

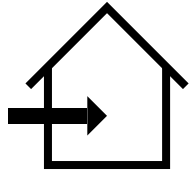
Kurzweil PC2R

Musician's Guide

KURZWEIL
Music Systems

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The symbol of a house with an arrow pointing inside is intended to alert the user that the product is to be used indoors only.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY & INSTALLATION INSTRUCTIONS

INSTRUCTIONS PERTAINING TO THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

WARNING: When using electric products, basic precautions should always be followed, including the following:

1. Read all of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. Do not use this product near water—for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a stand or cart that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
9. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
10. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
11. The product should be serviced by qualified service personnel when:
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 - B. Objects have fallen onto, or liquid has been spilled into the product;
 - C. The product has been exposed to rain;
 - D. The product does not appear to be operating normally or exhibits a marked change in performance;
 - E. The product has been dropped, or the enclosure damaged.
12. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.
13. **WARNING:** Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

RADIO AND TELEVISION INTERFERENCE

WARNING: Changes or modifications to this instrument not expressly approved by Young Chang could void your authority to operate the instrument.

IMPORTANT: When connecting this product to accessories and/or other equipment use only high quality shielded cables.

NOTE: This instrument has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the instrument is used in a commercial environment. This instrument generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this instrument in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

Changes and modifications not expressly approved by the manufacturer

or registrant of this instrument can void the user's authority to operate this instrument under Federal Communications Commission rules.

In order to maintain compliance with FCC regulations, shielded cables must be used with this instrument. Operation with unapproved equipment or unshielded cables is likely to result in harmful interference to radio and television reception.

NOTICE

This apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

AVIS

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Young Chang Distributors

Contact the nearest Young Chang office listed below to locate your local Young Chang/ Kurzweil representative.

Young Chang America, Inc.

P.O. Box 99995

Lakewood, WA 98499-0995

Tel: (253) 589-3200

Fax: (253) 984-0245

Young Chang Co., Ltd.

178-55 Gajwa-Dong

Seo-Ku, Inchon, Korea 404-714

Tel: 011-82-32-570-1380

Fax: 011-82-32-570-1218

Young Chang Akki Europe GmbH

Industriering 45

D-41751 Viersen

Germany

Tel: 011-49-2162-4491

Fax: 011-49-2162-41744

Young Chang America, Inc. (Canadian Division)

3650 Victoria Park Ave. Suite 105

Toronto, Ontario Canada M2H 3P7

Tel: (416) 492-9899

Fax: (416) 492-9299

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Young Chang Distributors	iii
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Chapter 1

Introduction

Thanks for buying your PC2R MIDI rack-mount performance synthesizer! It features 16 megabytes of renowned Kurzweil ROM sounds in a convenient one-space rack unit that can help you sound like a pro on stage or in the studio. We hope you like it.

The PC2R is perfect for adding 64 voices (or even 128 voices) to your performance controller—a Kurzweil PC2 or any other keyboard or alternative MIDI control source, or a computer with sequencing software. If you already own a PC2, you already know how to use the PC2R—although the programming parameters are organized a bit differently. If this is your first PC2 of any kind, you'll still find it easy to learn, and highly adaptable to your MIDI system.

Basic PC2R Features

The Sound

The PC2R offers 64-voice polyphony that's expandable to 128 voices. For maximum flexibility in connecting to sound systems and processing or recording equipment, the PC2R provides analog and digital audio outputs, which you can use simultaneously.

There are 256 factory programs, including Kurzweil's new stereo triple-strike Grand Piano, Rhodes and Wurlitzer electric pianos, stereo strings, brass, and Take 6 vocal samples—as well as our critically-acclaimed keyboard, guitar, bass, drums, and percussion sounds. There's also room for two Sound ROM Option cards, for up to 48 megabytes of ROM sounds.

For serious Hammond organ fans we offer KB3 Mode, which uses tone-wheel synthesis to provide superb recreations of the classic B-3 sound—including real-time drawbar control response and multi-effects settings that include all of the essential features of a Hammond-Leslie setup—percussion, key click, chorus and vibrato, tube amp distortion, and rotary speakers with programmable speed control that ramps up and down like the real thing. You can play KB3 programs by themselves or with other programs in setups.

Setups make the PC2R a versatile performance instrument. Each setup contains four zones that can cover any part of your controller's keyboard (or any part of the MIDI note range, if you're using an alternative control source). Zones can also overlap across the entire note range. You can program each zone independently—with different programs, physical controller assignments, and MIDI channels for each zone. Each zone in a setup can be programmed independently to have arpeggiation enabled or disabled.

Physical Controllers

You'll probably control the PC2R's sound from your MIDI source, using its Pitch and Mod Wheels and/or other physical controllers. You can also control the sound from the front panel of the PC2R itself, using the four programmable knobs to the left of the display. See page 3-8 for more information about these control knobs.

Effects

To complement the ROM sounds, there are over 150 multiple effects and 30 reverbs. You can apply the effects to programs or setups, and you can easily control the wet/dry mix in real time. You can also program the multi-effects and reverbs for even more control in performance and recording.

Options

Ask your Kurzweil dealer about the following PC2R options.

Sound ROM Cards

The PC2R has sockets for two ROM expansion cards that you can install yourself (the expansion kits come with complete instructions). Each expansion card adds 16 megabytes of ROM sounds to the 16 megabytes of onboard ROM.

Polyphony Expansion Board

There's a kit for expanding your PC2R's polyphony from 64 voices to 128 voices. You can install this kit yourself as well.

Unpacking your PC2R

Your PC2R carton should contain the following:

- PC2R Rack-Mount synthesizer module
- Power adapter
- Four adhesive-backed rubber feet
- This manual
- Warranty card

You might want to keep the PC2R carton and packing materials for easy shipping or transport.

Chapter 2

Startup

Setup

During operation, the PC2R must be either installed in a properly-ventilated MIDI rack, or resting on its four rubber feet on a sturdy, level surface. If not properly ventilated, the PC2R could overheat and malfunction.

Figure 2-1 shows the bottom panel of the PC2R and the recommended locations for the rubber feet. Peel the backing paper from each rubber foot and attach it as indicated.

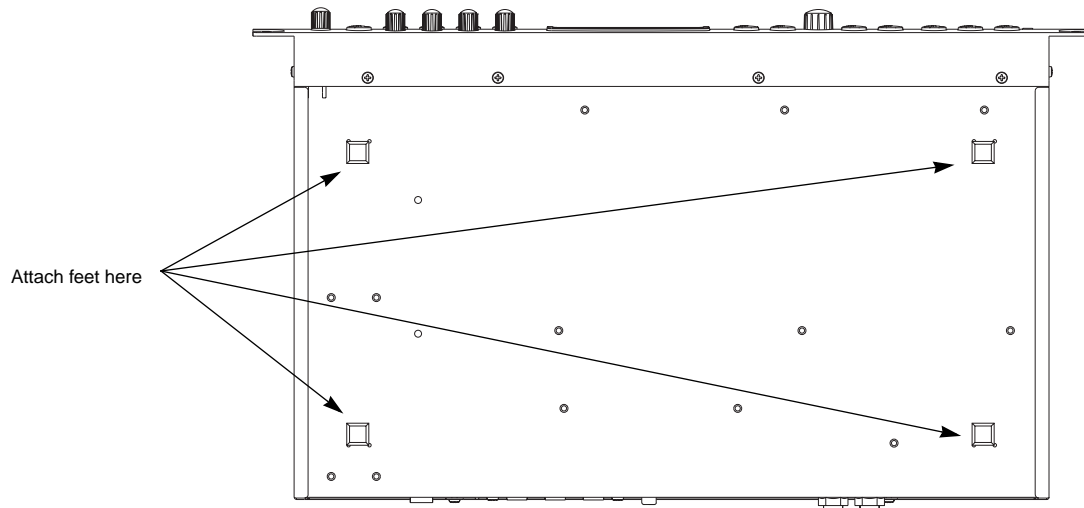


Figure 2-1 **Attaching rubber feet**

Basic Connections

Figure 2-2 shows the PC2R's rear panel, where you'll find the power, audio, and MIDI connections.



Figure 2-2 The PC2R's rear panel

Power

The PC2R has an external transformer/power supply with a standard electrical plug on one end, and a keyed four-pin plug that connects with the PC2R ("keyed" means that there's only one way to connect it). This is a specialized power supply, and is not interchangeable with other power supplies.



Caution: Use only the power supply that comes with your PC2R, or a replacement purchased from an authorized Kurzweil dealer. Using a different power supply can seriously damage your PC2R!

Connect the keyed plug to the AC In connector. Figure 2-3 shows the correct orientation of the plug.

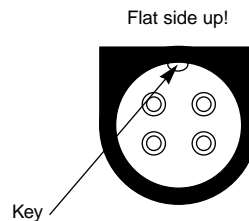


Figure 2-3 Proper orientation of plug

Place the power supply somewhere where it will stay dry and out of the way. We recommend keeping it on the floor. Never cover the power supply with anything; it needs adequate ventilation to prevent overheating.

Connect the plug at the other end of the power-supply cable into a standard power outlet. If you plan to take your PC2R to a location that uses a different voltage level, you'll need to get an additional power supply that's compatible with the local voltage.

The PC2R's Power Switch/Volume knob (in the top left corner of the front panel) will probably be in the off position when you plug the instrument in for the first time. If it happens to be on, we recommend that you turn it off before making any further connections.

Audio

The PC2R features balanced left and right analog audio outputs with 1/4-inch jacks. For best results, use balanced cables to connect to balanced, line-level inputs on your mixer or sound system.

It's important to use shielded, twisted-pair cables. The cables should each have 1/4-inch stereo (tip-ring-sleeve) plugs on one end to connect to the PC2R. The other end of each cable should have either 1/4-inch stereo plugs or XLR plugs. Cables of this type provide balanced operation, which greatly reduces many types of noise. Unbalanced cables or sound-system inputs won't give you quite the same audio quality.

For best performance, set the PC2R's Master Volume knob to its maximum when adjusting mixer or sound-system levels. Otherwise, if you adjust the PC2R's level by increasing the level of your sound system, you'll increase the noise level.

If you're using a monaural sound system or running the PC2R's audio into a single mixer channel, we recommend configuring the PC2R for mono output, in which case the PC2R sends the same one-channel signal to the left and right sides of both the analog and digital outputs. See page 4-31 for information about using mono audio output mode.

The PC2R has a headphone jack, which carries the same signal as the main outputs (that's true whether you're using stereo *or* mono output). The headphone jack accepts a standard 1/4-inch stereo plug, and is compatible with nearly all types of headphones. Plugging into the headphones jack does *not* mute the other audio outputs.

You can also use the headphone jack as an unbalanced stereo line-level output. Just connect a stereo cable from the headphone jack to a stereo input on your mixer or sound system. If you have only unbalanced inputs to your sound system, you'll get better audio quality using the headphone jack.

Digital Output

With the PC2R, you can take advantage of the growing number of digital recorders and mixers on the market. Connect a 75-Ohm coaxial cable from the PC2R's RCA Digital Out jack to the AES or S/PDIF input of the receiving device. You may need an RCA-to-XLR adapter to connect with the receiving device. If the receiving device receives only optical signals, you'll need a converter as well.

You can use the analog and digital audio outputs at the same time. There are five parameters in the Global menu that control the digital output configuration. You may want to edit some of these parameters, depending on how you're using the PC2R's digital output. In many (perhaps most) cases, however, the default values provide the best performance. For more information, see the descriptions of the digital audio output parameters, beginning on page 5-41.

MIDI

The PC2R accepts most standard (and several specialized) MIDI messages at its MIDI In port. It also has an Out port and a switchable Thru/Out port, so it can transmit certain MIDI messages—like program changes and system-exclusive (SysEx) information—as well as passing the MIDI information it receives on to other MIDI gear.

The typical MIDI configuration for the PC2R is to connect its MIDI In port to the MIDI Out port of a MIDI control source—a keyboard, an alternative controller like a wind or percussion controller, or a sequencer. The PC2R can receive information independently on all 16 MIDI channels.

Use the MIDI Out port and/or the programmable Thru/Out port if your PC2R is part of a more complex MIDI system.

Even if your MIDI source can transmit on only one MIDI channel, you can make it more powerful with the PC2R, which can remap incoming MIDI information to four different MIDI channels, each playing a different sound.

MIDI Configurations

You're likely to set up your PC2R in some variation of one of three basic configurations:

- As a MIDI slave only, for use as a sound module; connect the MIDI Out of your MIDI source to the PC2R's MIDI In.
- With a dedicated or computer-based sequencer or digital recording unit, for recording and multi-timbral (multi-channel) playback; connect the MIDI Out of your MIDI source to the MIDI In of your sequencer, and connect the MIDI Out of the sequencer to the MIDI In of the PC2R. In this case you'll probably want to use MIDI Receive mode instead of the performance modes (see page 3-3 for more information).
- As both a MIDI slave and MIDI master, enabling you to pass MIDI information through the PC2R and play additional multi-timbral sound sources; connect the MIDI Out of your MIDI source to the MIDI In of the PC2R, and connect the MIDI Out and/or MIDI Thru/Out to the MIDI In of one or more additional instruments.

MIDI Thru/Out

This jack has two functions: it can be a MIDI Out port, enabling you to send directly to two different slaves, or it can be a MIDI Thru port, in which case it passes along whatever MIDI information that the PC2R receives at its MIDI In port (but *not* the MIDI information that the PC2R itself generates). This makes it easy to include the PC2R in a chain of multiple MIDI devices, which is a common configuration when you're using a computer for sequencing.

There's a small switch labeled Thru/Out on the PC2R's rear panel (as you face the rear panel, the switch is to the left of the MIDI In port). You should be able to use a finger to flip the switch to the desired position. If that doesn't work, use a small pointed object—a ball-point pen works nicely.

Powering Up

When you've made all your connections, you're ready to turn on the PC2R. First, turn the Power/Volume knob all the way to the left, then push it until it clicks. All of the lights on the front panel flash, and the liquid-crystal display (LCD) shows a series of messages. The first time you power up the PC2R, the display looks like this:

```
Bank:0  Internal  1A  
000 Stereo Grand
```



Caution: Before playing, we recommend that you turn the Volume knob all the way down (to the left), and gradually raise the volume while playing from your MIDI source. This way you won't cause any pain or damage if there's too much gain in your sound system.

When you turn the power off, the PC2R remembers the performance mode you're in (or the corresponding editor). The next time you turn it on, it comes up in that mode.

Display (LCD)

The PC2R's 40-character liquid-crystal display tells you what's going on, whether you're playing or editing. Depending on your viewing angle (and possibly the temperature), you may need to adjust the contrast for better visibility. There's a small black knob at the far right of the front panel, which adjusts the LCD contrast so you can read the display easily in different lighting conditions.

LEDs

Most of the buttons on the PC2R's front panel contain light-emitting diodes that indicate the status of the features that the buttons control. They should all flash as the PC2R starts up.

Software Upgrades

The PC2R contains a type of reloadable computer memory called Flash ROM, which makes software upgrades fast and easy. You can learn about new features from your Kurzweil dealer, or from our website (www.kurzweilmusicsystems.com). See *Boot Block* on page A-4 for software-installation instructions.

Playing the Demo Sequences

The PC2R features two demonstration sequences that show what you can do with a PC2R and a MIDI sequencer. The demos were recorded using PC2R sounds and effects exclusively.

1. Press the **MIDI Receive** and **Global** buttons together (notice the word **Demo** on the front panel under these two buttons). The display shows **Select a demo...** and **(Cancel to exit)**. The LEDs in the **Main** and **Layer** buttons flash. If you decide not to play a demo, press **Cancel** to return to the previous mode.
2. Press **Main** to play the first demo, or press **Layer** to play the second. During playback, you can stop the demo by pressing **Cancel**.

Troubleshooting

No Text in Display

If no messages are displayed when you turn on the power on your PC2R and no LEDs flash, check the power adapter connections at the AC outlet and the PC2R Adapter In jack.

Low Battery

When you turn your PC2R off, a lithium battery protects the memory that the PC2R uses to store user-defined programs and setups, and other editing changes that you've saved. Every time you turn on your PC2R, it automatically checks the battery voltage. If it's getting low, you'll see a message like this before the PC2R finishes starting up:

```
Battery voltage is  
low (2.0 volts)
```

When you see this message, you should replace your battery immediately, to avoid losing your data. See page A-1 for instructions.

No Sound

If no sound comes from the audio or headphones outputs of your PC2R when you play your MIDI control source, check the following:

- The Volume knob might be set too low.
- Your MIDI connection may not be functioning: check that you have a MIDI cable connected from the MIDI Out port of your MIDI source to the MIDI In port of the PC2R. The LED in the **MIDI Receive** button blinks when the PC2R receives MIDI information.
- Your MIDI source may not be sending MIDI information.
- The channel on which you're sending MIDI may be inactive in the PC2R: Press the **MIDI Receive** button; use a cursor button or the Alpha Wheel to select the channel that your MIDI source is using; use a cursor button to select the Channel On/Off parameter; turn the Alpha Wheel to the right to change the value to **On**.
- There may be no current program or setup selected (the display shows **Not Found**).
- If your MIDI source has a continuous pedal, check the connection, and check the position of the pedal.
- You might be in MIDI Setups mode with all zones muted (inactive): press any or all of the four buttons labeled **Zone 1–Zone 4**, and the lights in the buttons will turn green.

You could also try the “Panic” feature, which sends an All Notes Off and All Controllers Off message to the PC2R. Press the **KB3** and **MIDI Setups** buttons at the same time.

Chapter 3

Playing Your PC2R

Changing Sounds

If your MIDI connections and channel assignments are OK, you should be able to change programs from your MIDI source—which is probably how most people do it. If you want to change programs from the PC2R however, you can. Just turn the Alpha Wheel in either direction to scroll through the list of available sounds.

There's more about selecting programs and setups beginning on page 3-13.

Demonstration Sequences

There are two demo sequences stored in ROM. These demos were recorded using PC2R sounds and effects exclusively. See page 2-5 to learn how to play the demo sequences.

Also In This Chapter

Chapter 3 shows you how to get the most out of your PC2R in performance. The overview introduces a few important features and concepts, while the remaining sections provide more detail.

- Overview 3-2
- The Front Panel 3-4
- Selecting Programs and Setups 3-13
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- Using the Controllers on Your MIDI Source 3-14
- Effects 3-15
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Overview

We'll start by explaining how the PC2R is organized. In this overview we'll discuss *modes*, *programs* and *setups* (and how they're organized), *objects*, *banks*, and something called the *Internal Setup*. (described on page 4-14) We'll also briefly mention EQ (equalization) and effects.

Modes

The PC2R has six modes. Each mode provides a different set of functions. You'll choose modes depending on what you want to do with the PC2R. There are two kinds of modes: performance modes for *playing* sounds, and edit modes for *programming* them.

The three main performance modes are Internal Voices mode, KB3 mode, and MIDI Setups mode. You'll use one of these modes whenever you're playing your PC2R. Each mode organizes sounds into *programs* or *setups*, which we'll describe below. Select a performance mode by pressing the corresponding button in the Modes region at the right side of the front panel.

Each of the performance modes has its own editor, where you can make changes to individual programs and setups.

There are also three special modes for programming effects, making channel-by-channel control assignments, and configuring the whole PC2R.

Performance Modes

Internal Voices (Programs)

Internal Voices mode lets you play one internal voice (program) at a time. A program consists of one or more sounds (like piano or strings), and the settings (parameters) that affect those sounds—for example, the highest and lowest notes for a particular sound. The PC2R starts in Internal Voices mode the first time you turn it on (after that, it starts in the performance mode you were in when you turned it off). See *Program Structure* on page 4-12 for more information about what's in a program.

KB3 Mode (KB3 Programs)

In KB3 mode, the PC2R uses a different synthesizer technique (tone wheel emulation) to reproduce the sound of classic tone-wheel organs (like the Hammond B-3). In most other respects, KB3 mode is like Internal Voices mode. See *KB3 Program Structure* on page 4-15 for details.

MIDI Setups Mode (Setups)

MIDI Setups mode is what makes the PC2R such a flexible MIDI rack unit. In this mode you play *setups* instead of programs. Each setup can play up to four different programs, each on its own MIDI channel. See *Setup Structure* on page 4-16 for more information.

Special Modes

While you're in Internal Voices mode, press **Main** to go to a special setup editor that controls the internal setup (see *Editing the Internal Setup* on page 4-32 for more information). The internal setup defines controller assignments and other characteristics for all the programs in Internal Voices mode. Pressing **Main** also enables you to create quick layers and splits, as described on page 3-18.

Effects Edit Mode

Press the **FX** button to get to Effects edit mode, where you can select and edit the effects associated with each program and setup. Effects edit mode is also accessible through the Program, KB3, and Setup Editors, but it's often more convenient to go directly to Effects edit mode: just press **FX**, and you're immediately looking at the first menu of effects parameters for the current program or setup.

There's an exception that occurs when the value of the FX Chg Mode parameter—in the Global menu—has a value of **Panel**. In this case, you can still get directly to Effects edit mode by pressing the **FX** button, but Effects edit mode controls the effects for the entire PC2R, not just the current program or setup.

MIDI Receive Mode

Use *MIDI Receive* mode to configure each MIDI channel independently (this is the mode to use when you're driving your PC2R from a multi-channel sequencer). You might think of this mode as a special performance mode for configuring individual MIDI channels—program assignment, volume and pan settings, effects routing, and the wet/dry mix of the effects.

Global Mode

Use *Global* mode to make changes that affect the entire PC2R—for example, tuning and transposition, MIDI clock source, program-change protocol, and more.

Objects

Throughout this manual, we'll occasionally mention *objects*, which may sound a bit technical, so we'll explain. *Object* is just a convenient name we use to refer to any chunk of information that the PC2R stores or processes. Programs and setups are objects, for example. So are effects. Many PC2R objects are invisible to you, but you'll be working regularly with the highest-level objects: programs, setups, and effects. When you're editing programs, there's a good chance you'll work with other important objects: keymaps. You might also use System Exclusive (SysEx) messages to store programs, setups or effects to an external device—or use a single SysEx message to store *all* the objects you've modified while editing.

EQ

Whichever mode you're in, the PC2R can apply three-band equalization (EQ) to the programs you're playing. Press the **Global** button to view the current EQ setting. See page 3-14 for more about changing the EQ settings.

Effects

There are over 150 preset effects, including reverbs, delays, choruses, flangers, phasers, tremolo, panners, envelope filters, distortions, rotary speakers, compressors, enhancers, waveform shapers, and multi-effect combinations. There are also 30 preset reverbs. See page 3-15 for more information about effects.

The Front Panel

The buttons and knobs on the PC2R's front panel control it during performances and when you're editing.

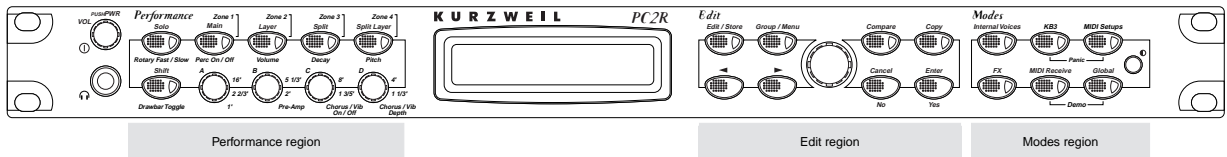


Figure 3-1 The PC2R's front panel

The two-line, 40-character display (LCD) lets you know what's going on, whether you're performing or editing. There's more about the display beginning on page 3-5.

In addition to the display, there are three main regions on the PC2R's front panel. These regions are labeled in orange at the top of the front panel:

- Performance** As the label suggests, you'll use the buttons and knobs in this region primarily when you're in one of the performance modes. They affect various functions, depending on the performance mode. This region also includes the Power/Volume knob and the Headphones jack.
- Edit** Use the buttons in this region (along with the Alpha Wheel) to select and edit parameters when you're programming your PC2R.
- Modes** There are two rows of buttons in this region. The buttons in the top row select the performance mode: **Internal Voices**, **KB3**, or **MIDI Setups**. The buttons in the bottom row select special modes for configuring your PC2R: the **FX** button selects parameters for selecting and routing effects; the **MIDI Receive** button selects parameters for determining how the PC2R responds to certain incoming MIDI messages; the **Global** button enters a menu of general parameters that affect the entire PC2R things like overall EQ and velocity sensitivity, among others). The Modes region also contains the adjustment knob for the display contrast; adjust the setting of this knob if you're having trouble reading the display.

For a more thorough discussion of the buttons and knobs in each region, see page 3-7.

Color-Coded Labeling

Most of the buttons to the right of the display are labeled in a single color: white. These buttons have similar or related functions in most performance and editing modes.

Most of the buttons and knobs in the Performance region, however, are labeled with more than one color, or with more than one function. These multi-purpose buttons and knobs do different things depending on which mode you're in. The color of the labeling in the Performance region corresponds to the color of the labeling of the mode-selection buttons: white corresponds to Internal Voices mode, orange corresponds to KB3 mode, and blue corresponds to MIDI Setups mode.

For example, there's a button labeled **Solo** in white, and **Rotary fast/Slow** in orange. In Internal Voices mode, this button (**Solo**) switches to AutoSplit mode and solos the current zone. When you're in KB3 mode, this button switches between fast and slow rotary effects for the current KB3 program. Any button with labeling in more than one color has different functions in different performance modes.

The Display (LCD)

The display looks quite different in each mode, so we'll show you examples of each.

Internal Voices Mode

When you turn on your PC2R, the display should look like this:

Bank ID	Bank name	Bank index (category and program)
Bank:0 000	Internal Stereo Grand	1A
Program ID and name		

This is Internal Voices mode, where the PC2R always starts when you turn it on (to get to Internal Voices mode from another mode, press the **Internal Voices** button). The top line gives you information about the bank, while the bottom line shows the ID and name of the current program.

KB3 Mode

Press the **KB3 Mode** button to enter KB3 mode; the display changes to something like this:

Bank ID	Program ID	Program name
4:000	P:88888885	All Out CU: Chor1
Drawbar type	Drawbar values (one digit for each harmonic wavelength)	Chorus/Vibrato setting

You'll find KB3-mode programs in banks with IDs 4 and 5. Unlike Internal-Voices programs and setups, they don't display a bank index.

KB3 programs use tone-wheel synthesis to produce sound. When you select a KB3 program (or a setup that contains one), the tone wheels start up and run constantly while the program is in use. This requires quite a bit of processing, and consequently has an effect on the polyphony available for other programs. KB3 programs use 44 of the PC2R's 64 available voices, so when you use a KB3 program in a setup, you have 20 voices of polyphony available for the remaining programs in the setup.

Because of the special processing requirements of KB3 programs, you can play only one KB3 program at a time (this is true in all performance modes). There's a parameter in the Global menu called KB3 MIDI Chan, which specifies which MIDI channel is available for playing KB3 programs. You can't play KB3 programs on any other channel. This is important to note if you're playing the PC2R from an external sequencer. In this case, make sure that the sequencer selects KB3 programs only on the KB3 channel; otherwise, the KB3 program won't play.

KB3 programs have nine adjustable drawbar settings, with harmonic wavelengths ranging from 1 to 16 feet. You can change the drawbar settings using the drawbar controls: Knobs **A–D** and the **Drawbar Toggle (Shift)** button. Here's how it works:

When the LED in the **Drawbar Toggle** button is green, Knobs **A–D** represent drawbars 1–4 (the four longest—or lowest-pitched—harmonic wavelengths). Press the **Drawbar Toggle** button, and its LED turns amber. The knobs then represent drawbars 5–8 (shorter, higher-pitched wavelengths). Press **Drawbar Toggle** again, and its LED turns red. Now Knob **A** controls Drawbar 9 (the shortest), and Knobs **B–D** control other KB3 features.

There are nine digits in the bottom line of the display that show the current drawbar values. From left to right, they correspond to drawbars 1–9. Moving one of the drawbars changes the corresponding drawbar values, and changes the nature of the organ sound.

Try it out. Make sure you're in KB3 mode, then move one of the knobs. You'll see one of the values on the bottom line change. By default, moving a knob all the way to the left is equivalent to pulling out the drawbar on a real organ. The corresponding value is 8. Conversely, turning the knob all the way to the right is equivalent to pushing the drawbar in, with a corresponding value of 0. If you change the value of the MIDI In parameter (in the Global menu) to **Normal** or **Merge**, you'll reverse the effect of the drawbar control knobs.

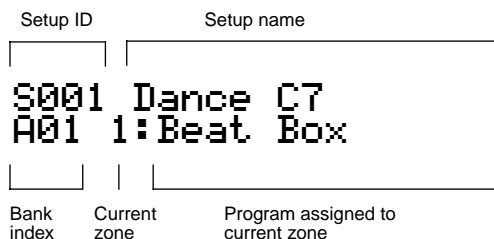
When the **Drawbar Toggle** LED is red, the **Pre-Amp** knob (Knob **B**) is at minimum when all the way to the left. The **Chorus/Vib On/Off** knob (Knob **C**) turns chorus or vibrato off when you turn it to the left past the halfway point, and on when you turn it to the right past the halfway point. The **Chorus/Vib Depth** knob (Knob **D**) scrolls through the chorus and vibrato settings as you turn the knob from left to right.

To the left of the drawbar values, there's a letter (either **P** or **L**) that indicates whether the program has preset or "live" drawbar values. A program with preset drawbars always starts with the same factory-set drawbar values when you select the program. Moving the drawbar controls changes their values temporarily, but the next time you select that program, the drawbars will once again be at their preset startup values. (You can edit the startup values for programs with preset drawbars; see *Changing Preset Drawbar Values* on page 4-32.)

A program with live drawbars starts with drawbar values that reflect the positions of the drawbar controls. Moving the drawbar controls changes their values further. Most of the KB3 programs have preset drawbars, although you can also edit them to have live drawbars.

MIDI Setups Mode

Press the **MIDI Setups** button to enter MIDI Setups mode, and the display looks like this:



The setup ID usually begins with **S** to indicate that you're playing a setup—although in Setups that have the AutoSplit feature turned on, the **S** is replaced by a caret (^). Notice that the bank index is a *letter* followed by a *numeral*, which is the opposite of the way the bank index looks in Internal Voices mode. This is convenient if you're controlling the PC2R from a PC2, because you can use the **Group** button on the PC2 to select a group of setups, then use the **Sound Select** buttons to select one of the 16 setups in that group.

The Performance Region

Depending on how you use your PC2R, you may control it more from your MIDI source than from the PC2R's front panel. Still, we've tried to organize the front panel so that everything you might need in a performance situation is easy to reach, and separate from the programming functions.

There are two rows of buttons and knobs in the Performance region. Their functions vary depending on your performance mode.

Solo

In either Internal Voices mode or MIDI Setups mode, pressing this button turns on the solo feature (if you're in Internal Voices mode, the PC2R switches to AutoSplit mode—a special performance configuration of MIDI Setups mode.). When the **Solo** feature is on, (that is, when its LED is lit), pressing one of the **Zone** buttons *solos* that zone, so you hear that zone only. See page 3-21 for more about muting and soloing.

In KB3 mode, this button switches between fast and slow rotary effects (if any) for the current program.

Main

In Internal Voices mode, this button takes you to AutoSplit mode—a special performance and editing configuration of MIDI Setups mode. In this case, the **Zone 2–Zone 4** buttons add splits or layers, as indicated (see page 3-18 for more information about layering and splitting).

In KB3 mode, this button turns the percussion effect on or off for the current program.

In MIDI Setups mode, this button selects Zone 1 for viewing or editing. Press it again to mute/unmute the zone.

Layer

In Internal Voices mode, this button switches the PC2R into AutoSplit mode, and adds a layer.

In KB3 mode, this button switches between low and high volume for the percussion effect (if any) for the current program.

In MIDI Setups mode, this button selects Zone 2 for viewing or editing.

Split

In Internal Voices mode, this button switches the PC2R into AutoSplit mode, and adds a new sound below a preset split point.

In KB3 mode, this button switches between fast and slow decay for the percussion effect (if any) for the current program.

In MIDI Setups mode, this button selects Zone 3 for viewing or editing.

Split Layer

In Internal Voices mode, this button switches the PC2R into AutoSplit mode, and adds a layer to the sound below the split point.

In KB3 mode, this button switches between high and low pitch for the percussion effect (if any) for the current program.

In MIDI Setups mode, this button selects Zone 4 for viewing or editing.

In any performance mode, pressing **Split** and **Split Layer** together is an editing shortcut that displays the AutoSplit Key parameter. You can then use the Alpha Wheel to change the AutoSplit key (or hold down the **Enter** button and play a note on your MIDI source). Press **Cancel** to return to your performance mode.

Shift

The **Shift** button controls the functions of Knobs **A–D** (described below). Each time you press **Shift**, its LED changes color—from green to amber to red. Each of these states causes Knobs **A–D** to have a different set of functions. The default functions of the knobs depend on your performance mode (they do different things in each mode). You can program them for different functions as well.

Knobs A–D

In Internal Voices mode and MIDI Setups mode, Knobs **A–D** control various program characteristics, as defined by a series of parameters in the Controllers menu in the Setup Editor. Remember that controller assignments in Internal Voices mode are defined by the internal setup, which you can edit in AutoSplit mode (which is a subset of the Setup Editor)—while in Internal Voices mode, press **Main**; hold **Global** and move a knob to select its Ctrl Num parameter; change its value; press **Store**; press the **Internal Voices** button at the Save prompt. See page 3-23.

The following table shows the parameters that correspond to Knobs **A–D**, for each state of the **Shift** LED when you're in Internal Voices mode or MIDI Setups mode. When the parameter name includes the word "Knob," the corresponding knob functions as a continuous controller. When the parameter name includes the word "Switch," the corresponding knob functions as a switch controller.

	Knob A	Knob B	Knob C	Knob D
Green	Green Knob A	Green Knob B	Green Knob C	Green Knob D
Amber	Amber Swch A	Amber Swch B	Amber Swch C	Amber Swch D
Red	Red Switch A	Red Knob B	Red Knob C	Red Knob D

In KB3 mode, Knobs **A–D** adjust drawbar lengths, pre-amp settings, and chorus/vibrato settings for KB3 programs. You'll notice that these knobs each have three rows of labeling in orange. Each row of labeling corresponds to one of the states of the **Drawbar Toggle** LED. The default assignments for the knobs are as follows:

	Knob A	Knob B	Knob C	Knob D
Green	Drawbar 1 (16')	Drawbar 2 (5 1/3')	Drawbar 3 (8')	Drawbar 4 (4')
Amber	Drawbar 5 (2 2/3')	Drawbar 6 (2')	Drawbar 7 (1 3/5')	Drawbar 8 (1 1/3')
Red	Drawbar 9 (1')	Pre-amp level	Chorus/Vibrato On/Off	Chorus/Vibrato Depth

If your MIDI source has programmable sliders or other physical controllers, you can program those controllers to work the way Knobs **A–D** work. See page B-12 for a list of the MIDI Controller messages that affect PC2R features.

The Edit Region

There are eight buttons, and a dial called the Alpha Wheel, in the Edit region. Most of the buttons you'll need for programming (editing) your PC2R are in this region. (We'll discuss editing thoroughly in Chapter 4.)

Four of the buttons in the Edit region have dual labels. For readability, when we refer to these buttons, we'll describe them according to the situation, instead of using the full name. For example, to enter an edit mode, we'll instruct you to press **Edit** (not **Edit/Store**).

Edit/Store

Press the **Edit** button to enter the edit mode corresponding to your current performance mode. This is where you make changes to the parameters that define programs, setups, and effects. See Chapter 4 for specifics about programming your PC2R.

Once you're in an edit mode, this button becomes the **Store** button. Press **Store** to bring up a Save dialog, then either press **Yes** to save the current object, or use the cursor buttons to select another related function. See *Naming and Storing* on page 4-3 for more information.

Group/Menu

In all three performance modes, this button is the **Group** button, and selects categories of programs or setups. (See page 3-13 for more information about using the Group button to select programs and setups by category.)

To select a program or setup this way, press the **Group** button to display a category of programs or setups. Use the Alpha Wheel or cursor buttons to scroll through the categories. Press **Enter** to select the first program or setup in that category.

If you're in Internal Voices mode or KB3 mode, you can scroll all the way through the Internal Voices categories and into the KB3 categories (and vice versa). The PC2R automatically switches to the corresponding performance mode. Setups are separate, however; you can't switch performance modes by scrolling through setup categories.

When you're editing programs or setups, press **Menu** to select the first menu of programming parameters in the current edit mode. Use the cursor buttons to view the available menus, then press **Enter** to view the parameters in the current menu. When you're viewing parameters, press **Menu** again to return to the list of menus.

Cursor Buttons

These are the **Left** and **Right** arrow buttons under the **Edit/Store** and **Group/Menu** buttons. We call them cursor buttons because they control the *cursor*, which is a bar that appears under one of the characters in the display. The position of the cursor indicates what's selected for changing or editing.

The following table shows what happens in each performance mode when you press one of the cursor buttons.

<i>Mode</i>	<i>Function</i>
Internal Voices	Selects bank ID parameter or program ID parameter
KB3	Selects bank ID parameter, program ID parameter, or chorus/vibrato setting parameter
MIDI Setups	None

You'll also use the cursor buttons when editing, to select what you want to edit. See *Basic Editing Concepts* on page 4-1 for more about the cursor buttons.

Compare

When you're editing, the **Compare** button lets you listen to the effect of a change, then to check the original. See page 4-8 for details.

Copy

When you're editing setups, you can copy a zone and paste it into another zone, either in the same setup, or in a different setup.

Cancel/No

Use this button to exit from edit modes, and to answer "No" to prompts in the display (like **Save Voice 1?**).

Enter/Yes

Use this button to enter program or setup categories in performance modes, to get into menus while editing, and to answer "Yes" to prompts in the display.

The Modes Region

The six buttons in the Modes region take you to various performance and editing modes.

Internal Voices

Press this button to get to Internal Voices mode from any performance or editing mode. Internal Voices is the mode to use for playing Internal-Voice programs.

KB3

Press this button to get to KB3 mode from any performance or editing mode. KB3 mode offers several programs that emulate the classic B-3 organ.

MIDI Setups

Press this button to get to MIDI Setups mode from any performance or editing mode. Use MIDI Setups mode when you want to play programs on up to four different MIDI channels.

FX

The FX button takes you to the FX Routing menu in the edit mode that corresponds to your current performance mode. For example, if you're in MIDI Setups mode, pressing FX takes you to the Setup Editor (the Zone Parameters menu).

From the FX Routing menu, you can assign a different effect to the current program or setup, and you can edit the current effect. See page 4-28 for more information about editing effects.

MIDI Receive

This button takes you to MIDI Receive mode, where you can configure how the PC2R responds to incoming MIDI information. The first time you enter MIDI Receive mode after powering up, the display shows Channel 1, because the PC2R resets the MIDI Receive channel each time you shut down. Until you shut down again, the PC2R tracks which channel you're viewing even after you've left MIDI Receive mode, so the next time you enter MIDI Receive mode, the display shows the channel you were most recently viewing.

Use the cursor buttons to select the parameters for each channel. You can scroll beyond the parameters for a given channel and move to the parameters for the next higher or lower channel. A faster way to jump to a different channel is to select the Channel parameter (that is, to move the cursor under the channel number), then use the Alpha Wheel to change channels. You can press either **MIDI Receive** or **Cancel** to jump immediately to the Channel parameter.

Another navigation short cut is to press both cursor buttons at the same time. When you do this, you jump to the corresponding parameter for the next higher channel (or back to Channel 1 if you're looking at channel 16).

You can set the following parameters for each channel. See page 5-33 for more information about using MIDI Receive mode.

- Channel On/Off
- Program
- Volume
- Pan
- Effects routing
- Wet/Dry mix from output of FX-A to input of FX-B
- Wet/Dry mix to input of FX-A
- Wet/Dry mix to input of FX-B

Global

The **Global** button takes you to a list of parameters and functions affecting the entire PC2R. There’s a description of each global parameter/function beginning on page 5-35.

Demo

Press **MIDI Receive** and **Global** together to enter a special demo mode. Then press **Main** or **Layer** (in the Performance region) to play a demo sequence. Press **Cancel** to stop playback, or to exit from demo mode.

Panic

Press **KB3** and **MIDI Setups** together for the “Panic” function. This sends All Notes Off messages and All Controllers Off messages on all MIDI channels—both to the PC2R’s sound engine and to its MIDI Out port.

Program and Setup Organization

The PC2R’s programs and setups are arranged in banks; each bank can contain 128 programs or setups. The PC2R has a total of eleven banks, as shown in the following table:

<i>Mode</i>	<i>Bank ID</i>	<i>Bank Name</i>	<i>Bank Contents</i>	<i>Comment</i>
Internal Voices	0	Internal	Programs 0–127	Factory programs
	1	User	Empty	Can store 128 user-defined programs numbered 0–127
	2	Exp1	Empty	Reserved for internal programs contained in future expansion block
	3	Exp2	Empty	Reserved for internal programs contained in future expansion block
	6	Int2	Programs 0–127	Factory programs
KB3	4	Internal	KB3 programs 0–120	Total of 16 factory KB3 programs, numbered in increments of 8
	5	User	Empty	Can store 128 user-defined KB3 programs numbered 0–127
MIDI Setups	0	Internal	Setups 0–32 and 125–128	Factory setups
	1	User	Empty	Can store 128 user-defined setups numbered 129–256
	2	Exp1	Empty	Reserved for factory setups contained in future expansion block
	3	Exp2	Empty	Reserved for factory setups contained in future expansion block

Selecting Programs and Setups

Select a performance mode by pressing **Internal Voices**, **KB3**, or **MIDI Setups**.

Once you're in a performance mode, you can select the programs or setups either by turning the Alpha Wheel, or by sending program change messages from your MIDI source. If you're scrolling with the Alpha Wheel, you'll notice that you can scroll from the Internal Voices programs into the KB3 programs, and vice versa. The LEDs in the mode-selection buttons change accordingly. You can't scroll out of MIDI Setups mode, however. If you scroll to the end of the list of setups, the list wraps around to the other end.

You can also select programs and setups by category, using the **Group** button. In Internal Voices mode, the factory programs are categorized into groups of eight related programs. For example, the group Piano 1 contains eight piano programs (1A–1H). In KB3 mode, they're categorized by bank—either Internal or User. In MIDI Setups mode, they're categorized into groups of 16 setups.

In Internal Voices mode, you'll see a bank index at the top right of the display (for example, 1A, which is the bank index for Program 000. The bank index consists of a numeral (from 1–16, representing the program group) and a letter (from A–H, representing the program within the group). That's 16 groups of eight programs, which accounts for the 128 programs in each Internal Voices bank.

To select a program by category, press the **Group** button to view the list of program categories. Use the cursor buttons or Alpha Wheel to scroll through the list of categories. Press **Enter** to select the first program in the current category.

There are 35 categories: 32 for factory Internal Voices programs; one for user-defined Internal Voices programs; one for factory KB3 programs; one for user-defined KB3 programs. All the Internal Voices programs and KB3 programs are accessible this way; you can scroll back and forth between the Internal Voices banks and the KB3 banks.

In KB3 mode, the programs themselves aren't organized into categories, so there's no bank index shown in the display. Still, you can use the **Group** button to select the Internal bank of KB3 programs or the User bank of KB3 programs (press **Group**, then use the Alpha Wheel or cursor buttons to select a bank, then press **Enter**).

Note that if the value of the Wrap/Skip parameter (in the Global menu) is set to **On**, you can't enter the User bank of KB3 programs unless you've stored at least one user-defined KB3 program. When Wrap/Skip is **On**, if the User KB3 bank is empty when you try to enter it, the PC2R skips to the next available program, which happens to be Program 000 in Bank 6. (This isn't true in the case of the User Internal Voices bank, since it actually contains a factory program.)

In MIDI Setups mode, there's a bank index in the lower left of the display. Setups are categorized into eight groups of 16 setups. The bank index consists of a letter (A–H, representing the setup group), and a numeral (1–16, representing the setup within the group). That's eight groups of 16 setups, accounting for the 128 setups in each MIDI Setups bank.

To select a setup by category, press the **Group** button to view the list of setup categories. Use the Alpha Wheel or cursor buttons to scroll through the list of categories. Press **Enter** to select the first setup in the current category. By storing related setups in groups of 16 (001–016, 017–032, etc.), you can make it easier to get to the setups you want. For example, you could use groups to arrange setups according to your playlist for a gig—a group or two for each set.

When you're in Internal Voices mode or KB3 mode, you can select not only programs, but program banks. Press the **Left** cursor button to select the bank ID parameter, then turn the Alpha Wheel to select a different bank.

EQ

The PC2R comes with its own three-band equalization (EQ), or tone controls. The EQ is global, which means that there is only one setting that is used all of the time regardless of which program or setup you're playing. Its purpose is to adjust the PC2R for individual listening situations.

Changing the EQ

1. Press the **Global** button, and the EQ parameters appear in the display (the EQ settings are at the top of the list of global parameters):

```
EQ:  Low   Mid   High  
      +0dB +0dB +0dB
```

Each band starts at **0 dB** when you turn on your PC2R (this is called *flat* equalization).

2. Use the cursor buttons to position the cursor under the frequency range that you want to adjust.
3. Turn the Alpha Wheel to adjust the level from -12 dB to +12 dB.
4. Press **Cancel** to return to the previous mode. The EQ settings remain in place until you change them again or turn off the PC2R.

Using the Controllers on Your MIDI Source

You can use the four knobs in the Performance region to control twelve different functions (three groups of four functions, depending in the color of the **Shift** LED). You can also use the physical controllers on your MIDI source for the same purpose. The MIDI Controller messages that the PC2R receives affect both the PC2R, and any MIDI instruments connected to the PC2R's MIDI Out or MIDI Thru ports. The MIDI Controller messages that the PC2R remaps and transmits via MIDI vary depending on your performance mode.

In every mode but MIDI Receive mode, incoming MIDI information usually gets remapped and then transmitted to four zones—each of which can use a different MIDI channel (the exception occurs when the MIDI In parameter in the Global menu has a value of **Normal**, in which case incoming MIDI information is processed as it's received.)

Because of this remapping, you can make any physical controller on your MIDI source behave like any of the knobs on the PC2R. To do this, program the controller on your MIDI source so that it sends the MIDI Controller message that corresponds to the knob on the PC2R (the table on page B-11 lists the MIDI Controller messages that correspond to the knobs). Here's an example.

When you move Red Knob **B** on the PC2R (that is, when the **Shift** LED is red and you move Knob **B**), each zone of the current setup generates a MIDI Controller message (or not), depending on the value of the Ctrl Num parameter for Red Knob **B** in each setup zone. In Setup **001**, for example, Zones 1 and 2 send no message, and Zones 3 and 4 send MIDI 1, which controls vibrato depth in those zones.

Chances are that when you move the Mod Wheel on your MIDI source, you'll change vibrato depth in Zones 3 and 4 just as if you'd moved Red Knob **B** on the PC2R. That's because most MIDI instruments are programmed so that the Mod Wheel sends MIDI 1. (If you were in Internal Voices mode or KB3 mode, moving the Mod Wheel on your MIDI source would affect

the vibrato depth in the current program only if the PC2R were using the same MIDI channel as your MIDI source—and if the program responded to MIDI 1.)

Suppose you want to use a different physical controller on your MIDI source to affect the vibrato depth in Setup **001**. Program that controller to send MIDI 1, and it will affect vibrato depth just as the Mod Wheel does.

On the other hand, suppose you want to use the Mod Wheel (or any controller sending MIDI 1) on your MIDI source to control something other than vibrato depth in Setup **001**. To do this, go to the Ctrl Num parameter for Red Knob **B** in each zone (because Red Knob **B** normally responds to an incoming MIDI 1 message). Set the value of the Ctrl Num parameter to the MIDI Controller message you want to send (**10 Pan**, for example). Now moving the Mod Wheel on your MIDI source changes the pan position in every zone that has a value of **10** for the Red Knob **B** Ctrl Num parameter. That's because the PC2R takes the incoming MIDI 1 message (on any channel) and remaps it to MIDI 10 before sending it to the PC2R's sound engine.

Only those MIDI Controller messages listed in the table on page B-11 get remapped in this way. Most of the remaining MIDI messages get sent to each zone in the setup without getting remapped to the PC2R's internal controller messages. The following MIDI messages are ignored completely while remapping is on: 54, 55, 56, 33, 34, 36, 43, 38, 96, 97, 98, 99, 100, and 101.

Keep in mind that this is the default behavior. In other words, the default value of the MIDI In parameter is **Auto**, which means that the PC2R automatically remaps incoming MIDI messages when you're in any mode but MIDI Receive mode. If you don't want the remapping to occur, set the value of MIDI In to **Normal** or **Merge**.)

Effects

The PC2R's digital multi-effects consist of two independent effects blocks called FX-A and FX-B. The current program or setup determines whether the signal from the PC2R's sound engine goes through either effect block (every program and every setup zone has a parameter called Routing that determines whether the signal goes through FX-A, FX-B, or both).

You can use most of the PC2R's effects on FX-A. FX-B is primarily for reverbs (these reverbs are also available for FX-A).

Controlling Effects

By default, most programs and setups use at least one of the effects blocks (the FX LED is lit), which means that you hear some kind of effect along with the sounds. You can vary the effects in real time by changing the wet/dry mix of FX-A and FX-B independently using MIDI Controller messages. (When you're in Internal Voices mode, you can use Green Knobs **A** and **B** to control the wet/dry mixes for most programs.)

Send the following MIDI Controller messages to the PC2R to change the wet/dry mix. A value of 0 for one of these messages sets the mix level to fully dry (0%); a value of 127 makes the mix fully wet (100%).

