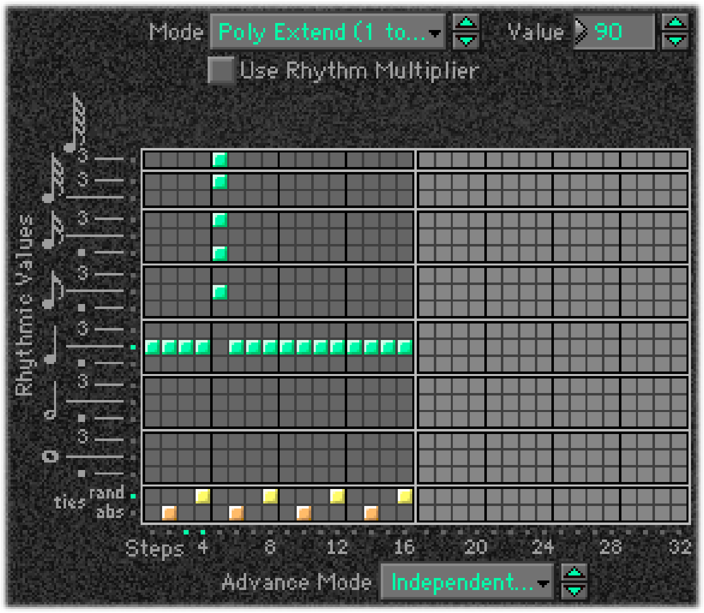
Duration - Global Parameters



[Randomize] (range bar) [-60...60 ms]

Sets a range of randomization to be applied to each note’s duration as it is generated. The range is -60 ~ 60 ms, in increments of 5 ms. Note that this can be used to make the duration of each note in a cluster slightly different. Useful for more human sounding effects, with less machine-like precision. The effect of this will only be applied depending on the Duration Mode (discussed below). When it is “Poly Extend,” “Poly Extend/Damped,” or “Mono Extend,” it will only have an effect on notes where the pattern has been set to “damp” the auto-extended durations.

Duration - Pattern Grid & Associated Parameters



◆ **[Pattern Grid]** [20 rows x 32 steps]

A Duration Pattern controls the duration that the notes are generated with according to a grid of rhythmic values. It 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Editing Grids**.

The top part of the grid corresponds to 18 different rhythmic values; the bottom 2 rows are special purpose "tie" rows allowing values in the upper part of the grid to be tied together. The 2 tie rows are mutually exclusive; only one at a time can be used in any given column.

[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 note durations.

[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 duration.

When at least one random tie has been selected, a weighting curve becomes available to the right of the grid that allows choices to be slanted towards more ties or less ties, as described later. A tie in the first column will not have any effect unless the pattern wraps around, in which case the last value in the pattern will tie around into the first step. Unlike Rhythm Patterns, a tie over a Phase is not permitted.

More than one value can be entered in any given column (in the top 18 rows corresponding to rhythmic values) by using the [shift] key. These then become 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 random choice from five different durations in the fifth step of the pattern. Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; 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 Page is whether or not the Duration Pattern will start from the beginning each time a Phase starts, with the [pr] (pattern restart) row of the Phase Activity Grid. For example, assume the pattern contained 10 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

⚠ If the Duration Mode is "Timed," "Rhythm Overlap," or "Rhythm %," the Pattern Grid will not be available.

◆ **[Duration Mode]** (popup menu) [0...7]

Selects one of several modes of operation for generating durations in the current Phase.

⚠ Based on the current setting, the Duration Pattern Grid, Random Weighting Parameters and Pattern Advance Mode menu may not be available.

0: Poly Extend (Value range: 1 ~ 800 %)
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 damped. Especially useful for fingerpicked and strummed guitar effects. Certain steps may be "damped" by using the Duration Pattern Grid 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 field 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 (Value range: 1 ~ 800 %)
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 (Value range: 1 ~ 800 %)
The same as above, except each note is sustained until the next note (of any pitch) is generated. When used with clusters, only one note in a cluster will actually be sustained. This can be used to simulate a monophonic instrument, for example, although other modes here can also do that depending on how you set the parameters.

3: Timed (Value range: 1 ~ 5000 ms)
The Duration Value field 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 (Value range: -500 ~ 500 ms)
The Duration Value field 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 % (Value range: 1 ~ 800 %)
The Duration Value field 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 (Value range: -500 ~ 500 ms)
The Duration Pattern Grid 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 field is used to specify an 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 Value field 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 % (Value range: 1 ~ 800 %)
The Duration Pattern Grid 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 field 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 Value field is 80%, they would be generated as 100 ms, 200 ms, etc. Note that this value is therefore relative to tempo.

◆ **[Duration Value]** (numerical) [-500...5000] range/function varies depending on Duration Mode

Depending on the Duration Mode setting, sets or modifies the durations of the generated notes. The range and function of the field varies - see the descriptions above under "Duration Mode." Note that the valid ranges are different for several of the Duration Modes, so if the Duration Mode (above) is changed and the current setting for the Duration Value is out of range, it will be limited to the top or bottom of the applicable range. This also means that if the Duration Mode is assigned as an RT Parm and varied in real-time, it is possible that it will affect the setting of the Duration Value at various times. In this case, the Duration Value will be limited internally (and the limited value will be displayed in the GE Editor:Duration Page), but the "Current (Controlled) Value" and "Stored (Center) Value" of the RT Parm as displayed in the PE or GE Editors may not reflect the actual value. The same is true for the "Floating Parameter Value Displays" in the Realtime Controls Editor, if the Duration Value is assigned to one of the controls.

Duration Mode:	Duration Value Valid Range:
Poly Extend	1 ~ 800%
Poly Extend/Damped	1 ~ 800%
Mono Extend	1 ~ 800%
Timed	1 ~ 5000 ms
Rhythm Overlap	-500 ~ 500 ms
Rhythm %	1 ~ 800%
Pattern Overlap	-500 ~ 500 ms
Pattern %	1 ~ 800%

◆ **[Use Rhythm Multiplier]** (checkbox) [0, 1]

0: Off 1: On

When On, the durations of the generated notes will be affected by the current setting of the Rhythm Page Rhythm Multiplier. 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.

◆ **[Advance Mode]** (popup menu) [0...5]

Determines whether the Duration Pattern will use its own Index to move through the pattern or lock to another pattern's index. A Duration Pattern has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:

0: Independent - 1 step per Rhythm Event

Each time the Rhythm Pattern determines it is time to generate a note or notes, a value will be chosen from the current step of the Duration Pattern, after which the index will be advanced to the next step of the Duration Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning. If using Drum Patterns, each Drum Pattern maintains a separate index into the Note Pattern that advances 1 step for each note, but does not advance for any rests in the Drum Pattern. Therefore, if the Drum Patterns have different rests in different places, it is possible for the values they are selecting to be from different steps of the Note Pattern.

1: Lock (R) - Lock To Rhythm Pattern & Ties

The Duration Pattern will "lock" to the Rhythm Pattern, by essentially using the Rhythm Pattern's index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step Duration Pattern and using this mode assures that when the Rhythm Pattern "skips" a step (due to a random tie occurring), the Duration Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location. If using Drum Patterns, each Drum Pattern will select values from the same step at the same time, regardless of any rests in the Drum Patterns.

2: Lock (D1) - Lock To Drum Pattern 1
3: Lock (D2) - Lock To Drum Pattern 2
4: Lock (D3) - Lock To Drum Pattern 3

The Duration Pattern will "lock" to the selected Drum Pattern, by essentially using the selected Drum Pattern's index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the Duration Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and Duration Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike "Independent" above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

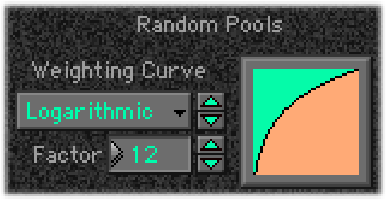
5: Lock (R/S) - Lock To Rhythm Pattern, Synchronize Randomization

Basically the same as "Lock (R)" above: the Duration Pattern will "lock" to the Rhythm Pattern, by essentially using the Rhythm Pattern's index. The difference is that the Duration Pattern then uses the Rhythm Pattern's Random Seeds, which means they will refer to the same sequence of random numbers. This means that you can set up a Random Rhythm Pattern and a corresponding Random Duration Pattern, and they will stay completely in sync, as long as you have the same randomizations in both, the same number of steps, etc.

They don't need to have the same rhythmic values; just the same number of pools in the same places, or the same random rests in the same places. In other words, assume a Rhythm Pattern of all 16ths with some random ties. If you set up the exact same pattern in the Duration Page, with the same values and same random rests, and select the "Lock (R/S)" mode, they will do exactly the same thing. Then, you can set some of the Duration values to be other than 16th notes, so that certain steps are shorter/longer, yet as long as the Random Ties are in the same place, they will stay locked together. If 3 ties occur next to each other in the Rhythm Pattern, they will also occur the same way in the Duration Pattern.

Another example is a Rhythm Pattern with a number of pools in it, i.e. at steps 4, 6, and 8. If you create a Duration Pattern, they don't need to have the same values, as long as there are pools of some values at the same steps, 4, 6, and 8. This ensures that every time the Rhythm Pattern makes a random choice from a pool of values, so does the Duration Pattern. Then they can stay "locked" in the random sequence.

Duration - Random Weighting Parameters (Pools)



The Random Weighting Parameters (Pools) are made available when at least one step in the Duration Pattern Grid contains multiple buttons turned on in the top 18 rows of rhythmic values (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the "Factor" field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (-), choices will be exponentially weighted towards the shorter durations (pool values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the longer durations (pool values lower in the grid column).

1: Logarithmic
With a positive Factor (-), choices will be logarithmically weighted towards the shorter durations (pool values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the longer durations (pool values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the middle durations (pool values towards the center of each pool), and away from the shorter and longer durations. With a negative Factor (-), choices will be exponentially weighted towards the shorter and longer durations (pool values lower and higher in the grid column), and away from the middle durations.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the middle durations (pool values towards the center of each pool), and away from the shorter and longer durations. With a negative Factor (-), choices will be logarithmically weighted towards the shorter and longer durations (pool values lower and higher in the grid column), and away from the middle durations.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

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	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	longer	shorter
Exp-S/Log-S	middle	shorter/longer

◆ **[Factor]** (numerical) [-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 also 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.)

Duration - Random Weighting Parameters (Ties)

The Random Weighting Parameters (Ties) are made available when at least one step (column) in the Duration Pattern Grid 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 also be favored by the use of a weighting table.

Whether or not a certain random sequence will repeat for a number of Phases is controlled by the [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...1]

Selects one of two different curves that affect the likelihood of a tie occurring when a random choice is made. Next to the Weighting Curve Menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor the rhythmic choices more often than the ties, while a curve arced towards the bottom will cause the occurrence of more ties. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards duration 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 duration values more often. With a negative Factor (-), choices will be logarithmically weighted towards the ties more often.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random ties:

Values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	less ties	more ties

[Factor] (numerical) [-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 also 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).

Duration - Template Management

Certain of the parameters in the Duration Page can be saved as a "Template." This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a Duration Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Pool Weighting Parameters (Weighting Curve and Factor);
- the Random Ties Weighting Parameters (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

[Open Template Bank] (button)

Opens a Template Bank Display Window for the current bank of Duration Pattern Templates.

[Template] (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Duration Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase's Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

<u>Template [1...63]</u>
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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

<u>Template + Restore [0...63]</u>
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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

[Store] (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory. After storing a Template, it will then be available in the Template popup menus for both Phases.

[Clear] (button)

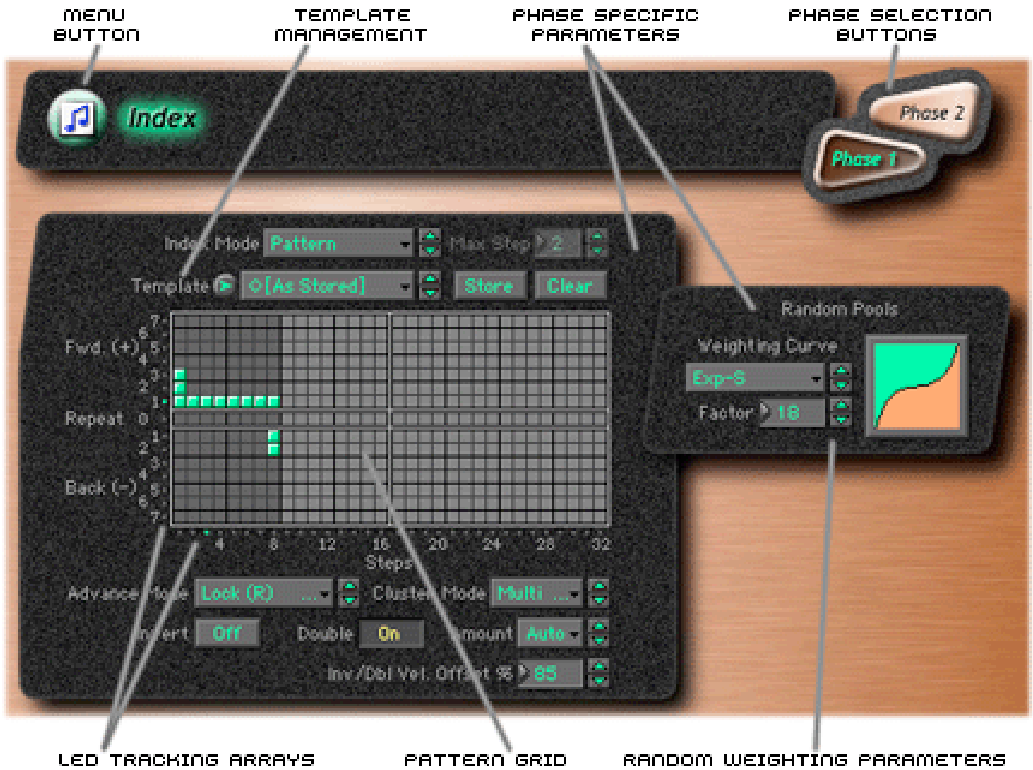
Brings up a dialog allowing you to clear the selected Template. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing “Save,” “Save As…” or “Save All…” from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

Index

Sections in this chapter:



Index - Overview

The Index Page 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.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the note generation characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

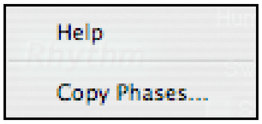
Pattern Grid
Allows Index Patterns to be constructed in various ways, which then control the order of the pitches as they are generated from the Note Series.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grid.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and pattern values (rows).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing Index Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons. If GE Type = “Generated - Gated,” the Phase Specific Parameters will not be available for either Phase.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

About Index Patterns

Index Patterns describe a way of moving through the Note Series in memory and consequently controls 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 note to be generated. The Index Pattern values indicate how the index will be moved after generating the note at the current position. A positive value moves forward from the current position; a negative value moves backwards; a value of {0} repeats an index. Choices can be made from “Random Pools” of values as described in detail later on. When the Phase Direction is set to “Backwards,” the values operate in inverted fashion.

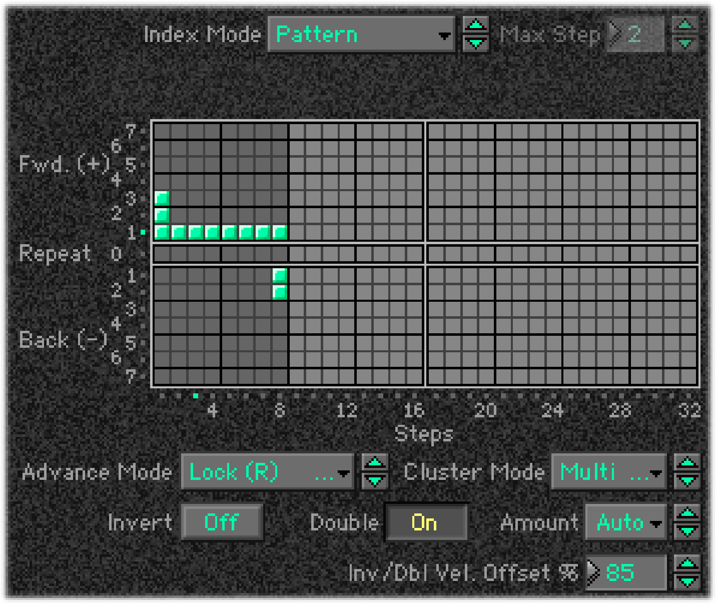
Since the first value in the Index Pattern is not used until after the first note has been generated, an Index Pattern of {1 1 1 -2} will cause the generation of the first 4 notes in the Notes Series, after which it jumps back to the 2nd note in the Note Series and so on.

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 “Initial Start %” or “Beginning/End Offset %” parameters in the Phase Page. If you do create an 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 is not set to “Actual,” since in this mode it waits for the end of the Index Series to be reached, and this will never happen if there is no forward movement.

An 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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart) buttons. 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 Mode parameter, as described below.

Index - Pattern Grid & Associated Parameters



◆ **[Pattern Grid]** [15 rows x 32 steps]

An Index 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Grids**.

More than one value can be entered in any given column (by using the [shift] key), 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 where the first 8 notes of the Note Series will be played in order (the Index Pattern always effectively starts with the 2nd note), followed by a jump back of either 1 or 2, selected at random. Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; 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 Page is whether or not the Index Pattern will start from the beginning each time a Phase starts, with the [pr] (pattern restart) row of the Phase Activity Grid. For example, assume the pattern contained 10 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

If the Index Mode menu is not set to "Pattern," the Pattern Grid will not be available.

⚠ If GE Type = "Generated - Gated," then the Pattern Grid and all of the following parameters will not be available.

◆ **[Index Mode]** (popup menu) [0…2]

For each Phase, selects one of several different Modes of operation for indexing the Index Series:

0: Pattern
Movement through the Index Series will be controlled by an 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.

If you want the possibility of notes happening twice or more in a row, you can configure the Index Pattern to have pools of values including "0."

2: Random Walk
Causes the index to meander from the start index in a random fashion, with the largest step that can be taken in any direction controlled by the "Random Walk Max Step" parameter (described below). For example, if "Max Step" is set to "2," then the "pool" of possible choices for movement from the current note is {-2, -1, 1, 2}. Note that {0} is not allowed as a possible choice. This is good for creating riffs which sound like improvisation, especially when you use the Phase Page to ensure that random phrases will be repeated a number of times before new ones are chosen.

If you want the possibility of notes happening twice or more in a row, you can configure the Index Pattern to have pools of values including "0."

◆ **[Random Walk Max Step]** (numerical) [1...9]

Sets the largest step that can be taken when the Index Mode 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 Mode is set to "Random Walk."

◆ **[Invert]** (button) [0, 1]

0: Off   1: On
When On, the index will be inverted with regards to the overall Note Series (taking into consideration the Beginning and End Offsets in the Phase Page) and generated again, thereby generating twice as many notes at a time. This will also cause any clusters to be inverted.

0: Off
```
Example: Index Pattern = 1, Cluster Size = 2
Note Series: C2 E2 G2 B2 C3 E3 G3 B3
Step 1:      C2 E2
Step 2:         E2 G2
Step 3:            G2 B2
Step 4:               B2 C3
```

1: On
```
Note Series: C2 E2 G2 B2 C3 E3 G3 B3
Step 1:      C2 E2             G3 B3
Step 2:         E2 G2       E3 G3
Step 3:            G2 B2 C3 E3
Step 4:            G2 B2 C3 E3
```

◆ **[Double]** (button) [0, 1]

0: Off   1: On
When On, the "Amount" popup menu becomes available, and 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.

When using Double and Invert at the same time, four times as many notes will be generated.

◆ **[Double Amount]** (popup menu) [0...12]

This parameter becomes available when "Double" is On, and the index will be doubled by the interval indicated and generated again, thereby generating twice as many notes at a time. When set to "Auto," a pleasing interval is automatically calculated depending on the number of notes in the Note Series. The other settings specify exact distances from the current index in terms of the order of notes in the Notes Series (not semitones).

```
Example: Index Pattern = 1, Cluster Size = 1, Double = On, Amount = 3
Note Series: C2 E2 G2 B2 C3 E3 G3 B3
Step 1:      C2       B2
Step 2:         E2       C3
Step 3:            G2       E3
Step 4:               B2       G3
```

Not available unless Double is set to On.

◆ **[Inv/Dbl Velocity Offset]** (numerical) [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 is set to On.

◆ **[Advance Mode]** (popup menu) [0...4]

Determines whether the Index Pattern will use its own Index to move through the pattern or lock to another pattern's index. An Index Pattern also has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:

<u>0: Independent - 1 step per Rhythm Event˜</u>
Each time the Rhythm Pattern determines it is time to generate a note or cluster of notes, a value will be chosen from the current step of the Index Pattern, after which the index will be advanced to the next step of the Index Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning. If using Drum Patterns and the [in] (use in´dex pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern maintains a separate index into the Index Pattern that advances 1 step for each note, but does not advance for any rests in the Drum Pattern. Therefore, if the Drum Patterns have different rests in different places, it is possible for the values they are selecting to be from different steps of the Index Pattern. This also interacts with the "Cluster Mode" setting, described below.

<u>1: Lock (R) - Lock To Rhythm Pattern & Ties</u>
The Index Pattern will "lock" to the Rhythm Pattern, by essentially using the Rhythm Pattern's index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step Index Pattern and using this mode assures that when the Rhythm Pattern "skips" a step (due to a random tie occurring), the Index Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location. If using Drum Patterns and the [in] (use index pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern will select values from the same step at the same time, regardless of any rests in the Drum Patterns.

<u>2: Lock (D1) - Lock To Drum Pattern 1</u>
<u>3: Lock (D2) - Lock To Drum Pattern 2</u>
<u>4: Lock (D3) - Lock To Drum Pattern 3</u>
The Index Pattern will "lock" to the selected Drum Pattern, by essentially using the selected Drum Pattern's index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the Index Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and Index Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike "Independent" above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

◆ **[Cluster Mode]** (popup menu) [0...1]

Sets the way that clusters affect the advancement through the Index Pattern. When set to Multi, a cluster will advance as many steps as notes in the cluster (if Advance Mode is 0:Independent).

<u>0: Single - 1 Step Per Cluster</u>
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 one, 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. The LED Tracking Arrays will display one value at a time.

```
Example: Index Pattern = 2, Cluster Size = 6
Note Series: C2 E2 G2 B2 C3 E3 G3 B3 C4 E4 G4 B4...
Step 1:      C2 E2 G2 B2 C3 E3
Step 2:            G2 B2 C3 E3 G3 B3
Step 3:                  C3 E3 G3 B3 C4 E4
Step 4:                        G3 B3 C4 E4 G4 B4 etc.
```

<u>1: Multi - 1 Step For Each Note In Cluster</u>
- When 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. The LED Tracking Arrays will display the number of values chosen depending on the current cluster size.

```
Example: 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...
Step 1:      C2    G2    C3    G3    C4    G4
Step 2:                                          C5    G5    C6    G6...
```

- When the 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.

```
Example: Index Pattern = {3 2 1}, Cluster Size = 3
Advance Mode: Lock (R), Cluster Mode: Multi
Note Series: C2 E2 G2 B2 C3 E3 G3 B3 C4 E4 G4 B4 C5 E5 G5 B5 C6 E6 G6 B6...
Step 1:     [C2       B2       G3]
Step 2:                                [E4    B4    E5]
Step 3:                                                  [B5 C6 E6]...
(between)     <- 3 ->  <- 3 ->  <- 3 -> <-2-> <-2-> <-2-> <1><1><1>
```

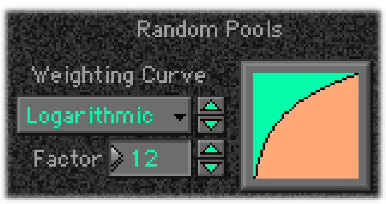
When the GE Type is “Generated - Riff,” setting this to “Multi” will have no effect unless there is a Cluster Pattern containing values of more than just one.

When the GE Type is “Generated - Drum,” setting this to “Multi” will have no effect unless at least one Drum Pattern has the [cl] (use cluster pattern) button turned on in a Phase Pattern step in the Phase Page and there is a Cluster Pattern containing values of more than just one.

If you use Index Pattern Values of {0} (no advance) and Cluster Patterns, when the Pattern Advance Mode is set to “Multi” a cluster will produce notes all of the same pitch, since each note in the cluster is “0” indexes away from the previous note. When the Pattern Advance Mode is “Single,” each note of the cluster will be heard since they are all played from adjacent indexes; however, the next cluster will start from the same note since there has been an overall advance of {0}.

When randomizing Drum Patterns with Index Patterns and watching the LED Tracking Arrays, you may also be seeing the “regular” index (which may be applied to generate pitch bend information) in addition to the index for each Drum Pattern using the Index Pattern. You may be watching up to four indexes displayed at the same time!

Index - Random Weighting Parameters



The Random Weighting Parameters are made available when at least one step (column) in the Index Pattern Grid contains multiple buttons turned on (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

[Weighting Curve] (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards the pool values higher in the grid column. With a negative Factor (-), choices will be exponentially weighted towards the pool values lower in the grid column.

1: Logarithmic
With a positive Factor (+), choices will be logarithmically weighted towards the pool values higher in the grid column. With a negative Factor (-), choices will be logarithmically weighted towards the pool values lower in the grid column.

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the pool values towards the center of each pool, and away from the values higher and lower in the grid columns. With a negative Factor (-), choices will be exponentially weighted towards the pool values higher and lower in the grid columns, and away from the center values.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the pool values towards the center of each pool, and away from the values higher and lower in the grid columns. With a negative Factor (-), choices will be logarithmically weighted towards the pool values higher and lower in the grid columns, and away from the center values.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

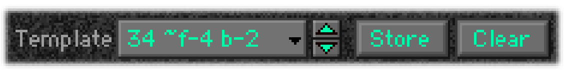
The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Index Pattern Pools:

Index Pool values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	higher in grid	lower in grid
Exp-S/Log-S	middle	higher/lower

[Factor] (numerical) [-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 also 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.)

Index - Template Management



Certain of the parameters in the Index Page can be saved as a “Template.” This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in an Index Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Weighting Parameters (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

The Template Management Area will be grayed out if the Index Mode is not set to “Pattern.”

[Open Template Bank] (button)

Opens a Template Bank Display Window for the current bank of Index Pattern Templates.

[Template] (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Index Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase’s Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].˜

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

◆ **[Store]** (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory in the current Template Bank. After storing a Template, it will then be available in the Template popup menus for both Phases.

◆ **[Clear]** (button)

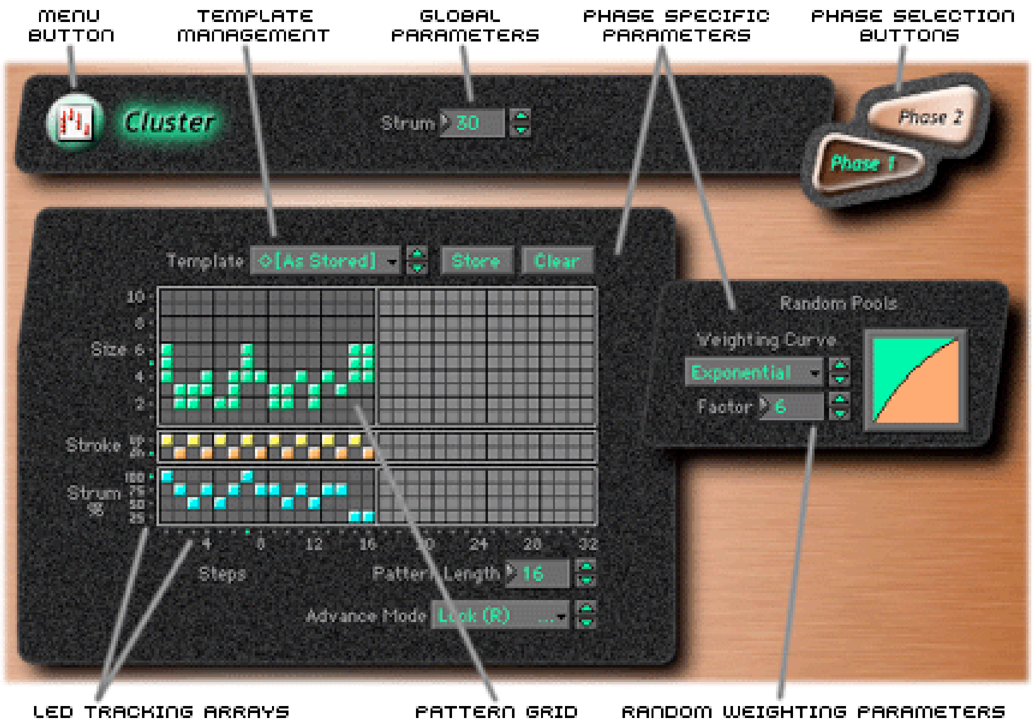
Brings up a dialog allowing you to clear the selected Template from the current Template Bank. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

Cluster

Sections in this chapter:



Cluster - Overview

The Cluster Page contains the parameters that control the "clustering" characteristics of the Generated Effect (the number of notes to generate simultaneously each time a rhythm event occurs). Also controlled from here is the degree of strumming on a cluster, and the direction in which a cluster is strummed.

Global Parameters
Parameters that affect clustering characteristics during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the note generation characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

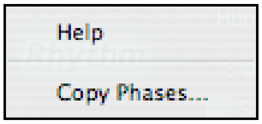
Pattern Grid
Allows Cluster Patterns to be constructed in various ways, which then control how many notes are generated at a time, along with a stroke direction and time percentage for strumming, if desired.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column in the upper ten Size rows) which may have been created in the Pattern Grid.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and values (rows).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing Cluster Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons. If GE Type = “Generated - Gated” and GE Gate Type does not = “Vel CP,” the Phase Specific Parameters will not be available for either Phase.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

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 be strummed or skewed in several ways, with differing degrees of looseness. Random choices of cluster sizes can be made from “Random Pools” of values in each column as described in detail later on.

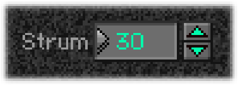
If the Cluster Pattern is {1}, single notes are produced (when GE Type = “Generated - Riff”). A CMaj7 as input source material might produced the following simple arpeggio as an example:

If a Cluster Pattern was {3 1 1 3 1 2} (and the Index Pattern Cluster Mode “Single”), 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” or both are being used in the Index Page. See **Index Page: Pattern Grid & Associated Parameters**.

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 Activity Grid (General) has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart) buttons. 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.

Cluster - Global Parameters

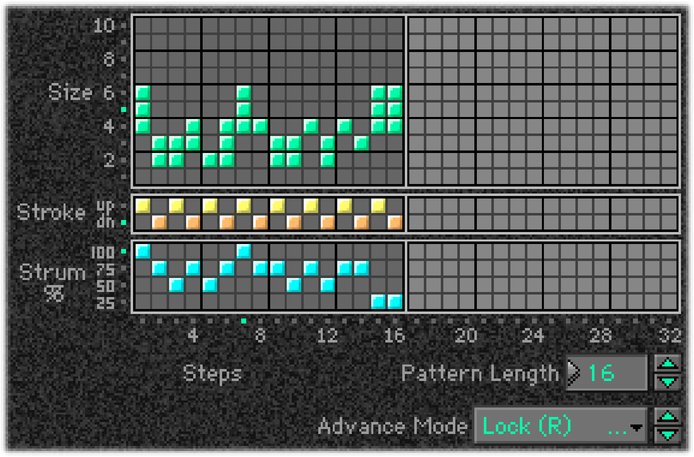


◆ **[Strum]** (numerical) [0...1000 ms]

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 five notes will be closer together than a cluster of three notes with the same strum value. This maintains a proper degree of "looseness" while changing cluster sizes. The direction of the strum (or random skewing if desired) is controlled by the Stroke rows of the pattern grid. By setting the Strum value to high values (so there are not really strums, but arpeggiations happening), interesting overlapping of each cluster over subsequent clusters can be made to occur.

Not available if GE Type = "Generated - Gated" and Gate Type = one of the CC options.

Cluster - Pattern Grid & Associated Parameters



If GE Type = "Generated - Gated," and GE Gate Type does not = "Vel CP", the Pattern Grid and associated parameters are not available.

◆ **[Pattern Grid]** [16 rows x 32 steps]

A Cluster Pattern represents a series of values indicating the size of clusters of notes to be generated (chords). It 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value (unless the "Pattern Length" field is available - see the "Size" description below). Note that a pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Grids, see **Using The Pattern Grids**.

Whether or not the Cluster Pattern will start from the beginning each time a Phase starts is controlled by the [pr] (pattern restart) row of the Phase Activity Grid (General). For example, assume the pattern contained 10 items and a Phase only used 8 of them before changing to a different Phase. If the pattern was not set to restart in the Phase Page, then the 2nd time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

Size (when using any configuration but GE Type = "Generated-Gated" and GE Gate Type = "Vel CP"):
The ten rows at the top of the grid specify the number of notes to generate simultaneously in a given step of the Cluster Pattern. More than one value can be entered in any given column (by using the [shift] key), 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 where randomly chosen clusters sizes are interleaved with fixed cluster sizes (single values in a column). Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; you can choose to repeat the same random sequence a number of times or always generate new random sequences of choices.

Note that in this case, the Cluster Pattern only specifies how many notes at a time to generate – it does not choose which. The Index Pattern and/or a Drum Pattern are used to specify which notes are to be generated at which steps.

Size (when using GE Type = "Generated-Gated" and GE Gate Type = "Vel CP" (Triton Arp simulation)):
The Cluster Pattern Grid is used to indicate which notes from all of the input notes are to be generated. In other words, the 10 rows of the Cluster Pattern allow you to specify which of up to 10 notes you may be holding at any time are to be generated. (This can be used to simulate the operation of the Korg Triton Arpeggiator, for example.) If a column of the Cluster Pattern has rows 1, 3 and 5 selected, then the first, third, and fifth notes provided as input will be generated at that step. (With other configurations, the Cluster Pattern only specifies how many notes at a time to generate – it does not choose which. The Index Pattern and/or a Drum Pattern are used to specify which notes are to be generated at which steps. However, with GE Gate Type = "Vel CP" the Cluster Pattern specifies directly which notes (and therefore how many) are to be generated, and the Index Pattern is unused.) Note that filling all 10 rows of each column is essentially the same as using GE Gate Type = "Vel."

In this particular configuration only, the Cluster Pattern allows empty columns with no buttons turned on in the upper ten Size rows. A column without a Size button turned on essentially creates a "rest" at that step based on the Rhythm Pattern value (like the Korg Triton Arpeggiator). In this case, the "Pattern Length" parameter explained below is made available and sets the number of steps in the pattern.

⚠ When the GE Type is not in this particular configuration the Cluster Pattern Grid does not allow empty columns, the same as most of the Pattern Grids in KARMA (except for the Phase Pattern). Therefore, if you are using Gate Type "Vel CP" and the Cluster Pattern Grid is set up with any empty columns, you will lose the empty columns if you switch to any other GE Type – empty columns will be filled with the default value "1."

⚠ Presently, the Random Weighting Parameters do nothing when GE Type = "Generated-Gated" and GE Gate Type = "Vel CP" (for Triton Arp simulation). It is planned to address this in a future version.

Stroke
The two rows near the middle of the grid specify a direction to strum the notes in a cluster. Up and Down refer to the strokes as they would be executed on a guitar being played by a right-handed person, with a standard tuning arrangement. Therefore, an up stroke would be pulling across the strings in an upward direction (therefore arpeggiating the tones in a downward direction), and a down stroke would be pulling across the strings in a downward direction (therefore arpeggiating the tones in an upward direction).

When a single button is on in a step, that stroke direction is executed. If both Up and Down Strokes are turned on (by using the [shift] key), it does not perform a random choice between the two as you might suspect, but rather arpeggiates the notes in a "random" order. The notes of the cluster are not generated in an up or down direction, but randomly skewed - more useful for simulating a little slop, or several musicians playing together (when creating effects other than simulations of guitar strumming). If neither button is turned on in a step, it simply alternates direction with whatever the last previously executed direction was. Therefore, it would perform in a similar fashion to alternating the up and down buttons in the example pictured above.

Strum %
The four rows at the bottom of the grid specify a percentage of the overall Strum value to be used on that step. This allows you to make some strokes "looser" or "tighter" than others. In other words, if the Strum value is 50 ms, then the rows would correspond to the following strum times:

100%	50 ms
75%	37 ms
50%	25 ms
25%	12 ms

If a single Strum % button is on in step, that is the percentage used for the cluster generated at that step. If more than one button is on (by using the [shift] key), one of them is chosen at random. If no Strum % buttons are on in a given step, the strum time is "0" (no strum or flam).

◆ **[Pattern Length]** (numerical) [1…32]

Specifies the number of steps in the Cluster Pattern, when GE Type = "Generated-Gated" and Gate Type = "Vel CP."

Only available when GE Type = "Generated-Gated" and Gate Type = "Vel CP." With this configuration, you are allowed to have empty steps in the Cluster Pattern, so the Length field specifies the total number of steps. In any other configuration, empty steps are not allowed and the length of the Pattern is determined by the number of steps with one or more buttons turned on.

◆ **[Advance Mode]** (popup menu) [0…4]

Determines whether the Cluster Pattern will use its own Index to move through the pattern or lock to another pattern's index. A Cluster Pattern has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:˜

0: Independent - 1 step per Rhythm Event

Each time the Rhythm Pattern determines it is time to generate a note or notes, a value will be chosen from the current step of the Cluster Pattern, after which the index will be advanced to the next step of the Cluster Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning. If using Drum Patterns and the [cl] (use cluster pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern maintains a separate index into the Cluster Pattern that advances 1 step for each note, but does not advance for any rests in the Drum Pattern. Therefore, if the Drum Patterns have different rests in different places, it is possible for the Clusters they are selecting to be from different steps of the Cluster Pattern.

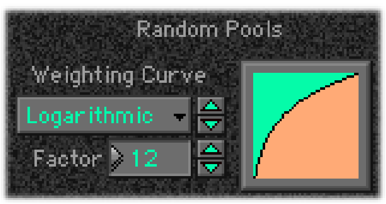
1: Lock (R) - Lock To Rhythm Pattern & Ties

The Cluster Pattern will “lock” to the Rhythm Pattern, by essentially using the Rhythm Pattern’s index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step Cluster Pattern and using this mode assures that when the Rhythm Pattern “skips” a step (due to a random tie occurring), the Cluster Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location. If using Drum Patterns and the [cl] (use cluster pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern will select clusters from the same step at the same time, regardless of any rests in the Drum Patterns.

2: Lock (D1) - Lock To Drum Pattern 1
3: Lock (D2) - Lock To Drum Pattern 2
4: Lock (D3) - Lock To Drum Pattern 3

The Cluster Pattern will “lock” to the selected Drum Pattern, by essentially using the selected Drum Pattern’s index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the Cluster Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and Cluster Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike “Independent” above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

Cluster - Random Weighting Parameters



The Random Weighting Parameters are made available when at least one step in the Cluster Pattern Grid contains multiple buttons turned on in the upper 10 rows of cluster size values (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

⚠ Presently, the Random Weighting Parameters do nothing when using GE Type = “Generated Gated” and GE Gate Type = “Vel CP” (for Triton Arp simulation). It is planned to address this in a future version.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential

With a positive Factor (+), choices will be exponentially weighted towards the larger clusters (selected values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the smaller clusters (selected values lower in the grid column).

1: Logarithmic

With a positive Factor (+), choices will be logarithmically weighted towards the larger clusters (selected values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the smaller clusters (selected values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the middle clusters (values towards the center of the selected values), and away from the largest and smallest clusters. With a negative Factor (-), choices will be exponentially weighted towards the smaller and larger clusters (selected values higher and lower in the column), and away from the middle clusters.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the middle clusters (values towards the center of the selected values), and away from the largest and smallest clusters. With a negative Factor (-), choices will be logarithmically weighted towards the smaller and larger clusters (selected values higher and lower in the column), and away from the middle clusters.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

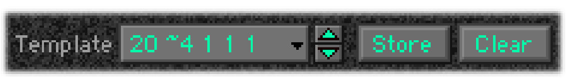
The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the Cluster Pools:

Cluster Pool values that receive priority:		
Weighting Curve	Factor + (Positive)	Factor - (Negative)
Exp/Log	larger	smaller
Exp-S/Log-S	middle	smaller/larger

◆ **[Factor]** (numerical) [-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 also 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.)

Cluster - Template Management



Certain of the parameters in the Cluster Page can be saved as a "Template." This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a Cluster Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Weighting Parameters (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

◆ **[Open Template Bank]** (button)

Opens a Template Bank Display Window for the current bank of Index Pattern Templates.

◆ **[Template]** (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Cluster Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase's Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

[Store] (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory in the current Template Bank. After storing a Template, it will then be available in the Template popup menus for both Phases.

[Clear] (button)

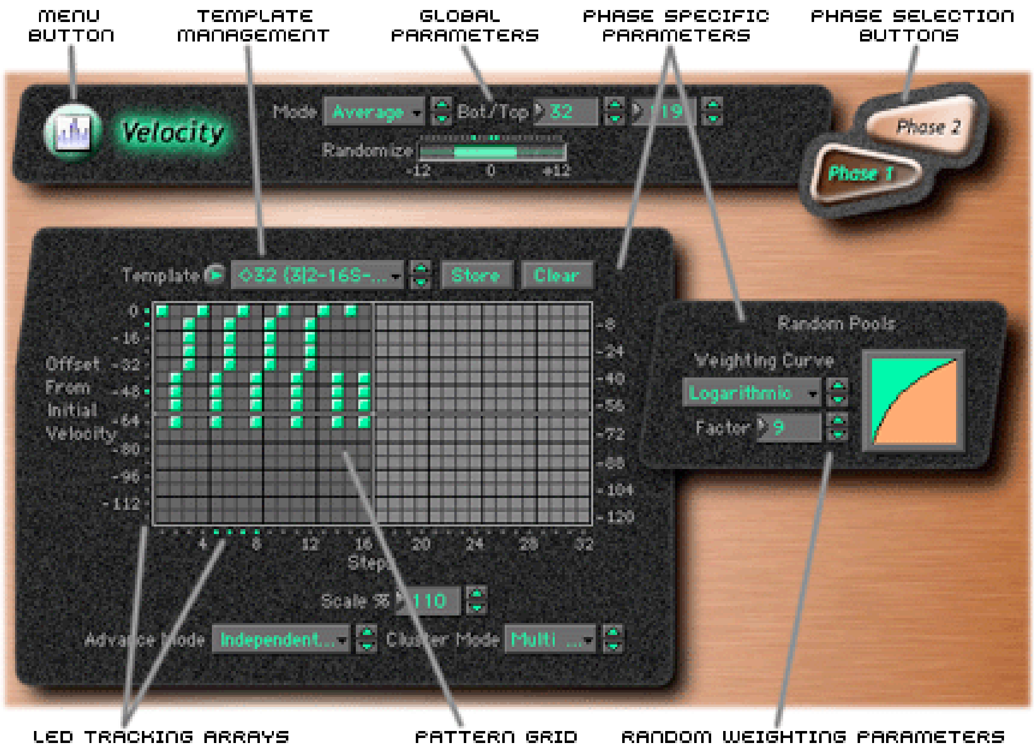
Brings up a dialog allowing you to clear the selected Template from the current Template Bank. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

Velocity

Sections in this chapter:



Velocity - Overview

The Velocity Page controls most of the aspects that affect the velocities of the notes in the Generated Effect.

Global Parameters
Parameters that affect velocity characteristics during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the note generation characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

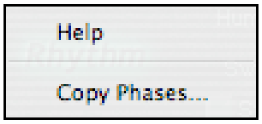
Pattern Grid
Allows Velocity Patterns to be constructed in various ways, which then modify the velocities of the notes as they are generated.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grid.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and velocity offset values (rows).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing Velocity Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

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. For example, if Velocity Mode was set to “Constant” and Velocity Value to “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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart] buttons. This 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.

Velocity - Global Parameters

- **[Velocity Mode]** (popup menu) [0...2]

Controls how the actual velocities of the notes received as input source material affect the velocities of the notes as they are generated. The fields next to the popup menu can change depending on the mode specified here, and have different functions as described below.

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 - Set Bottom/Top Range
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 will become available to the right of the popup menu, allowing you to scale the amount of sensitivity.

1: Average - Set Bottom/Top Range
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 will become available to the right of the popup menu, 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 cluster are the same.

2: Constant - Set Value

The velocities of the notes received as input are ignored; the Velocity Value parameter becomes available to the right of the popup menu and specifies directly the Initial Velocity value at which to generate the notes.

◆ **[Velocity Value]** (numerical) [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 is set to 2: Constant.

◆ **[Velocity Range Bottom]** (numerical) [1...127]
◆ **[Velocity Range Top]** (numerical) [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).

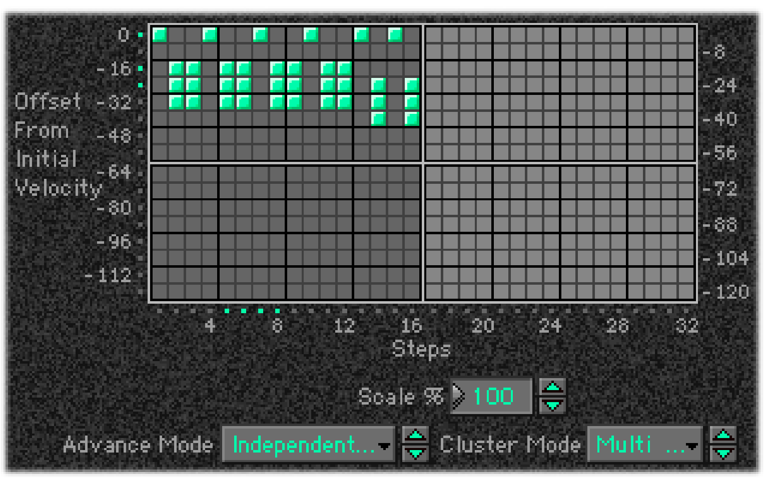
Setting the two values to the same value creates a constant value, and would be the same as using Velocity Mode = 2: Constant. For example, setting the Mode to Average with a range of 64/64 is the same as Constant with Velocity Value = 64.

◆ **[Randomize]** (range bar) [-12...+12]
◆ **[Randomize Bottom]** (RT Parm) [-12...+12]
◆ **[Randomize Top]** (RT Parm) [-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.

The “Randomize Bottom” and “Randomize Top” settings allow this parameter to be controlled via RT Parms for real-time control. The range bar is not directly accessible through RT Parms.

Velocity - Pattern Grid & Associated Parameters



◆ **[Pattern Grid]** [16 rows x 32 steps]

A Velocity Pattern subtracts certain amounts from the initial velocity value specified by the Velocity Mode as discussed above, thereby creating accents in the notes that are being generated. 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).

A Velocity 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. 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). Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Editing Grids**.

More than one value can be entered in any given column (by using the [shift] key), 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 syncopated pattern where accents (values of 0) are interleaved with choices from pools of three possible subtractive values. Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; 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 Page is whether or not the Velocity Pattern will start from the beginning each time a Phase starts, by using the [pr] (pattern restart) row. 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

◆ **[Velocity Scale]** (numerical) [-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 row rather than eight and an overall range of 0 ~ -60; at 25% the offsets would be divided by four for a difference of two between each row and an overall range of 0 ~ -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 ~ -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 ignored).

⚠ Not available if GE Type = “Generated - Drum.” Each pattern in the Drum Pattern Page has a separate Velocity Scaling parameter.

◆ **[Advance Mode]** (popup menu) [0...4]

Determines whether the Velocity Pattern will use its own Index to move through the pattern or lock to another pattern’s index. A Velocity Pattern has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:

0: Independent - 1 step per Rhythm Event

Each time the Rhythm Pattern determines it is time to generate a note or cluster of notes, a value will be chosen from the current step of the Velocity Pattern, after which the index will be advanced to the next step of the Velocity Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning. If using Drum Patterns and the [ve] (use velocity pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern maintains a separate index into the Velocity Pattern that advances 1 step for each note, but does not advance for any rests in the Drum Pattern. Therefore, if the Drum Patterns have different rests in different places, it is possible for the Velocities they are selecting to be from different steps of the Velocity Pattern.

1: Lock (R) - Lock To Rhythm Pattern & Ties

The Velocity Pattern will “lock” to the Rhythm Pattern, by essentially using the Rhythm Pattern’s index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step Velocity Pattern and using this mode assures that when the Rhythm Pattern “skips” a step (due to a random tie occurring), the Velocity Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location. If using Drum Patterns and the [ve] (use velocity pattern) buttons are turned on in the Phase Activity Grid (Drums), each Drum Pattern will select velocities from the same step at the same time, regardless of any rests in the Drum Patterns.

2: Lock (D1) - Lock To Drum Pattern 1
3: Lock (D2) - Lock To Drum Pattern 2
4: Lock (D3) - Lock To Drum Pattern 3

The Velocity Pattern will “lock” to the selected Drum Pattern, by essentially using the selected Drum Pattern’s index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the Velocity Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and Velocity Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike “Independent” above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

◆ **[Cluster Mode]** (popup menu) [0...1]

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 value. 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. The LED Tracking Arrays will display one value at a time.

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. The LED Tracking Arrays will display the number of values chosen depending on the current cluster size, as shown in the example above.

Note that when using Drum Patterns with Velocity Patterns and watching the LED Tracking Arrays, you may be watching up to three indexes displayed at the same time!

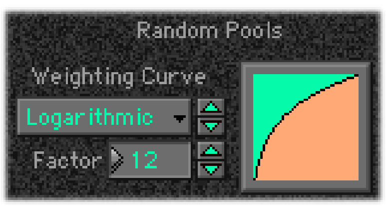
When the GE Type is “Generated - Riff,” setting this to “Multi” will have no effect unless there is a Cluster Pattern containing values of more than just one. When the GE Type is “Generated - Gated,” the number of notes being generated is considered the Cluster Size, and setting this to “Multi” will cause the pattern to advance by the number of notes being generated.

When the GE Type is “Generated - Drum,” setting this to “Multi” will have no effect unless at least one Drum Pattern has the [cl] (use cluster pattern) button turned on in a Phase Pattern step in the Phase Page and there is a Cluster Pattern containing values of more than just one, or more than one drum note is being generated at a time (by using Drum Patterns in “Poly” mode).

If you have a single Drum Pattern in “Poly” mode, you will be generating more than one drum note simultaneously from that Pattern at a time. This is also considered a “Cluster/Group” by the Velocity, Note and Pan Patterns; therefore, even if you do not have the [cl] (use cluster pattern) buttons turned on in the Phase Page, setting the Pattern Advance Mode to “Multi” will cause each note to advance the Velocity Patterns and get a different value because more than one drum note is being generated at a time. For example, if at a particular moment a kick, hi-hat and cowbell are generated at the same time from a single Drum Pattern, the Velocity Pattern will give them three different values and advance the pattern by three if the Pattern Advance Mode is set to “Multi;” if set to “Single,” then all three notes will get the same velocity, and the pattern will only advance by one.

Even if the Pattern Advance Mode is set to “Single,” if using more than one Drum Pattern simultaneously, it is possible to generate different Velocity Values at the same time. This is because each Drum Pattern maintains its own separate index into the Velocity Pattern; if the Drum Patterns have rests in them at different places, the indexes will be “out of sync” with each other and choose different steps of the Pattern. This will be visible in the Velocity Page Tracking LEDs and the Data Display Window.

Velocity - Random Weighting Parameters



The Random Weighting Parameters are made available when at least one step (column) in the Velocity Pattern Grid contains multiple buttons turned on (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards the louder velocities (pool values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the softer velocities (pool values lower in the grid column).

1: Logarithmic
With a positive Factor (+), choices will be logarithmically weighted towards the louder velocities (pool values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the softer velocities (pool values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the middle velocities (pool values towards the center of each pool), and away from the softer and louder velocities. With a negative Factor (-), choices will be exponentially weighted towards the softer and louder velocities (pool values lower and higher in the grid column), and away from the middle velocities.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the middle velocities (pool values towards the center of each pool), and away from the softer and louder velocities. With a negative Factor (-), choices will be logarithmically weighted towards the softer and louder velocities (pool values lower and higher in the grid column), and away from the middle velocities.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

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	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	louder	softer
Exp-S/Log-S	middle	softer/louder

[Factor] (numerical) [-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 also 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.)

Velocity - Template Management

Certain of the parameters in the Velocity Page can be saved as a “Template.” This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a Velocity Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Weighting Parameters (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

[Open Template Bank] (button)

Opens a Template Bank Display Window for the current bank of Velocity Pattern Templates.

[Template] (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Velocity Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase's Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

[Store] (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory in the current Template Bank. After storing a Template, it will then be available in the Template popup menus for both Phases.

[Clear] (button)

Brings up a dialog allowing you to clear the selected Template from the current Template Bank. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

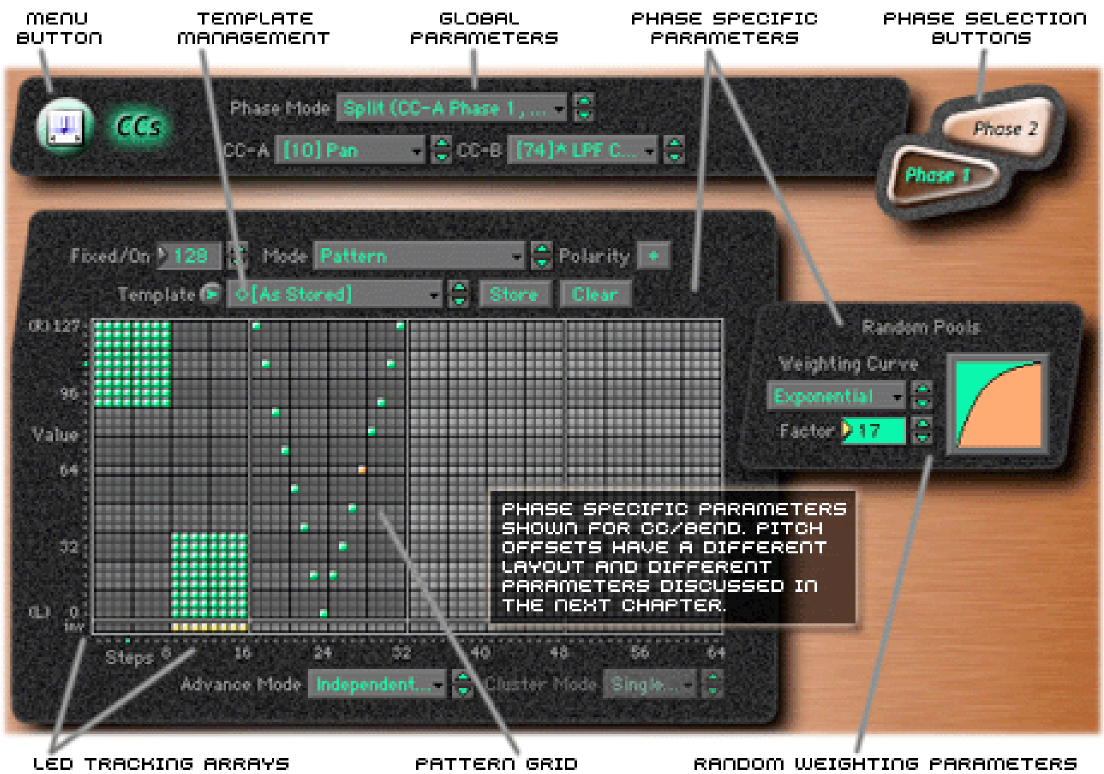
Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

CCs (Part 1)

Sections in this chapter:

Sections in **Part 2**:



CCs - Overview

The CCs Page allows the editing of parameters that control generation of CC (MIDI 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."

In one special case, you can use the CC Pattern to transpose notes, which has nothing to do with CCs or stepped Pitch Bend. Most of the time, the CCs Page will show the CC/Bend Phase Specific Parameters as shown in the above picture, for both Phase 1 and Phase 2. The only exception is when the CC Mode = "CC-A Both Phases, Pitch Offsets." In that case, Phase 2 becomes a 64 step Pitch Offset Pattern that will be applied as Transpose Values to each note as it is generated. This can be used to simulate the Korg Triton Arpeggiator Pitch Offset value for each step, or generate other unique effects. This is discussed in the following chapter **CCs Page (Part 2)**.

Global Parameters
Parameters that affect CC or Pitch Bend generation during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the note generation characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

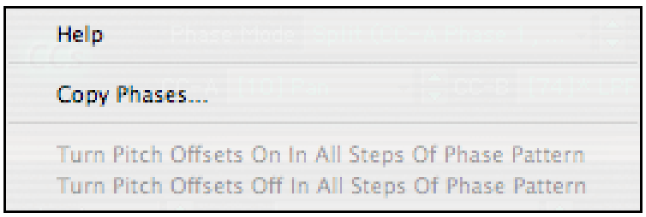
Pattern Grid
Allows CC/Bend Patterns to be constructed in various ways, which then control how the CC or Pitch Bend information is generated.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grid.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid, with one or more green dots displaying the currently chosen index (column) and CC/Bend value 0~127 (row).

Template Management
Allows the contents of the Pattern Grid(s) and certain associated parameters to be saved as a “Template.” It will then appear in the popup menu for future use when creating/editing CC Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

Turn Pitch Offsets On In All Steps Of Phase Pattern
Turn Pitch Offsets Off In All Steps Of Phase Pattern
Not available unless using Pitch Offsets. See **CCs Page (Part 2)**.

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message “Phase Not In Use” will be displayed near the Phase Selection Buttons.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

CCs - About CC/Bend Patterns

A value derived from a CC/Bend Pattern is a MIDI Control Change value from 0 ~ 127 (or Pitch Bend 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 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 without redrawing it.

Note that if your synthesizer does not respond to the particular CC data being generated, CC Patterns will have no effect. For example, on some synthesizers it is not possible to Pan Drum Programs.

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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart) buttons. 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.

There are two different CCs (CC-A and CC-B) or Pitch Bend that may be selected in the Global Parameters section (described below). The CC Mode controls which Phase’s Pattern grid applies to which CC.

CCs - Global Parameters

◆ **[CC Mode]** (popup menu) [0...5]

Specifies several ways that two different CCs or Pitch Bend (chosen below) will be generated, with regards to the two different Phases of a GE. The last option allows the Phase 2 Pattern to become a 64 step Pitch Offsets Pattern.

<u>0: CC-A In Both Phases</u>
The selected CC (or Pitch Bend) in the CC-A menu will be sent all the time, in both Phase 1 and Phase 2, according to the selected Pattern and Type. During Phase 1, the Phase 1 Pattern and Type will be used to send CC-A, and during Phase 2 the Phase 2 Pattern and Type will likewise be used to send CC-A. CC-B will not be sent at any time.

<u>1: CC-B In Both Phases</u>
The selected CC (or Pitch Bend) in the CC-B menu will be sent all the time, in both Phase 1 and Phase 2, according to the selected Pattern and Type. During Phase 1, the Phase 1 Pattern and Type will be used to send CC-B, and during Phase 2 the Phase 2 Pattern and Type will likewise be used to send CC-B. CC-A will not be sent at any time.

<u>2: Alternate (CC-A Phase 1, CC-B Phase 2)</u>
During playback of Phase 1, CC-A will be generated; during playback of Phase 2, CC-B will be generated. For example, if CC-B [18]* Slider in the example above was controlling filter frequency, then the phases would switch between sending pan data and controlling filter frequency. Therefore, the Phase 1 CC Pattern and parameters are associated with CC-A; the Phase 2 CC Pattern and parameters are associated with CC-B.

<u>3: Split (CC-A Phase 1, CC-B Phase 2, simultaneously)</u>
The Phase 1 CC Pattern and parameters are associated with CC-A; the Phase 2 CC Pattern and parameters are associated with CC-B. However, they generate CC data simultaneously, ignoring the Phase Pattern settings. For example, this means the Pattern Grid in Phase 1 can be used to generate a complex CCs Pattern, at the same time that the Pattern Grid in Phase 2 can be used to generate a completely different complex pattern to control resonance or filter frequency. The switching of Phases which normally occurs according to the Phase Pattern is ignored, and they both generate data for their associated CC (or Pitch Bend) simultaneously, all the time.

<u>4: Both (CC-A & CC-B simultaneously)</u>
The two selected CCs (or Pitch Bend) are controlled in tandem. The Phase Pattern switching of Phases is used as normal, but both CC-A and CC-B are sent out simultaneously as specified by the Pattern and Type (with the same values). For example, you can set up a complex pattern in Phase 1, and a different complex pattern in Phase 2, and let the Phase Pattern control switching between them. Both CC-A and CC-B data will be generated for each note or group of notes. In other words, with the above example settings, every time a CC 10 Pan Value is sent the same Value will be sent as CC 18 Slider.

<u>5: CC-A Both Phases, Pitch Offsets</u>
Selecting this mode causes the Phase 2 CC/Bend Pattern Grid to be replaced with a 64 Step Pitch Offsets Pattern, described in the next chapter. Pitch Offsets are transpose values that are applied to each step of the pattern (notes or clusters) as they are generated, thereby transposing the MIDI pitches of the notes. This can be used to simulate the Korg Triton Arpeggiator among other unique effects. In this case, it operates similar to “3: Split” above, in that the Phase switching controlled by the Phase Pattern is ignored. The CC specified in the CC-A menu is generated all of the time according to the Pattern and Type setup in the Phase 1 parameters. The Pitch Offset Pattern in the Phase 2 section of the Page is simultaneously generated/applied with no regard for the changing of Phases, and CC-B will not be sent at any time.

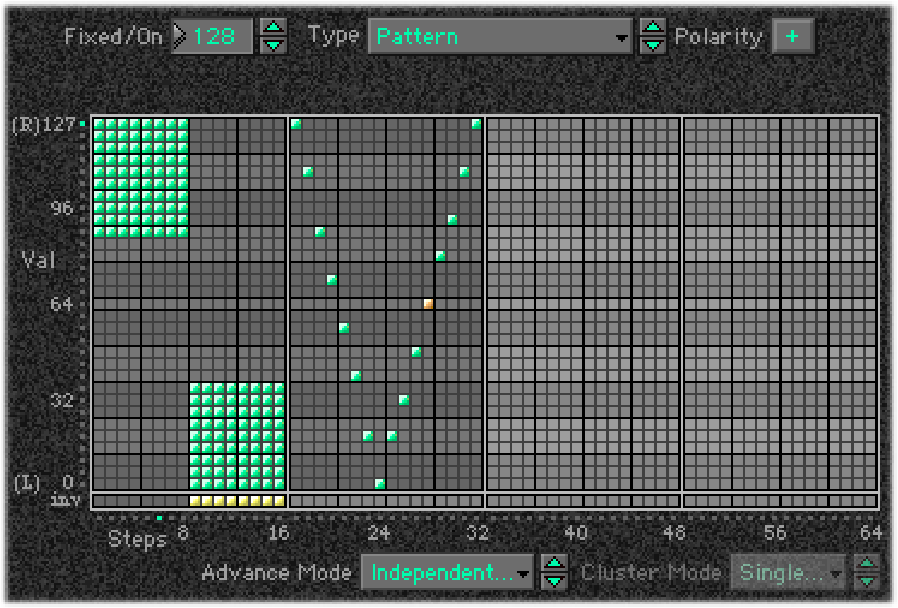
When you change from any other Mode setting to “5: CC-A Both Phases, Pitch Offsets” or vice versa, you are actually reconfiguring internally the data for the Phase 2 Grid. Therefore, you will be given a warning dialog and a chance to cancel the operation. Answering “OK” erases any data that may be in the Phase 2 Pattern Grid and initializes it for the new configuration.

◆ **[CC-A]** (popup menu) [-1...+126]
◆ **[CC-B]** (popup menu) [-1...+126]

<u>-1: Off</u>
<u>0...125: MIDI CC Messages</u>
<u>126: Pitch Bend</u>
Selects one of 125 MIDI Control Change Messages supported by the MIDI specification, in addition to Pitch Bend (in the last position of the popup menu). This CC (or Pitch Bend) will be generated according to the setting of the CC Mode popup menu above.

Even if CC-A and CC-B are configured properly, you may not be hearing any effects if the MIDI Filter parameters have been set to filter out the generation of that CC. See **MIDI Filter Page: Generated Data Parameters**.

CCs - Pattern Grid & Associated Parameters (CC/Bend)



◆ **[Pattern Grid]** [32 rows x 64 steps]

A CC Pattern represents a series of values indicating a MIDI Control Change (or Pitch Bend) value to be generated. The particular controller is selected according to the parameters in the Global area (described above). 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Each row represents a CC or Pitch Bend value in multiples of four (0, 4, 8, 12 etc.). Note that a pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Grids, see **Using The Pattern Grids**.

More than one value can be entered in any given column (using the [shift] key), 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. If CC 10 (Pan) was being sent, the example above shows a pattern where the first 8 notes will get random values chosen from 12 positions extending from the right (127) towards the center. The next 8 values will be randomly chosen from 12 positions extending from the left (0) towards the center; the next 16 values will perform a right to left “sweep.” Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page; you can choose to repeat the same random sequence a number of times or always generate new random sequences of choices. The special bottom row (“inv”) indicates whether or not to invert the Random Weighting Curve (discussed later on). See Weighting Curve Inversion Row

Also controlled in the Phase Page is whether or not the CC 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**

Pattern Grid not available if the Pattern Type parameter is other than “Pattern,” or the Fixed/On parameter is other than “128.”

If the CC Pattern does not look like the above example in terms of available parameters or layout, you may be looking at Phase 2 with a Pitch Offsets Pattern. See **CC Page (Part 2)**.

◆ **[Fixed/On]** (numerical) [0...128]

Allows the CC/Bend Pattern to be overridden with a fixed value. When set to “128,” the Pattern Grid becomes available, and the CC/Bend 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 grayed out. If assigned as an RT Parm, this can allow you to “sweep” a controller manually and then return it to being automatically generated by the pattern.

Not available in Phase 2 when Pitch Offsets are being used.

◆ **[Pattern Type]** (popup menu) [0...5]

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.

0: Pattern
The Pattern Grid described above will be available and operate as described.

1: Index to 0 <->127 (scales Note Series Indexes into CC values 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), or for simply tracking the movement of the indexes with any other CC data. The Pattern Grid described above will not be available.

2: Index to 24 <->108 (scales Note Series Indexes into CC values 24 ~ 108).
3: Index to 32 <-> 96 (scales Note Series Indexes into CC values 32 ~ 96).
The same as above, except scales the indexes into other smaller (less wide) ranges that are centered.

4: Index to 0 <-> 64 (scales Note Series Indexes into CC values 0 ~ 64).
5: Index to 64 <->127 (scales Note Series Indexes into CC values 64 ~ 127).
The same as above, except scales the indexes into other ranges. For example, if used with CC 10 Pan data, would be left to center or center to right.

Not available in Phase 2 when Pitch Offsets are being used.

[Polarity] (button) [0, 1]

Reverses the polarity of the CC Pattern (causing it to produce inverted values, where 0 ~ 127 becomes 127 ~ 0). This is an easy way to reverse the direction of the pattern without redrawing it.

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.

[Advance Mode] (popup menu) [0...4]

Determines whether the CC Pattern will use its own Index to move through the pattern or lock to another pattern’s index. A CC Pattern has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:

0: Independent - 1 step per Rhythm Event
Each time the Rhythm Pattern determines it is time to generate a note or notes, a value will be chosen from the current step of the CC Pattern, after which the index will be advanced to the next step of the CC Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning. Unlike Velocity and Cluster Patterns, the Drum Patterns share a single index into the CC Pattern, so it is not possible to be at different steps in the CC Pattern for each Drum Pattern.

1: Lock (R) - Lock To Rhythm Pattern & Ties
The CC Pattern will “lock” to the Rhythm Pattern, by essentially using the Rhythm Pattern’s index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step CC Pattern and using this mode assures that when the Rhythm Pattern “skips” a step (due to a random tie occurring), the CC Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location.

2: Lock (D1) - Lock To Drum Pattern 1
3: Lock (D2) - Lock To Drum Pattern 2
4: Lock (D3) - Lock To Drum Pattern 3
The CC Pattern will “lock” to the selected Drum Pattern, by essentially using the selected Drum Pattern’s index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the CC Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and CC Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike “Independent” above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

[Cluster Mode] (button) [0...1]

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 six notes will be generated with a single CC value preceding it, and advance the pattern by one to the next step. The LED Tracking Arrays will display one value at a time.

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 six notes will be generated with each note preceded by the next six CC values 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 CC value - but only if your synth supports this type of behavior. The LED Tracking Arrays will display the number of values chosen depending on the current cluster size, as shown in the example above.

This will also affect the “Index” Pattern Type options. If “Single,” a cluster of notes will be preceded by one CC value according to the pitch of the first note; if “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 is “Generated - Gated,” the number of notes being generated is considered the Cluster Size.

When the GE Type is “Generated - Riff,” setting this to “Multi” will have no effect unless there is a Cluster Pattern containing values of more than just one.

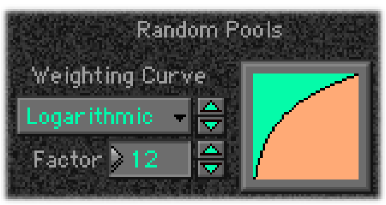
When the GE Type is “Generated - Drum,” setting this to “Multi” will have no effect unless at least one Drum Pattern has the [cl] (use cluster pattern) buttons turned on in the Phase Page and there is a Cluster Pattern containing values of more than just one, or more than one drum note is being generated at a time (by using more than one Drum Pattern, or by using a single Drum Pattern in “Poly” mode).

Not available when the Advance Mode is set to anything but “Independent” or if the Preferences have been set to disable this feature. See **Preferences: MIDI**.

If you are using more than one Drum Pattern simultaneously or have a single Drum Pattern in “Poly” mode, you will most likely be generating more than one drum note at a time. This is also considered a “Cluster/Group” by the Velocity, Note and CCs Patterns; therefore, even if you do not have the [cl] (use cluster pattern) buttons turned on in the Phase Page, setting the Pattern Advance Mode to “Multi” will cause each note to advance the CCs Patterns and get a different value because more than one drum note is being generated at a time. For example, if at a particular moment a kick, hi-hat and cowbell are generated at the same time, the CCs Pattern will give them three different pan values and advance the pattern by three if the Pattern Advance Mode is set to “Multi;” if set to “Single,” then all three notes will be preceded by one pan value, and the pattern will advance by only one.

However, if the [cl] (use cluster pattern) buttons are turned on in the Phase Page and there is a Cluster Pattern containing values of more than just one, the total advancement will be multiplied by the current cluster size. For example, if the Cluster Pattern causes four notes to be generated from each of three Drum Patterns simultaneously and the CCs Pattern Advance Mode is set to “Multi,” then the next twelve CCs Pattern values (4 x 3) will be generated (one in front of each note) and the CCs Pattern will advance by twelve; if set to “Single,” then all twelve notes will be preceded by one pan value and the pattern will advance by only one. In this case, setting the Drum Patterns to “Poly” will not cause any additional values to be generated.

CCs - Random Weighting Parameters (CC/Bend)



The Random Weighting Parameters are made available when at least one step in the CC Pattern Grid contains multiple buttons turned on in the upper 31 Value rows (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.

Note that CCs Patterns differ slightly from the other patterns in that there is a special “Inversion” row at the bottom of the grid. This row is only active in any particular column when a pool exists in that column; when turned on, it allows the weighting curve to be inverted for that particular pool (column). This is discussed in more detail at the end of the following section.

Whether or not a certain random sequence will repeat for a number of times is controlled in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve Menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid (except when the Weighting Curve Inversion Row buttons are turned on, explained at the end of the following section). For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards the higher values (selected values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the lower values (selected values lower in the grid column).

1: Logarithmic
With a positive Factor (+), choices will be logarithmically weighted towards the higher values (selected values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the lower values (selected values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the center values (values towards the center of the selected values), and away from the highest and lowest values. With a negative Factor (-), choices will be exponentially weighted towards the lowest and highest values (selected values higher and lower in the column), and away from the middle values.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the center values (values towards the center of the selected values), and away from the highest and lowest values. With a negative Factor (-), choices will be logarithmically weighted towards the lowest and highest values (selected values higher and lower in the column), and away from the middle values.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

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	Factor	
Curve	+ (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		
buttons causes the opposite behavior specified above.		

◆ **[Factor]** (numerical) [-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 also 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.)

◆ **[Weighting Curve Inversion Row]**

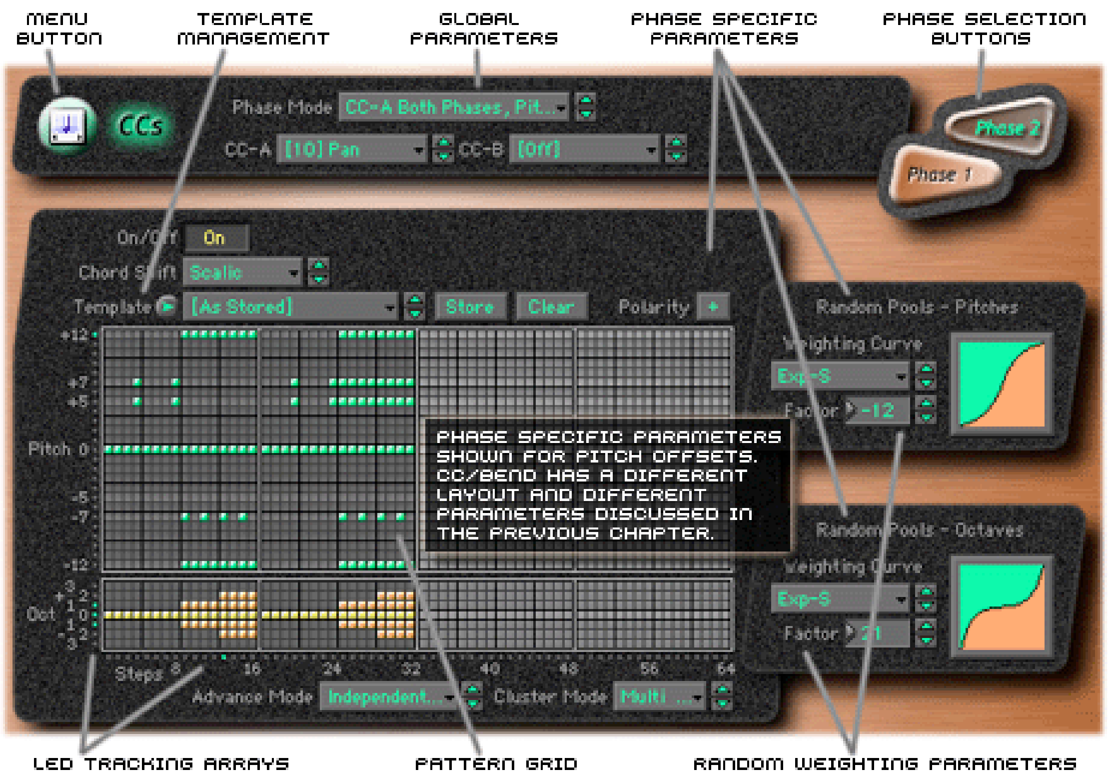
CC Patterns differ slightly from the other patterns in that there is a special “Inversion” row at the bottom of the grid (abbreviated “inv”). This row is only active in any particular column when a pool exists in that column. When turned on, it allows the weighting curve to be inverted for that particular pool (column). This is mainly intended for use with CC 10 (Pan), but can be useful with other CCs as well; the reason is for setting up pools on either side of “center” and then choosing inner/outer edges of those pools. For example, suppose you were using the Pattern illustrated earlier in this chapter as an example. The first eight Steps of the pattern are pools on the right side of center; the next eight Steps are pools on the left side of center. If you were to use an Exponential Weighting Curve with a positive value, and no Inversion Row buttons were turned on, then all choices would be weighted towards the tops of the pools (higher values in the column), with the result that choices would be made more towards the right side in the first eight Steps, but then more towards the center in the second eight Steps. Using the Inversion Row buttons on the second eight Steps inverts the weighting curve with respect to those Steps, so that choices from them will be more towards the bottom of the column (and the leftmost values). This makes the weighting symmetrical on both sides of center; i.e. towards the outer edges of the stereo field when the curve value is positive, towards the inner edges when the curve value is negative.)

For parameters related to **Template Management**, please see the next Chapter.

CCs (Part 2) - Pitch Offsets

Sections in this chapter:

Sections in **Part 1**:



CCs (Pitch Offsets) - Overview

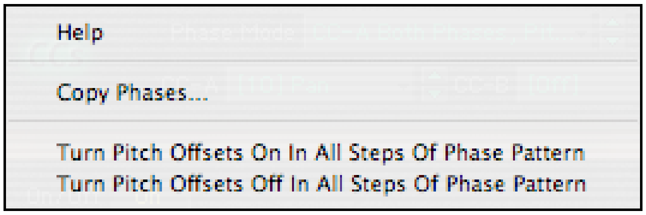
The CCs Page normally allows the editing of parameters that control generation of CC (MIDI Control Change). However, in one special case, the CC Pattern may also be used to specify "Pitch Offsets" that will be applied as Transpose Values to each note as it is generated. This can be used to simulate the Korg Triton Arpeggiator Pitch Offset value for each step, or generate other unique effects.

The features of the CCs Page that apply to both the normal use and this use are covered in the previous chapter. This chapter will only explain the differences pertaining to this special configuration.

Pattern Grids
Allows Pitch Offset Patterns to be constructed in various ways, which then control a pitch transpose value on a note-by-note basis.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grids.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Phases...

Turn Pitch Offsets On In All Steps Of Phase Pattern
Turn Pitch Offsets Off In All Steps Of Phase Pattern
When using Pitch Offsets, allows all of the buttons in the [po] (use pitch offsets) row(s) of the Phase Activity Grid to be turned on/off at once, saving you a trip to the Phase Page. The Pitch Offset Pattern will not be applied if none of these buttons are on, regardless of how the parameters are set. This allows you to individually apply the Pitch Offset Pattern to selected steps of the Phase Pattern, or to all of them.

When none of the [po] (use pitch offset) buttons are turned on in the Phase Activity Grid (General), all of the Pitch Offset Parameters will be grayed out and unavailable, and the message “Not In Use In Phase Page” will appear in the upper right corner.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

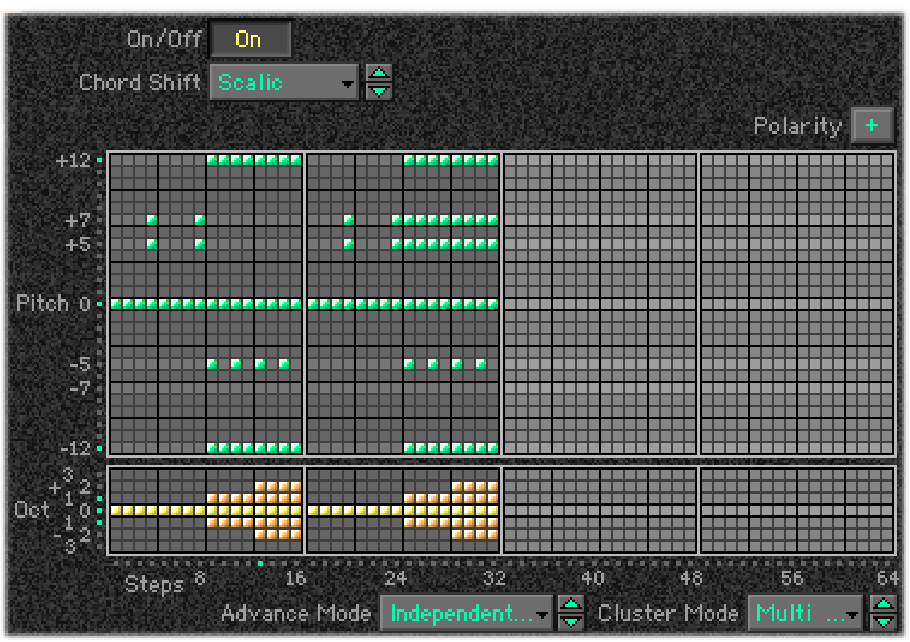
CCs - About Pitch Offset Patterns

A value derived from a Pitch Offsets Pattern is a semitone pitch transpose value of -48...+48. The transpose value is added to the MIDI note number of each pitch that is to be generated at that step. Choices can be made from “Random Pools” of values as described in detail later on.

A Pitch Offsets Pattern may be inverted any time by using the “Polarity” Parameter, which is an easy way to invert the direction of the pattern without redrawing it. Note that in this case it only inverts the semitone Pitch values in the upper 25 rows of the grid, and not the octave values (which would make it go too far outside of useful ranges).

A Pitch Offset 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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart) buttons. This means that a four step Pitch Offset Pattern can be looping while an eight step Velocity Pattern and a twelve step Cluster Pattern are also independently looping, for example.

CCs - Pattern Grid & Associated Parameters (Pitch Offsets)



[Pattern Grids] [Pitches: 25 rows x 64 steps, Octaves: 7 rows x 64 steps]

When CC Mode is “CC-A Both Phases, Pitch Offsets,” Phase 2 (only) becomes a 64 step Pitch Offsets Pattern utilizing two separate linked Pattern Grids, and the Phase Specific Parameters (for Phase 2 only) are completely different, as shown above.

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. The transpose value is added to the MIDI note number of each pitch that is to be generated at that step. This can be used to simulate the Korg Triton Arpeggiator Pitch Offset value for each step, in addition to many other unique effects.

The grids may have any number of steps up to 64 (both the same), and loop independently of other patterns being used at the same time. Each step is represented by one column on the grid. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Note that a pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Grids, see **Using The Pattern Grids**.

More than one value can be entered in any given column (using the [shift] key), separately for each of the two grids, 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 curves become available when there is at least one random pool selected in the grid associated with the Random Weighting Parameters. There are separate curves for each of the two sections of the grid, so that octaves can be varied independently of semitone pitches.

Also controlled in the Phase Page is whether or not the CC 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 Page, then the 2nd time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

[Pitch Offsets On/Off] (button) [0, 1]

0: Off 1: On

When On, the Pitch Offset pattern specified by the Phase 2 Pattern Grid is applied as transpose values to notes as they are generated. This allows the effect of the Pitch Offsets Pattern to be switched on and off in real-time.

Will not have any effect unless at least one step of the Phase Pattern has a [po] (use pitch offsets) button turned on.

The utilities in the Menu Button for the CCs Page provide a quick and easy way turn on or off all [po] (use pitch offset) buttons in the Phase Page without going there.

[Chord Shift] (button) [0...2]

Selects one of several options for using chord recognition algorithms to shift any atonal notes (due to the Pitch Offset Pattern Values) to musically correct ones.

0: Off

The Pitch Offsets are applied with no further modification from this setting.

1: Scalic

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, or for making a minor riff play in a major key when a major chord is detected.

2: Scalic2

Same as Scalic (above), except that the note tables used to shift the notes have more passing tones for each chord; therefore, Scalic 2 sounds more modal in nature.

[Polarity] (button) [0, 1]

Inverts the semitone portion (upper 25 rows) of the Transpose Value in a given step. In other words, if a step had +3 in the Pitch section and +1 octave in the Octave section, with Polarity Off, the Transpose Value would be 3 + 12 = +15 semitones. With Polarity On, the value would be -3 + 12 = +9. This keeps the pattern in the same octave range basically, but inverts the melody.

0: Regular (+)

The Pitch Offsets Pattern is sent out as originally created.

1: Inverted (-)

The Pitch Offsets Pattern is inverted, but only the semitone portion chosen from the Pitch section of the grids (upper 25 rows).

Note about Pattern Advance Mode when used with Pitch Offsets:

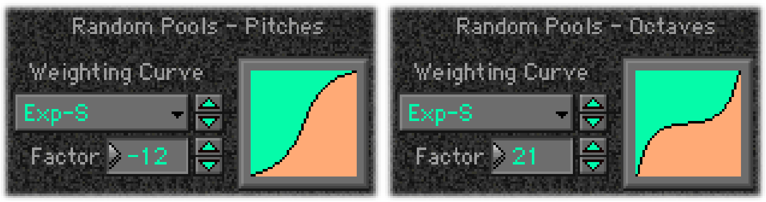
Because the Pitch Offsets pattern does not have two phases, and is only a single long pattern grid of 64 steps, when using the Pattern Advance Mode “Lock (R)” setting, it operates in a special manner: the length of the Phase 1 Rhythm Pattern corresponds to a first portion of the grid, while the length of the Phase 2 Rhythm Pattern corresponds to a later portion of the grid, starting after the first portion. In other words, if the Phase 1 Rhythm pattern is 16 steps long, then the first 16 steps of the Pitch Offsets grid will be indexed when the Rhythm Pattern is in Phase 1; when the GE switches to Phase 2, the Pitch Offsets pattern will begin at step 17, and continue for the length of the Phase 2 Rhythm Pattern.

