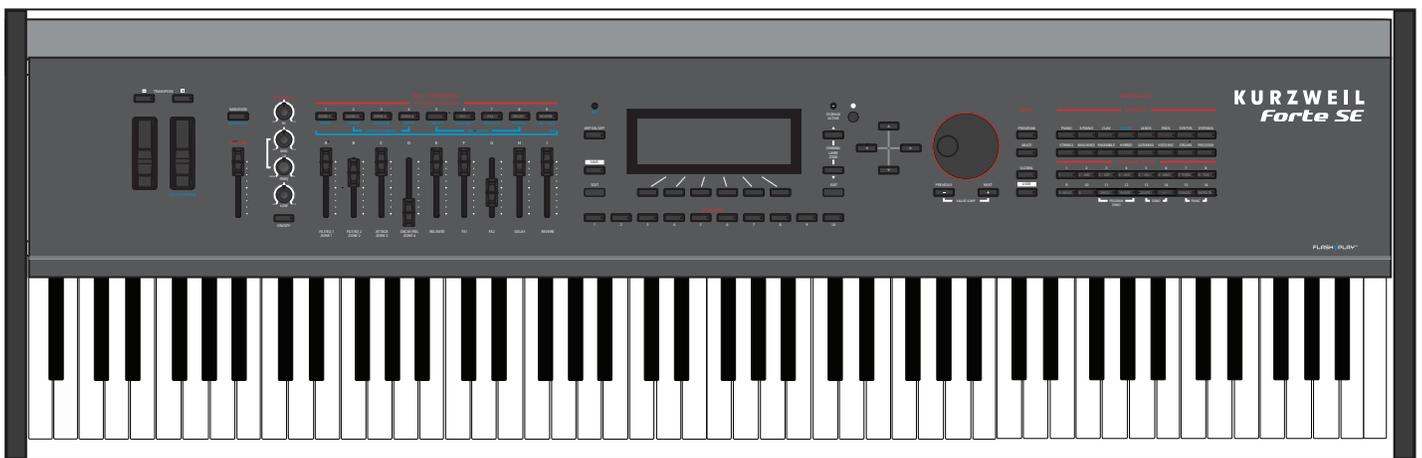
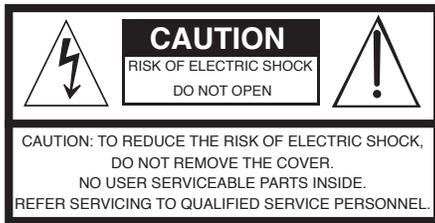


# ***Forte® SE***



## Musician's Guide

**KURZWEIL®**



The lightning flash with the arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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 the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a power supply cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet which is properly installed and grounded in accordance with all local codes and ordinances.
 

**DANGER:** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use an adaptor which defeats the function of the equipment-grounding conductor. If you are in doubt as to whether the product is properly grounded, check with a qualified serviceman or electrician.
3. 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.
4. This product should only be used with a stand or cart that is recommended by the manufacturer.
5. 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 a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6. This product should be located so that its location or position does not interfere with its proper ventilation.
7. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. 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.
10. 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.
11. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
12. The product should be serviced by qualified service personnel when:
  - A. The power supply, power cord or plug have been damaged;
  - B. Objects have fallen, 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.
13. 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.
14. **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 the 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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This instrument generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this instrument does cause harmful interference to radio or television reception, which can be determined by turning the instrument off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the instrument and the receiver.
- Connect the instrument into an outlet on a circuit other than the one to which the receiver is connected.
- If necessary consult your dealer or an experienced radio/television technician for additional suggestions.

The normal function of the product may be disturbed by strong electromagnetic interference. If so, simply reset the product to resume normal operation by following the instructions in the manual. If normal function does not resume, please use the product in another location.

### NOTICE

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

### AVIS

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

## SAVE THESE INSTRUCTIONS

# IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
- 10) Protect the power cord and power supply adapter from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



- 11) Only use power adapters and attachments/accessories specified by the manufacturer.
- 12) Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

**Warning:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.

To completely disconnect this equipment from the AC Mains, disconnect the power supply cord plug from the AC receptacle.

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# Kurzweil International Contacts

Contact the Kurzweil office listed below to locate your local Kurzweil representative.

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Tel: 800-431-2609

Fax: 818-597-0411

Email: [info@americanmusicandsound.com](mailto:info@americanmusicandsound.com)

## Customers outside the US:

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Post Code: 404-714

Tel: +82-32-570-1576

Fax: +82-32-576-2340



[www.kurzweil.com](http://www.kurzweil.com)



[support@kurzweil.com](mailto:support@kurzweil.com)



[www.facebook.com/kurzweilmusicsystems/](http://www.facebook.com/kurzweilmusicsystems/)



[www.twitter.com/KurzweilMusic](http://www.twitter.com/KurzweilMusic)



[www.youtube.com/user/KurzweilTutorials](http://www.youtube.com/user/KurzweilTutorials)

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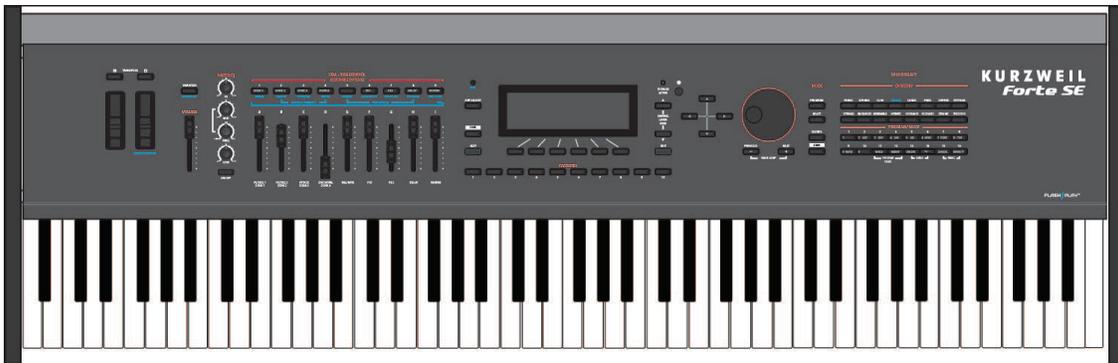
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# Chapter 1

## Introducing Forte SE

Congratulations on your purchase of the Kurzweil Forte SE® Stage Piano!

This manual will help you get acquainted with your new instrument. Be sure to keep the manual on hand as you continue to familiarize yourself with the features and functions of the Forte SE.



## Main Features

Forte SE is Kurzweil's latest entry in the Forte line of stage pianos. Some of the key specifications include:

- FlashPlay technology with support for 2GB of Sound ROM
- High Definition Japanese Grand Piano and High Definition Electric Piano
- ROM sounds included from Kurzweil's acclaimed PC3 series, KORE64 expansion, and German D Grand EXP Grand Piano expansion
- New Kurzweil String Resonance Simulation
- Full KB3 organ simulations with 9 sliders as drawbars
- 8 Zone MIDI Controller
- Space for 1024 Factory and 1024 User Programs and Multis (16 Categories of Programs)

## Introducing Forte SE

---

### Main Features

- Arpeggiator with dedicated On/Off button (1 per Program, up to 8 in Multi Mode)
- MP3 player audio input jack
- Full 128 voices of polyphony
- Hundreds of Effects Chains

## Keyboard and Controllers

The Forte SE has an 88-key fully-weighted hammer action keyboard that provides you with a piano-like feel without adding excessive weight to the instrument. The array of physical controllers includes:

- 9 assignable sliders
- 11 programmable switches
- A pitch wheel
- A modulation wheel
- 2 jacks on the rear panel for up to 4 optional switch pedals or 2 half damper pedals: SW1 (Sustain) & SW2
- 1 jack on the rear panel for an optional continuous controller pedal: CC (Volume)

## Pedals (Optional)

As described above, the Forte SE has three jacks on the rear panel for optional pedal controllers. Two jacks for switch pedals, which are typically used to control two-state (i.e., on / off) parameters such as sustain, sostenuto, and mute Zone. The third jack is for a continuous control (or CC) pedal typically used to control multi-state (i.e., “continuous”) parameters such as volume or wah.

Your Kurzweil dealer stocks the following pedals:

- FS-1 Standard box-shaped switch pedal
- KFP-1 Single piano-style switch pedal
- KFP-2S Double piano-style switch pedal unit (one stereo plug)
- CC-1 Continuous pedal

## Do You Have Everything?

Your Forte SE package should contain the following in addition to your instrument:

- Power adapter and cable
- Switch pedal
- USB cable (Type-A-to-Type-B)
- 4 self adhesive feet (see [page 2-1](#))
- Forte SE *Getting Started* Guide

If you are missing any of these components, please contact your Kurzweil / Young Chang dealer to get them. Don't connect anything until you make sure the Forte SE is properly and safely situated. If your Forte SE keyboard has been out in the cold, give it time to warm up to room temperature before starting it, since condensation may have formed inside.

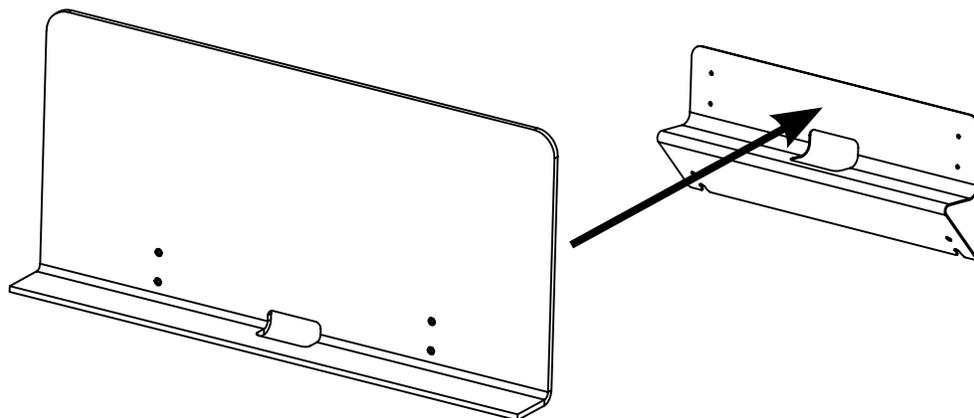
## Keeping the Forte SE up to date

Be sure to check the Kurzweil Music Systems website at [www.kurzweil.com](http://www.kurzweil.com) for new documentation and the latest software updates for Forte SE.

## Music Rack (Optional)

The optional KMR2 Music Rack attachment is a holder for sheet music or a computer tablet device. Contact your Kurzweil dealer for the KMR2 Music Rack.

Please refer to the instructions that come with the KMR2 on attaching the music rack to the Forte SE.



# Chapter 2

## Getting Started

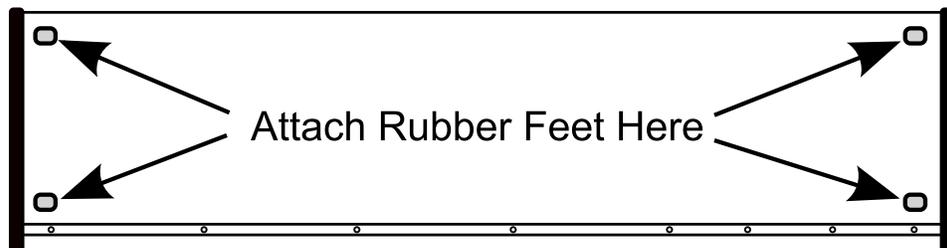
### Before You Start...

Don't connect anything until you make sure the Forte SE is properly and safely situated. If your Forte SE keyboard has been out in the cold, give it time to warm up to room temperature before starting it, since condensation may have formed inside.

### Setting up the Forte SE

Set the keyboard on a hard, flat, level surface.

Four adhesive-backed rubber feet are provided with Forte SE. Carefully turn the keyboard over onto a soft surface, remove the paper backing from the rubber feet and attach them.



**NOTE :** Unless the instrument will always be used with a keyboard stand, attachment of the rubber feet is strongly advised. Otherwise protruding screws will scratch the tabletop.

## Getting Started

### Updating the Forte SE

Connect the AC power cord to the Forte SE. Before plugging the cable into the power outlet, check that the power is compatible with the Forte SE. The Forte SE runs on AC power and works with voltages from 80-265 volts 50-60 Hz. The voltage level is detected and set automatically by the Forte SE. If your power source does not have the standard three hole outlet, you should take the time to install a proper grounding system. This will reduce the risk of a shock. If your power outlet is not within these ranges it is recommended you use an appropriate adaptor.

Plug the power cable into the wall.

Plug the Switch Pedal into the marked SW1 (Sustain) Pedal jack on the Forte SE rear panel.

Connect stereo headphones to the headphone jack on the rear panel or connect the audio outputs to your mixer or amplifier inputs using standard (1/4-inch) audio cables (use the Left out for mono). Balanced (“TRS” or “Stereo”) cables are recommended if your mixer or amp supports balanced inputs.

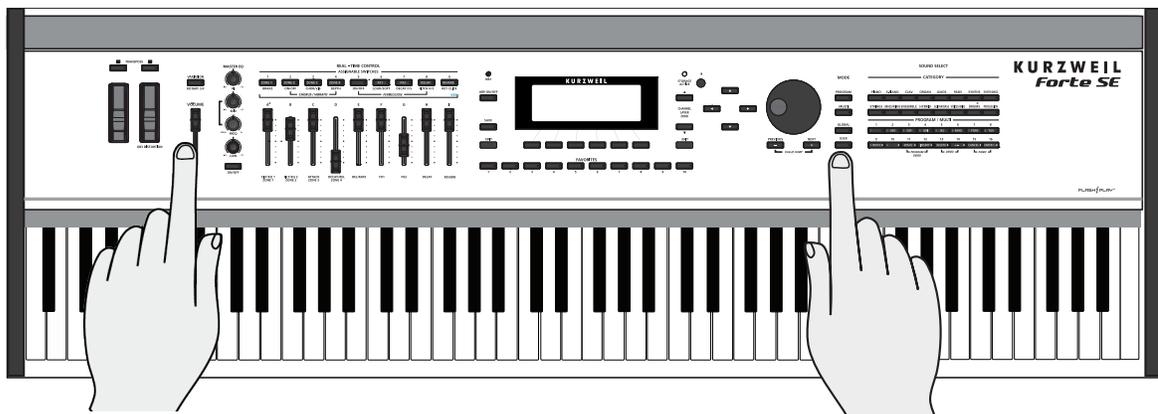
Make sure your sound system is at a safe volume level. Also make sure that the Forte SE Master Volume slider (on the far left side of the front panel) is all the way down.

## Updating the Forte SE

Please check online at [www.kurzweil.com](http://www.kurzweil.com) for Forte SE updates. Detailed instructions on updating the Forte SE are available with the update package. It is important that these instructions are followed closely for trouble free updating of the Forte SE.

## Using the Forte SE

Power up the Forte SE using the power switch on the rear left side of the instrument, and then raise the Master Volume slider, and mixer/amp volume. Your Forte SE keyboard starts up in Program Mode by default. Press one of the buttons under the “Mode” label to the right of the display to switch Modes.



Master Volume Slider

Mode select buttons

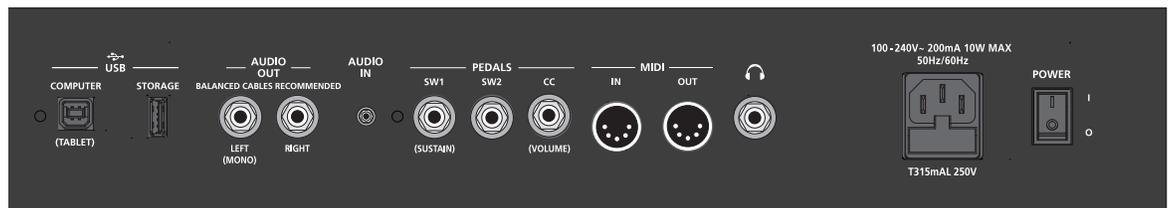
If you are connected to a mixing board and hear distortion, reduce the gain level on your mixing board, or use the pad (*a switch that decreases the input audio signal level, typically by 20dB*) if it has one.

To hear the capabilities of the Forte SE, you can play the demo songs. Press the 13 & 14 Program/Multi buttons simultaneously to listen to a demo song.

In Program Mode, scroll through the Programs using the Alpha Wheel, the Previous and Next buttons, or press a Category button to audition the sounds in the Forte SE. The Forte SE has short demos for each of the factory Programs. To hear a Program Demo for the current Program, press the 11 & 12 Program/Multi buttons simultaneously.

## The Rear Panel

The power switch and most of the Forte SE connections are located on the rear panel.



## The AC Power Jack

Please refer to “Setting up the Forte SE” on page 2-1.

## The USB Ports

Use the USB ports to connect the Forte SE to a computer/tablet in order to do the following:

- Use the Forte SE as a MIDI controller to play software instruments on a computer.
- Use a computer program to sequence multitrack songs on the Forte SE.
- Use a computer/tablet to manage the user data contents of the Forte SE.
- Update the software and sounds of the Forte SE.
- Store custom Programs and Multis on a USB flash drive.

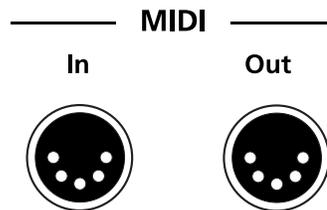
Be sure to check the Kurzweil Music Systems website at [www.kurzweil.com](http://www.kurzweil.com) for new documentation and software updates before using your new instrument.

## Getting Started

### The MIDI (IN and OUT) Ports

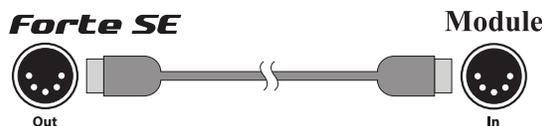
## The MIDI (IN and OUT) Ports

Use the MIDI ports to communicate with other MIDI modules and controllers. The OUT port is the MIDI transmitting port, and the IN port is the MIDI receiving port.

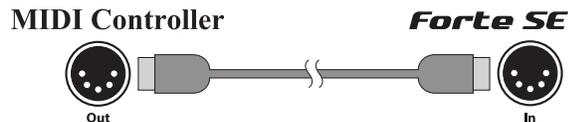


## Basic MIDI Hookup

To use the Forte SE as a MIDI controller for another sound module, use a MIDI cable to connect the MIDI port marked "Out" to the MIDI input port of the module that you want to control.



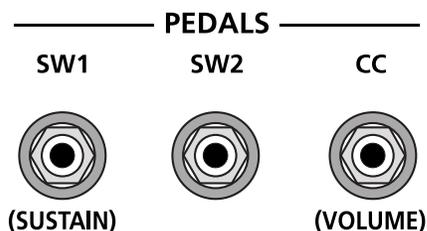
To control the Forte SE using another MIDI controller, use a MIDI cable to connect the MIDI port marked "In" to the MIDI output port of the controller that you will be using.



For other MIDI connection scenarios, please refer to the Forte SE Musicians Guide.

## The Pedal Jacks

Use the three pedal jacks to connect controller pedals to the Forte SE.



<b>Switch Pedals</b>	¼ inch tip-sleeve (mono) plug or, 1/4 inch tip-ring-sleeve plug configured as dual switches (TS and RS) or 2 terminal continuous pedal (half-damper).
<b>Continuous Control (CC) Pedals</b>	10 kΩ linear-taper potentiometer, ¼ inch tip-ring-sleeve (stereo) plug with the wiper connected to the tip.

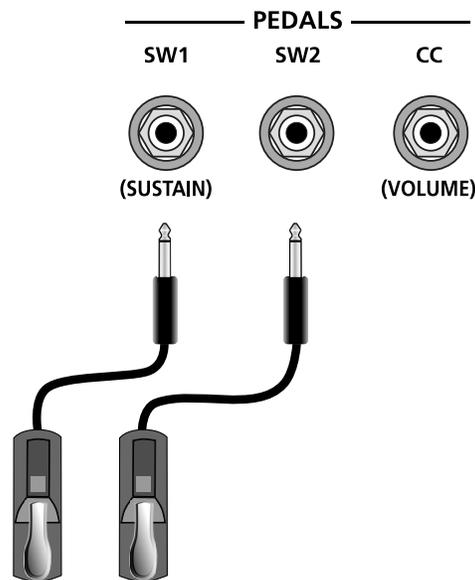
The default function of each pedal can be changed for all Programs and Multis by setting a pedal override on the Global Control Overrides page in Global Mode. Pedals are also independently assignable within each Program or each Zone of every Multi.

Here are the default control settings for the five pedals used by Forte SE:

<b>SW 1a Pedal</b>	Sustain (MIDI 64)
<b>SW 1b Pedal</b>	Sostenuto (MIDI 66)
<b>SW 2a Pedal</b>	Sostenuto (MIDI 66)
<b>SW 2b Pedal</b>	Soft (MIDI 67)
<b>CC Pedal</b>	Expression (MIDI 11)

## The SW1 (Sustain) and SW2 Jacks

Use the pedal jacks to connect switch pedals. A switch pedal is a physical controller typically used to control two-state (i.e., “on / off”) parameters, such as sustain, sostenuto, soft and Mute Zone.



## Getting Started

### The Pedal Jacks



**NOTE :** Do not step on the switch pedals when powering up the Forte SE, as the state of the pedal is detected as part of the power up sequence.

The Forte SE SW1 and SW2 jacks can support a single or dual switch pedal on each jack, or a single half-damper pedal on each jack.

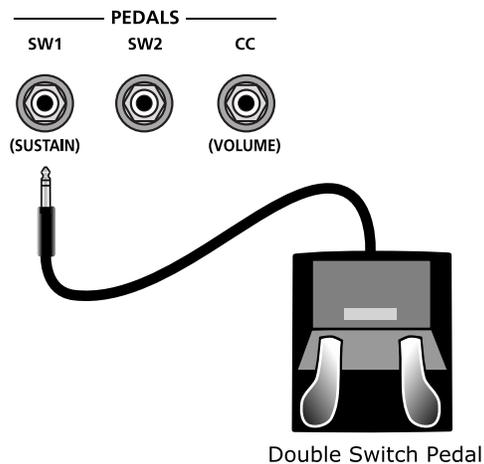


**NOTE :** It is not recommended to plug CC pedals into the SW inputs. Due to the flexible switch pedal support, CC pedals may not operate as expected in these inputs.

If you are not using a Kurzweil switch pedal, make sure it's connected before you turn on the Forte SE. This ensures that the pedal will work properly (it might function in reverse—off when it's down and on when it's up—if you turn on your Forte SE before plugging in the pedal). Similarly, don't press any of your switch pedals while powering up, as the Forte SE verifies each pedal's orientation during power-up. If you're pressing a pedal, you might cause it to work in reverse.

## Connecting a Dual Switch Pedal

You can connect a dual switch pedal with a single stereo plug, such as the Kurzweil KFP-2S, into the SW1 Pedal and SW2 Pedal jacks. Both SW1 and SW2 can support a dual pedal each allowing up to 4 pedals to be utilized by the Forte SE. These are enumerated as SW1a, SW1b, SW2a and SW2b. The Forte SE will recognize dual pedals that are wired as TS and RS, such as the KFP-2S.



If you're not familiar with traditional piano technique, the sostenuto (center) pedal on a grand piano allows one to hold chords in the bass while continuing to play the melody without the latter notes sustaining. Any keys that are down when you depress the pedal will sustain when you let go of the keys, but new notes played afterward will not be sustained. Releasing the pedal puts things back to normal. Of course it can be programmed to do other functions as well.

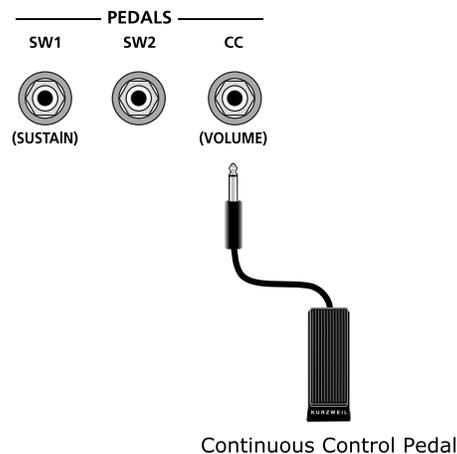
## Connecting a Half Damper Pedal

Half Damper pedals where the wiper is connected to the tip (such as the KORG DS-1H) can be connected to the SW1 and SW2 inputs on the rear panel. Some pedals have the wiper connected to the ring, and these pedals will require an adaptor to work with the Forte SE. When connected to the SW1 jack, a Half Damper pedal enables finer control of sustain than a standard switch pedal. Half Damper control is enabled for programs in the Piano category. Programs outside of the Piano category will respond to Half Damper pedals as if they are standard switch pedals. Half Damper pedals can also be used to control external software and sound modules via MIDI.

## The CC (Volume) Jack

A continuous control pedal can be very useful for controlling volume, wah, or other effects by foot.

The Kurzweil CC-1 continuous control pedal will work best with the Forte SE, but it is also possible to use third-party continuous control pedals designed for synthesizers.



## Getting Started

### The Audio (LEFT/MONO and RIGHT) Jacks

# The Audio (LEFT/MONO and RIGHT) Jacks

Please refer to “Connecting to Your Audio System” below.

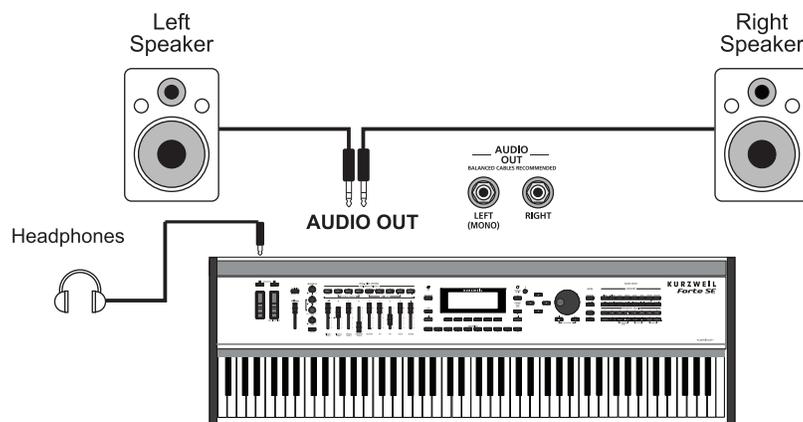
## The Headphones Jack

Use the Headphones jack located on the left rear panel of the instrument to listen to the Forte SE on stereo headphones. You will need a 1/4-inch-to-1/8-inch adapter in order to use headphones that have a smaller mini plug connector.

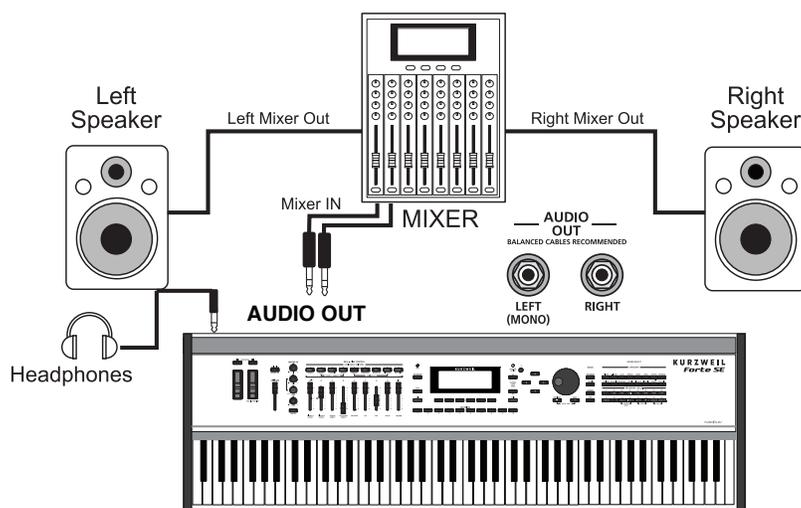
## Connecting to Your Audio System

After you’ve turned down the level on your sound system, connect the Forte SE analog audio outputs to your sound system using a pair of balanced (TRS or “stereo”) or unbalanced (TS or “mono”) audio cables. Unbalanced cables will always work, but if you’re going into balanced inputs, use balanced cables for a better signal-to-noise ratio and a bit more volume. The Forte SE analog outputs are balanced.

You’ll find two 1/4-inch balanced audio output jacks on the rear panel. Connect one end of each audio cable to your mixing board or PA system inputs, and connect the other end to the jacks marked Left (Mono) and Right on the rear panel of the Forte SE. If you have only one input available, use the Forte SE’s Left (Mono) output to get the full signal in mono. Use the jack marked Headphones to listen to Forte SE on headphones. When headphones are plugged in, sound still comes through the Left and Right audio jacks.



Forte SE connected to powered speakers and headphones



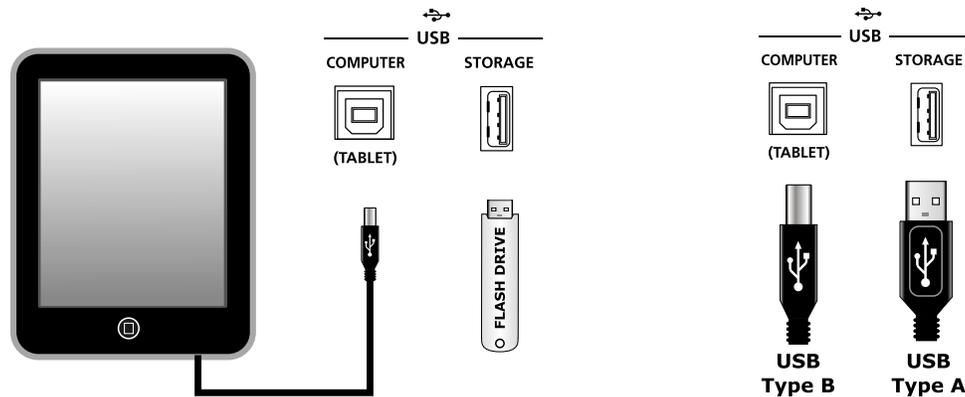
**Forte SE connected to a mixer, powered speakers and headphones**

## Getting Started

### Connecting to a Computer

# Connecting to a Computer

To connect the Forte SE to a computer/tablet, simply connect the Forte SE using the provided or compatible cable.



If you wish to use your own cable, make sure that it is a Type-A-to-Type-B USB cable (the USB port of Forte SE being Type B). By default, the Forte SE will act as a MIDI controller (rather than a hard drive) when connected to a computer.



**NOTE :** Some devices like the iPad® will require you to purchase adaptors to connect a USB cable.

## Forte SE Sounds

The Forte SE supports two types of sounds. The first type is a Program, and these are normally a single instrument, such as a piano, or an organ. A Program is similar to a “preset” or “patch” on other synthesizers. Both factory and User Programs are arranged into 16 categories of 16 sounds each.

The other type of sound is the more complex Multi. A Multi is a combination of Programs arranged as layers and splits across the keyboard. They are similar to setups, from the Kurzweil PC series, SP series and K2 series, and are similar to Combis or Multis from other synthesizers. Similar to selecting Programs, the Category buttons allow you to navigate through this list of Multis in groups of 16 Multis at a time, although Multis are not categorized by instrument type.

The Forte SE has been designed so that it is quick and easy to select Programs and Multis from the front panel. Use the following guide to audition the factory sounds on the Forte SE.

## Selecting Programs and Multis

The Forte SE always powers up in Program Mode. If you wish to play a Multi, simply press the Multi Button. The Multi Button will light up to show that Multi Mode is selected. To return to Program Mode, from a different mode, simply press the Program button. If the User button is illuminated, then you are in the User Bank. Press the User button to return to the Factory Bank, and the light will go out. In the Factory Bank, press one of the Category Buttons to change Category, and that Category button will light up. Once you are in your desired Category, press one of the Program/Multi buttons to select the program you want.

To select another Program or Multi within the same Category, just press a Program/Multi Button, or use the Alpha Wheel, or Next/Previous Buttons.

To select a Program or Multi in another Category, press the desired Category Button, followed by the desired Program/Multi Button. The Alpha Wheel and Next/Previous Buttons will select the next Category once you get to the end of the current Category. Pressing a Category Button will select the Category Default Program/Multi (by default this is set to the first Program/Multi of each category). For details on changing the Category Default Program/Multi see [Choosing Category Default Programs on page 6-6](#) or [Choosing Category Default Multis on page 10-5](#).

## Controllers

The Sliders, Wheels, Pedals and Buttons can control each of the factory Programs and Multis, to produce variations to the sound. Don't forget to try these out as you explore the factory sounds on the Forte SE. For details on controller assignments see [Controller Conventions on page 6-9](#).

## Favorites

The Forte SE also features Favorites Buttons to quickly recall your favorite sounds. The Favorites buttons store a set of 10 Programs and/or Multis. To assign the currently selected Program or Multi to a Favorites button, press and hold the desired Favorites button for a few seconds until the display indicates that the favorite has been saved. To recall a favorite Program or Multi, simply press the one of the Favorites buttons. The Favorites buttons will work from whichever mode you are currently in, changing to Program Mode or Multi Mode automatically if required.

# Chapter 3

## Features of the Forte SE

This chapter will help familiarize you with the features of the Forte SE. Many of these features have both general functions and mode-specific functions. For more in-depth descriptions of these features, refer to the chapters on the individual modes.

### Powering Up Defaults

In general, the Forte SE will always remember the last selection made by the user. However, powering up the Forte SE resets some of these settings back to their power-on defaults.

#### Parameters Reset To Defaults At Power-On

- Transpose set to 0 semitones.

#### Parameters Remembered After Power-Off

- Currently selected MIDI Channel in Program Mode.\*
- Currently selected Program per MIDI Channel in Program Mode.\*
- Currently selected Multi.\*
- User Programs, Multis and Favorites.
- Default Program and Multi per Category.
- Display View Mode.\*
- Master EQ On/Off switch setting.\*
- Global Mode parameters.\*

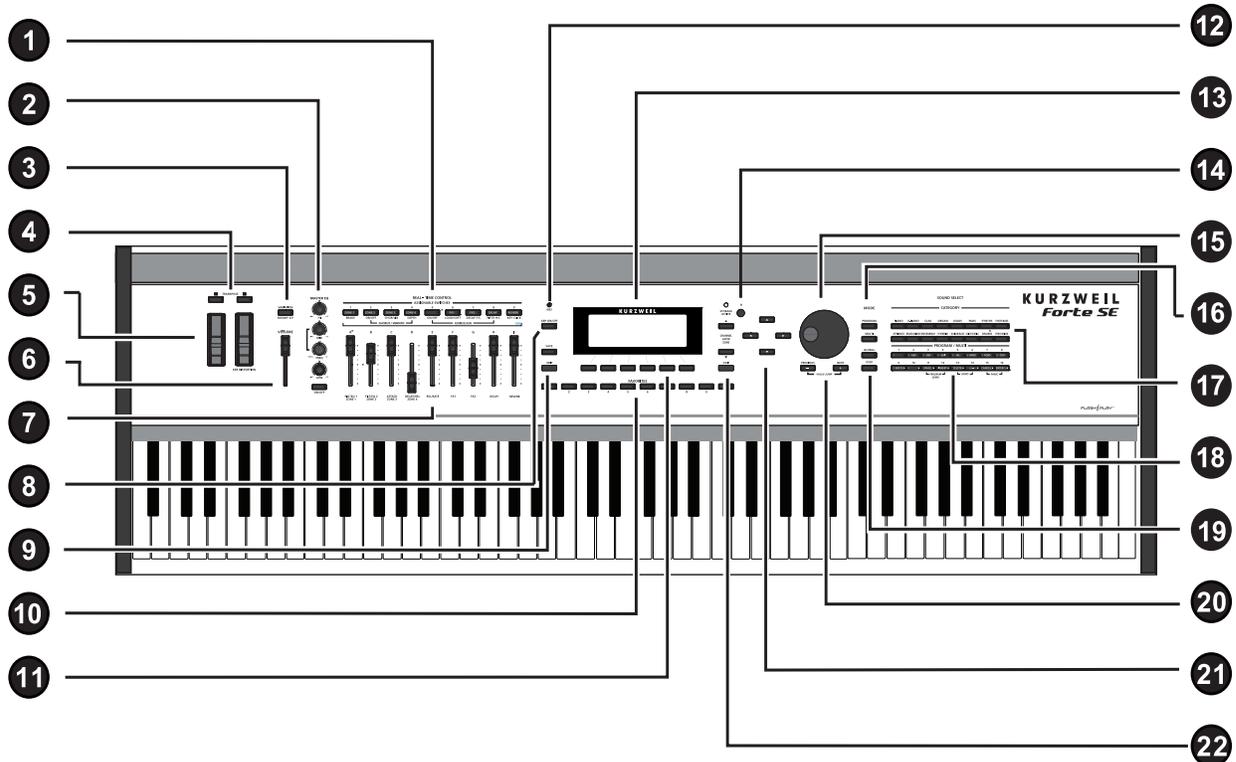
\* You must exit Global Mode to save settings.

## Features of the Forte SE

### The Front Panel

# The Front Panel

All the controls for Forte SE, both musical and navigational, are on its front panel.

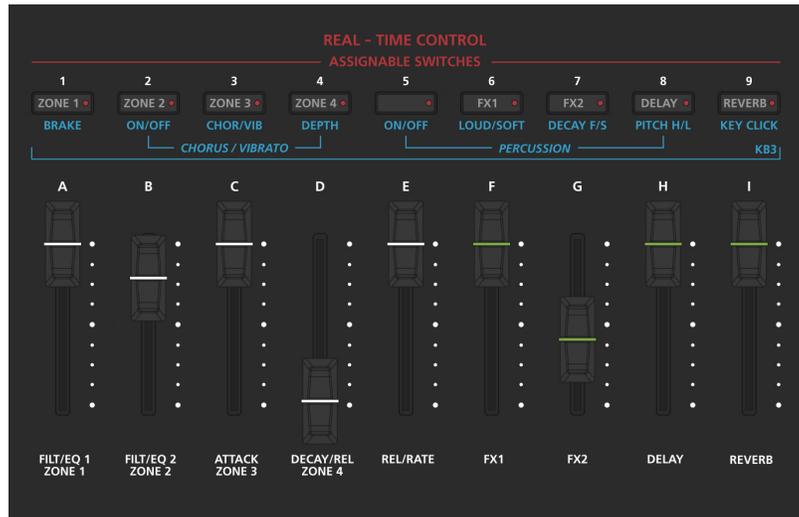


- 1 Multi-Function Switches
- 2 Master EQ
- 3 Variation button
- 4 Transpose buttons
- 5 Pitch and Modulation wheels
- 6 Volume slider
- 7 Nine programmable sliders
- 8 Arpeggiator On/Off button
- 9 Save and Edit buttons
- 10 Favorites buttons
- 11 Soft buttons

- 12 KB3 indicator light
- 13 LCD display
- 14 Display contrast knob
- 15 Alpha Wheel
- 16 Mode select buttons
- 17 Category buttons
- 18 Program/Multi buttons
- 19 User button
- 20 Previous/Next buttons
- 21 Navigation buttons
- 22 Channel/Layer/Zone select buttons

# Real Time Controls

## Sliders



In Program Mode, the sliders are used to control various Program parameters, typically assigned to the functions labeled in white below each slider. If you select a KB3 organ Program the KB3 LED will light and the nine sliders operate in a similar way to a Hammond organ, i.e. pulling the slider towards you increases the drawbar amount. For details on controller assignments see [Controller Conventions on page 6-9](#). In Program mode, press the Edit button to view the Parameters page, where you can view a list of controller assignments for the current program. All Program Slider assignments can be changed in Program Edit Mode.

In Multi Mode, Sliders A-D default to controlling volume for Zones 1-4, while Sliders E-I generally default to controlling synthesis parameters and effects. The sliders can also send MIDI continuous controller values to external MIDI equipment. All Multi Slider assignments can be changed in Multi Edit Mode. See [Controlling Program Parameter Assignments from Multi Mode on page 11-17](#) to view or change slider assignments for each Zone.

## Assignable Switches



These nine buttons perform various functions in real time, depending upon the current performance mode and assignment. The Switch Button LEDs illuminate when the switch is active.

In Program Mode the switches generally control synthesis parameters and effects as labeled in white on each switch button. If you select a KB3 organ Program the KB3 LED will light and the buttons perform the functions labeled in blue below each switch button. For details on controller assignments see [Controller Conventions on page 6-9](#). In Program mode, press the Edit button to view the Parameters page, where you can view a list of controller assignments for the current program. All Program switch assignments can be changed in Program Edit Mode.

In Multi Mode, the first four switches are assigned to mute and enable Zones 1-4, while the remaining switches generally control synthesis parameters and effects. The switches can also send MIDI continuous controller values to external MIDI equipment. All Multi switch assignments can be changed in Multi Edit Mode. See [Switch on page 11-24](#) to view or change switch assignments for each Zone.

## Variation Button



The Variation button is located on the left side of the front panel, just above the Volume slider. The Variation Button is a MIDI controller (default MIDI CC#29) that is programmed in most Programs to modify the sound, such as adding a pad sound, changing the effects or some other variation suited to changing with a switch.

For KB3 programs, the Variation Button controls the Rotary Speaker speed, switching between fast and slow.

## Features of the Forte SE

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### Real Time Controls

## Arp On/Off Button



The Arp On/Off button is set by default to turn on and off the Forte SE's Arpeggiator. It can also be assigned to control other parameters in Multi Edit mode.

## Transpose Buttons



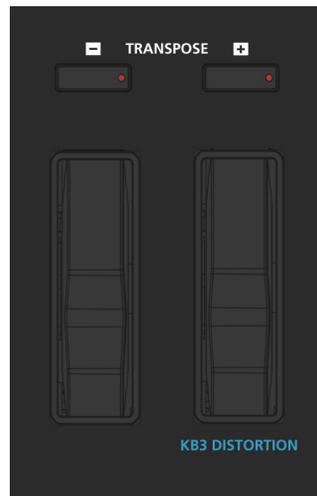
The Transpose buttons are located on the left side of the front panel, just above the Pitch & Modulation Wheels. They can be used to change the tuning of notes played on the Forte SE keyboard in semitones (ST), also known as half steps. This is a convenient way to change the key of a song without learning to play it in a different key. The Transpose buttons also transpose MIDI notes sent to the USB and MIDI out ports.

Press the Transpose - or + buttons to transpose the Forte SE keyboard down or up by one semitone. The top line of the display shows the current transposition value. Pressing both Transpose - and + simultaneously will reset the transposition to 0. To transpose up and down by octave intervals (12 ST), press the Octav- and Octav+ soft buttons underneath the display.

The maximum transposition value possible is  $\pm 36$  semitones.

The LEDs of the Transpose buttons indicate whether the current Program is transposed up (Transpose + LED is lit) or transposed down (Transpose - LED is lit). When there is no transposition, neither Transpose button is lit.

## Pitch Wheel



The Pitch Wheel is the left most of the two wheels. It is spring-loaded, such that its center position is restored when it is not being used. That is because the Pitch Wheel is used for pitch-bending notes—its “off” position is in the center. Pushing the Pitch Wheel up bends the pitches of all notes up. Pulling the Pitch Wheel down bends the pitches of all notes down.

For some Programs the Pitch Wheel will not bend notes that are held by the sustain pedal. This is how many Guitar and Bass Programs are configured, allowing played notes to be bent over sustained notes. You can adjust the Pitch Wheel bend amount for each Program/Multi by using the parameters on the [The COMMON Page on page 7-16](#) (Program Edit Mode) or [Bend Up / Down CT on page 11-13](#) (Multi Edit Mode).

## Modulation Wheel

The Modulation Wheel is the right most of the two wheels. Unlike the Pitch Wheel, the Modulation Wheel is not spring loaded, and can be set to and left in any position between fully up and fully down. Typically, the Modulation Wheel is assigned to a parameter that alters some aspect of the sound (e.g., vibrato, filter depth) when changed.

When a KB3 Program is in use, the Modulation Wheel is assigned to control distortion.

## Foot Switches and Controllers

The Forte SE has sophisticated Pedal controller options allowing up to 4 Switch Pedals or up to 2 Half Damper Pedals as well as a Continuous Controller Pedal to be connected. By default the Switch Pedals control SW1a - Sustain, SW1b - Sostenuto, SW2a - Sostenuto and SW2b - Soft. The CC Pedal controls expression (volume) by default.

## Features of the Forte SE

### Master EQ

Pedal assignments can be changed in each Program and saved in a User Program. Each Zone in a factory Multi may have different pedal assignments, and pedals are all independently assignable within each Zone of a user Multi. You can also use Global Mode to set pedal overrides, which will change the assignment of each pedal for all Programs in Program Mode, and act as default pedal assignments for all Multis in Multi Mode.

## Master EQ

The Master EQ allows you to have realtime control over the frequency response of all audio generated in either Program or Multi Modes. When the Master EQ On/Off button is “On”, the rotary knobs can change the high, middle & low frequencies of the audio.

If the LED on the Master EQ On/Off button is lit, this indicates that the Master EQ section is now “on.”

The HI & LOW EQ’s are shelving type filters, and the MID has an adjustable center frequency with a range of approximately 2 octaves up and down centered around approximately 1.4 kHz

	Frequency	Gain (+/-)
<b>HI</b>	~6.6 kHz	15 dB
<b>MID*</b>	~1.4 kHz	15 dB
<b>LOW</b>	123 Hz	15 dB

\* center of range



When the Master EQ is on, the audio signal flows as per the diagram above. When it is off, the signal flows as per the diagram below.



## Volume Slider

This controls the audio output level to external speakers and headphones.

## Mode Buttons



The Mode buttons are located on the right side of the Forte SE front panel. With these buttons you can instantly access the Program, Multi or Global Modes. If you are viewing an edit mode, you will have to press the Exit button before changing modes. On the Program and Multi mode main pages, press the currently selected mode button again to view the Banks page for the currently selected mode.

## Program Button

Pressing the Program button enters Program Mode (described in further detail in [Ch. 6 Program Mode](#)). In Program Mode, you can select and play different sounds (or “Programs”). This button’s LED is illuminated when you are in Program Mode. Program Mode is the default Mode — the Forte SE always boots up in this Mode. In Program mode, press the Program button again to view the Banks page (see [page 6-2](#) for details).

## Multi Button

Pressing the Multi button enters Multi Mode (described in further detail, in [Ch. 10 Multi Mode](#)). In Multi Mode, you can select different configurations of Programs, controller assignments, and MIDI channel assignments. This button’s LED is illuminated when you are in Multi Mode. In Multi mode, press the Multi button again to view the Banks page (see [page 10-2](#) for details).

## Features of the Forte SE

### Navigation

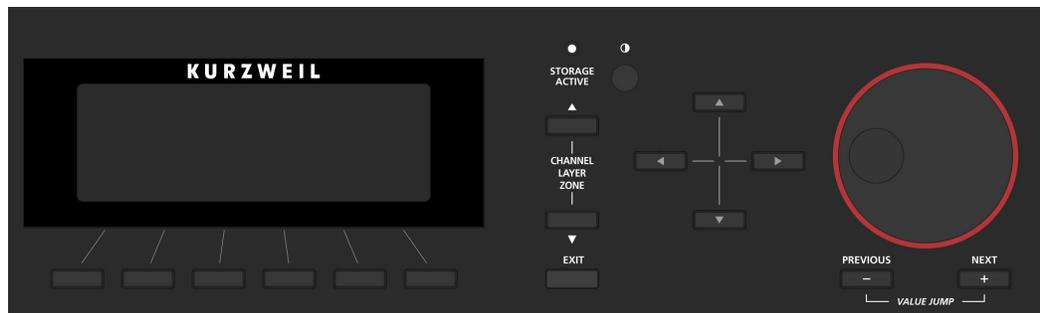
## Global Button

Pressing the Global button enters Global Mode (described in further detail, in [Ch. 12 Global Mode](#)). In Global Mode, you can edit parameters that control the overall behavior of the Forte SE. These parameters include tuning, transposition, velocity and pressure (aftersustain) sensitivity. Additionally, you can save or load user Programs and Multis to and from a computer connected to the Forte SE via USB as well as perform a Reset. This button's LED is illuminated when you are in Global Mode.



**CAUTION: Performing a Reset will erase ALL User Program and User Multis, and will reset Global settings to a factory state.**

## Navigation



The navigation section of the Forte SE front panel includes the LCD display, Previous- & Next+ buttons, Channel/Layer/Zone buttons, and the Alpha Wheel.