MIDI 91	FX-B
MIDI 92	FX-A to B
MIDI 93	FX-A

You can also change the wet/dry mix from the PC2R's front panel, using the FX Wet/Dry parameters. See *Wet/Dry Mix* on page 3-17 for more information.

Send a MIDI Controller message of 94 to change effects routing. A value of 0–31 switches the routing to None; a value of 32–63 switches to FX-A; a value of 64–95 switches to FX-B; a value of 96–127 switches to Both.

Selecting Effects

1. Press the **FX** button. You'll see the FX Routing menu in the bottom line of the display (unless you entered FX mode from MIDI Receive mode, in which case there's no FX Routing menu).
2. Press the **Right** cursor button. The FXA Select menu appears. (If you entered FX mode from MIDI Receive mode, the FXA Select menu appears right away, and you don't have to press the **Right** cursor button.)
3. Press **Enter** to enter the menu (or first press the **Right** cursor button again to get to the FXB Select menu). The bottom line of the display shows the ID and name of the current effect. The top line shows the name of the current menu, as well as the editing mode.
4. Use the Alpha Wheel to select a different effect.
5. Save your changes (see *Naming and Storing* on page 4-3), unless you want the effect to revert to its original state the next time you select the program or setup.

Changing the Effects Routing

The Routing parameter determines whether the sound of a program or setup gets sent to one or both of the effects blocks. Think of the Routing parameter as an effect send, routing the audio signal from the sound engine to the effects processor (or bypassing it).

When you select a program or setup, the LED in the **FX** button indicates the effects routing, as follows:

Off	None
Green	FX-A
Red	FX-B
Amber	Both

One way to change the effect you hear with a program or setup is to change the effects routing so that you hear a different effect, a combination of effects, or no effect at all.

1. Press the **FX** button. You'll see the FX Routing menu in the bottom line of the display (unless you entered FX mode from MIDI Receive mode, in which case there's no FX Routing menu, because effects routing is part of the MIDI Receive menu).
2. Press **Enter** to enter the FX Routing menu. You'll see the Routing parameter.
3. Use the Alpha Wheel to change the value of the Routing parameter.
4. If you're changing effects routings for a setup, press one of the zone buttons to select a different zone, and change the effects routing for that zone as well, if desired.
5. Save your changes (see *Naming and Storing* on page 4-3), unless you want the routing to revert to its original state the next time you select the program or setup.

Bypassing Effects

Suppose you're in the recording studio, and the engineers are using their own external effects processor, or perhaps a global reverb setting for all channels. You want to silence the PC2R's effects and/or reverb temporarily (without making permanent changes to the programs or setups you're playing during recording. You can quickly bypass either or both of the effects blocks globally, using the FXA Bypass and FXB Bypass parameters in the FX Routing menu.

1. In any performance mode, press **FX**, which takes you to the FX Routing menu.
2. Press **Enter**, which displays the Routing parameter for the current program or current setup zone.
3. Press the **Right** cursor button to display the FXA Bypass parameter.
4. Change the value to **On**.
5. Repeat Steps 3 and 4, if desired, for the FXB Bypass parameter.
6. Press **Cancel** twice to return to the previous performance mode.

Bypassing FX-A or FX-B in any program or zone bypasses the corresponding effect block in *all* programs or zones. When you no longer need to bypass effects, go to the FXA Bypass or FXB Bypass parameter in *any* program or zone, and set its value to **Off**. This removes the bypass in *all* programs and zones.

Wet/Dry Mix

Most of the PC2R's factory programs and setups route the audio signal into FX-A and not directly into FX-B. In this case, the PC2R automatically routes the signal from the output of FX-A into FX-B before it goes to the audio outputs. This means that there are three wet/dry variables; therefore there are three Wet/Dry parameters:

- | | |
|------------|---|
| A | Controls how much of FX-A's effect gets applied to the dry signal coming from the sound engine |
| B | Controls how much of FX-B's effect gets applied to the dry signal coming from the sound engine. |
| Global A>B | Controls how much of the processed signal coming from FX-A goes to FX-B and gets FX-B's effect applied to it. |

In Internal Voices mode, the settings for these three parameters affect every layer in the program. In MIDI Setups mode, GlobalA>B affects every zone in the setup (and every MIDI channel), but the settings for A and B are independent in each zone, and on each MIDI channel.

The specialized double-block KB3 effects use a different processing structure; only FX-A is available when you use these effects. Consequently, both B and Global A>B are inapplicable.



Note: You can use the KB3 effects for Internal-Voices programs and setups, not just for KB3 programs. If you use a KB3 effect in one of the zones in a setup (or on one of its MIDI channels), you might want to route the setup's other zones (or channels) to FX-B. This bypasses the KB3 effect for those zones or channels, since the send to FX-B is inactive. It depends on whether you want the KB3 effect applied to all the programs in the setup.

Changing the Wet/Dry Mix From the Front Panel

1. Press FX, then press the **Right** cursor button until you see the FX Wet/Dry menu.
2. Press Enter. The display should look something like this:

```
Z:1 Global A>B:22 %  
A: 64 % B:(36 %)
```

The first character is L (layer) if you're coming from Internal Voices mode or KB3 mode, or Z (zone) if you're coming from MIDI Setups mode. The numeral following the L or Z indicates the current layer or zone. Use the zone buttons to change the current zone or layer.



Note: Since the L indicates that you're changing the wet/dry mix for a program, the zone buttons don't do anything significant, since any change you make to any of the parameters affects every layer in the program, regardless of which layer is current. The only reason the L is there is to remind you that you're adjusting a program and not a setup.

Note the parentheses around the value for B. This indicates that the current zone is not routed to FX-B. In this case, editing the value of B won't change the wet/dry mix for FX-B. If you routed the zone to FX-B, the parentheses would disappear.

In performance modes, you can change the wet/dry mix for both FX-A and FX-B without going to the Wet/Dry parameters. When an effect block is in use, the corresponding knob (Green Knob A for FX-A and Green Knob B for FX-B) adjusts the wet/dry mix. This is a performance feature only; if you want to change the wet/dry mixes permanently, you'll need to use the Wet/Dry parameters, then save either the resulting effect or the entire program or setup.

There's a diagram of the PC2R's audio signal routing on page B-9.

Editing Effects

Each effect has up to four parameters that you can edit to modify the effect. See *Editing Effects Parameters* on page 4-28 for more information.

Layering and Splitting

In Internal Voices mode, you can play one program at a time. That's because Internal Voices mode is based on the internal setup, which contains a single zone (as described on page 4-14). If you wanted to create a multi-zone setup with different programs in each zone, you could go to MIDI Setups mode, then start programming (editing): assigning MIDI channels and programs to zones, making physical controller assignments (for front-panel controllers or programmable physical controllers on your MIDI source), and so on. This gives you a great deal of control and flexibility, but it takes a bit of time.

If you're on stage and you suddenly decide that your solo needs two sounds instead of one, you don't want to take the time to edit a setup; you just want to add another sound as quickly as possible. Fortunately, the PC2R makes it easy to do this kind of thing without doing any actual editing.

Layering is playing two sounds on the same part of the keyboard. Splitting is playing two sounds on different parts of the keyboard. Using the PC2R's AutoSplit feature, you can create a layer or a split by pressing a single button. With a few more button presses, you can change the

sounds in the layers or splits, and create combinations of layers and splits. We'll show you how to do it, then we'll explain what's going on.

Using AutoSplit for Quick Layers and Splits

We're going to start with piano, layer it with strings, add a split with bass, then layer the bass with drums.

1. Press **Internal Voices**, then turn the Alpha wheel until you see Program **000 Stereo Grand**. (Or press **Internal Voices** then press **Group**, then press the **Left** cursor button or turn the Alpha Wheel until you see **Piano 1**, then press **Enter**.)
2. Press **Layer** (in the Performance region—also labeled **Zone 2**).
3. Turn the Alpha Wheel until you see Program **065 Slow Strings**. Now you have piano and strings layered across the entire keyboard.
4. Press **Split (Zone 3)**.
5. Turn the Alpha Wheel until you see Program **104 Round and Wound**. Now you have a bass from the bottom of the keyboard up to G[#] 3, and layered piano and strings from A 3 up.
6. Press **Split Layer (Zone 4)**.
7. Turn the Alpha Wheel until you see Program **112 Studio Drums 1+2**. That's it: bass layered with drums in the lower part of the keyboard, and piano layered with strings in the upper part.

How AutoSplit Works

We'll go through the same procedure again, explaining what's going on with each step. If you want to follow along, start by pressing **Internal Voices** to return to Internal Voices mode. Notice the four zone buttons: Zone 1 is active (the LED in the **Zone 1** button is green), while Zones 2–4 are muted (amber LEDs).

1. Press **Layer (Zone 2)**. The first thing to notice is that you're in the Setup Editor. That's because you now have two active zones, and as you know, you can't have more than one zone in Internal Voices mode (because Internal Voices mode is based on the internal setup, which has only one zone.) Consequently the PC2R automatically switches to the Setup Editor so that it can activate Zone 2. Notice that the LED for Zone 2 is green, confirming that Zone 2 is active.

As soon as you press **Layer**, Zone 2 becomes active, and whatever program is assigned to Zone 2 gets layered with the piano. Zone 2 is now the *current* zone, which we know from the information in the top line of the display (whichever zone number you see is the current zone). Incidentally, the word **auto** means that the AutoSplit feature is on (if it weren't, none of this would work).

2. Use the Alpha Wheel to select Program **065 Slow Strings**. In Step 1 we created the layer by activating Zone 2; now we've assigned a program to it.
3. Press **Split (Zone 3)**. The PC2R automatically splits the keyboard at a predetermined point (it's called the AutoSplit Key, and by default it's G[#] 3, although you can change it). Zones 1 and 2 play above the AutoSplit Key. Zone 3 becomes active (and becomes the

current zone), and whatever program is assigned to Zone 3 plays below the AutoSplit Key.

4. Use the Alpha Wheel to select Program **104 Round and Wound**. In Step 3 we created the split by activating Zone 3 below the AutoSplit Key; now we've assigned a program to it.
5. Press **Split Layer (Zone 4)**. Zone 4 becomes active (and becomes the current zone), and whatever program is assigned to Zone 4 gets layered with the bass.
6. Use the Alpha Wheel to select Program **112 Studio Drums 1+2**. In Step 5 we created the layer by activating Zone 4 and layering it on Zone 3; now we've assigned a program to it.

Saving Quick Layers and Splits

With practice, you can use AutoSplit to create layers and splits in seconds, which is a great performance feature. When you come up with something you like, save it for future use.

1. After you've made a split or layer, press **Store** (in the Edit region). The display looks something like this, prompting you to save the setup at the lowest-available ID in the User bank for setups:

```
Save setup 129?  
A01 Setup 129
```

2. Press **Yes**. The display shows **Setup NNN saved!** then returns to MIDI Setups mode.

When you save a setup this way, the PC2R turns the AutoSplit feature off for that setup, and sets the low and high notes of each zone. See *Muting and Soloing* on page 3-21 to learn about how this affects playing setups. If you want, you can edit the setup and turn AutoSplit back on (there's a good reason to do so, described in *The AutoSplit Feature* on page 3-23). See *Turning AutoSplit On and Off* on page 4-31 to learn how.

Changing the AutoSplit Key Without Editing

Every setup can have its own AutoSplit Key. The internal setup also has an AutoSplit Key that determines where the split point goes when you make a setup out of a program by adding a layer or split.

You can change the AutoSplit Key without leaving Internal Voices Mode or MIDI Setups mode (you can't layer or split in KB3 mode; likewise, you can't change the AutoSplit Key).

1. Press **Zone 3** and **Zone 4** simultaneously. The display looks like this (the top line is blank):

```
AutoSplit Key: G#3
```

2. Use the Alpha Wheel to change the value (or hold the **Enter** button and play the note corresponding to the desired split point). You can put it anywhere from **C -1** to **G 9**, but in most cases, you'll want it somewhere within the normal note range of your MIDI source.
3. Press **Zone 3** and **Zone 4** simultaneously (or press **Cancel**) to return to your previous performance mode.

Changing the AutoSplit Key this way is a performance feature only; as soon as you leave your current performance mode, the change is lost. You *can* save it, however. Read on.

Saving the AutoSplit Key

If you're in MIDI Setups mode, just save the setup, as described in *Saving Quick Layers and Splits* above. If you want to save the AutoSplit Key to the internal setup, follow the procedure described in *Saving the Internal Setup* on page 3-23.

Muting and Soloing

Setups can give you a nice thick sound, with a different program in each of the four setup zones (you can arrange the zones so that they all play in different note ranges, or you can have them all overlap). You can make your setups even more versatile by muting or soloing zones, changing the sound by pressing a single button on the PC2R's front panel.

In MIDI Setups mode, the four zone buttons select, mute, and unmute the zones in a setup. This differs from turning the zones on and off, which is done with the MIDI Channel parameter in the MIDI Xmit menu.

The **Solo** button turns on the solo feature, in which case the zone buttons select the corresponding zone for soloing.

Zones that aren't playing (either because they're muted or because another zone is being soloed) are silent on the PC2R, but they still generate MIDI information.

Muting

You can mute any or all zones in a setup. Muting one zone has no effect on the other zones. To mute (or unmute) a zone, it must be the current zone (the bottom line of the display shows the number of the current zone, followed by the name of the program assigned to that zone). When a zone is current, each press of its zone button toggles between muting and unmuting. If a zone is not the current zone, press its zone button *twice* to mute or unmute the zone (the first press makes the zone current, then each subsequent press toggles between muting and unmuting).

Soloing

Not surprisingly, you can solo only one zone at a time, and that's the only zone you'll hear, regardless of the status of the other zones. When you press the **Solo** button, whatever zone was current at the time becomes the soloed zone (the LED in its zone button turns red). Once the **Solo** button is on, pressing any zone button once solos that zone.

Zone-Button LEDs

The tri-colored LED in each zone button indicates the zone’s status for the current setup:

- Off Empty zone—that is, a zone that has its MIDI Channel parameter set to **Off**. When a zone’s LED is off (unlit), the zone does not produce sound, even though it has a program assigned to it.
- Red Soloed zone. Only one zone can be soloed at a time. When a zone is soloed, *only* that zone plays and generates notes and controller messages. Other zones, if they’re not empty, still generate program changes and entry / exit controller values, but don’t play note or respond to controllers.
- Green Active zone. As long as no other zone is soloed, an active zone responds to note information— as well as controller information, program changes, and entry / exit controller values. If another zone is soloed, an active zone is “backgrounded”—its status LED remains green, but it doesn’t respond to note or controller information.
- Amber Muted zone. Muted zones don’t respond to note or controller information, but they do respond to program changes and entry / exit controller values.

The following table shows how a zone’s status affects the data generated by the zone.

LED Color	Zone Status	Data Generated by Zone			
		Notes	Controllers	Program Changes	Entry and Exit Values
Red	Soloed	✓	✓	✓	✓
Green (no others are red)	Active	✓	✓	✓	✓
Green (another is red)	Backgrounded			✓	✓
Amber	Muted			✓	✓
(Off)	Empty				

When you’re in MIDI Setups mode, the bottom line in the display indicates the current zone—that is, the one that will be affected by any editing you do to the setup. In the following example, Zone 1 is the current zone, as indicated by the numeral just to the left of the colon:

```
S002 Unison Line
A02 1:Big Brass
```

Press any zone button once to make that zone the current zone. Assuming the zone is active (it’s active if the LED in its zone button is green), pressing its zone button once mutes the zone, turning its LED amber. Press its zone button again to reactivate the zone, turning its LED green.

Press the **Solo** button to solo the current zone. The LED in the **Solo** button lights up, and the soloed zone’s LED also turns red. The other zone’s LEDs don’t change color, but if they’re active (green LED), they stop generating note and Controller data, becoming backgrounded.

While the **Solo** button is on, you can press any zone button to solo the corresponding zone. You can solo a zone even if it’s muted. Press the **Solo** button again to turn its LED off, and any backgrounded zones become active again. Muted zones stay muted.

The AutoSplit Feature

Muting and soloing are slightly different depending on whether the AutoSplit feature is on. When it's on, a soloed zone expands to cover the entire MIDI note range—it doesn't matter what the settings are for the AutoSplit key or for the zones low and high notes (key range). Similarly, if you mute both of the zones above the AutoSplit key, the zones below the AutoSplit key expand to cover the entire MIDI note range. And vice versa. This is great for performance situations, because you can use the full range of your MIDI source no matter which zone(s) you're using.

When AutoSplit is off, soloed zones remain within the limits defined by the setup. Likewise, unmuted zones stay within their limits if you mute both of the zones on the other side of the split point. This silences part of the MIDI note range.

By default, AutoSplit is on in the internal setup, enabling you to make quick layers and splits at any time when you're in Internal Voices mode (we recommend that you leave it this way). All of the factory setups have AutoSplit turned *off*, and when you save a quick layer or split, the resulting setup also has AutoSplit turned *off*. You can turn it back on for any setup, however, as described on page 4-31.

There's one more thing to remember about AutoSplit. When you make a quick layer or split, you're in a kind of transition between Internal Voices mode and MIDI Setups mode. You start off in Internal Voices mode, but as soon as you press one of the zone buttons, the MIDI Setups button lights up and the Internal Voices button becomes unlit. As long as you stay in this quick-layer-and-split semi-mode, you can mute and unmute each zone with a single button press; you don't have to make the zone current first. It's a nice performance feature.

Once you save your quick layer or split, it becomes a regular setup, with AutoSplit turned off. Even if you turn it back on (to make soloed and unmuted zones expand across the entire MIDI note range), you're no longer in the special quick-layer-and-split mode when you're playing the setup—you're in regular MIDI Setups mode. Consequently, you have to make a zone current before you can mute or unmute it.

Saving the Internal Setup

It's quite common to start out in Internal Voices mode then make a change that switches you to MIDI Setups mode—for example, when you make a quick layer or split, then change the AutoSplit point. At this point you have three options:

- Select another setup or move to another performance mode, without preserving your changes
- Store the changes in a new setup (or replace an existing one)
- Save the changes to the internal setup

Saving to the internal setup is useful when you want the changes you've made in the current setup to apply to all the programs you play while in Internal Voices mode (remember, Zone 1 of the internal setup is what sets all the parameters for programs—like note range, controller assignments, etc.).

1. Press **Store** (in the Edit region of the front panel). The display looks something like this:

```
Save setup 133?  
A05 Setup 133
```

2. Press Internal Voices (in the Modes region). The display looks like this:

```
Save to  
Internal Voices?
```

3. Press **Yes**. The display briefly shows **Internal setup saved!** then returns to Internal Voices mode.

There's more about editing and saving the internal setup on page 4-32.

Chapter 4

Programming Your PC2R

Basic Editing Concepts

So far we've explained the PC2R primarily from a performance standpoint, covering the fundamentals of selecting programs and setups, and applying real-time controls and effects. There's much more to the PC2R, however—you can modify existing programs, setups, and effects in countless ways, or create completely new ones. We call this editing, and there are a few concepts that apply to editing in general, whether you're working on programs, setups, or effects.

Overview

Editing consists of changing the value of one or more *parameters*. A parameter defines one particular component of a program or setup (or the PC2R itself). These parameters are organized into *menus*—groups of related parameters. There are separate menus for programs, setups, effects, and more. There's also a set of global parameters affecting the entire PC2R.

For example, in every MIDI setup, each zone has a parameter called MIDI Channel. This parameter's value determines the channel on which the PC2R transmits (and possibly receives) MIDI information. Every parameter has a default value set at the factory.



Note to PC2 keyboard owners: you'll notice a few differences in the names and the organization of some of the parameters. We did this to accommodate the differences between the keyboard models and the rack-mount model. If you prefer, you can program your PC2R directly from your PC2. Go to the Global menu (on the PC2, not on the PC2R), and set the value of the Xmit Buttons parameter to **On**. As long as the MIDI Out port of the PC2 is connected to the MIDI In of the PC2R, this causes the buttons you press on your PC2 to affect your PC2R in the same way. You might want to set the Local Control parameter on your PC2 to a value of **Off** while you edit your PC2R, so you can hear the PC2R exclusively.

Beginning to Edit

If you want to change the value of any parameter, there are three basic steps:

- Entering an edit mode
- Finding a parameter and changing its value
- Naming and storing (saving)

Entering an Edit Mode

There are four buttons that take you into the PC2R’s various edit modes:

- Edit** Takes you to the first menu in the edit mode corresponding to the performance mode you were in.
- FX** Takes you to the first FX edit menu corresponding to the current mode.
- MIDI Receive** Takes you to the Channel 1 menu in MIDI Receive mode, where you can configure each MIDI channel for program and controller assignments.
- Global** Takes you to the global three-band EQ, which is actually the first “menu” in Global mode, which contains parameters for overall control of the PC2R.

You can get to Effects edit mode, MIDI receive mode, or Global mode from any performance mode; just press **FX**, **MIDI Receive**, or **Global**.

To edit programs or setups, you must first select the performance mode corresponding to the object you want to edit (select KB3 mode, for example, if you want to edit a KB3 program). When you’ve selected a performance mode, press **Edit**.

When you press **Edit**, you go to the first menu in the edit mode corresponding to the performance mode you were in when you pressed **Edit**. You’ll see one of the following displays:

```
Internal Voices mode    Sound Parameters
                       Timbre    >

KB3 mode               KB3 Parameters
                       Timbre    >

MIDI Setups mode       Zone Parameters
                       MIDI Xmit  >
```

Finding a Parameter and Changing its Value

To navigate through the PC2R’s menus, use the Alpha Wheel or the cursor buttons (the right and left arrow buttons at the bottom left of the Edit region) and the **Enter** button.

Notice the arrows (>) in the display examples above. They indicate that you can view more menus of parameters by pressing the **Right** cursor button. The reason you don’t see any left arrows in these examples is that when you enter an edit mode, you’re always at the top menu. As soon as you move away from the top menu, you’ll see a left arrow in the display as well.

1. Once you’ve entered an edit mode, use the Alpha Wheel or the cursor buttons to find the menu you want.
2. Press **Enter** to enter the menu.
3. Use the cursor buttons to view the parameters in the menu. In most cases, there’s just one parameter visible at a time. In that case, when you see the parameter you want to edit, turn the Alpha Wheel left or right to change the value.

In some cases, you can see more than one parameter at a time (for example, the global three-band EQ is a set of three parameters in Global mode). When there’s more than one parameter visible, use the cursor buttons to move the cursor (the little flashing bar) under the value you want to change. Then turn the Alpha Wheel to change the value.

Naming and Storing

Storing (saving) is optional, of course. If you don't want to store any of your changes, press **Cancel** one or more times to return to the mode you were in before you started editing. Although naming is obviously optional as well, we'll assume you're going to name the object you're editing before storing it.

This procedure describes storing a setup, so it assumes that you're in MIDI Setups mode. The process is similar for naming and storing other objects.

1. Press **Store** (in the Functions group of buttons). The display will show either `Save Setup NNN?` or `RePlace Setup NNN?` where `NNN` is the setup ID.
 - If you're in the Internal bank of setups, the display will show `Save setup NNN?` where `NNN` is the first available setup ID in the User bank of setups.
 - If you're in the User bank, the display will show `RePlace setup NNN?` where `NNN` is the ID of the current setup. Use the Alpha Wheel to change the ID if you want to save a new setup instead of replacing the current one.
2. Press the **Right** cursor button to display `Rename setup NNN?`
3. Press **Yes (Enter)**. The display shows the name of the current setup, if any. The cursor highlights the character that's selected for editing.
4. Use the Alpha Wheel to change the character highlighted by the cursor. Use the cursor buttons to move the cursor.
5. When the name looks the way you want it, press **Yes**. The display again shows either `Save Setup NNN?` or `RePlace Setup NNN?`, depending on where you were when you started storing.
6. Press **Yes** (or press **No** if you don't want to store the setup after all). The display briefly shows `Setup NNN saved!` then returns to MIDI Setups mode.

Special Characters For Naming Objects

Here are all the characters available for object names, in the order in which they appear:

! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9

: ; < = > ? @ A through Z

[\] ^ _ ' a through z (space)

When you're naming objects, you can press **Zone 1** to switch a letter from upper to lower case, or vice versa. Press **Zone 2** to insert a space at the cursor, moving the remaining characters to the right. Press **Zone 3** to delete the character at the cursor, moving the remaining characters to the left. Press **Zone 4** to move the cursor to the end of the name.

Other Save-Dialog Functions

Restoring Factory Effects

If you've changed the effect settings associated with a factory program, you can quickly restore the factory settings. In the Save dialogs for programs (both Internal Voices and KB3) and effects, there are options for restoring the effects for either the current program, or for all programs (both Internal-Voice programs and KB3 programs).

1. Enter the Save dialog by pressing **Store**. Depending on the edit mode you're in, you'll see either a prompt to replace the current effect, or to save or replace the current program (voice).
2. Press the **Left** cursor button repeatedly until you see either `Restore Current Factory Effects?` or `Restore All Factory Effects?`
3. Press **Yes** to restore, or **No** to cancel.

If you choose to restore the current effect, the PC2R resets only the current program to its factory effect settings. If you choose to restore *all* effects, the PC2R resets all programs (both Internal-Voice programs and KB3 programs) to their factory effect settings.

Deleting Objects

You can delete user-defined Internal-Voice programs, KB3 programs, setups, or effects by entering the Save dialog for the Program Editor, KB3 Editor, or Setup Editor—or in the Save dialog for Effects edit mode.

When you enter the Save dialog, you'll see a prompt asking you whether you want to save or replace an object (the object type depends on which edit mode you're in). The prompt for dumping the object is at another location in the dialog, as you'll see.

1. Enter the Save dialog by pressing **Store**. Depending on the edit mode you're in, you'll see either a prompt to replace the current effect, or to save or replace the current program (voice) or setup.
2. Press the **Right** cursor button repeatedly until you see a prompt asking you to delete the object.
3. Press **Yes**. The display will show another prompt asking you if you're sure.
4. Press **Yes** again. The display will show **Deleted!** briefly, then return to the performance mode you were in before entering the edit mode. You'll also see `--Not Found--` in the display, indicating that the object is gone.

At any of these prompts, you can press **No** to cancel the operation.

Dumping Objects

If you've created a lot of programs, setups, and effects settings, you may want to store them externally, using a MIDI System Exclusive (SysEx) dump). This has several benefits: you can load the objects into other instruments that accept SysEx; you can preserve them in a more permanent backup archive (in case anything happens to the PC2R's battery-backed memory), and you can create libraries of objects customized for particular performance or recording situation.

You can dump objects to any MIDI recording device that accepts SysEx messages; most MIDI sequencers manufactured today accept SysEx. A SysEx dump can consist of a single object of any type, or all objects of a given type—it can also include *all* user-defined objects. You can initiate most of these dumps from the Save dialogs of the Program, Setup, KB3 Editors, or the save dialog in Effects edit mode. Each object you dump is a separate SysEx message.

When you enter one of these dialogs, the first thing you see is a prompt asking you whether you want to save or replace an object (the object type depends on which edit mode you're in). The prompt for dumping the object is at another location in the dialog, as you'll see.

You should prepare your MIDI recording device before initiating the dump. For example, if you're dumping to a sequencer application, open the file to which you want to dump, and get the application ready to record. Make sure you have a MIDI cable connected from the MIDI Out port of the PC2R to the MIDI In port of the recording device. Don't start recording just yet, however.

1. Enter the Save dialog by pressing **Store**. Depending on the edit mode you're in, you'll see either a prompt to replace the current effect, or to save or replace the current program (voice) or setup.
2. Press the **Right** cursor button repeatedly until you see a prompt asking you if you want to dump a single object, or to dump *all* objects of the current type (the current type is determined by the performance mode you were in when you entered the edit mode).
3. Start recording with the MIDI recording device, then press **Yes** on the PC2R's front panel.
4. The PC2R dumps the object or objects to the MIDI recording device as a normal file. The display indicates when the dump is finished.

Reloading a Dump

1. Connect a MIDI cable from the MIDI Out port of the external device to the PC2R's MIDI In port.
2. Initiate the dump or playback of the object file from your external device.

You don't have to put the PC2R in any special mode to receive the dump. When a dump is sent back to the PC2R, the information goes to the memory location for the corresponding object types.



Note: Reloading a dump does *not* update the edit buffer. Consequently you won't have access to the objects until you select them in one of the performance modes. For example, suppose you recently dumped an object (we'll assume it's Setup 129), but by coincidence you were editing Setup 129 just before you reloaded it. You might expect to be able to play and edit the reloaded version as soon as you've finished reloading, but in fact, you would be playing the copy of the setup that's in the edit buffer. To play the reloaded setup, return to MIDI Setups mode (without replacing Setup 129—save to a different ID if you really want to save what's in the edit buffer) and select Setup 129. Only then will you be able to play the reloaded version.

If you plan to make frequent use of SysEx dumps, you should run at least one test cycle of dumping and reloading before you put a lot of effort into editing. You don't want any surprises, for example, when you have to dump your entire memory to protect it because your PC2R's battery is running low.

For example, you might dump a setup, then make a simple change to the version on your PC2R (like renaming it). Reload it, then select it, and check whether the name has reverted to its original. If it hasn't, you haven't reloaded successfully.

Turn to page 4-11 for more information about SysEx dumps.

Editing Short Cuts: Intuitive Entry

If you do a lot of editing, you'll spend a fair amount of time finding parameters and changing values. The PC2R has quite a few parameters, and many of those parameters have long lists of values. Intuitive entry can help speed up the editing process in several ways.

Short Cuts for Navigating the Controllers Menu

The Controllers menu contains over a hundred parameters. Scrolling through them one by one can be time-consuming, so we've made it easier to get around.

Parallel Parameter Selection

Every physical controller shares a common set of basic parameters, organized into groups—the same (or nearly the same) group of parameters for each controller. Suppose you're setting the Ctrl Num parameters for Knobs **A–D** in the current zone of the setup you're editing. You don't have to scroll through all the Knob **A** parameters to get to the Ctrl Num parameter for Knob **B**. Just press both cursor buttons together, and you'll jump directly to the Ctrl Num parameter for Knob **B**.

This works for *any* parameter in the Controllers menu; press the cursor buttons at the same time, and you jump to the corresponding parameter for the next controller in the menu. You can't jump backward in the menu, but you can always press the **Menu** button to return to the Controllers menu.

Instant Parameter Selection

This technique works for all physical controllers, including mono pressure.

1. Go to MIDI Setups mode if you aren't already there, and press **Edit**.
2. Press and hold **Global**.
3. On your MIDI source, move any controller or strike a key and press it as if you were applying aftertouch—or move one of the controller knobs on the PC2R. This selects the Ctrl Num parameter for the corresponding controller.

Short Cuts for Changing Parameter Values

You can use any continuous physical controller (sliders, wheels, pedals, ribbons, or pressure on your MIDI source, or Knobs **A–D** on the PC2R) to change the value of the current parameter very quickly. You can also use the keyboard in some cases. Here are three quick examples.

Transposing Setup Zones

1. Go to MIDI Setups mode if you aren't already there, and press **Edit**.
2. Find the Transpose menu (it's fourth in the list). Press **Enter**.
3. Press **Enter** again, and hold it down. Then play a note from your MIDI source. The distance of that note from C 4 (Middle C) sets the number of semitones of transposition. For example, if you played E 4, you'd transpose the current zone up a third (four semitones).

Setting the Key Range of a Setup Zone

1. Go to MIDI Setups mode if you aren't already there, and press **Edit**.
2. Find the Key Range menu (it's third in the list). Press **Enter**.
3. Press and hold **Enter**, then play a note from your MIDI source. This sets the low key, since the Low parameter becomes current when you press **Enter**.
4. Select the Hi parameter.
5. Press and hold **Enter**, then play another note, which sets the high key.

Negotiating Long Lists of Values

When a parameter has a long list of values, using a continuous controller to change the value can be faster than using the Alpha Wheel.

This is especially useful within the Controllers menu in the Setup Editor, since for each controller there are well over a hundred available values. The following example changes the value of the Ctrl Num parameter.

1. Go to MIDI Setups mode if you aren't already there, and press **Edit**.
2. Hold **Global**, and move a controller on your MIDI source. You should see the Ctrl Num parameter for the corresponding controller parameter. If you don't see this, try using another controller on your MIDI source (the Pitch Wheel will probably work).
3. Press and hold **Enter**, and move one of the continuous controllers on your MIDI source (this is the intuitive entry part of the procedure). You'll see the value of the Ctrl Num parameter change.

This technique is convenient for moving quickly from one end of the list to the other. You can then release the **Enter** button and use the Alpha Wheel to scroll through the list more precisely.

Other Editing Functions

Comparing

Any time you make a change while editing an object, you can easily compare it to the original object, which is extremely useful for determining whether you want to keep the change.

1. Enter an edit mode, and change the value of a parameter.
2. Press **Compare**. The PC2R restores the previous value of the parameter. To remind you that you're listening to the unedited value, the **Compare** button blinks, and the top line of the display shows **Comp**.
3. Press **Compare** again, and PC2R restores your edited value.

The Compare function undoes all the changes you've made since entering the edit mode. Here's an example.

1. In Internal Voices mode, select a program with a crisp attack and a short release. Program **040 Clav Classic** works well for this example.
2. Press **Edit** to enter the Program Editor.
3. Press the **Right** cursor button until you see the Envelope menu. Press **Enter**.
4. Change the value of the Attack parameter to its minimum (crank the Alpha Wheel to the left a few turns). Now you have to hold a key down for the note to reach its full amplitude.
5. Press **Compare**. The display shows the previous value, and you hear the quick attack.
6. Press **Compare** again. The slow attack returns.

7. Press the **Right** cursor button twice to display the Release parameter.
8. Change the value to its minimum. Now both the attack and the release are slow.
9. Press **Compare**. Both the slow attack and the slow release are gone.
10. Press **Compare** again, and the slow attack and release both return.

Copying and Pasting

You can copy setup parameters (zones), controller parameters, and arpeggiator parameters into a buffer, then paste them into other controllers, zones, programs, or setups. You can also copy effects and their parameter settings, and paste them into other programs or setups. Pasting effects does not paste the wet/dry mix values, just the parameter settings.

Pasting Parameters Into a Zone

1. Select the setup whose parameters you want to copy. If you've already entered the Setup Editor, make sure you haven't selected any of the parameters in the Controllers menu (if you are in the Controllers menu, you'll copy just the controllers and not the entire zone's parameters).
2. Press **Copy**.
3. Press the zone button for the zone you want to copy.
4. Press **Enter**.
5. Press the **Right** cursor button to display the Paste prompt.
6. Press the zone button for the zone you want to paste into.
7. Press **Enter**.

Pasting a Zone Into a Different Setup

1. Select the setup containing the zone that you want to copy. If you've already entered the Setup Editor, make sure you are haven't selected any of the parameters in the Controllers menu.
2. Press **Copy**.
3. Press the zone button for the zone you want to copy.
4. Press **Enter**.
5. Press the **MIDI Setups** button.
6. Select the setup that you want to paste into.
7. Press **Copy**.
8. Press the **Right** cursor button to display the Paste prompt.
9. Press the zone button for the zone you want to paste into.
10. Press **Enter**.

Pasting Controller Parameters

1. In MIDI Setups mode, select the setup containing the controller settings that you want to copy.
2. If necessary, press one of the zone buttons to make sure that you're copying the controller settings for the right zone.
3. Press **Edit** to enter the Setup Editor.
4. Make sure the **Shift** LED is green. Press it one or more times if necessary.
5. Press and hold the **Global** button, and turn Knob **A**. This quickly selects the Green Knob **A** parameter in the Controllers menu.
6. Press **Copy**, then **Yes**. The display informs you that the PC2R has copied the controller settings, then returns to the Copy prompt.
7. You have several options for pasting the copied data. Depending on what you want to do, take one of the following steps:
 - To paste the data to the same controller in a different zone, press the appropriate zone button, then press the **Right** cursor button to get to the Paste parameter, then press **Enter**. The display indicates that the controllers have been pasted, then the Paste prompt reappears.
 - To paste the data to a different controller in the same zone, press **No** to remove the Copy prompt. Then select a parameter for the controller to which you want to past the settings (say, Green Knob **B**). Press **Copy** (to display the copy prompt), then the **Right** cursor button (to display the Paste prompt), then **Yes**. The display indicates that the controllers have been pasted, then the Paste prompt reappears.
 - To paste the data to a different controller in a different zone, press **No** to remove the Copy prompt. Then press a zone button to select a zone. Use the cursor buttons to select one of the parameters for the controller you want to paste to. Press **Copy**, then the **Right** cursor button, then **Yes**. The display indicates that the controllers have been pasted, then the Paste prompt reappears.
 - To paste the data into a different setup, press **No** to remove the Copy prompt. Press the **MIDI Setups** button, then select the setup you want to paste into. Press **Edit** to enter the Setup Editor, then press the **Right** cursor button until you see the Controllers menu. Press **Enter**. Press a zone button if necessary, to select a zone to paste to. Use the cursor buttons to select a controller to paste to. Press **Copy**, then the **Right** cursor button, then **Yes**.

Keep in mind that you can copy and paste only into similar controllers; the parameters for a switch controller can go only to another switch controller, and those for a continuous controller can go only to another continuous controller.

Pasting Arpeggiator Parameters

1. Select the setup containing the arpeggiator data that you want to copy. Press the **Arpeggiator** button.
2. Press **Copy**, then **Enter**.
3. Press the **MIDI Setups** button. Select the setup that you want to paste into. Press the **Arpeggiator** button.
4. Press the **Copy** button. Press the **Right** cursor button, then **Enter**.

You should be aware that this will copy only the parameters in the Arpeggiator menu. It won't copy any controllers assigned to arpeggiator functions like Arp Latch or Arp Switch.

Pasting Effects

1. In Internal Voices mode, KB3 mode, or MIDI Setups mode, select the program or setup that uses the effect you want to copy.
2. Press **FX**, select the FXA Select or FXB Select menu, then press **Enter**. You'll see the ID and name of the effect assigned to that effects block.
3. Press **Copy**, and the display shows **Copy effects?**
4. Press **Yes**. The display briefly shows that the effect has been copied, then returns to the **Copy effects?** prompt.
5. Press **No** three times to return to your previous performance mode. Select a different performance mode if desired, then select the program or setup into which you want to paste the effect.
6. Press **FX**, select the FXA Select or FXB Select menu, then press **Enter**. You'll see the ID and name of the effect assigned to that effects block.
7. Press **Copy**, then press the **Right** cursor button. The display shows **Paste effects?**
8. Press **Yes**. The display briefly shows that the effect has been pasted, then returns to the **Paste effects?** prompt.
9. Press **Store**, and you'll see one of several prompts, depending on your performance mode, and whether you pasted the effect to a factory program or setup or a user-defined program or setup. See *Saving Effects* on page 4-29 to learn about your options for saving.

More About SysEx Dumps

SysEx IDs

If all you're doing is dumping objects from your PC2R to a sequencer and loading them back, you won't have to worry about the PC2R's SysEx ID. Just make sure that you don't change it after dumping objects, because you won't be able to reload them if the PC2R's SysEx ID is different from the one contained in the incoming messages.

The SysEx ID for the PC2R is defined by the Device ID parameter in the Global menu.

Dumping the Entire Memory

1. Make sure that you have a MIDI connection from the PC2R's MIDI Out port to the MIDI In port of your external device.
2. Press the **Global** button, then press the **Right** cursor button until you see **Dump all Objects?**
3. Start recording on your external device, and press **Enter** on the PC2R. The LED in the **MIDI Xmit** button blinks and the display shows you the object being dumped. The PC2R shows which objects it's dumping, then returns to the **dump all objects?** prompt when finished.



A note for K2000/K2500/K2600 owners: The sequencer in the K2000/K2500 has a 64K maximum for each song. A dump of the entire PC2R memory is larger than 64k, so you can't use this method to load objects into a K2000, K2500, or K2600. Instead you must dump individual objects. If you need to dump all your PC2R objects, you can dump them into several different songs.

The Program Editor

If you press **Edit** while in Internal Voices mode, you enter the Program Editor, where you can make changes to a wide variety of parameters that affect individual programs.

Program Structure

A program consists of one or more sounds and other characteristics, as defined by the program's parameters. Each program contains from one to four layers, each of which can have a different sound, and its own complete set of sound parameters.

Bear in mind that these aren't the same type of layers that you create when you use the AutoSplit feature. Those layers are actually zones in a setup, as described on page 3-19. The layers in a *program* simply define the nature of the program's sound. When you're editing a program, you can't add or delete layers, but you can modify the existing layers using any of the sound parameters.

Program Editing Basics

You'll remember from *Basic Editing Concepts* on page 4-1 that the general procedure for editing involves three steps: entering an edit mode (in this case the Program Editor), finding a parameter then changing its value, and storing your changes—either replacing the current program, or creating a new one, renaming it as well if desired.

Let's take a quick tour of one of the program-editing menus, to familiarize you with the fundamentals of the Program Editor. Start by calling up Program **000 Stereo Grand**.

Entering the Program Editor

Press **Edit** to enter the Program Editor. For our get-acquainted tour, we'll look at the Timbre menu, which is the menu that appears when you enter the Program Editor. Press **Enter**, and the display looks like this:

```
Lyr:1  LP Filt[1]  
Freq: E#5 740Hz
```

The Timbre menu contains parameters that affect the nature of the sound in the current program. The parameter you see now controls the cutoff frequency of a lowpass filter, one of the two DSP (digital signal-processing) functions contained in each program. You can't change which DSP functions are associated with a program, but you can change the values for the existing functions.



By the way, you might think the display says **E#**, not **F#**. Actually, what you see is the cursor under the **F**. Turn the Alpha Wheel a couple of clicks to the left, and you'll see the cursor under the value.

The Current Layer

Notice the zone buttons. In the Program Editor, they represent the layers of the current program. When you enter the Program Editor, all the existing layers in a program are active (green LEDs), so you can see that Program 000 has three layers. Unlit LEDs indicate nonexistent layers.

Pressing a zone button makes the corresponding layer the *current* layer—that is, the one available for editing. The display shows the number of the current layer. The current layer is the only one you can edit; to edit another layer, make it the current layer.

Now let's navigate through the Timbre menu. Press the **Left** cursor button repeatedly until the display stops changing. The display should look like this:

```
Lyr:1  Keymap L >>
5 Piano mp Left
```

Keymaps

This shows you the *keymap* for the current layer. Every layer has a keymap assigned to it (*two* keymaps if the program uses stereo keymaps). The keymap is the most basic component of a program; it determines (among other things) which samples or waveforms the program plays. Change the keymap, and you have a different sound. If you wanted to make the current program an organ, for example, you'd change all the keymaps to organ keymaps.

Program 000 uses stereo keymaps, so in each layer there are separate keymaps for the left and right sides. Press the **Right** cursor button, and you'll see the keymap for the right side. Most of the PC2R's programs use *mono* keymaps, which means that only one of the keymap parameters is active. If you look at the keymap parameters for a mono-sample program (like any of the electric pianos) you'll see parentheses around one of the parameter names. That's the *inactive* keymap; you can't change its value.

Program 000 is also a multi-velocity program; each layer represents a different keystrike velocity. Note that layer 1 is the soft-strike (mp). Press **Zone 2**, then **Zone 3**, and you'll see that Layer 2 is medium (mf), and Layer 3 is hard (f). Let's listen to each layer separately.

Muting and Soloing Layers

Press the **Solo** button, and you're soloing the current layer (notice that its layer LED turns red, and an asterisk appears in the display next to the layer number). Press **Zone 3** (if its LED isn't already red) to solo Layer 3. Now play a key softly; you should hear nothing. Keep playing louder, and eventually you'll hear the notes.

Press **Solo** again to deactivate soloing. Press **Zone 2** twice. The first time you press it, Layer 2 becomes the current layer. The second time you press it, you mute Layer 2 (its LED turns amber). Now start playing softly, and gradually play harder. You'll hear notes at first, then

they'll drop out as your playing triggers muted layer, then you'll hear notes again as you trigger the loud layer.

Exiting the Program Editor

There are several ways to get out:

- Press **Cancel/No** one or more times.
- Press **Store** to begin the Save dialog; when you've finished saving, the PC2R returns to Internal Voices mode.
- Select a performance mode by pressing a mode-selection button.

The Internal Setup

The three performance modes are quite different from a musician's viewpoint. The most noticeable difference is the way the liquid-crystal display (LCD) looks in each mode, as you'll learn on page 3-5.

Behind the scenes, however, the performance modes aren't as different as they seem. In fact, they have quite a bit in common. For example, consider the Pitch Wheel, which you'll find on most MIDI keyboard controllers. Push it up and you bend notes up; pull it down and you bend notes down. This works in all three of the PC2R's performance modes.

Your MIDI source's Pitch Wheel (as well as other physical controllers) does what it does because the PC2R is programmed that way—but you could program it for other functions if you wanted. In a *setup*, your MIDI source's Pitch Wheel can do something different *in each zone*—and that's true for all the assignable physical controllers on your MIDI source (Mod Wheel, sliders, pedals, etc.)—as well as the knobs on the PC2R's front panel.

In a *program* (Internal Voices mode, KB3 mode, or MIDI Receive mode), things are different. From the viewpoint of you the musician, programs don't *have* zones, so each physical controller on your MIDI source can do only one thing, but it's up to you to decide what each physical controller does. That information gets stored in the *internal setup*, which has only one zone, but is otherwise exactly like a setup in MIDI Setups mode.

Every program in Internal Voices mode uses the internal setup to determine how the PC2R responds to your MIDI source's physical controllers (or its own knobs)—and many other characteristics. Programs in KB3 mode also use the internal setup (although in KB3 mode some responses to physical controllers vary from those of the internal setup).

See page 4-32 to learn about editing the internal setup.

Beyond the Basics

Now that you've had an introduction to program editing, it's time to experiment. If you're interested in a particular editing task, there's a good chance you'll find it in *Common Editing Tasks* on page 4-31. To learn about the specifics of each parameter, see *Program Editor Parameters* on page 5-1.

The KB3 Editor

In the KB3 Editor, you have access to the parameters that affect the sound of the current KB3 program. These parameters are described beginning on page 5-6. KB3 parameters are different from Internal Voices parameters, but otherwise, editing KB3 programs is much like editing Internal Voices programs.

KB3 Program Structure

KB3 programs are significantly different from the programs in Internal Voices mode. Instead of sample playback and waveform synthesis, KB3 programs use oscillators to emulate the tone wheel sound of the Classic Hammond™ B-3 organ. The oscillators start running as soon as you select a KB3 program, so there are always voices available—there's no note stealing, which occurs in Internal-Voices programs when you exceed the polyphony limit.

Because of their unique structure, KB3 programs don't have multiple layers. They're effectively a single layer with unlimited polyphony (although if you're using a KB3 program in a setup, the KB3 program reduces the polyphony available for the other programs in the setup). You'll also notice that the program IDs for the factory KB3 programs are organized in increments of eight. This is simply to make it convenient to select KB3 programs with the front-panel buttons of the PC2 keyboard model.

Editing the Percussion Parameters

When editing the percussion parameters, you must have percussion enabled in order to hear the effects of your edits. Similarly, the *combination* of percussion effects you want to edit must be active as well. For example, if you want to hear the effect of editing the Perc Ld/Fast parameter, you have to have both the high-volume and fast-decay effects activated.

The zone buttons control which of the effects are active. The **Zone 1**, **Zone 2**, and **Zone 3** buttons control the combination of Loud/Soft (Volume) and Fast/Slow (Decay) parameters. The Pitch parameters—activated by the **Zone 4** button—are independent of the others, but being able to hear edits to the Low Harm and High Harm parameters depends on having the low-pitch or high-pitch effects activated. The following table illustrates how the Loud/Soft and Fast/Slow parameters interact—that is, which effects must be active in order for you to hear the differences resulting from editing the corresponding parameters.

Zone 1 Status	Zone 2 Status (Volume)	Zone 3 Status (Decay)	Corresponding Parameter Group
Off	Irrelevant	Irrelevant	None (all percussion effects off)
On	Off	Off	Sft/Slow
	Off	On	Sft/Fast
	On	Off	Ld/Slow
	On	On	Ld/Fast

The Setup Editor

The Setup Editor lets you make changes to setups, then store the modified setups in the User setup bank. The PC2R comes from the factory with 36 setups, all in the Internal bank. The User bank is empty, so the first time you go into the Setup Editor, you'll be editing one of the setups in the Internal setup bank. The PC2R won't let you store setups in the Internal bank, but you can store them anywhere in the User bank, either replacing the setup you started with, or assigning it a different setup ID.

In this section, we'll use a number of practical examples to help you learn your way around the Setup Editor. All the setup editing you'll do involves these basic steps:

- Selecting a setup
- Entering the Setup Editor
- Changing the values of one or more parameters
- Storing (saving) the setup

You should already know how to select a setup. If not, see *Selecting Programs and Setups* on page 3-13. you should also be familiar with the three basic steps of editing: navigation, data entry, and storing. See *Basic Editing Concepts* on page 4-1 if you need to refresh your memory.

Setup Structure

A setup is a combination of up to four programs, each of which can use a different MIDI channel. Setups are structured in four zones; each zone has an independent set of parameters, including program, MIDI channel, controller assignments, and more. Even if your MIDI source can transmit on only one channel, you can make use of the four zones in a setup; the PC2R can remap incoming MIDI information to each of the channel in a setup, so you can play all four programs from one stream of MIDI information.

Before we begin with the details of setup editing, we'll mention five important setups that can help you keep track of your editing efforts.

Special Setups

Naturally you can edit any setup you want, changing values for any of the dozens of available parameters. Here's something to consider, however: the factory setups often have complex interactions between several parameters. Changing the value of one parameter can have a greater impact than you anticipated. Consequently, we've made it easy for you to keep things simple.