Therefore, by setting up a 32 step Rhythm Pattern in both Phase 1 and Phase 2, and setting the Phase Pattern so that you play the 32 steps in each Rhythm pattern, you can index the full 64 steps of the Pitch Offsets Pattern.

An example would be to set both Rhythm Pattern phases to 32 16th notes; then set the Phase Pattern to {1, 2}, in Time Signature Mode, with 8/4 for both phases. This will play 32 16th notes in each phase, and Phase 1 will index the first 32 steps of the Pitch Offsets Pattern, while Phase 2 will index the second 32 steps of the Pitch Offsets Pattern.

The one peculiar aspect of this is that if you set the Phase Pattern to begin with Phase 2, i.e. {2,1}, or simply do not use Phase 1, the Pitch Offsets Pattern will appear to be starting somewhere in the middle of the grid (depending on the length of the Phase 1 Rhythm Pattern, even if it is not in use.).

CCs - Random Weighting Parameters (Pitch Offsets)



The Random Weighting Parameters (Pitches) are made available when at least one step in the CC Pattern Grid contains multiple buttons turned on in the upper 25 Pitch rows (constituting a “random pool” of values). The Random Weighting Parameters (Octaves) are made available when at least one step in the CC Pattern Grid contains multiple buttons turned on in the lower 7 Octave rows (constituting a “random pool” of values). Since they operate the same, the following discussion applies to both.

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 in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve Menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid (except when the Weighting Curve Inversion Row buttons are turned on, explained at the end of the following section). For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards the higher values (selected values higher in the grid column). With a negative Factor (-), choices will be exponentially weighted towards the lower values (selected values lower in the grid column).

1: Logarithmic
With a positive Factor (+), choices will be logarithmically weighted towards the higher values (selected values higher in the grid column). With a negative Factor (-), choices will be logarithmically weighted towards the lower values (selected values lower in the grid column).

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the center values (values towards the center of the selected values), and away from the highest and lowest values. With a negative Factor (-), choices will be exponentially weighted towards the lowest and highest values (selected values higher and lower in the column), and away from the middle values.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the center values (values towards the center of the selected values), and away from the highest and lowest values. With a negative Factor (-), choices will be logarithmically weighted towards the lowest and highest values (selected values higher and lower in the column), and away from the middle values.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the CC Pools:

Pitch Offset Pool values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	higher in grid	lower in grid
Exp-S/Log-S	middle	higher/lower

[Factor] (numerical) [-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 also 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 all other Parameters related to the CCs Page and using Pitch Offsets, see the previous chapter **CCs Page (Part 1)**.

CCs - Template Management

Certain of the parameters in the CCs Page can be saved as a "Template." This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a CCs/Pitch Offsets Pattern Template:
- the configuration of the Pattern Editing Grid;
- the Random Weighting Parameters (Weighting Curve and Factor);
- Polarity.

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

[Open Template Bank] (button)

Opens a Template Bank Display Window for the current bank of CCs/Bend/Pitch Pattern Templates.

[Template] (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different CC/Bend/Pitch Offset Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase's Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

⚠ Pitch Offset Patterns (described in the next chapter) share the same Template Bank as CC/Bend Templates, since they are in the same page of the Editor. However, Templates are not interchangeable between the two. If you try to load a Template created for the other type of Pattern, you will be given an error message and it will not load.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

◆ **[Store]** (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory in the current Template Bank. After storing a Template, it will then be available in the Template popup menus for both Phases.

◆ **[Clear]** (button)

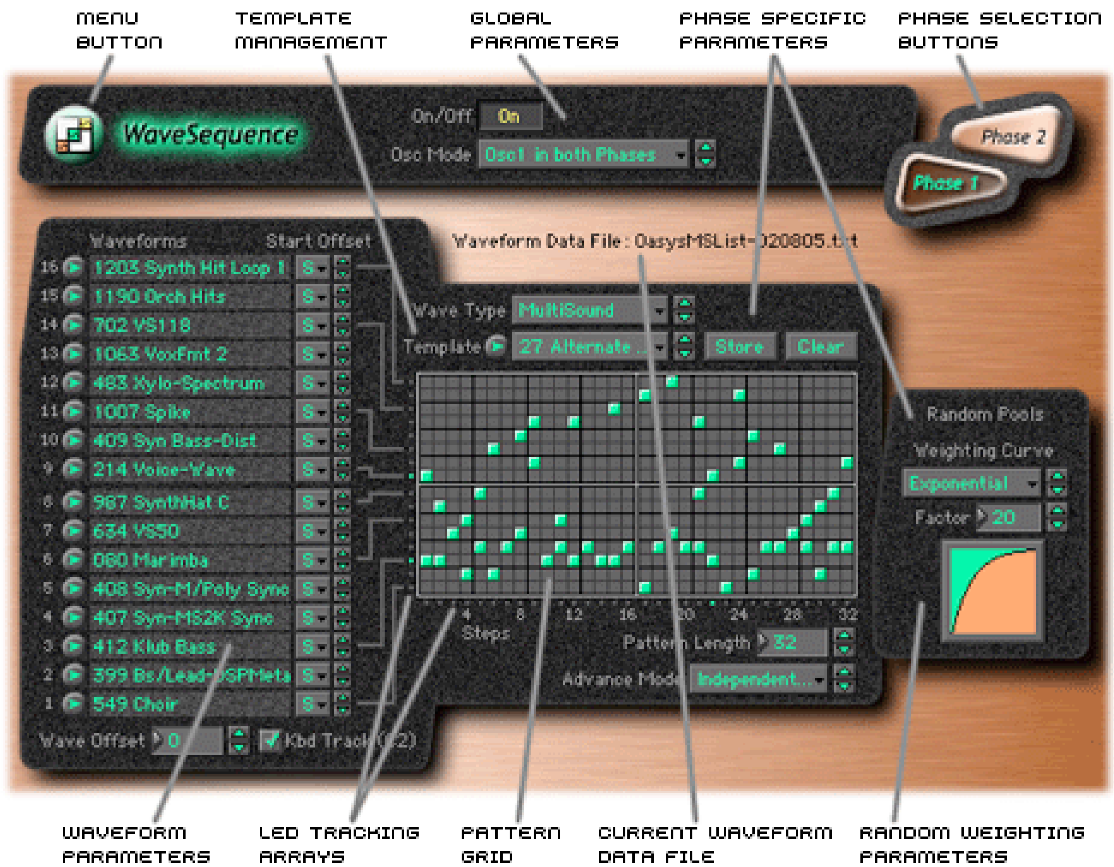
Brings up a dialog allowing you to clear the selected Template from the current Template Bank. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

⚠ Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

WaveSeq

Sections in this chapter:



WaveSeq - Overview

The WaveSeq Page controls a set of parameters that allow the waveforms of the destination synth’s programs to be varied in real-time, creating popular “wave-sequence” style effects.

Global Parameters
Parameters that affect WaveSeq characteristics during playback of either Phase in a Generated Effect.

Phase Specific Parameters
An identical group of parameters for each Phase that affect the waveform characteristics during playback of that Phase only. For more on Phases, see the **Phase Page**.

Phase Selection Buttons
Selects which Phase (a separate collection of the Phase Specific Parameters) to display and edit.

Waveform Parameters
Controls which waveforms are selected for each row, and whether they are shifted or offset while being generated.

Pattern Grid
Allows WaveSeq Patterns to be constructed in various ways, which then modify the waveforms of the synth programs being played by the Module’s GE.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) that may have been created in the Pattern Grid.

LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the Pattern Grid, with one or more green dots displaying the currently chosen index (column) and WaveSeq offset values (rows).

Current Waveform Data File
Displays the name of the currently loaded Waveform Data File, which contains the waveform names and start offset information used to the left of the grid. A new set of names and offsets can be loaded using the Menu Button.

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a "Template." It will then appear in the popup menu for future use when creating/editing WaveSeq Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:

Copy Phases...

Apply Waveform Offset
When the "Wave Offset" field is set to something other than zero, that value is being added to all the displayed waveforms to create a different set of waveforms. If you find you like a certain offset and you want to make it the basic setting of the GE, you can execute this utility and the Wave Offset will be added (permanently) to all the waveforms. "Wave Offset" will then be reset to zero, and the waveform names will refresh to show the new, actual waveform settings.

Reset Waveforms to Zero
All 16 Waveform choices will be reset to zero, in the Phase that you are viewing.

Reset Waveforms by One
All 16 Waveform choices will be reset to 0~15, in the Phase that you are viewing.

Reset Waveforms by Ten
All 16 Waveform choices will be reset to 0, 10, 20 etc. in the Phase that you are viewing.

Import Waveform Data...
Use this command to load a new list of names (and start offsets) corresponding to the synth that you are going to be controlling. This ensures the Waveform names to the left of the grid match what is actually inside the destination synth. The name of the currently loaded Waveform Data File is displayed above the Template popup menu.

Reset Waveform Data
Use this command to reset the list of names (and start offsets) to the factory default for your keyboard. The name of the currently loaded Waveform Data file is displayed above the Template popup menu.

If settings in the Phase Page indicate a particular Phase is not being used, the Phase Specific Parameters will not be available for that Phase. The message "Phase Not In Use" will be displayed near the Phase Selection Buttons.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

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 as described in detail later on. 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 Page or the Note Series to only repeat a single pitch, or by using GE Mode = Gated, with Gate Type = 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 Mode = Gated with Gate Type = CC (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 multisound (from a group you’ve defined) with each note you play on the keyboard. Or you can assign a range of multisounds to an RT 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 Page has been configured to restart it at the beginning of certain Phases by using the [pr] (pattern restart) buttons. 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.

WaveSeq - Global Parameters

◆ **[On/Off]** (button) [0, 1]

<u>0: Off 1: On</u>
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). For example, in the Korg OASYS, 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.

◆ **[Osc Mode]** (popup menu) [0...4]

Specifies several ways that two different oscillators in the destination program(s) can be controlled (if the destination synth supports this behavior), with regards to the two different Phases of a GE.

<u>0: Osc1 In Both Phases</u>
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.

<u>1: Osc2 In Both Phases</u>
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.

<u>2: Alternate (Osc1 Phase 1, Osc2 Phase 2)</u>
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.

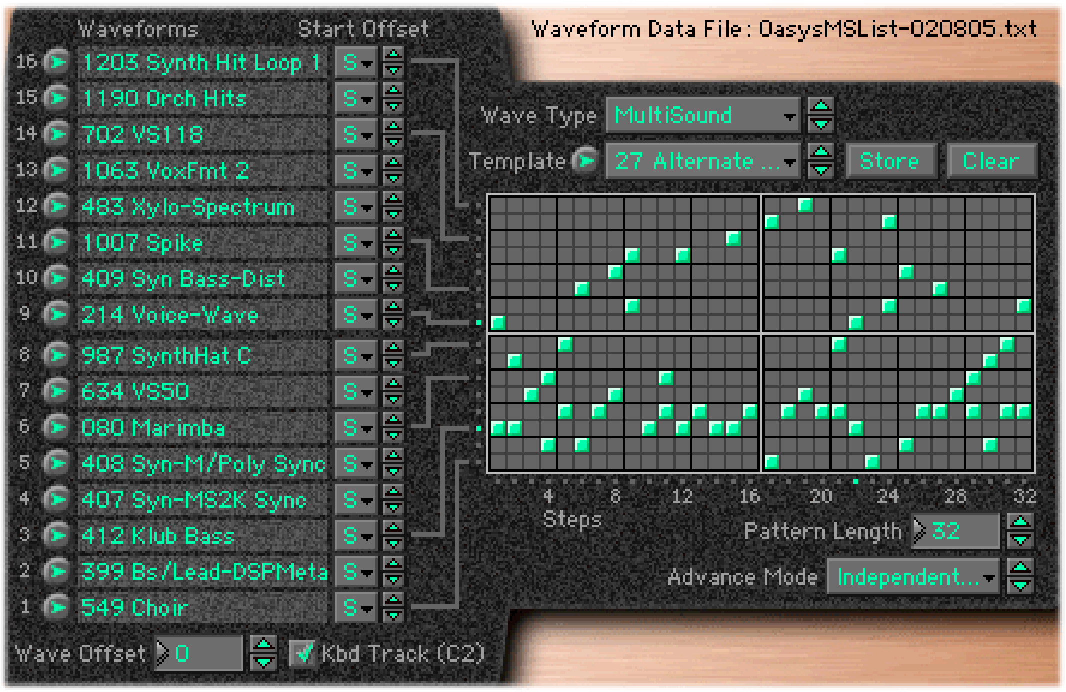
The Phase 2 parameters will have no effect on a single-oscillator or drum program.

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 & 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.

WaveSeq - Pattern Grid & Associated Parameters



A WaveSeq Pattern specifies a sequence of waveform select messages to be sent to a destination synth program, 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. As shown above, unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. The first column must always contain at least one value. Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Editing Grids**.

More than one value can be entered in any given column (by using the [shift] key), 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 Page; 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 Page is whether or not the WaveSeq Pattern will start from the beginning each time a Phase starts, by using the [pr] (pattern restart) row. 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 Page, then the second time through the same Phase it would pick up where it left off: at the 9th value of the pattern. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (General)**.

[Waveform Data File] (label)

Displays the name of the currently loaded Waveform Data File, which specifies the name and number of available Start Offsets for each waveform. A new file can be loaded using the Menu Button, and will be remembered and loaded automatically the next time you launch the application.

[Waveform Choice] (button) [0...number of available waveforms]

16 Waveform Choices for the Waveform Pattern Grid are displayed to the left of the grid. Click the round button with the triangle next to each waveform name, and the Waveform Select Dialog will appear, allowing you to choose a waveform for the corresponding row of the grid. The names and number of available waveforms is determined by the Waveform Data File that is currently loaded. A new set of names and offsets can be loaded using the Menu Button.

Depending on the setting of Waveform Type below, the list of names will either display MultiSound names, or Korg WaveSequence names.

[Waveform Select Button] (button)

Opens the Waveform Select Dialog and allows you to choose a waveform for the corresponding row of the Pattern Grid.

[Start Offset] (popup menu) [0 = Sample Start, 1...8]

Chooses one of the available start offset points for the selected waveform. Only the applicable number of available start offsets for the selected waveform will be enabled; unavailable offsets will be grayed out.

When this parameter is being varied by an RT Parm assignment, the full range of Start Offsets will be available. However, the actual value will be limited internally to the available number of Start Offsets for the specified waveform.

Korg WaveSequences do not have Start Offsets. Therefore, when the Waveform Type is “WaveSequence,” all Start Offsets other than Sample Start will be grayed out.

[Waveform Offset] (numerical) [+/- number of waveforms]

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.

[Waveform Type] (popup menu) [0, 1]

Specifies whether the messages sent will change the program’s oscillator(s) to different Multisounds, or different Korg Wave Sequences.

0: MultiSound
The choices indicated by the pattern values will cause various MultiSounds to be selected for the specified oscillators. The list of names in the Waveform Choice labels will change to display the available MultiSounds.

1: WaveSequence
The choices indicated by the pattern values will cause various Korg WaveSequences to be selected for the specified oscillators. The list of names in the Waveform Choice labels will change to display the available WaveSequences.

[Kbd Track (C2)] (checkbox) [0, 1]

0: Off   1: On
When On, allows the specified 16 Waveform Choices to track the keyboard (lowest note played, with reference to C2-36). 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] (numerical) [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.

[Advance Mode] (popup menu) [0...4]

Selects whether the index into the WaveSeq Patterns will move independently, or track the Rhythm Pattern or selected Drum Pattern Index. For example, if the Rhythm Pattern is skipping steps due to the use of Random Ties, you might want the WaveSeq Pattern to also skip the same steps in tandem – or you might not.

A WaveSeq Pattern has an associated index that moves through the pattern and dictates the current step to be used. The LED Tracker Arrays show the current step and chosen value during operation. The Advance Mode parameter controls one of several methods of operation:

0: Independent - 1 step per Rhythm Event
Each time the Rhythm Pattern determines it is time to generate a note or notes, a value will be chosen from the current step of the WaveSeq Pattern, after which the index will be advanced to the next step of the WaveSeq Pattern. The index will therefore advance through the pattern without skipping any steps, and upon reaching the end, loop back to the beginning.

1: Lock (R) - Lock To Rhythm Pattern & Ties
The WaveSeq Pattern will “lock” to the Rhythm Pattern, by essentially using the Rhythm Pattern’s index. This is useful when the Rhythm Pattern has been set to include random ties. For example, if the Rhythm Pattern has 16 steps including random ties, creating a 16 step WaveSeq Pattern and using this mode assures that when the Rhythm Pattern “skips” a step (due to a random tie occurring), the WaveSeq Pattern will skip the same step. If the patterns are of unequal length, the index will be wrapped around to a valid location.

2: Lock (D1) - Lock To Drum Pattern 1
3: Lock (D2) - Lock To Drum Pattern 2
4: Lock (D3) - Lock To Drum Pattern 3
The WaveSeq Pattern will “lock” to the selected Drum Pattern, by essentially using the selected Drum Pattern’s index. The only time this is any different than Lock (R) is when the Rhythm Pattern contains Random Ties. If you want the WaveSeq Pattern values to be selected in a linear fashion, one after the other, and not skip over certain steps of the pattern, you can lock to one of the Drum Patterns. If the Drum Pattern and WaveSeq Pattern are of unequal length, the index will be wrapped around to a valid location. Note that a rest in the Drum Pattern will still advance the index, unlike “Independent” above. Therefore, if all three Drum Patterns are in use, locking to any one of the three will produce identical results, other than taking the length of the Drum Pattern into consideration.

WaveSeq - Random Weighting Parameters

The Random Weighting Parameters are made available when at least one step (column) in the WaveSeq Pattern Grid contains multiple buttons turned on (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 [nr] (new random sequence) buttons in the Phase Page. See **Phase Page: Phase Activity Grid (General)**.

◆ **[Weighting Curve]** (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exponential
With a positive Factor (+), choices will be exponentially weighted towards the waveform choices higher in the grid column (values closer to the top of each pool). With a negative Factor (-), choices will be exponentially weighted towards the waveform choices lower in the grid column (values closer to the bottom of each pool).

1: Logarithmic
With a positive Factor (+), choices will be logarithmically weighted towards the waveform choices higher in the grid column (values closer to the top of each pool). With a negative Factor (-), choices will be logarithmically weighted towards the waveform choices lower in the grid column (values closer to the bottom of each pool)..

2: Exp-S (Exponential S)
With a positive Factor (+), choices will be exponentially weighted towards the waveform choices nearer the center of the grid column (values towards the center of each pool), and away from the higher and lower choices. With a negative Factor (-), choices will be exponentially weighted towards the waveform choices higher and lower in the grid column (nearer the top and bottom of each pool), and away from the middle choices.

3: Log-S (Logarithmic S)
With a positive Factor (+), choices will be logarithmically weighted towards the waveform choices nearer the center of the grid column (values towards the center of each pool), and away from the higher and lower choices. With a negative Factor (-), choices will be logarithmically weighted towards the waveform choices higher and lower in the grid column (nearer the top and bottom of each pool), and away from the middle choices.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

The following table summarizes the effect of the various Weighting Curves and the Factor field on the choices from the WaveSeq Pools:

WaveSeq Pool values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	higher in grid	lower in grid
Exp-S/Log-S	middle	higher/lower

◆ **[Factor]** (numerical) [-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 also 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.)

WaveSeq - Template Management

A set of certain parameters in the WaveSeq Page can be saved as a “Template.” This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a WaveSeq Pattern Template:
- the configuration of the Pattern Editing Grid;
- the sixteen choices in the Waveform Choice menus, and the corresponding Start Offset values;
- the Random Pool Weighting Parameters (Weighting Curve and Factor);

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

◆ **[Open Template Bank]** (button)

Opens a Template Bank Display Window for the current bank of Wave Sequence Pattern Templates.

◆ **[Template]** (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Wave Sequence Pattern Templates (shared by both Phase 1 and 2), and loads the parameters into the current Phase’s Editing Area.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

[Store] (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory. After storing a Template, it will then be available in the Template popup menus for both Phases.

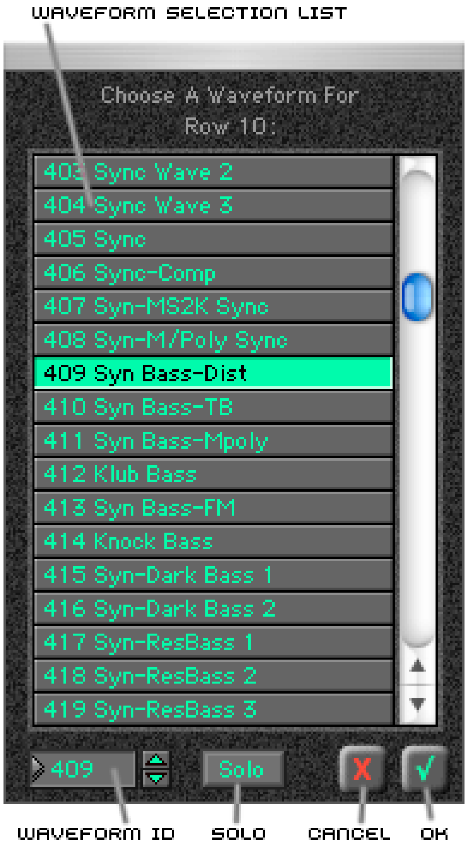
[Clear] (button)

Brings up a dialog allowing you to clear the selected Template. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

WaveSeq - Waveform Select Dialog



The Waveform Select Dialog is opened by clicking on any of the round triangle buttons to the left of any Waveform Choice label. It allows you to choose one of the available waveforms for the selected row of the Pattern Grid. The up/down arrow keys or the scroll bar to the right side can be used to navigate the list. You can also type the first letter or first few letters of a name to jump directly to it, or enter a number directly in the value field at the bottom left to select a waveform if you know the ID. The current selection is highlighted in green. You will hear the changes immediately in the pattern (assuming this row is being used in the grid).

◆ **[Waveform Selection List]** (scrolling list) [0...number of available waveforms]

Displays the list of available waveforms (which can be changed using the Menu Button). Click on a row to select, double-click to select and close the dialog. The up/down arrow keys or the scroll bar to the right side can be used to navigate the list. You can also enter a number directly in the value field at the bottom left to select a waveform if you know the ID.

◆ **[Solo]** (button)

When the Solo button is On, you will hear only the notes that are being generated with the corresponding row of the WaveSeq Pattern. If you leave the Solo button on when you close, it will remain soloed, and you need to open the dialog to clear it, or load a new Performance or GE.

When soloed and GE Type = Generated Riff, you will not hear any notes that are generated as a result of Melodic Repeat being used on the Notes Series. This is because repeated notes do not cause a Waveform Change in and of themselves; only notes from the Note Series transmit a Waveform Change.

◆ **[Waveform ID]** (numerical) [0...number of available waveforms]

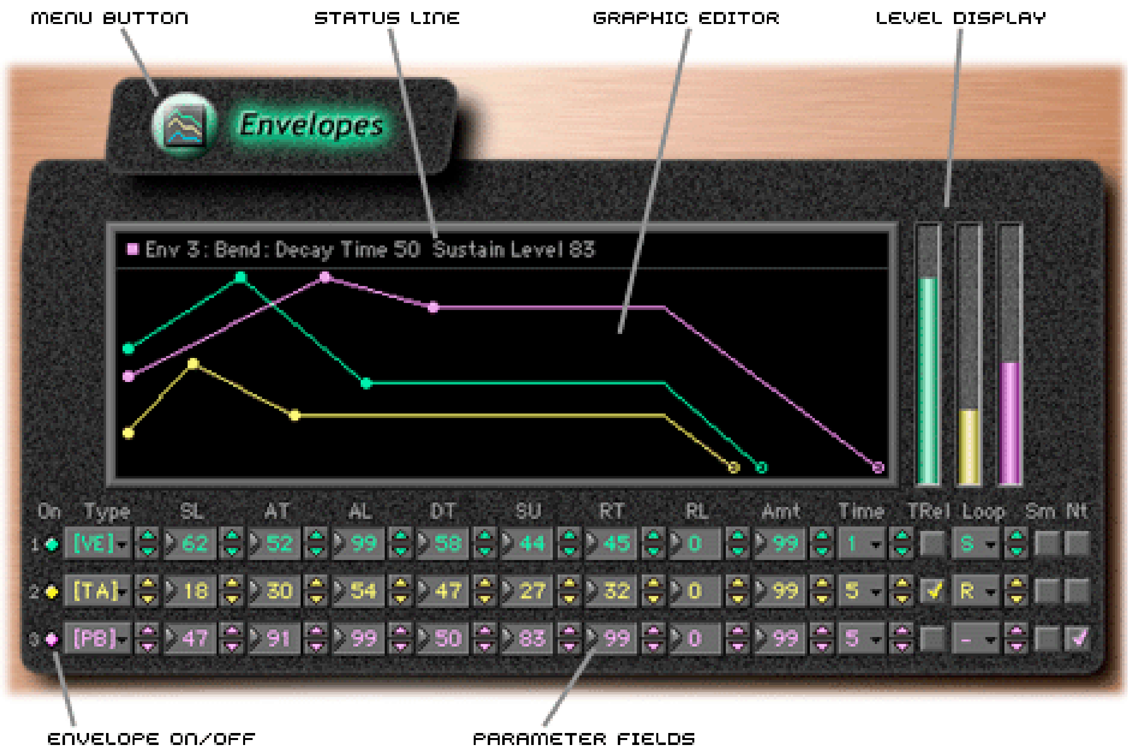
Allows you to enter a Waveform ID number directly, for quick selection of a desired waveform. The tab key will move the "focus" of the dialog between the list (for the arrow keys) and the numerical (for entering the ID). For example, if you wanted to set multiple rows to the same Waveform, you can open the dialog, hit the tab key, enter the ID, then hit return – that's about as quick as it gets. You can also use the arrow keys when you are inside the numerical, but they operate in reverse from when the list is selected.

◆ **[OK/Cancel]** (buttons)

Cancel (red X) closes the dialog and returns the waveform to the previous selection. OK (green checkmark) closes the dialog and accepts the edited choice.

Envelopes

Sections in this chapter:



Envelopes - Overview

Each Generated Effect has three envelopes that can be applied to various functions such as Velocity, Tempo, Pitch Bend, Duration, and to send any CC (MIDI Control Change Message).

Graphic Editor
Displays the shapes of whichever envelopes are active. Envelope parameters can be edited by clicking and dragging in the Graphic Editor on the appropriate points of the displayed envelope.

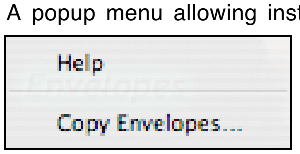
Status Line
When clicking and dragging in the Graphic Editor, the Status Line at the top shows which point is being edited and the current value. If you click in the Status Line, the front-most envelope will cycle through all active envelopes (useful if points overlap).

Envelope On/Off
Makes an envelope active, and displays it in the Graphic Editor.

Parameter Fields
Allows the envelope shape to be edited by entering or scrolling to the desired values, along with other parameters.

Level Display
Shows the action of the three envelopes when they are being run. The colors match the Graphic Editor.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy Envelopes...

In addition to being triggered by the keyboard and various controllers through Dynamic MIDI, the envelopes can also be selectively triggered by each note as it is generated (see below), or at Phase Changes according to settings in the **Phase Activity Grid (General)**.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Envelopes - 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 “Attack, Decay, Sustain, Release.” 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, the function is either a crescendo/decrescendo of the velocity levels of the notes in the Riff, 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. The best way to understand how the envelopes function is to play with them!

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. 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 Page: Global Parameters**.

When and how the Envelopes will be triggered is determined by the Envelope Trigger Parameters in the Trigger Page of the Performance Editor. See **Trigger Page: Note & Envelope Triggering Parameters**.

In addition to being triggered by the keyboard, the envelopes can also be selectively triggered at Phase Changes according to settings in the **Phase Activity Grid (General)**.

Envelopes - Parameters

You can edit the three envelopes by clicking on the Graphic Editor and dragging the envelope points to new locations, which will update the values in the Parameter fields. Alternatively, you can directly enter values in the Parameter fields, or click and drag up/down to scroll the values, which will update the Graphic Editor.

◆ **[Envelope On/Off]** (button) [0, 1]

0: Off 1: On
Turns on the corresponding envelope, shows its shape in the Graphic Editor, and makes its parameters available to be edited. The parameters are the same for all three of the envelopes, and are discussed in the following section.

Even if the envelope is turned on, you may not be hearing any effect if the Envelope MIDI Filter parameters in the Performance are filtering out that particular envelope. See **Performance Editor: MIDI Filter Page**.

◆ **[Envelope Type]** (popup menu) [0...127]

Selects the function that the envelope performs. The first five 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 Performance or GE 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 the Internal Master Clock or External Sync, but runs on its own clock, controlled by the Tempo Envelope. However, this option takes into account the tempo of the Performance, 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 (T.Rel)” parameter.

The calculation is a ratio of the GE’s stored tempo, and the present tempo of the Performance - therefore, make sure your GE tempo is stored correctly (which is not the same as the Performance tempo necessarily!)

Example: assume that the envelope is set to a shape that generates an increase/decrease from 100 BPM - 120 BPM, and the GE is stored with a tempo of 120. If the Performance Tempo is 60 (one-half of the GE Tempo), the envelope will produce an increase/decrease from 50 - 60 BPM; if the Performance Tempo is 240 (two times the GE Tempo), the envelope will produce an increase/decrease from 200 - 240 BPM.

⚠ If varying the Performance Tempo and using a Tempo Envelope, if the Tempo Envelope has finished running, varying the Performance Tempo will have no effect until the envelope is restarted.

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 Editor.

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 Page, as explained below:

- 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 occurence 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% ms, 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%).

For more information about Duration Modes, see **Duration Page: Pattern Grid & Associated Parameters**.

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.

[6...127] MIDI CC Numbers 0...121
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 Mode and Envelope Latch Modes properly - see the “Loop Mode” parameter below.

All of the following Level and Time parameters may also be controlled in different combinations via a group of “virtual” RT Parms. See **Envelope Page: RT Parm Virtual Parameters**.

◆ **[Start Level (SL)]** (numerical) [0…99]

The level at which the envelope begins when triggered.

◆ **[Attack Time (AT)]** (numerical) [0…99]

The time it will take to reach the Attack Level. This is a portion of the overall time setting specified in the "Time Scale" menu described below.

◆ **[Attack Level (AL)]** (numerical) [0…99]

The first level the envelope reaches in the amount of time specified by Attack Time.

◆ **[Decay Time (DT)]** (numerical) [0…99]

The time it will take to reach the Sustain Level from the Attack Level. This is a portion of the overall time setting specified in the "Time Scale" menu described below.

◆ **[Sustain Level (SL)]** (numerical) [0…99]

The second level 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 (RT)]** (numerical) [0…99]

The time it will take to reach the Release Level from the Sustain Level, once the Release Phase is triggered. This is a portion of the overall time setting specified in the "Time Scale" menu described below.

◆ **[Release Level (RL)]** (numerical) [0…99]

The final level the envelope reaches in the amount of time specified by the Release Time.

◆ **[Amplitude Amount (Amt)]** (numerical) [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 parameters specify.

◆ **[Time Scale]** (popup menu) [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 a KARMA GE are three 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 three 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 "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 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 "Riff Length" may not be noticeable in that case.

◆ **[Tempo Relative (T. Rel)]** (checkbox) [0, 1]

0: Off 1: On

When 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 one 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 one bar of 4/4 at 120 BPM. If you change the tempo to 60 and the T.Rel checkbox is "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 two measures of 4/4. With T.Rel "On," the time scale of the envelope is changed according to the tempo. Therefore, it will always sweep over one bar of 4/4 regardless of the tempo.

You can use this with the [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.

◆ **[Loop Mode]** (popup menu) [0...3]

Selects one of several methods of causing the envelope to loop continuously from one point back to another.

Off
Envelope will proceed through all its segments in a normal fashion.

0: 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 (in the Performance Editor: Trigger Page) to be set to “Off,” “Sus1,” or “Sus2.” For continuous looping after key release, you must have “Sus2” selected - see the table below.

1: 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 (in the Performance Editor: Trigger Page) to be set to “Rel1” or “Rel2.” For continuous looping after key release, you must have “Rel2” selected - see the table below.

2: 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 (in the Performance Editor: Trigger Page) 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 three Envelope Loop Modes described above, and the Envelope Latch Modes (set in the **Performance Editor: Trigger Page**).

	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

◆ **[Attack Smooth (Sm)]** (checkbox) [0, 1]

0: Off 1: On
When set to “Off,” retriggering an envelope will start it at its preset Start Level regardless of its current position. When set to “On,” the envelope will restart from its current position, not the Start Level. This can be used to “smooth” the repeated retriggering of the envelope.

◆ **[Note Trigger (Nt)]** (checkbox) [0, 1]

0: Off 1: On
Allows an envelope to be triggered with every single note. When set to “Off,” the envelope is triggered normally as specified by the settings of the Performance Editor:Trigger Page, Dynamic MIDI, and the Envelope Triggering rows of the Phase Editor. When set to “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)).

Envelopes - RT Parm Virtual Parameters

The following parameters are not true parameters, but "virtual" parameters for RT Parm control. In other words, they do not physically exist on the Envelope Page, but perform a modifying function on one or more of the other parameters. They can be found in the Envelope Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual).

◆ **[~Sta/Att Level]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [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]** (virtual) [0…99]

Controls an Envelope's Start, Attack, Sustain and Release Levels at the same time - all will be set to the same value.

◆ **[~Att/Dec Time]** (virtual) [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]** (virtual) [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]** (virtual) [0…99]

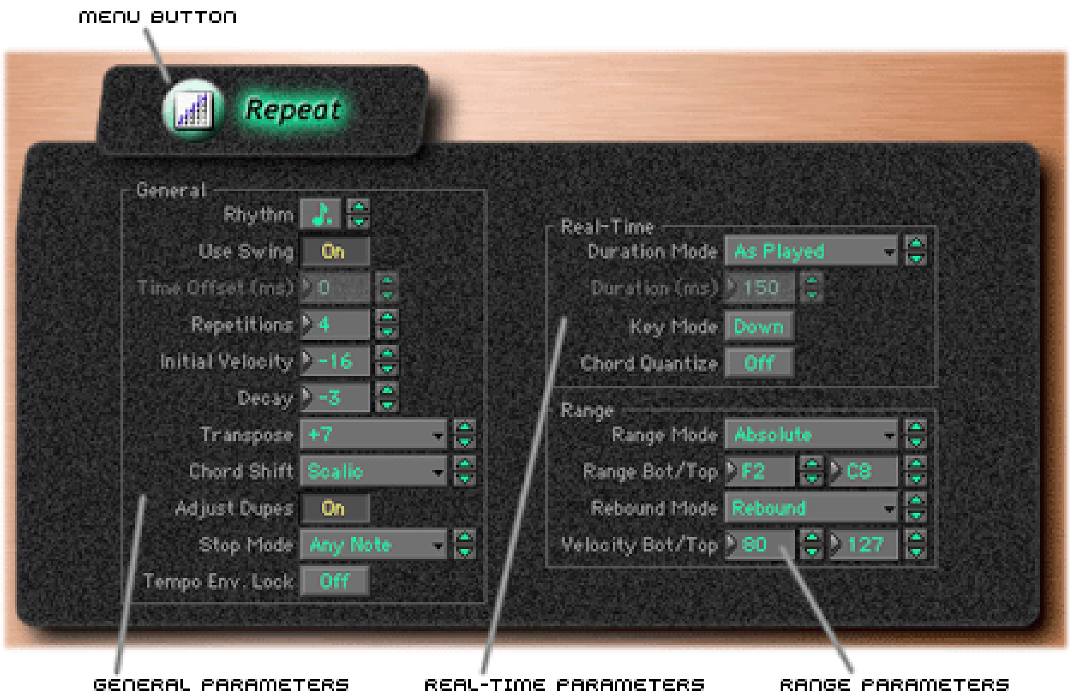
Controls an Envelope's Decay and Release Times at the same time - both will be set to the same value.

◆ **[~All Times]** (virtual) [0…99]

Controls an Envelope's Attack, Decay and Release Times at the same time - all will be set to the same value.

Melodic Repeat

Sections in this chapter:



Melodic Repeat - Overview

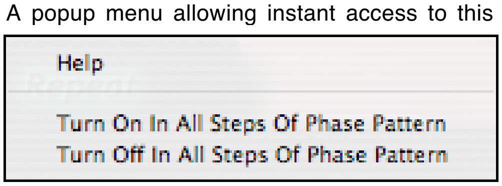
Melodic Repeat™ allows any note to be repeated in a delay-like fashion, with many additional features and enhancements. When the GE Type is one of the “Generated” types (i.e.“Generated - Riff”), the notes as they are generated may each start sequences of repeating notes. When the GE Type is “Real-Time,” the actual input notes may each start sequences of repeating notes. As shown above, the parameters have been divided into several distinct groups:

General Parameters
Parameters that affect repeating note generation in general, regardless of which GE Type is selected.

Real-Time Parameters
Additional parameters that only have an effect when the GE Type is “Real-Time.”

Range Parameters
Parameters that affect the pitch range of the repeating notes as they transpose, and what happens when they go outside of the range. Also contains parameters for using a velocity range to trigger repeats.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Turn On In All Steps Of Phase Pattern
Turn Off In All Steps Of Phase Pattern
Allows all of the buttons in the [mr] (melodic repeat) row(s) of the Phase Activity Grid to be turned on/off at once, saving you a trip to the Phase Page. Melodic Repeat will not occur if none of these buttons are on, regardless of how the parameters are set.

When none of the [mr] (melodic repeat) buttons are turned on in the Phase Activity Grids, all of the Repeat Page Parameters will be grayed out and unavailable, and the message “Not In Use In Phase Page” will appear in the upper right corner.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Melodic Repeat - About Melodic Repeat

Melodic Repeat is based on a familiar technique know as “MIDI Delay,” where 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 will remain in time with the original notes.
• Use the 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 as well.
• 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 certain a certain velocity range can trigger repeated notes, while others will not.
• The Rhythm Patterns, Note Patterns, Velocity Patterns, etc. may be used to control when and how the repeated notes are generated.

However, no repeats will actually occur unless the [mr] (melodic repeat) row(s) of the Phase Activity Grid in the Phase Page has some buttons turned on. This allows you to set up an effect where repeats only occur in one or more steps of the Phase Pattern, while other steps have no repeats. The Menu Button popup provides a convenient way to turn these on/off all at once. Furthermore, certain steps of the Phase Pattern can be set to “turn off” pending repeats which might overlap into the new step, by using the Bend/Repeat [no] (no overlap) row of the grid. See **Phase Page: Phase Activity Grid (General)**.

When the “GE Type” is one of the Generated types (i.e. Generated-Riff), the notes as they are generated may each start strings of repeating notes. When the “GE Type” is Real-Time, the actual input notes may each start strings of repeating notes.

Repeats can not be generated when “GE Type” = Generated-Gated and “Gate Type” 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).

Melodic Repeat - General Parameters

The parameters in this section affect repeated note generation in general, regardless of which GE Type is selected.

[Rhythm] (popup menu) [0...25]

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 (below) 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. 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 Page is used (indicated by a grid graphic in the popup), so that repeated notes can have different rhythms.

The Rhythm parameter can also be controlled by several "virtual" RT Parms. See **Repeat Page: RT Parm Virtual Parameters**.

[Use Swing] (button) [0, 1]

0: Off 1: On
Sets whether the repeated notes will take on the swing feel that is set in the Rhythm Page. If "Off," the generated notes may be swung but the repeated notes will not be.

When the Rhythm Page Swing % is "0," this parameter has no effect.

[Time Offset (ms)] (numerical) [-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" resonant delay effects created with short repeat times to a certain key.

Only available and 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 RT Parm control, and the offset will be ignored, allowing the longer rhythms to stay in sync.

[Repetitions] (numerical) [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 (infinity ∞) causes the notes to repeat indefinitely, unless something else stops them.

[Initial Velocity] (numerical) [-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 Page.

[Decay] (numerical) [-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 Page.

[Transpose] (numerical) [-24...+24 semitones, Index Pattern)

The amount by which each successive repeated note is transposed in pitch. When one of the number values is selected, the same value is used for each repeated note. When "Index Pattern" is selected, the Index Pattern in the Index Page 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] (popup menu) [0...2]

When repeated notes are being transposed in pitch, atonal results may occur depending on the Transpose setting. When Chord Shift is "Off," no change occurs in the transposition. Setting Chord Shift to one of the Scalic modes 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 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 On, the still to be generated repeats will shift to the new chord and blend with the new repeats.

A certain area of the keyboard may need to be assigned as a Control Area (in the Dynamic MIDI Page) for Chord Shift 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 Scalic (described below), and therefore may produce results that are more pleasing.

2: Scalic 2
Same as Scalic (above), except that the note tables used to shift the notes have more passing tones for each chord; therefore, Scalic 2 sounds more modal in nature.

◆ **[Adjust Dupes]** (button) [0, 1]

0: Off   1: On
When Chord Shift is set to “Scalic” or “Scalic 2,” notes are shifted as they are transposed to avoid atonal notes, based on chord analysis. If small Transpose values are used (+1, for example), this results in duplicate notes side by side. While you may want this effect sometimes, setting Adjust Dupes to “On” activates an algorithm that pleasantly meanders the duplicate notes to adjacent pitches. Note that this does not affect deliberately generated duplicate notes when using a Note Pattern with Melodic Repeat (i.e. set Transpose menu to “Pattern,” and the Note Pattern has values of “0” in it) - only notes that would be duplicated because of the Chord Shift feature being on.

Not available when Chord Shift is set to “Off.”

◆ **[Stop Mode]** (popup menu) [0...2]

Allows pending repeated notes that haven’t sounded yet to be discarded (stopped) by various actions.

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 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.

When a Dynamic MIDI Destination is set to “Trigger Notes” or “Trigger Notes & Envs,” the Stop Mode parameter also applies to whether the repeats will be stopped when triggered by the Dynamic MIDI action.

A MIDI Controller can also be assigned to perform the stopping of repeats by using the “Melodic Repeat Stop” Dynamic MIDI Destination.

◆ **[Tempo Env. Lock]** (button) [0, 1]

0: Off   1: Lock
When a Tempo Envelope is being used (in the Envelope Page), setting this to “Lock” causes the repeated notes to lock their size to the Tempo Envelope (as the Tempo Envelope speeds up the times between them get smaller). Setting this to “Off” causes the size to remain relative to the Global Tempo; even though the Tempo Envelope may be speeding up or slowing down the effect, the repeat times remain the same.

When the Tempo Envelope is “Off,” this parameter has no effect.

Melodic Repeat - Real-Time Parameters

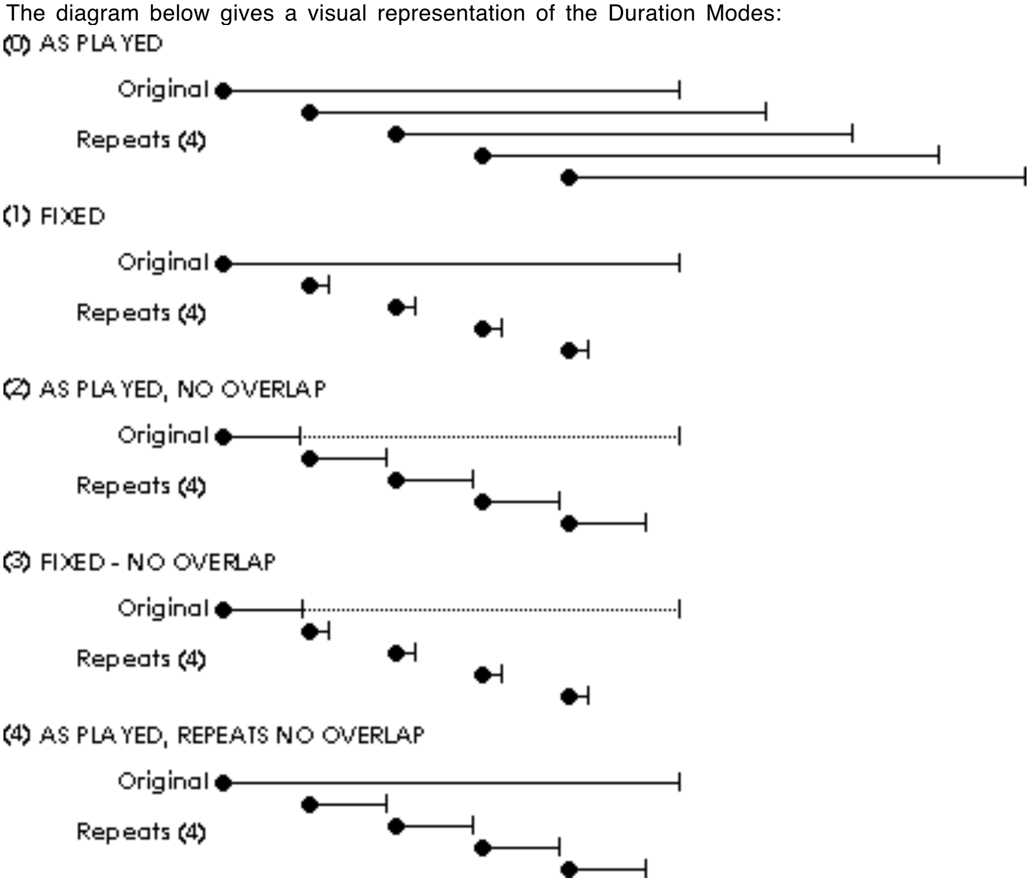
If the GE Type is “Real-Time,” these additional parameters will also become available.

◆ **[Duration Mode]** (popup menu) [0...4]

Chooses one of several 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.

<u>0: As Played</u>
Each delayed note will have the same duration as the initial note, with the exception that if Transpose 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.
<u>1: Fixed</u>
The original note will have the duration as played, but each repetition will have a fixed length, set by the Duration ms 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.
<u>2: As Played-No Overlap</u>
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.
<u>3: Fixed-No Overlap</u>
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 ms parameter.
<u>4: As Played-Delay No Overlap</u>
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.

The diagram below gives a visual representation of the Duration Modes:



◆ **[Duration ms]** (numerical) [2...5000 ms]

Specifies the length of the durations of the repeated notes (in milliseconds).

Only available when the Duration Mode is one of the Fixed modes.

◆ **[Key Mode]** (button) [0, 1]

Selects whether the repeated notes start immediately upon receiving a "key down" event, or wait until notes are released ("key up").

0: Down

Generation of the repeated notes starts immediately upon receiving a note according to the settings of the parameters.

1: 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]** (button) [0, 1]

0: Off   1: On

Causes one of two different types of behavior, depending on the setting of the Key Mode parameter above:

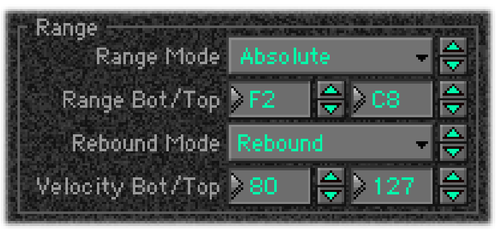
When Key Mode is "Down":

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 setting of "Off." This may or may not be desirable; sometimes you may want it, other times you may not. When Chord Quantize is set to "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.

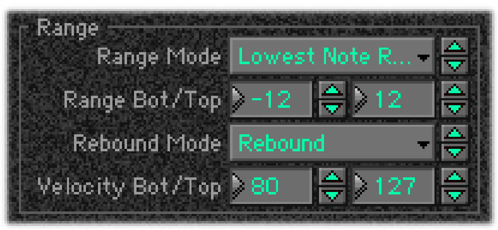
When Key Mode is "Up":

The repeats will be normally triggered when the key(s) are released, so they will be quantized together at that point to occur simultaneously anyway, with no "slop." However, 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 setting of "Off." When Chord Quantize is set to "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 Repeat Rhythm popup menu, whichever is longer.

Melodic Repeat - Range Parameters



RANGE MODE = ABSOLUTE



RANGE MODE = ONE OF RELATIVE OPTIONS

These parameters affect the pitch range of the repeating notes as they transpose, and what happens when they go outside of the range. The range can be expressed differently, depending on the Range Mod. As shown above, when the Range Mode is Absolute, you specify a highest and lowest note. When the Range Mode is one of the relative options, you specify a sliding range that follows your hands around the keyboard. This section also controls a range for triggering by velocity.

◆ **[Range Mode]** (popup) [0...3]

Selects one of several options for how the Range Bottom and Range 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 Mode setting (described later on).

0: Absolute

The Range Bottom and Range Top parameters are Note Number values that specify the absolute bottom and top of the pitch range for repeated notes.

1: Lowest Note Relative

The Range Bottom and Range Top parameters define a "sliding range" with regards to the lowest note played. The range fields change to numbers indicating 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 parameter relates to the lowest note played, and the Range Top 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 Range Bottom and Range 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/Top]** (numericals) [C-1...G7 or -64...+63]
- **[Range Bottom/Top (abs)]** (RT Parm) [C-1...G7]
- **[Range Bottom/Top (rel)]** (RT Parm) [-64...+63]

Specifies a pitch range within which to keep repeated notes that are being transposed. The values selected here have different meanings depending on the Range Mode described above. When the pitches of repeated notes exceed this range, the setting of the Rebound Mode comes into effect.

When Range Mode is "Absolute":
The Bottom and Top values are Note Numbers in the range [0...127, C-1...G7], and specify the absolute bottom and top of the pitch range for repeated notes.

When Range Mode is one of the "Relative" settings:
The Bottom and Top values are semitone offsets in the range [-64...+63], and specify a "sliding range" with regards to the notes played.

When using RT Parms to control the Range Bottom/Top, you must choose between using the Range Bottom/Top (abs) parameters (for Range Mode = 0: Absolute), or the Range Bottom/Top (rel) parameters (for Range Mode = 1...3: Relative settings).

- **[Rebound Mode]** (popup menu) [0...2]

When using Transpose 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 smaller "sliding" 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 above. When the pitches of 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 a "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.

- **[Velocity Bottom/Top]** (numericals) [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 is "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.

Melodic Repeat - RT Parm Virtual Parameters

The following parameters are not true parameters, but "virtual" parameters for RT Parm control. In other words, they do not physically exist on the Melodic Repeat Page, but perform a modifying function on one or more of the other parameters. They can be found in the Repeat Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual).

◆ [~Straight Rhythm Values] (virtual) [0…11]

Selects a value for the Repeat Rhythm field from a subset of the entire range. The subset consists of the straight values (no triplets or dotted values) along with None and Rhythm Pattern. This is used to provide real-time control of the Repeat Rhythm parameter while excluding certain of the in-between values.

0: None (Instant)
1: 64th
2: 32nd
3: 16th
4: 8th
5: Quarter
6: Half
7: Whole
8: 2 Wholes
9: 3 Wholes
10: 4 Wholes
11: Rhythm Pattern

◆ [~Dotted Rhythm Values] (virtual) [0…8]

Selects a value for the Repeat Rhythm field from a subset of the entire range. The subset consists of the dotted values along with None and Rhythm Pattern. This is used to provide real-time control of the Repeat Rhythm parameter while excluding certain of the in-between values.

0: None (Instant)
1: 64th Dotted
2: 32nd Dotted
3: 16th Dotted
4: 8th Dotted
5: Quarter Dotted
6: Half Dotted
7: Whole Dotted
8: Rhythm Pattern

◆ [~Triplet Rhythm Values] (virtual) [0…8]

Selects a value for the Repeat Rhythm field from a subset of the entire range. The subset consists of the triplet values along with None and Rhythm Pattern. This is used to provide real-time control of the Repeat Rhythm parameter while excluding certain of the in-between values.

0: None (Instant)
1: 64th Triplet
2: 32nd Triplet
3: 16th Triplet
4: 8th Triplet
5: Quarter Triplet
6: Half Triplet
7: Whole Triplet
8: Rhythm Pattern

◆ [~Selected Rhythm Values] (virtual) [0…13]

Same as "Straight Rhythm Values," except adds the two most musically useful dotted values also.

0: None (Instant)
1: 64th
2: 32nd
3: 16th
4: 8th
5: 8th Dotted (additional dotted value)
6: Quarter
7: Quarter Dotted (additional dotted value)
8: Half
9: Whole
10: 2 Wholes
11: 3 Wholes
12: 4 Wholes
13: Rhythm Pattern

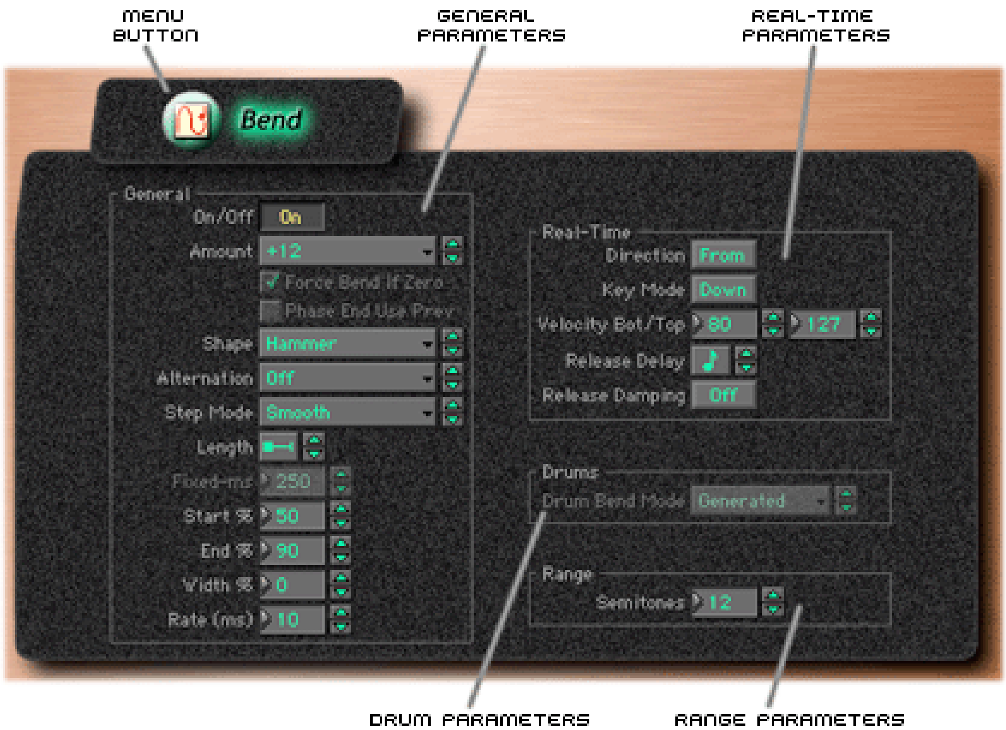
[~Selected Rhythm Values 2] (virtual) [0...18]

Specially created for Drum GEs, providing the same subset as Selected Rhythm Values (above), with the addition of the most useful short note values (which can be “tuned” using the Time Offset (ms) Parameter).

0: None (Instant)
1: 64th Triplet
2: 64th
3: 64th Dotted
4: 32nd Triplet
5: 32nd
6: 16th Triplet
7: 16th
8: 8th Triplet
9: 8th
10: 8th Dotted
11: Quarter
12: Quarter Dotted
13: Half
14: Whole
15: 2 Wholes
16: 3 Wholes
17: 4 Wholes
18: Rhythm Pattern

Bend

Sections in this chapter:



Bend - Overview

The Bend Page allows various shapes of automatic pitch bending to be applied to individual notes as they are generated ("Auto Bend"). It also allows a special "arpeggiated bending" option to be applied to Drum Patterns. As shown above, the parameters have been divided into several distinct groups:

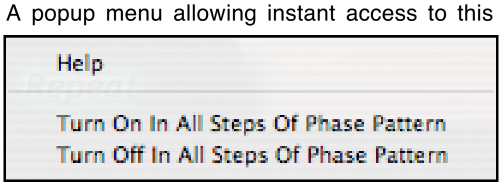
General Parameters
Parameters that affect automatic pitch bending in general, regardless of which GE Type is selected.

Real-Time Parameters
Additional parameters that only have an effect when the GE Type is "Real-Time."

Drum Parameters
Additional parameters that only have an effect when the GE Type is "Generated-Drum."

Range Parameters
An overall Bend Range setting that affects all pitch bending for the GE, including Pitch Bend Envelopes and CC-A/CC-B (if generating bend).

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Turn On In All Steps Of Phase Pattern
Turn Off In All Steps Of Phase Pattern
Allows all of the buttons in the [pb] (pitch bend) row of the Phase Activity Grid to be turned on/off at once, saving you a trip to the Phase Page.

No bending will actually occur unless the [pb] (pitch bend) row of the Phase Activity Grid in the Phase Page has some buttons turned on. This allows you to set up an effect where bending only occurs in one or more steps of the Phase Pattern, while other steps have no bending. See **Phase Page: Phase Activity Grid (General)**.

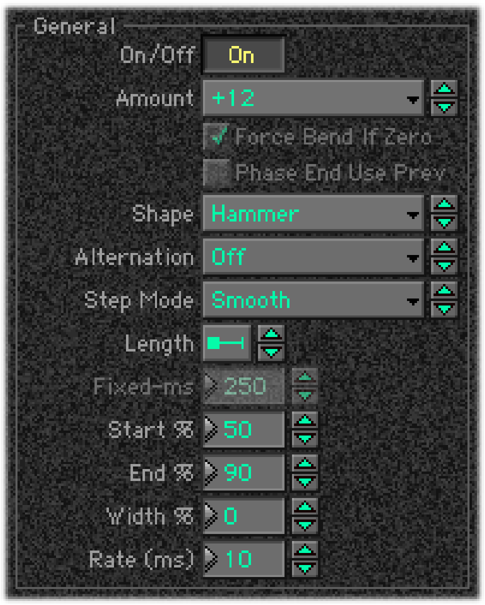
Bending is also affected by the Rhythm Pattern's "no bend" row. Bending will normally be triggered with every single generated note or cluster within a Phase Pattern step where bending is activated. By using the "no bend" row, you can specify that bends will not occur on various notes (single steps) of the Rhythm Pattern. See **Rhythm Page: Pattern Grid & Associated Parameters**.

Note that even if bending is properly activated, you may not be hearing any bending effects if the Performance's MIDI Filter Page has been set to filter out the pitch bend data that KARMA is generating. See **MIDI Filter Page: Generated Data Parameters**.

When none of the [po] (pitch bend) buttons are turned on in the Phase Activity Grid (General), most of the Bend Page Parameters will be grayed out and unavailable, and the message "Not In Use In Phase Page" will appear in the upper right corner.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Bend - General Parameters



[On/Off] (button) [0, 1]

Allows the bending effects configured on this Page 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.

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" button turned on.

The utilities in the Menu Button for the Bend Page provide a quick and easy way turn on or off all [pb] (pitch bend)) buttons in the Phase Page without going there.

[Amount] (popup menu) [-12...+18]

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 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 (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 the next within a phrase.

14: Next Note + 1
Bends each note to what will be the note two 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 three 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 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.

Settings 13, 14, 15, 17 and 18 are not available when GE Type = "Real-Time."

◆ **[Force Bend If Zero]** (checkbox) [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 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 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.

◆ **[Phase Ends Use Prev]** (checkbox) [0, 1]

0: Off 1: On
When using Next Note bending, depending on the position of the index into the Note series at the end of a phase, a large jump to the beginning pitch of the next phase can occur. For example, if using only one Phase, and the start index is low, while the last index at the end of the Phase is high, a next note bend may produce an undesirably large bend (compared to other bends that were occurring in the phase.) Turning this "On" makes the last note bend to the previous note instead of the next note (first note of the next phase), thereby producing generally a smaller bend that may sound more musical.

This only has an effect at the end of phases where the next phase is set to the same direction (Phase Direction). In other words, a good example would be a phase pattern of {1 1 1 2}, where the Phase Direction is set to Forward for Phase 1 and Backwards for Phase 2. This parameter would effect the ends of Phase Pattern Steps 1 and 2, but not 3 and 4.

Not available unless Amount is set to one of the Next Note settings.

◆ **[Shape]** (popup menu) [0...2]

Selects one of three different overall shapes for the resulting bend. "Bend" is a single bend to a destination pitch, while the "Hammer" settings bend to the pitch and back. See the diagrams in the Appendix **Using Auto-Bend: The Different Bend Shapes**.

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. 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, 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]** (popup menu) [0...1]

0: Off   1: Alternating
When set to "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/Prev Note Bending is selected, it will alternate between Next and Prev. For example, if "Next" is selected in the size Menu, then the bends will be {Next, Prev, Next, Prev...} etc.

◆ **[Step Mode]** (popup menu) [0: Smooth, 1...12 semitones]

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: 1 ST - Chromatic
2: 2 ST - Whole Tone
3: 3 ST - Diminished
4: 4 ST - Augmented
5: 5 ST - Fourth
6: 6 ST - Tritone
7: 7 ST - Fifth
8: 8 ST - Aug. Fifth
9: 9 ST - Sixth
10: 10 ST - Dom. 7th
11: 11 ST - Maj. 7th
12: 12 ST - Octave
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 ST," then the resulting bend will be quantized to 6 steps of 2 semitones each (a Whole Tone scale).

When one of the Semitone settings is selected, the Rate parameter is not available.

◆ **[Length]** (popup menu) [0...25]

Specifies an overall length for a "bend window" within which the bend will take place. The actual timing of the bend within that window is based on the Start and End parameters.

0...23: Rhythmic Values
Sets the overall length of each bend window to the selected rhythm value; each bend will be therefore be the same length. Note that this is tempo dependent, so changing tempos 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 - (milliseconds)
Makes available the Fixed-ms field beneath the popup menu. 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.

"Note Duration" not available if GE Type = "Real-Time," since the duration of the note is determined by actually playing the keyboard, so it cannot be known in advance. If selected, this setting will act the same as 7: 16th note.

◆ **[Fixed-ms]** (numerical) [0...5000 ms]

Specifies a fixed length of absolute time 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.

Not available unless "Fixed ms" is selected in the Length popup menu.

◆ **[Start %]** (numerical) [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 %]** (numerical) [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 %]** (numerical) [0...100%]

Specifies the width of the “hammer” when the Hammer shapes are 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 description in the Appendix **Using Auto-Bend: Length of Bends**.

Not available when Shape = “Bend.”

◆ **[Rate]** (numerical) [1...100 ms]

Specifies how often a bend value will be sent out (in milliseconds). This controls the density of the MIDI data. For long bends, a higher rate may be acceptable, while for short bends a lower rate will be necessary. Usually, a setting of 8~10 ms is adequate.

Not available when Step Mode = “Smooth.”

Bend - Real-Time Parameters

If the GE Type is “Real-Time,” the following parameters will also be available.

◆ **[Direction]** (button) [0, 1]

Selects whether the pitch is bent from the note to the destination (“To”) or from the destination to the note (“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. pitch wheel center). For example, if Amount = -12 and Shape = Bend, it would be the same as starting a note with the pitch wheel all the way in the down position, and then moving it to the center.

1: To
The bend starts at the current pitch (i.e. pitch wheel center), and ends at a pitch offset equal to the Amount setting. For example, if Amount = -12 and Shape = Bend, it would be the same as starting a note with the pitch wheel in the center position, and then moving it all the way down.

For more information on practical uses for this, see the Appendix **Using Auto-Bend: Next Note/Previous Note Bends**.

◆ **[Key Mode]** (button) [0, 1]

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 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 Release Delay parameter below to something other than “Off.”

[Velocity Range Bottom/Top] (numericals) [0...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.

[Release Delay (Length)] (popup menu) [0...24]

0...23: Rhythmic Durations 24: Off

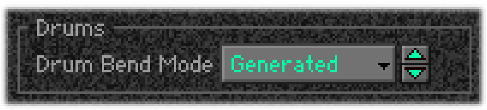
Allows the release (note-offs) of notes to be delayed by certain amounts (various rhythmic durations at the current tempo). This is mainly to allow bends to be produced when you release the keys (with Key Mode set to Up). When Off, no delay is added.

[Release Damping] (button) [0, 1]

0: Off 1: On

When On, starting new notes while others are still sustaining (because of a delayed note-off from the Release Delay parameter above) will shut the sustaining notes off. This is useful for creating monophonic style bending effects using Key Mode and Release Delay. When Off, the notes are allowed to overlap.

Bend - Drum Parameters



[Drum Bend Mode] (popup) [0...1]

Selects one of two different bending techniques for Drum GEs: “Generated” according to the parameters on this Page, or “Arpeggiated” using the current Note Series settings.

0: Generated - generate shape for each note

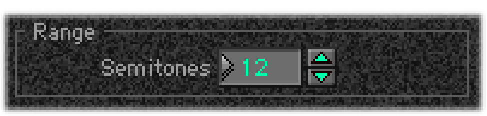
Causes bending to be generated for each drum note the same as with any other GE Type. All of the parameters described above operate as described.

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 “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 “Generated - Riff.” This results in “Wave-Sequencing” effects and other unique sounds.

Not available when GE Type is not “Generated - Drum.”

Bend - Range Parameters



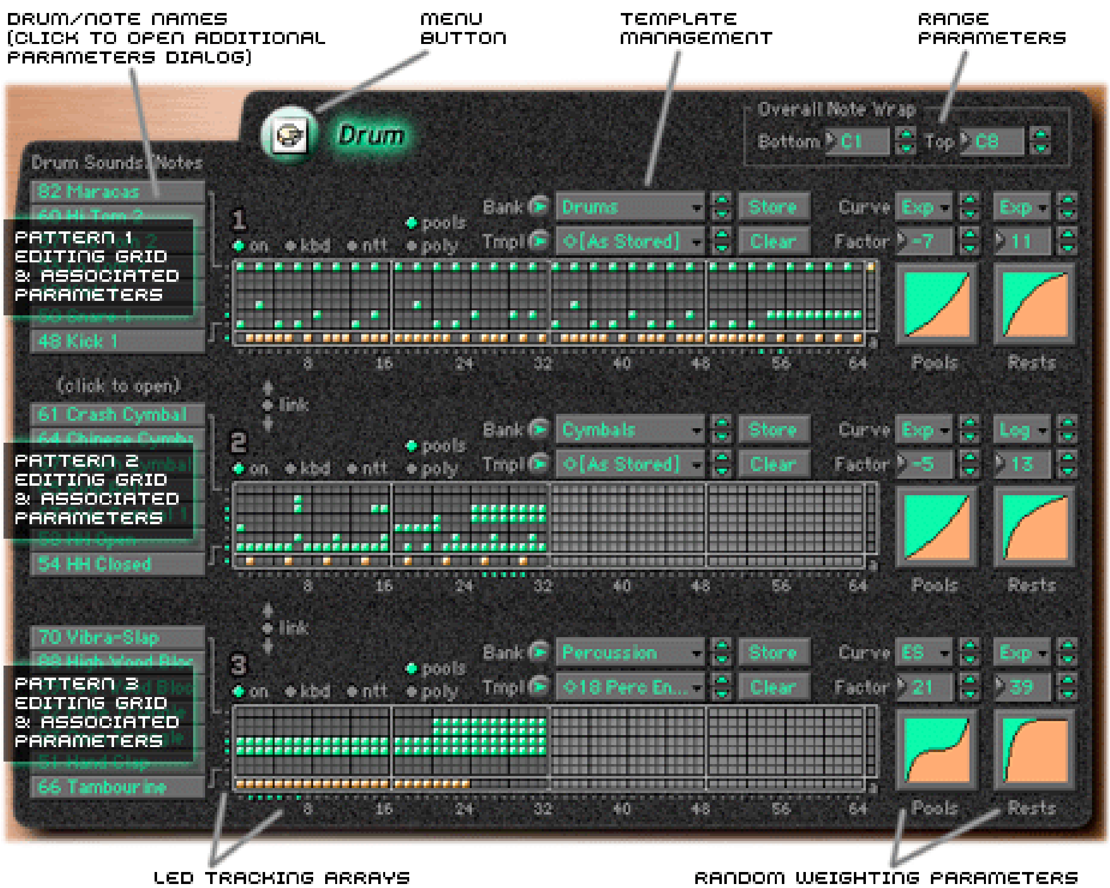
[Range - Semitones] (numerical) [0...24 semitones]

Sets the overall bending range of the whole GE, by setting the pitch bend range of the external MIDI device. This affects pitch bend envelopes and CC-A/CC-B if generating pitch bend, also. Note that this must be set to 12 for the semitone-related bend parameters described above to actually be semitones. Also note that some devices do not allow bend ranges beyond 12 semitones.

Drum (Part 1)

Sections in this chapter:

Sections in **Part 2**:



Drum - Overview

The Drum Page 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 Page Activity Grid (Drums). 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 that is randomized with a Cluster Pattern every fourth time through (bars 13 - 16). See **Phase Page: Phase Activity Grid (Drums)**.

As shown above, the parameters are divided into several distinct areas:

Pattern 1, 2, 3 Editing Grid & Associated Parameters
Allows Drum and Melodic Patterns to be constructed in various ways, which then control which notes will be generated. As shown above, there are three identical areas, one for each Drum Pattern.

Random Weighting Parameters
Parameters that allow weighting curves to be applied to any random pools (more than one value in a column) which may have been created in the Pattern Grids. There is a separate section for allowing weighting curves to be applied to random rests within the pattern.

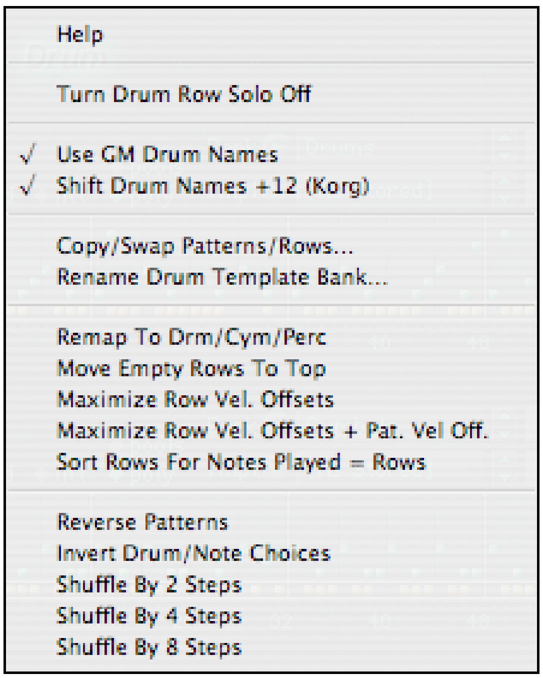
LED Tracking Arrays
Rows of gray dots along the horizontal and vertical axes of the pattern grid(s), with one or more green dots displaying the currently chosen indexes (columns) and notes (rows).

Drum/Note Names (Opens Additional Parameters Dialog)
Clicking on any popup menu in this area opens the Additional Parameters Dialog, where seven Drum Sounds or Note Numbers are selected for each Pattern Grid. Other additional parameters associated with each Pattern are also located in this dialog.

Range Parameters
Sets an overall range within which the pitches generated by the Patterns Grids will be limited (wrapped around).

Template Management
Allows the contents of the Pattern Grid and certain associated parameters to be saved as a "Template." It will then appear in the popup menu for future use when creating/editing Drum Patterns. Selecting a Template from the menu loads it into the Pattern Grid and associated parameters.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Turn Drum Row Solo Off
When the **Drum Pattern Row Solo** feature is in use in any of the Additional Parameter Dialogs for the three Drum Patterns, this menu item allows you to clear all solo buttons and return to normal operation.

Use GM Drum Names
Selects whether or not the note names will have GM Drum Names added to them, i.e. "36 C_2" or "36 C_2 - Kick 1."

This is the same setting as controlled by "Use GM Drum Names" in the **Preferences Popups Tab**, and changing it in either place stores it into the preferences.

Shift Drum Names +12 (Korg)
For Korg keyboards, typically the internal Drum Kits are mapped an octave higher than the GM Drum Map. In other words, in the GM Drum Map, Kick1 is C2 and Snare1 is D2. In Korg Drum Kits, they are C3 and D3. Checking this option shifts the GM Drum names so they display an octave higher, matching most of the Korg Drum Kits more closely. This does not change the note number designations; C3 is still C3. It just changes which drum name is displayed for C3.

This is the same setting as controlled by "Display Names +12" in the **Preferences Popups Tab**, and changing it in either place stores it into the preferences.

Copy/Swap Patterns/Rows...

Rename Drum Template Bank...

The following operations (to the end of the menu) all perform modifications to the Drum Patterns. These operations cannot be undone except by reloading the GE. Some of these functions are mainly developer tools of limited use to the average user.

Remap To Drm/Cym/Perc
Redistributes the rows across all 3 Drum Patterns according to the general KARMA concept of:
Pattern 1: kick, snare, toms
Pattern 2: cymbals (hi-hats, rides, crashes)
Pattern 3: percussion

Move Empty Rows To Top
Allows you to “clean up” the Drum Patterns by moving empty rows to the top of each pattern and moving rows with active cells to the bottom of each pattern.

Maximize Row Vel. Offsets
Within each Drum Pattern, finds the loudest row based on the row’s Velocity Offset, and increases the Velocity Offsets of all rows (if negative) so that at least one is at zero, and then applies the difference to the Pattern Velocity Offset. The end result is that the level of the notes in the pattern play the same, but the individual row Velocity Offsets are maximized.

Maximize Row Vel. Offset + Pat. Vel Off.
The same as above, with the additional refinement that all three Drum Patterns are analyzed at the end and have their Pattern Velocity Offsets raised so that at least one pattern is at zero (i.e. as loud as the patterns can go and still maintain the same velocity relationships.

Sort Rows For Notes Played = Rows
Similar to the “Move Empty Rows To Top” operation above, this moves empty rows to the top as well, but optimizes the order of the remaining rows so that they work well with the **Notes Played = Rows** parameter/feature.

The following operations all have the additional feature of only working on the Drum Patterns that are turned on; so you can apply them to individual Patterns without affecting the others - just turn off the ones you don’t want to affect.

Reverse Patterns
Reverses the cells in the Drum Patterns that are turned on, so that they essentially “play backwards.”

Invert Drum/Note Choices
Mainly for use with Melodic Drum GEs, this command inverts the assignments of the 7 rows in each Drum Pattern that is turned on, such that a melodic pattern plays in an inverted fashion compared to the original.

Shuffle By 2 Steps
Shuffle By 4 Steps
Shuffle By 8 Steps
These three commands all “mix up” (shuffle) the order of the columns in the Drum Patterns that are turned on - the position of the specified number of steps (columns) is swapped with every other number of steps. In other words, for “Shuffle By 2 Steps,” columns 1 and 2 are swapped with 3 and 4, columns 5 and 6 are swapped with 7 and 8, etc.

If the GE Type is not “Generated - Drum,” all of the parameters will be disabled and the message “GE Type not Drum” will be displayed near the top.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Drum - 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 Page. Although you can create Drum Patterns with any mixture of notes you desire, a basic concept used throughout the available Performances 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 Drum Sounds (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 of other than straight values, for more variations.

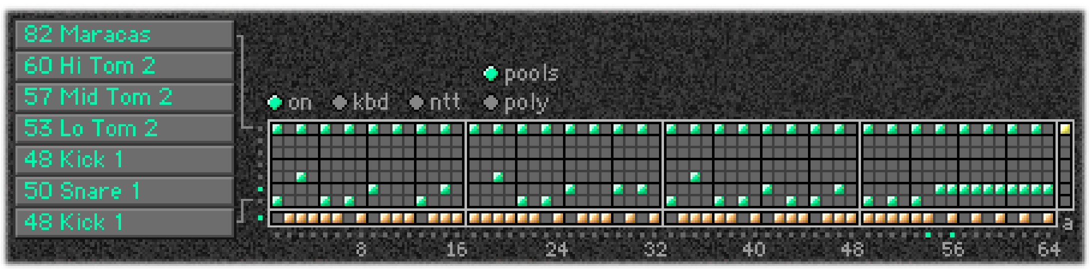
A Drum Pattern will loop as long as note generation continues. The three Patterns are independently loopable, so they can be of different lengths; a four bar Kick/Snare Pattern can be used with a two bar Hi-hat Pattern and a three bar Percussion Pattern, etc. They normally will not reset to the beginning of the Pattern unless a new Trigger is received, or unless the Phase Page 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 was "Generated - Riff" is still being generated internally. Therefore, if Note 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 improvisational effects. These randomizations can be controlled by settings in the Phase Page Activity Grid (Drums). 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 that is randomized with a Velocity Pattern every fourth time through (bars 13 - 16).

In addition, the same riff or arpeggio can be applied to the resulting drum rhythms as Pitch Bend values, on the Bend Page. This results in "Wave-Sequencing" effects and other unique sounds. Note that this requires the synth channel you are sending the Drum Patterns to have pitch bend active. For each of the steps that are being used as specified in the Phase Page's Phase Pattern, a button is available which activates the Pitch Bend 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.

For information on how to control various actions of the Drum Pattern with the Phase Pattern, see **Phase Page: Phase Activity Grid (Drums)**.

Drum Pattern Editing Grid & Associated Parameters



◆ **[Pattern Grid]** [8 rows x 64 steps, step 65 = Always Column]

A Drum Pattern is a grid of 8 rows by 64 columns. The bottom row of the grid is the "Rest" row, and has orange buttons. The other seven rows correspond to the seven Drum Sound/Note Number popup menus to the left of the grid, and have green buttons. You select seven different Drum Sounds or Notes with which to construct your pattern using these menus; when a green button in a row is turned on, the corresponding Drum Sound/Note will be played when that step is reached.

A Drum Pattern 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. Unused columns will appear disabled; clicking on a disabled column inserts a value into it and any other disabled columns between it and the last column in use. Enabled columns may not be "empty"; they must contain at least one Drum Sound/Note, or a rest. Note that a Pattern with a single value in a single column is functionally equivalent to many columns each containing the same value. For general information on working with the various Pattern Editing Grids, see **Using The Pattern Grids**.

More than one value can be entered in any given column (using the [shift] key). The pattern can then operate in either "poly" mode (generating more than one drum note at a time) or in "pool" mode, where each column is treated as a "Random Pool" from which choices will be made at random, subject to the use of the weighting curves as described later on. When at least one random pool is selected, a weighting curve becomes available to the right of the grid that allows choices to be shifted towards different areas of the pool, making different drum notes more or less likely to be generated. Rests that may be a part of a pool have their own weighting curve to influence the density or complexity of the resulting rhythms, rather than the note choices themselves.

The example above shows a kick, snare, toms and maracas pattern, where the bottom two rows of green buttons in the top part of the grid have their corresponding Drum Sound menus set to kick and snare.

The bottom row of orange buttons (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 two bar phrase of 4/4 time, with every eight columns representing one quarter note (eight 32nd notes).

Also shown above is a 65th column, known as the "Always Column" and indicated by the abbreviation "a" underneath it. When a yellow button is turned in any of the rows of 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).

For example, in the third column there are three buttons turned on: a kick, a maracas, and a rest. Because of the settings of the Always Column, the maracas will always be played no matter what. Then there will be a random choice made at that point of a kick or a rest. At the end of the pattern you can see a string of snare notes with rests added at every other column. This creates a fill which has many different potential ways of ending up, since either none, or one, or many of the rests could end up being used instead of the straight snare notes. Step 30 shows a "pool" of choices, including the snare and 4 different toms. At this step, there will be a random chance any one of those, with the maracas always being played due to the Always Column.

Whether or not the random choices will be different each time through the Phase is controlled in the Phase Page with the [nr] (new random sequence) buttons. 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 Page is whether or not the Drum Pattern will start from the beginning each time a Phase starts. Using the above example where the grid represents a two bar phrase of 4/4 time, if Phase 1 was set to play one bar of 4/4 time, you could set up a Phase Pattern of four steps playing Phase 1 each time. However, if you re-started the Drum Pattern in each of the first three steps but not the 4th step, then Drum Pattern steps 1 - 32 would be played through three times, followed by columns 33 - 64 once, yielding a four bar Drum Pattern with a fill at the end. For information on both restarting the pattern and repeating random sequences, see **Phase Page: Phase Activity Grid (Drums)**.

[Drum Sound/Note] (name/note display)

Clicking on any of the names causes the Additional Parameters Dialog to open, where you select one of many Drum Sounds (or Note Numbers) to be assigned to the corresponding row of the Pattern Editing Grid, in addition to other parameters. See **Additional Parameters Dialog**.

Note that whether the popups display Drum Sound Names, Note Numbers, or a combination of the two is controlled by settings in the **Preferences: Popups Tab**.

[Link] (button) [0, 1]

0: Off 1: On

The three Drum Patterns can be linked together to form longer Drum Patterns; in this case, they do not play simultaneously, but "back-to-back." When "On," the upper Link Button links Patterns 1 & 2 (creating a 128 step Drum pattern). The lower Link Button links Patterns 2 & 3 in the same way. When both Link Buttons are "On," all three Patterns are linked for a total of 192 steps. 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.

When using the Drum Pattern Link feature to link two patterns, and the Rhythm Pattern is being randomized, the Drum Patterns will switch when reaching the physical end of the pattern (whenever that may be as determined by the Rhythm Pattern). Unlike the effect of randomizing the Drum Patterns with Index Patterns, it is not possible to switch between the patterns after filling a particular amount of time. (When using Index Patterns to jump around, the underlying Rhythm Pattern is still what determines when the switch between the linked patterns will take place, so the switch still takes place as if the pattern was not being jumped around by the Index Pattern.) You can, however, still use the "Resync Index" [ri] buttons in the Phase Pattern to cause the Drum Patterns to resynchronize within whichever of the linked patterns is currently being played.

[On (Play On/Off)] (button) [0, 1]

0: Off 1: On

When "On," the Drum Pattern is played during note generation. When "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 editing or playback. This parameter can also be controlled as an RT Parm, or a "virtual" RT Parm. See **Drum Page: RT Parm Virtual Parameters**.

[Kbd - Keyboard Track] (button) [0, 1]

Allows the Drum Pattern to track the input notes if desired, thereby changing keys depending on the chord. "Off" is normal for Drum Patterns while "On" is normal for Melodic Patterns.

0: Off   1: On
When set to “Off,” the Drum or Melodic Pattern is “fixed” - it doesn’t matter which 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. When “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 four 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 that the “Root Position” parameter in the Performance Editor: Control Page 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 - Note Table Tranposition]** (button) [0, 1]

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   1: On
When “Off,” different chords played on the keyboard (or other input device) have no effect on the pitches of the notes related to each other (although the overall key may change when using “Keyboard Track” above). When “On,” 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 “Kbd - 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 that the “Root Position” parameter in the Performance Editor: Control Page 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.

◆ **[Pools/Poly]** (radio buttons) [0, 1]

Selects one of two modes of operation for the entire grid relating to columns that contain more than one Drum Sound and/or a rest.

0: Poly
If there is more than one Drum Sound turned on in a column (and no rest), 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 three 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 turned on, 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 three Drum Sounds a choice between the sound and the rest would be made (subject to the Random Rest Weighting Curve described later on). This would result in one of eight 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)

The “Always Column” described below can modify this behavior.

1: Pools
If there is more than one Drum Sound turned on in a column, those sounds form a “pool” of choices from which only one will be chosen at random. If a rest is also turned on, 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 three Drum Sounds (subject to the Random Pool Weighting Curve described later on), 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 later on). This would result in one 4 possible choices:

kick
snare
hi-hat
rest

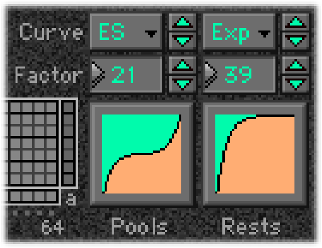
The “Always Column” described below can modify this behavior.

[a - Always Column] (65th column of Grid) [0, 1]

0: Off   1: On

When a yellow button is turned in any of the rows of this column, it causes any values in that row of the Drum Pattern to always be generated, regardless of any randomization that may be set up. This means it ignores the Poly/Pools setting (discussed above). This can be used to cause one note or sound to always play, while there is randomization going on around it.

Drum - Random Weighting Parameters (Pools)



The Random Weighting Parameters (Pools) are made available when at least one step in the Drum Pattern Grid contains multiple buttons turned on in the upper seven rows (not counting the “rest” row), and Pools/Poly Mode is set to “Pools.” This step then constitutes a “random pool” of Drum Sounds/Notes. 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. For example, you can influence whether a tom will be played at a certain step more often than a snare.

Whether or not a certain random sequence will repeat for a number of times is controlled in the Phase Page. See **Phase Page: Phase Activity Grid (Drums)**.

[Weighting Curve] (popup menu) [0...3]

Selects one of four different curves that act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve Menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor values towards the top of the columns in the grid. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exp - Exponential

With a positive Factor (+), choices will be exponentially weighted towards the Drum Sounds/Notes higher in the grid column. With a negative Factor (-), choices will be exponentially weighted towards the Drum Sounds/Notes lower in the grid column.