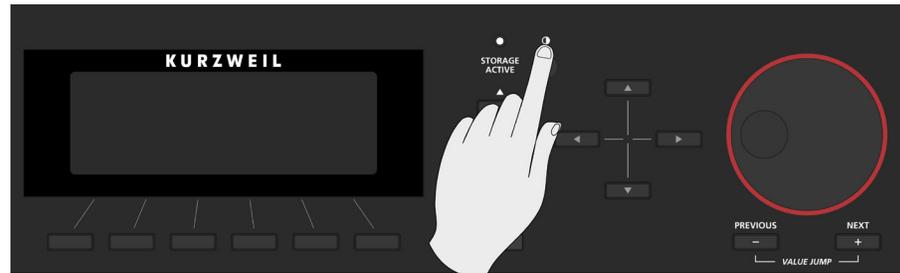
## The LCD Display

The top line of the display always shows the name current Mode and/or page. The bottom line of the display shows the names of any available Soft Buttons for the current page.

On the Program and Multi Mode main pages, the top line of the display shows the MIDI transposition, and Program Mode also shows the current MIDI channel. The middle of the display shows the currently selected Program/Multi ID and name, as well as the name of assignment for the last moved controller. Press the View soft button to switch between Large view and List view.

In other modes the display will change depending on the available parameter for the current mode and page.

## Display Contrast Knob



You can adjust the display contrast by turning this small potentiometer knob.

## Previous (–) and Next (+) Value Buttons

Use the Previous and Next buttons to scroll through the list of values for the currently selected parameter. Pressing both the Previous and Next buttons simultaneously is referred to as the Value Jump double button press. Depending on the selected parameter, Value Jump can select the next Category default Program/Multi, jump to commonly used values, and reset parameters to default values. For more information, see [Value Jump on page 3-14](#).

## Soft Buttons

These buttons immediately below the display change their functions depending upon which screen is being displayed. The functions of the soft buttons on each screen are described in the bottom row of the display.

## Navigation Buttons

The Navigation buttons move the cursor in the LCD display and allow you to select the current parameter to be edited.

## Channel/Layer/Zone Buttons

Use the Channel/Layer/Zone buttons to change the current MIDI Channel in Program mode, the current Layer in Program Edit mode, or the current Zone in Multi Edit mode.

## Alpha Wheel

Use the Alpha Wheel to scroll through the list of values for the currently selected parameter—turning the Alpha Wheel counter-clockwise will select the previous value and turning the Alpha Wheel clockwise will select the next value. Turn the Alpha Wheel slowly to change the value by one increment or turn it quickly to jump several increments.

# The Edit Button



In Program or Multi Mode, press the Edit button to enter the Program or Multi Editor for the currently selected Program or Multi.

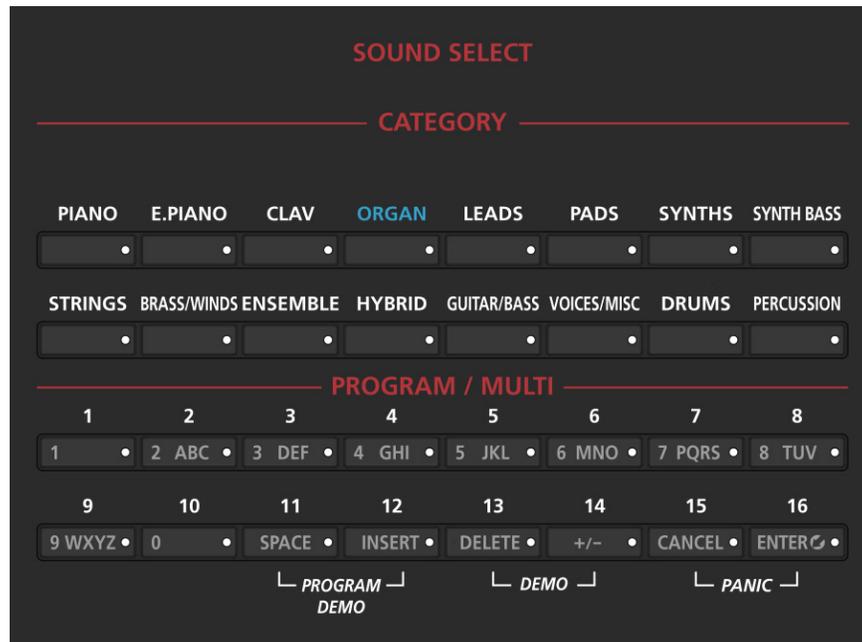
In the Program Editor, press the Edit button to enter an editor for the currently selected Effects Chain or FX Algorithm; the Arpeggiator Shift Pattern, Velocity Pattern, or Duration Pattern; and Keymap, Sample, or Algorithm parameters. To change the name of a Program parameter assignment, select a parameter on the EDIT:Prog Parameters page and press the Edit button.

In the Program Editor, the Edit button can also be used as a shortcut for viewing modulation sources. For example, if a parameter on the DSP Mod page has Src1 set to LFO1, select the Src1 field and press the Edit button to jump to the LFO1 page. This also works for sources set to an ASR, FUN, Envelope, or physical controller assigned on the Prog Parameters page. Naturally, you can find every page in the current editor by using the soft buttons, but often it's easier to use the Edit button shortcut.

# The Save Button

The Save button is located beneath the “Save” label on the left side of the LCD screen. In Program Mode, the Save button's LED lights up when you have made changes to the current Program either by moving controllers or using Program Edit mode. Pressing the Save button saves the current position of the sliders, switches and wheels as a User Program.

# Sound Select



The Sound Select section allows you to quickly and easily get access to sounds in either Program or Multi Modes. Select the Category of sound you want, then via the Program/Multi buttons select any of the 16 sounds in that Category.

## CATEGORY

In Program Mode, the Category buttons allow you to Select and browse Programs in 16 categories of instruments. In Multi Mode, the Category buttons allow you to navigate through this list of Multis in groups of 16 Multis at a time (Multis are not categorized by instrument type).

## PROGRAM / MULTI

When a Category has been selected in Program or Multi Mode, you can select any of the 16 sounds of that Category. The Program/Multi buttons are numbered from 1 to 16 to make the selection easy.

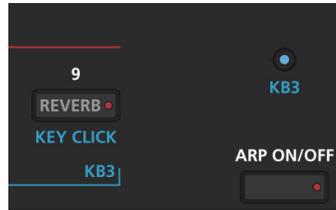
The white print on each of these buttons indicates their secondary alphanumeric functions when used for data entry.

## Features of the Forte SE

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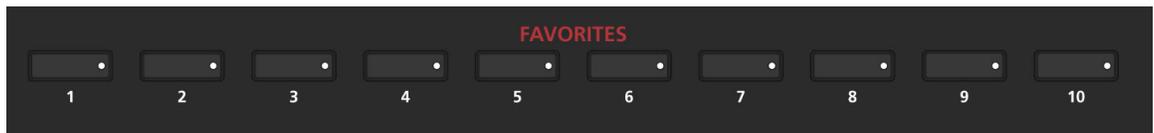
### Double Button Presses

#### KB3 LED



The KB3 LED is on the right side of the Assignable Switches. If the currently selected Program is a KB3 program, the KB3 button's LED is lit. This indicates that the front panel KB3 controls (printed in blue) are active.

#### FAVORITES BUTTONS



The Favorites buttons can be programmed to immediately take you to your favorite Programs and Multis. To assign the currently selected Program or Multi to a Favorites button, press and hold the desired Favorites button for a few seconds until the display indicates that the favorite has been saved.

## Double Button Presses

Several pairs of the buttons on the Forte SE have timesaving secondary functions when pressed simultaneously—think of them as keyboard shortcuts. For convenience of reference, descriptions of all of the double-button press functions appear below.

#### Value Jump



In Program Mode, the Value Jump double button press selects the first Program of each Category, as well as the Category Default Program of each Category (if a Category Default Program has been set).

For more information on choosing a new Category Default Program, see [Choosing Category Default Programs on page 6-6](#).

In Multi Mode, the Value Jump double button press selects the first Multi of each Category, as well as the Category Default Multi of each Category (if a Category Default Multi has been set; see [Choosing Category Default Multis on page 10-5](#)).

In Program Edit Mode or Multi Edit Mode, pressing the Value Jump double button press can reset certain parameters to a default value, or jump between multiple useful values.

## Channel Reset

In Program Mode, a simultaneous double press of the Channel/Layer/Zone ▲ and ▼ buttons will select MIDI channel 1.

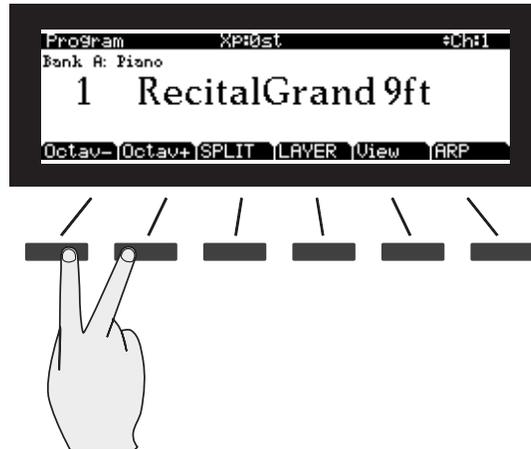


## Features of the Forte SE

### Double Button Presses

## Reset Transposition

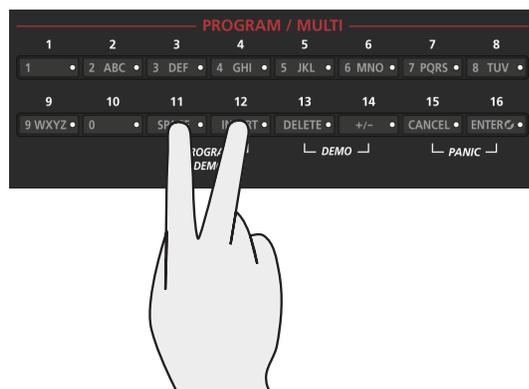
Pressing both Transpose + and Transpose - , or Octave + and Octave - (Soft Buttons) simultaneously will restore the current Program or Multi to having no transposition.



## Program Demo

In Program Mode only, pressing the 11 & 12 Program/Multi buttons performs the Program Demo Function. The Program Demo Function plays the Demo Song for the currently selected Program.

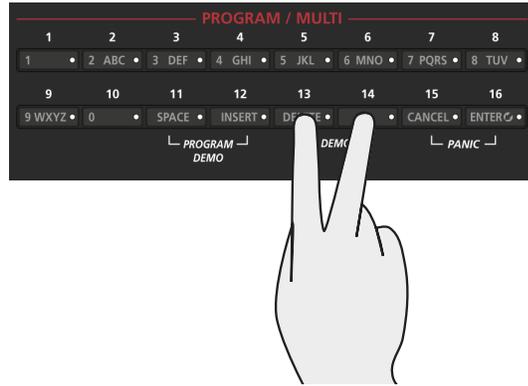
If you press these buttons from any other Mode, the display will give you a message indicating you are not in Program Mode. Press the Cancel soft button to exit the Program Demo.



A label below the 11 & 12 Program/Multi buttons indicates the Program Demo double button press.

## Demo

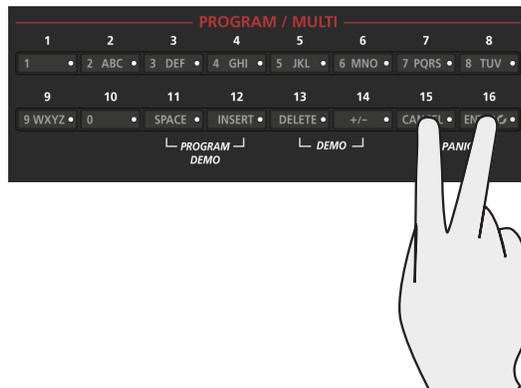
Pressing the 13 & 14 Program/Multi buttons performs the Demo Function (described in further detail in [Demo on page 3-17](#)). With the Demo Function selected, you can hear a demonstration Song that showcases many of the features of Forte SE.



A label below the 13 & 14 Program/Multi buttons indicates the Demo double button press.

## Panic

Pressing the 15 & 16 Program/Multi buttons simultaneously deactivates all sounding notes and control messages and sends an “all notes off” message and an “all controllers off” message on all 16 MIDI channels.



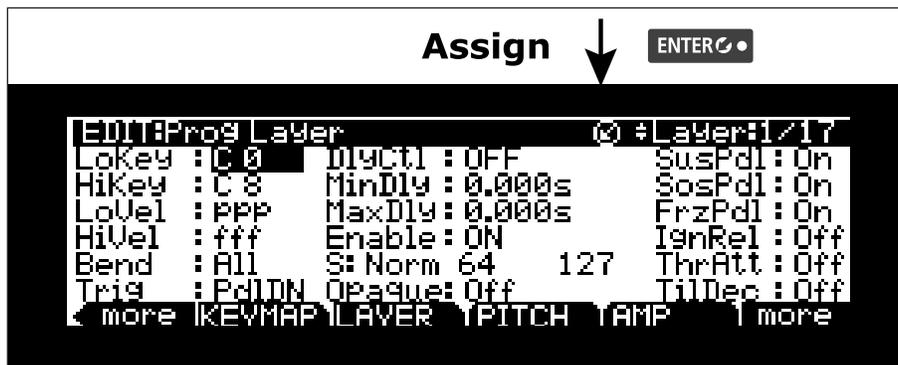
A label below the 15 & 16 Program/Multi buttons indicates the Panic double button press.

## Assign



Assign is the secondary function of the Enter button. You can use the Assign function to quickly select parameters or set values for parameters by holding the Enter button while moving Forte SE controllers (Sliders, Switch buttons, Keys, Mod Wheel, and Pedals). This is useful for quickly assigning physical controllers or setting key ranges in Program Edit Mode or Multi Edit Mode, as well as finding existing controller assignments on the Program Edit Parameters page. For Program Edit details see [Ch. 7 Assign, on page 7-3](#), and for Multi Edit details see [Ch. 11 Assign, on page 11-3](#).

Parameters that can use the Assign function are indicated by showing the Assign symbol in the top right of the display when selected.



# Chapter 4

## Terminology

This chapter provides definitions and descriptions for all of the Forte SE-specific terms used in this manual. Some of the terms are also used by other manufacturers.

Since there are no standard definitions for some of these terms, they are described here to avoid confusion. All of these terms appear with the first letter capitalized as proper nouns in this manual to make it easy to distinguish between the generic term and the Forte SE specific term.

In addition to the terms below, and to avoid confusion, any Forte SE specific feature, connector or control will have the first letter capitalized to distinguish it from the generic term.

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**Program**

A Program is an instrument sound that plays on a MIDI channel. The sound of each Program can be modified by parameters that are assigned to the controllers (Sliders, Switch buttons, Mod Wheel, and Pedals).

See [Program Mode on page 6-1](#) for more information on Programs.

---

**Multi**

A Multi allows up to 8 instrument sounds (Programs) to be played from the keyboard at once. A Multi has up to 8 Zones, each with its own keyboard range, Program, MIDI channel, and controller assignments.

See [Ch. 10 Multi Mode, on page 10-1](#) for more information on Multis.

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<b>KB3</b>	Kurzweil's organ modelling simulation of the original Hammond B3 with Leslie rotary speaker emulation.
<b>Zone</b>	<p>A keyboard region of a Multi that has its own Program, MIDI channel, and controller assignments.</p> <p>See <a href="#">About Zones on page 10-6</a> for more information on Zones.</p>
<b>Split Multi</b>	<p>A Split Multi is a Multi containing at least two Zones that have keyboard ranges that don't overlap. This allows different keyboard ranges to play different instrument sounds.</p> <p>See the <a href="#">Split Function on page 6-11</a> for more information on Splits.</p>
<b>Layer Multi</b>	<p>A Layer Multi is a Multi containing at least two Zones that have overlapping keyboard ranges. This allows a single keyboard range to play multiple instrument sounds.</p> <p>See the <a href="#">Layer Function on page 6-12</a> for more information on Layers.</p>
<b>Forte SE Bank</b>	<p>A Forte SE Bank is a group of 256 Programs or Multis that can be navigated with the Sound Select buttons. On the main Program Mode or Multi Mode select pages, press the current Mode button to view the Bank Select page for the current mode. After selecting a Forte SE Bank on the Bank Select page, you can use the Sound Select buttons to navigate within the Bank.</p>
<b>MIDI Bank</b>	<p>A group of 128 Programs that can be navigated by MIDI compatible software or hardware.</p>

---

<b>Mode</b>	An operating status with a unique group of operations. See <a href="#">Ch. 5 The Operating Modes, on page 5-1</a> for more information on Modes.
<b>Reset</b>	A process that returns Forte SE back to a Factory state. All User Programs & User Multis are erased. All Global Mode parameters are reset back to their default settings as well.
<b>Object</b>	Anything that can be named, saved, deleted, or edited (i.e., a Program or a Multi).
<b>KUF file</b>	KUF (Kurzweil Unified File) file is a special file that has the objects and operating system combined that is used to update the Forte SE.

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# Chapter 5

## The Operating Modes

This chapter will help familiarize you with the operating Modes of the Forte SE.

Each of the five Modes (Program, Program Edit, Multi, Multi Edit, Global) has its own individual chapter.

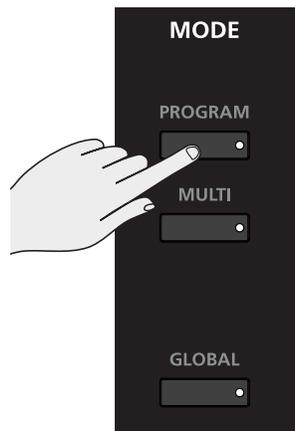
The four Functions (Split, Layer, Program Demo, and Song Demo) are described in this chapter in [Functions on page 5-4](#).

### Program Mode

Program Mode is the default Mode for the Forte SE.

In Program Mode, instrument sounds (Programs) can be selected and played. The sound of each Program can be modified by parameters that are assigned to the controllers (Sliders, Assignable Switch buttons, Zone buttons, Mod Wheel, Pitch Wheel, and Pedals). Modified Programs can be saved as User Programs by pressing the Save button.

To enter Program Mode from another Mode, press the Program Mode button.



For more detailed information on Program Mode, see [Ch. 6 Program Mode](#).

## The Operating Modes

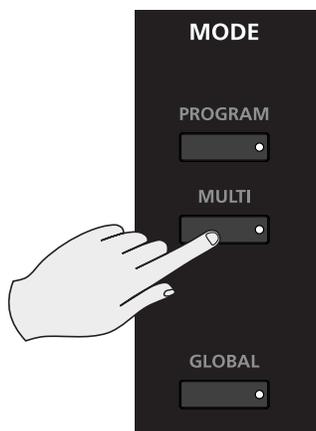
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### Multi Mode

# Multi Mode

Multi Mode allows you to select and play Multis.

A Multi allows up to 8 instrument sounds (Programs) to be played from the keyboard at once. A Multi has up to eight Zones, each with its own keyboard range, Program, MIDI channel, and controller assignments. To enter Multi Mode from another Mode, press the Multi Mode button.



For more detailed information on Multi Mode, see [Ch. 10 Multi Mode](#).

# Global Mode



**CAUTION: THIS MODE CONTAINS CERTAIN OPERATIONS THAT CANNOT BE UNDONE.** Read [About Global Mode on page 12-1](#) for info.

Global Mode allows you to edit global parameters and MIDI settings, load and save User Programs and Multis, use diagnostic tools, view system information, and restore the Forte SE back to factory default settings. To enter Global Mode from another Mode, press the Global Mode button.



## The Operating Modes

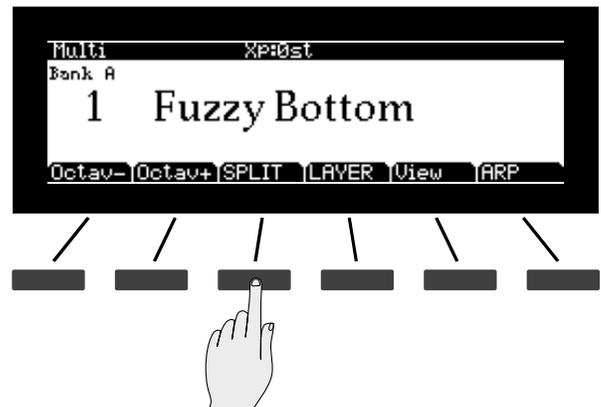
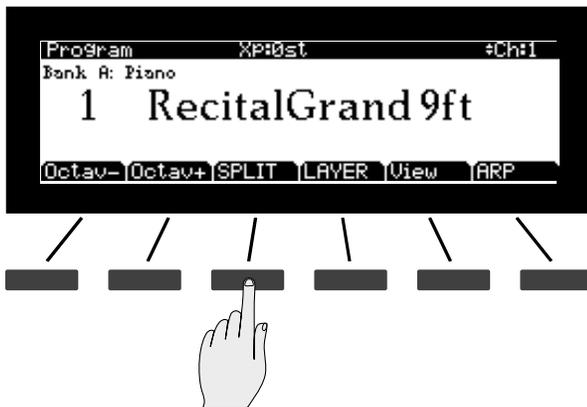
### Functions

# Functions

In addition to the four primary Modes, there are five Functions. Some Functions are available through dedicated buttons, others are available as Soft buttons accessed via the buttons under the LCD screen. These Functions are not as complex as the primary Modes and are described below.

## The Split Function

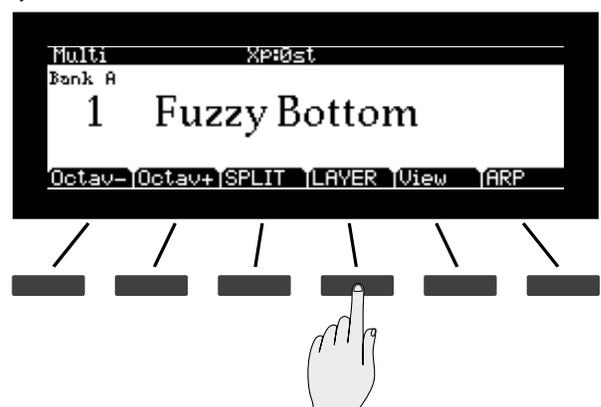
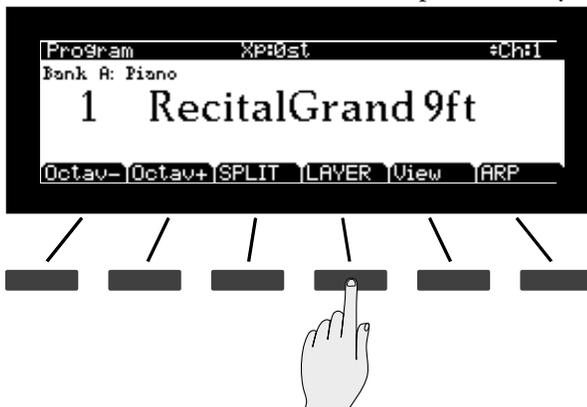
Pressing the Split Soft button while in either Program or Multi Mode performs the Split Function. The Split Function allows you to split Programs and Multis such that keys in one region of the keyboard produce different sounds than another region.



Creating Splits in Program Mode is slightly different from creating Splits in Multi Mode. See the [Split Function on page 6-11](#) (for Splits in Program Mode) and the [Split Function on page 10-10](#) (for Splits in Multi Mode).

## The Layer Function

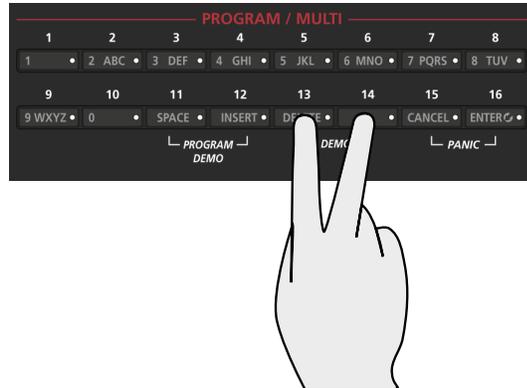
Pressing the Layer Soft button while in either Program or Multi Mode performs the Layer Function. The Layer Function allows you to layer Programs and Multis such that more than one sound can be produced by striking one key.



Creating Layers in Program Mode is slightly different from creating Layers in Multi Mode. See the [Layer Function on page 6-12](#) (for Layers in Program Mode) and the [page 5-5](#) (for Layers in Multi Mode).

## Demo Function

Pressing the 13 & 14 Program/Multi buttons simultaneously performs the Demo Function.



Use the Demo Function to play built-in Demo Songs designed to demonstrate the capabilities of the Forte SE.

While using the Demo Function, the top line of the display shows the text "Demo", the Demo number, and the total number of available Demos. The center of the display shows the ID number and name of selected Demo Song. Use the Alpha Wheel, Value buttons or the Channel/Layer/Zone ▲ or ▼ buttons to select another demo from the list. The 13 & 14 Program/Multi button LEDs blink when using the Demo Function.

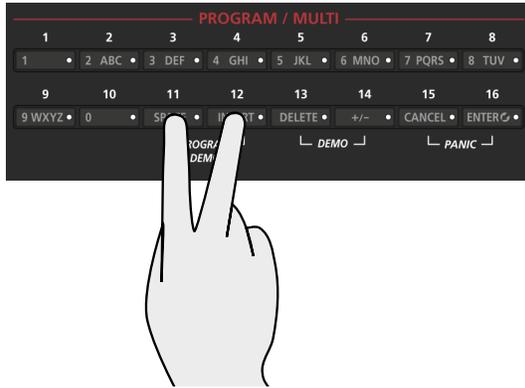
Press the Cancel Soft button to exit the Demo Function.

## The Operating Modes

### Program Edit Mode

## Program Demo Function

Pressing the 11 & 12 Program/Multi buttons simultaneously performs the Program Demo Function.



In Program Mode, use the Program Demo Function to play a built-in Demo Song that demonstrates the selected Program. The 11 & 12 Program/Multi button LEDs blink when using the Program Demo Function.

Press the Cancel soft button to exit the Program Demo Function.

## Program Edit Mode

Program Edit Mode allows you to edit pre-existing Programs. To enter Program Edit Mode press the Edit button while in Program Mode.



For more detailed information on Program Edit Mode, see [Ch. 7 Program Edit Mode](#).

## Multi Edit Mode

Multi Edit Mode allows you to edit pre-existing Multis. To enter Multi Edit Mode press the Edit button while in Multi Mode.



For more detailed information on Multi Edit Mode, see [Ch. 11 Multi Edit Mode](#).

# Chapter 6

## Program Mode

This chapter will help familiarize you with the features of Program Mode.

Programs are essentially the different sounds of a MIDI instrument—they are preset instrument sounds equivalent to the “patches,” “presets,” or “voices” that you find on other keyboards.

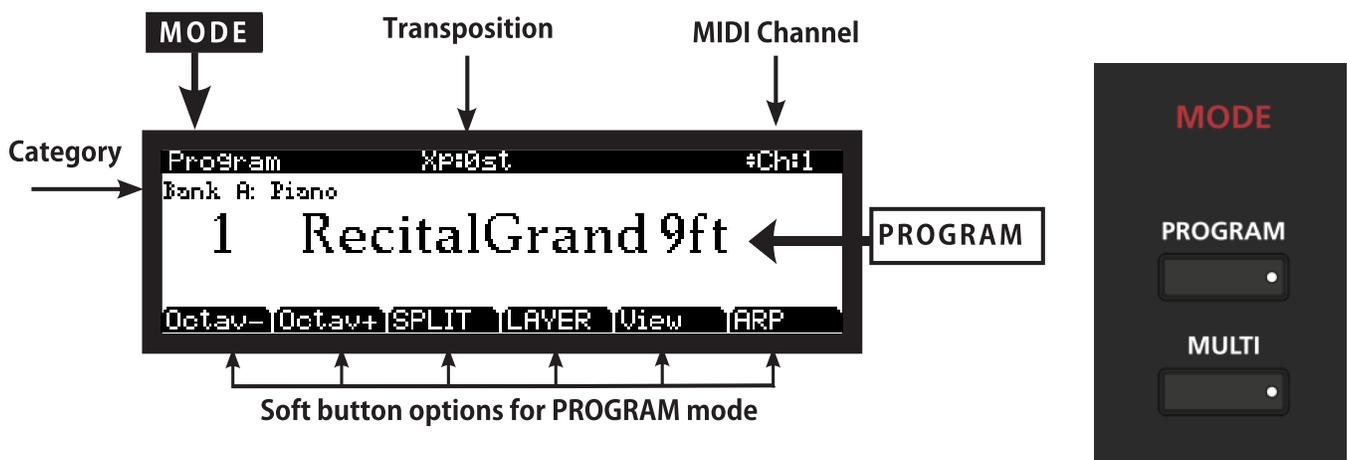
### About Program Mode

Program Mode is the default Mode of the Forte SE. It will always boot up in this Mode.

To enter Program Mode from another Mode, press the Program Mode button. While you are in Program Mode, the Program button’s LED is illuminated.

The Forte SE starts up with Program 1 selected, or the Program that was selected the last time Global mode was exited.

If you enter Program Mode from another Mode, the current Program will be the last selected Program on the current MIDI Channel.



# Selecting Programs

The Forte SE can provide up to eight Program Banks (Factory Banks A-D and User Banks A-D). Factory Banks B-D are reserved for future Forte SE program updates. When announced, free updates can be downloaded at [kurzweil.com](http://kurzweil.com).

Each Forte SE Bank has space for 256 Programs, for a total of 2048 possible programs. Each Bank is split into 16 categories of 16 Programs each.

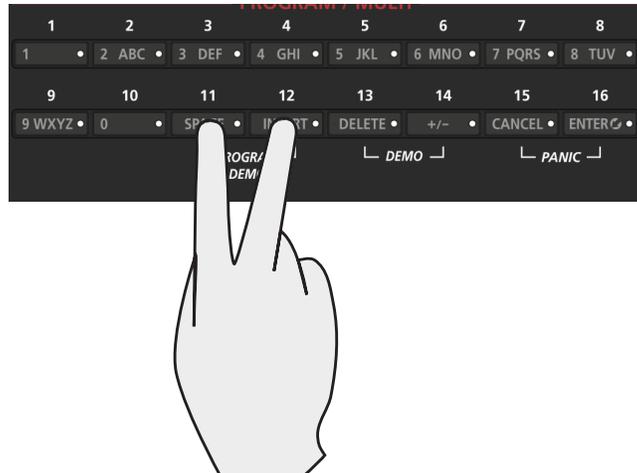
When you are in Program Mode, there are a few ways to select Programs.

- To select a Program in the current Category, press the relevant Program/Multi button.
- To select a Program in a different Category, press the Category button of choice and then a Program/Multi button to select from the 16 Programs in the Category.
- To select the default Program from a Category, simply press the relevant Category button.
- Choosing a Program in the User Categories, while in the factory Categories, or choosing a Program in a factory Category while in a User Category, requires pressing the User button, followed by a Category button and then a Program/Multi button.
- The Alpha Wheel and the Next and Previous buttons allow you to advance through the Programs one at a time. When you reach the end of the Category, advancing further will go to the next Category.
- If a Program is assigned to a Favorite button, pressing that button will go directly to the assigned Program.
- To select a program in a different Forte SE Bank, press the Program mode button while in Program Mode to view the Select Bank page. On the Select Bank page use the navigation buttons to select a Bank and press the OK soft button, then use any of the methods above to select a program in that Bank.
- When the Global Mode User Type parameter is set to Advanced, and the Global Mode Sound Sel parameter is set to ID number, programs can be selected by typing in an ID number using the numbers printed on the Program/Multi buttons, followed by pressing the Enter button.

For a full list of factory Programs, see [Appendix](#).

## Program Demo

If you want to quickly hear what a Program sounds like, try the Program Demo Function.



In Program Mode only, pressing the 11 & 12 Program/Multi buttons performs the Program Demo Function. The Program Demo Function plays a Demo Song for the currently selected Program.



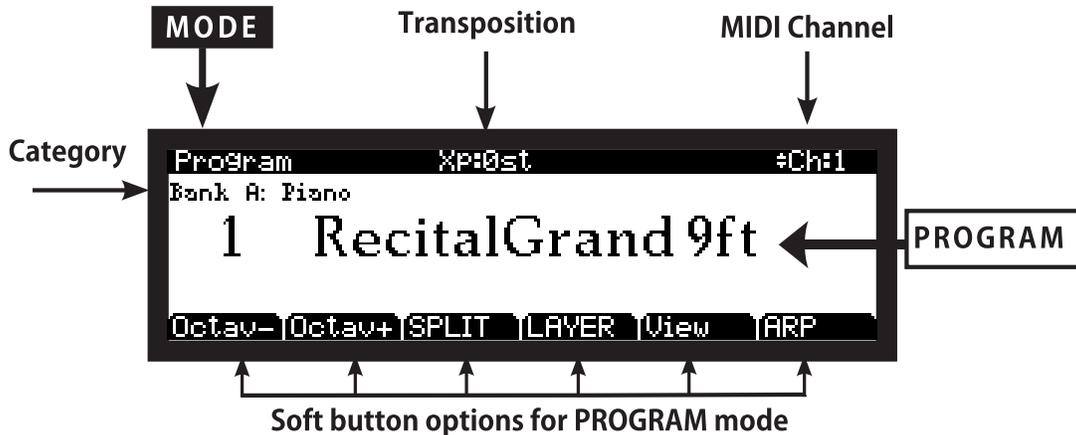
Press the Cancel soft button to exit Program Demo.

## Program Mode

### Selecting Programs

## The Display

In Program Mode, the top line of the display shows the current Mode, MIDI transposition, and MIDI Channel. The Program ID number and name are displayed in the center of the display. The current Bank and Category are displayed above the program ID and name. When a controller is moved, the controller assignment and value is briefly displayed below the program ID and name. The Soft buttons are displayed along the bottom line.



## Changing View

The View soft button will toggle the display and allow you to see available Programs as a list. Buttons and controllers will behave as usual. When a controller is moved, the controller name, assignment and value is briefly displayed in the box at left of the screen. KB3 information is also shown if a KB3 program is selected in any MIDI channel:



## Pop Up Messages

Some actions cause the display to show pop up messages. After a short time the display returns to show the current Program.

## Alpha Wheel & Previous (-) and Next (+) Value Buttons

Use the Alpha Wheel or the Previous (-) and Next (+) buttons, to the right of the display below the Alpha Wheel, to change the current Program. Turning the Alpha Wheel counter-clockwise or pressing the Previous button will select the previous Program and turning the Alpha Wheel clockwise or pressing the Next button will select the next Program. When the highest or lowest Program is reached, the list will wrap back to the last or first Program respectively.

When scrolling through the Program list, the list moves through each Category, both factory and User.



## Value Jump Buttons

In Program Mode, the Value Jump double button press selects the first Program of each Category, as well as the Category Default Program of each Category (if a Category Default Program has been set).

For more information on choosing a new Category Default Program for each Category, see [Choosing Category Default Programs on page 6-6](#) (for Program Mode) or [Choosing Category Default Multis on page 10-5](#) (for Multi Mode).

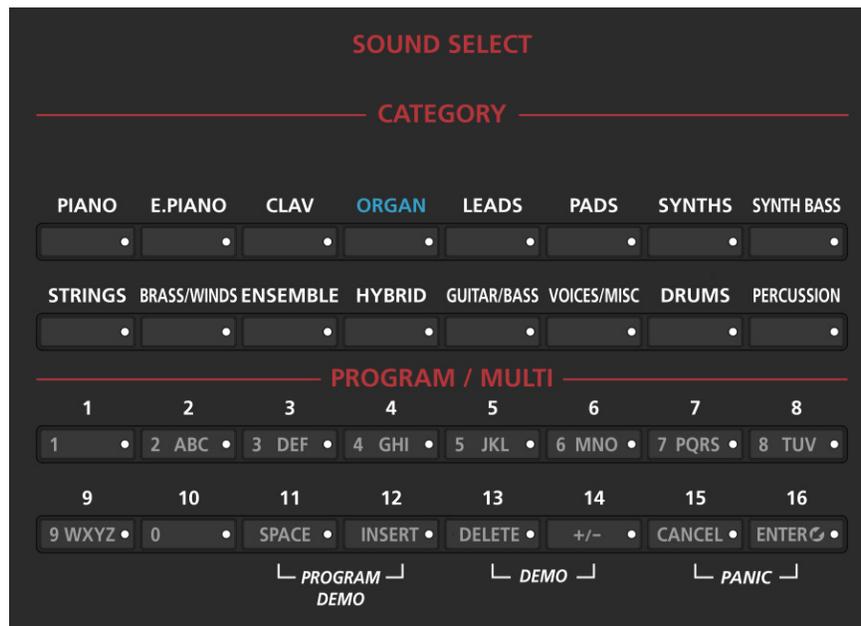
If the User button is selected, Value Jump works the same way.

## Program Mode

### Selecting Programs

## Category & Program/Multi Buttons

The Category buttons allow you to select Programs by instrument type simply by pressing a button. You can select one Category button at a time and the current Category button's LED is lit.



Each Category contains 16 Programs of a single instrument type. First select the Category you want, then select one of the 16 Programs by pressing any of the Program/Multi buttons numbered from 1 to 16.

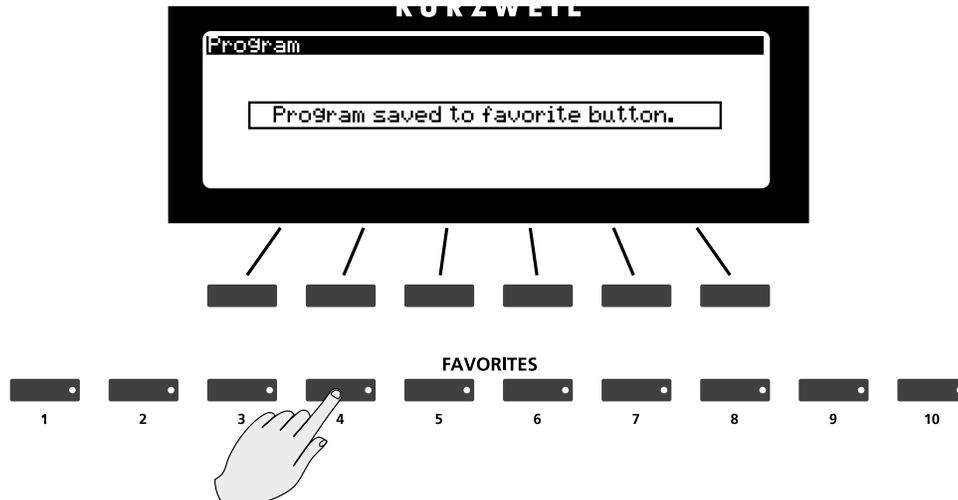
You can also press one of the instrument Category buttons, then turn the Alpha Wheel clockwise or press the Next button to advance to the next Program in the Category. When you reach the end of a Category, the Forte SE automatically advances to the beginning of the next Category. This will also work in reverse if you turn the Alpha Wheel counter-clockwise or press the Previous button. In this case when you reach the beginning of a Category, Forte SE automatically advances to the end of the previous Category. The 16 User Categories come after the factory ones, but only non-empty programs can be selected this way.

## Choosing Category Default Programs

You can choose a "Category default program" from each Category that will be recalled each time you press that Category's button. To save a Category default program, first select a Program using any Program select method (Alpha wheel, Previous-/Next+ buttons, Category buttons, Program/Multi buttons). A Category button for the current Category will have a lit LED. Next, press and hold the currently lit Category button until the display shows the message "Category default program saved." The Category default program has now been successfully saved.

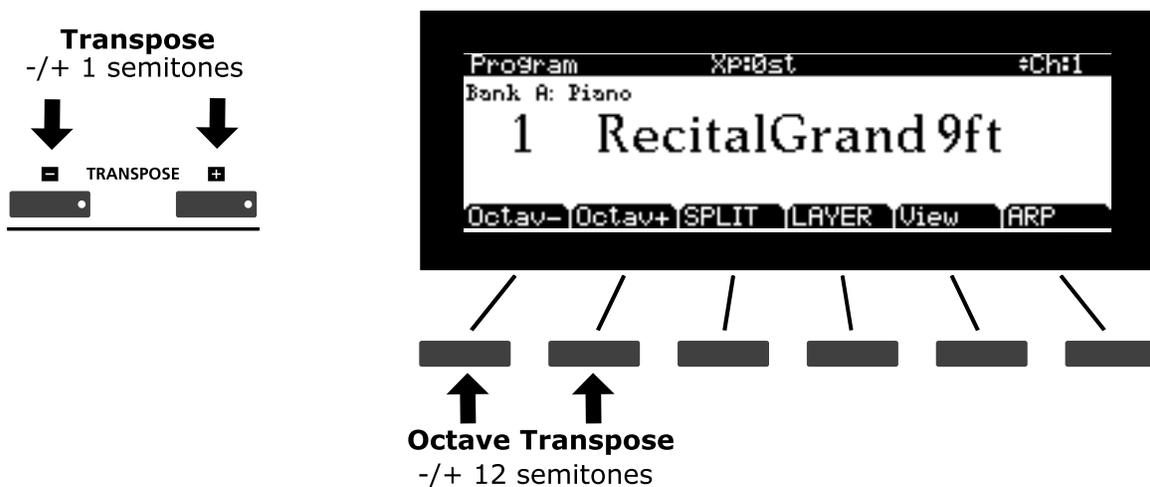
## Choosing Favorites

You can save ten Favorite Programs (or Multis) from any Category to the ten Favorite buttons beneath the display. Once saved, these favorite Programs can be recalled from any Mode with a single button press. To save the currently selected Program to a Favorite button, press and hold a Favorite button until the display shows the message “Favorite (#) saved.”



## Transposition

The Transpose buttons can be used to change the tuning of notes played on the Forte SE keyboard in semitones (ST), also known as half steps. This is a convenient way to change the key of a song without learning to play it in a different key. The Transpose buttons are located to the left of the keyboard, above the Pitch and Mod Wheels. The Transpose buttons also transpose MIDI notes sent to the USB and MIDI Out ports.



## Program Mode

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### Parameter Assignments

Press the Transpose - or + buttons to transpose the Forte SE keyboard down or up by one semitone. The top line of the display shows the current transposition value. Pressing both Transpose - and + simultaneously will reset the transposition to 0. To transpose up and down by octave intervals (12 ST), press the Octav- and Octav+ soft buttons underneath the display.

The maximum transposition value possible is  $\pm 36$  semitones.

The LEDs of the Transpose buttons indicate whether the current Program is transposed up (Transpose + LED is lit) or transposed down (Transpose - LED is lit). When there is no transposition, neither Transpose button is lit.

## Parameter Assignments

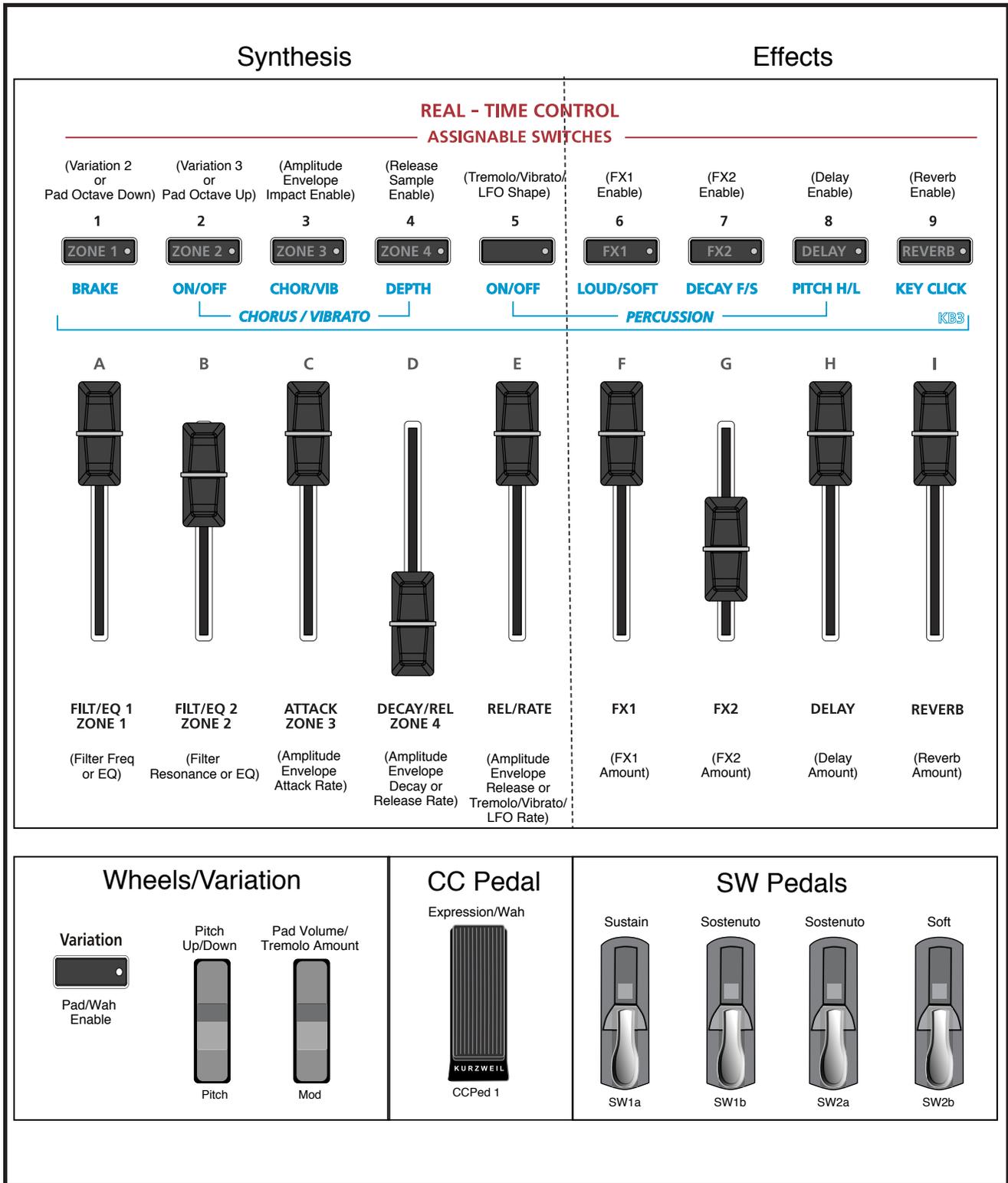


In Program Mode, each Program has factory-set Program and Effect parameters assigned to physical controllers (Sliders, Switch buttons, Mod Wheel, and Pedals). A parameter assignment can modify an instrument sound during a performance to add variation or expression. Moving a controller changes the value of the parameter. Any time you do this, the display shows the assigned parameter and value.

Front panel labels show the typical controller assignments, but these may vary with different Programs. The Variation button often enables an effect or additional Program layer.

If you make changes to the current Program using any of the controllers, the Save button's LED lights to indicate that a change has been made to that Program. For more information on the Save button, see [Save User Programs on page 6-14](#). See [Ch. 7 Program Edit Mode](#) for details on changing parameter controller assignments.

# Controller Conventions



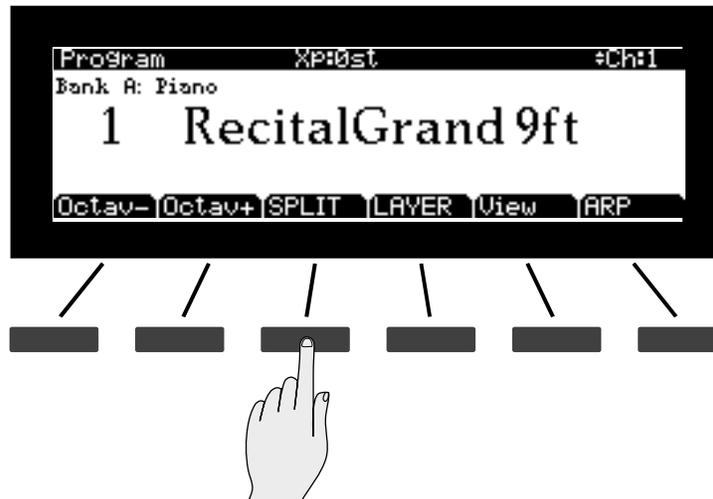
## Program Mode

### The Split and Layer Functions

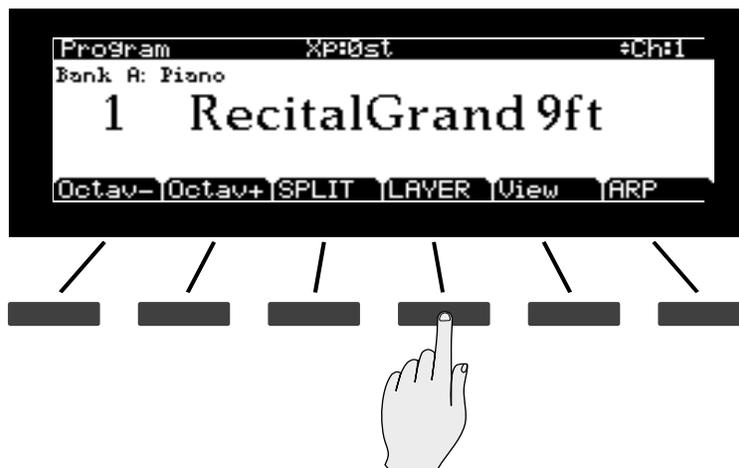
# The Split and Layer Functions

The soft buttons Split and Layer perform slightly different functions, but offer identical parameters.