In the Internal setup bank are five template setups: **016 KB3 Setup**, **125 PC2R Control**, **126 Internal Voices**, **127 Clear Setup**, and **128 Default Setup**. They're included to make it easier for you to get started editing setups.

016 KB3 Setup

You might want to create a setup that includes a KB3 program as well as V.A.S.T programs. This setup is a good template that combines a KB3 program with a bass and a ride cymbal. The setup is designed to give you easy control over the drawbar settings for the KB3 program. Here's how it works.

When you select this setup, Zone 1 is soloed (the **Solo** LED is on, and the **Zone 1** LED is red). Green Knobs **A–D** control the settings for Drawbars 1–4. When they're adjusted the way

you want them, press **Zone 2**. You'll hear the same organ, because Zone 2 uses the same program. Now, however, Green Knobs **A–D** control Drawbars 5–8. Red Knob **B** (or the Mod Wheel on your MIDI source or any controller that sends MIDI 1) always controls Drawbar 9.

When all the drawbars are set the way you want them, press **Solo** to exit from solo mode, and you'll hear the bass and ride cymbal. At this point, both Zone 1 and Zone 2 are muted (their LEDs are amber). Press either **Zone 1** or **Zone 2**, one or more times until its LED turns green, activating the zone. Now the organ plays in the upper range, and the bass/ride plays in the lower range. You can still use Green Knobs **A–D** to control the drawbars (Drawbars 1–4 when Zone 1 is active, and Drawbars 5–8 when Zone 2 is active). If you activate both zones, Green Knobs **A–D** control the drawbars in pairs (Green Knob **A** controls Drawbars 1 and 5, and so on).

125 PC2R Control

Setup 125 has many of its controller parameters set for optimum control of the PC2R. If you're using a PC2 keyboard to control a PC2R, pasting this setup into one or more zones in your PC2 setups will make it easier to control your PC2R. In this case, make sure that the PC2R has its MIDI In parameter (in the Global menu) set to a value of **Auto** (or **Remap** if you're using MIDI Receive mode).

126 Internal Voices

Setup 126 is a generic setup with controller assignments in Zone 1 that match the factory default settings for the internal setup. It's convenient for restoring the default controller assignments to the internal setup. To do this, select Setup 126, press **Edit** to go into the Setup Editor, press **Store**, then press **Internal Voices**, then press **Yes**.

127 Clear Setup

Setup 127 is completely "blank"—that is, it has no controller assignments whatsoever.

128 Default Setup

Setup 128 has a handful of typical controller assignments (Pitch Bend, for example).

As you learn to edit setups, you're likely to find it easier to keep track of things if you start with one of these setups and make a few changes at a time. As you learn what kinds of features you like in your setups, you can store them in the User bank, and use *them* as templates for further editing.

In any case, the examples we provide in this section begin with Setup 128, and build from there. In each example, we'll refer to the setups we create using the names we suggest in the examples.

Entering the Setup Editor

1. Press the **MIDI Setups** button to enter MIDI Setups mode.
2. Select the setup you want to edit.
3. Press **Edit**. This takes you to the Zone parameters menu, the first of the twelve menus in the Setup Editor.
4. Use the cursor buttons to view the menus. When you see the menu you want, press **Enter** to view the parameters in the menu.

Creating Setups

If you've read *Layering and Splitting* on page 3-18, you know how to create layered setups using the AutoSplit feature. Doing it this way, however, adds a lot of other features to the resulting setup, and you may not want that. Sometimes it's better to start from scratch.

1. Start by selecting Setup **128**. (Don't press **Edit** yet.)
2. Press each of the **Zone 1** through **Zone 4** buttons once (notice the zone numbers labeled in blue above the buttons). As you press each button, notice how the bottom line of the display shows you the corresponding zone number.

You'll also notice that every zone already has a program assigned to it. That's fine, because you can always mute zones (or turn them off) if you don't want to hear them. In fact, all the zones are muted now (their zone buttons are amber). You muted Zone 1 when you pressed its button, because it was the current zone. Let's shut two of the zones off, to make the setup as simple as possible.

3. Press **Edit**, which displays the MIDI Xmit menu.
4. Press **Enter**, which displays the first parameter (MIDI Channel) in the MIDI Xmit menu.
5. Press the **Zone 3** button. The display looks like this:

```
Zone:3-      0:105  
MIDI Channel: 03
```

The top line indicates the current zone, as well as the current bank and program ID. Notice the minus sign after the zone number, indicating that the zone is muted.

6. Turn the Alpha Wheel to the left until you see **Off** in the bottom line of the display. Notice that the **Zone 3** button is now unlit, indicating that the zone is off.
7. Repeat Steps 5 and 6 for Zone 4. You now have a two-zone setup (the setup still has four zones, but two of them are completely inactive).
8. Press the **Zone 1** button to make Zone 1 the current zone. Press it again to unmute the zone, if necessary. The **Zone 1** LED should be green.
9. Press **Menu** to return to the list of menus.
10. Press the **Right** cursor button to view the Program menu, and press **Enter** to view the Program ID and name parameter. This is one of the rare cases in which you don't see the *name* of the parameter, just its value.

You should see **000 Stereo Grand** on the bottom line of the display. If you don't, select it now.

11. Press the **Zone 2** button to make Zone 2 the current zone. Press it again to unmute it, if necessary. The **Zone 2** LED should be green.
12. Select the program **064 Lyrical Strings**.

13. Press **Store** to display the Save dialog:

```
Save Setup 129?
A01 Default Setup
```

Notice that the PC2R suggests a setup ID of **129**, which is the first unused setup ID in the User bank. We'll use that ID, but we'll rename the setup before storing it.

14. Press the **Right** cursor button; the display prompts you to rename the setup. Press **Yes**.
15. Press **Zone 3** repeatedly until you've erased the entire name. (This is optional; you can also write over each existing character in turn, if you prefer. You can also press **Zone 1** to switch a letter from upper to lower case and back. Press **Zone 2** to insert a space at the cursor and move the remaining characters to the right, or press **Zone 4** to move the cursor to the end of the name.)
16. Enter a name that you can remember, because we'll refer to it in later examples. Use the Alpha Wheel and the cursor buttons to insert characters and move the cursor. We'll call this setup **Piano&Strings**. Refer to *Naming and Storing* on page 4-3 if you need a reminder about naming objects.
17. When you've entered the name, press **Yes**. The Save prompt returns. Press **Yes** again to save the setup. The display tells you that the setup is saved, the returns you to MIDI Setups mode.

Setting Initial Volume Levels for Different Zones

Suppose you want the program in one zone of a setup to be at a lower volume than the others. We'll edit our two-zone setup to lower the volume of the strings.

1. Start with Setup **129 Piano&Strings**, which we created in the previous example.
2. Press **Edit**, then press the **Right** cursor button until you see the Controllers menu. Press **Enter**. The display probably looks like this:

```
Zone:2           0:064
Entry Volume: 127
```

Notice that the cursor is under the "1" in "127," indicating that this is the current parameter. (In this case, it doesn't really matter, since there's only one parameter visible. Sometimes, however, there's more than one parameter visible, in which case you can use the cursor buttons to move the cursor under the parameter you want to edit.)

3. Using the Alpha Wheel, change the value to **75**.
4. Play a few notes. If you don't hear a difference in the volume, press **Compare** and play some more. Press **Compare** again to stop its LED from blinking.
5. Press **Store** to display the Save dialog. Notice that the display prompts you to replace Setup **129**. We don't want to do this.
6. Turn the Alpha Wheel one click to the right; the display prompts you to save Setup **130**.
7. Rename the setup as **EntryVol**, and save it at ID **130**.

Assigning Knobs to Control Wet/Dry Mix in Different Zones

Many of the factory programs use Green Knobs **A** and **B** to control the wet/dry mix of the effects assigned to FX-A and FX-B. The setups in these examples don't use either of these knobs.

Our next example creates a setup that uses Green Knob **A** to control FX-A's wet/dry mix (but only in Zone 1), and Green Knob **B** to control FX-B's wet/dry mix (but only in Zone 2). By using variations on this procedure, you can make a single knob control different functions in each zone of a setup, or use different knobs to control the same function in different zones.

1. Start with Setup **130 EntryVol**, which we created in the previous example.
2. If necessary, press the **Zone 1** button to make Zone 1 current.
3. Press **Edit**.
4. Press **Shift** one or more times, if necessary, to make the **Shift** LED green.
5. Hold the **Global** button, and turn Knob **A**. You'll see the Ctrl Num parameter for Green Knob **A**. Its default value is **None**.
6. Turn the Alpha Wheel to the right until the value is **93 FXAWet**.
7. Press the **Zone 2** button to make Zone 2 the current zone. Press the button again to unmute the zone, if necessary. Notice that Ctrl Num is still the current parameter, but now you're looking at the Ctrl Num parameter for Zone 2.
8. Hold the **Global** button, and turn Knob **B**. Change the value of the Ctrl Num parameter to **91 FXBWet**.
9. Save the setup as **131 KnobFX**.

Now when the **Shift** button's LED is green, Knobs **A** and **B** control the wet/dry mix of whatever effects are assigned to FX-A and FX-B. Turning these knobs won't necessarily change anything, however. In order for them both to have an effect, the setup must route some or all of its audio signal through both effects blocks. So let's check the effects routing.

The easiest way to check the effects routing is to look at the LED in the **FX** button while you're in MIDI Setups mode, which is where we are now. The color of the LED indicates the effects routing of the current zone. If you press each of the zone buttons in turn, you'll see that the **FX** button's LED is red for Zones 1 and 2, and green for Zones 3 and 4 (Zones 3 and 4 are off, but they still have effects routings). This means that Zones 1 and 2 are routed through FX-B only, and Zones 3 and 4 are routed through FX-A only. (Off is None, green is FX-A, red is FX-B, and amber is Both. Each zone can be routed independently.)

Let's change the effects routing so that Zone 1 is routed through FX-A.

1. Select Setup **131**, and make sure that Zone A is the current zone.
2. Enter the Setup Editor. Press the **Right** cursor button until you see the FX Routing menu.
3. Press **Enter** to display the Routing parameter.
4. Change the value to **FXA**. Notice that the **FX** LED changes to green.
5. Play some notes on your MIDI source, and move Knobs **A** and **B**. You should hear the level of the effects (a chorus controlled by Knob **A** and a reverb controlled by Knob **B**) change as you move the knobs.
6. Save the setup, replacing Setup **131**.

Assigning Entry Values

Suppose you have a setup with an effect whose wet/dry mix is controlled by a knob on your PC2R. You want to make sure it's active when you start playing the setup. Entry values are a convenient way to specify initial settings for any controller. We'll edit **KnobFX**, and set an entry level for Knob A in Zone 1 so that the wet/dry mix of the reverb is at about 75% as soon as we select the setup.

1. Start with Setup **131 KnobFX**. Make Zone 1 active, if it isn't already.
2. Press **Edit**.
3. Press **Shift** one or more times, if necessary, to make the **Shift** LED green.
4. Hold the **Global** button, and turn Knob **A**. You'll see the Ctrl Num parameter for Green Knob **A**.
5. Press the **Right** cursor button until you see the Entry Value parameter in the bottom line of the display. Use the Alpha Wheel to change its value to **85** (about 3/4 of the full range of **0–127**).
6. Save the setup as **132 EntryFX**.

A Few Important Points About Entry Values

Crossing the Entry Value

Suppose that Knob **A** happens to be all the way to the right when you select Setup **132**. Wet/dry mix is now at 85 on Channel 1. Now you want to use the Knob **A** to fade the chorus out. If you move the knob, you don't want it to suddenly jump to the current value; since the knob is all the way up (sending a MIDI Controller message with a value of 127), it would jump to 126 the moment you moved the knob down, and the chorus would suddenly get much wetter.

To avoid this problem, the PC2R is designed so that once you set an entry value for a physical controller, it won't become active until you pass the point of the entry value. So as you turn Knob **A** to the left for Setup **132**, nothing happens until you reach 85. At that point, the knob takes effect, giving you a smooth fade.

Avoiding Extra Controller Motion

Now suppose you want to have a piano-and-strings setups like Setup **132**, but you don't want to hear the chorus at all when you select the setup. Instead, you want to bring it in later. To do this, you could set the entry value for Knob **A** in Zone 1 to **0**.

Imagine that the knob is all the way to the left when you first call up the setup. Remember that the knob must go past the entry value before it becomes active. In this example the entry value is **0** and the current MIDI Controller value sent by the knob is 0 (minimum). When you move the knob up, the MIDI Controller value goes to 1, and therefore hasn't *crossed* the entry value, and therefore nothing happens as you continue to turn the knob. You'd have to turn the knob to the right slightly, then back to the left so that it goes to MIDI Controller value 0, then the next time you turn it to the right, the knob will be active. To avoid having to turn the knob right, left, and right again, set the entry value to a very low number other than **0**, such as **5**. The value is so low that you won't hear the reverb, but as you turn the knob to the right the first time, it will go past value 5 and become active.

Setting Exit Values

Suppose that you're using Setup 132 in a performance, and you finish a tune by fading out the chorus with Knob A. Its MIDI Controller value is now 0, and will stay at 0 until you turn the knob again (or until something else changes the value).

Unless, of course, you reset Channel 1's wet/dry mix somehow. That's where exit values come in; they let you specify MIDI Controller values when you *leave* a setup. We recommend that you get in the habit of setting exit values for physical controllers *whenever* you set entry values.

This is less of a problem for some controllers, like volume and wet/dry controls, since the PC2R has default entry values for these controllers. It's just something to keep in mind when you're creating your own setups.

Let's revisit Setup 132, and specify some exit values.

1. Select Setup 132. We'll assume that Zone 1 is current.
2. Press **Edit**.
3. Press **Shift** one or more times, if necessary, to make the **Shift** LED green.
4. Hold the **Global** button, and turn Knob A.
5. Press the **Right** cursor button until you see the Exit Value parameter for Green Knob A.
6. Set a value of 127 (wet/dry mix of 100%).
7. Save the setup, this time replacing Setup 132 without renaming it.

Multiple Controller Function

Here's your next scenario: You want to add a layer of electric piano to Setup 132, and you want Green Knob A to control the wet/dry mix of the effects for both the acoustic and the electric piano. But you want the acoustic piano's mix to be dryer than the electric piano's mix at all times.

1. Select Setup 132. First, we'll bring the entry value of the piano's chorus back up to 127.
2. Make sure Zone 1 is current, then enter the Setup Editor and select the Entry Value parameter for Green Knob A. Set its value to 127.
3. Make Zone 3 the current zone (press **Zone 3**). Note that the **Zone 3** LED is off, indicating that the zone is inactive, which we don't want.
4. Press **Menu** to exit the Controllers menu. Press the **Left** cursor button until you see the MIDI Xmit menu. Press **Enter**.
5. Change the value of the MIDI Channel parameter to 3. Press **Zone 3** to unmute the zone, if necessary. The **Zone 3** LED should now be green. Now we're ready to add the electric piano. Since Zone 3 is going to be almost identical to Zone 1 (except for the program and entry effect mix), we'll save time by copying Zone 1 and pasting it into Zone 3.
6. Press **Copy**. The display shows a prompt asking you if you want to copy Zone 3 (because Zone 3 is the current zone). You don't want to copy Zone 3; you want to copy Zone 1.
7. Press **Zone 1**, then **Enter**. The display shows **Zone copied!** and returns to the Copy prompt. (This makes Zone 1 the current zone, by the way.)

8. Press the **Right** cursor button. The display shows a prompt asking if you want to paste to Zone 1.
9. Press **Zone 3**, then **Enter**. The display shows **Zone Pasted!** and returns to the Paste prompt.
10. Take a minute to save the setup as **133 Offset**. You'll see why we chose that name in a minute. Once you've saved, you're no longer in the Setup Editor.
11. Now we'll change the program assignment for Zone 3. Press **Edit** to enter the Setup Editor, then press the **Right** cursor button until you see the Program menu. Press **Enter**.
12. Use the Alpha Wheel to select Program **016 Classic E Piano**.
13. Now we'll change the wet/dry mix of the acoustic piano. Press **Zone 1** to make Zone 1 active.
14. Hold the **Global** button, and turn Knob **A**. Press the **Right** cursor button until you see the Ctrl Offset parameter. Turn the Alpha Wheel to the left until the value is **-64**.

This sets an offset of -64 for Green Knob **A** in Zone 1. The offset uniformly subtracts 64 from the value of the slider (a *positive* offset would uniformly *add* to the value). When the knob is all the way up, the value is (127 - 64) or 63. therefore, the acoustic piano will always have a wet/dry mix that's 64 lower than the electric piano.
15. Save again, replacing Setup **133** without renaming.

Now try playing some notes and adjusting Knob **A** (make sure the **Shift** LED is still green). As you move the knob left to the midpoint, the Controller value of the wet/dry mix for the electric piano is 64, and the value for the acoustic piano is 0 (64 - 64). In the bottom half of the knob's throw, you'll hear chorus only on the electric piano.

Offset vs. Scale

There's another way to adjust levels relative to each other that gives slightly different results.

1. Select Setup **133** if necessary, and make Zone 1 current, if it isn't already.
2. Hold the **Global** button, and turn Knob **A**.
3. Press the **Right** cursor button until you see the Exit Value parameter for Green Knob **A**.
4. Press the **Left** cursor button once, to select the Ctrl Scale parameter. Set its value to **50%**. This sets a scale of **50%** for the wet/dry mix.

Whereas an offset provides a uniform difference between the wet/dry mix for the acoustic and electric pianos, scaling creates a proportional difference. As you turn Knob **A** to the left, the difference in the wet/dry mix values between the two sounds gets smaller, until they meet at 0.

Crossfades

You can use a single continuous controller to fade one sound out while it fades another sound in. This is called a crossfade.

1. Create a two-zone setup, as you did in the example on page 4-18. Use a sustaining sound in each zone: perhaps two different organs. (If you want, you can use Setup **129**, and change the piano to an organ.)
2. Make Zone 1 current, then enter the Controllers menu in the Setup Editor. Go to the Ctrl Scale parameter for Green Knob **A**. Set its value to **-100%**.
3. Press the **Right** cursor button to select the Ctrl Offset parameter, and to **127**.

That's all it takes to create a crossfade. You'll notice a bit of a drop in volume at the midpoint between the sounds. You can adjust that.

1. Starting from the previous example, press the **Right** cursor button to select the Ctrl Curve parameter. Change its value to **Cos+**.
2. Make Zone 2 current, and change its Ctrl Curve parameter to **Sin+**. Notice the difference?

Explaining why this works can get a bit technical. The easy explanation is that the Sin+ curve boosts the volume in the midrange, while the Cos+ curve *cuts* the volume in the midrange—but since we've inverted the curve with scaling and offset, it also boosts the volume in the midrange.

Velocity Switching

You can use your keystroke velocity (how hard you play) to change sounds. This is how program **000 Stereo Grand** works: there are actually three sets of samples, one for soft, one for medium, and one for loud.

1. Create a two-zone setup. Go to the Program menu in the Setup Editor. Assign program **022 Soft E Piano** to Zone 1, and program **023 Hybrid E Piano** to Zone 2. Make Zone 1 current if it isn't already.
2. Press **Menu** to exit the Program menu, then press the **Right** cursor button until you see the Velocity menu. Press **Enter**.
3. Press the **Right** cursor button four times to select the Max parameter. Note that this is one of those cases in which there are two parameters visible at a time.
4. Set the value of the Max parameter to **80**. Note that the Min value for Zone 1 is **1**. This is good.
5. Make Zone 2 current. Press the **Left** cursor button to select the Min parameter. Set its value to **81**. Note that the Max value for Zone 2 is **127**. This is also good.

The soft piano plays at velocities from 1 to 80, and the Hybrid piano plays from 81 to 127. This gives you a nice thump when you play hard. You can create three- and four-zone setups to switch between even more sounds.

Velocity Layering

Another use for the velocity parameters is to add a layer instead of switching between layers. To do this, have one layer play at velocities from 1 to 127, and another at velocities from 100 to 127. For the higher-velocity layer, use a program with a percussive attack, and possibly bring its entry volume down for a more subtle mix (you can use the entry- and exit- value approach we discussed on page 4-19, or you can simply set the Entry Volume parameter for that layer to something less than 127).

Selecting Setups Remotely

You can use a switch controller on your MIDI source to select Setups 129–256 on the PC2R, which is convenient in performance situations if the PC2R isn't within easy reach. By default, setups switch immediately when you activate the controller, but you can change the value of the Chg Setups parameter (in the Global menu) to **Keys Up**, and the setup will remain current until you've released all notes on your MIDI source.

You can use any switch controller that sends MIDI 66—whether it's a dedicated Sostenuto pedal, or a programmable button or pedal that sends MIDI 66. We'll assume you have a dedicated Sostenuto pedal that's called Pedal 2.

1. Create a setup with one or more zones. Don't forget to save...
2. Go to the Setup Editor (press **Edit**). Go to the MIDI Channel parameter in the MIDI Xmit menu, and note the channel used by the current zone. This is the channel your MIDI source should be using to transmit its MIDI information.
3. Press and hold **Global**, and press Pedal 2 on your MIDI source. You should see the On Ctrl parameter for SwitchPdl 2 in the display.
4. Change the value of Ctrl Num to **GoToSetup** (it's near the end of the list of values, so this might be a good time to hold **Enter** and use a controller to change the value).
5. Press the **Right** cursor button to select the On Value parameter. Set its value to 129 lower than the setup you want to select. For example, a value of **0** selects Setup **129**, a value of **1** selects Setup **130**, and so on).
6. Save! If you send a before you save, you'll change setups, and your edits will get erased.

As an alternative, you can use a value of **Setup Inc** for On Ctrl and a value of **127** for On Value. If you do this for a string of consecutively-numbered setups, you can step through them without taking your hands off the keys. You might also use **GoToSetup** for the highest- numbered setup in this sequence to take you back to the lowest- numbered setup in the sequence.

In this same sequence of setups, you could use Switch Pedal 3 with On Ctrl set to **Setup Dec** and On value set to **127** to step *down* one setup at a time by sending MIDI 67 (Soft Pedal) from your MIDI source.

Transposing a Setup With a Button

If you don't have the time to learn a tune in a different key, you can have the PC2R transpose a setup with one press of a button. This example transposes up a fourth, but it's up to you to decide both the direction and the interval. You can use any switch controller; this example assumes that you use a controller programmed to send MIDI 67 (Soft Pedal).

1. Create and save a setup with one or more zones.
2. Go to the Setup Editor. Select a zone that matches the MIDI channel used by your MIDI source.
3. Program your MIDI source so that one of its switch controllers sends MIDI 67. This probably should be a *toggle* switch (which stays on when you release it, then goes off when you press it again), and not a *momentary* switch (which goes off when you release it). If you use a momentary switch for transposition, the transposition will be in effect only while you're holding the switch in the on position (of course, this may be the result you want).
4. Hold the **Global** button, and press the controller on your MIDI source. You should see the On Ctrl parameter for SwitchPdl 3 in the display.
5. Change the value of On Ctrl to **TransUp** (it's near the end of the list of values). This automatically changes the value of the Off Ctrl parameter to **TransUp** as well.
6. Select the On Value parameter, and set its value at 5.
7. Select the Off Ctrl parameter, and change its value to **TransDown**.
8. Select the Off Value parameter, and set its value at 5.
9. Repeat this procedure for all zones in the setup (unless you want to transpose some zones and not others).

Now when you press the controller on your MIDI source, it transposes the setup up a fourth. Press it again to remove the transposition.

Effects Edit Mode

Effects edit mode has two functions: changing the effects associated with the current program or setup (or the entire PC2R), and modifying the nature of the effects that are currently in use.

Effects Change Mode

The effects change mode determines whether the PC2R automatically selects effects when you select a program or setup. The effects change mode is controlled by the FX Chg Mode parameter, which is one of the parameters in Global mode (press the **Global** button to get to Global mode). By default, this parameter's value is **Auto**, which means that regardless of your performance mode, the PC2R automatically selects the effects associated with whatever object you select—a program or a setup. FX Chg Mode is closely tied to the FX Channel parameter, which determines whether a program change on a particular channel can also change the current effect.

If you change the value of FX Chg Mode to **Panel**, the PC2R *doesn't* automatically select effects when you select a program or setup, and the only way to change the effects is to select them manually in Effects edit mode, using the FXA Select and FXB Select parameters (Press the **FX** button to enter Effects edit mode). When the value of FX Chg Mode is **Panel**, the effects you

select manually apply to whatever program or setup you select, regardless of your performance mode.

The value of FX Chg Mode resets automatically to Auto every time you turn on the PC2R.

Setting the Effects Change Mode

In many cases, you can leave both FX Chg Mode and FX Channel at their default settings (**Auto** and **1**). If you want the effect to change when you select programs on channels other than Channel 1, set the value of FX Channel to match that channel (or set it to **Current**, so the effect changes regardless of which channel you're on). There's one additional case in which you might want to change the settings of FX Chg Mode and FX Channel.

Applying Effects Globally

Suppose you're in the studio, and you want to use the same reverb settings regardless of the programs or setups you play. In this case, set FX Chg Mode to **Panel**, which prevents program changes (either from the PC2R or via an external MIDI source) from changing any effects settings. The only way to change the current effect is by changing it manually in Effects edit mode.

There's another important point to remember about using **Panel** as the value for FX Chg Mode: you can still edit the current set of effects, but you can't save them to the current program or setup. Our explanation of Effects edit mode assumes that you have FX Chg Mode set to the default setting of **Auto**.

See *Effects Change Mode (FX Chg Mode)* on page 5-38 for a more detailed description of FX Chg Mode.

Entering Effects Edit Mode

You can get to Effects edit mode from any performance mode by pressing the **FX** button. Effects edit mode is actually a special "subeditor" of your current performance mode—for example, if you press **FX** while in Internal Voices mode, you end up at the FX Routing menu in the Program Editor:

```

Sound Parameters
< FX Routing >

```

The top line of the display indicates that we've come from Internal Voices mode—you'd see **KB3 Parameters** or **Zone Parameters** in the top line if you had come from KB3 mode or MIDI Setups mode. (If you've changed the value of FX Chg Mode to **Panel**, the top line shows **Panel FX Params** regardless of where you started).

You can also get to Effects edit mode when you're in MIDI Receive mode, by pressing the **FX** button. In this case the top line of the display shows **FX Parameters**. To get back to MIDI Receive mode, press **MIDI Receive**.

Selecting Different Effects

On page 3-16 we briefly described performance aspects of changing effects. Here we'll go into a bit more detail about selecting effects.

1. Enter Effects edit mode as described in the previous subsection.
2. Find the FXA Select or FXB Select menu, then press **Enter**.
3. Use the Alpha Wheel to change the effect displayed on the bottom line.

This procedure applies to any performance mode, as long as you're using one of the standard effects in both effect blocks. Things are a bit different if you're using one of the specialized KB3 effects (IDs 395 and 396). Only the KB3 programs use these effects by default, but you can apply them to any setup or program if you want.

The KB3 effects are complex multi-stage DSP functions that use the FX-A and FX-B blocks in tandem (to accommodate the extra processing requirements). In this case, the first parameter in the FXB Select menu is inactive. If you select it, you'll notice that its value is in parentheses, and you can't change it (although you can edit the other parameters in the menu).

When you're using one of these effects, anything else that's routed to FX-B bypasses the KB3 effect. When you're using a KB3 effect in one of the zones or channels of a setup, you might want to route the other zones or channels to FX-B (unless you want the KB3 effect applied to all zones or channels of the setup).

You can change the effect associated with the current program or setup as often as you like without actually affecting the program's or setup's definition. Unless you save your changes, the original effect gets reapplied to the program or setup as soon as you exit Effects edit mode. See *Saving Effects* on page 4-29 to learn how to save the current effect settings to the current program or setup.

Editing Effects Parameters

Most effects have four parameters that control various aspects of the effect (the special KB3 effects we mentioned above have three additional parameters that we'll describe at the end of the following procedure). Our sound engineers determine which parameters go with which effects; you don't get a choice of parameters, but you can edit their values any way you want.

1. Select the effect you want to edit, using the FXA Select or FXB Select parameter.
2. Press the **Right** cursor button one or more times to select one of the four parameters associated with the current effect.
3. Change the value of the current parameter.
4. If desired, save your changes, as described in *Saving Effects* on page 4-29.

KB3 Effects

The double-block KB3 effects we mentioned in *Selecting Different Effects*—the ones with IDs 395 and 396—are associated by default with every KB3 program (remember that you can use them with *any* program or setup if you want). These effects have two special properties that set them apart from the standard single-block effects.

In addition to the usual four parameters, these effects have three additional parameters at the end of the FXB Select menu.

Also, there's a special editing case. If the KB3 effect you're editing is assigned to a KB3 program *and* the FX Chg Mode parameter is set to **Auto** (which is the default), you'll notice that when you enter the FXA Select menu, the first three parameters don't have values; instead of values you see `<Program>`. That's because in this special case, the values of these three parameters are determined by the program settings, as described below:

Vibr/Chor	Vibrato/Chorus (which is what the VC stands for in the names of some of these effects). In KB3 mode, change this value with Red Knob D .
Low Rate	The vibrato rate in KB3 mode when the Solo button is off. Change this value using the Rotor Effects Low Rate parameter in the LFO menu in the KB3 Editor.
High Rate	The vibrato rate in KB3 mode when the Solo button is on. Change this value using the Rotor Effects High Rate parameter in the LFO menu in the KB3 Editor.

If the KB3 effect you're editing is assigned to a setup or an Internal-Voices program—or when it's assigned to a KB3 program but FX Chg Mode is set to **Panel**—you can change the values of these three parameters within Effects edit mode.

Saving Effects

If you've made changes while in Effects edit mode, you must store the changes if you want to preserve them when you leave Effects edit mode. The basic procedure is as follows, although you have different options depending on whether you're working with programs or setups, and whether you're in the Internal bank or the User bank. We'll get to that in a minute. For now we'll assume that you've edited the effects for a program in the Internal bank.

1. Change the effects as desired (either assign a new effect to one or both effect blocks, or edit the parameters associated with one or both of the current effects).
2. Press **Store**. The Save dialog appears, looking something like this:

```
Replace Effects 30?
Digital E Piano
```

The top line shows the ID of the program whose effects you've changed, and the bottom line shows the program's name.

3. Press **Yes**, and the display tells you that the effects are saved to the current program.

You've modified the factory settings of the current effect, but *only with respect to Program 030*. The effect retains its factory settings in other programs or setups that use that effect. So you've really modified only the current *program*, overwriting its factory settings (don't worry; you can get them back, as described in *Restoring Factory Effects* on page 4-4).

You don't *have* to modify the factory programs when editing effects; you can create a new program in the User bank instead.

1. Repeat Steps 1 and 2 from the preceding procedure. When you see the Save dialog, press the **Right** cursor button. The Save dialog changes:

```
Save Voice N?  
Digital E Piano
```

N stands for the lowest-available program ID in the User bank for Internal Voices mode. At this point, you can either proceed to the next step, or select a different program ID. If the ID is unused, the dialog doesn't change. If you select an ID that already has a program assigned to it, **Save** changes to **RePlace**.

2. Press **Yes** to save to the current program ID (or rename the program first, as described on page 4-3).

If you've entered Effects edit mode from the *User* bank of Internal Voices mode, the Save dialog starts by asking if you want to replace the current effect assignment for the current program (just as it does for programs in the Internal bank). If you press the **Right** cursor button, the Save dialog doesn't jump to the lowest-available program ID in the User bank; it asks you if you want to replace the current program. Again, you can select a different ID if you want. The dialog says **Save** or **RePlace** depending on whether you select an ID that's already in use.

The Save dialog operates in exactly the same way if you enter Effects edit mode from either the Internal or User bank in KB3 mode. If you're coming from MIDI Setups mode, the dialog is a bit different, since setup effects are stored as part of the entire setup, not its constituent programs. Consequently, the dialog doesn't ask you if you want to replace the current effect; it asks you if you want to save the setup (if you're coming from the Internal bank) or replace the setup (if you're coming from the User bank). Otherwise, the Save dialog operates the same as it does for Internal Voices mode and KB3 mode.

Other Effects-Mode Functions

There's more to Effects-mode Save dialog than just storing the results of your editing. You can also do the following:

- Dump effects via MIDI System Exclusive messages to an external MIDI recording device
- Restore the factory settings for the effects of the current program (applies to programs in the Internal bank of Internal Voices mode and KB3 mode; doesn't apply to setups or to programs in any User bank)
- Restore the factory settings for the effects of *all* programs in the Internal banks for Internal Voices mode and KB3 mode (doesn't apply to setups or to programs in any User bank)

We describe all of these procedures in *Other Save-Dialog Functions* on page 4-4.

Common Editing Tasks

Turning AutoSplit On and Off

The AutoSplit feature is on by default for all programs in Internal Voices mode (as defined by a parameter in the internal setup). In MIDI Setups mode, AutoSplit is off for most factory setups, but you can turn it on if you want. AutoSplit is not available for KB3 mode. Here's how to turn it on and off.

1. In MIDI Setups mode, press **Edit** to enter the Setup Editor.
2. Find the Key Range menu and press **Enter**.
3. Press the **Right** cursor button until you see the AutoSplit parameter. Change its value as desired.
4. Press **Store**. The Save dialog appears, prompting you to save the change to the lowest available setup ID. You have two options:
 - Press **Yes** to save the change to the current setup (of course, you can change the setup ID and name before saving if you want)
 - Press the Internal Voices button; this brings up a prompt asking if you want to save the change to Internal Voices—we'll assume you do, so press **Yes**.

In the former case (saving to a setup) saving creates a new setup with AutoSplit either on or off as you specified. (Alternatively, if you change the setup ID to that of an existing setup before saving, you replace that setup.)

In the latter case (saving to Internal Voices), saving stores the new setting to the internal setup, thereby enabling or disabling AutoSplit for *all* Internal-Voices programs. When you're in Internal Voices mode, AutoSplit is so convenient that we recommend that you always leave it on (it's the factory default setting). In MIDI Setups mode, there are advantages and disadvantages to having AutoSplit on. See *The AutoSplit Feature* on page 3-23 for more information.

Controlling Vibrato and Tremolo with LFOs

While you can't add an LFO to a program (LFOs are permanently linked to certain programs at the factory), you can modify the LFOs' effects on the programs that do use them. Many factory programs and setups make use of the LFOs for vibrato, tremolo, or rotor effects. In many Internal-Voices programs, you can bring in the vibrato or tremolo with the Mod Wheel on your MIDI source.

Using Mono Audio Output

If you have a monaural sound system, or have only one available input to your mixer, you might want to play your PC2R in mono mode, in which case the full audio signal gets sent to both sides of the analog outputs (there's no separation of left and right).

1. Press **Global**, then press the **Right** cursor button until you see the Output Mode parameter.
2. Set its value to **Mono**, then return to any performance mode.

Changing Preset Drawbar Values

Making Drawbars Live

When you're in KB3 mode, you have two options for using the drawbars. A KB3 program's drawbars can be preset, which means that the PC2R sets them to their programmed values when you select the KB3 program. They can also be live, in which case the PC2R sets their values to the current positions of the drawbar controls (Knobs **A–D**, in combination with the **Drawbar Toggle** button) when you select the KB3 program.

1. In KB3 mode, press **Edit** to go to the KB3 Editor. The Timbre menu appears.
2. Press **Enter**, then press the **Right** cursor button until you see the DrawbarMode parameter.
3. Set its value to **Live**.
4. Save the program.

Changing the Values of Preset Drawbars

1. Continuing from the previous example, press the **Right** cursor button, and you'll see **Drawbar:** followed by nine digits, which are the values for Drawbars 1–9.
2. Move any of the drawbar controls to change the corresponding value. Use the **Drawbar Toggle** button to change which drawbars the knobs control. When the **Drawbar Toggle** LED is green, Knobs **A–D** control Drawbars 1–4. When the LED is amber, the knobs control Drawbars 5–8. When the LED is red, Knob **A** controls Drawbar 9.

As an alternative, you can use the cursor buttons to position the cursor under the value you want to change, then change it with the Alpha Wheel.

3. Save the program.

The next time you select the program, your edited values will be in effect. You'll still be able to change them temporarily in real time using the drawbar controls.

Editing the Internal Setup

You can edit the internal setup and store your changes, thereby changing the zone parameters for every program in Internal Voices mode. As an example, we'll transpose the internal setup up an octave.

1. Start in Internal voices mode, using any program.
2. Press **Main** to go to the Internal Setup Editor. If necessary, press **Main** again to unmute Zone 1 (the **Main** LED should be green before you proceed).
3. Press **Menu**, which displays the Program menu. Find the Transpose menu, then press **Enter**. This displays the Transposition parameter.
4. Change the value to **12**. If you play notes from your MIDI source, you'll hear the transposition.
5. Press **Store**. The display prompts you to save the setup at the next-available ID (or it prompts you to replace the setup if you were in the User bank of setups when you entered the Internal Setup Editor).

6. Press the **Internal Voices** button. This displays a prompt asking you if you want to save to the internal setup. Press **Yes**. The display briefly shows **Internal setuP saved!**, then returns to Internal Voices mode.
7. Select a few different programs, and you'll notice that they're all an octave higher when you play them.

Using the Arpeggiator

The arpeggiator takes input from your MIDI source and turns it into a constant rhythmic pattern. You can control the speed and nature of the pattern in real time. The arpeggiator resembles what were called “sequencers” on old analog synths—playing a finite series of notes repeatedly, with changes in the series controlled by the notes you play. The arpeggiator can affect both the PC2R and any MIDI instruments that are slaves of the PC2R. The notes produced by the arpeggiator in a given setup zone go to all of that zone's destinations: local, MIDI, or both.

The concept behind the PC2R's arpeggiator is fairly simple, although the options are extensive. Think of it as a “note processor,” generating complex output from relatively modest input. You can select any number of notes for the input, and tell the arpeggiator to recognize and remember them. This is called “latching” the notes. The arpeggiator then processes them by playing them repeatedly, and/or transposing them up and down. You have control over several processing parameters: tempo, velocity, order, duration, transposition, and whether the intervals between notes are filled chromatically. You can also tell the arpeggiator how to deal with new information coming from the MIDI source. The settings you define in the Arpeggiator menu apply to all zones for which arpeggiation is activated; you can program each zone individually to respond to or ignore the setup's arpeggiation values.

Figure 4-1 shows the processing order the PC2R uses to create arpeggios from your input:

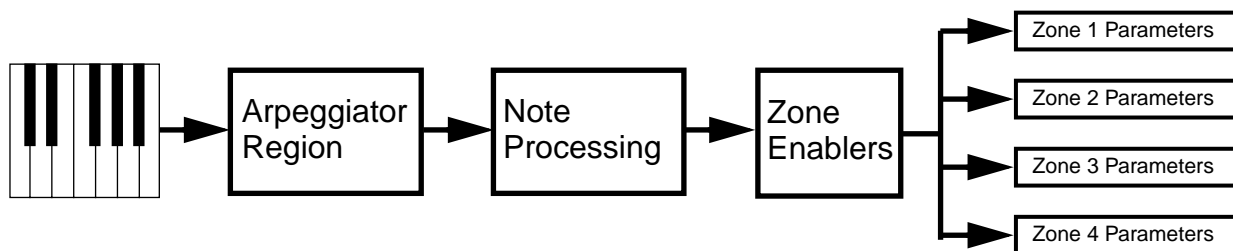


Figure 4-1 Arpeggiator Processing Sequence

Many of the PC2R's factory setups make use of the arpeggiator—for example, those that include notes in the setup's name, like setup **001 Dance C7**. There are others as well; you'll know them when you find them.

The PC2R's arpeggiator can be a lot of fun to play with; you can get many interesting and unusual effects. The following tutorial will get you started.

1. Start in MIDI Setups mode. To best hear the effects of the arpeggiator, you might want to start with a program that has a percussive attack, such as piano, marimba, or guitar. Select a program you like, then mute the other zones in the setup.
2. Press **Edit**, then find the Arpeggiator menu and press **Enter**.
3. The Arp Active parameter appears. Set its value to **On**, if it isn't there already. Play a note on your MIDI source, and hold it on. You should hear arpeggiated notes. If you hear nothing at all, go to the Global menu and check to make sure the Clock parameter is set to **Internal**. If you hear notes but they aren't arpeggiated, go back to the Arpeggiator menu (if you've left it), find the Zone Enable parameter, and make sure its value is **On**. Find the Latch Mode parameter and make sure its value is **Keys**.

Play and hold a single note. Notice that it is repeated. Try adding more notes. As you press them they are added to the arpeggio. Let go of one of the keys. Notice that note is dropped from the arpeggio while the others continue. Notice that the arpeggiator plays the notes in the specific order that you strike them. Also notice that the loudness of the arpeggiated notes depends on how hard you strike the keys.

Hold the sustain pedal and let go of the keys. Notice that even though the notes sustain normally, the arpeggiation stops. In order for the arpeggiator to work, the keys must be held down, or otherwise latched (see the descriptions of the arpeggiator parameters beginning on page 5-26).

4. Select the Hi parameter. Hold **Enter** and play Middle C to set the Hi parameter to **C 4**. Now play a chord in the bass and a melody in the treble. Notice that any notes up to C 4 are arpeggiated but all notes above that are played as normal. The Key Range parameter lets you set a range of notes that will be affected by the arpeggiator while others can be played regularly. Hold **Enter** and play the top note to put the arpeggiator back to playing across the "keyboard."
5. Select the Zone Enable parameter. This enables you to arpeggiate one or more setup zones, and play others normally. Several of the preset setups do this.

Using Pressure (Aftertouch) as an Arpeggiator Controller

In this example, we'll use aftertouch to control the volume of arpeggiated notes. We're assuming that you can send standard Mono Pressure messages from your MIDI source.

1. Make sure that the PC2R is responding to aftertouch. Find the Ctrl Num parameter for MPressure (in the Controllers menu in the Setup Editor), and set its value to **Pressure** (it's near the end of the list of values).

Aftertouch is somewhat similar to the Pitch Wheel, in that it functions like a spring; it returns to 0 as you release the pressure. You can assign aftertouch to send any MIDI controller number. However typically, aftertouch is assigned to Pressure, which is a separate MIDI message.

One final thing to understand: There are actually two different types of aftertouch: Mono Pressure and Poly Pressure. On most MIDI keyboards, Mono Pressure has a single strip running across the keyboard, so pressing down on any note will generate controller info that will affect *all* the notes played on that MIDI channel. Poly Pressure has a separate sensor for each key, so pressing down on a key only affects that key. The PC2R uses Mono Pressure.

2. Press the **Menu** button, then find the Arpeggiator menu and press **Enter**.
3. Find the Vel Mode parameter, and set its value to **Pressure**. Now when you hold notes and apply pressure, the volume of each arpeggiated note is controlled by how much pressure you apply.

Using the Arpeggiator with a Sequencer or External Controller

If you are sequencing and you use a setup with arpeggiation, the PC2R sends the actual notes generated by the arpeggiator to the sequencer. When you play back the sequence, it simply sends back those notes and does not activate the arpeggiator.

But if, for some reason, you need to have the sequencer or other MIDI source send notes to the arpeggiator itself, you must use the Remap function. To do this, press the **Global** button, then press the **Right** cursor button until you see the MIDI In parameter. If you set this to **Remap**, then *all* incoming MIDI note messages will be treated as if you played those notes on the keyboard of the PC2R itself.

The MIDI channel info on the incoming data is ignored; The PC2R simply takes the note numbers (and controller messages) and sends them to each zone based on the note range settings for that zone. It's the same as playing that note on the MIDI source itself. So you probably wouldn't want to send more than one channel of MIDI information from your source, since the note messages will get mixed together.

Using the PC2R with Other Gear

If your system consists of a MIDI source and a PC2R alone, you probably don't need to read this section. If you're using a sequencer, you should read *Using MIDI Receive Mode*; if you're using the PC2R to control additional instruments, read *The PC2R as MIDI Master*.

Using MIDI Receive Mode

MIDI Receive mode is extremely convenient for multi-timbral playback or MIDI recordings. Each channel has an independent set of parameters for adjusting program assignment, volume and pan, effects routing, and effects wet/dry mix.

Any time the PC2R is receiving multi-channel MIDI information from an external source, MIDI Receive mode gives you the most control.

The PC2R as MIDI Master

The PC2R's MIDI Out port (as well as its MIDI Thru port) transmits part or all of the MIDI information the PC2R receives at its MIDI In port. If you connect an Out or Thru port of the PC2R to the MIDI In of another MIDI instrument, you can control that instrument via the PC2R.

When the PC2R is in Internal Voices mode or KB3 mode, this usually means sending the same program changes, note information, and controller information to both instruments. In MIDI Setups mode, however, the PC2R can remap a single channel of incoming MIDI information, and transmit four independent channels of MIDI information to the slave instrument. (The PC2R can also do this in the other performance modes, if you want.)

Sending Bank-Select and Program-Change Messages

When you have a MIDI instrument slaved to the PC2R, the program-change messages you send to the PC2R from your MIDI source also go to the slave instrument. If your MIDI source can also send bank-select messages, you can select banks and programs on both the PC2R and the slave.

When you're in MIDI Setups mode and you select a PC2R setup from your MIDI source, that message gets remapped into four separate program-change messages that get transmitted to the slave instrument, selecting the corresponding program (or bank and program) on the slave. (If you're wondering what to do if you want to send program changes only to the slave, see *Sending Program Changes Only* on page 4-38.)

If you want to change banks on the slave instrument when you select a setup on the PC2R, you'll need to know which MIDI message the slave uses for selecting banks (it's usually MIDI 0 or MIDI 32 with a value from 0 to 127; many instruments, including the PC2R, can accept MIDI 0 and MIDI 32 as a single bank-selection message, allowing you to select banks numbered from 0 to 16,383). Here's how to do it:

1. Go into the Program menu in the Setup Editor, and press the **Left** cursor button to select the Bank parameter. Change its value to a number from 0 to 16,383 (not all instruments can handle numbers higher than 127, however).

Keep in mind that this is also instructing the PC2R to use the same bank. If you want to send different program-change messages to the slave, you'll need to edit the setup a bit. See *Sending Program Changes Only* on page 4-38.

2. Press the **Right** cursor button to select the Program parameter, and select the desired program.
3. Save the setup.

For more information about the bank-select message, see *Understanding Bank-Select Controllers*.

Understanding Bank-Select Controllers

Most newer keyboards have more than 128 different programs, but MIDI allows only 128 values for the Program Change message. The bank-selection controller enables you to have multiple banks of programs: each program bank can store up to 128 programs.

There are actually *two* bank-selection controllers: Controller 0 and Controller 32. Some manufacturers use just 0, some use just 32, and some use both. Since each bank-selection controller can have 128 values, that means that the total number of possible banks is $128 \times 128 = 16,384$ (numbered as 0–16,383). Since each bank can have 128 programs in it, that means the total number of possible programs in an instrument is 2,097,152! In practice, most instruments tend to have 10 or fewer banks.

By default, the PC2R responds to Controller 0 with a value of 0, followed by Controller 32 with a value corresponding to the desired bank (although you can use either controller). There are five standard program banks (0–3 and 6), and two KB3 banks (4 and 5). When working with external slaves, you may find they require very different values for the banks. Many Roland keyboards, for example, use values of 80 or 81 for Controller 0.

The PC2R actually has a transmit parameter called Bank Mode, within the Program menu. This allows you to choose either 0 or 32 or 0/32 for an individual zone. However, if the value of this parameter is not the same as the Bank Sel Ctl (Bank Selection Control) reception parameter found in the Global menu, it causes the PC2R to display the bank values in a very confused manner. Therefore, we recommend that you leave the Bank Mode parameter set at the default value of 0/32, which is the same as the default Global Bank Sel Ctl value.

If you have an instrument like a Roland, which responds only to Controller 0 for bank selection, you have to know how to calculate the bank number. Controller 0 is the Most Significant Byte (MSB) and Controller 32 is the Least Significant Byte (LSB). If you see the two bank controllers together, they are normally shown as MSB/LSB. This means that you count by incrementing the number in the LSB column before incrementing the MSB. In essence, you are counting in base 128. To make it obvious for the majority of us who prefer to think in base 10, the following numbers show how the banks increment:

<i>Controller 0/32 Value</i>	<i>Bank Number</i>
0/0	0
0/1	1
0/2	2
...	...
0/127	127
1/0	128
1/1	129
...	...
2/0	256
...	...

When you've selected the Bank parameter in the PC2R, the display shows you both the **0/32** value and the bank number equivalent. With other parameters selected, the display shows only the bank number equivalent, followed by a colon (:), followed by the program number.

To figure out which bank number equivalent you need, follow this formula:

$$\text{MSB} \times 128 + \text{LSB}$$

Using the Roland example, if they require you to send Controller 0 with a value of 80 and no value of Controller 32, then you would have $80 \times 128 + 0 = 10,240$. With the Bank parameter selected, if you scroll to **10240**, you will see the display show both 80/0 and 10240.

Another example: If the Roland required you send Controller 0 with a value of 81 and Controller 32 with a value of 2, then you would have $81 \times 128 + 2 = 10,370$. Again, setting the value of the Bank parameter to **10370** will show both 81/2 and 10370.

Sending Program Changes Only

Imagine that you're playing the PC2R from a keyboard controller, and playing another keyboard at the same time. You want to use your keyboard controller to change programs on both the PC2R and the second keyboard. You don't want to send *note* information to the second keyboard, however, since you're actually playing the second keyboard (and not slaving it from the PC2R). You can easily create a setup that sends program change information, but doesn't play notes on the second keyboard.