1: Log - Logarithmic

With a positive Factor (+), choices will be logarithmically weighted towards the Drum Sounds/Notes higher in the grid column. With a negative Factor (-), choices will be logarithmically weighted towards the Drum Sounds/Notes lower in the grid column.

2: ES - Exp-S (Exponential S)

With a positive Factor (+), choices will be exponentially weighted towards Drum Sounds/Notes near the center of each pool, and away from the lower and higher choices. With a negative Factor (-), choices will be exponentially weighted towards the Drum Sounds/Notes lower and higher in the grid column, and away from the center choices.

3: LS - Log-S (Logarithmic S)

With a positive Factor (+), choices will be logarithmically weighted towards Drum Sounds/Notes near the center of each pool, and away from the lower and higher choices. With a negative Factor (-), choices will be logarithmically weighted towards the Drum Sounds/Notes lower and higher in the grid column, and away from the center choices.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

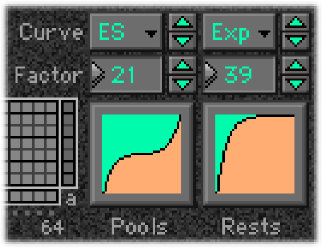
The following table summarizes the effect of the various Weighting Curves and the Factor field on Drum Sound choices:

Drum Pool values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	higher in grid	lower in grid
Exp-S/Log-S	middle	higher/lower

◆ **[Factor]** (numerical) [-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 also 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.)

Drum - 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 “Pool” or “Poly” buttons selected, since you can have random rests in both modes; they just operate differently (see description above under “Pools/Poly”).

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 table.

Whether or not a certain random sequence will repeat for a number of Phases is controlled in the Phase Page. See **Phase Page: Phase Activity Grid (Drums)**.

◆ **[Weighting Curve]** (popup menu) [0…1]

Selects one of two different curves that affect the likelihood of a rest occurring when a random choice is made. Next to the Weighting Curve Menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field; this graphic is oriented to relate to the grid. For example, a curve arced towards the top will favor the rhythmic choices more often than the ties. For a more complete discussion of the various shapes and how the Factor influences the choices, see the Appendix **Random Weighting Curves**.

0: Exp - Exponential
With a positive Factor (+), choices will be exponentially weighted towards the Drum Sounds/Note more often. With a negative Factor (-), choices will be exponentially weighted towards the rests more often.

1: Log - 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.

While exponential and logarithmic curves may seem to have a similar shape, they have slight differences that can affect the outcome of the random choices. For a comparison, see the Appendix **Random Weighting Curves**.

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.

The following table summarizes the effect of the various Weighting Curves and the Factor field on random rests:

Values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	less rests	more rests

◆ **[Factor]** (numerical) [-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 also rotate the curve. When the value is +99, the choices are “locked” to no rests whatsoever; when the value is -99, the choices are “locked” to rests always.

Drum - Range Parameters

◆ **[Note Wrap Bottom/Top]** (numericals) [0...127: C-1...G9]

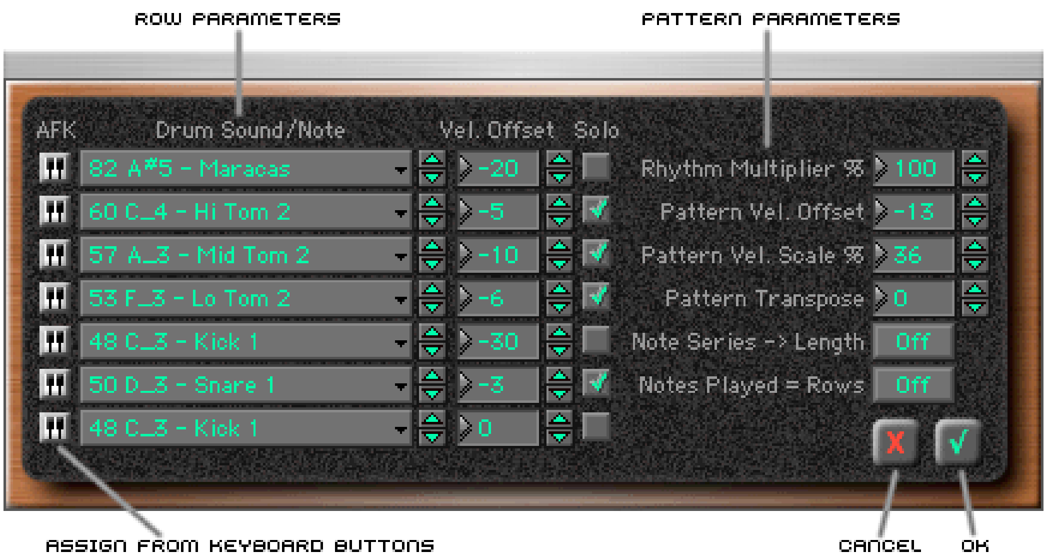
Sets an overall range that notes from all three Drum Patterns will be limited to. Notes going beyond the range will be transposed up or down by however many octaves necessary to keep them within the specified range. This is mainly intended for use with Melodic Patterns that are being transposed by using the Keyboard Track feature.

Drum (Part 2)

Sections in this chapter:

Sections in **Part 1**:

Drum - Additional Parameters Dialog



The Drum Page Additional Parameters Dialog contains the Drum Sound/Note selections for the associated Drum Pattern, and some other related parameters. It is opened by clicking on any of the Drum Sound/Note popups (display only) in the main Drum Page window.

Row Parameters
Parameters for each of the upper seven rows of the applicable Drum Pattern. Orientation matches the Pattern Grid.

Pattern Parameters
Parameters that affect the entire applicable Drum Pattern.

Assign From Keyboard Buttons (AFK)
Allow the Drum Sound/Note for a particular row to be assigned from the keyboard. Click on a button, and the next note you play will be assigned to that row. Click on all seven, and you can assign the next seven played notes sequentially from the bottom row to the top row.

Cancel
Closes the dialog without accepting any of the changes you have made. Values are restored to the settings they had prior to opening the dialog.

OK
Closes the dialog and accepts the modified settings.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

◆ **[Drum Sound/Note]** (popup menu) [0...127: C-1...G9]

Selects a Drum Sound/MIDI Note Number for each of the top seven rows of the selected Drum Pattern. Audible feedback is provided while selecting. The small keyboard button next to each row allows the note to be assigned from the keyboard itself. Click on the button, and the next note you play will be assigned to that row. Click on all seven, and you can assign the next seven played notes sequentially from the bottom row to the top row. Note that whether the popups display Drum Sound Names, Note Numbers, or a combination of the two is controlled by settings in the **Preferences: Popups Tab**

◆ **[Row Velocity Offset]** (numerical) [-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 at based on the Velocity Page settings.

You can also use this to get different velocity levels of the **same note** by assigning the same note to more than one row of the pattern, and then setting different Row Velocity Offsets.

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 Page 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. Of course, maybe that's what you wanted!

◆ **[Solo]** (checkbox) [Off, On]

Allows one or more rows in the Drum Pattern to be soloed during playback. This does not solo the Module itself, but only the rows inside the pattern. Rows can be soloed in more than one Drum Pattern by opening the Additional Parameters Dialog for the other patterns. You can un-solo all selected rows at once using the "Turn Drum Row Solo Off" command from the Drum Page's Menu Button.

◆ **[Rhythm Multiplier]** (numerical) [1...800%]

Multiplies the current Rhythm Pattern by the specified setting. Note that this is entirely independent of the same parameter in the Rhythm Page. This means that each Drum Pattern can have a different Rhythm Multiplier. 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. This parameter can also be controlled by several "virtual" RT Parms. See Drum Page: RT Parm Virtual Parameters.

◆ **[Pattern Velocity Offset]** (numerical) [-127...127]

Subtracts or adds a constant amount to the velocities for each Pattern. This applies to the entire Pattern (all rows), unlike the Row Velocity Offset. Allows a Pattern's relative volume to be raised or lowered with regard to the other two Patterns. Note that this is subtractive/additive: "0" leaves velocities at the Initial Velocity they would normally be generated based on the Velocity Page 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 Page 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. Of course, maybe that's what you wanted!

◆ **[Pattern Velocity Scale %]** (numerical) [-999...+999%]

Specifies a percentage by which the Velocity Pattern in the Velocity Page is scaled before being used to generate notes from the Drum Pattern, if this feature has been assigned in the Phase Page ([ve] (use velocity pattern) row). 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 Page itself is disabled for Drum GEs, since each Pattern here has its own Velocity Scale.

⚠ Has no effect unless at least one step of the Phase Pattern has the [ve] (use velocity pattern) row turned on for the selected Drum Pattern. See **Phase Page: Phase Activity Grid (Drums)**.

◆ **[Pattern Transpose]** (numerical) [-36...+36]

Allows each Pattern to be individually transposed in semitones with regards to the other two Patterns. This is additive to the transpose in the Performance GE Setup Page. This parameter can also be controlled by several "virtual" RT Parms. See Drum Page: RT Parm Virtual Parameters.

◆ **[Note Series -> Length]** (button) [0, 1]

0: Off 1: On

When On, the Pattern uses the GE's actual Note Series Length as the length of the Drum Pattern. For example, if the Note Series Page was set to Replications 4.0 with Symmetry Off, and four notes were played, a 16 note Note Series would normally be created. Assuming the [pr] (pattern restart) rows of the Phase Page Activity Grid (Drums) are on, the Drum Pattern would restart after 16 steps of it have been played. Playing one note would change the Note Series Length to four, and the Drum Pattern would restart after four steps. This can be used to change the apparent length or time signature of the Drum Pattern or Melodic Phrase in real-time. When this is Off, the Drum Pattern loops through its full length, subject to the [pr] (pattern restart) rows of the Phase Page Activity Grid (Drums).

◆ **[Notes Played = Rows]** (button) [0, 1]

0: Off 1: On

When On, the number of keys pressed on the keyboard determines which rows of the Drum Pattern 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 seven rows specifying drum notes) are generated. If three 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."

Drum - Template Management

Certain of the parameters in the Drum Patterns Page can be saved as a "Template." This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated.

What is saved in a Drum Pattern Template:
- the configuration of the Drum Editing Grid;
- Pools/Poly setting;
- the seven choices in the Drum Sounds menus;
- the Random Weighting Parameters (Pools) (Weighting Curve and Factor);
- the Random Weighting Parameters (Rests) (Weighting Curve and Factor).

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the Template Bank parameter in the GE Editor. All Templates used in a GE must come from the same bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

When a Template is selected and loaded via RT Parm control, the Weighting Curve and Factor will remain as presently set if the Weighting Curve or Factor is also assigned as an RT Parm. In other words, a Weighting Curve and Factor are stored as part of the Template, but if they are under RT Parm control, their current settings are not replaced when the Template is loaded.

◆ **[Open Templates]** (button)

Opens a Template Bank Display Window for the current Template Bank.

◆ **[Open Template Bank]** (button)

Opens a Template Bank Display Window for the current bank of Drum Pattern Templates.

◆ **[Bank]** (popup menu) [0...3]

Selects from one of three Banks of Drum Pattern Templates within the current selected Template Bank, and loads the parameters into the selected Drum Pattern's Editing Area.

◆ **[Template Bank 1] [Templ Bank 1 + Restore]** (popup menu) [0 = [As Stored], 1...63]
◆ **[Template Bank 2] [Templ Bank 2 + Restore]** (popup menu) [0 = [As Stored], 1...63]
◆ **[Template Bank 3] [Templ Bank 3 + Restore]** (popup menu) [0 = [As Stored], 1...63]

Selects from 63 different Drum Pattern Templates within the currently selected Template Bank (shared by all three Drum Patterns), and loads the parameters into the selected Drum Pattern Editing Grid and associated parameters.

Selecting Template 0 (which is always named [As Stored] and cannot be overwritten) reloads the stored internal settings of the GE for the parameters corresponding to the template. In other words, you can have a complex pattern set up on the grid, select one or more Templates, thereby completely replacing it, and then return to the original settings by selecting [As Stored].

When selected by the mouse using the popup menu, the [As Stored] selection is always available. When the Template is being controlled as a Real-Time Parameter, there are two different options available:

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 RT Parm. In this case, available range is 1~63, and it is not possible to select 0: [As Stored].

Template + Restore [0...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 on the grid. Using "Template + Restore" as a GE RT Parm, 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 (the same as selecting "0 [As Stored]"), and 6 through 10 would select the corresponding 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.

When a GE is first loaded, the Template popup will always display "As Stored." If you select a Template, the popup menu will display the name of the Template, but after you save the GE and load it again, it will once again display "As Stored." This is because the Template value is not saved in the GE, but the contents of the Pattern Grid and associated parameters are.

◆ **[Store]** (button)

Brings up a **Store Dialog** allowing you to name the Template and store it in memory in the current Template Bank. After storing a Template, it will then be available in the Template popup menus for both Phases.

◆ **[Clear]** (button)

Brings up a dialog allowing you to clear the selected Template from the current Template Bank. You will be given an opportunity to cancel. After clearing, the Template will disappear from the Template popup menus for both Phases.

Storing or clearing only affects the Templates in RAM. To save these changes to disk, you must save the KDF File by choosing "Save," "Save As..." or "Save All..." from the File menu.

Since the changes are not written to disk until one of the Save commands is executed, to undo a change after you have stored or cleared a Template you can close and reopen the current KDF file.

Drum - RT Parm Virtual Parameters

The following parameters are not true parameters, but "virtual" parameters for RT Parm control. In other words, they do not physically exist on the Drum Page, but perform a modifying function on one or more of the other parameters. They can be found in the Drum Group when assigning parameters in the GE Editor: RT Parms Page, and have a tilde (~) at the beginning of the parameter name (indicating that they are virtual).

◆ **[~On/Off Combinations]** (virtual) [0...7]

Controls all three Drum Pattern On/Off buttons 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 turn all three Patterns on and off in real-time. 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

◆ **[~Straight Multipliers]** (virtual) [0...5]

{0, 1, 2, 3, 4, 5} = {25, 50, 100, 200, 400, 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]** (virtual) [0...10]

{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10} = {25, 34, 50, 68, 100, 136, 200, 272, 400, 544, 800 (%)}
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.

◆ **[~Str/Dot/Trip Mults]** (virtual) [0...15]

{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10} =
{25, 34, 37, 50, 68, 75, 100, 136, 150, 200, 272, 300, 400, 544, 600, 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.

◆ **[~Octave Transpose]** (virtual) [-36...+36]

Allows the Drum Pattern'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 virtual 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]** (virtual) [-36...+36]

Allows the Drum Pattern 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 virtual 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 =   0  (+5th)
 10 to  15 =  12  (+1 octave)
 16 to  21 =  17  (+1 octave  +5th)
 22 to  27 =  24  (+2 octaves)
 28 to  33 =  31  (+2 octaves +5th)
 34 to  36 =  36  (+3 octaves)
```

◆ **[~Repeat On/Off Pattern]** (virtual) [0...2]

Allows an individual Drum Pattern to have its Melodic Repeat settings [mr] in the Phase Activity Grid (Drums) set to one of three states:

<u>0: Off</u>
The Melodic Repeat button [mr] will be turned off in each step of the Phase Pattern, for the specified Drum Pattern.

<u>1: On</u>
The Melodic Repeat button [mr] will be turned on in each step of the Phase Pattern, for the specified Drum Pattern.

<u>2: As Stored</u>
The Melodic Repeat button [mr] 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)]** (virtual) [0...8]

Allows all three Drum Patterns to have their Melodic Repeat settings [mr] in the Phase Activity Grid (Drums) 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
The Melodic Repeat button [mr] will be turned off in each step of the Phase Pattern, for the specified Drum Patterns.

On
The Melodic Repeat button [mr] will be turned on in each step of the Phase Pattern, for the specified Drum Patterns.

As Stored
The Melodic Repeat button [mr] 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]** (virtual) [-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 Page and Index Page. 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.

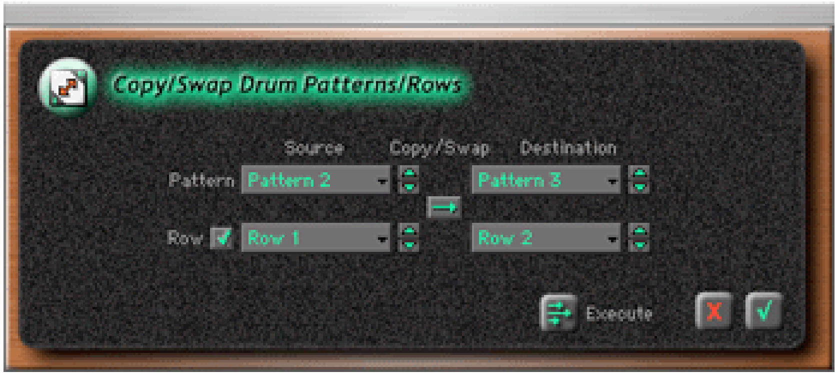
The following table illustrates the various values loaded into the Phase Pattern when a Resync Index Template is loaded for a particular Drum Pattern:

	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 buttons [ri] 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 buttons [ri] 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.

Drum - Copy/Swap Patterns/Rows Dialog



The Copy/Swap Patterns/Rows Dialog allows the three Drum Patterns within the current GE (or individual rows within them) to be copied and swapped around. It can be opened from the “Copy/Swap Patterns/Rows…” command in the GE Editor Drum Page’s Menu Button.

Menu Button

A popup menu allowing instant access to this help chapter.

◆ **[Source]** (popup menus)

Specifies the source Drum Pattern (and optional row if the Rows checkbox is on) for the copy or swap operation.

◆ **[Destination]** (popup menus)

Specifies the destination Drum Pattern (and optional row if the Rows checkbox is on) for the copy or swap operation.

◆ **[Copy/Swap]** (button) [copy, swap]

Sets whether the source will be copied to the destination (single-headed arrow), or the source and destination will be swapped (double-headed arrow).

◆ **[Row]** (checkbox) [off, on]

Allows individual rows within the source and destination patterns to be copied or swapped. When this is on, only the specified row in the specified patterns will be copied or swapped, not the whole pattern.

◆ **[Execute]** (button)

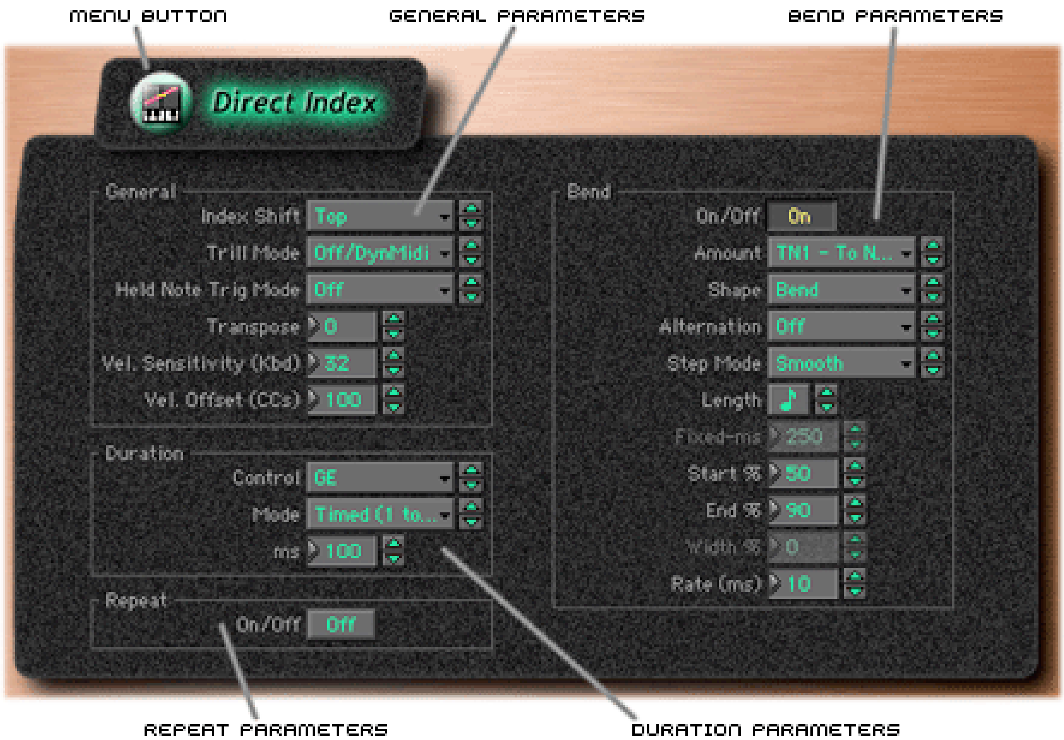
Performs the copy or swap operation without closing the dialog, in case you want to perform other operations

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing the copy or swap operation. The OK Button (green checkmark) closes the dialog and performs the specified copy or swap operation.

Direct Index

Sections in this chapter:



Direct Index - 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 or Mod Wheel 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.

As shown above, the parameters have been divided into several distinct groups:

General Parameters
Parameters that affect Direct Indexing in general.

Duration Parameters
Parameters that affect the durations of the Direct Index notes.

Repeat Parameters
Parameters that effect whether Melodic Repeat effects are used with Direct Index notes.

Bend Parameters
Parameters that allow bending effects to be added to Direct Index notes, independent of the Auto Bend effects set up in the Bend Page.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this page.

Note that to perform Directing Indexing, a controller must be selected as a Source in the Performance Editor: Dynamic MIDI Page, and one of two different options selected as a Destination:

- Direct Index
- Direct Idx & Mdl Stop

For more information, see:

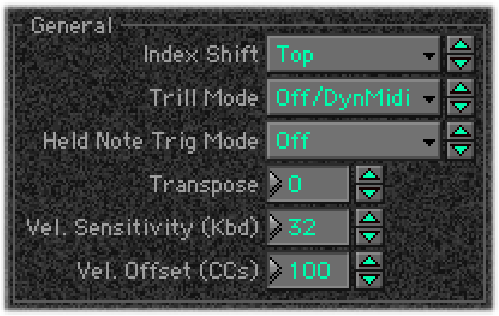
Dynamic MIDI Sources

Dynamic MIDI Destinations

Performance Editor: Dynamic MIDI Page.

Any parameters that have a grey/black appearance (but are not disabled), yet are unable to be edited when clicked, are assigned as RT Parms (Real-Time Parameters). See the **GE Editor: RT Parms** page for more information.

Direct Index - General Parameters



The parameters in this section affect the overall Direct Indexing effect in general.

◆ **[Index Shift]** (popup menu) [0...3]

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]** (popup) [0...5]

Selects one of several options for producing an automatic randomized trill/arpeggio when holding down a certain number of Direct Index notes. 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. A Dynamic MIDI destination may be assigned to switch the trill on and off (for (IJ) InterJam only).

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 Trigger Mode]** (popup) [0...3]

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 notes no longer "fit" the chord (are no longer a 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]** (numerical) [-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 Performance GE Setup Page, so changing the octave there will have no effect on Direct Indexing.

◆ **[Vel. Sensitivity (Kbd)]** (numerical) [1...127]

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)]** (numerical) [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.

Direct Index - 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.

◆ **[Control]** (popup) [0...2]

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 Page.

0: GE
Direct Index notes will have the duration specified by the other two parameters in this section, the Duration Mode menu and the ms field (if applicable). The actual durations of the controller keys are not taken into account. For example, you might set up an effect with a short duration that 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 menu and ms field become grayed out and 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 "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.

◆ **[Mode]** (popup) [0...3]

Selects one of several modes of operation for controlling durations of the Direct Index notes, when the Duration Control parameter is set to "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 (shut off) 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 to 5000 ms)
Makes available the "ms" field, 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.

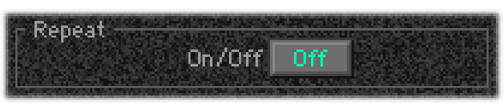
Not available if Duration Control is not set to "GE."

◆ **[ms - milliseconds]** (numerical) [1...5000 ms]

When the Duration Mode above is "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 50 ms, it will always be 50 ms, regardless of tempo.

Not available if Duration Control is not set to "GE" or Duration Mode is not set to "Timed."

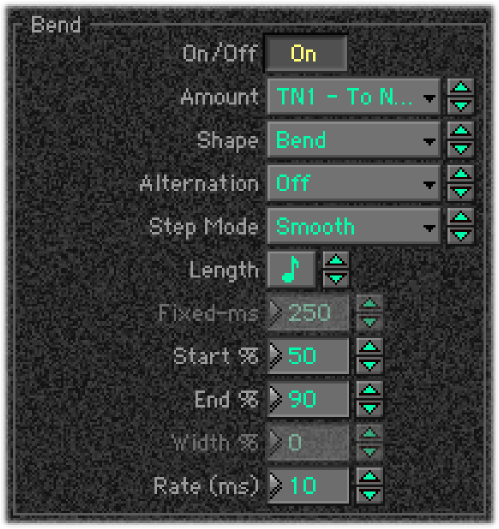
Direct Index - Repeat Parameters



◆ **[Repeat]** (button) [0, 1]

0: Off 1: On
Allows Melodic Repeat to be independently controlled for Direct Indexing. When this is "On," the Direct Index notes will have Melodic Repeat according to the settings of the parameters in the Melodic Repeat Page. The [mr] (melodic repeat) buttons in the Phase Page: Phase Activity Grid do not affect Direct Indexing. 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.

Direct Index - Bend Parameters



The Bend Parameters 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 Page. 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.

There are several differences between Direct Index Auto Bend and Auto Bend for generated notes (set in the Bend Page):

- It is not possible for the length of the bend to be set to “Note Dur,” since in most cases the duration is not known ahead of time. Therefore, this option is not available in the Length popup.

- 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.

◆ **[On/Off]** (button) [0, 1]

<u>0: Off 1: On</u>
When set to “Off,” Direct Index notes will have no bending, but the GE can still generate Auto Bend according to the Bend Page settings when triggered normally. When set to “On,” Direct Index notes will have bending according to the parameters in this Page - the settings in the Bend Page do not affect them (other than Bend Range).

◆ **[Amount]** (popup menu) [-12...+18]

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 (in the Bend Page). The following descriptions apply when the Bend Range 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.

<u>0: Random (-12~12)</u>
Each bend selects a random semitone size from -12 ~ 12 (excluding 0).

<u>-12...+12 (Semitones)</u>
Bends each note the selected semitone size.

<u>13: Next Index</u>
Bends each note to the next index in the Note Series (note that his 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.

<u>14: Next Index + 1</u>
Bends each note to the index in the Note Series that is two indexes forward (note that his 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.

<u>15: Next Index + 2</u>
Bends each note to the index in the Note Series that is three indexes forward (note that his 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 his 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 two indexes backward (note that his 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 three indexes backward (note that his 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.

◆ **[Shape]** (popup menu) [0...2]

Selects one of three different overall shapes for the resulting bend. "Bend" is a single bend to a destination pitch, while the "Hammer" settings bend to the pitch and back. See the diagrams in the Appendix **Using Auto-Bend: The Different Bend Shapes**.

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. 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, 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]** (popup menu) [0...1]

0: Off   1: Alternating
When set to "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/Prev Note Bending is selected, it will alternate between Next and Prev. For example, if "Next" is selected in the size Menu, then the bends will be {Next, Prev, Next, Prev...} etc.

◆ **[Step Mode]** (popup menu) [0: Smooth, 1...12 semitones]

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: 1 ST - Chromatic
2: 2 ST - Whole Tone
3: 3 ST - Diminished
4: 4 ST - Augmented
5: 5 ST - Fourth
6: 6 ST - Tritone
7: 7 ST - Fifth
8: 8 ST - Aug. Fifth
9: 9 ST - Sixth
10: 10 ST - Dom. 7th
11: 11 ST - Maj. 7th
12: 12 ST - Octave
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 ST," then the resulting bend will be quantized to 6 steps of 2 semitones each (a Whole Tone scale).

When one of the Semitone settings is selected, the Rate parameter is not available.

◆ **[Length]** (popup menu) [0...24]

Specifies an overall length for a "bend window" within which the bend will take place. The actual timing of the bend within that window is based on the Start and End parameters.

0...23: Rhythmic Values
Sets the overall length of each bend window to the selected rhythm value; each bend will be therefore be the same length. Note that this is tempo dependent, so changing tempos 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 - (milliseconds)
Makes available the Fixed-ms field beneath the popup menu. 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.

◆ **[Fixed-ms]** (numerical) [0...5000 ms]

Specifies a fixed length of absolute time 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.

Not available unless "Fixed ms" is selected in the Length popup menu.

◆ **[Start %]** (numerical) [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 %]** (numerical) [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 %]** (numerical) [0...100%]

Specifies the width of the "hammer" when the Hammer shapes are 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 description in the Appendix **Using Auto-Bend: Length of Bends**.

Not available when Shape = "Bend."

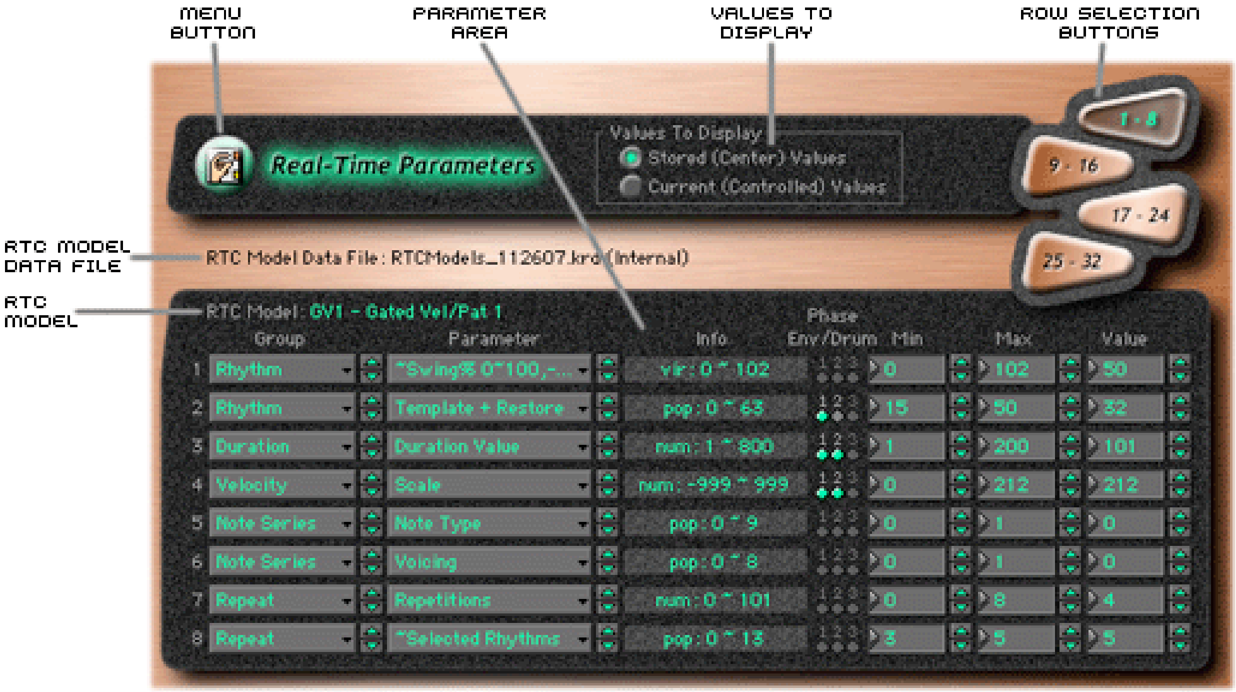
◆ **[Rate]** (numerical) [1...100 ms]

Specifies how often a bend value will be sent out (in milliseconds). This controls the density of the MIDI data. For long bends, a higher rate may be acceptable, while for short bends a lower rate will be necessary. Usually, a setting of 8~10 ms is adequate.

Not available when Step Mode = "Smooth."

RT Parms (Real-Time Parameters)

Sections in this chapter:



RT Parms - Overview

The GE RT Parms Page is where you can select up to thirty-two parameters within the GE to be brought to the Performance level for possible real-time control. The parameters selected here appear in the Performance Editor: RT Parms Page, and may be modified (without affecting the underlying settings of the GE) or assigned to various real-time control options, such as the sliders in the Real-Time Controls Window.

Parameters Area
Displays GE RT Parms 1~8, 9~16, 17~24, or 25~32, depending on the Row Selection Buttons.

Row Selection Buttons
Switches the Parameter Area between rows 1~8, 9~16, 17~24, or 25~32.

Values To Display
Switches between displaying the actual Stored (Center) Values, and the Current (Controlled) Values that may be modified by the positions of any assigned Real-Time Controls. See About Values To Display below.

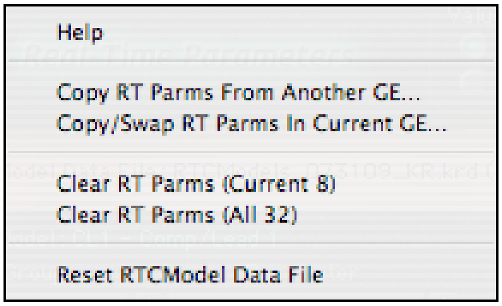
Stored (Center) Values
Displays the stored settings in the Value fields. These are editable, and reflect the “center” position of any assigned controller.

Current (Controlled) Values
Displays the actual current settings in the Value fields. These are not editable, but represent the Value as modified by any assigned controller.

RTC Model Data File
Displays the name of the currently loaded RTC Model Data File, which is a factory provided specification for how to assign the RT Controls when a GE is loaded. This generally does not need to be changed by the user.

RTC Model
Displays the name of the current GE’s RTC Model Type, which controls how the RT Controls are assigned to it when it is loaded.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this page:



Copy RT Parms From Another GE...

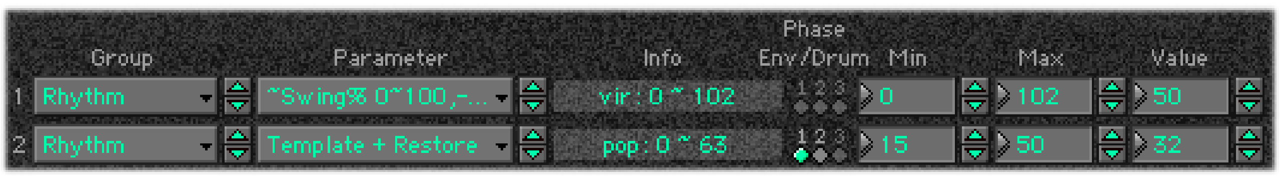
Copy/Swap RT Parms In Current GE...

Clear RT Parms (Current 8)
Clears all RT Parm assignments for the currently showing eight rows.

Clear RT Parms (All 32)
Clears all RT Parm assignments for all 32 rows.

Reset RTCModel Data File
There is an external file used by the KARMA application that contains RTC Model data. In the unlikely event that this file cannot be located, use this command to reset the file location to the factory default. The name of the currently loaded RTC Model Data file is displayed below the Menu Button.

RT Parms - Parameters



◆ **[Group]** (popup menu) [0...14]

Selects the group of GE Parameters that you wish to assign. Groups correspond to all of the GE Editor Pages (with the exception of the RT Parms Page itself) and the main GE Editor. For a complete list of all GE Parameters within each group, see the Appendix **RT Parms Reference**.

0: Off
No assignment. The rest of the parameters in the row will be grayed out.

1: GE
2: Note Series
3: Phase
4: Rhythm
5: Duration
6: Index
7: Cluster
8: Velocity
9: CCs
10: Envelopes
11: Repeat
12: Bend
13: Drum
14: Direct Index

◆ **[Parameter]** (popup menu) [varies depending on Group]

Depending on the Group setting (above), certain parameters from within the various GE Pages and GE Editor will appear in this menu. Selecting one assigns that parameter to be controlled by the Value field, and any assigned RT Control. RT Control assignments are done in the **Performance Editor: RT Parms Page**.

Once a parameter is assigned as an RT Parm, it will have a grayed out appearance in its normal location. If you click on it to edit it, If you try to edit such a parameter, it will present you with the **RT Parm Warning Dialog** and not allow editing unless you hold down the Cmnd Key (Mac) or Ctrl Key (Win) when clicking the parameter. Once it is assigned, editing the Value field in this Page or moving an assigned RT Control will change that value in place.

[Info] (label)

This non-editable label displays the “type” of user interface object associated with the selected parameter, and the overall available Min/Max Range. You can limit the range using the Min/Max parameters below if desired. This information is mainly for help in programming the desired response.

pop: the parameter is a popup menu object
num: the parameter is a numerical object
but: the parameter is a button object, or button grid
rng: the parameter is a range bar object
vir: the parameter is a “virtual parameter” not associated with any other UI object

When a parameter is first assigned, if it exists in more than one place (such as both Phases or all three Envelopes or Drum Patterns), the info popup will remind you to make an assignment in the Phase/Env/Drum button grid discussed below by displaying a message such as “** select phase ->.”

If you see asterisks (**) in this info label, it indicates a programming error where the assigned RT Parm is configured incorrectly. Check the Min/Max settings and the Phase/Env/Drum assignment.

Many ranges and values in KARMA are “˜zero relative.” In other words, a popup menu might show 64 items, which would be referred to as a range of “0 ~ 63.”

[Phase/Env/Drum] (button grid) [0...2]

When the selected parameter has more than one “instance” (it exists in both Phases, or all three Envelopes or Drum Patterns), these buttons become available to indicate which parameter you wish to control. You can control them individually with two or three RT Parm rows, or click all the buttons to control them all identically at the same time.

[Minimum] (numerical) [-500...+5000, limited according to applicable range]

Specifies the Minimum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected Parameter. When the Parameter is selected, the Minimum parameter value (displayed in the Info Label) will be set as the default.

[Maximum] (numerical) [-500...+5000, limited according to applicable range]

Specifies the Maximum Value that can be operated by an assigned controller or entered into the Value field. The available range will depend on the selected Parameter. When the Parameter is selected, the Maximum parameter value (displayed in the Info Label) will be set as the default.

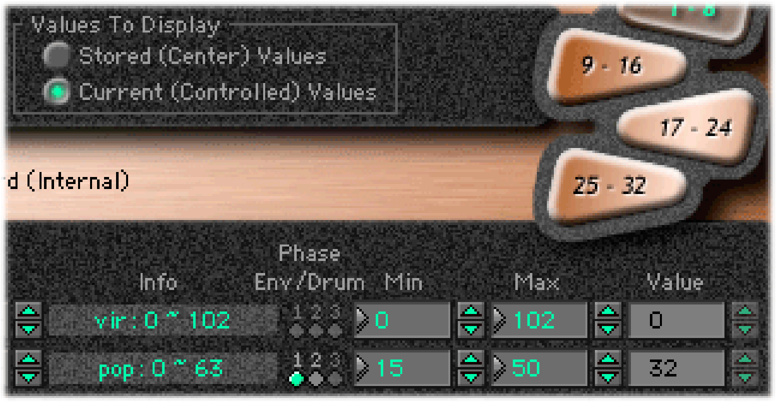
You can reverse the polarity (invert the operation) of a GE RT Parm by either reversing the Min/Max settings or using the Polarity parameter in the Performance RT Parms Page.

[Value] (numerical) [-500...+5000, limited according to min/max range]

Sets the Value of the selected GE RT Parameter. The range of this parameter will vary depending on the settings for the RT Parm Min/Max fields above. When you select a parameter, the Value displayed here initially will be set to the current Value of the parameter. If the parameter has more than one Phase/Env/Drum button selected, they will all be set to the same value.

The value you specify here will be the center value when a slider is assigned and used to control this parameter, and the min or max when a Switch is assigned. To view the actual modified value, and not the stored center value, switch the “Value To Display” buttons to “Current (Controlled) Values.” See “About Values To Display” below.

RT Parms - About Values To Display



As shown above, when the Values To Display button is changed to "Current (Controlled) Values," the Value fields become grayed out and are not editable. However, in this mode they display the actual current values as they may be modified by the positions of any assigned controllers, and not the stored center values. In other words, in the example above, GE RT Parm #1 happens to be assigned to a slider in the Real-Time Controls Window. Out of the available range of -200...+200, the RT Parm has been set to have a controllable range of 0...+100. The Value has been set to +50 in the "Stored (Center) Values" view, so that the center of the slider is 50 and the parameter varies from 0 to 100 as the slider moved from left to right. However, currently the slider is nearly all the way to the left, so the actual "Current (Controlled) Value" of the parameter is 7.

To experiment with this, select any Performance, switch the Values To Display to "Current (Controlled) Values," and move the Sliders in the Real-Time Controls Editor. Watch the values of the parameters here that are assigned to the Sliders and Switches change to reflect the actual setting as based on the position of the controller.

Section 4:

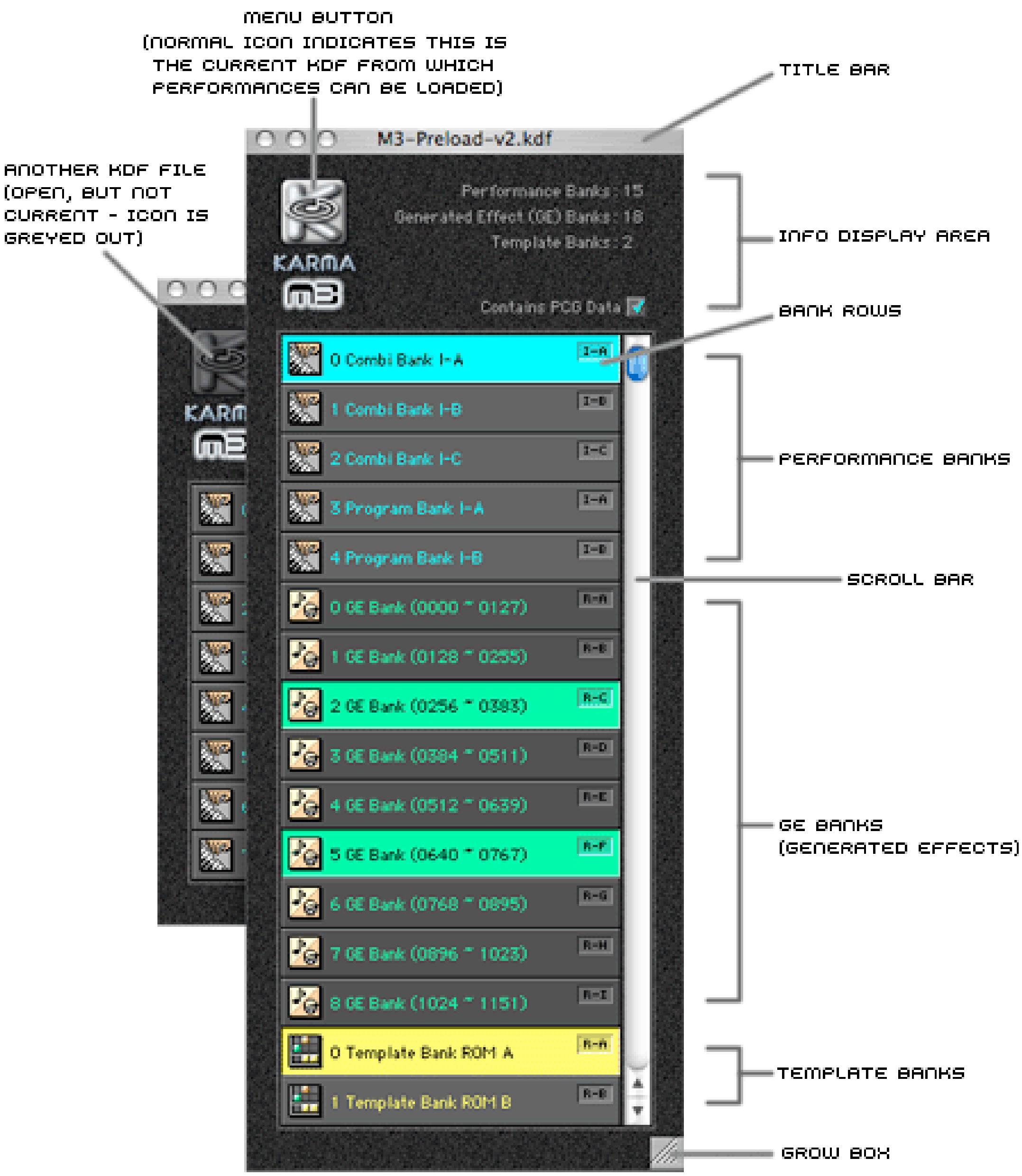
Other Windows/Editors

KDF (KARMA Data File)

Sections in this chapter:

Overview

Add Bank Dialog



KDF - Overview

"KDF" stands for KARMA Data File (also referred to as the ".kdf file" because of its three-letter extension). The KDF file contains all the data for the Performances you work with, and opens in a window similar to the one shown above. You may have multiple KDF Windows open, and move between them during a session if desired, but only one KDF is the "current KDF," meaning you are editing or playing a Performance located in that file. The current KDF is indicated by a normal enabled logo icon in the Menu Button, while other KDF Files that are not current will have Menu Buttons with a disabled, greyed-out appearance as shown above.

Title Bar

Displays the name of the file, and a diamond (Mac) or asterisk (Windows) when the file has been edited.

Info Display Area

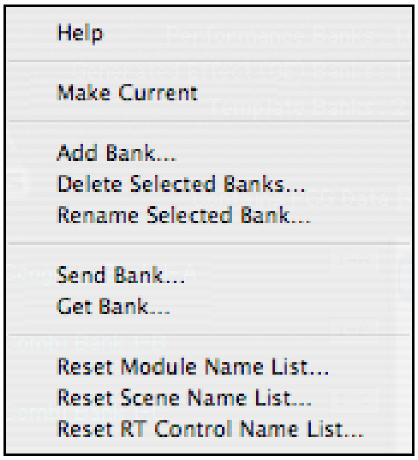
Displays the total number of Banks of different data in the file. The "Contains PCG Data" checkbox indicates whether the KDF file is also storing PCG data for the Performances (Programs/Combis).

Bank Rows
Each row represents a different bank in the file, and they are arranged in three sections: Performance Banks (blue), GE Banks (green), and Template Banks (yellow). Click to select, double-click to open, command-click (Mac) or control-click (Win) to select more than one at a time. You may also press the Enter key to open multiple selected banks at once. When double-clicked, depending on the type of row, a Bank Display Window will be opened, and you can view and select individual Performances, GEs, and other items by clicking on them. You can also use the arrow keys to advance the selection to the next row.

Entire banks can be copied, pasted, and deleted (cleared) by selecting the desired Bank Rows in the KDF Window and using the commands on the Edit Menu.

Scroll Bar
Use to scroll more banks into view if necessary. The window can also be resized vertically using the Zoom Box (Mac), or the Grow Box at the bottom right corner (Mac/Win).

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with the parent KDF Window:



Make Current
You may have multiple KDF windows open for different files, but only one KDF is the current KDF, meaning you are editing or playing a Performance located in that file. The current KDF is indicated by a "normal" appearing logo icon in the Menu Button, while other KDF Files that are not current will have Menu Buttons with a disabled, greyed-out appearance as shown above. To make a different file current, you can use the "Make Current" command, which will load the last selected Performance in that file. You can also open a Bank of data in another KDF file and select a Performance there to make that KDF File current.

Add Bank…

Delete Selected Banks…
Allows you to remove any selected banks from the .kdf file. You will be given an opportunity to cancel. Note that it is not recommended to remove banks of GEs or Templates unless you know what you are doing, as you may cause problems with any Performances that use them.

Rename Selected Bank...

The following commands open the Send or Get SysEx Dialogs, preconfigured to the selected bank (you must select a bank first). The type of the bank dictates which of the dialogs will be opened (all chapters listed here for reference):

Not available when the SysEx communication has not been established.

Send Bank (Perf)...	**Send Bank (GEs)...**	**Send Bank (Tmpl)...**
Get Bank (Perf)...	**Get Bank (GEs)...**	**Get Bank (Tmpl)...**

Reset Module Name List…
Allows you to reset the list of Module Names available in the Performance Editor > GE Setup page to the factory default. If you have used Module Names in the Performances, they may need to be manually reset. If you have created custom names, they wil be lost. You will be given an opportunity to cancel when selecting this command. For more information on Module Names, see **GE Setup - GE Parameters**.

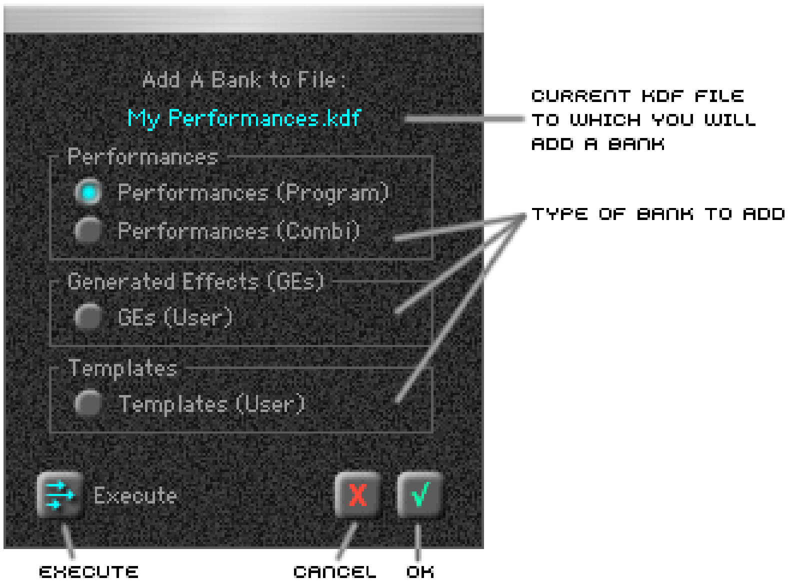
Reset Scene Name List…
Allows you to reset the list of Scene Names available in the Real-Time Controls Editor to the factory default. If you have used Scene Names in the Performances, they may need to be manually reset. If you have created custom names, they wil be lost. You will be given an opportunity to cancel when selecting this command. For more information on Scene Names, see **RT Controls - Scene Matrix Parameters**.

Reset RT Control Name List...
Allows you to reset the list of RT Control Names available in the Real-Time Controls Editor to the factory default. Since RT Control Names are used in all Performances, they may need to be manually reset. If you have created custom names, they will be lost. You will be given an opportunity to cancel when selecting this command. For more information on RT Control Names, see RT Controls - Slider/Switch Name.

◆ **[Contains PCG Data]** (checkbox) [Off, On]

When checked, indicates that the file contains PCG data associated with the Performance banks that can be exchanged with the M3. If the checkbox is On, turning it Off will strip the PCG data from the file, reducing the file size. If the checkbox is Off, turning it on will add initialized PCG data for each Performance Bank. See the tutorial files for more information on the relationship between the KDF file and PCG data.

KDF - Add Bank Dialog



The Add Bank Dialog allows you to add one bank at a time to the current KDF File. It can be opened from the KDF Window's Menu Button. It will automatically add a bank of the next "type" that is currently not in the file - for example, if you have Combi Banks I-A, I-B, and I-C in the file, adding a Combi bank will add Combi Bank I-D. You can change this using the Bank Type setting in the new bank's Bank Display Window.

◆ **[File Name]** (label)

Displays the name of the KDF file to which you will add a bank.

◆ **[Performances (Program)]** (button)

Adds a bank that contains single-module Performances, corresponding to the Program Banks on the M3.

◆ **[Performances (Combi)]** (button)

Adds a bank that contains four-module Performances, corresponding to the Combi Banks on the M3.

◆ **[GEs (User)]** (button)

Adds a bank containing 128 User GEs that can be freely edited and transferred to the keyboard.

◆ **[Templates (User)]** (button)

Adds a bank of User Templates for storing and accessing Rhythm Patterns, Drum Patterns, etc.

◆ **[Execute]** (button)

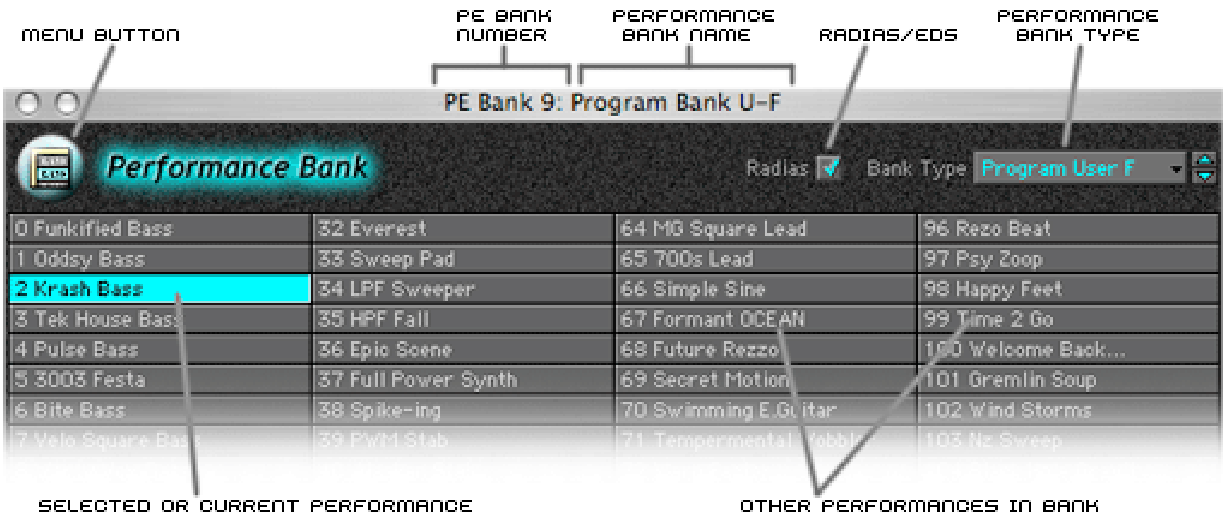
Adds the specified bank without closing the dialog, so that you can continue adding banks.

◆ **[OK/Cancel]** (buttons)

The Cancel button (red X) closes the dialog without adding any banks to the file. The OK button (green checkmark) closes the dialog and adds the selected bank to the file. It then selects the bank in the KDF Window and scrolls it into view if necessary.

Bank Display (Performances)

Sections in this chapter:



Bank Display (Performances) - Overview

A Performance (PE) Bank Display Window can be opened for any bank of Performances in an open KDF File. As shown above, the Bank Number and Bank Name are shown in the title bar (Mac OS X shown; Windows is similar). When multiple KDF files are open, the title of the KDF file it belongs to will also be shown. The window displays the 128 Performances in the bank in gray. The current Performance (if it is located in the bank) will be displayed in blue, or any other PEs that have been selected with the mouse.

PE Bank Display Windows can be opened by double-clicking a Performance Bank Row in a KDF Window, or clicking the round triangle button to the left of the Performance Selection popup menu at the top of the Performance Editor, which opens the Performance Bank containing the current loaded Performance.

When a Performance Bank Display Window is in front, you can navigate around it and change the currently loaded Performance by using the arrow keys on the computer keyboard. Pressing an arrow key while holding down the option key (Mac) or alt key (Win) will bring up the Rename Selected Performance Dialog, the same as opt/alt+clicking or using the "Rename Selected Performance..." utility below.

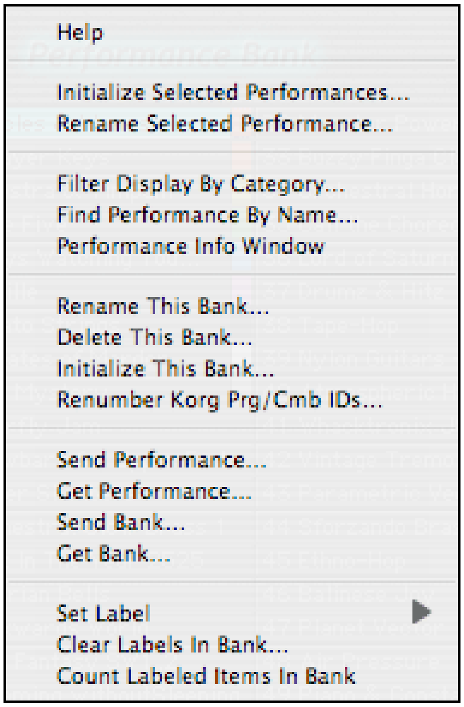
All currently open Bank Display Windows are listed dynamically at the bottom of the Window Menu; you can bring them to the front from there.

Even when a PE Bank Display Window is not in front, you can advance to the next/previous Performance by using the up/down arrow keys and the cmnd key (Mac) or ctrl key (Win).

You can also use the Edit menu when PE Bank Display Windows are in front. You can select multiple Performances with the mouse (or all of the Performances in a bank with Cmnd+A (Mac) or Ctrl+A (Win)), and Cut, Paste, Copy or Clear the Performances using menu commands.

Performances In Bank
Click to select and load Performance. Shift+click to select more than one (for cutting and pasting or initializing). Shift+click and drag to select ranges. Ctrl+click (Mac) or c+click (Win) and drag to draw a marquee around areas.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with the parent Bank Display Window:



(Click on the links for detailed information on utilities not fully explained here.)

Initialize Selected Performances
Initializes the selected Performances in the bank to a default starting point (shift-click to select more than one).

Rename Selected Performance...

Filter Display By Category ...

Find Performance By Name...

Performance Info Window

Rename This Bank...

Delete This Bank...
Deletes the Performance Bank from the current KDF File and closes the window. You will be given a chance to cancel if desired.

Initialize This Bank...
Initializes all Performances in the PE Bank Display Window to a default starting point. You will be given a chance to cancel if desired.

Deleting or initializing a bank cannot be undone, so the only way to restore data after this is to reload the KDF File from disk.

Renumber Korg Prg/Cmb IDs...
Renumbers all Performances in the bank to call up the correct M3 combi or program, based on the Bank Type and the sequential location in the bank. This sets the Bank and Prog/Combi parameters in the Performance Editor > Korg page for each Performance in the bank. This can be useful if you have pasted Performances from other locations into the bank and wish to renumber them to call up the correct associated program or combi in the M3. You will be given a chance to cancel if desired.

The following commands open the Send or Get Performances SysEx Dialogs, preconfigured to the current Performance or Performance Bank:

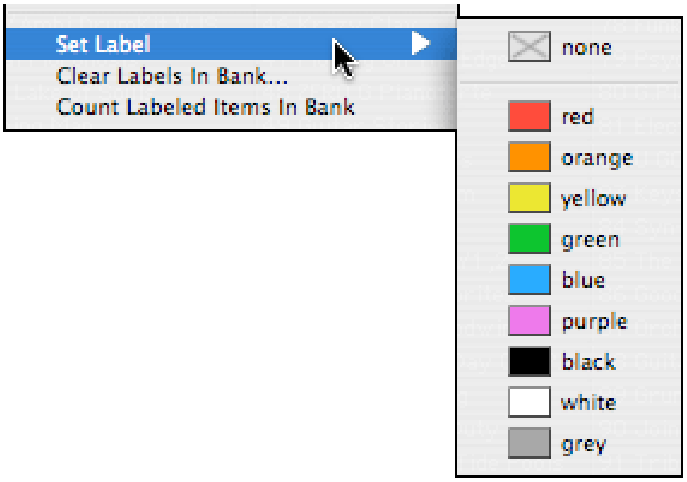
Not available when SysEx communication has not been established.

Send Performance...

Get Performance...

Send Bank...

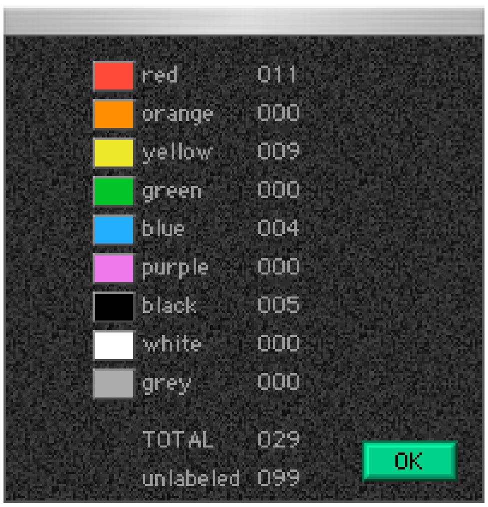
Get Bank...



Set Label (sub-menu)
Allows you to affix a colored label to the selected Performances, for organizational purposes, such that they are displayed in the various menus where you can view and select them.

Clear Labels In Bank...
Clears any colored labels from all Performances in the bank. You will be given a chance to cancel if desired.

Count Labeled Items In Bank
Displays the following dialog, showing how many Performances in the bank are labeled with the various colored labels. This can be useful during development - for example, if you have various Performances in various states of completion labeled with different colored labels, you can quickly count how many of each state are completed.



Bank Display (Performances) - Parameters

◆ **[Radias/EDS]** (checkbox) [Off, On]

Differentiates a bank of Performances corresponding to a bank of Programs between the PCM-based programs (EDS), and the other type of synth engine (Radias). The PCG Data for these two types of banks are different, and cannot be freely exchanged.

When on, this indicates the bank corresponds to an Radias Program Bank. When off, this indicates the bank corresponds to an EDS Program Bank.

Not available in Performance banks corresponding to Combi banks. Will be disabled for the internal Program Banks that have a fixed Radias/EDS relationship.

⚠ If the file contains PCG Data and you change this checkbox, the bank's PCG data will be deleted and replaced with initialized data of the other type, since the two types of data are incompatible. This is fine, as long as you know what to expect and are planning to replace the initialized data with a SysEx dump of the correct bank. You will be given a chance to cancel if desired.

Note that the KARMA Software needs to know how your User Program Banks are set, in order to function properly. In the M3, Internal Banks A, B, C, D, E and G are fixed as EDS, while Bank F is fixed as Radias. However, the 7 User Program Banks can be freely configured between the two types, in the Global Mode of the keyboard.

The first time that KARMA Software is launched after you install it and it finds the keyboard, it initiates a short sequence of querying the keyboard to determine the User Program Bank Types, and it stores this information in the Preferences file (so that it does not need to do it every time). This means, however, that if you change the User Program Bank Types, you must run this function again from the Utilities Menu > Update User Program Bank Types.

[Performance Bank Type] (popup menu) [0...28]

0: Program Int A
1: Program Int B
2: Program Int C
3: Program Int D
4: Program Int E
5: Program Int F
6: Program Int G
7: Program User A
8: Program User B
9: Program User C
10: Program User D
11: Program User E
12: Program User F
13: Program User G
14: ----------------
15: Combi Int A
16: Combi Int B
17: Combi Int C
18: Combi Int D
19: Combi Int E
20: Combi Int F
21: Combi Int G
22: Combi User A
23: Combi User B
24: Combi User C
25: Combi User D
26: Combi User E
27: Combi User F
28: Combi User G

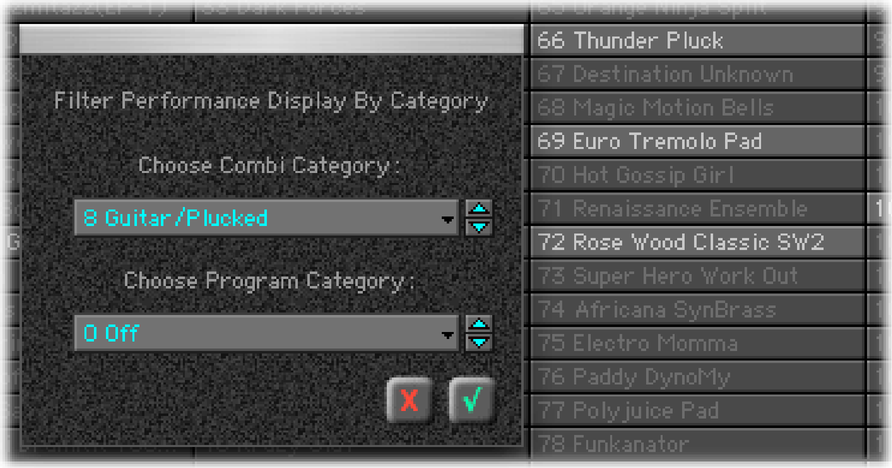
Sets the Bank Type of this Performance Bank, which determines which banks the Performances go in when sending the PCG Data to the M3 via SysEx. The Bank Type is also used as an internal identifier, so you should generally not have more than one bank of any given type in a KDF file.

Changing this will also renumber the bank change information stored in the Korg Page for each Performance, since calling up a Performance changes the bank and combi or program on the destination device. In other words, if you change this from Combi Bank B to Combi Bank C, all Performances will now call up locations in Combi Bank C when selected. A dialog will be presented asking you to confirm the changes.

It is generally not recommended to change this setting after working on Performances in a bank. Set it the way you want it after creating a new bank, unless you know what you are doing (and wish to move Performances to a different bank in the M3).

It is not possible to change a Program Bank to a Combi Bank.

Bank Display (Performances) - Filter Display By Category



The Filter Display By Category dialog allows you to filter the Performance Bank Display windows to hilight Performances based on Category, easily identifying those that belong to a certain category. Opened by the corresponding command in the Bank Display's Menu Button, you can select a specific combi or program category, and have the contents of all open Performance Bank Display Windows instantly highlight the Performances in that category. The diagram above shows the results of choosing the "Guitar/Plucked" Combi Category on a Bank Display window that is behind it - combis belonging to that category are highlighted by dimming all other Performances in the window.

Since combis and programs have different categories, there is a menu for each type, and each menu only affects Bank Display Windows that correspond to programs or combis. You can close the dialog and leave the filtering in place; open it again to remove the filtering and return the Bank Displays to their normal appearance.

You can still choose other Performances while the Bank Displays are in this state; only the display of the Performance names is affected.

◆ **[Choose Combi Category]** (popup menu) [number of Combi Categories]

Selects a Combi Category to use when filtering all Performance Bank Displays that show Combis. Any affected Bank Displays will update immediately without closing this dialog.

◆ **[Choose Program Category]** (popup menu) [number of Program Categories]

Selects a Program Category to use when filtering all Performance Bank Displays that show Programs. Any affected Bank Displays will update immediately without closing this dialog.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog and returns to the previous settings that were in use before the dialog was opened. The OK Button (green checkmark) closes the dialog and accepts the current settings to use for filtering Performance Bank Displays.

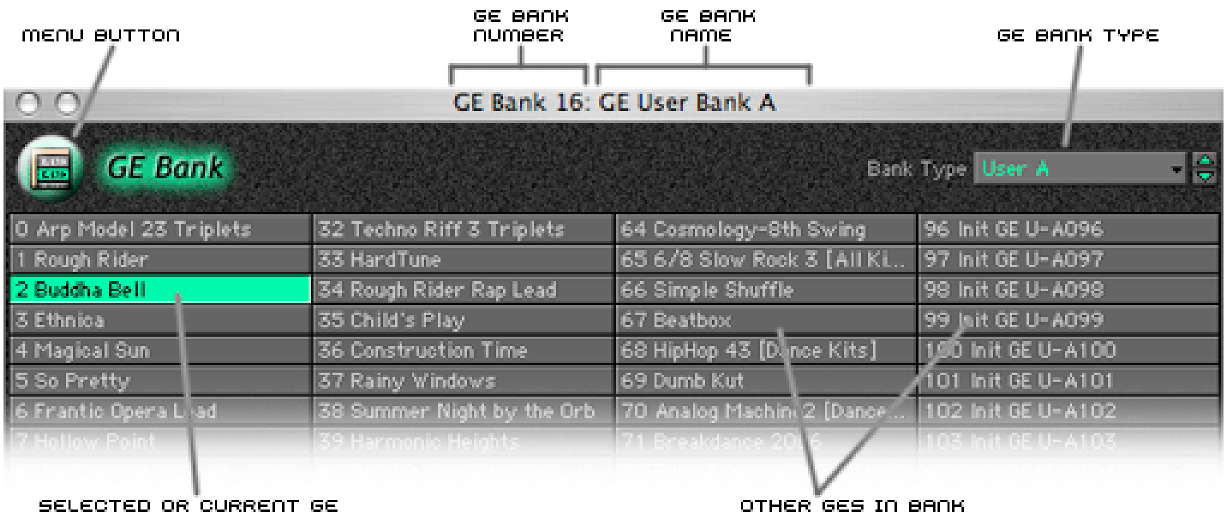
Bank Display (GEs)

Sections in this chapter:

Overview

Parameters

Filter Display By RTC Model Type



Bank Display (GEs) - Overview

A GE Bank Display Window can be opened for any bank of GEs in an open KDF File. As shown above, the Bank Number and Bank Name are shown in the title bar (Mac OS X shown; Windows is similar). When multiple KDF files are open, the title of the KDF file it belongs to will also be shown. The window displays the 128 GEs in the bank in gray. The current Edit GE (if it is located in the bank) will be displayed in green, or any other GEs that have been selected with the mouse.

GE Bank Display Windows can be opened by double-clicking a GE Bank Row in a KDF Window, or clicking the round triangle button to the left of the GE Selection popup menu at the top of the GE Editor, which opens the GE Bank containing the current loaded GE.

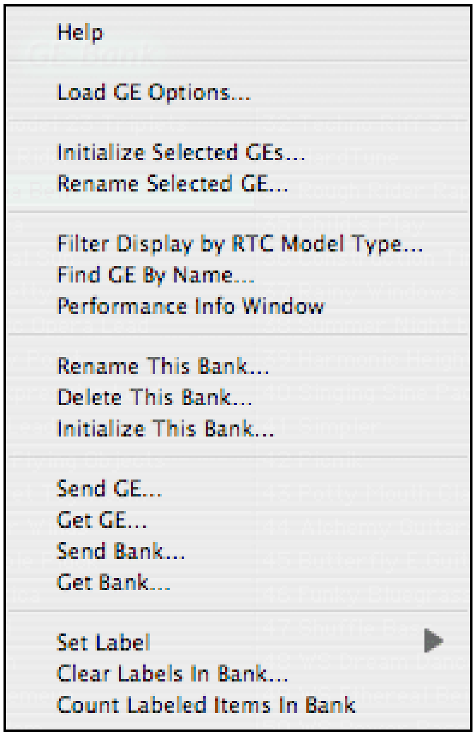
When a GE Bank Display Window is in front, you can navigate around it and change the currently loaded GE by using the arrow keys on the computer keyboard. Pressing an arrow key while holding down the option key (Mac) or alt key (Win) will bring up the Rename Selected GE Dialog, the same as opt/alt+clicking or using the “Rename Selected GE...” utility below.

All currently open Bank Display Windows are listed dynamically at the bottom of the Window Menu; you can bring them to the front from there.

You can also use the Edit menu when GE Bank Display Windows are in front. You can select multiple GEs with the mouse (or all of the GEs in a bank with Cmnd+A (Mac) or Ctrl+A (Win)), and Cut, Paste, Copy or Clear the GEs using menu commands.

GEs In Bank
Click to select and load a GE. Shift+click to select more than one (for cutting and pasting or initializing). Shift+click and drag to select ranges. Ctrl+click (Mac) or c+click (Win) and drag to draw a marquee around areas.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with the parent Bank Display Window:



(Click on the links for detailed information on utilities not fully explained here.)

Load GE Options...
Opens the Preferences Dialog to the General tab, where the Load GE Options settings can be found.

Initialize Selected GEs...
Initializes the selected GEs in the bank to a default starting point (shift-click to select more than one). You will be presented with the **Initialize Current/Selected GE** dialog where you can choose one of the existing RTC Model types for the initialized GEs.

Rename Selected GE...

Filter Display By RTC Model Type ...

Find GE By Name...

Performance Info Window

Rename This Bank...

Delete This Bank...
Deletes the Performance Bank from the current KDF File and closes the window. You will be given a chance to cancel if desired.

Initialize This Bank...
Initializes all GEs in the bank to a default starting point. You will be given a chance to cancel if desired. If you proceed, you will be presented with the **Initialize Current/Selected GE** dialog where you can choose one of the existing RTC Model types for the initialized GEs.

Deleting or initializing a bank cannot be undone, so the only way to restore data after this is to reload the KDF File from disk.

The following commands open the Send or Get GEs SysEx Dialogs, preconfigured to the current GE or GE Bank:

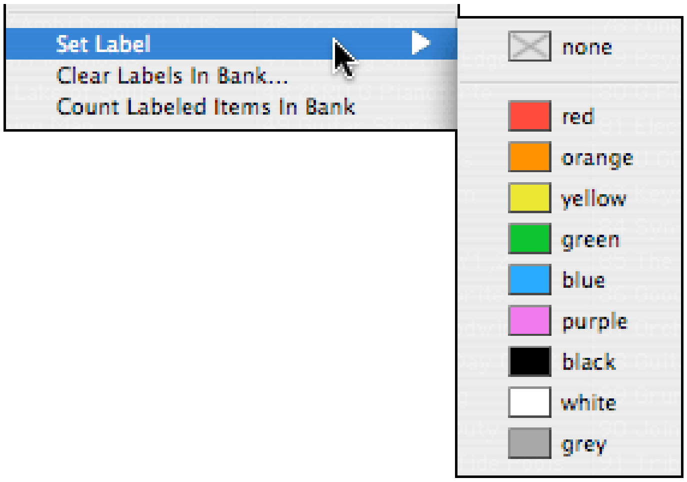
Not available when SysEx communication has not been established.

Send GE...

Get GE...

Send Bank...

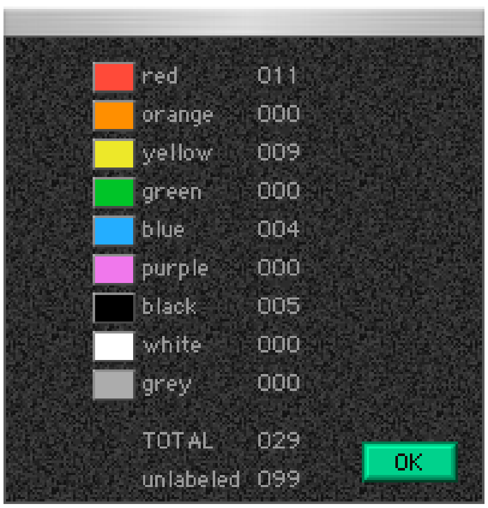
Get Bank...



Set Label (sub-menu)
Allows you to affix a colored label to the selected GEs, for organizational purposes, such that they are displayed in the various menus where you can view and select them.

Clear Labels In Bank...
Clears any colored labels from all GEs in the bank. You will be given a chance to cancel if desired.

Count Labeled Items In Bank
Displays the following dialog, showing how many GEs in the bank are labeled with the various colored labels. This can be useful during development - for example, if you have various GEs in various states of completion labeled with different colored labels, you can quickly count how many of each state are completed.



Bank Display (GEs) - Parameters

◆ **[GE Bank Type]** (popup menu) [0...24]

0: ROM A (17 Factory Banks)
1: ROM B
2: ROM C
3: ROM D
4: ROM E
5: ROM F
6: ROM G
7: ROM H
8: ROM I
9: ROM J
10: ROM K
11: ROM L
12: ROM M
13: ROM N
14: ROM O

15: ROM P
16: ROM Q

17: User A (8 User Banks)
18: User B
19: User C
20: User D
21: User E
22: User F
23: User G
24: User H

Sets the Bank Type of this GE Bank, which determines which banks the GEs go in when exporting or exchanging KGE Data with the M3. Changing this has no apparent immediate effect on the KDF File, but it will when you send or receive SysEx data, or try to export the data - see **Export KGE**. The Bank Type is also used as an internal identifier, so you should generally not have more than one bank of any given type in a KDF file. ROM Banks correspond to the factory preset GEs included in the M3, which cannot be edited, exported or replaced in the keyboard. Therefore, it is generally not recommended to edit or replace GEs in the ROM Banks of the KDF file, so that it remains a copy of what is in the keyboard.

It is generally not recommended to change this setting after working on GEs in a bank. Set it the way you want it after creating a new bank.

It is not possible to create a GE ROM Bank (except in a nw KDF file), or change a User Bank to a ROM Bank, or vice versa.

Bank Display (GEs) - Filter Display By RTC Model Type

The Filter Display By RTC Model Type dialog allows you to filter the GE Bank Display windows to hilight GEs based on RTC Model, easily identifying those that belong to a certain type. Opened by the corresponding command in the Bank Display's Menu Button, you can select a specific RTC Model Type, and have the contents of all open GE Bank Display Windows instantly highlight the GEs with that type. The diagram above shows the results of choosing the "GV1 - Gated Vel/Pat 1" RTC Model Type on a Bank Display window that is behind it - GEs belonging to that type are highlighted by dimming all other GEs in the window.

You can close the dialog and leave the filtering in place; open it again to remove the filtering and return the Bank Displays to their normal appearance.

You can still choose other GEs while the Bank Displays are in this state; only the display of the GE names is affected.

◆ **[Choose RTC Model Type]** (popup menu) [number of RTC Models]

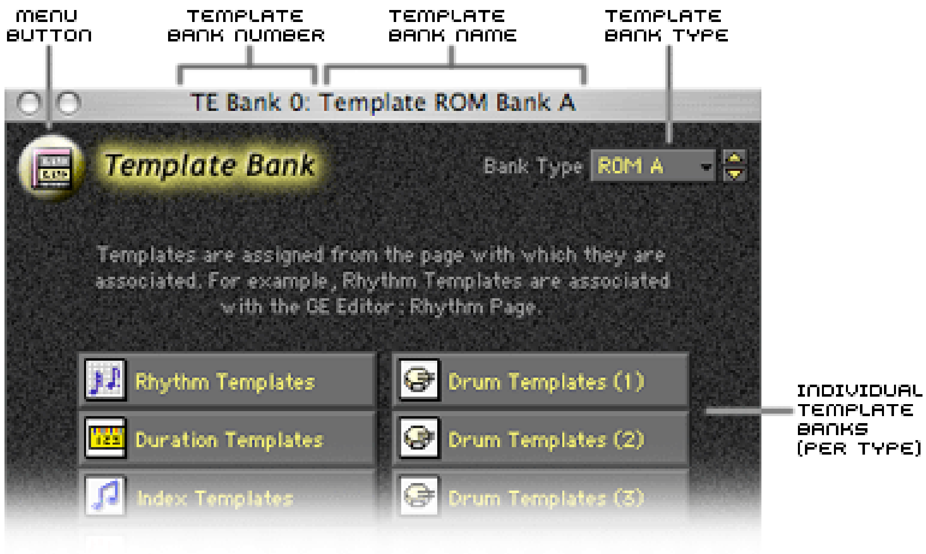
Selects an RTC Model Type to use when filtering all GE Bank Displays. Any affected Bank Displays will update immediately without closing this dialog.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog and returns to the previous settings that were in use before the dialog was opened. The OK Button (green checkmark) closes the dialog and accepts the current settings to use for filtering GE Bank Displays.

Bank Display (Templates)

Sections in this chapter:



Bank Display (Templates) - Overview

A Templates Bank Display Window can be opened for any bank of Templates by double-clicking a Template Bank row in an open KDF file. As shown above, the Bank Number and Bank Name are shown in the title bar (Mac OS X shown; Windows is similar). When multiple KDF files are open, the title of the KDF file it belongs to will also be shown.

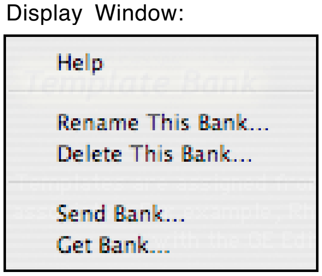
As shown in the image above, the bank represents an entire set of the various Individual Template Types used within KARMA - Rhythm Templates, Duration Templates, Velocity Templates etc. The different Template Types are assigned and used from the page with which they are associated. For example, Rhythm Templates are associated with the GE Editor > Rhythm Page. For more information, see About Templates below. You can copy and paste whole Template Banks from one KDF file to another by selecting the corresponding row in the KDF File and using the Edit Menu's commands.

Individual Template Banks (Per Type)

A button exists for each type of Individual Template within a bank of Templates. Clicking the buttons open Individual Template Banks as explained below.

Menu Button

A popup menu allowing instant access to this help chapter and the following utilities associated with the parent Bank Display Window:



(Click on the links for detailed information on utilities not fully explained here.)

Rename This Bank...

Delete This Bank...

Deletes the Templates Bank from the current KDF File and closes the window. You will be given a chance to cancel if desired.

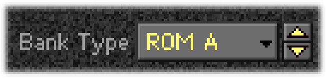
The following commands open the Send or Get Templates SysEx Dialogs, preconfigured to the current Template Bank:

Not available when SysEx communication has not been established.

Send Bank...

Get Bank...

Bank Display (Templates) - Parameters



[Template Bank Type] (popup menu) [0...5]

0: ROM A (2 Factory Banks)
1: ROM B

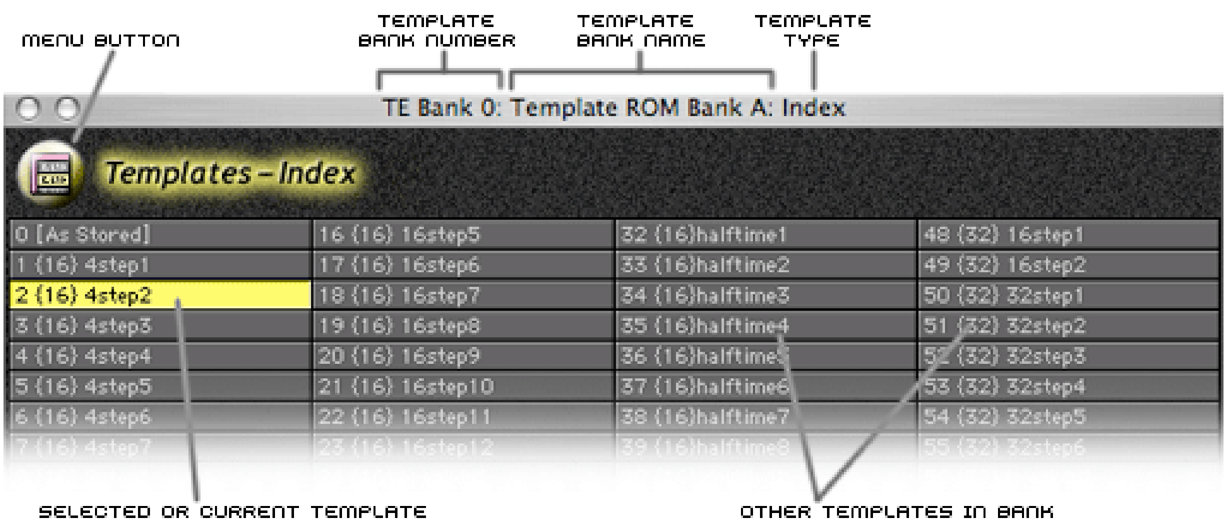
2: User A (4 User Banks)
3: User B
4: User C
5: User D

Sets the Bank Type of this Templates Bank, which determines which banks the Templates go in when exporting or sending KGE Data to the M3. Changing this has no apparent immediate effect on the KDF File, but it will when you send or receive SysEx data, or try to export the data - see **Export KGE**. The Bank Type is also used as an internal identifier, so you should generally not have more than one bank of any given type in a KDF file. ROM Banks correspond to the factory preload Templates use by the factory preset GEs included in the M3, which cannot be edited, exported or replaced in the keyboard. Therefore, it is generally not recommended to edit or replace Templates in the ROM Banks of the KDF file, so that it remains a copy of what is in the keyboard.

It is generally not recommended to change this setting after working on Templates in a bank. Set it the way you want it after creating a new bank.

It is not possible to create a Template ROM Bank (except in a new KDF file), or change a User Bank to a ROM Bank, or vice versa.

Bank Display (Templates) - Individual Template Banks



An Individual Template Bank Display Window can be opened for any type of Individual Templates in an open KDF File. As shown above, the Bank Number, Bank Name and Template Type are shown in the title bar (Mac OS X shown; Windows is similar). The window displays the 64 Templates in the bank in gray. The currently selected Template will be displayed in yellow, or any other Templates that have been selected with the mouse.

Individual Template Bank Display Windows can be opened by clicking the appropriate button within a Template Bank Display Window, or by clicking the round triangle button to the left of the Templates menu within the various GE Editor pages that have Templates, such as the Rhythm Editor, Duration Editor, etc.

When an Individual Template Bank Display Window is in front, you can navigate around it and change the currently loaded Template by using the arrow keys on the computer keyboard. Pressing an arrow key while holding down the option key (Mac) or alt key (Win) will bring up a Rename Template Dialog, the same as opt/alt+clicking.

All currently open Bank Display Windows are listed dynamically at the bottom of the Window Menu; you can bring them to the front from there.

You can also use the Edit menu when Bank Display Windows are in front. You can select multiple Templates with the mouse (or all of the Templates in a bank with Cmnd+A (Mac) or Ctrl+A (Win)), and Cut, Paste, Copy or Clear the Templates using menu commands.

The first location in each Individual Templates Bank is a special item named [As Stored]. It is used to restore the parameters of the template to those that are actually stored in the GE. This means that each GE can have its own stored patterns, they can be replaced by selecting different templates (by real-time control for example), and they can then be restored by choosing the [As Stored] item. Therefore, it is not possible to store a template in this location, or clear it, or rename it.

Templates In Bank
Click to select and load a Template. Shift+click to select more than one (for cutting and pasting or clearing). Shift+click and drag to select ranges. Ctrl+click (Mac) or c+click (Win) and drag to draw a marquee around areas.

Menu Button
A popup menu allowing instant access to this help chapter.

Bank Display (Templates) - About Templates

Certain of the parameters in the various GE Editor pages can be saved as a “Template” for a specific KARMA attribute, such as rhythm, duration, velocity etc. In general, a Template stores the settings of the particular pattern grid in a Phase, and some associated parameters. This can be useful for Templates that you use often, or that you like to use as a starting point for further experimentation, or to maintain a library of Templates. Furthermore, Templates can be switched in real-time when they are assigned as RT Parms, causing radical changes in what is being generated. In most of the GEs, one or more Individual Template Types are assigned as RT Parms, and can be varied in real-time and stored in the scenes, so that you can completely change the contents of various pattern grids instantly - selecting from up to 64 different Rhythm or Index Patterns, for example.

There can be more than one bank of Templates in a KDF File. Each GE stores a reference to which Bank it is using, which is set by the **Template Bank parameter** in the upper right of the GE Editor. All Templates used in a GE must come from the same Template Bank - for example, you cannot use Rhythm Templates from one bank and Index Templates from another at the same time.

The following **GE Editor** pages have Templates associated with them - click to go to the portion of the chapter dealing with the specific type of Individual Templates:

Rhythm

Duration

Index

Cluster

Velocity

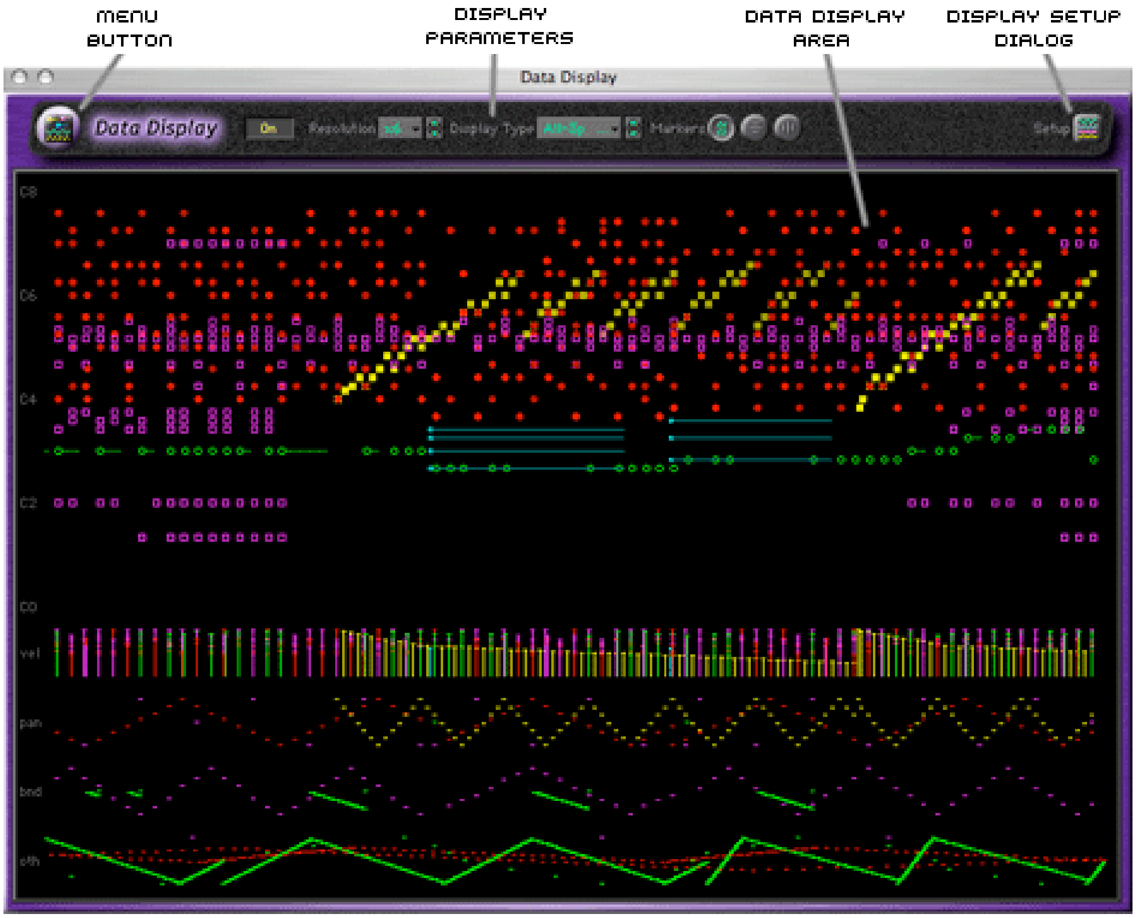
CCs

WaveSeq

Drum

Data Display

Sections in this chapter:



Data Display - Overview

The Data Display Window provides a captivating and colorful way to view the MIDI data being generated by KARMA in real-time. Complete control over the colors, velocity scaling of color, note head sizes, shapes and other attributes of the display is provided by the Data Display Setup Dialog. However, this view is not just "eye candy" - you will find it a helpful diagnostic tool when trying to determine exactly what KARMA may be generating at a given moment as you are programming GEs and Performances.

Data Display Area
Displays the MIDI Data being generated by KARMA in one of several different "layouts" (Display Types).

Display Setup Dialog
Opens the [Data Display Setup Dialog](#), where settings can be made for all the colors and shapes viewed in the Data Display Area.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this editor.

Although there is presently only one "setting" for the Data Display Window (stored in the Preferences), future versions will support loading and saving multiple "presets."

Data Display - Display Parameters

◆ **[On/Off]** (button) [0, 1]

0: Off 1: On

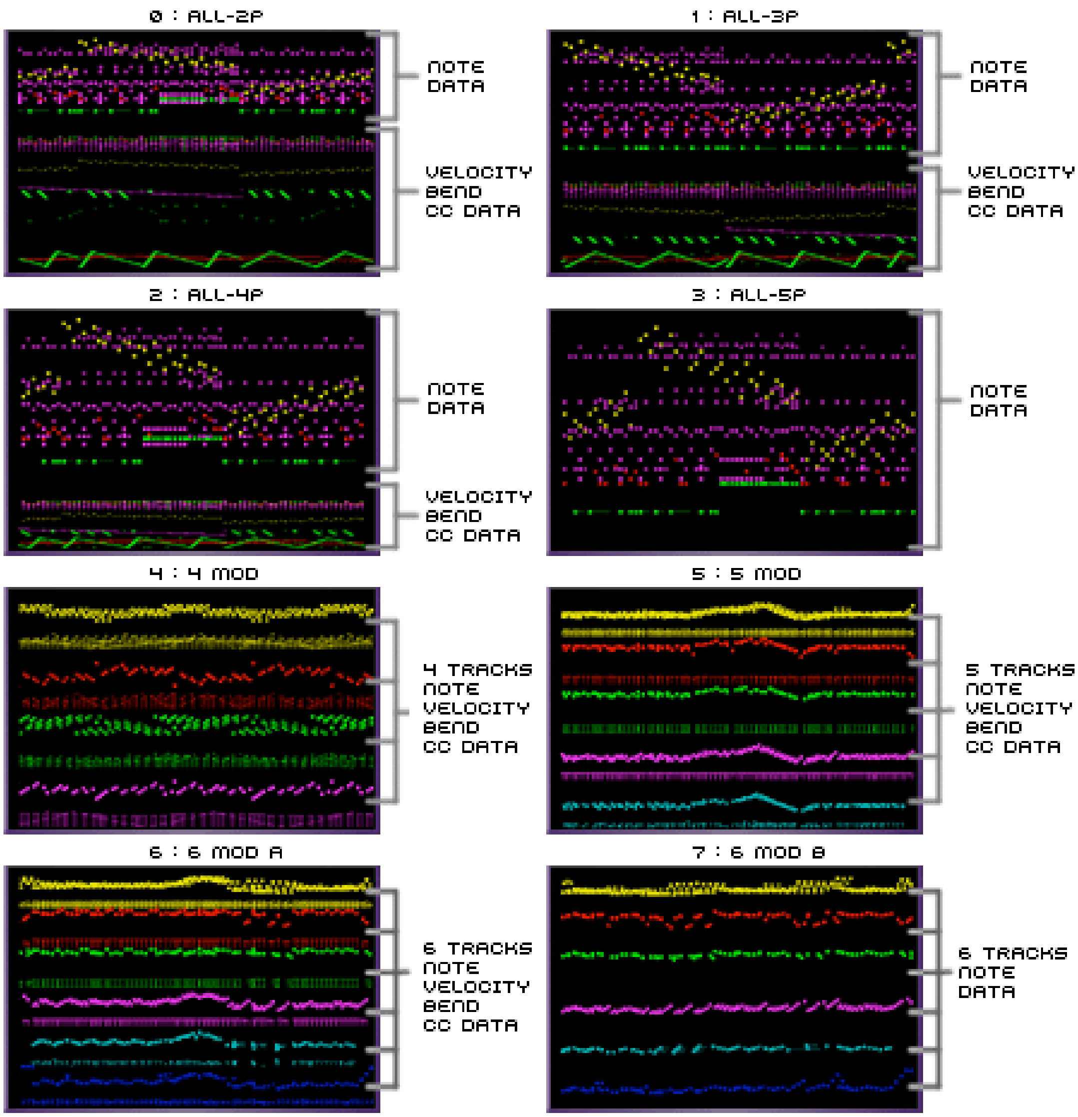
When On, the Data Display Area displays in real-time the current MIDI Data being generated by KARMA. When Off, the display freezes with whatever was last generated. Note that this is only drawn to the screen, so moving other windows over it, changing to a different application and coming back etc. may erase portions of the data. When first turned on, the display will erase and start displaying data at the far left side.

◆ **[Resolution]** (popup menu) [0...7: 1x...40x]

Sets the overall resolution and time frame for the display, allowing you to "zoom in" and "zoom out" on the data. A setting of 6x is the default "normal" setting. Higher settings such as 12x or 20x allow you to examine events with greater accuracy. Lower resolutions such as 1x or 2x allow you to display a longer period of time.

◆ **[Display Type]** (popup menu) [0...7]

Selects one of eight different formats for displaying the data, which determines how many different CC Display areas there are, whether the Modules are displayed in separate areas or on top of each other, etc.



0: All-2p C0-C8, 2 pixels per note, 6 large CC display areas

Displays data for all six Modules on top of each other, with an area for Note Data in the range of C0~C8 at the top followed by six different Vel/CC display areas. This has the smallest size for Note Data in the first four types (two vertical pixels per note), but the greatest detail for CCs. The six CC areas display: Velocity, Pan (CC 10), Bend, other CCs 0~16, 17~64, 65~127.

1: All-3p   C0-C8, 3 pixels per note, 4 large CC display areas
Similar to 0: All-2p above, except the Note Data area is larger (three vertical pixels per note) and there are only four "CC" display areas: Velocity, Pan (CC 10), Bend, and all other CCs.

2: All-4p   C0-C8, 4 pixels per note, 4 smaller CC display areas
Similar to 1: All-3p above, except the Note Data area is larger (four vertical pixels per note) and the four CC areas are compressed with less vertical resolution.

3: All-5p   C0-C8, 5 pixels per note, no CC display areas
Displays only Note Data for all six Modules, with the largest vertical resolution of five pixels per note. No CC, Velocity, or Bend information is displayed - just notes.

4: 4 mod   separate tracks, C1-C8, 1 pixel per note, 1 CC display area
Displays Modules 1~4 as separate "tracks," with Note Data in the range of C1-C8 being displayed, at a vertical resolution of one pixel per note. There is one "CC" area for each track that displays Velocity, Bend, and all other CCs.

5: 5 mod   separate tracks, C2-C8, 1 pixel per note, 1 CC display area
Displays Modules 1~5 as separate "tracks," with Note Data in the range of C2-C8 being displayed, at a vertical resolution of one pixel per note. There is one "CC" area for each track that displays Velocity, Bend, and all other CCs.

For Performances corresponding to Korg Combis, data played on the Global Track is shown on Module 5.

6: 6 mod A   separate tracks, C2-C7, 1 pixel per note, 1 CC display area
Displays Modules 1~6 as separate "tracks," with Note Data in the range of C2-C7 being displayed, at a vertical resolution of one pixel per note. There is one "CC" area for each track that displays Velocity, Bend, and all other CCs.

7: 6 mod B   separate tracks, C2-C8, 1 pixel per note, no CC display area
Displays Modules 1~6 as separate "tracks," with Note Data in the range of C2-C8 being displayed, at a vertical resolution of one pixel per note. No CC, Velocity, or Bend information is displayed - just notes.

[Markers] (buttons)

Labels
Allows short labels to be displayed along the vertical axis of the display, such as Note Markers "C2, C4, C6," labels for the CC Display areas, etc.

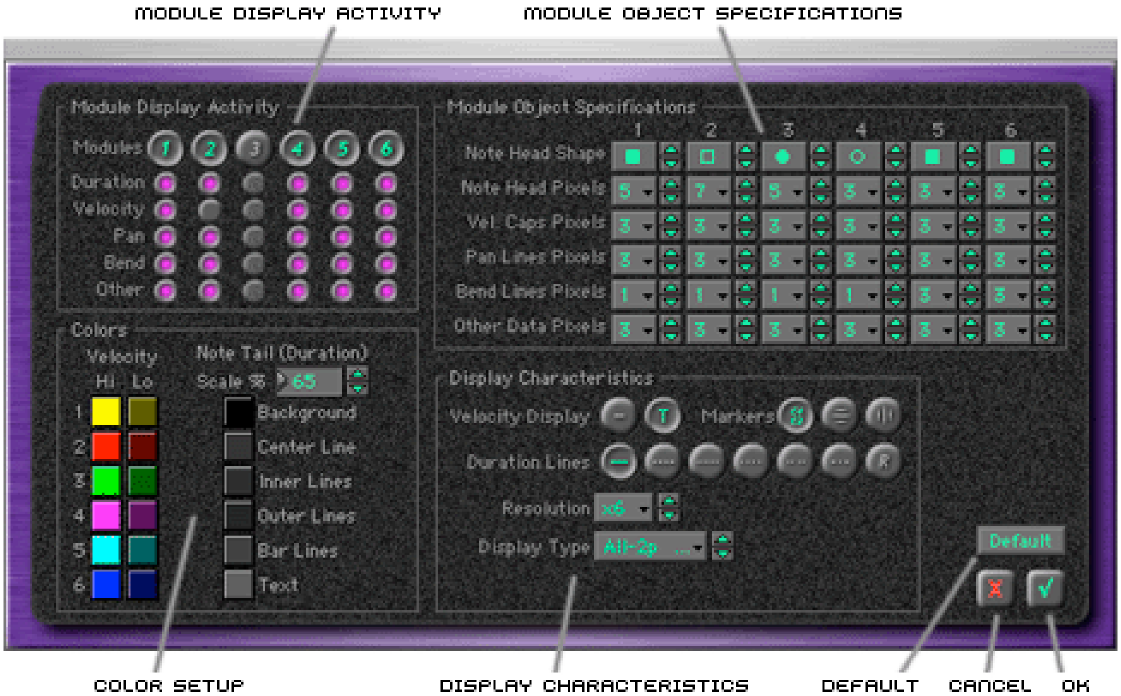
Horizontal
Allows horizontal marker lines to be turned on and off. In the Note Display Areas, they indicate staff lines, while in the CC Data display areas, they indicate 0, 64 and 127.

Vertical
Allows vertical marker lines to be turned on and off. These are arbitrary and simply subdivide the display, without having any specific relationship to time. However, vertical marker lines can also be drawn at beat divisions by the metronome. See **Metronome Editor**.

[Setup] (button)

Opens the Display Setup Dialog (discussed below), allowing the colors for various parts of the Note Series Display to be customized.

Data Display - Display Setup Dialog



Module Display Activity
Settings that control which Modules are displayed, and what exactly is displayed for them. See Module Display Activity.

Module Object Specifications
Parameters that control the size and shape of the various objects that are drawn to represent the MIDI Data. See Module Object Specifications.

Color Setup
Specifies colors for the different areas of the display and the objects drawn to represent the MIDI Data. See Color Setup.

Display Characteristics
Parameters that specify certain other characteristics of the display of data such as Velocity Data, Note Duration Lines, Resolution etc. See Display Characteristics.

Default
Returns the settings to the recommended default colors and specifications.

Cancel/OK
The Cancel Button closes the dialog and returns all settings to the previous settings. The OK Button closes the dialog and saves your changes in the Preferences File.

Although the Display Setup Dialog is a modal dialog, you can drag the top of the window and move the dialog, and watch your edits being displayed in the Data Display Window in real-time as you make changes.

Data Display Setup - Module Display Activity

This section contains settings that control which Modules are displayed, and what exactly is displayed for them.

◆ **[Modules]** (buttons) [0, 1]

0: Off 1: On

Allows the display of data for each of the six Modules to be turned on or off individually. When off, the column of buttons beneath becomes grayed out, as shown above. You can use this to remove certain Modules from the overall display even though you can still listen to them generate data - you just won't see it.

◆ **[Duration]** (button) [0, 1]

0: Off 1: On

When On, the durations of the notes for the specified Module will be drawn as lines extending from the note head to the end of the note. When off, only the note heads will be drawn.

◆ **[Velocity]** (button) [0, 1]

0: Off 1: On

When On, the velocities of the notes for the specified Module will be displayed in the Velocity Area of the Data Display, as specified by the Display Type. When Off, no velocity data will be displayed.

◆ **[Pan]** (button) [0, 1]

0: Off 1: On

When On, Pan Data (MIDI CC 10) for the specified Module will be displayed in the CC Area of the Data Display, as specified by the Display Type. When Off, no Pan Data will be displayed.

◆ **[Bend]** (button) [0, 1]

0: Off 1: On

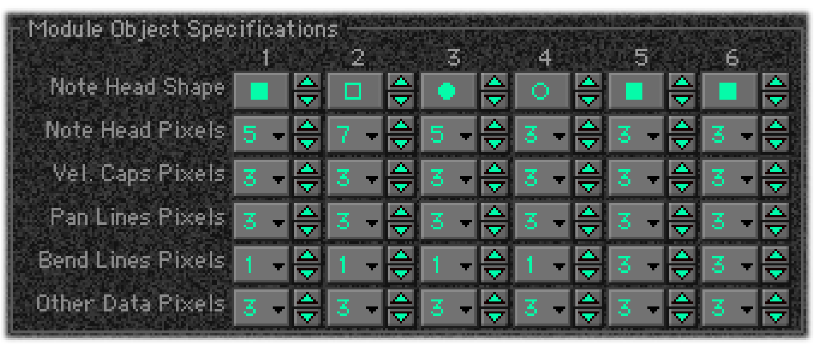
When On, Pitch Bend Data for the specified Module will be displayed in the CC or Bend Area of the Data Display, as specified by the Display Type. When Off, no Bend Data will be displayed.

◆ **[Other]** (button) [0, 1]

0: Off 1: On

When On, all other MIDI Data not covered by the other options for the specified Module will be displayed in the CC Area of the Data Display, as specified by the Display Type. When Off, no data will be displayed.

Data Display Setup - Module Object Specifications



This section contains parameters that control the size and shape of the various objects that are drawn to represent the MIDI Data.

◆ **[Note Head Shape]** (popup menu) [0...3]

0: Rect 1: Frame 2: Circle 3: Ring

Selects one of four basic shapes for the Note Head that is displayed for every note: square (filled and unfilled) or circular (filled or unfilled).

Note Head Pixels must be set to five pixels or greater for a circular shape to be seen, and three pixels or greater for any shape to be seen.

◆ **[Note Head Pixels]** (popup menu) [0...10: 1,3,5,7,9,11,13,15,17,21 pixels]

Sets the width and height (in pixels) of the object drawn to represent the Note Head. The actual shape is specified by the Note Head Shape parameter.

◆ **[Velocity Caps Pixels]** (popup menu) [0...10: 1,3,5,7,9,11,13,15,17,21 pixels]

Sets the width (in pixels) of the horizontal line drawn for the velocity of each note (which may be displayed as the "cap" of a vertical line if desired). A width of one pixel simply draws a point.

🔷 **[Pan Lines Pixels]** (popup menu) [0...10: 1,3,5,7,9,11,13,15,17,21 pixels]

Sets the width (in pixels) of the horizontal line drawn for every Pan (CC 10) data value received. A width of one pixel simply draws a point.

🔷 **[Bend Lines Pixels]** (popup menu) [0...10: 1,3,5,7,9,11,13,15,17,21 pixels]

Sets the width (in pixels) of the horizontal line drawn for every Pitch Bend data value received. A width of one pixel simply draws a point.

🔷 **[Other Lines Pixels]** (popup menu) [0...10: 1,3,5,7,9,11,13,15,17,21 pixels]

Sets the width (in pixels) of the horizontal line drawn for every other type of MIDI data value received. A width of one pixel simply draws a point.

Data Display Setup - Color Setup

The parameters in this section specify colors for the different areas of the display and the objects drawn to represent the MIDI Data.

🔷 **[Velocity Hi/Lo]** (color buttons)

For each Module, the Hi Color specifies the color the Note Head and Note Duration will be drawn in when received with a Velocity of “127,” and the Lo Color specifies the color they will be drawn in when received with a Velocity of “1.” All velocities in between are scaled to a shade between the two. The default settings allow notes to “fade” as they decrease in velocity. However, if you program two radically different colors, interesting visual displays can be achieved based on the changing velocities.

🔷 **[Note Tail (Duration) Scale %]** (numerical) [1...100%]

Specifies a percentage of the Note Head’s color that will be used to draw the duration line. In other words, when a Note Head is drawn, first the color is calculated based on the note’s velocity according to the Velocity Hi/Lo Color settings above. With Scale % set to 100%, the duration line will be drawn with the exact same color. However, it seemed that it looked better if they were scaled down somewhat, so this parameter lets you darken the duration lines by a certain percentage.

🔷 **[Background]** (color button)

Specifies a color for the overall background of the whole Data Display.

🔷 **[Center Line]** (color button)

Specifies a color for the lines representing Middle C and the center 64 value of the CC/Vel Display Areas. These lines are only displayed when the Horizontal Markers button is On.

🔷 **[Inner Lines]** (color button)

Specifies a color for the inner Staff Lines in the Note Areas. These lines are only displayed when the Horizontal Markers button is On.

🔷 **[Outer Lines]** (color button)

Specifies a color for the outer Staff Lines in the Note Areas, and the lines representing 0 and 127 in the CC/Vel Display Areas. These lines are only displayed when the Horizontal Markers button is On. Also specifies the color used for the Vertical Marker Lines that are only displayed when the Vertical Markers button is On.

🔷 **[Bar Lines]** (color button)

Specifies a color for “Bar Lines” that are generated on the beat by the Metronome. See **Metronome Editor**.

◆ **[Text]** (color button)

Specifies a color for the labels such as C2, C4, Pan, Bend and so on that are displayed on the left vertical axis. These labels are only displayed when the Labels Marker button is On.

Data Display Setup - Display Characteristics

The parameters in this section specify certain other characteristics of the display of data such as Velocity Data, Note Duration Lines, Resolution etc.

◆ **[Velocity Display]** (buttons)

Selects whether to display velocities as simple horizontal lines or points like other MIDI data types, or to draw a vertical line with a cap, similar to most sequencing programs.

◆ **[Markers]** (Buttons)

This parameter is linked with the same parameter in the main Data Display Window - changing one will change the other. See Display Parameters: Markers.

◆ **[Duration Lines]** (buttons) [0...6]

Allows one of six different line types to be used for the duration lines of the notes. In other words, the first choice is a solid line, but the next five are different variations on a dotted line theme. The last “R” button signifies choosing the duration lines at random from all six of the line variations.

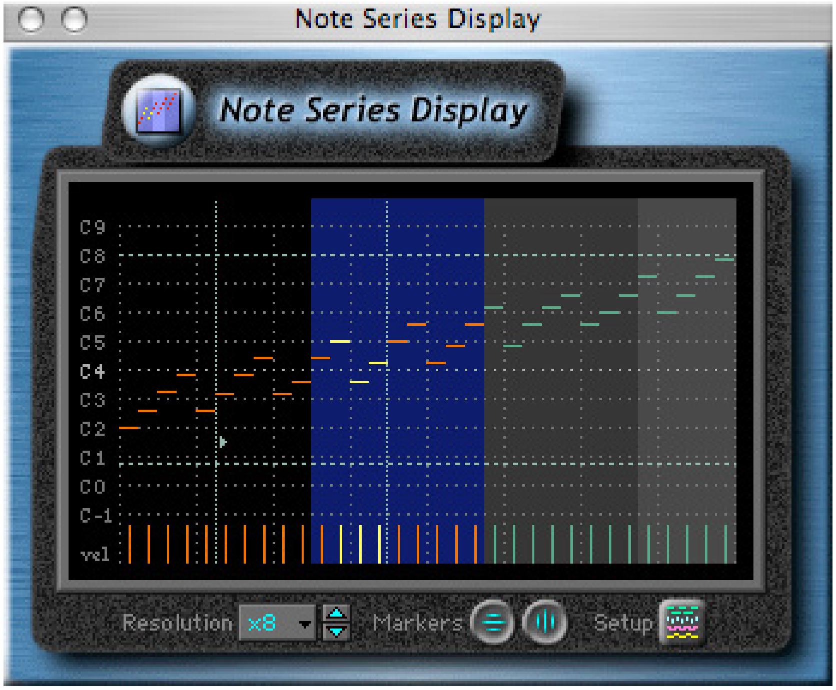
◆ **[Resolution]** (popup menu) [0...7: 1x...40x]

This parameter is linked with the same parameter in the main Data Display Window - changing one will change the other. See Display Parameters: Resolution.

◆ **[Display Type]** (popup menu) [0...7]

This parameter is linked with the same parameter in the main Data Display Window - changing one will change the other. See Display Parameters: Display Type.

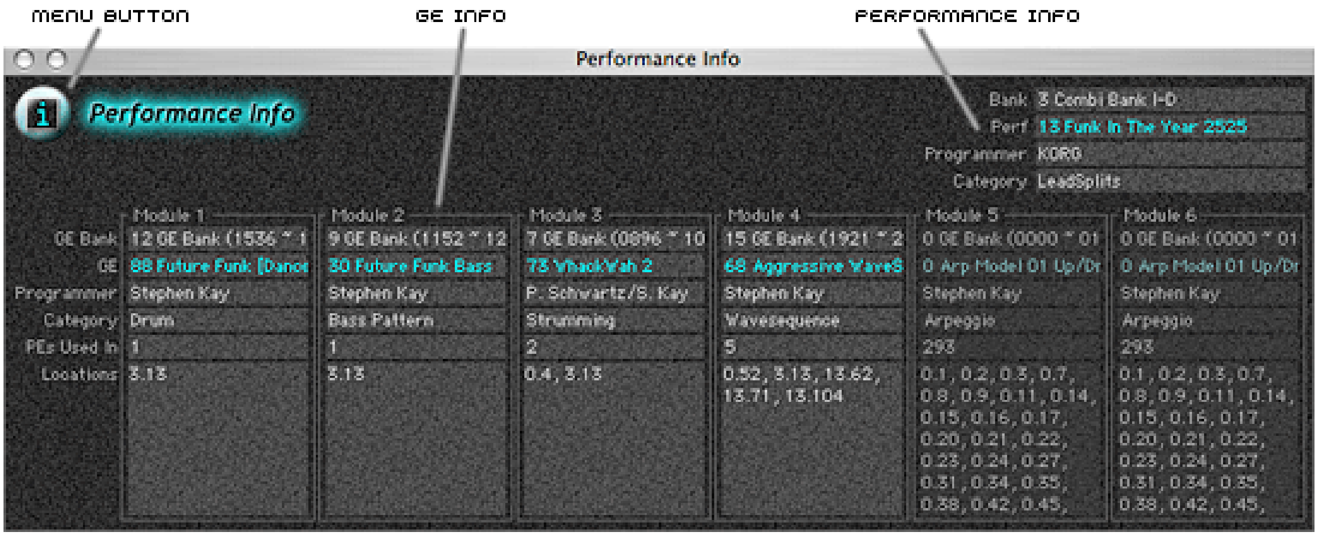
Note Series Display



A separate window showing the current Note Series, identical to the Note Series Display in the **GE Editor:Note Series** Page. When editing parameters in other panels of the GE Editor, such as the Cluster page or the Index page, you may wish to watch the effect on the Note Series without switching back to the Note Series page.

For explanations of the display and all parameters, see **Note Series - Display**.

Performance Info Window



The Performance Info Window displays information about the current performance, including which GEs are being used, how many other times those GEs are used in other Performances, etc. This can be useful, for example, when you wish to know if you are modifying a GE that may be used by other Performances. It can be opened by any of the following methods:

- the “Performance Info Window” item in the main application Window Menu;
- the Menu Buttons in the GE Editor, Performance Editor, and GE and PE Bank Display Windows.

Performance Info
This section displays info about the current Performance.

GE Info
A column for each of the six Modules displays info about the GE loaded in that Module, and other Performances that may be using it.

Menu Button
A popup menu allowing instant access to this help chapter.

◆ **[Bank]** (label)

Displays the name of the Performance Bank containing the currently loaded Performance.

◆ **[Performance]** (label)

Displays the name of the currently loaded Performance.

◆ **[Programmer]** (label)

Displays the programmer name stored with the current Performance.

◆ **[Category]** (label)

Displays the category of the current Performance.

◆ **[GE Bank]** (label)

Displays the name of the GE Bank containing the GE that is loaded into the specified Module.

◆ **[GE]** (label)

Displays the name of the GE that is loaded into the specified Module.

◆ **[GE Programmer]** (label)

Displays the name of the programmer that is stored with the GE.

◆ **[GE Category]** (label)

Displays the category of the GE.

[PEs Used In]

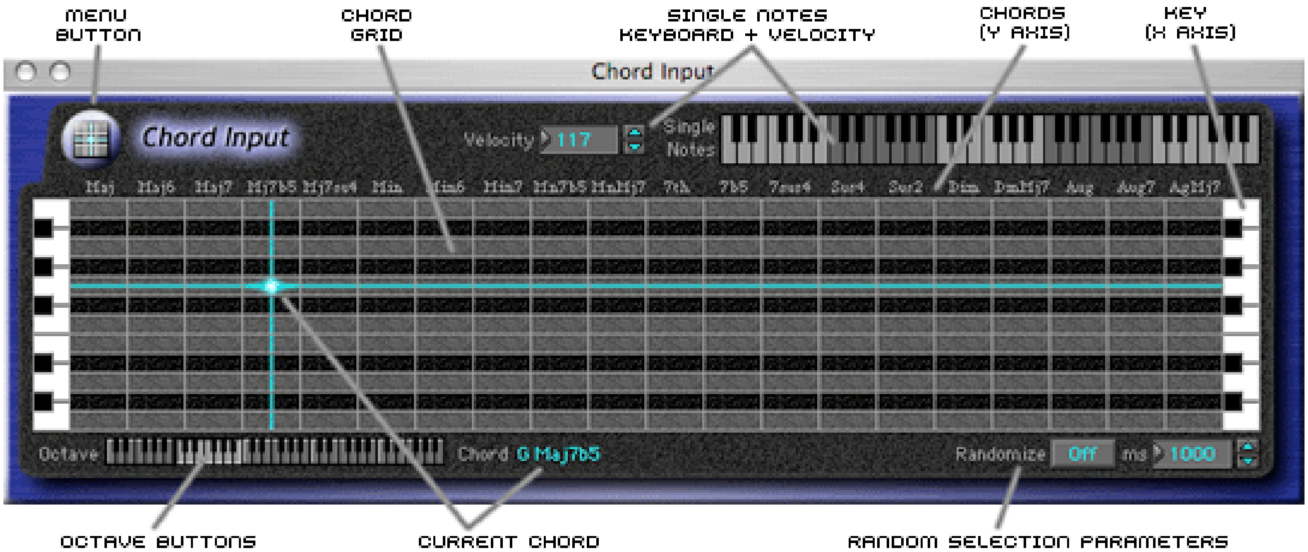
Displays the total number of Performances in the current KDF file that reference the GE in the specified Module.

[Locations]

Displays the location(s) of the Performances using the GE referenced by that Module, in the current KDF File. The format is Bank/Location, being zero-relative. 0.0 therefore indicates the first Performance in the first Performance Bank. If there are more than will fit, the rest will not be displayed.

Chord Input

Sections in this chapter:



Chord Input - Overview

The Chord Input Window allows you to send MIDI Data into KARMA without actually using a MIDI Input Device. It contains a Chord Grid containing 240 chords based on 20 different chord types and 12 different keys. Furthermore, it can allow you to experiment with chord types you might not be familiar with.

Chord Grid
Click on the grid with the mouse to send the chord specified by the column in the key specified by the row into KARMA as MIDI Input, as if it came from a keyboard or other MIDI Device. You may drag around and change the chord type without releasing the mouse.

Chords (Y Axis)
Across the top of the grid are specified 20 different chord types. Clicking in a column sends the chord specified by the column in the key specified by the row. See the Chord Reference later in this chapter for the exact notes.

Key (X Axis)
The rows correspond to the 12 notes in an octave, from C to B going from bottom to top. Clicking in a row sends the chord specified by the column in the key specified by the row.

Current Chord
The Current chord is indicated by the “intersection” graphic in the grid and displayed as a Chord Symbol in the bottom of the editor. The chord will also be displayed at the top of the GE Editor. This field also displays the chord when played from a MIDI Input Device, the same as the one at the top of the GE Editor.

Octave Buttons
These let you change the input octave of the chord that is sent when you click on the grid. They correspond to the five octaves of a 61 note keyboard in terms of range. In other words, with the third octave button pressed, clicking a C Major chord would send [C E G C] with the bottom C at Middle C (C4 - 60). With the first octave button pressed, it would be the same as playing the C chord in the lowest octave of your 61 note keyboard.

Single Notes Keyboard + Velocity
Clicking and dragging with the mouse sends individual notes into KARMA, with the specified Velocity.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this editor.

Random Selection Parameters
Allows you to have chords randomly selected every “n” milliseconds, as specified by the “ms” Field. This feature is something that was written more as a test function, so it’s not as full-featured as it might be someday. It’s not really intended to produce useful results at the moment, but I decided to leave it in. Have fun!

◆ **[Randomize On/Off]** (button) [0, 1]

0: Off   1: On

When On, a new chord will be randomly selected on the Chord Grid at timing intervals specified by the “ms” parameter below. When Off, you use the grid with the mouse.

◆ **[ms (milliseconds)]** (numerical) [10...10,000 ms (10 seconds)]

Specifies the time interval for choosing the next chord at random, in milliseconds. For example, 5000 is five seconds.

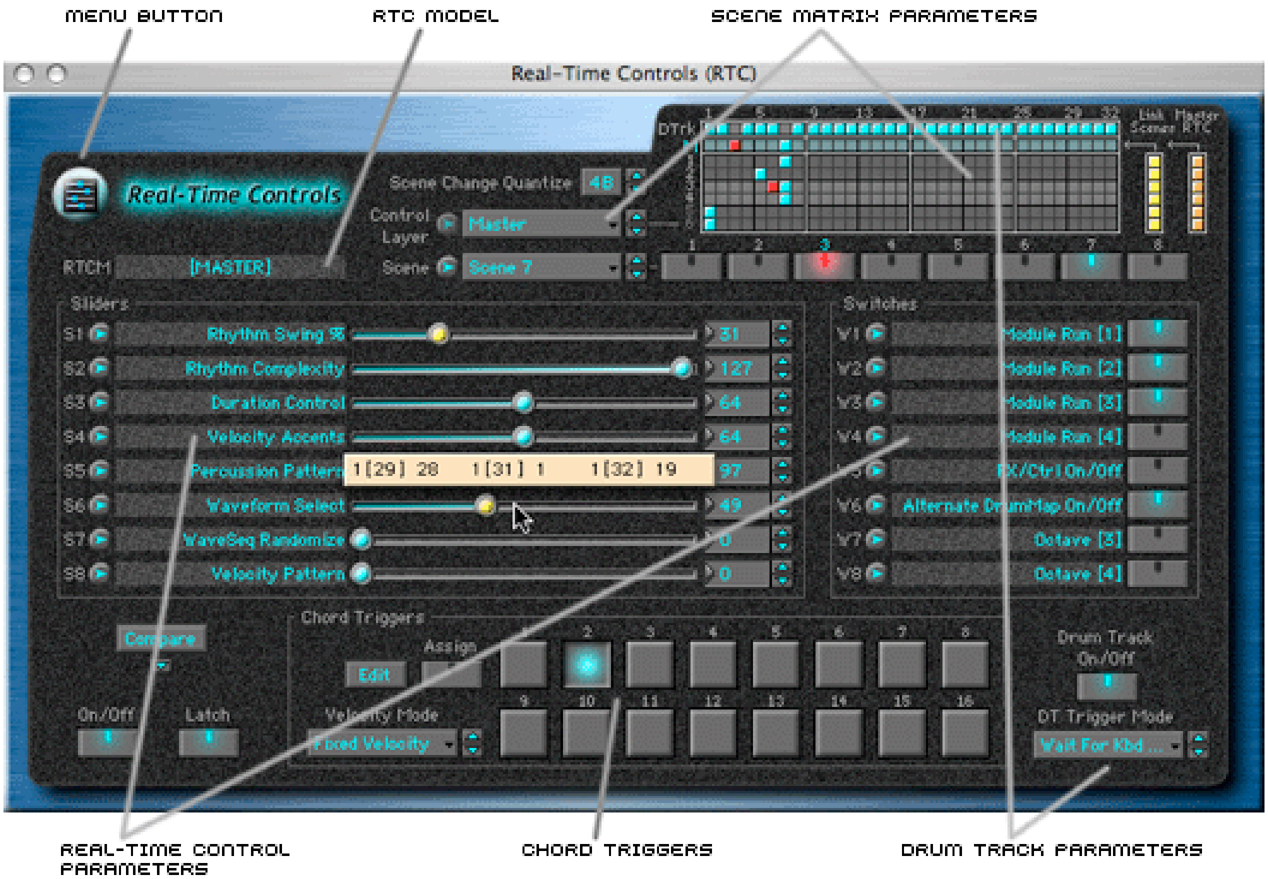
Chord Input - Chord Reference

All chords are four notes. The following table lists the four notes for each chord type in the key of C:

1	Maj	[C E G C]
2	Maj6	[C E G A]
3	Maj7	[C E G B]
4	Maj7b5	[C E Gb B]
5	Maj7sus4	[C E F C]
6	Min	[C Eb G C]
7	Min6	[C Eb G A]
8	Min7	[C Eb G Bb]
9	Min7b5	[C Eb Gb Bb]
10	MinMaj7	[C Eb G B]
11	7th	[C E G Bb]
12	7b5	[C E Gb Bb]
13	7sus4	[C F G Bb]
14	Sus4	[C F G C]
15	Sus2	[C D G C]
16	Dim	[C Eb Gb A]
17	DimMaj7	[C Eb Gb B]
18	Aug	[C E Ab C]
19	Aug7	[C E Ab Bb]
20	AugMaj7	[C E Ab B]

Real-Time Controls (RTC)

Sections in this chapter:



RT Controls - Overview

The Real-Time Controls Window (also referred to as the RT Controls Window or RTC Window) is where you go for top-level control of the KARMA Performance in real-time.

Of course, you can vary any parameter in a GE or a Performance directly on the screen with the mouse in real-time at any time. What we mean by “Real-Time Control” here is that multiple parameters can be assigned to the eight sliders and eight switches, and then varied in real-time via MIDI Controllers (such as any programmable control surface, or the control surface of the M3). The MIDI CCs that each slider and switch will respond to are set up in the **Preferences: RT Controls Tab**.

Furthermore, this window is a combination of several screens of the M3: it corresponds to the 0-6 KARMA RTC page or Control Surface page in the M3, and also incorporates elements of the Scene Matrix Page as well. It may look different, but you will find that it contains all the functionality of those pages and more.

It can even be “linked” with the Control Surface of the keyboard via MIDI Control so that you can move sliders on the keyboard and have them move the sliders in this window, and vice versa. Details on how to set that up can be found in one of the tutorials included in the installation folder.

Other features of the above window not described below in this section are described in the other sections of this chapter.

RTC Model
This label displays the RTC Model type for the GE loaded into a particular Control Layer, or [MASTER] when displaying the Master Layer in a multi-module Performance (corresponding to a Combi in the M3).

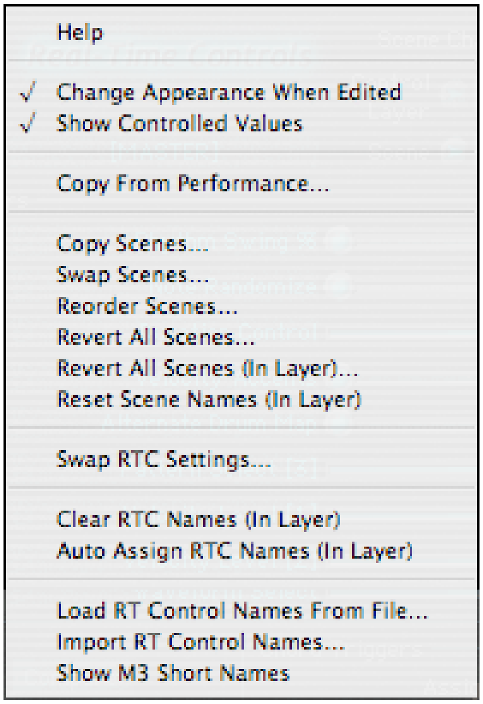
Scene Matrix Parameters
Parameters for selecting scenes, controlling when they change, and selecting the current Control Layer being displayed and edited.

Real-Time Control Parameters
Parameters for varying multiple assigned GE and Performance Parameters in real-time.

Chord Triggers
16 buttons that each store a chord - the first 8 correspond to the 8 pads of the M3. They can be clicked with the mouse, triggered via a CC message, or activated using the Function Keys of your computer keyboard. [F1]~[F8] activate Chord Triggers 1~8, while the same keys + Shift activate 9~16.

Drum Track Parameters
Several of the M3's Drum Track Parameters are stored in each performance, allowing convenient control of the Drum Track in conjunction with KARMA. Also, the Drum Track can be turned on/off in each of KARMA's scenes using the row at the top of the Scene Matrix.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this Window:



<u>Change Appearance When Edited</u>
When On (checked), the slider heads will change appearance (turn yellow) when they are different from the stored values of the Scene, indicating they have been edited. When Off, there will be no change in appearance. This setting is stored in the Preferences.

<u>Show Controlled Values</u>
When On (checked), moving the mouse over any of the 16 RT Controls (eight sliders and eight switches) will popup the "Controlled Values Display" explained in the following section, displaying the current values of any parameters that are assigned to them. When the control is activated, the values update as the control is moved. When Off, this feature is disabled. This setting is stored in the Preferences.

Copy From Performance...
Opens the Copy From Performance Dialog with the options related to RT Controls already set.

Copy Scenes...
Opens the Copy Scenes Dialog allowing you to copy a scene in one or more Control Layers, to one or more other scenes.

Swap Scenes...
Opens the Swap Scenes Dialog allowing you to swap any two scenes, in one or more Control Layers at the same time.

Reorder Scenes...
Opens the Reorder Scenes Dialog, allowing to reorder the arrangement of the first 8 scenes in any Control Layer.

<u>Revert All Scenes</u>
Returns all settings in all 32 Scenes in the all Control Layers to the stored values, as if you had reloaded that part of the Performance. You cannot return to the edited values.

Revert All Scenes (In Layer)
Returns all settings in all 32 Scenes in the current Control Layer to the stored values, as if you had reloaded that part of the Performance. You cannot return to the edited values.

Reset Scene Names (In Layer)
Resets the names of the 32 Scenes in the current Control Layer to the default names, i.e. Scene 1, Scene 2, Scene 3...

Swap RTC Settings...
Opens the Swap RTC Settings Dialog, allowing you to swap the assignments of controllers within a Performance.

Clear RTC Names (In Layer)
Clears the name assignments for all eight sliders and eight switches, in the currently selected Control Layer.

⚠ There is no option to cancel. To return to the previous settings, you will need to reload the Performance.

Auto Assign RTC Names (In Layer)
Based on the GE RT Parms and PE RT Parms that are being controlled, appropriate names (out of the default factory names such as Rhythm Swing % and Rhythm Complexity) can be automatically assigned for the eight sliders and eight switches. You can use this when creating new KARMA function assignments, or changing GE selections.

⚠ When you select this menu item, it will rename all eight sliders and eight switches. There is no option to cancel. To return to the previous settings, you will need to reload the Performance.

Please be aware that even in the case of a Performance for which you have not edited the KARMA function, executing this command may assign names that are different from the currently specified names. That is because the programmer made other choices that s/he felt were more appropriate.

While the default names are useful for quick settings, many times you can set them to even more appropriate names by checking the names in the same general area of the list for variations or greater clarity.

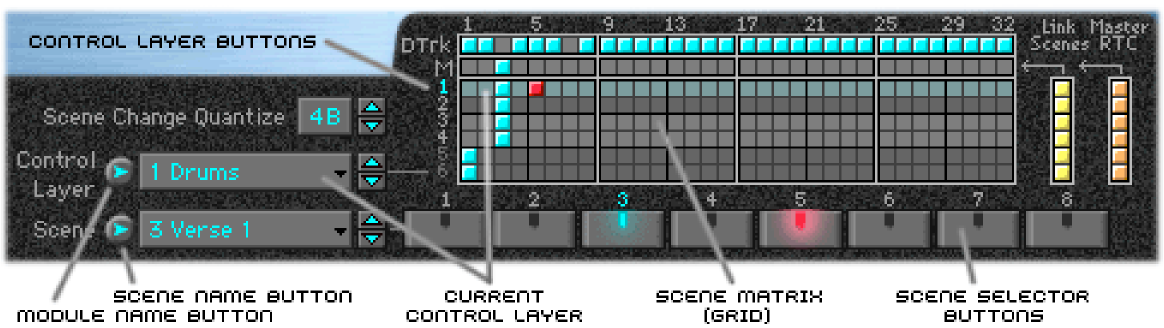
To see what this is doing on a Performance that is already named, you can use the “Clear RTC Names” Utility above first.

Load RT Control Names From File...
Opens the Standard File Open Dialog, allowing you to locate another KDF File containing RT Control Names that you want to load into the current KDF File. This replaces the RT Control Names in the current file.

Import RT Control Names...
Opens the Standard File Open Dialog, allowing you to locate a text file containing a list of RT Control Names that you wish to import into the current KDF File. This replaces the RT Control Names in the current file.

Show M3 Short Names
When this option is selected, the RT Control Names change to use the shortened versions that are used in the KARMA RTC page of the M3 - if you wish to use those same abbreviations, use this option.

RT Controls - Scene Matrix Parameters



The Scene Matrix Parameters section contains settings for working with scenes, and for changing which Control Layer is displayed in the rest of the RT Controls Window. Here you can conveniently view and edit the selected Scenes for each of the seven Module Control layers at the same time. You can also set a Scene Change Quantize Window that controls a time interval for when the scene changes will occur, and view information about upcoming scene changes. Additionally, the top ‘DTrk’ row controls whether the M3’s Drum Track will be on in a particular scene. See Drum Track Parameters.

- **[Control Layer]** (popup menu) [0...6, Master...Module 6]
- **[Control Layer Buttons]** (clickable numbers) [M, 1...6]

Chooses between the Master Layer and a Control Layer for each Module. In a multi-module Performance (corresponding to a Combi in the M3), the Real-Time Control Window can be up to 7 layers deep: there is a Master Control Layer and a Control Layer for each Module. Each layer has its own slider, switch, and scene settings. The Control Layer menu and Control Layer buttons (the tiny numerals to the left of the Scene Matrix grid) let you switch between these layers. When you do so, all of the sliders, switches and scenes will update instantly to show their current values and names within the selected layer. The Control Layer button corresponding to the current layer will be highlighted in blue, as will the row of the Scene Matrix grid.

This can also be operated with the computer's Function Key [F12].

The names shown in the Control Layer menu can be set to more descriptive names for each Module, by clicking the Module Name button to the left of the menu.

Not available in a single-module Performance (corresponding to a Program in the M3).

Settings for Modules 5 and 6 cannot be transferred to the M3.

[Scene Matrix] (grid)

The Scene Matrix grid includes a row of buttons for each Module, with the top row corresponding to the Master Layer. Each row has 32 buttons, with the first eight buttons corresponding to the eight scenes of the M3 control surface. This lets you select any scene in any layer directly, without changing the Control Layer setting. The grid shows an overview of which Scene is selected in any of the layers at any given time.

You can click in any row and column 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 To Master" is on (checked)). When the Scene Quantize Window is set to the higher values such as 1...4 Bars, selecting a scene will not change it immediately. In this case, the pending scene changes will blink red as shown above, in any rows that have been clicked as well as the 8 Scene Selector buttons beneath the grid.

If you click the tiny labels on the left side (M, 1...6), you will change the Control Layer setting to the selected layer, and the entire row and label will be highlighted blue to indicate the current Control Layer setting.

In a single-module Performance (corresponding to a Program in the M3), only the top row of the grid will be available, since there is only one control layer.

[Scene] (popup menu) [0...31]

Selects one of the 32 Scenes in the current Control Layer. The eight sliders and switches instantly update to the stored values in the scene. If selecting a scene in the Master Layer, the Module Layers can change to a specified scene as well, if the "Link Scenes To Master" setting is enabled for that Module.˜

Only the settings related to first eight scenes can be transferred to the M3.

[Scene Selector Buttons] (8 buttons)

A Scene is a collection of settings for the eight sliders and eight switches. Each Performance has up to 32 Scenes (although only the first 8 in any Control Layer can be transferred to the M3.) The first 8 Scenes in the selected Control Layer may be selected by these buttons, which correspond to the 8 Scene Switches of the M3 Control Surface.

When the Scene Quantize Window is set to the higher values such as 1...4 Bars, selecting a scene will not change it immediately. In this case, the button with the pending scene change will blink red as shown above.

Scenes can be selected with the following computer keys:

Mac
Ctrl + 1 - Scene 1 (in current Control Layer)
Ctrl + 2 - Scene 2 (in current Control Layer)
Ctrl + 3 - Scene 3 (in current Control Layer)
Ctrl + 4 - Scene 4 (in current Control Layer)
Ctrl + 5 - Scene 5 (in current Control Layer)
Ctrl + 6 - Scene 6 (in current Control Layer)
Ctrl + 7 - Scene 7 (in current Control Layer)
Ctrl + 8 - Scene 8 (in current Control Layer)

Win
Ctrl + Shift + 1 - Scene 1 (in current Control Layer)
Ctrl + Shift + 2 - Scene 2 (in current Control Layer)
Ctrl + Shift + 3 - Scene 3 (in current Control Layer)
Ctrl + Shift + 4 - Scene 4 (in current Control Layer)
Ctrl + Shift + 5 - Scene 5 (in current Control Layer)
Ctrl + Shift + 6 - Scene 6 (in current Control Layer)
Ctrl + Shift + 7 - Scene 7 (in current Control Layer)
Ctrl + Shift + 8 - Scene 8 (in current Control Layer)

◆ **[Link Scenes To Master]** (buttons) [Off, On]

Allows a Module's Control Layer to be controlled by the Master Layer. When on, changing scenes in the Master Layer will select a new scene for the Linked Module.

On:
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. For example if Master Scene 1 is selected, Module 1 (e.g., drum pattern) could be switched to Scene 5, and Module 2 (e.g., bass riff) could be switched to Scene 8.

Off:
Changing a Scene in the Master Layer only changes Module parameters assigned to the sliders and switches in the Master Layer. The Module Layers do not change Scenes, but stay where they are. Each layer is independent.

◆ **[Enable Master RTC]** (buttons) [Off, On]

Used in conjunction with "Link Scenes To Master" to disconnect any parameters in the Module that may be assigned to sliders and switches in the Master Layer.

Off:
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:
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.

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 Control 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 ˜Control setting 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.

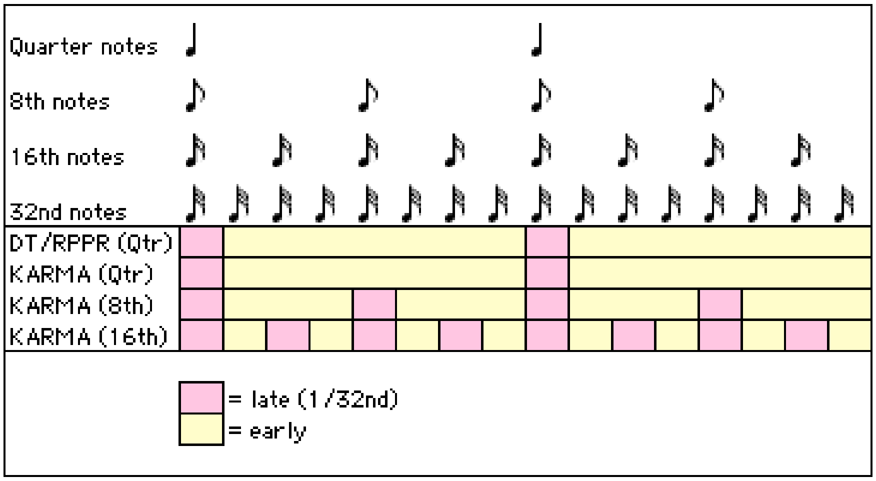
◆ **[Scene Change Quantize Window]** (popup menu) [0...8]

Specifies the metric division by which scene changes will be quantized, in any of the Module Layers. Depending on the setting, this may delay the scene change from occurring until the next beat, next bar, or several bars later.

16th triplet...Quarter:
These smaller values set the window as a note value relative to the tempo. For triplet-based patterns, you may need to select one of the triplet-based settings if you intend to perform scene changes "off the beat."

1 Bar...4 Bars:
These larger values set the window in terms of measures, relative to both the tempo and the time signature of the Performance or the individual Module's GE.

If the KARMA T.Sig (Time Signature) is set to something other than "0 GE/TS", then the specified Time Signature is what will be used to calculate the bar lengths. If the KARMA T.Sig is set to "0 GE/TS" (meaning that each Module's GE uses its own stored internal time signature), then the bar length is calculated using an internal averaging formula based on the Time Signatures of all GEs that are in use.



Scene changes selected at a timing that is within a 32nd note of the Scene Change Quantize Window setting will be considered “late” (shown by the pink color in the diagram above), and will cause the scene change to occur immediately. If the scene change is later than this, it will be considered “early” (shown by the yellow color in the diagram above), and will occur at the next metric division corresponding to the Scene Change Quantize Window (not all settings are shown in the diagram).

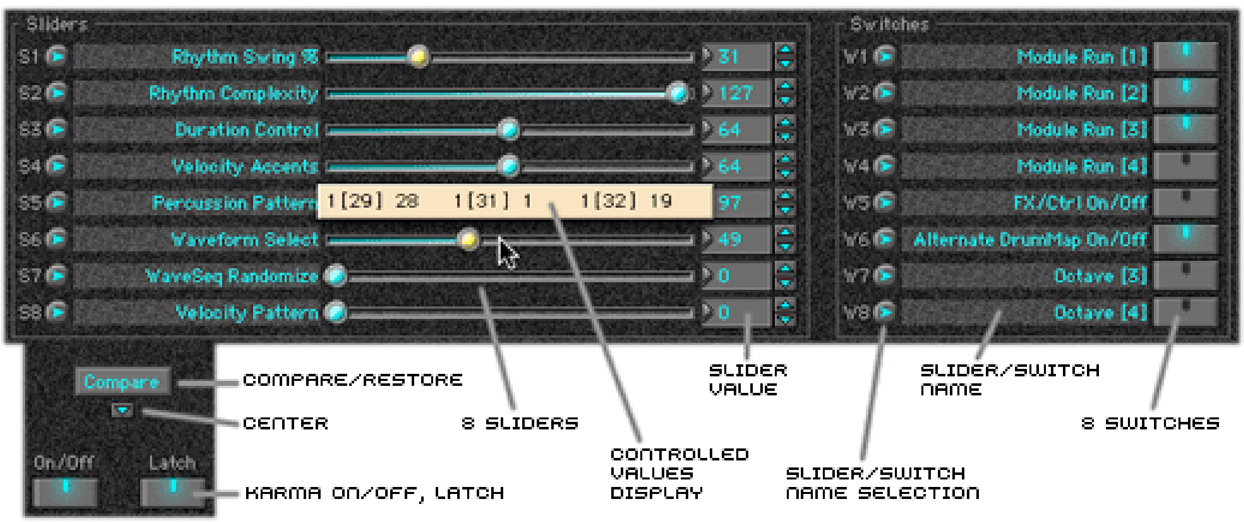
◆ **[Module Name]*** (button)

Allows a descriptive name to be chosen for each Module from a large list of predefined Module Names. By default, in a new Performance the Modules are named Module 1, Module 2, Module 3 etc., but you can choose something that is more appropriate if desired (such as Drums, Bass, etc.). These names then show up in other pages of the Performance Editor, the top of the GE Editor, and the RT Control Window, making it easier to identify a particular Module. See **Module Name Select Dialog**.

◆ **[Scene Name]*** (button)

Allows a descriptive name to be chosen for each Scene from a large list of predefined Scene Names. By default, in a new Performance the Modules are named Scene 1, Scene 2, Scene 3 etc., but you can choose something that is more appropriate if desired (such as Verse, Chorus, Fill, Intro). These names then show up in in the Scene . See **Scene Name Select Dialog**.

RT Controls - Real-Time Control Parameters



The Real-Time Control Parameters section contains the 8 Sliders, 8 Switches, KARMA On/Off and Latch Switch, and a few other features. These correspond to the same same features on the M3 control surface, and can be linked with them so that they mirror each other, as explained in one of the included tutorials.

Slider/Switch Name Selection

These small buttons to the left of the Slider/Switch Name labels next to each of the 16 RT Controls open the **RTC Name Selection Dialog** when clicked (explained later in this chapter), allowing you to select one of many predefined names to describe the function of the control.

8 Sliders/Slider Value

Eight rows that display a name describing the function of the slider, a graphical slider that may be dragged or clicked with the mouse, and a Value field for entering the slider's value directly. These correspond to the eight sliders on the control surface of the M3. The slider can transmit or receive a MIDI CC, allowing external devices to control it such as any commercially available control surface.

As shown in the diagram above, slider heads can be displayed in yellow when they are different from the stored values, indicating they have been edited. This is controlled by the "Change Appearance When Edited" item in the Menu Button explained earlier in this chapter.

8 Switches

Eight rows that display a name describing the function of the switch and a button for switching the function from its minimum to maximum value. These correspond to the eight switches on the control surface of the M3. The switch can transmit or receive a MIDI CC, allowing external devices to control it such as any commercially available control surface.

Controlled Values Display

A small window that pops up over each of the sliders and switches (when the mouse is held over them) showing the value(s) of any parameters that are assigned to them. This corresponds to the "KARMA Values" displays in the M3. The values update as the control is moved. You can activate or deactivate this feature using the "Show Controlled Values" item in the Menu Button explained at the top of this chapter. If there is more than one parameter assigned (as in the picture shown above) they are displayed one after the other in a row.

In a single module Performance (a Program in the M3), or the Module Control Layers 1...6 in a multi-module Performance (a Combi in the M3), the format is:

```
[07] 230
  |   |
  |  Current Controlled Value
 GE RT Parm Number [01...32]
```

In the Master Layer of a multi-module Performance (a Combi in the M3), the Module number is also shown, or a "P" indicating a Performance RT Parm:

```
2[07] 230
|  |   |
|  |   Current Controlled Value
|  RT Parm Number [01...32, 01...08]
Module Number [1...6, P]
```

- **[Slider Name]** (button)
- **[Switch Name]** (button)

Opens the **RTC Name Selection Dialog** when clicked, allowing you to select one of many predetermined names to describe the function of the corresponding slider or switch.

In KARMA, there are multiple ways to achieve a certain sort of effect. Let's say we're talking about varying the "Rhythm Complexity" - you could do this by changing the Rhythm Random Factor, the Velocity Random Factor, The Drum Rest Random Factor (in a Drum Pattern), the Rhythm Multiplier, etc. Seeing one of these parameter names on the screen wouldn't necessarily tell you much about what the actual effect of varying it is, if it was just displayed automatically. So the Programmer gets to decide on an effect to achieve (when designing a GE), such as varying the Rhythm Complexity. He can do this using any one of multiple different parameters, some of them with non-intuitive names. But after assigning this parameter to the slider/switch, he can then give it an intuitive (hopefully) name that describes in more simple words what it is supposed to do. Furthermore, multiple parameters with different names can be assigned to a single RT Control, so again, the name of the function is separate from the parameters.

You can have KARMA automatically assign default names based on the current parameters settings using the "Auto Assign Names (in Layer)" item in the Menu Button described at the top of this chapter.

- **[Slider Value]** (numerical) [0...127]

Displays the value of the corresponding slider as it is moved, or allows you to enter directly a value from 0 to 127, jumping the slider to that value.

- **[Slider]** (slider) [0...127]

Allows you to graphically control the RT Parms assigned to the slider. Click on the head and drag, or click anywhere on the slider to jump to that location.

Sliders can be assigned to transmit or receive a specified MIDI CC number in the **Preferences: RT Controls Tab**. This allows you to record the movements into a sequencer, or control them remotely using the M3 control surface or any commercially available control surface.

[Switch] (button) [0, 1]

0: Off (0)   1: On (127)

Allows you to graphically control the RT Parms assigned to the switch. Click on the button to toggle between the off and on positions.

Switches, including the KARMA On/Off and Latch On/Off buttons discussed below can be assigned to transmit or receive a specified MIDI CC number in the **Preferences: RT Controls Tab**. This allows you to record the movements into a sequencer, or control them remotely using the M3 control surface or any commercially available control surface.

[KARMA On/Off] (button) [0, 1]

0:Off   1: On

Turns the whole KARMA Function On/Off. This corresponds to the KARMA On/Off button on the M3. The computer keyboard's Function Key [F9] may be used to toggle this on/off.

When Off, the KARMA Function will not generate any data, and the **Key Zone Page Timbre Thru** setting(s) are active.

[Latch On/Off] (button) [0, 1]

0:Off   1: On

Allows any Modules that have the Trigger Page Note Latch parameter set to On in the current Performance to be controlled by this switch. This corresponds to the Latch On/Off button on the M3. The computer keyboard's Function Key [F11] may be used to toggle this on/off.

If the Module's Trigger Page Note Latch setting is Off, operating this button will have no effect on the latch for that Module. It will only work if the Module's Note Latch setting is On. See **Trigger Page: Note & Envelope Triggering Parameters**.

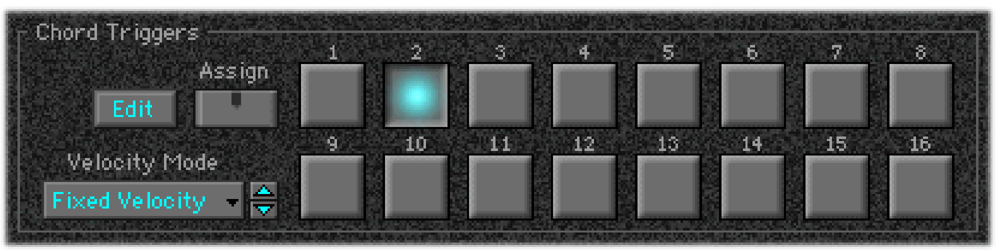
[Compare/Restore] (button)

Allows each Scene (if edited) to be compared individually with the stored settings of the Performance. Will not be available unless at least one setting in the scene has been edited.

[Center Button] (button)

When clicked, will initialize (center) all sliders to "64" and all switches to "Off."

RT Controls - Chord Triggers



The Chord Triggers section allows you to assign and trigger 16 different chords from the buttons.

[Chord Trigger Buttons] (16 buttons)

16 buttons that each store a chord of up to eight notes and velocities - the first 8 correspond to the 8 pads of the M3. They can be clicked with the mouse, triggered via a CC message, or activated using the Function Keys of your computer keyboard:

[F1]...[F8] - Pad 1/Chord Trigger Button 1...Pad 8/Chord Trigger Button 8
Shift + [F1]...[F8] - Chord Trigger Button 9...Chord Trigger Button 16
Ctrl + a [Mac], Ctrl + Shift + a [Win] - Chord Trigger Assign

[Assign] (button)

Allows you to easily assign a chord of up to eight notes and velocities to one of the 16 Chord Trigger buttons. There are two ways you can do this:

Method 1:
1. Click on the Assign button to turn it On. The LED will light.
2. Play the chord on the MIDI Input Device. To assign notes that are difficult to play simultaneously, hold down the first note on a keyboard and then add additional notes one by one with the other hand. You can create extremely wide voicings this way that would be impossible to play normally.
3. Click one of the Chord Trigger Buttons. The notes and velocities you played in step 2 will be registered to that button, and the Assign button will turn off.

Method 2:
1. Play a chord on the MIDI Input Device (the last chord is always kept in memory).
2. Click on the Assign button to turn it On. The LED will light.
3. Click one of the Chord Trigger Buttons. The chord you played in step 1 will be registered to that button, and the Assign button will turn off.

The Assign button can also be operated with a key shortcut on the computer keyboard, see above under Chord Trigger Buttons.

◆ **[Velocity Mode]** (popup) [0, 1]

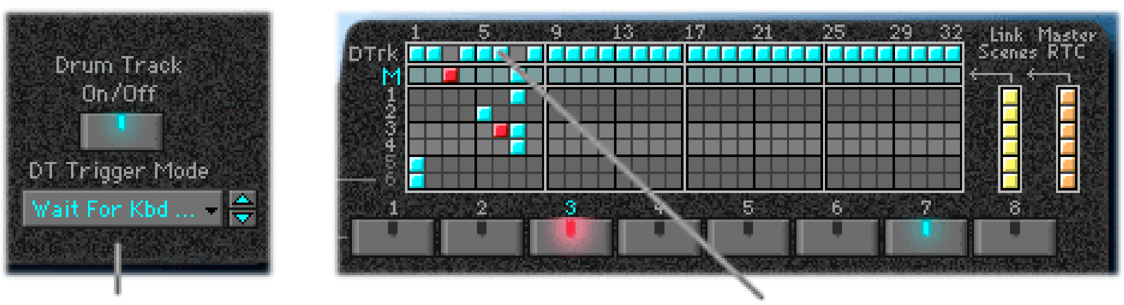
Sets one of two ways of generating the velocities for the notes on the Chord Trigger, with regards to velocity sensitive input devices. Note that since the computer keyboards function keys are not velocity-sensitive, this has a very limited effect on the chords being generated from the function keys, but can be used to make them all somewhat softer or louder, since a simulated "Function Key Velocity" is able to be set in the **Chord Trigger Editor**.

0. Fixed Velocity
The Chord Triggers (and Pads in the M3) will send the stored velocity for each note as it is programmed, without any velocity sensitivity.
1. Vel. Sensitive
The programmed velocities of the notes are scaled to become louder or softer, depending on the velocity with which the pad is triggered, while maintaining the same relationship to each other.

◆ **[Edit]** (button)

Opens or brings to the front the **Chord Trigger Editor**, where you can edit each note and velocity of a Chord Trigger, and apply utility functions such as transposition and velocity scaling to them as well.

RT Controls - Drum Track Parameters



DRUM TRACK PARAMETERS DRUM TRACK RUN (FOR EACH SCENE)

Several of the M3's Drum Track Parameters are stored in each performance, allowing convenient control of the Drum Track in conjunction with KARMA. Also, the Drum Track can be turned on/off in each of KARMA's scenes using the Drum Track Run row at the top of the Scene Matrix.

◆ **[Drum Track On/Off]** (button)

Turns the M3's Drum Track on or off, in conjunction with the DT Trigger Mode setting below. These settings are stored in the KARMA Performance, and are sent to the M3 via SysEx.

◆ **[DT Trigger Mode]** (popup menu)

Specifies how the Drum Track will be triggered, in conjunction with the above On/Off setting. Wait for Keyboard: the Drum Track will start when the keyboard or Chord button is pressed. Immediately: starts with the On/Off button.";

◆ **[Drum Track Run]** (grid row)

Controls whether the M3's Drum Track will be running in a particular Scene of the Master Layer; you can use this to have the Drum Track turn on and off in different scenes.

RT Controls - Korg M3 Special Notes

The following features (indicated with an asterisk in the above descriptions) are not able to be transferred to the M3:

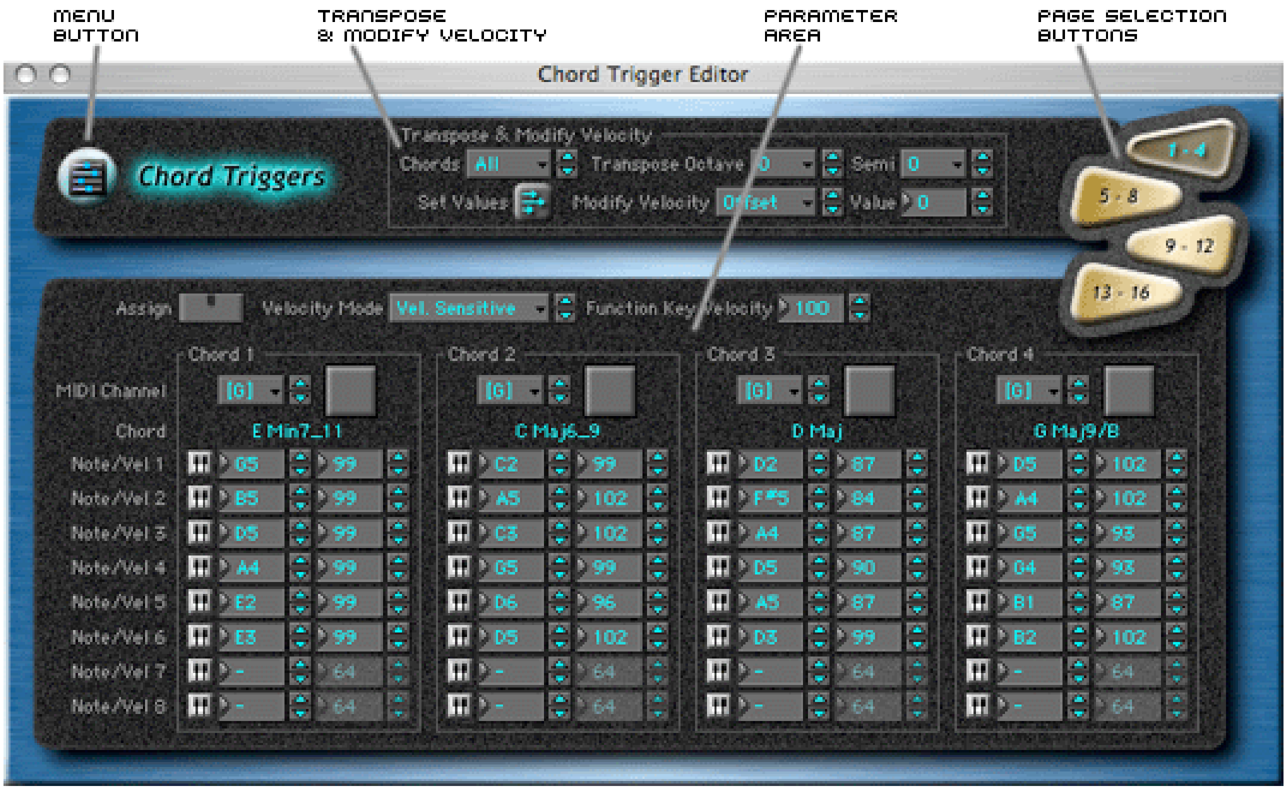
Module Name
Scene Name

- In addition, only the first 8 scenes in any Control Layer are capable of being sent or received from them M3. Any settings for Modules 5 and 6 are ignored when being transferred to the M3.

- Only the first 8 Chord Triggers are capable of being sent or received from the M3.

Chord Triggers

Sections in this chapter:



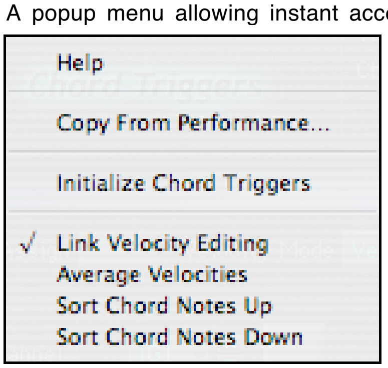
Chord Triggers - Overview

The Chord Triggers Editor provides editing for each of the notes and velocities in each of the 16 Chord Triggers, as well as the Channel for each Chord Trigger, along with a number of useful utility functions for modifying and managing the Chord Triggers. The first eight Chord Triggers correspond to the 8 Pads in the M3; the second eight Chord Triggers can be used in the software, but cannot be transferred to the M3.

Transpose & Modify Velocity
This section allows you to transpose the pitch and modify the velocity settings of one or more chords in real-time, auditioning the results before committing to the edit.

Parameter Area
For each of the 16 Chord Trigger Buttons, a column is displayed showing the eight notes and velocities that can be assigned to the button. The notes and velocities can be edited or assigned from the keyboard.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this editor:



Copy From Performance...
Opens the Copy From Performance Dialog with the options related to Chord Triggers already set.

Initialize Chord Triggers
Resets all 16 stored chords to 4 groups of Cmin7, Dmin7, Fmin7, GMin7.

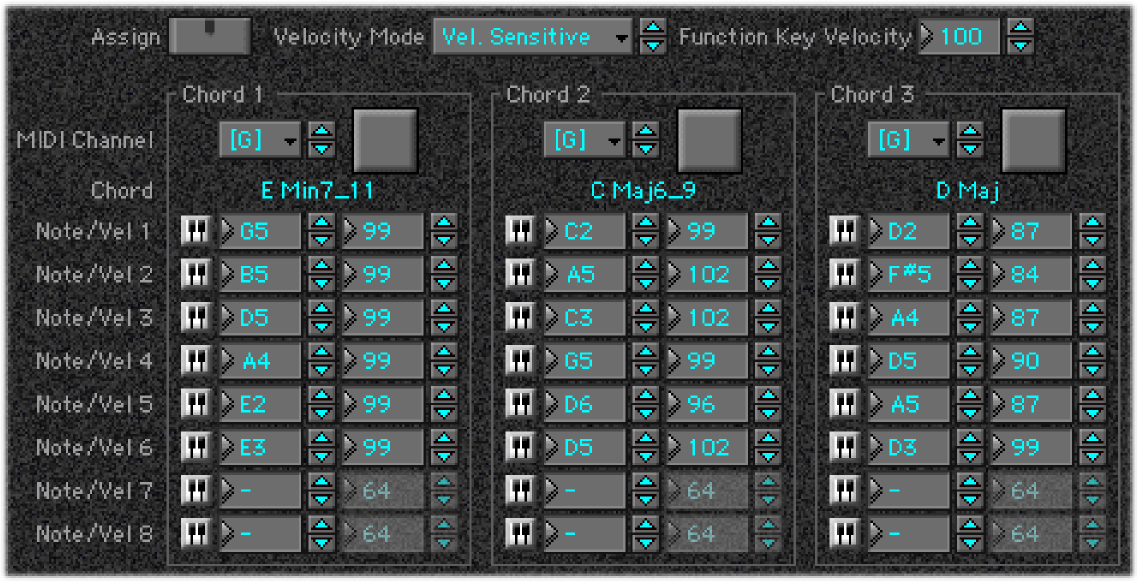
Link Velocity Editing
When this is activated, a checkmark appears. Then, editing any note's velocity in a Chord Trigger will adjust all notes in that chord to the same velocity. You can use this to easily set the entire chord to a particular velocity.

Average Velocities
Averages the velocities of all notes, within each Chord Trigger.

Sort Chord Notes Up
Sorts the notes in each Chord Trigger by pitch, in an ascending direction.

Sort Chord Notes Down
Sorts the notes in each Chord Trigger by pitch, in a descending direction. Note that this is the recommended direction for making sure a root note will play on a monophonic program, with KARMA Off.

Chord Triggers - Parameter Area



This section contains the main Assign button for assigning chords, a few parameters related to the Velocity Mode, and then a column for each of the 16 Chord Triggers (only four may be viewed at a given time). A label in each column shows the analyzed Chord Type, such as "Emin7_11." A Chord Trigger button allows each chord to be triggered with the mouse (or the function keys, or incoming CC messages, as described in the **RT Controls Window** chapter).

◆ **[Assign]** (button)

Allows you to easily assign a chord of up to eight notes and velocities to one of the 16 Chord Trigger buttons. There are two ways you can do this:

Method 1:
1. Click on the Assign button to turn it On. The LED will light.
2. Play the chord on the MIDI Input Device. To assign notes that are difficult to play simultaneously, hold down the first note on a keyboard and then add additional notes one by one with the other hand. You can create extremely wide voicings this way that would be impossible to play normally.
3. Click one of the Chord Trigger Buttons. The notes and velocities you played in step 2 will be registered to that button, and the Assign button will turn off.

Method 2:
1. Play a chord on the MIDI Input Device (the last chord is always kept in memory).
2. Click on the Assign button to turn it On. The LED will light.
3. Click one of the Chord Trigger Buttons. The chord you played in step 1 will be registered to that button, and the Assign button will turn off.

The Assign button can also be operated with a key shortcut on the computer keyboard, see below under Chord Trigger Button.

[Velocity Mode] (popup) [0, 1]

Sets one of two ways of generating the velocities for the notes on the Chord Trigger, with regards to velocity sensitive input devices. Note that since the computer keyboards function keys are not velocity-sensitive, this has a very limited effect on the chords being generated from the function keys, but can be used to make them all somewhat softer or louder, since a simulated “Function Key Velocity” is able to be set below.

0. Fixed Velocity

The Chord Triggers (and Pads in the M3) will send the stored velocity for each note as it is programmed, without any velocity sensitivity.

1. Vel. Sensitive

The programmed velocities of the notes are scaled to become louder or softer, depending on the velocity with which the pad is triggered, while maintaining the same relationship to each other.

[Function Key Velocity] (numerical) [1...127]

Allows a simulated “velocity level” to be set for the computer’s Function Keys (which are not velocity sensitive). In other words, since they only generate a fixed level, you can set the level at which you want them to be interpreted. If you set this to 90, for example, then each Function Key will be assumed to have been pressed with a velocity of 90. This is mainly for testing the Vel. Sensitive Mode from the computer.

[MIDI Channel] (popup menu) [1...16, [G] (Global)]

Specifies the MIDI Channel on which the Chord Trigger will transmit its notes. You can use this to have different Chord Triggers activate different KARMA Modules, by setting this to something other than the Global Channel, and then setting the Module’s Input Channel to the same value in the MIDI Ins & Outs Editor.

[Chord Trigger Button] (button)

Sends the stored notes and velocities into KARMA as MIDI Input, where they can trigger KARMA Modules or be routed to other destinations. They can be clicked with the mouse, triggered via a CC message, or activated using the Function Keys of your computer keyboard:

[F1]...[F8] - Chord Trigger Button 1...Chord Trigger Button 8
Shift + [F1]...[F8] - Chord Trigger Button 9...Chord Trigger Button 16
Ctrl + a [Mac], Ctrl + Shift + a [Win] - Chord Trigger Assign

[Chord Name] (label)

Shows the chord type as analyzed by KARMA’s chord recognition.

[Note 1~8] (numerical) [-1: Off, 0...127: C-1...G9]

Specifies the MIDI Note Number for one of the notes assigned to a Chord Trigger Button. A chord may contain up to up to eight notes. As shown above, unused Notes display the “-” symbol, indicating they are “Off.” If you select the numerical with the mouse and drag all the way down, you will get this “-”. You can enter MIDI Note Names directly (i.e. for C3 just type c3 on the computer keyboard), or scroll with the mouse, use the computer up/down arrow keys, or use the Inc/Dec arrows next to each field.

You can also assign the note directly from MIDI Input using the “Assign From Keyboard Buttons” described below.

[Velocity 1~8] (numerical) [1...127]

Specifies the velocity for one of the notes assigned to a Chord Trigger Button. When the chord is triggered, each note will be input into KARMA with the velocity specified here.

You can also assign the velocities directly from MIDI Input using the “Assign From Keyboard Buttons” described below.

[Assign From Keyboard Buttons]

To the left of each note field in the chord is a small keyboard button. When turned on, the next note and velocity you play on the MIDI Input device will be assigned to that field. If you turn on multiple buttons, for however many are turned on the next sequential notes from the MIDI Input Device will be assigned in order from the top to the bottom of the column (Notes 1~8).

Of course, the easiest way to assign a chord to a Chord Trigger Button is to simply use the Assign Button and play the chord on the MIDI Input Device. See the description above.

Chord Triggers - Transpose & Modify Velocity

The parameters in this section are not stored in the Performance - rather, they allow you to make real-time modifications to the transposition of the notes and the velocities of the notes, to one or more Chord Triggers at a time. You can audition the results by playing the Chord Triggers, without actually modifying them. Once you have a result you like, you can press the “Set Values” button and the changes are written to the Chord Triggers.

⚠ It is important to note these settings are a temporary real-time modification that do not affect the Performance until the Set Values button is clicked. Storing a Performance with these values set to some modification does not automatically enter them in the Performance.

◆ **[Chords]** (popup menu) [All, 1...16, 1~4, 5~8, 9~12, 13~16, 1~8, 9~12]

Specifies which of the Chord Triggers will be affected by the Transpose and Velocity settings. You can choose from single chords, groups of 4 or 8, or all Chord Triggers.

◆ **[Transpose Octave]** (popup menu) [-3...+3]

Transposes the specified Chord Triggers by an octave amount. This is combined with the Semitone setting.

◆ **[Semitone]** (popup menu) [-12...+12]

Transposes the specified Chord Triggers by a semitone amount. This is combined with the Octave setting.

◆ **[Modify Velocity]** (popup menu) [0, 1]

Selects one of two modes that the Value field will operate in:

<u>Offset</u>
The Value field accepts a range from -63...+64, and this value is used to raise or lower the velocities in the specified Chord Triggers by that amount, maintaining the original relationship, but making the whole chord louder or softer.

<u>Absolute</u>
The Value field accepts a range from 1...127, and this value is used as an absolute setting for all notes in the specified Chord Triggers. You can use this to set all velocities to 100, for example.

◆ **[Value]** (numerical) [-63,...+64, 1...127]

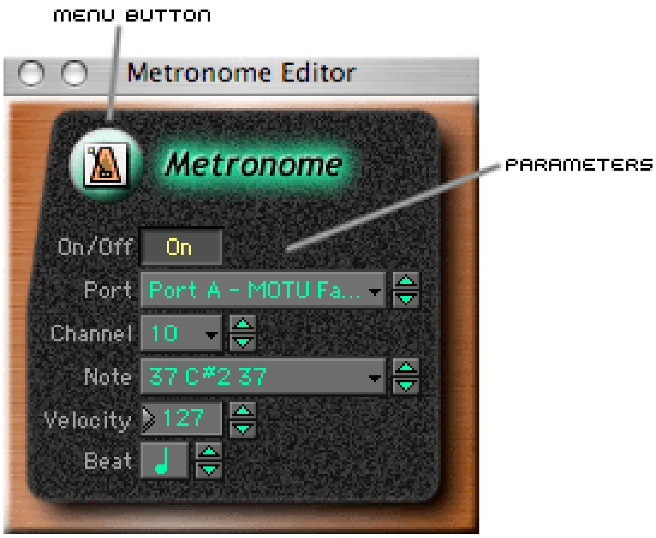
Operates in two different ways, depending on the setting of the Modify Velocity menu. Offset raises or lowers all notes in the chords by the specified amount, while Absolute sets all notes in the chords to the specified velocity.

◆ **[Set Values]** (button)

Applies the transposition and velocity modifications to the specified Chord Triggers. Once the settings have been made to your satisfaction and sound correct, you then apply them with this button. The settings of the entire Transpose & Modify Velocity section then return to zero. Note that while the values have been entered into the current Performance’s Edit Buffer, the changes are not permanent until you save the Performance and the KDF File.

Metronome

Sections in this chapter:



Metronome - Overview

The Metronome Editor allows you to generate a metronome that can be a useful timing reference when you are creating and editing GEs and Performances.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this editor.

Parameters
Control the settings of the metronome, such as note, velocity, beat division, etc.

When the metronome is On, vertical beat markers (vertical lines) are generated and displayed in the Data Display Editor. If you want to see the vertical beat markers but not hear the metronome, set the Metronome Port to something that is not being use, or the Velocity to "1."

Metronome - Parameters

◆ **[Metronome On/Off]** (button) [0, 1]

0: Off 1: On
When On, a note is generated at regular intervals according to the settings and sent to the specified MIDI Device on the specified Channel. This provides a useful timing reference while editing GEs.

◆ **[Port]** (popup menu) [varies depending on MIDI Interface]

Selects the MIDI Device that you wish to send the metronome notes to.

◆ **[Channel]** (popup menu) [0...15: 1...16]

Specifies the MIDI Channel that the metronome note will be generated on.

◆ **[Note]** (popup menu) [0...127: C-1...G9]

Selects the MIDI Note Number that will be generated as the metronome. This popup menu displays either MIDI Note Numbers, GM Drum Names, or a combination of the two depending on the settings in the Preferences: Popups Tab.

◆ **[Velocity]** (numerical) [1...127]

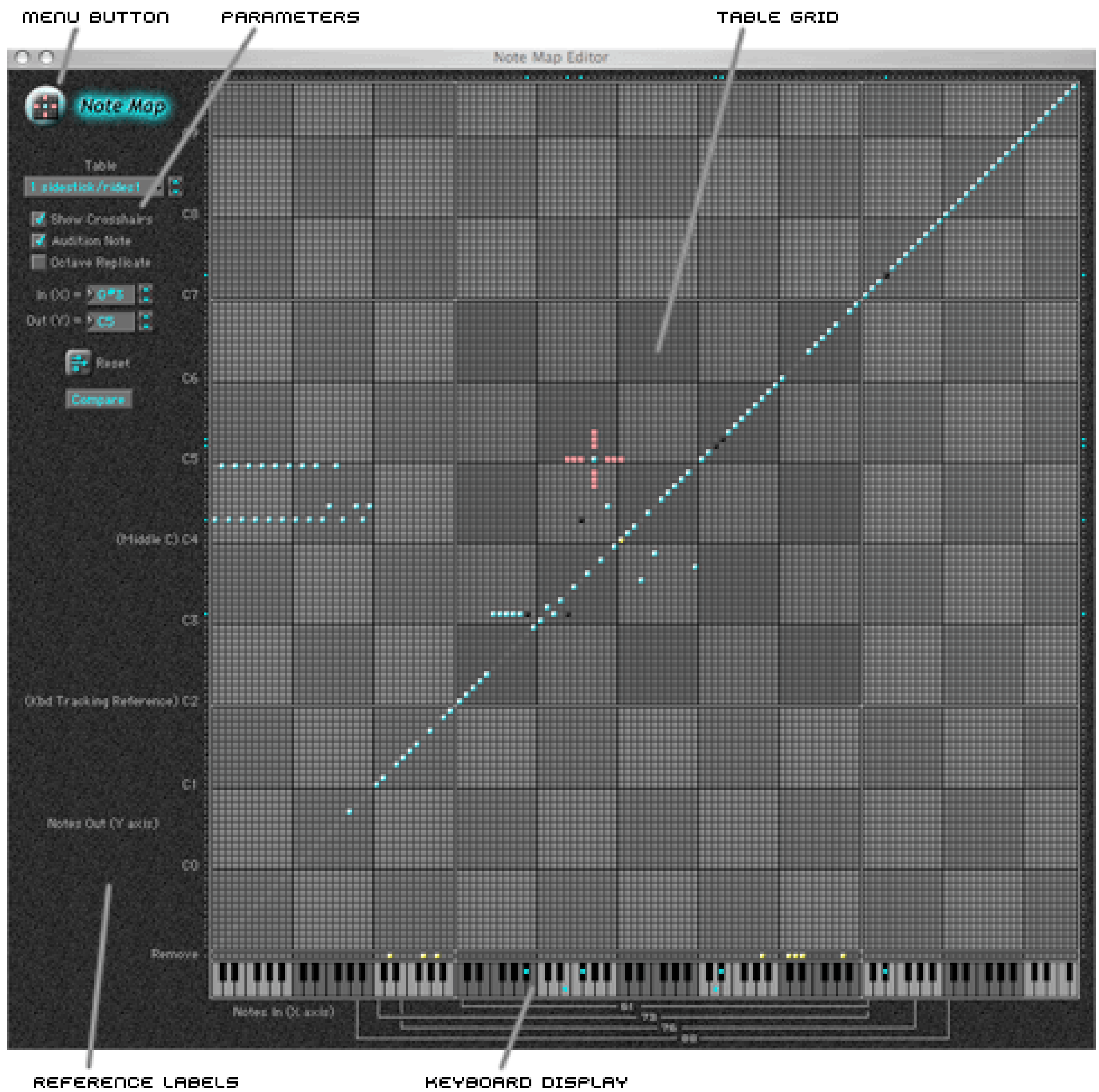
Sets the velocity with which the note will be generated.

◆ **[Beat]** (popup) [0...3: 32nd, 16th, 8th, Quarter Notes]

Sets the rhythmic division at which to generate the metronome note. This relates to the Performance Tempo setting in BPM.

Note Map

Sections in this chapter:



Note Map - Overview

The Note Map feature allow a “final note shaper” to be applied at the end of the KARMA note generation process, within each Module of a Performance. 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.

The Note Map feature can be useful for:

Drum GEs w/Drum data
• Filter out (remove) any note, or any number of notes from an existing GE drum groove.
• Remap any GE’s notes on a particular drum kit to sound good on another drum kit.

• “Tame” and “limit” the effect of repeats w/ transpose on the drums, without affecting basic groove notes.
One thing that’s useful is to turn on Melodic Repeat on drums, with some sort of transpose value - it instantly creates additional rhythms with random drum notes. Many times, however, 98% of what is being created is cool except there’s a Cuica, Crash, Vibraslap or some other weird note in there that spoils the whole effect, so it’s not usable. Since the Note Map Table can operate on “All Notes”, “Main Notes Only”, or “Repeat Notes Only”, it becomes simple to just limit/remove the bad notes coming from the repeats, and leave all the rest of the syncopation that sounds cool.
• Real-time modifications
Since “Note Map Mode (On/Off)” and other parameters can be assigned as RT Parms, the table can be used in real-time to drop out the snare, change snare to sidestick or hi-hats to rides, change the drum kit into a completely different mapping for a different scene, etc. It’s true that some of this may already be programmed into the GE, but this allows it to be applied to any GE after the programming is already finished.

Melodic GEs (GE Type = Riff, Gated, Real-Time, or Drum GEs with note data)
• Thin out overall note activity, on all notes, just repeated notes, or just main notes.
• Remap or remove certain undesirable tones.
For example, say you have created a groove or effect where you like everything except there is a Major 7th when you play a straight major chord (for example), and there’s no way to edit or modify the GE to remove it. You can easily do this in every octave of the table, and remap the 7th to some other more desirable note (which maintains the activity), or remove it completely (which leaves a space or rest instead).
• Get 2 or 3 (or more) completely different phrases out of the same GE.
This is done by mapping all input octaves of the table to a single output octave or two (i.e. all input notes are mapped to notes in the range C2 to C3). Setup up different mappings in different octaves of the X values (left to right). Then, by varying in real-time the transpose octave of the input notes, target the selection of different parts of the table to generate the output notes. Change the octave of the transpose, and get a different phrase (since it runs through a different octave of the table).
• Run different Modules simultaneously through different areas of the same table.
In the “Kbd Track (C2 Ref)” mode, you can use the Module transpose and other GE transposes to move modules to different areas of the table, and then use the Timbre’s pitch transpose to bring them back to the normal range, so that different modules can essentially have their own area of the table to run through. In other words, you could transpose the Bass GE down by -24, which would run it through the octaves of the table at C0->C2, and then put the timbre’s pitch transpose at +24. Then you could run an additional module through the table, which would be using C3->G7, and the two modules will not conflict with each other, yet each have their own range inside the single table.

As summarized in the diagram above, the Note Map Editor can be divided into the following sections:

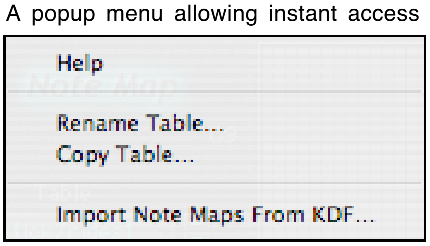
Table Grid
The Note Map Table itself, displayed graphically on a large grid, with various generated note displays running down the sides and across the top. You can click on individual cells to edit them.

Parameters
Options that affect certain characteristics of the Table Grid, allow individual cells to be edited numerically, and allow tables to be restored or compared.

Keyboard Display
A graphic across the bottom of the Table Grid that displays incoming MIDI notes, and also can be clicked to locate a particular note to edit.

Reference Labels
Indicators showing the octaves of the table and other useful information.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this Editor:

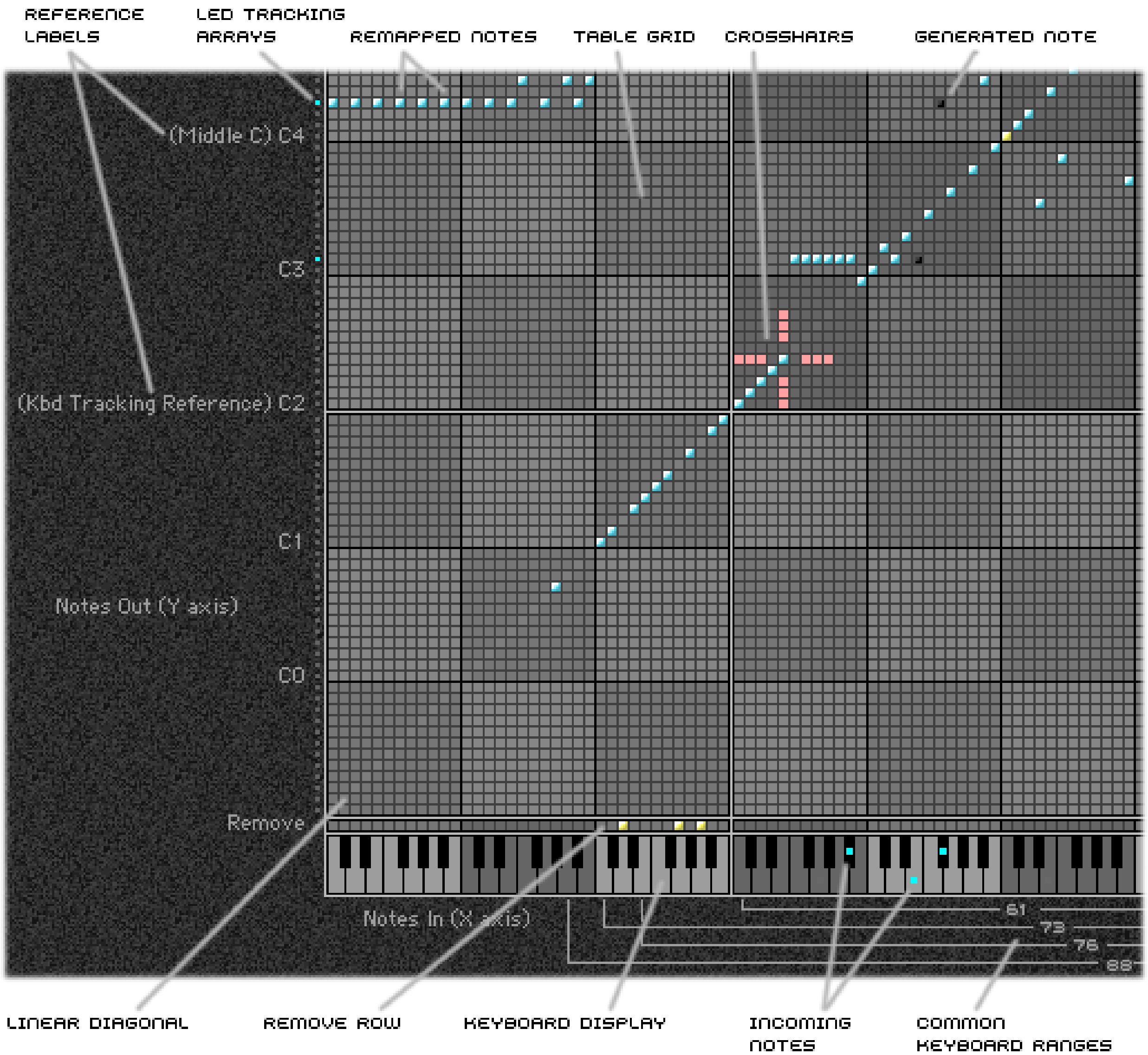


Rename Table…
Rename any of the Global Tables (the Custom Table cannot be renamed).

Copy Table…

Import Note Maps From KDF...
Opens the Standard File Select dialog, allowing you to locate a KDF file from which to read Note Map data. All of the Note Maps in the current KDF file will be replaced by the data from the selected KDF File.

Note Map - Table Grid



◆ **[Table Grid]** (128 columns by 129 rows)

The Note Map Table is implemented as a large grid, allowing any incoming MIDI note generated by KARMA (0~127) to be remapped to any other MIDI note (0~127), or filtered out (removed). You can click on any cell in the table to change it, and use the command-key (Mac) or control-key (Win) to connect cells and draw straight lines, as well as using the numerical fields in the Parameters are to edit individual cells by number or note.

As shown in the diagram above, there are a number of different graphic indicators to help you determine which notes you are remapping. Contrasting gray shading is used to indicate octaves - each “checkerboard square” is an octave. The darker square of 5 octaves in the center corresponds to the 5 octaves of a 61 note keyboard (minus one note). The legend at the bottom shows the relationship to common keyboard sizes. Reference labels down the side show each octave, Middle C, and the “Kbd Tracking Reference” (C2), which relates to the use of the Kbd Track parameter in the **Performance Editor:Control** page.

The X-axis of the table (the columns) represent the pitch of the incoming notes, and the Y-axis (the rows) represent the pitch the the note will be remapped to. The bottom row is labeled “Remove” and allows any note to be filtered out of the final output. When you click on the grid with the mouse, the note at the current X value (left to right) is mapped to the note at the Y Value (bottom to top). The last clicked “cell” in the grid is displayed in the “In (X)/Out (Y)” fields to the left for info or easier editing (see below). If “Show Crosshairs” is turned on, a red set of marks will surround the currently selected note.

The “Linear Diagonal” line represents “no remapping” - notes positioned on this line leave the table with the same pitch as they enter it. When notes are moved off the diagonal line, faint markings in the grid show the original diagonal line. “Remapped Notes” are any notes that are off the Linear Diagonal line. As the GE is playing in real-time, incoming notes will blink in the Keyboard Display at the bottom, the generated notes will blink blue in the LED Tracking Arrays down each side and across the top. The generated notes will also blink the cells black on the Table Grid itself, allowing you to find the notes in the map that are currently sounding.

The real-time blinking of the Table Grid, Keyboard Display, and LED Tracking Arrays while notes move through the table will only happen if the table being displayed and edited is the one that is selected in the Current Edit Module, on the **Performance Editor:Control page**.

◆ **[Keyboard Display]** (clickable graphic)

Displays incoming MIDI notes as the enter the table. Clicking on the graphic plays the corresponding note (when “Audition Note” is on), and selects that X/Y value for display and editing in the “In (X)/Out (Y)” fields below.

Note Map - Parameters

◆ **[Table]** (popup menu) [0 = Custom, 1...64 = Global]

Chooses the single “Custom” table in the current Performance, or one of the Global Tables. It is then loaded into the grid for display and editing.

◆ **[Show Crosshairs]** (checkbox) [0, 1]

When On, clicking in the grid (or using the In (X)/Out (Y) fields) will display a set of “crosshairs” surrounding the last clicked intersection. This can help you more easily locate the values being edited.

◆ **[Audition Note]** (checkbox) [0, 1]

When On, clicking on the grid (or using the In (X)/Out (Y) fields) plays the note that is being edited. Clicking in the Keyboard Display along the bottom will also select and play the note.

◆ **[Octave Replicate]** (checkbox) [0, 1]

When On, any edit you make with the mouse within an octave will be made in every octave. This also applies to the In (X)/Out (Y) edit fields. 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.

◆ **[In (X)/Out (Y)]** (numericals) [0...127, 0...128]

These fields allow you to select any “X/Y” pair on the grid, and modify it. You can type MIDI Note Numbers (i.e. 36) and it will turn them into Note Names, or you can type the name directly (i.e. C4). If you click on the Table Grid with the mouse, the current X/Y value is displayed here for easy editing. When either one of the value fields is selected, you can scroll with the mouse or use the up/down arrow keys to increment/decrement by one, or hold down the arrow keys for continuous advancement. Clicking in the Keyboard Display along the bottom will also select that note for editing.

◆ **[Reset]** (button)

Resets the current table to the “Linear Diagonal” (no change in pitch to any notes).

[Compare/Restore] (button)

When a Note Map Table has been edited, the Compare button becomes available, and will restore the previous state of the table when clicked. At that time, the button changes to “Restore,” and clicking it again will go back to the edited state. Once you select another table for viewing, any edits are “accepted” and the button is again grayed out.

IMPORTANT: When you edit one of the global tables (anything other than “Custom”) and switch to another table, it is permanently edited in the KDF in RAM, and you cannot restore it unless you reload the KDF. The “Custom” table is stored in the Performance and therefore can be restored (if necessary) by reloading the current Performance.

Note Map - Copy Table Dialog

The Copy Table Dialog allows you to copy a Note Map Table from one location to another. It can be opened by the “Copy Table...” command in the Note Map Editor’s Menu Button. The most common use of this utility is to copy one of the Global Tables into the Custom Table, where you can modify it for other purposes. If you try to copy the other way, into one of the Global Tables, you will receive a warning dialog advising you that you may not want to proceed (since this could affect the various Performances that may rely on the current Global Tables).

If you wish to develop your own Global Note Map Tables you can; however, they cannot be transmitted to the M3.

You can also copy a table simply by using the Edit Menu Copy command while the table is showing, then go to the desired destination map and use Edit Menu > Paste.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this dialog.

[Source] (popup menu) [0: Custom, 1...64: Global Tables]

Selects the Note Map Table that you wish to copy to another location.

[Destination] (popup menu) [0: Custom, 1...64: Global Tables]

Selects the Note Map Table location that you wish to replace with the copy.

[Execute] (button)

The Execute Button (three green arrows) performs the specified copy operation without closing the dialog, in case you want to perform other operations.

[OK/Cancel] (button)

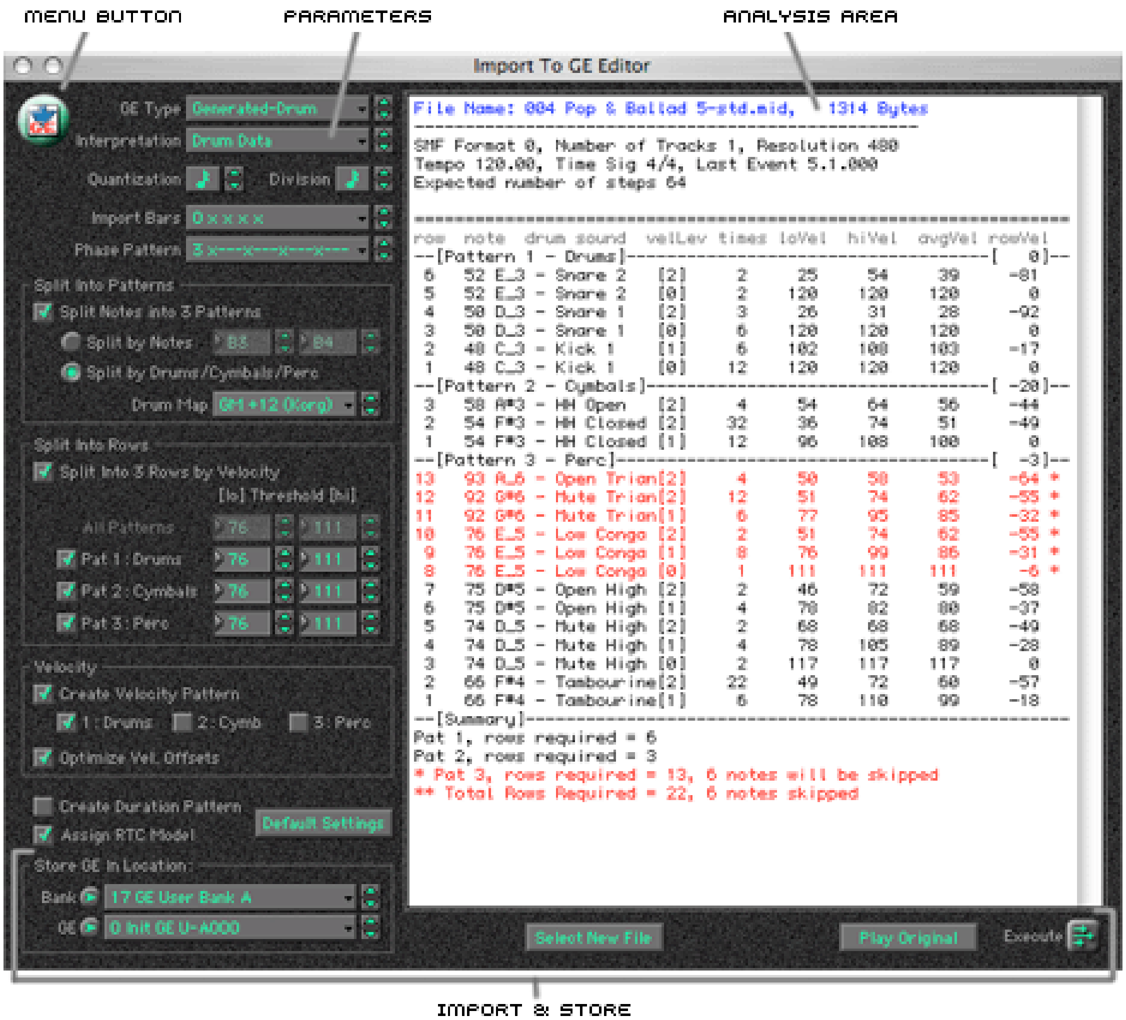
The Cancel Button (red X) closes the dialog without performing the copy operation. The OK Button (green checkmark) closes the dialog and performs the specified copy operation.

Note Map - Korg M3 Special Notes

KARMA Software permits editing of all Note Map Tables, but only the Custom table is actually capable of being edited in the M3. The Global Note Map tables (1...63) are fixed in the Korg products; they cannot be edited or replaced. Therefore, it is not recommended to edit the Global Note Maps, but copy them into the Custom table when you wish to edit them, or you will not get the same results after transferring your data to the M3.

Import To GE

Sections in this chapter:



Import To GE - Overview

The Import To GE Editor is where you can import short phrases and turn them into GEs. The imported data should be in Standard MIDI File format (SMF) on your computer (typically ending in .MID) - note that the M3 and M50 are capable of exporting data from the sequencer in this format. You can then edit the GEs further, build Performances with them, and transfer them to the Korg device’s User GE Memory Locations.

When you import a file, the data is kept in memory temporarily so you can repeatedly try different settings if you want. The Analysis Area shows how the data will be mapped to the Drum Pattern grids, how many rows will be used in each grid, velocities of notes and various other useful information - and the “prediction” changes when you change settings, so you can “optimize” the results. You can keep the GE Editor: Drum Page open while this window is in front, and see the results of the conversion immediately when pressing Execute.

Be sure to consult the included tutorial on "Creating GEs with the Import To GE Editor" for detailed examples of how to use this editor.

⚠ At this time, the best results are obtained by performing any melodic phrases in the key and tonality of CMajor or CMajor7.

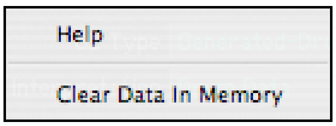
⚠ The “Import To GE Editor” is somewhat limited in scope, and will be enhanced in future versions. However, it is important to note that the relationship between a GE and a sequenced phrase is slim at best. Do not expect these functions to magically translate every nuance of a sequenced phrase into a GE. This is impossible and actually counter-intuitive to the nature of KARMA. If you want a sequenced phrase to sound like a sequenced phrase, use a sequencer. These functions exist to allow you to easily get some basic notes and settings into a GE. From there, you may need to work with it further to achieve the results that you want. However, you may also immediately apply KARMA’s variation-generating magic to the phrase, which is not possible with a sequencer.

Analysis Area
Shows a representation of how the data will end up once it is imported. This will change in real-time as you change various parameters, so you can optimize the results of the import operation.

Parameters
The various parameters that influence how the imported phrase is mapped to a GE.

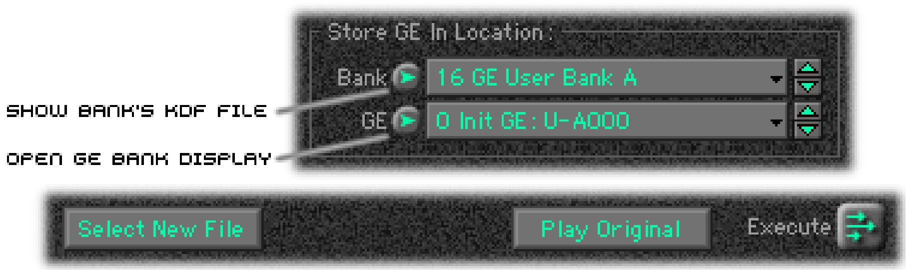
Import & Store
Allows you to import Standard MIDI Files on your hard drive, after which you can play it, or turn it into a GE and store it in a location of a GE User Bank.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this editor:



Clear Data In Memory
Clears the last loaded SMF data in memory and resets the Analysis Area to the “empty” state.

Import To GE - Import & Store



This section of buttons and menus near the bottom of the window allows you to import short phrases and turn them into GEs, storing them in the current KDF file. The imported data must be in Standard MIDI File format (SMF) on your computer (typically ending in .MID).

◆ **[Select New File]** (button)

Opens the Standard File Select dialog where you can locate a Standard MIDI File on your computer’s hard drive. After answering OK, the data is imported into memory and an analysis of the results will be shown in the Analysis Area. You may then change the parameters to better optimize the results. When you are ready, press the Execute button and the data will be turned into a GE in the specified location.

◆ **[Play Original]** (button)

Once a section of data has been loaded into memory by either of the two methods above, the Play Original button allows you to hear the data played back for comparison purposes. For example, you could use this to listen to a drum groove while gaining an understanding of what is printed in the Analysis Area.

This is not a 100% accurate reproduction as it plays back with a resolution of 24 cpq, but it’s good enough for reference.

◆ **[GE Bank]**
◆ **[GE Location]**

The GE Bank and Location menus allow you to choose a location in which to store the GE that you will be creating. This must be a location within a GE User Bank, not one of the GE ROM Factory Banks. If a bank is not available, you can use the “Add Bank” command from the Menu Button of the current KDF Window. Once you press the Execute button, the GE will be stored into the specified location, with the name of the data that was imported. You can change this name by using the “Store” button at the top of the GE Editor, or renaming it in the appropriate GE Bank Display Window.

◆ **[Show Bank's KDF File]** (button)

Brings to the front the KDF Window that contains the selected bank, and selects it in the KDF Window.

◆ **[Open GE Bank Display]** (button)

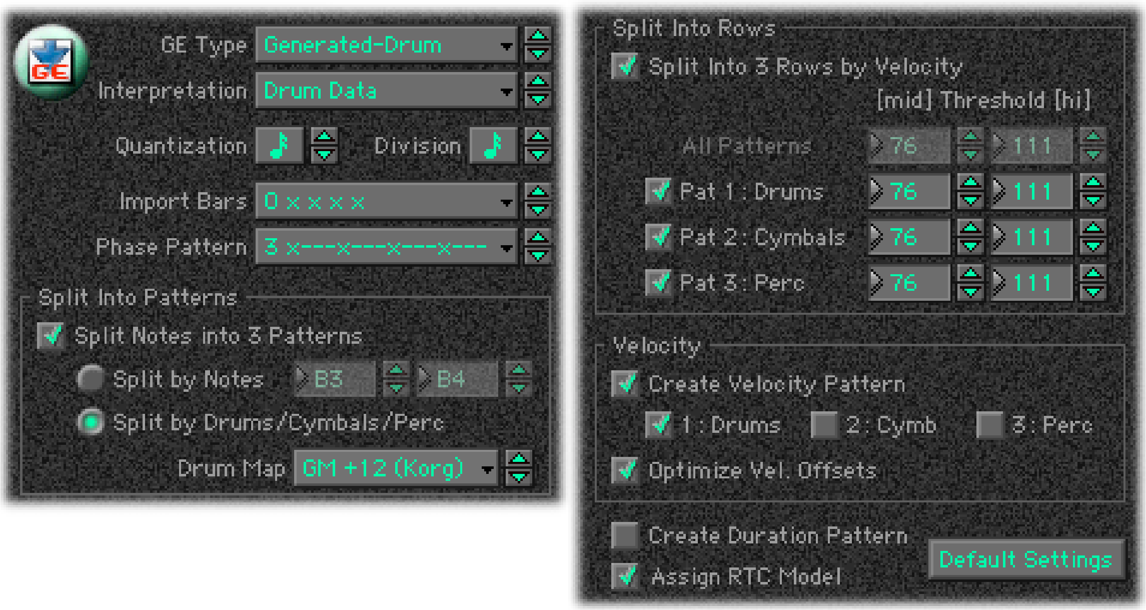
Opens a Bank Display Window for the selected bank of GEs.

◆ **[Execute]**

Once the Analysis Area looks good to you, pressing the Execute button causes the GE to be created in the specified GE Bank and Location. You can immediately go to the GE Editor: Drum Page and see the results, while triggering the new GE from the keyboard or Chord Triggers and experimenting with the real-time control possibilities in the Real-Time Control Window.

If the results aren't as intended after executing the Import, just try it again with different settings. You can continue overwriting the same GE location until the results are satisfactory.

Import To GE - Parameters



◆ **[GE Type]** (popup) [0…3]

Selects a specific type of GE to create. Presently, a Generated-Drum GE (with melodic or drum data) is the only option.

Just because it is "Generated-Drum" doesn't mean you cannot create melodic phrases. Actually, some of the more interesting melodic effects you can create with KARMA come from using the Drum Patterns with Note Data.

◆ **[Interpretation]** (popup) [0…1]

When the GE Type being created is "Generated-Drum," this specifies whether to treat the data being imported as a drum groove, or melodic phrase data. This enables different options in the area below, as well as chooses which type of RTC Model will be applied to the data at the end of the process.

0: Drums
Specifies that the resulting GE will be used to generate a drum or percussion groove, will be assigned an RTC Model of "DP1 – Drum/Perc 1," and will be in a "fixed position" such that changing input note data does not cause the pattern to transpose.

1: Melodic
Specifies that the resulting GE will be used to generated melodic phrase data, will be assigned an RTC Model of "DM1 – Drum Melodic 1," and will change keys and chords depending on input note data.

When this is changed, the settings of all other parameters are returned to default settings, which are somewhat different for Drum vs. Melodic.

◆ **[Quantization]** (popup) [0…7 = Off, 32nd…Qtr]

Sets the rhythmic division to which the imported data will be quantized before being assigned to the Drum Pattern Grids. This should generally be longer than or equal to the Division setting.

[Division] (popup) [0…7 = Off, 32nd…Qtr]

Sets the rhythmic value of a step in the resulting GE's Drum Patterns and Rhythm Patterns. This should generally be shorter than or equal to the Quantization setting.

Quantization and Division are related to and dependent on each other. Generally, you will want them to be the same, for example, both set to 16th, such that each step in the resulting Drum Pattern is a 16th, and you've quantized the imported data to 16th notes as well. A Drum Pattern would therefore be a maximum of 4 bars long (64 steps / 16 = 4 bars). For patterns containing 32nd notes, you would set them both to 32nd, and the resulting Drum Pattern would be 2 bars in length, and run twice as fast. You might use them set differently if you wanted a pattern containing 16ths to end up with 32nd resolution in the GE, for example, and the data was a bit sloppy in timing.

[Import Bars] (popup) [0…1]

Indicates which bars of the pattern to import. For example, when a drum groove is 8 bars with a fill at the end, if you only import the first 4 bars, you will not get the fill. If you apply this to an 8 bar phrase, you will get a 4 bar phrase with the beginning and end of the phrase. If you apply this to a 4 bar phrase, you would end up with a 2 bar phrase, and so on.

0 x x x x = import bars sequentially, however many will fit.
1 x - - x = import the first part of the pattern, and the fill at the end.

This works in conjunction with the "Phase Pattern" below.

[Phase Pattern] (popup) [0…3]

When importing an 8 bar pattern with a fill at the end (for example), you end up with a 4 bar phrase in the Drum Grids (at 16th note resolution). But you can set the Phase Pattern Drum "pr" (pattern restart) buttons to simulate the 8 bar phrase, for example by restating the pattern and playing the first half 3 times, followed by the second half, which creates an 8 bar phrase with the fill at the end.

0 x-x-x-x-x-x-x-x- = retriggers the pattern every 2 bars of 4/4

1 x-x-x-x-x-x-x--- = makes a 16 bar phrase by retriggering every 2 bars except in bar 15, which then lets the fill play

2 x-x-x---x-x-x--- = makes an 8 bar phrase by retriggering every 2 bars except in bars 7 and 15, which then let the fill play

3 x---x---x---x--- = retriggers the pattern every 4 bars of 4/4

So for example, when importing an 8 bar drum pattern with a fill at the end, you would set "Import Bars" to "1", and "Phase Pattern" to "2", and you will get something very close to the original pattern.

[Split Notes into 3 Patterns] (checkbox) [Off, On]

This controls whether the notes in the pattern will be split into the three different Drum Pattern grids using several different criteria, or simply allocated to the 21 available rows in the order they are found.

<u>Off</u>
The notes in the pattern are allocated according to pitch from the lowest to the highest, across the 21 rows, with row 1 of pattern 1 receiving the lowest note, and row 7 of pattern 3 receiving the highest note.

<u>On</u>
The following two options become available:

[Split by Notes] (radio button)

Mainly for Melodic Data, it allows you to specify which note range of a pattern goes to which grid, so you could put the bass notes on one grid, the middle notes on another, and the high notes on a third. When this option is chosen, two split point fields (numericals) become available. By moving the split points around, you can change which notes end up on which grid - watch the Analysis Area while doing this.

[Split by Drums/Cyms/Perc] (radio button)

This selects the standard KARMA convention of attempting to allocate the notes to patterns as follows:

Pattern 1: kicks, snares, toms
Pattern 2: hi-hats, cymbals, rides
Pattern 3: everything else (percussion)

When this option is selected, an additional parameter "Drum Map" becomes available (see below).

◆ **[Drum Map]** (popup) [0...1]

When the “Split by Drums/Cyms/Perc” option is selected above, this parameter becomes available and allows you to select one of several different drum maps for splitting the data into 3 different patterns:

0 GM
Select this option when importing drum phrases created to go with a General MIDI drum kit.

1 GM +12 (Korg)
Select this option when importing drum phrases created to go with Korg drum kits.

◆ **[Note Split Threshold (Lo)]** (numerical) [C-1...G9]

Specifies the highest note that will appear in Pattern 1. Notes above this value will appear in Patterns 2 and 3 according to the Note Split Threshold (Hi) setting below.

◆ **[Note Split Threshold (Hi)]** (numerical) [C-1...G9]

Specifies the highest note that will appear in Pattern 2. Notes above this value will appear in Pattern 3.

◆ **[Split into 3 Rows by Velocity]** (checkbox) [Off, On]

This allows a pattern to attempt to keep some of the velocity it was programmed with. Due to the structure of a GE, it’s not possible for each note to get the exact velocity it was programmed with from the imported data. But the various velocity options allow a close approximation to be achieved in most cases.

Off
Each note of a specific note number will take one row only in the resulting pattern, with a Row Velocity Offset corresponding to the accumulated average velocity (avgVel) of all the notes in the row across the whole pattern.

On
This controls whether each note is split into up to 3 rows (with different Row Velocity Offsets), based on several different velocity threshold settings.

There are four different pairs of Velocity Thresholds that will be available depending on the setting of “Split Notes Into 3 Patterns” (described above):

The first value of each pair is the “Low Threshold” – velocities lower than or equal to this value will be split to velLev[2] (in the Analysis Area). The second value is the “Hi Threshold” – velocities lower than or equal to this value will be split to velLev [1]. Velocities higher than the Hi Threshold will be split to velLev[0]. As a result, a single note number may end up in 1, 2 or 3 different rows, based on velocity, and the Row Velocity Offset for the Drum Pattern will be set according to the calculated average velocity for the row. By varying the thresholds while watching the Analysis Area, you can optimize how many rows end up in each pattern. (The Analysis Area shows the loVel and hiVel for each row, and the resulting avgVel.)

By setting any two Thresholds to the same value, you can limit it to only 2 levels maximum per note, not 3.

When “Split Notes Into 3 Patterns” is Off:
The top pair of Velocity Threshold values is available, which allows each note to be split into 3 different rows based on velocity. The options for individual patterns will be grayed out.

When “Split Notes Into 3 Patterns” is On:
The top pair of Velocity Thresholds will be grayed out. Instead, each Pattern may have this feature turned on or off individually, and there is a separate set of Velocity Threshold values for each Pattern. You might turn one of them off if there are too many notes to fit into a particular pattern, but the other patterns have room for the velocity variations.

(Depending on the setting for “Interpretation” or “Split Notes Into 3 Patterns,” the labels will be different for these)

Pat 1: Low/Drums
Split the notes that will go to Pattern 1 into up to 3 rows for each note based on the Velocity Threshold settings next to the label.

Pat 2: Mid/Cymbals
Split the notes that will go to Pattern 2 into up to 3 rows for each note based on the Velocity Threshold settings next to the label.

Pat 3: High/Perc
Split the notes that will go to Pattern 3 into up to 3 rows for each note based on the Velocity Threshold settings next to the label.

◆ **[Velocity Threshold (Lo)]** (numerical) [1...127]

Velocities below this value will be split into a third row. Velocities equal to or above this value are subject to the Velocity Threshold (Hi) setting.

◆ **[Velocity Threshold (Hi)]** (numerical) [1…127]

Velocities below this value will be split into a second row (and possibly a third row according to the Velocity Threshold (Lo) setting). Velocities equal to or above this value are split into the first row.

By setting the two thresholds to the same value, you can limit it to only 2 levels per note, not 3.

◆ **[Create Velocity Pattern]** (checkbox) [Off, On]

Allows a Velocity Pattern to be created from the analyzed data of the selected patterns, and applied to the selected patterns. For example, this can be used to try and get more nuance to the velocities of the kick and snare, or the hi-hats, or the percussion.

Basically, a recorded phrase or drum groove may have a lot of velocity nuances going on with the notes. KARMA is not able to accurately assign a velocity to each note; it is capable of assigning all instances of a particular note a velocity level, or in the case of using the “Split Into 3 Rows by Velocity” feature, assigning a note to up to 3 rows of the pattern with different Velocity Offsets. However, a Velocity Pattern can be applied to these rows with its own velocity offsets, imparting further velocity nuances onto the generated notes.

Off
A default Velocity Pattern is assigned to the Pattern Grid, but it is not activated for any Drum Patterns in the Phase Pattern Grid.

On
This attempts to create some kind of an overall Velocity Pattern based on the cumulative differences in velocity of the original notes in each column of the grids versus the actual velocity they will be performed with by the resulting GE. Note that selecting more than one pattern combines the analysis across those patterns, with less accurate results. Probably the best results are realized by only choosing one pattern to be affected by the Velocity Pattern.

(Depending on the setting for “Interpretation”, the labels will be different for these)

Low/Drums
Include the notes for Pattern 1 in the analysis, and set the Phase Pattern to apply the resulting Velocity Pattern to Pattern 1.

Mid/Cymb
Include the notes for Pattern 2 in the analysis, and set the Phase Pattern to apply the resulting Velocity Pattern to Pattern 2.

High/Perc
Include the notes for Pattern 3 in the analysis, and set the Phase Pattern to apply the resulting Velocity Pattern to Pattern 3.

◆ **[Optimize Velocity Offsets]** (checkbox) [Off, On]

Allows the velocities of the notes on the 3 patterns to be maximized up so that the full range of velocities can be generated based on how the GE is triggered and controlled. (Generally should be always on.)

Off
When set to Off, the Row Velocity Offsets in the resulting Drum Pattern are set exactly as shown by the avgVel calculation in the Analysis Area.

On
When set to On, the Row Velocity Offsets in each pattern are raised so that at least one of them is at 0, and then decreases the overall Pattern Velocity Offset, so that the end result sounds the same, but it is more logical when viewed, and allows greater control of the overall volume of each pattern by the normal GE RTP. In other words, instead of having a pattern with 3 rows at –20, -30, and –40, and a Pattern Velocity Offset of 0, this would raise the 3 rows to 0, -10, and –20, with a Pattern Velocity Offset of –20, which sounds the same.

◆ **[Create Duration Pattern]** (checkbox) [Off, On]

Allows the durations of the notes in the imported data to be analyzed, and a Duration Pattern to be constructed that attempts to replicate the durations of the original notes. Similar to Velocity information, the structure of a GE does not permit an exact capture of the duration information, as notes that occur at the same moment will always have the same duration, unlike the imported data. However, this can come close to the original in many cases. This is Off by default for Drum Grooves, as it has no effect unless you were using a Drum Kit that has hold turned off. But for Melodic Interpretation, this can be very useful. The DM1 RTC Model that is applied to that type of GE provides Duration Control on one of the sliders, so you can adjust it further.

[Assign RTC Model] (checkbox) [Off, On]

Allows the correct RTC Model to be applied to the GE after it is created. (Generally should always be on.)

Off

No RTC Model is applied. However, changes to the GE may still occur as part of the SMF Import process.

On

Automatically assigns the appropriate RTC Model after conversion. This is the recommended setting for compatibility with other GEs in the system. However, it is possible that a user may set up his own custom GE values and RTC assignments that he wants to keep when importing the pattern (as much as possible within the design of the feature.) However, for voicing that is compatible with the library of GEs included with KARMA, this should always be on.

[Default Settings] (button)

Restores all of the parameters to default settings, which are different depending on Melodic or Drum Interpretation. Use this to go back to the defaults. Changing the Interpretation setting will also return the settings to the defaults.

Section 5:

Dialogs and Utilities

Preferences (Part 1)

Sections in this chapter:

See also the next chapter for the following sections:

Preferences - Overview

The Preferences Editor can be opened by choosing "Preferences" from the Application Menu (Mac) or Edit Menu (Windows). It allows you to edit many global settings that affect the way the KARMA application works.

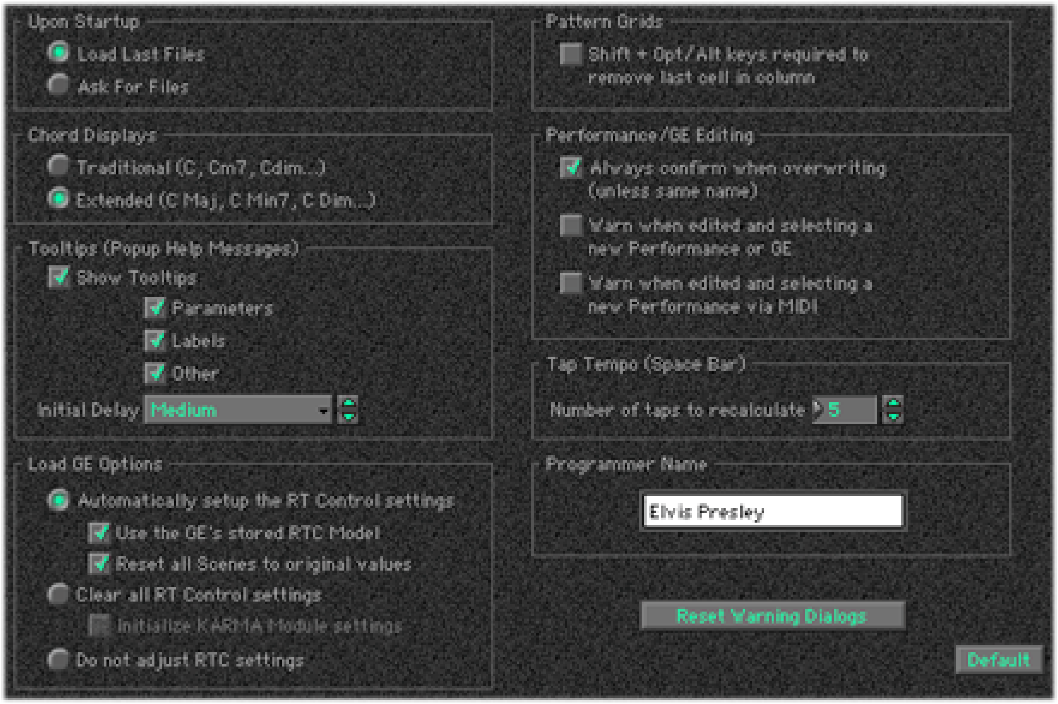
Page Tabs
Selects one of several groups of related parameters for editing.

Default Button
Reverts the current page to default factory settings.

Cancel Button
Closes the dialog without saving any changes you have made.

OK (Save) Button
Closes the dialog and saves your changes.

Preferences - General Tab



The General Tab contains some global settings that control how the KARMA Application functions.

◆ [Upon Startup] (radio buttons)

Determines the file-loading behavior of KARMA when it is launched.

Load Last Files
KARMA will attempt to locate and load the last used KDF file(s) after being launched. If not found, you will be presented with a dialog box asking you to locate the missing file.

Ask For Files
After KARMA is launched, you will be presented with a dialog box asking you to locate the KDF file that you want to load.

◆ [Chord Displays] (radio buttons)

Affects how any chord names are displayed in parts of the KARMA Applications, such as the top of the GE Editor.

Traditional
Chord names are displayed in a “traditional” shortened format, such as C, Cm, Cdim etc. This is the format used in the Korg Karma Music Workstation.

Extended
Chord names are displayed in an “extended” format, such as C Maj, C Min7, C Dim etc.

◆ [Tooltips (Popup Help Messages)] (checkboxes)

Popup Tooltips are short descriptions that popup while holding the mouse cursor over various labels, parameters and objects in the application. Tooltips can be turned on or off globally for the entire application, in addition to having several groups within the tooltip system that can be independently controlled. You can control exactly which objects have tooltips and the amount of time delay before they pop up, or only the use of the ‘t’ key to make them pop up.

For example, after you get used to working with KARMA, it may be helpful to set the tooltips to only popup over labels (and not parameters), and have the longest delay time setting. That way, you may never notice they are there during normal speed of working, but if you want a reminder or a hint about some function, you can hold the mouse over a label and it will appear. Or, you may wish to use the option where popping up is completely disabled, but you can still press the ‘t’ key to make a tooltip popup at any time.

When a tooltip is showing, if you press Cmnd+H (Mac) or Ctrl+H (Win), you will be taken directly to the Help File and the parameter associated with the tooltip for more information.

Show Tooltips
Turns On/Off the presence of popup tooltips in the application. This setting can also be toggled on/off by the “Show Tooltips” item in the Help Menu. When this is on, the items underneath become available to be edited, giving you more control over when and how the tooltips popup:

Parameters
When On, popup tooltips will be presented any time the cursor is held over an actual “parameter object” such as a popup menu, a number box, or a parameter button. When off, these objects will not be popup the tooltips (but the others objects selected here may be if desired).

Labels
When On, popup tooltips will be presented any time the cursor is held over a “label” such as the names next to the actual parameters. When off, these objects will not be popup the tooltips (but the others objects selected here may be if desired). This is potentially most useful, as you can get tooltip help without interfering with the usage of the actual parameter entry objects.

Other
When On, popup tooltips will be presented any time the cursor is held over other objects like Menu Buttons, Page Selection Buttons, keyboard graphics, etc. When off, these objects will not be popup the tooltips (but the others objects selected here may be if desired).

◆ **[Initial Delay]** (popup) [0…5]

Short, Medium, Medium Long, Long, Very Long
Sets the amount of time required to wait before popping up tooltips when the cursor is over an object. The shortest time is about a half-second, the longest time is about 6 seconds. Note that the ‘t’ key is always operational in these modes as well.

Off - use ‘t’ key
When this option is selected, tooltips will not popup at all. However, you can still use the ‘t’ key. Simply place the cursor over an object, and press ‘t’ - the tooltip will pop up. You can hold down the ‘t’ key and move the cursor over other objects and the tooltips will keep popping up.

◆ **[Load GE Options]** (radio buttons and checkboxes)

The settings in this section determine how the RTC models are applied when you load a GE into a Performance. This corresponds to the [Load GE Options] button on the M3 KARMA Pages. Here is an explanation of the different settings:

Automatically setup the RTC Control Settings
When this option is selected, loading a GE will remap the Real-Time Controls according to the GE’s RTC Model Type, optionally initializing all scenes.

Use the GE’s stored RTC Model
When On (recommended), the RT Controls will be set up according to the GE’s stored RTC Model Type. When Off, an attempt to hook the GE’s RTP to the current setup will be made.

Reset all scenes to original values
When On, all scenes in the Module’s Control Layer will be reset to the default settings of the GE. When Off, the scene settings will not be altered if the RTC Model Type is the same as the previous GE.

Clear all RT Control Settings
When this option is selected, loading a GE will clear all RT Control Settings (so that no controllers are assigned to the GE’s RTP), optionally initializing the rest of the Module settings as well (Trigger, Control, Seeds, etc.)

Initialize KARMA Module Settings
When Off, nothing will be changed in the Module settings (recommended for most situations). When On, all Module parameters within the Performance will be reset to default values (except for Key Zone and Thru).

Do not adjust RT Control Settings
Nothing will be changed when loading a new GE. Sliders and switches will remain assigned to whatever new parameters are in the 32 GE RTP. This is likely only useful in certain advanced situations.

Here is an explanation of the various combinations of settings and what results they achieve:

1. (*) Automatically setup the RTC Control Settings
    [x] Use the GE’s stored RTC Model
    [x] Reset all scenes to original values

- If new GE has an RTC Model, load it and reset it according to the RTC Model Spec, and reset all 8 scenes and scene names. This wipes out all previous settings.

- If new GE has no RTC Model, clear all RTC settings, load GE with nothing assigned. Reset scenes and names to INIT. This wipes out all previous settings. In this case, same as Example [4] below.

This is the best option for selecting and loading a new GE. It guarantees everything gets set up correctly, with all 16 RTControls and Names automatically assigned to the 32 GE RTP and ready for use.

2. (*) Automatically setup the RTC Control Settings
    [x] Use the GE’s stored RTC Model
    [ ] Reset all scenes to original values

- If new GE has the same RTC Model as the currently loaded GE, load it and reset it according to the RTC Model Spec. However, do not reset scenes - the scene settings will be kept, and applied to the newly loaded GE. For example, this means that if you have a certain Melodic Repeat effect set up in a scene, that settings would be kept and the new GE would be able to use those settings in that scene, since they are basically the same RTC Model and RTParms.

- If the new GE has a different RTC Model from the currently loaded GE, load it and reset it according to the RTC Model Spec, and reset all 8 scenes. This wipes out all previous settings. This is the same as Example [1], in this case.

- If new GE has no RTC Model, clear all RTC settings, load GE with nothing assigned. This wipes out all previous settings. In this case, same as Example [4] below.

3. (*) Automatically setup the RTC Control Settings
[ ] Use the GE's stored RTC Model
--- Reset all scenes to original values (disabled)

RTC models are not taken into consideration for any existing RTC Assignments. Rather, this uses a different method written specially to deal with the following situation: User loads a GE with a specific RTC Model, but clears all control assignments. Then user sets up the GE with his own Control Assignments. User then wants to change GE to another GE having the same RTC Model (or maybe different), and keep his control assignments while switching. In this case, the system will "remap" the settings (attempting to keep his setup as much as possible). If a control is assigned to Velocity Scale, the code looks for Velocity Scale in the new GE and moves the control assignment to that slot. If the RTParm is not found in the new GE, it is removed. The Scene settings will not be affected, and can be applied to the new GE.

4. (*) Clear all RT Control Settings
[ ] Initialize KARMA Module Settings

Loading any GE clears all RTC settings, resets all scenes/names, and loads GE with nothing assigned. This wipes out all previous settings. GE is guaranteed to play correctly, any time. No controls are connected.

5. (*) Clear all RT Control Settings
[x] Initialize KARMA Module Settings

Same as above, with the additional step of initializing all Module parameter with the exception of the Key Zone and Thru settings. In other words, this resets all Module triggering settings, clock advance, random seeds, CC offsets, MIDI filtering, etc.

6. (*) Do not adjust RT Control Settings

Loading a GE does nothing, other than load the GE. If the RTParms in the slots don't match, and the controls that were previously assigned make no sense with the new GE (as is often the case), it will not match and likely perform strangely. However, this might have an application in vertain advanced situations with custom-designed GEs.

◆ **[Shift + Opt/Alt keys required to remove last cell in column]** (checkbox)

Patterns created in the various pattern editing grids can normally be shortened or cleared by removing all the cells in a column (with the mouse), which causes all columns after that one to be emptied and grayed out. Turning this checkbox on means that you must hold down the [shift] + [option] keys (Mac) or [shift] + [alt] keys (Win) to remove the last cell in any column. This makes it more difficult to accidentally erase half of your pattern because you removed a cell in the middle, when all you wanted to do was change it. Pattern Grids affected: Rhythm, Duration, Index, Cluster, Velocity, CCs, WaveSeq and Drum.

◆ **[Always confirm when overwriting (unless same name)]** (checkbox)

When On, attempting to store a Performance or GE into a location occupied by one with a different name will put up a confirmation dialog asking you if you really want to replace it, giving you a chance to reconsider. This can be helpful if you find yourself accidentally overwriting items that you didn't want to. The dialog will not be presented if you are trying to replace an item with the same name (the assumption is that you are updating it).

◆ **[Warn when edited and selecting a new Performance or GE]** (checkbox)

When On, selecting a new Performance or GE when there are unsaved edits will present a warning dialog allowing you to cancel the selection. Since any real-time playing with a combi edits the performance, this may get annoying, but some users have requested this type of notification, so it has been included (and it defaults to Off). By using this, you'll never blow out an edit by changing inadvertently to a new Performance or GE.

◆ **[Warn when edited and selecting a new Performance via MIDI]** (checkbox)

This option is separate from the above for use with the feature that allows Performances in the software to be changed by selecting Programs and Combis on the M3. When On, selecting a new Performance via Program Change when there are unsaved edits will present a warning dialog allowing you to cancel the selection. The two options are separate, since you may wish to disable the other one, but it's easy to be in the middle of a deep edit, and change to a different program on the M3 to check something, forgetting that this will blow out your edit. This also defaults to Off.

◆ **[Tap Tempo - number of taps to recalculate]** (numerical) [2...9]

When the Tap Tempo function is enabled in the Options menu, specifies the number of taps (on the space bar) required to recalculate and reset the tempo. In other words, it takes at least one tap to start a time period, and a second tap to end it. However, by setting it to 3, 4 or 5 for example, the taps are averaged and the resetting of the tempo occurs on the last tap. If no taps are received for three seconds, the tap tempo function will start over with the next tap.

◆ **[Programmer Name]** (text)

A programmer name can be stored with each Performance and GE. You can enter the name here that you would like stored with your Performances and GEs, in the event that you share them with others. Note that this does not change the names that are presently stored in any GEs or Performances. It only presets the name that will be displayed when you click on the Programmer Name fields in the GE or Performance.

◆ **[Reset Warning Dialogs]** (button)

Pressing this button resets any of the "Don't Show Again" settings that are stored in the Preferences. In some of the warning dialogs displayed during operation, you may see a checkbox with the words "Do not display again" or "Do Not Display Again this session", or a button with a similar command. Some of these work on a session basis (in other words, the next time you launch the app they are reset and will appear again until you tell them not to), and others are stored in the Preferences, such as whether to show the "First Time Setup" window when launching the application.

◆ **[Default]** (button)

Restores the settings on the General Tab only to the recommended default settings.

Preferences - MIDI Tab

The MIDI Tab has settings for many MIDI-related global parameters.

⚠ The Global MIDI In and Out Ports and Channels are set in the MIDI Ins & Outs Editor.

◆ **[DynMIDI User Controls]** (popup menu) [0...127]

Allows you to specify the first 14 controllers that will be listed in the Dynamic MIDI Sources menu from a list of MIDI Control Change Messages. For more information on Dynamic MIDI Control, see **Dynamic MIDI Page**.

⚠ For KARMA M3, if you intend to create Performances to be exported and loaded into the keyboard, you should not change these from the default settings. They are hard-wired to the above choices inside the keyboard.

[Automatic Local Control] (checkbox) [Off, On]

When the software is launched, it will automatically send a Local Control Off command to the keyboard, and when you exit the software, a Local Control On message will be sent. Turning this on (recommended) enables the following two radio buttons, which control how this feature then operates when the Bypass option is used.

[Bypass Toggles Local Control] (radio button)

Allows the keyboard's Local Control setting to automatically follow the status of the Bypass setting (which is a command on the Options Menu). Bypass On sets Local Control On (so the keyboard works again), Bypass Off sets Local Control Off (so that the software can work properly.)

[Send Keyboard Thru If On] (radio button)

When Bypass is On, MIDI on the Global Channel will be echoed back thru to the keyboard, allowing it to be played with Local Control Off. You would use this option if you wanted the Bypass feature to **not** change the Local Control On/Off status.

[Korg Device's Global Mode - Bank Map]

Sets one of two different means of transmitting MIDI Bank changes. Either one may be used, provided that the Korg keyboard is set to the same option in its Global MIDI Settings. For information on setting the Bank Map parameter in your M3, see:
Communication Configuration - M3

[CCs On Clusters] (radio buttons)

Different synthesizers react to CC messages in different ways. For example, they can differ on whether each note in a chord can have its own pan position.

Force Single Values
If your synthesizer does not support multiple pan values per chord (such as most Roland gear and Korg gear starting with the Triton), then you should have this option selected. For example, if you send multiple values to Roland synthesizers, the entire chord will pan to the last received pan value. Therefore, when this option is selected, the CC Patterns in the GE will be forced to send out only single values, even if they were originally stored with Cluster Mode set to "Multi" in the CCs Page.

Allow Multiple Values
If your synthesizer supports multiple pan values per chord (such as most Korg gear earlier than the Trinity), then you can select this option if desired. This affects whether or not the CCs Page Cluster Mode can be set to "Multi." This can allow each note in a cluster to be panned to a different location if desired, even though they appear to be generated simultaneously (basically, there is a pan message inserted between each note as they are sent.)

This setting affects any CC that may be being generated by the CC Pattern, not just pan information.

For more information on CC Patterns, see GE Editor: CCs Editor.

[Default Thru Bend Range] (numericals) [-12...+12 semitones]

Sets the default Bend Range (in semitones) that will be transmitted for pitch bend levers and wheels (0~64, 64~127) when the KARMA On/Off Switch is in the Off position (Real-Time Controls Window). The plus (+X) setting indicates the range when the lever or wheel is moved "up" and the minus (-X) setting indicates the range when the lever or wheel is moved "down." Since KARMA Performances may modify the bend range as part of the overall effect, this allows it to be returned to something "normal" when switched off.

[Korg Device SysEx Errors - Report Error Messages]

Korg devices will transmit back a SysEx error message if something goes wrong while receiving SysEx data. Normally, the KARMA Software ignores this and does not inform the user. However, in certain diagnostic situations, it can be useful to turn on this checkbox and therefore be informed if the receiving device is experiencing any errors when dealing with SysEx.

[SysEx Transmission - Packet Delay]

Sets the amount of time in milliseconds to wait between transmitting each packet of System Exclusive data. Shorter settings can make it faster, but try longer settings (85 - 150) if experiencing MIDI SysEx errors. This setting only affects the transmission of SysEx data, not the receiving of it. Based on our testing, the Mac version defaults to 85 ms, while the Windows version defaults to 0 ms. This setting is ignored when using the Korg USB MIDI Driver.

Only affects MIDI SysEx transmissions from the keyboard's 5-pin MIDI Out jack. Has no effect on MIDI transmission using the USB port and the Korg USB MIDI Driver.

◆ **[Thin Echoed CC/Bend Data - Thinning On]** (checkbox)