The Split Function allows you to quickly create a Multi such that keys in one region of the keyboard produce different sounds than another region.



The Layer Function allows you to layer Programs and Multis such that more than one sound can be produced by striking one key.

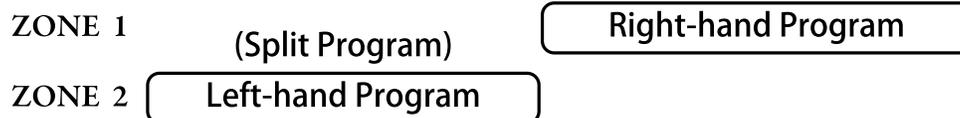
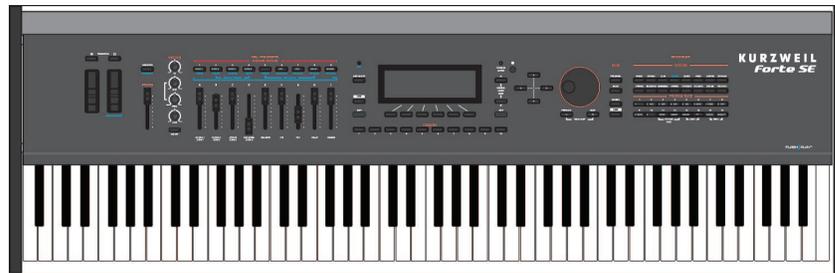


This is convenient, as you do not need to use Multi Edit Mode to configure Zone key ranges, Programs, and volumes. You can simply hit the soft button while in Program Mode to select the Function. You can then configure additional Zones, each of which may have its own Program and controller assignments. The result may be saved as a new Multi (see [Ch. 10 Multi Mode](#), for more information on Multis).

## Split Function

When you create a Split in Program Mode, you are creating a Multi with two active Zones.

The Program you were using in Program Mode is used in the right hand of the Split as the Program for Zone 1. After this you can choose a Program that will be used in the left hand of the Split as the Program for Zone 2.



The default Program parameter for a Split is 210 P-Bass, and the default keyboard range is C1 - E3. These may be changed, as described below.

```

EDIT:Multi SPLIT/Layer          #Zone:2/4
Zn Stat  Program                Low Hi  Vol Pan
1 Active 1 RecitalGrand 9f F 3  G 9  127 None
2 Active 201 P-Bass             C -1 E 3  127 None
3 Muted
4 Muted
                                CANCEL
    
```

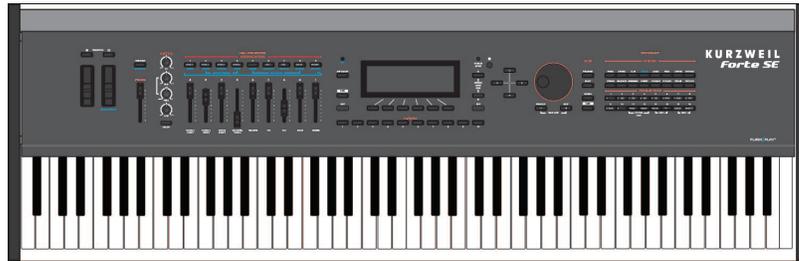
Other parameters that determine the behavior of the Split are described in [“Split/Layer parameters” on page 6-12](#). Use the navigation buttons to access each of the Split/Layer parameters.

## Program Mode

### The Split and Layer Functions

## Layer Function

When you create a Layer in Program Mode, you are also creating a Multi with two active Zones, each using the same keyboard range. The Program you were using in Program Mode is used as the Program for Zone 1. After this you can choose a Program that will be used for Zone 2.



ZONE 1	Program from Program Mode
ZONE 2	Layer Program

The default Program parameter for a Layer is 130 Adagio Strings, and the default keyboard range is C1 - G9. Use the navigation buttons to access each of the Split/Layer parameters.

```
EDIT:Multi Split/Layer          #Zone:2/4
Zn Stat  Program                Low Hi  Vol Pan
1 Active 1 RecitalGrand 9f C -1 G 9 127 None
2 Active 130 Adagio Strings C -1 G 9 127 None
3 Muted
4 Muted
CANCEL
```

Other parameters that determine the behavior of the Multi are described below. Use the navigation buttons to access each of the Split/Layer parameters.

## Split/Layer parameters

### Zn and Stat (Zone and Status)

Selecting Split or Layer makes Zone 2 active. You can continue to add Zones to the Multi by activating additional Zones with the Stat parameter or the front panel Zone buttons. The Forte SE will display a message if you have already reached the maximum number of active Zones (see [Ch. 10 Multi Mode](#), for more information on Multis).

### Program (Split or Layer Program)

The default Program will appear in Zone 2. Choose a different Program using the Category and Program/Multi buttons, the Alpha Wheel, or the Previous-/Next+ buttons.

### Low/Hi (Keyboard range)

The Low and Hi parameters set the keyboard boundaries for each Zone. Using Split sets the boundary between Zone 1 and Zone 2 to E3. Using Layer sets the Zone 2 keyboard range to C1 - G9.

The low and high keys for each Zone can be selected using Assign  (holding down the Enter button and then striking the desired key on the keyboard). Keys can also be selected by using the Alpha Wheel or the Previous-/Next+ buttons.

### Vol (Zone Volume)

The VOL parameter determines the volumes of each Zone. By default, VOL is set to 127, which results in each Zone having the same volume. To change volumes use the Alpha Wheel or Previous-/Next+ buttons. A Zone volume can be set to any number between 0 and 127.

### Pan (Zone Pan)

To change the panning of a Zone (left/right stereo placement), use the navigation buttons to select the Pan parameter for one of the Zones. To set a Pan value, use the Alpha Wheel, the Previous-/Next+ buttons, or use the keypad function of the Category buttons to type a pan value (0-127) followed by the Enter button. A value of 0 is full left, 64 is center, and 127 is full right. Other values will move the stereo placement in between these positions. A value of “None” will use the last pan value used by the Zone’s MIDI channel. A value of “None” can be entered by scrolling below 0, or by using the keypad function of the Category buttons to type negative 1 by pressing the small +/- button and then the 1 button, followed by the Enter button.

### Saving a Split or Layer

After setting the Split/Layer parameters, the Split can be saved as a Multi so that it can easily be recalled in Multi Mode. Press the Save button to the left of the display to begin the saving process. See Save User Programs below for more details. Once you have saved your Split or Layer as a Multi, you can edit controller assignments and other Multi parameters in Multi Edit Mode (see [Ch. 11 Selecting Parameters](#) for details).

## The Arp Pages

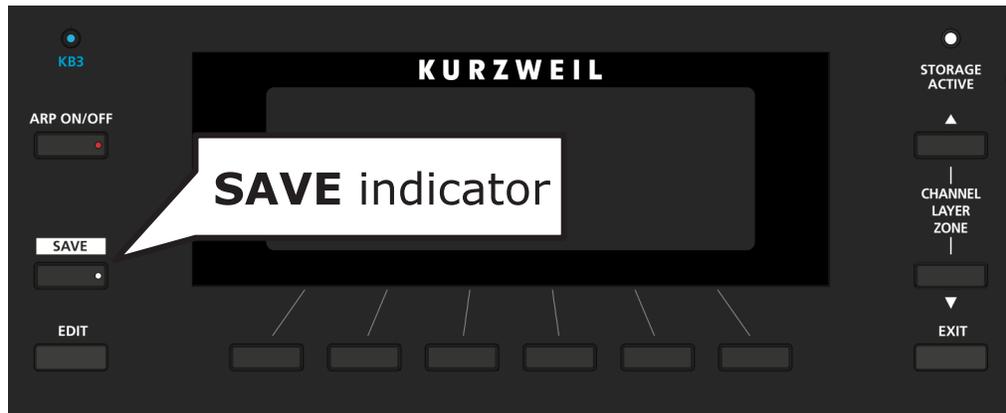
Selecting the Arp soft button will call up the Arpeggiator settings on the ARP1page, and put you into Program Edit Mode. See [The Arpeggiator Function on page 7-55](#) for details on using the Arpeggiator function.

## Program Mode

### Save User Programs

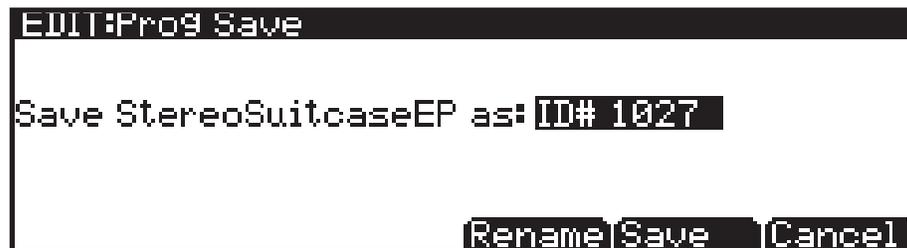
# Save User Programs

If you make changes to the current Program using any of the controllers, the Save button's LED lights to indicate that a change has been made to that Program.



To save the changes you've made, press the Save button once to use the Save Dialog. This will allow you to specify the ID number to save to, and to rename the Program if you wish. When viewing the Save Dialog, you can quickly save the Program to the displayed ID number by pressing the Save button again.

## Changing ID Numbers



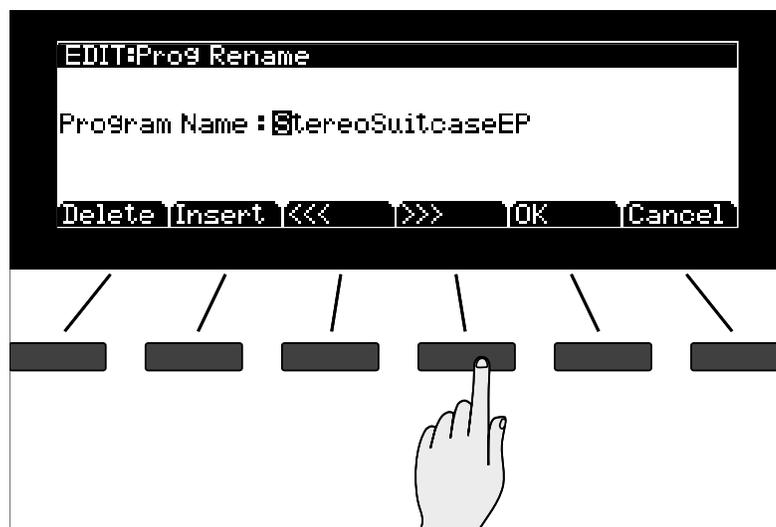
The display shows the first available ID number and the current Program name. You can save Programs with ID numbers from 1024 to 2047. If you are saving a Program that has not been previously edited, the next available unused ID number will be selected. If you are saving a previously edited User Program, the ID number that the Program was last saved with will be selected. Press the Value Jump double button press (Previous-/Next+) to toggle between selecting the ID number that the Program was last saved with and the next available unused ID number.

To change the ID number, turn the Alpha Wheel or use the Previous-/Next+ buttons to select the new ID number. If you select a previously used ID# the display will show a prompt to allow you to decide whether to replace it.



## Naming a User Program

To rename the Program, first press the Rename soft button. You should see the following in the display:



The display shows the current Program name. Program names can total 16 characters in length. To enter the new Program name you may use the letters and numbers printed on the Program/Multi buttons, or use the Alpha wheel or Previous-/Next+ buttons to cycle through the alphabet.

Press the center soft buttons (<<< and >>>) or the navigation buttons to move the cursor. The Insert soft button will insert a blank space (the selected character and all characters to the right will move one space to the right), and the Delete button will delete the current character (all the characters to the right will move one space to the left).

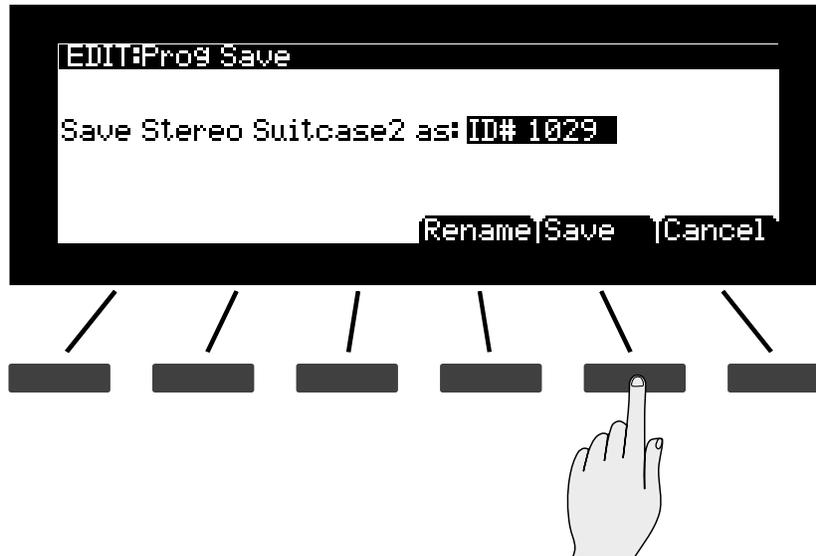
When you are satisfied with your name, press the OK soft button to return to the Save screen.

## Program Mode

### Changing the Transmit MIDI Channel

## Saving a User Program

Press the Save button or Save soft button to complete the saving process, or press the Cancel soft button to exit without saving.



The display will confirm a successful save by displaying a brief message.

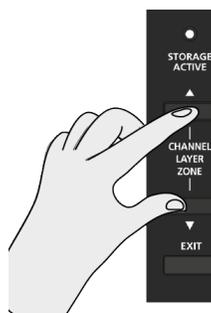
After successfully saving, the Program will be selected in Program Mode in the User Bank. To find the Program again later, make sure to press the User bank button under the Mode buttons.

## Changing the Transmit MIDI Channel

The current MIDI Transmit channel is shown on the right side of the top line of the display. A different Program can be selected for each MIDI Channel. All channels can be triggered simultaneously from an external MIDI sequencer or computer. The Aux FX Chains of the Program on the currently selected MIDI Channel are used for Programs on all Channels.

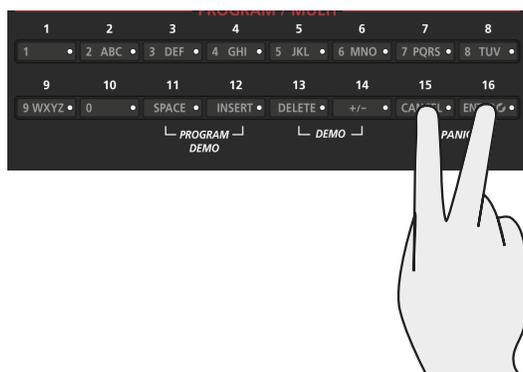


Press the Channel/Layer/Zone ( $\blacktriangle$  or  $\blacktriangledown$ ) buttons to change the MIDI Transmit channel. Pressing both  $\blacktriangle$  and  $\blacktriangledown$  at the same time will reset the current MIDI Transmit channel to 1.



# Panic

Pressing the 15 and 16 Program/Multi buttons simultaneously deactivates all sounding notes and resets controller values by sending an “All Notes Off” message and a “Reset All Controllers” message on all 16 MIDI channels.



# Chapter 7

## Program Edit Mode

This chapter will help familiarize you with the features of Program Edit Mode.



NOTE: Before you read this chapter, be sure to read [Ch. 6 Program Mode](#) for a full description of Programs.

Program Edit Mode allows you to edit and customize Programs. Any Program can be edited in Program Edit Mode and saved to one of the 1024 User locations.

To enter Program Edit Mode, first press the Program Mode button to enter Program Mode, then press the EDIT button at the bottom left of the display.

Once you are in Program Edit Mode, press the soft buttons at the bottom of the screen to navigate to each of the Program Edit Mode pages. See the following sections for details on navigating and changing parameters. All parameters apply only to the currently selected Program.

## Differences Between Regular and Advanced User Type

When the Global Mode User Type parameter is set to Regular, you can access a Program's parameter controller assignments, effects, arpeggiator, and common settings. When the Global Mode User Type parameter is set to Advanced, you can access the Regular User Type pages as well as additional VAST or KB3 pages. The User Type parameter can be selected in Global Mode on the Global Main page (see [User Type on page 12-3](#) for details).

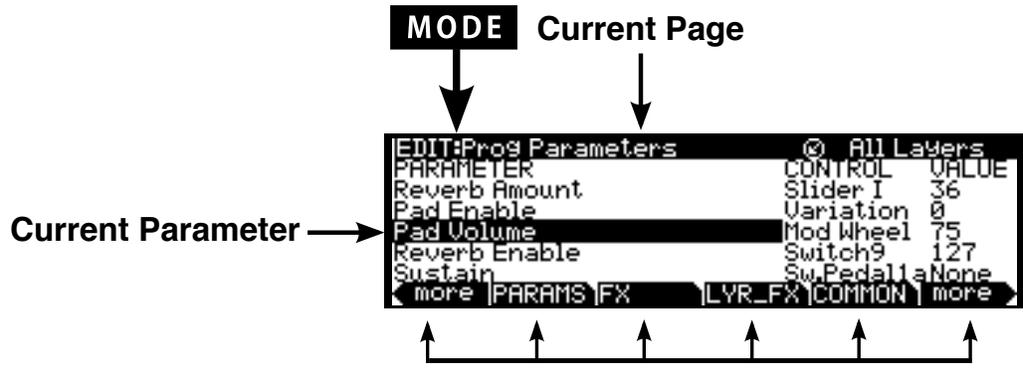


Note: This chapter describes how Program Edit Mode works when the Global Mode User Type parameter is set to Advanced. Program Edit Mode works the same way when the Global Mode User Type parameter is set to Regular, except that fewer pages are shown, and some settings will be hidden when scrolling through Arpeggiator settings.

# Selecting Parameters

## The Display

In Program Edit Mode, the top line of the display shows the current Mode, Page, and Layer.



Soft button options for Program Edit mode

## Alpha Wheel & Previous (-) and Next (+) Value Buttons

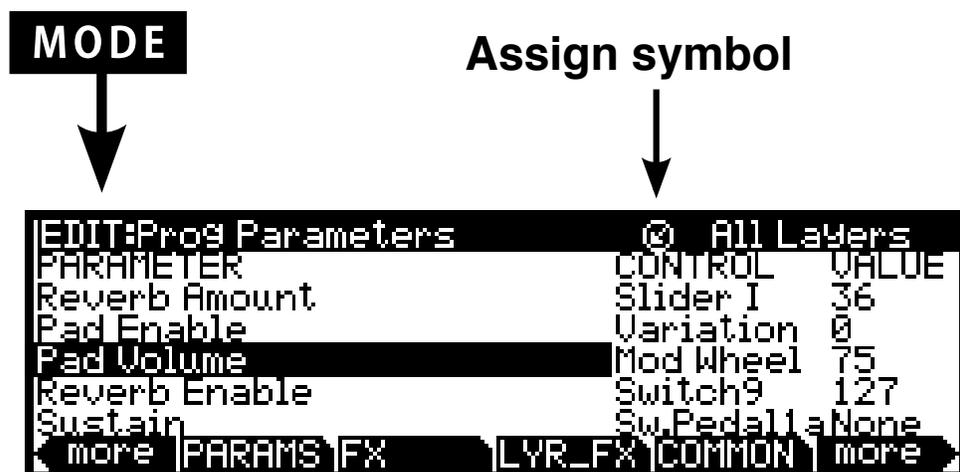
Use the Alpha Wheel or the Value buttons to the right of the display below the Alpha Wheel, to change the selected parameter value. Turning the Alpha Wheel counter-clockwise or pressing the Previous- button will select the previous value and turning the Alpha Wheel clockwise or pressing the Next+ button will select the next value.

## Assign

Assign is the secondary function of the Enter button. You can use the Assign function to quickly select parameters or set values for parameters by holding the Enter button while moving Forte SE controllers (Sliders, Switch buttons, Keys, Mod Wheel, and Pedals).



Parameters that can use the Assign function are indicated by showing the Assign symbol in the top right corner of the display when selected.



Pressing a key, switch, or moving a controller while holding down the Enter button will perform Assign in the following cases.

### Enter + Controller

On the Program Edit Mode Parameters page, select any parameter in the Parameter column, hold the Enter button and move a controller (a Slider, Switch button, Mod Wheel or Pedal). Doing this will jump to selecting the parameter that is assigned to the moved controller (if a parameter is assigned to that controller).

On the Program Edit Mode Parameters page, select any parameter in the Control column, hold the Enter button and move a controller (a Slider, Switch button, Mod Wheel or Pedal). Doing this will assign the selected parameter to be controlled by the moved controller.

On other Program Edit Mode pages, the assign symbol appears whenever the selected parameter can use a MIDI controller as a control source. When the assign symbol appears, hold the Enter button and move a controller (a Slider, Switch button, Mod Wheel or Pedal). Doing this will assign the selected parameter to be controlled by the moved controller.

# VAST and KB3 Programs

It is important to understand the difference between VAST programs and KB3 programs.

VAST programs contain up to 32 layers, each of which contains a keymap or KVA oscillator. Keymaps consists of a number of samples assigned to a particular keyboard range. KVA oscillators use powerful DSP (digital signal processors) to generate a range of simple and complex waveforms. See [Editing VAST Programs With KVA Oscillators on page 7-71](#)) for more details. See [VAST Program Structure](#) below for details on VAST programs.

KB3 programs use a much different architecture. There are no layers or algorithms, just a set of oscillators (designed to emulate the tonewheels in a Hammond Organ) that start running as soon as you select a KB3 program. See [KB3 Program Structure](#) for details on KB3 programs.

## VAST Program Structure

You might want to take a look at [Figure 7-1](#) on page 7-9, which depicts the hierarchy of a VAST program, from individual samples all the way up to Multis, which can contain up to 16 programs.

Every VAST program contains at least one layer. A layer consists of a keymap and an algorithm for processing the samples contained in the keymap. Each sample is a separate digital recording of some kind of sound: musical, vocal, industrial, any sound at all. Individual samples are assigned to specific key ranges (from A 2 to D 3, for example), and are also assigned to be triggered at specific attack velocities. These assignments constitute the keymap.

When you trigger a note, the Forte SE looks to the keymap of each layer of the currently active VAST program(s) to determine which samples to play. The sound engine then fetches the requested samples and generates a digital signal representing the sound of the samples. This signal first passes through the DSP functions that make up the algorithm. It then passes through the Forte SE's effects processor, and finally appears—with some level of effects applied to it—at one or more of the audio outputs.

The layer is the VAST program's basic unit of polyphony, that is, each layer constitutes one of the 128 voice channels the Forte SE can activate at any time. If you have a program that consists of two layers covering the note range from A 0 to C 8, each key you strike triggers two voice channels.



Note: One exception to this structure is when using a KVA oscillator, the sound source for that layer is not derived from a keymap, but is generated at the algorithm stage (though keymap information is still used to set key range and maximum amplitude). After this, the structure is the same as described above. See [Editing VAST Programs With KVA Oscillators on page 7-71](#) for more details.

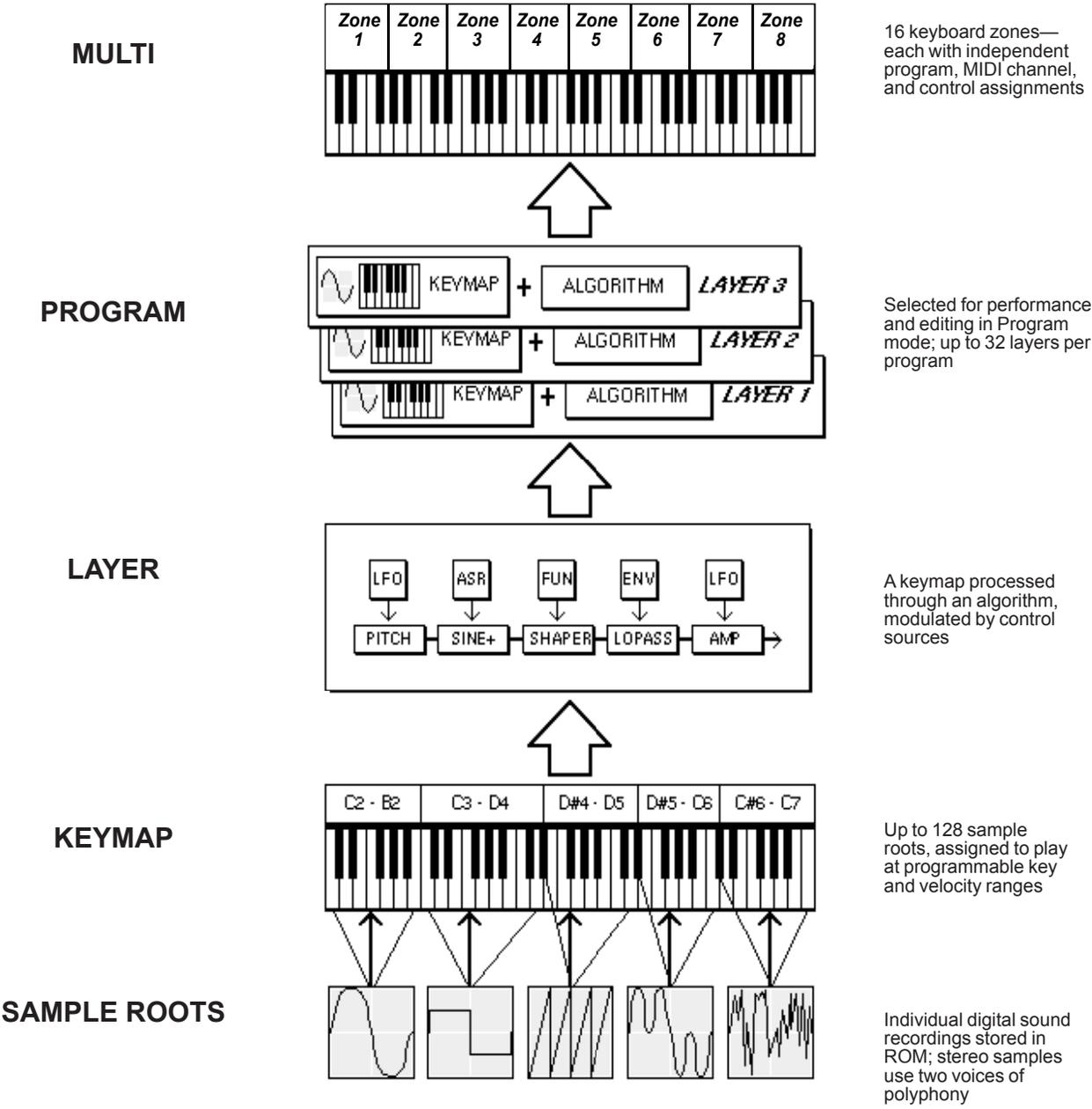


Figure 7-1 VAST Program Structure

# Editing VAST Programs

The Forte SE offers two powerful editing features: Cascade Mode and Dynamic VAST .

- **Cascade Mode** lets you route any layer of a program into the DSP of any other layer. Any of the 32 layers of a program can go into any other layer.
- **Dynamic VAST** lets you “wire” your own algorithms. You can combine different DSP functions in any order you like, including parallel and serial configurations.

The Program Editor is where you begin to modify the Forte SE’s resident sounds, and to build your own sounds around sample keymaps or KVA oscillators (see [Editing VAST Programs With KVA Oscillators on page 7-71](#) for some differences). There’s virtually no limit to the sounds you can create using the tools in the Program Editor.



Note: This section describes the Program Editor as it applies to VAST programs. See [Editing KB3 Programs on page 7-81](#) for information about editing KB3 programs.

To enter the Program Editor, start in Program mode and press the **Edit** button. The Program Parameters PARAMS page will appear.

EDIT:Prog Parameters		Ⓞ All Layers
PARAMETER	CONTROL	VALUE
Reverb Amount	Slider I	36
Pad Enable	Variation	0
Pad Volume	Mod Wheel	75
Reverb Enable	Switch9	127
Sustain	Sw.Pedalia	None
more	PARAMS FX	LVR_FX COMMON more

The top line of the display indicates your location and which layer you’re viewing, and how many layers there are in the program (if you are viewing a layer specific page). You can use the **Channel/Layer/Zone** buttons to scroll through the layers, if the program has more than one.

Here’s a method for jumping quickly to a specific layer in a program—it’s especially useful in multi-layered drum programs. Hold the **Enter** button and strike a key. The display will show the layer(s) assigned to that key. If more than one layer is assigned to the same key, repeatedly striking the key (while continuing to hold the **Enter** button) will cycle through all layers assigned to that key. This method will work in most places within the Program Editor, but there is an exception: if the parameter you have highlighted has a note number or control source as its value, then holding **Enter** and striking a note will call up that note or control source. For all other parameters, however, this method will switch between layers.

## The Soft Buttons in the Program Editor

The Program Editor's soft buttons are labeled by the words that appear in the bottom line of the display. These buttons have two important jobs in the Program Editor: selecting pages, and selecting specific functions. If a soft button is labeled in all uppercase letters, pressing it will take you to the page it describes. If the button is labeled in mixed uppercase and lowercase letters, pressing it will execute the software function described by the label. Pressing the **LAYER** soft button, for example, will take you to the Layer page, while pressing the **Save** soft button will initiate the process for saving the currently selected program.

There are more pages and functions in the Program Editor than there are soft buttons. Therefore, two of the soft buttons are dedicated to scrolling through the list of pages and functions. If you don't see the button for the page or function you want to select, press one of the soft buttons labeled **more**, and the labels will change. This doesn't change the currently selected page, it merely changes the selection of available soft buttons.

Two of the soft buttons in the Program Editor are special cases. They're the soft buttons that select the editing pages for the first and last DSP functions (Pitch and Level, respectively) of the current program's algorithm. One of these soft buttons is labeled **PITCH**, and pressing it will take you to the DSPCTL (DSP Control) page with the Pitch parameter highlighted. The other one of these soft buttons is labeled **AMP**, and pressing it will take you to the DSPCTL page with the Level parameter highlighted. Pressing the **LAYER** soft button, for example, will take you to the Layer page, while pressing the **ArpSav** soft button will initiate the process for saving the current Arpeggiator preset.

## Assigning VAST Parameters to Control Sources

Many Forte SE program parameters can be assigned to be controlled by the Forte SE's physical controllers or by MIDI CCs from an external MIDI device. For details on controllable parameters of VAST programs, see the following sections:

[Common DSP Control Parameters on page 7-32](#)

[The DSP Control \(DSPCTL\) Page on page 7-37](#)

[The DSP Modulation \(DSPMOD\) Page on page 7-39](#)

[The LFO Page on page 7-43](#)

[The ASR Page on page 7-46](#)

[The Function \(FUN\) Page on page 7-47](#)

[The Amplitude Envelope \(AMPENV\) Page on page 7-48](#)

[The Envelope 2 \(ENV2\) and Envelope 3 \(ENV3\) Pages on page 7-51](#)

[The Envelope Control \(ENVCTL\) Page on page 7-52](#)

For KB3 programs, see the following sections:

## Program Edit Mode

### Editing VAST Programs

[KB3 Editor: The PITCH Page on page 7-88](#)

[KB3 Editor: The AMP Page on page 7-89](#)

[KB3 Editor: The PERC1 Page on page 7-91](#)

[KB3 Editor: The PERC2 Page on page 7-93](#)

[KB3 Editor: The KEYCLICK Page on page 7-89](#)

For each program, the Program Editor can be used to assign the Forte SE's physical controllers or external MIDI controller CC numbers to control program parameters. When editing a factory program, the Parameters page will list all parameters that have already been assigned to a physical controller or MIDI CC. To add additional controller assignments for parameters that are not listed on the Parameters page, an assignment must be made on one of the VAST pages.

In the VAST editor pages, controllable parameters each have a source field. Make assignments to the source field for the desired parameter. Source fields are named differently depending on their page: Src1, Src2, RateCt, Trigger, Input a, Input b, and Source. Internal control sources can also be selected here such as LFOs, Envelopes, Key Number, Key Velocity, Key Pressure, FUNs, Clocks, and more.

To assign a Forte SE physical controller, select the source field for the parameter, hold the Enter button and move the controller.

To assign a CC number to a source field, enter a number from 1-31 or 64-95 with the alphanumeric pad, then press Enter. A CC number for an external controller can also be set by selecting the source field for the parameter, holding the Enter button, and sending a CC value from the external MIDI controller. The Forte SE's physical controllers each use one of the available MIDI CC numbers, so you must choose one of the other available CC numbers when using an external MIDI control source or else the parameter will also be controlled by a Forte SE physical controller. See the [PARAMETER CONTROLS on page 7-11](#) for a list of CC numbers used by the Forte SE's physical controllers. Some MIDI CCs are also hard wired to control certain program parameters or functions such as MIDI 5 (Portamento Time), MIDI 7 (Program Volume), MIDI 10 (Pan), MIDI 11 (Expression/Program Volume), MIDI 64 (Sustain), MIDI 66 (Sostenuto), so if you use one of these numbers the CC will always perform the hard wired function, in addition to any other assignment you make.



Note: When assigning a physical controller or CC number to a source field, the source field will either show a MIDI CC number, or the standard MIDI name associated with that MIDI CC number. For example, when assigning a parameter to be controlled by Slider A, the source field will show MIDI 12 when Slider A is selected, because MIDI 12 does not have a standard MIDI name. When assigning a parameter to be controlled by the Mod Wheel, the source field will show MWheel when the Mod Wheel is selected, because MWheel is the standard MIDI name for CC 1. When assigning a parameter to be controlled by MIDI CC 16, the source field will show Ctl A, keep in mind that Ctl A is the standard MIDI name for CC 15 and is unrelated to Slider A. MIDI CCs 17-19 and 80-83 are also respectively named Ctl B-H, but are unrelated to Sliders B-H.

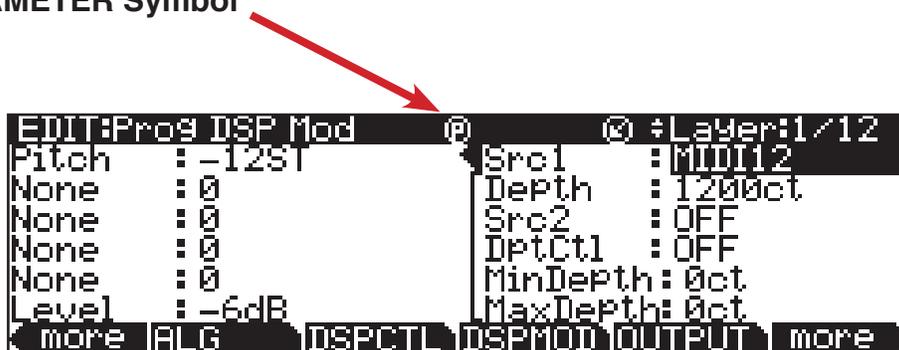
## VAST Sources and the Parameters Page

When assigning a physical controller or CC number to a source field, a Parameter is automatically added to the Parameters Page with the name of the first assigned VAST parameter.

If you are assigning a physical controller or CC number that is already used by a parameter on the Parameters Page, a new parameter will not be added to the Parameters Page. The new assignment will share the existing Parameter on the Parameters Page (Name, Control assignment and initial Value). The previously existing Parameter's name will not change based on the new assignment. If you have assigned one physical controller/MIDI CC to multiple VAST parameters, you may wish to edit the Parameter name to reflect this. For details on renaming a Parameter see the Parameter Edit page on page <?>.

When a VAST parameter source has been assigned to a physical controller or CC number, there will be an associated parameter on the Parameters Page (unless it has been manually deleted from the Parameters Page). To quickly find the associated parameter, select the VAST source field and press the Edit button to jump to selecting the associated parameter on the Parameters Page. When a VAST parameter source is selected which has an associated parameter on the Parameters Page, the top bar of the page will show the Parameter symbol.

### PARAMETER Symbol



## Relationship Between Controller Assignments on the Parameters Page and the VAST Pages

By default, when a new parameter is automatically added to the Parameters Page, the physical controller or CC number in the Control column will be the same CC number that was selected as a VAST source. If you select a different physical controller or CC number in the Control column of the Parameters page, that physical controller or CC number will now control the VAST parameter, though the CC number that was originally selected as a VAST source will not change. For example, if you make your original VAST source assignment with MIDI 12 (aka Slider A), but then change Slider A to Slider B on the Parameters Page, Slider B will now control the VAST assignment, but the original VAST source will still show MIDI 12.

## Program Edit Mode

### The Parameters (PARAMS) Page

On the Parameters page, you can press the Edit button to see a Parameters Destination field, which shows the CC number that it sends to parameters on the VAST pages. A parameter's Destination is automatically set when the Parameter is created, and can not be changed.

Alternatively, if you have changed Control assignments on the Parameters page and are no longer sure which VAST source assignment goes with which Parameter on the Parameters page, you can quickly find the associated parameter by selecting the VAST source field and pressing the Edit button. This will jump to selecting the associated parameter on the Parameters Page.

## The Parameters (PARAMS) Page

Press the PARAMS soft button to display the Parameters page.



PARAMETER	CONTROL	VALUE
Reverb Amount	Slider I	36
Pad Enable	Variation	0
Pad Volume	Mod Wheel	75
Reverb Enable	Switch9	127
Sustain	Sw.Pedalia	None

more PARAMS FX LVR\_FX COMMON more

Parameter	Range Of Values	Default Value
Parameter	Program / Effect Chain dependent	-
Control	Physical controller or MIDI CC	None
Value	None, 0 to 127	None

The Parameters page shows a list of every parameter in the current program that has been assigned to be controlled by one of the Forte SE's physical controllers (or by an external MIDI CC number). The Parameters page allows you to edit the name displayed for each controller assignment, select a different controller assignment, and set an initial MIDI value for each controller assignment. All VAST, KB3 and FX parameters that have been assigned to a controller or MIDI CC number are shown. When controller or MIDI assignments are made on other Program or FX Edit pages, or if an FX Chain is selected which contains controller assignments, these parameters are automatically added to the Parameters page.

## Parameter

The Parameter (left) column shows a list of every parameter in the current program that has been assigned to be controlled by one of the Forte SE's physical controllers (or by an external MIDI CC number). Effect Chain parameters are named with prefixes based on their effect type, either "INS" for parameters from Insert effects, or "AUX1/AUX2" for parameters from Aux effects.

Use the navigation buttons to move up and down in the list. To quickly find a parameter that is already assigned to a controller, select the parameter column, hold the Enter button and move a controller to jump to its assigned parameter.

## Control

The Control (middle) column determines which physical controller (or external MIDI CC number) will control the parameter in the selected row. To quickly assign one of the Forte SE's physical controllers to a parameter, select the control column in the row of the desired parameter, hold the Enter button and move the desired controller. Alternatively, you can use the Alpha Wheel or the Value buttons to select a controller from the list, or type in the controller's MIDI number followed by the Enter button. See below for a list of Forte SE physical controllers and their associated MIDI numbers.

If you want to disable the controller for a parameter, you can select a value of None by scrolling to the bottom of the controller list (using the Alpha Wheel or the Value buttons), or type -1 followed by the Enter button.

To choose an external MIDI CC number as a control source, you can enter the number of the controller followed by the Enter button, or use the Alpha Wheel or the Value buttons. The Forte SE's physical controllers each use one of the available MIDI CC numbers, so you must choose one of the other available CC numbers when using an external MIDI control source or else the parameter will also be controlled by a Forte SE physical controller. The list below shows the available choices for the Control column. MIDI CC numbers associated with the Forte SE's physical controllers are highlighted in bold type.

PARAMETER CONTROLS		
None	<b>Slider E (MIDI 24)</b>	<b>Switch 1 (MIDI 80)</b>
MIDI 0	<b>Slider F (MIDI 25)</b>	<b>Switch 2 (MIDI 81)</b>
<b>Mod Wheel (MIDI 1)</b>	<b>Slider G (MIDI 26)</b>	<b>Switch 3 (MIDI 82)</b>
MIDI 2 to MIDI 10	<b>Slider H (MIDI 27)</b>	<b>Switch 4 (MIDI 83)</b>
MIDI 5 to MIDI 10	<b>Slider I (MIDI 28)</b>	MIDI 84
<b>CC Pedal (MIDI 11)</b>	<b>Variation (MIDI 29)</b>	<b>Switch 5 (MIDI 85)</b>
<b>Slider A (MIDI 12)</b>	MIDI 30 to MIDI 63	<b>Switch 6 (MIDI 86)</b>
<b>Slider B (MIDI 13)</b>	<b>Sw. Pedal 1a (MIDI 64)</b>	<b>Switch 7 (MIDI 87)</b>
MIDI 14 to MIDI 21	MIDI 65	MIDI 88
<b>Slider C (MIDI 22)</b>	<b>Sw. Pedal 2a (MIDI 66)</b>	<b>Switch 8 (MIDI 89)</b>
<b>Slider D (MIDI 23)</b>	<b>Sw. Pedal 2b (MIDI 67)</b>	<b>Switch 9 (MIDI 90)</b>
	MIDI 68 to MIDI 79	MIDI 91 to MIDI 127

## Program Edit Mode

### The Parameters (PARAMS) Page



#### Important note about selecting a Control source

When you change the control source for a parameter, the new control source immediately sets its current value for the MIDI value of the current parameter. If the MIDI value of the parameter was set to None before changing the control source, changing the control source will set a new MIDI value, but the Value column for the parameter will still display None (see Important note about values of “None”). This can be troublesome if for example you were to change the Control Source for the Expression parameter, you may accidentally set the MIDI Value to 0, but wouldn't know it because None would still be displayed. Also, if you set a MIDI Value to None by scrolling below 0, the MIDI value will be 0 until you change the value with the assigned controller (though None will still be displayed). If you edit the parameters of a program and suddenly can't produce any sound from the program, this may be the cause. In this case, either set the Value for Expression to something other than None, or use the Control Source that you set for Expression to increase the Value.

## Value

The Value (right) column sets the initial MIDI value that the Parameter in the selected row and it's assigned controller will have when the Program is selected. This value changes as you move the assigned controller, so don't move the assigned controller if you have set a value that you wish to save. To set a specific value, use the cursor button to highlight the right column and type a value followed by the Enter button (or select a value of None by typing -1, followed by the Enter button). You can also use the Alpha Wheel or Value buttons to enter a MIDI value from 0-127, or a value of None by scrolling below 0. If you set a Value



#### Important note about values of “None”

For factory programs, standard parameters like Expression (program volume), Sustain, and Sostenuto are always set to **None** by default. If you change one of these values, either on the Parameters page in the Program Editor, or with a physical controller from Program Mode (or the Program Editor,) **the same value will be used for any other program you select**, if you select another program that uses a value of **None** for the same parameter. **These values remain set even if you don't save the program.**

This can be useful, for example, when using an expression pedal to control program volume.

By default, all factory programs have their Expression parameter set to a value of **None**, and Expression (program volume) by default can be controlled by an expression pedal plugged into the CC Pedal jack. With an expression pedal plugged into the CC Pedal jack, you can control the volume of any factory program, but when you select another factory program, it will have the same volume that you set with the expression pedal in the last program. This way, the volume of your programs will stay consistent, and can always be changed by the expression pedal. If you want a program to have a default volume, you must set a Value other than **None** for the Expression parameter.

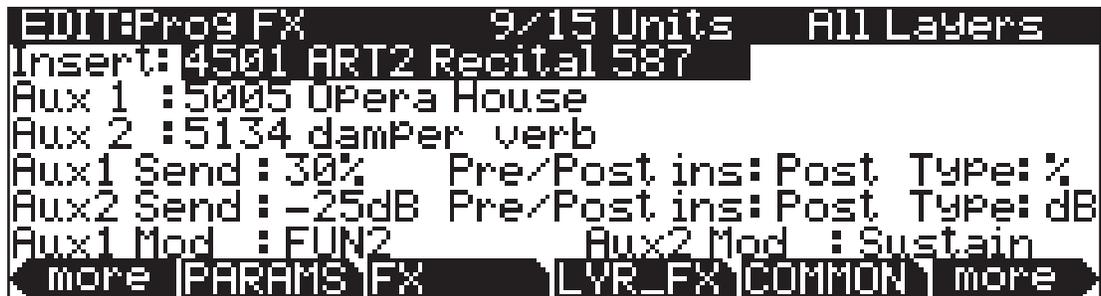
**For all parameters with a Value of None, any values set with a physical control will not be saved when saving the program. You must set the Value column for that parameter to something other than None in order to set and save a value. These values will remain set until changed with a controller, or until a program is loaded on the current MIDI channel that does not have a value of None for these parameters.**

## The Parameter Edit Page

When the Global Mode User Type parameter is set to Advanced, press the Edit button with a Parameter selected to view the Parameter Edit page. The Parameter Edit Page allows you to view the Parameter’s Destination (MIDI CC that it sends to VAST parameters), as well as the currently assigned Control, Text name, and Value. Press the Edit button again to enter the Parameter Text page, where you can change the name displayed for the Parameter. You can also press the Delete soft button to delete the current Parameter. Press Exit or the Back soft button to return to the Parameters page

## The Program FX (FX) Page

Press the FX soft button to call up the Program FX (FX) page. This is the page that you will use to apply effects to a program, and to configure the routing of the various pre- and post-FX audio signals. Effects chosen on this page affect every layer of the current program. The section [The Layer FX \(LYR\\_FX\) Page on page 7-15](#) contains information on using layer-specific effects. The FX page looks like this:



Parameter	Range of Values	Default
Insert	Chain List	0 None
Aux 1, Aux 2	Chain List	0 None
Output	Main, Sec.	Main
Auxiliary Send Parameters	Aux Send (dB)	off, -95 to 24 decibels
	Aux Send (%)	0 to 100%
	Aux Pre/Post Insert	Post, Pre
	Type	dB, %
Aux Modulation	Control Source List	On

On the Forte SE, a program can have up to 11 insert effects and 2 aux effects using up to 16 DSP “units.” An insert is essentially just an effect that you apply to a program or layer, while aux effects receive signal from all active programs’ aux sends. Note the 0/0 Units in the middle of the top line of the page. This figure indicates how many of the total units are being used by the highlighted insert; the left-hand number is the size of the insert, and the right-hand number is the total number of units being used by the program.

## Program Edit Mode

---

### The Program FX (FX) Page

If you exceed the maximum number of DSP units, the Forte SE will notify you that you have done so, and no effects will be applied to the program.

## Insert

The Insert effect is the effects chain that is applied to the main audio bus. When the Insert field is selected, you can press the Edit button to edit the current Chain. For details on Chain editing see Chapter 8, The Effects Chain Editor.

## Aux 1, Aux 2

The Aux effect is the effects chain that is applied to the selected auxiliary audio bus. When the Aux 1 or Aux 2 field is selected, you can press the Edit button to edit the current Chain. For details on Chain editing see [Ch. 8 The Effects Chain Editor](#).

## Auxiliary Send Parameters

The Auxiliary Send parameters determines the level of the program signal sent to the auxiliary effects chain.

### Aux Send

The Aux Send parameter determines the level of the program signal sent to the auxiliary effects chain.

### Pre/Post Insert

The Pre/Post Insert parameter determines the point at which the auxiliary effect is applied to the signal. When this parameter is set to Post, the Forte SE applies the auxiliary effect to the signal post-insert, i.e., after the insert effect has been applied. When this parameter is set to Pre, the Forte SE applies the auxiliary effect to the signal pre-insert.

To hear a program put through two effects in series (i.e., through two cascaded effects), choose your desired effects for the Insert and either Aux (for whatever Aux you choose, the other should be set to 0 None), set each bus' Output to Main, and set the Aux Send parameter to either 0 dB or 100%. Then, set the Pre/Post Insert parameter to Post.

To hear a program put through two effects in parallel (i.e., through two distinct effects), choose your desired effects for the Insert and either Aux (again, for whatever Aux you choose, the other should be set to 0 None), set each bus' Output to Main, and set the Aux Send parameter to either 0 dB or 50%. Then, set the Pre/Post Insert parameter to Pre.