1. Go to MIDI Setups mode and select Setup **127 Clear Setup**.
2. Press **Copy**, then **Enter**. You have now copied a zone from this setup into the edit buffer.
3. Press **MIDI Setups**, then select Setup **128 Default Setup**. Press **Copy**, then press the **Right** cursor button. The display should now say **Paste into zone 1?** Press the **Zone 2** button, then **Enter**. (The display will say **Zone Pasted**, then revert back to **Paste into Zone 2?**) You have now pasted all the parameter values from Zone 1 of Setup **128** into Zone 2 of Setup **127**.
4. Press **Edit**, then press **Enter** to enter the MIDI Xmit menu. Set the MIDI channels that you want for Zones 1 and 2.
5. Press the **Right** cursor button to select the Dest parameter. Set the value for Zone 2 to **MIDI**.
6. Press **Zone 1**, and set the value of its Dest parameter to **Local**.
7. Press **Menu**, then find the Program menu and press **Enter**.
8. Select a program for Zone 1 and a program for Zone 2.
9. Press **Menu**, then find the Key Range menu and press **Enter**.
10. Make sure Zone 2 is current, then find the NoteMap parameter, and change its value to **Off**.
11. Name and save your setup.

Now when you call up the setup, it will send a program change to your second keyboard, but since the note map for that zone (and therefore MIDI channel) is turned off, no note information is sent to the external keyboard when you play your MIDI source.

This procedure is also an example of the Copy and Paste feature. You pasted all the settings and assignments from the Clear Setup (which has all of its controllers disabled) into the setup you were editing. This is a quick way to make sure that you don't accidentally send controller information to the second keyboard; if you had copied a zone with controller assignments, those assignments would affect the second keyboard as well.

Sending Different Program Changes to the Same Channel

Suppose you want to play Program A on Channel 1 on the PC2R, and Program B on Channel 1 on an instrument that's slaved to the PC2R. To create a setup that does this, follow Steps 1–8 of the preceding tutorial, but in Step 4 use the same MIDI channel for both zones (don't forget to save the setup).

Preventing Program Changes on Slaves

You might want a slave instrument to play the same sound regardless of what the PC2R is playing, or you might want to change programs from the slave's own front panel. You can create a setup that sends note and controller information to the slave, but doesn't transmit program-change messages.

1. Create a two-zone setup. In the MIDI Xmit menu, set a value of **Local** for the Dest parameter in Zone 1 and a value of **MIDI** for the Dest parameter in Zone 2.
2. Make sure that Zone 2 is current. Press **Menu**, then find the Program menu and press **Enter**.
3. Find the Entry Transmit parameter, and set its value to **Off**.
4. Name and save this setup. Now when you select the setup from your MIDI source, the program-change message goes only to the PC2R, although both instruments get note and controller information.

Working With an External Sequencer

The most common configuration for MIDI recording assumes that you're recording one track at a time:

1. Connect the MIDI Out of your keyboard or other MIDI source to the MIDI In of your sequencer (this might be a direct connection, or it might involve a MIDI interface).
2. Connect the MIDI Out of your sequencer to the MIDI In of the PC2R.
3. Turn on the Thru, Soft Thru, or Patch Thru feature on your sequencer. This enables you to hear the PC2R as you record.
4. On the PC2R, press **MIDI Receive** to go into MIDI Receive mode.

When you record, use your keyboard or MIDI source to set the MIDI channel for recording. When you play back your recording, put the PC2R in MIDI Receive mode, for convenient access to several parameters for each channel. (MIDI Receive mode also automatically disables MIDI remapping—unless you've changed the value of the MIDI In parameter in Global mode—so each channel of MIDI information coming in from your sequencer plays only that channel on the PC2R.)

Multi-Track Recording

This configuration enables you to record multiple tracks, if your sequencer has that capability:

1. Connect the MIDI Out of your keyboard or MIDI source to the MIDI In of the PC2R.
2. Connect the MIDI Out of the PC2R to the MIDI In of the sequencer.

Now you can play a setup and record each of the zones on a separate MIDI channel and track. Of course, this configuration doesn't let you play back your recording without refitting MIDI cables. If you have a MIDI patch bay, you can set things up so that you don't have to switch cables between recording and playback. During playback, put the PC2R in MIDI Receive mode so that each track plays properly.

Troubleshooting

If you run into problems while playing or programming, there are several things you can do to help troubleshoot the problem.

First of all if you are not getting the expected results from your programming or are having strange results when hooked to an external device, you can use the MIDIScope utility to see exactly what MIDI messages are being received by the PC2R's sound engine.

Press the **Global** button, then find the MIDIScope prompt (it's the last item in the menu). Press **Enter**, and the display says **MIDIScope Any Button Quits**. Now the display will show every MIDI message that the sound engine of the PC2R receives. You'll see exactly what type of message it is along with the value of that message. For example, a Note On message will show you the note number, along with the attack velocity. A Controller message will show the controller number along with the controller value. It also shows you the MIDI channel of the message. To leave MIDIScope, press any button on the PC2R's front panel.

A limitation of MIDIScope is that it can display only one message at a time. Therefore it can be confusing if you are sending multiple channels of information at the same time. It's best to mute all the zones but one so that you can see only that zone's information (or you could use the **Solo** button).

If you suspect a physical problem with the PC2R, you can use the diagnostics to test it.

Chapter 5

Descriptions of Parameters

This chapter contains a description for each of the PC2R's editing parameters. They're organized into the following sections:

- Program Editor Parameters 5-1
- KB3 Editor Parameters..... 5-6
- Setup Editor Parameters 5-10
- Effects Edit Mode Parameters..... 5-32
- MIDI Receive Mode Parameters 5-33
- Global Mode Parameters..... 5-35

Within each of these sections, the descriptions are organized according to the order in which they appear in the editing menus. We've included lists of values only where necessary to explain what those values mean.

For quick reference to all parameters, their possible values, and (where applicable) default settings, see *Parameter Reference* on page B-4.

Program Editor Parameters

There are three primary menus in the Program Editor. Each layer of a program has an independent set of these three menus:

- | | |
|-----------------|---|
| Timbre | The basic nature of the sound |
| Envelope | Attack, decay, and release times |
| LFO | Two low-frequency oscillators that you can use to modulate programs during performance; also the rotor effects for Internal-Voice organs and KB3 organs |

There are also three menus for effects settings, including routing and wet/dry mix; these are the same parameters you see when you go into Effects edit mode from Internal Voices mode. See *Effects Edit Mode* on page 4-26 for more information about saving effects to programs. Also see page 5-32 for a description of all Effects-mode parameters.

The Store menu contains parameters for saving and dumping effects and programs.

The Timbre Menu

The parameters in the Timbre menu control the most basic components of the sound in a program. There's a separate set of Timbre parameters for each program layer.

Keymap

The keymap for programs using mono keymaps (most keymaps are mono keymaps). This parameter appears as << **Keymap** **R** for programs using stereo keymaps.

Keymap L >>

The keymap for the left side of programs using stereo keymaps. This parameter appears as < **Keymap** > for programs using mono keymaps, and is inactive (you can't change its value).

<< Keymap R

The keymap for the right side of programs using stereo keymaps. It appears as **Keymap** for programs using mono keymaps, and is the only active keymap parameter.

Key Range Low, Key Range Hi

These parameters set the lowest and highest notes for the layer.

DSP Parameters

Each layer uses a set of DSP (digital signal-processing) functions that you can use to modify the sound of the layer. Every layer of every program is assigned a set of DSP functions (and associated parameters) at the factory; you can't change which parameters are associated with each layer, but you can change the *values* of the parameters.

Every layer has a total of two DSP parameters. Some layers use two single-parameter DSP functions, while others use one two-parameter function. For example, Layer 1 of Program **016 Classic E Piano** uses two separate lowpass filters, each of which has a single parameter for setting the cutoff frequency. All the layers in Program **054 Retro Roto** use a two-pole lowpass filter with parameters for setting cutoff frequency and resonance.

Layers that use single-parameter functions include numbers in their names to distinguish them from each other. For example, in Layer 1 of **Classic E Piano**, there's LP Filt[1] and LP Filt[2]. These numbers don't appear in the parameter names of two-parameter functions.

Not all layers use their allotment of DSP functions. They have one or two parameters called None to indicate the absence of DSP functions. You can't change the values of these parameters.



Note: When you enter the **Timbre** menu, the first parameter you see is the first DSP parameter. To get to the preceding parameters in the Timbre menu, press the **Left** cursor button one or more times.

Volume (Amp)

Independent amplitude control for the layer. Use this parameter to make one layer softer or louder than the others.

Initial Value (Init Value)

Sends MIDI Controller messages with the specified value when you select the program. For example, if you want to hear the full Mod Wheel effect on a program as soon as you start playing, set the init value of the Mod Wheel parameter to **127**.

Keep in mind that these initial values have an effect only under one or both of the following conditions:

- The program is defined at the factory to use one or more of the MIDI Controllers listed below to modify the program in some way
- The physical controller assignments for the internal setup use one or more of the same MIDI Controllers to modify all programs in some way

You can set initial values for seven different MIDI Controllers:

Mod Wheel (MIDI 1)	MIDI 12
Breath (MIDI 2)	MIDI 13
Data (MIDI 6)	MIDI 29
MIDI 9	

You may be wondering why you can set initial values for *these* MIDI Controllers and not others. It's because most of the PC2R's programs use at least one of these MIDI Controllers to do something (a common example is MIDI 1, which on most keyboards is the message sent by the Mod Wheel, and which controls vibrato or tremolo in many PC2R programs). Appendix B contains a list of programs and which MIDI Controllers the physical controllers are assigned to in each program.

Capture MIDI Vals?

This is a function, not a parameter. Press **Yes** to read the current values of the MIDI Controller messages listed above (assuming you're sending them from your MIDI source), and store them as the values for the seven Initial Value parameters.

The Envelope Menu

There are three parameters in the Envelope menu. They control how the amplitude of each layer develops over time.

Attack

How fast the layer ramps up to full volume.

Decay

How fast the layer fades to silence when you're sustaining notes by holding the keys or using the sustain pedal.

Release

How fast the layer fades to silence when you release notes by letting up the keys or releasing the sustain pedal.

These parameters control the *rate* of attack, decay, and release, which are known collectively as the *envelope* of a sound. Each parameter is measured as a multiple of 1, which is the unadjusted rate (that's why there's an \times after the value). Higher values mean a *higher rate*, which means that *less time* elapses during the corresponding segment of the envelope. For example, if you want notes to linger a long time after you let up the keys, set the Release parameter to a low value.

The LFO Menu

There are eight parameters in the LFO menu. Four of them control two LFOs (low-frequency oscillators). The other four control the rotor effects of the organs in Internal Voices mode, and the rotor effects of the KB3-mode organs. In many programs, the LFOs are activated by the Mod Wheel; they add a vibrato or tremolo effect when you push up the Mod Wheel on your MIDI source.

The LFOs are permanently linked to various sound-modulation functions, which vary from program to program. These functions are in turn controlled by various physical controllers. For example, most of the organs in Internal Voices mode rely on Mod Wheel messages to change the speed of rotary-speaker effects (which are produced by LFOs), while the KB3 organs make use of the **Rotary Fast/Slow** button or MIDI 68 messages for the same purpose—although the KB3 organs don't use the LFOs; they have a separate set of rotor-effect generators.

Adjusting the values of the LFO parameters modifies how the LFOs affect the programs that use them (not all programs make use of the LFOs). See *MIDI Controllers* on page B-10 to learn which programs have functioning LFOs.

Many programs use LFO1, which is always *local*, meaning that the LFO affects just one layer of the program. The other LFO is called LFO2 in some programs, and GLFO in others. LFO2 is always *local*, while GLFO is *global*, which means that it uniformly affects every layer in the programs that use it. In other words, if you change the value of a GLFO parameter in one layer, that value remains constant regardless of which layer you select while editing the program. The detailed description of the LFO parameters begins on page 5-4.

LFO1 Rate

The number of oscillation cycles per second (Hz) for LFO1. Changing the value makes the LFO run faster or slower.

LFO1 Shape

The waveform of the oscillation. Changing the value changes the nature of the LFO's effect on the sound.

LFO2/GLFO Rate

The number of oscillation cycles per second (Hz). Changing the value makes the LFO run faster or slower.

LFO2/GLFO Shape

The waveform of the oscillation. Changing the value changes the nature of the LFO's effect on the sound.

The LFO Menu: Rotor Effects Parameters

The rotor effects simulate the popular Leslie rotating speaker that has become a standard addition to the B-3 organ. KB3 programs all use rotor effects. You can add rotor effects to other programs by saving one of the KB3 effects to those programs.

The rotor effects have two pairs of parameters. Each is responsible for emulating the two speakers (high and low frequencies) that make up the original Leslie rotating speaker.

Rotor Effects Low Rate

Oscillation cycles per second (Hz) for the low rotor. Negative values reverse the phase without changing the rate.

Rotor Effects Low Adjust

The amount of change in the rate of the low rotor when you switch the rotor's speed control from fast to slow or vice versa. When you're in KB3 mode, you can use the **Rotary Fast/Slow** button to switch rotor speed. You can also send a MIDI Controller 68 message from your MIDI source (values of 64 and above switch to fast, and values below 64 switch to slow).

Rotor Effects High Rate

Oscillation cycles per second for the high rotor. Negative values reverse the phase without changing the rate.

Rotor Effects High Adjust

The amount of change in the rate of the high rotor when you switch the rotor's speed control from fast to slow or vice versa. When you're in KB3 mode, you can use the **Rotary Fast/Slow** button to switch rotor speed. You can also send a MIDI Controller 68 message from your MIDI source (values of 64 and above switch to fast, and values below 64 switch to slow).

The Store Menu

This menu appears in all the editors, and includes functions for storing, naming, dumping (via SysEx), and deleting programs (in the Program and KB3 Editors), setups (in the Setup Editor), and effects (in the Program and KB3 Editors).

See *Naming and Storing* on page 4-3 and *Other Save-Dialog Functions* on page 4-4 for more information about the functions in the Store menu.

KB3 Editor Parameters

The Timbre Menu

Wheel Volume Map (*WheelVolMap*)

The wheel volume map determines the volume level for each tone wheel. We've provided several tone wheel volume maps here, based on measurements we've taken of different organs.

<i>Equal</i>	All tone wheels at the same volume. Not based on a real B-3.
<i>Bright</i>	Normal map, based on a B-3 in good condition.
<i>Mellow</i>	Somewhere between Bright and Junky .
<i>Junky</i>	Based on a B-3 with an uneven, rolled-off response.

OrganMap

Controls the relative amplitude of each key, per drawbar. Like the wheel volume maps, these maps are based on measurements we've made on actual organs.

<i>Equal</i>	Uses the same volume for each key and drawbar, and is not based on a real B-3.
<i>Peck's</i>	Normal map, from a B-3 in good condition.
<i>Bob's</i>	More uneven, based on an old B-3.
<i>Eric's</i>	More idealized; smoothed out, but less realistic.

Chorus/Vibrato Switch (*Chor/Vib Switch*)

This parameter is either **On** or **Off**, which enables or disables the chorus or vibrato effect for the KB3 program. If the value is **On**, the chorus or vibrato is determined by the value of the *Chor/Vib* parameter (described below). In KB3 mode, you can use the **Chorus/Vib On/Off** knob to enable or disable the effect. You can also send a MIDI Controller 95 message from your MIDI source (values of 64 and above switch the effect on, and values below 64 switch it off).

Chorus/Vibrato (*Chor/Vib*)

Determines the preset chorus or vibrato effect that gets applied to the program. The six possible values are **Chor1–Chor3**, and **Vib1–Vib3**. For choruses, the amount of detuning increases from **Chor1** to **Chor3**. For vibratos, the vibrato depth increases from **Vib1** to **Vib3**. In KB3 mode, you can use the **Chorus/Vib Depth** knob to change the effect. You can also send a MIDI Controller 93 message from your MIDI source.

Rotary Speed

Sets the rotary effect for the program at either **Slow** or **Fast**. In KB3 mode, you can use the **Rotary Fast/Slow** button to change speed (or send MIDI 68 from your MIDI source).

DrawbarMode

Determines whether the program's drawbar controls set themselves to the positions of the drawbar controls when you select the program.

Preset

Initial drawbar settings are defined by the values of Drawbar parameters 1–9; they ignore the initial positions of the drawbar controls. Moving the drawbars affects the sound during performance, but the program restores the preset values each time you select the program.

Live

Initial drawbar settings are defined by the positions of the drawbar controls (Knobs A–D in combination with the **Drawbar Toggle** button).

Drawbars 1–9 (Drawbar)

The nine parameters correspond to the nine drawbar controls (Knobs A–D in combination with the **Drawbar Toggle** button). Each can have a value from 0 (drawbar fully in) to 8 (drawbar fully out)

DrawbarSteps

Affects the transition between drawbar levels for each of the drawbar controls.

Smooth

Levels range from 0–127 (but still represented as 0–8 in the display). Smoother transition between levels than **Normal**.

Normal

Levels range from 0–8, like actual organ drawbars.

Preamp Response (PreampResp)

Enables/disables the preamp+expression pedal part of the KB3 model.

On

Makes KB3 programs function like stock organs. The expression pedal in this case is more than a volume pedal; it actually functions like a "loudness control," varying the frequency response to compensate for the ear's sensitivity at different volumes. In addition, the preamp provides a deemphasis curve to compensate for the built-in tone wheel volume preemphasis.

Off

Emulates organs that have been modified to have a direct out (before the preamp and expression pedal).

Leakage

Controls the level of the simulated crosstalk and signal “bleed” of adjacent tone wheels in the model. This is provided to help “dirty up” the sound to make it a bit more realistic. A setting of **-96 dB** gives the purest tones; other values add more simulated leakage (the maximum is **0.0 dB**). The leakage level is scaled by the drawbar levels, as well as by the expression pedal level.

Amp

Standard amplitude (volume) control, ranging from -96 dB to +48 dB.

The Envelope Menu

Keyclick

Enables/disables Keyclick. Values are **On** or **Off**.

Keyclick Volume (KeyclickVol)

Adjusts the volume of the keyclick when the value of the Keyclick parameter is **On**.

NoteAttack

Controls the attack characteristic of KB3 notes.

Normal

Smoothed attack.

Hard

Instant attack with audible click, in addition to any amount of key click specified with the Keyclick and KeyclickVol parameters (you might want to set Keyclick to **Off** when you use this setting).

PerchHard

Hard attack level for percussion only; notes without percussion use a normal attack.

NoteRelease

Controls the release characteristic of notes.

Normal

Smoothed release.

Hard

Instant release with audible click.

Perc Switch

Either **On** or **Off**, this parameter enables/disables the percussion effect for the program. When the value is **On**, the nature of the percussion effect is determined by the percussion and percussion-pitch parameters (described below). In KB3 mode, you can use the **Perc On/Off** button to enable or disable percussion (or send MIDI 73 from your MIDI source).

Perc Volume

This parameter sets the volume of the percussion effect when Perc Switch is **On**. Available values are **Soft** and **Loud**. In KB3 mode, you can use the **Volume (Zone 2)** button to switch between soft and loud percussion (or send MIDI 71 from your MIDI source).

Perc Decay

This parameter sets the decay rate of the percussion effect when Perc Switch is **On**. Available values are **Slow** and **Fast**. In KB3 mode, you can use the **Decay (Zone 3)** button to switch between slow and fast percussion decay (or send MIDI 70 from your MIDI source).

Perc Pitch

This parameter sets the pitch of the percussion effect when Perc Switch is **On**. Available values are **Low** and **High**. In KB3 mode, you can use the **Pitch (Zone 4)** button to switch between low and high percussion pitch (or send MIDI 72 from your MIDI source).

The Envelope Menu: Percussion Parameters

There are four possible combinations of percussion effects. The following table lists these combinations, and indicates which set of parameters corresponds to each combination.

Combination of Effects	Corresponding Parameter Group
Loud and Fast	Ld/Fast
Loud and Slow	Ld/Slow
Soft and Fast	Sft/Fast
Soft and Slow	Sft/Slow

For each combination, there are three parameters:

Level

Sets the absolute level of the percussion effect.

Decay

Sets the decay rate of the percussion effect—that is, how long it takes to fade to silence.

Volume Adjust (Vol Adj)

Adjusts the amplitude of the organ relative to the amplitude of the percussion effect.

The Envelope Menu: Percussion Pitch Parameters

Three parameters control the pitch of the percussion effect:

Low Harmonic (Low Harm)

Controls which drawbar is used as the basis for the low harmonic of the percussion effect. The actual pitch obtained depends on which drawbar you use. On an actual tone wheel organ, this is Drawbar 4. You can use any of the nine drawbars. Whichever drawbar you use, it will affect the pitch of the low harmonic only when percussion is on (the **Zone 1** button is lit), and the low harmonic is active (the **Zone 4** button is off).

High Harmonic (High Harm)

Controls which drawbar is used as the basis for the high harmonic of the percussion effect. The actual pitch obtained depends on which drawbar you use. On an actual tone wheel organ, this is Drawbar 5. You can use any of the nine drawbars. Whichever drawbar you use, it will affect the pitch of the high harmonic only when percussion is on (the **Zone 1** button is lit), and the high harmonic is active (the **Zone 4** button is lit).

Steal Bar

Controls which drawbar is disabled (if any) when the percussion effect is turned on (the **Zone 1** button is lit). On an unmodified tone wheel organ, the ninth drawbar is the one disabled. Possible values are **Drawbar1–Drawbar9**, and **None**.

The LFO Menu

The LFO parameters for KB3 programs are the same as those for Internal-Voices programs. See *The LFO Menu* on page 5-4.

Setup Editor Parameters

There are twelve menus in the Setup Editor. With one exception, each zone in a setup has an independent set of these menus (the exception is the Arpeggiator menu, in which all parameters but Zone Enable affect all zones in a setup).

The primary menus in the Setup Editor are listed below. There are also four Effects-mode parameters (as described on page 5-32), and a Store menu containing functions for saving, naming, and deleting setups.

MIDI Xmit	Various MIDI-related features (like what MIDI channel each zone uses)
Program	Bank and program assignments, and other program-related parameters
Key Range	Activation/ deactivation of keys, pitch control
Transpose	Uniform pitch-shifting of entire zone
Velocity	Response to your playing style
Controllers	Functions of PC2R knobs, and physical controllers on your MIDI source
Arpeggiator	Activation/ deactivation and control of arpeggiator

Each zone in every setup has an independently-programmable set of Setup-Editor parameters; when you change a value for one of these parameters, you're affecting only the current zone in the current setup (except for the Arpeggiator parameters, which affect the entire setup). Always check to make sure you've selected the zone you want to edit before you make changes.

If you want to reprogram the internal setup, use the Setup Editor to edit Zone-1 parameters, then save your changes to the internal setup, as described on page 3-23 and page 4-32.

Throughout this section, we'll refer only to setup editing. Remember, however, that any changes you make to Zone 1 in the Setup Editor can also be applied to the internal setup.

The MIDI Xmit Menu

The parameters in the MIDI Xmit menu control several aspects of the MIDI information that the PC2R transmits to its sound engine, as well as to its MIDI Out ports.

By changing the value of the Dest parameter, you can make these parameters affect only the PC2R, only external MIDI equipment, or both.

MIDI Channel

Determines which MIDI channel the current zone uses. Use a value of **Off** to disable a zone. In the default setup, each zone corresponds to the zone number (Zone 1 uses Channel 1, Zone 2 uses Channel 2, and so on).

Destination (Dest)

Determines whether the zone transmits only to the PC2R, only to MIDI, or to both. The default-setup value is both (**Local+MIDI**). If you set the value to **Local**, the zone plays only on the PC2R. If you're using the PC2R to control other instruments or to record to an external sequencer, use a value of **MIDI** or **Local+MIDI**.

Bend Range, Semitones (BndRng ST)

Sets the number of semitones of pitch bend applied by any physical controller that sends either the Pitch Up, Pitch Down, Pitch, or Rvrs Pitch MIDI Controller message, when that controller is at its maximum. In the default setup, pitch bending is assigned to be controlled by the standard Pitch Wheel on your MIDI source.

The value of this parameter gets added to the value of BndRng ct. You can think of BndRng ST as a coarse adjustment, and BndRng ct as a fine adjustment. For example, if you want the maximum amount of pitch bend to be slightly more than a whole note, set BndRng ST to **2**, and BndRng ct to a relatively low number like **10**.

In the default setup, BndRng ST is **2**, and BndRng ct is **0**, so pushing the Pitch Wheel on your MIDI source all the way up bends the pitch two semitones up, and pulling it all the way down bends the pitch two semitones down.

Bend Range, Cents (BndRng ct)

Sets the number of cents (100ths of a semitone) of pitch bend applied by any physical controller that sends either the Pitch Up, Pitch Down, Pitch, or Rvrs Pitch MIDI Controller message, when that controller is at its maximum. The value of this parameter gets added to the value of BndRng ST. In the default setup, BndRng ct is **0**.

Auxiliary Bend 1, Up (AuxBnd1 Up)

Sets the number of semitones of upward pitch bend applied by any physical controller that sends AuxBnd1 (MIDI 21 for MSB and MIDI 53 for LSB), when that controller is at its maximum.

Auxiliary Bend 1, Down (AuxBnd1 Dwn)

Sets the number of semitones of downward pitch bend applied by any physical controller that sends AuxBnd1 (MIDI 21 for MSB and MIDI 53 for LSB), when that controller is at its maximum.

Auxiliary Bend 2 Range (AuxBnd2 Rng)

Sets the number of semitones of pitch bend applied by any physical controller that sends AuxBnd2 (MIDI 15), when that controller is at its maximum. In the default setup, there aren't any controllers set to send AuxBnd2.

The Program Menu

Bank

When you select this parameter, the top line of the display shows the current zone of the setup you're editing, as well as the bank ID and program ID of the program assigned to the zone. The bottom line shows the ID and name of the bank that the current zone uses.

This parameter selects the bank for the current zone. It also determines which bank-select value the zone sends via MIDI when you select the setup (the zone won't send a bank-select message to the MIDI Out port if it has a value of **Local** for the Dest parameter in the MIDI Xmit menu).

Program ID and Name (No parameter name shown)

When you select this parameter, the top line of the display shows the current zone of the setup you're editing, as well as the bank ID and program ID of the program assigned to the zone. The bottom line shows the ID and name of the program assigned to the current zone.

This parameter selects the program for the current zone. It also determines which program-change value the zone sends via MIDI when you select the setup (the zone won't send a program-change message to the MIDI Out port if it has a value of **Local** for the Dest parameter in the MIDI Xmit menu).



Note: When you enter the Program menu, the first parameter you see is the Program ID and Name parameter. To get to the Bank parameter, press the **Left** cursor button once.

Entry Transmit

Determines whether the current zone sends a program-change command when you select the setup. If its value is **On**, the zone transmits the program ID of the program assigned to the zone (as shown in the top line of the display when you're viewing this parameter). This is the setting for each zone in the default setup. The program-change message may include a bank-select message, depending on the value of the Bank Mode parameter.

If the value of Entry Transmit is **Off**, the zone doesn't send a program change when you select the setup.

The function of this parameter depends on the setting of the Dest parameter. If the current zone's setting for Dest is **Local**, the zone doesn't send a program-change command to the MIDI Out port when you select the setup, even if Entry Transmit is set to **On**.

Bank Mode

Determines what type of bank-select message, if any, the zone sends when you select the setup.

A value of **None** prevents the zone from sending a bank-select message. If the value is **0**, the zone sends a MIDI 0 message, with a value equal to the ID of the current bank. If the value is **32**, the zone sends a MIDI 32 message with a value equal to the ID of the current bank. Values of **0** and **32** enable you to select banks numbered from 0–127.

If the value of Bank Mode is **0/32**, the zone sends both MIDI 0 and MIDI 32, combined as a single value. This enables you to select banks numbered from 0-16,383. Since many of today's MIDI instruments respond to this form of bank-select message (as recommended by the MIDI specification), **0/32** is the value of Bank Mode in each zone of the default setup.

There are two other values for Bank Mode: **K2000** and **K1000**. These enable you to send bank-select and program-change commands to older Kurzweil instruments, which use a different system for numbering programs. The manuals for these instruments explain the numbering system thoroughly.

The function of this parameter depends on the setting of the Dest parameter in the MIDI Xmit menu. If the current zone's setting for Dest is **Local**, the zone doesn't send a bank-select command to the MIDI Out port when you select the setup, regardless of the setting for Bank Mode.

Program ID Display Format (PNumDisp)

This parameter is primarily a convenience for when you're sending MIDI to other instruments or to a sequencer. If you're using the PC2R as a MIDI slave only, you won't need to edit this parameter unless your MIDI source numbers its programs starting at 1 (the PC2R numbers its programs and setups starting at 0).

Different MIDI instruments and sequencers refer to program numbers differently: some start counting at 0, and others start at 1. Still others arrange them in groups of 8, with the first digit (or letter) denoting the group, and the second digit denoting the number within the group.

PnumDisp lets you display program numbers in the same format as the receiving MIDI equipment. It doesn't change the outgoing MIDI information in any way; it just makes it easier for you select the desired programs on the receiving gear without having to convert the PC2R's program ID into the receiving instrument's format.

- 0–127** For instruments that start numbering IDs at 0 (the setting for each zone in the default setup)
- 1–128** For instruments that start numbering IDs at 1
- 11–88** Compatible with many Roland instruments
- A1–P8** For instruments that organize programs in groups of 8

Program Name Display Format (PNameDisp)

This is another parameter designed to help you keep track of programs when you're sending MIDI to other instruments or to a sequencer. It determines the program name you see when you're viewing the Program Name and ID parameter for the current zone (the parameter you see when you enter the Program menu). It doesn't affect the program ID that you see, nor does it affect the MIDI information that the zone sends.

The idea behind this parameter is that you use it only for zones that are sending to MIDI (that is, the zone has a value of either **MIDI** or **Local+MIDI** for the Dest parameter in the MIDI Xmit menu). For any zone that sends to MIDI, PNameDisp lets you choose between viewing what gets selected on the PC2R when you select the setup, or what gets selected on the *receiving* instrument when you select the setup.

If the value is **Internal**, the display normally shows the name of the program that the PC2R uses in that zone. This is the value for each zone in the default setup.

There's one exception when the value of PNameDisp is **Internal**: if the zone has a value of **MIDI** for the Dest parameter (making it a MIDI-only zone), the display shows a name of **External Prog** regardless of the current program ID. This makes sense, since the zone won't select *any* program for the PC2R, it'll select a program only for the receiving instrument. The PC2R can't determine the *name* of that program, so it reminds you that it's programmed to select *some* external program with the ID shown in the display.

Use a value of **Gen. MIDI** when the receiving instrument is a General-MIDI instrument. In this case, the PC2R *can* determine the name of the program it's going to select on the receiving instrument, it shows you both the ID and the name.

Use a value of **Off** when you want the PC2R to remind you that the zone will select a program on a non-General-MIDI external instrument when you select the setup. In this case, the display shows **External Prog** regardless of the program ID.

The Key Range Menu

Low and Hi

The primary function for the Key Range menu is determining where a zone plays within the MIDI note range. This is controlled by the values of the Low and Hi parameters. In the default setup, all zones range from C -1 to G 9. An 88-note keyboard ranges from A 0 to C 8 (a 76-note keyboard ranges from E 1 to G 7, and a 61-note keyboard ranges from C 2 to C 7), but you can transpose a zone so that it sends note numbers below or above those ranges—it may not make any sound, but it will still generate MIDI information, which can be useful).

The PC2R ignores the values of these parameters when the AutoSplit parameter has a value of **On** (the values appear in parentheses to indicate that these parameters are inactive. When AutoSplit is set to On, the value of the AutoSplit Key parameter determines the split points for all the zones in the setup (Zones 3 and 4 cover the region from the bottom of the note range up to—and including—the split point, while Zones 1 and 2 cover the region from the top of the note range down to the note above the split point).

Intuitive entry makes it easy to edit these parameters; just hold down the **Enter** button and play a note on your MIDI source to set the value.

Note Map

This parameter determines how the current zone responds to each note. If you're using the PC2R as a solo instrument, you'll probably never need to edit the note map for the internal setup. If you play a lot of setups, or control external instruments, different note maps can be useful in a number of ways.

In the default setup, each zone has a value of **Linear** for Note Map. This gives you a normal keyboard: playing C 4 triggers the note C 4, just as you would expect. Assuming the zone's Dest parameter is at its default value of **Local+MIDI**, every note you play goes both to the PC2R and to the MIDI Out port.

If the value of Note Map is Off, the zone generates no note information, but still generates all non-note information like MIDI Controller messages.

The next group of values—**1 of 2** through **4 of 4**—generate note information only for specific notes. We call these alternating note maps. They're handy when playing a setup that sends MIDI information to multiple external instruments, because they enable you to play the external instruments as if they were a single instrument, thereby increasing your available polyphony.

A value of **Inverse** reverses the note range: high notes at the bottom and low notes at the top. A value of **Constant** causes all Note On messages to play the same note. By default this is C 4, but you can change it with the Transpose parameter. Setting a zone's Note Map parameter to **Constant** is useful when you want the sound from a particular note to play with every note of another zone—for example, playing a ride cymbal with every note in a bass line.

AutoSplit

Turns the AutoSplit feature on and off *for all zones in the setup*. In the default setup, this value is **Off**. The AutoSplit feature is intended primarily for making quick layers and splits from an Internal-Voices program, but enabling AutoSplit for a setup is useful if you like to solo and mute zones while performing. See *The AutoSplit Feature* on page 3-23 for more information.

AutoSplit Key

When the value of the AutoSplit parameter is **On**, this parameter sets the split point *for all zones in the setup*, overriding each zone's key range settings. Depending on the key ranges you've set for the zones in any particular setup, this may not be useful. On the other hand, you may enjoy the flexibility it provides for muting and soloing. See *The AutoSplit Feature* on page 3-23 for more information.

When the value of AutoSplit is **Off**, the value of AutoSplit Key appears in parentheses, indicating that it's inactive. In this case, the setup uses the values of the Low and Hi parameters to determine the key ranges of each zone.

The Transpose Menu

Transposition

Sets the amount of transposition for the current zone. In the default setup, there's no transposition on any of the zones.

The Velocity Menu

The parameters in this menu control the PC2R's response to the attack velocity of the notes you play—how hard you strike the keys, for example, if your MIDI source is a keyboard. The settings for the velocity parameters affect both the PC2R's sounds, and the MIDI information the PC2R transmits via its MIDI Out port.

A Bit of Background

When you play a note on your MIDI source, the PC2R generates a Note On message with an attack-velocity value corresponding to how forcefully you play the note. Attack-velocity values range from 1 to 127; they never go lower than 1 or higher than 127. A value of 1 is the softest and 127 is the loudest.

The velocity parameters interact extensively with each other, so changing one parameter's value can alter the way that others affect the PC2R's velocity response. We'll give you a few examples of this interaction. More to the point, it's quite complicated to describe all the possible ways you can use these parameters in combination with each other. As we describe each parameter, the description assumes that all the other parameters are at their default values. Experimenting with different combinations is the best way to understand how these parameters interact.

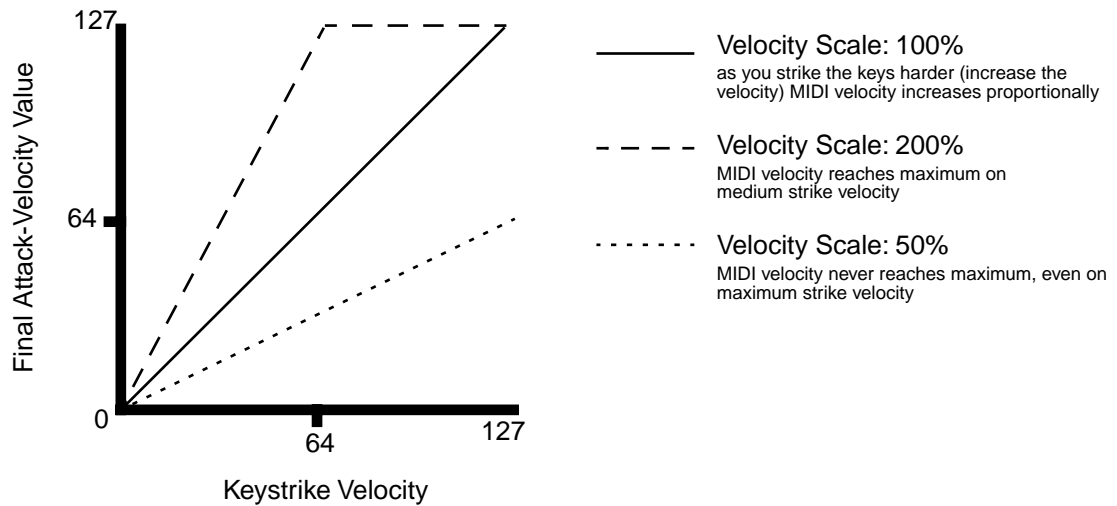
You can use the velocity parameters in several interesting ways: customizing the feel of your keyboard to your playing style; compensating for velocity-response differences in instruments receiving MIDI from the PC2R; triggering different sounds as you play softer or harder (see *Velocity Switching* on page 4-24 to learn how to trigger different sounds at different velocities).

To illustrate how the velocity parameters work, we've included a number of graphs with the parameter descriptions. In each graph, the horizontal axis (labeled Keystroke Velocity) represents how hard you play. The vertical axis (labeled Final Attack-Velocity Value) is the attack-velocity value that gets sent to the PC2R to and to the MIDI Out port *after* any adjustments resulting from non-default values for the velocity parameters. The lines in the graph are the *velocity curve*—which shows the relationship between every possible keystroke velocity value and the resulting final attack-velocity value.

Velocity Scale (Vel Scale)

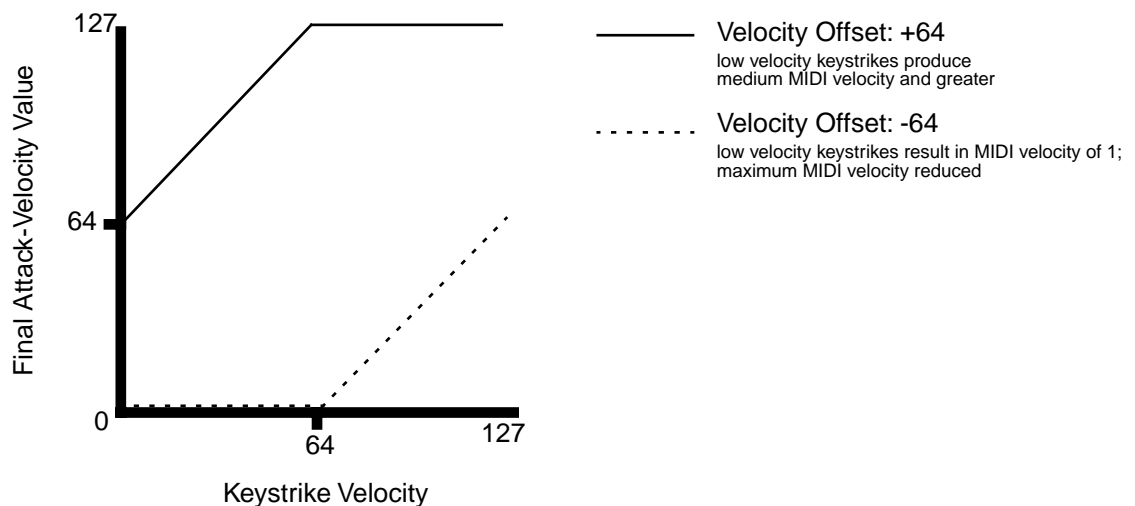
Increases or decreases the PC2R's velocity sensitivity. The value for all zones in the default setup is **100%**—think of this as the normal value. Higher values increase the sensitivity; notes get louder faster than normal as you play harder. Lower values decrease the sensitivity; notes get louder slower than normal as you play harder. You'll notice the difference more when you're playing hard than when you're playing softly.

You can set negative values for Vel Scale, but doing so isn't useful unless you also change the value of the Vel Offset parameter (this is one of those interactions we mentioned). See *Vel Offset* for more information.



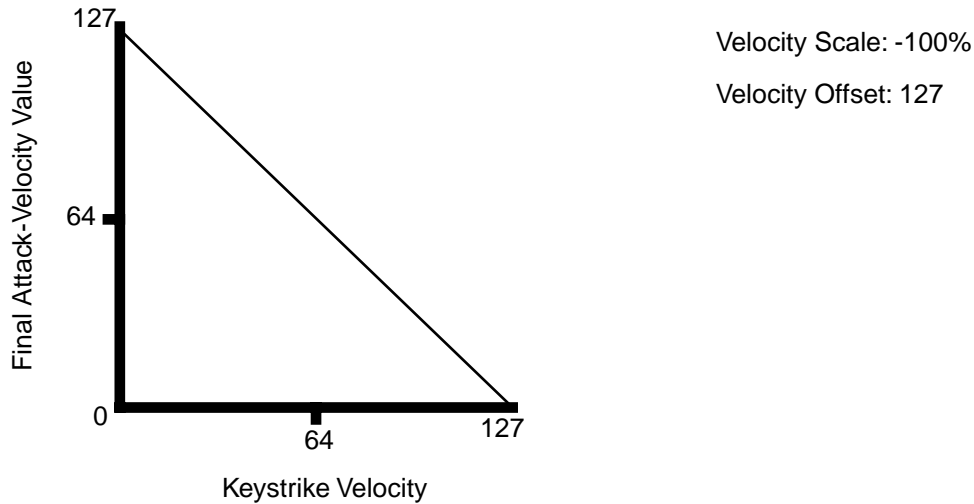
Velocity Offset (Vel Offset)

Adds a constant value to your keystrike velocity. The value for all zones in the default setup is 0. A positive value for this parameter causes an upward shift in the entire velocity curve. For example, if you set a value of 64, every note in that zone has a final attack-velocity value of 64 greater than your keystrike velocity (to a maximum of 127, of course). So if you play a note with a keystrike velocity of 32, the final attack-velocity value is 96. Negative values for Vel Offset shift the velocity curve downward.



Vel Scale and Vel Offset have a very close relationship; when you change the value of one of them, you'll often want to change the value of the other as well. For example, suppose you set Vel Scale to 250% in a zone, to make it stand out from the other zones when you're playing hard. You may find that the velocity curve pins at the high end rather quickly—in other words, by the time you're playing *f*, the final attack-velocity value may already be 127, and playing *ff* or *fff* doesn't give you any more dynamics. Setting a negative offset shifts the velocity curve downward, preventing the final attack-velocity value from maxing out before you get to *fff*.

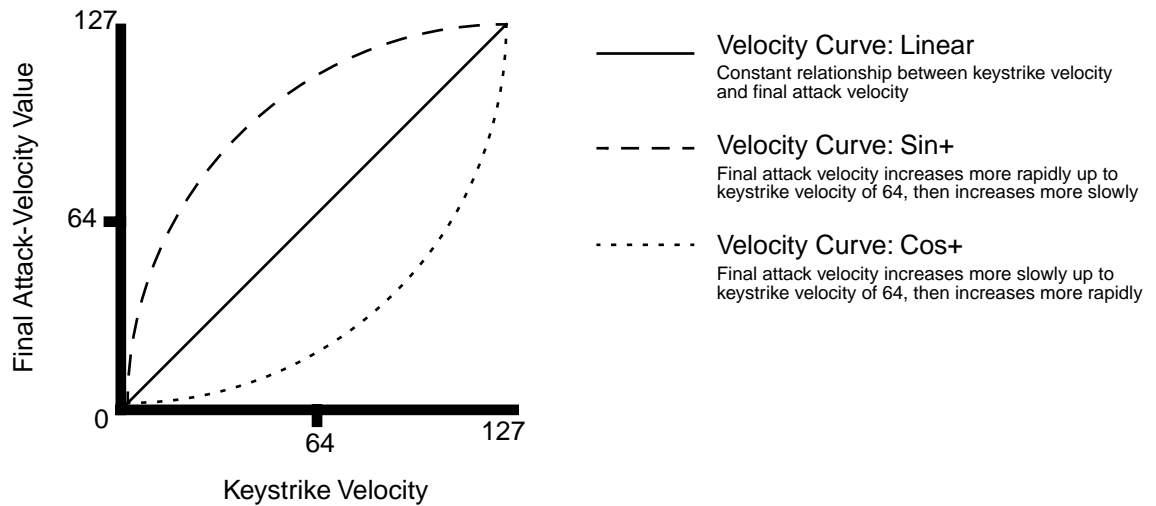
Here's another example: reversing a linear velocity curve so that it plays loud when you strike the keys softly, and vice versa. You might think that all you have to do is set Vel Scale to **-100%**. when you do that, you find that all the final attack-velocity values are at minimum. When you set Vel Offset to 127, the velocity curve gets shifted as high as it will go, enabling the negative scaling to work properly, as shown in the following graph.



Velocity Curve (Vel Curve)

So far we've been describing the velocity parameters in terms of *linear* velocity curves—that is, the final attack-velocity increases at a uniform rate as your keystrike velocity increases so that on the graph, the velocity curve appears as a straight line. You can use the Vel Curve parameter to change the shape of the velocity curve, which provides variations in dynamic response.

The setting for Vel Curve in all zones of the default setup is **Linear**. There are two other values whose effects are the opposite of each other. **Sin+** causes the final attack-velocity value to increase faster than the linear curve until your keystrike velocity is *mf*, than slower than the linear curve as keystrike velocity continues to increase (the velocity curve resembles the first portion of a sine wave, if you're wondering why the value is called **Sin+**). **Cos+** causes the final attack-velocity value to increase *slower* than the linear curve until your keystrike velocity is *mf*, than *faster* than the linear curve as keystrike velocity continues to increase (resembling the first portion of a cosine wave).

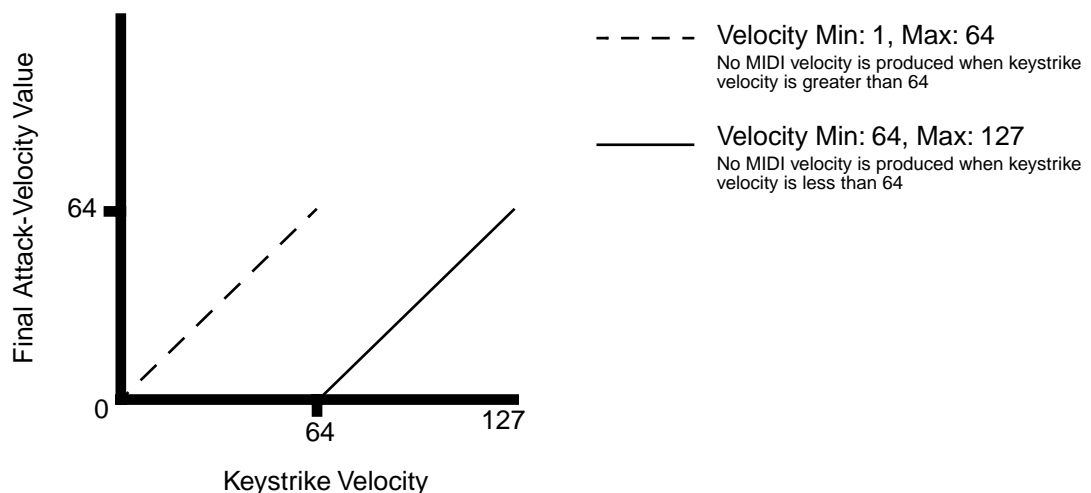


Minimum Velocity (Min) and Maximum Velocity (Max)

These parameters work in tandem to define the velocity range for the zone. If the final attack-velocity value of a note is below the minimum or above the maximum, the note won't sound. Note that it's not your *keystrike* velocity that determines whether the note sounds, but your keystrike velocity plus (or minus) the adjustments applied by the other velocity parameters.

In the default setup, these parameters are set to values of **1** and **127** for all zones. Intuitive entry works nicely for editing: hold down the **Enter** button, and strike any key. Your keystrike velocity sets the value.

You can also set the value of the Min parameter higher than the value of the Max parameter for any zone. In this case, the zone plays outside the velocity range—that is, you'll hear notes when the final attack-velocity value is below the minimum or above the maximum. Final attack-velocity values within the velocity range don't produce notes.



The Controllers Menu

The Controllers menu contains parameters that enable you to use the physical controllers on your MIDI source (wheels, sliders, breath, pedals, buttons, ribbons, or other programmable switch or continuous controllers) to control any of several functions on the PC2R. The parameters in the Controllers menu also determine how the PC2R responds to its own control knobs, as well as what MIDI Controller messages the PC2R sends to MIDI slaves, if you have any connected.

Each zone of every setup has a set of independently-programmable controller parameters. Editing a parameter in one zone of a setup affects *only* that zone; it doesn't affect the other zones in the setup, nor does it affect any other setup.

The internal setup (which defines numerous characteristics for every program in Internal Voices mode and KB3 mode) also has a separate set of these same parameters. Editing a parameter in the internal setup affects all programs, but doesn't affect any setups.

Some of the controllers in the Controllers menu correspond to the knobs on the PC2R's front panel—for example, the controller called Green Knob **A** corresponds to the bottom-left knob in the Performance region, when the **Shift** LED is green. Moving this knob when the **Shift** LED is green adjusts the effects mix in many factory setups. (You can also program controllers on your MIDI source to make use of these controllers. See the table on page B-11 to learn which MIDI Controller messages to send to activate these controllers from your MIDI source.)

The other controllers correspond to the various types of physical controllers available on keyboards and other MIDI sources: mono pressure (aftertouch) and control pedals, for example. The PC2R responds by default to many standard MIDI Controller messages like Sustain and Mod Wheel. With a little programming, you can get the PC2R to respond to just about any MIDI Controller message your MIDI source can generate.