When this is On, incoming MIDI data is “thinned” before being echoed thru to the modules, reducing how much MIDI data is sent. The amount of thinning is based on the Factor setting below.

When receiving controller values from the keyboard, and a multi-module Performance (Combi) is selected, KARMA generally echoes through many of the CC values to each of the modules (based on settings in the Performance Editor: MIDI Filter page). This can result in massive quantities of CC/Bend data being put into the MIDI stream, such that it actually causes the keyboard to stutter and slow down when receiving the data from the software. This is also dependent on the resolution of the controllers being received. For example, many of the controllers on the M3 are high-resolution, and transmit every value from 0 to 127, even when moved quickly. So imagine wildly flailing such a controller, which is coming into KARMA software and being echoed out to 6 modules at the same time (6x the data being generated) - it can totally overflow the MIDI stream. When thinning is On, intermediate values in the MIDI are removed, using time windows, such that the outgoing values are more sparse. In most cases, this thinning cannot even be heard, but it effectively fixes the situation described below.

◆ **[Thin Echoed CC/Bend Data - Factor]** (numerical) [1..15]

Sets the amount of CC/Bend data thinning that is performed, with higher values causing more thinning. A default value of 6 seems to work well.

◆ **[Overall Note Range Limit - Lowest Note]** (numerical) [1...127, C-1...G9]

Sets the lowest possible note that can be generated by any of KARMA’s features, on a global level. This can be used to globally prevent KARMA from generating notes outside of a specific “safe range” if desired. Note that this setting cannot be transferred to the M3.

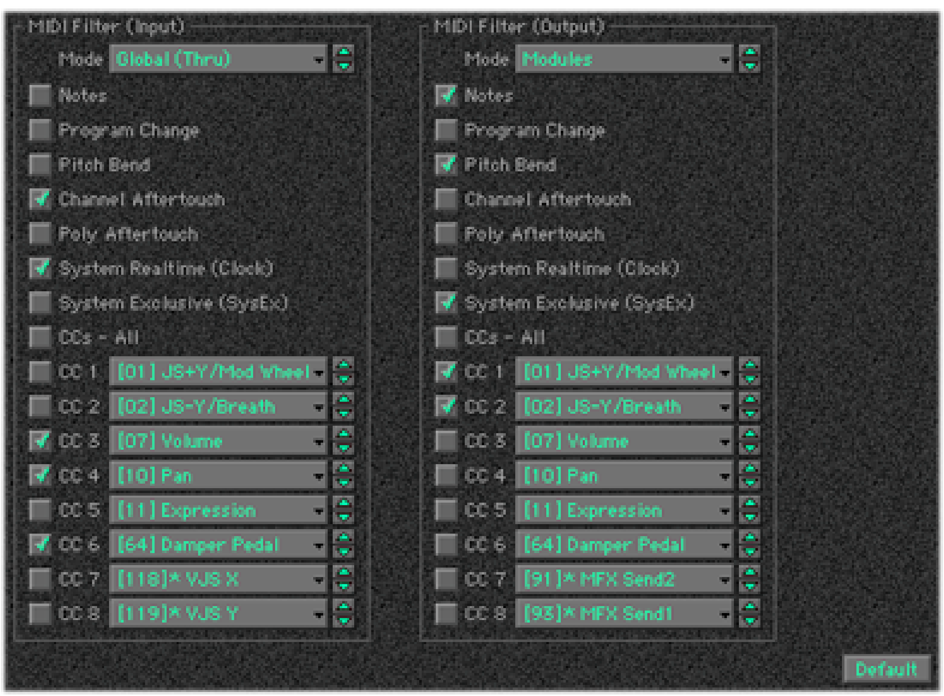
◆ **[Overall Note Range Limit - Highest Note]** (numerical) [1...127, C-1...G9]

Sets the highest possible note that can be generated by any of KARMA’s features, on a global level. This can be used to globally prevent KARMA from generating notes outside of a specific “safe range” if desired. Note that this setting cannot be transferred to the M3.

◆ **[Default]** (button)

Restores the settings on the MIDI Tab only to the recommended default settings.

Preferences - MIDI Filter Tab



The MIDI Filter tab provides a comprehensive set of MIDI filters that operate on all data going in and out of the KARMA software. This is mainly useful for testing purposes, or configuring the software within an extensive MIDI system, where the interaction of other gear may be sending MIDI messages that are causing some problems within KARMA. (Note that each Performance in KARMA has a stored set of MIDI filters to handle common filtering needs for the modules, in the Performance Editor: Filter page. If you simply want to filter Pitch Bend in a particular Performance, this is not the place to do it, as doing it here will render Pitch Bend non-functional for all Performances.)

The MIDI Filter tab contains two identical columns - one for MIDI Input, and one for MIDI Output, containing the following settings:

[Mode] (popup) (0...2)

Global (Thru)
Filter the selected MIDI messages on the Global Channel.

Modules
Filter the selected MIDI Messages on the input/output channels of the Modules.

Both
Filter the selected MIDI Messages on the Global Channel, and the input/output channels of the Modules.

[Filter Checkboxes] (checkboxes) [Off, On]

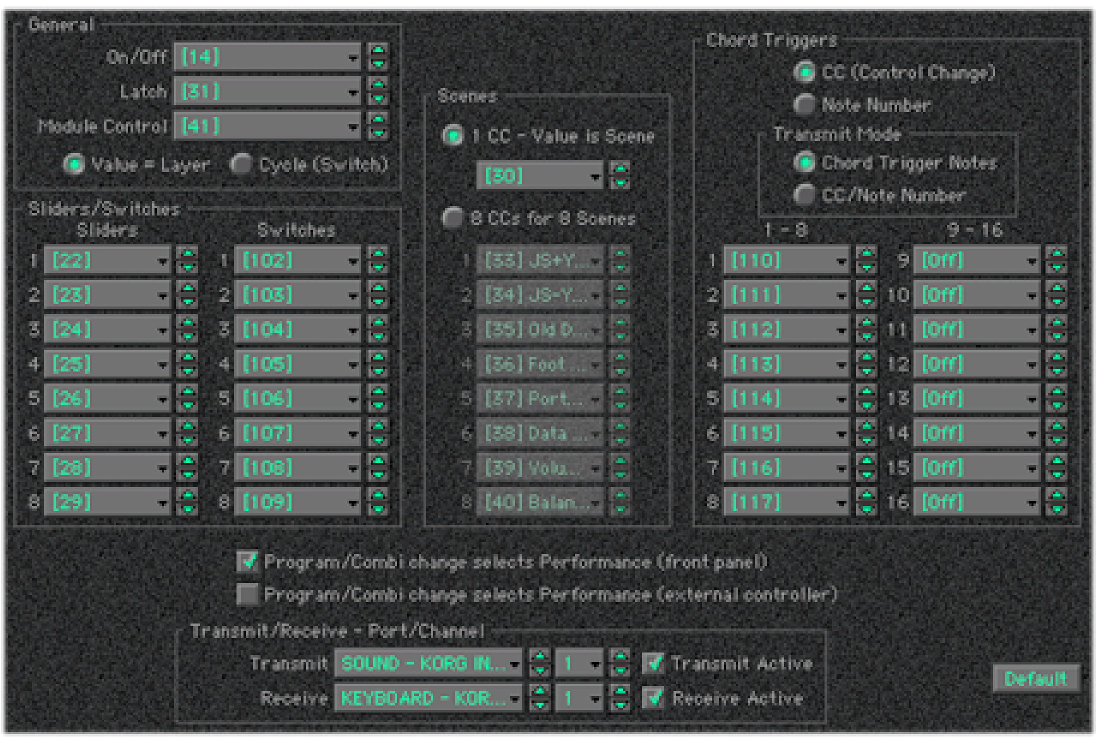
Each of the following checkboxes filters a different type of MIDI Data:

Notes
Program Changes
Pitch Bend
Channel Aftertouch
Poly Aftertouch
System Realtime (Clock)
System Exclusive (SysEx)
CCs - All (Filter all Control Change messages)
CC1...CC8 (Select up to 8 different individual Control Change messages)

[Default] (button)

Restores the settings on the MIDI Filter Tab only to the recommended default settings (all off).

Preferences - RT Controls Tab



The RT Controls Tab allows you to specify the MIDI Control Change Messages and Notes that will be utilized by the sliders, switches and other controls in the Real-Time Control Window for transmitting and receiving MIDI data. This allows you to use the control surface of the M3 (or an external MIDI controller such as a Peavey PC1600) to move the RT Controls and control KARMA in real-time. Another use is to allow the movements of the RT Controls to be recorded into a sequencing program or device.

See the Tutorial on mirroring the Real-Time Controls Window and the M3 Control Surface for details on how to synchronize the two systems.

◆ **[General - Transmit/Receive CC]** (popup) [0...127]

Selects a MIDI CC number for controlling the following in the Real-Time Controls Window:

KARMA On/Off Switch
Latch Switch
Module Control Layer

For the Module Control Layer, there are two different modes of operation, depending on the capabilities of your programmable controller:

Value = Layer
A CC Value of 0 selects the Master Layer, while values 1 ~ 6 select the corresponding Module Layer.

Cycle (Switch)
For use with a momentary switch: pressing the switch (a value greater than 0) cycles to the next Module Control Layer. After the last Module Layer in use is selected, it wraps around back to the Master Layer.

◆ **[Sliders - Transmit/Receive CC]** (popup) [0...127]

Selects a MIDI CC number for each of the eight sliders in the Real-Time Controls Window.

◆ **[Switches - Transmit/Receive CC]** (popup) [0...127]

Selects a MIDI CC number for each of the eight switches in the Real-Time Controls Window.

◆ **[Scenes]** (radio buttons) (popup) [0...127]

Sets one of two different ways that CCs can be used to select Scenes, depending on the programming options of the external controller you are planning to use:

1 CC - Value is Scene
In this mode, a single CC is used to specify scene changes, with the CC value of 0~31 selecting Scenes 1~32 of the current Module Control Layer. This is the way the Scene button in the M3 operates.

8 CCs for 8 Scenes
In this mode, 8 separate CCs are used to select the first 8 Scenes of the current Module Control Layer. A CC Value of 127 will select the associated Scene.

◆ **[Chord Triggers - Assign CC/Note]** (radio buttons)

CC (Control Change)
When this option is selected, the Chord Triggers will transmit and be triggered by a CC (Control Change) number, with the value equaling the velocity.

Note Number
When this option is selected, the Chord Triggers will transmit and be triggered by a single MIDI Note Number and velocity.

◆ **[Transmit Mode]** (radio buttons)

Chord Trigger Notes
When this option is selected, the Chord Triggers will transmit the notes that are programmed into it.

CC/Note Number
When this option is selected, the Chord Triggers will transmit the selected CC number and value, or the single assigned MIDI Note.

◆ **[Chord Triggers - Transmit/Receive CC]** (popup) [0...127]

Selects a MIDI CC number or Note Number for each of the 16 Chord Trigger buttons in the Real-Time Controls Window, depending on the settings of the Assign CC/Note radio buttons at the top.

◆ **[Program/Combi change selects Performance (front panel)]** (checkbox) [Off, On]

When on, selecting a Program or Combi from the M3 **itself** will select the corresponding Performance in the software, if it is available. For example, when you select a Combi, it will find the corresponding Performance Bank in the current KDF File, based on the Performance Bank Type setting the Bank Display Window (i.e. User-B), and select the corresponding Performance. If you select a Combi or Program that has no matching bank, an alert dialog will be displayed (which you can silence for the remainder of the session if desired.)

◆ **[Program/Combi change selects Performance (external controller)]** (checkbox) [Off, On]

This additional option is for the situation of using an external controller to control the M3. If you are using the external controller to select patch changes on the M3, then this checkbox will allow the external controller to also do the same in the KARMA software, similar to the above setting. This should not be enabled unless you are using an external controller for this purpose.

◆ **[Transmit/Receive Port/Channel]** (popups)

Transmit Port/Channel
Selects a Destination Port and MIDI Channel on which the RT Controls will transmit the selected CC/Note number as MIDI data. You would use this to allow the movements of the RT Controls to be sent to a sequencing program or other external device. Note that none of the controls will transmit MIDI data unless the Transmit Active checkbox is "On."

Receive Port/Channel
Selects a Source Port and MIDI Channel on which the RT Controls will "listen" for the selected CC/Note number. You would use this to allow an external controller such as a PC1600 to control the RT Controls. Note that none of the controls will receive MIDI data unless the Receive Active checkbox is "On."

◆ **[Transmit Active]** (checkbox) [Off, On]

When On, the specified CCs (or Notes) will be sent when any control in the Real-Time Controls Window is activated.

◆ **[Receive Active]** (checkbox) [Off, On]

When On, the controls in the Real-Time Controls Window will respond to the specified incoming CC Messages (or Notes).

◆ **[Default]** (Button)

Restores the settings on the RT Controls Tab only to the recommended default settings.

For any sections not covered in this chapter, please see:
Preferences (Part 2)

Preferences (Part 2)

Sections in this chapter:

See also the previous chapter for the following sections:

Preferences - Popups

The Popups Tab allows you to modify the way items like GE Names, Performance Names, Programs, etc. are displayed in the popup menus. The popup menus have two states:

Display
The "unclicked" state, where the menu is simply displaying a single item in one of the windows.

Popup
When the popup is actually clicked, and the full contents are displayed.

The main purpose of this is to allow more letters rather than numbers to be displayed in the "unclicked" (display) states of the popups, where space is often at a premium. However, it's up to you. The following options are available for all of the following described popups:

Add Location Numbers
Selects whether or not the names will be shown with a numerical locator before them, such as "Trumpet" or "56 Trumpet."

Use Leading Zeroes (i.e. 004)
If the "Add Location Numbers" option above is turned on, selects whether or not the numerical locator will be displayed with zeroes so that the number is padded to the same length, i.e. "56 Trumpet" or "056 Trumpet."

The following option is available for any popups that display Drum Note Names:

Use GM Drum Names:
Selects whether or not the Note Names will have GM Drum Names added to them, i.e. "36 C_2" or "36 C_2 - Kick 1."

Display Names +12:
For Korg keyboards, typically the internal Drum Kits are mapped an octave higher than the GM Drum Map. In other words, in the GM Drum Map, Kick1 is C2 and Snare1 is D2. In Korg Drum Kits, they are C3 and D3. Checking this option shifts the GM Drum names so they display an octave higher, matching most of the Korg Drum Kits more closely. This does not change the Note Number designations; C3 is still C3. It just changes which drum name is displayed for C3.

◆ [GE Popup Menus]

Display options for:
GE Editor: GE Bank and GE popups.
Performance Editor: GE Setup Page: GE Bank and GE popups for each module.
Performance Editor: Info Display: GE name and bank name.

◆ [Performance Popup Menus]

Display options for:
Performance Editor: Performance Bank and Performance popups.

◆ [Program Popup Menus]

Display options for:
Performance Editor: GE Setup Page: Program Bank and Program popups for each module.
Performance Editor: Info Display: Program name and bank name.

◆ [Template Popup Menus]

Display options for:
GE Editor: Rhythm Page: Template popup
GE Editor: Duration Page: Template popup
GE Editor: Note Page: Template popup
GE Editor: Cluster Page: Template popup
GE Editor: Velocity Page: Template popup
GE Editor: CCs Page: Template popup
GE Editor: WaveSeq Page: Template popup
GE Editor: Drum Page: Template popups

◆ [Drum Name Popup Menus]

Display options for:
GE Editor: Drum Page: Drum Choice popups (seven in each Drum Pattern)
Metronome: Note popup.

◆ [Default] (button)

Restores the settings on the Popups Tab only to the recommended default settings.

Preferences - Korg M3 Special Notes

1. The 14 User CCs on the Preferences MIDI tab are hard-wired in the M3 to the default values, and cannot be changed. Unless you are planning to always use the software with the keyboard, you should consider leaving this set the same as in the keyboard, so that when you transfer Performances to the keyboard they will work as expected.

2. The "Load GE Options" settings on the Perferences General tab has the same function as the [Load GE Options] button on the following pages:

Program:
0-5 KARMA GE
7-1 GE Setup

Combi/Seq:
0-5 KARMA GE
7-1,2,3,4 GE Setup

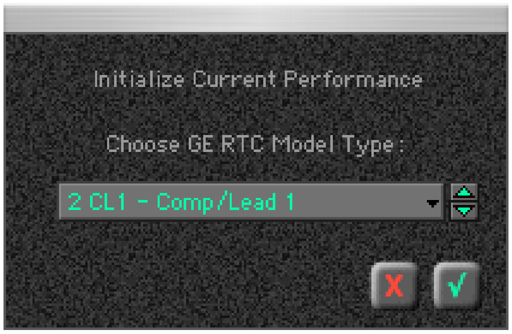
For any sections not covered in this chapter, please see:
Preferences (Part 1)

Performance Dialogs

Sections in this chapter:

This chapter describes in detail some of the dialogs you will encounter when using the Performance Utilities available from the Menu Buttons in various windows, and from the application's main Utilities Menu.

PE Dialogs - Initialize Current Performance



Opened by the "Initialize Current Performance" command on the Performance Editor's Menu Button, this dialog allows you to initialize the current Performance in the edit buffer with an initialized GE selected from one of the 13 types of GE RTC Models.

For KARMA M3, if you are in a bank of Programs (single Module Performances), an initialized single Module Performance is created. If you are in a bank of Combis (four Module Performances), an initialized four Module Performance is created. In a four Module Performance, note that only the first Module's GE is set to the selected RTC Model type; the other Modules are set to GE 0000. You can initialize other Modules and their GEs to different types of GEs by applying the **Initialize Current GE** command from the GE Editor's Menu Button.

◆ **[Choose GE RTC Model Type]** (popup menu) [RTC Models 1...13]

Based on which RTC Model is selected, certain Module-level parameters (outside of the GE) will be reset and adjusted within the Performance's Module settings. First, the entire Module will be initialized, resetting everything except Key Zone and Thru settings on the Zones Page. Then, for some (but not all) of the RTC Model Types, further adjustments are made as follows:

LF1-Dual LFOs 1
Quantize Triggers = Off
MIDI Filter (Transmit) Notes = Off
Env 1 Latch Mode = Rel2
Env 2 Latch Mode = Rel2

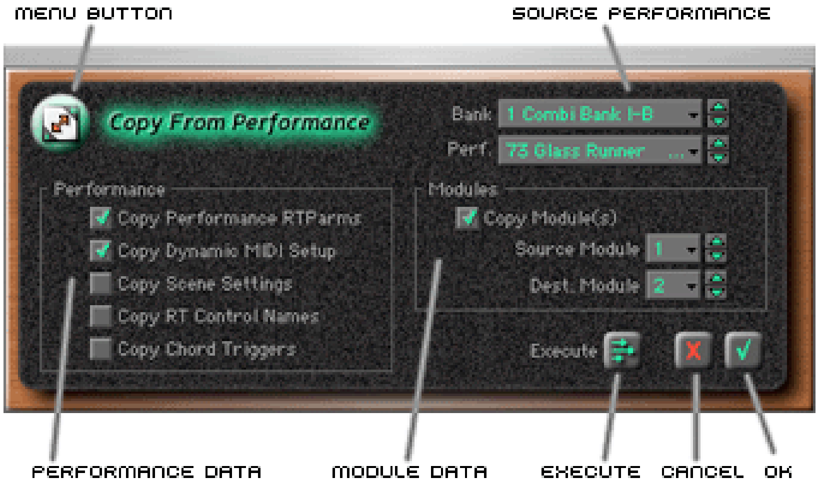
EG1- Dual Env Gen 1
Quantize Triggers = Off
MIDI Filter (Transmit) Notes = Off
Env 1 Latch Mode = Sus1
Env 2 Latch Mode = Sus1

MB1-Melodic Rpt/Bend 1
MR1-Melodic Repeat 1
RB1-Real-time Bend 1
Quantize Triggers = Off
If a Program, or a Combi and Module 1, LATCH button = OFF

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing any action. The currently loaded Performance is not changed. The OK Button (green checkmark) closes the dialog and performs the initialization.

PE Dialogs - Copy From Performance



The Copy From Performance Dialog allows you to copy various settings from another Performance in the same KDF File to the currently loaded Performance. It can be opened by any of the following methods:

- the "Copy From Performance..." item in the Performance Editor's Menu Button, and many of the Menu Buttons in the other Pages of the Performance Editor;
- the "Copy From Performance..." item in the main application Utilities Menu: Copy/Swap sub-menu.

Source Performance
Selects the Performance in the current KDF File from which you want to copy some data.

◆ **[Bank]** (popup menu) [0...number of banks in KDF file-1]

Selects a bank of Performances in the current KDF file from which to copy.

◆ **[Performance]** (popup menu) [0...127]

Selects a Source Performance within the selected bank of the current KDF File, from which data will be copied into the currently loaded Performance.

Performance Data
Selects various types of Performance data that can be copied from the Source Performance. The following types of data can be copied:

◆ **[Copy Performance RTParms]** (checkbox) [0, 1]

When checked, the Source Performance's Real-Time Parm assignments on the (P) sub-page of the PE Editor: Real-Time Parms Page will be copied into the currently loaded Performance.

◆ **[Copy Dynamic MIDI Setup]** (checkbox) [0, 1]

When checked, the Source Performance's Dynamic MIDI Setup will be copied into the currently loaded Performance.

◆ **[Copy Scene Settings]** (checkbox) [0, 1]

When checked, the Source Performance's Scene settings (in the Real-Time Controls Editor) will be copied into the currently loaded Performance.

◆ **[Copy RT Control Names]** (checkbox) [0, 1]

When checked, the Source Performance's RTC Name Assignments (in the Real-Time Controls Editor) will be copied into the currently loaded Performance.

◆ **[Copy Chord Triggers]** (checkbox) [0, 1]

When checked, the Source Performance's Chord Trigger settings (in the Real-Time Controls Editor) will be copied into the currently loaded Performance.

Module Data
The Module settings for a particular Module can be copied with or without any of the preceding Performance data.

Module Data includes settings such as the Trigger Page, Key Zones Page, Control Page, MIDI Filter Page, etc.

◆ **[Copy Module(s)]** (checkbox) [0, 1]

When checked, the selected Module Data in the Source Performance will be copied into the currently loaded Performance, as specified below.

◆ **[Source Module]** (popup menu) [varies depending on Performance Type]

Selects a Module in the Source Performance to copy into the Destination Module below.

Not available if there is only a single Module in the Source Performance. If the Source Performance and the currently loaded Performance have the same number of active Modules (based on the Performance Type parameter), both popup menus will also contain the choice "All," which copies all Modules from the source to the currently loaded Performance. Otherwise, will contain the number of Modules in the Source Performance.

◆ **[Destination Module]** (popup menu) [varies depending on Performance Type]

Selects a Module or Modules in the currently loaded Performance into which the selected Source Module(s) will be copied.

Not available if there is only a single Module in the currently loaded Performance. If the Source Performance and the currently loaded Performance have the same number of active Modules (based on the Performance Type parameter), both popup menus will also contain the choice "All," which copies all Modules from the source to the currently loaded Performance. Otherwise, will contain the number of Modules in the Destination Performance.

◆ **[Execute]** (button)

Copies the selected data from the Source Performance into the currently loaded Performance, but does not close the window, in case you wish to perform other copy operations.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without copying anything. The currently loaded Performance is not changed. The OK Button (green checkmark) closes the dialog and performs the selected copy operations.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this dialog.

PE Dialogs - Copy/Swap Module In Current Performance

The "Copy/Swap Module In Current Performance" dialog allows you to copy one module to another, or to swap the position of two modules - for example, say you wrote a Performance with the Drums in Module 2 and the Bass in Module 1, and you wanted them the other way around, with the Drums in Module 1. This utility function intelligently swaps (or copies) all settings related to the Module, including RT Control Assignments, Dynamic MIDI etc.

Menu Button
A popup menu allowing instant access to this help chapter.

◆ **[Source]** (popup menu) [Module 1...6]

Specifies the Source Module for the copy or swap operation.

◆ **[Copy/Swap]** (button) [0, 1]

Selects one of two different operations for the Source and Destination: "Swap" <-> swaps the Source and Destination, while "Copy" --> copies the Source to the Destination.

◆ **[Destination]** (popup menu) [Module 1...6]

Specifies the Destination Module for the copy or swap operation.

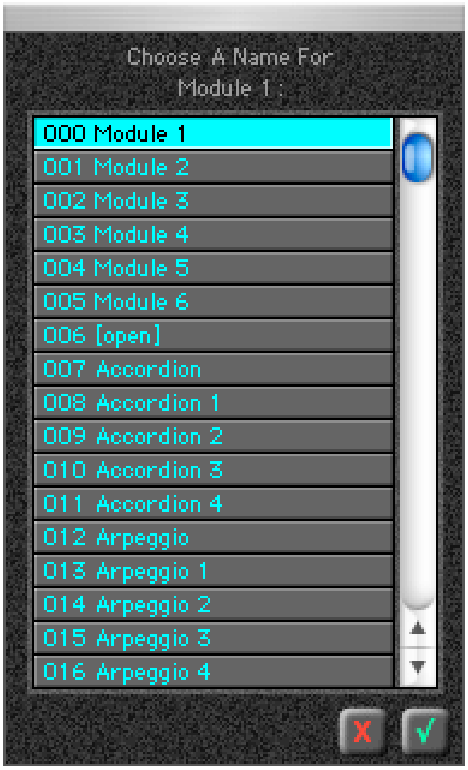
◆ **[Execute]** (button)

Performs the copy or swap operation without closing the dialog, so that you can perform additional operations.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing any operations. The OK Button (green checkmark) closes the dialog and performs the copy or swap operation.

PE Dialogs - Module Name Select



The Module Name Select Dialog allows you to give each Module a descriptive name, selected from a list of predefined names. It is opened by clicking on the small round triangle Module Name Buttons in the Performance Editor > GE Setup page. The names can only be used within the KARMA Software, and cannot be exported to or seen inside the Korg M3.

◆ **[Name Selection List]** (scrolling list) [0...number of names]

Allows you to select one of many predetermined names to describe the selected Module. You may use the computer keyboard's up/down arrow keys to navigate the list, scroll with the scroll bar and click with the mouse to select, use the up/down arrow keys, or type the first few letters of a name to jump to it. The current selection is highlighted in blue.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without saving any edits you may have made. The OK Button (green checkmark) close the dialog and accepts your selection.

PE Dialogs - Export Performance Names

The Export Performance Names Dialog allows you to export the names and various parameters of all the Performances in the current KDF File to a text file. It can be opened from the main application Utilities Menu: Export Names/Lists sub-menu.

The file itself is saved in Microsoft Excel Text format, but can be opened in any text application.

◆ **[Add Internal Parameter Info]** (checkbox) [0, 1]

When On (checked), the settings of various internal Performance parameters are added to the list.

◆ **[Add Category, Programmer]** (checkbox) [0, 1]

When On (checked), the Programmer Name and Category of each Performance are added to the list.

◆ **[Export with RT Control Names]** (checkbox) [0, 1]

When On (checked), the names of all eight RT Control assignments (from the Real-Time Controls Window) are listed with each Performance.

◆ **[Show GE(s) used in Performance]** (checkbox) [0, 1]

When On (checked), the names of all GEs used by each Performance are added to the list, and the following option is also made available:

◆ **[Add GE Category, Programmer]** (checkbox) [0, 1]

When On (checked), the Programmer Name and Category of each GE are added to the list of GEs used in each Performance. Not available unless “Show GE(s) used in Performance” above is checked.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without completing the export. The OK Button (green checkmark) closes the dialog and opens the Standard File Save Dialog, where you can name and choose a location for the exported file.

If none of the options are checked and you continue with the Export, only a list of Performance Names and Locations will be exported, without any additional information.

PE Dialogs - Sort Performances

The Sort Performances Dialog allows you to sort all of the Performances in the current KDF File according to various criteria. It can be opened from the main application Utilities Menu: Sort sub-menu, and the Menu Button in the Performance Editor.

Up to three different sorts may be specified, in order of most important to least important. In other words, with the example settings shown above, the Performances would be sorted by Category overall, then within each Category by Programmer, then within each Programmer in each Category by Name.

◆ **[Additional Sorts]** (checkboxes) [0, 1]

When the dialog first opens, only the 1st Sort column is available. Turn these On to enable additional sorting levels.

◆ **[By Name]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Performance Name.

◆ **[By Category]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Category Name. This places all Performances of the same Category next to each other. An additional sort is typically performed when this is selected as the first sort or second sort.

◆ **[By Programmer]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Programmer Name stored with each Performance. This places all Performances written by the same Programmer next to each other. An additional sort is typically performed when this is selected as the first sort or second sort.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without completing the sort, leaving the current KDF File untouched. The OK Button (green checkmark) closes the dialog and sorts all Performances in all Performance Banks in the current KDF File according to the selected criteria.

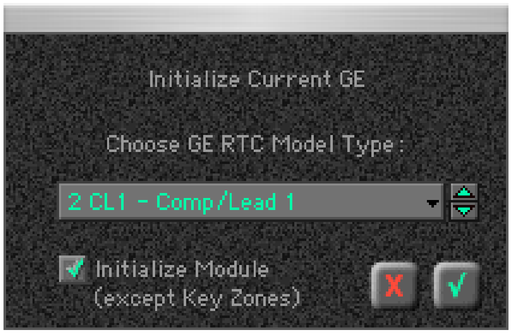
⚠ This operation cannot be undone. Therefore, after performing a sort the only way to restore the data is to reload the KDF File from disk without saving the sorted file (or taking care to save the sorted file with a different name).

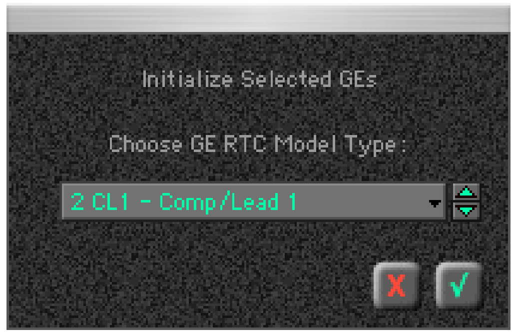
GE Dialogs

Sections in this chapter:

This chapter describes in detail some of the dialogs you will encounter when using the GE Utilities available from the Menu Buttons in various windows, and from the application’s main Utilities Menu.

GE Dialogs - Initialize Current/Selected GE





The Initialize GE Dialog has two variations, as shown above, depending on how you are accessing the feature. It can be called from a GE Bank Display Menu Button, with the “Initialize Selected GEs” command, in which case the dialog on the right is shown. The operation is then applied to one or more selected GE locations in the GE Bank Display Window. It can also be called from the GE Editor’s Menu Button with the “Initialize Current GE” command, in which case the dialog on the left is shown, containing an additional option for initializing the current Module’s parameters. The operation is then applied to the current Module in the current Performance (in the edit buffer). In both cases, you select an initialized GE from one of the 13 types of GE RTC Models.

◆ **[Choose GE RTC Model Type]** (popup menu) [RTC Models 1...13]

Based on which RTC Model is selected, certain Module-level parameters (outside of the GE) will be reset and adjusted within the Performance’s Module settings. First, the entire Module will be initialized, resetting everything except Key Zone and Thru settings on the Zones Page. Then, for some (but not all) of the RTC Model Types, further adjustments are made as follows:

LF1-Dual LFOs 1
Quantize Triggers = Off
MIDI Filter (Transmit) Notes = Off
Env 1 Latch Mode = Rel2
Env 2 Latch Mode = Rel2

EG1- Dual Env Gen 1
Quantize Triggers = Off
MIDI Filter (Transmit) Notes = Off
Env 1 Latch Mode = Sus1
Env 2 Latch Mode = Sus1

MB1-Melodic Rpt/Bend 1
MR1-Melodic Repeat 1
RB1-Real-time Bend 1
Quantize Triggers = Off
If a Program, or a Combi and Module 1, LATCH button = OFF

◆ **[Initialize Module (except Key Zones)]** (checkbox) [Off, On]

Will only be shown when doing “Initialize Current GE” from the GE Editor Menu Button. When checked on, performing the initialization will also initialize all of the Module’s settings in the Performance such as Trigger, Control, MIDI Filter etc. - with the exception of Key Zone settings, which will remain as they are presently set in the current Performance.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing any action. The currently loaded GE is not changed. The OK Button (green checkmark) closes the dialog and performs the initialization.

GE Dialogs - Copy Phases

The Copy Phases Dialog allows you to copy the Phase Specific Parameters of certain GE Editor Pages from one Phase to the other. It can be opened by the “Copy Phases...” command in the GE Editor: Phase Page’s Menu Button, and the Menu Buttons in the other Pages having Phase Specific Parameters (Rhythm, Duration, Index etc.).

Exactly what is copied is determined by the Phase Specific Parameters of each Page. To copy the GE’s entire Phase to the other Phase, simply select all buttons (you can drag down the column).

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this dialog.

◆ **[Phase Copy Direction]** (popup menu) [0, 1]

Phase 1 --> Phase 2
Phase 2 --> Phase 1
Selects the source and destination Phases for the copy operation.

◆ **[Phase]** (button)

Specifies that Phase Specific Parameters from the Phase Page will be copied.

◆ **[Rhythm]** (button)

Specifies that Phase Specific Parameters from the Rhythm Page will be copied.

◆ **[Duration]** (button)

Specifies that Phase Specific Parameters from the Duration Page will be copied.

◆ **[Index]** (button)

Specifies that Phase Specific Parameters from the Index Page will be copied.

◆ **[Cluster]** (button)

Specifies that Phase Specific Parameters from the Cluster Page will be copied.

◆ **[Velocity]** (button)

Specifies that Phase Specific Parameters from the Velocity Page will be copied.

◆ **[CCs]** (button)

Specifies that Phase Specific Parameters from the CCs Page will be copied.

◆ **[WaveSeq]** (button)

Specifies that Phase Specific Parameters from the WaveSeq Page will be copied.

◆ **[Execute]** (button)

The Execute Button (three green arrows) performs the specified copy operation without closing the dialog, in case you want to perform other operations.

◆ **[OK/Cancel]** (button)

The Cancel Button (red X) closes the dialog without performing the copy operation. The OK Button (green checkmark) closes the dialog and performs the specified copy operation.

GE Dialogs - Copy Envelopes

The Copy Envelopes Dialog allows you to copy an entire envelope's settings from any envelope in the Performance to another. It can be opened by the "Copy Envelopes..." command in the GE Editor: Envelope Page's Menu Button.

You can copy from one envelope to another inside a GE simply by setting the Source and Destination Modules both to the current Module containing the GE that you are editing. Alternatively, you can copy an envelope from another GE by loading it into a different Module and specifying the Source and Destination Modules appropriately.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this dialog.

◆ **[Source Module]** (popup menu) [varies depending on number of Modules in use]

Selects the Module containing the Source GE that you wish to copy an envelope from. The menu will only contain the available Modules in the current Performance.

◆ **[Destination Module]** (popup menu) [varies depending on number of Modules in use]

Selects the Module containing the Destination GE that you wish to copy the envelope to. The menu will only contain the available Modules in the current Performance.

◆ **[Source Envelope]** (popup menu) [0...2: Envelope 1 to 3]

Selects the Envelope in the Source GE that you wish to copy.

◆ **[Destination Envelope]** (popup menu) [0...2: Envelope 1 to 3]

Selects the Envelope in the Destination GE that you wish to be replaced with the Source Envelope.

◆ **[Execute]** (button)

The Execute Button (three green arrows) performs the specified copy operation without closing the dialog, in case you want to perform other operations.

◆ **[OK/Cancel]** (button)

The Cancel Button (red X) closes the dialog without performing the copy operation. The OK Button (green checkmark) closes the dialog and performs the specified copy operation.

GE Dialogs - Copy/Swap GE RT Parms

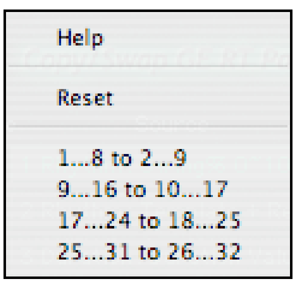
The Copy/Swap GE RT Parms Dialog allows you to copy and swap the locations of the up to 32 GE RTP within a currently loaded GE. It can be opened by any of the following methods:

- the "Copy/Swap RT Parms In Current GE.." command in the GE Editor: RT Parms Page's Menu Button;
- the "Copy/Swap RT Parms In Current Module.." command in the Performance Editor: RT Parms Page's Menu Button.

There are eight rows available to perform eight concurrent copy or swap operations. The example above shows the locations of GE RT Parms 22 and 23 being swapped, and 24 and 25 being swapped. You can specify a copy rather than a swap by clicking on the Copy/Swap arrows.

⚠ It is only advisable to copy/swap RT Parms in the slots that are not required for the GE's RTC Model. Each GE that is configured to use a particular RTC Model has a certain number of "required" parameters, that are in a particular order. Swapping them around will interfere with GE loading operations. The safe slots are located towards the end of the 32 RTP, and are indicated by an asterisk (*) preceding the slot name. Otherwise, you risk compromising the RTC Model concept for that GE, and when it is reloaded, it will not automatically hookup the RT Controls properly.

Menu Button
A popup menu allowing instant access to this help chapter and the following utilities associated with this dialog:



Reset
Resets all eight rows to default initialized settings.

1…8 to 2…9
9…16 to 10…17
17…24 to 18…25
25…31 to 26…32
Quickly sets up different groups of 8 parameters to be shifted down by one.

◆ **[Active]** (checkbox) [0, 1]

Activates the selected row so that its specified copy/swap operation will be performed. The Source and destination can then be set.

◆ **[Source]** (popup menu) [0…31]
◆ **[Destination]** (popup menu) [0…31]

Specifies a source and destination GE RT Parm from the 32 available locations. The names of the parameters are displayed.

◆ **[Copy/Swap]** (button) [0, 1]

Selects one of two different operations for the Source and Destination:

0: Swap <->
Select two different GE RT Parms for the Source and Destination settings, and they will be swapped. If there are any RT Control assignments in the Performance RT Parms Page, they will also be swapped so that everything continues to work correctly.

1: Copy -->
Select two different GE RT Parms for the Source and Destination settings, and the Source will be copied to the Destination. If there are any RT Control assignments in the Performance RT Parms Page, they will also be copied.

◆ **[Execute]** (button)

The Execute Button (three arrows) performs the selected operation without closing the dialog, so that you can perform more operations if you desire.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without executing the operation. The OK Button (green checkmark) closes the dialog and executes the operation.

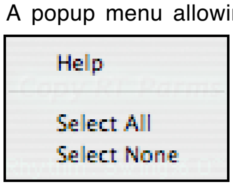
GE Dialogs - Copy RT Parms From Another GE

The Copy RT Parms From Another GE Dialog allows you to selectively copy GE RT Parms from any other GE in the same KDF File. It can be opened by the “Copy RT Parms From Another GE…” command in the GE Editor: RT Parms Page’s Menu Button.

There are 32 rows that allow some or all of the up to 32 RT Parms to be copied at once.

⚠ It is only advisable to copy RT Parms in the slots that are not required for the GE’s RTC Model. Each GE that is configured to use a particular RTC Model has a certain number of “required” parameters, that are in a particular order. Changing them will interfere with GE loading operations. The safe slots are located towards the end of the 32 RTP, and are indicated by an asterisk (*) preceding the slot name. Otherwise, you risk compromising the RTC Model concept for that GE, and when it is reloaded, it will not automatically hookup the RT Controls properly.

Menu Button
A popup menu allowing instant access to this help chapter and any utilities associated with this dialog:



Select All
Select None
Quickly selects all (or none) of the “Select For Copy” checkboxes preceding each ro`w.

◆ **[Bank]** (popup menu) [number of banks of GEs in current KDF File]

Selects one of the Banks of GEs in the current KDF File.

◆ **[GE]** (popup menu) [0...127]

Selects a GE in the current KDF File. The names of the 32 GE RT Parms from that GE will be displayed in the 32 rows of the dialog.

◆ **[RT Parm Name]** (label)

Displays the name of the GE RT Parm in each location in the selected GE.

◆ **[Select For Copy]** (checkbox) [0, 1]

Activates the selected row so that it will be copied when the operation is executed.

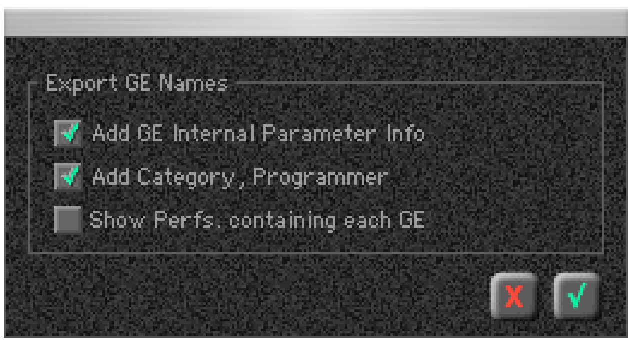
◆ **[Execute]** (button)

The Execute Button (three arrows) performs the selected operation without closing the dialog, so that you can perform more operations if you desire.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without executing the operation. The OK Button (green checkmark) closes the dialog and executes the operation.

GE Dialogs - Export GE Names



The Export GE Names Dialog allows you to export the names and various parameters of all the GEs in the current KDF File to disk. It can be opened from the main application Utilities Menu: Export Names/Lists sub-menu.

The file itself is saved in Microsoft Excel Text format, but can be opened in any text application.

◆ **[Add GE Internal Parameter Info]** (checkbox) [0, 1]

When On (checked), information about some of the parameters in each GE is added to the list. The format and information is similar to that found in the Korg M3 Voice Name List.

◆ **[Add Category, Programmer]** (checkbox) [0, 1]

When On (checked), the Programmer Name and Category of each GE are added to the list.

◆ **[Show Perfs. containing each GE]** (checkbox) [0, 1]

When On (checked), the Performances in the KDF File that use each GE are added to the list.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without completing the export. The OK Button (green checkmark) closes the dialog and opens the Standard File Save Dialog, where you can name and choose a location for the exported file.

If none of the options are checked and you continue with the Export, only a list of GE Names and Locations will be exported, without any additional information.

GE Dialogs - Sort GEs

The Sort GEs Dialog allows you to sort all of the GEs (or just the User Bank GEs) in the current KDF File according to various criteria. It can be opened from the main application Utilities Menu: Sort sub-menu.

Up to three different sorts may be specified, in order of most important to least important. In other words, with the example settings shown above, the GEs would be sorted by Category overall, then within each Category by Subcategory, then within each Subcategory in each Category by Name.

◆ **[All GEs In File]** (button)

Indicates that the sort is to include all GEs in all GE Banks of the current KDF File.

◆ **[User GEs Only]** (button)

Indicates that the sort is to include only GEs that are inside User GE Banks.

◆ **[Additional Sorts]** (checkboxes) [0, 1]

When the dialog first opens, only the first sort column is available. Turn these on to enable additional sorting levels.

◆ **[By Name]** (button)

Specifies that the indicated sort level be performed alphabetically based on the GE Name.

◆ **[By Category]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Category Name. This places all GEs of the same Category next to each other. An additional sort is typically performed when this is selected as the first sort or second sort.

◆ **[By Subcategory]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Subcategory Name, which is typically done as an additional sort level after sorting by Category.

◆ **[By Programmer]** (button)

Specifies that the indicated sort level be performed alphabetically based on the Programmer Name stored with each GE. This places all GEs written by the same Programmer next to each other. An additional sort is typically performed when this is selected as the first sort or second sort.

◆ **[OK/Cancel]** (buttons)

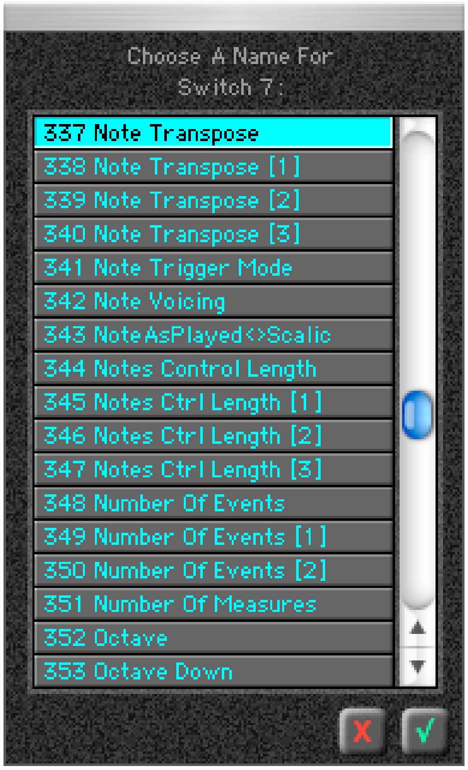
The Cancel Button (red X) closes the dialog without completing the sort, leaving the current KDF File untouched. The OK Button (green checkmark) closes the dialog and sorts all GEs in all GE Banks in the current KDF File according to the selected criteria.

⚠ This operation cannot be undone. Therefore, after performing a sort the only way to restore the data is to reload the KDF File from disk without saving the sorted file (or taking care to save the sorted file with a different name).

Real-Time Controls Dialogs

Sections in this chapter:

RT Controls Window - RTC Name Select Dialog



The RTC Name Select Dialog is opened by clicking on any of the round triangle buttons to the left of any RTC Slider or Switch name in the RT Controls Window. It allows you to choose one of the available names for the selected slider or switch. The up/down arrow keys or the scroll bar to the right side can be used to navigate the list. You can also type the first letter or first few letters of a name to jump directly to it.

◆ **[Name Selection List]** (scrolling list) [0...number of names]

Allows you to select one of many predetermined names to describe the function of the corresponding slider or switch. You may use the computer keyboard's up/down arrow keys to navigate the list, scroll with the scroll bar and click with the mouse to select, use the up/down arrow keys, or type the first few letters of a name to jump to it. The current selection is highlighted in blue.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without saving any edits you may have made. The OK Button (green checkmark) close the dialog and accepts your selection.

RT Controls Window - Scene Name Select Dialog

The Scene Name Select Dialog is opened by clicking the round triangle button to the left of the Scene popup menu in the RT Controls Window. It allows you to choose one of the available names for the current scene in the current Module Control Layer. The up/down arrow keys or the scroll bar to the right side can be used to navigate the list. You can also type the first letter or first few letters of a name to jump directly to it.

◆ **[Name Selection List]** (scrolling list) [0...number of names]

Allows you to select one of many predetermined names to describe the current scene in the current Module Control Layer. You may use the computer keyboard's up/down arrow keys to navigate the list, scroll with the scroll bar and click with the mouse to select, use the up/down arrow keys, or type the first few letters of a name to jump to it. The current selection is highlighted in blue.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without saving any edits you may have made. The OK Button (green checkmark) close the dialog and accepts your selection.

RT Controls Window - Copy and Swap Scenes Dialogs

The Copy and Swap Scenes Dialogs are opened by selecting “Copy Scenes...” or “Swap Scenes...” from the Menu Button in the RT Controls Window. When used for Copy operations, it allows you to copy a scene in one or more Control Layers, to one or more other scenes. When used for Swap operations, it allows you to swap any 2 scenes, in one or more Control Layers at the same time. Note that more sophisticated reordering of scenes can be performed with the Reorder Scenes Dialog.

Menu Button
A popup menu allowing instant access to this help chapter.

◆ **[Control Layer]** (popup) [= ALL =, Master, Module 1...6]

Specifies which Control Layers you want to apply the copy or swap operation to. You can choose the Master Layer, any of the Module Layers, or all layers at once.

◆ **[Source]** (popup menu) [Scene 1...32]

Copy:
Specifies the Source Scene that you want to copy into other scene(s).

Swap:
Specifies one of the two scenes that you want to swap the locations of.

◆ **[Destination]** (popup menu) [Scene 1...32, All Higher, = ALL =, 9 to 32]

Copy:
The destination can be any scene from 1~32, with the addition of three special items. “All Higher” copies the specified Source Scene to all scenes with a higher location. For example, if the Source is set to Scene 4, using “All Higher” would copy to Scenes 5~32. “= ALL =” copies the specified Source Scene to all other locations. “9 to 32” copies the Source Scene to Scenes 9 to 32.

Swap:
Specifies one of the two scenes that you want to swap the locations of. Note that more sophisticated reordering of scenes can be performed with the Reorder Scenes Dialog.

◆ **[Execute]** (button)

Performs the copy or swap operation without closing the dialog, so that you can perform additional operations.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing any operations. The OK Button (green checkmark) closes the dialog and performs the copy or swap operation.

RT Controls Window - Reorder Scenes Dialog

The Reorder Scenes Dialog can be opened by using the “Reorder Scenes...” command from the Menu Button in the RT Controls Window. It provides more sophisticated swapping of scenes than the Swap Scenes Dialog above, which only allows you to swap two scenes with each other. Here, you can specify a completely new order for the first 8 scenes of the KARMA software’s 32 scenes (corresponding to the 8 scenes of the M3). Scenes 9~32 of the software are not affected by this operation (and cannot be exported to the M3).

To reorder scenes, you click on the scene numbers in the “Old” column one at a time in the order you would like them to appear, and they appear in the new order in the “New” column. When you have finished all 8 scenes, you may click OK to perform the reordering, or click “Start Over” to reset and begin again.

Menu Button
A popup menu allowing instant access to this help chapter.

◆ **[Control Layer]** (popup menu) [Master, Module 1~6, = ALL =]

Specifies which Control Layer you would like to apply the reordering operation to. When reordering scenes in a finished Performance, it is typical to use the “= ALL = ” setting, so that all layers of the scenes are reordered at the same time and maintain their relationships, and you are reorganizing what happens when you click on the Master Layer scenes. However, it is possible to also reorder scenes in a particular layer.

◆ **[Old Scene Location]** (button) [1...8]
◆ **[New Scene Location]** (label) [1...8]

When you click on scene numbers in the “Old” column, they will be added to the “New” column in the next available location. Clcik them one at a time in the new order you would like them to appear, and when you have completed all eight buttons, press Execute or OK.

◆ **[Start Over]** (button)

Resets the “Old” column and clears the “New” column so that you can begin reordering the scenes again.

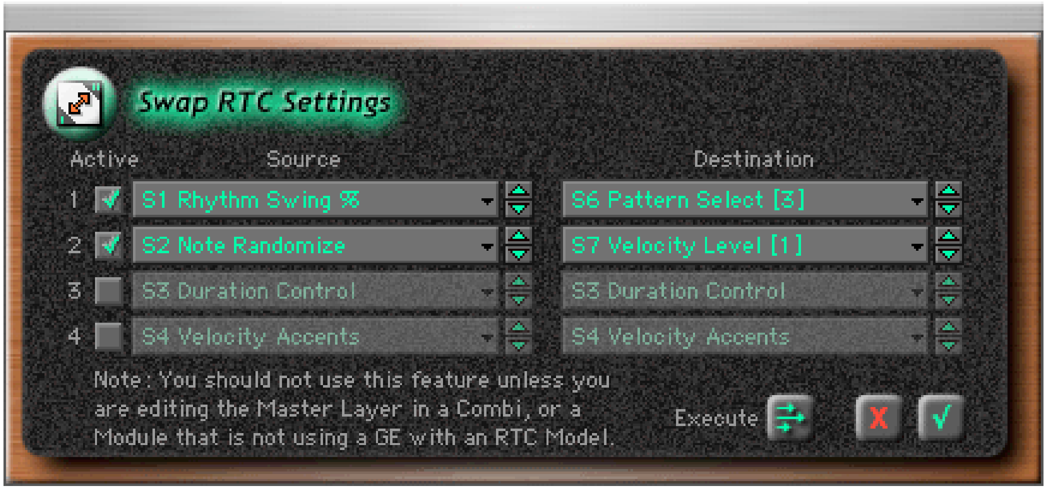
◆ **[Execute]** (button)

Performs the reordering operation without closing the dialog, so that you can perform additional operations.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without performing any operations. The OK Button (green checkmark) closes the dialog and performs the reordering operation.

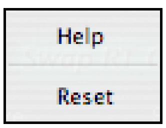
RT Controls Window - Swap RTC Settings Dialog



The Swap RTC Settings Dialog can be opened by using the “Swap RTC Settings...” command from the Menu Button in the RT Controls Window. It allows you to swap the locations of the assigned controls within the current Module Control Layer of the current Performance. In other words, say that you have a whole Performance set up with various settings controlled by different slider and switch assignments. Then you decide you’d like to have the function of sliders 1 and 2 switched, in the Master or a Module Layer. This utility can do that and renumber all control assignments within the Performance and Scenes so that everything still works correctly.

Menu Button

A popup menu allowing instant access to this help chapter and the following utilities associated with this dialog:



Reset

Resets all four rows to default initialized settings.

◆ **[Active]** (checkbox) [0, 1]

Makes a particular row of the dialog active. The Source and Destination menus can then be set to perform a swap operation.

◆ **[Source]** (popup menu) [Sliders 1...8, Switches 1...8]
◆ **[Destination]** (popup menu) [Sliders 1...8, Switches 1...8]

Selects the Source and Destination RT Controls from among the eight sliders and eight switches. The example above shows Slider 1 being swapped with Slider 6, and Slider 2 being swapped with Slider7.

◆ **[Execute]** (button)

The Execute Button (three arrows) performs the selected operation without closing the dialog, so that you can perform more operations if you desire.

◆ **[OK/Cancel]** (buttons)

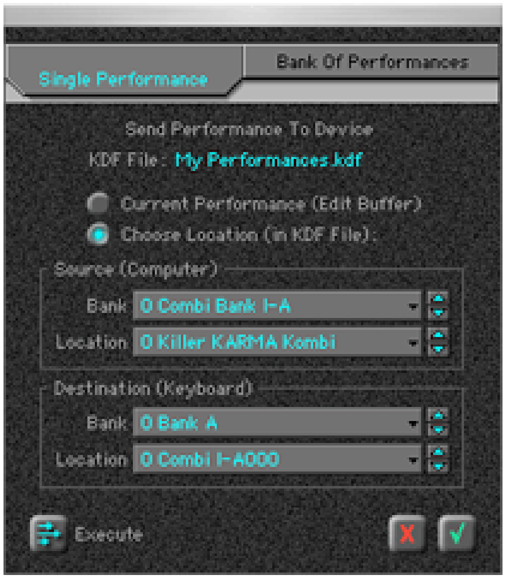
The Cancel Button (red X) closes the dialog without executing the operation. The OK Button (green checkmark) closes the dialog and executes the operation.

SysEx Dialogs - Performances

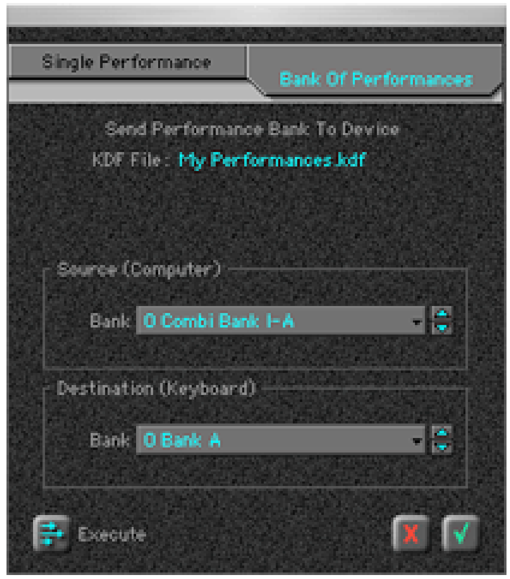
Sections in this chapter:

This chapter describes in detail the dialogs related to sending and receiving Performances (Programs/Combis) via SysEx (System Exclusive data). It also explains one utility dialog, the Send Sysex Message dialog for sending any raw Sysex message.

SysEx Dialogs - Send Performances



SINGLE PERFORMANCE TAB



BANK OF PERFORMANCES TAB

The Send Performances Dialog allows you to send single Performances or banks of Performances (Combis/Programs) to your M3, via SysEx (System Exclusive) messages. It can be opened by the "Send Bank..." and "Send Performance..." commands in various Menu Buttons in the Performance Editor, PE Bank Display Windows, and KDF Window. It will come up preset to the current Bank or Performance, depending on which option you choose from the Menu Button. You can then change it to other locations based on your needs.

◆ **[Single/Bank Tabs]** (page selector)

Selects the "Single" or "Bank" page of the dialog. Use the Single page to send Performances one by one, and the Bank page to send complete banks of Combis or Programs.

◆ **[KDF File]** (label)

Displays the name of the KDF File from which you are sending data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to send.

◆ **[Execute]** (button)

Sends the specified Performance or Performance Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)

The OK Button (green checkmark) closes the dialog and sends the specified Performance or Performance Bank. The Cancel Button (red X) closes the dialog without sending any data.

SINGLE PERFORMANCE TAB:

◆ **[Current Performance]** (radio button)

The currently loaded Performance in the edit buffer will be sent to the M3, and stored in the currently selected Program or Combi. The Source and Destination menus will not be available and will be grayed out.

◆ **[Choose Location]** (radio button)

The selected Performance in the Source section will be sent to the M3 and stored in the location specified in the Destination section.

◆ **[Source Bank]** (popup menu) [Number of Performance Banks in KDF File]

Selects one of the banks of Performances in the KDF File.

◆ **[Source Location]** (popup menu) [0...127]

Selects one of the Performances in the selected bank of the KDF File to be sent to the M3.

◆ **[Destination Bank]** (popup menu) [Number of Combi or Program banks in the M3]

Selects one of the Program or Combi Banks in the M3 where you want the Performance to be stored. Items may be grayed out depending on the mode and user bank types of the M3.

◆ **[Destination Location]** (popup menu) [0...127]

Selects one of the locations in the selected Program or Combi Bank (in the M3), into which the Source Performance will be stored.

BANK OF PERFORMANCES TAB:

◆ **[Source Bank]** (popup menu) [Number of Performance Banks in KDF File]

Selects one of the banks of Performances in the KDF File to be sent to the M3.

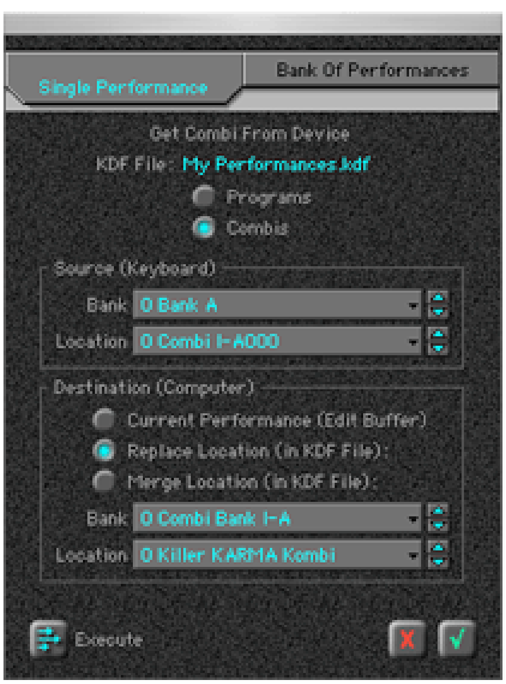
◆ **[Destination Bank]** (popup menu) [Number of Combi or Program banks in the M3]

Selects one of the Program or Combi Banks in the M3 where you want the Performance Bank to be stored. Items may be grayed out depending on the mode and user bank types of the M3.

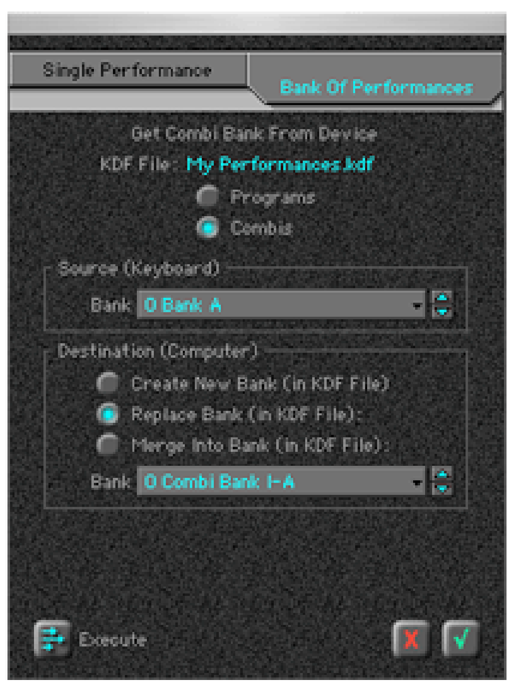
◆ **[User Program Bank Types unknown]** (label)

Indicates that the User Program Bank Type settings in the keyboard are unknown, and the “Update User Program Bank Types” command should be run from the Utilities Menu.

SysEx Dialogs - Get Performances



SINGLE PERFORMANCE TAB



BANK OF PERFORMANCES TAB

The Get Performances Dialog allows you to get single Performances or banks of Performances (Combis/Programs) from your M3. It sends SysEx (System Exclusive) data requests to the device, and the device responds by “dumping” the requested PCG data back to the software.

The dialog can be opened by the “Get Bank...” and “Get Performance...” commands in various Menu Buttons in the Performance Editor, PE Bank Display Windows, and KDF Window. It will come up preset to the current Bank or Performance, depending on which option you choose from the Menu Button. You can then change it to other locations based on your needs.

◆ **[Single/Bank Tabs]** (page selector)

Selects the “Single” or “Bank” page of the dialog. Use the Single page to get Performances one by one, and the Bank page to get complete banks of Combis or Performances.

◆ **[KDF File]** (label)

Displays the name of the KDF File that will store the received data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to operate on.

◆ **[Programs]** (radio button)

Only Program Banks will be displayed in the Source section, and only Performance Banks corresponding to Programs will be displayed in the Destination section.

◆ **[Combis]** (radio button)

Only Combi Banks will be displayed in the Source section, and only Performance Banks corresponding to Combis will be displayed in the Destination section.

◆ **[Execute]** (button)

Sends a SysEx request for the specified Performance or Performance Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)
The OK Button (green checkmark) closes the dialog and sends a SysEx request for the specified Performance or Performance Bank. The Cancel Button (red X) closes the dialog without sending/receiving any SysEx data.

SINGLE PERFORMANCE TAB:

◆ **[Source Bank]** (popup menu) [Number of Combi or Program banks in the M3]

Selects one of the Program or Combi Banks in the M3 from which data will be received.

◆ **[Source Location]** (popup menu) [0...127]

Selects one of the 128 Programs or Combis in the selected bank of the M3, to be received by the KARMA Software.

◆ **[Current Performance]** (radio button)

The currently loaded Performance in the edit buffer will be replaced by the data sent from the M3. The Destination menus will not be available and will be grayed out.

⚠ When this is performed, the selected Source Program or Combi is loaded into the Edit Buffer, replacing the currently loaded Performance. This also causes the GEs used by the Performance to be loaded, and any edits to the previous Performance and GEs will be lost. Note that since the Program/Combi is loaded into the Edit Buffer, the name of the Performance does not change, and the whole thing is only in “temporary” memory. You can then save it wherever you like using the “Store” button as usual. If you reselect the current Performance or another one without saving, the contents of the Edit Buffer will be lost.

◆ **[Replace Location]** (radio button)

The data sent from the M3 will be stored in the KDF File at the location specified by the Destination menus, replacing the previous data.

◆ **[Merge Location]** (radio button)

The data sent from the M3 will be “merged” into the KDF File at the specified Destination location. “Merging” means that you only take the PCG Program and Combi parameters and put them into the KDF File in the correct places - none of the KARMA Performance settings in the corresponding slots are affected. In other words, you use this when you have edited some sound parameters on the keyboard, and also some KARMA related parameters in the software. If you want the KDF data to reflect the combined edits of the both of them, you merge the data so that the KDF File has the latest PCG parameters stored along with the KARMA parameters, for exporting or sending via SysEx.

[Destination Bank] (popup menu) [Number of Performance Banks in KDF File]

Selects one of the Performance Banks in the KARMA Software where you want the Program/Combi to be stored. Only banks corresponding to the Programs/Combis setting at the top of the dialog will be enabled. Banks may also be disabled depending on User Program Bank Type settings.

[Destination Location] (popup menu) [0...127]

Selects one of the locations in the Destination Bank into which the data received from the M3 will be stored.

<u>BANK OF PERFORMANCES TAB:</u>

[Source Bank] (popup menu) [Number of Combi or Program banks in the M3]

Selects one of the Program or Combi Banks in the M3 from which data will be received.

[Create New Bank] (radio button)

A new bank of the correct type will be created inside the KDF File to hold the results of the bank dump. The Destination Bank menu will be grayed out and unavailable.

[Replace Bank] (radio button)

The contents of the specified Destination Bank will be completely replaced with the requested bank dump. Combis and Programs will be converted to KARMA Performance data as necessary.

[Merge Into Bank] (radio button)

The contents of the specified Destination Bank will be merged with the results of the bank dump, allowing the KARMA Performance data to remain as it is, while the associated PCG data in the KDF file is replaced. “Merging” means that you only take the PCG Program and Combi parameters and put them into the KDF File in the correct places - none of the KARMA Performance settings in the corresponding slots are affected. In other words, you use this when you have edited some sound parameters on the keyboard, and also some KARMA related parameters in the software. If you want the KDF data to reflect the combined edits of the both of them, you merge the data so that the KDF File has the latest PCG parameters stored along with the KARMA parameters, for exporting or sending via SysEx.

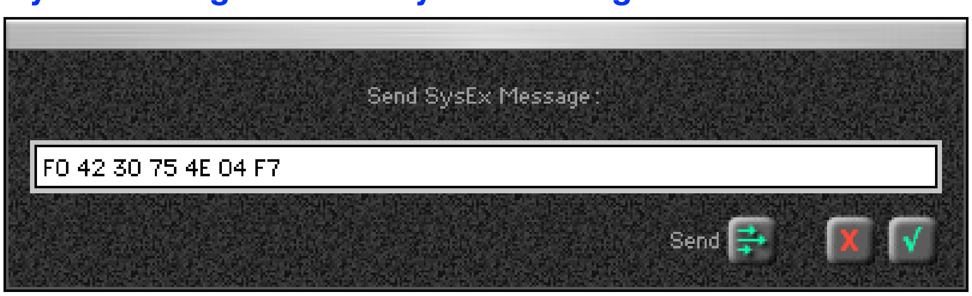
[Destination Bank] (popup menu) [Number of Performance Banks in KDF File]

Selects one of the Performance Banks in the KARMA Software to be replaced by or merged with the SysEx data. Only banks corresponding to the Programs/Combis setting at the top of the dialog will be enabled. Banks may also be disabled depending on User Program Bank Type settings.

[User Program Bank Types unknown] (label)

Indicates that the User Program Bank Type settings in the keyboard are unknown, and the “Update User Program Bank Types” command should be run from the Utilities Menu.

SysEx Dialogs - Send Sysex Message



The Send Sysex Message dialog allows you to send any System Exclusive message to your M3 on the KARMA M3 Software’s Global Out Port. You can use this for testing various SysEx messages when programming fader boxes and controllers to work with your M3, or other development activities.

[Message] (text field)

Enter a SysEx message here, in the format "FO xx xx xx xx F7", with each byte consisting of two hexadecimal characters, and each byte separated by a space. For example, the message shown above (the default message when you open the dialog) changes the M3 to Sequencer Mode.

[Send] (button)

Sends the specified SysEx message without closing the dialog, so that you can send additional messages.

[OK/Cancel] (buttons)

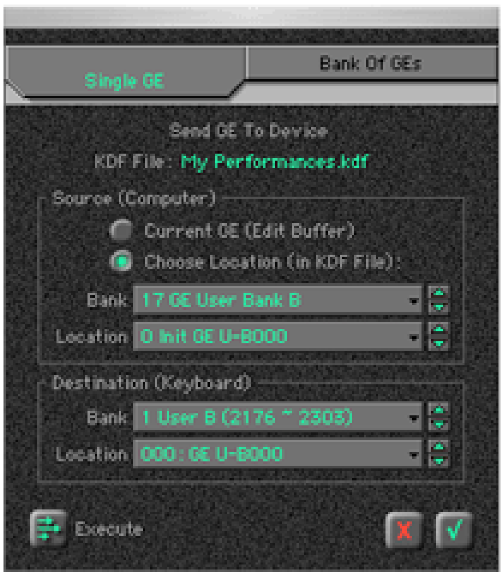
The Cancel Button (red X) closes the dialog without performing any operations. The OK Button (green checkmark) closes the dialog and sends the specified SysEx message.

SysEx Dialogs - GEs and Templates

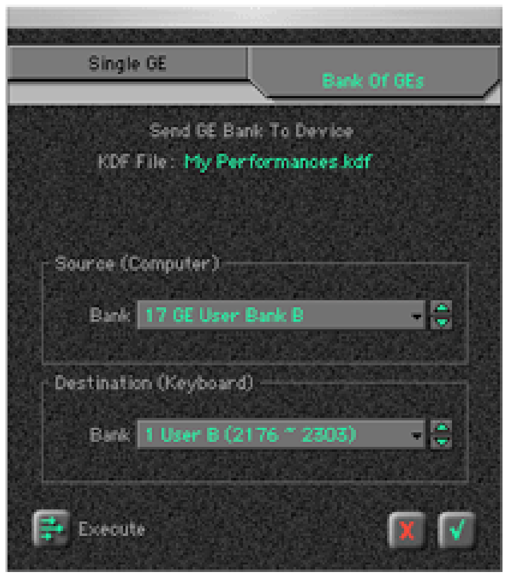
Sections in this chapter:

This chapter describes in detail the dialogs related to sending and receiving GEs and Templates via SysEx (System Exclusive data).

SysEx Dialogs - Send GEs



SINGLE GE TAB



BANK OF GES TAB

The Send GEs Dialog allows you to send single GEs or banks of GEs (Generated Effects) to your M3, via SysEx (System Exclusive) messages. You can send any GE in any GE Bank of the current KDF File to one of the 1024 User GE locations in the Korg M3, or banks of 128 User GEs.

The dialog can be opened by the “Send Bank...” and “Send GE...” commands in various Menu Buttons in the GE Editor, GE Bank Display Windows, and KDF Window. It will come up preset to the current Bank or GE, depending on which option you choose from the Menu Button. You can then change it to other locations based on your needs.

You must manually select the GE in the keyboard after sending it if you want to see it or play it.

◆ **[Single/Bank Tabs]** (page selector)

Selects the “Single” or “Bank” page of the dialog. Use the Single page to send GEs one by one, and the Bank page to send complete banks of GEs.

◆ **[KDF File]** (label)

Displays the name of the KDF File from which you are sending data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to send.

◆ **[Execute]** (button)

Sends the specified GE or GE Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)

The OK Button (green checkmark) closes the dialog and sends the specified GE or GE Bank. The Cancel Button (red X) closes the dialog without sending any data.

SINGLE GE TAB:

◆ **[Current GE]** (radio button)

The currently loaded GE in the edit buffer will be sent to the M3, and stored in the specified Destination Bank and Location. The Source menus will not be available and will be grayed out.

◆ **[Choose Location]** (radio button)

The selected GE in the Source section will be sent to the M3 and stored in the location specified in the Destination section.

◆ **[Source Bank]** (popup menu) [Number of GE Banks in KDF File]

Selects one of the banks of GEs in the KDF File containing the GE that you want to send as SysEx Data.

◆ **[Source Location]** (popup menu) [0...127]

Selects one of the GEs in the selected bank of the KDF File to be sent to the M3.

◆ **[Destination Bank]** (popup menu) [0...7: User GE Banks A...H]

Selects one of the 8 User GE Banks in the Korg M3 where you want the GE to be stored.

◆ **[Destination Location]** (popup menu) [0...128]

Selects one of the 128 locations in the selected User GE Bank (in the M3), into which the Source GE will be stored.

Bank PAGE:

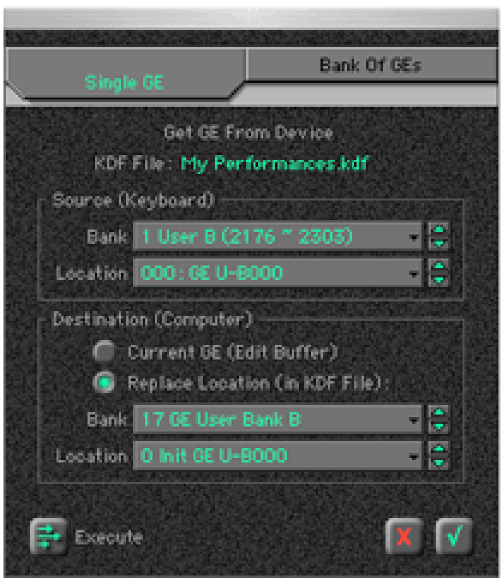
◆ **[Source Bank]** (popup menu) [Number of GE Banks in KDF File]

Selects one of the banks of GEs in the KDF File to be sent to the M3 as SysEx Data.

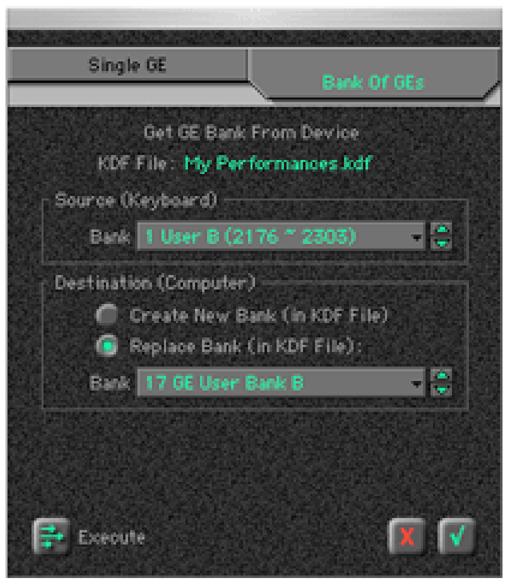
◆ **[Destination Bank]** (popup menu) [0...7: User GE Banks A...H]

Selects one of the 8 User GE Banks in the M3 where you want the GE Bank to be stored.

SysEx Dialogs - Get GEs



SINGLE GE TAB



BANK OF GES TAB

The Get GEs Dialog allows you to get single GEs or banks of GEs (Generated Effects) from your M3. You can “ask” the M3 to send you any one of the 1024 User GEs, or any bank of 128 User GEs. It sends SysEx (System Exclusive) data requests to the device, and the device responds by “dumping” the requested data back to the software.

The dialog can be opened by the “Get Bank...” and “Get GE...” commands in various Menu Buttons in the GE Editor, GE Bank Display Windows, and KDF Window. It will come up preset to the current Bank or GE, depending on which option you choose from the Menu Button. You can then change it to other locations based on your needs.

◆ **[Single/Bank Tabs]** (page selector)

Selects the “Single” or “Bank” page of the dialog. Use the Single page to get GEs one by one, and the Bank page to get complete banks of GEs.

◆ **[KDF File]** (label)

Displays the name of the KDF File that will store the received data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to operate on.

◆ **[Execute]** (button)

Sends a SysEx request for the specified GE or GE Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without sending a request. The OK Button (green checkmark) closes the dialog and sends a SysEx request to the keyboard to send the specified GE. The specified GE will then be received and loaded into the current Module of the current Performance. KARMA MW will put up a message indicating that the GE was received.

SINGLE PAGE:

◆ **[Source Bank]** (popup menu) [Depends on the Global Device setting in the MIDI Ins & Outs Editor]

Selects one of the 8 User GE Banks in the Korg M3 that contains the GE you wish to receive.

◆ **[Source Location]** (popup menu) [0...128]

Selects one of the 128 locations in the selected User Bank that contains the GE you wish to receive.

◆ **[Current GE]** (radio button)

The currently loaded GE in the edit buffer will be replaced by the data sent from the M3. The Destination menus will not be available and will be grayed out.

⚠ When this is performed, the selected GE is loaded into the Edit Buffer, replacing the currently loaded GE. Any edits to the previous GE will be lost. Note that since the GE is loaded into the Edit Buffer, the name of the GE does not change, and the whole thing is only in "temporary" memory. You can then save it wherever you like using the "Store" button as usual. If you reselect the current GE or another one without saving, or the Performance, the contents of the Edit Buffer will be lost.

◆ **[Replace Location]** (radio button)

The GE sent from the M3 will be stored in the KDF File at the location specified by the Destination menus, replacing the previous data.

◆ **[Destination Bank]** (popup menu) [Number of GE Banks in KDF File]

Selects one of the GE Banks in the KARMA Software where you want the GE to be stored. Banks of "ROM GEs" (factory preload data) will be grayed out and cannot be overwritten.

◆ **[Destination Location]** (popup menu) [0...127]

Selects one of the locations in the Destination Bank into which the GE received from the M3 will be stored.

BANK PAGE:

◆ **[Source Bank]** (popup menu) [0...7: User GE Banks A...H]

Selects one of the 8 User GE Banks in the M3 from which data will be received.

◆ **[Create New Bank]** (radio button)

A new bank of the correct type will be created inside the KDF File to hold the results of the bank dump. The Destination Bank menu will be grayed out and unavailable.

◆ **[Replace Bank]** (radio button)

The contents of the specified Destination Bank will be completely replaced with the requested bank dump.

◆ **[Destination Bank]** (popup menu) [Number of GE Banks in KDF File]

Selects one of the GE Banks in the KARMA Software to be replaced by the SysEx data. Banks of “ROM GEs” (factory preload data) will be grayed out and cannot be overwritten.

You can also use the “Dump GE” UTILITY on the Korg M3 to send single User GEs to KARMA MW. In this case, go to Global (2.1) and press [F8] UTILITY. Select “Dump User GE,” set the User GE field to “Single,” and select the User GE you wish to send. Press [F8] again, and the keyboard will send the GE. KARMA MW will beep and put up a message indicating that the GE was received. It will be loaded into the current Module in the current Performance.

When the GE is received by KARMA MW and loaded into the current Performance, it does not initialize any Module settings or RT Control settings, so you could be loading a GE into a Performance that makes it sound “broken.” It is better to first choose “Initialize Current Performance” from the Performance Editor Menu Button so you have a “clean slate” to start with.

SysEx Dialogs - Send Templates

The Send Templates Dialog allows you to send banks of User Templates to your M3, via SysEx (System Exclusive) messages. A single bank of User Templates can be exchanged with the Korg M3. It can be opened by the following methods:

- the “Send Templates...” item in the main application SysEx Menu;
- the “Send Bank To Device...” item in the Menu Button in the Template Bank Display Windows.

When the dialog is opened from the SysEx Menu, it will attempt to retain the settings from the last time it was used.

◆ **[KDF File]** (label)

Displays the name of the KDF File from which you are sending data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to send.

◆ **[Source Bank]** (popup menu) [Number of Template Banks in KDF File]

Selects one of the banks of Templates in the KDF File to be sent to the M3 as SysEx Data.

◆ **[Destination Bank]** (popup menu) [Number of Template Banks in the M3]

Selects one of the User Template Banks in the M3 to be replaced by the SysEx data.

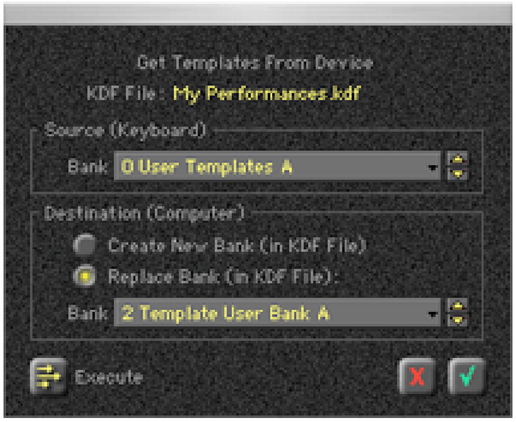
◆ **[Execute]** (button)

Sends the specified Template Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)

The OK Button (green checkmark) closes the dialog and sends the specified Template Bank. The Cancel Button (red X) closes the dialog without sending any data.

SysEx Dialogs - Get Templates



The Get Templates Dialog allows you to get banks of User Templates from your M3. It sends SysEx (System Exclusive) data requests to the device, and the device responds by “dumping” the requested data back to the software. It can be opened by the “Get Bank...” command in the Menu Button in the Template Bank Display Windows and KDF Window.

◆ **[KDF File]** (label)

Displays the name of the KDF File that will store the received data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to operate on.

◆ **[Source Bank]** (popup menu) [Number of Template Banks in the M3]

Selects one of the banks of User Templates in the M3 to be received by the KARMA Software as SysEx data.

◆ **[Create New Bank]** (radio button)

A new bank of the correct type will be created inside the KDF File to hold the results of the bank dump. The Destination Bank menu will be grayed out and unavailable.

◆ **[Replace Bank]** (radio button)

The contents of the specified Destination Bank will be completely replaced with the requested bank dump.

◆ **[Destination Bank]** (popup menu) [Number of Template Banks in KDF File]

Selects one of the Template Banks in the KARMA Software to be replaced by the SysEx data. Banks of “ROM Templates” (factory preload data) will be grayed out and cannot be overwritten.

◆ **[Execute]** (button)

Sends a SysEx request for the specified Template Bank without closing the dialog, so that you can send another when finished.

◆ **[OK/Cancel]** (buttons)

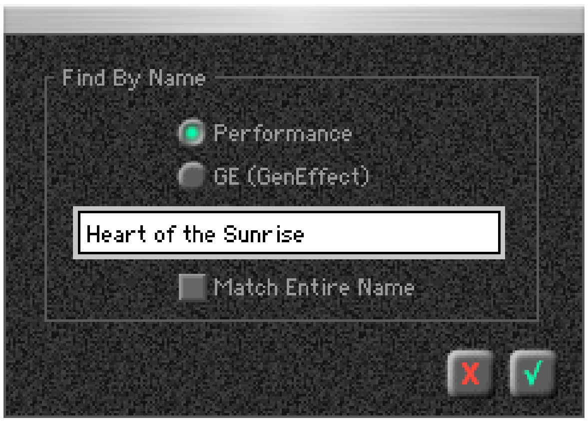
The Cancel Button (red X) closes the dialog without sending a request. The OK Button (green checkmark) closes the dialog and sends a SysEx request to the keyboard to send the specified Template Bank.

Other Dialogs

Sections in this chapter:

This chapter describes in detail some of the dialogs you will encounter when using the Performance Utilities available from the Menu Buttons in various windows, and from the application's main Utilities Menu. Some of these are also GE Utilities and operate the same, so they will be covered in this chapter. A few other types of dialogs that are not "utilities" are also discussed here.

Other Dialogs - Find By Name



The Find By Name Dialog allows you to search for a Performance or GE by name, within the current KDF File. You can either try to match the whole name exactly (case sensitive) or a portion of the beginning of the name (case sensitive). It can be opened by the following methods:

- the "Find Performance By Name..." item in the Menu Buttons of the Performance Editor and PE Bank Display Windows;
- the "Find GE By Name..." item in the Menu Buttons in the GE Editor and GE Bank Display Windows;
- the "Find By Name..." item in the main application Utilities Menu;
- the key shortcut Cmnd+F (Mac) or Ctrl+F (Win).

◆ **[Performance]** (button)

Specifies that the search will be performed in Performance Banks.

◆ **[GE (GenEffect)]** (button)

Specifies that the search will be performed in GE Banks.

◆ **[Name Entry Field]** (edit text field)

Enter the whole name, or a portion of the first part of the name (case sensitive).

◆ **[Match Entire Name]** (checkbox) [Off, On]

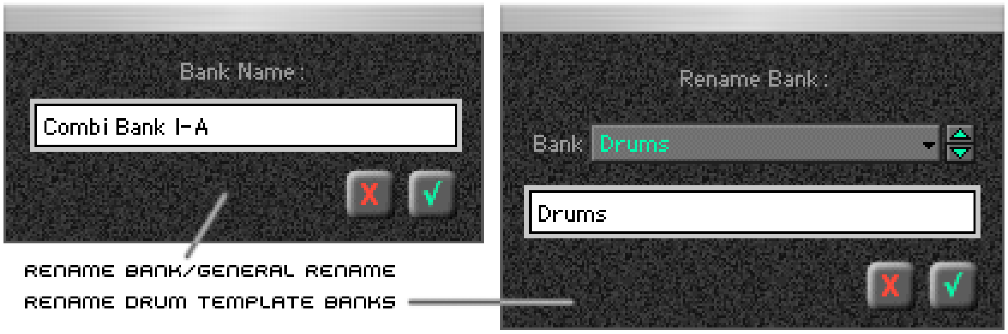
When On (checked), must match the entire name exactly. Otherwise, will search for the first part of the name.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without searching. The OK Button (green checkmark) closes the dialog and performs the search.