With respect to each other, the Auxes are always in parallel, that is, they cannot be cascaded.

## Type

The Type parameter determines how the selected wet aux signal (i.e., with effects applied) is mixed into the final signal. Additionally, it determines the units in which the Aux Send parameter values are.

When Type is set to dB, the Aux Send parameter values are in units of decibels (dB). The value specified in the Aux Send parameter is the amount of program signal sent to the aux effects chain. To hear equal parts wet signal and dry signal (the signal with no effects applied) on the main audio output, set the main Insert effect to 0 None and the Insert Output to Main, and set the Aux 1 effect to your desired effect and the Aux 1 Output to Main. Then, set the Aux1 Send to 0dB. If you want only wet signal on the main audio output, set the main Insert Output to Sec.—keep in mind that by this method, the dry signal is sent to the auxiliary audio outputs.

When Type is set to %, the Aux Send parameter values are in units of percent (%). The value specified in the Aux Send parameter is the percentage of which the wet auxiliary signal comprises the final signal—the insert signal comprises the rest of the final signal. To hear equal parts wet signal and dry signal on the main audio output, set the main Insert effect to 0 None and the Insert Output to Main, and set the Aux 1 effect to your desired effect and the Aux 1 Output to Main. Then, set the Aux1 Send to 50%. If you want to hear only the wet signal, set the Aux1 Send to 100%.

## Aux1 Mod, Aux2 Mod

The Aux Mod parameter gives you real-time control over the amount of program signal sent to the aux effects chain. You can set the Aux Mod parameter to any Forte SE control source. The amount that you specify for the Aux Send parameter is the maximum value that the Aux Mod control source can send—the minimum value is 0.

## The Layer FX (LYR\_FX) Page

Press the LYR\_FX soft button to call up the Layer FX (LYR\_FX) page. On this page, you can apply layer-specific effects. There are three Layer FX Modes: Use Program FX, Layer-Specific FX, and Use Another Layer's FX.

### Use Program FX Mode

With Use Program FX Mode selected, the current layer will use the effects configured on the Program FX (FX) page. See [The Program FX \(FX\) Page on page 7-13](#) for more information on program FX.

### Layer-Specific FX Mode

With Layer-Specific FX selected, you can configure the effects for the current layer. This mode's parameters are similar to those of the FX page. This mode is shown in the following display:

## Program Edit Mode

### The COMMON Page

```
EDIT:Prog LayerFX 0/5 Units #Layer:1/4
Layer FX Mode      : Layer-Specific FX
Insert: 0 None
Aux1 Send: off     Pre/Post ins: Post  Type: dB
Aux2 Send: off     Pre/Post ins: Post  Type: dB
Aux1 Mod  : ON      Aux2 Mod  : ON

more | PARAMS | FX | LVR_FX | COMMON | more
```

All of the Layer-Specific FX mode parameters have the same functions and ranges of values as their corresponding parameters on the FX page. See [The Program FX \(FX\) Page on page 7-13](#) for more information on these parameters.

### Use Another Layer's FX Mode

With Use Another Layer's FX selected, you can put the current layer through the effects of another layer. You can specify the layer through whose effects you wish to put the current layer.

## The COMMON Page

The COMMON page is reached by pressing the **COMMON** soft button in the Program Editor. Here's where you find 12 frequently-used parameters that affect the entire current program, not just the current layer.

```
EDIT:Prog Common All Layers
PBend UP : 220ct    PBendDown: -200ct
Mono      : Off     OutGain   : 10dB
                                     Globals  : On
Int Map   : 0 None  IKey: C
more | PARAMS | FX | LVR_FX | COMMON | more
```

Notice that when the Monophonic parameter is set to its default value of **Off**, the five monophonic parameters do not appear on the page.

Parameter	Range of Values	Default
Pitch Bend Range Up	± 7200 cents	200
Pitch Bend Range Down	± 7200 cents	-200
Monophonic	Off, On	Off
(Legato Play)	Off, On	Off
(Portamento)	Off, On	Off
(Portamento Rate)	1 to 3000 keys per second	70
(Attack Portamento)	Off, On	On
(Mono Sample XFade)	Off, On	Off
Globals	Off, On	Off

Parameter	Range of Values	Default
Output Gain	-96 to 24 decibels	0
Output Pan	± 64	0
Output Pan Mode	Fixed, +MIDI	+MIDI
Demo Song	Demo Song List	0 None

## Pitch Bend Range Up and Down

Use these parameters to define how much the pitch will change when you move your Pitch Wheel. For both Pitch Bend Range parameters, positive values will cause the pitch to bend up, while negative values will cause the pitch to bend down. Large positive values can cause samples to bend to their maximum upward pitch shift before the Pitch Wheel is fully up (or down). This will not happen when bending pitch down.

## Monophonic

When off, the program is polyphonic—it can play up to 128 notes at a time. Notice that when the Monophonic parameter is off, the LegatoPlay parameter and the three Portamento parameters do not appear on the COMMON page. This is because only monophonic programs can use portamento.

When On, the program will play only one note at a time. This makes it possible to use and to determine the behavior of the portamento feature. Do not set Ignore Release On (page 6-20) when you are using Monophonic programs, since the lack of Note Off messages will prevent you from switching programs properly.

EDIT:Prog Common		All Layers	
PBend UP	: 22Oct	PBendDown:	-20Oct
Mono	: On	OutGain	: 10dB
Legato	: On	MonoxFade:	On
Portament	: On	Globals	: On
PortRate	: 70.0key/s	PortAttk	: Off
Int Map	: 0 None	IKey:	C
more PARAMS FX		LYR_FX COMMON more	

## Legato Play

When Legato Play is on, a note will play its attack only when all other notes have been released. This is useful for realistic instrumental sounds.

## Portamento

This parameter is either on or off. The default value of **Off** means that portamento is disabled for the current program.

Portamento is a glide between pitches. On actual acoustic instruments like violin and bass, it's achieved by sliding a finger along a vibrating string. On most keyboards that offer portamento, it's achieved by holding down a key that triggers the starting note, then striking and releasing other keys. The pitch glides toward the most recently triggered note, and remains at that pitch as long as the note remains on. The Forte SE gives you two ways to get portamento. See the [Attack Portamento](#) parameter below.

When applying portamento to multi-sampled sounds (Acoustic Guitar, for example), the Forte SE will play more than one sample root as the pitch glides from the starting pitch to the ending pitch. This may cause a small click at each sample root transition. You can eliminate clicks by using the [Mono Sample XFade](#) parameter below.

## Portamento Rate

The setting for Portamento rate determines how fast the current note glides from starting pitch to ending pitch. The value of this parameter tells you how many seconds the note takes to glide one semitone toward the ending pitch. At a setting of **12 keys/second**, for example, the pitch would glide an octave every second. The list of values is nonlinear; that is, the increments get larger as you scroll to higher values.

## Attack Portamento

This parameter toggles between two types of portamento. When set to **On**, the Forte SE remembers the starting pitch so you don't have to hold a note on to achieve portamento. The pitch always glides to each new note from the previously triggered note. When set to **Off**, the pitch will glide to the most recently triggered note only when the previous note is still on (in other words, you must use legato fingering).

## Mono Sample XFade

When applying portamento to multi-sampled sounds (Acoustic Guitar, for example), the Forte SE will play more than one sample root as the pitch glides from the starting pitch to the ending pitch. This may cause a small click at each sample root transition. You can eliminate clicks by setting the Mono Sample XFade parameter to On. When the Mono Sample XFade parameter is set to On, the Forte SE performs a crossfade at each sample root transition to eliminate clicks.

## Globals

This is another toggle, which affects LFO2, ASR2, FUNs 2 and 4. When off, these three control sources are local; they affect each individual note in the layers that use them as a control source. They begin operating each time a note in that layer is triggered.

When the Globals parameter is set to **On**, these control sources become global, that is they affect every note in every layer of the current program, they're not specific to any one layer. When these control sources are global, they begin operating as soon as the program is selected. When Globals are on, LFO2, ASR2, and FUNs 2 and 4 will appear on their respective pages preceded by the letter G to indicate that they're global.

You'll use global control sources when you want to affect all notes in a program uniformly, and local control sources when you want to affect each note independently. For example, you'd use a global LFO controlling pitch to create a *Leslie effect* on an organ sound, since you want the effect applied to all the notes you play. You'd use a local LFO controlling pitch to create a vibrato for a solo violin, since you want to be able to vary the rate and depth of the vibrato for each note.

## Output: Gain, Pan, and Pan Mode

The Output parameters on the COMMON page allow you to adjust the final-stage gain and panning of the post-FX signal. Use the OutGain parameter to cut or boost the signal. Use the OutPan parameter to pan the signal; negative values pan the audio signal to the left channel, positive values to the right, and a value of zero pans to the center.

When the OPanMode is set to **Fixed** the pan position remains as defined with the OutPan parameter, ignoring MIDI pan messages. When the OPanMode is set to **+MIDI**, MIDI pan messages (MIDI 10) will shift the sound to the left or right of the Pan parameter setting. Message values below 64 shift it left, while those above 64 shift it right.

## The KEYMAP Page

Press the **KEYMAP** soft button to call up the KEYMAP page. The parameters on this page affect sample root selection, i.e., which samples are played on which keys.

```

EDIT:Prog9 Keymap #Layer:1/4
Keymap: 173 Partial Prime Stereo: Off
XPose : 0ST TimbreShift : -6ST
KeyTrk : 100ct/key PlaybackMode: Normal
VelTrk : 0ct AltControl : ON
AltMethod : Switched Pno.Resonance: Off
more KEYMAP LAYER PITCH AMP more

```

## Program Edit Mode

### The KEYMAP Page

Parameter	Range of Values	Default
Keymap	Keymap List	1 Piano f Left
Transpose	-128 to 127 semitones	0
Key Tracking	± 2400 cents per key	100
Velocity Tracking	± 7200 cents	0
Alt Method	Switched, Continuous	Switched
Stereo	Off, On	Off
Timbre Shift	± 60 semitones	0
Playback Mode	Norm, Rvrs, Bidirectional, Noise	Normal
Alt Control	Control Source List	Off
Piano Resonance	Off, On	Off

## Stereo

You'll use this parameter when you're working with stereo samples.

When you set this parameter to **On**, the KEYMAP page changes slightly:

```
EDIT:Prog Keymap #Layer:1/17
Keymap1: 1794 Damper Pedal fas
Keymap2: 1794 Damper Pedal fas Stereo: On
XPose : 0ST TimbreShift : 0ST
KeyTrk : 100ct/key PlayBackMode: Normal
VelTrk : 0ct AltControl : OFF
AltMethod : Switched Pno.Resonance: Off
more KEYMAP LAYER | PITCH TAMP | more
```

An additional Keymap parameter appears. The two keymap parameters are distinguished as Keymap 1 and Keymap 2. The KEYMAP page parameters will affect both keymaps. When the Stereo parameter is set to **On**, the OUTPUT page for the current layer will show an additional pair of Pan parameters.

The Forte SE contains both stereo and mono samples. Keymaps designed for stereo use are labeled with names beginning with "Stereo" or ending in "Left," "Right," "L," or "R." For stereo keymap playback, set Stereo "On" and assign corresponding Left and Right keymaps to Keymap1 and Keymap2 respectively. For keymaps beginning with "Stereo," assign the same keymap to both Keymap1 and Keymap2. If you select the same keymap for Keymap1 and Keymap2, the Forte SE automatically uses the left side for Keymap1 and the right side for Keymap2.

Once you have the keymaps assigned, go to the OUTPUT page and set the panning for each sample as desired. Keep in mind that using stereo keymaps reduces the polyphony of the program. For example, if you had a two-layer program with stereo keymaps in each layer, each note you play would use 4 of your 128 voices, allowing a total of 32 notes before all the voices have been used.

If you're not using stereo samples, you should set this parameter's value to **Off**.

## Keymap

Assign a keymap from ROM to the current layer. Keymaps are collections of samples assigned to note and velocity ranges. With the Keymap parameter selected, press the Edit button to enter the Keymap editor (see [Ch. 9 Keymap and Sample Editing](#) for details).

## Transpose (Xpose)

Transpose the current keymap up as much as 127 semitones (ten octaves and a perfect fifth) or down as much as 128 semitones (ten octaves and a minor sixth).

## Key Tracking (KeyTrk)

This is one of the six common DSP control parameters. On the KEYMAP page, key tracking affects the interval between notes. The default value of **100 cents** (a cent is a hundredth of a semitone) gives you the normal semitone interval between each note. Higher values increase the interval; lower values decrease it. Negative values will cause the pitch to decrease as you play higher notes.

When you make changes to this parameter, you'll need to keep in mind that KeyTrk on the KEYMAP page works in conjunction with KeyTrk on the PITCH page. Therefore, you'll need to check the KeyTrk value on both pages to see how key tracking works within a program. Unless you're looking for nonstandard note intervals, the values of the KeyTrk parameters on the PITCH and KEYMAP pages should add up to 100 cents.

## Velocity Tracking (VelTrk)

This is another common DSP control parameter. As with the other parameters on the KEYMAP page, this shifts the position of the keymap. Different attack velocities will play different pitch shifts of the sample root assigned to that note range. If the shift is great enough, the next higher or lower sample root will be played, which in some cases (many drum programs, for example) will play an entirely different sound. Positive values will play higher pitches of the sample root when you use hard attack velocities (they shift the keymap downward), while negative values will play lower pitches.

## Method (AltMethod)

See [Alternative Switch \(AltControl and AltMethod\)](#) on page 7-22.

## Timbre Shift

This parameter works only on multi-sample keymaps, and changes the root selection for each key you play. With this parameter you can radically alter the current layer's timbre (basic sound characteristics). The nature of the change depends on the timbre itself, so this parameter calls for experimentation. Basically, timbre shifting changes a note's timbre by imposing different harmonic qualities onto the note. A timbre-shifted note retains its original pitch, but its harmonics are those of the same timbre at a higher or lower pitch. Positive values for this parameter tend to brighten a sound, while negative values darken.

Here's an example. If you shift the timbre up 4 semitones, then playing C 4 will result in the *pitch* C 4, but will actually play the sample normally assigned to G# 3, and shift its pitch up four semitones. This will increase the playback rate of the sample, so although the pitch remains normal, the timbre is brighter. You'd get the same effect by setting the Xpose parameter on the KEYMAP page to **-4 semitones**, then setting the Adjust on the PITCH page to **+4 semitones**. For multi-sample layers with narrow key ranges, large amounts of timbre shifting will cause different sample roots to be played back.

## Playback Mode

This gives you numerous options for manipulating the samples in the current layer as you trigger them. **Normal** leaves the samples unaffected, while **Reverse** plays them in reverse. At a value of **Reverse**, the samples will continue to loop as long as notes are sustained. To play them just once in reverse, you would adjust the length of the layer's amplitude envelope (explained later in this chapter). **BiDirect** (bidirectional) causes the samples to loop infinitely, alternating between normal and reversed playback. **Noise** replaces the samples with a white noise generator.

## Alternative Controller (AltControl)

See [Alternative Switch \(AltControl and AltMethod\)](#) below.

## Alternative Switch (AltControl and AltMethod)

Many, but not all, Forte SE sample roots have been pre-assigned a carefully chosen alternate sample start point that can be selected using the Alternate Switch feature (AltControl and AltMethod parameters). This feature allows you to control the sample playback start/end time triggered by any control source. (The alternate sample start point can be adjusted by

editing a sample, see [Editing Samples on page 9-10](#) and [The TRIM Page on page 9-14](#) for details).

Use the AltControl parameter to specify a control source that will cause the sample to begin or end at the Alt point. Then use the AltMethod parameter to choose between switched and continuous calculation of the Alt point. If the value of AltMethod is **Switched**, the Forte SE will use the Alt point when the relevant control source is at a value greater than 64 at Note Start. If AltMethod is **Continuous**, the Alt point will vary depending on the value of the relevant control source at Note Start.

As an example, suppose you're working with a flute keymap and wish to control the amount of chuff heard at the beginning of the sound. On the KEYMAP page in the Program Editor, set AltControl to MWheel. Now the Mod Wheel controls how much of the initial sample attack is used. If you set AltMethod to Switched and move the Mod Wheel at least half-way up, at Note Start the sample will begin at the pre-set alternate start point (in this case, slightly past the initial chuff). If you set the AltMethod to Continuous, the Forte SE will interpolate the sample's starting point based on the position of the Mod Wheel. If the Mod Wheel is 75% of the way up at Note Start, the sample will begin 75% of the way between normal and alternate start points.

### Emulating Legato Play

If you place the Alt point after the initial attack transients of the sample, then you can use the Alt Switch to emulate legato playing in an acoustic instrument. As an example, set Keymap to **14 Flute**. Now set the AltControl parameter to **Chan St** (Channel State). Now if you play notes separately, the initial breathy chuff will be heard. But if you play the notes legato (connecting them smoothly), the Alt point is used and you do not hear the chuff. This is because the Chan St is turned on as long as any note is being held. Most of the Forte SE's ROM samples have their Alt points set for purposes of legato play. In most cases the difference in attacks is subtle, but for some sounds, like drums, the difference can be more noticeable.

## Pno.Resonanc (Kurzweil String Resonance)

Sympathetic string resonance in an acoustic piano is the phenomenon of undamped piano strings resonating as a result of sound from other notes/keys. This can be observed if one plays a C, continues holding down the key after the sound has decayed, and then forcibly presses and quickly releases another C key. The undamped strings of the held-down C key will audibly ring, providing a highly tuned "echo", commonly known as sympathetic string resonance.

The Pno.Resonanc parameter works in conjunction with the FX preset "600 String Resonance" to emulate the sound of strings resonating in an acoustic piano. When combined, these two components create KSR (Kurzweil String Resonance). Factory programs in the Piano category are set up to use KSR, and they provide a good example of how the two components should be used. When making your own program with KSR, it may be easiest to use an FX Chain from one of these programs, since they already contain controller

## Program Edit Mode

### The LAYER Page

assignments for KSR. In these Programs and Chains the dry/wet mix of the KSR effect can be controlled with slider F, and the effect can be enabled or disabled with assignable switch 6. When making your own Chain, the FX preset “600 String Resonance” should be used for the first box of the Program’s insert Chain.

When a layer has the Pno.Resonanc parameter set to On, the FX preset “600 String Resonance” monitors which keys are being held on that layer and uses them to tune the algorithm in the FX preset. Any audio that passes through the FX preset while these keys are held will cause emulated strings to resonate based on this tuning. When using KSR, layers which contain samples of piano notes should have the Pno.Resonanc parameter set to On. Layers that do not play samples of piano notes (such as layers for mechanical key release noise, pedal noise, string/synth layers etc) should have the Pno.Resonanc parameter set to Off. (Layers set to Off will still resonate any other strings that have been emulated.) If more than one layer in a program is set to play piano notes for the exact same velocity and key range, the FX preset will function the best if only one of those layers has the Pno.Resonanc parameter set to On.

In an acoustic piano, it is possible to strike and hold a key very lightly so that a note is not played, but the key’s strings will still become undamped and will resonate when other keys are played. KSR can simulate this behavior. To do so, select the layer in the program which has the lowest velocity range and which has the Pno.Resonanc parameter set to On. On the Layer page, set the Enable parameter to GAttVel, and set the Enable Min parameter to 2. This will allow notes played with a velocity of 1 to tune the algorithm in FX preset “600 String Resonance”, without playing a note. (This only works for velocities of 1. Velocities above 1 will not tune the algorithm without playing a note, even if the Enable Min parameter is set to a higher value.)

## The LAYER Page

Press the **LAYER** soft button to call up the LAYER page. Here you’ll set a number of parameters that affect the current layer’s keyboard range, attack and release characteristics, and response to various controls.

```
EDIT:Prog Layer                               @ #Layer:1/6
LoKey  : A 0      DlyCtl : OFF                SusPdl : On
HiKey  : C 4      MinDly : 0.000s            SosPdl : On
LoVel  : PPP      MaxDly : 0.000s            FrzPdl : On
HiVel  : fff      Enable : ON                IgnRel : Off
Bend   : All      S: Norm 64      127      ThrAtt : Off
Trig   : Norm     Opasue: Off                TilDec : Off
more | KEYMAP | LAYER | PITCH | AMP | more
```

Parameter	Range of Values	Default
Low Key	C -1 to G 9	C 0
High Key	C -1 to G 9	C 8

Parameter	Range of Values	Default
Low Velocity	ppp to fff	ppp
High Velocity	ppp to fff	fff
Bend	Off, Key, All	All
Trig	Normal, Reversed, Pedal Down, Pedal Up	Normal
Delay Control	Control Source list	Off
Minimum Delay	0 to 25 seconds	0
Maximum Delay	0 to 25 seconds	0
Layer Enable	Control Source list	On
Enable Sense	Normal, Reversed	Normal
Enable Min	± 127	64
Enable Max	± 127	127
Opaque Layer	Off, On	Off
Sustain Pedal	Off, On, On2, On3	On
Sostenuto Pedal	Off, On	On
Freeze Pedal	Off, On	On
Ignore Release	Off, On	Off
Hold Through Attack	Off, On	Off
Hold Until Decay	Off, On	Off

## Low Key (LoKey)

This sets the lowest active note for the current layer. This parameter's value cannot be set higher than the value for HiKey. The standard MIDI key range is C 1—G 9 (0-127). Middle C is C 4.

## High Key (HiKey)

Here you set the highest active note for the current layer. This parameter's value cannot be set lower than the value for LoKey.

## Low Velocity (LoVel)

With this parameter you define the lowest attack velocity at which the layer will be enabled (generate a sound). The values for this parameter and the next are expressed in the standard musical dynamics markings, similar to the values available for the velocity maps. Attack velocities that are below this threshold will not trigger notes. If you set this parameter's value higher than the HiVel value, the layer will not play at all.

## High Velocity (HiVel)

Similarly, this will set the highest attack velocity at which the layer will be enabled. Attack velocities above this threshold will not trigger notes in this layer.

Using LoVel and HiVel, you can set up velocity switching between up to eight layers. If you need even more, you can do it using the [Enable](#) and [Enable Sense \(S\) parameters on page 7-27](#).

## Pitch Bend Mode (Bend)

This determines how Pitch bend control messages will affect the current layer. A value of **All** bends all notes that are on when the Pitch bend message is generated. A value of **Key** bends only those notes whose triggers are *physically* on when the Pitch bend message is generated (notes held with the sustain pedal, for example, won't bend). This is great for playing guitar solos on top of chords—play a chord, hold it with the Sustain pedal, then play your licks and bend them all you want; the chord won't bend with it. A value of **Off** disables Pitch bend for the current layer. To apply the same Pitch Bend Mode setting to the entire program, make sure to set the same setting for each layer.

## Trigger (Trig)

The Trigger parameter determines how notes in the current layer are triggered. The default setting is Norm, which causes notes to be triggered when a key is pressed down and a MIDI note on message is received by the layer. A setting of Rvrs causes notes to be triggered when a key is released and a MIDI note off message is received by the layer (velocity is determined by the release velocity of the released key).

A setting of PdlDN or PdlUP causes a note to be triggered when the sustain pedal is respectively pressed down or released (typically used for triggering mechanical pedal noise samples). The sustain pedal will trigger MIDI note 60 with a velocity of 64.

## Delay Control (DlyCtl)

Here you select, from the Control Source list, a control source that will delay the start of all notes in the current layer. The length of the delay is determined by MinDly and MaxDly (described below). You'll assign a continuous control like MWheel for the DlyCtl parameter when you want to vary the delay time, and a switch control if you want the delay to either be its minimum value (switch off), or its maximum (switch on). The delay control will affect only those notes triggered after the delay control source is moved; the delay time is calculated at each note start, based on the status of the delay control source at that time.

## Minimum Delay (MinDly), Maximum Delay (MaxDly)

The length of the delay is determined by these two parameters. When the control source assigned to DlyCtl is at its minimum, the delay will be equal to the value of MinDly. The delay will be equal to the value of MaxDly when the control source is at its maximum. If DlyCtl is set to **OFF**, you get the minimum delay. If it's set to **ON**, you get the maximum delay. This doesn't change the note's attack time, just the time interval between the Note On message and the start of the attack. The delay is measured in seconds.

## Enable

This assigns a control source to activate or deactivate the layer. When the value of the assigned control source is between the minimum and maximum thresholds set by the Sense (S) parameter, the layer is active. When the value of the assigned control source is below the minimum or above the maximum, the layer is inactive. By default, many layers have the Enable parameter set to **ON**, so the minimum and maximum thresholds don't matter. They're relevant only when Enable is set to a specific control source (like MWheel).

Some local control sources (KeyNum and AttVel, for example) are not valid for the Enable parameter. In these cases, you should use the global equivalent (GKeyNum and GAttVel in this example).

## Enable Sense (S)

This parameter determines how and when a layer is enabled by the control source assigned for the Enable parameter. Enable Sense has three values: orientation, minimum, and maximum.

Suppose for a moment that you're editing a program, and in the current layer you've set the value of Enable to **MWheel**, which causes the Mod Wheel to control whether the layer is active. The default values for Enable Sense are as follows: orientation is **Norm**; minimum is **64**, and maximum is **127**. This means that when the Mod Wheel is less than halfway up, the layer is disabled. The layer plays only when the Mod Wheel is more than halfway up.

Change the orientation to **Rvrs**, and the layer plays only when the Mod Wheel is *less* than halfway up. Change the orientation back to **Norm**, and change the minimum to **127**. Now the layer plays only when the Mod Wheel is *all* the way up.

You could use this parameter to set up a two-layer program that would let you use a MIDI control to switch between layers, say a guitar sound and a distorted guitar. Both layers would have their Enable parameters set to the same control source, say **MWheel**. One layer would have its Enable Sense orientation set to **Norm**, and the other would have it set to **Rvrs**. Both layers would have their Enable Sense minimums set to 64, and their maximums to 127. The first layer would play when your Mod Wheel was above its midpoint, and the second layer would play when the Mod Wheel was below its midpoint. (You could achieve the same effect by having the Enable Sense orientation in both layers set to **Norm**, and the minimum and

## Program Edit Mode

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### The LAYER Page

maximum values set as follows: minimum **0** and maximum **63** for one layer; minimum **64** and maximum **127** for the other).

Using this parameter in conjunction with the Enable parameter, you can easily create velocity-switching for as many layers as you have in your program. This is useful for drum programs, since you can define a different velocity-trigger level for each of the 32 layers available in drum programs.

First, set the Enable parameter for the Layer 1 to a value of **GAttVel** (global attack velocity). This causes the layer to play based on the attack velocity of your keystrokes. Then set the Enable Sense (S) parameter to a value of **Norm**, and adjust its minimum and maximum values (the two numerals to the right of **Norm**) to a narrow range. Don't use negative values, since they don't apply when you're using GAttVel as the layer enabler.

Repeat this for each layer in the program. Bear in mind that if you want to set up 32 different velocity levels for a program, with equal intervals between each layer, then you have a range of 4 for each level (Layer 1 is 0–3, Layer 2 is 4–7, and so on). It won't be easy to play precisely enough to trigger the layer you want. On the other hand, if you're using Song mode or an external sequencer, you can edit attack velocity levels, and get exactly the results you want.

## Opaque

An opaque layer blocks all higher-numbered layers in its range, allowing only the opaque layer to play. This is an easy way to change a small range of notes in a program, leaving the original sound playing above and below the new sound.

Start with a one-layer program, and create a new layer (Layer 2) with the **NewLyr** soft button. On the KEYMAP page for Layer 2, select the keymap you want to use, then on the LAYER page, set Layer 2's range (say, C 3 to D 3), and set its Opaque parameter to **On**. Then go to Layer 1, and duplicate it (with the **DupLyr** soft button); the duplicate layer becomes Layer 3. You now have a three-layer program. Delete Layer 1 (the original layer); Layer 2 (the new layer you created) becomes Layer 1, and Layer 3 becomes Layer 2. Now Layer 2 blocks out Layer 3 (the duplicate of the original layer) at the notes C 3–D 3.

## Sustain Pedal (SusPdl)

When this parameter is on, the layer will respond to all sustain messages (Controller destination 64, Sustain). When off, the current layer will ignore sustain messages. **On2** means that the sustain pedal will not catch the release of a note that is still sounding when the sustain message is received; this can be very useful in a program that uses amplitude envelopes with a long release time.

**On3** enables the use of half damper pedal techniques when using a compatible continuous switch pedal (such as the Korg DS-1H). On3 emulates the behavior of an acoustic piano's sustain pedal by increasing the release portion of the current layer's amplitude envelope as the pedal is pressed down, before becoming fully sustained. This allows you to use a sustain pedal to control note release length and sustain.

## Sostenuto Pedal (SosPdl)

When Sostenuto is on, the layer will respond to all sostenuto messages (Controller destination 66, Sostenuto). When off, the layer ignores sostenuto messages. Sostenuto, as you may know, is a feature found on pianos that have three pedals. Pressing the Sostenuto pedal on a piano (usually the middle pedal) sustains the notes whose keys you were holding down when you pressed the pedal. Notes played after the pedal is already down do not get sustained.

## Freeze Pedal (FrzPdl)

This parameter activates or deactivates the layer's response to Freeze pedal messages (Controller destination 69, Freeze). The Freeze pedal control causes all notes that are on to sustain without decay until the Freeze pedal control goes off. If a note is already decaying, it will freeze at that level.

## Ignore Release (IgnRel)

When IgnRel is off, the layer responds normally to Note Off messages. When on, the layer will ignore all Note Off messages that it receives. This should be used only with sounds that decay to silence when a note is held, otherwise the sounds will sustain forever (press the Cancel and Enter buttons simultaneously to stop sustained notes). This parameter can come in handy when your Forte SE is slaved to a drum machine or sequencer, which sometimes generates Note Ons and Note Offs so close together that the envelope doesn't have time to play before the note is released. If used in combination with ThrAtt or TilDec (see below). IgnRel allows you play staccato, yet still hear the entire length of the attack and decay sections of the amplitude envelope.

## Hold Through Attack (ThrAtt)

When on, this parameter causes all notes in the layer to sustain through the entire first attack segment of their amplitude envelopes, even if the notes have been released. If you have a sound with a slow attack, or an attack that's delayed with the delay control, setting this parameter to On will make sure your notes reach full amplitude even if you're playing fast. When set to **Off**, notes will release as soon as you release the note (generate a Note Off). If the first attack segment of the layer's amplitude envelope is very short, you probably won't notice a difference between values of **On** and **Off**.

## Hold Until Decay (TilDec)

When on, this parameter causes all notes in the layer to sustain through all three attack segments in their amplitude envelopes even if the notes have been released. Looped amplitude envelopes will not loop, however, if the notes are released before reaching the end of the final attack segment. Notes will go into their normal releases if they are released after the envelope has looped. When set to **Off**, notes will release as soon as a Note Off message is generated.

## The PITCH Page

Pressing the PITCH soft button takes you to the DSPCTL page with the Pitch function highlighted. See [The DSP Control \(DSPCTL\) Page on page 7-37](#) for more information on the Pitch function.

## The AMP Page

Pressing the AMP soft button takes you to the DSPCTL page with the Amp function (labeled as “Level”) highlighted. See [The DSP Control \(DSPCTL\) Page on page 7-37](#) for more information on the Amp function.

## The Algorithm (ALG) Page

Press the **ALG** soft button to call up the Algorithm (ALG) page. The top line of the display gives you the usual mode reminder, and tells you which layer you’re looking at, as well as how many layers are in the current program. You can view the ALG pages of any other layers in the program by using the **Channel/Layer/Zone** buttons.



The basic definition: an algorithm is the “wiring” (signal path) of a sample to the audio outputs, through a series of digital signal processing (DSP) functions that you select. The Forte SE’s algorithms are the core of Variable Architecture Synthesis Technology. The DSP functions are synthesis tools (filters, oscillators, etc). that you assign to the various stages of the algorithm. The DSP functions you choose determine the type of synthesis you use.

The central portion of the page shows the algorithm for the currently selected layer. You see the number of the algorithm (from 1 to 28, 101 to 131, and the IDs for any user-defined algorithms) and a graphic representation of the signal path, as well as the currently selected DSP functions within the signal path.

To use a different algorithm, select the Algorithm parameter and use any data entry method to select a different one. To change the DSP function within an algorithm, move the cursor to the block you want to change, then use the Alpha Wheel or **Plus/Minus** buttons. There's a staggering number of combinations of algorithms and DSP functions alone, not to mention the numerous controls that can be used to modify the DSP functions.

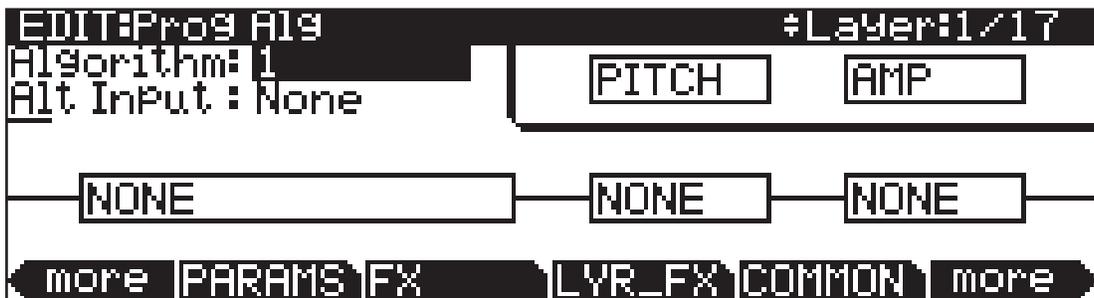


**Note:** Changing a layer's algorithm can affect the layer's sound drastically. It's a good idea to bring down the volume of your Forte SE or your sound system before changing algorithms.

See [Algorithm Basics](#) below for information on editing algorithms.

## Algorithm Basics

Each of the 59 available algorithms represents a preset signal path. With our new Dynamic VAST feature, you can edit any preset signal path and make your own, unique algorithms, but that will be explained further on in this section. Take a look at Algorithm 1 in the diagram below. It's one of the simplest algorithms.



The DSP functions are represented by the rectangular blocks. The lines connecting the blocks together indicates the flow of the digital signal from left to right; they represent what we call the “wire” of the algorithm: the actual physical path that the signal follows through the algorithm. Selecting different algorithms can be compared to connecting different DSP functions with different wiring diagrams.

Think of the left side of each block as its input, and the right side as its output. Depending on the algorithm, the signal may split into two wires, enabling part of the signal to bypass certain portions of the algorithm. Split wires may rejoin within the algorithm, or they may pass all the way through as split signals. If the last block has two wires at its output, we call it a double-output algorithm. If it has one wire, it's a single-output algorithm, even if there are two wires in earlier portions of the algorithm.

## Program Edit Mode

---

### The Algorithm (ALG) Page

Each block of the algorithm represents a certain function in the signal path. In every non-cascaded algorithm (see [Alt Input for Algorithms \(Cascade Mode\) on page 7-35](#) below), the signal flows first through a one-stage DSP function that controls the pitch of the samples in the keymap (this function is represented as a block labeled PITCH in the upper right-hand corner of the display). In fact, the first DSP function in each algorithm always controls pitch, even though it doesn't apply in every instance and, as will be explained later in this section, it is bypassed in cascaded algorithms. Similarly, the last DSP function always controls the final amplitude of the signal (this function is represented as a block labeled AMP in the upper right-hand corner of the display).

The number of function-parameters a DSP function can have depends on the relative size of its function-block on the Algorithm page (four slots is the largest block size). For instance, a function-block that is three slots long can have up to three function-parameters, whereas a function-block that is two slots long can have up to two function-parameters. For each function-parameter, there's a corresponding "subpage" on both the DSPCTL and DSPMOD pages. On the DSPCTL subpages, there are fine adjust and hard-wired parameters with which you can make fixed adjustments to the function-parameter. On the DSPMOD subpages, there are programmable parameters that you can assign to any control source in the Controller List to modulate the function-parameter. The above italicized parameter-types are described in [Common DSP Control Parameters on page 7-32](#). More information on the subpages can be found in [The DSP Control \(DSPCTL\) Page on page 7-37](#) and [The DSP Modulation \(DSPMOD\) Page on page 7-39](#).

Highlighting any of the function-blocks on the ALG page and pressing the Edit button takes you to the DSPCTL page.

## Common DSP Control Parameters

The type of DSP function available for any function block depends on the algorithm. Some of the specialized functions like the PANNER are always located just before the final AMP function. Others, like the two-input functions, appear only in algorithms that are structured for two-input functions.

You can change the nature of each layer of a program simply by assigning different DSP functions to the layer's algorithm. Your level of control goes much deeper than that, however. Each DSP function has one or more parameters to which you can patch a variety of control sources to modify the behavior of the DSP functions themselves.

The parameters on the various control-input pages are very similar; in fact, there are six parameters that appear on almost every page. Consequently we refer to them as the common DSP control parameters. Although the parameters on the control-input pages differ slightly from function to function, you can expect to see some or all of the common DSP control parameters whenever you select the control-input page for any of the DSP functions.

```

EDIT:Prog DSP Control @ #Layer:1/17
Pitch      : 0ST      Fine      : 0ct
LP Frq     : F 8 5588Hz  Hz       : 0.00Hz
LP Res     : -7.0dB
Gain       : -17dB     KeyTrk   : 0ct/key
None       : 0         VelTrk   : 0ct
Level      : -96dB
more KEYMAP LAYER PITCH AMP more

```

You'll recognize the common DSP control parameters, along with several other parameters. Keep in mind that there's a set of common control parameters for each of the DSP functions; in this case we're describing them only as they apply to the pitch control function.

### Function-parameter

Unlike the other five common DSP parameters, the function-parameters are accessible on both the DSPCTL page and the DSPMOD page. They are listed along the left-hand side of each page; any changes made to them on one page are reflected in the other. The label of each function-parameter depends on its function in the current program's algorithm. For example, the Pitch function's function-parameter is labeled Pitch; whereas the two-block Lopass function's function-parameters are labeled LP Frq and LP Res.

By adjusting the function-parameter, you can add a fixed amount of adjustment to any DSP function. For the Pitch function, adjusting the function-parameter will change the pitch in semitone increments. Use this as a starting point to set the pitch where you want it to be normally. This will shift the pitch of the currently selected layer, and will affect the playback rate of sampled sounds. Sampled sounds have an upper limit on pitch adjustment. It's normal for the pitches of sampled sounds to “pin” (stop getting higher) when you adjust the pitch upward in large amounts. The oscillator waveforms can be pitched higher. Any sound can be pitched downward without limit.

The primary use of adjusting the function-parameter or fine adjust parameter (which will be explained under the next heading) is to offset the cumulative effects of the other DSP function parameters. For example, you might set a high value for key tracking (defined below) for a dramatic change in effect across the keyboard. The effect might be too much at one end of the keyboard, however, so you could use one of the adjust parameters to reduce the initial amount of that effect.

The Forte SE always uses real values of measurement, rather than just arbitrary numbers, for adjustable parameters. This means that you specify pitch in semitones (ST) and cents (ct), and amplitude in decibels (dB).

Remember that the parameters on the control-input pages are cumulative—they can add to or subtract from the effects of the other parameters on the page, depending on their values. For example, even if you've adjusted the pitch of a sample so high that it pins, the effects of the other parameters may bring the pitch back down to a workable range.

#### Fine Adjust Parameter

You can add slight detuning to the pitch with the fine adjust parameters. Notice that there are actually two fine adjust parameters for the Pitch function: one that changes the pitch in cents (100ths of a semitone), and one that changes it according to its frequency (in increments of Hertz—cycles per second). Since we're discussing the universal control sources here, and not specifically pitch, we'll move on for now, as the Hz parameter applies only to pitch-related functions. See [The PITCH Page on page 7-30](#) for a more thorough description of Hz.

#### Hard-wired Parameters

##### *Key Tracking*

This is a quick way to get additional control based on the MIDI note number of each note you trigger. Key tracking applies a different control signal value for each note number. In the case of pitch, key tracking enables you to change the tuning of each note relative to its normal pitch.

Middle C is the zero point. Regardless of the key tracking value, there is no effect on Middle C. If you set a nonzero value for key tracking, the effect increases for each note above or below Middle C. In the case of pitch, for example, say you assign a value of **5 cents per key** for the key tracking parameter. Triggering Middle C (C 4 on the Forte SE) will play a normal C 4. Triggering C# 4 will play a note 5 cents higher than C# 4. Triggering D 4 will play a note 10 cents higher than D 4, and so on. Notes below Middle C will be tuned lower than their normal pitches. If you set a negative value for key tracking, notes above Middle C will be tuned lower than their normal pitches.

Keep in mind that key tracking on the PITCH page works in conjunction with the key tracking parameter on the KEYMAP page. This is why you can set the KeyTrk parameter on the PITCH page to **Oct/key**, and notes still increase in pitch by 100 cents/key as you go up the keyboard. It's because the KeyTrk parameter on the KEYMAP page is already set at **100 cents per key**.

##### *Velocity Tracking*

A positive value for velocity tracking will raise the pitch as you trigger notes with higher attack velocities. This is great for getting a trace of detuning based on your attack velocity, especially in drum programs, where you can make the pitch of the drum samples rise slightly with higher-velocity Note Ons, just as drums do when you strike them harder. Negative values will lower the pitch as you increase the attack velocity.

#### Programmable Parameters

##### *Source 1 (Src1)*

This parameter takes its value from a long list of control sources including every MIDI control number, a host of LFOs, ASRs, envelopes and other programmable sources.

Src1 works in tandem with the parameter beneath it on the page: Depth. Choose a control source from the list for Src1, then set a value for Depth. When the control source assigned to Src1 is at its maximum, the pitch will be altered to the full depth you set. For example, if you set Src1 to **MWheel**, and set Depth to **1200 ct**, the pitch will rise as you push the Mod Wheel up on your Forte SE or MIDI controller, reaching a maximum of 1200 ct (12 semitones, or one octave).

**Source 2 (Src2)**

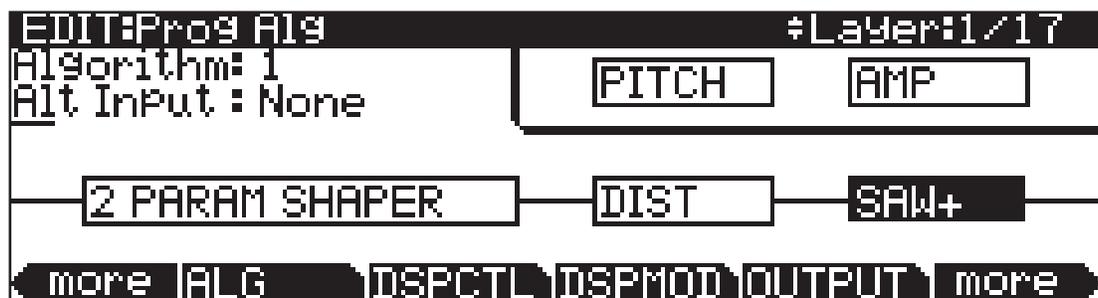
This one's even more programmable. Like Src1, you choose a control source from the list. But instead of setting a fixed depth, you can set a minimum and maximum depth, then assign another control source to determine how much depth you get. Try this example. (Make sure Src1 is set to **OFF** first, so the two sources don't interact). Start with Program 199, and press **Edit**. Press the **PITCH** soft button to select the PITCH page. Set the Src2 parameter to a value of **LFO1**, then set the Minimum Depth parameter to **100 ct**, and Maximum Depth to **1200 ct**. Then set the Depth Control parameter to **MWheel**. This lets you use the Mod Wheel to vary the depth of the oscillation in pitch generated by the LFO.

Now, when the Mod Wheel is down, the pitch will oscillate between a semitone (100 ct) up and a semitone down (the default waveform for LFO1 is a sine wave, which goes positive and negative). With the Mod Wheel up, the pitch will oscillate between an octave up and an octave down.

Since the Mod Wheel is a continuous control, you can achieve any amount of depth control between the minimum and maximum. If you had set the Depth Control to **Sustain**, for example, then you'd get only two levels of depth control: the maximum (1200 cents) with your MIDI controller's sustain pedal down, or the minimum (100 cents) with the sustain pedal up.

## Alt Input for Algorithms (Cascade Mode)

Cascade mode is a particularly powerful feature of the Forte SE that allows you to create unique algorithms of previously unattainable levels of complexity. The following three figures show the signal path of a program configured using the Forte SE's Cascade mode:



## Program Edit Mode

### The Algorithm (ALG) Page



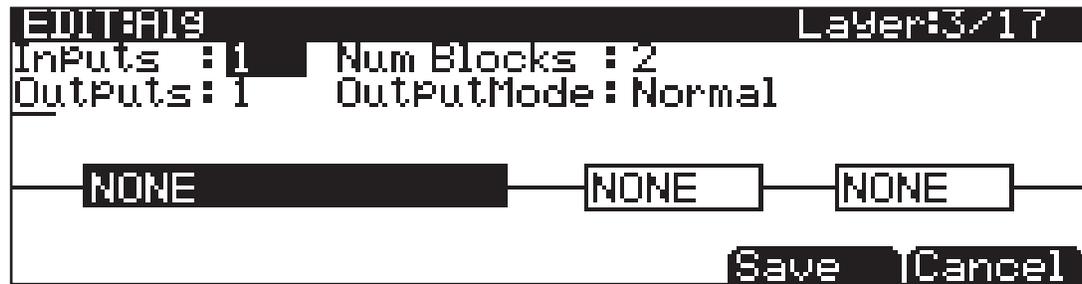
On the ALG (Algorithm) page of every layer, the Alt Input parameter lets you select any other layer to go through the current layer's DSP. You can set it up so that layer 1 goes into layer 2 into 3 (as shown above). If you turn down the volume on layers 1 and 2, then you are hearing true cascading—it's like a big chain with each algorithm feeding into the next, and what you hear is layer 3's output. You can also have the volumes of all three layers turned up, which will mix the signal of all three layers. You could, in the same program, also decide to run layer 4 into 5 into 6 into 13 into 25 if you wanted. Any of the 32 layers can go into any other layer.

The Cascade mode algorithms (very much like triple mode on a K2600) start at ID 101. Note in the above figures how algorithm 101 looks very similar to algorithm 1. Each Cascade mode algorithm corresponds to its non-cascade equivalent, which has the same ID number minus 100. For example, algorithm 105 is a cascade mode version of algorithm 5. On the Alg page, select which layer you want to have running through your cascade layer with the Alt Input parameter. Make sure to turn down the Amp volume on your source layers if you only want to hear what's coming out of the final cascade layer.

## Dynamic VAST

The Dynamic VAST editor is yet another particularly powerful feature of the Forte SE that allows you to edit the wiring of an algorithm. With Dynamic VAST, literally thousands of wiring schemes are possible. Using Cascade mode in conjunction with Dynamic VAST gives you almost infinite control over your program's sound and behavior by enabling you to create your own unique, complex algorithms.

To enter the Dynamic VAST editor, select the ALG (Algorithm) page by pressing the ALG soft button. Highlight the Algorithm parameter, select an algorithm, and press the edit button. This action calls up the Edit Algorithm (EditAlg) page in which you can edit the wiring of the selected algorithm.



Parameter	Range of Values	Default
Inputs	1, 2	1
Outputs	1, 2	1
Number of Blocks	1 to 4	2
Output Mode	Normal, Sep. L/R	Normal

In addition to having a selectable function, each function block has three editable parameters: number of inputs, number of outputs, and block size (the Output Mode parameter is an editable parameter of the algorithm as a whole). When you first enter the EditAlg page, there will be a cursor in the parameter field, and the first block of the algorithm will be highlighted. To select a block for editing, move the cursor down the display until no parameter field is highlighted; then, using the < and > buttons, highlight the block you wish to edit. Press the ^ button to move the cursor back into the parameter fields, and then select the parameter you wish to edit.

The Output Mode parameter determines the number of outputs from the algorithm. With Output Mode set to Normal, the algorithm has one output. With Output Mode set to Sep. L/R, the algorithm has two outputs, each of which is sent to a separate stereo channel.

To edit the signal path, select either an input of a block or an output of the entire algorithm. By scrolling with Alpha Wheel or the Previous- and Next+ buttons, you can see every possible configuration for that selected signal path.

## The DSP Control (DSPCTL) Page

Before reading further, be sure to read [Algorithm Basics on page 7-31](#) and [Common DSP Control Parameters on page 7-32](#).