There are three types of controllers listed in the Controllers menu:

- Continuous controllers
- Switch controllers
- Ribbon controller (a specialized continuous controller)

Each type of controller shares a set of common but independently-programmable parameters. For example, every continuous controller has a parameter called Ctrl Num; it determines which MIDI message the controller sends—either to the PC2R's sound engine or to external MIDI instruments. Editing the Ctrl Num parameter for one continuous controller doesn't affect the value of Ctrl Num for any of the other continuous controllers.

To save space, we won't list every parameter for every controller. Instead, we list the common parameters once for each type of controller.

Front-Panel Controllers and MIDI-Source Controllers

Many of the parameters in the Controllers menu correspond to the four control knobs on the PC2R's front panel (for example, Red Knob **B**). The values of these parameters determine what happens when you move the knobs. For example, in many setups, Red Knob **B** has a value of **1 Mod Whl**, so any program that responds to a MIDI Controller message of 1 (many programs use this message for vibrato, for example).

A program that responds to MIDI Controller 1 also responds to your MIDI source whenever it sends MIDI 1. You can program the physical controllers on your MIDI source to send MIDI Controller messages that simulate moving the knobs on the front panel of the PC2R. On

page B-11 there's a table that shows the MIDI Controller messages to send from your MIDI source when you want to simulate moving the knobs on the PC2R's front panel.

Entry Volume

Sets the volume level of the zone when you select the setup, by sending a MIDI Controller 7 message with the value you specify. You can set a value of **None** to prevent the message from being sent when you select a setup.

The Controllers Menu: Continuous Controller Parameters

There are fourteen controllers in the continuous-controller group:

Wheel 1 Up	Pedal 1
Wheel 1 Down	Red Knob C
Red Knob B	Red Knob D
Mono Pressure (MPressure)	Ribbon 1
Green Knob A	Ribbon 2
Green Knob B	Ribbon 3
Green Knob C	
Green Knob D	

Each of the controllers in this group has the following six parameters.

MIDI Controller Number (Ctrl Num)

Determines which MIDI Controller message the physical controller sends—either to the PC2R's sound engine or to the MIDI Out port(s). For example, Knob **A** (when the **Shift** LED is green) affects the effects mix in many factory setups because the value of its Ctrl Num parameter for one or more zones in those setups is set to **91 FXBWet**, **92 FXABWet**, or **93 FXAWet**. If you changed the Ctrl Num value for Green Knob **A** in one of the zones, it would control something different.

Controller Scale (Ctrl Scale)

Amplifies or diminishes the action of the controller. The normal unscaled value is **100%**. Higher values make the controller more sensitive; lower values make it less sensitive. Setting the scale to a negative value makes the controller work in reverse. You can make a controller crossfade its behavior between two zones by assigning the same Ctrl Num value for both zones, then setting Ctrl Scale to a positive value in one zone, and a negative value in the other.

Controller Offset (Ctrl Offset)

Adds or subtracts a constant to the controller, and depending on the value, sets minimum or maximum values. For example, if the value of Ctrl Offset is **25**, the minimum value of the MIDI Controller message sent by the controller is 25. If Ctrl Offset is **-25** (and Ctrl Scale is **100%**) the first one-fifth of the controller's movement (25/127, which is about 1/5) won't do anything, and the maximum value of the MIDI Controller message sent by the controller is 102 (127-25).

Controller Curve (Ctrl Curve)

This parameter affects the behavior of the controller the same way that the Vel Curve parameter affects the PC2R's velocity response. If you set Ctrl Curve to **Sin+**, the controller has its greatest effect in the middle of its range; if Ctrl Curve is **Cos+**, the controller has its greatest effect at the ends of its range.

Entry Value

Enables a controller to send a MIDI Controller message of a specific value as soon as you select a program or setup, regardless of the position of the physical controller that is assigned to send the message. For example, if you want to make sure that the program in Zone 1 of a setup is panned to the left whenever you select the setup, assign a physical controller in Zone 1 of that setup to send MIDI Controller 10, then set an Entry Value of **0** for that controller.

Entry values ignore the current position of the physical controller when you select the program or setup. In fact, if the physical controller is above or below the entry value when you select the program or setup, moving the controller has no effect until you move it past its entry value. In the panning example above, moving the controller won't change the panning until you move it all the way down, then back up at least partially.

Setting Entry Value to **None** is different from setting it to **0**. **None** means that there's no initial controller command when you select the program or setup, but you'll notice the effect as soon as you move the controller.

Exit Value

Enables a controller to send a MIDI Controller message of a specific value as soon as you leave a program or setup, either by selecting another program or setup, or by changing performance modes. This prevents the position of the controller in the current program or setup from affecting the next program or setup you select.

For example, suppose you have Green Knob **D** controlling pan position in Zone 1 of a setup. You have Green Knob **D**'s Exit Value parameter set to **None** for Zone 1. While you're playing that setup, you pan Zone 1 fully left. If you select another setup that doesn't have an entry value for pan in Zone 1, then Zone 1 of the newly-selected setup will also be panned left. The easiest way to prevent this is to set an exit value of **64** for Green Knob **D** in Zone 1. This will return the panning to the center.

In general, if you set an entry value for a controller, it's a good idea to set an exit value as well, to remove that controller's effect when you leave the setup.

The Controllers Menu: Ribbon Controller Parameters

If your MIDI source is a PC2, the ribbon controller parameters work the same as for the PC2. If you're using a different MIDI source that has a ribbon controller, it may work with the PC2R's default ribbon controller settings, depending on the MIDI Controller message that your MIDI source sends. See the table on page B-11 to learn how to activate the ribbon controllers from your MIDI source.

There's one ribbon parameter (Ribbon Sect) that's unique to ribbon section 1, as described below. The three parameters following Ribbon Sect are common to all three ribbon

controllers—so are all of the continuous controller parameters (whose descriptions start on page 5-21).

Ribbon Section Configuration (Ribbon Sect)

Determines the configuration of the optional ribbon controller. A value of **Large** creates a single section spanning the entire length of the ribbon. A value of **3 Sect.** divides the ribbon into three sections (sections) of equal length.

Each ribbon section has the following three parameters:

Spring Switch

Controls the “memory” of each section of the optional ribbon controller *for all zones*. When the value is **On**, the MIDI Controller message sent by the ribbon section “springs” back (the MIDI Controller message’s value returns to the value specified by the Spring Pos parameter—the way the Pitch Wheel does on most instruments).

If the value is **Off**, the ribbon section remembers the last value it was sending when you released the pressure on it. If you use a value of **Off**, we recommend that you also set the ribbon section’s Exit Value parameter to **0**, so that any lingering values don’t apply to other setups that don’t have entry values for that ribbon section.

Ribbon Mode

Affects the MIDI Controller values sent by the ribbon section *for all zones*. A value of **Absolute** means that the value of the MIDI Controller message that the ribbon section sends is tied directly to a physical location on the ribbon—in other words, touching a particular point on the ribbon always generates the same value for the MIDI Controller message. If Spring Switch is **On**, this means that when you touch the ribbon, the MIDI Controller value changes from the Spring Pos value to whatever value corresponds to the location of your finger on the ribbon. If Spring Switch is **Off**, touching the ribbon changes the MIDI Controller value from wherever it was when you released the ribbon last time.

A value of **Relative** means that the position of your finger on the ribbon doesn’t matter, and when you press it, the MIDI Controller value picks up where you left off (either at the Spring Pos value if Spring Switch is **On**, or whatever the last value was if Spring Switch is **Off**). When Ribbon Mode is **Relative**, touching the ribbon doesn’t change this value until you move your finger.

Setting Ribbon Mode to **Relative** works best when you also set Spring Switch to **Off**. In this case, the ribbon works much like the mouse on a personal computer.

Spring Position (Spring Pos)

When Spring Switch is **On**, Spring Pos sets the “return” value for the ribbon section—that is, the MIDI Controller message value sent by the ribbon section when you lift your finger from the ribbon. This affects *all zones* in the setup. A value of **64** sets the zero point in the center of the section; a value of **127** sets the zero point at the cable end of the section; a value of **0** sets the zero point at the other end of the section.

The ribbon controller is a continuous controller, so each ribbon section also has the six continuous-controller parameters (see page 5-21).

The Controllers Menu: Switch Controller Parameters

There are eight controllers in the switch-controller group:

Amber Swch A	SwitchPdl1
Amber Swch B	SwitchPdl2
Amber Swch C	SwitchPdl3
Amber Swch D	
Red Switch A	

The controllers with the words “Amber” and “Red” in their names correspond to the four knobs in the Performance region. We’ll refer to them collectively as the front-panel switches. When the **Shift** LED is *red*, Knob **A** acts as a switch controller (Red Switch **A**), not as a continuous controller. Similarly, when the **Shift** LED is *amber*, Knobs **A–D** act as switch controllers (Amber Swch **A–D**).

To use a knob as a switch, turn it through its halfway point. Turning it left shuts the switch off, and turning it right turns the switch on. It’s important to note that the knob has to travel through its halfway point in order to take effect.

For example, suppose you select a setup in which Red Switch **A** is on in all zones as soon as you select the setup (you would do this by setting a value of **On** for the Entry State parameter for Red Switch **A** in all zones of the setup). Suppose also that when you select the setup, the **Shift** LED is *red*, and Knob **A** is set somewhere below (to the left of) its midpoint. In this case, turning Knob **A** all the way left won’t turn the switch off. You’d have to turn Knob **A** *right* until it was past the halfway point, then turn it *left* past the halfway point.

You might find it easier to manipulate the switch controllers from your MIDI source. If it has programmable buttons, you can use them to send the appropriate MIDI Controller messages to activate the PC2R’s switch controllers (see page B-11). This has the added advantage of enabling you to use the switches in two different ways (see *Switch Type (SwType)* below).

Each of the eight switch controllers shares the following set of parameters. Each switch controller in each zone of a setup has an independent set of these parameters.

Switch Type (SwType)

This parameter is irrelevant for the PC2R, since the red and amber switches have only one mode of operation (as described above), and there are no switch pedals on the PC2R itself. Changing the value of this parameter will have no effect on the PC2R’s behavior.

The only reason this parameter is here at all is in case you dump setups from your PC2R to a PC2. In this case, the SwType parameter *is* relevant, since the PC2’s switch controllers can operate in two different modes. If you program your setups so that the switch type is the way you would want it to work on a PC2, you can dump them from the PC2R and use them right away on the PC2, without having to check whether the switch is programmed the way you want it.

The available values are **Momentary** and **Toggle**. A momentary switch is on only when you’re holding it down. A toggle switch changes from off to on (or vice versa) when you press it, and stays in that state when you release it. Remember that changing the value of this parameter on your PC2R will have no effect. The value of this parameter in any setup is relevant only when you dump that setup to a PC2.

On Controller (On Ctrl)

Determines the MIDI Controller message that the controller sends when you turn it on. When you set a value for this parameter, the PC2R automatically assigns the same value to Off Ctrl.

On Value

Sets the value of the MIDI Controller message sent by the controller when you turn it on. The value for all zones in the default setup is **127** or **On**. You can set any value from **0** to **127**, but in most cases, **127** is the most useful. You can also set a value of **None**, in which case the controller sends no message. This is useful when you want the controller to do something in one zone but not in another (although it probably makes more sense to set a value of **None** for On Ctrl).

Off Controller (Off Ctrl)

Determines the MIDI Controller message that the controller sends when you turn it off.

Off Value

Sets the value of the MIDI Controller message sent by the controller when you turn it off. The value for all zones in the default setup is **0** or **Off**. You can set any value from **0** to **127**, but in most cases, **0** is the most useful. You can also set a value of **None**, in which case the controller sends no message. This is useful when you want the controller to do something in one zone but not in another (although it probably makes more sense to set a value of **None** for On Ctrl).

Entry State

Determines what MIDI Controller message, if any, the controller sends when you select the setup. If the value is **None**, the controller sends no message. If the value is **On**, the controller sends a message according to its settings for On Ctrl and On Value. If the value is **Off**, the controller sends a message according to its settings for Off Ctrl and Off Value.

Exit State

Determines what MIDI Controller message, if any, the controller sends when you leave the setup, by selecting either a different setup or a different performance mode. If the value is **None**, the controller sends no message. If the value is **On**, the controller sends a message according to its settings for On Ctrl and On Value. If the value is **Off**, the controller sends a message according to its settings for Off Ctrl and Off Value.

The Arpeggiator Menu

Arpeggiator Activation (Arp Active)

Enables or disables the arpeggiator for the setup. If this parameter's value is **Off**, then you won't hear arpeggiation for any notes in any zone of the setup, regardless of the settings for any of the other arpeggiator parameters.

In most setups, you can press Amber Switch **D** to activate the arpeggiator (in these setups, Amber Switch **D** sends MIDI 116, ArpOn. You can program any physical controller (typically a switch controller to activate the arpeggiator by setting its On Ctrl parameter to **116**, and its On Value parameter to any value from **64** to **127**.

Arpeggiator Region, Lower Limit (Low) and Upper Limit (Hi)

Determines, in part, which notes you can arpeggiate. All notes, in all setup zones, that are between the notes specified by Low and Hi (including the notes specified by Low and Hi) get arpeggiated when *both* of the following conditions are met:

- The value of the ArpActive parameter is **On**
- The value of the Zone Enable parameter for that zone is **On**

Zone Enable

Determines whether the current zone can be arpeggiated under any circumstances. If the value is **Off** for a zone, *none* of the notes within that zone's key range get played by the arpeggiator. If the value is **On** (and the arpeggiator is active), notes within that zone's key range get played by the arpeggiator if *either* of the following conditions is met:

- The note is within the arpeggiator region (as defined by the Low and Hi parameters); in this case it becomes one of the latched notes
- The note isn't within the arpeggiator region, but *is* within the range of the arpeggiator's transposition (as defined by the Shift Limit parameter); in this case it doesn't get latched, but still gets played

Take a look at Figure 4-1 on page 4-33. The Zone Enable parameter determines whether arpeggiated notes get sent to a particular zone. Then the zone's parameters process the notes, and if they're within the zone's key range, the notes get played.

Latch Mode

Determines the manner in which notes get latched. There are six possible values:

Keys

The arpeggiator plays only while you are holding one or more keys down (or holding note triggers on). As you play different notes, they get added to the arpeggiator, and as you release notes, they get taken out. If you play notes faster than the arpeggiator's current tempo, each subsequent note gets added to the arpeggiation at the next division of a beat. This can cause a lag between the time you play the note and the time you hear it in the arpeggiation.

In the next three modes, the arpeggiator latches notes only when MIDI Controller 119 (ArpLatch) sends a value of On (64 or higher). An easy way to experiment with these modes is to assign a convenient physical controller to send MIDI 119.

Overplay

The arpeggiator latches any notes in the arpeggiator that are being held when ArpLatch goes on, and continues playing them, even after you let them go, until ArpLatch goes off. Any notes that you play after ArpLatch is already on do not get arpeggiated, even if they're in the arpeggiation region.

Arpeg

Similar to **Overplay**: any notes in the arpeggiator region that are held when ArpLatch goes on are latched and arpeggiated, and keep going until ArpLatch goes off. Any notes you play outside the arpeggiation region play normally. Notes that you play inside the arpeggiation region do *not* play unless you hold them on, in which case they become part of the arpeggiation. They drop out of the arpeggiation as soon as you release them.

Add

As with **Overplay** and **Arpeg**, all notes in the arpeggiator region being held when ArpLatch goes on get latched, and keep playing until ArpLatch goes off (even if you've released the notes). Any notes you play in the arpeggiator region after ArpLatch is already on also get latched.

Auto

This value is independent of ArpLatch. Every note you play in the arpeggiator region is automatically latched, and the arpeggiator runs as long as you hold at least one arpeggiated note. As long as you keep holding on at least one note (it doesn't have to be the same note the whole time), every note you play in the arpeggiation region gets latched.

Pedals

A combination of **Keys**, **Add**, and **Overplay**. It relies on both ArpLatch (MIDI 119) and Latch2 (MIDI 118). If neither latch controller is on, notes in the arpeggiator region get arpeggiated only while you are holding down keys (similar to **Keys**).

If you activate Controller 119, notes in the arpeggiator region that are currently held on get latched, and any additional notes in the arpeggiator region played while Controller 119 is on also get latched (similar to **Add**). When Controller 119 is off, any notes in the arpeggiator region that are not currently held on get removed from the arpeggiation.

If you activate Controller 118, notes in the arpeggiator region that are currently held on get latched, and any additional notes in the arpeggiator region played while Controller 118 is on play normally (similar to **Overplay**). This mode is called Pedals mode because if your MIDI source has programmable switch pedals, you might want to assign SwitchPdl 1 to **Controller 119** (Latch 1) and SwitchPdl 2 to **Controller 118** (Latch 2) to make the pedals function similarly to sustain and sostenuto pedals.

Play Order

Determines the order in which the arpeggiator plays latched notes. There are eight possible values:

Played

Latched notes get played in the chronological order in which you latched them.

Up

Latched notes play in ascending pitch order, regardless of their chronological order.

Down

Latched notes play in descending pitch order, regardless of their chronological order.

Up/Down

Latched notes play from lowest pitch to highest, then from highest pitch to lowest, repeating the cycle until you stop the arpeggiation. The notes at the very top and very bottom play only once.

Up/Dwn Rp

Similar to **Up/Down**, except that the notes at the top and bottom play twice (repeat) when the arpeggiator reverses direction.

Random

Latched notes play in completely random order.

Shuffle

Latched notes play at random, but no note repeats until all other latched notes have played.

Walk

A “random walk” order: each successive note is either the next or previous note (in chronological order of latching). For example, suppose you’ve latched four notes—G 4, B 4, D 5, and F 5—in that order. The first note the arpeggiator plays is the G 4. The second note will be either B 4 (the next note chronologically), or F 5 (the “previous” note chronologically—that is, the last latched note). If the second note is B 4, the third note will be either D 5 or G 4. If the second note is F 5, the third note will be either G 4 or D 5. And so on.

Beats

Sets the number of repetitions for each count of the internal clock. This parameter provides an easy way to change arpeggio tempo in regular intervals. There are seven possible values:

4th notes	One note per clock beat
8th notes	Two notes per beat
8th trips	Three notes per beat
16th notes	Four notes per beat
16th trips	Six notes per beat
32nd notes	Eight notes per beat
32nd trips	Twelve notes per beat

Initial Tempo

The starting tempo of the arpeggiation, and the basis for the divisions created via the value of the Beats parameter. Any physical controller assigned to send MIDI Tempo message can control the arpeggiator tempo in real time.

The value for this parameter is relevant only if the value for the Clock parameter in the Global menu has a value of **Internal**. If the value of Clock is **External**, the arpeggiator follows the tempo of MIDI Clock signals (if any) received at the PC2R's MIDI In port. If no external Clock signal is received, notes in the arpeggiator region do not play at all.

Duration

How long each arpeggiated note lasts. **100%** is legato—no breaks between notes. The lower the value, the more staccato the arpeggiation.

Velocity Mode (Vel Mode)

Determines how the attack velocity of latched notes affects the volume of arpeggiated notes. There are five possible values:

Fixed

All arpeggiated notes play at the same attack-velocity level, determined by the Fixed Vel parameter.

Played

Each arpeggiated note plays at the attack-velocity level of its original latched note.

Last

All arpeggiated notes play at the attack-velocity level of the most recently-latched note.

Pressure

All arpeggiated notes play with attack velocities matching the current value of mono pressure (aftertouch).

Ctrl 117

All arpeggiated notes play with attack velocities matching the current value of MIDI 117, either from a front-panel controller on the PC2R or received at the MIDI In port.

Fixed Velocity (Fixed Vel)

When the value of Vel Mode is **Fixed**, sets the attack-velocity level for all arpeggiated notes.

Note Shift

The value of this parameter determines how much transposition, if any, gets applied to latched notes each time the cycle of latched notes repeats. The transposition is cumulative, and continues until it reaches the amount specified by the value for the Shift Limit parameter.

Shift Limit

Sets the maximum number of semitones that arpeggiated notes can be transposed up or down. This parameter is relevant only when Note Shift has a non-zero value. When the transposition reaches the shift limit, it changes direction according to the value for the Limit Opt parameter.

Limit Option (Limit Opt)

Determines what the arpeggiator does when it has shifted the currently latched notes up (or down) to the shift limit. There are seven possible values:

Stop

Causes the Arpeggiator to stop the arpeggiation when it reaches the shift limit.

Reset

Causes the Arpeggiator to return to its original pitch and repeat the latched cycle of notes, transposing each cycle according to the settings for Note Shift and Shift Limit. If the limit allows the notes to go out of MIDI range (for example, if you set Shift to **12**, set the limit to **80**, and play C 4), then those "ghost" notes don't sound, but they take up rhythmic space: the arpeggiator waits for the cycle to play itself out before starting over.

Unipolar

After transposing to the shift limit, the arpeggiator begins shifting notes in the opposite direction, until it reaches the original pitch, where it reverses again. To determine the next note when it reaches the shift limit, the arpeggiator calculates the interval between the shift limit and what the next note would be if the shift limit weren't there. It then plays the note that is the calculated interval lower (if reversing from upward transposition) than the last note before the shift limit. The same thing happens in reverse when the arpeggiated notes get back to the original pitch. The following table makes this easier to visualize by showing the result of arpeggiating one note (C 4) in Unipolar mode, with Note Shift set to **3 ST** and various values for Shift Limit.

Shift Limit	Resulting Arpeggiation (When LimitOption is Unipolar)			Comment
	Up	Down	Up	
6 ST (F#4)	C4, D#4, F#4,	D#4, C4	D#4, ...	Same notes play in both directions when Shift Limit is a multiple of Note Shift
7 ST (G4)	C4, D#4, F#4,	E4, C#4,	D#4, ...	Last upward note before shift limit is F#4, next upward note would be A4, which is 2 ST from shift limit (G4); therefore first downward note is E4 (2 ST below last upward note)
8 ST (G#4)	C4, D#4, F#4,	F4, D4,	D#4, ...	A4 is 1 ST from shift limit, therefore first downward note is F4 (1 ST lower than last upward note)
9 ST (A4)	C4, D#4, F#4, A4	F#4, D#4, C4,	D#4, ...	All symmetrical again; now A4 is within shift limit
10 ST (A#4)	C4, D#4, F#4, A4,	G4, E4, C#4,	D#4, ...	Next upward note would be C5, which is 2 ST from shift limit
11 ST (B4)	C4, D#4, F#4, A4,	G#4, F4, D4,	D#4, ...	C5 is 1 ST from shift limit
12 ST (C5)	C4, D#4, F#4, A4, C5,	A4, F#4, D#4, C4,	D#4, ...	Symmetrical again, including C5

Bipolar

Starts out the same way as **Unipolar**, but during downward note shifting, it continues past the original pitch until it hits the shift limit in the *opposite* direction, where it reverses again.

Flt Reset

Adds a bit of apparent randomness to the process. **Flt** stands for “Float,” and it means that when the arpeggiator reaches the shift limit, it resets—but not to its original pitch as with plain **Reset**. Like **Unipolar** and **Bipolar**, it looks at the first note that would exceed the shift limit, and calculates the interval between that note and the shift limit. It then restarts the cycle of latched notes, transposing the entire cycle by the interval it just calculated, then shifting each subsequent cycle by the value of Note Shift, until it reaches the shift limit again.

Here’s a very simple example. Suppose that the only note in the arpeggiator cycle is C 4, Note Shift is 4 (a third), and Shift Limit is 7 (so notes won’t get shifted above G 4). The arpeggiator plays C 4, then E 4. The next note should be G# 4, but that’s above the shift limit—so the PC2R calculates the difference between that G# 4 and the shift limit (G 4): one semitone. It adds that difference to the original starting note (C 4) and plays that note next—C# 4. The next note (F 4) is within the shift limit, but the next note (A 4) isn’t, so it gets translated into D 4—and so on.

Flt Uni

Uses the same concept as **Flt Reset** and applies it to Unipolar mode: when the arpeggiator reaches the shift limit, it calculates the difference between the next note and the limit, and transposes the next cycle of notes down by that interval, then shifts each subsequent cycle down until it reaches the original pitch.

Flt Bipl

Similar to **Flt Uni**, but the downward shift limit isn’t the original pitch, it’s the negative of the Shift Limit value.

Glissando

When the Glissando parameter is **On**, the arpeggiator chromatically fills between latched notes. When Glissando is on, the Arpeggiator ignores the Note Shift, Shift Limit, and Limit Option parameters.

You must latch at least two notes to get a result. When Glissando is on, all notes played in the arpeggiation range get latched, although you won't necessarily get meaningful results from all latched notes. In general, try to get each subsequent note you latch to be a change in direction. For example, try latching the following sequence of notes: C4, C5, G4, G5, C5, C6, G4, G5. The "glissando" changes direction around each change in direction of the latched notes.

Effects Edit Mode Parameters

Effects edit mode is a special subset of the PC2R's editors. When you press **FX**, you go to the FX Routing menu in the editor corresponding to the performance mode you were in:

Internal Voices mode	Sound parameters (Program Editor)
KB3 mode	KB3 parameters (KB3 Editor)
MIDI Setups mode	Zone parameters (Setup Editor)

The Effects-mode menus are the same menus you see when scrolling through the list of menus after going into an editor by pressing **Edit**.

In addition to the parameters described below, there are three effects-related parameters in the Global menu. See page 5-38.

The FXA Select Menu

When you enter this menu, you see **FXA Select** in the top line of the display, along with the performance mode (Voices, KB3, or Setups) from which you entered Effects edit mode. The bottom line shows the current effect for FX-A.

Use the Alpha Wheel to select a different effect. Or press the **Right** cursor button to scroll through the parameters for the current effect. Note that the top line of the display changes to show **FXA:** followed by the name of the current effect. The bottom line shows the current parameter and its value, which you can change with the Alpha Wheel. Every effect has up to four preset parameters controlling varying characteristics of the effect.

When the current program uses one of the double-block KB3 effects, you'll notice **FXA/B Select** or **FXAB:** in the top line of the display, indicating that you're selecting or editing an effect that encompasses both effects blocks. See *FXA/B Select and FXA/B* on page 5-33.

The FXB Select Menu

This menu contains parameters for selecting and editing the effect assigned to FX-B. It has the same parameters as the FXA Select menu.

When the current program uses one of the double-block KB3 effects, you'll notice that the FXB Select parameter shows the current effect's name in parentheses, which means that you can't select a different effect in this menu, although you can still edit its parameters. (To select a different effect in this case, use the FXA/B Select parameter in the FXA Select menu).

FXA/B Select and FXA/B

These parameters replace FXA Select and the FX-A parameters when the current effect is one of the double-block KB3 effects. In this case, the FXA/B Select parameter determines the effect for both effect blocks (in fact, you can't change effects from the FXB Select menu in this case). Use the **Right** cursor button to scroll through the FXAB parameters. Many of the FXAB parameters control the chorus and vibrato associated with the effect, although you can't necessarily change the values of these parameters. See *KB3 Effects* on page 4-28

Effect ID and Name

The display doesn't show you the names of these parameters, as it does with most other parameters. Instead, you'll see **FXA Select** in the top line (or **FXB** or **FXAB**, depending on the current effect block). This parameter appears when you press Enter after selecting the FXA or FXB Select menu. Press the **Right** cursor button to scroll through the parameters for the current effect.



Note: There are two cases in which you'll see **View** in the top line of the display, instead of **Select**. The first occurs when you're in MIDI Receive mode, and the FX Chg Mode parameter (in the Global menu) has a value of **Auto** (which is the default). In this case, if you go into the FXA Select or FXB Select menu, you'll find that you can't change the current effect. That's because MIDI Receive mode isn't really an editor—that is, you can't make permanent changes to programs or setups, including the effects they use.

The other case occurs when the current MIDI channel isn't the same as the effects channel (which is determined by the FX Channel parameter in the Global menu). In this case, if you go into the FXA Select or FXB Select menu from Internal Voices mode or KB3 mode, you'll be able to view the current effect, but not to change it.

MIDI Receive Mode Parameters

MIDI Receive mode is designed to make it easy to configure your PC2R as a MIDI slave—especially when you're using it as a multi-timbral playback module for a sequencer. There's a set of parameters for defining how the PC2R responds to incoming MIDI information. Each channel has an independently-programmable set of the parameters described below. The settings for these parameters affect the PC2R's performance modes, as well as how the PC2R transmits MIDI information.

When you're in MIDI Receive mode, the settings for the MIDI Receive-mode parameters normally override any corresponding parameters in the programs themselves. For example, if you've set the effects routing for Channel 1 to FX-A, then any program that plays on Channel 1 will be routed to FX-A, even if the program's routing is different.

There's one exception to this rule. If the value of the FX Channel parameter isn't **Current**, but instead specifies a single channel, then selecting a program on that channel sets the effects routing and wet/dry mix for that channel according to the settings for the program you selected.

When you're in MIDI Receive mode, you can use the cursor buttons as a short cut for navigating through the MIDI channels. Press the cursor buttons at the same time, and you'll jump to the corresponding parameter for the next-highest MIDI channel. For example, if you're looking at the Vol and Pan parameters for Channel 1, pressing the cursor buttons together jumps to the Vol and Pan parameters for Channel 2.

Channel Number

This is the first parameter in the menu. Select this parameter and use the Alpha Wheel to select the top of the list of parameters for a different MIDI channel.

Channel Activation (No parameter name shown)

Activates/deactivates current channel. The value is either **On** or **Off**.

Program ID and Name (No parameter name shown)

Specifies a program for the current channel. Changing the value changes the program in the current zone (if the zone's destination includes MIDI, it transmits the program change to the PC2R's MIDI Out port as well).

Volume (Vol)

Sets the volume level for the current channel. Transmits a MIDI Volume (7) message of the same value to the MIDI Out port.

Pan

Specifies the pan setting for the current channel. A value of **0** is full left; **64** is center; **127** is full right. Transmits a MIDI Pan (10) message of the same value to the MIDI Out port.

Effects Routing (Routing)

This sets the effects routing for any program playing on the current channel. This overrides the effects routing of the program itself (but only while you're in MIDI Receive mode). Also transmits a MIDI 94 message of the same value to the MIDI Out port.

A-to-B Wet/Dry Mix (Global A>B)

For all programs, specifies how much of the processed signal coming from FX-A goes to FX-B and gets FX-B's effect applied to it. Also transmits a MIDI 92 message to the MIDI Out port.

FX-A Wet/Dry Mix (A)

For the current program on the current channel, specifies how much of FX-A's effect gets applied to the dry signal coming from the PC2R's sound engine. Also transmits a MIDI 91 message to the MIDI Out port.

FX-B Wet/Dry Mix (B)

For the current program on the current channel, specifies how much of FX-B's effect gets applied to the dry signal coming from the sound engine. Also transmits a MIDI 91 message to the MIDI Out port.

Global Mode Parameters

The Global menu contains parameters that control high-level functions affecting the entire PC2R—such as global EQ, MIDI clock source, and velocity sensitivity. There are also a few utilities and special functions toward the end of the menu.

EQ: Low, Mid, and High

These three parameters control the three-band equalization for the entire PC2R. Select one of the parameters with the cursor buttons, and change its value with the Alpha Wheel. Each parameter has a range of values from **-12 dB** to **+12 dB**.

Local Control

Controls the connection between incoming MIDI information and the PC2R's sound engine. Set Local Control to **On** (the default) when you want to play the PC2R from your MIDI source (as well as instruments slaved to the PC2R). Set Local Control to **Off** if you want to mute the entire PC2R, but still pass MIDI information to instruments slaved to the PC2R.

You'll want to turn local control off whenever you have a MIDI loop between the PC2R and another instrument (typically a sequencer). You have a MIDI loop when the MIDI Out port of the PC2R is connected to the MIDI In of another instrument, and its MIDI Out is connected to the MIDI In of the PC2R. In this case, if the sequencer's Soft Thru (Patch Thru, Play Thru, etc.) is active, you'll get doubled notes unless you turn the PC2R's local control off.

Clock

Set Clock to **Internal** (the default) to use the PC2R's internal MIDI clock for arpeggiation, and to control synchronization with external MIDI equipment. Set Clock to **External** when you want the PC2R (including the arpeggiator) to synchronize with a MIDI Clock signal from an external source.

Transmit Clock

This parameter determines whether the PC2R sends its internal MIDI clock signal to its MIDI Out port. This parameter is irrelevant if the Clock parameter has a value of **External**. There are three possible values:

- Off** The PC2R doesn't transmit its internal clock signal.
- On** The PC2R always transmits its internal clock signal to its MIDI Out port.
- Seq** Default value. The PC2R transmits its internal clock signal to its MIDI Out port only when you're playing one of the demo sequences or using the arpeggiator.

Touch

Sets the keyboard sensitivity for the entire PC2R, somewhat like the Vel Scale parameter for individual programs and setups (like Vel Scale, the value for the Touch parameter also affects notes that get sent via MIDI). There are seven possible values:

- | | |
|-----------------|----------------|
| 1 Linear | 5 Hard1 |
| 2 Light1 | 6 Hard2 |
| 3 Light2 | 7 Hard3 |
| 4 Light3 | |

A value of **Linear** (the default) is the standard, unaltered level of sensitivity. Values of **Light1–Light3** are for players who have a light touch—that is, you can play more lightly and still get the same attack-velocity values. **Light1** is more sensitive than **Linear**, and **Light3** is the most sensitive.

Values of **Hard1–Hard3** are for players who have a heavier touch—that is, you can play harder and still get the same attack-velocity values. **Hard1** is less sensitive than **Linear**, and **Hard3** is the least sensitive.

Change Setups (Chg Setups)

Determines what the PC2R does when you select a setup.

Immediate

Default value. The newly-selected setup becomes active as soon as you select it. Any notes being held by the PC2R (or by Kurzweil instruments receiving MIDI from the PC2R) continue with their normal decays. Non-Kurzweil MIDI slaves may cut off notes as soon as the PC2R's setup changes.

Keys Up

The newly-selected setup becomes active only after you've physically released all keys (notes held with Sustain or other MIDI Controllers don't delay the change). Any notes being held by the PC2R (or by Kurzweil instruments receiving MIDI from the PC2R) continue with their normal decays. Non-Kurzweil MIDI slaves may cut off notes as soon as the PC2R's setup changes.

Setup Change Channel (Setup Chg Chan)

Enables the PC2R to change *setups* when it receives a *program-change message* from an external MIDI source. This is useful when the PC2R is controlled by another instrument or a sequencer. The possible values are **None** (the default, which disables this feature), and **1–16**.

Set the value of this parameter to match the channel on which you want to send program-change messages from the external source. Make sure that none of your external MIDI sources uses that channel for any other purpose; if the PC2R receives a program-change message on that channel from *any* MIDI source, it will change setups, which may not be what you want.

When you've set this parameter's value to a specific MIDI channel, bank-select messages with values of 0–3 received on that channel select setup banks 1–4.

MIDI In

Determines how the PC2R handles MIDI information received at its MIDI In port. There are three possible values:

Normal

The PC2R leaves the MIDI information unaltered. If the Thru/Out switch on the rear panel is set to Thru, the PC2R passes the MIDI information to the MIDI Thru port.

Remap

Processes incoming MIDI information as if it had been generated by a four-channel MIDI source: notes get rechanneled into four different zones, and sent to the MIDI Out port on the MIDI channels corresponding to all the active zones. Any notes that lie in overlapping zones get sent on *all* the corresponding channels. Channel numbers on incoming notes are ignored. Non-note information (controllers, pitchbend, etc.) get sent on *all* active channels: for example, if the four zones of a Setup are transmitting on channels 2, 5, 9, and 12, any Pitch Bend information coming into the PC2R (on any channel) get sent on channels 2, 5, 9, and 12 simultaneously.

You won't need to use this value often, since the remapping occurs by default in all three performance modes (that is, the default value of **Auto** causes the remapping to occur automatically in all performance modes). Still, you might want to use a value of **Remap** on occasion—for example, in MIDI Receive mode, incoming MIDI information doesn't get remapped when the value of MIDI In is **Auto**. If you set MIDI In to **Remap**, incoming MIDI information gets remapped to whatever channel is showing in the PC2R's display. This is a convenient way to audition a single channel.

Merge

Mixes incoming MIDI data with the data generated by the PC2R and sends the combined data stream to the MIDI Out port. Channel numbers of incoming commands remain intact. Both note and non-note messages get passed normally, but System Exclusive messages get filtered out. A value of **Merge** doesn't affect the behavior of the MIDI Thru port, if you're using the MIDI Thru/Out port.

Auto

The default. At this setting, the PC2R remaps incoming MIDI information when you're in any mode except MIDI Receive mode.

Wrap/Skip

This is a convenience feature. When Wrap/Skip has a value of **On** (the default), you won't see any unused program or setup IDs when you scroll through programs and setups. When Wrap/Skip has a value of **Off**, you'll see all unused program and setup IDs, in which case the display shows **Not Found** for those programs and setups.

Exit Save

Affects what happens when you exit an editor without saving. If the value is **Never** (the default), the PC2R won't prompt you to save your edits when you leave an editor (by pressing one of the mode-selection buttons). In this case, the mode-selection button flashes, prompting you to select a bank (or press the same button again to enter that mode on the last program or setup you were using in that mode).

If the value is **Ask**, leaving an editor without saving causes the PC2R to ask you if you want to save your edits. You can press **Yes** or **No** as desired, or you can press a mode-selection button to cancel your edits and return to a performance mode.

Drum Remap

Determines the layout of the timbres in drum programs. There are three possible values:

Normal	Default value. No remapping of drum timbres.
PC2ReMap	Assigns many timbres to different note numbers.
GMReMap	Remaps drum timbres according to the General MIDI layout.

See Appendix D for diagrams of the layouts of drum and percussion timbres.

Effects Change Mode (FX Chg Mode)

Determines how the PC2R selects effects when you select a program or setup. Select this parameter by pressing the **FX** button while in any performance mode, or while in MIDI Receive mode. There are two possible values:

Auto

The PC2R selects the effect associated with whatever programs you select while in Internal Voices mode or KB3 mode; it selects the effect associated with whatever setup you select while in MIDI Setups mode.

Panel

The PC2R ignores the effects associated with whatever program or setup you select. Select effects from the front panel using the **FXA**, **FXB**, and/or **FXA/B Select** parameters. The selected effects get applied to every program or setup you select, regardless of performance mode.

Effects Channel (FX Channel)

When the value of **FX Chg Mode** is **Auto**, the **FX Channel** parameter affects how the PC2R handles effects when you change programs (if the value of **FX Chg Mode** is **Panel**, the effects never change unless you change them from the PC2R's front panel). The **FX Channel** parameter *doesn't* affect how the PC2R handles effects when you change setups—setups always use their programmed settings for effect selection, effect routing, and wet/dry mix). The **FX Channel** parameter is closely related to the **FX Chg Mode** parameter, so what happens when you change programs also depends on the value for **FX Chg Mode**.

FX Chg Mode is Auto; FX Channel is Current

In this case, program changes on the channel used by the program in the display (or program changes on the channel used by Zone 1 of the setup in the display) also change the current effect. This is true for front-panel program changes as well as those received via MIDI. Programs on all other channels use the current effect, but retain their own settings for wet/dry mix.

FX Chg Mode is Auto; FX Channel is 1–16

Program changes on the channel designated as the FX channel (or program changes in the setup zone that uses the FX channel) change the current effect. This is true for front-panel program changes as well as those received via MIDI. All other programs use the current effect, but retain their own settings for wet/dry mix.

Setting the value of FX Channel to a specific channel is useful when you're using the PC2R for playback with a sequencer. This enables you to specify which channel controls the selection of effects.

FX Chg Mode is Panel

In this case, the value of FX Channel is irrelevant. Program changes—either from the PC2R or via an external MIDI source—never change the current effect (you must change the current effect from the PX2's front panel). The channel used by the program in the display adopts the wet/dry mix of the current effect as soon you change the effect via the front panel (this is true only in Internal Voices mode and KB3 mode; when you're in MIDI Setups mode or MIDI Receive mode, changing effects doesn't change the wet/dry mix on the channel shown in the display). The other channels don't adopt the wet/dry mix of the current effect until you make a program change.

MIDI Receive Mode

When you're in MIDI Receive mode, program changes received via an external MIDI source change the current effect (or not) according to the same rules describe above. The only difference is that when the PC2R receives a program change via MIDI, the wet/dry mix settings for each channel are determined by the wet/dry parameters in MIDI Receive mode.

There's one exception to this rule. If the value of the FX Channel parameter isn't **Current**, but instead specifies a single channel, then selecting a program on that channel sets the effects routing and wet/dry mix for that channel according to the settings for the program you selected.

Stored Effects (Stored FX)

The value of this parameter is relevant only for those factory programs and setups to which you've stored effects settings. For these programs and setups, you can quickly revert to using the factory effect settings without erasing your user-defined settings (which is what happens when you use one of the Restore Factory Effects functions in any Save dialog). This parameter has two possible values:

Factory

When you select a program or setup, the PC2R applies the original factory settings to the corresponding effect, even if you have stored your own effect settings with the program or setup

User

When you select a program or setup, the PC2R applies your user-defined settings (if any) to the corresponding effect.

If you change the value of this parameter, you'll need to reselect the current program to notice the change in effect. This parameter works only when the value of FX Chg Mode is **Auto**. When FX Chg Mode is **Panel**, the PC2R uses the factory settings for whatever effect you select from the front panel.

KB3 MIDI Chan

Specifies which channel can play KB3 programs (because they have special processing requirements, KB3 programs are available on only one channel at a time). If you try to assign a KB3 program to a channel that's not the KB3 channel, the program change won't take effect.

Tuning

You can tune the PC2R up or down one semitone, in one-cent increments. This can be useful if you are playing along with a recording, or playing with other acoustic instruments that can't be easily retuned. The default value is **0 cents**.

Receive Transposition (Recv Trans)

This allows you to transpose the instrument globally, for all MIDI channels. The default value is **0 ST**.

Bank-Select Controller (Bank Sel Ctl)

Determines how the PC2R responds to bank-select messages received at the MIDI In port. There are four possible values:

- | | |
|--------------|---|
| 0 | Uses <i>only</i> MIDI Controller 0 as a bank-select command. |
| 32 | Uses <i>only</i> MIDI Controller 32 as a bank-select command. |
| 0/32 | Default value. Uses MIDI Controller 0 and 32 as a single combined bank-select command, enabling selection of banks numbered from 0 to 16,383. |
| 0or32 | Responds to either MIDI Controller 0 <i>or</i> 32 as separate bank-select commands. |

AllNotesOff

If you set this to **Ignore**, the PC2R will ignore the MIDI All Notes Off message. Some instruments and sequencers (notably older Roland instruments) will send this message when no notes are being held, even if the sustain pedal is still held. If you are hooked to a Roland controller or sequencer and find that the PC2R doesn't seem to sustain, set this parameter to **Ignore** and the problem will go away.

The default value is **Respond**, which causes the PC2R to respond to All Notes Off messages.

Device ID

Sets the ID used by the PC2R for MIDI SysEx messages—which the PC2R uses for dumping objects. The default value is **0**.

If you always dump objects—programs, setups, or effects—to the same device and reload them from that device, you won't have to worry about this parameter; just leave its value at **0** and your dumps will work just fine. If you plan to dump objects to different objects in a MIDI chain, however—or if you want to reload different dumps to different instruments in a MIDI chain—you'll need to change the device ID for at least one instrument. See *More About SysEx Dumps* on page 4-11.

Xmit Buttons

You can generate MIDI SysEx messages when you press the buttons on the PC2R's front panel. You can also send these messages to the MIDI Out port, enabling you to record them to a sequencer along with note and controller information. This enables you to include operations like muting and soloing, activating the arpeggiator, muting and activating effects—even changing performance modes—as part of the sequence. When you play back the sequence, the PC2R responds just as if you had pressed the buttons yourself.

To transmit button presses via SysEx, set the value of this parameter to **On** (the default is **Off**).

Output Mode

Configures the PC2R for monaural (mono) or stereo audio output. The default is **Stereo**. You might want to use mono mode if you have a mono sound system, or have only one channel available on your mixer.

Digital Output Mode (DigOut Mode)

If you're using high-end digital processing and recording gear, you may want to leave this parameter at its default setting of **Pro** (AES/EBU format). Most other equipment (such as the typical DAT recorder) is compatible with the **Cons.** (consumer) setting (S/PDIF format). Use whichever mode works best for you.

Digital Output Channel Status (DigOut ChanStat)

The PC2R's digital audio output includes a pair of status bits for each sample. These status bits inform receiving equipment of various aspects of the audio signal, like sample rate and audio data width. Most digital processing and recording equipment requires these bits to be transmitted, so by default, the PC2R sends these status bits (a value of **On** for this parameter). If your equipment isn't processing or recording the PC2R's digital audio output properly, try setting the value of this parameter to **Off**, which prevents the PC2R from sending the status bits.

Digital Output Width (DigOut Width)

Determines the size, in bits, of the digital "words" that the PC2R sends to the digital outs. Choose between 16-bit, 18-bit, 20-bit, or 24-bit digital word lengths. Set this to match the input digital-word-length configuration of your recording or processing equipment.

Digital Output Level (DigOut Level)

You can control the output level with the Master Volume Slider (a value of **Slider**), disable it with a value of **Off**, or fix it at any level from **-79 dB** to **+24 dB**.

Digital Output Shaping (DigOut Shaping)

By default, this parameter's value is **On**, which "shapes" the digital audio output, providing a smoother noise floor. If you're sending the PC2R's digital output to another digital device for further processing, you may want to set the value of this parameter to **Off**, especially if the other device applies its own shaping.

Available RAM (Mem Avail)

Not editable. Displays the amount of memory (RAM) available for storing user-defined objects. Approximately 220 kilobytes for units with no user-defined objects.

OS Version

Not editable. Indicates the version of the currently installed operating system software.

Keyboard (Keyboard) and Version (Ver)

Not editable (and not important for the PC2R). There are two fields: Keyboard and Ver. The Keyboard field indicates the length of the keyboard (0, of course, since there is no keyboard; in keyboard models of the PC2, this field would have a value of 76 or 88). The Ver field is also relevant only for keyboard models, and indicates the version of one of the software components relating to the response of the keyboard.

Expansion Blocks 1 (EXP1) and 2 (EXP2)

Not editable. Indicates whether Expansion Sound Cards 1 and/or 2 are properly installed (in which case the value is **Yes** for either or both parameters). If you've installed either Expansion Sound Card and the corresponding parameter still has a value of **No**, you may have a problem with the installation of that Sound Card.

PCX-1

Not editable. Indicates whether the PCX-1 Polyphony Expansion Kit is properly installed. If it is, this parameter also shows the version of the PCX-1's operating system software. If you've installed the PCX-1 and the value is still **Not Installed**, you may have a problem with the installation of that Sound Card

PCXP1 and PCXP2

Not editable. On instruments that have the PCX-1 Polyphony Expansion Kit installed, this parameter indicates whether Expansion Sound Cards 1 and/or 2 are properly installed on the PCX-1 board. If you've installed either Expansion Sound Card and the corresponding parameter still has a value of **No**, you may have a problem with the installation of that Sound Card.

Reset PC2?

Not a parameter but a prompt to execute a hard reset. Press **Yes**, and you'll see a prompt asking you if you're sure. The prompt prevents you from executing a hard reset inadvertently. A hard reset erases all RAM, and restores all programs, setups, effects, and global parameters to their original factory settings.

Dump all objects?

Not a parameter but a prompt to initiate a SysEx dump of all programs, setups, and effects.

MIDIScope?

Not a parameter but a prompt to run MIDIScope, a MIDI-analysis application. Monitors any event from the PC2R's keyboard or controllers, as well as MIDI information (including SysEx messages received at the MIDI In port. Press any non-controller button to exit.

Appendix A

Maintenance and Upgrades

Replacing the Battery

Changes that you make to your PC2R settings are stored using a Lithium battery when the PC2R is powered off. When it is time to replace your battery, the PC2R will display the message: **Battery voltage is low** for a few seconds after being powered up. If this happens, you should replace the battery as soon as possible.

Before you Begin

You'll need the following items:

- One CR2032 battery which is a 3 volt Lithium coin cell that can be purchased from Radio Shack and large drug stores.
- A #1 Phillips screwdriver
- A large table with a padded surface (foam or soft cloth) to prevent damage
- A pen cap or plastic knife

Replacing the battery may erase the programs and setups that you have created, so back them up using a MIDI SysEx dump as described on page 4-5. When you are finished, turn off the power and remove all cables from your PC2R including the power adapter.

Removing the Top Panel

1. Make sure that your PC2R is disconnected from its power supply, and that you've discharged any residual static electricity by touching a conductive object.
2. Position the PC2R on your work surface—right side up, with the front panel facing away from you.
3. Remove the seven screws that secure the top panel (see Figure 5-1).

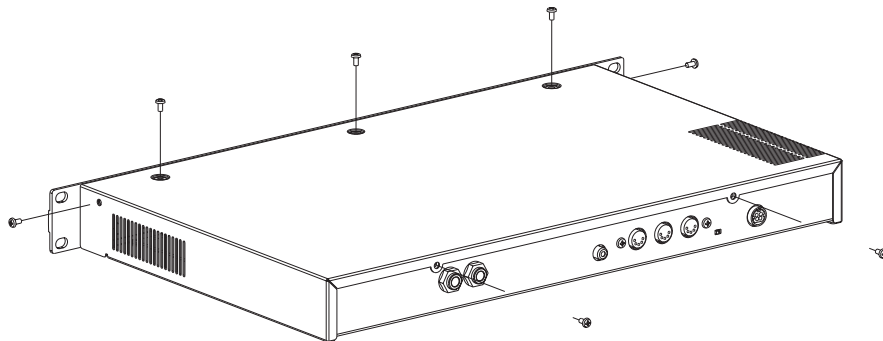


Figure 5-1 Removing the retaining screws

4. Grasp the front of the PC2R and slide the top panel straight back until it's free from the body of the PC2R (see Figure 5-2).