When searching for a Performance, if it is located the Performance will be loaded and a Bank Display Window will open for the bank containing the Performance with it selected. When searching for a GE, if it is located a Bank Display Window will open for the bank containing the GE with it selected, but the GE will not be loaded.

Other Dialogs - Rename Bank/General Rename



The Rename Bank Dialog can be used to rename Performance, GE, Template, or Drum Template Banks. It can be opened by any of the following methods:

- the “Rename This Bank...” command in the Performance and GE Bank Display Windows;
- the “Rename Selected Bank...” command in a KDF Window’s Menu Button;
- the “Rename Drum Template Bank...” command in the GE Editor > Drum Page.

You will also see the version pictured on the left when editing names in various other parts of the application, such as Programmer Names, Note Map Table Names, etc.

◆ **[Bank]** (popup menu)

Selects the Drum Template Bank that you wish to rename (only available when renaming Drum Template Banks).

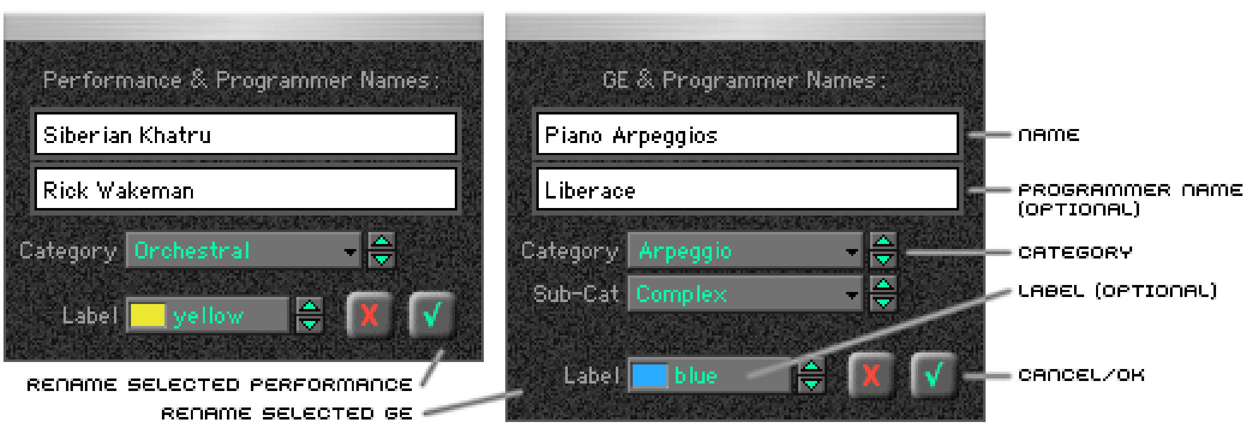
◆ **[New Name]** (edit text field)

Allows you to enter a new name for the item.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without saving any changes. The OK Button (green checkmark) closes the dialog and renames the bank in the current KDF File.

Other Dialogs - Rename Selected Performance/GE



The Rename Selected Performance/GE Dialog is accessed from an open Performance/GE Bank Display Window by the following methods:

- the “Rename Selected Performance/GE...” item in the Bank Display Menu Button;
- holding the option(Mac) or alt(Win) key while clicking a Performance or GE in the Bank Display Window;
- holding the option(Mac) or alt(Win) key while using an arrow key in the Bank Display Window.

It allows you to rename a Performance or GE without using the “Store” buttons in the GE or Performance Editors to overwrite it, and also allows editing of the GE/Performance Category, the Programmer Name and colored Label.

◆ **[New Name]** (edit text field)

Allows you to enter a new name for the Performance or GE.

◆ **[Programmer Name]** (edit text field)

Allows you to edit the Programmer Name if desired.

◆ **[Category]** (popup menu)

Selects a Category Name from the list of available categories.

◆ **[Subcategory]** (popup menu)

Selects a Subcategory Name from the list of available subcategories (when renaming a GE only).

◆ **[Label]** (popup menu)

Allows you to affix a colored label to the object, for organizational purposes, such that it is displayed in the various menus where you can view and select it.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without saving any edits. The OK Button (green checkmark) closes the dialog, renames the GE or Performance, and changes the Category (if edited).

Other Dialogs - Single-Bank Store

The Single-Bank Store Dialog is presented whenever you store an item that does not have banks. The title changes to show the type of object being saved. This dialog will be presented when you:

- click the "Store" Button in the GE Editor > Rhythm Page, Duration Page, Index Page, Cluster Page, Velocity Page, WaveSeq or CCs Page to store a Template. (Templates do have banks, but you are always storing within whatever bank of Templates the current GE is set to use - so there is no bank to choose from within the dialog.)

◆ **[Location]** (popup) [number of items in bank]

Selects the location that you want to store the data in.

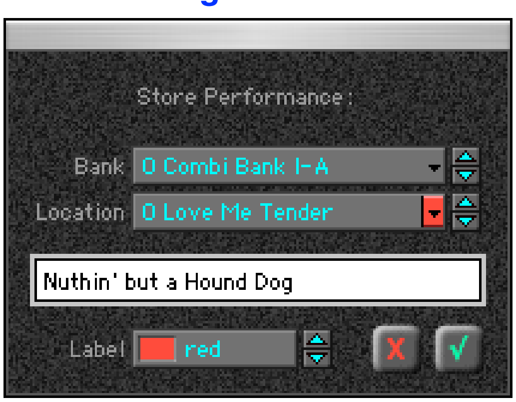
◆ **[Name Entry Field]** (edit text field)

Allows you to enter the name for the item you wish to store. The number of characters is limited according to the maximum length for the item.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without storing the item. The OK Button (green checkmark) closes the dialog and stores the item at the specified location.

Other Dialogs - Multi-Bank Store



The Multi-Bank Store Dialog is presented whenever you store an item that has multiple Banks. The title changes to show the type of object being saved. This dialog will be presented when you:

- click the “Store” Button in the GE Editor, to store a GE;
- click the “Store” Button in the Performance Editor, to store a Performance;
- click the “Store” Button in the GE Editor Drum Page, to store a Drum Template.

[Bank] (popup) [number of banks of specified type]

Selects the Bank that you want to store the data in.

[Location] (popup) [number of items in bank]

Selects the location that you want to store the data in.

[Name Entry Field] (edit text field)

Allows you to enter the name for the item you wish to store. The number of characters is limited according to the maximum length for the item.

[Label] (popup)

Allows you to affix a colored label to the object, for organizational purposes, such that it is displayed in the various menus where you can view and select it.

[OK/Cancel] (buttons)

The Cancel Button (red X) closes the dialog without storing the item. The OK Button (green checkmark) closes the dialog and stores the item at the specified location.

Other Dialogs - Export KGE

The Export KGE Dialog is presented when you select “Export KGE...” from the File Menu. It allows you to export all or portions of the GE Banks in the current KDF File as a Korg M3 format KGE file (KARMA Generated Effects and Templates).

[Current KDF File Name] (label)

Displays the name of the current KDF File from which you are exporting data. If you have more than one KDF File open, make sure that this name corresponds to the file you wish to export. If it does not, close the dialog and “Make Current” the KDF File that you wish to export.

[User GE Bank] (checkbox) [Off, On]

Selects banks of GEs for export based on the “Bank Type” parameter that is set in the upper right corner of a GE Bank Display Window. Only banks for which there exists data in the KDF File will be available. If you have more than one bank of a specific type (for example, two GE Banks set to User A), only the first one will be exported to the KGE if selected.

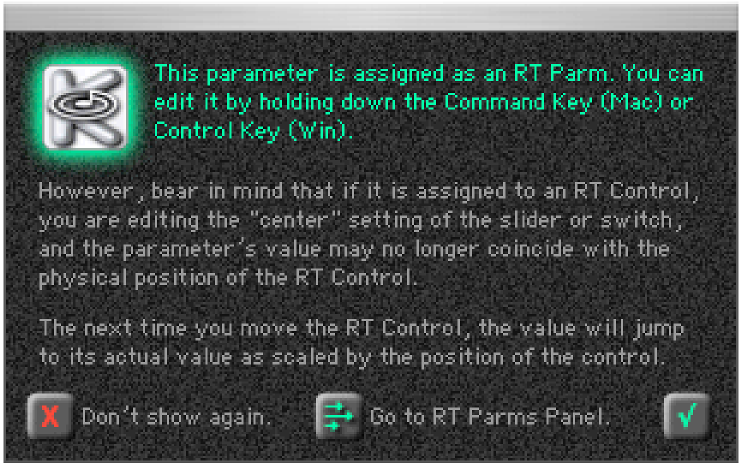
◆ **[User Template Bank]** (checkbox) [Off, On]

Selects banks of Templates for export based on the "Bank Type" parameter that is set in the upper right corner of a Template Bank Display Window. Only banks for which there exists data in the KDF File will be available. If you have more than one bank of a specific type (for example, two Template Banks set to User A), only the first one will be exported to the KGE if selected.

◆ **[OK/Cancel]** (buttons)

The Cancel Button (red X) closes the dialog without exporting any data. The OK Button (green checkmark) closes the dialog and presents the Standard File Save dialog so you can name the file and choose a location in which to save it.

Other Dialogs - RT Parm Warning Dialog



The RT Parm Warning Dialog is presented when you click on a grayed out parameter that is assigned as an RT Parm, in either the GE Editor or the Performance Editor. This is a warning that since the parameter is assigned, directly editing it in its original place may cause unwanted or confusing behavior. Technically, if it is not assigned to a RT Control in the Performance Editor > RT Parms Page, it's OK to edit it in place, and you can bypass the restriction by holding down the [cmnd] key (Mac) or [ctrl] key (Win). However, if it is assigned to an RT Control, editing it will destroy the relationship that you have established between the center value of the control and the parameter. You are better off going to the RT Parms Page and editing it there, which is why there's a button in the dialog to take you there.

◆ **[Don't show again]** (button)

If you get really annoyed at seeing this during a session, you can click this button. The dialog will close and will not appear again for the rest of that session, until the next time you launch KARMA Software. However, you will still get a beep when you click on the disabled parameters and will need to use the [cmnd] key (Mac) or [ctrl] key (Win).

◆ **[Go to RT Parms Page]** (button)

Clicking this closes the dialog and takes you to the correct sub-page of the Performance RT Parms Page, where you can edit the parameter in place or check if it is assigned to an RT Control before doing so.

◆ **[OK]**

The OK Button (green checkmark) closes the dialog.

Section 6:

Menus and Shortcuts

Menu Reference (Part 1)

Sections in this chapter:

See also the next chapters for the following menus:

Part 2:

Utilities, Help

Many of these commands operate on the current KDF File. If more than one KDF Window is open, the current KDF file is indicated by the enabled Menu Button in the upper left corner (non-current KDF files have a grayed-out Menu Button). You can make a different KDF file current using the “Make Current” command from the Menu Button in the KDF you wish to make current, or by loading a Performance from that file (for example, by opening a Bank Display Window from that KDF and clicking on a Performance). See **KDF Window**.

Menu Reference - Application Menu (Mac OS X)

The Application menu (Mac OS X only) contains the following items related to KARMA M3:

◆ **About KARMA M3...**

Opens the about box containing info on copyrights, trademarks, credits, and other information.
For Windows, this item is found on the Help Menu.

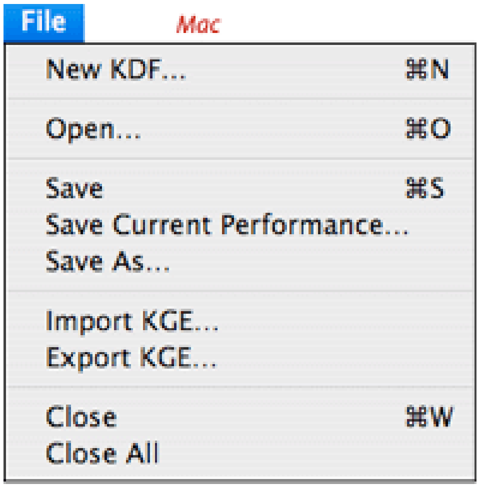
◆ **Preferences...** Cmnd+, (Mac)

Opens the Preferences Editor, where global settings for the application are made. See **Preferences**.
For Windows, this item is found on the Edit Menu.

◆ **Quit (Mac)** Cmnd+Q (Mac)

Quits the application. For Windows, this item is found on the File Menu.

Menu Reference - File Menu



The File Menu contains commands for managing the data files that KARMA works with, such as opening, closing, importing and exporting various file formats. It also contains commands for closing windows and exiting the application (Windows OS).

◆ **New KDF...** Cmnd+N (Mac) Ctrl+N (Win)

Allows you to create a new KDF file containing a single Performance bank - you are given the option to add the factory GE and Template banks if desired (recommended) - otherwise, a single GE bank and a single Templates bank will be created. The file will also have the default set of RT Control Names, Module Names, Scene Names, and Note Map Tables.

◆ **Open...** Cmnd+O (Mac) Ctrl+O (Win)

Brings up the Standard Open Dialog, allowing you to locate and select a .kdf file (Karma Data File). The file will open in a new KDF Window. It will not become the current KDF, however, until you make it current by selecting a Performance from it, or using the “Make Current” command from the KDF Menu Button. You may have a maximum of 16 KDF files open simultaneously, depending on available memory.

◆ **Save** Cmnd+S (Mac) Ctrl+S (Win)

Saves any changes to the current KDF file. If no changes have been made, the Save item will be grayed out.

◆ **Save Current Performance...**

Brings up the **Multi-Bank Save Dialog**, allowing you to store the current Performance in the same location, or a different location. If no changes have been made to the current Performance, the item will be grayed out. This is the same as clicking on the [Store] button at the top of the Performance Editor.

◆ **Save As...**

Brings up the standard Save dialog, allowing you to save the current KDF File in a different location or with a different name.

◆ **Import KGE...**

Brings up the Standard Open Dialog, allowing you to locate and select a KORG KGE format file to be imported as banks of GE data. A new KDF file is created to accommodate them containing an empty bank of Initialized Performances. If the data you are importing references banks of Templates that are not contained in the file, you will be given an opportunity to create them; otherwise, an empty bank of User Templates will be created.

When importing User Templates from a KGE file, there are no associated names for them stored in the data format (at this time). Therefore, for every Template location containing stored data, a default name is provided. For example, in the Rhythm Templates, every valid template will be named “Rhythm Template,” while the others will be empty locations with blank names.

◆ **Export KGE...**

Allows you to create a KORG format KGE file from the current KDF file containing GE User Banks and User Template Banks, which can then be copied onto various media such as a USB memory stick and loaded into the keyboard. It brings up an intermediate dialog allowing you to select some options for selectively exporting some or all of the GE data. For more information on exporting KGE format data, see **Export KGE**.

When exporting User Templates from a KGE file, all Template names will be lost (which are not presently used by the Korg devices). Therefore, you should keep the main KDF file for your future work, rather than relying on importing the KGE file back into a KDF, because when you import the User Templates, they will be given default names as explained above under “Import KGE...”

Close Cmnd+W (Mac) Ctrl+W (Win)

Closes the topmost window.

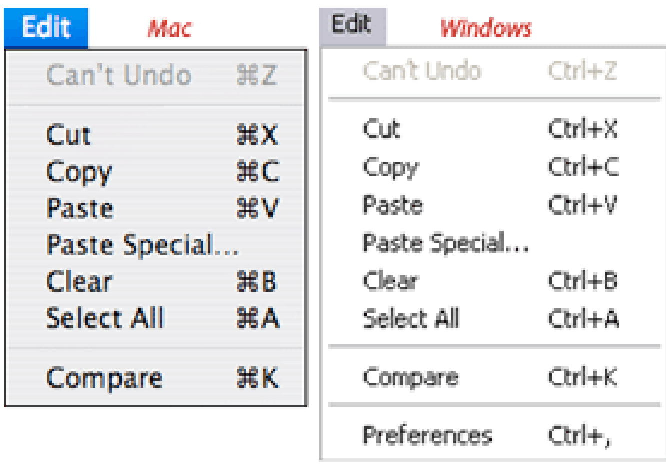
Close All

Closes all open windows except the KDF Files. You can then use the Windows Menu > Reset Windows To Defaults command to restore the position of the main editing windows. This can also be accomplished by option-clicking (Mac) or alt-clicking (Win) a close box in one of the open windows.

Exit (Windows Only) Ctrl+Q (Win)

Quits (exits) the application. For Mac OS X, this item is found on the Application Menu.

Menu Reference - Edit Menu



The Edit Menu contains commands for editing text data, for copying, pasting and clearing GEs, Performances and Note Maps, for comparing an edited Performance to a previous version, and for editing the global Preferences (usually known as Properties, for Windows users).

- **Cut** Cmnd+X (Mac) Ctrl+X (Win)
- **Copy** Cmnd+C (Mac) Ctrl+C (Win)
- **Paste** Cmnd+V (Mac) Ctrl+V (Win)
- **Clear** Cmnd+B (Mac) Ctrl+B (Win)
- **Select All** Cmnd+A (Mac) Ctrl+A (Win)

The above standard editing commands will only be available when you are in a Bank Display Window (for copying, pasting and clearing GEs or Performances), in the KDF Window (for copying and pasting banks), in the Note Map Editor (for copying and pasting Note Maps) or if you are in a dialog containing a text field that can be edited. They operate in a standard fashion that most computer users should be familiar with.

When copying and pasting GEs and Performances, you cannot Paste into more destinations than items that were copied. In other words, if you copy three GEs, and then select six GEs and execute the Paste command, it will only paste the three GEs into the first three locations.

Paste Special...

This command is only available in two cases:

1. When you have copied GE data from a GE Bank Display Window, and you are going to paste it into another GE Bank Display Window. In this case, using this command presents a dialog allowing you to renumber any GE references inside Performances that are using that GE. In other words, you can use this to move a GE from one location to another, while updating any Performances that may be referencing it.

2. When you have copied Performance data from a Performance Bank Display Window, and you are going to paste it into another Performance Bank Display Window. In this case, using this command allows you to paste only the Module Names, Programmer Names, and Performance Names of the copied Performances to the new locations. You can use this to copy the Performances to the clipboard prior to receiving a SysEx dump of a Performance Bank using the Replace or Merge option, so that you can then paste the information back on top of the newly received Performances and not have the Module Names get set to the default.

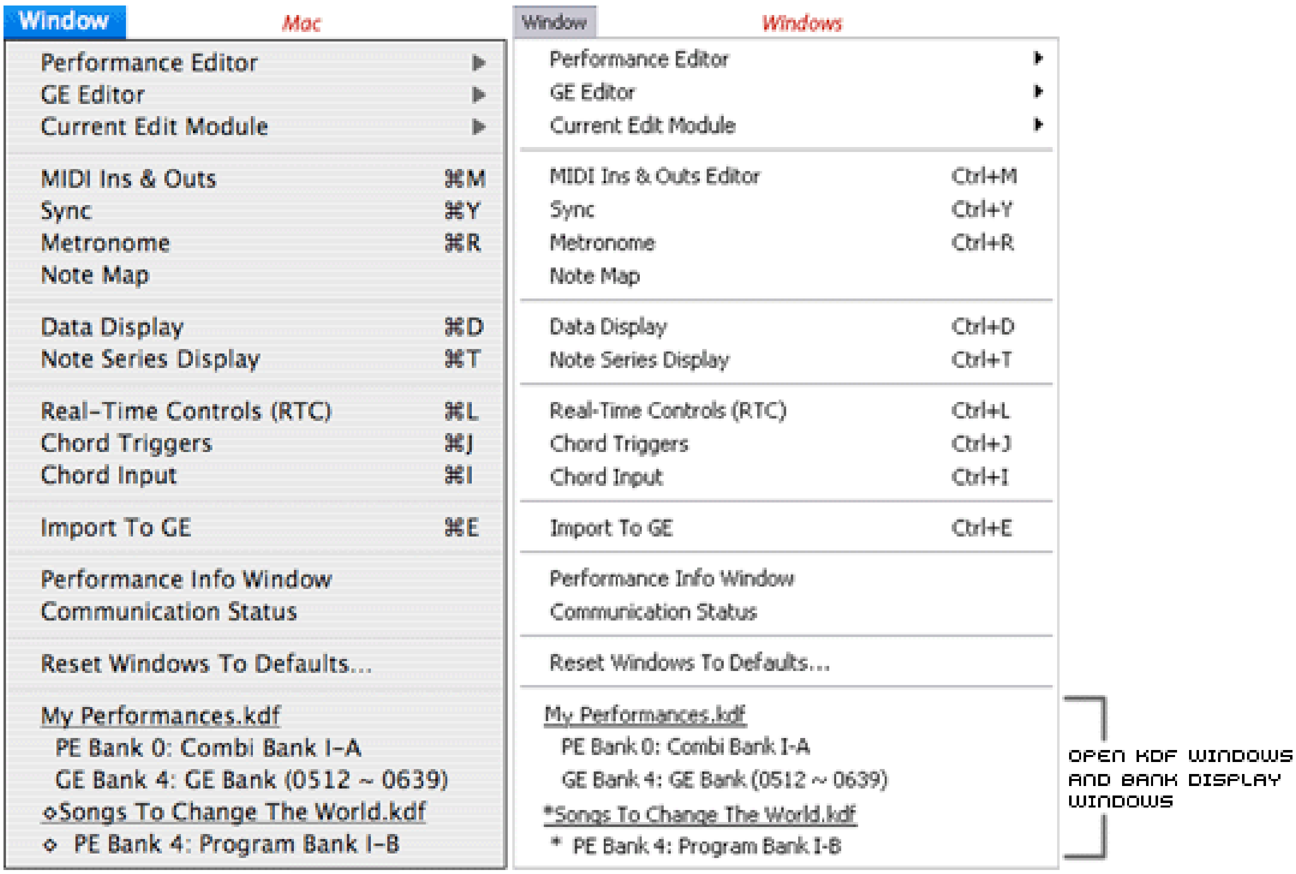
◆ **Compare** Cmnd+K (Mac) Ctrl+K (Win)

Allows you to revert back to the unedited version of the current Performance, to compare it with the edited version. You may toggle back and forth, but if you edit it while it is in the unedited state, it will become the new edited version.

◆ **Preferences (Windows Only)** Ctrl+, (Win)

Opens the Preferences Editor, where global settings for the application are made. See **Preferences**.
For Mac OS X, this item is found on the Application Menu.

Menu Reference - Window Menu



The Window Menu contains commands for opening and navigating through the various windows and editors in the application.

◆ **Performance Editor** Cmnd+P (Mac) Ctrl+P (Win)

A hierarchical menu that allows you to open or bring to the front the **Performance Editor**, and optionally move to any page within it.

◆ **GE Editor** Cmnd+G (Mac) Ctrl+G (Win)

A hierarchical menu that allows you to open or bring to the front the **GE (Generated Effect) Editor**, and optionally move to any page within it.

◆ **Current Edit Module** Cmnd+1~6 (Mac) Ctrl+1~6 (Win)

A hierarchical menu that allows you to select the current Module for viewing and editing within the current loaded Performance. This is the same as clicking on the tiny Module selection buttons at the top of the Performance or GE Editors. The number of available Modules will be limited to those available in the current Performance.

◆ **MIDI Ins & Outs** Cmnd+M (Mac) Ctrl+M (Win)

Opens or brings to the front the **MIDI Ins & Outs Editor**, where settings are made for the MIDI routings of each Performance.

◆ **Sync** Cmnd+Y (Mac) Ctrl+Y (Win)

Opens or brings to the front the **Sync Editor**, where settings are made for the global synchronization options.

◆ **Metronome** Cmnd+R (Mac) Ctrl+R (Win)

Opens or brings to the front the **Metronome Editor**, where settings are made for the global metronome options.

◆ **Note Map**

Opens or brings to the front the **Note Map Editor**, where settings are made for the custom Note Map within each Performance, or the Global Note Maps.

◆ **Data Display** Cmnd+D (Mac) Ctrl+D (Win)

Opens or brings to the front the **Data Display Window**, which displays the MIDI data being generated in a captivating visual display.

◆ **Note Series Display** Cmnd+T (Mac) Ctrl+T (Win)

Opens or brings to the front the **Note Series Display Window**, which displays the current GE's Note Series in a separate window. This display is the same as the one in the GE Editor: Note Series Page, but having it open in a separate window can sometimes be handy. The window can also be opened from the GE Editor: Note Series Page Menu Button.

◆ **Real-Time Controls (RTC)** Cmnd+L (Mac) Ctrl+L (Win)

Opens or brings to the front the **Realtime Controls Window**, which displays the Realtime Control Setup for the current Performance. This corresponds to the KARMA Play and Control Surface Pages of the M3.

◆ **Chord Triggers** Cmnd+J (Mac) Ctrl+J (Win)

Opens or brings to the front the **Chord Trigger Editor**, which displays the notes and velocities for the 16 Chord Triggers stored in the current Performance, as well as some editing utilities for them. This corresponds to the Pads page of the M3.

◆ **Chord Input** Cmnd+I (Mac) Ctrl+I (Win)

Opens or brings to the front the **Chord Input Window**, which allows you to choose various chord types from a grid and input them directly into the current Performance.

◆ **Import To GE**

Opens or brings to the front the **Import To GE Editor**, which allows you to import Standard MIDI File Format phrases as GEs.

◆ **Performance Info Window**

Opens or brings to the front the **Performance Info Window**, which displays information about the current performance, including which GEs are being used, how many other times those GEs are used in other Performances, and other information. Also available from the Menu Buttons in the GE Editor and Performance Editor.

◆ **Communication Status**

Opens or brings to the front the **Communication Status Window**, which shows the current status of communications between KARMA and the Korg device.

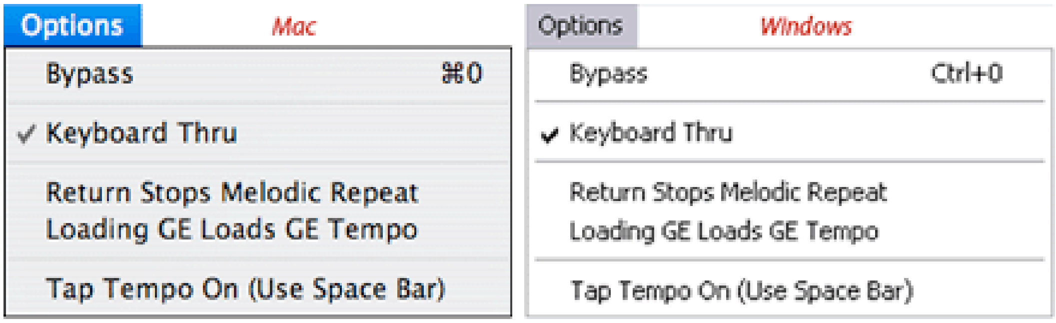
◆ **Reset Windows To Defaults...**

A command that will reset all windows to the default Factory Position, same as when the application was first launched. You will be given an opportunity to cancel.

◆ **Open KDF Windows and Bank Display Windows**

The bottom portion of the Windows Menu dynamically displays all currently open KDF Windows (which are underlined), along with the Bank Display Windows that are open for each of them (arranged under the associated KDF File, slightly indented). When a file has been edited, it receives an "edited mark" in front of it (a "diamond" shape on the Mac and an "asterisk" on Windows - as shown).

Menu Reference - Options Menu



The Options Menu allows you to conveniently operate several Global options. They all toggle between Off (unchecked) and On (checked), and are stored in the **Preferences** when you quit the application (except for Bypass).

◆ Bypass   Cmnd+0 (Mac)   Ctrl+0 (Win)

Turning Bypass On allows you to completely “disconnect” the KARMA Software from the M3, as if it was turned off and you were just working with the keyboard. This can be useful to check the results of transferring your work over to the keyboard - you turn on Bypass, and check it on the keyboard, using the internal KARMA Engine.

Bypass does the following things:
- it disables the software’s generation of MIDI data in response to incoming MIDI;
- enables the functioning of the keyboard’s internal KARMA Engine (which KARMA Software normally disables)
- toggles the Local Control On/Off setting (in the keyboard’s Global > MIDI page) or other Thru options depending on settings in the software’s Preferences Editor.

When activated, you will see “[BYPASS]” labels turn on in several of the software’s Editor Windows, to alert you to the fact that it is presently bypassed, since it’s sometimes easy to forget this.

Note that when bypassed you can still use the computer’s Function Keys to trigger the chord pads from your computer.

◆ Keyboard Thru

When Keyboard Thru is On, it echoes any data received on the Global Channel (selected in the MIDI Ins & Outs Editor) straight thru to the output device(s) if no Module is set to generate data on that channel already.

This is necessary for Performances that correspond to Combis on the M3 that may also be using the Global Channel to just “play” some timbres manually (such as a pad layer), while the GEs generate data on multiple other channels.

It is generally recommended when using KARMA software that the keyboard’s Local Control setting in the Global Mode be set to Off. Otherwise, you will get the keyboard playing through when it is not supposed to be, especially in Program Mode.

Fortunately, you don’t have to worry about this if you use KARMA Software’s “Automatic Local Control” feature, located on the MIDI tab of the **Preferences** dialog. When this is enabled, the software will automatically set your keyboard’s Local Control to Off when the software is launched, and return it to On when it is shut down.

For reference, KARMA Software and the M3 already have parameters to control whether the keyboard goes through or not on a particular channel, when the KARMA function is On or Off - these Thru check boxes are located in the **Performance Editor: Key Zones Page**. So Local Control should be Off, and you should use those parameters if you want the effect of the notes going thru at the same time in a particular Performance.

◆ Return Stops Melodic Repeat

Melodic Repeat is capable of adding delay-like repeated effects to the notes of a GE. If you are in the habit of using the Return Key to “Stop” the KARMA Effects, you may or may not wish the repeated notes to end abruptly at the same time. When this is On, the Return Key will abruptly stop all notes, including repeated notes. When this is Off, it will stop the generated notes from the GE, but any repeated notes will be allowed to die away on their own, much like an analog or digital delay.

This also controls whether the repeated notes will be automatically stopped when the KARMA On/Off switch is used in the Real-Time Controls Window. Note that even with this Off, you can set up Dynamic MIDI to stop repeated notes when the KARMA On/Off switch is turned Off. See **Dynamic MIDI Destinations**.

⚠ For the internal KARMA of Korg Workstations, the Options Menu item “Return Stops Melodic Repeat” does not exist. Therefore, if you want repeated notes to be stopped when the KARMA On/Off switch is operated inside the keyboard, you should leave this set to Off and program Dynamic MIDI to do it.

Loading GE Loads GE Tempo

Each Generated Effect is stored with the tempo that was being used when it was last saved, so that a reference exists for the correct tempo to use it at. However, the Performance Tempo overrides the settings of all the GEs being used by that Performance. When you load a GE using the popup menus, the GE Tempo will not normally affect the Performance Tempo unless the “Loading GE Loads GE Tempo” option in the Options Menu is checked. Therefore, if you are auditioning single GEs and want to hear them at the tempo that they were intended to be used at, you should select this option. Then when the GE is loaded, it will replace the Performance Tempo with the GE Tempo.

This only applies to GEs that are loaded using the popup menus in the GE Editor, or the corresponding GE popup menus in the Performance Editor: GE Setup Page. It does not apply to GEs that are automatically loaded when changing Performances, for example.

The GE Tempo and Performance Tempo settings are “linked,” in that if you adjust the GE Tempo while listening to a GE you will also be changing the Performance Tempo.

Tap Tempo On (Use Space Bar)

When this is On, the Tap Tempo function is activated, and you can use the computer keyboard’s space bar to tap out a tempo for the current Performance. The number of taps required to recalculate the tempo can be adjusted in the **Preferences: General Tab**.

For any menus not covered in this chapter, please see:
Menu Reference (Part 2)

Menu Reference (Part 2)

Sections in this chapter:

See also the previous/next chapters for the following menus:

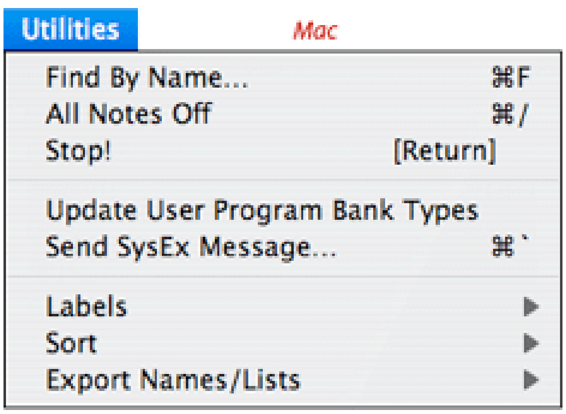
Part 1:

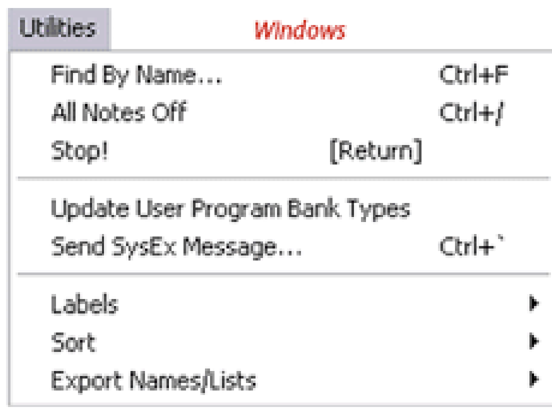
File, Edit, Window, Options

The diagrams below show the menus from the Macintosh version; the Windows version is identical with the difference that the Key Shortcuts shown use the Control Key instead of the Command Key.

Many of these commands operate on the current KDF File. If more than one KDF Window is open, the current KDF file is indicated by the enabled Menu Button in the upper left corner (non-current KDF files have a grayed-out Menu Button). You can make a different KDF file current using the “Make Current” command from the Menu Button in the KDF you wish to make current, or by loading a Performance from that file (for example, by opening a Bank Display Window from that KDF and clicking on a Performance).

Menu Reference - Utilities Menu





In general, the Utilities Menu can be thought of as a place for functions and utility operations that are global in nature, or that aren’t specifically associated with an Editor or Editor Page. Many more Utility Functions are located on the Menu Buttons inside each Editor and Editor page, since they are associated more directly with those pages.

Several of the items above are hierarchical menus containing additional selections. First we will discuss the non-hierarchical items and then each of the hierarchical sub-menus.

◆ **Find By Name...** Cmnd+F (Mac) Ctrl+F (Win)

Opens the **Find By Name** Dialog allowing you to search for a Performance or GE by name, within the current KDF File. Also available from the Menu Buttons in the GE Editor and Performance Editor.

◆ **All Notes Off** Cmnd+/ (Mac) Ctrl+/ (Win)

Should you ever experience stuck notes, you can use this command to send note-off messages everywhere to fix the problem.

◆ **Stop!** [Return]

The Return Key stops all notes that are being generated by the KARMA function without actually turning it off. You can immediately restart it by playing the keyboard or activating a chord trigger button. This can be more useful than the actual On/Off button in the Realtime Controls Window.

Whether or not repeated notes caused by the Melodic Repeat parameters will also stop is controlled separately by the “Return Stops Melodic Repeat” option on the Options Menu.

◆ Update User Program Bank Types

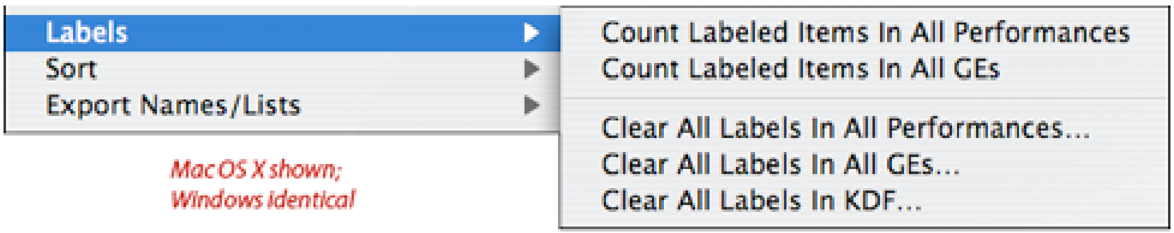
In the M3 the User Program Banks are capable of being either EDS or Radias. The KARMA software needs to know what their types are for various operations related to sending and receiving SysEx data, cutting and pasting Performances from one bank to another, etc. When this item is selected, it receives a program SysEx dump from the first program in each of the User Banks, from which it can determine the Bank Types, and a dialog is put up at the end of the process showing a report. This is performed when the application is launched for the first time. The results are stored in the Preferences file so that this does not need to be performed each time the appplication is launched.

⚠ When you change the Bank Type of a User Program Bank, the software cannot automatically know about this. You must then run this function at that time, or unexpected problems may result.

This item will be greyed out if there is no MIDI communication with the keyboard.

◆ Send SysEx Message Cmnd+` (Mac) Ctrl+` (Win)

Opens the **Send SysEx Message** dialog, which allows you to format and send any raw SysEx Message to an external device. This can be useful for test purposes when setting up various pedals and external devices to control each other with SysEx - you can easily test messages from the KARMA software to make sure they work like you intend.



The Labels heirarchical sub-menu contains global operations related to the use of Labels in the Bank Display Windows. Individual labeling settings and utilities can be found in the Bank Display Menu Buttons.

◆ Count Labeled Items In All Performances

Counts all labeled items in all Performance Banks, and puts up a dialog showing a report. For example, this could be useful if you have labeled all rock Performances as yellow, and all jazz Performances as orange, you could see how many of each there are. You can count labels in a single bank from the Bank Display Menu Button.

◆ Count Labeled Items In All GEs

Counts all labeled items in all GE Banks, and puts up a dialog showing a report. For example, this could be useful if you have labeled all rock GEs as yellow, and all jazz GEs as orange, you could see how many of each there are. You can count labels in a single bank from the Bank Display Menu Button.

◆ Clear All Labels In All Performances...

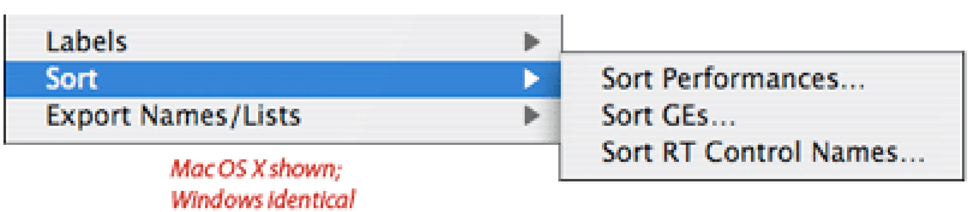
Clears all label settings in all Performances in the current KDF File (but not labels in GEs). You will be given an opportunity to cancel. You can clear labels in a single bank from the Bank Display Menu Button.

◆ Clear All Labels In All GEs...

Clears all label settings in all GEs in the current KDF File (but not labels in Performances). You will be given an opportunity to cancel. You can clear labels in a single bank from the Bank Display Menu Button.

◆ Clear All Labels In KDF...

Clears all label settings in all Performances and GEs in the current KDF File. You will be given an opportunity to cancel.



The Sort hierarchical sub-menu contains operations related to sorting various data items within the current KDF File. Generally, these utilities may not be useful and may even be dangerous to the average user, but are included for developer purposes.

◆ **Sort Performances...**

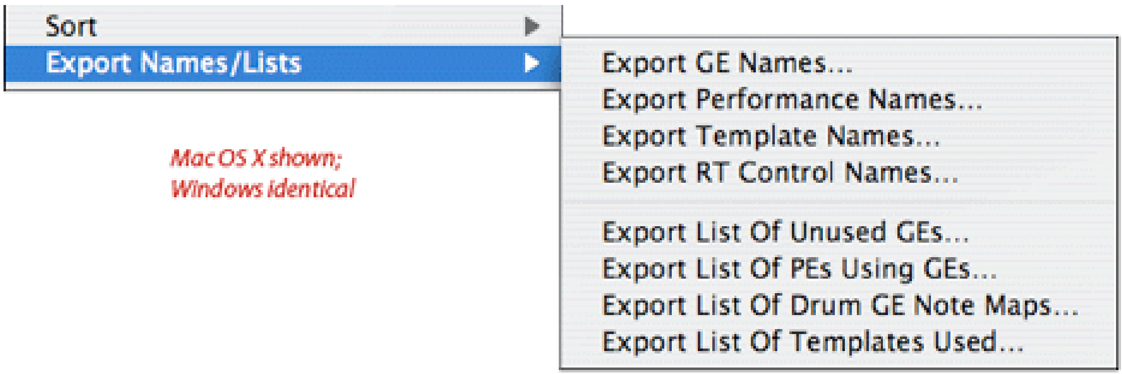
Opens the **Sort Performances** Dialog that allows you to sort all of the Performances in the current KDF File according to various criteria.

◆ **Sort GEs...**

Opens the **Sort GEs** Dialog that allows you to sort GEs in the current KDF File according to various criteria. You can sort all of them or just the GEs in the User area.

◆ **Sort RT Control Names...**

Performs an alphabetical sort on all RT Control Names in the current KDF File. You will be given an opportunity to cancel if desired.



The Export Names/Lists hierarchical sub-menu contains operations related to exporting text lists of various parameters or names to disk. All files are saved in Text (tab-delimited) format.

◆ **Export GE Names...**

Opens the **Export GE Names** Dialog, which allows you to export the names and various parameters of all the GEs in a KDF File to disk.

◆ **Export Performance Names...**

Opens the **Export Performance Names** Dialog, which allows you to export the names and various parameters of all the Performances in a KDF File to disk.

◆ **Export RT Control Names...**

Brings up the Standard File Save Dialog, allowing you to export a list of all the RT Control Names in the current KDF File, and the number of times each one is used in that file.

◆ **Export Templates Names...**

Brings up the Standard File Save Dialog, allowing you to export a list of all the Template Names in the current KDF File.

◆ **Export List Of Unused GEs...**

Brings up the Standard File Save Dialog, allowing you to export a list of all GEs in the current KDF File that are not used in any Performances in that file, along with their categories and programmer names.

◆ **Export List of PEs Using GEs...**

Brings up the Standard File Save Dialog, allowing you to export a sequential list of all GEs in the current KDF File, showing every Performance that uses that GE, along with category and programmer information.

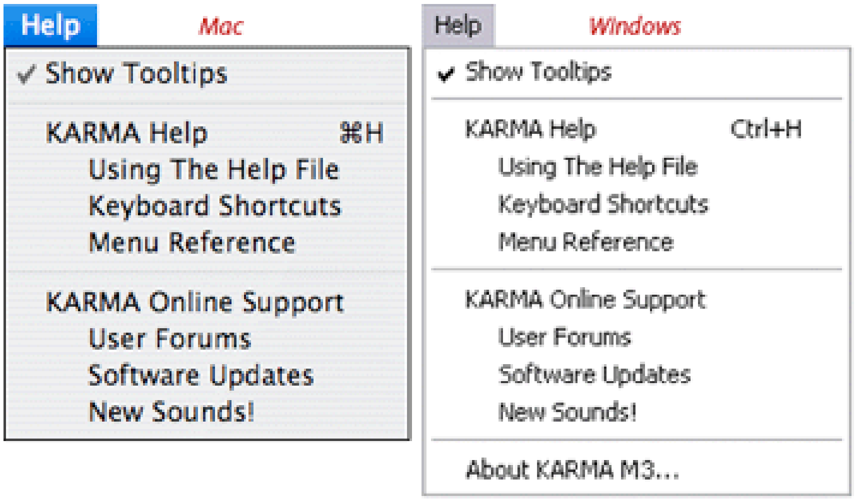
◆ **Export List Of Drum GE Note Maps...**

Brings up the Standard File Save Dialog, allowing you to export a list of all GEs having GE Type = Generated-Drum, with the MIDI Note Numbers that each row of each Drum Pattern is set to.

◆ **Export List Of Templates Used...**

Brings up the Standard File Save Dialog, allowing you to export a list of all GEs that use Templates, and the various Templates and ranges used by each of them.

Menu Reference - Help Menu



The Help Menu provides access to the Help File and various online pages designed to help you get the most out of KARMA Software.

◆ Show Tooltips

Turns On/Off the presence of popup tooltips in the application. When this is On, holding the mouse cursor over various labels, parameters and objects in the application, will cause short explanations of the items to appear. Tooltips can be turned on or off globally for the entire application, in addition to having several groups within the tooltip system that can be independently controlled. In the **Preferences Editor**, you can control exactly which objects have tooltips and the amount of time delay before they pop up, or the use of the 't' key to make them pop up.

For example, after you get used to working with KARMA, it may be helpful to set the tooltips to only popup over labels (and not parameters), and have the longest delay time setting. That way, you may never notice they are there during normal speed of working, but if you want a reminder or a hint about some function, you can hold the mouse over a label and it will appear. Or, you may wish to use the option where popping up is completely disabled, but you can still press the 't' key to make a tooltip popup at any time.

When a tooltip is showing, if you press Cmnd+H (Mac) or Ctrl+H (Win), you will be taken directly to the Help File and the parameter associated with the tooltip for more information.

◆ KARMA Help

The four items in this section give you immediate acces to the KARMA Software Help File:

KARMA Help Cmnd+H (Mac) Ctrl+H (Win)
Opens the Help File (or brings it to the front), and takes you to the Table Of Contents (Index), where you can quickly select a Chapter Title for viewing.

Remember, you can also press Cmnd+H (Mac) or Ctrl+H (Win) at any time when a tooltip is showing, and be taken directly to the section of the Help File that contains that object for more information. On the Macintosh only, the dedicated Help key (next to Home) performs the same function as Cmnd+H.

Using The Help File
Opens the Help File (or brings it to the front), and takes you to the chapter of the same name for basic info useful to new users.

Keyboard Shortcuts
Opens the Help File (or brings it to the front), and takes you to the Keyboard Shorcuts Chapter for a quick reference to any key commands you may need.

Menu Reference
Opens the Help File (or brings it to the front), and takes you to the Menu Reference Chapter for in depth explanations of every item that appears on any of the menus.

◆ KARMA Online Support

Assuming you have an Internet connection, the four items in this section of the menu will open your browser (if it is not open already) and take you directly to the following locations:

KARMA Online Support
The main support page for KARMA Lab. Link from here to documentation, dowloads, tutorials and more. (http://www.karma-lab.com/support)

User Forums
Karma Lab Forums, our acclaimed user forum area. Ask a question, get an answer, share your knowledge, or enjoy a chat about some other topic in one of the non-specific areas.
(http://www.karma-lab.com/forum/m3)

Software Updates
A page devoted to any available updates, and information pertaining to updates and upgrades of KARMA Software.
(http://www.karma-lab.com/updates)

New Sounds!
Learn about the incredible additional sound collections available from Karma Lab for your KARMA Software.
(http://www.karma-lab.com/sounds)

◆ About KARMA M3...

Opens the about box containing info on copyrights, trademarks, credits, and other information.
For Mac OS X, this item is found on the Application Menu.

For any menus not covered in this chapter, please see:
Menu Reference (Part 1)

Keyboard Shortcuts

Sections in this chapter:

This chapter is a reference to the use of the computer keyboard with the menus and other functions of the KARMA application.

Keyboard Shortcuts - In Menus

Only items with keyboard shortcuts are shown in these diagrams. For detailed information on each of these commands, see the chapter **Menu Reference**.

Application Menu (Mac OS X)	Mac
	Cmnd +
Preferences	,
Quit	Q

File Menu	Mac	Windows
	Cmnd +	Ctrl +
New	N	N
Open	O	O
Save	S	S
Update (Save All)	U	U
Close	W	W
Exit (Windows)		Q

Edit Menu	Mac	Windows
	Cmnd +	Ctrl +
Cut	X	X
Copy	C	C
Paste	V	V
Clear	B	B
Select All	A	A
Compare	K	K
Preferences (Windows)		,

Windows Menu	Mac	Windows
	Cmnd +	Ctrl +
Performance Editor	P	P
GE Editor	G	G
Current Module	1~6	1~6
MIDI Ins & Outs Editor	M	M
Sync Editor	Y	Y
Metronome Editor	R	R
Data Display	D	D
Note Series Display	T	T
Realtime Controls	L	L
Chord Triggers	J	J
Chord Input	I	I
Import To GE	E	E

Options Menu	Mac	Windows
	Cmnd +	Ctrl +
Bypass	0	0

Utilities Menu	Mac	Windows
Find By Name...	Cmnd + F	Ctrl + F
All Notes Off	Cmnd + /	Ctrl + /
Stop!	Return	Return
--		
Send SysEx Message	Cmnd + `	Ctrl + `

Keyboard Shortcuts - Function Keys and Number Keys

The Function Keys across the top of your computer keyboard have the following preset assignments with regards to the Real-Time Controls Window:

[F1] - Pad 1/Chord Trigger Button 1
[F2] - Pad 2/Chord Trigger Button 2
[F3] - Pad 3/Chord Trigger Button 3
[F4] - Pad 4/Chord Trigger Button 4
[F5] - Pad 5/Chord Trigger Button 5
[F6] - Pad 6/Chord Trigger Button 6
[F7] - Pad 7/Chord Trigger Button 7
[F8] - Pad 8/Chord Trigger Button 8
Shift + [F1] - Chord Trigger Button 9
Shift + [F2] - Chord Trigger Button 10
Shift + [F3] - Chord Trigger Button 11
Shift + [F4] - Chord Trigger Button 12
Shift + [F5] - Chord Trigger Button 13
Shift + [F6] - Chord Trigger Button 14
Shift + [F7] - Chord Trigger Button 15
Shift + [F8] - Chord Trigger Button 16
[F9] - KARMA On/Off
[F11] - Latch On/Off
[F12] - Module Control Layer, move to next

The Number Keys have the following preset assignments with regards to the Real-Time Controls Window:

Mac
Ctrl + 1 - Scene 1 (in current Control Layer)
Ctrl + 2 - Scene 2 (in current Control Layer)
Ctrl + 3 - Scene 3 (in current Control Layer)
Ctrl + 4 - Scene 4 (in current Control Layer)
Ctrl + 5 - Scene 5 (in current Control Layer)
Ctrl + 6 - Scene 6 (in current Control Layer)
Ctrl + 7 - Scene 7 (in current Control Layer)
Ctrl + 8 - Scene 8 (in current Control Layer)
Ctrl + a - Chord Trigger Assign

Win
Ctrl + Shift + 1 - Scene 1 (in current Control Layer)
Ctrl + Shift + 2 - Scene 2 (in current Control Layer)
Ctrl + Shift + 3 - Scene 3 (in current Control Layer)
Ctrl + Shift + 4 - Scene 4 (in current Control Layer)
Ctrl + Shift + 5 - Scene 5 (in current Control Layer)
Ctrl + Shift + 6 - Scene 6 (in current Control Layer)
Ctrl + Shift + 7 - Scene 7 (in current Control Layer)
Ctrl + Shift + 8 - Scene 8 (in current Control Layer)
Ctrl + Shift + a - Chord Trigger Assign

If you wish to use these Function Key shortcuts, you may need to check the settings in your computer's operating system preferences. Furthermore, some third party products may interfere with these operations and need to be disabled when using KARMA Software.

Note to Mac OS X users: If you press [F1] and do not get Chord Trigger 1, but get the image on the screen showing a decrease in screen brightness, please read further: By default, the function keys on a Mac are set to perform system functions pictured on the keys, such as volume up/down, screen brightness etc. But they are “dual function” keys - you can hold down the “fn” modifier key in the lower left of the keyboard to make them work as normal function keys (which would then work to play the Chord Triggers etc.) To reverse these so that they work for KARMA Mac without needing the “fn” key, you open the System Preferences, choose Hardware > Keyboard & Mouse > Keyboard, and then turn on the checkbox named “Use all F1, F2 etc. keys as standard function keys” and then close the System Preferences. The functioning of the keys will now be reversed - they will all work normally for KARMA Mac (and other applications), and if you want to access the other functions such as volume up/down, screen brightness etc., you use the “fn” modifier key at the lower left.

Additionally, [F8] and [F9]~[F11] are configured by default to control the Spaces and Expose features of Mac OS X. This can also be handled in the Sytem Preferences dialog, using the sections related to Expose and Spaces (it differs depending whether you are running OS X 10.4 or 10.5.) We recommend using the command key as a modifier for the function keys to bring up Expose and Spaces; then, the normal function keys can work for KARMA’s shortcuts.

Keyboard Shortcuts - Arrow Keys

When a Bank Display Window is frontmost (Performances or GEs), the arrow keys allow you to navigate around it and change Performances or GEs.

Even when a PE Bank Display Window is not in front, you can advance to the next/previous Performance by using the up/down arrow keys and the cmnd key (Mac) or ctrl key (Win).

The arrow keys have special functionality when the Help Window is frontmost (see below).

Keyboard Shortcuts - In The Help Window

To open the help, use Ctrl + H (Win) or Cmnd + H (Mac).

To go directly to the section of the Help File related to a tooltip when it is showing, do the same thing.

When the Help Window is front most (or when a modal dialog is open in front of it), certain keys on the computer keyboard can also be used to navigate through the file, instead of or in addition to the above buttons:

Movement	Key Command	
Previous Chapter	Left Arrow	
Next Chapter	Right Arrow	
Top Of Chapter	Home	
Bottom Of Chapter	End	
Page Up	Page Up	
Page Down	Page Down	
Scroll Up	Up Arrow	
Scroll Down	Down Arrow	
	Mac	Windows
Back (Previous Link)	cmnd + [	ctrl + [
Forwards (Next Link)	cmnd +]	ctrl +]

Even though a modal dialog may be up, you can still open and access the Help File. You cannot click on it with the mouse, but all of the key commands above let you navigate through it and get information on the modal dialog that is up if desired.

Keyboard Shortcuts - In Dialogs

In all dialogs, the “Cancel” and “OK/Save/Accept” buttons are mapped as follows:

Cancel Esc (Mac/Win), Cmnd+Period (Mac), Ctrl+Period (Win)
OK Enter, Return (Mac/Win)

If there is a “Don’t Save” button, it is mapped to:

Don’t Save Cmnd+D (Mac), Ctrl+D (Win)

Keyboard Shortcuts - With Pattern Grids

The mouse can be used with many different modifier keys to perform various operations on the Pattern Grids. The table below is a summary. See **Using The Pattern Grids**.

Mouse +

Mac	Win	perform this operation:
[shift]	[shift]	add multiple cells to columns
[option]+[shift]	[alt]+[shift]	remove last cell in a column if set in Preferences
[cmnd]	[ctrl]	connect two cells in different columns (draw a line)
[cmnd]+[shift]	[ctrl]+[shift]	connect two cells in different columns while adding to existing cells
[ctrl]	[c]	drag a marquee and turn on/off groups of cells
[ctrl]+[shift]	[c]+[shift]	drag a marquee and add groups of cells to existing cells
[option]	[alt]	replicate

Arrow Keys +

Mac	Win	perform this operation:
[shift]+[option]+[cmnd]	[shift]+[alt]+[ctrl]	rotate pattern left, right, up, or down

Section 7:

Appendices - General

- Using The Pattern Grids
- KARMA Performance Architecture
- Using Auto-Bend
- Open Voicing Reference
- Random Weighting Curves
- Dynamic MIDI Sources
- Dynamic MIDI Destinations
- RT Parms Reference

Using The Pattern Grids

Sections in this chapter:

All of the Pattern Grids (Rhythm, Duration, Index, Cluster, Velocity, CCs, WaveSeq and Drum) operate in the same basic fashion. The intersection of each row and column ("cell") has a button which can be turned on or off. Disabled columns having no cells turned on will be shown in a lighter gray color than enabled columns having at least one cell turned on.

In addition, most of the operations here also apply to the Phase Pattern Grid, which operates a bit differently in that you do not have to use the [shift] key to add and remove cells, since the pattern length is set manually, and it is expected that you will have multiple items in all the columns. But you can still use the operations below with regards to connecting cells, drawing marquees, replicating and rotating, etc.

Key Combinations

The mouse can be used with many different modifier keys to perform various operations on the Pattern Grids. The table below is a summary. The rest of this chapter goes into detail about the various operations.

Mouse +

Mac	Win	perform this operation:
[shift]	[shift]	add multiple cells to columns
[option]+[shift]	[alt]+[shift]	remove last cell in a column if set in Preferences
[cmnd]	[ctrl]	connect two cells in different columns (draw a line)
[cmnd]+[shift]	[ctrl]+[shift]	connect two cells in different columns while adding to existing cells
[ctrl]	[c]	drag a marquee and turn on/off groups of cells
[ctrl]+[shift]	[c]+[shift]	drag a marquee and add groups of cells to existing cells
[option]	[alt]	replicate

Arrow Keys +

Mac	Win	perform this operation:
[shift]+[option]+[cmnd]	[shift]+[alt]+[ctrl]	rotate pattern left, right, up, or down

Adding And Removing Individual Cells

Use the mouse to add individual cells. When you add a cell in an empty column, all the empty columns in between the new column and the last clicked cell will be filled in with an interpolated value.

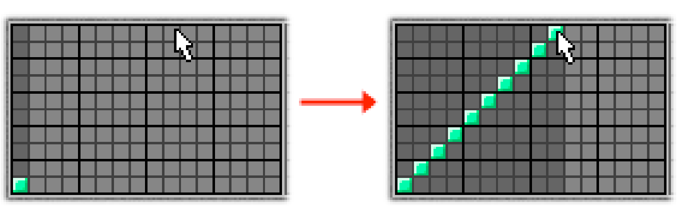
Removing cells can be done in two different ways, depending on your **Preference** settings:

(a) If "Shift + Opt/Alt Keys Required To Remove Last Cell In Column" is Off, then you can simply click on any active cell to remove it. When you remove a cell from a column with only one cell on, that column and all columns to the right will be emptied and become disabled (as shown in the second diagram below). This is potentially easier to use, but also makes it easier to potentially erase half of your pattern if you accidentally remove one in the middle that was the only cell in a column.

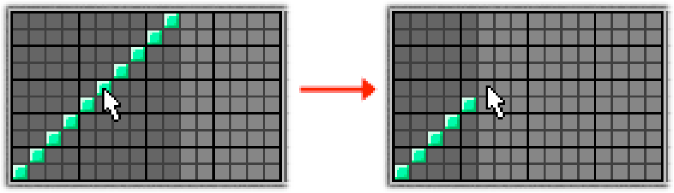
(b) If "Shift + Opt/Alt Keys Required To Remove Last Cell In Column" is On, then you can use just the mouse to remove cells in any column as long as there are more than one turned on. To remove the last cell in a column and thereby shorten the pattern, you must hold down the [shift] + [option] keys (Mac) or [shift] + [alt] keys (Win) (as shown in the third diagram below). The cursor will change to a "remove" (minus) symbol.

On Windows, sometimes it is necessary to first press and release the [alt] key or move the cursor after pressing the [alt] key to make the remove symbol appear.

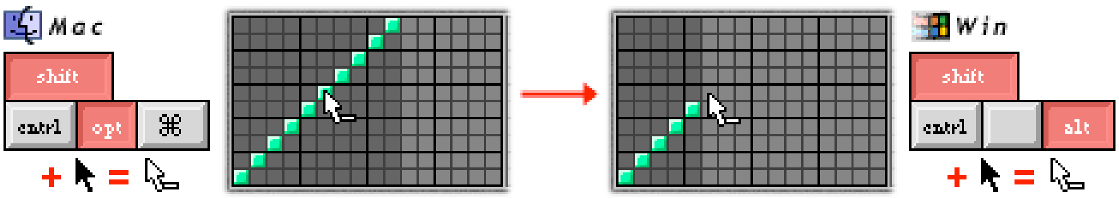
mouse to add:



(a) When “Shift + Opt/Alt Keys Required To Remove Last Cell In Column” is Off:
mouse to remove anywhere:



(a) When “Shift + Opt/Alt Keys Required To Remove Last Cell In Column” is On:
mouse to remove anywhere except when cell is the last one in a column, then:
[option] (Mac) or [alt] (Win) + [shift] + mouse:

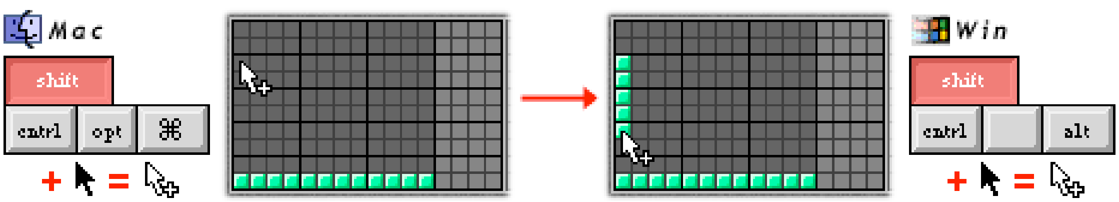


To clear an entire grid, simply remove any cells that are on in the second column.

Adding More Than One Cell In A Column

To add more than one cell in a column (forming a random pool in that step), hold down the [shift] key when clicking with the mouse. As shown in the diagram below, the cursor will change to an “add” symbol. You can drag down while the [shift] key is down to add multiple cells in that column, or drag across columns to add multiple cells to that row.

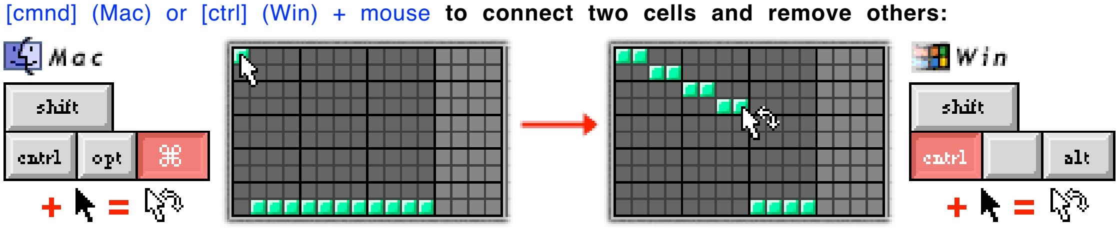
[shift] + mouse **to add:**



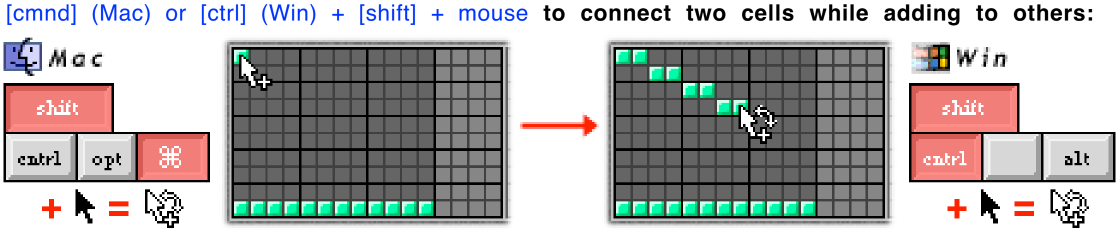
Connecting Two Cells In Different Columns

To connect two different cells (and remove other cells in between), first click on the start cell with the mouse, then hold down the [command] key (Mac) or [ctrl] key (Win) and click on the destination cell. As shown in the diagram below, the cursor will change to a “connect” symbol. To connect two cells while adding cells to those already entered, hold the [shift] key when clicking the start cell, then add the [command] key (Mac) or [ctrl] key (Win) when clicking the destination cell. As shown in the second diagram below, the cursor will change to a combination “connect/add” symbol.

[cmnd] (Mac) or [ctrl] (Win) + mouse **to connect two cells and remove others:**



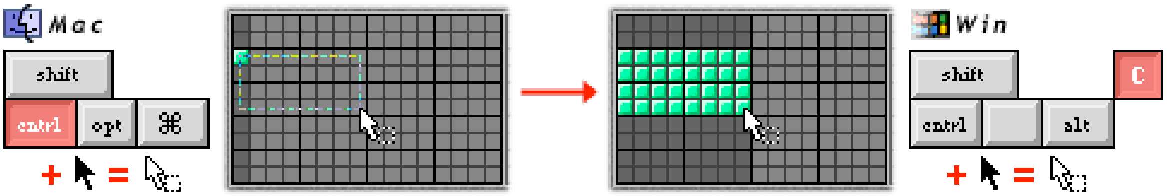
[cmnd] (Mac) or [ctrl] (Win) + [shift] + mouse **to connect two cells while adding to others:**



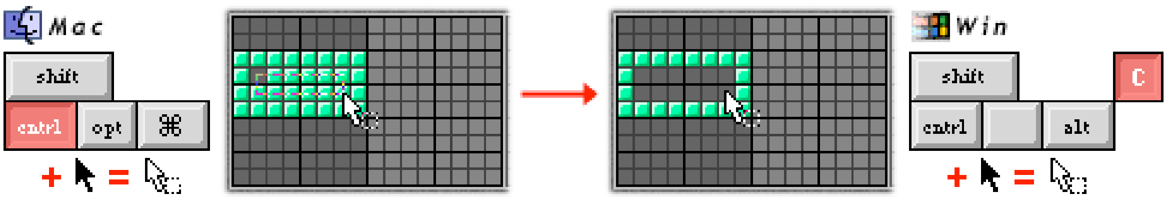
Adding and Removing Groups Of Cells

To turn on or off a group of cells, hold down the [ctrl] key (Mac) or [c] key (Win) and click and drag with the mouse. As shown in the diagrams below, the cursor will change to a “marquee” symbol, and as you drag, a dotted outline (marquee) will be formed. Depending on whether the first cell you clicked was turned on or off, all cells within the marquee will be turned on or off when the mouse is released. These will replace other cells that might have been on in those columns and rows. To add a group of cells while keeping existing cells, add the [shift] key to the [ctrl] key (Mac) or [c] key (Win) before clicking the first cell, as shown in the fourth diagram below. The cursor will change to a combination “marquee/add” symbol.

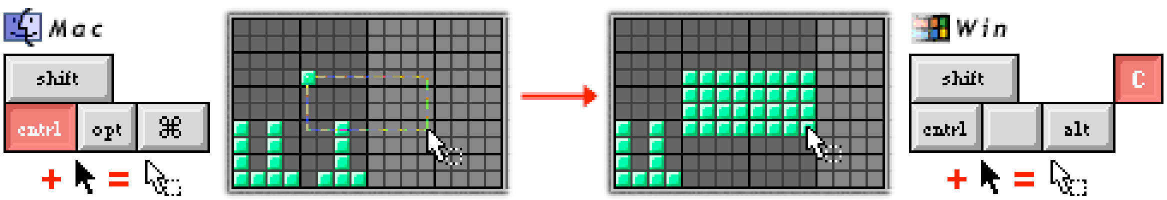
[ctrl] (Mac) or [c] (Win) + mouse **to add a group:**



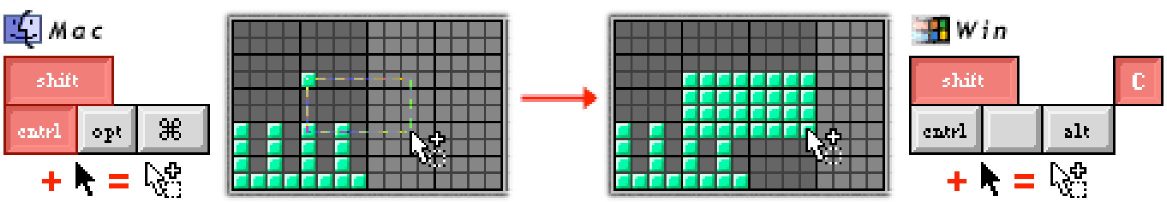
[ctrl] (Mac) or [c] (Win) + mouse **to remove a group:**



[ctrl] (Mac) or [c] (Win) + mouse **to add a group while removing other cells:**



[ctrl] (Mac) or [c] (Win) **+ [shift] + mouse to add a group while keeping existing cells:**

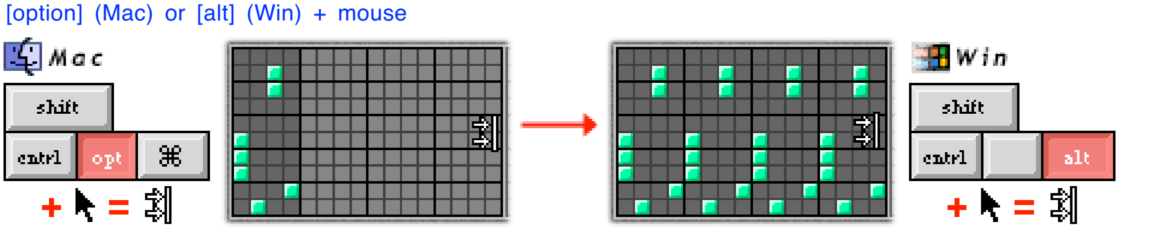


Replicating A Range Of Cells

To replicate a range of cells, hold down the [option] key (Mac) or [alt] key (Win) and click with the mouse. As shown in the diagram below, the cursor will change to a “replicate” symbol. However many columns are currently filled in will be replicated however many times (or portion thereof) is necessary to fill the empty columns with the same pattern of values. This can be useful for doubling patterns, extending Drum Patterns, etc.

On Windows, sometimes it is necessary to first press and release the [alt] key or move the cursor after pressing the [alt] key to make the replicate symbol appear.

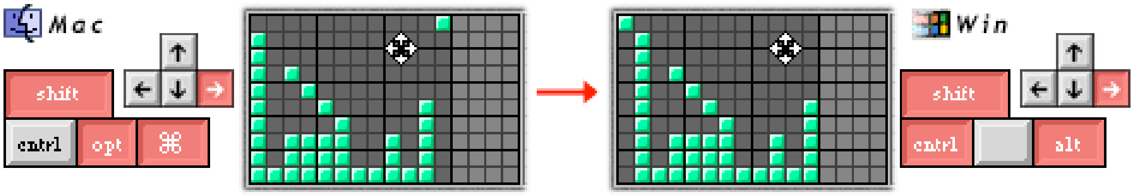
[option] (Mac) or [alt] (Win) + mouse



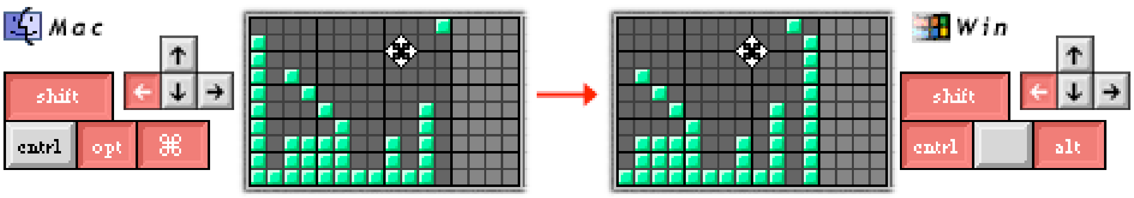
Rotating a Pattern Left, Right, Up or Down

To rotate a pattern, hold down the [shift] + [option] + [cmnd] keys (Mac) or [shift] + [alt] + [ctrl] keys (Win) and use the arrow keys on the keyboard. As shown in the diagrams below, if the cursor happens to be over the grid, it will change to a "rotate in 4 directions" symbol, just to remind you that you have the correct key combination. However, you don't use the mouse - in fact, if you click with it, it will just beep. Instead, you use the four arrow keys on the keyboard to rotate left, right, up or down a step at a time. Depending on the length of the pattern, when you rotate right, steps will be removed from the end and inserted at the beginning. When you rotate left, steps will be removed from the beginning, and added back on to the end. Likewise, when you rotate up or down, rows will be removed from the bottom and inserted at the top, or vice versa. This can be very useful for moving the patterns of accents and rhythms onto different beats than you originally intended, coming up with something completely new.

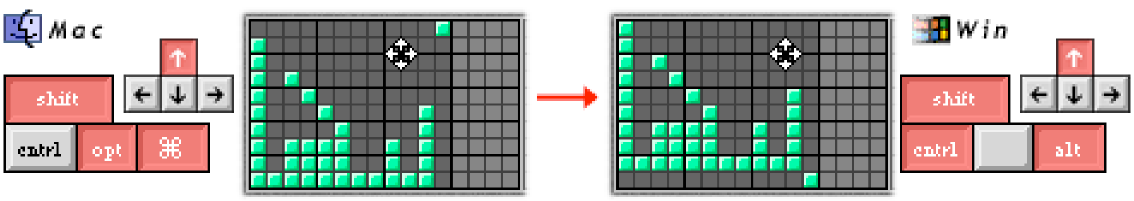
Rotate Right:
[shift] + [opt] + [cmnd] + [right arrow] (Mac)
[shift] + [alt] + [ctrl] + [right arrow] (Win)



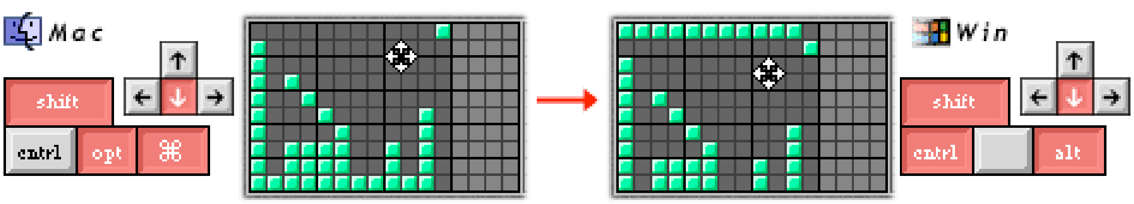
Rotate Left:
[shift] + [opt] + [cmnd] + [left arrow] (Mac)
[shift] + [alt] + [ctrl] + [left arrow] (Win)



Rotate Up:
[shift] + [opt] + [cmnd] + [left arrow] (Mac)
[shift] + [alt] + [ctrl] + [left arrow] (Win)

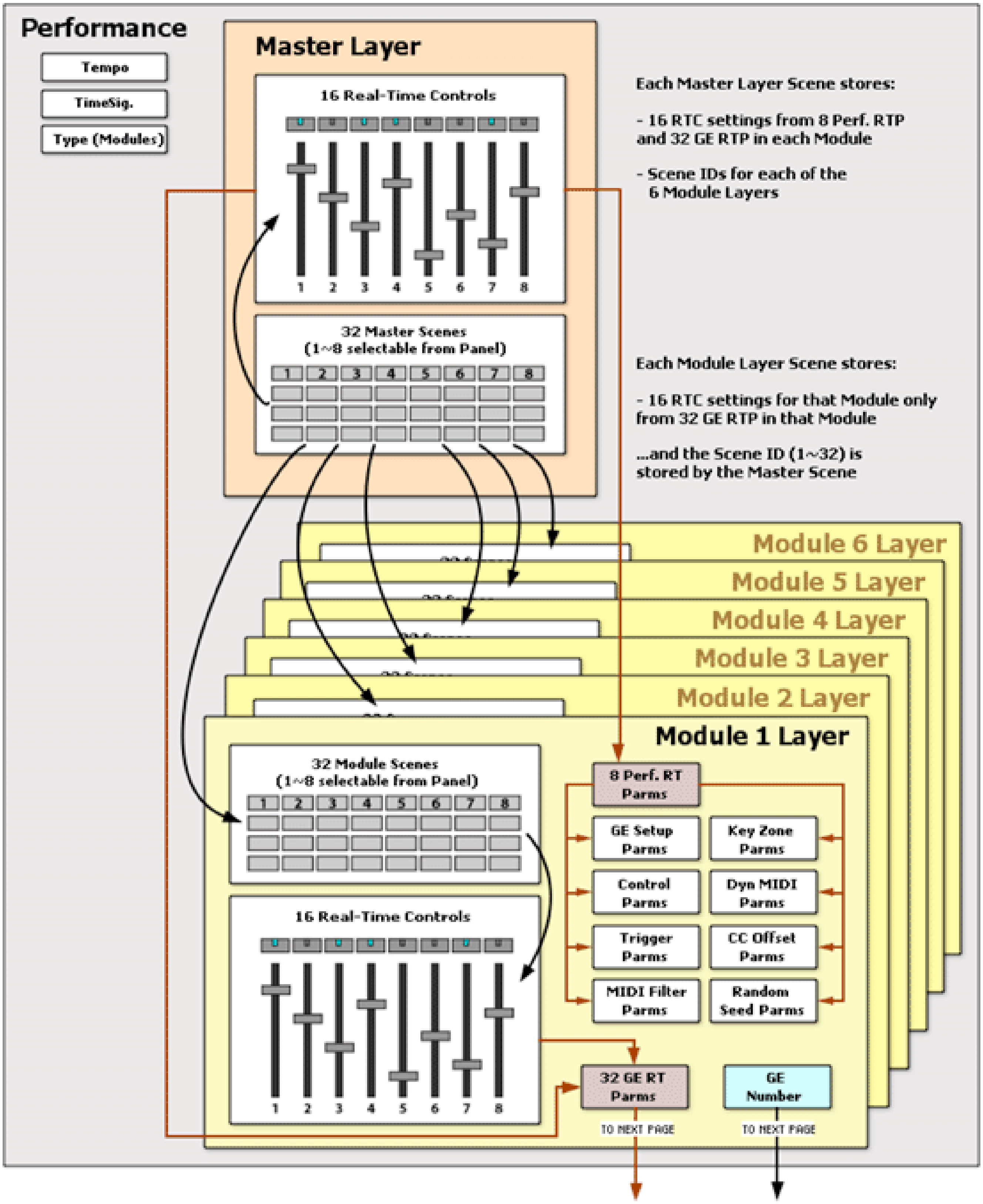


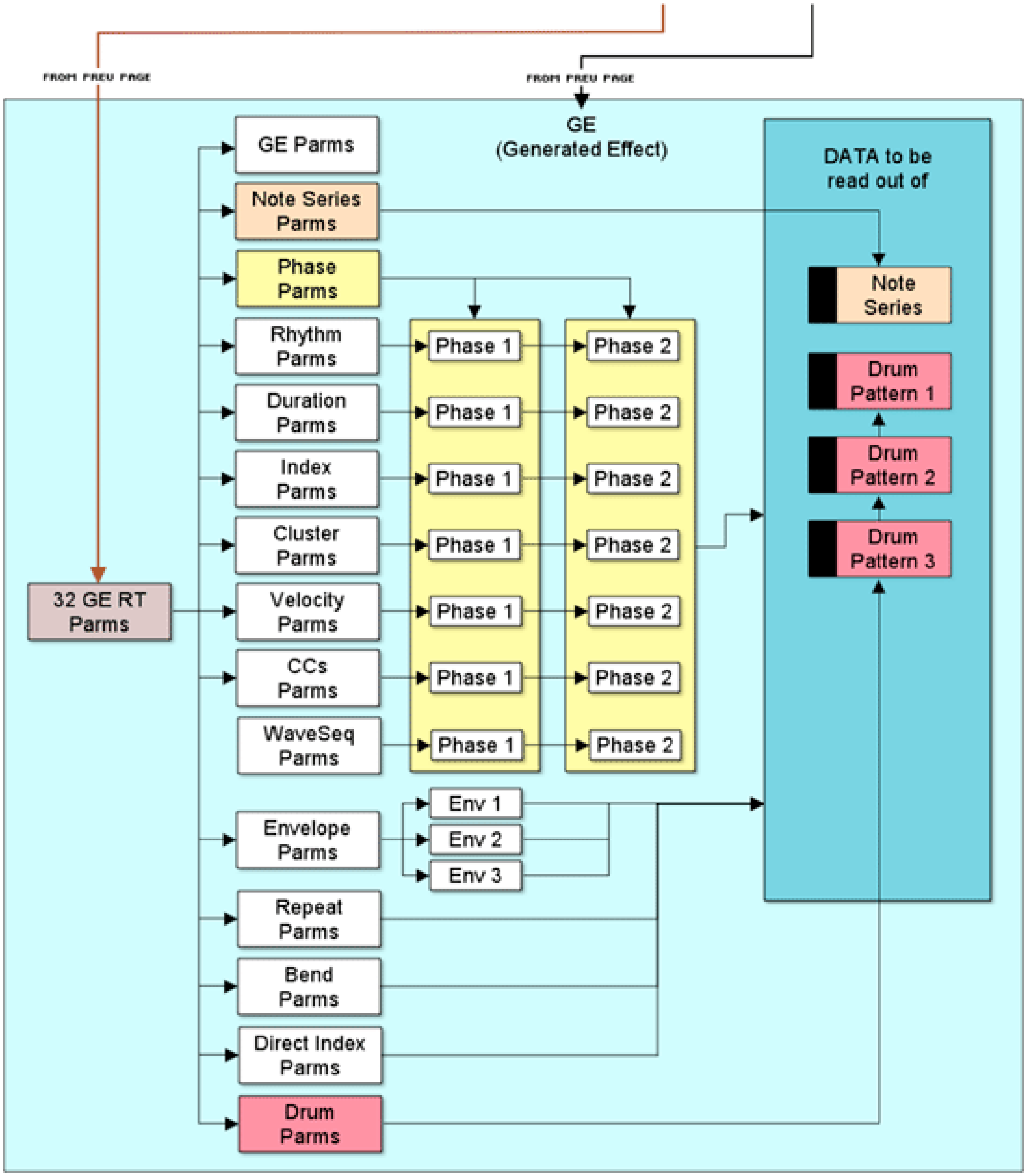
Rotate Down:
[shift] + [opt] + [cmnd] + [left arrow] (Mac)
[shift] + [alt] + [ctrl] + [left arrow] (Win)



KARMA Performance Architecture

The diagrams below illustrate the overall architecture of a KARMA Performance.





A Generated Effect (GE) is the basic building block of the Performance. It describes how to generate notes and MIDI controller information. Within a single Performance, there are up to six Modules. Within each Module is a “pointer” to a GE that is used by that Module.

Within each GE are up to 32 GE RTParms, which show up in the Module when the GE is loaded. They can be assigned to the 16 RT Controls in each individual Module’s Control Layer for real-time control. GE RTP settings from any of the six Modules can also optionally be assigned to the Master Control Layer for additional or grouped control. Furthermore, within the Module are groups of Module-level parameters that can be assigned to the Master Layer as up to eight Perf. RTP.

The settings of the 16 RT Controls in each Module Control Layer are stored in the Module’s 32 Scenes. The Master Control Layer stores the settings of its 16 RT Controls in each of the Master Layer’s 32 scenes. The Master Layer scenes also store the Scene ID (currently loaded Module Layer Scene) for each of the six Modules, so that loading a Master Layer Scene can switch each Module to a different Module Layer Scene.

Using Auto-Bend

Sections in this Chapter:

Auto Bend refers to a feature of KARMA that can generated 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.

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 Panel. This chapter does not apply to those additional methods.

Using Auto-Bend: Next Note/Previous Note Bends

Generated

When the GE Type is “Generated - Riff” or “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.

The maximum bend size is controlled by the Bend Range setting (usually +12 semitones), even if the next/previous note is farther away.

In addition, 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.

When using the Bend Parameters in the Direct Index Panel to apply Auto-Bending to Direct-Indexed notes, the options are slightly different. Instead of Next/Prev Note Bending, we have Next/Prev Index Bending. The pitch bends are calculated based on the pitches of the notes in the Note Series at various indexes. Otherwise, it works the same as the previous description.

Real-Time

When the GE Type is “Real - Time,” only Previous Note bending is available, since KARMA cannot know which note you will play next. However, by using the Bend Direction button, 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!

Using Auto-Bend: Length Of Bends

GE Type = 0: Generated-Riff, 1: Generated-Gated, or 2: Generated-Drum

Bend Panel “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 Panel "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 Panel "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.

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.

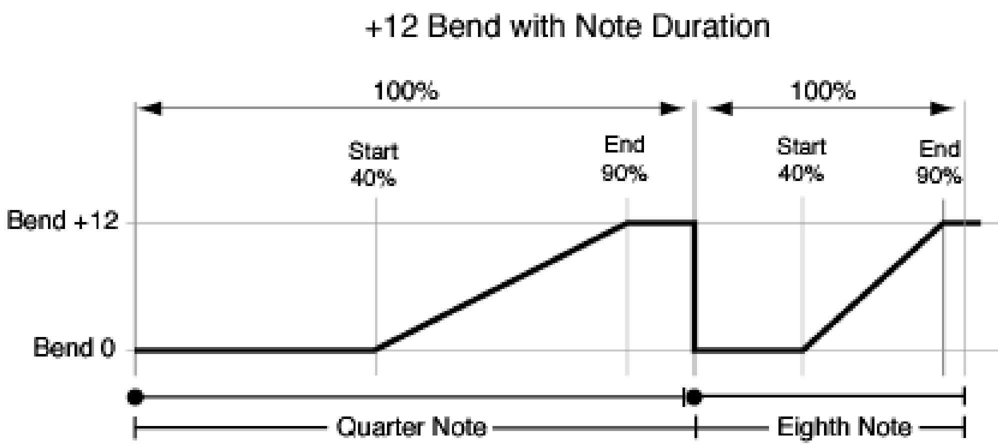
"GE Type" 3: Real-Time

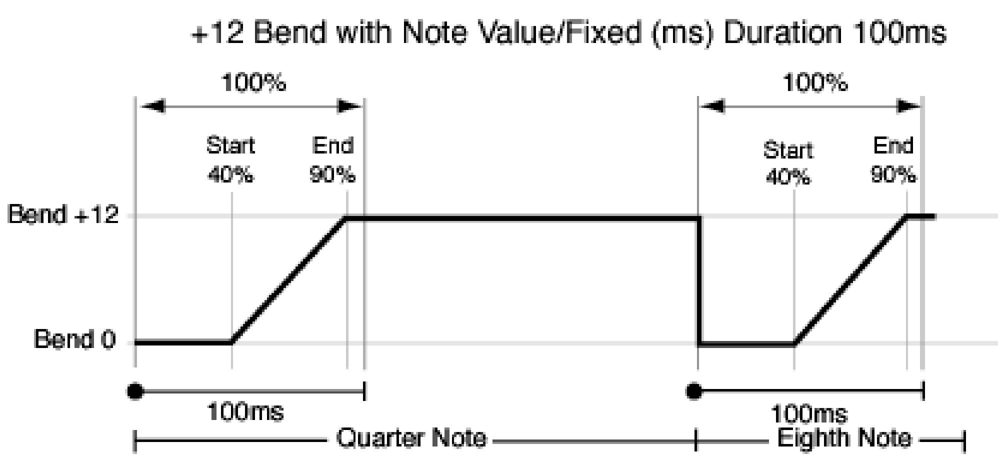
Since the duration of the note is determined by actually playing the keyboard, Bend Group "Length" 25: Note Duration is not available for this GE Type, and will act the same as 7: 16th if selected. The other Bend Length settings operate as described above.

Using Auto-Bend: 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-ms/Note Values settings.





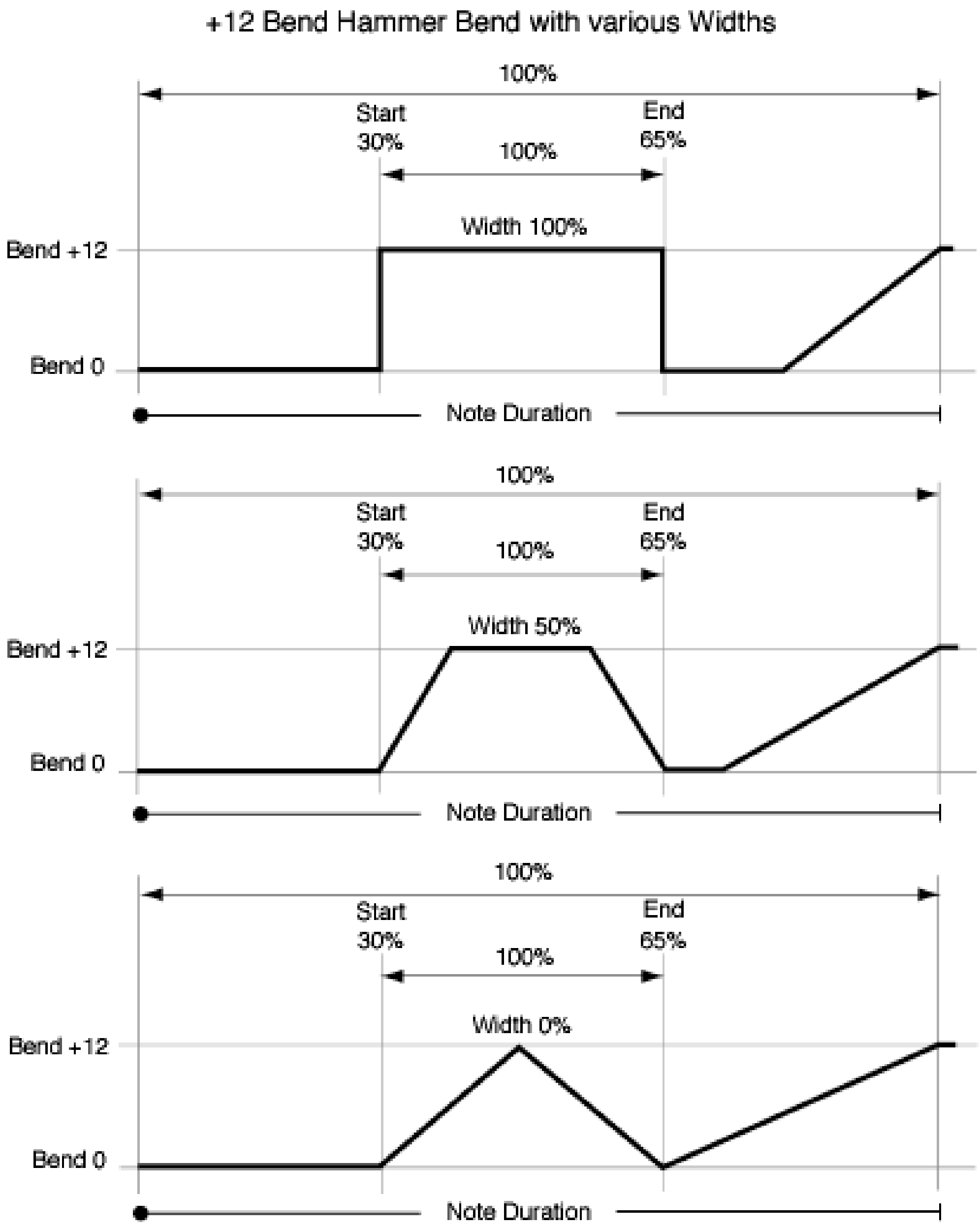
Hammer, Hammer Bend

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 third bend is generated for Hammer Bends.

In addition, 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 its 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.

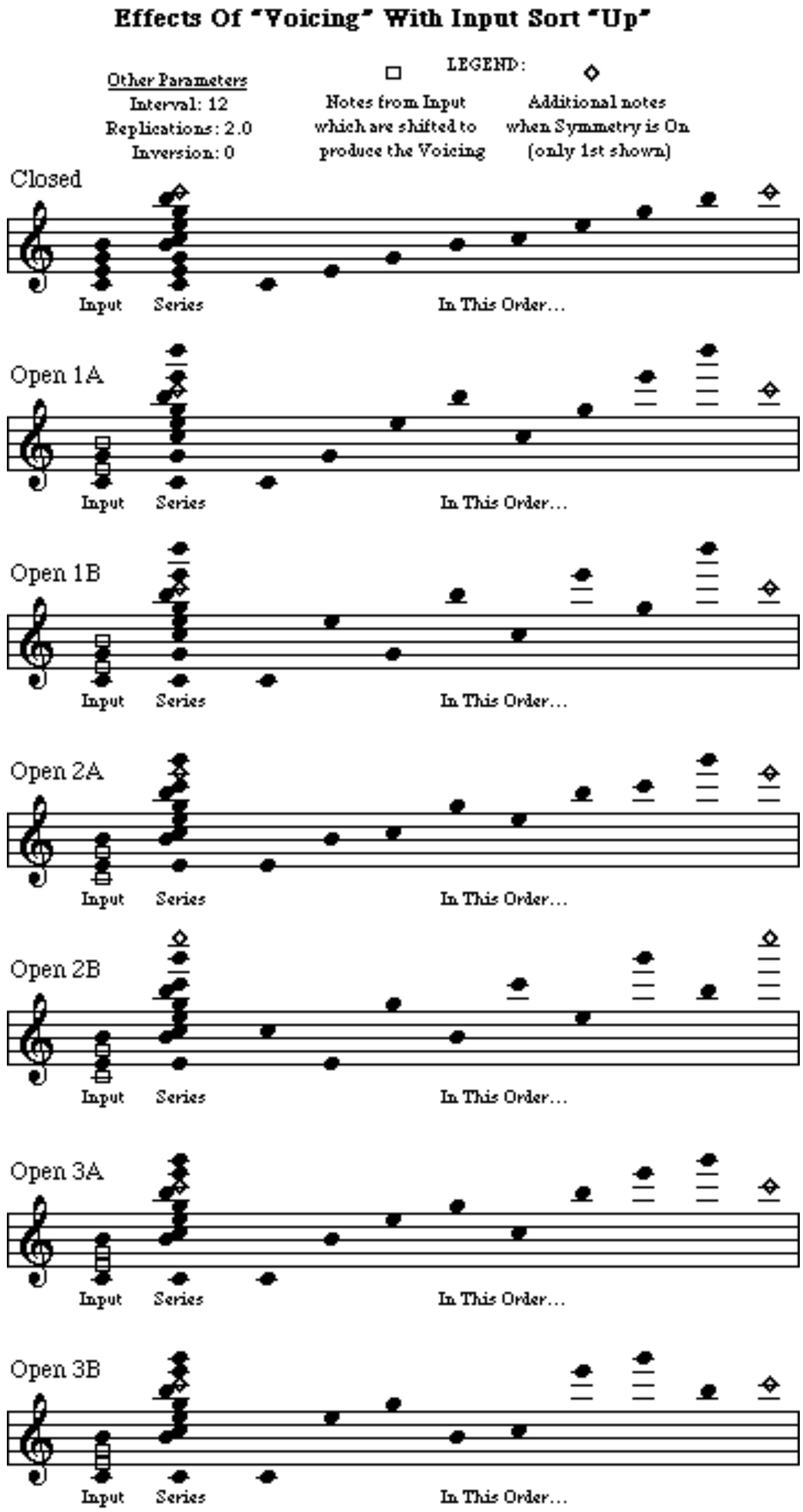
In a Hammer Bend, the third bend starts at a point in the note’s duration following the End setting, and is determined by a ratio of the Width. Even when Width is at 100% and the Hammer-On and Hammer-Off Bends are instantaneous, the final third bend will still be an audible bend.

The following diagrams illustrate the shape of a Hammer Bend. A Hammer is the same thing, without the final third bend at the end. Hammers and Hammer Bends follow the same behavior with Duration as discussed in the previous section Length Of Bends.



Open Voicing Reference

The following diagrams illustrate the effects of the “Voicing” Parameter in the Note Series Panel, on the spread and order of the notes in the Note Series. Note that the Input Notes are shifted prior to the creation of the Series, so the results will be different for 3 and 5 note Input Chords, for example. Furthermore, when Symmetry is on, additional notes are created in the Note Series for use with Clusters. These are also shifted in the same fashion, the first of such additional notes being indicated by a diamond in the diagrams below.



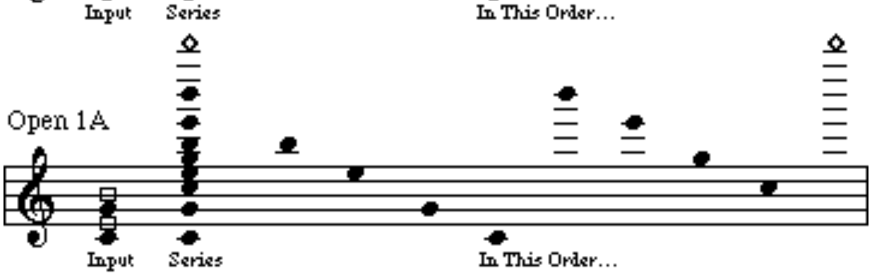
Effects Of "Voicing" With Input Sort "Down"

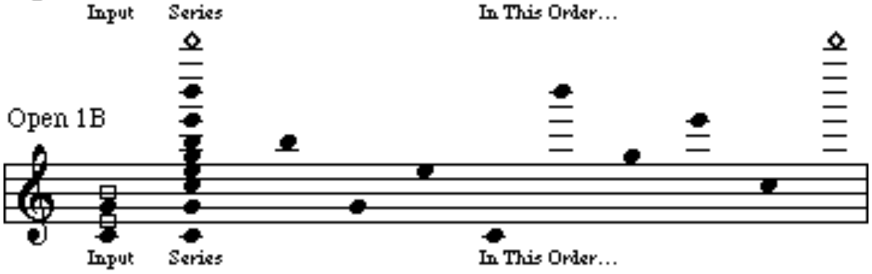
LEGEND:

Other Parameters
Interval: 12
Replications: 2.0
ersion: 0

□ Notes from Input which are shifted to produce the Voicing

◇ Additional notes when Symmetry is On (only 1st shown)

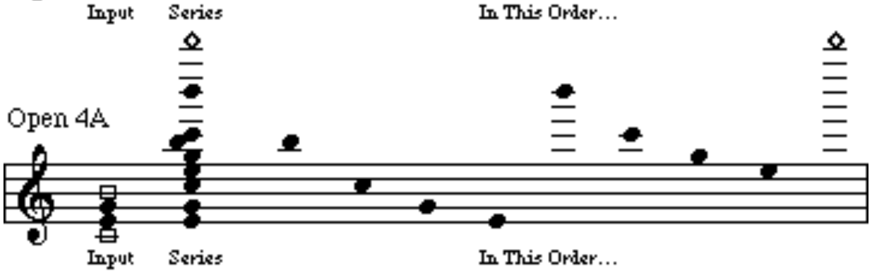




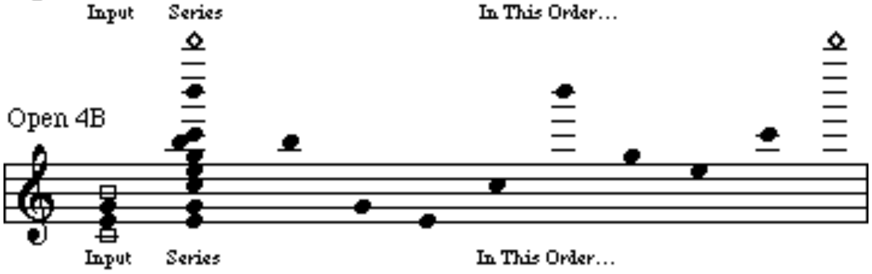
Open 3A

Open 3B

Open 4A



Open 4B



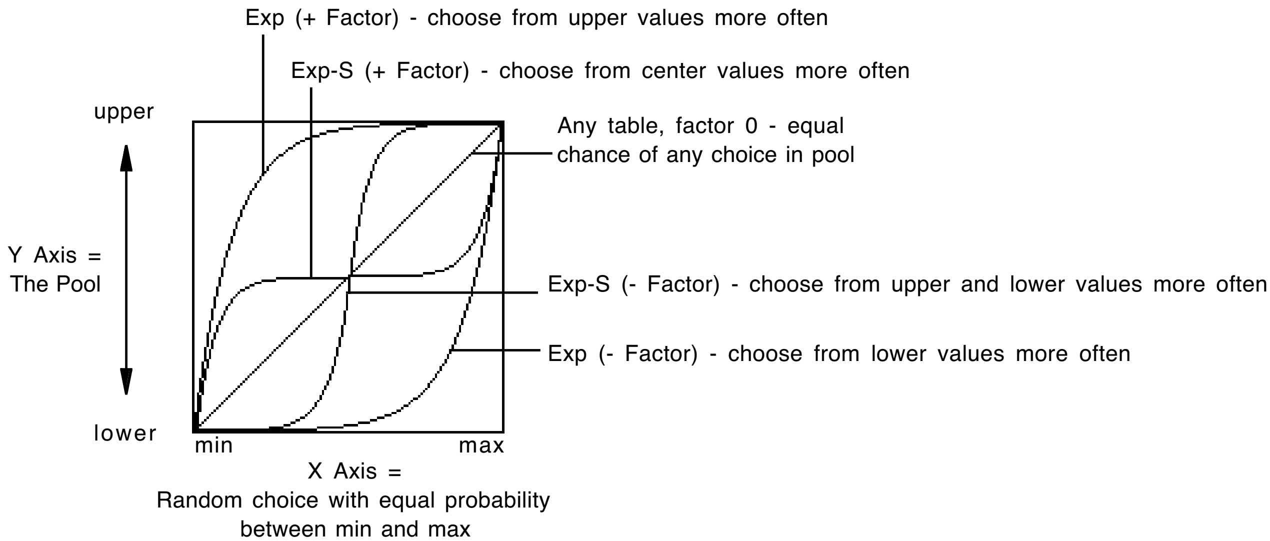
Random Weighting Curves

Sections in this chapter:

Weighting Curve Shapes And Their Effects

When using the various Pattern Grids, more than one cell clicked in a column creates a “pool” of random choices. Different areas of the pool may be selectively favored using a Weighting Curve. Four different shapes are available, which act to favor certain areas of the pool over others when each random choice is made. Next to the Weighting Curve menu, a small graphic displays the actual shape of the chosen curve based on the setting of the “Factor” field.

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.

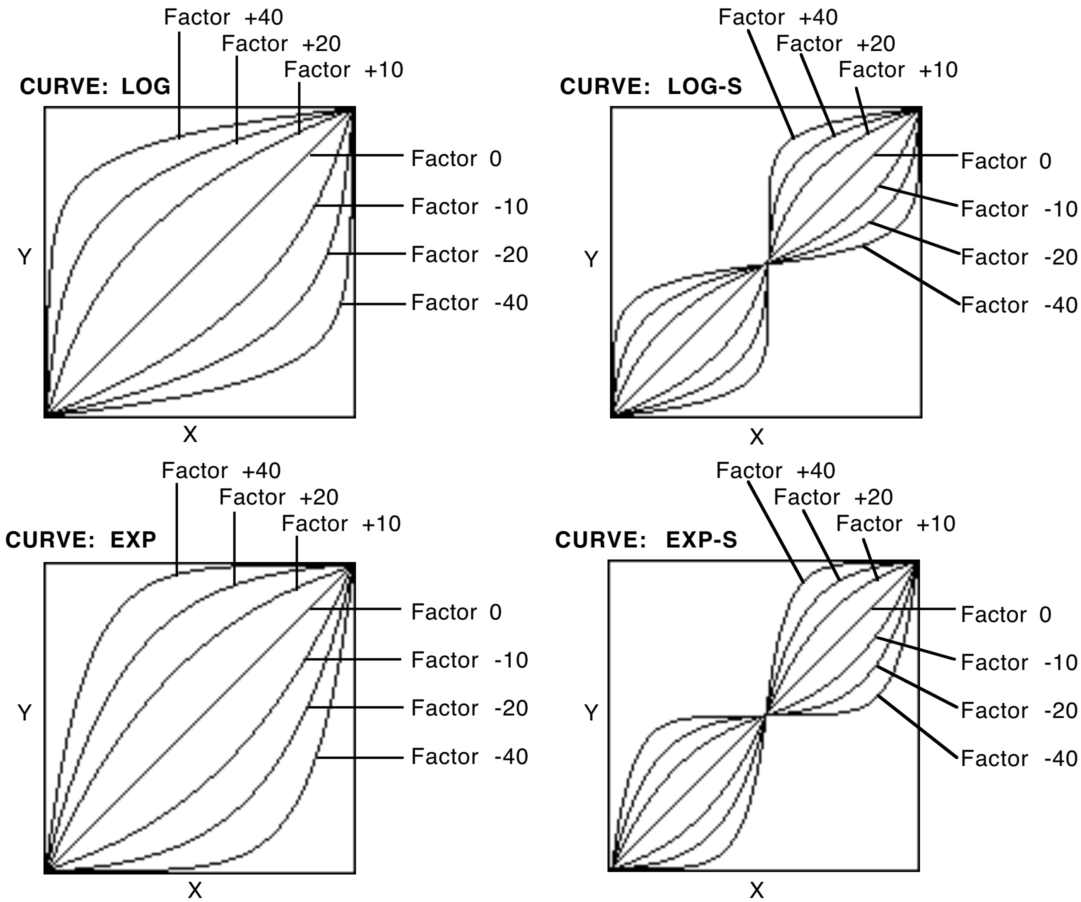
Using negative Factors not only inverts but also rotates the curve.

The following table summarizes the effect of the Factor field on the curves and the pools:

Pool values that receive priority:		
Weighting	Factor	
Curve	+ (Positive)	- (Negative)
Exp/Log	upper	lower
Exp-S/Log-S	center	lower/upper

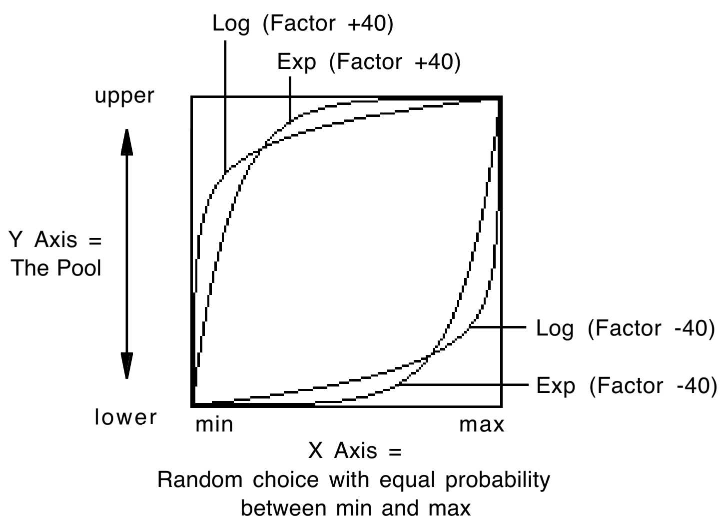
Comparison of Exponential and Logarithmic Curves

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)
approximately 75% chance of a choice from the upper 10% of the pool
approximately 25% chance of a choice from the lower 90% of the pool

Logarithmic Curve (Log)
approximately 90% chance of a choice from the upper 25% of the pool
approximately 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)
approximately 75% chance of a choice from the lower 10% of the pool
approximately 25% chance of a choice from the upper 90% of the pool

Logarithmic Curve (Log)
approximately 90% chance of a choice from the lower 25% of the pool
approximately 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 being chosen.

Dynamic MIDI Sources

See also: **Dynamic MIDI Destinations**

The Dynamic MIDI Sources can be roughly divided into three groups:

1) The Controller Group - MIDI Controllers

2) The Notes Group - Note Ranges or Durations

3) The Velocities Group - Velocity Ranges

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 section of the **Dynamic MIDI Destinations** and make sure to select sources and destinations that are appropriate for each other.

The selected Source comes from the MIDI data stream going to the Module selected in the Port/Chan menu. In other words, if “2 - Module 2’s Port/Chan/KeyZone” is selected, then whatever Port and Channel has been selected for Module 2 in the Input section of the MIDI Ins & Outs Editor is used here as a source of MIDI Data. Furthermore, in the case of using some specialized Sources with the word “Zone” such as “Note # Inside Zone,” the settings for the Module’s Key Zone in the Key Zone Editor also have an effect. Note that this is only for Note Numbers and Velocities; other controller data is not effected by the Key Zone settings.

--- 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 [01] Mod Wheel and set the range to be 110~127, then only when the Mod Wheel reaches the far end of its throw 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.

[01] JS+Y/Mod Wheel
[02] JS-Y/Breath
[04] Foot Pedal
[64] Damper Pedal
[65] Porta. Switch
[82] General/Foot SW
[83] General
[16] Ribbon
[118] Ribbon VJS X
[119] Ribbon VJS Y
[85] VJS +X Mod.
[86] VJS -X Mod.
[87] VJS +Y Mod.
[88] VJS -Y Mod.
The first fourteen choices in the Dynamic MIDI Sources menu (shown above) are user selectable continuous controllers or switches. They default to the settings above, which can be changed in the **Preferences Editor: MIDI Tab**.

⚠ If you intend to create Performances to be exported and loaded into a Korg M3, you should not change these. They are hard-wired to the above choices inside the keyboard.

[14] RT On/Off
[31] RT Latch
[22] RT Slider 1
[23] RT Slider 2
[24] RT Slider 3
[25] RT Slider 4
[26] RT Slider 5
[27] RT Slider 6
[28] RT Slider 7
[29] RT Slider 8
[102] RT Switch 1
[103] RT Switch 2
[104] RT Switch 3
[105] RT Switch 4
[106] RT Switch 5
[107] RT Switch 6
[108] RT Switch 7
[109] RT Switch 8

[30] RT Scene 1
[30] RT Scene 2
[30] RT Scene 3
[30] RT Scene 4
[30] RT Scene 5
[30] RT Scene 6
[30] RT Scene 7
[30] RT Scene 8
RT Scene (Any)
[110] RT Chord Trigger 1
[111] RT Chord Trigger 2
[112] RT Chord Trigger 3
[113] RT Chord Trigger 4
[114] RT Chord Trigger 5
[115] RT Chord Trigger 6
[116] RT Chord Trigger 7
[117] RT Chord Trigger 8
RT Chord Trigger (Any)

These correspond to the KARMA On/Off switch, Latch switch, eight sliders, eight switches, eight scene buttons, and eight Chord Triggers in the Real-Time Controls Window, and the CCs they are set to respond to in the **Preferences: RT Controls Tab**. Shown above are the default CC settings. If "Receive Active" is checked for the RT Controls in the Preferences 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: RT Scene (Any), and RT Chord Trigger (Any). When these are selected, the operation of any Scene button or any Chord Trigger button respectively can be intercepted and used as a Dynamic MIDI Source.

While all of the RT 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 Scene Buttons 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 RT parms of a GE, etc. Chord Triggers 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 an RT Slider through Dynamic MIDI and into RT Parms Control, rather than assigning it to an RT Parm directly, you can choose only a portion of the slider's range to affect the parameter. For example, if you selected RT Slider 1 as a Dynamic MIDI Source, and set the Bottom/Top to 110/127, then only at the far right of the slider will the slider's values affect any destination parameters assigned through RT Parms Control.

After Touch
Selects channel (monophonic) aftertouch to be used as a controller. The Range fields will be available to choose all or a portion of the overall range of 0 ~ 127.

Pitch Bend/JS X
Selects pitch bend to be used as a controller. When doing so, you may want to try the "+/-" or "-/+" setting in the Polarity menu of the Destination Parameters, as they are intended to go with a pitch wheel or pitch lever. The Range fields will be available to choose all or a portion of the overall range of 0 ~ 127.

Example using Global Tempo as a Destination, with original Tempo 100 BPM, Range Bottom and Top = 000/127:

MIDI Value:	0	64	127
Polarity	Far Left	Center	Far Right
+	100 BPM	150 BPM	200 BPM
-	200 BPM	150 BPM	100 BPM
+/-	50 BPM	100 BPM	200 BPM
-/+	200 BPM	100 BPM	50 BPM

--- Note Group ---

For the Note Group, when the Range Bottom/Top fields are available, they indicate MIDI Note Numbers [0...127: C-1...G9].

Short Note (Select Note Range)
Allows a note received with a "short" duration to be used as a switch. The Range fields set the Note Number range within which a short note will be detected, for the selected Module's Port/Channel. The length threshold has a default value of 45 ms. For example, this means that if you play a note with a duration shorter than 45 ms, it can be used as an action to control some Dynamic MIDI destination. One possibility is using a short note to stop the generation of notes from a certain module.

Note # (Select Note Range)
Allows Note Numbers coming in on the selected Module's Port/Channel to be used as a controller. The Range fields will be available, and specify the bottom and top note numbers for a range of notes to be used. Note that this can be a single note by setting the bottom and top to the same value.

Note # Inside Zone
Allows Note Numbers coming in on the selected Module's Port/Channel to be used as a controller. However, only those note numbers within the Key Zone selected in the Key Zone Editor will be passed through as controllers. The Range parameters are not available. This is an easy way to get the same notes as a zone in the Key Zone page.

Bottom and Top fields (Range) not available.

Note # Outside Zone
Allows Note Numbers coming in on the selected Module's Port/Channel to be used as a controller. However, only those note numbers outside the Key Zone selected in the Key Zone Editor will be passed through as controllers (the opposite of above). The Range parameters are not available. This is an easy way to get the all the notes that are not in a zone in the Key Zone page.

Bottom and Top fields (Range) not available.

White Note # (Select Note Range)
Allows only Note Numbers from the White Keys of the selected Module's Port/Channel to be used as controllers. The Range fields will be available, and specify the bottom and top note numbers for a range of notes to be used.

Black Note # (Select Note Range)
Allows only Note Numbers from the Black Keys of the selected Module's Port/Channel to be used as controllers. The Range fields will be available, and specify the bottom and top note numbers for a range of notes to be used.

--- Velocity Group ---

For the Velocity Group, the Range Bottom/Top fields are always available, and they indicate a velocity range from [0...127].

Velocity (Select Vel Range)
Allows Key Velocities to be used as controllers. The Range fields will be available, and specify the Bottom and Top Values (inclusive) of a Velocity Window within which velocities will be passed through.

Velocity Inside Zone (Select Vel Range)
Same as above, but only the specified range of Velocities from Notes within the Module's Key Zone as specified in the Key Zone Editor will be used.

Velocity Outside Zone (Select Vel Range)
Same as above, but only the specified range of Velocities from Notes outside of the Module's Key Zone as specified in the Key Zone Editor will be used.

White Velocities (Select Vel Range) *
Allows Key Velocities from only White Keys to be used as controllers. The Range fields will be available, and specify the Bottom and Top Values (inclusive) of a Velocity Window within which velocities will be passed through.

White Velocities In Zone (Select Vel Range) *
Same as above, but only the specified Range of Velocities from White Keys within the Module's Key Zone as specified in the Key Zone Editor will be used.

White Velocities Outside Zone (Select Vel Range) *
Same as above, but only the specified Range of Velocities from White Keys outside of the Module's Key Zone as specified in the Key Zone Editor will be used.

Black Velocities (Select Vel Range) *
Allows Key Velocities from only Black Keys to be used as controllers. The Range fields will be available, and specify the Bottom and Top Values (inclusive) of a Velocity Window within which velocities will be passed through.

Black Velocities In Zone (Select Vel Range) *
Same as above, but only the specified Range of Velocities from Black Keys within the Module's Key Zone as specified in the Key Zone Editor will be used.

Black Velocities Outside Zone (Select Vel Range) *
Same as above, but only the specified Range of Velocities from Black Keys outside of the Module's Key Zone as specified in the Key Zone Editor will be used.

* not available in Korg Workstation implementations.

Dynamic MIDI Destinations

See also: **Dynamic MIDI Sources**

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 [M, T, C] indication shown at the right of each destination name indicate the source operating modes (“Action”) that are valid for each destination function (Momentary, Toggle, Continuous). See the **Dynamic MIDI: Action** parameter.

The chosen Destination is further supplemented by the setting of the “Module” menu, which determines which of the six Modules will be affected (or the last triggered Module if “Last” is selected). This does not have an effect for several “Global” destinations indicated below, which affect all Modules or the entire Performance only.

[OFF]
No Destination is selected and any Source settings are ignored.

RT Parms Control Assign [M, T, C]
Assigning this as a destination means that Dynamic MIDI can be used to control any of the 16 GE RT Parms in each Module of the Performance, or any of the 8 Performance RT Parms. In other words, in the “Assign” popup menu in the Performance RT Parms page there are eight “DynMidi” assignments (D1...D8) that correspond to the eight rows in the Dynamic MIDI page. This creates a sort of assignment matrix between Dynamic MIDI and the RT Parms. If you assign a source in row three of the Dynamic MIDI page to the destination “RT Parms Control Assign” and then in the RT Parms page assign some parameters to “D3 (DynMidi),” you’ve routed the Dynamic MIDI control into the RT Parms section.

You should normally select a source from the **Controller Group**.

Since this setting is not Module-specific, the Module settings are grayed out and ignored.

Setting example:
Joystick operations in the +Y direction will control GE RT Parm #1 in Module 2.