Press the DSPCTL soft button to call up the DSP Control (DSPCTL) page, which is displayed below:

## Program Edit Mode

### The DSP Control (DSPCTL) Page

```

EDIT:Prog DSP Control @ #Layer:1/17
Pitch : 0ST           Fine : 0ct
LP Freq : F 8 5588Hz  Hz   : 0.00Hz
LP Res  : -7.0dB
Gain    : -17dB
None    : 0
Level   : -96dB
KeyTrk  : 0ct/key
VelTrk  : 0ct
more |KEYMAP|LAYER|PITCH|AMP|more
  
```

Function	Parameter	Range of Values	Default
Pitch	Pitch	-128 to 127 semitones	0
	Fine Adjust	± 100 cents	0
	Hertz Adjust	± 10.00 Hertz	0
	Key Tracking	± 2400 cents/key	0
	Velocity Tracking	± 7200 cents	0
(Function)	(Function-Parameter)	(Depends on Function)	(Depends on Function)
(Function)	(Function-Parameter)	(Depends on Function)	(Depends on Function)
(Function)	(Function-Parameter)	(Depends on Function)	(Depends on Function)
(Function)	(Function-Parameter)	(Depends on Function)	(Depends on Function)
Level	Level	-96 to 24 decibels	-6
	Key Tracking	± 2.00 decibels/key	0
	Velocity Tracking	± 96 decibels	35

Each field in the left-hand column of the page is a function-parameter of the current layer's algorithm. You can coarsely adjust the function-parameter in these left-hand fields—as noted in [Common DSP Control Parameters](#), any adjustments made to the function-parameters on the DSPCTL page are reflected in the corresponding function-parameters on the DSPMOD page. The right-hand side of the DSPCTL page is the subpage of the highlighted function-parameter—on the subpage are the fine adjust parameters and hard-wired parameters. To access the parameters on the subpage, highlight the function-parameter you wish to edit, and then press the > button to move the cursor into the subpage. The label of a function-parameter depends on its corresponding function-block in the current layer's algorithm. The above DSPCTL page corresponds to the following algorithm:

```

EDIT:Prog A19 #Layer:1/17
Algorithm: 1
Alt Input : None
[PITCH] [AMP]
-----
[2POLE LOWPASS] — [SHAPER] — [NONE]
more |PARAMS|FX|LYR_FX|COMMON|more
  
```

## The DSP Modulation (DSPMOD) Page

Before reading further, be sure to read [Algorithm Basics on page 7-31](#) and [Common DSP Control Parameters on page 7-32](#).

Press the DSPMOD soft button to call up the DSP Modulation (DSPMOD) page, which is displayed below:

```

EDIT:Prog DSP Mod                                     #Layer:1/17
Pitch      : 0ST                                     Src1      : OFF
LP Frq    : F 8 5588Hz                               Depth    : 0ct
LP Res    : -7.0dB                                   Src2     : OFF
Gain      : -17dB                                   DptCtl   : OFF
None      : 0                                        MinDepth : 0ct
Level    : -96dB                                   MaxDepth : 0ct
more ALG   DSPCTL DSPMOD OUTPUT more
    
```

Parameter	Range of Values	Default
Source 1	Control Source List	Off
Depth	<i>(Depends on Function)</i>	0
Source 2	Control Source List	Off
Depth Control	Control Source List	Off
Minimum Depth	<i>(Depends on Function)</i>	0
Maximum Depth	<i>(Depends on Function)</i>	0

Each field in the left-hand column of the page is a function-parameter of the current layer’s algorithm. You can coarsely adjust the function-parameter in these left-hand fields—as noted in [Common DSP Control Parameters](#), any adjustments made to the function-parameters on the DSPMOD page are reflected in the corresponding function-parameters on the DSPCTL page. The right-hand side of the DSPCTL page is the subpage of the highlighted function-parameter—on the subpage are the programmable parameters. To access the parameters on the subpage, highlight the function-parameter you wish to edit, and then press the > button to move the cursor into the subpage.

Each function-parameter’s subpage contains the programmable parameters of the highlighted function-parameter. By assigning control sources to modulate a function-parameter, you can enable real-time control of your program’s sound and behavior. You can assign Src1 to any control source, and can specify its maximum value with the Depth parameter. Src2 is different—you can assign it to any control source, but can also assign a control source to its maximum value with the DptCtl parameter. You can then specify the range of Src2’s depth with the MinDepth and MaxDepth parameters.

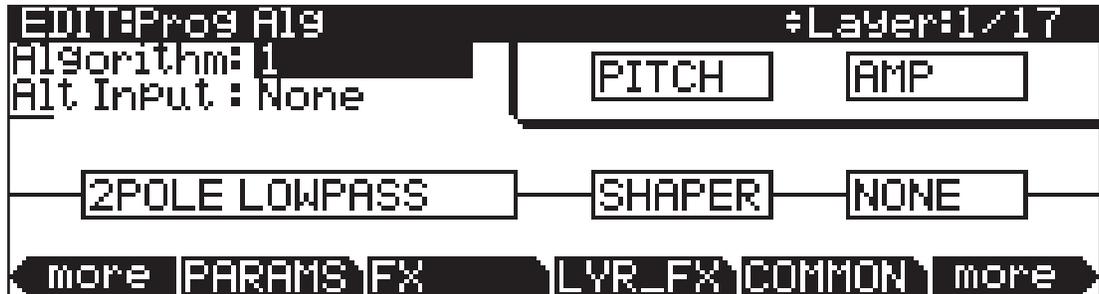
## Program Edit Mode

### The OUTPUT Page



Note: The Forte SE features an easy shortcut for quickly assigning any of the Forte SE's realtime controllers (sliders, wheels, buttons, etc). to a currently selected parameter (such as the Src1 and Src2 parameters above). Simply hold the Enter button and move the desired controller.

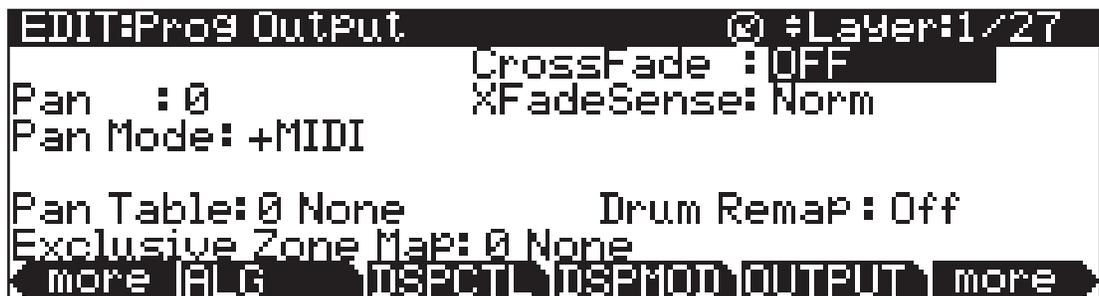
The label of a function-parameter depends on its corresponding function-block in the current layer's algorithm. The above DSPMOD page corresponds to the following algorithm:



## The OUTPUT Page

Press the **OUTPUT** soft button to get to the OUTPUT page, where you set the layer's pre- and post-FX panning. There are actually four different configurations of the OUTPUT page; which one you see depends on whether the current layer uses a stereo keymap, and whether it uses program FX or layer-specific effects (more on this in [The Program FX \(FX\) Page on page 7-13](#) and [The Layer FX \(LYR\\_FX\) Page on page 7-15](#)).

Regardless of the page's configuration, there are parameters for adjusting the pan position, the pan mode, the pan table (if any), the crossfade control, and the crossfade sense. Layers that use stereo keymaps, or that use layer-specific FX, have additional parameters on their OUTPUT pages. The following page is for a mono keymap program that uses program FX:



Parameter	Range of Values	Default
Pan (or Pan 1)	± 64	0
(Pan 2)	± 64	63
Pan Mode	Fixed, +MIDI, Auto, Reverse	+MIDI

Parameter	Range of Values	Default
(Output Pan)	± 64	0
(Output Gain)	-96 to 48 decibels	0
(Output Pan Mode)	Fixed, +MIDI	+MIDI
Pan Table	Pan Table List	0 None
Crossfade Control	Control Source List	Off
Crossfade Sense	Normal, Reversed	Norm
Drum Remap	Off, Kurz1, Kurz2	Off
Exclusive Zone Map	Zone Map List	0 None

## Pan

Use this parameter to position the current layer's *pre-FX* signal. Negative values pan the signal to the left channel, positive values pan to the right, and a value of zero pans to the center. To adjust the *post-FX*, final-stage gain and panning of the current program, go to the COMMON page and adjust the Output parameters (see [The COMMON Page on page 7-16](#)); or to adjust a layer's post-FX audio signal individually, go to the LYR\_FX page and set the Layer FX Mode parameter to Layer-Specific FX (see [The Layer FX \(LYR\\_FX\) Page on page 7-15](#)), and then return to the OUTPUT page and adjust the output parameters.

An additional pan parameter (Pan2) appears if you have the Stereo parameter on the KEYMAP page set to a value of **On**.

```

EDIT:Prog Output #Layer:1/17
Pan1 : -64          CrossFade : OFF
Pan2 : 64           XFadeSense: Norm
Pan Mode: +MIDI

Pan Table: 0 None      Drum Remap: Off
Exclusive Zone Map: 0 None
more |ALG |DSPCTL|DSPMOD|OUTPUT| more
    
```

## Pan Mode

When the mode is **Fixed** the pan position remains as defined with the Pan parameter, ignoring MIDI pan messages. When the mode is **+MIDI**, MIDI pan messages (MIDI 10) will shift the sound to the left or right of the Pan parameter setting. Message values below 64 shift it left, while those above 64 shift it right. A setting of **Auto** assigns the pan setting of each note based on its MIDI note number. In this case, Middle C (MIDI note number 60) is equivalent to the Pan parameter's setting. Lower notes shift increasingly left, while higher notes shift increasingly right. A setting of **Reverse** shifts low notes right, and high notes left. MIDI pan messages will also affect the pan position when values of **Auto** and **Reverse** are selected.

## Output: Pan, Gain, and Mode

When the Layer FX Mode parameter is set to Layer-Specific FX on the LYR\_FX page, three additional parameters appear on the OUTPUT page: Out Pan, Out Gain, and Out Pan Mode.

```
EDIT:Prog Output @ #Layer:1/17
Pan1 : -64          Crossfade : OFF
Pan2 : 64           XFadeSense: Norm
Pan Mode: +MIDI     Out Pan : 0
Out Gain : 0dB      Out Pan Mode: +MIDI
Pan Table: 0 None   Drum Remap: Off
Exclusive Zone Map: 0 None
more [ALG] [DSPCTL] [DSPMOD] [OUTPUT] more
```

These parameters are analogous to the output parameters on the COMMON page, but are layer-specific—the COMMON output parameters apply to all layers. You can use the output parameters on the OUTPUT page to adjust the panning and gain of the post-FX signal of the current layer.

## Pan Table

The factory preset pan tables are key-specific panning schemes by which the note that each key produces is uniquely panned. These tables are particularly useful for producing the stereo image of a drum set when creating percussion programs, or for producing the stereo image of a piano when creating piano programs.

## Crossfade and Crossfade Sense (XFadeSense)

The Crossfade parameter lets you select a control source to fade the current layer's amplitude from zero to maximum. When XFadeSense is **Normal**, the layer is at full amplitude when the Crossfade control is at minimum. With XFadeSense set to **Reverse**, the layer is at zero amplitude when the Crossfade control is at minimum.

This parameter is similar to the Src1 and Depth parameters for the Amp function on the DSPCTL and DSPMOD pages, but the attenuation curve for the Crossfade parameter is optimized specifically for crossfades.

To crossfade two layers in the same program, assign the same control source for the CrossFade parameters in both layers, then set one of their XFadeSense parameters to a value of **Norm**, and the other's to **Rvrs**.

## Drum Remap

The Drum Remap parameter should generally not be changed. This parameter lets the Forte SE know how drum programs are mapped so that drum sounds can be properly remapped when using the General MIDI (GM) drum map (see below). Kurz1 designates that the current drum program was originally a PC2 program, and that it uses the PC2 drum map (programs 113-119 use this map). Kurz2 designates that the current drum kit uses the new Forte SE drum map (all other factory drum programs use this map: 120, 241-248, 369-376). The new drum map is similar to that of the PC2, except tom-tom sounds have been moved into octave C3-C4, so they are more easily playable with the main kick and snare drum sounds in that octave. When editing a kit, make sure to follow the layout of the drum map being used if you want to be able to properly remap the kit to the GM drum map. Programs that have the Drum Remap parameter set to Off will not be viewed by the Forte SE as drum programs and will not be affected when remapping to the GM drum map.

In most keyboards and synthesizers, drum programs are mapped as dictated by the General MIDI (GM) industry standard. The GM drum map isn't optimally intuitive in terms of playability, so we developed our own unique keymap that is more intuitive and lends better to performance. However, the GM drum map is so commonplace that many players feel most comfortable playing drum programs with the GM drum map. So, we designed the Forte SE such that you can remap drum programs to the GM drum map. You can set drum programs to remap to the GM drum map in Master Mode. On the Master Mode MAIN page set the drum remap parameter to GM. To return drum programs to their original maps, set this parameter to None. See [Drum Remap on page 7-43](#) in the Master Mode chapter for more information.

## Exclusive Zone Map

The Exclusive Zone Map is another parameter that applies principally to drum programs. When using a drum program, you may want the closed hi-hat sounds to “cut off” open hi-hat sounds. Since you can remap the keymaps of drum programs, this parameter remaps “cut off keys” accordingly.

Like Drum Remap, you can use this parameter on any program, but you probably won't want to do this.

## The LFO Page

LFOs are low-frequency oscillators. LFOs are used to automate the modulation of a parameter based on the shape and frequency of an audio waveform. You'll use the LFO page to define the behavior of the two LFOs available to each layer. LFOs are periodic (repeating) control sources. The basic elements are the rate, which defines how frequently the LFO repeats, and shape, which defines the waveform of the modulation signal it generates.

## Program Edit Mode

### The LFO Page

With the Forte SE, you can set upper and lower limits on each LFO's rate, and assign a control source to change the LFO's rate in realtime, if you wish.

Because of its periodic nature, the LFO is perfect for creating effects like vibrato (cyclic variation in pitch) and tremolo (cyclic variation in amplitude). When you're editing LFOs, or any control source, remember that it must be assigned to control some parameter before you'll hear the effects of your edits.

LFO1 is always local, meaning that it's triggered with each Note On event, and runs independently for each note in the layer. LFO2 is local by default, but can be made global. This is done on the COMMON page, by setting the Globals parameter to **On**, which causes LFO2, ASR2, FUN2 and FUN4 all to become global. Global controls uniformly affect every note in each layer.

	MnRate	MxRate	RateCt	Shape	Phase
LFO1	0.00H	0.00H	OFF	None	0deg
GLFO2	0.00H	0.00H	OFF	None	0deg

Parameter Group (Available for each of LFO1 and LFO2)	Range of Values	Default
Minimum Rate	1/4 note, 1/8 note, 1/8 triplet, 1/16 note, 0 to 24 Hz	0.00
Maximum Rate	0 to 24 Hz	0.00
Rate Control	Control Source List	Off
LFO Shape	LFO Shape List (Ref. Guide)	Sine
LFO Start Phase	0, 90, 180, 270 Degrees	0

## Minimum Rate

This is the slowest rate at which the LFO runs. When its Rate Control is set to **OFF**, or when the control source assigned to it is at its minimum, the LFO runs at its minimum rate. As previously mentioned, the values 1/4 note, 1/8 note, 1/8 triplet, and 1/16 note sync the Minimum Rate with the Forte SE's system tempo. Of course, if you choose to tempo sync your LFO, then the LFO rate is fixed, and you can specify neither Maximum Rate nor Rate Control. The display changes as shown below:

EDIT:Prog LFO		#Layer:1/17			
	MnRate	MxRate	RateCt	Shape	Phase
LFO1	0.00H	0.00H	OFF	None	0deg
GLFO2	0.00H	0.00H	OFF	None	0deg

more LFO ASR FUN more

## Maximum Rate

This is the fastest possible rate for the LFO. When its Rate Control is set to **ON**, or when the control source assigned to it is at its maximum, the LFO runs at its maximum rate.

## Rate Control

Assign any control source in the list to modulate the LFO's rate between its minimum and maximum. A continuous control like the Mod Wheel is a natural choice, enabling you to get just about any rate between minimum and maximum. But you can use a switch control too, to get just the minimum or maximum with nothing in between. Assigning **MPress** (aftertouch) as the rate control for an LFO vibrato gives you an easy way to increase the vibrato rate in realtime, as you can on many acoustic instruments.

## LFO Shape

The shape of the LFO waveform determines the nature of its effect on the signal its modulating. An easy way to check the effects of the different LFO shapes is to set **LFO1** as the value for the Src1 parameter on the PITCH page, and set the Depth for Src1 to **400 cents** or so. Then go to the LFO page, set the Min and Max rates for LFO1 at **0.00 Hz** and **4.00 Hz** or so, and set the Rate control to **MWheel**. Now play your MIDI controller and you'll hear the LFO's rate change when you move its Mod Wheel. Select different LFO Shapes and check out the effect on the pitch.

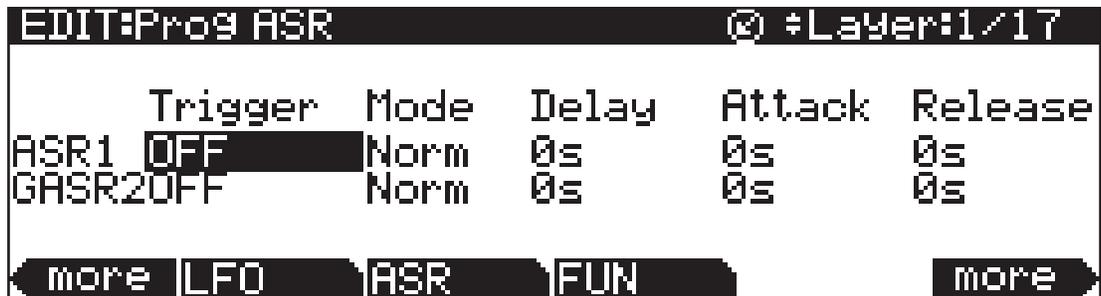
## LFO Phase

Use this parameter to determine the starting point of the LFO's cycle. One complete cycle of the LFO is 360 degrees. 0 degrees phase corresponds to a control signal value of 0, becoming positive. Each 90-degree increment in the phase represents a quarter-cycle of the LFO.

When an LFO is local, the phase parameter gives you control over the starting point of the LFO for each note (for example, you could make sure every vibrato started below the pitch you played instead of at the pitch you played). The LFO's phase also affects global LFOs, although it's often indistinguishable, since global LFOs start running as soon as the program containing them is selected, even if you don't play any notes.

## The ASR Page

ASRs are three-section unipolar envelopes—attack, sustain, and release. The Forte SE’s ASRs can be triggered by a programmable control source, and can be delayed. ASR1 is always a local control. ASR2 is local by default, but becomes global if the Globals parameter on the COMMON page is set to **On**. ASRs are frequently used to ramp the depth of pitch or amplitude in a vibrato or tremolo, enabling delays in those effects. The ASR page consists of two rows of five parameters, one row for each of the ASRs.



Parameter	Range of Values	Default
Trigger	Control Source List	Off
Mode	Normal, Hold, Repeat	Normal
Delay	0 to 30 seconds	0 seconds
Attack	0 to 30 seconds	0 seconds
Release	0 to 30 seconds	0 seconds

### Trigger

This defines the control source that starts the current layer’s ASRs. The ASR starts when the trigger switches from off to on. If the Trigger parameter is set to **ON**, a global ASR starts running immediately when you select a program that contains it. A *local* ASR starts running as soon as you trigger a note in the layer that contains it. Switch controls are better suited for ASR triggers because of their binary (on/off) nature. A continuous control will trigger the ASRs when its signal value is above its midpoint.

### Mode

This parameter sets the sustain section of the ASR. The ASR’s mode determines what the ASR does when it finishes its attack section. If the Mode parameter is set to **Normal**, the ASR will run directly from its attack section to its release section (no sustain). At a setting of **Repeat**, the ASR will cycle through the attack and release sections, then loop forward and cycle through again until the ASR’s trigger switches off. If the mode is set to **Hold**, the ASR maintains its position at the end of the attack section until the ASR’s trigger switches off.

The ASR then goes into its release section. If the ASR's trigger switches off before the attack section is complete, the ASR goes directly to its release section.

## Delay

When the ASR's trigger switches on, the ASR will start immediately if this parameter is set to zero. Nonzero values will cause a corresponding delay between the ASR trigger and the start of the ASR.

## Attack

This defines how long the ASR takes to ramp up from minimum to maximum effect on whatever it's patched to.

## Release

This defines how long the ASR takes to fade to minimum from its maximum. If the ASR's trigger switches off before the ASR has reached maximum, the ASR releases from that level.

# The Function (FUN) Page

FUN is short for function. The Forte SE's four FUNs greatly extend the flexibility of the control sources. Each FUN accepts input from any two control sources, performs a selectable function on the two input signals, and sends the result as its output, which can be assigned like any other control source. Using the FUNs involves defining them on the FUN page, then assigning one or more of them as control sources. The FUN page looks like this:

EDIT:Prog Functions @ #Layer:1/17			
	Input a	Input b	Function
FUN1	OFF	OFF	None
GFUN2	MIDI28	MIDI90	a*b
FUN3	OFF	OFF	None
GFUN4	OFF	OFF	None

more LFO ASR FUN more

There are three parameters for each FUN. Inputs **a** and **b** can be any control source from the Control Source list. The control sources you want to combine are the ones you'll assign as the values for these parameters.

The Function parameter determines what mathematical function is applied to the two inputs. When a FUN has been assigned as a control source, the Forte SE reads the values of the two control sources defined as Inputs **a** and **b**. It then processes them according to the setting for the Function parameter, and the resulting value is the FUN's output.

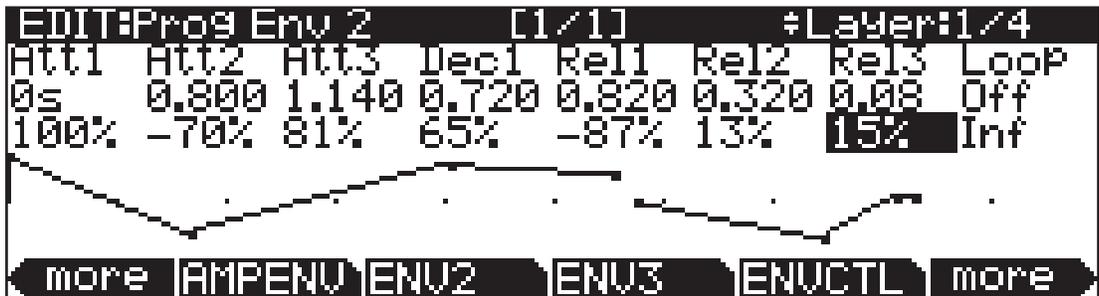
## The Amplitude Envelope (AMPENV) Page

Amplitude envelopes have three sections: attack, decay, and release. The attack section determines how long each note takes to reach its assigned amplitude level after you trigger a Note On event. The decay section determines how quickly and how much a sustained sound fades before a Note Off is triggered. The release section determines how quickly a sound fades to silence *after* a Note Off is triggered.

Press the **AMPENV** soft button to reach the Amplitude Envelope page. For many programs, it will look like the diagram below, which tells you that the amplitude envelope for the current layer is the sample's default "natural" envelope. Many factory ROM programs use the natural envelope, which is custom designed for each sample and waveform during its original development process. A natural envelope usually contains more detail than a user envelope, and may make samples of acoustic instruments sound more realistic.



If you want to build your own amplitude envelope, just turn the Alpha Wheel a click. The value **Natural** will change to **User**, and a set of AMPENV parameters will appear. The sound will change when you do this, because the default settings for the User envelope, as shown in the diagram below, take effect as soon as you leave Natural mode. Returning to Natural mode applies the original amplitude envelope once again.



You'll tweak the parameters on the AMPENV page when you want to shape the amplitude characteristics of your sounds. A graphic view of the amplitude envelope will appear on the display to give you a visual sense of the envelope's characteristics. The dots along the envelope graphic indicate the breakpoints between the envelope's various segments.

The AMPENV page's top line gives you the usual location reminder, points out the currently selected layer, and tells you the relative scale of the envelope's graphic view. The envelope graphic shrinks in scale as the segment times get longer. This auto-zoom feature maximizes the available display space. Try lengthening one of the segment times. The envelope graphic will stretch to fill the display from left to right. When it fills the display, it will shrink to half its size, and the top line will indicate that the scale has changed (from [1/1] to [1/2], for example).

Each parameter on this page has two values, as listed below. For the envelope segments, the first (upper) value is the duration of the segment, and the second is the amplitude level at the completion of the segment. For the Loop parameter, the values define how the envelope loops, and how many times the loop cycles.

Parameter Group	Parameter	Range of Values
Attack Segment 1, 2, 3	Time	0 to 60 seconds
	Level	0 to 100%
Decay Segment	Time	0 to 60 seconds
	Level	0 to 100%
Release Segment 1, 2, 3	Time	0 to 60 seconds
	Level	0 to 150% (Release Segment 3 is always set to 0%)
Loop	Type	Off, Forward, Bidirectional
	# of loops	Infinite, 1 to 31 times

## Attack Segment Times

These indicate how long it takes for the current layer's amplitude to reach its final level from its starting level.

## Attack Segment Levels

These are the final levels that each segment achieves at completion. The levels are expressed as percentages of the maximum possible amplitude for the current layer. Attack segment 1 always starts at zero amplitude, and moves to its assigned level in the time specified by its time value. So the default settings of **0 seconds** and **100%** mean that the first segment of the attack section moves instantly from zero amplitude to 100% amplitude. Increase the time of Attack segment 1 if you want the sound to ramp up more slowly.

Attack segments 2 and 3 affect the sound only when you set a nonzero value for time. They will then move to their assigned levels in the time specified. Their starting levels are equal to the final levels of the preceding segment.

## Decay Segment

The decay section has only one segment. It has values for time and level, just as for the attack section. The decay section begins as soon as the attack section has been completed. It starts at the same amplitude level as the attack segment preceding it, and moves to its assigned level in the time specified. You'll hear a note's decay section only when the attack section is completed before a Note Off message is generated for that note.

To create a sustaining envelope, simply set the Decay segment's level to a nonzero value.

## Release Segments

Like the attack and decay sections, each of the three segments in the release section has values for time and level. Each segment reaches its assigned level in the time specified for that segment. Release segment 1 starts at the Note Off event for each note, at the current amplitude level of that note—whether it's in the attack section or the decay section. It then moves to its assigned level in the time specified. Release segments 2 and 3 start at the final levels of the segments before them.

Release segments 1 and 2 can be set to any level from **0** to **150%**. Release segment 3 always has a level of **0%**, so you can't adjust its level. In place of its Level parameter you see a parameter that lets you toggle between User envelopes and the sound's preprogrammed natural envelope.

## Loop Type

There are seven different values for Loop type.

A value of **Off** disables looping for the current layer's amplitude envelope.

Values of **seg1F**, **seg2F**, and **seg3F** are forward loops. In each case, the amplitude envelope plays through the attack and decay sections, then loops back to the beginning of the first, second, or third attack segments, respectively.

Values of **seg1B**, **seg2B**, and **seg3B**, are bidirectional loops. The amplitude envelope plays through the attack and decay sections, then reverses and plays backward to the beginning of the first, second, or third attack segment, respectively. When it reaches the beginning of the assigned attack segment, it reverses again, playing forward to the end of the decay section, and so on.

## Number of Loops

A value of **Inf** makes the amplitude envelope loop until a Note Off is generated. Values of **1** through **31** indicate how many times the loop will repeat after the amplitude envelope has played once through its normal cycle.

Regardless of the loop type and the number of loops, each note goes into its release section as soon as its *Note State* goes off (that is, when a Note Off is generated). The envelope will continue to loop as long as Note State remains on, whether it's held on by a pedal, by the IgnRel parameter (described in the section entitled *The LAYER Page on page 6-17*), or anything else.

## The Envelope 2 (ENV2) and Envelope 3 (ENV3) Pages

The Forte SE offers two envelopes in addition to AMPENV. Like AMPENV, ENV2 and ENV3 can be assigned like any other control source. Unlike AMPENV, however, ENV2 and ENV3 can be bipolar. This means that you can set negative values for them. (Obviously, you can't have an amplitude less than zero, so AMPENV is unipolar—the values range from **either 0 to 100% or 0 to 150%**). A bipolar envelope controlling pitch, for example, could modulate the pitch both above and below its original level.

Another difference is that AMPENV *always* controls the amplitude of the layer, so even if you use it as a control source for other functions, it will still affect the layer's amplitude. ENV2 and ENV3 affect only those layers that have them assigned as a control source. Also, AMPENV uses an exponential attack (the amplitude rises much faster at the end of the attack segment than it does at the beginning), while ENV2 and ENV3 use linear attacks (the attack segment increases at the same rate from start to finish).

The pages for Envelopes 2 and 3 are reached with the soft buttons **ENV2** and **ENV3**. When you select these pages, you'll find a display that looks very much like the AMPENV page. The only differences are that you can program an amount for Rel3; the Rel1 and Rel2 limits, which are  $\pm 100\%$ ; and in the envelope graphic, which has a dotted line running horizontally across the display. This is the zero level line; negative level values for the various envelope segments will cause the envelope graphic to dip below this line.

## The Envelope Control (ENVCTL) Page

The Envelope Control page gives you realtime control over the rates of each section of the amplitude envelope for both natural and user envelopes (see [The Amplitude Envelope \(AMPENV\) Page on page 7-48](#)). Press the ENVCTL soft button to reach the ENVCTL page.

EDIT:Prog Env Control				#Layer:1/17		
	Adjust	Keytrk	VelTrk	Source	Depth	
Attack:	1.000x	1.000x	1.000x	MIDI73	1.000x	
Decay:	50.000	1.000x		Sustai	0.018x	
Releas:	1.000x	1.000x		MIDI71	1.000x	
Impact:	0.0dB	0.0dB	0.0dB	MIDI70	0.0dB	
more		AMPENV	ENV2	ENV3	ENVCTL	more

The display's top line reminds you of the current layer. The column on the left lists the three section types of the amplitude envelope, and each corresponding line lists the values for the five DSP control parameters that are available for each section type. The DSP control parameters are: Adjust, Key tracking, Velocity tracking, and Source/Depth, which are listed at the top of each corresponding column. When AMPENV is set to User mode, the Attack and Release sections on this page apply to the attack and release sections on the AMPENV page. It's important to keep in mind that the values for the various parameters are cumulative, meaning that if for example you set attack to be controlled by Keytrk and VelTrk, the resulting change on Attack would be affected by the combination of the values produced by KeyTrk and VelTrk. Also note that unlike previous Kurzweil models, ENVCTL does affect the attack sections of natural envelopes. Additionally, the bottom line of this page lets you make use of the Impact feature, which lets you boost or cut the amplitude of the first 20 milliseconds of a note's attack.

The parameters and values in the following parameters list (see below) apply to *each* of the three envelope sections—attack, decay, and release. We'll describe them only once, since their functions are largely the same for each envelope section. The only difference is with velocity tracking, which is only available as a parameter to control attack sections of the amplitude envelope (however, you can assign attack velocity as the value for the Source parameter in each of the sections).

The values of each of these parameters multiply the *rates* of the envelope sections they control. Values greater than **1.000x** make the envelope sections run *faster* (they *increase* the rate), while values less than **1.000x** make the envelope sections run *slower*. Say for example that on the current layer's AMPENV page you had set the Decay section's time at **2.00 seconds**, and its level at **0%**. This sets the layer's amplitude to fade to silence two seconds after the completion of the last attack segment. The decay *time* is two seconds; the decay *rate* is 50% per second. Now if you select the ENVCTL page and set the Decay Adjust parameter to a value of **2.000x**, you've increased the decay *rate* by a factor of two, making it twice as

fast. The rate increases to 100% per second, and the decay time is now one second instead of two.



Note: Since 0 multiplied by any number equals 0, the envelope parameters on this page will have no effect on any AMPENV sections set to 0 seconds. A way around this is to change any AMPENV sections set to 0 to 0.02 seconds.

Parameter Group (Available for each of Att, Dec, Rel, Imp)	Range of Values
Adjust	0.018 to 50.000x (-24.0 to 24.0 dB for Imp)
Key Tracking	0.018 to 50.000x (-2.00 to 2.00 dB for Imp)
Velocity Tracking	0.018 to 50.000x (Not available for Dec or Rel; -24.0 to 24.0 dB for Imp)
Source	Control Source List
Depth	0.018 to 50.000x (-24.0 to 24.0 dB for Imp)

## Adjust

This is the familiar Coarse adjust found on many other pages. Use it here to change the rate of one of the envelope sections without reprogramming the envelope itself. This parameter doesn't give you realtime control over the envelope. It is, however, a good way to adjust the natural envelopes without switching to a User envelope and trying to approximate the Natural envelope.

## Key Tracking

This uses the MIDI note number of each key as the control input for the current layer's corresponding envelope section. When the value of this parameter is greater than **1.000x**, notes above C 4 will make the envelope section run faster, while notes below C 4 will make it run slower. When the value of this parameter is less than **1.000x**, notes above C 4 will make the envelope section run slower, and notes below C 4 will make it run faster. This gives you realtime envelope control right from your MIDI controller. You might use it, for example, to cause an acoustic guitar sound to decay quicker at the high end of the keyboard (set the key tracking to a positive value).

## Velocity Tracking

Use your attack velocity as the control input for the current layer's attack section (this parameter doesn't apply to decay or release). When the value of this parameter is greater than **1.000x**, attack velocities greater than 64 make the attack section run faster, and attack velocities below 64 make it run slower. This gives you realtime attack control over the envelope.

## Source, Depth

These two parameters work together to let you assign a control like the Mod Wheel to affect the current layer's amplitude envelope in realtime. The value of the Source parameter defines which control affects the envelope section, and the value of the Depth parameter defines how much the rate is multiplied when the control is at its maximum value, 127. No effect is had when the control is at its minimum value, 0, and Depth values are scaled for controller values in between.



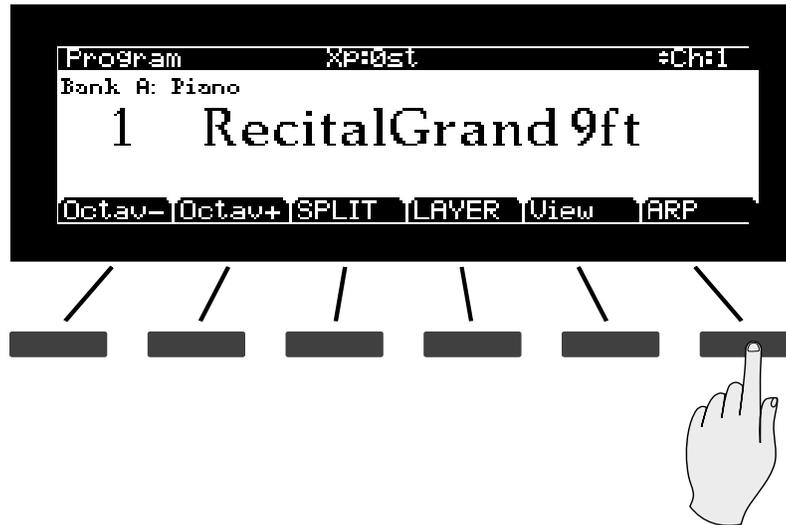
Note: For each note triggered, you can only set the controller value that will scale the Depth parameter of an envelope section before that section of the envelope is triggered. For controllers assigned for Attack, the controller value used will be the last received before the note is triggered. For controllers assigned for Decay, the controller value used will be the last received before the final section of the attack envelope reaches its maximum amplitude. For controllers assigned for Release, the controller value used will be the last received before the note is released. To put it another way, for each envelope section, you cannot change the rate of a note's envelope once that section of the envelope has been triggered.

## Impact

Impact can boost or cut note volume by up to 24 dB during the first 20 milliseconds of the attack of an envelope. This feature is an easy way to get more “thump” from your bass and drum sounds.

## The Arpeggiator Function

The Arpeggiator takes note input from the keyboard (or via MIDI) and outputs a rhythmic and/or melodic pattern of MIDI notes. The Arpeggiator can affect both the internal programs and external MIDI instruments.



The Arpeggiator processes notes by playing them repeatedly, and/or transposing them up and down the keyboard. You have control over note output velocity, order, duration, transposition, and more. You can control several arpeggiator parameters in real time. You can also assign and edit specific patterns for note shifting, velocity shifting, and duration, either as separate patterns, or as a combination of all three in Step Sequencer mode. The Arpeggiator also has several different “latch” settings, which allows the arpeggiator to continue to play after you have released the keys.

### Arp Switch (On/Off)

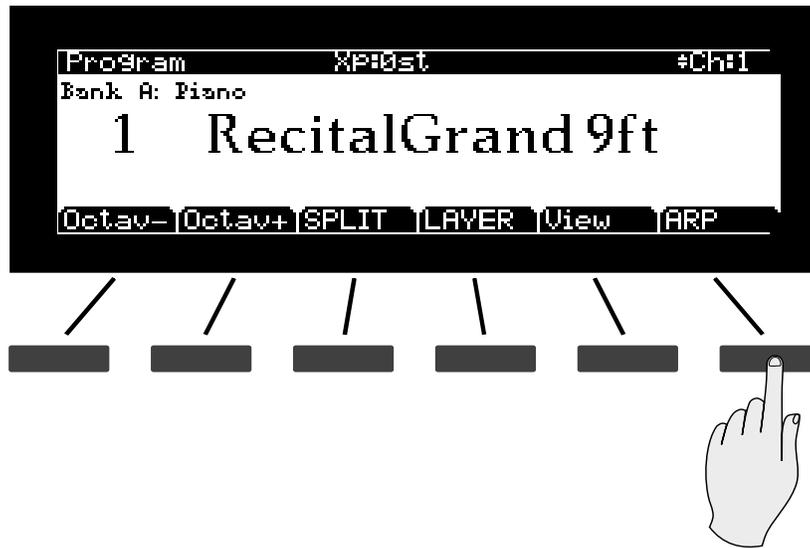
Forte SE Programs use a global arpeggiator, which can be toggled on and off with the Arp switch. This changes the “State” parameter of the Program Arpeggiator, which can also be switched on using Controller number 147 (**ArpOn**) and switched off using Controller number 148 (**ArpOff**). These controllers can, of course, be assigned as the destination of a Forte SE physical controller other than the Arp Switch.

### Arp soft button

Hitting the Arp soft button brings up the Arpeggiator editor, where you can adjust many parameters.

## Program Edit Mode

### The Arpeggiator Function



Some Arpeggiator parameters may be determined by the ArpPreset, which can be saved with the Program. An ArpPreset of 0 (none) will default to the parameter values shown below.

## ARP1 Page

EDIT:Prog Arpeggiator		All Layers
ArpPreset : 0	None	State : Off
Arp Mode	: Classic	Tempo : System
Latch	: Standard	LimitOpt : Unipolar
KeyRange	: C -1 ... G 9	Beats : 1/8
ShiftMode	: Alg	ShiftLimit : 24
Shift	: OST	PlayOrder : Played
more	ARP1   ARP2	ArpSav   more

Parameter	Range of Values	Default
Arp Preset	0-148 factory presets; 1024 user presets	0 (None)
State	On/Off	Off
Arp Mode	Classic, StepSeq (see ARP2 page for further parameters)	Classic
Tempo	System, 20-320 bpm	System
Latch	Standard, Overplay, Arpeg, Add, Auto, AutoHold, 1NoteAuto, 1NoteAutLo, 1NoteAutHi	Standard
Limit Option	Stop, Reset, Unipolar, Bipolar, Float Res, Float Uni, Float Bip	Unipolar
KeyRange	all keys	C1 - G9
Beats	1/1 (Whole Notes) to 1/384 (96 notes per beat)	1/16 (16th Notes)

<b>Parameter</b>	<b>Range of Values</b>	<b>Default</b>
ShiftMode	Alg (algorithm) or Patt (pattern)	Alg
ShiftLimit	0-60 semitones	24
Shift (Alg) Shift Pattern (Patt)	± 88 Semitones 1-69 Preset patterns	0 Off
Play Order	Played, Upwards, Downwards, UpDown, UpDown Repeat, Random, Shuffle, Walking, Simultaneous	Played

### Arp Preset

Use the Arp Preset parameter to recall factory or user created Arpeggiator settings. An Arp Preset contains settings for all of the parameters on the Arp1 and Arp2 pages (except for the State parameter). Scrolling through the Arp Presets is an easy way to discover the different possibilities of the arpeggiator, or to find a preset similar to what you want and continue to edit it from there.

You can save your current settings as an Arp Preset by pressing the ArpSav soft button. If you select a different Arp Preset before saving your current Arpeggiator settings, the current Arpeggiator settings will be replaced by the settings from the preset without showing a warning. Be sure to save your settings as an Arp Preset if you want to be able to recall them after making additional changes. Even if you don't save the current Arpeggiator settings as an Arp Preset, the most recent settings will always be saved with the program when the program is saved.

### State

Use the State parameter to turn the Arpeggiator On or Off. The State parameter does the same thing as the front panel Arp On/Off switch.

If you save a Program with the Arp State On you may then use the Arp switch to change the state to Off as you play.

### Arp Mode

The two Arpeggiator modes, Classic and StepSeq, offer different means of shaping and editing Arpeggiator patterns. Depending upon this mode, the ARP2 page will provide access to different options and editable patterns. In Classic mode, ARP2 will offer factory-programmed note-Shift Patterns, and editable Velocity and Duration patterns. In StepSeq mode, you can use ARP2 to edit sequences step-by-step, specifying Note, Velocity, Duration and Beat for each step in a sequence.

## Program Edit Mode

---

### The Arpeggiator Function

#### Tempo

The Arpeggiator tempo parameter specifies beats-per-minute. When set to System it will use the value set on the TEMPO page in Global Mode (see [TEMPO on page 12-16](#)) for details). If a specific Arpeggiator tempo is saved with an Arp Preset, the Global tempo will be set to that value when the preset is selected.

For quick access to the Global TEMPO page from any other page, press the left and right navigation buttons simultaneously. You can then use the Alpha Wheel for real time control over the Arpeggiator tempo, overriding the saved preset value.

#### Latch

Latch determines how the Arpeggiator responds to notes when they are they are triggered.

**Keys** means that the Arpeggiator plays only while you are holding one or more keys down (or 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 will be 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 157 (Latch) sends a value of On (64 or higher). An easy way to experiment with these modes is to assign the Mod Wheel to send MIDI 157.

In **Overplay** mode, the Arpeggiator latches any notes that are being held when Latch turns on, and continues playing them, even after you let them go, until Latch turns off. Any notes that you play after Latch is already on do not get arpeggiated, even if they're in the arpeggiation range.

**Arpeg** is similar: any notes held when Latch goes on are latched and arpeggiated, and keep going until Latch goes off. Any notes you play outside the arpeggiation range play normally. Notes that you play inside the arpeggiation range do not play normally; rather, if you hold them on, they become part of the arpeggiation. They drop out of the arpeggiation as soon as you release them.

Like Overplay and Arpeggiation, **Add** means that all notes being held when Latch goes on get latched, and keep playing until Latch goes off (even if you've released the notes). Any notes you play after Latch is already on also get latched.

**Auto** is independent of Latch; every note you play 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 range gets latched.

**Pedals** is sort of a combination of Keys, Add, and Overplay modes. It relies on both Latch (MIDI 157) and Latch2 (MIDI 158). If neither latch controller is on, notes will arpeggiate only while you are holding down keys (similar to Keys mode). If you activate Controller 158, the keys currently held down will latch, and any additional keys played while Controller 158

is on will also latch (similar to Add mode). When Controller 158 is off, any keys that are not currently held down will be removed from the arpeggiation. If you activate Controller 157, keys currently held down will latch, and any additional keys played while Controller 157 is on will play normally (similar to Overplay mode). This mode is called Pedals mode because you might want to assign Footswitch 1 to **Latch (Controller 157)** and Footswitch 2 to **Latch2 (Controller 158)** to make the pedals function similarly to sustain and sostenuto pedals. Additionally, you could assign one Footswitch to **SusLatch (Controller 160)**—doing this makes the Footswitch act as a sustain pedal when Arpeggiator is off, and as a Latch pedal when Arpeggiator is on.

**Autohold** is similar to Auto. Holding at least one arpeggiated note on and playing other notes latches those notes. Unlike in Auto mode, if you stop holding at least one arpeggiated note on, the arpeggiation continues playing (although you can't latch any more notes). In this case, if you strike another key within the Multi's arpeggiation range, you start a new arpeggiation sequence. **Autohold** is useful for arpeggiating chords: when you play a chord, it gets latched, and continues arpeggiating after you release the chord. When you play another chord, the previous chord gets unlatched, and the new one gets latched. You can use the **Panic** soft button to stop arpeggiation at any time.

**1NoteAuto** is similar to Autohold, except only the last note played is latched (even if previously played notes are still being held.) **1NoteAuto** is specifically designed for use with Shift Patterns (see above) because Shift Patterns are designed to be played from one note at a time (though you can use **1NoteAuto** without a Shift Pattern as well.) Using **1NoteAuto** for zones that use a Shift Pattern ensures that Shift Patterns will sound correct by only allowing one note at a time to trigger the pattern. You can use the **Panic** soft button to stop arpeggiation at any time. **1NoteAutoLow** and **1NoteAutoHi** are also designed for use with Shift Patterns. They work similarly to **1NoteAuto**, except **1NoteAutoLow** always latches the lowest note when holding multiple notes, and **1NoteAutoHi** always latches the highest note when holding multiple notes. You can also use these latch types without a Shift Pattern if desired.

### Limit Option

This parameter determines what the Arpeggiator does when it has shifted the currently latched notes up (or down) to the shift limit. **Stop** causes the Arpeggiator to stop 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 Shift Amount 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 **60**, and play C6), 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** means that after playing up 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 than the last note before the

## Program Edit Mode

### The Arpeggiator Function

shift limit. The same thing happens in reverse when the arpeggiated notes get back down to the original pitch. The following table makes this easier to visualize by showing the result of arpeggiating one note (C<sub>4</sub>) in Unipolar mode, with Shift Amount 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 <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> ,	D <sub>4</sub> , C <sub>4</sub>	D <sub>4</sub> , ...	Same notes play in both directions when Shift Limit is a multiple of Shift Amount
7 ST (G <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> ,	E <sub>4</sub> , C <sub>4</sub> ,	D <sub>4</sub> , ...	Last upward note before shift limit is F <sub>4</sub> , next upward note would be A <sub>4</sub> , which is 2 ST from shift limit (G <sub>4</sub> ); therefore first downward note is E <sub>4</sub> (2 ST below last upward note)
8 ST (G <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> ,	F <sub>4</sub> , D <sub>4</sub> ,	D <sub>4</sub> , ...	A <sub>4</sub> is 1 ST from shift limit, therefore first downward note is F <sub>4</sub> (1 ST lower than last upward note)
9 ST (A <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> , A <sub>4</sub>	F <sub>4</sub> , D <sub>4</sub> , C <sub>4</sub> ,	D <sub>4</sub> , ...	All symmetrical again; now A <sub>4</sub> is within shift limit
10 ST (A <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> , A <sub>4</sub> ,	G <sub>4</sub> , E <sub>4</sub> , C <sub>4</sub> ,	D <sub>4</sub> , ...	Next upward note would be C <sub>5</sub> , which is 2 ST from shift limit
11 ST (B <sub>4</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> , A <sub>4</sub> ,	G <sub>4</sub> , F <sub>4</sub> , D <sub>4</sub> ,	D <sub>4</sub> , ...	C <sub>5</sub> is 1 ST from shift limit
12 ST (C <sub>5</sub> )	C <sub>4</sub> , D <sub>4</sub> , F <sub>4</sub> , A <sub>4</sub> , C <sub>5</sub> ,	A <sub>4</sub> , F <sub>4</sub> , D <sub>4</sub> , C <sub>4</sub> ,	D <sub>4</sub> , ...	Symmetrical again, including C <sub>5</sub>

**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.

**Float Res** adds a bit of apparent randomness to the process. “Float” 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 Shift Amount, until it reaches the shift limit again.

Here’s a very simple example. Suppose that the only note in the Arpeggiator cycle is C<sub>4</sub>, Shift Amount is **4** (a third), and Shift Limit is 7 (so notes won’t get shifted above G<sub>4</sub>). The Arpeggiator plays C<sub>4</sub>, then E<sub>4</sub>. The next note should be G<sub>4</sub>, but that’s above the shift limit—so the Forte SE calculates the difference between that G<sub>4</sub> and the shift limit (G<sub>4</sub>): one semitone. It adds that difference to the original starting note (C<sub>4</sub>) and plays that note next—C<sub>4</sub>. The next note (F<sub>4</sub>) is within the shift limit, but the next note (A<sub>4</sub>) isn’t, so it gets translated into D<sub>4</sub>—and so on.