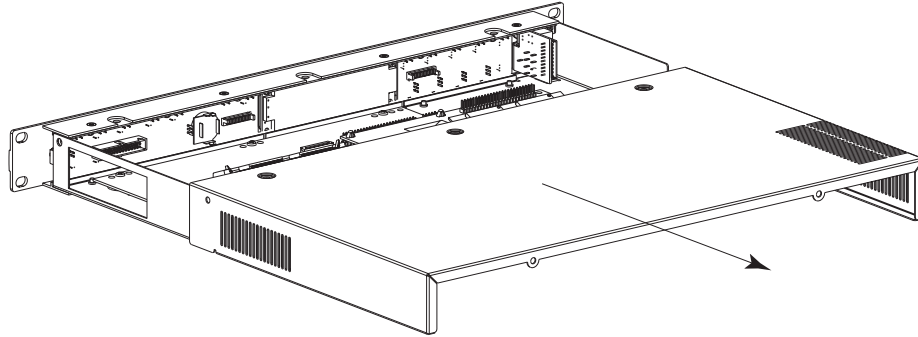


Figure 5-2 *Removing the top panel*

Installing the Battery

1. The battery is mounted in a retaining clip that's mounted vertically on the engine board (see Figure 5-3).

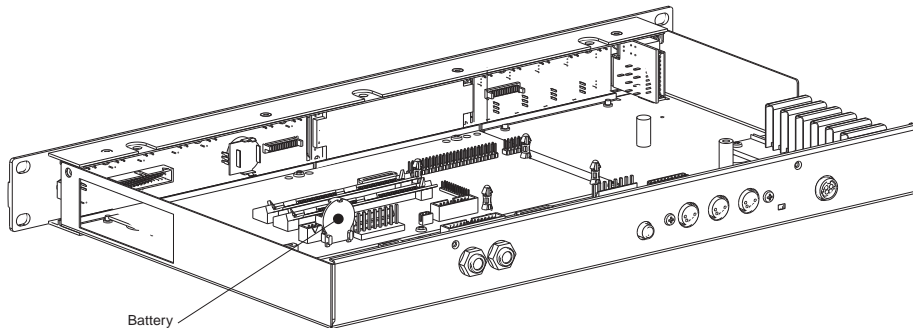


Figure 5-3 *Location of battery*

2. The battery's positive pole (the flat side) is facing away from you. Loosen the battery from its retaining clip using a fingernail, a plastic knife, or a pen cap, as shown in Figure 5-4.

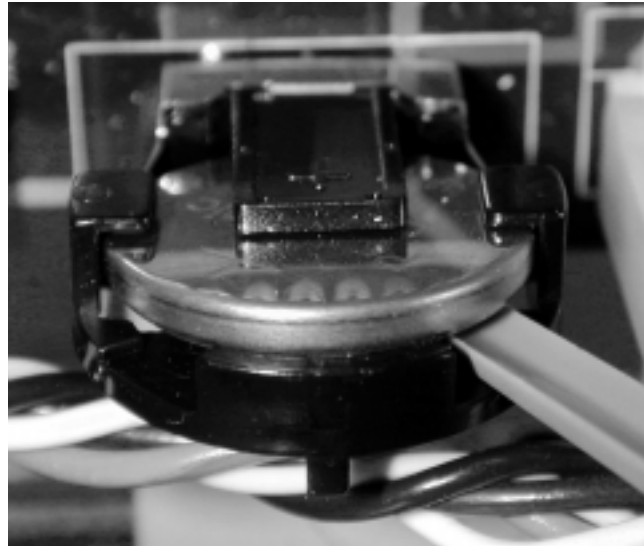


Figure 5-4 *Freeing battery from retaining clip*

3. Insert your fingernail, the plastic knife, or the pen cap behind and under the battery, and lift the battery out, as shown in Figure 5-5.

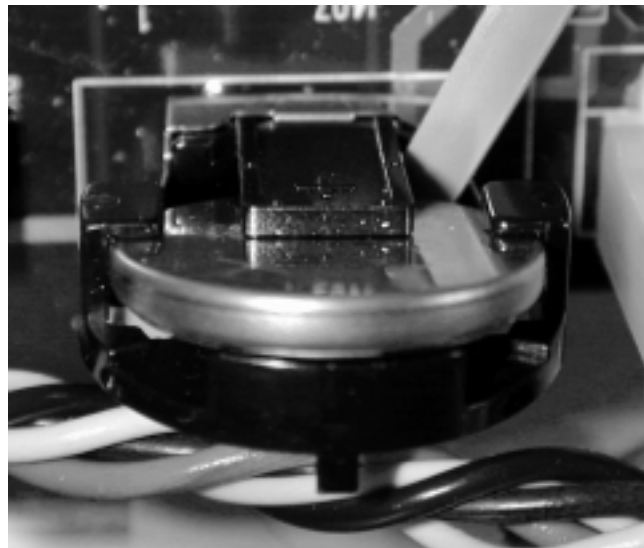


Figure 5-5 *Removing battery*

4. With the positive (+) side of the new battery facing away from you, slide the battery into the retaining clip, pushing down on the battery until it snaps into place.

Replacing the Top Panel

1. Replace the top panel, aligning the screw holes with the holes in the PC2R's chassis.
2. Install and tighten the screws.

Powering up

When you have finished, plug in the power adapter, and turn the power on. You should see the usual start up messages. If the **Battery voltage is low** message still appears, review the battery replacement steps to see if you missed something.

Boot Block

Although the PC2R comes from the factory with an operating system (OS, also called engine software) and factory setups already installed, you may decide to upgrade the software and/or hardware at a later time to add more features or sounds. The PC2R boot block lets you install new software and factory setups into Flash ROM. The boot block also provides hard reset and diagnostic options.

Execution of any function in the boot block may cause or require a hard reset causing erasure of the setups that you have created. To save them, back them up using a MIDI Sysex dump as described on page 4-5.

Starting the Boot Block

When you power up the PC2R, it displays **Waiting for scanner**, then displays **Please wait...** after a couple of seconds. When you see **Please wait...**, press and release the **Edit** button.

After the boot block message banner and version number are displayed, the first of several menu items appears on the screen. Pressing the cursor buttons scrolls through the menu items. Pressing the **Enter** button invokes the menu item in the screen.

About Software Upgrades

You can get software upgrades for your PC2R from Kurzweil's FTP website (www.kurzweilmusicsystems.com/html/downloads.html) or from your Kurzweil dealer. A computer (Mac or PC) with a MIDI interface and sequencer is necessary for transferring the software to your PC2R using MIDI Sysex. A list of compatible software sequencers will accompany your software upgrade kit. If you don't have a computer, your PC2R can be upgraded by a Kurzweil Service Center.

The software upgrades are stored as one or more standard MIDI files. Filenames are in the format **PC2XVVV.MID**, where **X** is the software block, and **VVV** is the version number (**V.VV**). The following table lists the possible values for **X**. Don't attempt to install files with names that don't conform to this format; it won't work.

Value of X	Corresponding Software Block
bk	Boot block for keyboard models
br	Boot block for rack-mount model
bp	Boot block for Polyphony Expansion option (keyboard and rack-mount models)
k	Operating system software for keyboard models
r	Operating system software for rack-mount model
p	Operating system software for Polyphony Expansion Kit option (keyboard and rack-mount models)
s	Soundware data for keyboard and rack-mount models
sp	Soundware data for Polyphony Expansion option (keyboard and rack-mount models)

Setting Up For a Software Upgrade

1. Connect a MIDI cable from the MIDI Out of the computer's MIDI port or interface to the MIDI In of the PC2R.
2. Launch the sequencer application.
3. Open the first **.MID** file using the sequencer program.
4. Start the boot block on the PC2R using the directions above.

Installing an Operating System or Setups

This procedure is for installing OS and setup files. See *Installing a New Boot Block* on page A-6 if you want to install a new boot block.

1. Select **Install engine** by pressing the **Enter** button.
2. Select **via MIDI** by pressing the **Enter** button.
3. Start playing the MIDI file from the sequencer. While loading, the bottom line of the PC2R's display will show a message "segment X of Y" where X starts at 1 and increments with each segment up to Y segments. If the display continues to show "waiting for MIDI" after starting the sequencer, stop and restart the sequence.
4. Depending on the size of the file, it may take up to 17 minutes to completely load at which point the bottom line of the display will show **done**. Then, if you have another file to load, open that file from the sequencer and start playing it.
5. After you have completed loading all of the MIDI files (except a boot block file), press the **Cancel** button twice to get back to the main boot block menu, scroll to the **Hard RESET** menu item, and select it by pressing **Enter**. Before doing a hard reset, please read *Resetting the PC2R* on page A-6, so you can avoid losing any of your PC2R programs or setups.
6. Press **Yes** to execute a hard reset; the PC2R will restart with the new operating system and/or setups.

Installing a New Boot Block

If the file you are loading is a boot block file with the letter **b** as the fourth letter in the filename, follow instructions in *Setting Up For a Software Upgrade* on page A-5, then continue:

1. Scroll to **Update boot block** and select by pressing **Enter**.
2. Select **via MIDI** by pressing **Enter**.
3. Start playing the MIDI file from the sequencer. While loading, the bottom line of the PC2R's display will show a message "segment 1 of 1." If the display continues to show "waiting for MIDI" after starting the sequencer, stop and restart the sequence.
4. After about a minute, the PC2R will reset and start running normally.

Installing Sound ROM Options

After installing a Sound ROM option SIMM using the accompanying instructions, you'll need to transfer the presets from the option ROM to the PC2R's Flash ROM. Once the SIMM(s) has been installed and the option panel replaced, complete the following instructions:

1. Start the boot block on the PC2R using the directions above.
2. Scroll to **Install ROM option** and select by pressing **Enter**.
3. Select the correct option (**card 1** or **card 2**) by scrolling and pressing **Enter**.

If a ROM option is installed in the correct card slot, the display shows **Installing...** followed by a sequence of address blocks. When the installation is complete, the main boot block menu appears.
4. If you're installing a second ROM option, select **Install ROM option** again by pressing **Enter** repeat Step 3.
5. Scroll to the **Hard RESET** menu item, and select by pressing **Enter**. Before doing a hard reset, please read *Resetting the PC2R* below, so you can avoid losing any of your PC2R programs or setups.
6. Press **Yes** to execute a hard reset; the PC2R will restart with the additional ROM option setups installed.

Resetting the PC2R

If you select **Hard RESET** by scrolling and pressing **Enter**, the display will ask **Erase RAM objects?** which gives you an important opportunity to think about what you are doing. This resets all of the PC2R's memory back to the initial factory state. This is necessary if you are upgrading the software or installing ROM options. If you're not concerned about losing all of your work, or it has been saved using a MIDI Sysex dump (see page 4-5), then press the button beneath the **Yes** on the display. The PC2R will execute a hard reset and start running normally.

Running the Diagnostics

The **Run diags** option executes the diagnostics that are loaded with the operating system. Some diagnostic tests will erase the PC2R's memory, which will cause a hard reset when the PC2R is powered on again. Power off and power on your PC2R to leave diagnostics and return to normal operation.

Appendix B

General Reference

This appendix contains the following information:

- Specifications.....B-1
- Parameter ReferenceB-4
- PC2R Audio Signal RoutingB-9
- MIDI ControllersB-10
- Special ControllersB-10
- KB3 Controllers.....B-12
- PC2R Keymaps.....B-13
- PC2R Effects and Effects Parameters.....B-14
- MIDI Implementation Chart.....B-21

Specifications

Specifications are subject to change without notice.

Physical Specifications

The PC2R occupies one space in a standard MIDI rack.

Height	1 3/4 inches	4.5 cm
Width	19 inches	48.3 cm
Depth	11 1/8 inches	28.3 cm
Weight	6.88 lb.	3.1 kg

Electrical Specifications

Voltage and Frequency Ranges

	120 VAC Adapter Model PM0023A	230 VAC (Adapter Model PM0024A)
Safe voltage range	100–125 Volts RMS	200–230 Volts RMS
Safe frequency range	58–65 Hz	48–65 Hz

Power Consumption

Voltage Level	Power consumption
120 VAC	0.6 Amps
230 VAC	0.3 Amps

Environmental Specifications

	Minimum		Maximum	
Operating temperature	40 F	5 C	104 F	40 C
Storage temperature	-13 F	-25 C	185 F	85 C
Operating humidity	5%		95% (non-condensing)	
Storage humidity	5%		95% (non-condensing)	

Audio Specifications

Line-Level Left and Right Analog Audio Outputs

Connectors	Balanced outputs using two 1/4-inch stereo (tip-ring-sleeve) phone plugs and shielded twisted-pair cable or unbalanced using two 1/4-inch mono (tip-ring) phone plugs and coaxial cable
Impedance	400 Ω , balanced, nominal
	200 Ω , unbalanced, nominal
Maximum output level	21 dBu (8.7 Volts RMS) balanced, high-impedance load
	15 dBu (4.4 Volts RMS) unbalanced, high-impedance load
Frequency response	20Hz–20kHz +/- 0.6 dB
Idle channel noise	Less than -115 dBA, balanced, relative to full-scale signal
Dynamic range	Greater than 112 dBA, balanced, using -60 dBFS signal
Stereo channel separation	96 dB

Digital Audio Output

Connectors	IEC 60958-3 (S/PDIF) electrical interface using one RCA connector
Output impedance	75 Ω , nominal
Formats	S/PDIF (Consumer) and AES/EBU (Professional)
Digital audio format	48 kHz linear PCM
Bit width	16, 18, 20, and 24 bits (software selectable)
Dither	Flat and shaped (software selectable)

Headphone Output

Output impedance	47 Ω , nominal
Maximum output level	-4 dBu (0.5 Volts RMS) with 32 Ω load

Parameter Reference

Parameter names in parentheses don't appear in the display; only their values are visible.

Menu	Subgroup (if any)	Parameter	Range of Values	Default
Internal Voices: Timbre (for each layer)		KeyMap L	Any keymap	
		Keymap R	Any keymap	
	Key Range	Lo	C -1 to G 9	C 0
		Hi	C -1 to G 9	C 8
		Block param 1	Varies according to Block	
		Block Param 2	Varies according to Block	
		Amp	-96dB to 48dB	20 dB
		Mod Wheel	None, 0–127	0
		Breath	None, 0–127	0
		Data	None, 0–127	0
		MIDI 9	None, 0–127	0
		MIDI 12	None, 0–127	0
		MIDI 13	None, 0–127	0
	MIDI 29	None, 0–127	0	
	Capture MIDI Vals?	Yes/ No	N/A	
Internal Voices: Envelope		Attack	0.018x–50.000x	1.000x
		Decay	0.018x–50.000x	1.000x
		Release	0.018x–50.000x	1.000x
Internal Voices: LFO		LFO1 Rate	0.00Hz–24.00Hz	2.00Hz
		LFO1 Shape	None, 1/4 /Sine, 1/2 /Sine, 3/4 Sine, Sine, 1/4 +Sine, 1/2 +Sine, 3/4 +Sine, +Sine, 1/4 Squ, 1/2 Squ, 3/4 Squ, Square, 1/4 +Squ, 1/2 +Squ, 3/4 +Squ, +Square, 1/4 Tri, 1/2 Tri, 3/4 Tri, Triangle, 1/4 +Tri, 1/2 +Tri, 3/4 +Tri, +Triangle, Rise Saw, +Rise Saw, Fall Saw, +Fall Saw, 3 Step, +3 Step, 4 Step, +4 Step, 5 Step, +5 Step, 6 Step, +6 Step, 7 Step, +7 Step, 8 Step, +8 Step, 10 Step, +10 Step, 12 Step, +12 Step	None
		GLFO Rate	0.00Hz–24.000Hz	2.00Hz
		GLFO Shape	Same as LFO	None
KB3: Timbre		WheelVolMap	Equal, Bright, Mellow, Junky	
		OrganMap	Equal, Peck's, Bob's, Eric's	
		Chor/Vib Switch	Off, On	
		Chor/Vib	Vib1, Vib2, Vib3, Chor1, Chor2, Chor3	
		Rotary Speed	Slow, Fast	
		DrawbarMode	Preset, Live	
		Drawbars 1–9	0–8	
		DrawbarSteps	Smooth, Normal	
		PreampResp	On, Off	
		Leakage	-96 dB–0.0 dB	
	Amp	-96 dB to +48 dB		

Menu	Subgroup (if any)	Parameter	Range of Values	Default
KB3: Envelope		Keyclick	Off, On	
		KeyclickVol	-96 dB–0.0 dB	
		NoteAttack	Normal, Hard, PercHard	
		NoteRelease	Normal, Hard	
		Perc Switch	Off, On	
		Perc Volume	Soft, Loud	
		Perc Decay	Slow, Fast	
		Perc Pitch	Low, High	
	Perc Ld/Fast	Level	0.0 dB–24.0 dB	
	Perc Ld/Slow	Decay	0.01 s–5.10s	
	Perc Sft/Fast	Vol Adj	-12.0 dB–12.0 dB	
Perc Sft/Slow				
Perc Pitch	Low Harm	Drawbar1–Drawbar9		
	High Harm	Drawbar1–Drawbar9		
	Steal Bar	None, Drawbar1–Drawbar9		
KB3: LFO	LFOs	LFO1 Rate	0.00Hz–24.00Hz	2.00Hz
		LFO1 Shape	None, 1/4 /Sine, 1/2 /Sine, 3/4 Sine, Sine, 1/4 +Sine, 1/2 +Sine, 3/4 +Sine, +Sine, 1/4 Squ, 1/2 Squ, 3/4 Squ, Square, 1/4 +Squ, 1/2 +Squ, 3/4 +Squ, +Square, 1/4 Tri, 1/2 Tri, 3/4 Tri, Triangle, 1/4 +Tri, 1/2 +Tri, 3/4 +Tri, +Triangle, Rise Saw, +Rise Saw, Fall Saw, +Fall Saw, 3 Step, +3 Step, 4 Step, +4 Step, 5 Step, +5 Step, 6 Step, +6 Step, 7 Step, +7 Step, 8 Step, +8 Step, 10 Step, +10 Step, 12 Step, +12 Step	None
		GLFO Rate	0.00Hz–24.000Hz	2.00Hz
		GLFO Shape	Same as LFO	None
	Rotor Effects	Low Rate	-10.00 Hz–10.00 Hz	
		Low Adjust	-10.00 Hz–10.00 Hz	
		High Rate	-10.00 Hz–10.00 Hz	
		High Adjust	-10.00 Hz–10.00 Hz	
Setups: MIDI Xmit (transmit)		MIDI Channel	Off, 1–16	Zones 1–4 default to channels 1–4
		Dest	Local, MIDI, Local+MIDI	Local+MIDI
		Bnd Rng (semitones)	0–127	2
		Bnd Rng (cents)	0–127	0
		AuxBend1 Up	0–60 semitones	12
		AuxBend1 Down	0–60 semitones	12
Setups: Program		AuxBend2 Rng	0–60 semitones	12
		Bank	0–13,683	Internal Voices
		Program	0–127	
		Entry Transmit	Off, On	On
		Bank Mode	None, Ctl 0, Ctl 32, Ctl 0/32, K2000, K1000	Ctl 0/32
		PNumDisp	0–127, 1–128, 11–88, A1–P8	0–127
Setups: Key Range		PNameDisp	Off, Internal, Gen MIDI	Internal
		Lo	C-1–G 9	D 0
		Hi	C-1–G 9	G 9
		Note Map	Off, Linear, 1 of 2, 2 of 2, 1 of 3, 2 of 3, 3 of 3, 1 of 4, 2 of 4, 3 of 4, 4 of 4, Invrs, Const	Linear
		AutoSplit	Off, On	On
Setups: Transposition		AutoSplit Key	C-1–G9	G# 3
		Transpose	-127 to 127	0

General Reference

Parameter Reference

<i>Menu</i>	<i>Subgroup (if any)</i>	<i>Parameter</i>	<i>Range of Values</i>	<i>Default</i>
Setups: Velocity		Vel Scale	-300 to 300%	100%
		Vel Offset	-127 to 127	0
		Vel Curve	Linear, Sin+, Cos+	Linear
		Vel Min	1–127	1
		Max	1–127	127
Setups: Continuous controllers These controllers all have the same six parameters, called the Basic Parameter Group. Default values are usually the same, with the exception of Ctrl Num; its value varies for each controller	Wheel 1 Up	Ctrl Num Ctrl Scale Ctrl Offset Ctrl Curve Entry Value Exit Value	Any control source or destination (Next column for defaults) -300 to 300% (default 100%) -127 to 127 (default 0 for all) Linear, Sin+, Cos+ (default Linear) None, 0–127 (default None) None, 0–127 (default None)	Wheel 1 Up Ctrl Num: Pitch Up
	Wheel 1 Down			Wheel 1 Down Ctrl Num: Pitch Down
	Red Knob B			Red Knob B Ctrl Num: Mod Whl
	MPressure			MPressure Ctrl Num: Pressure
	Green Knob A			
	Green Knob B			
	Green Knob C			
	Green Knob D			
	Pedal 1			
	Red Knob C			
Red Knob D				
Setups: Continuous controllers: Ribbons Ribbons have three common parameters, called the Spring Parameter Subgroup The ribbon controllers also have the six basic parameters.		Ribbon Sect	Large, 3 Sect.	Large
	Spring Parameters	Spring Switch	Off, On	On
		Ribbon Mode	Absolute, Relative	Relative
		Spring Pos	0–127	64
	Ribbon 1 basic parameters	As indicated in Basic Parameter Group		
	Ribbon 2 spring parameters	As indicated in Spring Parameter Subgroup		
	Ribbon 2 basic parameters	As indicated in Basic Parameter Group		
	Ribbon 3 spring parameters	As indicated in Spring Parameter Subgroup		
Ribbon 3 Basic parameters	As indicated in Basic Parameter Group			
Setups: Switch controllers All switch controllers have the same seven parameters, called the Switch Control Parameter Group	Amber Swch A	SwType On Ctrl On Value Off Ctrl Off Value Entry State Exit State	Momentary, Toggle (default Momentary) Any control source or destination (default None) None; 0–127 (default None) Any control source or destination (default None) None; 0–127 (default None) None, Off, On (default None) None, Off, On (default None)	
	Amber Swch B			
	Amber Swch C			
	Amber Swch D			
	Red Switch A			
	SwitchPdl 1			
	SwitchPdl 2			
	SwitchPdl 3			

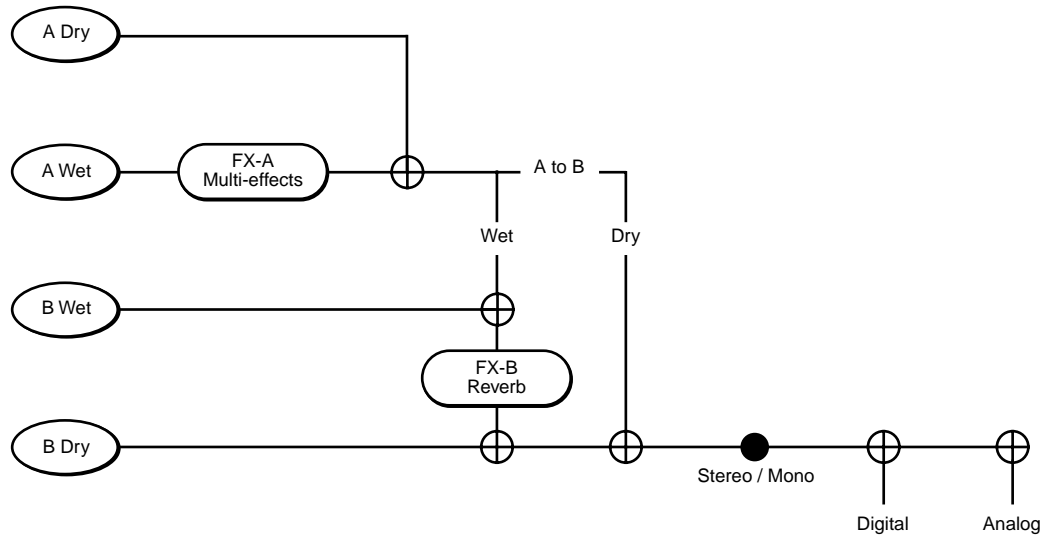
<i>Menu</i>	<i>Subgroup (if any)</i>	<i>Parameter</i>	<i>Range of Values</i>	<i>Default</i>
Setups: Arpeggiator	Key range	Arp Active	Off, On	Off
		Low	C-1 to G9	G 9
		Hi	C-1 to G9	C-1
		Zone Enable	Off, On	On
		Latch Mode	Keys, OverPlay, Arpeg, Add, Auto, Pedals	
		Play Order	Played, Up, Down, Up & Down, Up & Down Rpt, Random, Shuffle, Walk	Played
		Beats	4th Notes, 8th Notes, 8th Trips, 16th Notes, 16th Trips, 32nd Notes, 32nd Trips	4th Notes
		Initial Tempo	20–300 BPM	120 BPM
		Duration	1–100%	100%
		Vel Mode	Fixed, Played, Last, Pressure, Ctrl 117	Played
		Fixed Vel	1–127	100
		Note Shift	-12 to 12	0
		Shift Limit	0–88	24
	Limit Opt	Stop, Reset, UniPolar, BiPolar, Flt Reset, Flt Unipolar, Flt Bipolar	UniPolar	
	Glissando	Off, On	Off	
FX Routing (in all editors)		Routing	None, FXA, FXB, Both	Varies
		FXA Bypass	Off, On	Off
		FXB Bypass	Off, On	Off
MIDI Recv (for each channel)		Channel	1–16	
		(Channel status)	Off, On	On
		(Bank:Program)	0:000–16,384:127	
		(Program ID and name)		
		Volume	0–127	127
		Pan	0–127	64
		Routing	None, FXA, FXB, FXAB, Both	Varies
	Wet/Dry Mix	Global A>B	0%–100%	Varies
		A:	0%–100%	Varies
B:		0%–100%	Varies	

General Reference

Parameter Reference

<i>Menu</i>	<i>Subgroup (if any)</i>	<i>Parameter</i>	<i>Range of Values</i>	<i>Default</i>	
Global	EQ	Low	-12 dB to +12 dB	0	
		Mid	-12 dB to +12 dB	0	
		High	-12 dB to +12 dB	0	
			Local Control	Off, On	On
			Clock	Internal, External	Internal
			Transmit Clock	Off, On, Seq	Seq
			Touch	1 Linear, 2 Light1, 3 Light2, 4 Light3, 5 Hard1, 6 Hard2, 7 Hard3	1 Linear
			Chg Setups	Keys Up, Immed	Immed
			Setup Chg Chan	None, 1–16	None
			MIDI In	Normal, Remap, Merge, Auto	Auto
			Wrap/Skip	Off, On	On
			Exit Save	Never, Ask	Never
			Drum Remap	Normal, PC2ReMap, GMReMap	Normal
			FX Chg Mode	Panel, Auto	Auto
			FX Channel	Current, 1–16	1
			Stored FX	Factory, User	User
			KB3 MIDI Chan	1–16	1
			Tuning	-100 ct to 100 ct	0 ct
			Recv Trans	-64 to 63	0
			Bank Sel Ctl	0, 32, 0/32, 0 or 32	0/32
			All Notes Off	Respond, Ignore	Respond
			Device ID	0–127	0
			Xmit Buttons	Off, On	Off
			Output Mode	Stereo, Mono	Stereo
			DigOut Mode	Pro, Cons	Pro
			DigOut ChanStat	Off, On	On
			DigOut Width	16 bit, 18 bit, 20 bit, 24 bit	16 bit
			DigOut Level	Slider, Off, -79dB to +24 dB	Slider
			DigOut Shaping	Off, On	On
			Mem Avail	Not editable	220K
			OS Version	Not editable	2.00
			Keyboard	Not editable	0
			Ver	Not editable	1
	Expansion Blocks	EXP1, EXP2	Not editable	No	
		PCX-1	Not editable	Not Installed	
		PCXP1, PCXP2	Not editable	No	
		Reset PC2?	N/A	N/A	
		Dump all objects?	N/A	N/A	
		MIDIScope?	N/A	N/A	

PC2R Audio Signal Routing



MIDI Controllers

	None						
0	Bank MSB	32	Bank LSB	64	Sustain	96	DataInc
1	Mod Wheel	33	Mod Wheel LSB	65	Port Switch	97	DataDec
2	Breath	34		66	Sosten	98	NRg LBS
3		35		67	Soft	99	NRg MSB
4	Foot Control	36		68	Legato	100	Rg LSB
5	Port Time	37	Port Time LSB	69	Hold2	101	Rg MSB
6	Data	38	Data LSB	70	SndCtl1	102	
7	Volume	39	Volume LSB	71	SndCtl2	103	
8	Balance	40	Balance LSB	72	SndCtl3	104	
9		41		73	SndCtl4	105	
10	Pan	42	Pan LSB	74	SndCtl5	106	
11	Expression	43	Expression LSB	75	SndCtl6	107	
12	EfxCt 1	44		76	SndCtl7	108	
13	EfxCt 2	45		77	SndCtl8	109	
14		46		78	SndCtl9	110	
15	AuxBnd2	47		79	SndCtl10	111	
16	Gen 1	48		80	Gen 5	112	
17	Gen 2	49		81	Gen 6	113	
18	Gen 3	50		82	Gen 7	114	
19	Gen 4	51		83	Gen 8	115	
20		52		84	PortCtl	116	ArpOn
21	AuxBnd1 MSB	53	AuxBnd1 LSB	85		117	ArpVel
22		54		86		118	Latch2
23		55		87		119	Latch1
24		56		88		120	SndOff
25		57		89		121	RstCtl
26		58		90		122	LclCtl
27		59		91	FXBWet	123	NtsOff
28		60		92	FXABWet	124	Omniof
29		61		93	FXAWet	125	OmnioN
30		62		94	FXRoute	126	MonoOn
31		63		95	Ef5 Dpt	127	PolyOn

Special Controllers

The controllers in the following table are not MIDI Controllers. The numerals indicate the buttonpad entries that select the corresponding controllers.

128	Pitch Bend	133	Tempo	138	Goto Prog	143	Seq Stop
129	Rev Bnd	134	Key Number	139	Setup Inc	144	Seq Cont
130	Pitch Up	135	Key Veloc	140	Setup Dec	145	Trans Up
131	Pitch Down	136	Prog Inc	141	Goto Setup	146	Trans Down
132	Pressure	137	Prog Dec	142	Seq Start		

MIDI Controller Messages for Front-Panel Knobs

The following table shows the MIDI Controller messages to send from your MIDI source when you want to simulate moving the knobs on the PC2R's front panel. We've included the equivalents for the PC2 keyboard models, for those of you who are controlling your PC2R from a PC2.

Bear in mind that this works only when MIDI remapping is enabled. By default, MIDI remapping occurs in all performance modes, but not in MIDI Receive mode. If you're in a performance mode and remapping doesn't seem to work, check the MIDI In parameter (in the Global menu), and make sure its value is **Auto**.

To understand this table, use the following reasoning: using your MIDI source to send one of the messages listed in the first column is the same as moving the corresponding PC2R controller listed in the second column. The result of sending the message depends on the assignment of the PC2R controller (as specified in the Controllers menu in the Setup Editor).

For example, sending MIDI 6 from your MIDI source is the same as turning Knob **A** on the PC2R (when the **Shift** LED is green). The value of the Ctrl Num parameter for Green Knob **A** (in each zone of the current setup) determines what you're controlling when you send MIDI 6. If you want to change what happens when you send MIDI 6, change the value of the Ctrl Num parameter for Green Knob **A**.

<i>MIDI Controller Message</i>	<i>Corresponding PC2R (rack) Front-panel Controller</i>	<i>Corresponding PC2 (Keyboard) Front-panel Controller</i>
MIDI 6	Green Knob A	Slider 1
MIDI 22	Green Knob B	Slider 2
MIDI 23	Green Knob C	Slider 3
MIDI 24	Green Knob D	Slider 4
MIDI 88	Amber Swch A	Button 1
MIDI 80	Amber Swch B	Button 2
MIDI 81	Amber Swch C	Button 3
MIDI 82	Amber Swch D	Button 4
MIDI 83	Red Switch A	Button 5
MIDI 85	Ribbon 1	Ribbon 1
MIDI 86	Ribbon 2	Ribbon 2
MIDI 87	Ribbon 3	Ribbon 3
MIDI 1	Red Knob B	Mod Wheel
MIDI 2	Red Knob D	Breath
MIDI 11	Pedal 1	Pedal 1
MIDI 4	Red Knob C	Pedal 2
MIDI 64	SwitchPdl 1	Footswitch 1
MIDI 66	SwitchPdl 2	Footswitch 2
MIDI 67	SwitchPdl 3	Footswitch 3
Pitch Bend	Pitch Bend	Pitch Bend
Pressure	Pressure	Pressure
Note On/Off	Note On/Off	Note On/Off

KB3 Controllers

There's a subset of the MIDI Controller numbers dedicated to controlling KB3 features. The first column in the following table lists the KB3 features that respond to MIDI Controller messages. The second column lists the Controller numbers that KB3 programs always respond to. KB3 programs also respond to the Controller numbers in the third column; these are the Controller numbers that the Voce™ MIDI Drawbar Controller uses to control common tone-wheel organ features. Whatever kind of external MIDI source you're using, you can use the MIDI controller numbers in either the second or third column to control the corresponding KB3 feature in the first column. For example, to control Drawbar 1, you can send either MIDI 6 or MIDI 12.

KB3 Program Feature	MIDI Controller Number	
	PC2R	Voce
Drawbar1	6	12
Drawbar2	22	13
Drawbar3	23	14
Drawbar4	24	15
Drawbar5	25	16
Drawbar6	26	17
Drawbar7	27	18
Drawbar8	28	19
Drawbar9	1	20
Expression Pedal	4	8
Percussion On/Off	73	N.A.
Percussion High/Low	72	72
Percussion Loud/Soft	71	71
Percussion Fast/Slow	70	70
Rotating Speaker Slow/Fast	68	68
Vibrato/Chorus On/Off	95	95
Vibrato/Chorus Selector	93	93
Key Click Level	89	89
Leakage Level	90	90

PC2R Keymaps

1	Piano f Left	65	Clav alt	152	Partials 1 3	234	Ambient Kit 2
2	Piano f Right	66	Clav alt2	153	Partials 1 4	235	Electric Kit 1
3	Piano mf Left	67	Clav Key Release	154	Partials 1 6	236	Electric Kit 2
4	Piano mf Right	68	Harpsichord	155	Partials 1 8	237	Light Kit
5	Piano mp Left	69	Harpsichord Rel	156	Partials 1 12	238	Hybrid Kit 1/L
6	Piano mp Right	70	Accordion	157	Partials 1 2 3	239	Hybrid Kit 2/R
7	Piano 3Vel L	71	Celesta	168	Partials 1 2 4	240	Hybrid Kit 3/L
8	Piano 3Vel R	80	B3 Bars 1-3	159	Partials 1 2 4 6	241	Hybrid Kit 4/R
9	Piano 3V Easy L	81	B3 Full	160	Partials 1 3 5	242	Kicks and Snares
10	Piano 3V Easy R	82	B3 Key Click	161	Partials 2 3 4	243	Jazz Toms/Kicks
11	Piano f Mono	83	B3 Dist Wave	162	Partials 2-4 Gli	244	Sine Toms/Kicks
12	Piano mf Mono	84	B3 Full Wave	163	Partials 2-10Evn	245	Ride Cymbal
13	Piano mp Mono	85	B3 Bars 1-3 Wave	164	Partials 2-12Evn	246	Drum Lyrs1 C4-B4
14	Piano 3Vel Mono	86	B3 Bars 1-4 Wave	165	Partials 3 4	247	Drum Lyrs2 C4-B4
15	Piano 3V Easy M	87	B3 SW Wave	166	Partials 3 4 5	248	SFX Layers C4-B4
16	Piano 440 f L	88	Tone Wheel Wave	167	Partials 4 5 6 7	249	Reverse Drums
17	Piano 440 f R	90	Trumpets	168	Partials 5 6 7	260	Percussion 1
18	Piano 440 mf L	91	Trombets	169	Partials 5-11Odd	261	Percussion 2
19	Piano 440 mf R	92	Trombets alt	170	Partials 11-15	262	Percussion 3
20	Piano 440 mp L	93	Trombones	171	Partials 13-20	263	Percussion 4
21	Piano 440 mp R	94	Trombones alt	172	Partials 16-21	264	Percussion 5
22	Piano 440 3Vel L	95	Low Bones	173	Partials prime	265	Perc Layers 1
23	Piano 440 3Vel R	96	Tenor Sax	174	Sawtooth Wave	266	Perc Layers 2
24	Piano 440 3VEZ L	97	Tenor Sax alt	175	Saw Wave Dull	267	Perc Layers 3
25	Piano 440 3VEZ R	98	Tenor Sax Fast	176	Saw Wave Duller	268	Perc Layers 4
25	Piano 440 f Mono	99	Tenor Sax med	177	Saw Wave Dullest	269	Perc Layers 5
26	Piano 440 mf M	100	Bari/Tenor Sax	178	Triangle Wave	270	Perc Layers 6
27	Piano 440 mp M	101	Baritone Sax	179	Square Wave	271	Perc Layers 7
28	Piano 440 3Vel M	110	Stereo Strings	180	Square Wave Dull	272	Conga Moose Lyr
30	Piano 440 3VEZ M	111	Strings Left	181	Pulse Wave 1/3	273	VeryMutedTriang1
31	Piano 3Vel L alt	112	Strings Right	182	Buzz Wave	274	Marimba
32	Piano 3Vel R alt	113	Meteor Strings	183	Bell Wave	275	Vibes
33	Piano 3Vel rag L	120	Take6 Aah Attack	184	Clav Wave	276	Vibes/Bells
34	Piano 3Vel rag R	121	Take6 Aah Loop	185	Sine Wave alltun	277	Agogo/Bells
35	Piano f rag L	122	Take6 Aah Loop a	186	Synth Vox	267	Agogo Bells Keys
36	Piano f rag R	123	Take6 Ooh Attack	187	Koreana	279	Triangle Keys
37	Piano alttimb1 L	124	Take6 Ooh Loop	188	Hybrid Pan	280	Layer Vibes
38	Piano alttimb1 R	125	Take6 Ooh Loop a	200	Steel String Gtr	909	Diagnostic Sine*
39	Piano alttimb2 M	126	Take6 Ooh Loopa2	201	StlStrGtrHiDecay	999	Silence
40	Piano alttimb3 M	127	Take6 Ooh Glide	202	Clean Elec Gtr		
50	Rhoadz Hard	129	Take6 Bop	203	Distorted Guitar		
51	Rhoadz Soft	130	Take6 B(op)	210	EBass1 Finger		
52	Rhoadz 2Vel	131	Take6 Dot	212	EBass1 Fng alt		
53	Rhoadz Thump	132	Take6 Dot alt	213	EBass1 Fng alt2		
57	Wurly Hard	133	Take6 D(ot)	214	EBass2 Finger		
58	Wurly Med	134	Take6 Doop	215	EBass Slap		
59	Wurly Soft	135	Take6 Doop alt	216	Synth Fretless		
60	Wurly 3Vel	136	Take6 D(oop)	217	Upright Bass		
61	Wurly Thump	137	Take6 Accents 2V	230	Dry Kit 1		
62	Wurly Key Releas	138	Take6 Accents 3V	231	Dry Kit 2		
63	FM Elec Piano	160	Sine Wave	232	Dry Kit 3		
64	Clav	151	Partials 1 2	233	Ambient Kit 1		

Keymap 909 is used in the program 127 Sine, which is intended only for diagnostic purposes. It's not useful as a program keymap.

PC2R Effects and Effects Parameters

Reverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
1	NiceLittleBooth	Rvrb Time	HF Damping	Size Scale	Density
2	Viewing Booth	Rvrb Time	HF Damping	Size Scale	Density
3	Drum Booth	Rvrb Time	HF Damping	Size Scale	Density
4	Add Ambience	Rvrb Time	HF Damping	Size Scale	Density
5	BrightSmallRoom	Rvrb Time	HF Damping	Size Scale	Density
6	Tight Perc Room	Rvrb Time	HF Damping	Size Scale	Density
7	SmallDarkRoom	Rvrb Time	HF Damping	Size Scale	Density
8	Bassy Room	Rvrb Time	HF Damping	Size Scale	Density
9	Percussive Room	Rvrb Time	HF Damping	Size Scale	Density
10	Bathroom	Rvrb Time	HF Damping	Size Scale	Density
11	Real Room	Rvrb Time	HF Damping	Size Scale	Density
12	Drum Room	Rvrb Time	HF Damping	Size Scale	Density
13	Drum Room B	Rvrb Time	HF Damping	Size Scale	Density
14	Large Room	Rvrb Time	HF Damping	Size Scale	Density
15	Small Chamber	Rvrb Time	HF Damping	Size Scale	Density
16	SmallDrumChamber	Rvrb Time	HF Damping	Size Scale	Density
17	Brass Chamber	Rvrb Time	HF Damping	Size Scale	Density
18	Sax Chamber	Rvrb Time	HF Damping	Size Scale	Density
19	Plebe Chamber	Rvrb Time	HF Damping	Size Scale	Density
20	Live Chamber	Rvrb Time	HF Damping	Size Scale	Density
21	Grandiose Hall	Rvrb Time	HF Damping	Size Scale	Density
22	Elegant Hall	Rvrb Time	HF Damping	Size Scale	Density
23	Bright Hall	Rvrb Time	HF Damping	Size Scale	Density
24	Ballroom	Rvrb Time	HF Damping	Size Scale	Density
25	Medium Hall	Rvrb Time	HF Damping	Size Scale	Density
26	Medium Hall Too	Rvrb Time	HF Damping	Size Scale	Density
27	Ball Hall	Rvrb Time	HF Damping	Size Scale	Density
28	Sweet Hall	Rvrb Time	HF Damping	Size Scale	Density
29	Small Hall	Rvrb Time	HF Damping	Size Scale	Density
30	Large Hall	Rvrb Time	HF Damping	Size Scale	Density
40	Small Wood Booth	Room Type	Size Scale	Treb Freq	Treb Gain
41	With A Mic	Room Type	Size Scale	L PreDelay	R PreDelay
42	PrettySmallPlace	Room Type	Size Scale	HF Damping	DiffAmtScl
43	Natural Room	Room Type	Size Scale	L PreDelay	R PreDelay
44	SmallStudioRoom	Absorption	HF Damping	EarRef Lvl	Late Lvl
45	The Real Room	Rvrb Time	HF Damping	Treb Freq	Treb Gain
46	Sizzly Drum Room	Rvrb Time	HF Damping	L PreDelay	R PreDelay
47	ClassRoom	Rvrb Time	HF Damping	Treb Freq	Treb Gain
48	AnotherRealRoom	Rvrb Time	HF Damping	L PreDelay	R PreDelay
49	Big Studio Room	Absorption	LF Split	EarRef Lvl	Late Lvl
50	Real Big Room	Rvrb Time	HF Damping	LF Split	LF TimeScl

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
51	My Garage	Absorption	Late Lvl	Treb Freq	Treb Gain
52	Half Bath	Rvrb Time	HF Damping	E DfDlyScl	E DiffAmt
53	School Stairwell	Absorption	HF Damping	L PreDelay	R PreDelay
54	Small Hall	Rvrb Time	EarRef Lvl	L PreDelay	R PreDelay
55	Classic Chapel	Rvrb Time	HF Damping	L PreDelay	R PreDelay
56	Semisweet Hall	Rvrb Time	HF Damping	EarRef Lvl	Late Lvl
57	Reflective Hall	Rvrb Time	EarRef Lvl	Treb Freq	Treb Gain
58	Smooth Hall	Rvrb Time	HF Damping	L PreDelay	R PreDelay
59	Sweet Hall	Rvrb Time	EarRef Lvl	L PreDelay	R PreDelay
60	Spacious Hall	EarRef Lvl	HF Damping	L PreDelay	R PreDelay
61	Opera House	Rvrb Time	HF Damping	EarRef Lvl	Late Lvl
62	Real Niceverb	Rvrb Time	HF Damping	Treb Freq	Treb Gain
63	Splendid Palace	Rvrb Time	Late Lvl	EarRef Lvl	EarRefDiff
80	Weighty Platey	Rvrb Time	HF Damping	EarRef Lvl	LF TimeScl
81	Classic Plate	Rvrb Time	HF Damping	EarRef Lvl	Late Lvl
90	Gated Reverb	Rvrb Time	Gate Time	GateThresh	GateReleas
91	Gate Plate	Rvrb Time	Gate Time	GateThresh	GateReleas

Delay

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
100	Complex Echo	L Fbk1 Dly	L Fbk2 Dly	R Fbk2 Dly	
101	Stereo Echoes	L Fbk1 Dly	R Fbk1 Dly	L Fbk2 Dly	R Fbk2 Dly
102	4-Tap Delay	Dly Tempo	Fdbk Level	Tap2 Level	Tap4 Level
103	8-Tap Delay	Dly Tempo	Fdbk Level	HF Damping	LoopLength
104	Spectral 4-Tap	Dly Tempo	Tap2 Pitch	Tap3 Pitch	Tap4 Pitch
105	Astral Taps	Dly Tempo	Tap2 Pitch	Tap3 Pitch	Tap4 Pitch

Chorus

Chorus

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
120	Stereo Chorus1	LFO Rate	LFO Depth	Fdbk Level	L/R Phase
121	Stereo Chorus2	LFO Rate	Chor Shape	Fdbk Level	L/R Phase
122	Basic Chorus	L LFO Rate	R LFO Rate	L LFODepth	R LFODepth
123	Chorus Comeback	L LFODepth	R LFODepth	L TapDelay	R TapDelay
124	Chorusier	L LFO Rate	R LFO Rate	LFdbk Lv	R Fdbk Lvl
125	SlowSpinChorus	L LFO Rate	R LFO Rate	L Fdbk Lvl	R Fdbk Lvl
126	Everyday Chorus	L LFO Rate	R LFO Rate	L LFODepth	R LFODepth
127	Soft Chorus	L LFO Rate	R LFO Rate	L TapLevel	R TapLevel
128	Thick Chorus	L LFO1Dpth	R LFO1Dpth	L LFO2Dpth	R LFO2Dpth
129	Rock Chorus	L LFO Rate	R LFO Rate	L TapLevel	R TapLevel

General Reference

PC2R Effects and Effects Parameters

Flange

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
150	Big Slow Flange	LFO Period	LFO TempoFdbk Level	L/R Phase	
151	Sweet Flange	LFO Period	LFO Tempo	Fdbk Level	L/R Phase
152	Throaty Flange	LFO Period	LFO Tempo	HF Damping	
153	Squeeze Flange	LFO Period	LFO Tempo	Fdbk Level	L/R Phase
154	Simply Flange	LFO Period	LFO Tempo	Fdbk Level	L/R Phase
155	Wetlip Flange	LFO Period	Fdbk Level	StatDlyLvl	StatDlyTim

Phase

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
180	Slow Deep Phaser	LFO Rate	LFO Depth	CenterFreq	L/R Phase
181	Saucepan Phaser	LFO Rate	LFO Depth	CenterFreq	Fdbk Level
182	Circles	LFO Rate	LFO Depth	NotchLFORt	NotchDepth

Chorus + Delay

200–233 can be combined to create Chorus/Delay/Reverb multi-effects

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
200	BasicChorusDelay	Mix Chorus	Ch FdbkMix DelayDly Tempo		
201	Doubler & Echo	Ch Depth L	Ch Depth R	Mix Delay	Dly Tempo
202	FastChorusDouble	Mix Chorus	Ch Rate L	Ch Rate R	Mix Delay
203	Chorus Slapbacks	Mix Chorus	Mix Delay	Dly TempoDly	LFDamp
204	Chorus PanDelay	Mix Chorus	Ch Fdbk	Mix DelayDly Tempo	
205	Chorused Taps	4 Tap Tempo	4Tap Fdbk	Tap1 Delay	Tap3 Delay
206	MultiEchoChorus	Ch Rate L	Ch Rate R	Dly Time LDly Time R	

Chorus + Reverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
210	Chorus Air	Ch Rate L	Ch Rate R	Ch Depth LCh Depth R	
211	ChorusSmallRoom	Ch Rate L	Ch Rate R	L Mix Rvrb	R Mix Rvrb
212	ClassicEP ChorRm	Ch Rate L	Ch Rate R	L Mix Rvrb	R Mix Rvrb
213	Chorus HiCeiling	Ch Delay L	Ch Delay R	Rvrb Time	Mix Reverb
214	Chorus MiniHall	Ch Fdbk L	Ch Fdbk R	Rvrb Type	Rvrb Time
215	Chorus PercHall	Ch Rate L	Ch Rate R	Rvrb Type	Rvrb Time
216	ChorusMedChamber	Ch Depth L	Ch Depth R	Rvrb Time	Rvb HFDamp
217	VanillaChorRvb	Mix Chorus	Rvrb Time	Rvb HFDamp	Mix Reverb
218	SoftChorus Hall	Ch Rate L	Ch Rate R	Rvrb Time	Mix Reverb
219	Chorus SlowHall	Mix Chorus	Ch Delay L	Ch Delay R	Rvrb Time
220	ChorBigBrtPlate	Ch Rate L	Ch Rate R	Rvb HFDamp	Mix Reverb

Chorus + Delay + Reverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
230	ChorusDelayHall	Dly Tempo	Rvrb Type	Rvrb Time	Rvb HFDamp
231	ChorDlyRvb Lead	Dly Time LDly Time R	Rvrb Type	Rvrb Time	
232	Fluid ChorDlyRvb	Dly Fdbk L	Dly Fdbk R	Rvrb Time	Rvb HFDamp
233	DeepChorDlyHall	Ch Rate L	Ch Rate R	Dly Tempo	Rvrb Time