```
Dyn1 Source:            [01] JS+Y/Mod Wheel
Dyn1 Range-Btm/Top:     000/127
Dyn1 Action:            C - Continuous
Dyn1 Destination:       RT Parms Control Assign
Dyn1 Pol (Polarity):    (+)
GE RT Parm #1 Assign:   D1 (DynMidi)
```

Global Tempo [M, T, C]
Allows a source action to increase or decrease the Performance Tempo. You will normally select a source from the **Controller Group**.

Since this setting is not Module-specific, the Module settings are grayed out and 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 “Range Bottom,” the tempo will be as specified by the Performance. When the value of the controller selected as the source is at the value specified for “Range Top,” the tempo will be double the tempo specified by the respective mode. (The tempo will not be faster than a maximum tempo of q=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 “Range Bottom,” the tempo will be as specified by the Performance. When the value of the controller selected as the source is at the value specified for “Range Top,” the tempo will be half the tempo specified by the respective mode. (The tempo will not be slower than a minimum tempo of q=35 BPM.)

Note/Env Latch [M, T]
Controls the Note Latch and Envelope Latch parameters in the Trigger page, for any assigned Module. You will normally select a source from the **Controller Group**. For example, you can use the damper pedal etc. to control note latch independently of the settings in the Trigger page.

If you use the operation of Envelope 1, 2, and 3 will also be affected. Regardless of the Envelope Latch settings for each 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 a Chord Trigger Button.

Example of use (Single Module Performance):