**Float Uni** uses the same concept 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. **Float Bip** is similar to **Float Uni**, but the downward shift limit isn't the original pitch, it's the negative of the Shift Limit value.

The Arpeggiator can be a lot of fun, even if you don't always understand exactly what it's doing. Keep in mind that the stranger the algorithm you set up, the more unlikely the notes will stay close to one key, so if you want to create something that's going to sound at all diatonic, keep it simple.

### Key Range (Low Key and High Key)

The Arpeggiator processes notes within the range of these parameters. Notes outside the specified range play normally, and do not become part of the arpeggiation sequence. Set the LoKey and HiKey parameters using the data entry wheel or buttons.

### Beats

The Beats parameter sets the number of notes per beat. The tempo is based on quarter notes. Therefore, if you set Beats to 1/4, you will get one note per beat of the clock. At 1/16, you will get 4 notes per beat, and so forth. The maximum value is 96 notes per beat (1/384), but at most tempos, divisions smaller than 1/64 will sound pretty much the same.

To find a Beats value, multiply the notes you want per beat by 4. For example, 4 notes per beat (16th notes) would be  $4*4=16$ , a Beats value of 1/16. Three notes per beat (8th note triplets) would be  $3*4=12$ , a Beats value of 1/12. Six notes per beat (16th note triplets) would be  $6*4=24$ , a Beats value of 1/24.

### Shift Mode

The **Alg** (algorithm) option will let you create note sequences based upon a fixed Shift Amount. When you select **Patt** (pattern), the **ShiftPatt** parameter option will appear, allowing you to select one of several factory- defined patterns.

### Shift Limit

**Limit** determines how far up or down the Arpeggiator shifts from the original note. The minimum value is **0**, and the maximum is **60**. When the Arpeggiator reaches the limit, the Arpeggiator responds according to the setting for the Limit Option parameter.

### Shift (Shift Amount)

You can tell the Arpeggiator to transpose all of the currently latched notes each time it plays through them. Shift Amount determines how much transposition will occur for each cycle of notes. For example, if you have latched C4 and F4, and you assign a Shift Amount of 2, the Arpeggiator will play C4, F4, D4, G4, E4, A4, and so on until it reaches the Limit value. The Shift Amount values can range from **-88** to **88**, with **0** (the default) being no transposition.

## Program Edit Mode

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### The Arpeggiator Function

#### Shift Pattern (ShiftPatt)

When the Shift Mode is set to Pattern, **ShiftPatt** engages a step sequencer for arpeggiator note patterns. The inputted note number of each played key is shifted according to a sequenced pattern, thus “Shift Pattern.” The Forte SE has 69 pre-programmed shift patterns including many useful chords, intervals, and rhythms. (You can also create your own custom patterns using the StepSeq editor.) Steps are played back at the rate set for **Beats**. Keep in mind that Shift Patterns are affected by every parameter on the ARP1 page, which can be the cause of unexpected variation, or a way to add interesting variation to a pattern.

Shift Patterns are most easily used and understood when triggered by only one key at a time. One way to prevent triggering from multiple keys is to use one of the Latch types 1NoteAuto, 1NoteAutoLow, or 1NoteAutoHi when using a shift pattern. Triggering shift patterns from one key allows the pre-programmed patterns to sound like what you would expect from their names. If no other keys are playing, patterns will start over each time a key is pressed (there are some exceptions to this when using Arpeggiator Latch parameters other than “Keys,” though a newly triggered pattern will always start at step 1). When triggering Shift Patterns from more than one key at a time, each consecutive step of the pattern shifts the note from a different inputted key, the order of which is decided by the Play Order parameter on the ARP1 page. This means that each key will not be shifted by every step of the pattern, causing you to only hear part of the pattern from each key, often making the pattern unrecognizable. Though triggering a Shift pattern from multiple keys can be used creatively, it can also make it hard to predict what the output will be.

#### Play Order

This parameter determines the order in which the Forte SE plays arpeggiated notes. **Played** causes them to play back in the chronological order in which you played and latched them. **Upwards** means that notes play in ascending pitch order, regardless of their chronological order. **Downwards** means descending pitch order. **UpDown** causes notes to 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 only play once. **UpDown Repeat** is similar to **UpDown**, except that the notes at the top and bottom play *twice* (repeat) when the Arpeggiator reverses direction.

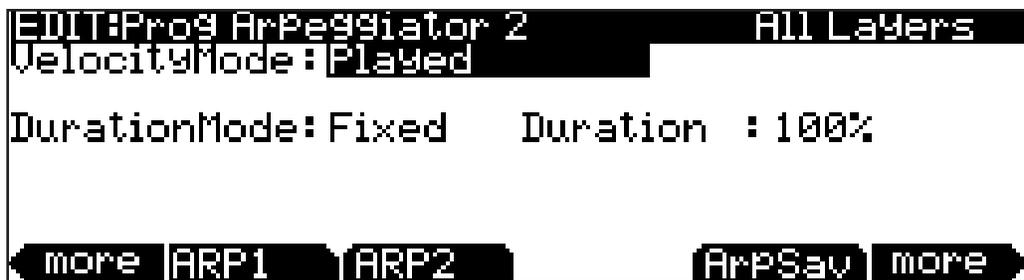
**Random** plays the currently latched notes in completely random order. **Shuffle** plays them at random, but keeps track of the notes so that no note repeats until all of the others have played. **Walk** is a “random walk” order: each successive note is either the next or previous note (in chronological order). For example, suppose you’ve latched four notes—G4, B4, D5, and F5—in that order. The first note the Arpeggiator plays is the G4. The second note will be either B4 (the next note chronologically), or F5 (the “previous” note chronologically—that is, the last latched note). If the second note is B4, the third note will be either D5 or G4. If the second note is F5, the third note will be either G4 or D5.

**Simultaneous** makes the Arpeggiator latch each note you play and repeat it in time with the Tempo value, sort of like a digital delay with no decay. If you play a C and hold it while you play an E and a G, the Arpeggiator will play all three notes at the same time and at the same tempo. **Simultaneous** also works well with Shift and Limit, allowing you to shift multiple notes simultaneously.

## The ARP2 Page

### Editing Patterns in Classic Mode

The ARP2 page will allow you to set different parameters depending upon the Arp Mode selected. When set to “Classic” the ARP2 page will give access to these parameters:



With Arp Mode set to **Pattern**, Velocity Mode and Duration Mode include step sequencers for note and velocity shifting, allowing you to more precisely control how your Arpeggiator (or MIDI note input) is processed.

Velocity Mode	First, Played, Last, Aftertouch, MIDI 109, Fixed, Pattern (1-74 factory patterns plus user created patterns) Human1-4, Chimp1-4, MissNotes1-9	Played
Velocity (Fixed)	1 to 100	100
Duration Mode	Fixed, Pattern	
Duration (Fixed)	1% to 100%	100%
ShftPattrn (Shift Pattern)	Off, 1-69 factory patterns	Off

### Velocity Mode

Velocity sets the attack velocity of the played notes. **With Velocity set to First**, all notes play at the velocity of the first played note. **With Velocity set to Played**, each note repeats with the same velocity you played it at. **With Velocity set to Last**, all notes play at the velocity of the most recently played note. **With Velocity set to Aftertouch**, the velocities are controlled by keyboard pressure: as you hold and push down on any key, the velocities get higher, and as you ease up they get lower.

## Program Edit Mode

### The Arpeggiator Function

With Velocity set to **MIDI 109**, MIDI controller 109 continually sets the arpeggiator velocity. This works well when MIDI controller 109 is set to a knob or expression pedal.

With Velocity set to **Fixed**, all notes play with the same velocity. The default **Fixed** velocity is 100. Like **MIDI 109**, You can control this velocity amount in real-time by assigning a controller to **VelFixed**, controller destination number is 175. Input from any physical controller assigned to send VelFixed (or any entry value for a controller assigned to send VelFixed) overrides the programmed value of the Velocity parameter, disabling it until you select a different Multi (or in Program mode, until you select a different control setup on the MIDI-mode TRANSMIT page).

```
EDIT:Prog ArPeggiator 2 All Layers
VelocityMode: Pattern
VelocityPat : 11 X00
DurationMode: Pattern
DurationPatt: 2 long-2short
more |PARAMS|FX |LYR_FX|COMMON|more
```

#### Velocity Pat

The **Pattern** option engages a step sequencer for arpeggiator velocity patterns, which shifts the velocity of each arpeggiated note according to a sequenced pattern. There are **XX** pre programmed velocity patterns to choose from, some of which create rhythms by using velocity values of -127 or “none” to leave rests in the arpeggiation. The sequencer uses the velocity received from the first note played as the center position to shift velocities up or down from. If no other keys are playing, patterns will start over each time a key is pressed (*there are some exceptions to this when using ARP1 Latch parameters other than “Keys,” though a newly triggered pattern will always start at step 1.*) When triggering velocity patterns from more than one key at a time, each consecutive step of the pattern shifts the velocity from a different inputted key, the order of which is decided by the **Play Order** parameter on the ARP1 page.



Note: For patterns with negative velocity values, if the velocity of the first played note is low enough that a pattern step could result in a velocity of zero, some notes may have a velocity of zero and therefore produce no sound.

### Editing Velocity Patterns

You can edit the included patterns by pressing the Edit button when a pattern is highlighted in the VelocityPat field.

```

EDIT:Velocity Patt11:XXXX Steps:24
Stp1 : 0      Stp7 : -1   Stp13: 2     Stp19: -1
Stp2 : None   Stp8 : None  Stp14: None  Stp20: None
Stp3 : None   Stp9 : None  Stp15: None  Stp21: None
Stp4 : 2      Stp10: 0    Stp16: 1     Stp22: 1
Stp5 : None   Stp11: None Stp17: None  Stp23: None
Stp6 : None   Stp12: None Stp18: None  Stp24: None
Step- |Step+ |Delete |Rename |Save  |More
    
```

The top line of the “EditVelocityPatt” page displays the pattern’s name and total number of steps. Each pattern can have up to 48 steps, and each step can shift velocities by ± 127 steps. You can insert a step with a value of “none” by entering -127 and then shifting down one more step. A step with the value “none” causes the arpeggiator to play nothing for that step, allowing you to create rhythmic patterns by using “none” to leave spaces. Pressing **Step-** removes the last step in the list, pressing **Step+** inserts a new velocity step at the end of the list (the pattern editor remembers the values of removed steps until you save or exit.) Use the navigation buttons to move between pattern steps, use the Alpha Wheel, or Previous-/Next+ buttons to enter the velocity shift amount for each step. Press **More** to see a second page for patterns with more than 24 steps.

Press **Delete** to delete the pattern from memory. Press **Rename** to rename the pattern and save. Pressing **Save** gives you the option to save the pattern or rename and save. To create a new VelPatt, edit an existing pattern and choose Rename when saving. Press Exit to return to the ARP2 page. When exiting the Program editor, it will automatically give you the option to save the pattern with a User Program if changes have been made.

The Velocity Modes **Human1** through **Human4** randomly change played note velocity within a range in order to make arpeggiation sound more human like, with each note varying slightly in velocity. The Human settings use the velocity received from the first note played as the center of the randomization range. Each note of the arpeggiator will randomly choose a velocity within the given range. (See the table below for velocity ranges.)

The Velocity Modes **Chimp1** through **Chimp4** function in a similar fashion to the Human settings (see above.) Like the Human settings, the Chimp settings randomly change played note velocity within a range, but the Chimp settings have larger randomization ranges. The Chimp settings use the velocity received from the first note played as the center of the randomization range. Each note of the arpeggiator will randomly choose a velocity within the given range. (See the table below for velocity randomization ranges.)



Note: For Human and Chimp modes, if the velocity of the first played note is low enough that the selected randomization range could result in a velocity of zero, some notes may have a velocity of zero and therefore produce no sound..

## Program Edit Mode

### The Arpeggiator Function

Velocity Setting	Velocity Randomization Range
Human1	± 3
Human2	± 6
Human3	± 10
Human4	± 15
Chimp1	± 25
Chimp2	± 35
Chimp3	± 50
Chimp4	± 64

Velocity Modes **MissNotes1** through **MissNotes9** makes the Forte SE randomly miss playing a percentage of inputted notes. See the table below for percentages and their equivalent settings. Each of these settings also randomly changes some of the inputted velocities in a range of ± 5, with the purpose of simulating a more human played sound.



Note: Missed Notes are actually output as notes with a velocity of zero.

Velocity Setting	Approximate % of Notes Missed
MissNotes1	% 10
MissNotes2	% 20
MissNotes3	% 30
MissNotes4	% 40
MissNotes5	% 50
MissNotes6	% 60
MissNotes7	% 70
MissNotes8	% 80
MissNotes9	% 90

### Duration

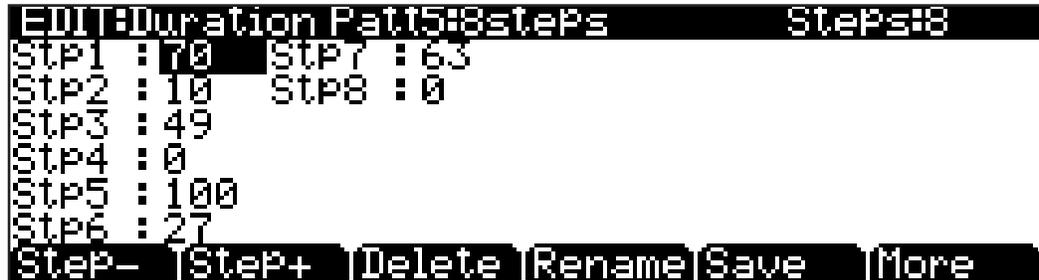
Duration determines how long each arpeggiated note plays. 100% means that a note sustains until the next one sounds—very legato. **50%** means that the note fills half the space between itself and the next note. The lowest value is **1%**—*staccatissimo*. This parameter has no effect on percussion sounds or other sounds whose duration is fixed.

### Duration Pattern

Selecting **Pattern** as the Duration Mode engages a step sequencer for arpeggiator note duration patterns. There are 7 pre-programed duration patterns you may choose from, and 1024 locations in which to save user-generated patterns.

### Editing Duration Patterns

Press the Edit button when a pattern is highlighted in the DurationPatt field to access the editor.



The top line of the “Edit:DurationPatt” page shows the pattern number and name. This page also displays the pattern’s total number of steps, as well as pattern direction. Pressing **Step-** removes the last step in the list, pressing **Step+** inserts a new note step at the end of the list (the pattern editor remembers the values of removed steps until you save or exit.) Use the navigation buttons to move between pattern steps, use the Alpha Wheel, alphanumeric pad, or Previous-/Next+ buttons to enter the note shift amount for each step. Press **More** to see a second page for patterns with more than 24 steps.

Press **Delete** to delete the pattern from memory. Press **Rename** to rename the pattern and save. Pressing **Save** gives you the option to save the pattern or rename and save. To create a new Duration pattern, edit an existing pattern and choose Rename when saving. Press the **Exit** button to return to the ARP2 page. Your pattern will be available in the Duration Patt parameter.

Press the ArpSave soft button to save your new pattern as an Arp Preset. When you hit Exit to leave the Program editor, you will be given the option to save a new User Program with any changes you have made. See [Save User Programs on page 6-14](#) for details.

### Editing Patterns in StepSeq Mode

Many ArpPresets use StepSeq for the ArpMode. In this mode, the ARP2 page will give you the ability to create a unique Arpeggiator pattern step-by-step. Select a parameter using the navigation buttons (to change steps, first put the cursor on the Step line, then move left or right). Use the soft buttons as labelled to add or subtract steps.



## Program Edit Mode

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### The Arpeggiator Function

The Step Seq specifies four fixed parameters: for each step Note, Velocity, Duration and Beat. Use the navigation buttons to move between pattern steps, use the Alpha Wheel, alphanumeric pad, or plus/minus buttons to enter the parameter values for each step.

**Note** values create the shift pattern for the Step sequence. Notes are specified in half-steps from the last latched note (represented as 0). Thus, this series of notes: 0, 4, 7 will play a triad in sequence. Note values can range from -128 to +127, with negative numbers shifting below the latched note.

**Velocity** values shift each steps velocity up or down from the last latched note played or received. Values range from -127 to +127 (with 0 representing the origin value).

**Duration** is specified in cents, from 0-100, as a percentage of the specified Beat.

**Beats** sets the pattern rhythm, using fractions of the Beat rate set by the Tempo parameter. A Beat to 1/4 will be a quarter note based on the clock Tempo.

To find a Beats value, multiply the notes you want per beat by 4. For example, 4 notes per beat (16th notes) would be  $4*4=16$ , a Beats value of 1/16. Three notes per beat (8th note triplets) would be  $3*4=12$ , a Beats value of 1/12. Six notes per beat (16th note triplets) would be  $6*4=24$ , a Beats value of 1/24.

## ArpSave

If you have adjusted any Arpeggiator settings, you have the option of saving a new Arp Preset to a User location, where it will be available to use with other Programs and Multis. The Arp Preset is saved independently from the Program itself.

Press ArpSave to initiate a save. You will have the option to select the location and name for your Arp Preset, using the Alpha Wheel or alphanumeric buttons.

When you hit Exit to leave the Program editor, you will be given the option to save a new User Program with any changes you have made. See Save User Programs below for details.

# The Utility Soft Buttons, HELP Soft Button and Favorites Buttons Functions

Some of the soft buttons in Program Edit Mode perform a function when pressed, as well as some of the Favorites buttons. The soft buttons described below appear when the Global Mode User Type parameter is set to Advanced.

## New Layer (NewLyr)

**Create a new layer, numbered one above the highest existing layer.** When you press this button, the Forte SE will tell you that it is creating a new layer, then will return to the page you were on. The new layer becomes the current layer, and is the highest-numbered layer in the program. If the current program already has its maximum number of layers, the Forte SE will tell you that you can't add any more.

## Duplicate Layer (DupLyr)

**Create a copy of the current layer, duplicating the settings of all its parameters.** The copy becomes the current layer, and is the highest-numbered layer in the program.

## Import Layer (ImpLyr)

**Copy a specific layer from another program into the current program.** This button brings up a dialog that prompts you to select a layer number and a program number. The dialog tells you the currently selected layer, and the total number of layers in the program. Use the **Layer-** or **Layer+** soft buttons (or the alpha wheel) to change the layer number. If the current program has only one layer, pressing these buttons will have no effect. Use **Prog-** or **Prog+** soft buttons (or the alpha wheel) to change the program number.

While you are in this dialog, you can listen to the layer you are selecting to import, along with all other layers in the current program. If you want to hear the layer to be imported by itself, you must mute the other layers.

When you have selected the desired layer from the desired program, press the **Import** soft button, and the selected layer will be copied from the selected program, becoming the current layer. Importing layers is a convenient alternative to creating layers from scratch. If you have a favorite string sound, for example, and you want to use it in other programs, just import its layer(s) into the program you're building. This will preserve the envelopes and all the control settings so you don't have to reprogram them.

### Delete Layer (DelLyr)

**Delete the current layer.** When you press this button, the Forte SE asks you if you want to delete the layer; press the **Yes** soft button to start the deletion process, or the **No** soft button to cancel it. This prompt prevents you from accidentally deleting a layer.

### Delete

Press the Delete soft button to delete the current Program (factory Programs can not be deleted). Press Delete, and you will be given a choice to Delete or Cancel. Press Delete again, and an “*Are You Sure?*” message will appear. Press Yes to delete the Program, or Cancel to cancel.

### Help

Press the HELP soft button to view the Help page, where you can view a description of functions assigned to the Favorites buttons.

#### Favorites 1: Help

Press the Favorites 1 button to view the HELP page.

#### Favorites 2: Compare

Press the Favorites 2 button to temporarily recall an unedited version of the program, allowing you to compare your edited program with the original program. Press the Favorites 2 button again to return to the edited version of the Program

#### Favorites 3: Solo Layer

Press the Favorites 3 button to temporarily solo the currently selected Layer. Press the Favorites 3 button again to un-solo the currently selected Layer.

#### Favorites 4: Mute Layer

Press the Favorites 4 button to mute the currently selected Layer. Press the Favorites 4 button again to un-mute the currently selected Layer.

#### Favorites 5: Bypass FX

Press the Favorites 5 button to temporarily bypass the Insert and Aux FX Chains. Press the Favorites 5 button again to re-enable the Insert and Aux FX Chains.

Bypassing the FX is useful for checking the output level of a program with and without its FX Chains. If the output level of a program is the same with and without the FX being bypassed, it will prevent sudden jumps in volume that can occur when switching programs while notes are being held. When a new program is selected while notes from the last program are still being held, the FX Chains from the last program may be “stolen” by the

new program if there are not enough FX resources for both programs. You may hear a sudden jump in volume if the output of a program is too quiet or too loud without its FX Chains. To fix this, usually the output gain in the last box of the Insert Chain should be adjusted until the program volume is the same with and without bypassing the FX. Afterwards, you may need to adjust the Common Page OutGain of the program to match its level with other programs.

### **Favorites 6: New Parameter**

When assigning a physical controller or CC number to a VAST source field, a Parameter is automatically added to the Parameters Page (unless the physical controller/MIDI CC is already being used by an existing Parameter on the Parameters Page). In other cases it may be desirable to manually create a new Parameter. Press the Favorites 6 button to create a new Parameter. At the prompt, choose a Destination and then name the Parameter. The Parameter Destination is the default MIDI CC number that the Parameter will send to the Program. The Destination also becomes the default Control for the Parameter. Once the parameter is created, you can change its Control on the Parameters Page.

## **Editing VAST Programs With KVA Oscillators**

The Forte SE uses KVA oscillators as another way to generate sounds in VAST programs. Unlike keymaps, which play samples stored in ROM, KVA oscillators create DSP-generated waveforms every time they are triggered. The KVA oscillators can create a range of waveforms, from high quality simple waveforms familiar to users of classic analog synths, to complex waveforms which take advantage of the Forte SE's internal processing power and complex signal routing capabilities. Though the Forte SE does have keymaps containing samples of basic synth waveforms, the use of KVA oscillators provides users with better portamento, more modulation options, higher sound quality, and other advantages which will be explained in this section. Learning to use KVA oscillators instead of keymaps (where appropriate) is simple and will increase the versatility of your VAST editing capabilities. VAST programs using layers with KVA oscillators can also be combined with other layers using keymaps.

### **Basic Use of KVA Oscillators**

#### **Minimal Settings for Basic Use of KVA Oscillators:**

These are the minimal settings that a KVA layer needs in order to function in the style of a classic analog synth:

1. EditProg:KEYMAP Page: Set the Keymap parameter to 999 Silence.
2. EditProg:AMPENV Page: Set the Envelope mode to User, and adjust the amplitude envelope to your liking (see [The Amplitude Envelope \(AMPENV\) Page on page 7-48](#)).

## Program Edit Mode

### Editing VAST Programs With KVA Oscillators

3. EditProg:ALG Page: Pick an Algorithm and set an Oscillator (see [Setting KVA Oscillator Type on page 7-72](#)).

Further basic VAST settings that you will likely want to adjust are:

- Monophonic On/Off (see [The COMMON Page on page 7-16](#))
- Level Velocity Tracking (see [The DSP Control \(DSPCTL\) Page on page 7-37](#))

Read the *Setting KVA Oscillator Type* section below to learn about how to set each type of oscillator. After doing this, you can experiment with making KVA programs by following the above settings, and then setting and listening to each type of oscillator. Once you understand how to do this, read on to the [Advanced Use Of KVA Oscillators on page 7-74](#) (see below) to learn how to make your KVA patches more expressive through the use of DSP modulation.

### Pitch Settings for KVA Oscillators

Each oscillator (except for noise functions) has its own pitch parameters, and is unaffected by pitch settings that would normally affect keymaps (such as those on the Keymap page). On a program layer, the coarse pitch parameter for the oscillator in use can be found on both the DSPCTL and DSPMOD pages, in the parameters list below the standard Pitch parameter for keymaps. For each oscillator, its coarse pitch parameter is named by an abbreviation of the oscillator name followed by “Pch.” For example, the coarse pitch parameter for a saw wave oscillator will be called Saw Pch. On the DSPCTL sub page for any oscillator Pch. parameter, you can adjust fine pitch by cents and Hertz, as well as KeyTrk and VelTrk settings for pitch.



Note: Be sure to differentiate between the different pitch parameters, each used either only for keymaps or only for KVA oscillators. The Pitch parameter on the top left of the DSPCTL and DSPMOD pages always appears in VAST programs but only affects the pitch of keymaps. If a KVA oscillator is being used, this Pitch parameter will have no affect on the layer's pitch, in which case the oscillator Pch. parameter described above must be used to control the pitch of the oscillator.

## Setting KVA Oscillator Type

The Forte SE comes with 22 Different KVA oscillators. There are 11 high quality anti-aliased oscillators (free of digital artifacts) and 11 oscillators that exhibit some aliasing (digital artifacts) in the higher octaves. The anti-aliased oscillators use up more DSP resources than the ones with aliasing, but the improvement in sound quality is quite noticeable. We strongly recommend using the anti-aliased oscillators for most applications.

The tables below list KVA oscillators by type and function block size. Before setting an oscillator, you must choose an algorithm which includes a block that matches the block size for the oscillator that you wish to use. See [The Algorithm \(ALG\) Page on page 7-30](#) and [Algorithm Basics on page 7-31](#) for more on selecting algorithms. Once you have picked an algorithm with the desired block size, highlight the block and use the Alpha Wheel to scroll through the available functions until you find the desired oscillator.

The SYNC SQUARE oscillator is an 8 block oscillator that requires the use of two layers (4 blocks each) and the Alt Input feature of cascade mode. See below for details on setting up the Sync Square oscillator.



Note: If you put more than one oscillator in an algorithm, you will only hear the output of the last oscillator in the algorithm, unless an algorithm is used to route the earlier oscillator around the last oscillator and into a MIX function block, or if the last oscillator processes its audio input.

Anti-Aliased Oscillators	
Size	Name/Type
1 Block	LPNOIZ (noise + low pass filter)
2 Blocks	SINE
	SINE+
	SAW
	RES NOISE (noise + low pass filter with resonance)
	SQUARE
3 Blocks	PWM (Pulse Width Modulation)
4 Blocks	SYNC SAW
	SUPER SAW
	TRIPLE SAW
8 Blocks	SYNC SQUARE (master) >>, >>SYNC SQUARE (slave) (4 blocks each)

Aliased Oscillators	
Size	Name/Type
1 Block	SINE
	SAW
	TRI
	SQUARE
	NOISE
	SINE+
	SAW+
	NOISE+
	SW+SHP (Sawtooth + Shaper)
	2 Blocks
PWM (Pulse Width Modulation)	

### Setting Up The Sync Square Oscillator:

The Sync Square oscillator is actually comprised of two oscillators, a master and a slave, set up to emulate the way sync square oscillators worked on classic analog synthesizers. To create a program using Sync Square, select **Program 1023 Editor Template**. Select “none” on the Keymap page. Select “user” on the Ampenv page for an amp envelope. On the ALG page, select Algorithm 5 at the top of the page. Use the cursor buttons to select the function block and use the alpha wheel to select the “SYNC SQUARE (master) >>” function. Next, press the << soft button to change soft button pages until you see “DupLyr.” Press DupLyr to

## Program Edit Mode

### Editing VAST Programs With KVA Oscillators

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duplicate the layer, creating layer 2. In layer 2, on the ALG page, change the function block to “>> SYNC SQUARE (slave)”, and set the Alt Input parameter to “Layer 1.” The final step is to go to Layer 1’s DSPCTL page and turn the Level parameter all the way down, to -96dB (this ensures that you will only hear the output of the slave oscillator on layer 2, which is the intended function of Sync Square).

Now the Sync Square oscillator should be working. The “Syncoff” parameter, Sync Offset, is the main parameter for shaping the tone of this sound. Syncoff sets the sync offset between the master and slave square waves in each corresponding oscillator, which changes the shape of the waveform output by the slave oscillator. The Sync Square oscillator is most expressive when the Syncoff parameter is modulated during performance. Use the DSPMOD page to assign an envelope or continuous controller like the Mod Wheel for this parameter to hear the effect (see [The DSP Modulation \(DSPMOD\) Page on page 7-39](#), as well as [The DSP Control \(DSPCTL\) Page on page 7-37](#) and [Common DSP Control Parameters on page 7-32](#) in [Algorithm Basics on page 7-31](#), for details on setting up modulation and other ways to control parameters, and see [The Envelope 2 \(ENV2\) and Envelope 3 \(ENV3\) Pages on page 7-51](#) for details on using envelopes as modulation sources). See [Advanced Use Of KVA Oscillators on page 7-74](#) below for some similar examples of how to set and control modulation for oscillator specific functions and other parameters.

To add a DSP function to the Sync Square oscillator, you’ll need to use cascade mode. For example, to add a filter, duplicate one of the layers to create layer 3. On layer 3, select the ALG page and choose one of the cascade mode algorithms, algorithms 101-131. For this example, let’s use alg 105 with the filter “4Pole Mogue LP” selected for the function block. For the Alt Input parameter, select Layer 2. This routes a pre-Level parameter copy of Layer 2’s output into Layer 3. Go to layer 2’s DSPCTL page and turn its level down to -96dB (otherwise the un-filtered sound from layer 2 will be audible as well as the filtered sound in layer 3). Now you can hear the Sync Square from layers 1 and 2 running through the filter in layer 3. See [Advanced Use Of KVA Oscillators on page 7-74](#) below for examples of how to set and control modulation of filter parameters.

## Advanced Use Of KVA Oscillators

Read the KVA sections above before moving on to this section.

If you have tried the program described above in [Basic Use of KVA Oscillators](#), you may have noticed that there is no variation in the notes played aside from pitch. Layers and programs created with KVA oscillators can become much more expressive by introducing variation with DSP modulation. For a KVA oscillator layer, you can use DSP modulation just as you would for keymap layers (see [Common DSP Control Parameters on page 7-32](#), [The DSP Modulation \(DSPMOD\) Page on page 7-39](#), and [The DSP Control \(DSPCTL\) Page on page 7-37](#)). Several KVA oscillators also have their own modulation parameters that must be accessed to control the oscillator’s intended function. Aside from these methods, KVA layers can also be altered by using keymaps with natural amplitude envelopes. See below for details on each method.

**Examples of Simple DSP Control and Modulation:**

Select the Program 1023 Editor Template, and press the Edit button. Go to the KEYMAP page and set Keymap to 999 Silence. Next, go to the AMPENV page, and set the mode to User, set Att1 time to .002, Rel1 time to .260, and Dec1 time to 30.0 and 0% (this gives you basic control of attack, decay and release envelopes with sliders C, D, and E). Press the ALG soft button and select Algorithm 8. Select the leftmost empty function block and use the alpha wheel to scroll to the PWM oscillator. Play some notes to hear the sound of the PWM oscillator.

You should immediately hear a difference in the sound of the program, because the LOPASS function is set by default to cut some of the high frequencies from any signal that passes through it, in this case the PWM signal is passing through. With the LOPASS function still selected, press the Edit button. This brings you to the main parameter for the LOPASS object on the DSPCTL page, which is LP Frq (you can also reach this page using the DSPCTL soft button). Here you can adjust the initial value of the function, in this case it is cut off frequency for the low pass filter. For this example, leave this initial value set to its default. With the LP Frq parameter selected, press right on the cursor button to get to this function's sub page (the right half of the display). Select the Veltrk parameter and use the alpha wheel or alpha numeric pad to turn it all the way up to 10800ct. Now keyboard velocities will affect the LP Frq parameter. A velocity of 127 will cause the filter's cut off frequency to move up 10800 cents from its initial value, a velocity of 0 will have no effect on the cut off frequency, and values in between will increase the cut off frequency by a scaling between 0 and 10800 cents. Overall, this will cause higher played velocities to increase the cut off frequency, making the oscillator sound brighter, and lower velocities to lower the cut off frequency, making the oscillator sound duller. This method can be used to control any DSP function that is loaded into an algorithm. See [Common DSP Control Parameters on page 7-32](#), for other control parameters available on the DSPCTL page.

Alternatively, you could assign cut off frequency to be controlled by any continuous controller, such as the Mod Wheel. Start again with the unedited Program 1023 Editor Template. Follow the same steps as above, but instead of changing any parameters on the DSPCTL page, press the DSPMOD soft button to reach the DSP Modulation page. On the left side of the screen, choose the parameter for LP Frq, and then press the right cursor button to reach the LP Frq sub page. On this sub page, you can assign any continuous controller to control the cut off frequency of the LOPASS function (or the main parameter for any function loaded in the current algorithm). Select the Src1 parameter, hold the Enter button and move the Mod Wheel to quickly select MWheel (the Mod Wheel) as your control source. Next, press the cursor down button to select the Depth parameter, then use the alpha wheel or alpha numeric pad to turn it all the way up to 10800ct. Now the Mod Wheel will affect the LP Frq parameter. Moving the Mod Wheel all the way up (a value of 127) will cause the filter's cut off frequency to move up 10800 cents from its initial value, moving the Mod Wheel all the way down (a value of 0) will have no effect on the cut off frequency, and values in between will increase the cut off frequency by a scaling between 0 and 10800 cents. Now you have the same control over cut off frequency as you did in the previous example, but now it is controlled by the Mod Wheel. Overall, moving the Mod

## Program Edit Mode

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### Editing VAST Programs With KVA Oscillators

Wheel up will increase the cut off frequency, making the oscillator sound brighter, and moving the Mod Wheel down will lower the cut off frequency, making the oscillator sound duller. This is useful to control a classic “filter sweep” sound. The above method can be used to control any DSP function that is loaded into an algorithm, and you can choose any continuous controller as a control source.

#### **Oscillator Specific Control And Modulation Parameters:**

Several KVA oscillators also have their own modulation parameters that must be accessed to control the oscillator’s intended function. Below is a list of these oscillators and their distinctive parameters, grouped by block size. Though the following parameters could be left at one setting, utilizing one of the DSPCTL or DSPMOD techniques described in the above examples will expose a wider range of expression from each oscillator.

##### **1 Block:**

###### **LPNOIZ**

A noise generator combined with a low pass filter. Use the Noiz Frq parameter to control the cut off frequency of the filter.

###### **NOISE**

A simple noise generator. Use the Noise parameter to control the noise initial amplitude.

###### **SW + SHP (Sawtooth + Shaper)**

This oscillator is capable of basic FM Synthesis. Its distinctive parameter is Pch Coar. This oscillator must come after the sound source in an algorithm (either keymap or oscillator) in order to hear the effect of Pch Coar, which can radically change whatever the oscillator receives as an input. Works well placed after a Sine source.

###### **SINE+ [Aliased (not recommended)]**

Same as 2 block version, but without the Sine+Am parameter.

###### **SAW+ [Aliased (not recommended)]**

A saw oscillator that can add an input signal to its output.

###### **NOISE+ [Aliased (not recommended)]**

A noise oscillator that can add an input signal to its output.

##### **2 Block:**

###### **SINE+**

A sine oscillator that can add an input signal to its output. The Sin+ Pch and Sine+ Am parameters affect the pitch and amplitude of the sine waveform without affecting the pitch of the input source.

### RES NOISE

A noise generator combined with a low pass filter with resonance control. Use the Noiz Frq parameter to control the cut off frequency of the filter. Use the Noiz Q parameter to control the amplitude of the resonance (a boost or cut at the cut off frequency). One technique for use of this function is to set a high value for Noiz Q (so that you hear a the resonance create a tone,) and then on the DSPCTL page set C4 as an initial frequency for Noiz Frq, and set Keytrk to 100ct/key on the Noiz Frq sub page. Doing this causes the noise resonance frequency to match the note of the key played.

### SHAPED SAW

The Shaped Saw oscillator is a sawtooth oscillator with the ability to morph its output shape between sawtooth and sine wave (without crossfading). This oscillator's distinctive parameter is Shape, which controls the morphing. With Shape set to 0, the oscillator produces a pure sawtooth wave. With Shape set to 127, the oscillator produces a pure sine wave. Values in between morph between the two wave shapes.

### PWM (Pulse Width Modulation) [Aliased (not recommended)]

This oscillator's distinctive parameter is PWM Wid, which adjusts pulse width from values of 1-99. With PWM Wid set to a value of 50, PWM produces a square wave. The further the PWM Wid parameter is set from 50, the narrower the pulse width becomes, changing the shape of the output waveform and thus altering the oscillator's tonal quality.

### **3 Block:**

### PWM (Pulse Width Modulation) [Anti-Aliased (recommended)]

Same as 2 Block PWM, See above.

### **4 Block:**

### SYNC SAW

Sync Saw consists of two saw waves, one that you hear (the slave) and one that controls the slave (the master). This oscillator's distinctive parameter is SyncOff, which controls the offset of the slave and master waves. With SyncOff set to 0, the master has no effect on the slave. When an offset is set, the slave restarts its wave cycle every time the master wave completes a cycle. Offsets cause the slave to restart its cycle in the middle of normal sawtooth cycles, which causes the slave's waveform shape and sound to be altered.

### SUPER SAW

The Super Saw oscillator consists of two saw waves. This oscillator's distinctive parameter is Detune, which has settings from 0-50 cents, allowing you to detune both of the saw waves by up to 50 cents away from the root pitch of the key played. Detune affects both saw waves, one is detuned above the original root pitch, and the other is detuned below the original root pitch.

## Program Edit Mode

### Editing VAST Programs With KVA Oscillators

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#### TRIPLE SAW

The Triple Saw oscillator consists of three saw waves. This oscillator's distinctive parameter is Detune, which has settings from 0-50 cents, allowing you to detune two of the saw waves by up to 50 cents away from the root pitch of the key played. Detune affects two of the saw waves, one is detuned above the original root pitch, and the other is detuned below the original root pitch. The third saw wave always plays the root pitch and is not affected by Detune.

#### **8 Block:**

SYNC SQUARE (master) >>, >>SYNC SQUARE (slave)

See above, [Setting Up The Sync Square Oscillator: on page 7-73](#).

#### **Use Of Keymaps and Natural Amplitude Envelopes With KVA Oscillators:**

Keymaps are important in layers using KVA oscillators, even though their samples are not usually heard in these layers (see the note below for exceptions). Keymap selection is important because the maximum amplitude set for each key in the keymap is applied to the oscillator. For most uses of KVA oscillators, users will want to use the 999 Silence keymap because each key in the keymap is set to the same maximum amplitude, unlike many instrument keymaps. The 999 Silence keymap ensures uniform amplitude behavior of an oscillator, and with the amplitude envelope set to user mode, users can easily shape all aspects of an oscillator's amplitude. The Forte SE also has the ability to apply natural amplitude envelopes to oscillators. With an amplitude envelope set to natural mode, each oscillator note takes on the amplitude qualities of each sample in a keymap (with each note relative to sample key placement). Each sample in a keymap has a natural envelope that was created during its original development process. Natural envelopes have much more detail than what is possible to create with the user amplitude envelope, and they are useful when trying to mimic specific instrument amplitude envelopes. When using this technique, remember that the maximum amplitude of each key is set by the current keymap. You can still control the overall parameters of a natural envelope by using the ENVCTL page.



Note: The samples from a keymap are not heard when using an oscillator, unless an algorithm is used to route the keymap signal around the oscillator and into a MIX function block, or unless it is an oscillator that processes its audio input.

## KB3 Program Structure

There's nothing quite like the sound of the classic Hammond™ B-3 tone wheel organ, especially when played through a Leslie™ rotating speaker system. We've done extensive testing and analysis with several tone wheel organs, and created our own models to emulate the unique tone wheel sound. We even took into account the way that older organs start to sound different (and arguably better) as their capacitors begin to leak—and we included a parameter that lets you vary the amount of grunge (leakage) in your sound.

KB3 programs use oscillators to emulate the tone wheel sound. Each oscillator operates independently, and has its own pitch and amplitude control. You can control how many oscillators are used for a KB3 program. There are two oscillators per voice, for a total of 256. You can use up to 91 of them in a KB3 program (the 92nd is reserved to produce key click). Because the oscillators start running as soon as you select a KB3 program, there are always voices available—unlike VAST programs, which start “stealing” notes when you reach the polyphony limit.

The oscillators—we'll call them tone wheels from here on—are divided into an upper and lower group. The upper tone wheels use the samples in the Forte SE's keymaps to generate sound, while the lower tone wheels use sine waves. You can change the keymap of a KB3 program's upper tone wheels to produce a large array of sounds. By changing the keymap from sine to a saw wave it is possible to emulate the sound of classic combo organs like the Vox™ and Farfisa™ models.

KB3 programs are also routed through vibrato, rotary speaker, preamp and distortion effects, see below for details.

### KB3 Mode

KB3 programs are different enough from VAST programs that we use the term KB3 mode to describe what's going on when you play a KB3 program. Whenever you play a KB3 program, you are in KB3 mode. The blue LED on the front panel will light when the current program is a KB3 program. You can play KB3 programs only on a single channel at a time.

If you want to create your own KB3 program, start by editing an existing KB3 program.

### KB3 Effects And Real-time Controls

You have real-time control over many components of KB3 programs directly from the front panel. The sliders emulate the drawbars that are so essential to the tone wheel sound, while the buttons above them (the Assignable Switches) can control the KB3 effects: Leslie, vibrato, chorus, and percussion.

## Program Edit Mode

### KB3 Program Structure

#### Drawbars

One of the standard performance features of many tone wheel organs is the set of drawbars for emulating the stops on a pipe organ. Moving the drawbars controls the amplitude of either the fundamentals or the harmonics of the notes. The Forte SE's sliders serve as the nine drawbars found on most tone wheel organs. Pushing the sliders up is the equivalent of pushing the drawbars in (removing fundamentals or harmonics).

Subharmonics		Fundamental	Harmonics					
16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Slider A	Slider B	Slider C	Slider D	Slider E	Slider F	Slider G	Slider H	Slider I

**Table 7-1 Standard Drawbar Settings for the Hammond B3**

#### KB3 Mode Effects Buttons (Assignable Switches)

When using a KB3 program, the switches above the sliders control KB3 effects, and the blue KB3 LED is lit. The KB3 function is labeled below each switch, their LEDs indicate the status of the various effects for the current KB3 program. This status is saved as part of each program. You can change the effects in real time by pressing the switches.

In KB3 mode these switches also respond to and send MIDI Controller messages.

Effect Category	Button Name	LED Color (relative to button name/state)	Corresponding Page and Parameter	Comments
Rotary	Fast / Slow	red/green	MISC: SpeedCtl	
Vibrato	On / Off	red/off	MISC: VibChorCtl	
	Chorus / Vibrato	red/green	MISC: VibChorSel	Disabled if Button 2 is off
	Depth 1 / 2 / 3	green/orange/red	MISC: VibChorSel	Disabled if Button 2 is off
Percussion	On / Off	red/off	PERC: Percussion	
	Volume Loud / Soft	red/green	PERC: Volume	Disabled if Button 5 is off
	Decay Fast / Slow	red/green	PERC: Decay	Disabled if Button 5 is off
	Pitch High / Low	red/green	PERC: Harmonic	Disabled if Button 5 is off

**Table 7-2 KB3 Mode Effects Buttons and Corresponding Parameters**

#### Additional Controller Assignments In KB3 Mode

Other default assignments for factory KB3 programs include:

CC Pedal 1 (volume) controls preamp volume, which emulates the volume control of an organ preamp. The PreampResp parameter must be set to On for this to work (the default setting). See [PreampResp on page 7-83](#) for details.

The Mod Wheel controls Distortion Drive.

Switch Pedal 1 (sustain) controls the SpeedCtl parameter, which toggles the Rotary speed between slow or fast. See [SpeedCtl on page 7-83](#) for details. This has the same effect as using Rotary S/S (Variation button).

## Editing KB3 Programs

You can edit a wide assortment of any KB3 program's parameters. You can also create your own KB3 programs, though you must start with an existing KB3 program to do this. A regular Forte SE program cannot be turned into a KB3 program. If you're not sure whether the current program is a KB3 program, check the KB3 button (located above the right most slider). If the blue LED is on, then the current program is a KB3 program.

Enter the KB3 program editor by pressing the Edit button while a KB3 program is selected in program mode. You'll quickly see that the KB3 editor differs from the standard VAST program editor.

### KB3 Programming Tips

This following section provides some starting points for creating your own KB3 programs.

The most prominent difference between organ vintages is the number of tone wheels used. Keep in mind, however, that the sound of an actual tone wheel organ will depend not only on its age, but also on how well it has been maintained.

Octave folding, where an octave (or part of an octave) is repeated at the top or bottom of the keyboard, is handled automatically by KB3 Mode, emulating the folding done on actual tone wheel organs.

Early Tone Wheel Organs. Instruments of this period had 91 tone wheels. To get this sound, go to the TONEWL page, select 91 tone wheels, and set lowest pitch to C 1. Start with the **Junky** Wheel Volume Map and **Bob's** Organ Map. You may also want to increase the Key Click level, since this tends to become louder on older organs.

Middle Period Organs. To model one of these instruments, set 82 tone wheels and a low note of A 1. Use the **Mellow** Wheel Volume Map and **Eric's** Organ Map. Set Key Click to a moderate level.

The Classic B-3. For this sound, choose 79 tone wheels and set the low note to be C 2. The best settings here are the **Bright** Wheel Volume Map and **Peck's** Organ Map. You may also want to reduce the Key Click level.

## Program Edit Mode

KB3 Editor: The Parameters (PARAMS) Page

# KB3 Editor: The Parameters (PARAMS) Page

This page is the same as the VAST editor Parameters page; see [The Parameters \(PARAMS\) Page on page 7-10](#).

## KB3 Editor: The Program FX (FX) Page

This page is the same as the VAST Program editor FX page (see [page 7-13](#)) except for one important difference: there is no Pre/Post insert parameter for the auxiliary sends.

```
EDIT:Prog FX 14/15 Units
Insert: 747 Double Leslie15
Aux 1 : 0 None
Aux 2 : 5015 Little Booth
Aux 1 Send : 0% Type: %
Aux 2 Send : 21% Type: %
Aux1 Mod : Ctl D Aux2 Mod : MIDI20
more PARAMS FX COMMON TONEWL more
```

## KB3 Editor: The COMMON Page

The COMMON page contains an assortment of control parameters, including Leslie speed control and vibrato/chorus selection.

```
EDIT:Prog Common
PreampResp : On VolAdjust : -10dB
Leakage : -45.0dB BendRngUP : 200ct
LeakMode : TypeX BendRngDn : -200ct
SpeedCtl : Slow Sustain : On
VibChorCtl : Off Sostenuto : Off
VibChorSel : Chr3 LesliePedal : Sustain
more PARAMS FX COMMON TONEWL more
```

Parameter	Range of Values
Preamp/Expression Response	Off, On
Leakage	-96.0 to 0.0 dB, in 0.5-dB increments
Leak Mode	None, Type A, Type X, Type Y, Type Z, Type R
Speed Control	Slow, Fast
Vibrato/Chorus Control	Off, On
Vibrato/Chorus Type Selection	Vib1, Vib2, Vib3, Chor1, Chor2, Chor3
Volume Adjust	-96 to 96 dB
Bend Range Up	± 7200 cents
Bend Range Down	± 7200 cents

Parameter	Range of Values
Sustain	Off, On
Sostenuto	Off, On
Leslie Pedal	None, Sustain, Sost, Soft

## PreampResp

Set this parameter **On** or **Off** to enable or disable the preamp+expression pedal part of the KB3 model. Turning this **On** (the default) 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 de-emphasis curve to compensate for the built-in tone wheel volume pre-emphasis. Turning preamp response **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. This level is scaled by the drawbar levels, as well as the expression pedal level. The leakage level can also be controlled by MIDI CC 90; value 0 = -96 dB, value 127 = 0 dB, values between 0 and 127 scale between -96 dB and 0 dB. When using CC 90, the value displayed for the Leakage parameter will not change.

## LeakMode

Selects between different leakage models, determining which leakage harmonics are emphasized. **TypeA** provides an overall tone wheel leakage, with all tone wheels leaking a small amount. **TypeX**, **TypeY**, **TypeZ**, and **TypeR** emulate different degrees of drawbar leakage, where the leakage components correspond to the nine drawbars, instead of all the tone wheels.

## SpeedCtl

Select either **Fast** or **Slow** to choose the speed of the rotary speaker emulation. You can toggle between fast and slow speed using the [Rotary S/F](#) button (Variation).