Flange + Delay

250–283 can be combined to create Flange/Delay/Reverb and other multi-effects

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
250	Flange Delay	Fl Rate	Mix Delay	Dly Time L	Dly Time R
251	ThroatyFlangeDly	Fl Rate	Mix Delay	Dly Time L	Dly Time R
252	Slapback Flange	Fl Rate	Fl Fdbk L	Fl Fdbk R	Mix Delay

Flange + Reverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
260	Flange Booth	Fl Rate L	Fl Rate R	Rvrb Type	Rvrb Time
261	Flange Room	Fl Tempo	Fl Fdbk L	Fl Fdbk R	Mix Reverb
262	SlowFlangeVerb	Fl Tempo	Fl Fdbk LF	Fl Fdbk R	Mix Reverb
263	Flange TheatreMix Flange	Rvrb Time	Rvb HFDamp	Mix Reverb	
264	Flange Hall	Fl Tempo	Mix Flange	Rvrb Time	Rvb HFDamp

General Reference

PC2R Effects and Effects Parameters

Flange + Delay + Reverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
270	FlangeDelayRoom	Fl Tempo	Fl Phase R	Dly Tempo	Rvb HFDamp
271	SloFlangeDlyRoom	Dly Tempo	Dly Fdbk L	Dly Fdbk R	Rvb HFDamp
272	FlangeDelayHall	Dly Tempo	Rvr Time	L Mix Rvr	R Mix Rvr
273	FlangeDlyBigHall	Fl Rate	Dly Tempo	Rvr Time	Rvb HFDamp

Flange and Other

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
280	Flange->LaserDly	Fl Rate	Fl Fdbk	Mix Delay	Dly Tempo
281	FlangeTap Synth	Fl Rate	Mix 4Tap	4Tap Tempo	4T LoopLen
282	Lazertag Flange	Fl Tempo	Dly Tempo	LsrCntourL	LsrCntourR
283	Shaper->Flange	Shp Amount	Out Gain	Fl Rate	Fl Fdbk

Filters

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
300	Bass Env Filter	Min Freq	Freq Sweep	Resonance	Threshold
301	EPno Env Filter	Freq Sweep	FilterType	Resonance	Threshold
302	Phunk Env Filter	Min Freq	Freq Sweep	ResonanceThreshold	
303	Trip Filter	LFO Period	FilterType	Min Freq	Max Freq
304	LFO Sweep Filter	LFO Period	FilterType	Min Freq	Max Freq
305	LFO Sweep Filt2	LFO Period	R Phase	Resonance	Max Freq
306	DoubleRiseFilter	LFO Period	FilterType	LFO Shape	Max Freq
307	Circle Bandsweep	LFO Period	Resonance	Min Freq	Max Freq

Laserverb

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
320	Cheap LaserVerb	Fdbk Lvl	Delay Contour	Spacing	
321	Spry Young BoyFdbk	LvlDelay	Contour	Spacing	
322	LaserDelay->Rvb	Dly Tempo	LsrCntourL	LsrCntourR	Mix Reverb
323	LazerfazerEchoesF	dbk Lvl	Delay	Contour	Spacing
324	Drum Neurezonate	Fdbk Lvl	Delay	Contour	Spacing

Distortion

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
330	SuperShaper	Shp Amoun	tOut Gain	None	None
331	SubtleDrumShape	Low Amount	Mid Amoun	tHi Amoun	tOut Gain
332	2 Band Shaper	CrossOver	Low Amount	Hi Amount	Out Gain
333	Shaper->Reverb	Shp Amount	Shp Lopass	Rvrb Time	Rvb HFDamp
334	SubtleDistortion	Dist Drive	Warmth	Highpass	Out Gain
335	Synth Distortion	Dist Drive	Mid1 Gain	Treb Gain	Out Gain
336	Dist Cab EPiano	Dist Drive	Warmth	Cab Preset	Out Gain
337	Distortion+EQ	Dist Drive	Warmth	Mid2 Gain	Out Gain
338	Quantize+FlangeQuantizLvl	Mix Flange	Fl Period	Fl Fdbk	

Enhancer

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
350	3 Band Enhancer	Hi Drive	Mid Drive	Low Drive	Out Gain
351	Extreem EnhancerHi/Md Xovr	Hi Drive	Mid Drive	Low Drive	

Compressor

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
360	HKCompressor 3:1	Ratio	Threshold	MakeUpGain	Attk Time
361	DrumKompres 5:1	Ratio	Threshold	MakeUpGain	Attk Time
362	SKFdbkComprs 6:1	RatioThreshold	MakeUpGain	Attk Time	
363	SKCompressr 12:1	Ratio	Threshold	MakeUpGain	Attk Time

Simple Motion

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
370	Tremolo	Trem Rate	Trem Depth	Trem ShapeL/R	Phase
371	Simple Panner	LFO Rate	LFO Shape	PanWidth	ImageWidth
372	Dual Panner	L LFO Rate	R LFO Rate	L PanWidth	R PanWidth

Spatial

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
380	SRS	Center	Space	Bass Gain	Treb Gain
381	Mono->Stereo	CenterGain	Pan High	Pan Mid	Pan Low
382	Widespread	CenterGain	Diff Gain	DfBassFreq	DfBassGain
383	Wide Space	Rvrb Type	Rvb Diffus	Ch Delay L	Ch Delay R

General Reference

PC2R Effects and Effects Parameters

Rotary Speaker

<i>ID</i>	<i>Effect</i>	<i>Param1</i>	<i>Param2</i>	<i>Param3</i>	<i>Param4</i>
390	VibChor+Rotary1	Vibr/Chor	Low Rate	High Rate	HiResonate
391	VibChor+Rotary2	Vibr/Chor	Low Rate	High Rate	Roto InOut
392	VC+Dist+Rotary1	Vibr/Chor	Low Rate	High Rate	Dist Drive
393	VC+Dist+Rotary2	Vibr/Chor	Low Rate	High Rate	Dist Drive
394	VC+Dist+Rotary3	Vibr/Chor	Low Rate	High Rate	Dist Drive
395	VC+Tube+Rotary1	Vibr/Chor	Low Rate	High Rate	Tube Drive
396	VC+Tube+Rotary2	Vibr/Chor	Low Rate	High Rate	Tube Drive

MIDI Implementation Chart

Model: Kurzweil PC2R

Manufacturer:
Young Chang
Digital Synthesizers

Date: 10/1/00
Version 2.0

Function	Transmitted	Recognized	Remarks	
Basic Channel	Default	1	1	
	Changed	1 - 16	1 - 16	
Mode	Default	Multi*	Multi*	memorized
	Messages	Any	Modes 1 & 3	memorized
	Altered	X		
Note Number		0-127	0-127	key range
	True Voice	1-128	1-128	C 0-C 8
Velocity	Note ON	O	O	
	Note OFF	O	O	
After Touch	Keys	X	X	
	Channels	O	O	
Pitch Bender		O	O	
Control Change**	0, 32	O	O	bank select
	1	O	O	mod wheel
	2	O	O	breath controller
	4	O	O	foot controller
	6, 38	O	O	data entry
	7	O	O	volume
	10	O	O	pan
	11	O	O	expression
	15, 47	O	O	AuxBnd2
	21, 53	O	O	AuxBnd1
	64	O	O	sustain pedal
	66	O	O	sostenuto pedal
	67	O	O	soft pedal
	91	O	O	FXB wet dry
	92	O	O	A>B wet dry
	93	O	O	FXA wet dry
	94	O	O	FX route
	96	O	O	data increment
	97	O	O	data decrement
	98, 99	O	O	non-registered param num
	100, 101	O	O	registered param num
116	O	O	arpeggiator on/off	
117	O	O	arpeggiator velocity ctl	
118	O	O	arpeggiator latch 2	
119	O	O	arpeggiator latch 1	
120	O	O	all sound off	
121	O	O	reset all controllers	
Program Change		O 0-127	O 0-127	
	True #	0-127	0-127	
System Exclusive		O	O*	
System Common	Song Pos.	X	X	
	Song Sel.	X	X	
	Tune	X	X	
System Real Time	Clock	O	O	
	Messages	O	O	
Aux Messages	Local Control	O	O	
	All Notes Off	O	O	
	Active Sense	X	X	
	Reset	X	X	
Notes	*Manufacturer's ID = 07 Device ID: default = 0; programmable 0-127		*Use Multi to assign different programs to each MIDI channel **The PC2R can send any control change	

Mode 1: Omni On, Poly
Mode 3: Omni Off, Poly

Mode 2: Omni On, Mono
Mode 4: Omni Off, Mono

O = yes
X = no

Appendix C

Program and Setup Information

This appendix contains the following information:

- PC2R Programs.....C-2
- Controller Assignments for Programs in Bank 0.....C-4
- Controller Assignments for Programs in Bank 6.....C-23
- PC2R SetupsC-33
- Physical Controller Assignments for SetupsC-34

Program and Setup Information

PC2R Programs

PC2R Programs

The programs in Bank 0 and Bank 6 are Internal-Voices programs. The programs in Bank 4 are KB3 programs. There's one factory program in the User bank (Bank 1), but you can save a user-defined program over it if you want, so there are 128 IDs available in the User bank (you can restore the factory program **127 Sine V2.0** by deleting any user-defined program you may have stored over it).

Bank 0 (Internal)

000	Stereo Grand	032	C3PO	064	Lyrical Strings	096	Acoustic Guitar
001	Classic Grand	033	Digital E Grand	065	Slow Strings	097	Strummer 12 Str
002	Dynamic Grand	034	Rock E Grand	066	Marcato Strings	098	Rich 6 String
003	Warm Grand	035	FantAsmAtron	067	Layer Strings	099	12 String Guitar
004	Solo Grand Piano	036	Atmaz	068	Fast Strings	100	Chorus Elec Gtr
005	Concert Grand	037	Celestial Comet	069	Touch Strings	101	Elec 12 String
006	Mono Grand Piano	038	Comp Time	070	Velocity Strings	102	Jazzy Frets
007	Piano for layers	039	Ruth Buzzy	071	Phantom Strings	103	Lead Rock Gtr
008	Hard Rock Piano	040	Clav Classic	072	Ooh><Aah	104	Round and Wound
009	Rock Grand	041	Touch Clav	073	Doo><>Daa	105	Punch Bass
010	Grand Piano 440	042	Dual Wah Clav	074	Baa stacc. Bop	106	Two Finger Bass
011	Mono Stage Piano	043	Harpsichord	075	Doo stacc. Doop	107	Dual-Tri Bass
012	Dyn Stage Piano	044	Modern Harpsi	076	Daa stacc. Dot	108	Clav o' Bass
013	Ragtime Piano	045	CrystalClavchd	077	Scatman	109	Fret Not Bass
014	Tack Piano	046	Accordion	078	The Croons	110	Upright Bass 1
015	Piano & Strings	047	Celesta	079	Cathedral Vox	111	Upright Bass 2
016	Classic E Piano	048	The Reverend's	080	Solar Lead	112	Studio Drums 1+2
017	Serious Classic	049	Ballad Of 3 Bars	081	Vox Lead	113	Studio Drums 3+4
018	That 70's E Pno	050	Prog Rocker's B	082	Alazawi	114	Ambient Rock Kit
019	Hard E Piano	051	All Out Full On	083	Slo Wood Flute	115	Coliseum Kit
020	Lounge E Piano	052	Grungy Overdrive	084	Groove Bass	116	Resonant Traps
021	Dyno My E Pno	053	Uptown Gospel	085	1/3 Pulse Bass	117	Tripkit/Trashkit
022	Soft E Piano	054	Retro Roto	086	Sweeper Bass	118	Beat Box
023	Hybrid E Piano	055	Pipe Organ	087	Lowdown Bass	119	Electro Kit
024	My Best Wurly	056	Big Brass	088	Rez Aah Pad	120	Virtuoso Perc
025	Big Red Wurly	057	Saxes/Trumpets	089	Crypt	121	Rhythm Maker
026	Brkfst in Korea	058	Split Section	090	Meteor Strings	122	Woody Marimba
027	Soft Wurly	059	Broadway Brass	091	Orch Pad	123	African Marimba
028	Wurly Road	060	Trombones	092	Neptune	124	Vibes
029	Pearly Keys	061	Bari/Tenor Sect	093	Analogy	125	New Fluid Vibes
030	Digital E Piano	062	Solo Tenor Sax	094	Dream Catcher	126	Aborigine Jam
031	Ballad E Piano	063	Williams Brass	095	U Say Tomita...	127	Drums 'n Bells

Bank 1 (User)

127 Sine V2.0

The PC2R uses this program for internal diagnostics. Don't use it as a performance program; it can get really loud.

Bank 4 (KB3)

000	All Out	064	Uncle Clark's
008	Testify	072	Loungin'
016	ProgRock Organ	080	Live Drawbars
024	Reverend Al's	088	Keith's Revenge
032	Steve's li'l B	096	Bars 1-3
040	Flutey Flakes	104	Fine Overdrive
048	Gospel Organ	112	Odd Ones Out
056	Syn Rock Organ	120	VoxOrgan Split

Program and Setup Information

PC2R Programs

Bank 6 (Internal 2)

000	Sweet Ivories	032	Janet's Comp	064	Fast Vtrig Rosin	096	Titanium Guitar
001	Nice Touch Grand	033	Mild Sheen	065	Emotional String	097	Latin Lover
002	Piano Solitude	034	Scrape Glass	066	Octave Strings	098	Roto 12 String
003	Piano Recital	035	Air Society	067	Emphatic Strings	099	Electric 12
004	Full Bloom Piano	036	Push Air	068	Rosin Section	100	Twangy Guitar
005	Pianetta	037	Dronin'	069	Resolute Section	101	Chr Elec & Mute
006	Suite Piano	038	Alien Salt Mine	070	Tender Strings	102	Comp Chr E Gtr
007	Dreamy Piano	039	Imperfect Storm	071	Flute & Strings	103	Trashed Tubes
008	Basement Upright	040	Mod Clavier	072	Bright Voices	104	Gimme The Finger
009	Chiano	041	Belly Celeste	073	Crystal Voices	105	Bright E Bass
010	Way Back Piano	042	Harpsichordion	074	Vox & Organ	106	Bright A Bass
011	Dance Piano	043	Circus Keys	075	BIG Ooh Voices	107	Triangle Bass
012	Cloud Ride Piano	044	Cosmic Calliope	076	BIG Voices	108	Yow Bass
013	Organic Piano	045	Calliope Keys	077	Bright Syn Vox	109	Mono Synth Bass
014	Piano & Wash	046	Chiff Attack	078	Vox Orgel	110	400 HP Bass
015	Piano & Vox Pad	047	Spaced Harmonix	079	Vox & Strings	111	Base in Face
016	Mello E Piano	048	BackgroundOrgan	080	Subdivide	112	Radio Kings/Rods
017	Tines Square	049	Mello Tone Wheel	081	Rezy Bass/Poly	113	Ripper Kit/Vinyl
018	Brunch In Seoul	050	Piped Organ	082	Technicolor	114	LA Drums/Brk Bt.
019	Classy Roadz	051	Playful Piper	083	Elan Lead	115	Compact/Raw Kit
020	Barking Tines	052	Peter's Pan	084	Sun Spot Lead	116	TubeTraps/lb.der
021	Clean and Soft	053	Imaginary Flute	085	Dinosaur's Lead	117	Acoustic/HiPKit
022	Ballad Keys	054	Bright Koreana	086	Sawyer's Bomb	118	Dirt/Triphop Kit
023	Lotus Keys	055	Bouncin'BassBall	087	Reverse Feedback	119	SumPumpKit MWsus
024	Soft Ballad	056	Goosed Riff Sect	088	Poseidon	120	Marimba
025	'70s FM Tines	057	Fatso Sax	089	Analogica	121	Milky Way Vibes
026	'90s FM Ballad	058	Big&Beefy Saxes	090	Anti Rez	122	Percussionist
027	Chorus Rock Pno	059	Goosed Unison	091	Spider's Web	123	Carnival
028	Bright Pianotone	060	Anabrass	092	Ethereal Strings	124	Primitive Perc
029	Family Portrait	061	Honk'n Dyn Sax	093	FreeResAhh Notch	125	Bunch of Perc
030	Harpsi-Piano	062	Saxy Lush	094	Ooh><Ahh Pad	126	Perc Party
031	Fantasy Keys	063	Classical Brass	095	Vocalicious	127	Perc Circle

Program and Setup Information

Controller Assignments for Programs in Bank 0

Controller Assignments for Programs in Bank 0

The tables in this section list the physical controller assignments for the factory programs in Bank 0. The table titles show program IDs and names.

Notice that the IDs start at 0. If you change the default value of 0–127 for the PNumDisp parameter (see page 5-13), the program IDs you see in the display won't match the IDs you see here.

See page C-23 for lists of physical controller assignments for the factory programs in Bank 6. See page C-34 for lists of the physical controller assignments for setups.

000 Stereo Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

001 Classic Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

002 Dynamic Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

003 Warm Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

004 Solo Grand Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

005 Concert Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

006 Mono Grand Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

007 Piano for layers

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

008 Hard Rock Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

009 Rock Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

010 Grand Piano 440

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

011 Mono Stage Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

012 Dyn Stage Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

013 Ragtime Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

014 Tack Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Tack Level
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Vibrato
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

Program and Setup Information

Controller Assignments for Programs in Bank 0

015 Piano & Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	Strings Level
Amber Swch A	Octave Shift
Amber Swch B	Enable Vibrato
Amber Swch D	Arp On/Off
Red Switch A	Lyr Disable (Strings)
Red Knob B	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal: piano

016 Classic E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Bass Boost
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

017 Serious Classic

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

018 That 70's E Pno

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Enable Thump
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

019 Hard E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Enable Thump
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

020 Lounge E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Disable release
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

021 Dyno My E Pno

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Hi Freq Cut
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Fast Decay
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	LoPass Freq Cut
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

022 Soft E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq Cut
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Layer Enable (Pad)
Amber Swch D	Arp On/Off
Red Switch A	Disable Chorus Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

023 Hybrid E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Disable Thump
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
Red Knob D	Timbre
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob D	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

024 My Best Wurly

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Disable Thump
Amber Swch D	Arp On/Off
Red Switch A	Impact/Thump Lvl
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto

025 Big Red Wurly

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Enable Detuned Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto

026 Brkfst in Korea

Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch B	Sample Start
Amber Swch C	Disable Detuned Layer
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 67	Soft Pedal

027 Soft Wurly

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

Program and Setup Information

Controller Assignments for Programs in Bank 0

028 Wurly Road

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

029 Pearly Keys

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Envelope Ctl
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto

030 Digital E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Soft Pedal
MIDI 67	Soft Pedal

031 Ballad E Piano

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Envelope Ctl
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	Timbre
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Pedal

032 C3PO

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Sample Start
Amber Swch D	Arp On/Off
Red Switch A	Enable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

033 Digital E Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

034 Rock E Grand

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

037 Celestial Comet

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Treble Cut
Green Knob D	Trem/Vib Rate
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch D	Arp On/Off
Red Switch A	Switch Layers
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

035 FantAsmAtron

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

038 Comp Time

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	Resonance
Amber Swch A	Octave Shift
Amber Swch B	Octave Drop
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

036 Atmaz

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Attack Ctrl
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch D	Arp On/Off
Red Switch A	Switch Layers
Red Knob B	Vibrato Rate
MPressure	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

039 Ruth Buzzy

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq Cut
Green Knob D	Tremolo+Rate
Amber Swch A	Octave Shift
Amber Swch B	Resonance Boost
Amber Swch D	Arp On/Off
Red Switch A	Decay Control
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

Program and Setup Information

Controller Assignments for Programs in Bank 0

040 Clav Classic

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Bass Level
Green Knob D	HiPass LFO Rate
Amber Swch A	Octave Shift
Amber Swch B	Disable Release
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	HiPass LFO Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
Red Knob C	HiPass LFO Depth
MIDI 64	Sustain
MIDI 66	Sostenuto

041 Touch Clav

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Impact
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	BandPass LFO Rate
MPressure	Timbre
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

042 Dual Wah Clav

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Bandpass Width
Green Knob D	LFO2 Rate
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	LFO => Red Knob B
Red Knob B	Bandpass Freq(Red Switch A)
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

043 Harpsichord

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Sample Start
Amber Swch A	Octave Shift
Amber Swch B	Disable Release
Amber Swch C	Disable Velocity
Amber Swch D	Arp On/Off
Red Switch A	Octave Switch
Red Knob B	Decay Control
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Octave Switch

044 Modern Harpsi

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Decay Control
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Enable Release
Red Knob B	LoPass Freq, Layer Detune
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

045 CrystalClavchd

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Treble Cut
Green Knob D	Sample Start
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	Layer 1 Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

046 Accordion

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremelo Rate
Amber Swch A	Octave Shift
Amber Swch B	Disable Layer
Amber Swch D	Arp On/Off
Red Switch A	Attack Control
Red Knob B	Swell
MPressure	Swell
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

047 Celesta

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremelo Rate
Amber Swch B	Decay Control
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	LoPass Freq
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

048 The Reverend's

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	Layer XFade
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

049 Ballad Of 3 Bars

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Perc XFade
Green Knob D	Bass Cut
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch C	VAST Chr/Vib On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

050 Prog Rocker's B

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Perc XFade
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

051 All Out Full On

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

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052 Grungy Overdrive

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch C	VAST Chr/Vib On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

053 Uptown Gospel

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Para EQ Freq
Green Knob D	Para EQ Cut
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

054 Retro Roto

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Xtra Hi Freq
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chr On/Off
Amber Swch C	VAST Chr/Vib On/Off
Amber Swch D	Arp On/Off
Red Switch A	VAST Rotary On/Off
Red Knob B	FX/VAST Rotary Ramp Speed Ctl
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	FX/VAST Rotary Ramp Speed Ctl

055 Pipe Organ

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Layer XFade
Green Knob D	Layer XFade
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

056 Big Brass

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Amber Swch B	Layer Switch
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	LoPass Freq
Red Knob C	LoPass Freq

057 Saxes/Trumpets

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Amber Swch B	Layer Switch
Amber Swch C	Layer Switch
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	LoPass Freq
Red Knob C	LoPass Freq

058 Split Section

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Amber Swch B	Layer Switch
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	Timbre
Red Knob C	Timbre

059 Broadway Brass

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	LoPass Freq

060 Trombones

Green Knob C	Timbre
Green Knob D	Attack Control
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	LoPass Freq
Red Knob C	LoPass Freq

061 Bari/Tenor Sect

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Amber Swch B	Layer Switch
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Env & Pitch
Red Knob D	LoPass Freq
Red Knob C	LoPass Freq

062 Solo Tenor Sax

Green Knob C	LoPass Freq
Green Knob D	Attack Control
Red Knob B	Vibrato Depth
MPressure	Vibrato Depth

063 Williams Brass

Green Knob C	LoPass Envelope
Amber Swch B	Layer Switch
Amber Swch C	Layer Switch
Red Switch A	Layer Switch
Red Knob B	Vibrato Depth
MPressure	Swell Envelope

064 Lyrical Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Brightness
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Envelope
Red Knob B	Attack Switch
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

065 Slow Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Brightness (Cut)
Green Knob D	Attack Control
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	Slow Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

066 Marcato Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Brightness (Cut)
Green Knob D	Envelope Control
Amber Swch A	Octave Shift
Amber Swch B	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Envelope Control
Red Knob B	Envelope Switch
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Envelope Switch

067 Layer Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Brightness
Green Knob D	Release Control
Amber Swch A	Octave Shift
Amber Swch B	Layer Switch(w/Red Switch A)
Amber Swch C	Layer Switch(w/Red Switch A)
Red Switch A	Mono -> Stereo
Red Knob B	Attack Control
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

Program and Setup Information

Controller Assignments for Programs in Bank 0

068 Fast Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Release Control
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Knob B	Layer Switch
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Layer Switch

069 Touch Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Envelope Control
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	Tremelo
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

070 Velocity Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Knob B	Layer Switch
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Layer Switch

071 Phantom Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Attack Control
Amber Swch A	Octave Shift
Amber Swch B	Layer Switch
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	Envelope Control
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Envelope Control

072 Ooh><Aah

Green Knob C	Timbre
Green Knob D	Layer XFade
Red Switch A	Layer Switch
Red Knob B	Vibrato
MPressure	Layer XFade
Red Knob D	Timbre
Red Knob C	Timbre

073 Doo><>Daa

Green Knob C	Timbre
Green Knob D	Layer XFade
Red Switch A	Layer Switch
Red Knob B	Vibrato
MPressure	Layer XFade
Red Knob D	Timbre
Red Knob C	Timbre

074 Baa stacc. Bop

Green Knob D	Envelope Control
Red Switch A	Layer Switch
Red Knob B	Vibrato
MPressure	Swell
Red Knob D	Swell
Red Knob C	Timbre

075 Doo stacc. Doop

Green Knob D	Envelope Control
Red Switch A	Layer Switch
Red Knob B	Vibrato
MPressure	Swell
Red Knob D	Swell
Red Knob C	Timbre

076 Daa stacc. Dot

Green Knob D	Envelope Control
Red Switch A	Layer Switch
Red Knob B	Vibrato
MPressure	Swell
Red Knob D	Swell
Red Knob C	Timbre

077 Scatman

Red Switch A	Envelope Control
Red Knob B	Vibrato
MPressure	Swell
Red Knob D	Swell
Red Knob C	Timbre

078 The Croons

Green Knob C	Timbre
Red Switch A	Layer Switch
Red Knob B	Vibrato

079 Cathedral Vox

Green Knob C	Brightness (Cut)
Green Knob D	Envelope Control
Red Switch A	Layer Enable
Red Knob B	Brightness (Cut)

080 Solar Lead

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Switch
Red Knob B	Vibrato Rate, Depth
MPressure	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

081 Vox Lead

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Rel. Layer off
Amber Swch C	Octave Jump w/Red Switch A
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable
Red Knob B	Vibrato Rate, Depth
MPressure	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

082 Alazawi

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Envelope
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Transpose (5ths)
Red Knob B	Vibrato Rate, Depth
MPressure	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

083 Slo Wood Flute

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Breath Noise
Green Knob D	Chiff Noise
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable (ooh)
Red Knob B	Tremelo Depth (Cut)
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

084 Groove Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LowPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Layer Delay
Amber Swch D	Arp On/Off
Red Switch A	Octave Layer Enable
Red Knob B	Vibrato Depth
MPressure	Vibrato Rate
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

085 1/3 Pulse Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LowPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Impact
Amber Swch D	Arp On/Off
Red Switch A	Octave Layer Enable
Red Knob B	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

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086 Sweeper Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Octave Layer Enable
Amber Swch D	Arp On/Off
Red Switch A	Stereo Layer Enable
Red Knob B	Vibrato Depth
MPressure	Vibrato Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

087 Lowdown Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Impact
Amber Swch D	Arp On/Off
Red Switch A	Octave Divide
Red Knob B	Vibrato Rate, Depth
MPressure	Vibrato Rate, Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

088 Rez Aah Pad

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass LFO Rate
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch D	Arp On/Off
Red Switch A	Timbre (Envelope)
Red Knob B	Vibrato
MPressure	Swell (Layer 3)
Red Knob D	Swell (Layer 3)
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

089 Crypt

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Timbre
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch D	Arp On/Off
Red Switch A	Vibrato Rate Env
Red Knob B	Vibr, Pan/Filtr LFO
MPressure	Vibr, Pan/Filtr LFO
Red Knob D	Pan LFO Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

090 Meteor Strings

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Vibrato Rate Env
Red Knob B	Vibrato, Trem Depth
MPressure	Brightness
Red Knob D	LoPass Freq
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

091 Orch Pad

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Filter Freq
Green Knob D	Filter LFO Rate
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Attack Control
Red Knob B	Vibrato
MPressure	Horn Layer Swell
Red Knob D	Horn Layer Swell
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

092 Neptune

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Chiff Level
Green Knob D	Env Control
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Disable
Red Knob B	Tremolo Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

093 Analogy

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LP Res & Release
Amber Swch B	Attack Control
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable
Red Knob B	Vibrato Rate, Depth
MPressure	Swell
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

094 Dream Catcher

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch D	Arp On/Off
Red Switch A	Attack Control
Red Knob B	Filter LFO Depth
MPressure	Swell
Red Knob D	Swell
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

095 U Say Tomita...

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	LoPass Resonance
Amber Swch A	Octave Shift
Amber Swch B	Release Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Attack Control
Red Knob B	Vibrato/Trem
MPressure	Vibrato/Trem
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

096 Acoustic Guitar

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	EQ Ctr Freq
Green Knob D	EQ Cut/Boost
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
Red Knob B	Vibrato
MPressure	Vibrato Rate
Red Knob D	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

097 Strummer 12 Str

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Brightness
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Layer Detune
Red Knob B	Vibrato
Red Knob D	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

Program and Setup Information

Controller Assignments for Programs in Bank 0

098 Rich 6 String

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Vibrato Rate
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Stereo Image
Red Knob B	Vibrato
Red Knob D	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

099 12 String Guitar

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	EQ Ctr Freq
Green Knob D	EQ Cut/Boost
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Layer Detune
Red Knob B	Vibrato
MPressure	Vibrato Rate
Red Knob D	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

100 Chorus Elec Gtr

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Disable Layer Detune
Red Knob B	Tremolo Depth
Red Knob D	LFO2 Depth
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

101 Elec 12 String

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Envelope Control
Amber Swch A	Octave Shift
Amber Swch B	FX Vib/Chor On/Off
Amber Swch C	Layer Disable
Amber Swch D	Arp On/Off
Red Switch A	Enable Leslie
Red Knob B	Leslie Rate Switch
Red Knob D	Tremolo
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Soft Ped

102 Jazzy Frets

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Attack Control
Green Knob D	Decay Control
Amber Swch A	Octave Shift
Amber Swch B	Filter Env Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Enable Slide Layer
Red Knob B	Vibrato
Red Knob D	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 66	Sostenuto
MIDI 67	Envelope Control

103 Lead Rock Gtr

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre (Dist)
Green Knob D	Timbre (Tone)
Amber Swch A	Octave Shift
Amber Swch B	Disable FB Layer
Amber Swch D	Arp On/Off
Red Switch A	Feedback in 5ths
Red Knob B	Vibrato
MPressure	Feedback Amount
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Release Control

104 Round and Wound

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq (Cut)
Green Knob D	Attack Control
Amber Swch A	Octave Shift
Amber Swch B	Impact
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable(Ride)
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

105 Punch Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq
Green Knob D	Attack Control
Amber Swch A	Octave Shift
Amber Swch B	Layer Disable
Amber Swch D	Arp On/Off
Red Switch A	LoPass Res, Freq
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

106 Two Finger Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	LoPass Freq (Cut)
Amber Swch A	Octave Shift
Amber Swch B	Impact
Amber Swch D	Arp On/Off
Red Switch A	Impact
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

107 Dual-Tri Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Amber Swch A	Octave Shift
Amber Swch B	Layer Enable
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable(Ride)
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

108 Clav o' Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Amber Swch A	Octave Shift
Amber Swch B	Layer Disable
Amber Swch D	Arp On/Off
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

109 Fret Not Bass

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Amber Swch A	Octave Shift
Amber Swch B	Layer Disable
Amber Swch D	Arp On/Off
Red Switch A	Timbre
Red Knob B	Vibrato
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

Program and Setup Information

Controller Assignments for Programs in Bank 0

110 Upright Bass 1

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Timbre (Cymbal)
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable(Ride)
Red Knob B	Ride Cymbal Volume
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

111 Upright Bass 2

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Timbre (Cymbal)
Amber Swch A	Octave Shift
Amber Swch B	Layer Disable
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable(Ride)
Red Knob B	Ride Cymbal Volume
MPressure	Vibrato
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

112 Studio Drums 1+2

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

113 Studio Drums 3+4

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

114 Ambient Rock Kit

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

115 Coliseum Kit

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Pitch Drop
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

116 Resonant Traps

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch C	Pitch Up
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

117 Tripkit/Trashkit

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

118 Beat Box

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
Red Knob B	Env/Lyr, Ptch LFO
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Lyr Enable/Pitch LFO

119 Electro Kit

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Timbre
Green Knob D	Pitch Control
Amber Swch A	Octave Shift
Amber Swch B	Decay Control
Amber Swch C	Layer Switch
Amber Swch D	Arp On/Off
Red Switch A	Attack Control
Red Knob B	Layer Enable
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Layer Enable

120 Virtuoso Perc

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Pitch Control
Green Knob D	Shaker Rate (F1-C2)
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Knob B	Muting
MPressure	Moose Pitch/Mute
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Sample Start

121 Rhythm Maker

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Pitch Control
Green Knob D	PitchCtrl Via MPrs
Amber Swch A	Octave Shift
Amber Swch B	Layer Disables
Amber Swch C	Layer Disable
Red Switch A	Layer Disable
Red Knob B	Sample Start
MPressure	PtchCtl (Amber Swch B/SosPed)
MIDI 11	Expression
MIDI 64	Off
MIDI 66	Off
MIDI 67	Sample Start

Program and Setup Information

Controller Assignments for Programs in Bank 0

122 Woody Marimba

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Sample Start
Amber Swch A	Octave Shift
Amber Swch B	Layer Switch
Amber Swch D	Arp On/Off
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Layr Sw to Round Marimba
MIDI 66	Off
MIDI 67	Sample Start

123 African Marimba

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	Lyr Enable (Shaker)
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto

124 Vibes

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Tremolo Rate
Green Knob D	Layer Switch
Amber Swch A	Octave Shift
Amber Swch B	Envelope Control
Amber Swch D	Arp On/Off
Red Switch A	Layer Enable (Sine)
Red Knob B	Tremelo
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Sample Start

125 New Fluid Vibes

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob C	Tremolo Rate
Amber Swch A	Octave Shift
Amber Swch B	Stereo Spread
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
Red Knob B	Tremelo
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Sample Start

126 Aborigine Jam

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Sample Start

127 Drums 'n Bells

Green Knob A	FX-A Wet/Dry
Green Knob B	FX-B Wet/Dry
Green Knob D	PitchCtrl via MPrs
Amber Swch A	Octave Shift
Amber Swch D	Arp On/Off
Red Switch A	Sample Start
MPressure	PtchCtl (Amber Swch B/SosPed)
MIDI 21/53	Pitch Bend
MIDI 11	Expression
MIDI 64	Sustain
MIDI 66	Sostenuto
MIDI 67	Sample Start

Controller Assignments for Programs in Bank 6

The tables in this section list the physical controller assignments for the factory programs in Bank 6. The table titles show program IDs and names.

See page C-34 for lists of the physical controller assignments for setups.

000 Sweet Ivories

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

001 Nice Touch Grand

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

002 Piano Solitude

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

003 Piano Recital

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

004 Full Bloom Piano

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

005 Pianetta

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato
MIDI 64	Enable ringy layer

006 Suite Piano

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

007 Dreamy Piano

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

008 Basement Upright

Red Knob B	Vibrato (when Red Switch A is on)
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

009 Chiano

Red Knob B	Vibrato (when Red Switch A is on)
Green Knob C	Tone control: Notch
Amber Swch C	More detune
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

010 Way Back Piano

Red Knob B	Vibrato (when Red Switch A is on)
Green Knob C	Envelope: decay rate
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

011 Dance Piano

Red Knob B	Vibrato (when Red Switch A is on)
Green Knob C	Highpass filter
MIDI 67	Disables piano layer
Amber Swch B	More treble boost
Amber Swch C	Vibrato rate
Green Knob D	Envelope: decay rate
Red Switch A	Activates Red Knob B vibrato

012 Cloud Ride Piano

Red Knob B	Vibrato (when Red Switch A is on)
Green Knob C	Pad layer decay
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

Program and Setup Information

Controller Assignments for Programs in Bank 6

013 Organic Piano

Green Knob C	Duller Vox
MIDI 67	Disables piano layer
Amber Swch B	Enables unison Vox
Red Switch A	Disables octave Vox layer

014 Piano & Wash

Red Knob B	Increases volume of pad layer
Green Knob C	Cutoff, pad layer
MIDI 67	Soft pedal
Amber Swch B	Slower attack, pad layer
Amber Swch C	Faster release, pad layer
Green Knob D	Resonance, pad layer
Red Switch A	Different pad layer

015 Piano & Vox Pad

Red Knob B	Fade volume of Vox layer
Green Knob C	Cutoff, Vox layer
MIDI 67	Soft pedal
Green Knob D	Attack Time: Vox layer
Red Switch A	Duller piano

016 Mello E Piano

Red Knob B	Tremolo depth
Green Knob C	Timbre: cutoff
Amber Swch B	Alternative attack
Amber Swch C	Detunes layers
Green Knob D	Tremolo rate
Red Switch A	Impact

017 Tines Square

Red Knob B	Tremolo depth
Green Knob C	Timbre
Amber Swch B	Alternative attack
Green Knob D	Tremolo rate
Red Switch A	Impact

018 Brunch In Seoul

Red Knob B	Tremolo depth
Green Knob C	Timbre: cutoff
Amber Swch B	Alternative attack
Amber Swch C	Detunes layers
Green Knob D	Tremolo rate
Red Switch A	Impact

019 Classy Roadz

Red Knob B	Tremolo depth
Green Knob C	Cutoff & Resonance
Amber Swch B	Alternative attack
Green Knob D	Tremolo rate
Red Switch A	Impact

020 Barking Tines

Red Knob B	Tremolo depth
Green Knob C	Cutoff & Resonance
Amber Swch B	Alternative attack
Amber Swch C	Detunes layers
Green Knob D	Tremolo rate
Red Switch A	Impact

021 Clean and Soft

Red Knob B	Treble control: : duller
Green Knob C	Cutoff
Amber Swch B	Envelope: decay
Green Knob D	Vibrato rate
Red Switch A	Impact

022 Ballad Keys

Red Knob B	Tremolo depth
Green Knob C	Tremolo rate
Amber Swch B	Alternative attack
Green Knob D	Envelope control
Red Switch A	Disables E Piano layer

023 Lotus Keys

Red Knob B	Tremolo depth
Green Knob C	Tremolo rate
Amber Swch B	Alternative attack
Green Knob D	Envelope control
Red Switch A	Disables E Piano layer

024 Soft Ballad

Red Knob B	Tremolo depth
Green Knob C	Tremolo rate
Amber Swch B	Alternative attack
Green Knob D	Envelope control
Red Switch A	Disables E Piano layer

025 '70s FM Tines

Red Knob B	Tremolo depth
Green Knob C	Cutoff & Resonance
Amber Swch B	Alternative attack
Green Knob D	Tremolo rate; envelope: release
Red Switch A	Impact

026 '90s FM Ballad

Red Knob B	Vibrato depth
MPressure	Vibrato rate
Green Knob C	Para EQ freq
Amber Swch B	Alternative attack
Green Knob D	Para EQ amp
Red Switch A	Timbre & envelope control

027 Chorus Rock Pno

Red Knob B	Vibrato (when Red Switch A is on)
Green Knob C	
MIDI 67	Soft pedal
Green Knob D	Vibrato rate
Red Switch A	Activates Red Knob B vibrato

028 Bright Pianotone

Red Knob B	Tremolo depth
Green Knob C	Timbre: duller
Amber Swch B	Decay rate
Green Knob D	Tremolo rate
Red Switch A	Impact

029 Family Portrait

Red Knob B	Tremolo depth
MPressure	Filter cutoff
Green Knob C	Bandpass width, Lopass resonance, Treble amp cut
Amber Swch B	Slow Vibrato off/on
Amber Swch C	Release rate
Green Knob D	Tremolo rate, vibrato rate
Red Switch A	Impact

030 Harpsi-Piano

Red Knob B	Vibrato/tremolo depth
Green Knob C	Timbre control
Amber Swch B	Alternative attack
Green Knob D	Vibrato/tremolo rate
Red Switch A	Detune

031 Fantasy Keys

Red Knob B	Vibrato depth
Green Knob C	Timbre/Amp control
Amber Swch B	Envelope control
Green Knob D	Paramid Boost
Red Switch A	Alternative attack

032 Janet's Comp

Red Knob B	Vibrato depth
Green Knob C	Timbre/Amp control
Amber Swch B	Envelope control
Green Knob D	Paramid boost
Red Switch A	Disables layer

033 Mild Sheen

Red Knob B	Vibrato/tremolo depth
Green Knob C	Timbre control
Amber Swch B	Envelope control
Green Knob D	Vibrato/tremolo rate
Red Switch A	Impact/alternative start

034 Scrape Glass

Red Knob B	Vibrato depth
Green Knob C	Cutoff
Amber Swch B	Transposes one voice -12ST
Amber Swch C	Vibrato rate
Green Knob D	Resonance
Red Switch A	Layer swap

035 Air Society

Red Knob B	Vibrato/tremolo depth
Green Knob C	Timbre control
Amber Swch B	Envelope control
Green Knob D	Vibrato/tremolo rate

036 Push Air

Red Knob B	Filter LFO depth/rate
Green Knob C	Timbre control
Amber Swch B	Envelope control
Green Knob D	Tremolo control
Red Switch A	Timbre control

037 Dronin'

Red Knob B	Bandpass width
Green Knob C	Bandpass frequency
Green Knob D	LFO rate
Red Switch A	Adds Vox pad layer

038 Alien Salt Mine

Red Knob B	Vibrato depth
Green Knob C	Notch frequency
Amber Swch B	Envelope control: attack
Amber Swch C	Envelope control: release
Green Knob D	Notch width
Red Switch A	Switch to Cymbal Layer

039 Imperfect Storm

Red Knob B	Resonance
Green Knob C	Cutoff frequency Layer 1
Amber Swch B	Mutes Layer 2
Amber Swch C	Mutes Layer 3
Green Knob D	LFO rate Layer 2
Red Switch A	Pitch shift: up

040 Mod Clavier

Red Knob B	Timbre: fade bright layer
Green Knob C	Timbre: Para EQ amp
Amber Swch B	Alternative attack
Green Knob D	Envelope: decay rate
Red Switch A	Enable release layer

Program and Setup Information

Controller Assignments for Programs in Bank 6

041 Belly Celeste

Red Knob B	Tremolo depth
Green Knob C	Tremolo rate
Amber Swch B	Alternative attack
Green Knob D	Envelope control
Red Switch A	Disables Celesta layer

042 Harpsichordion

Red Knob B	Vibrato depth
Green Knob C	Timbre: Para EQ frequency
Amber Swch B	Timbre & envelope control
Green Knob D	Timbre: Para EQ amp
Red Switch A	Alternative attack

043 Circus Keys

Red Knob B	Vibrato/tremolo depth
Green Knob C	LFO rate control
MIDI 67	Soft pedal
Green Knob D	Envelope control

044 Cosmic Calliope

Red Knob B	Tremolo/vibrato
Green Knob C	LFO rate
Amber Swch B	Resets tuning
Green Knob D	Envelope: attack rate

045 Calliope Keys

Red Knob B	Tremolo; vibrato
Green Knob C	LFO rate
Amber Swch B	reset tuning
Green Knob D	Envelope: attack rate

046 Chiff Attack

Red Knob B	Vibrato depth
Green Knob C	Timbre: Para EQ frequency
Amber Swch B	Alternative attack
Green Knob D	Timbre: Para EQ Amp
Red Switch A	Timbre & envelope control

047 Spaced Harmonix

Red Knob B	Vibrato depth
Green Knob C	Timbre: Amp control
Amber Swch B	Envelope control
Green Knob D	Para mid boost
Red Switch A	Alternative control

048 BackgroundOrgan

Red Knob B	Vibrato/tremolo depth
Green Knob C	LFO rate control
Amber Swch B	Alternative attack
Green Knob D	Envelope control

049 Mello Tone Wheel

Red Knob B	Vibrato/tremolo depth
Green Knob C	LFO rate control
Amber Swch B	Alternative attack
Green Knob D	Envelope control

050 Piped Organ

Red Knob B	Vibrato depth
MPressure	Pitch bend
Green Knob C	Vibrato rate
Amber Swch B	Disables layer
Green Knob D	Envelope: attack rate
Red Switch A	Disables Chiff layer

051 Playful Piper

Red Knob B	Delayed vibrato
MPressure	Pitch bend
Green Knob C	More breath
Amber Swch B	Envelope: release rate
Green Knob D	Chiffer attack
Red Switch A	Disables Chiff layer

052 Peter's Pan

Red Knob B	Vibrato depth
Green Knob C	Timbre (air)
Amber Swch B	Enables chorused layer
Green Knob D	Envelope: attack control; vibrato rate
Red Switch A	Impact

053 Imaginary Flute

Red Knob B	Delayed vibrato
MPressure	Pitch bend
Green Knob D	Chiffer attack

054 Bright Koreana

Red Knob B	Vibrato depth
Green Knob C	Timbre
Amber Swch B	Enables chorused layer
Green Knob D	Envelope: attack control; vibrato rate
Red Switch A	Alternative control

055 Bouncin'BassBall

Red Knob B	Vibrato/tremolo depth
Green Knob C	LFO rate control
Amber Swch B	Alternative attack
Green Knob D	Envelope: decay rate
Red Switch A	Disables layer

056 Goosed Riff Sect

MPressure	Pitch bend
Green Knob C	
MIDI 67	
Red Switch A	Disables Tsax octave layer

057 Fatso Sax

Red Knob B	Delayed vibrato
MPressure	Pitch bend
Green Knob C	Layer 3 Amplitude
Red Switch A	Disables Waveform layer
Red Knob C	Swell
Red Knob D	Swell

058 Big&Beefy Saxes

Red Knob B	Vibrato depth
Green Knob C	Envelope: decay rate
Green Knob D	Envelope: attack rate
Red Switch A	Enables layer

059 Goosed Unison

MPressure	Pitch bend
Red Knob C	Swell
Red Knob D	Swell

060 Anabrass

Red Knob B	Vibrato depth
Green Knob C	Timbre control
Amber Swch B	Disables layer
Green Knob D	Amp/envelope control
Red Switch A	Impact

061 Honk'n Dyn Sax

Red Knob B	Vibrato depth
Red Switch A	Switches programs
Red Knob C	Swell
Red Knob D	Swell

062 Saxy Lush

Red Knob B	Vibrato depth
MPressure	Vibrato
Amber Swch C	Disables Strings layer
Red Switch A	Disables Strings layer
Red Knob C	Swell
Red Knob D	Swell

063 Classical Brass

Red Knob B	Vibrato depth
MPressure	Envelope control
Green Knob C	Envelope control
Green Knob D	Envelope: release rate

064 Fast Vtrig Rosin

Green Knob C	Timbre: duller
Green Knob D	Envelope: attack rate

065 Emotional String

Red Knob B	Switches layers
Green Knob C	Timbre: duller
MIDI 67	Switches layers

066 Octave Strings

Red Knob B	Disables lower-pitched layer
Green Knob C	Timbre: duller
MIDI 67	Disables lower-pitched layer

067 Emphatic Strings

Red Knob B	Switches layers
Green Knob C	Timbre: duller
MIDI 67	Switches layers

068 Rosin Section

Red Knob B	Switches layers
Green Knob C	Timbre: duller
MIDI 67	Switches layers

069 Resolute Section

Red Knob B	Switches layers
MIDI 67	Switches layers

070 Tender Strings

Red Knob B	Switches layers
Green Knob C	Timbre: duller
MIDI 67	Switches layers

071 Flute & Strings

Red Knob B	Modulation sweep
Green Knob C	Resonance, brightness
Amber Swch B	Disables Flute layer
Green Knob D	Envelope control: Strings
Red Switch A	Disables Chiffy layer

072 Bright Voices

Red Knob B	Vibrato depth
Green Knob C	Timbre
Amber Swch B	Enables chorused layer
Green Knob D	Envelope: attack control; vibrato rate

Program and Setup Information

Controller Assignments for Programs in Bank 6

073 Crystal Voices

Red Knob B	Vibrato/tremolo depth
Green Knob C	LFO rate control
Red Switch A	Disables oayer

074 Vox & Organ

Amber Swch B	Transposes organ layer down an octave
Amber Swch C	Disables Vox layer
Green Knob D	Envelope: release rate
Red Switch A	Disables organ layer

075 BIG Ooh Voices

Red Knob B	Vibrato depth
Green Knob D	Vibrato rate
Red Switch A	Disables octave layer

076 BIG Voices

Red Knob B	Vibrato depth
Green Knob D	Vibrato rate, tremolo rate
Red Switch A	Disables octave layer

077 Bright Syn Vox

Red Knob B	Vibrato depth
Green Knob C	Timbre
Amber Swch B	Enables chorused layer
Green Knob D	Envelope: attack control; vibrato rate
Red Switch A	Tranposes up an octave

078 Vox Orgel

Red Knob B	Vibrato depth
Green Knob C	Timbre control
Amber Swch B	Envelope control: adds decay
Green Knob D	EQ gain
Red Switch A	Alternative attack

079 Vox & Strings

Red Knob B	Vibrato depth
Green Knob C	Vibrato rate
MIDI 67	Envelope: attack rate
Green Knob D	Envelope: attack rate
Red Switch A	Disables Strings layer

080 Subdivide

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Detunes
Amber Swch C	Sample and Hold
Green Knob D	LFO rate, tremolo depth, envelope control, Lopass resonance
Red Switch A	Disables resonance

081 Rezy Bass/Poly

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Transposes one layer down an octave
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Impact

082 Technicolor

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	ASR trigger: resonance
Green Knob D	Transposes one layer down five octaves
Red Switch A	Swaps layers

083 Elan Lead

Red Knob B	Vibrato depth
MPressure	Vibrato
Green Knob C	Filter cutoff
Amber Swch B	Transposes one layer down an octave
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Swaps layers

084 Sun Spot Lead

Red Knob B	Vibrato depth
MPressure	Vibrato
Green Knob C	Filter cutoff
Amber Swch B	Transposes one layer down an octave
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Swaps layers