```
[Module 1] Trigger page: Note Latch: On
Dyn1 Source:        [64] Damper Pedal
Dyn1 Range-Btm/Top: 000/127
Dyn1 Action:        M - Momentary
Dyn1 Destination:   Note/Env Latch
Dyn1 Module 1:      On (checked)
Dyn1 Polarity:      (+)
```

When the RT Controls Window "Latch" switch is On, latch will always be on. When the RT Controls Window "Latch" switch is Off, pressing the connected damper pedal will turn latch on, and releasing it will turn latch off.

Example of use (Multiple Module Performance):

```
[Module 1] Trigger page, Note Latch: On
[Module 2] Trigger page, Note Latch: Off
Dyn1 Source:         [64] Damper Pedal
Dyn1 Range-Btm/Top:  000/127
Dyn1 Action:         M - Momentary
Dyn1 Destination:    Note/Env Latch
Dyn1 Module 1:       On (checked)
Dyn1 Module 2:       Off (checked)
Dyn1 Polarity:       (+)
```

When the RT Controls Window "Latch" switch is On, latch will be on for Module [1], and latch will be off for Module [2]. When the RT Controls Window "Latch" switch is Off, pressing the connected damper pedal will turn latch on for both Modules [1] and [2], and releasing the pedal will turn latch off for both Modules [1] and [2].

Auto Transpose On/Off [M]
Allows a Source action such as a pedal to be used to latch the Auto-Transpose feature. You will normally select a source from the **Controller Group**.

Auto Transpose is a feature that allows you to play a voicing on the keyboard that generates a KARMA effect, and then "memorize" that voicing and play single notes on the keyboard to transpose the voicing to different chords quickly and easily. See the example under the Auto Transpose Range destination (next).

Auto Transpose Range [C]
Controls the amount of transposition for the auto transpose function. Select the source from the **Note Group**. If you select a source from the Controller Group or Velocity Group, it will not be possible to control the transpose amount of the auto transpose function.

The Polarity setting will be ignored.

This is normally used in conjunction with the Auto Transpose On/Off destination being assigned to another controller such as the damper pedal. 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.

Example of use (Single Module Performance):

```
Dyn1 Source:         [102] RT Switch 1
Dyn1 Range-Btm/Top:  000/127
Dyn1 Action:         M - Momentary
Dyn1 Destination:    Auto Transpose On/Off
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       +

Dyn2 Source:         Note # (Select Note Range)
Dyn2 Range-Btm/Top:  000/060 (000 = C-1, 060 = C4)
Dyn2 Action:         C - Continuous
Dyn2 Destination:    Auto Transpose Range
Dyn2 Module 1:       On (checked)
Dyn2 Polarity:       ignored
```

1) Turn on the KARMA function in the Real-Time Controls Window, 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 RT Controls Switch [1]. The auto transpose function will be turned on. The Cmaj7 chord will be remembered.
3) When you play a single note number in the range specified by "Range bottom/Top" (in this case, below middle C), 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 RT Controls Switch [1]. The auto transpose function will be turned off, and the KARMA function will resume normal operation.

Module Stop [M]
Operating the selected source controller when the KARMA function is operating will stop the KARMA Module. (The KARMA function will remain on.) This is the same as hitting the computer keyboard's [Return] key, for the selected Module only. When you apply a trigger (for example by playing the keyboard), the Module will resume functioning.

You can use a source from any of the three groups, but typically it will be the **Controller Group**.

Melodic Repeat Stop [M]
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 of repeats even when you turn off the KARMA [ON/Off] key (subject to the setting of the Options Menu "Return Stops Melodic Repeat.") If you want the repeated notes to stop immediately when you turn the KARMA function Off, use the source "KARMA On/Off" to control the destination "Melodic Repeat Stop."

You can use a source from any of the three groups, but typically it will be the **Controller Group**.

For the Korg devices, the Options Menu item "Return Stops Melodic Repeat" does not exist (inside the device). Therefore, if you want repeated notes to be stopped when the KARMA On/Off switch is operated, you should leave that setting Off for compatibility and program Dynamic MIDI to do it as in the following example.

Example: using the KARMA On/Off switch to stop all repeated notes when switched Off.
(Single Module Performance)

```
Dyn1 Source:        [14] KARMA On/Off
Dyn1 Range-Btm/Top: 000/127
Dyn1 Action:        M - Momentary
Dyn1 Destination:   Melodic Repeat Stop
Dyn1 Module 1:      On (checked)
Dyn1 Polarity:      (-) (Polarity minus since we want to stop when Off)
```

Module Stop & Repeat Stop [M]
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.

You can use a source from any of the three groups, but typically it will be the **Controller Group**.

Module Pause [M, T]
Allows a Module to be "paused" in the middle of whatever it is doing, and then be "resumed." Technically, this is accomplished by the temporary disconnection of the internal clock from a selected Module's effect as it is being generated, thereby pausing it at its current location. Generation can then be resumed at any time from the present location, without restarting from the beginning of the effect. For example, with a long up/down glissando, you can pause at various points in the phrase and continue from the same location.

You can use a source from any of the three groups, but typically it will be the **Controller Group**.

This is a different effect from turning the GE Setup page "Run" parameter On/Off, where the module is actually still continuing with generation even though you cannot hear it. Normally, when the KARMA Module GE Setup page "Run" parameter is turned Off, the KARMA module will continue operating internally without pausing. This means that if Run is Off and then is turned On, the phrase or pattern will not resume from where the Run button was turned Off, but from wherever it is at the moment the Run button is turned On. In contrast, using Dynamic MIDI Module Pause makes the phrase or pattern resume playing from where it was stopped.

Example of use (Single Module Performance):

```
Dyn1 Source:        [01] JS+Y/Mod Wheel
Dyn1 Range-Btm/Top: 000/127
Dyn1 Action:        M - Momentary
Dyn1 Destination:   Module Pause
Dyn1 Module 1:      On (checked)
Dyn1 Polarity:      (+)
```

When you move the joystick/mod wheel all the way in the up direction, the phrase will pause. When you return the joystick to the center, the phrase will resume playing.

Chord Scan [C]
Allows a Dynamic MIDI Source such as a range of keys to be analyzed by the Chord Recognition algorithms, instead of the normal range set in the Key Zone page. Select the "Note # (Select Note Range)," "Note # Inside Zone," or "Note # Outside Zone" sources in the **Note Group**. Chord analysis cannot be controlled if you select a source from the Controller Group, a note source other than the above, or the Velocity Group.

The Polarity setting will be ignored.

KARMA normally performs Chord Analysis independently for each module, on notes played within the Input Note Key Zone set up in the Key Zone page. The resulting chord determination(s) affect the operation of the following parameters/features:
- Note Series: Chord Shift
- Note Series: Note Type "Scalic" or "Scalic 2"
- Note Series: Filter Notes Grid
- Melodic Repeat: Chord Shift
- Drum Pattern: NTT (Note Table Transposition)
- CC Pitch Offset Pattern: Chord Shift

There are certain cases where you may want to override the default behavior, and have KARMA use a different key range than the Key Zone set in the Key Zone page. A good example is when using GE Type “Real-Time” and triggering “one finger riff” type effects, or overlapping repeats with transpose values other than 0, 12, -12, etc. A typical use is to create a Key Zone for a module having a Real-Time GE Effect extending from C4 (60) up to the top of the keyboard, and then selecting “Note # Outside Zone” as a Dynamic MIDI Source and “Chord Scan” as a Dynamic MIDI Destination. With these settings, the bottom half of the keyboard produces no sound, but instead determines the chord that is recognized by the Chord Analysis algorithms. Since this affects the Melodic Repeat: Chord Shift parameter, when the real-time notes are triggered in the upper part of the keyboard, they will be transposed according to the chord determination from the lower area of the keyboard, and not have any effect themselves on the chord recognition. For example, this can be used to simulate harp glissandi proceeding from a selected input note, much like plucking a specific string and then trailing off from it, among other effects. Furthermore, if Repeat Repetitions are set high and there are many repeats, changing the chord in the lower area of the keyboard will cause repeats after that to be transposed according to the newly determined chord.

When using Chord Scan, a single note in the specified key range will be recognized as a Major chord, and all notes within the range will be utilized to determine the chord type. Additional control can be obtained by using “Smart Scan,” described below.

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.

Example (Single Module Performance):
Select a GE of GE Type = Real-Time using Melodic Repeat to generate repeated transposed notes, and use the keyboard to input the chord that will control the phrase or note being played by Melodic Repeat.

```
Dyn1 Source:         Note # Outside Zone
Dyn1 Range-Btm/Top:  not available
Dyn1 Action:         C - Continuous
Dyn1 Destination:    Chord Scan
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       ignored
KeyZone Bottom/Top:  C4/G9 (Key Zone page)
```

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 real-time. (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 [C]
The same as “Chord Scan” above, except adds a patented proprietary dual-windowing algorithm for further control. Each hand creates its own “sliding key zone” having a three-note threshold (within the overall key range set by the Dynamic MIDI Bottom/Top Range). Therefore, it requires at least three notes in either hand to change the analyzed chord.

Select the “Note # (Select Note Range),” “Note # Inside Zone,” or “Note # Outside Zone” sources in the Note Group. Chord analysis cannot be controlled if you select a source from the Controller Group, a note source other than the above, or the Velocity Group.

The Polarity setting will be ignored.

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.

As an example, with Smart Scan you can play a chord with the left hand, and then solo with the right hand at the same time without changing the chord. As long as the right hand plays two notes or less and remains a certain distance from the left hand, it will not affect the Chord Analysis. Likewise, you can play a chord in the right hand, have it analyzed, and then play bass-lines with the left hand without changing the chord.

Additionally, when the sustain pedal (damper) is in use for a particular module (i.e. not filtered in the MIDI Filter page), the Chord Analysis will not operate when the sustain pedal is down. This allows the determined chord to be “locked” while adding additional sustained notes in a typical pianistic fashion.

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.

Example (Single Module Performance):
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 real-time without changing the chord.

```
Dyn1 Source:         Note # (Select Note Range)
Dyn1 Range-Btm/Top: 000/127 (full range)
Dyn1 Action:         C - Continuous
Dyn1 Destination:    Smart Scan
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       ignored
```

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 [M, T, C]
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. The Clock Advance Mode Parameter in the Control page of the KARMA module being controlled must be set to "Dyn," "Int + D," or "Int + DS."

You can use a source from any of the **Dynamic MIDI Sources**. If you select the source from the Note Group or Velocity Group, set the Action to "C - Continuous."

Example 1 (Single Module Performance) - Control by joystick operations:

```
Dyn1 Source:         [01] JS+Y/Mod Wheel
Dyn1 Range-Btm/Top: 000/127
Dyn1 Action:         M - Momentary
Dyn1 Destination:    Clock Advance
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       (+)
Control page, Clock Advance Mode: DynMidi
```

Example 2 (Single Module Performance)
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):

```
Dyn1 Source:         Note # Outside Zone
Dyn1 Range-Btm/Top: not available
Dyn1 Action:         C - Continuous
Dyn1 Destination:    Clock Advance
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       (+)
Control page, Clock Advance Mode: DynMidi
Key Zone page, Bottom/Top:    C-1/B3
Key Zone page, Thru In Zone:  Off
Key Zone page, Thru Out Zone: Off
```

Trigger Notes & Envs [M, T, C]
Trigger Envelope 1 [M, T, C]
Trigger Envelope 2 [M, T, C]
Trigger Envelope 3 [M, T, C]
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.

You can use a source from any of the **Dynamic MIDI Sources**.

If you are using a GE that does not use envelopes, the envelope-related settings made here will be ignored.

Direct Index [C]
Allows a Source action, such as a continuous controller or a range of keys, to directly index the Note Series and selectively generate notes in real-time. You can use this to sweep a controller through the Note Series, or to select notes from the Note Series with a keyboard, and "solo" without thinking about what you are doing. If an effect is already being generated by the GE, it will continue playing while you are Direct Indexing.

Normally you would select a source from:
the **Controller Group**
the **Note Group**

Direct Idx & Mdl Stop [C]
The same as Direct Index (above), but also stops the generation of any notes that may be happening from the normal triggering of the GE. You can use this to have an effect trigger normally from one area of the keyboard, and then be stopped by Direct Indexing notes from another area of the keyboard or a controller.

Normally you would select a source from:
the **Controller Group**
the **Note Group**

Direct Index 1 Way [C]
The same as Direct Index (above), but only functions in one direction (sweep) 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 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 = +:
|  Up  ----> ----> ----> ----> ----> ----> ----> ---->|
0 . . . . . . . . . . . . 64 . . . . . . . . . . . .127

Polarity = -:
|<---- <---- <---- <---- <---- <---- <---- <---- Down |
0 . . . . . . . . . . . . 64 . . . . . . . . . . . .127

Polarity = +|-:
<---- <---- <---- <- Down || Up ----> ----> ----> ---->
0 . . . . . . . . . . . . 64 . . . . . . . . . . . .127

Polarity = -|+:
<---- <---- <---- <--- Up || Down --> ----> ----> ---->
0 . . . . . . . . . . . . 64 . . . . . . . . . . . .127
```

Normally you would select a source from:
the **Controller Group**

Dir. Idx 1Way & Mdl Stop [C]
The same as Direct Index 1 Way (above), but also stops the generation of any notes that may be happening from the normal triggering of the GE. You can use this to have an effect trigger normally from one area of the keyboard, and then be stopped by Direct Indexing notes from another area of the keyboard or a controller.

Normally you would select a source from:
the **Controller Group**

Buffer Latch [M, T]
Allows a Dynamic MIDI Source such as a pedal to be used to "latch" the input of notes into KARMA, so that they are added to the group of input notes from which the Note Series is created. You can think of this as a sustain pedal for the input notes of KARMA. In other words, normally if you play one note, that one note will be used to create the Note Series (if Note Series Note Type is "Regular"). If you keep holding the note, and add a second note, the Note Series will then be recreated from the two notes. If you release the first note before adding the second note, then the second note will recreate the Note Series from only the second note. If Buffer Latch is being used, you can release the notes, but KARMA will consider them to be "sustained," and the Note Series will be created with the additional notes as if they were not released. Notes can be added until the pedal/switch is released, after which the next note(s) will again create the Note Series without the previous notes.

You should normally select a source from the **Controller Group**.

Example (Single Module Performance):

```
Dyn1 Source:         [64] Damper Pedal
Dyn1 Range-Btm/Top:  000/127
Dyn1 Action:         M - Momentary
Dyn1 Destination:    Buffer Latch
Dyn1 Module 1:       On (checked)
Dyn1 Polarity:       (+)
MIDI Filter page, Sustain - CC 64: Filter
```

1) With the KARMA function On, hold down the damper pedal, and play C4 (and release the note). The chord will be detected as C Maj, and a phrase based on C Maj will be played.
2) While continuing to hold down the damper pedal, play B4. The chord will be detected as C Maj7. If you were not using Buffer Latch, the chord would be detected as B Maj.
3) Notes will be added until you release the damper pedal and play the keyboard. Since the MIDI Filter page Sustain setting is set to “Filter” in this example, the damper pedal will not produce the conventional damper effect when the KARMA function is on.

RT Parms Reference

Sections in this Chapter:

RT Parms Reference - GE RT Parms By Group

The following fifteen groups of parameters are available to be assigned as GE RT Parms in the **GE Editor: RT Parms** page.

Virtual Parameters are indicated by a tilde “~” at the beginning of the name.

0: Off
No assignment. The rest of the parameters in the row will be grayed out.

1: GE
GE Type
Gate Type
Gate CC Number
Force Mono
See the **GE Editor**.

2: Note Series
Note Type
Input Sort
Input Transpose
Inversion
Replications
Max
Symmetry
Interval
Chord Shift
Wrap Bottom
Wrap Top
Voicing
Filter Dupes
Filter Fixed
~Filter Template
~Filter Temp + Restore
See the **Note Series** page.

3: Phase
Total Steps
Start %
Start Mode
Length Mode
Cycle Mode
Direction
Phase Transpose
~Octave Phs. Transpose
~Oct/5th Phs. Transpose
Step Transpose On/Off
~Step Transp. Template
Events
TSig Numerator
TSig Denominator
Beginning Offset %
End Offset %
End Loop On/Off
End Loop Start Step
End Loop Length
Pattern Items
Pattern Step 1
Pattern Step 2
Pattern Step 3
Pattern Step 4

Pattern Step 5
Pattern Step 6
Pattern Step 7
Pattern Step 8
Pattern Step 9
Pattern Step 10
Pattern Step 11
Pattern Step 12
Pattern Step 13
Pattern Step 14
Pattern Step 15
Pattern Step 16
~Template (All Steps)
~Template Steps 1~4
~Template Steps 5~8
~Template Steps 9~12
~Template Steps 13~16
See the **Phase** page.

4: Rhythm
Humanize
Swing Note Value
Swing %
Swing Use Multiplier
Pools-Random Factor
Pools-Weighting Curve
Ties-Random Factor
Ties-Weighting Curve
Rhythm Multiplier
~Straight Multipliers
~Straight/Trip Mults
~Strt/Dot/Trip Mults
Template
Template + Restore
See the **Rhythm** page.

5: Duration
Duration Mode
Duration Value
Pools-Random Factor
Pools-Weighting Curve
Ties-Random Factor
Ties-Weighting Curve
Use Rhythm Multiplier
Template
Template + Restore
See the **Duration** page.

6: Index
Index Mode
Random Walk Max Step
Pools-Random Factor
Pools-Weighting Curve
Cluster Mode
Invert
Double
Double Amount
Inv/Dbl Vel. Offset
Template
Template + Restore
See the **Index** page.

7: Cluster
Strum
Pools-Random Factor
Pools-Weighting Curve
Template

Template + Restore
See the **Cluster** page.

8: Velocity
Velocity Mode
Velocity Value
Randomize Bottom
Randomize Top
Pools-Random Factor
Pools-Weighting Curve
Cluster Mode
Scale
Template
Template + Restore
See the **Velocity** page.

9: CCs
Fixed/On
Pattern Type
Polarity
Pools-Random Factor
Pools-Weighting Curve
Pitches-Random Factor
Pitches-Weighting Curve
Octaves-Random Factor
Octaves-Weighting Curve
CC A
CC B
Cluster Mode
Pitch Offsets On/Off
P.Offset Chord Shift
Template
Template + Restore
See the **CCs** page.

10: WaveSeq
Wave Pattern On/Off
Oscillator Mode
Waveform Offset
Row 1 Waveform
Row 2 Waveform
Row 3 Waveform
Row 4 Waveform
Row 5 Waveform
Row 6 Waveform
Row 7 Waveform
Row 8 Waveform
Row 9 Waveform
Row 10 Waveform
Row 11 Waveform
Row 12 Waveform
Row 13 Waveform
Row 14 Waveform
Row 15 Waveform
Row 16 Waveform
Row 1 Start Offset
Row 2 Start Offset
Row 3 Start Offset
Row 4 Start Offset
Row 5 Start Offset
Row 6 Start Offset
Row 7 Start Offset
Row 8 Start Offset
Row 9 Start Offset
Row 10 Start Offset
Row 11 Start Offset
Row 12 Start Offset

Row 13 Start Offset
Row 14 Start Offset
Row 15 Start Offset
Row 16 Start Offset
Track Keyboard
Pools-Random Factor
Pools-Weighting Curve
Template
Template + Restore
See the **WaveSeq** page.

11: Envelopes
Env On/Off
Envelope Type
Start Level
Attack Time
Attack Level
Decay Time
Sustain Level
Release Time
Release Level
Amplitude Amount
Time Scale
Attack Smooth
Loop Mode
Tempo Relative
Note Trigger
~Sta/Att Level
~Sta/Sus Level
~Sta/Rel Level
~Att/Sus Level
~Att/Rel Level
~Sus/Rel Level
~Sta/Att/Sus Level
~Sta/Att/Rel Level
~Sta/Sus/Rel Level
~Att/Sus/Rel Level
~All Levels
~Att/Dec Time
~Att/Rel Time
~Dec/Rel Time
~All Times
See the **Envelopes** page.

12: Repeat
Rhythm
~Straight Rhythms
~Dotted Rhythms
~Triplet Rhythms
~Selected Rhythms
~Selected Rhythms 2
Use Swing
Repetitions
Decay
Initial Velocity
Transpose
Chord Shift
Damping
Rebound Mode
Tempo Env. Lock
Range Mode
Wrap Bottom (Abs)
Wrap Top (Abs)
Wrap Bottom (Rel)
Wrap Top (Rel)
Vel. Range Bottom

Vel. Range Top
Duration Mode (RT)
Duration Value (RT)
Key Mode (RT)
Chord Quantize (RT)
See the **Melodic Repeat** page.

13: Bend
On/Off
Amount
Shape
Alternation
Step Mode
Length
Fixed-ms
Start %
End %
Width %
Drum Bend Mode
Bend Range
Key Mode (RT)
Direction (RT)
Rel. Delay Length (RT)
Rel. Delay Damping (RT)
Force Bend If Zero
See the **Bend** page.

14: Drum
Play On/Off
~On/Off Combinations
Row 1 Note
Row 2 Note
Row 3 Note
Row 4 Note
Row 5 Note
Row 6 Note
Row 7 Note
Row 1 Vel. Offset
Row 2 Vel. Offset
Row 3 Vel. Offset
Row 4 Vel. Offset
Row 5 Vel. Offset
Row 6 Vel. Offset
Row 7 Vel. Offset
Rhythm Multiplier
~Straight Multipliers
~Straight/Trip Mults
~Strt/Dot/Trip Mults
Pattern Vel. Offset
Velocity Pat. Scale
Pattern Transpose
~Octave Transpose
~Oct/5th Transpose
Note Series -> Length
Pools-Random Factor
Pools-Weighting Curve
Rests-Random Factor
Rests-Weighting Curve
Pools/Poly
Keyboard Track
NTT On/Off
Link To Next
Notes Played = Rows
Wrap Bottom
Wrap Top
Template Bank 1

Template Bank 2
Template Bank 3
Temp Bank1 + Restore
Temp Bank2 + Restore
Temp Bank3 + Restore
See the **Drum** page.

15: Direct Index
Index Shift
Trill Mode
Held Note Trig Mode
Transpose
Velocity Sensitivity
Velocity Offset (CCs)
Duration Control
Duration Mode
Duration ms
Melodic Rpt On/Off
Bend On/Off
Bend Amount
Bend Shape
Bend Alternation
Bend Step
Bend Length
Bend Fixed-ms
Bend Start
Bend End
Bend Width
See the **Direct Index** page.

RT Parms Reference - Performance RT Parms By Group

The following six groups of parameters are available to be assigned as Performance RT Parms in the **Performance RT Parms** page.

Virtual Parameters are indicated by a tilde "~" at the beginning of the name.

0: Off
No assignment. The rest of the parameters in the row will be grayed out.

1: PE
Time Signature
See the **Performance Editor**

2: GE Setup
Run
Transpose
~Octave Transpose
~Oct/5th Transpose
See the **GE Setup** page

3: Control
Force Range
Force Range Wrap
Root Position
Clock Advance Mode
Clock Advance Size
CA Vel. Sensitivity
CA Chord Trigger Mode
Note Map Mode
Note Map Table
Note Map Transpose
Note Map Chord Track
Note Map Kbd Track
See the **Control** page

4: Trigger
Quantize Triggers
Quantize Window
Delay Start
Delay Start ms
Note Trigger Mode
Note Latch
Update On Release
Env1 Trigger Mode
Env1 Latch Mode
Env2 Trigger Mode
Env2 Latch Mode
Env3 Trigger Mode
Env3 Latch Mode
Trigger By Module
GE Phrase Length %
See the **Trigger** page

5: Key Zones
Thru Inside Zone
Thru Outside Zone
Key Zone Bottom
Key Zone Top
Transpose Thru In Zone
Transpose Thru Out Zone
~Oct. Transp. Thru InZ
~Oct. Transp. Thru OutZ
~Oct/5 Transp. Thru InZ
~Oct/5 Transp. Thru OutZ
See the **Key Zones** page

6: Random Seeds
Start Seed
Freeze Loop Length
~Freeze Loop Len + Reset
Retrigger Each Time
See the **Random Seeds** page

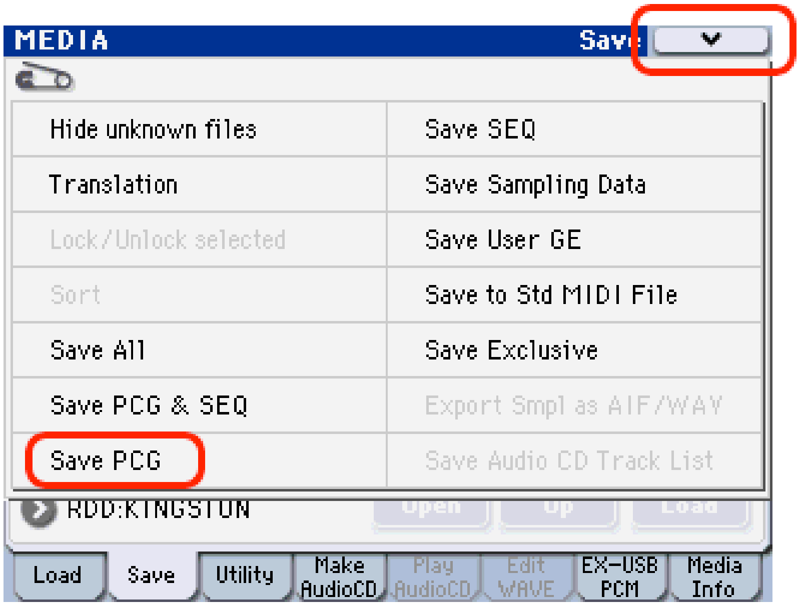
Section 8:

Appendices - M3

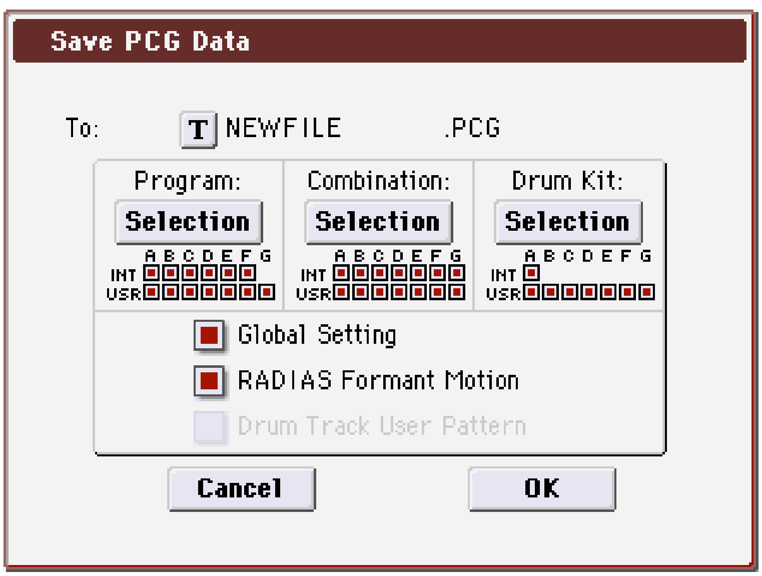
Backing Up And Reloading Your M3's PCG Data

If you're not experienced with backing up your data yet, here's the simplest way to do it. This example assumes you have M3 OS 2.0 or higher.

A. Backup the PCG Data (Programs, Combi, Global)

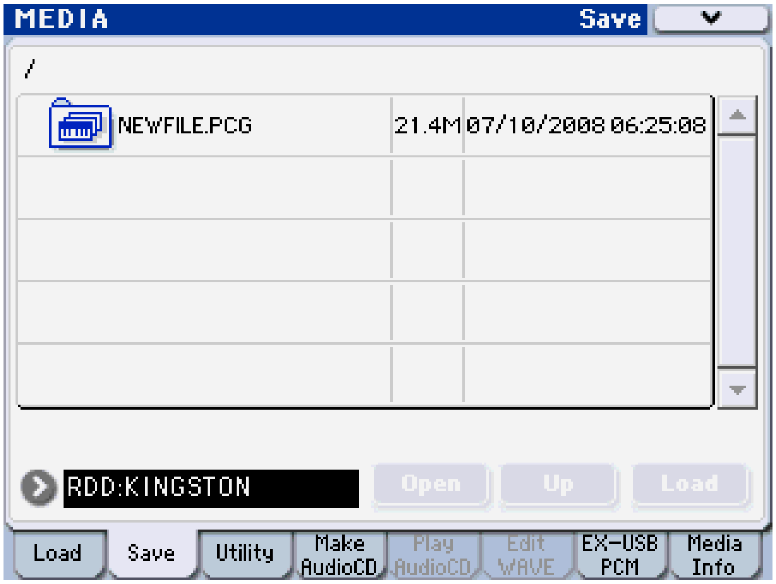


1. In Media Mode, on Page 2: Save, select Save PCG from the Menu Command button (shown above). (This example assumes you have a properly formatted USB memory stick or drive attached to one of the USB-A Ports.)



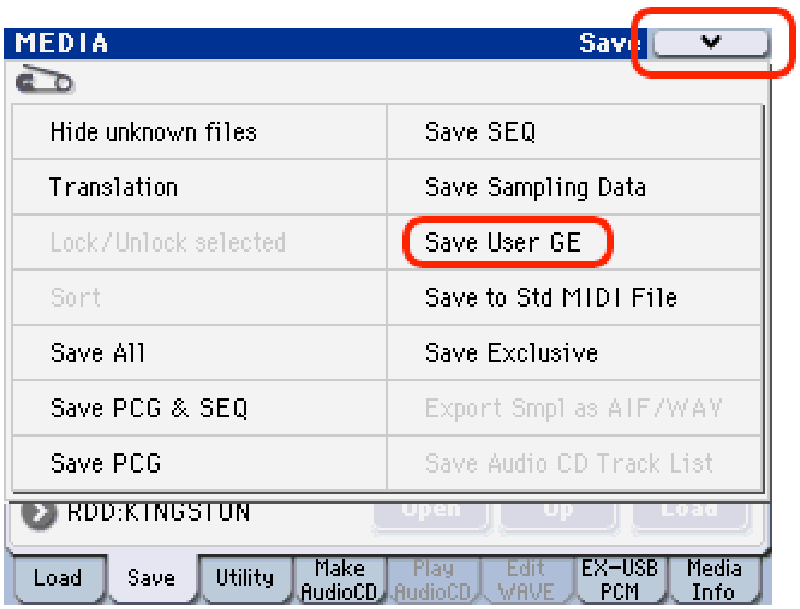
2. In the resulting dialog, just leave everything checked so that it looks like the above screen shot. You can touch the "T" button if you'd like to give the file a different name. This example will assume we leave the name as NEWFILE.

3. Press OK. This will save the entire contents of your M3 exactly as it is at this moment (your Program, Combi, Global data) onto the external hard drive. You will see the resulting file "NEWFILE.PCG" appear on your hard drive.

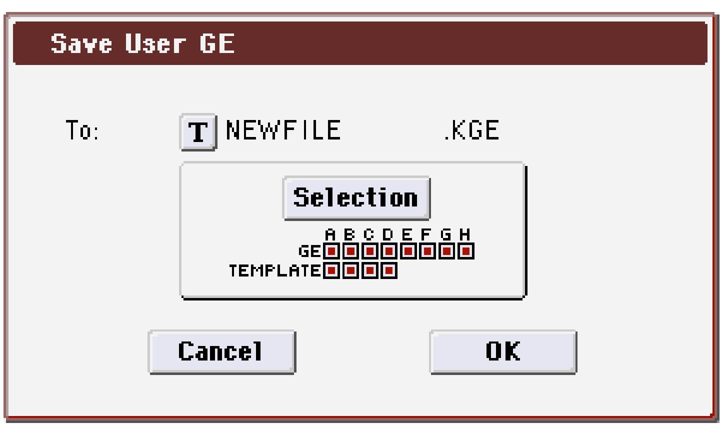


B. Backup the KGE Data (User GEs)

This step is optional, but you may wish to do it to be safe. If you come back to these instructions in the future, and you have made some changes to the User GEs since then, this is how you back them up as well.

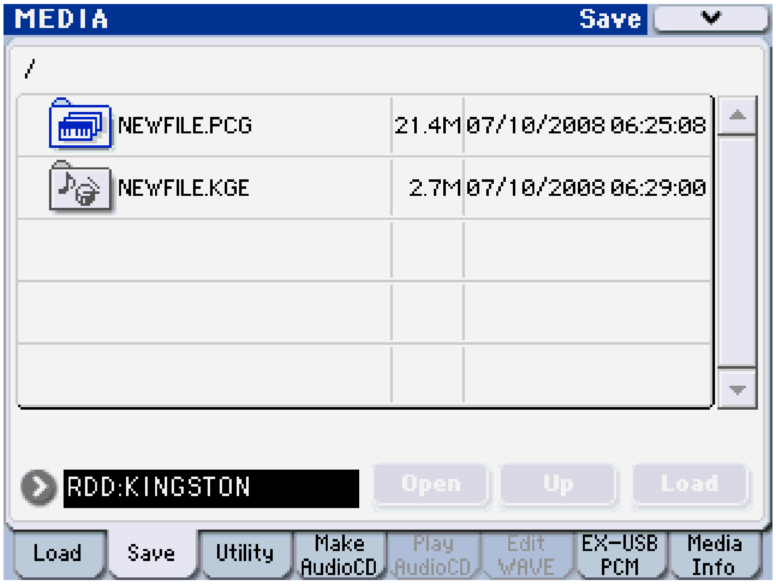


1. In Media Mode, on Page 2: Save, select Save User GE from the Menu Command button (shown above).



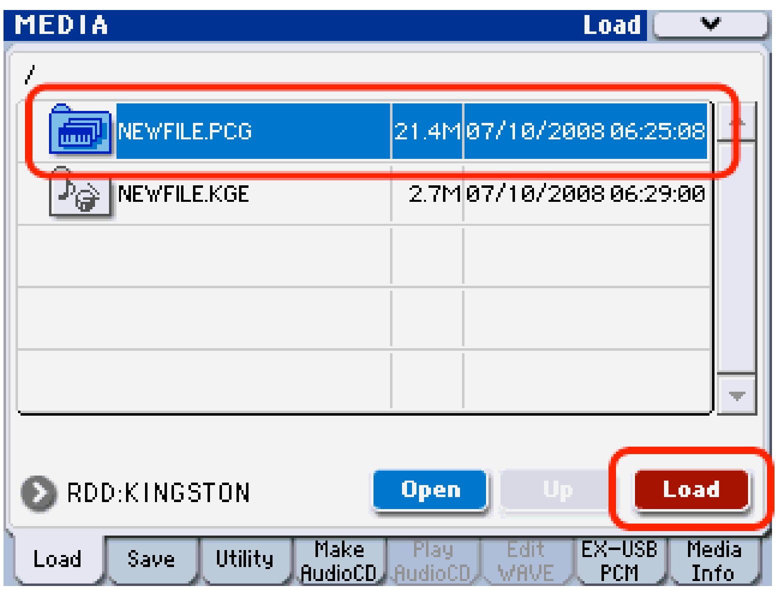
2. In the resulting dialog, just leave everything checked so that it looks like the above screen shot. You can touch the “T” button if you’d like to give the file a different name. This example will assume we leave the name as NEWFILE. But if you do rename the file, you should give it the same name as the PCG file you saved in Section A.

3. Press OK. This will save all of your User GE data onto the internal hard drive. You will see the resulting file “NEWFILE.KGE” appear on your hard drive.

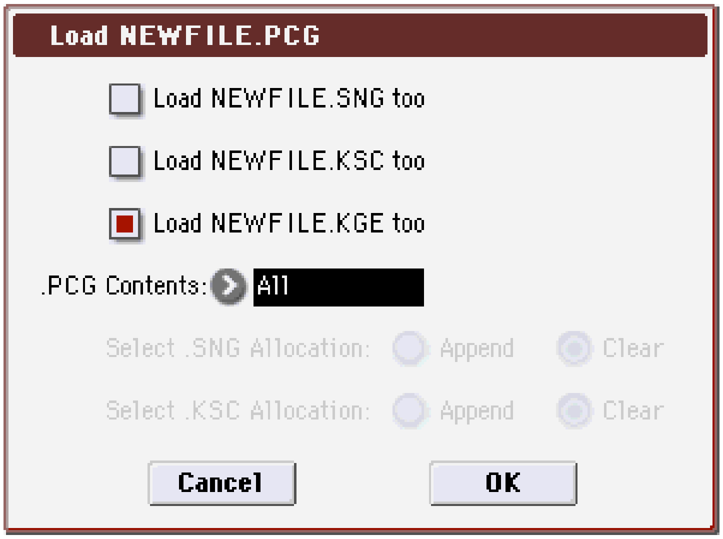


C. How To Reload Your Backup

If you have made any edits to the Combis, Programs, and GEs while using KM3 Software that you would like to keep, then do not perform this step without backing up that data first! That may be obvious, but it’s worth mentioning.



1. After you are done working with KARMA M3, you can reload the file and restore your M3 to the way it was before. All you need to do is select the file you saved (e.g. NEWFILE.PCG) from the Load tab, and press the LOAD button (above).



2. In the resulting dialog (shown above), make sure the box is checked to load the KGE file you created with the same name (if you performed that step). Press OK, and all your data is restored to the way it was before.

For additional details on how to save and load PCG and KGE Data, see the M3 Operation Guide > Loading and saving data, and creating CDs.

Restoring The M3’s Factory Data

The Factory Data of the M3 can be restored at any time from the Global Mode - you don't even need to have made a backup of it.

⚠ This will overwrite anything that you have in all of the banks that comprise the Factory Preload!

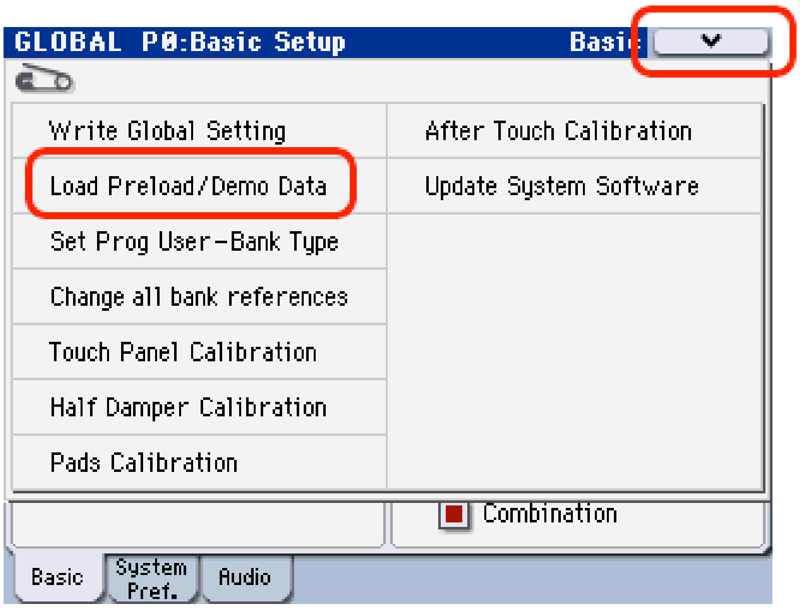
Make sure that Memory Protect is off

Before loading, make sure that Memory Protect is turned off:
1. Press the front-panel GLOBAL button.
2. Go to Page 0-1 Basic Setup > System Pref.
3. Make sure that all of the Memory Protect checkboxes are not checked.

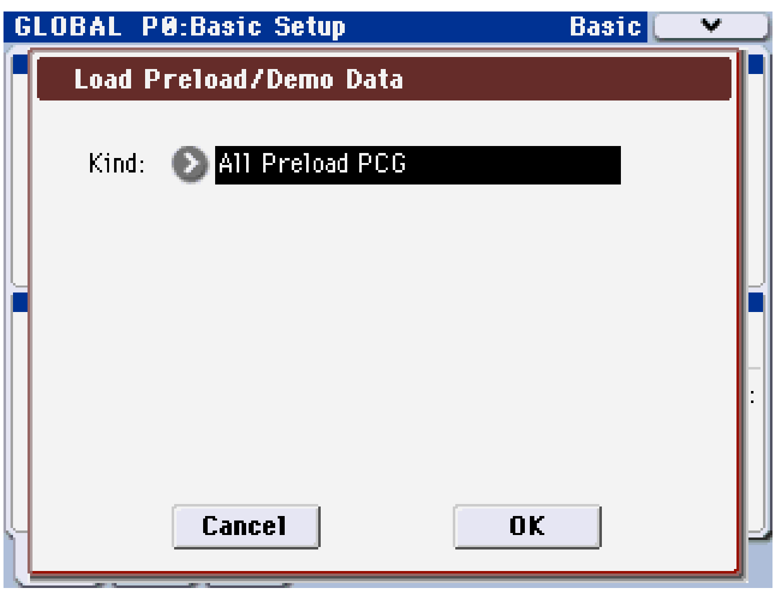
Loading the factory data

1. In Global Mode, select Page 0-1: Basic Setup > Basic.

2. From the Menu Command button in the upper right corner, select “Load Preload/Demo Data.”



3. Use the menu to select “All Preload PCG.”



4. Touch “OK” and answer “Yes” to “Are you sure?”

💡 Note for future reference that you can restore different parts of the Factory Preload; just Programs, just Combis, just Drum Kits - you can even restore a single Program or Combi! Very useful.

Communication Configuration - M3

There are a few settings you must make on your M3 in order to allow it to properly “talk” to the KARMA M3 software.

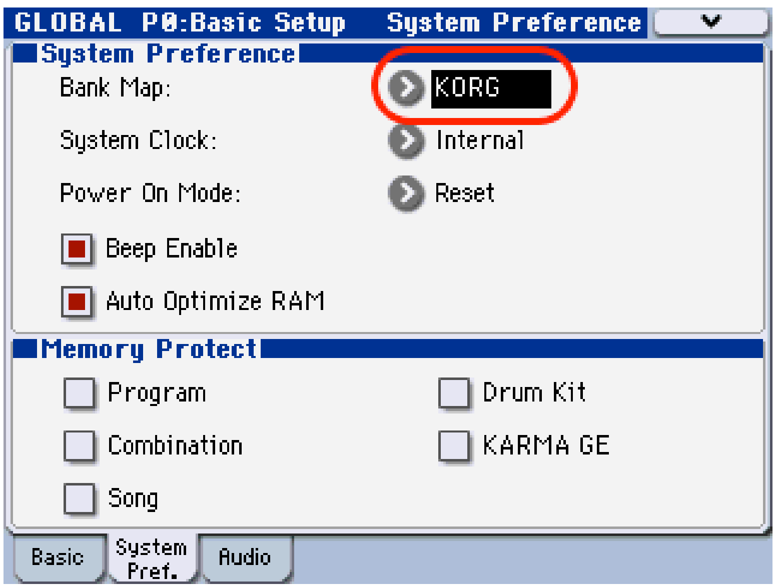
The settings here are just the basic ones to establish communication between the M3 and the KARMA software. To mirror the control surface (synchronize it) with KARMA M3’s Real-Time Controls Window, including allowing the Pads to trigger the software’s Chord Triggers 1~8, please see the included Tutorial “**Mirroring KM3 and M3.**” It is located in the install folder (Mac), or the Start Menu (Windows).

Quick Summary:

1. Global > Basic Setup > System Pref. (Page 0-2)
   Bank Map = KORG
2. Global > MIDI > MIDI Basic (Page 1-1)
   MIDI Channel = 1
   Local Control = Off
   MIDI Clock Mode = Auto
   Receive Ext. Realtime Commands = On
3. Global > MIDI > MIDI Routing (Page 1-2)
   MIDI Filter > Enable Exclusive = On
4. Menu Command > Write Global Settings (if desired)

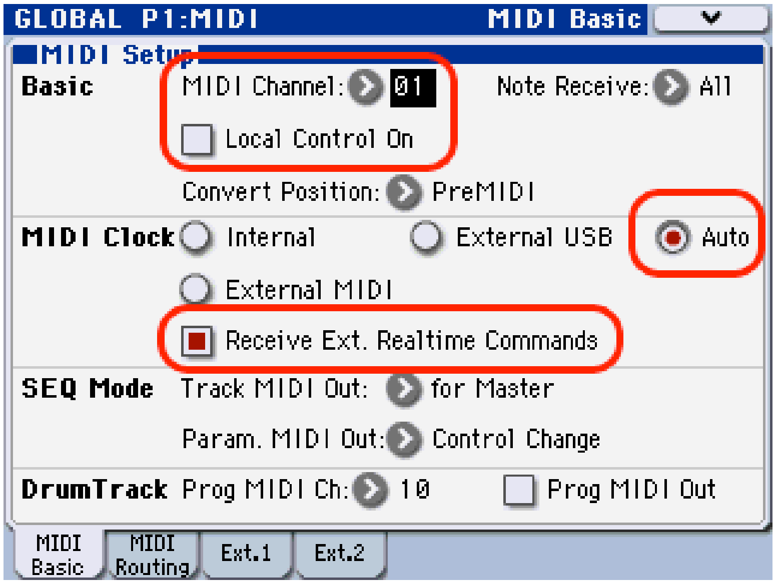
Detailed explanation:

1. By default, KARMA M3 will be configured to work with the “KORG” Bank Map setting. To set the M3 to the same Bank Map setting, press the Global button, press the Page Select button, select Page 0 Basic Setup, choose tab 2 System Pref., and set the System Preferences Bank Map to “KORG,” as shown below:



If you prefer to use the GM(2) Bank Map setting, choose “Preferences” from the “Edit” menu in KARMA M3. Select the “MIDI” tab and choose “GM(2)” for the Bank Map. The important thing is to **make sure that Bank Map on the device and in KARMA M3 are identical**.

2. While in Global Mode, select Page 1-1 MIDI > MIDI Basic, and make the settings as shown below:

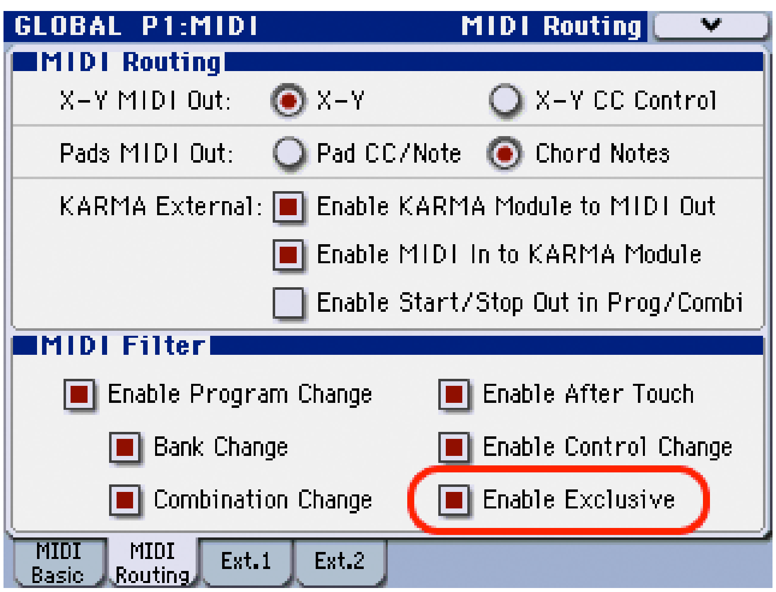


MIDI Channel = 1
(so that the default settings of KM3 will communicate with your M3 - this can be changed later.)

Local Control On = Off (unchecked)
(so that you do not get double notes when you play through KARMA M3. The software will echo the keyboard through. Note that this will be done automatically when the software starts up anyway by a setting in KM3's Preferences - see **Preferences: MIDI - Automatic Local Control**.)

MIDI Clock Mode = Auto
Receive Ext. Realtime Commands = On (checked)
(so you can control the Tempo of the M3 properly from the software. This goes along with the settings made automatically in the **Sync Editor** when you run the MIDI Setup Assistant.)

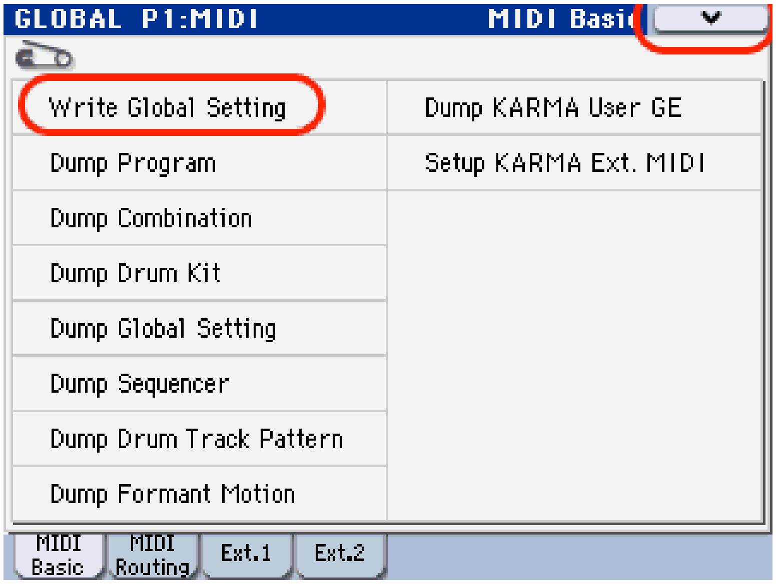
3. While in Global Mode, select Page 1-2 MIDI > MIDI Routing, and make the settings as shown below:



MIDI Filter: Enable Exclusive = On (checked)
(so that the device sends and receives System Exclusive MIDI data.)

To mirror the control surface (synchronize it) with KARMA M3's Real-Time Controls Window, including allowing the Pads to trigger the software's Chord Triggers 1~8, please see the included Tutorial "**Mirroring KM3 and M3.**" It is located in the install folder (Mac), or the Start Menu (Windows).

4. You may wish to write these settings into memory so you don't have to do it every time you turn on the keyboard. Press the Menu Command button (top right corner), and select "Write Global Setting" and answer OK until it's done. Don't forget that if you reload the Factory PRELOAD or any other file containing Global Data, you will overwrite these changes and it may appear that communications between the software and the device no longer work. Just reset them as above in this case. You may wish to save a PCG file containing **only** the Global Data for your sessions with KARMA M3, as an easy way to set all of this.



⚠ IMPORTANT! If you use the keyboard without the software, and Local Control On is set to OFF, the keyboard will appear to have stopped working (no sound). To use the keyboard without KARMA M3, set Local Control back to On (checked). There is a Preferences setting in KM3 that will automatically turn the Local Control Off and On when you launch and exit the software. See **Preferences: MIDI - Automatic Local Control**.

Communication Configuration - KM3 Software

Sections in this Chapter:

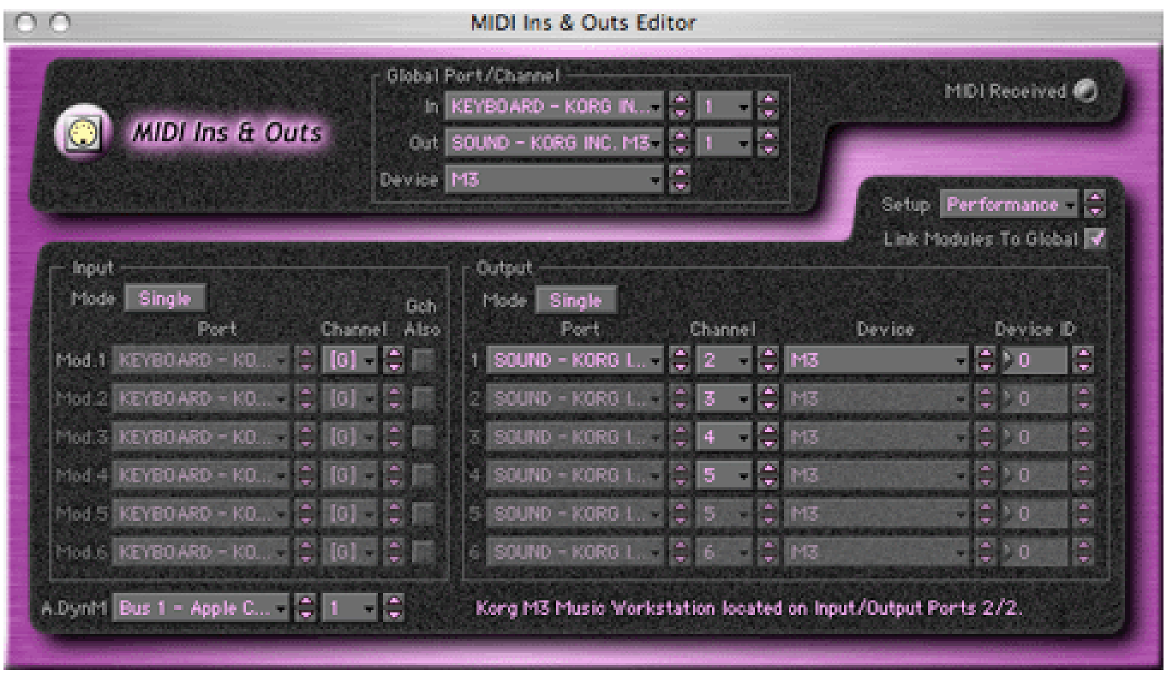
If you configured KARMA M3 using the MIDI Assistant as explained in **First Time Setup**, you will not need to perform the steps in this section - they are all done automatically. However, if you are having difficulties or need to manually configure the software, use the guide below.

Setting the Global MIDI Settings

1. If it is not already open, from the "Windows" menu select "MIDI Ins & Outs Editor." In the top center area you'll find the Global Port and Channel settings (see the image below).

At this point, the status message at the bottom of the window most likely reads "Korg M3 Music Workstation not located on Global Ports." To connect the M3 to KM3, set the Global In and Out port(s) to the ports that your M3 is connected to. When using the Korg USB MIDI Driver (recommended), you will see a clearly labeled "KEYBOARD - KORG INC. M3" input (shown above), and "SOUND - KORG INC. M3" output. With a multi-port MIDI interface, the names are different for each manufacturer – in the image above, an M-Audio MidiSport 2x2 interface is also shown, as well as a Korg Kronos. In this example, the M3 is located on the first port.

2. Next, set the Global In/Out Channels to 1, and make sure your M3's Global MIDI Channel is also set to 1 – you can check this in Global Mode (1-1) MIDI > MIDI. See **Communication Configuration - M3**.

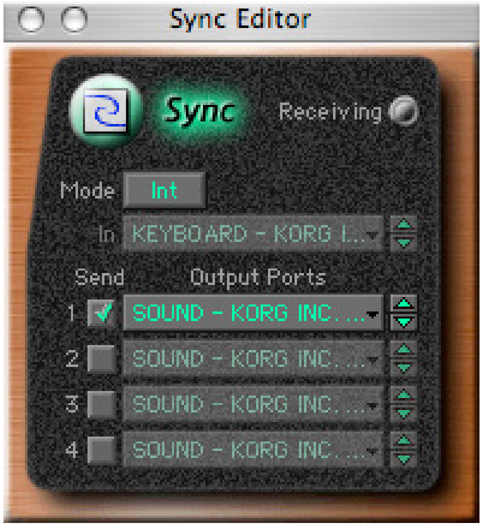


Once you have this correct, the status message will change (give it a few seconds or so) to something like "Korg M3 Music Workstation located on Input/Output Ports 2/2" (your numbers may be different). The numbers indicate which port in the lists in the In and Out Port menus the M3 has been located on. The window will look something like the image above (this example shows the use of the Korg USB MIDI Driver).

If the "Link Modules To Global" checkbox is selected (recommended and set by default), changing the Global Ports automatically changes the MIDI Ins & Outs Ports for each Performance directly below it, so you may not have to make any other changes manually. Note that these Global Port/Channel/Device settings are actually stored in the Preferences file for the application, not on a Performance-by-Performance basis, while the other settings in the Input and Output sections are stored inside each Performance.

⚠ IMPORTANT! If you are using an M3-M with an ecternal keyboard controller, you will need to set this up differently. Please see **Additional M3-M (Module) Setup** for details.

Setting the MIDI Clock Sync Options



Open the Sync Editor from the Windows Menu (Cmnd+Y [Mac], Ctrl+Y [Win]), and configure it so that the first Output Port is set to the port your M3 is located on (when using the Korg USB MIDI Driver, it will be "SOUND - KORG INC. M3"), and the "Send" button is checked. This way, when you change the Tempo of Combis or Programs inside the software, the beat-synchronized effect settings (IFX/MFX) will stay properly in sync (assuming the M3 has been set up to recognize the sync). For more information, see:

Communication Configuration - M3

Sync Editor

Additional M3-M (Module) Setup

This appendix explains the essential final steps for configuring KARMA M3 and your M3-M along with an external keyboard controller. If you haven't already, please refer to First Time Setup - KARMA M3 to begin your configuration.

Sections in this chapter:

Using a Multi-Port MIDI Interface

Diagram 1 below shows one typical setup, using a two port MIDI Interface such as a MidiSport 2x2, MOTU FastLane, etc.

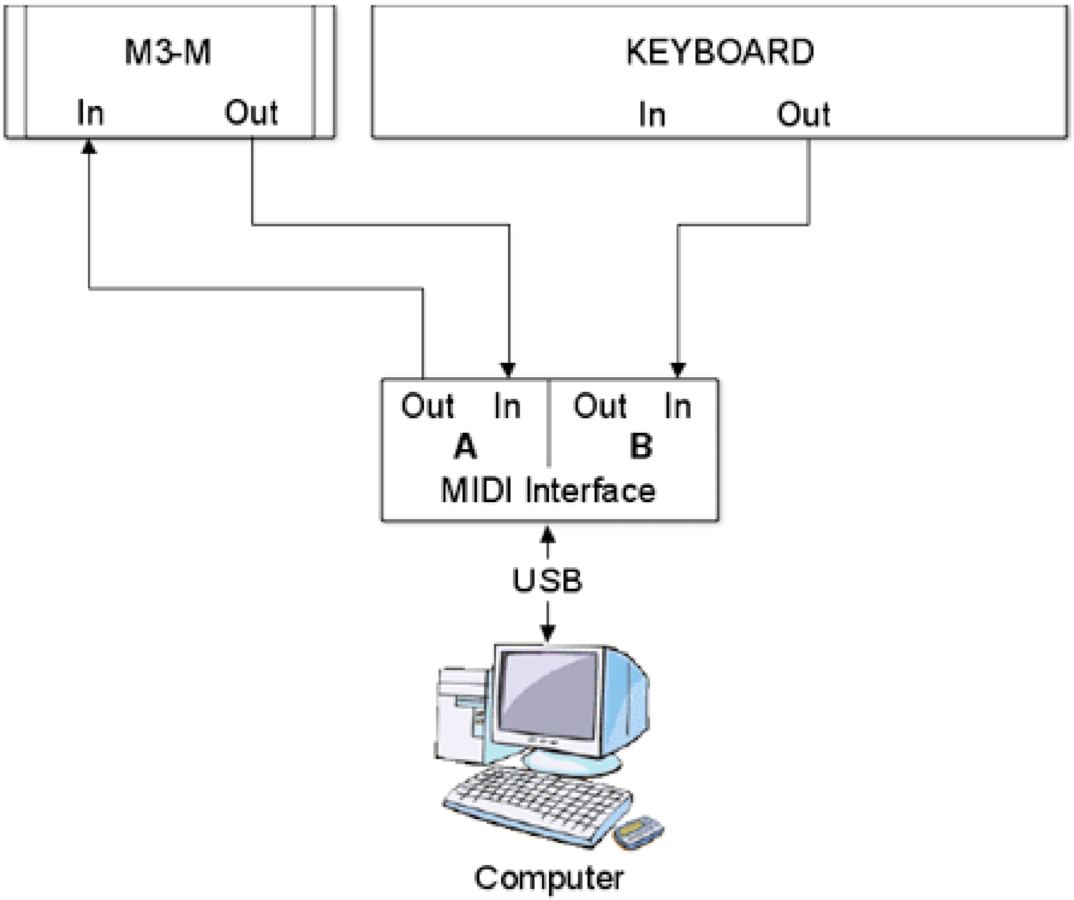


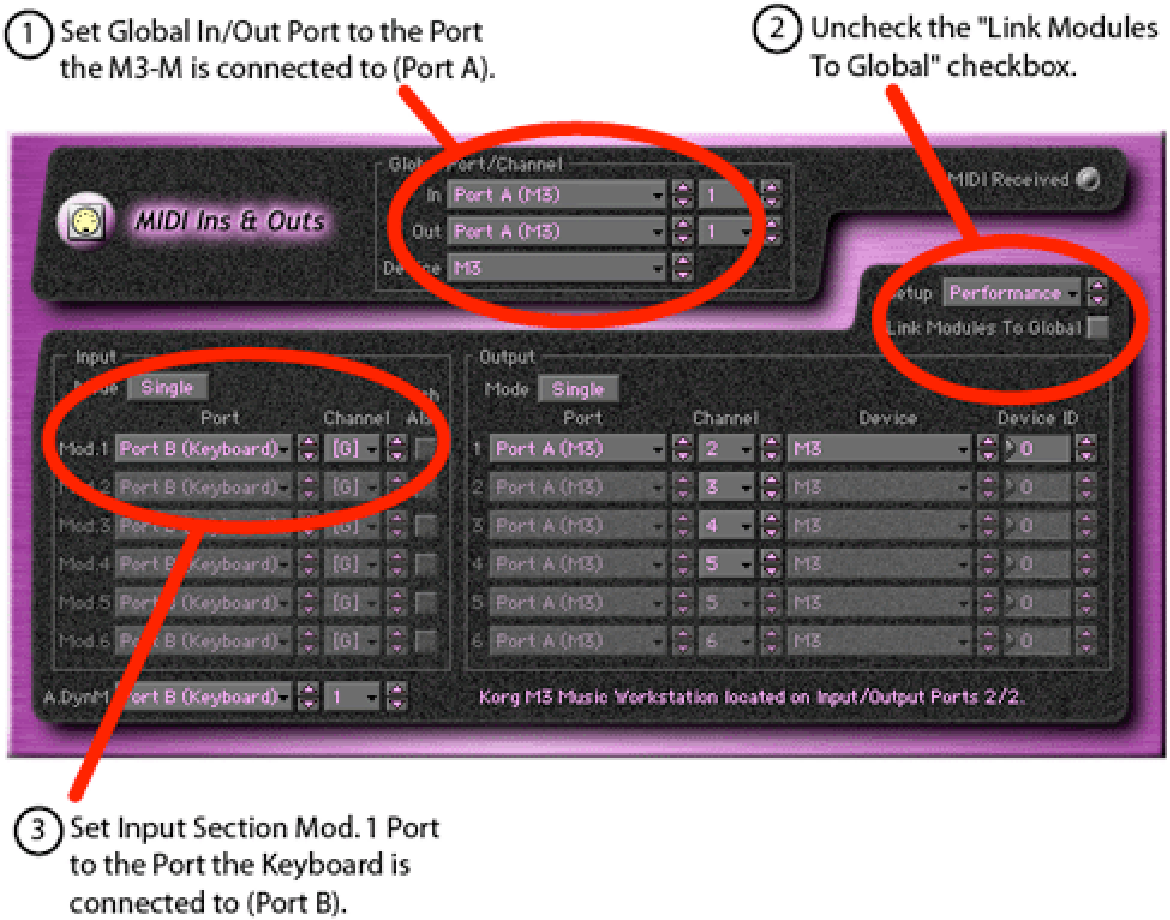
Diagram 1: Typical M3-M setup with 2-port MIDI Interface

In KARMA M3, open the MIDI Ins & Outs Editor from the "Windows Menu." Then setup according to the diagram and instructions below.

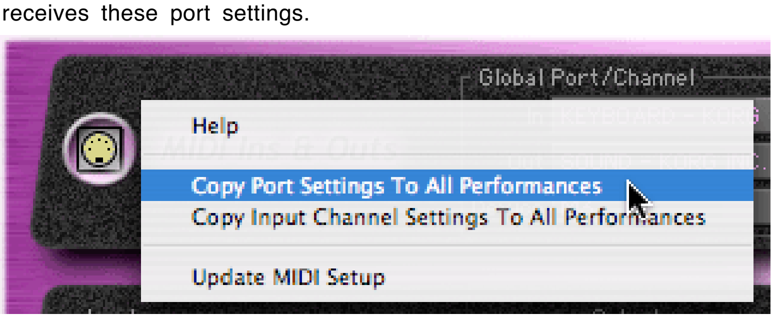
1. Set the Global In/Out Ports at the center top section to the Port that the M3-M is connected to (Port A in this example). Set the Global Channels to "1" and the Global Channel inside your M3 to "1." (You can change this later if you need to, but for now use Channel 1). Note: this will normally have already been accomplished by the MIDI Setup Assistant.

2. Next, uncheck the "Link Modules To Global" checkbox at the upper right.

3. Set the Module 1 Input Port (in the Input Section to the left) to the Port that the Keyboard is connected to (Port B in this example).



Note that this has only changed the settings for the current Performance (each Performance has its own MIDI Setup stored inside it). In order to propagate these changes to all Performances in the file, click on the round Menu Button in the upper left of the MIDI Ins & Outs Editor (shown below). A popup menu will appear, giving you access to the Help file and other utilities that apply to the current window. Choose “Copy Port Settings To All Performances” and every Program/Combi receives these port settings.



Finally, it is important that you save your changes to the KDF file using the “File > Save As…” command. You can give this file a new name and it will automatically be opened the next time you run KARMA M3.

Using the Korg USB MIDI Driver

The Korg USB MIDI Driver allows you to connect the computer directly to the USB-B port on the back of the M3, and send MIDI back and forth (on one wire). The driver is generally included on a CD with the product, or can be downloaded from Korg at www.korg.com/m3. Diagram 2 below shows one typical setup, using the USB Port on the M3. The external keyboard is shown using a MIDI interface, but it could also be using a USB Driver if the device’s manufacturer has supplied one.

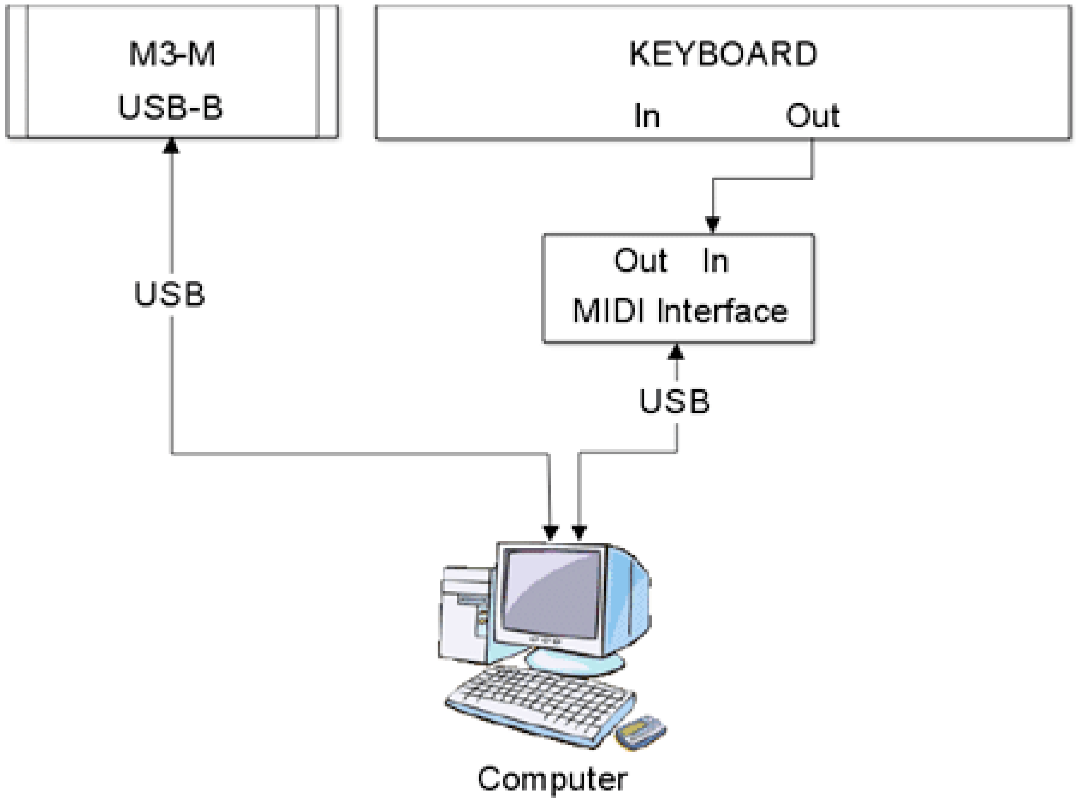


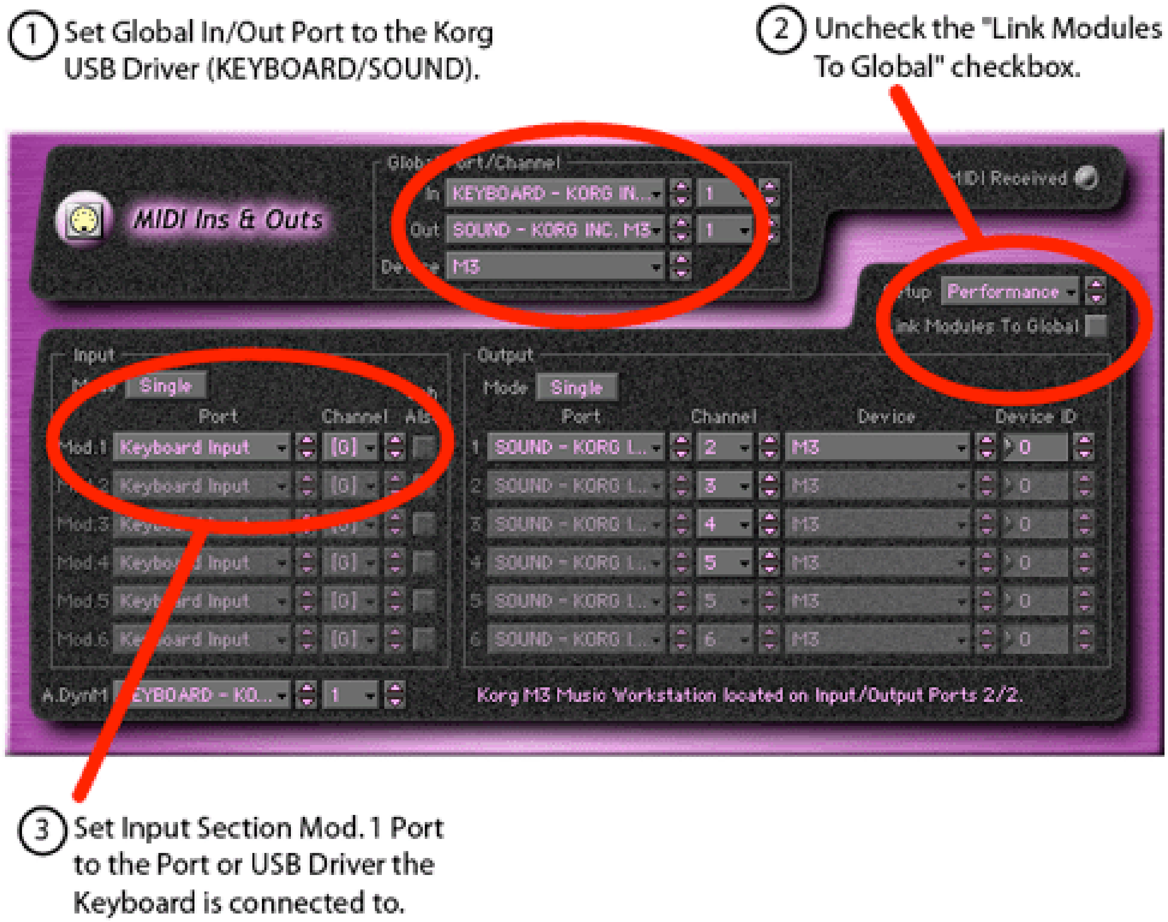
Diagram 1: Typical M3-M setup with Korg USB Driver

In KARMA M3, open the MIDI Ins & Outs Editor from the “Windows Menu.” Then setup according to the diagram and instructions below.

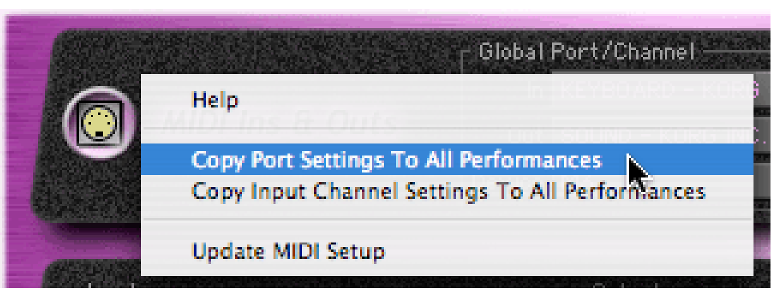
1. Set the Global In/Out Ports at the center top section to the Korg USB MIDI Driver (set the In Port to “KEYBOARD”, and the Out Port to “SOUND”. Set the Global Channels to “1” and the Global Channel inside your M3 to “1.” (You can change this later if you need to, but for now use Channel 1). Note: this will normally have already been accomplished by the MIDI Setup Assistant.

2. Next, uncheck the “Link Modules To Global” checkbox at the upper right.

3. Set the Module 1 Input Port (in the Input Section to the left) to the Port or USB Driver that the Keyboard is connected to.



Note that this has only changed the settings for the current Performance (each Performance has its own MIDI Setup stored inside it). In order to propagate these changes to all Performances in the file, click on the round Menu Button in the upper left of the MIDI Ins & Outs Editor (shown below). A popup menu will appear, giving you access to the Help file and other utilities that apply to the current window. Choose “Copy Port Settings To All Performances” and every Program/Combi receives these port settings.



Finally, it is important that you save your changes to the KDF file using the “File > Save As…” command. You can give this file a new name and it will automatically be opened the next time you run KARMA M3.

Using a Single-Port MIDI Interface (with MIDI Merger)

Diagram 3 below shows a third way of hooking up the computer, keyboard and M3-M. This type of setup is used with computer sound cards having only a single MIDI Input/Output. This requires using a “MIDI Merger,” which can be a simple 2x1 merger such as those available at http://www.midisolutions.com/prodmrg.htm or http://www.philrees.co.uk/products/mergebox.htm.

If you are using this type of setup, you will be able to easily configure KARMA M3 using the MIDI Setup Assistant. Simply follow the instructions in Step 2: Setting the Global In/Out Ports in the First Time Setup Chapter.

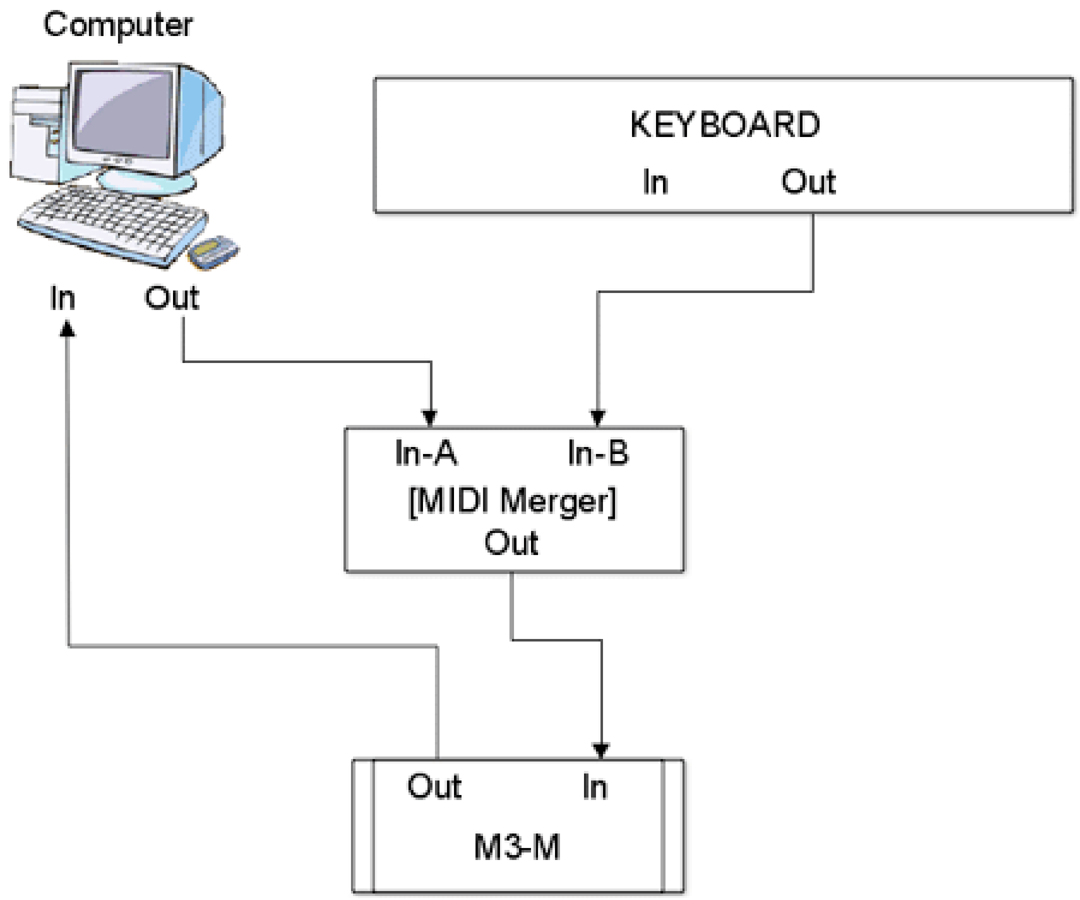


Diagram 2: Typical setup with Sound Card MIDI Interface and Merger