## Program Edit Mode

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KB3 Editor: The COMMON Page

### VibChorCtl

Choose **On** or **Off** to turn on or off either vibrato or chorus (as selected with the VibChorSel parameter). You can toggle between on and off using Assignable button **2** (labeled [Chorus/Vibrato] On/Off).

### VibChorSel

Choose the vibrato or chorus program (there are three of each) you wish to use with this KB3 program. Note that you must set VibChorCtl (also on the MISC page) to **On** to hear the effect. You can select the vibrato or chorus you want using Assignable buttons **3** and **4** (labeled [Chorus/Vibrato] Chor/Vib and Depth).

### VolAdjust

Provides an overall volume adjust for the KB3 model. Use this parameter to “normalize” KB3 programs with other programs.

### BendRngUp, BendRngDn

Respectively control the upward and downward pitch bend ranges of the KB3 program.

### Sustain

Set **On** or **Off** to enable or disable response to MIDI sustain (MIDI 64). By default MIDI sustain (MIDI 64) is sent by Switch Pedal 1.

### Sostenuto

Set **On** or **Off** to enable or disable response to MIDI sostenuto (MIDI 66). By default MIDI sostenuto (MIDI 66) is sent by Switch Pedal 2.

### LesliePedal

Set the pedal source (Sustain=Switch Pedal 1, CC 64 by default, Sost=Switch Pedal 1, CC 66 by default, Soft=Switch Pedal 3, CC 67 by default) to toggle between Fast and Slow for the Leslie™ speaker rotation speed.

## KB3 Editor: The Tone Wheels (TONEWL) Page

KB3 Mode uses DSP-generated waveforms for the lower half of its tone wheels and samples for the upper half of its tone wheels. Using the parameters on the TONEWL page, you can specify which sample you wish to use, the number of tone wheels (which will affect how many other voices are available to you), and other related settings.

```

EDIT:Prog Tonewheels
UPPER ToneWheel Keymap: 150 Sine Wave
UPPER Vol Adjust : 3dB      LowerXpose : 0ST
NumToneWheels : 79      UPPERXpose : 0ST
OrganMap      : Peck's
WheelVolMap   : Bright
Globals       : Off
more PARAMS FX COMMON TONEWL more
    
```

Parameter	Range of Values
Upper Tone Wheel Keymap	Sample List
Upper Volume Adjust	-96 to 96 dB
Number of Tone Wheels	24 to 91
Organ Map	Equal, Peck's, Bob's, Eric's
Wheel Volume Map	Equal, Bright, Mellow, Junky
Globals	On, Off
Lower Transposition	-120 to 127 semitones
Upper Transposition	-168 to 87 semitones

### Upper Tone Wheel Keymap

Use this parameter to indicate the keymap (and thereby the samples) to use for the upper tone wheels. You can use any keymap from ROM, though you must specify a keymap that uses looped samples for KB3 Mode to work correctly. When in Program mode, the keymap assigned to the program appears in the info box.

### Upper Volume Adjust

Since sample volumes can vary, while the volume of DSP-generated waveforms will remain consistent, you may find it necessary to adjust the level of the sample-based tone wheels. This parameter lets you adjust the amplitude of the upper (sample-based) tone wheels relative to amplitude of the waveform-generated tone wheels.

### Number of Tone Wheels

This parameter lets you specify the number of tone wheels used by a KB3 program. The classic tone wheel organs used 91 tone wheels, though the lowest 12 were for the pedals only. Therefore, you may find 79 a good number of tone wheels to specify for realistic organ emulations. This would leave you 88 voices for other programs. You can specify up to 91 tone wheels. The number of Forte SE voices used by a KB3 program is  $(\text{number of tone wheels} + 1) / 2$ , rounded to the next highest whole number if the result is a fraction. So, for example, with 79 tone wheels specified you would use 40 voices. Keep in mind that these voices are permanently allocated and running while the KB3 program is selected, and cannot be stolen. The additional voice used by KB3 programs is for keyclick.

### Organ Map

The organ map 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. **Equal** uses the same volume for each key and drawbar, and is not based on a real B3. **Peck's** is a good normal map, from a B3 in good condition. **Eric's** is a bit more idealized; it's smoothed out, but less realistic. **Bob's** is more uneven, based on an old B3.

### Wheel Volume Map

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 on different organs. **Equal** is a map with all tone wheels at the same volume. It's not based on a real B3. **Bright** is a good normal map, based on a B3 in good condition. **Junky** is based on a B3 with an uneven, rolled-off response. **Mellow** is somewhere between **Bright** and **Junky**.

You can also apply EQ to control wheel volumes based on the frequencies of each tone wheel. See [KB3 Editor: The EQ Page on page 7-94](#).

### Globals

This is another toggle, which affects LFO2, ASR2, FUNs 2 and 4. When off, these three control sources are local; they affect each individual note in the layers that use them as a control source. They begin operating each time a note in that layer is triggered.

When the Globals parameter is set to **On**, these control sources become global, that is they affect every note in every layer of the current program, not just the one to which they're applied. When these control sources are global, they begin operating as soon as the program is selected. When Globals are on, LFO2, ASR2, and FUNs 2 and 4 will appear on their respective pages preceded by the letter G to indicate that they're global. You'll use global control sources when you want to affect each note in a given layer uniformly, and local control sources when you want to affect each layer's note independently.

## Lower Transpose / Upper Transpose

These two parameters let you transpose the upper and/or lower tone wheels in semitone steps away from their default tunings.

## KB3 Editor: The Drawbars (DRAWBR) Page

Press the Drawbr soft button to view the DRAWBR Page. This page lets you edit KB3's drawbars.

```

EDIT:Prog Drawbars
Mode : Preset Steps : 0-8
Vol:  8   8   8   8   0   0   0   0   0
Tune: -12 7   0  12 19 24 28 31 36
more DRAWBR PITCH AMP KEYCLK more

```

### Mode

When you set Mode to **Preset**, the preset drawbar settings on this page will be installed at program selection. The drawbar values will immediately change, however, as soon as you move the corresponding drawbar. Set Mode to **Live** if you want the drawbar volume settings at program selection to be determined by the positions of the drawbar controllers (sliders). With either setting, any engagements of the drawbar controllers subsequent to program selection will affect drawbar volumes.

### Steps

This parameter lets you specify the increments by which drawbar volumes will change. Choose either **0-8**, to approximate the drawbar settings on actual organs, or choose **0-127** for a finer degree of resolution.

### Volume

This parameter appears only if you've set Mode (see above) to **Preset**. Use the Volume parameter to set the preset volume of each of the nine drawbars. The available values will be **0-8** or **0-127**, depending on the setting of the Steps parameter.

## Program Edit Mode

KB3Editor:TheSetDrawbars(SetDBR)SoftButton

### Tune

This parameter lets you tune each of the nine drawbars up or down in semitone steps. The values for the Tune parameter on the DRAWBR page shown above represent standard drawbar settings on a real B3, as shown in the table below.

Subharmonics		Fundamental	Harmonics					
16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Slider A	Slider B	Slider C	Slider D	Slider E	Slider F	Slider G	Slider H	Slider I

Figure 7-2 Standard Drawbar Settings for the Hammond B3

## KB3 Editor: The Set Drawbars (SetDBR) Soft Button

Press the SetDBR soft button to capture the current position of the drawbars, and use those positions as the preset drawbar positions on the DRAWBR page.

## KB3 Editor: The PITCH Page

The PITCH page parameters for KB3 programs is much like the PITCH page parameters for VAST programs. The only difference is that for KB3 programs, there are no Hz, KeyTrk, or VelTrk parameters. For a full description of the PITCH-page parameters, see [Common DSP Control Parameters on page 7-32](#), [The DSP Control \(DSPCTL\) Page on page 7-37](#) and [The DSP Modulation \(DSPMOD\) Page on page 7-39](#).

```
EDIT:Prog Pitch
Coarse: 0ST      Src1   : OFF
Fine   : 0ct     Depth  : 0ct
                               Src2   : OFF
                               DptCt1 : OFF
                               MinDpt : 0ct
                               MaxDpt : 0ct
more DRAWBR PITCH AMP KEYCLK more
```

## KB3 Editor: The AMP Page

The AMP page parameters for KB3 programs is much like the AMP page parameters for VAST programs. The only difference is that for KB3 programs, there are no KeyTrk or VelTrk parameters. For a full description of the AMP page parameters, see [Common DSP Control Parameters on page 7-32](#), [The DSP Control \(DSPCTL\) Page on page 7-37](#) and [The DSP Modulation \(DSPMOD\) Page on page 7-39](#).

```

EDIT:Prog Amp
Coarse: -6dB      Src1   : OFF
                  Depth  : 0dB
                  Src2   : OFF
                  DptCt1 : OFF
                  MinDpt : 0dB
                  MaxDpt : 0dB
more DRAWBR PITCH AMP KEYCLK more
  
```

## KB3 Editor: The KEYCLICK Page

The Key Click feature adds a decaying burst of pitched noise to the attack of notes. Unlike the percussion, the key click is “multi-triggered,” which means that every new note will trigger it. The parameters on this page primarily control the decay, volume, and pitch of the key click.

```

EDIT:Prog KeyClick
KeyClick : On      Random   : 9%
Volume   : -70.0dB RetrigThresh : -31.5dB
Decay    : 0.075s  NoteAttack  : Normal
VelTrk   : 0%     NoteRelease : Normal
Pitch    : 98     KTrkAmt: -5.0%/key  Key: B 3
more DRAWBR PITCH AMP KEYCLK more
  
```

Parameter	Range of Values
Key Click	Off, On
Volume	-96.0 to 0.0 dB, in 0.5-dB increments
Decay	0.005 to 1.280 seconds, in 0.005-second increments
VelTrk	0 to 100%
Pitch	1 to 120
Random	0 to 100%

## Program Edit Mode

---

### KB3 Editor: The KEYCLICK Page

Parameter	Range of Values
Retrig Thresh	-96.0 to 0.0 dB, in 0.5-dB increments
Note Attack	Normal, Hard, PercHard
Note Release	Normal, Hard

## KeyClick

This is where you turn Key Click on or off. With KeyClick set to Off, you may still hear a click depending on your Note Attack and Note Release settings (see below).

## Volume

This parameter sets the level of the keyclick; the noise decays from the level you set here. This level is scaled by the drawbar levels, as well as the expression pedal level. Keyclick volume can also be scaled by MIDI CC 89; value 0 = -96 dB, value 127 = the level set for the Volume parameter. Values between 0 and 127 scale between -96 dB and the level set for the Volume parameter. When using CC 89, the value displayed for the Volume parameter will not change.

## Decay

Sets the basic decay time of the noise envelope. Smaller values produce a shorter burst.

## VelTrk

Controls the degree to which key velocity affects the key click volume. A value of zero means that the key velocity has no effect on the key click volume (which is like a real tone wheel organ). Other values add volume as the velocity increases.

## Pitch

Sets the basic pitch of the key click noise, relative to the highest tonewheel's pitch. The pitch is controlled by a steep lowpass filter applied to white noise. The filter's cut off frequency is controlled relative to key number, higher keys move the cutoff frequency up, lower keys move the cutoff frequency down.

## Random

Controls the degree to which a random amount of amplitude variation is added to the key click.

## ReTrigThresh

This parameter lets you set the volume level below which key click must decay before it will be retriggered.

## Note Attack

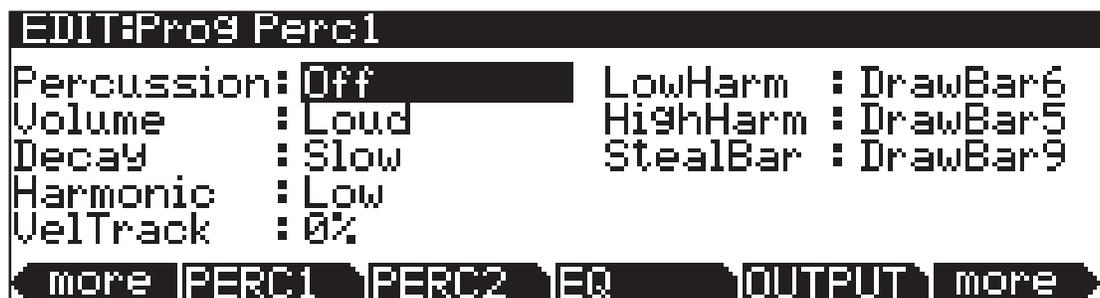
Controls the attack characteristic of notes. **Normal** provides a smoothed attack, while a setting of **Hard** has an instant attack and will produce an audible click, in addition to any amount of key click specified with the other parameters on this page (you might prefer not to specify any additional key click when you use this setting). **PercHard** sets a hard attack level for percussion only; notes without percussion use a normal attack.

## Note Release

Controls the release characteristic of notes. A setting of **Normal** has a smoothed release, while a setting of **Hard** has an instant release. **Hard** will produce an audible click.

# KB3 Editor: The PERC1 Page

Percussion is a characteristic feature of tone wheel organs. It's especially useful while soloing, since percussion adds an extra "plink" (actually an extra tone at a defined harmonic) to the attack. You can reach the percussion parameters by pressing the Perc1 and Perc2 soft buttons.



Parameter	Range of Values
Percussion	Off, On
Volume	Soft, Loud
Decay	Slow, Fast
Harmonic	Low, High
Velocity Tracking	0 to 100%
Low Harmonic	Drawbar 1 to 9
High Harmonic	Drawbar 1 to 9
Steal Bar	Drawbar 1 to 9

## Percussion

This is where you turn the percussion effect on or off. Percussion is created by a decaying envelope applied to one of the nine drawbars. The percussion effect is “single-triggered,” which means that once it’s triggered, it won’t trigger again until all keys (or whatever you’re using to trigger notes) go up. So if no keys are down, and you play a chord, percussion gets applied to all notes in the chord (and in fact, to all notes that are triggered during the short duration of the percussion envelope). Once the envelope runs its course, any notes you play while at least one key is held down get no percussion. You can turn percussion on or off by pressing Assignable button 5 (labeled [\[Percussion\] On/Off](#)).

## Volume

This parameter switches between loud and soft percussion settings. The actual amplitude is set on the PERC2 page. You can toggle between loud and soft by pressing Assignable Button 6 (labeled [\[Percussion\] Loud/Soft](#)).

## Decay

This parameter switches between fast and slow percussion settings. The actual decay rate is set on the PERC2 page. You can toggle between slow and fast decay by pressing Assignable button 7 (labeled [\[Percussion\] Decay F/S](#)).

## Harmonic

This parameter switches between high and low harmonic percussion settings. The actual pitch is controlled by the LowHarm and HighHarm parameters. You can toggle between low and high harmonics by pressing Assignable Button 8 (labeled [\[Percussion\] Pitch H/L](#)).

## VelTrack

Here is where you specify the degree to which key velocity controls percussion volume. A value of zero corresponds to no velocity tracking, which is like a real tone wheel organ. Other values add velocity tracking, so that increased velocity results in louder percussion.

## LowHarm

Controls which drawbar is used as the basis for the percussion when Harmonic is set to **Low**. On an actual tone wheel organ, this is Drawbar 4 (2nd harmonic). The actual pitch obtained depends on the drawbar tuning.

## HighHarm

Controls which drawbar is used as the basis for the percussion when Harmonic is set to **High**. On an actual tone wheel organ, this is Drawbar 5 (3rd harmonic). The actual pitch obtained depends on the drawbar tuning.

## StealBar

Controls which drawbar is disabled when the percussion effect is turned on. On an unmodified tone wheel organ, the ninth drawbar is the one disabled. Any drawbar can be selected.

## KB3 Editor: The PERC2 Page

EDIT:Prog Perc2			
	PercLevel	DecayTime	OrgLevel
Loud+Fast	5.0dB	0.44s	-2.0dB
Loud+Slow	6.0dB	0.60s	-2.0dB
Soft+Fast	4.0dB	0.24s	0.0dB
Soft+Slow	4.0dB	0.60s	0.0dB

more PERC1 PERC2 EQ OUTPUT more

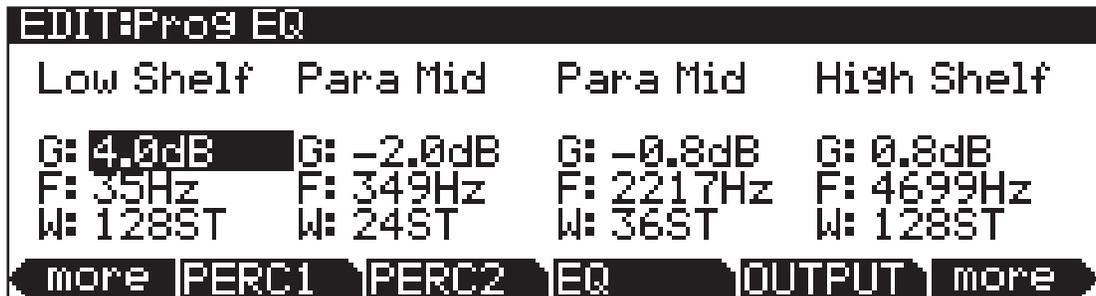
Parameter Group (Available for each combination of the Volume and Decay parameters on the PERC1 page)	Range of Values
Percussion Level	0 to 24.0 dB
Decay Time	0.01 to 5.10 seconds, in 0.02-second increments
Organ Volume Level	-12.0 to 12.0 dB

## PercLevel, DecayTime, OrgLevel

With these parameters you can control the amplitude and decay time of the percussion effect for all combinations of the Volume and Decay parameters (on the PERC1 page). You can also adjust the level of the organ relative to the percussion, for accurate emulation of classic organs.

## KB3 Editor: The EQ Page

The four column headers on this page represent two shelving bands of equalization and two parametric bands. The KB3 EQ offered here, though, is not implemented as a true EQ section; instead, it adjusts the volume of the tone wheels based on frequency. If the tone wheels are based on sine waves, then this acts similarly to a real EQ.



Parameter Group (Available for each EQ band)	Range of Values
Gain	-24.0 to 24.0 dB, in 0.2-dB increments
Frequency	16 to 25088 Hz, in varying increments
Width	-128 to 128 Semitones, in 2-semitone increments

Each EQ section has Gain (G), Frequency (F), and Width (W) controls. Frequency controls the center frequency of the band. Width controls the bandwidth. Gain controls the amount of boost or cut.

## KB3 Editor: The OUTPUT Page

Use this page to route the current program's post-FX signals. The two Pan parameters correspond to those of the VAST Program editor OUTPUT page (See [page 7-40](#)). The Out Gain parameter corresponds to those of the VAST Program Editor COMMON page (See [page 7-16](#)).

```
EDIT:Prog Output
Output Pan      : 0
Output Pan Mode : +MIDI
Out Gain       : 3dB

more PERC1 PERC2 EQ OUTPUT more
```

### Exp Pedal

Use this parameter to set which rear panel CC Pedal input will control volume for the current KB3 program. With a setting of Expression/Foot, volume can be controlled by a CC pedal plugged into either the rear panel input labeled CC Pedal 1 (volume), or the rear panel input labeled CC Pedal 2 (wah). With a setting of Expression, volume can be controlled by a CC pedal plugged into the rear panel input labeled CC Pedal 1 (volume). With a setting of Foot, volume can be controlled by a CC pedal plugged into the rear panel input labeled CC Pedal 2 (wah). With a setting of None, volume control from both CC pedal inputs is disabled.

## KB3 Editor: The LFO, ASR, FUN, and ARP Pages

The rest of the pages—LFO, ASR, FUN, ARP1 and ARP2 — are the same for KB3 programs as they are for VAST programs, so we won't describe them again here. For descriptions of these pages see:

[The LFO Page on page 7-43](#)

[The ASR Page on page 7-46](#)

[The Function \(FUN\) Page on page 7-47](#)

[The Arpeggiator Function on page 7-55](#)

# Chapter 8

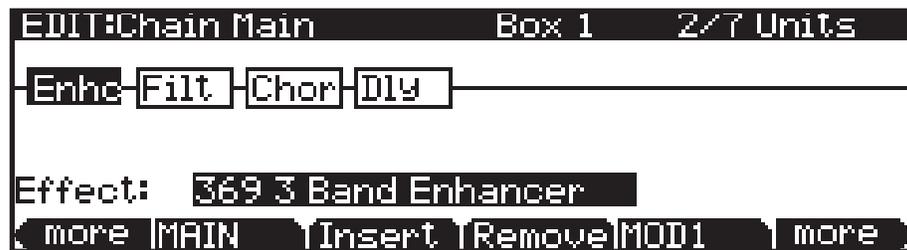
## The Effects Chain Editor

Pressing the Edit button while a Chain (other than 0 None) is highlighted—on any of the various effects pages—will call up the Chain editor. From the Program editor, the program's Insert and Aux Chains can be edited from the PROGFX and LYRFX pages. In Effect mode Chains selected for Aux overrides can be edited from the Aux 1 Override and Aux 2 Override pages. In Multi Edit Mode, Chains selected for Aux overrides can be edited from the AUX1 and AUX2 pages.

A Chain is made up of one or more effect-boxes, with each box containing a single effect. You can have up to 16 effect-boxes in a Chain. The settings for all of the parameters of each effect-box are also stored within the Chain. There are 15 Mod Controls that allow for real-time control over any parameter from any effect-box in the Chain. Per Chain Control sources are also provided to be used as inputs to the effect Mods (two FXLFOs, two FXASRs, and four FXFUNs.) These work similarly to the LFOs, ASRs and FUNs in Program mode, but are only available for use with the effect Mods.

### The MAIN Page

In the Chain Editor, pressing the MAIN soft button calls up the MAIN page. The MAIN page is where you configure the length of a Chain and select the individual effects that make up the Chain. The Chain editor MAIN page of the Chain 269 PnoEnhancRvb3 appears as shown below:



At the top right of the display is the number of DSP units used by the currently selected effect- box, and by the Chain as a whole. 2/5 Units indicates that the current effect-box is using two DSP units and the Chain is using a total of five DSP units for all of its effects boxes. There are a total of 16 units available for all of the Chains that are currently loaded by programs and any active Aux overrides from Multi Mode.

## The Effects Chain Editor

### The MOD Pages



NOTE: In some configurations, not all 16 units are available for use with multi-unit effects because of the way the DSP is allocated internally.

Like all other representations of signal paths in the Forte SE display, the program signal moves from left to right through the Chain. Use the cursor buttons to select an effect-box or empty spot in the Chain. The effect loaded into the selected effect-box can be changed by numeric entry, with the Alpha Wheel, or with the +/- buttons; and can be changed with either the effect-box or the Effect field at the bottom of the page highlighted. The +/- double button press will jump to the next effect “category.”

Pressing the Insert soft button adds a new effect-box to the Chain in the currently selected block-slot, and pushes the currently selected effect-box down the Chain to the right. (If you have run out of DSP units, you will not be able to create additional effects boxes.) Pressing the Remove soft button takes the currently selected effect out of the Chain.

### Editing Effect-boxes

To edit the parameters of an effect, select its effect-box on the MAIN page and press the Edit button. For each effect, there are one or more pages of parameters that are specific to that effect. See [Effects Parameters on page 8-5](#) for details on parameters for each type of effect. Any parameter controlled by an effect Mod will display a value of FxMod and cannot be edited. To return to the MAIN page of the chain editor, press the Exit button.

## The MOD Pages

There are six pages for configuring effects mods: MOD1 - MOD6. All pages are essentially identical in appearance and function. See below for an example MOD page:

```
EDIT:Chain Fx Mods 1
Box: Param: Adjust: Source: Depth:
Box4 Wet/Dry 0%Wet FxFUN1 85%Wet
Box3 L Wet/Dry 0%Wet FxFUN2 100%Wet
Box2 Wet/Dry 0%Wet FxFUN3 100%Wet
Box3 R Wet/Dry 0%Wet FxFUN2 100%Wet
None OFF
more |MAIN |Insert |Remove|MOD1 |more
```

### Box

The Box parameter specifies which effect-box in the Chain to which the Mod will be applied.

### Param

The Param parameter selects which parameter of the specified box's effect will be modulated.

## Adjust

The Adjust parameter sets a fixed value for the specified parameter (Param) that is applied before any modulation.

## Source

The Source parameter determines the Control source that will modulate the parameter (Param) in real-time. This can be any of the normal channel Control sources (sliders, mod wheel, pedals, etc.) or one of the Chain-specific Control sources (FXLFOs, FXASRs, and FXFUNs).

## Depth

The Depth parameter determines the range of modulation that the Controller will apply. When the Control source has a value of 0, the parameter's (Param's) value will be the Adjust value. When the control source is all the way up, the parameter's (Param's) value will be the Adjust value plus the Depth value.

## FXLFO, FXASR, and FXFUN pages

The FXLFO, FXASR, and FXFUN pages are the pages from which you edit the Effects-only Control sources. These are Control sources that can be used by the effects Mods in the current Chain. The parameters on these pages work exactly like those of the corresponding Control sources in program mode (see [The LFO Page on page 7-43](#), [The ASR Page on page 7-46](#), and [The Function \(FUN\) Page on page 7-47](#)).

## INFO page

Press the INFO soft button to go to the Chain Info page where you can edit the controller assignment info for the current Chain. Chain Info allows you to add a description for each FX Mod you have assigned. On the Chain Info page, use the Channel/Layer/Zone buttons to scroll through the current Chain's list of controller assignment info. Each assignment Info entry has a MIDI controller number and a Text parameter to describe what the assignment controls. One Info entry can be made for each MIDI CC number.

Chain Info allows you to see a name for each FX Mod controller assignment, as well as set an initial controller value for each FX Mod in each Program. When assigning a physical controller or CC number to a source field on one of the FX Mod pages, a Chain Info entry is automatically added to the Chain Info Page with the name of the FX parameter. Chain Info entries are also automatically deleted when their associated FX Mods are removed or unassigned from the FX Mod pages.

## The Effects Chain Editor

---

### The Utility Soft Buttons, HELP Soft Button and Favorites Buttons Functions

When an FX Chain is selected in a Program, the Chain Info entries appear on the Program Parameters page. Chain Info names are also shown on the main Program and Multi Mode Pages when moving an assigned controller. The Program Parameters page allows you to remap existing Chain FX Mod controller assignments, as well as set an initial MIDI value for each assignment. This allows you to reuse the same Chain in several Programs, and each of the Chain FX Mods can have a different controller assignment or initial value in each Program.

Each MIDI CC number can have one Chain Info entry. When setting an FX Mod source field, if the selected physical controller or CC number is already used by a different FX Mod in the Chain, a new Chain Info entry will not be added to the Chain Info Page. The new FX Mod will share the existing Chain Info entry for the same physical controller/MIDI CC. The name of the previously existing Chain Info entry will not change based on the new FX Mod. If you have assigned one physical controller/MIDI CC to multiple FX Mods, you may wish to edit the Info name to reflect this.

To edit an Chain Info name, first go to the Chain Info page, then use the Channel/Layer/Zone buttons to select the Info entry from the list. Press the Text soft button to enter the text editor for the currently selected Info entry. After making text changes, press the OK soft button, or press the cancel soft button to exit the text editor without making changes. Be sure to save the Chain when exiting the Chain editor in order to save your changes.

In some cases it may be desirable to manually create a new Chain Info entry. Press the New soft button, then choose an available MIDI CC. Once the Info entry is created, you can change its name using the Text soft button.

If you have edited the Info text for an FX Mod, but wish to change to physical controller or CC number for the source field of that FX Mod, you can duplicate the Info entry to preserve the edited text. First, go to the Chain Info page, then use the Channel/Layer/Zone buttons to select the Info entry from the list. Press the Dup soft button and select an available CC to use for the new FX Mod source assignment. Lastly, select the desired FX Mod source field on one of the FX Mod pages, and select the same CC for the source field.

You can delete a Chain Info entry by selecting it on the Chain Info page and pressing the Delete soft button.

## The Utility Soft Buttons, HELP Soft Button and Favorites Buttons Functions

Some of the soft buttons in the Chain Editor perform a function when pressed, as well as some of the Favorites buttons.

## Delete

Press the Delete soft button to delete the current Chain (factory Chains can not be deleted). Press Delete, and you will be given a choice to Delete or Cancel. Press Delete again, and an “Are You Sure?” message will appear. Press Yes to delete the Chain, or Cancel to cancel.

## HELP

Press the HELP soft button to view the Help page, where you can view a description of functions assigned to the Favorites buttons.

### Favorites 1: Help

Press the Favorites 1 button to view the HELP page.

### Favorites 5: Bypass Box

Press the Favorites 5 button to temporarily bypass the currently selected FX box in the Chain. Press the Favorites 5 button again to re-enable the selected box.

## Effects Parameters

This section contains descriptions of the Forte SE’s many effects parameters, and instructions on how to use them. Read through this section to get a good general understanding of the parameters.

The descriptions here do not include all of the parameters associated with every effect, and some effects may not have some of the parameters described here for their category. A more complete reference, with every effect and the meaning and range of every parameter, arranged in the order they appear on the screen, can be found in the KSP8 Algorithm Reference Guide on the Kurzweil website, [www.kurzweil.com](http://www.kurzweil.com).

## General Parameters

There are a number of parameters that are common to all or almost all effects, and we’ll deal with those first.

**Wet/Dry** balances the levels of the processed and unprocessed signals output from the effect. Wet represents the processed signal, while dry represents the unprocessed signal. The range is 0% wet (the signal is unprocessed) through 100% wet (no dry signal is present). Values between 0% and 100% blend the two signals, for example, at 20% the output signal is 20% wet (processed) and 80% dry (unprocessed.) A setting of 50% wet means the dry and processed signals are roughly equal in level. In some effects, separate Wet/Dry parameters are provided for the Left and Right input channels. In some cases, this parameters can have negative values, which indicate that the Wet signal is polarity-inverted.

## The Effects Chain Editor

---

### Effects Parameters

When an effect with the Wet/Dry parameter is used in Chain that has been selected as an Aux effect, Wet/Dry is automatically set to 100% wet and cannot be adjusted. This is because when using an Aux effect, the dry signal is already effectively at 100% on the main audio bus (not routed through the Aux effect.) In this case, turning up the Aux send level will blend the 100% wet signal (from the Aux bus) with the dry signal on the main audio bus.

**Out Gain** sets the gain at the output of an effect.

**In/Out** enables or disables the effect. You can think of it as a Wet/Dry parameter with only two

**HF Damping** (high frequency damping) is the cutoff (-3 dB) frequency of a 6dB/octave lowpass filter that's inserted before the processor. High frequencies above the set cutoff frequency will be filtered out. In the case of processors where multiple iterations of the signal are heard, such as in a delay, each iteration of the signal will pass through the filter, and will therefore be duller.

**XCouple** (Cross Couple). In stereo effects, this controls how much of any signal being fed back is going to the channel opposite to the one where it first appeared. At 100%, all feedback from signals at the left input goes to the right channel and vice versa, causing a “spreading” or in the case of delay lines, a “ping-pong” effect. At 0%, fed-back signals stay with the channel they came in on.

**A->B cfg** (configuration). In combination effects that contain two (or more) components, the order in which the signal passes through the two components can be changed with this parameter. Combination effects are usually named with a “->”, as in 484 “Flange->Shaper.” For example, 484 “Flange->Shaper” can be configured so the signal passes through the flanger first and then the shaper, or through the shaper first and then the flanger. The cfg parameter determines the configuration, and its value is context-sensitive—in this example, the choices would be “Fl->Shp” and “Shp->Fl.”

**A/Dry->B** is also found in many combination effects, and controls the amount of signal that will pass dry (unprocessed) through the first component into the second component. Different combination effects use different variations on this parameter, depending on the context. The range is 0 to 100%.

## Reverbs

**Room Type** changes the configuration of the effect to simulate a wide array of room types and sizes including booths, small rooms, chambers, halls and large spaces. Because this parameter changes the structure of the reverb effect, you need to be careful when assigning it a MOD—changing it in real time while signal is passing through it is likely to cause audible artifacts. Room types in different effects with similar names do not necessarily sound the same.

**Rvrb Time** is the RT60—the time it takes for the reverb to decay to 60 dB below its initial level—in seconds. It is accurate assuming that several other parameters (HF Damping, Diff Scale, Size Scale, and Density) are at their nominal levels. It is adjustable up to “Inf”, which creates an infinitely-sustaining reverb.

**LateRvbTim** adjusts the basic decay time of the late portion of the reverb after diffusion.

L Pre Dly and R Pre Dly (Pre-Delay) is the time between the start of a sound and the output of the first reverb reflections from that sound. Longer pre-delays can help make larger spaces sound more realistic. Longer times can also help improve the clarity of a mix by separating the reverb signal from the dry signal, so the dry signal is not obscured. You can set a separate time for the left and right reverb signals using L Pre Dly and R Pre Dly.

**EarRef Lvl** adjusts the mix level of the early-reflection portion of effects which offer early reflections.

**Late Lvl** adjusts the mix level of the late-reverb portion of effects which offer early reflections.

**Diff Scale** scales the “diffusion“ of the early reflections, that is, how spread out they are as a group over time. At very low settings, the early reflections start to sound quite discrete, and at higher settings the early reflections are seamless. It is adjustable from 0.00 to 2.00, with 1.00 being nominal for the given Room Type.

**Density** controls how tightly the early reflections are packed in time. Low Density settings group the early reflections close together, while higher values spread the reflections for a smoother reverb. It is adjustable from 0.00 to 4.00, with 1.00 being nominal (and usually optimal) for the given Room Type.

**Expanse** controls the amount of late reverb energy biased toward the edges of the stereo image. A setting of 0% will bias energy towards the center. Moving away from 0% will bias energy towards the sides. Positive and negative values will have a different character.

**Build** adjusts the envelope of certain portions of the reverb. Positive values speed up the envelope, and negative values slow it down.

**Size Scale** changes the size of the current room. Altering this parameter will change the reverb time and also cause some coloration of the reverb. It is adjustable from 0.00 to 4.00, with 1.00 being nominal (and usually optimal) for the given Room Type.

**InfinDecay**, when turned “On”, causes the reverb tail to decay infinitely. When it’s “Off”, the decay time is determined by the “Rvrb Time” or “LateRvbTim” parameters. This is a good parameter to control with a footswitch.

**Wet Bal** (Wet Balance). Some reverb effects are actually two stereo reverbs in one, with each one receiving a different mono signal. This balances the outputs of the two reverbs—0% means they are being mixed equally.

## Delays

There are two types of taps in the Multitap delays: The “Loop” tap, which has a feedback loop back to its input, and the numbered taps. The numbered taps can be single iterations or they can repeat as part of a loop, but they do not have individual feedback paths.

**Fdbk** (Feedback) Level controls the repeating function of the Loop Tap. A setting of 0% means there will only be a single delay, while a setting of 100% means the signal keeps repeating without ever stopping.

Both types of taps are individually adjustable from 0 to 2.55 seconds. The Loop Crs and Tapn Crs (**n** being the number of the tap) parameters set the coarse value of the loop in 20-ms increments, while the Loop Fine and Tapn Fine parameters set the fine value in 0.2-ms increments.

In Delay effects that use tempo to determine tap lengths, there is a Tempo parameter which can be set from 1 to 255 BPM or to “System.” The Loop Length and Tapn Delays are then expressed in beats relative to that overall Tempo.

**Hold** is a switch that, when turned on, “locks” any signal currently in the delay and plays it until Hold is turned off. When Hold is on, no signal can enter the delay and Feedback is set to 100%. A good parameter to control with a footswitch.

**Dry Bal** (Balance) is the left/right balance of the dry signal. At -100%, only the left dry signal goes to the left output, while at 100% only the right dry signal passes to the right output, and at 0%, equal amounts of the left and right dry signals pass to their respective outputs.

**Tapn Level** is the level of each numbered tap, from 0% to 100%, relative to the overall output of the effect.

**Tapn Bal** is the left/right balance of each of the numbered taps. At -100%, only the left channel of tap *n* goes to the left output, while at 100% only the right channel of tap *n* goes to the right output. At 0%, equal amounts of the left and right channels of the tap pass to their respective outputs. In some delays, pairs of taps (1 and 5, 2 and 6, etc.) are controlled together as stereo pairs.

**DelayScale** lets you change the lengths of all the taps together. Its range is 0 to 10x.



Note: It is possible for the Forte SE to run out of delay memory with over-generous settings of DelayScale or very slow Tempos. Some Delay effects will simply go to a maximum value and stay there, while in some, a calculation is made that automatically cuts the delay times in half, thereby maintaining a relationship with tempo.

### Complex Echo

This effect has two feedback taps per channel as well as three independent taps, and also a feedback diffuser for “smearing” the delays. Feedback line 1 feeds the signal back to the delay input of the same channel, while feedback line 2 feeds the signal back to the opposite channel.

**FB2/FB1 > FB** is a balance control between feedback lines 1 and 2. 0% (minimum) turns off feedback line 2, only allowing use of feedback line 1. 50% is an even mix of both lines, and 100% (maximum) turns off line 1.

**L Diff Dly** and **R Diff Dly** adjusts the delay lengths of the diffusers. Range is 0 to 100 ms. **Diff Amt** adjusts the diffuser intensity. Range is 0 to 100%.

**C Fdbk n Dly** adjusts the delay length of the C channel’s nth feedback tap, fed back to the C channel’s delay input. Range is 0 to 2600 ms.

### Spectral Multitap Delays

These 4- and 6-tap delays have their feedback and output taps modified with shapers and filters. In the feedback path of each tap are a diffuser, hipass filter, lopass filter, and imager. Each delay tap has a shaper, comb filter, and balance and level controls.

**Fdbk Image** sets the amount that the stereo image is shifted each time it passes through the feedback line. Range is -100 to 100%.

**Tap n Shapr** adjusts the intensity of the shaper at each output tap. Range is 0.10 to 6.00 x. **Tap n Pitch** adjusts the frequency of the comb filter at each output tap. Range is C-1 to C8, in semitones.

**Tap n PtAmt** adjusts the intensity of the comb filter at each output tap. Range is 0 to 100%.

### Gated Ducking Delay

This runs the last thing you played through a looping delay, but only outputs the delay signal when you aren’t playing. Gated Ducking Delay is great for that announcer sound, sound, sound, so popular in Monster Truck radio spots.

### DegenRegen

This one’s a big looping delay with lots of gain, distortion and filtering, and with a compressor to keep it all under control.

## Equalizers (EQ)

The Forte SE has both Graphic and Parametric EQ effects. Parametric EQ sections are also found on a number of combination effects.

## The Effects Chain Editor

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### Effects Parameters

The **Graphic** equalizer is available as stereo (linked parameters for left and right) or dual mono (independent controls for left and right). It has 10 bandpass filters per channel, each of whose gain is adjustable from -12 dB to +24 dB.

Like all graphic equalizers, the filter response is not perfectly flat when all gains are set to the same level (except at 0 dB), but rather has ripple from band to band. To minimize this ripple, it is best to center the overall settings around 0 dB.

The **Parametric** equalizer (“5-Band EQ”) has two bands of shelving filters and three bands of true parametric EQ.

**Treb Freq** and **Bass Freq** set the center frequencies for the shelving filters. Both of these are adjustable over the full range of 16 to 25088 Hz, in increments of a semitone.

**Treb Gain** and **Bass Gain** control the amount of cut or boost above (Treb) or below (Bass) the center frequency. The range is -79 to +24 dB.

**Midn Gain** sets the cut or boost for the parametric band n, with a range of -79 to +24 dB. **Midn Freq** sets the center frequency for parametric band n, with a range of 16 to 25088 Hz, in increments of a semitone.

**Midn Width** set the bandwidth of the filter on band n, with a range of 0.01 to 5 octaves.

### Enhancers

Enhancers modify the spectral content of the input signal by boosting existing spectral content, or stimulating new ones. Two and three-band versions are provided.

**Drive** adjusts the input into each band. Increasing the drive will increase the effects. Range is -79.0 to 24.0 dB.

**Xfer** adjusts the intensity of the transfer curves. Range is -100 to 100%.

### EQ Morpher

This effect uses two four-band bandpass filters, A and B, and moves between them. This can produce very convincing human vocal type sounds.

**FreqScale** offsets the filter frequencies for each set of filters. After setting the filter parameters (Freq, Gain, and Width), the FreqScale parameters will move each of the four filter frequencies together by the same relative pitch. Range is -8600 to 8600 cents.

**Morph A>B**. When set to 0% the “A” parameters are controlling the filters, and when set to 100%, the “B” parameters control the filters. Between 0 and 100%, the filters are at interpolated positions. When morphing from A to B settings, the A filter #1 will change to the B filter #1, A filter #2 moves to B filter #2, and so on. Range is 0 to 100%.

## Compressors, Expanders, and Gates

A wide range of Compression and Expansion effects is available in the Forte SE. The various effects include different combinations of:

- compressors with soft-knee characteristic—the compression action comes in gradually as the signal level approaches the threshold
- compressors with hard-knee characteristic—the compression action comes in abruptly when the signal reaches the threshold
- expanders
- multiband compressors that break the signal up into three frequency bands and compress them all separately
- sidechains or output EQs
- reverbs and compressors in combination
- gates
- gated reverbs

All of the Compression effects use these parameters:

**FdbkComprs** (Feedback Compression) selects whether to use feed-forward (set this to “Out”) or feed-back (set this to “In”) compression. The feed-forward configuration uses the input signal as a side-chain source, which is useful when the compressor has to act really quickly. The feed-back configuration uses the compressor output as the side-chain source, which lends itself to more subtle, but not as quick-reacting, compression.

**Atk** (Attack) Time for the compressor is adjustable from 0.0 to 228.0 ms. **Rel** (Release) Time for the compressor is adjustable from 0 to 3000 ms.

**SmoothTime** smooths the output of the expander’s envelope detector by putting a lowpass filter in the control signal path. Smoothing will affect the Attack or Release times only when this parameter is longer than one of the other times. The range is 0.0 to 228.0 ms.

**Signal Dly** (Delay) puts a small delay in the signal relative to the sidechain processing, so that the compressor (or gate) “knows” what the input signal is going to be before it has to act on it. This means the compression can kick in before an attack transient arrives. In the **SoftKneeCompress** and **HardKneeCompress** effects, delay is really only useful in feed-forward configuration (**FdbkComprs** is “Out”). For other compressors, the delay can be useful in feedback configuration (**FdbkComprs** is “In”). The range is 0 to 25 ms.

**Ratio** is the amount of gain reduction imposed on the compressed signal, adjustable from 1.0:1 (no reduction) to 100:1, and Inf:1.

**Threshold** is the level in dBFS (decibels relative to full scale) above which the signal begins to be compressed. Adjustable from -79.0 to 0 dB.

**MakeUpGain** allows additional output gain to compensate for gain reduction in the compressor. It is essentially the same parameter as **Out Gain**, with which it is summed. The minimum is -79.0, and the maximum summed gain (**MakeUpGain** + **Out Gain**) is +24.0 dB.

## Expansion

Effects containing Expanders have these controls:

## The Effects Chain Editor

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### Effects Parameters

**Atk** or **Exp Atk** (Attack), how fast the expander turns off when the input signal rises above the threshold level, adjustable from 0.0 to 228.0 ms.

**Rel** or **Exp Rel** (Release), how fast the expander turns back on after the signal drops below the threshold level, adjustable from 0 to 3000 ms.

**Ratio** or **Exp Ratio**, how much the gain is reduced below the expansion threshold, adjustable from 1:1.0 (no expansion) to 1:17 (extreme downward expansion).

**Threshold** or **Exp Threshold**, the level below which the signal is expanded, adjustable from -79.0 to 0 dB.

In addition, the two-segment compressors with expander have separate Ratio and Threshold controls for each of the compression segments.

### Multiband Compression

The Multiband Compression effect has Attack, Release, Smooth, Signal Delay, Ratio, Threshold, and MakeUp Gain parameters for each of the three bands (“Low”, “Mid”, and “High”). In addition, it has:

Crossover1 and Crossover2. These set the frequencies which divide the three compression frequency bands. The two parameters are interchangeable, so either may contain the higher frequency value. The range is 16 to 25088 Hz, in increments of a semitone.

### Gates

**SC Input** lets you select which input channel(s) will control the sidechain, which is responsible for opening and closing the gate. It can be set to L, R, or the average of the two channels, (L+R)/2. You can use this, if you arrange the signal paths and pan controls appropriately, to gate one mono signal with a different mono signal.

**Gate Time** is the time that the gate will stay open after the sidechain signal reaches the Threshold. Its range is 0 to 3000ms.

**Ducking** reverses the action of the gate. Normally this is set to “Off”, and the gate opens when the input signal rises above the threshold. But when this is “On”, the gate closes when the input signal rises above the threshold.

### Super Gate

Super Gate is a more sophisticated gate that includes these two functions:

**Env Time** is the amount of time it takes for the sidechain signal envelope to drop below the threshold. If this time is too short, the gate can close and open too quickly from amplitude modulation in the sidechain signal. If it is too long, the gate may stay closed until the envelope has a chance to fall, and some signals would not get through. This parameter is only in effect when Retrigger is Off.

**Retrigger** determines whether the gate timer will reset itself each time the sidechain signal goes above the threshold. If it is “On”, the timer resets itself, and therefore the gate stays open as long as the signal is above the threshold, or keeps going above the threshold, within the interval specified by Gate Time. If it is “Off”, the gate closes down after Env Time has elapsed, regardless of the sidechain level, and the sidechain level must fall below the threshold and come back up again before the gate will open again.

## Chorus

Chorus is an effect which gives the illusion of multiple voices playing in unison. The effect is achieved by detuning copies of the original signal and summing the detuned copies back with the original. Low frequency oscillators (LFOs) are used to modulate the positions of output taps from a delay line. The movement of the taps causes the pitch of the signal to shift up and down, producing the required detuning.

The choruses are available as stereo or dual mono. The stereo choruses have the parameters for the left and right channels ganged, while the dual mono choruses have separate left and right controls.

**Fdbk Level** is the level of the feedback signal from the LFO1 delay tap into the delay line. Negative values polarity-invert the feedback signal.

**Tap Lvl** sets the levels of the LFO-modulated delay taps. Negative values polarity-invert the signal. Setting any tap level to 0% turns it off.

**Tap Pan** sets the stereo position for a given tap's output. The range is -100% for fully left, to 100% for fully right.

**Atk Time** (attack time) is the time for the gate to ramp from closed to open (reverse if Ducking is on) after the signal rises above threshold, adjustable from 0.0 to 228.0 ms.

**Rel Time** (release time) is the time for the gate to ramp from open to closed (reverse if Ducking is on) after the gate timer has elapsed, adjustable from 0 to 3000 ms.

**LFO Rate** sets the speed of modulation of the delay lines with a range of 0.01 to 10 Hz.

**LFO Dpth** sets the maximum detuning depth of the LFO-modulated delay lines, with a range from 0 to 50 cents (= 1/2 semitone).

**Tap Dly** adds extra delay in front of the LFO modulated delay taps from 0 to 230 ms.

**L/R Phase** or **LFO LRPhs** adjusts the relative phases of the LFOs for the left and right channels in the stereo Choruses.

## Flanger

Flanging is the process of adding or subtracting a signal with a time-displaced replica of itself, which results in a series of notches in the frequency spectrum, generally referred to as a comb filter. In the Forte SE, the flanger is a multi-tap delay line, all (but one) of whose taps can have their lengths modulated up and down by a low frequency oscillator (LFO). The rate of the LFO is expressed in Tempo.

**StatDlyLvl** (Static Delay Level) is the level of the first, non-moving tap. Negative values invert the polarity of the tap. The range is -100 to 100%; 0% turns the tap off.

**DlyCrs** and **DlyFin** are the coarse and fine length controls for the Static delay (StatDly...) and for the minimum value of the moving delays (Dlyn...). The coarse range is 0 to 228 ms, and the fine range adjusts the coarse range in samples (=  $1/48,000$  sec =  $20.8\mu\text{sec}$ ) from -127 to 127.

**Xcurs Crs** and **Xcurs Fin** determine how far the LFO-modulated delay taps can move from the center of their ranges. The total range of the LFO sweep is twice the excursion. If the excursion is set to 0, the LFO does not move and the tap behaves like a simple delay line set to the minimum delay. The coarse range is 0 to 228 ms; the range 0 to 5 ms is most effective for flanging. The fine range adjusts the coarse range in samples from -127 to 127.

## Quantize

This effect produces digital distortion known as quantization noise, by limiting the number of bits available to the signal. See effect 329 “Aliaser.”