085 Dinosaur's Lead

Red Knob B	Vibrato depth
MPressure	Vibrato
Green Knob C	Filter cutoff/resonance
Amber Swch C	Envelope: release rate
Green Knob D	Crossfade
Red Switch A	Disables layers

086 Sawyer's Bomb

Red Knob B	Vox pitch bend
Green Knob C	Filter sweep range
Amber Swch B	Transposes one layer down an octave
Amber Swch C	Envelope: release rate
Green Knob D	Bandpass width
Red Switch A	Disables Vox layer

087 Reverse Feedback

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Transposes one layer down an octave
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Tremolo

088 Poseidon

Red Knob B	Tremolo depth
MPressure	Vibrato
Green Knob C	Filter cutoff, treble boost
Amber Swch B	With Red Switch A, octave transpose
Green Knob D	Envelope control
Red Switch A	Enables layer

089 Analogica

Red Knob B	Vibrato depth
MPressure	Filter cutoff
Green Knob C	Filter cutoff
Amber Swch B	Envelope: attack rate
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Alternative attack, enables layer

090 Anti Rez

Red Knob B	Vibrato depth/rate
Green Knob C	Filter cutoff
Amber Swch B	Envelope: attack rate
Amber Swch C	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Adds 4th layer, detunes

091 Spider's Web

Red Knob B	Filter sweep
MPressure	Volume
Green Knob C	Filter cutoff
MIDI 67	Crossfade
Amber Swch B	Envelope: release rate
Green Knob D	Resonance
Red Switch A	Envelope: attack rate

092 Ethereal Strings

Red Knob B	Bandpass width & frequency
Green Knob C	Filter cutoff in Layer 2
Green Knob D	Envelope control
Red Switch A	Switches To Meteor Str 2

093 FreeResAhh Notch

Red Knob B	Crossfade, layer detune
MPressure	Treble boost
Green Knob C	Filter cutoff
Amber Swch B	Envelope control: release
Green Knob D	Envelope control, LFO rate
Red Switch A	Enables layer
Red Knob D	Treble Boost

094 Ooh><Ahh Pad

Red Knob B	Vibrato depth
MPressure	Filter cutoff, layer crossfade
Green Knob C	Resonance
Amber Swch B	Envelope: attack rate
Amber Swch C	Envelope: release rate
Green Knob D	Filter cutoff, layer crossfade
Red Switch A	Filter cutoff, layer crossfade

095 Vocalicious

Red Knob B	Different envelope
Green Knob C	Timbre: duller
MIDI 67	Different envelope
Green Knob D	Different envelope
Red Switch A	Disables layer

096 Titanium Guitar

Red Knob B	Muted Guitar
Green Knob C	More body
MIDI 67	Muted Guitar
Amber Swch B	Finger snap
Green Knob D	Fret snap
Red Switch A	Chorus effect

097 Latin Lover

Red Knob B	Muted Guitar
Green Knob C	
MIDI 67	Muted Guitar
Amber Swch B	Alternative attack
Red Switch A	Disables Knock layer

098 Roto 12 String

Red Knob B	Rotary Fast/Slow
Green Knob C	Filter cutoff
Amber Swch B	Vibrato chorus
Amber Swch C	Swaps layers
Green Knob D	Envelope control
Red Switch A	Rotary in/out

Program and Setup Information

Controller Assignments for Programs in Bank 6

099 Electric 12

Green Knob C	Filter cutoff
MIDI 67	Alternative attack
Amber Swch C	Enables layer
Green Knob D	Envelope: decay
Red Switch A	Impact off

100 Twangy Guitar

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Envelope: decay
Green Knob D	EQ gain
Red Switch A	Alternative attack

101 Chr Elec & Mute

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Envelope: decay
Amber Swch C	Alternative attack; disables thump layer
Green Knob D	Impact
Red Switch A	Adds Mute layers

102 Comp Chr E Gtr

Red Knob B	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Muted Guitar (envelope: decay)
Amber Swch C	Alternative attack
Green Knob D	Impact

103 Trashed Tubes

Red Knob B	Vibrato depth
MPressure	Fade-in feedback
Green Knob C	Distortion amount
Green Knob D	Filter cutoff

104 Gimme The Finger

Red Knob B	Vibrato depth
MPressure	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Impact
Amber Swch C	Filter Cymbal layer
Green Knob D	Envelope: attack rate
Red Switch A	Adds Ride Cymbal

105 Bright E Bass

Red Knob B	Vibrato depth
MPressure	Pitch bend
Green Knob C	Timbre: more low end
Amber Swch B	Alternative attack
Green Knob D	Vibrato rate

106 Bright A Bass

Red Knob B	Vibrato depth
MPressure	Pitch bend
Green Knob C	Less Body, more tacky
Green Knob D	Vibrato rate
Red Switch A	Enable Vtrig Percussion layer

107 Triangle Bass

Red Knob B	Vibrato depth
MPressure	Vibrato
Green Knob C	Cutoff frequency: deeper
Amber Swch B	Envelope: release rate
Amber Swch C	Impact
Green Knob D	Vibrato rate
Red Switch A	Adds octave layer

108 Yow Bass

Red Knob B	Vibrato depth
MPressure	Vibrato depth/rate
Green Knob C	Filter cutoff
Amber Swch B	Envelope: release rate
Amber Swch C	Disables impact
Green Knob D	Resonance
Red Switch A	Adds octave layer

109 Mono Synth Bass

Red Knob B	Vibrato depth
MPressure	Vibrato depth/rate
Green Knob C	Filter cutoff
Amber Swch B	Envelope: release rate
Amber Swch C	Disables impact
Green Knob D	Resonance
Red Switch A	Adds octave layer

110 400 HP Bass

Red Knob B	Vibrato depth
MPressure	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Transpose one layer down an octave
Amber Swch C	Impact
Green Knob D	Resonance
Red Switch A	Mutes layer

111 Base in Face

Red Knob B	Vibrato depth
MPressure	Vibrato depth
Green Knob C	Filter cutoff
Amber Swch B	Layer 1 in 5ths
Amber Swch C	Transpose Layer 1 down an octave
Green Knob D	Resonance
Red Switch A	Transpose Layer 3 down an octave

112 Radio Kings/Rods

Green Knob C	Timbre
Amber Swch B	Envelope control
Amber Swch C	2nd Kit Enable
Green Knob D	Pitch control
Red Switch A	Alternative attack

113 Ripper Kit/Vinyl

Green Knob C	Shaper; timbre
Amber Swch B	Envelope control
Amber Swch C	2nd Kit Enable
Green Knob D	Pitch control
Red Switch A	Alternative attack

114 LA Drums/Brk Bt.

Green Knob C	Timbre
Amber Swch B	Envelope control
Amber Swch C	2nd Kit Enable
Green Knob D	Pitch control
Red Switch A	Alternative attack

115 Compact/Raw Kit

Green Knob C	Shaper; timbre
Amber Swch B	Envelope control
Amber Swch C	2nd Kit Enable
Green Knob D	Pitch control
Red Switch A	Alternative attack

116 TubeTraps/lb.der

Green Knob C	Shaper; timbre
Amber Swch B	Envelope control
Amber Swch C	Enables 2nd Kit
Green Knob D	Pitch control
Red Switch A	Alternative attack

117 Acoustic/HiPKit

Green Knob C	Shaper; timbre
Amber Swch B	Envelope control
Amber Swch C	Enables 2nd Kit
Green Knob D	Pitch control
Red Switch A	Alternative attack

118 Dirt/Triphop Kit

Green Knob C	Timbre
Amber Swch B	Envelope control
Amber Swch C	Enables 2nd Kit
Green Knob D	Pitch control
Red Switch A	Alternative attack

119 SumPumpKit MWsus

Red Knob B	Drone layer
MPressure	Drone layer
Green Knob C	Timbre
MIDI 67	Real Kit layer
Amber Swch B	Envelope control
Amber Swch C	Ghost layer
Green Knob D	Pitch control
Red Switch A	Alternative attack

120 Marimba

Red Knob B	Alternative attack
Green Knob C	Timbre: duller
MIDI 67	Alternative attack
Green Knob D	Vol Adjust for attack layer
Red Switch A	Enables attack layer

121 Milky Way Vibes

Red Knob B	Tremolo depth
Green Knob C	Tremolo rate
MIDI 67	Alternative attack
Amber Swch B	Switches layers
Red Switch A	Alternative attack

122 Percussionist

Red Knob B	Alternative attack
Green Knob C	Timbre
MIDI 67	Alternative attack
Amber Swch B	Disables layer
Red Switch A	Damps, disables layer

123 Carnival

Red Knob B	Alternative attack
Green Knob C	Timbre
MIDI 67	Alternative attack
Amber Swch B	Octave transpose: 2 Layers
Green Knob D	Muted, faster decay
Red Switch A	Disables layer

124 Primitive Perc

Red Knob B	Alternative attack
Green Knob C	Different attack for some instruments
MIDI 67	Alternative attack
Amber Swch B	Disables layer
Red Switch A	Disables layer

Program and Setup Information

Controller Assignments for Programs in Bank 6

125 Bunch of Perc

Red Knob B	Alternative attack
MPressure	Pitch bend with MIDI 66 or Green Knob D
Green Knob C	Pitch change
MIDI 67	Alternative attack
Amber Swch B	Disables layer
Green Knob D	Enables MPressure pitch bend
Red Switch A	Damps, disables layer
MIDI 66	Enables MPressure pitch bend

126 Perc Party

Red Knob B	Alternative attack
MPressure	Pitch bend with MIDI 66 or Green Knob D
Green Knob C	Transpose 2 Layers; timbre
MIDI 67	Alternative attack
Amber Swch B	Disables layer
Green Knob D	Enables MPressure pitch bend
Red Switch A	Decreases Volume on 1 layer
MIDI 66	Eables MPressure pitch bend

127 Perc Circle

Red Knob B	Alternative attack
MPressure	Pitch bend with MIDI 66 or Green Knob D
Green Knob C	Pitch Change in 1 layer
MIDI 67	Alternative attack
Amber Swch B	Disables layer C0-G#3
Green Knob D	Enables MPressure pitch bend
Red Switch A	Disables layer
MIDI 66	Enables MPressure pitch bend

PC2R Setups

001	Dance C7
002	Unison Line
003	Tek Jam C6->
004	Heavenly
005	Synth / E Piano
006	SmoothBass/Pads
007	Dad's Bad Clav
008	Odyssey Pad
009	CenturyGroov C7
010	Oom pah pah
011	Contemplation
012	Brass & Strings
013	Dramatize
014	After Hours
015	Piano Trio
016	KB3 Setup
017	Touch Orch
018	One Man Trio
019	HolidayInnMiami
020	Ambients
021	CrypticNiteGlo
022	Seascape
023	Rhythmic Chase
024	Rhumba Combos
025	E Bass/E Piano
026	Babaganooj
027	Warm Fusion
028	Ostinato / Lead
029	Dr. Crane's
030	Perc/Organ Jam
031	VoxJazzCombo C7
032	Where's Syd???
125	PC2R Control
126	Internal Voices
127	Clear Setup
128	Default Setup

Physical Controller Assignments for Setups

(The list of physical controller assignments for programs begins on page C-4.)

001 Dance C7

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	118 Beat Box	118 Beat Box	090 Meteor Strings	087 Lowdown Bass
Wheel 1 Up/Down	None	None	Pitch	Pitch
Red Knob B	None	None	Vibrato	Vibrato
MPressure	None	None	None	Vibrato
Green Knob A	Timbre	Envelope	None	None
Green Knob B	None	None	None	Envelope
Green Knob C	None	None	LP Freq	None
Green Knob D	Arp Tempo	Arp Tempo	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	AuxBend
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	Octave Jump	None
Amber Swch B	None	None	None	Octave Jump
Amber Swch C	None	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	None	None	Sustain	None
SwitchPdl 2	None	None	Sostenuto	None
SwitchPdl 3	None	None	None	Sustain

002 Unison Line

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	056 Big Brass	106 Two Finger Bass*	019 Hard E Piano*	053 Uptown Gospel
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	None	None	Tremelo	None
MPressure	Swell	None	None	None
Green Knob A	Reverb Lvl	None	None	None
Green Knob B	Timbre	None	None	None
Green Knob C	None	None	Timbre	None
Green Knob D	None	None	Timbre	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Foot Ctl	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	Octave Jump	None	None
Amber Swch B	None	Program Switch	Program Switch	None
Amber Swch C	None	None	None	None
Amber Swch D	None	None	None	None
Red Switch A	Layer Switch	None	None	None
SwitchPdl 1	Sustain	None	None	Sustain
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

Program and Setup Information

Physical Controller Assignments for Setups

003 Tek Jam C6->

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Off
MIDI Channel	1	2	3	NA
Program	115 Coliseum Kit*	116 Resonant Traps*	117 Tripkit/Trashkit*	NA
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	
Red Knob B	None	None	Envelope	
MPressure	None	None	None	
Green Knob A	Pitch Bend	Pitch Bend	None	
Green Knob B	None	None	Pitch Bend	
Green Knob C	None	None	LP Freq	
Green Knob D	None	None	Arp Tempo	
Pedal 1	None	None	None	
Red Knob C	None	None	None	
Red Knob D	None	None	None	
Ribbon 1	Envelope	Envelope	None	
Ribbon 2	None	None	None	
Ribbon 3	None	None	None	
Amber Swch A	Program Switch	None	None	
Amber Swch B	None	Program Switch	None	
Amber Swch C	None	None	Program Switch	
Amber Swch D	Arp Switch	None	None	
Red Switch A	Arp Latch 1	None	None	
SwitchPdl 1	Sustain	Sustain	Sustain	
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	

004 Heavenly

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Mute
MIDI Channel	1	2	3	4
Program	055 Pipe Organ	044 Modern Harpsi	064 Lyrical Strings	092 Neptune
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	None	None	None	None
MPressure	None	None	None	None
Green Knob A	Layer Mix	None	None	None
Green Knob B	None	Timbre	None	None
Green Knob C	None	None	Timbre	None
Green Knob D	13	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	None	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	None	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	Sustain	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

Program and Setup Information

Physical Controller Assignments for Setups

005 Synth / E Piano

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Mute
MIDI Channel	1	2	3	4
Program	017 Serious Classic	087 Lowdown Bass	084 Groove Bass	002 Dynamic Grand
Wheel 1 Up/Down	None	Pitch Up/Down	Pitch Up/Down	None
Red Knob B	Tremelo	None	None	None
MPressure	None	Vibrato	None	None
Green Knob A	None	None	Timbre	None
Green Knob B	None	Timbre	None	None
Green Knob C	None	None	None	None
Green Knob D	None	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Arp Tempo	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	None	None	Octave Jump
Amber Swch B	None	None	Layer Switch	None
Amber Swch C	None	Layer Switch	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 2	None	None	None
SwitchPdl 1	Sustain	None	None	Sustain
SwitchPdl 2	Sostenuto	None	None	None
SwitchPdl 3	None	None	Sustain	None

006 SmoothBass/Pads

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Mute
MIDI Channel	1	2	3	4
Program	095 U Say Tomita...	088 Rez Aah Pad	087 Lowdown Bass	083 Slo Wood Flute
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	None	None	Vibrato	None
MPressure	None	None	Vibrato	Vibrato
Green Knob A	Timbre	None	None	None
Green Knob B	None	Timbre	None	None
Green Knob C	None	None	Layer Mix	None
Green Knob D	Effect	None	None	None
Pedal 1	Expression	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Timbre	LoPass Freq	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	None	None	None	None
Amber Swch C	Layer Switch	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 2	None	None	None
SwitchPdl 1	Sustain	Sustain	None	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

007 Dad's Bad Clav

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	040 Clav Classic	041 Touch Clav	042 Dual Wah Clav	108 Clav o' Bass
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Filter LFO	None	None	Vibrato
MPressure	None	None	None	Vibrato
Green Knob A	Chor Level	Chor Level	Chor Level	Chor Level
Green Knob B	Timbre	Timbre	Timbre	Timbre
Green Knob C	None	None	None	None
Green Knob D	None	None	None	Layer Mix
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	Octave Jump
Amber Swch B	Layer Switch	Layer Switch	Layer Switch	None
Amber Swch C	None	None	None	None
Amber Swch D	None	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	Sustain	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

008 Odyssey Pad

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Off
MIDI Channel	1	2	3	NA
Program	080 Solar Lead	088 Rez Aah Pad	093 Analogy	NA
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	
Red Knob B	None	None	None	
MPressure	Vibrato	None	None	
Green Knob A	LoPass Freq	None	None	
Green Knob B	None	LoPass Freq	None	
Green Knob C	None	None	Timbre	
Green Knob D	Arp Tempo	None	None	
Pedal 1	None	None	None	
Red Knob C	None	None	None	
Red Knob D	None	None	None	
Ribbon 1	Reverb Lvl	Reverb Lvl	Reverb Lvl	
Ribbon 2	None	None	None	
Ribbon 3	None	None	None	
Amber Swch A	None	Octave Jump	Octave Jump	
Amber Swch B	LoPass Res	None	None	
Amber Swch C	Delay Feedback	None	None	
Amber Swch D	Arp Switch	None	None	
Red Switch A	Arp Latch 2	None	None	
SwitchPdl 1	Sustain	Sustain	Sustain	
SwitchPdl 2	Arp Latch 2	Sostenuto	Sostenuto	
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	

Program and Setup Information

Physical Controller Assignments for Setups

009 CenturyGroov C7

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	117 Tripkit/Trashkit	118 Beat Box	080 Solar Lead	080 Solar Lead
Wheel 1 Up/Down	None	None	Pitch Up/Down	None
Red Knob B	None	None	Vibrato	None
MPressure	None	None	Vibrato	None
Green Knob A	Flange Level	Flange Level	None	None
Green Knob B	None	None	None	LoPass Freq
Green Knob C	None	None	LoPass Freq	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Reverb Lvl	Reverb Lvl	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	Octave Jump
Amber Swch B	None	None	None	Down a 4th
Amber Swch C	None	Transpose	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	None	None	Sustain	None
SwitchPdl 2	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	None	None	None	None

010 Oom pah pah

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Play	Play
MIDI Channel	1	2	3	4
Program	046 Accordion	112 Studio Drums 1+2	099 12 String Guitar	110 Upright Bass 1
Wheel 1 Up/Down	None	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Vol Swell	None	Vibrato	None
MPressure	Vol Swell	None	None	Vibrato
Green Knob A	FX Level	None	FX Level	None
Green Knob B	None	None	Timbre	None
Green Knob C	Timbre	None	None	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Up/Down	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	None	None	None
Amber Swch B	Layer Switch	None	None	None
Amber Swch C	None	None	Octave Jump	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Envelope	None	None	None
SwitchPdl 1	None	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

011 Contemplation

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	037 Celestial Comet	065 Slow Strings	094 Dream Catcher	111 Upright Bass 2*
Wheel 1 Up/Down	Pitch Up/Down	None	None	Pitch Up/Down
Red Knob B	None	None	None	None
MPressure	None	None	Vol Swell	Vibrato
Green Knob A	Reverb lvl	Reverb lvl	Reverb lvl	Reverb lvl
Green Knob B	None	None	Layer Mix	None
Green Knob C	None	None	Timbre	None
Green Knob D	None	None	None	Timbre
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	Timbre	None	None
Ribbon 2	None	Layer Mix	Timbre	None
Ribbon 3	Timbre	None	None	None
Amber Swch A	None	Octave Jump	None	None
Amber Swch B	None	None	Octave Jump	None
Amber Swch C	None	None	None	Program Switch
Amber Swch D	Octave Jump	None	None	None
Red Switch A	None	None	None	Layer Switch
SwitchPdl 1	None	Sustain	Sustain	None
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

012 Brass & Strings

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Off
MIDI Channel	1	2	3	NA
Program	070 Velocity Strings	Williams Brass	Trombones	NA
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	
Red Knob B	None	Vibrato	Vibrato	
MPressure	None	Vol Swell	Vol Swell	
Green Knob A	Reverb lvl	Reverb lvl	Reverb lvl	
Green Knob B	None	Envelope	None	
Green Knob C	None	None	Envelope	
Green Knob D	None	None	Timbre	
Pedal 1	None	None	None	
Red Knob C	None	None	None	
Red Knob D	None	None	None	
Ribbon 1	None	None	None	
Ribbon 2	None	None	None	
Ribbon 3	None	None	None	
Amber Swch A	None	Octave Jump	None	
Amber Swch B	None	Timbre	None	
Amber Swch C	None	None	Timbre	
Amber Swch D	Layer Switch	None	None	
Red Switch A	None	Layer Switch	None	
SwitchPdl 1	Sustain	Sustain	Sustain	
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	
SwitchPdl 3	None	None	None	

Program and Setup Information

Physical Controller Assignments for Setups

013 Dramatize

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	Williams Brass	064 Lyrical Strings	070 Velocity Strings	092 Neptune
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Vibrato	Modulation	None	None
MPressure	Vol Swell	None	None	None
Green Knob A	Reverb lvl	Reverb lvl	Reverb lvl	Reverb lvl
Green Knob B	Envelope	None	None	None
Green Knob C	None	Timbre	Timbre	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Layer Mix	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	None	None	None
Amber Swch B	Layer Switch	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	Sustain	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

014 After Hours

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Off
MIDI Channel	1	2	3	NA
Program	Scatman	The Croons	111 Upright Bass 2	NA
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	
Red Knob B	None	Vibrato	None	
MPressure	None	None	Vibrato	
Green Knob A	Reverb lvl	Reverb lvl	Reverb lvl	
Green Knob B	None	Brightness	None	
Green Knob C	None	None	Layer Mix	
Green Knob D	None	None	None	
Pedal 1	None	None	None	
Red Knob C	None	None	None	
Red Knob D	None	None	None	
Ribbon 1	None	Attack	None	
Ribbon 2	None	None	None	
Ribbon 3	None	None	None	
Amber Swch A	Octave Jump	Octave Jump	None	
Amber Swch B	None	Layer Switch	None	
Amber Swch C	Envelope	None	None	
Amber Swch D	None	None	None	
Red Switch A	Envelope	None	Layer Switch	
SwitchPdl 1	Sustain	Sustain	None	
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	
SwitchPdl 3	Soft Pedal	None	None	

Program and Setup Information

Physical Controller Assignments for Setups

015 Piano Trio

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Mute	Mute
MIDI Channel	1	2	3	4
Program	111 Upright Bass 2	Piano 440	Trombones	056 Big Brass
Wheel 1 Up/Down	Pitch Up/Down	None	Pitch Up/Down	Pitch Up/Down
Red Knob B	Layer Mix	None	Vibrato	Vibrato
MPressure	None	None	Vol Swell	Vol Swell
Green Knob A	Reverb lvl	None	None	None
Green Knob B	Layer Mix	None	None	None
Green Knob C	None	Layer Mix	None	None
Green Knob D	None	None	Layer Mix	Layer Mix
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	Octave Jump
Amber Swch B	None	None	Timbre	None
Amber Swch C	None	None	None	Layer Switch
Amber Swch D	None	None	None	None
Red Switch A	Layer Switch	None	None	None
SwitchPdl 1	None	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

016 KB3 Setup

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Solo mute	Mute	Play	Off
MIDI Channel	1	1	3	NA
Program	All Out	All Out	Round and Wound	NA
Wheel 1 Up/Down	None	None	Pitch Up/Down	
Red Knob B	None	1	Layer Mix	
MPressure	None	None	Vibrato	
Green Knob A	6	25	None	
Green Knob B	22	26	None	
Green Knob C	23	27	None	
Green Knob D	24	28	133	
Pedal 1	4	4	None	
Red Knob C	4	None	29	
Red Knob D	2	None	None	
Ribbon 1	89	89	AuxBend	
Ribbon 2	90	90	None	
Ribbon 3	71	71	None	
Amber Swch A	Leslie Spin Rate	Leslie Spin Rate	None	
Amber Swch B	Chor/Vib Toggle	Chor/Vib Toggle	None	
Amber Swch C	Chorus Depth	Chorus Depth	None	
Amber Swch D			None	
Red Switch A			None	
SwitchPdl 1	Sustain	Sustain	None	
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	
SwitchPdl 3	Soft Pedal	Soft Pedal	None	

Program and Setup Information

Physical Controller Assignments for Setups

017 Touch Orch

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	092 Neptune	Williams Brass	Virtuoso Perc	Drums 'n Bells
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Filter LFO	Vibrato	Layer Mix	None
MPressure	None	None	None	Layer Mix
Green Knob A	None	None	Reverb Lvl	None
Green Knob B	Reverb Lvl	Reverb Lvl	None	Reverb Lvl
Green Knob C	None	Layer Mix	None	None
Green Knob D	Envelope	None	None	None
Pedal 1	Expression	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Timbre	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	None	Octave Jump
Amber Swch B	Layer Switch	None	None	None
Amber Swch C	None	None	Transpose	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	None	Layer Switch	None	None
SwitchPdl 1	Sustain	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

018 One Man Trio

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Off
MIDI Channel	1	2	3	NA
Program	Stereo Grand	Virtuoso Percussion	Fret Not Bass	NA
Wheel 1 Up/Down	None	Pitch Up/Down	Pitch Up/Down	
Red Knob B	None	Envelope	Vibrato	
MPressure	None	None	Vibrato	
Green Knob A	Reverb Lvl	None	None	
Green Knob B	Reverb Lvl	Reverb Lvl	Reverb Lvl	
Green Knob C	None	Layer Mix	None	
Green Knob D	Arp Tempo	None	None	
Pedal 1	None	Expression	None	
Red Knob C	None	None	None	
Red Knob D	None	None	None	
Ribbon 1	Pitch Bend	None	None	
Ribbon 2	None	None	None	
Ribbon 3	None	None	None	
Amber Swch A	Octave Jump	None	None	
Amber Swch B	None	None	Octave Jump	
Amber Swch C	None	Soft Pedal	None	
Amber Swch D	Arp Switch	None	None	
Red Switch A	Arp Latch 2	None	None	
SwitchPdl 1	Sustain	Sustain	None	
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	
SwitchPdl 3	Soft Pedal	None	None	

Program and Setup Information

Physical Controller Assignments for Setups

019 HolidayInnMiami

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	Solo Tenor Sax	106 Two Finger Bass	Wurly Road	Virtuoso Perc
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Vibrato	Vibrato	Tremelo	Envelope
MPressure	Vibrato	None	None	None
Green Knob A	Reverb Lvl	Reverb Lvl	None	None
Green Knob B	None	None	Reverb Lvl	None
Green Knob C	Timbre	None	None	None
Green Knob D	Envelope	None	None	None
Pedal 1	None	None	None	None
Red Knob C	Timbre	None	None	None
Red Knob D	Timbre	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	None	None	Impact	None
Amber Swch C	None	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 2	None	None	None
SwitchPdl 1	None	Sustain	Sustain	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

020 Ambients

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	Vox Lead	087 Lowdown Bass	093 Analogy	Atmaz
Wheel 1 Up/Down	Pitch Up/Down	None	None	Pitch Up/Down
Red Knob B	Vibrato	None	None	Vibrato
MPressure	Vibrato	Vibrato	None	None
Green Knob A	None	None	None	None
Green Knob B	Reverb Lvl	Reverb Lvl	Reverb Lvl	None
Green Knob C	Timbre	None	None	None
Green Knob D	Envelope	None	None	None
Pedal 1	Expression	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	None	None	None
Amber Swch B	None	Octave Jump	None	None
Amber Swch C	Layer Switch	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	Sustain	None	Sustain	Sustain
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

021 CrypticNiteGlo

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Off	Off
MIDI Channel	1	2	NA	NA
Program	Crypt	037 Celestial Comet	NA	NA
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down		
Red Knob B	None	None		
MPressure	None	Tremelo		
Green Knob A	None	Reverb Lvl		
Green Knob B	Reverb Lvl	None		
Green Knob C	LoPass Freq	None		
Green Knob D	Arp Tempo	None		
Pedal 1	Expression	None		
Red Knob C	None	None		
Red Knob D	None	None		
Ribbon 1	Pitch Bend	Pitch Bend		
Ribbon 2	None	None		
Ribbon 3	None	None		
Amber Swch A	Octave Jump	Octave Jump		
Amber Swch B	None	Layer Switch		
Amber Swch C	BandPass freq	None		
Amber Swch D	Arp Switch	None		
Red Switch A	Arp Latch 2	None		
SwitchPdl 1	Sustain	Sustain		
SwitchPdl 2	Sostenuto	Soft Pedal		
SwitchPdl 3	Soft Pedal	None		

022 Seascape

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Mute	Mute
MIDI Channel	1	2	3	4
Program	080 Solar Lead	065 Slow Strings	037 Celestial Comet	Stereo Grand
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Vibrato	None	None	None
MPressure	Vibrato	None	None	None
Green Knob A	Reverb Lvl	None	None	None
Green Knob B	None	Reverb Lvl	Reverb Lvl	Reverb Lvl
Green Knob C	LoPass Freq	None	None	None
Green Knob D	None	Timbre	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	LoPass Freq	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Mono Switch	None	None	None
Amber Swch B	None	Layer Switch	None	None
Amber Swch C	None	None	Layer Switch	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Layer Switch	None	None	None
SwitchPdl 1	64	64	64	64
SwitchPdl 2	Sostenuto	Sostenuto	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	Soft Pedal	None	None

Program and Setup Information

Physical Controller Assignments for Setups

023 Rhythmic Chase

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	092 Neptune	Piano For Layers	Rhythm Maker	Rhythm Maker
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Filter LFO	None	None	None
MPressure	None	None	None	None
Green Knob A	Layer Mix	None	None	None
Green Knob B	None	Layer Mix	None	None
Green Knob C	None	None	Layer Mix	Layer Mix
Green Knob D	Arp Tempo	None	None	None
Pedal 1	Expression	None	None	None
Red Knob C	Envelope	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Echo Lvl	Razer Lvl	Reverb Lvl	Reverb Lvl
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	None	None	Panning	Panning
Amber Swch C	Layer Switch	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	64	64	119	None
SwitchPdl 2	Sostenuto	Soft Pedal	Arp Latch 2	None
SwitchPdl 3	Soft Pedal	None	None	None

024 Rhumba Combos

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	New Fluid Vibes*	Drums 'n Bells	065 Slow Strings*	Punch Bass
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Tremelo	None	None	None
MPressure	None	None	None	Vibrato
Green Knob A	Reverb Lvl	None	Reverb Lvl	None
Green Knob B	None	Reverb Lvl	None	Reverb Lvl
Green Knob C	None	None	None	None
Green Knob D	None	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	Pitch Bend	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	None
Amber Swch B	Program Switch	None	None	None
Amber Swch C	None	None	Program Switch	None
Amber Swch D	None	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	64	64	64	64
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

Program and Setup Information

Physical Controller Assignments for Setups

025 E Bass/E Piano

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Mute	Mute
MIDI Channel	1	2	3	4
Program	Dual Tri-Bass	Pearly Keys	Dual Tri-Bass	Soft E Piano
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	None	Tremelo	None	None
MPressure	Vibrato	Filter Freq	Vibrato	None
Green Knob A	Layer Mix	None	None	None
Green Knob B	None	Layer Mix	None	None
Green Knob C	None	Trem Rate	None	None
Green Knob D	None	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	None	None	None
Amber Swch B	None	Key click	None	None
Amber Swch C	None	None	None	None
Amber Swch D	None	Impact	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	None	64	64	64
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

026 Babaganooj

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	Atmaz	CrystalClavchd	Rhythm Maker	Fret Not Bass
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Vibrato	Vibrato	Envelope	Vibrato
MPressure	Pitch Bend	Pitch Bend	None	Vibrato
Green Knob A	Effect Lvl	None	Effect Lvl	Effect Lvl
Green Knob B	Effect Lvl	Effect Lvl	None	None
Green Knob C	Timbre	Timbre	None	None
Green Knob D	Envelope	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	Decay	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Layer Switch	None	None	None
SwitchPdl 1	64	64	64	64
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

027 Warm Fusion

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Play	Play
MIDI Channel	1	2	3	4
Program	Alazawi	The Croons	092 Neptune	Big Red Wurly
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	None	None
Red Knob B	Vibrato	Vibrato	None	Tremelo
MPressure	Vibrato	None	None	None
Green Knob A	Distortion	None	None	None
Green Knob B	None	None	None	None
Green Knob C	Timbre	None	None	None
Green Knob D	Envelope	Arp Tempo	Arp Tempo	Arp Tempo
Pedal 1	Expression	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	Octave Jump
Amber Swch B	None	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Transpose	None	None	None
SwitchPdl 1	64	64	64	64
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

028 Ostinato / Lead

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	FantAsmAtron	Pearly Keys	Ballad E Piano	080 Solar Lead
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Tremelo	Tremelo	Tremelo	Vibrato
MPressure	None	None	None	Vibrato
Green Knob A	None	None	None	None
Green Knob B	None	None	None	None
Green Knob C	None	None	None	LoPass Freq
Green Knob D	Trem Rate	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	Pitch Bend	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	Octave Jump	None
Amber Swch B	Attack	Attack	Attack	None
Amber Swch C	Layter Switch	None	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	None	None	None	LoPass Resonance
SwitchPdl 1	119	None	None	64
SwitchPdl 2	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	None	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

029 Dr. Crane's

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Play	Play
MIDI Channel	1	2	3	4
Program	Vibes	The Croons	110 Upright Bass 1	Vibes
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Tremelo	None	None	None
MPressure	None	None	Vibrato	None
Green Knob A	None	None	None	None
Green Knob B	None	Layer Mix	None	None
Green Knob C	None	None	Timbre	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Octave Jump	Octave Jump	None	None
Amber Swch B	Envelope	None	None	Envelope
Amber Swch C	Timbre	None	None	Timbre
Amber Swch D	Arp Switch	None	None	None
Red Switch A	None	None	Layer Switch	None
SwitchPdl 1	117	64	None	117
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

030 Perc/Organ Jam

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	2	1	3	4
Program	Virtuoso Perc	Prog Rocker's	115 Coliseum Kit	Studio Drums 3
Wheel 1 Up/Down	Pitch Up/Down	None	None	None
Red Knob B	Envelope	Rotary Speed	None	None
MPressure	None	None	None	None
Green Knob A	None	None	None	None
Green Knob B	None	Timbre	None	None
Green Knob C	Pitch Up/Down	None	None	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	Octave Jump	None	None
Amber Swch B	None	None	None	None
Amber Swch C	None	Chorus Depth	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	None	64	None	None
SwitchPdl 2	Sostenuto	Soft Pedal	Soft Pedal	Soft Pedal
SwitchPdl 3	Soft Pedal	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

031 VoxJazzCombo C7

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	The Reverend's	Scatman	106 Two Finger Bass	116 Resonant Traps
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	None
Red Knob B	Rotary Speed	None	None	None
MPressure	None	Volume Swell	None	None
Green Knob A	None	None	None	None
Green Knob B	Timbre	None	None	None
Green Knob C	Layer Mix	None	None	None
Green Knob D	Arp Tempo	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	Octave Jump	None
Amber Swch B	Chor/Vibe Switch	None	None	None
Amber Swch C	None	Envelope	None	None
Amber Swch D	Arp Switch	None	None	None
Red Switch A	Arp Latch 1	None	None	None
SwitchPdl 1	64	64	None	None
SwitchPdl 2	Sostenuto	Sostenuto	Sostenuto	Sostenuto
SwitchPdl 3	Soft Pedal	Soft Pedal	Soft Pedal	Soft Pedal

032 Where's Syd???

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Play	Play	Play
MIDI Channel	1	2	3	4
Program	000 Stereo Grand	037 Celestial Comet	Fret Not Bass	099 12 String Guitar
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Mod Whl	Mod Whl	Mod Whl	Mod Whl
MPressure	Pressure	Pressure	Pressure	Pressure
Green Knob A	MIDI 93	None	None	None
Green Knob B	MIDI 91	None	None	None
Green Knob C	MIDI 6	None	None	None
Green Knob D	MIDI 13	Tempo	Tempo	Tempo
Pedal 1	MIDI 11	None	None	None
Red Knob C	MIDI 4	None	None	None
Red Knob D	MIDI 2	None	None	None
Ribbon 1	MIDI 21	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Trans Down	Trans Down	Trans Up	Trans Up
Amber Swch B	MIDI 9	None	None	None
Amber Swch C	MIDI 12	MIDI 119	MIDI 119	MIDI 119
Amber Swch D	MIDI 116	None	None	None
Red Switch A	MIDI 29	None	None	None
SwitchPdl 1	MIDI 64	MIDI 64	MIDI 64	MIDI 64
SwitchPdl 2	MIDI 66	MIDI 67	MIDI 67	MIDI 67
SwitchPdl 3	MIDI 67	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

125 PC2R Control

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Mute	Mute
MIDI Channel	1	2	3	4
Program	000 Stereo Grand	088 Rez Aah Pad	104 Round and Wound	040 Clav Classic
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Mod Whl	Mod Whl	Mod Whl	Mod Whl
MPressure	Pressure	Pressure	Pressure	Pressure
Green Knob A	MIDI 6	None	None	None
Green Knob B	MIDI 22	None	None	None
Green Knob C	MIDI 23	None	None	None
Green Knob D	MIDI 24	Tempo	Tempo	Tempo
Pedal 1	MIDI 11	None	None	None
Red Knob C	MIDI 4	None	None	None
Red Knob D	MIDI 2	None	None	None
Ribbon 1	MIDI 21	None	None	None
Ribbon 2	MIDI 86	None	None	None
Ribbon 3	MIDI 87	None	None	None
Amber Swch A	MIDI 88	Trans Down	Trans Up	Trans Up
Amber Swch B	MIDI 80	None	None	None
Amber Swch C	MIDI 81	MIDI 119	MIDI 119	MIDI 119
Amber Swch D	MIDI 82	None	None	None
Red Switch A	MIDI 83	None	None	None
SwitchPdl 1	MIDI 64	MIDI 64	MIDI 64	MIDI 64
SwitchPdl 2	MIDI 66	MIDI 67	MIDI 67	MIDI 67
SwitchPdl 3	MIDI 67	None	None	None

126 Internal Voices

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Mute	Mute
MIDI Channel	1	2	3	4
Program	000 Stereo Grand	088 Rez Aah Pad	104 Round and Wound	040 Clav Classic
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	Mod Whl	Mod Whl	Mod Whl	Mod Whl
MPressure	Pressure	Pressure	Pressure	Pressure
Green Knob A	MIDI 93	None	None	None
Green Knob B	MIDI 91	None	None	None
Green Knob C	MIDI 6	None	None	None
Green Knob D	MIDI 13	Tempo	Tempo	Tempo
Pedal 1	MIDI 11	None	None	None
Red Knob C	MIDI 4	None	None	None
Red Knob D	MIDI 2	None	None	None
Ribbon 1	MIDI 21	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	Trans Down	Trans Down	Trans Up	Trans Up
Amber Swch B	MIDI 9	None	None	None
Amber Swch C	MIDI 12	MIDI 119	MIDI 119	MIDI 119
Amber Swch D	MIDI 116	None	None	None
Red Switch A	MIDI 29	None	None	None
SwitchPdl 1	MIDI 64	MIDI 64	MIDI 64	MIDI 64
SwitchPdl 2	MIDI 66	MIDI 67	MIDI 67	MIDI 67
SwitchPdl 3	MIDI 67	None	None	None

Program and Setup Information

Physical Controller Assignments for Setups

127 Clear Setup

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Mute	Mute
MIDI Channel	1	2	3	4
Program	<i>000 Stereo Grand</i>	<i>000 Stereo Grand</i>	<i>000 Stereo Grand</i>	<i>000 Stereo Grand</i>
Wheel 1 Up/Down	None	None	None	None
Red Knob B	None	None	None	None
MPressure	None	None	None	None
Green Knob A	None	None	None	None
Green Knob B	None	None	None	None
Green Knob C	None	None	None	None
Green Knob D	None	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	None
Amber Swch B	None	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	None	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	None	None	None	None
SwitchPdl 2	None	None	None	None
SwitchPdl 3	None	None	None	None

128 Default Setup

Setup Feature	Zones			
	Zone 1	Zone 2	Zone 3	Zone 4
Zone Status	Play	Mute	Mute	Mute
MIDI Channel	1	2	3	4
Program	000 Stereo Grand	093 Analogy	105 Punch Bass	087 Lowdown Bass
Wheel 1 Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down	Pitch Up/Down
Red Knob B	None	None	None	None
MPressure	Pressure	Pressure	Pressure	Pressure
Green Knob A	None	None	None	None
Green Knob B	None	None	None	None
Green Knob C	None	None	None	None
Green Knob D	None	None	None	None
Pedal 1	None	None	None	None
Red Knob C	None	None	None	None
Red Knob D	None	None	None	None
Ribbon 1	None	None	None	None
Ribbon 2	None	None	None	None
Ribbon 3	None	None	None	None
Amber Swch A	None	None	None	None
Amber Swch B	None	None	None	None
Amber Swch C	None	None	None	None
Amber Swch D	None	None	None	None
Red Switch A	None	None	None	None
SwitchPdl 1	MIDI 64	MIDI 64	MIDI 64	MIDI 64
SwitchPdl 2	MIDI 66	MIDI 66	MIDI 66	MIDI 66
SwitchPdl 3	MIDI 67	MIDI 67	MIDI 67	MIDI 67

Appendix D

PC2R Drum Maps

Drum maps determine the layout of PC2R drum programs with respect to the notes you play on your MIDI source. They don't control the *sounds* contained in the drum programs as much as the *location* of the sounds within the MIDI note range. This means that for any given drum program, changing the drum map changes the sound (if any) that you hear when you play a particular note on your MIDI source.

There are three drum maps in the PC2R. Each map positions drum and percussion sounds in various locations within the MIDI note range. There are two advantages to having more than one drum map:

- With three alternative arrangements of drum and percussion sounds, you can choose the arrangement that is easiest for you to play.
- If you're playing sequences that are recorded according to General MIDI (GM) specifications, you can quickly configure the PC2R to play the correct GM sounds when you play back your sequences.

To choose a drum map, set the value of the Drum Remap parameter (in the Global menu) to a value of **Normal**, **PC2ReMap**, or **GMReMap**. Use **Normal** or **PC2ReMap** according to your preference. Use **GMReMap** when you want the PC2R to play General MIDI sounds, either live or for sequence playback.

The following pages show the layouts of the PC2R's drum sounds in each drum map. Each page shows a keyboard diagram that corresponds to the notes on a standard 88-note keyboard (A 0 through C 8). Beside each note is the sound corresponding to that note (white keys on the left, and black keys on the right).

You'll notice several unlabeled notes in each map. For the Normal and PC2ReMap maps, this indicates that the sound you'll hear for that note varies according to the current program. For the General MIDI map, unlabeled notes indicate that there's no General MIDI sound corresponding to that note, and consequently you won't hear anything when you play those notes.

Sounds with the character "/" in their names (like Ride Cymbal Rim/Bell) are dual-velocity sounds; you'll hear the first sound when you play softly, and the second sound when you play hard.

Normal

A 0		A# 0
B 0		
C 1		
D 1		C# 1
E 1		D# 1
F 1		F# 1
Kick 3	G 1	Hard Snare 1
Snare 4	A 1	Kick 3
Crash Cymbal	B 1	A# 1 Snare 4
Floor Tom	C 2	C# 2 Floor Tom
Lo Mid Tom	D 2	D# 2 Lo Mid Tom
Mid Tom	E 2	
Mid Tom	F 2	F# 2 Mid Tom
Hi Tom	G 2	G# 2 Hi Tom
Hi Tom	A 2	A# 2 Hi Tom
Kick 1	B 2	
Kick 1	C 3	C# 3 Kick 1
Kick 2	D 3	D# 3 Kick 2
Cross Stick Ambient	E 3	
Cross Stick Ambient	F 3	F# 3 Cross Stick
Snare 3	G 3	G# 3 Snare 3
Snare 2	A 3	A# 3 Snare 2
Soft Snare 1	B 3	
Dual Snare 1	C 4	C# 4 Dual Snare 1
Closed Hi-hat	D 4	D# 4 Closed Hi-hat
Closed Hi-hat	E 4	
Slightly Open Hi-hat	F 4	F# 4 Slightly Open Hi-hat
Slightly Open Hi-hat	G 4	G# 4 Open Hi-hat
Open Hi-hat	A 4	A# 4 Open/Closed Hi-hat
Open/Closed Hi-hat	B 4	
Foot Hi-hat	C 5	C# 5 Crash Cymbal
Crash Cymbal	D 5	D# 5 Crash Cymbal
Crash Cymbal	E 5	
Crash Cymbal	F 5	F# 5 Crash Cymbal
Splash Cymbal	G 5	G# 5 Ride Cymbal
Ride Cymbal Rim	A 5	A# 5 Ride Cymbal Rim/Bell
Ride Cymbal Bell	B 5	
Ride Cymbal Bell	C 6	C# 6 Cowbell
Hand Clap	D 6	D# 6 Lo Timbale/Hi Timbale
Timbale Shell	E 6	
Conga	F 6	F# 6 Hi Tumba
Conga	G 6	G# 6 Lo Tumba
Clave	A 6	A# 6 Shakers
Tambourine	B 6	
Tambourine	C 7	C# 7 Shakers
Tambourine	D 7	D# 7 Maracas
Maracas	E 7	
Lo Agogo	F 7	F# 7 Hi Agogo
Lo Bongo	G 7	G# 7 Bongo Slap
Hi Bongo	A 7	A# 7 Finger Snap
Muted Triangle	B 7	
Open Triangle	C 8	

PC2ReMap

	A 0		A# 0
	B 0		
	C 1		C# 1
	D 1		D# 1
	E 1		
	F 1		F# 1
	G 1		G# 1
	A 1		A# 1
	B 1		
	C 2		C# 2
	D 2		D# 2
	E 2		
	F 2		F# 2 Floor Tom
Kick 1	G 2		G# 2 Floor Tom
Crash Cymbal	A 2		A# 2 Low Mid Tom
Kick 3	B 2		
Kick 2	C 3		C# 3 Mid Tom
Kick 1	D 3		D# 3 Hi Tom
Snare 4	E 3		
Snare 3	F 3		F# 3 Lo Mid Tom/Floor Tom
Snare 2	G 3		G# 3 Mid Tom
Cross Stick	A 3		A# 3 Hi Tom
Kick 1	B 3		
Kick 1	C 4		C# 4 Foot Hi-hat
Hard Snare 1	D 4		D# 4 Closed Hi-hat
Dual Snare 1	E 4		
Lo Tom	F 4		F# 4 Closed Hi-hat
Soft Snare 1	G 4		G# 4 Slightly Open Hi-hat
Mid Tom	A 4		A# 4 Open Hi-hat
Soft Snare 1	B 4		
Hi Tom	C 5		C# 5 Open/Closed Hi-hat
Open/Closed Hi-hat	D 5		D# 5 Crash Cymbal
Crash Cymbal	E 5		
Crash Cymbal	F 5		F# 5 Ride Cymbal Rim
Splash Cymbal	G 5		G# 5 Ride Cymbal Rim/Bell
Ride Cymbal Rim/Bell	A 5		A# 5 Ride Cymbal Bell
Ride Cymbal Bell	B 5		
Ride Cymbal Bell	C 6		C# 6 Cowbell
Hand Clap	D 6		D# 6 Lo Timbale/Hi Timbale
Timbale Shell	E 6		
Conga	F 6		F# 6 Hi Tumba
Conga	G 6		G# 6 Lo Tumba
Clave	A 6		A# 6 Shakers
Tambourine	B 6		
Tambourine	C 7		C# 7 Shakers
Tambourine	D 7		D# 7 Maracas
Maracas	E 7		
Lo Agogo	F 7		F# 7 Hi Agogo
Lo Bongo	G 7		G# 7 Bongo Slap
Hi Bongo	A 7		A# 7 Finger Snap
Muted Triangle	B 7		
Open Triangle	C 8		

GMReMap

	A 0		A# 0
	B 0		
	C 1		C# 1
	D 1		D# 1
	E 1		
	F 1		F# 1
	G 1		G# 1
Metronome Click	A 1		A# 1
Kick Drum 2	B 1		
Kick Drum 1	C 2		C# 2 Side Stick
Snare Drum 1	D 2		D# 2 Hand Clap
Snare Drum 2	E 2		
Lo Tom 2	F 2		F# 2 Closed Hi Hat
Lo Tom 1	G 2		G# 2 Pedal Hi Hat
Mid Tom 2	A 2		A# 2 Open Hi Hat
Mid Tom 1	B 2		
Hi Tom 2	C 3		C# 3 Crash Cymbal 1
Hi Tom 1	D 3		D# 3 Ride Cymbal 1
	E 3		
Ride Bell	F 3		F# 3 Tambourine
Splash Cymbal	G 3		G# 3 Cowbell
Crash Cymbal 2	A 3		A# 3
Ride Cymbal 2	B 3		
Hi Bongo	C 4		C# 4 Lo Bongo
Mute Conga	D 4		D# 4 Hi Conga
Lo Conga	E 4		
Hi Timbale	F 4		F# 4 Lo Timbale
Hi Agogo	G 4		G# 4 Lo Agogo
Cabasa	A 4		A# 4 Maracas
	B 4		
	C 5		C# 5
	D 5		D# 5 Clave
	E 5		
	F 5		F# 5
	G 5		G# 5 Triangle Mute
Triangle Open	A 5		A# 5 Shaker
	B 5		
	C 6		C# 6
	D 6		D# 6
	E 6		
	F 6		F# 6
	G 6		G# 6
	A 6		A# 6
	B 6		
	C 7		C# 7
	D 7		D# 7
	E 7		
	F 7		F# 7
	G 7		G# 7
	A 7		A# 7
	B 7		
	C 8		

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