**DynamRange** (dynamic range) controls how many bits to remove from the signal data words. The lower the level, the greater the distortion. At 0 dB the hottest of signals will toggle between only two quantization levels, thereby producing a square wave. Every 6 dB added doubles the number of quantization levels, reducing the noise and getting closer to the original signal. If the signal has a lot of headroom (available signal level before digital clipping), then not all quantization levels will be reached. Range is 0 to 144 dB.

**Headroom** sets the available signal level before digital clipping. Setting this properly prevents the signal from getting too loud at low levels of DynamRange. You want to have it match the amount of level still available above the input signal: this is done by finding the DynamRange level at which the signal starts getting louder, and setting Headroom to match the DynamRange value. Range is 0 to 144 dB.

**DC Offset** adds a positive DC Offset to the input signal, which allows you to alter the position where digital zero is with respect to your signal. At low DynamRange settings, this can cause the output to “sputter.” Range is Off/-79.0 to 0.0 dB.

## LaserVerb

LaserVerb is a type of reverb which produces a delayed train of closely spaced reflections, or impulses. As time passes, the spacing between the impulses gets wider, which creates a discernible buzzy pitch that gets lower as the spacing increases. The signal can be fed back into itself to extend the effect.

**Dly Coarse** is the overall delay length, which controls the duration or decay time. 0.5 sec is a good starting point. Range is 0 to 1.3 seconds in the 2 DSP unit version of the effect, and 0 to 2 seconds in the 3 DSP unit version.

**Dly Fine** adjusts the delay with a resolution down to 0.2 ms. Range is -20.0 to 20.0 ms. Spacing determines the starting pitch of the descending buzz and how fast it descends, by setting the initial separation of impulses and the subsequent rate of increasing impulse separation. The spacing between impulses is given in samples (20.8 $\mu$ s). At low values, the buzz starts at high frequencies and drops slowly, while at high values the buzz starts at a lower pitch and drops rapidly. Range is 0.0 to 40.0 samples, with a resolution of 0.2 sample.

**Contour** controls the overall shape of the reverb. When set to a high value, sounds passed through the reverb start at a high level, and it slowly decays. As the control value is reduced, it takes more time for the effect to build up before decaying. At a value of around 34%, the reverb behaves like a reverse reverb, building up to a hit. When it is set to zero, the effect acts like a simple delay. Range is 0 to 100%.

## Filters

### Resonant Filter

Frequency (or Freq) is the fixed resonant frequency of the filter. Its range is 16 to 8372 Hz.

### Envelope Filter

Envelope Filter is a resonant filter whose center frequency can be made to vary according to the level of the incoming signal.

There are four types of Resonant Filter effects in the Forte SE. All of them have these parameters in common:

Filter Type (or **FiltType**) can be Lowpass, Highpass, Bandpass, or Notch (band-cut). Resonance is the resonance of the filter, adjustable from 0 to 50 dB.

Filter Type can be Lowpass, Highpass, Bandpass, or Notch (band-cut).

**Min Freq** is the minimum resonant frequency of the filter, that is, the filter frequency when the input gain is below the triggering threshold. Its range is 16 to 8372 Hz.

## The Effects Chain Editor

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### Effects Parameters

**Sweep** determines how far the resonant frequency moves when the input level increases. At positive levels it moves up in pitch, and at negative levels it moves down. The highest possible resonant frequency is 8372 Hz, the lowest is 0 Hz. This parameter's range is -100% to +100%.

**Resonance** is the resonance of the filter, adjustable from 0 to 50 dB.

**Atk Rate** adjusts the upward slew of the attack portion of the envelope detector. Range is 0 to 300.0 dB/sec.

**Rel Rate** adjusts the downward slew of the release portion. Range is 0 to 300.0 dB/sec.

**Smooth Rate** slows down the envelope follower. If it is set to a lower rate than Atk Rate or Rel Rate, it can dominate those parameters. Range is 0 to 300.0 dB/sec.

### Triggered Filter

The Triggered Filter is a sweeping resonant filter that triggers when a certain input threshold is reached, and then follows its own envelope, consisting of an instantaneous attack and an exponential release, rather than the envelope of the input signal.

**Max Freq** is the resonant frequency of the filter at the peak of the internal envelope. It can be set lower than Min Freq (above), in which case the filter will sweep downwards, then back up. Range is 16 to 8372 Hz.

**Trigger** is the input-signal threshold at which the envelope detector triggers. Range is -79 to 0 dB.

**Retrigger** is the input-signal threshold at which the envelope detector resets, so that it can trigger again. This parameter is only useful when it is set below the value of Trigger. Range is from -79 to 0 dB.

**Env Rate** is the envelope detector decay rate. This can be used to prevent false triggering. When the signal envelope falls below the retrigger level, the filter can be triggered again when the signal rises above the trigger level. Since the input signal can fluctuate rapidly, it is necessary to adjust the rate at which the signal envelope can fall to the retrigger level. The range is 0 to 300.0 dB/sec.

**Rel Rate** is the downward slew (release) rate of the triggered envelope generator. The range is 0 to 300.0 dB/sec.

**Smth Rate** slows down the envelope follower. If set lower than the release rate, it will dominate it. You can also use the smoothing rate to lengthen the attack of the internal envelope. The range is 0 to 300.0 dB/sec.

### LFO Filter

The LFO filter is continuously swept between two resonant frequencies over a period of time. The LFO frequency, expressed in BPM and beats, can be fixed or set to follow System tempo.

**Min Freq** and **Max Freq** are the low and high limits of the resonant frequency as the filter is swept. You can set the Min Freq higher than the Max Freq, in which case the filter will sweep “upside down” relative to the controlling clock. The range for both is 16 to 8372 Hz.

**LFO Shape** is the waveform type for the LFO. Choices are Sine, Saw+, Saw-, Pulse, and Tri.

**LFO PlsWid** (Pulse Width). When the LFO Shape is set to Pulse, this sets the pulse width as a percentage of the waveform period. When the width is set to 50%, the result is a square wave. This parameter has no effect if other waveform types are chosen. Range is 0 to 100%.

**LFO Smooth** smooths (removes the higher harmonics from) the Saw+, Saw-, and Pulse waveforms. A Sawtooth wave becomes more like a triangle wave, and a Pulse wave becomes more like a sine wave. Range is 0 to 100%.

## Distortion

Distortion effects on the Forte SE may also include a parametric equalizer or a cabinet simulator.

**Dist Drive** applies a boost to the input signal to overdrive the distortion effect into soft clipping. This will tend to make the signal very loud, so you may have to reduce the Out Gain as this parameter is increased. Range is 0 to 96 dB.

**Warmth** is a lowpass filter in the distortion control path. This filter may be used to reduce some of the harshness of some distortion settings without reducing the bandwidth of the signal. Range is 16 to 25088 Hz.

**Highpass** allows you to reduce the bass content of the distortion content in the smaller distortion effects that don't have true parametric EQ. Range is 16 to 25088 Hz.

**Cab Preset** selects from eight cabinet simulations which have been created based on measurements of real guitar amplifier cabinets. The presets are: Basic, Lead 12, 2x12, Open 12, Open 10, 4x12, Hot 2x12, and Hot 12.

**Cab Bypass** switches on and off the cabinet-simulation part of the effect. When this is set to “In”, the cabinet simulation is active; when it is “Out”, there is no cabinet action.

**Cabinet HP** and **Cabinet LP** are highpass and lowpass filters to set the frequency response limits of the cabinets. Range of both filters is 16 to 25088 Hz.

## Polydistort

This is a more complex distortion effect that provides two, four, or six stages of distortion.

**Curve n** controls the curvature of the individual distortion stages. 0% is no curvature (no distortion at all). At 100%, the curve bends over smoothly and becomes perfectly flat right before it goes into clipping. Maximum value is 127%.

**LP n Freq** are shelving frequencies for one-pole lowpass filters on each of the distortion stages. LP0 Freq handles the initial low pass prior to the first distortion stage. The other low pass controls follow their respective distortion stages. Range is 16 to 25088 Hz.

## Rotating Speakers

An effect that includes Rotating Speakers breaks the signal into two frequency bands, “rotates” each band separately through a virtual speaker, and then combines the outputs with a pair of virtual “microphones” whose angle relative to the speakers is adjustable. A number of very sophisticated parameters have been included in the Rotating Speakers effect, to give the effect a great degree of realism. Because of the complexity of the effects, you might want to approach any parameters that seem a little obscure to you with caution.

**Roto InOut** engages or bypasses the rotary speaker effect.

There are four virtual microphones, with two each on the woofer (LoMic A and LoMic B) and on the tweeter (HiMic A and HiMic B). Each microphone has:

**Pos** (position), the angle of the microphone from the front of the virtual speaker, from -180 to 180degrees;

**Lvl** (level) from 0 to 100%; and **Pan**, the left/right panning of the microphone’s output, from -100% (full left) to 100% (full right). Other parameters:

**Lo Beam W** and **Hi Beam W** set the acoustic radiation patterns (“beam width”) of the two drivers in the rotating speaker. If you imagine looking down on the rotating speaker, this is the angle between the -6 dB levels of the beam. The range is from 45° to 360°. At 360°, the driver is omnidirectional.

**Xover** (Crossover) is the frequency at which high and low frequency bands are split and sent to separate rotating drivers. The range is 16 to 25088 Hz.

**Lo Gain** and **Hi Gain** are the gains of the signal passing through the rotating woofer or tweeter, respectively. The range is Off/-79.0 to 24.0 dB.

**Lo Size** and **Hi Size** are the effective sizes (radius of rotation) of the rotating speakers in millimeters. This affects the amount of Doppler shift or vibrato of the low frequency signal. The range is 0 to 250 mm.

**Lo Trem** and **Hi Trem** control the depth of tremolo (amplitude modulation) of the signals. It is expressed as a percentage of full scale tremolo. The range is 0 to 100%.

**LoResonate** and **HiResonate** are simulations of cabinet resonant modes expressed as a percentage. For realism, you should use very low settings. The range is 0 to 100%.

**Lo Res Dly** and **Hi Res Dly** are the number of samples of delay in each resonator circuit in addition to the rotation excursion delay. The range is 10 to 2550 samples.

**LoResXcurs** and **HiResXcurs** are the number of samples of delay to sweep through the resonator at the rotation rate of each rotating speaker. The range is 0 to 510 samples.

**ResH/LPhs** sets the relative phases of the high and low resonators. The angle value in degrees is somewhat arbitrary and you can expect the effect of this parameter to be rather subtle. The range is 0 to 360.0 degrees.

**Mic Angle** is the angle of the virtual microphones in degrees from the “front” of the rotating speaker. For the left microphone the angle increases clockwise (when viewed from the top), while for the right microphone the angle increases counter-clockwise. Assigning a MOD to this parameter should be done with caution: real-time adjustments to it will result in large sample skips, which will cause clicks in the signal passing through. The range is 0 to 360.0 degrees. (In Distort + Rotary only.)

The following parameters relate to rotation speed:

**Speed** sets the rotating speakers to run at either the slow rate or the fast rate. Brake, when set to “On”, slows the rotating speakers to a halt.

**Lo Mode**, in the “Normal” setting, will give you full control of the low frequency speaker with the Speed parameter. The “NoAccel” setting will hold the low frequency speaker at the slow speed, and the Speed parameter will have no effect on its speed, though Brake will still work. In the “Stopped” position, the low frequency speaker will not spin at all.

**Lo Slow** and **Hi Slow** are the rotation rates in hertz (Hz) of the speakers when Speed is set to “Slow.”

**Lo Fast** and **Hi Fast** are the rotation rate in hertz (Hz) of the speakers when Speed is set to “Fast.” **LoSlow>Fst** and **HiSlow>Fst** are the times for the speakers to accelerate from the slow speed to **LoFst>Slow** and **HiFst>Slow** are the times for the speaker to decelerate from the fast speed to the slow speed.

**LoAccelCrv** and **HiAccelCrv** are the shapes of the acceleration curves for the speakers. 0% is a constant acceleration. Positive values cause the speaker to speed up slowly at first then quickly reach the fast rate. Negative values cause a quick initial speed-up then slowly settle in to the fast speed. If set to a low negative value, it will overshoot.

**LoSpinDir** and **HiSpinDir** are the directions of rotation of the speakers. The choice is clockwise (CW) or counter-clockwise (CCW).

## Vibrato/Chorus

The Vibrato/Chorus effect simulates the vibrato and chorus effects on a tone wheel organ, and is used in conjunction with the Rotary Speaker. It has several unique parameters:

**VibChInOut** is an in/out switch for the Vibrato/Chorus effect.

**Vib/Chor** is the type of Vibrato/Chorus effect to be used. The choices are from three vibratos, “V1”, “V2”, “V3”, or three choruses, “C1”, “C2”, “C3.”

## Tremolo and AutoPan

Tremolo is amplitude modulation using an LFO. AutoPan moves the signal between the left and right channels, using an LFO. They have several parameters in common and several unique ones.

**LFO Rate** is the rate of the LFO. The range is 0 to 10.00 Hz, or 0 to 12.00 x the tempo.

**Rate Scale** multiplies the speed of the LFO rate into the audio range. The range is 1 to 25088 x. When above 16x, the values increment in semitone steps. When the LFO Rate is set to 1.00 Hz, the value of this parameter is equal to the LFO frequency in Hertz.

**LFO Shape** is the waveform type for the LFO. Choices are Sine, Saw+, Saw-, Pulse, and Tri.

**LFO PlsWid** or Pulse Width. When the LFO Shape is set to Pulse, this sets the pulse width as a percentage of the waveform period. When the width is set to 50%, the result is a square wave. This parameter has no effect if other waveform types are chosen. Range is 0 to 100%.

### AutoPan

Origin determines the axis for the panning motion. At 0%, the panning is centered between the speakers. Positive values shift the axis to the right, while negative values shift it to the left. At -100% or +100% (the range limits), there is no panning action.

**ImageWidth** is the width of the original input program material before it is auto-panned. At 0% (minimum), the input image is shrunk to a single point source, allowing maximum panning excursion. At 100% (maximum), the original width is maintained so no panning can occur.

**Pan Width** controls the amount of pan excursion. It is the percentage of total panning motion available after Origin and ImageWidth are set. Range is 0 to 100%.

**CentrAtten** (Attenuation) is the amount the signal level drops as it is panned through the center of the stereo image. For the smoothest tracking, a widely accepted subjective reference is -3dB. Values above -3dB will cause somewhat of a bump in level as an image passes through the center, while values below -3dB will cause a dip. Range is -12 to 0 dB.

### Tremolo

**Depth** controls the amount of attenuation applied when the LFO is at its deepest excursion point. Range is 0 to 100%.

**LFO Phase** shifts the phase of the tremolo LFO relative to the beat reference. Range is 0.0 to 360.0 degrees.

**50% Weight** is the relative amount of attenuation added when the LFO is at the -6dB point. This causes the LFO shape to bow up (positive values) or down (negative values). Range is -16 to 3 dB.

**L/R Phase** sets the phase relationship of the channels. “In” flips the left channel’s LFO out of phase, with the result that the effect turns into an auto-balancer. “Out” leaves the left LFO alone.

## Pitcher

Pitcher applies a filter to the input signal which has a series of peaks in the frequency response.

These peaks are normally adjusted so that their frequencies are all multiples of a specific, selectable frequency, which imposes a strong sense of pitch at the selected fundamental frequency.

**Pitch.** The fundamental pitch imposed upon the input, in MIDI note numbers from C-1 to G9. Pch Offst is an offset from the pitch frequency in semitones, from -12.0 to 12.0. It can be useful to assign pitch bend, a ribbon, or another continuous controller to this parameter through a MOD.

**Odd Wts, Pair Wts, Quartr Wts, Half Wts** are parameters that control the shape of the frequency response of Pitcher. An exact description of what each one does is, unfortunately, impossible, since there is a great deal of interaction between them. For more information and examples, see the KSP8 Algorithm Reference Guide available as a free download at [www.kurzweil.com](http://www.kurzweil.com).

## Ring Modulation

Ring modulation multiplies two signals (the “carrier” and the “modulator”) together to produce unusual, often non-harmonic, overtones. The Ring Modulator effect in the Forte SE has two modes: “**L\*R**” in which two mono signals are modulated together; and “**Osc**”, in which the input is stereo, and it is modulated with the sum of five waveforms that are generated from oscillators within the effect itself. Four of these oscillators are sine waves, while one (Oscillator 1) offers a selection of waveforms.

**Wet/Dry.** When the effect is in “L\*R” mode, this controls how much of the left signal only is passed dry (the right signal isn’t passed dry at all).

**Mod Mode** selects between the two modes, L\*R or Osc.

**Osc1 Lvl** is the level of Oscillator 1, from 0 to 100%.

**Osc1 Freq** is the frequency of Oscillator 1, from 16 to 25088 Hz.

**Osc1 Shape** is the waveshape of Oscillator 1, selectable from Sine, Saw+, Saw-, Pulse, and Tri.

**Osc1PlsWid** (Pulse Width). When Osc1 Shape is set to Pulse, this sets the pulse width as a percentage of the waveform period. When the width is set to 50%, the result is a square wave. This parameter has no effect if other waveform types are chosen. Range is 0 to 100%.

**Osc1Smooth** smooths (removes the higher harmonics from) the Saw+, Saw-, and Pulse waveforms. A Sawtooth wave becomes more like a triangle wave, and a Pulse wave becomes more like a sine wave. Range is 0 to 100%.

The other four oscillators, **Sine2** through **Sine5**, each have **Lvl** and **Freq** controls.

## Stereo Simulation

The Mono to Stereo effect converts a monaural input to simulated stereo output.

**In Select** selects the input signal to be “stereo-ized.” It can be Left, Right, or both: (L+R)/2. CenterGain is the level of the summed left and right channels. Range is Off/-79.0 to 24.0 dB.

**Diff Gain** is the level of the difference signal produced, which is the spatial component of the stereo signal. Range is Off/-79.0 to 24.0 dB.

**DiffBassG** controls the gain of a bass-shelf filter on the difference signal. By boosting the low frequency components of the difference signal, you can increase the sense of acoustic envelopment. Range is -79.0 to 24.0 dB.

**DiffBassF** is the transition frequency for the bass-shelf frequency. Range is 16 to 25088 Hz.

The processed signal is split into three frequency bands—Lo, Mid, and High—each of which can be delayed and panned separately.

**Crossover1** and **2** are the two Crossover frequencies at which the band-split filters split the signal into three bands. The two parameters are interchangeable: either may have a higher frequency than the other. Range is 16 to 25088 Hz.

**Pan** [*High/Mid/Low*] sets the pan position for each band. Range is -100% (fully left) to 100% (fully right.)

**Delay** [*High/Mid/Low*] sets the delay for each band. Range is 0 to 1000 ms.

### Stereo Image

This effect provides enhancement for a stereo signal. It also features a stereo correlation meter. It uses some parameters from **Mono to Stereo** and some from **Stereo Analyze** (following).

# Chapter 9

## Keymap and Sample Editing

### The Keymap Editor

The Keymap Editor lets you customize the Forte SE's factory preset keymaps and save them to RAM. You can also build your own keymaps from scratch (see [Building a Keymap on page 9-9](#)).

Keymaps are an integral part of every layer of a program. Each keymap contains a set of parameters determining which sample(s) the Forte SE will play when you trigger a note. Each layer has at least one keymap, but it can have two keymaps when you're working with stereo samples. Each of these stereo keymaps uses two of the 128 available voices.

Each keymap consists of a set of key (note) ranges—C 4 to G 4, for example. The entire span of each keymap is from C 0 to G 10. Each range has a sample root assigned within the range. Each sample root is a distinct ROM or RAM sample. Within each key range, the sample root is transposed up and down to play on each of the range's notes. You can view each range by changing the value of the Key Range parameter on the Keymap-editor page. You can mix samples of different timbres within a single keymap, and even tune individual keys to any pitch by defining key ranges to single notes and assigning samples to each of those notes.

When you trigger a note, the Forte SE identifies the key range where the Note On event occurred. It also checks the attack velocity value of the note. It then addresses its memory, and retrieves the sample root that's assigned to that key range and attack velocity value. If the note that's triggered is not the note where the sample root is assigned, the sample is transposed to play at the correct pitch. The Forte SE then generates the digital signal that represents the sound of the note. At this point the keymap's job is done, and the signal proceeds through the layer's algorithm and on to the audio outputs.

You can assign as many key ranges to a keymap as you like, even creating a separate range for each note. This would allow you to tune each key independently, to create microtonal tunings. For keymaps that use a single timbre, like the Grand Piano, there's a key range for each sample root stored in memory. For acoustic instrumental sounds, the more key ranges you have for a keymap, the more realistic the sound will be, since there will be less pitch shifting of the sample root within the key range.

## Keymap and Sample Editing

### The Keymap Editor

Of course, you can assign sample roots with different timbres within the same keymap. Many of the drum kit keymaps in ROM, for example, have about 20 key ranges, with several different timbres assigned as the sample roots. You can also create a keymap with a single key range that spans from C 0 to G 10, if you want to stretch a single sample root from C 0 to G 10. Keep in mind, however, that samples can only be transposed upward by an octave from the sample's original pitch. Samples can be transposed downward without limit.

Think of a keymap as if it were a single piece of string, divided into different sections that adjoin one another. Sections cannot overlap. If you have one range that goes from C4 to F4 and another that goes from F#4 to C5, then if you change the first range to be C4 to G4, the second one will change to be G#4 to C5.

Also, you can't have "nothing" assigned to a key range. Even if it is Silence (#999), there will always be a sample assigned to every range in the keymap. This is something to watch out for when creating drum programs. For example, let's say you are creating a program with 20 layers. Each layer has its own keymap, which has just one sample assigned to part of the keyboard with the rest of the key range assigned to Silence. Make sure that you limit the note range of each layer using the LoKey and HiKey parameters on the LAYER page in the Program Editor. If each layer covers the entire range, then each note you played would trigger 20 voices (one for each layer). You would only hear one drum per note because all the other layers are triggering "Silence." Because of the voice-stealing algorithms in the Forte SE, the voices would almost immediately become available again, since they have no amplitude. But for one brief instant, the voice would be triggered, which could cause other voices to be cut off.

You can also create multi-velocity keymaps—that is, keymaps that will play different timbres depending on the attack velocities of your Note On events. For example, Keymap 7 Piano 3Vel L has 3 velocity ranges. Each key range in a multi-velocity keymap contains two or more distinct sample roots that the Forte SE chooses between, according to the attack velocity of the note. See [Velocity Range \(VelRange\) on page 9-4](#).

The Keymap Editor is nested within the Program Editor. The first step in using the Keymap Editor is to select the keymap you want to edit. This is done on the KEYMAP page in the Program Editor, using the Keymap parameter. Once you've done this, just press the **Edit** button, and you'll enter the Keymap Editor. If you want to edit a different keymap, press the Exit button to return to the KEYMAP page in the Program Editor and select the desired keymap. If you want to build a keymap from scratch, start with the keymap **999 Silence** ([Building a Keymap on page 9-9](#)). This keymap template contains one key range from C 0 to G 10, and is a convenient starting point for adding key ranges and assigning sample roots.

The Keymap-editor page looks like this:

```
EDIT:Keymap Main          #KeyRange:C 0 G 1
Sample      : 275 saw-E 1
KeyRange    : C 0 G 1     Lo:C 0     Hi:G 1
VelRange    : ppp-fff     Lo:ppp   Hi:fff
CoarseTune  : 0ST        FineTune : 0ct
MasterXPose: 0ST
VolumeAdjus: 0.0dB
MAIN      |Toggle|NewRng|Assign|VelRng
```

Parameter	Range of Values
Sample	Sample Root list
Key Range	Variable from C0-G10
Low Key	C 0 to G 10
High Key	C 0 to G 10
Velocity Range (VelRange)	Variable from ppp-fff
Low Velocity (Lo)	ppp-fff
High Velocity (Hi)	ppp-fff
Coarse Tune	-128 to 127 semitones
Fine Tune	-49 to 50 cents
Master Transpose	-126 ST to 127 semitones
Volume Adjust	± 24 dB

## Keymap Editor Parameters

### Sample

This is where you assign a sample root to the current key range. Depending on the nature of the sample root—an individual sample or a block of sample roots—the sample’s name looks a bit different in the display. Each sample’s name consists of three parts: a numeral, a name, and a note number—for example, **999 Silence-C4**. Additionally, the name of stereo samples will end with an **S**. (To use a stereo sample, the [Stereo](#) parameter must be set to **On** in the Program Editor, and two keymaps must be selected.)

The numeral is the sample block ID. If the sample object is an individual sample, the sample block ID is the same as the sample’s object ID. If the sample object is a group of sample roots, the object ID of the first root in the group determines the sample block ID. The remaining roots in the block have the same ID, and differ only in their note numbers.

Next comes the name of the sample, which typically describes the sample’s timbre. The final part of the sample’s name refers to the pitch at which it was originally sampled. For many timbres, multiple samples are made at various pitches. As you scroll through the Sample list, you’ll see only the pitch of the sample change until you reach the next sample block. The sample’s original pitch is set in the Sample Editor (see [Root Key on page 9-12](#)). This determines which key will play the sample at its original pitch when a sample is used in a key range (see [Key Range](#) below).

## Keymap and Sample Editing

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### The Keymap Editor

#### Key Range

A keyrange is a range of keyboard keys that plays one sample (per velocity range, see [Velocity Range \(VelRange\)](#) below for details). Each sample in a key range (per velocity range) is transposed based on each sample's RootKey parameter so that it plays at the correct pitch on the keyboard relative to its root key (see [Editing Samples on page 9-10](#) for details on the RootKey parameter). Other keys within the key range transpose the sample chromatically relative to the root key. Sample pitch relative to the root key can also be offset using the [Coarse Tune](#) and [Fine Tune](#) parameters, see below).

The **KeyRange** parameter shows you which key range you're currently viewing or editing (key ranges are named by their lowest and highest notes). Changing the value of the **KeyRange** parameter selects from the available key ranges, and allows you to view or edit the sample assignment and other parameters of the selected key range. When the Key Range parameter is selected, you can also scroll through available key ranges using the Alpha Wheel or the Previous-/Next+ buttons. Multiple key ranges are only shown if the current Keymap uses more than one key range. If the top line of the EditKeymap page displays KeyRange, you can scroll through the available key ranges with any parameter on the page selected using the **Channel/Layer/Zone** buttons. (Press the **Toggle** soft button to toggle the top line between displaying KeyRange and VelRange.)

With the Keyrange parameter selected, keyranges can also be selected by holding the **Enter** button and playing a key. The keyrange assigned to that key will be selected.

#### Low Key (Lo), High Key (Hi)

With these parameters you can use any of the data entry methods to change the low and high notes of the current key range. You can extend a key range to the full capacity of the Forte SE (C 0 to G 10). If you extend the current key range into another, the boundaries of the other key range will become shortened to accommodate the key range you are extending. If the keyrange you are extending covers another keyrange, the other key range will be deleted.

The setting for the low key cannot be higher than the setting for the high key. Similarly, the setting for the high key cannot be lower than the setting for the low key.

#### Velocity Range (VelRange)

This parameter shows the keyboard velocity range (in dynamic levels) that will trigger a sample for the current KeyRange. In a key range with more than one velocity range, each velocity range can use a different sample, as well as different CoarseTune, FineTune, and VolumeAdjust settings. Velocity ranges are intended for use with instrument samples recorded at different velocities. This helps to make playing sampled instruments sound more realistic. Sample volumes are also scaled based on keyboard velocity within each velocity range. Velocity ranges for the current Keymap are set using the **VelRng** soft button (see [Velocity Range \(VelRange\) on page 9-4](#) or the [Low Velocity \(Lo\), High Velocity \(Hi\)](#) parameters (see below). All keyranges in a Keymap share the same set of velocity ranges. Up to eight velocity ranges can be used.

When the VelRange parameter is selected, you can scroll through available velocity ranges using the Alpha Wheel or the Previous-/Next+ buttons. Multiple velocity ranges are only shown if the current Keymap uses more than one velocity range. If the top line of the EditKeymap page displays VelRange, you can scroll through the available velocity ranges with any parameter on the page selected using the **Channel/Layer/Zone** buttons. (Press the **Toggle** soft button to toggle the top line between displaying VelRange and KeyRange.)

### **Low Velocity (Lo), High Velocity (Hi)**

Use these parameters to set the velocity range of the current key range. If you extend the current velocity range into another, the boundaries of the other velocity range will become shortened to accommodate the velocity range you are extending. If the velocity range you are extending covers another velocity range, the other velocity range will be deleted.

### **Coarse Tune**

Coarse Tune allows you to transpose a sample for a given range. This is extremely useful when you have set the Root key of the sample for one note but want to assign the sample to a different part of the keyboard and still be able to play it without transposition (see [Root Key on page 9-12](#) for details.) For example, if you originally set the Root key at C4 but want the sample assigned to C3, you would set Coarse Tune to 12ST, transposing it up one octave. Now the original pitch will play at C3, one octave down. If you examine the drum and percussion kit keymaps in ROM, you will see that we have done this. Most of our ROM drum samples have the Root key set at C4.

There's a short cut for adjusting the Coarse Tune automatically so that the sample plays with minimal transposition in the assigned key range. See [Special Double Button Presses in the Keymap Editor on page 9-8](#).

### **Fine Tune**

This gives you further pitch control. Once the sample's pitch is close to the desired note, use the Fine tune to sharpen or flatten it as much as a half-semitone.

### **Master Transpose (MasterXpose)**

This parameter does not really pertain to the keymap itself. Instead it is identical to the Transpose amount set with the front panel Transpose buttons or Octav-/Octav+ soft buttons on the Program and Multi mode select pages. If you change the transpose value here, the same value will be reflected by the transpose button LEDs as well as in the top bar of the Program and Multi mode select pages, and vice versa. It transposes the entire instrument globally. The MasterXpose parameter allows you to easily see the transpose value while in the keymap editor. It is also useful for assigning samples across the entire keyboard when using a keyboard that has fewer than 88 notes.

### **Volume Adjust**

Here you can adjust the volume of the notes in the current key range. This enables you to make each key range play at the same volume even if the samples in the various ranges were recorded at different volumes.

## The Soft Buttons in the Keymap editor

### Toggle

Pressing the Toggle soft button switches the function that the **Channel/Layer/Zone** buttons perform while on the EditKeymap page. Press the **Toggle** soft button to toggle the top line between displaying **KeyRange** or **VelRange**. If the top line of the page displays **KeyRange**, then the **Channel/Layer/Zone** buttons will scroll between the available key ranges in the key map (if the current key map has more than one key range). The note range for each key range will also be displayed on the top line. If the top line of the page displays **VelRange**, then the **Channel/Layer/Zone** buttons will scroll between the available velocity ranges in the key map (if the current key map has more than one velocity range). The dynamic range for each velocity range will also be displayed on the top line.

### Velocity Ranges (VelRng)

Press the **VelRng** soft button to view the VEL RANGES page (see below). Use the VEL RANGES page to add, edit or delete velocity ranges for the current keymap. The VEL RANGES page shows a chart of a keymap's entire available dynamic range, from most quiet (ppp) to most loud (fff). Velocity ranges can also be adjusted from the EditKeymap page, but the VEL RANGES page provides a chart as a visual aid. Each keymap can be split into a maximum of eight velocity ranges. Each key range in a keymap can use its own sample for each velocity range. All key ranges in a keymap share the same velocity ranges.



Press the **Split** soft button to split the currently selected velocity range into two ranges (until the maximum of eight velocity ranges have been created). Press the **Delete** soft button to delete the currently selected velocity range. Press the **Exit** soft button to return to the EditKeymap page.

On the VEL RANGES page, the currently selected velocity range is highlighted in the chart, and its name is displayed in the VelRange field. With the VelRange field selected, you can use the Alpha Wheel or Previous-/Next+ buttons to move between the available velocity ranges (if there is more than one velocity range available). You can also use the **Channel/Layer/Zone** buttons at any time to move between the available velocity ranges. If there is more than one velocity range available, you can adjust the dynamic range of each using Lo and Hi parameters. These Hi and Lo parameters are the same as the Low Velocity (Lo) and High Velocity (Hi) parameters on the EditKeymap page (see [Low Velocity \(Lo\), High Velocity \(Hi\) on page 9-5](#) for details). Changes made with either set of parameters are shown on both pages.

### **New Range (NewRng)**

The **NewRng** button lets you define a new keyrange to edit, whether it's to assign a different sample, or to adjust the pitch or volume. Just press **NewRng**, then play the note you want as the low note, then the high note. The Forte SE will prompt you for each note. When you trigger the high note, you'll return to the Keymap-editor page, and the new keyrange you defined will be selected. The next change you make will affect only that edit range.

If you set a new keyrange that's completely within an existing key range, the existing key range will be split into two keyranges, with the new keyrange between the two. At this point, you must change at least one parameter of the new keyrange before editing a different keyrange, otherwise the new keyrange will be merged with the adjacent keyranges. If you set a new keyrange that overlaps part or all of another key range, the sample assigned to the lower key range will be applied to the new keyrange. Again, at this point you must change at least one parameter of the new keyrange before editing a different keyrange, otherwise the new keyrange will be merged with the lower keyrange that it overlapped.

### **Assign**

The **Assign** soft button lets you select a sample, then specify the key range to which it's assigned. This enables you to insert a new key range within the current keymap. When you press the **Assign** soft button, a dialog appears that prompts you to select a sample from the Samples list. Scroll through the list, then press the **OK** soft button. You'll then be prompted to define the new key range by playing the notes you want to be the lowest and highest notes of the range. (Press the **Cancel** soft button if you change your mind.) When you trigger the low and high notes, the new key range is inserted. If the new key range partially overlaps an adjacent key range, the existing key range will be adjusted to accommodate the new range. If the new key range completely overlaps an existing key range, the original key range will be replaced.

## Saving Changes to a Keymap

When you hit the Exit button from the Keymap Main page, a page will come up with option to rename, save or cancel your changes:



### Rename

Call up the page that enables you to change the name of the current keymap.

### Save Yes/No

Start the process of saving the current keymap, or return to the Keymap page

### Cancel

Cancel the changes and return to the Keymap Main editor page.

## Special Double Button Presses in the Keymap Editor

Suppose you have a sample whose root key is C 4, and you want to assign it to A 0, because you don't expect to play it often. If you want it to play back without transposition, you'll have to adjust the Coarse Tune parameter. Calculating the right value for Coarse Tune can get tedious if you're assigning a large number of samples. Fortunately, there's a short cut.

1. Assign a sample root to a key range, either using the Lo, Hi, and Sample parameters or using the **Assign** soft button.
2. Highlight the value of the Coarse Tune parameter.
3. Press the **Plus/Minus** buttons at the same time. The value of Coarse Tune changes automatically. If the sample is assigned to one note, the Forte SE sets Coarse Tune so that the note plays the sample without transposition. If the sample is assigned to a range of notes, the Forte SE sets Coarse Tune so that the middle note of the range plays the sample without transposition.

## Building a Keymap

Read below for detailed directions on manually creating and editing a keymap. To build a keymap, start in Program Mode and select program **1022 Clear Program**. Then go to Program Edit Mode by pressing the **Edit** button. Next press the **KEYMAP** soft button, and the KEYMAP page will appear. The Keymap parameter **999 Silence** will be automatically selected. This makes it easier to recognize the key ranges that have samples assigned to them when you start assigning samples. You can actually choose any program or keymap you want to start with, but by choosing these, you are starting with a “blank slate.”

With the Keymap parameter still selected, press the **Edit** button, and you’ll enter the Keymap Editor. The Key Range parameter will be automatically selected, and you see its values: C 0 to G 10 (the entire MIDI keyboard range). The Sample parameter will have a value of **999 Silence-C 4**.

Now you’re ready to start assigning samples to key ranges within the keymap. We’ll assume that you’ve loaded samples with roots at C 1, C 2, C 3, etc. and that you plan to assign a root to each octave. To begin, press the **Assign** soft button. The display will prompt you to select a sample. Use the Alpha Wheel to scroll to one of your samples, or type its ID on the alphanumeric pad and press **Enter**. When you’ve found the sample you want to use, press the **OK** soft button. The display will say “Strike low key...” Trigger A 0 (MIDI note number 21, the lowest A on a standard 88-note keyboard). The display will change to say “Strike High Key...” Now trigger F 1 (MIDI note number 29). The display will return to the Keymap-editor page. The Key Range parameter will show A 0–F 1, and the Sample parameter will show the sample you selected when you started the range assignment.

Each sample in a key range is automatically transposed based on each sample’s RootKey parameter so that it plays at the correct pitch on the keyboard relative to its root key (see [Editing Samples on page 9-10](#) for details on the RootKey parameter). Other keys within the key range transpose the sample chromatically relative to the root key. Automatic transposition based on each sample’s RootKey is important if you want your sample to play in tune with other Forte SE programs or other instruments. The Forte SE makes this easy if your samples have the correct RootKey settings (as the Forte SE’s factory samples do). Generally you should set a keyrange so that the sample’s RootKey (displayed at the end of the sample name) is in the middle of the range. If you set a key range that does not cover the sample’s RootKey, the sample will have to automatically transpose by many semitones, and will likely not sound correct. Samples are also limited to an octave of upward transposition from the sample’s original pitch. If you set a keyrange too high based on the Root Key, some samples may not be able to transpose upward far enough to play in tune, and many keys may play the same note (the highest note that the sample can be transposed to). Automatic transposition relative to the root key can be offset using the Coarse Tune and Fine Tune parameters on the EditKeymap page (see [Coarse Tune](#) and [Fine Tune on page 9-5](#)).

## Keymap and Sample Editing

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### Editing Samples

Continuing with the example, press the **Assign** soft button again. Select another sample root at the prompt, and press the **OK** soft button. Now trigger F# 1 for the Low Key prompt, and F 2 for the High Key prompt. At this point you've defined two key ranges, the first from A 0 to F 1, and the second from F# 1 to F 2. You can repeat the process as many times as you want, creating a new key range each time.

Once you have your samples assigned, you may need to transpose them so that they play back at the correct pitch within the range you have chosen. To do this, highlight the Key Range parameter, scroll to the range you need, then highlight the Coarse Tune parameter. Adjust Coarse Tune to bring the sample to the proper pitch within that key range. Then scroll back up to the Key Range parameter, select the next range, and continue as needed.

Here's a fairly important point that may or may not affect your keymap construction. Suppose you want to build a keymap that uses the same sample in several adjacent key ranges, and you plan to add a bit of detuning to the samples in each range. You might think that you could build the keymap first, then go into the Sample Editor and tweak the sample settings of each keyrange when the keymap is finished. Yes, but...

Suppose you used the technique we described above to assign a vocal sample whose root was C 4 to a key range from A 3 to E 4. Then you assigned the same sample to a key range from F 4 to B 4. You might be surprised to find that when you finished the F 4–B 4 key range and the Keymap-editor page reappeared, the current key range would not be F 4 to B 4, but A 3 to B 4! This is because the Forte SE automatically merges adjacent key ranges that are identical (this is done to save memory). Therefore, some parameter must be different in each adjacent key range you create if you want to build keymaps using the technique we just described. So if you want to use the same samples in adjacent key ranges with, for example, minor pitch or volume modification, you should make those changes to the current sample on the Keymap-editor page *before* assigning the next range.

## Editing Samples

To enter the Sample Editor, first select the program you wish to edit in Program mode. With the program selected, press the **Edit** button to enter the Program Editor. In the program editor the KEYMAP page will be selected (if not press the **KEYMAP** soft button). With the KeyMap parameter selected on the KEYMAP page, press the **Edit** button again to enter the Keymap Editor. On the EditKeymap page, select the KeyRange parameter and use the Alpha Wheel or Previous-/Next+ buttons to choose one of the available key ranges (if there is more than one keyrange). You can edit the existing sample of a keyrange, or choose a new sample for the keyrange and edit that. When the Keymap parameter is selected you can hold the **Enter** button and trigger notes to select different key ranges.

If you want to select a different sample, use the cursor buttons to select the Sample parameter. Use the Alpha Wheel to select a sample. Press the **Edit** button once more, and you'll enter the Sample Editor. The sample will play through the effects of the current program. The name of stereo samples end with an **S**. To use a stereo sample, the [Stereo](#) parameter must be set to **On** in the Program Editor, and two keymaps must be selected, see [The KEYMAP Page on page 7-19](#).

There are two sample editing pages—MISC (Miscellaneous) and TRIM. The soft buttons for these pages are visible when you enter the Sample Editor. You can trigger notes at any time while you're editing, to hear your changes as you make them.

## The Miscellaneous (MISC) Page

On the MISC page, you'll set several parameters that affect the behavior of the current sample. These parameters affect the entire sample. The right side of the top line displays the root number and RootKey of the sample. For stereo samples, **L** or **R** is displayed after the Root# parameter to indicate that you are viewing parameters for the left or right channel of the sample. Use the **Channel/Layer/Zone** buttons to move between channels of stereo samples. Although you can edit parameters for the left and right channels of a sample, both channels can only be heard if the [Stereo](#) parameter is set to **On** in the Program Editor, and the same keymap is selected for the Keymap1 and Keymap2 parameters in the Program Editor. If the Stereo parameter is set to **Off** in the Program Editor, only the left channel of stereo samples will be heard in mono. If the sample is part of a group of sample roots, you can also use the **Channel/Layer/Zone** buttons to scroll through each sample in the group. A representative MISC page is shown below:

```

EDIT:Sample Main          @ Root#:1 (D#2)
RootKey      : D#2        LoopSwitch   : On
PitchAdjust  : -9ct       Playback    : Normal
VolAdjust    : -2.5dB     AltSense   : Normal
AltVolAdjust : -4.5dB     IgnoreRel  : Off
DecayRate    : 7987dB/s  SampleRate : 32000Hz
ReleaseRate  : 499dB/s   NumSamples : 9Ks
MISC        TRIM

```

Parameter	Range of Values
Root Key Number	C -1 to G 9
Pitch Adjust	Variable (depends on sample rate)
Volume Adjust	-64.0 to 63.5 dB
Alternative Volume Adjust	-64.0 to 63.5 dB
Decay Rate	0 to 5000 dB per second
Release Rate	0 to 5000 dB per second
Loop Switch	Off, On
Playback Mode	Normal, Reverse, Bidirectional
Alternative Sample Sense	Normal, Reverse
Ignore Release	Off, On

#### Root Key

The root key represents the keyboard key at which the sample will play back without transposition (that is, at the same pitch as the pitch of the original sample). Use the Previous-/Next+ buttons or Alpha Wheel to select a RootKey note, or use the alphanumeric pad followed by the **Enter** button to enter a RootKey by MIDI note number.

#### Pitch Adjust

Use this parameter to change the pitch of the sample relative to the key from which it's played. Setting a value of **100cts**, for example, will cause the sample to play back one semitone higher than normal. This parameter is handy for fine tuning samples to each other if they're slightly out of tune.

#### Volume Adjust

Uniformly boost or cut the amplitude of the entire sample.

#### Alternative Start Volume Adjust (AltVolAdjust)

This parameter sets the amplitude of the sample when the alternative start is used. See [page 7-22](#) for a discussion of AltSwitch.

#### Decay Rate

This parameter defines how long the sample takes to decay (fade) to zero amplitude (silence). Decay Rate affects each sample individually, and is in effect only when the amplitude envelope for the program (the Mode parameter on the AMPENV page in the Program Editor) is set to **Natural**. If Mode is **User**, the settings on the AMPENV page override the setting for DecayRate.

DecayRate takes effect in the loop portion of the sample, after all the attack stages of the amplitude envelope are complete.

#### Release Rate

The release rate determines how long the sample will take to decay to zero amplitude when the note trigger is released. The higher the value, the faster the release rate. This release affects each sample individually, and is in effect only when the amplitude envelope for the program (the Mode parameter on the AMPENV page in the Program Editor) is set to **Natural**. In this case, the release begins as soon as the note is released. If Mode is **User**, the settings on the AMPENV page override the setting for ReleaseRate.

To create an extended sample loop that will play data after the sample's loop on key-up, set the Alternative Start sample pointer after the sample end pointer, then set a relatively low value for the release rate.

### **Loop Switch**

This parameter activates or deactivates the looping of the currently selected sample. When set to **On**, the sample will loop according to the settings on the TRIM page. When set to **Off**, the sample will play through to its End point and stop.

### **Playback Mode (Playback)**

This parameter lets you modify the direction in which the sample is played. Set it to a value of **Reverse** if you want the sample to play from its End point to its Start point. Choose a value of **Bidirectional** to cause the sample to play from Start to End, then reverse direction and play again from End to Loop and back, repeating until the note trigger is released (this works only when the Loop Switch parameter is set to **On**).

### **Alternative Sample Sense (AltSense)**

This provides a convenient way to activate the alternative start of a sample. When set to **Normal**, the alternative start will be used when the Alt Switch control is **On** (this is set on [The KEYMAP Page](#)), or when the control source assigned to it is above its midpoint. When set to **Reverse**, the alternative start will be used when the Alt Switch control is **Off**, or when the control source assigned to it is below its midpoint.

### **Ignore Release (IgnRelease)**

When set to a value of **Off**, the sample will release normally when the note trigger is released. When set to **On**, the note will not release, even when the note trigger is released. This setting should be used only with samples that normally decay to silence; nondecaying samples will play forever at this setting. This parameter is equivalent to the IgnRelease parameter on the LAYER page, but affects only the currently selected sample.

### **SampleRate and NumSamples**

These parameters cannot be edited, but show the sample's sample rate and the sample's length in samples. Samples that are longer than 1 million samples are displayed a 1Ms.

# The TRIM Page

The TRIM page lets you set the Start, Alternative Start, Loop, and End points of the current sample. The right side of the top line displays the root number of the sample. If the sample is part of a group of sample roots, you can use the **Channel/Layer/Zone** buttons to scroll through each sample in the group.

```
EDIT:Sample Trim #R10
Start      : 0
AltStart   : 0
Loop       : 9216
End        : 9216

MISC TRIM
```

The four parameters on this page are Start, Alternative Start, Loop, and End. Selecting these parameters and adjusting their values enables you to modify how the sample plays back when notes are triggered. Each of these parameter points are expressed in individual samples. For example, a one second sample at a sample rate of 44,100Hz would have 44,100 values available to adjust for each of these parameters.

The **Start** point determines the beginning of the current sample. You can truncate the beginning of the sample by increasing the value of the Start parameter. You might do this to remove silence at the beginning of a sample, or to remove some or all of the attack. You can't decrease the Start point of samples below zero.

The **Alternative Start** parameter lets you set a second, optional start or end point for the current sample. The Alternative Start will be used when the Alt Switch parameter on the KEYMAP page is set to **On**, or when it's set to a specific control source and that control source is generating a value of more than +.5. (For example, if you assign **MWheel** as the control source for the Alt Switch parameter, the Alternative Start will be used when the Mod Wheel—or whatever control source you have set to send MWheel—is above its halfway point.) The Alternative Start can be set before, after, or at the same point as the Start or End.

If you set the Alternative Start after the End, you can extend the play of looped samples. Normally, looped samples will play through to the End, then will loop back to the Loop point, and continue looping like this until the note is released, when they go into their normal release. If the Alternative Start is set after the End, looped samples will loop in the same way while notes are sustained. As soon as you release the notes, however, the samples will play through to the Alternative Start point before going into release.

The **Loop** parameter sets the beginning of the looped portion of the current sample. The Loop can be set at any point before the End, including before the Start and Alternative Start. If you try to move it after the End, the End will move with it.

The **End** parameter sets the point at which the current sample will stop playback. Typically you'll use this parameter to trim unwanted silence off the end of a sample, although you can use it to shorten a sample as much as you want.



**Note On Saving Samples:** Trimmed portions of a sample are not saved. Trimmed portions before the Start, or Alternative Start points. Trimmed portions of a sample saved to a user ID will be deleted. Trimmed portions before the Start or Alternative Start points (whichever has a lower value) will be lost upon saving to a user ID, and whichever parameter had a lower value will have a value of zero the next time it is loaded (values for all other sample point parameters will be adjusted relatively). Trimmed portions after the Alternative Start or End points (whichever has a higher value) will be lost upon saving to a user ID. The original untrimmed sample is always available by selecting the sample's original factory ID number. Saving trimmed factory samples to user IDs will not change the sound of factory samples, keymaps, or Programs.

### Zero- and Zero+

Pressing the **Zero-** or **Zero+** buttons will search left or right respectively for the sample's next zero-crossing. A zero-crossing is a point where the sample waveform is neither positive or negative (crossing the horizontal line in the middle of the waveform display). The currently selected parameter (Start, Alternative Start, Loop, or End) will be set to this point in the sample. Setting these parameters to zero-crossings can help minimize clicks at the start, end, or loop point of a sample. It's best to have each of these points set first by adjusting each parameter and listening to the sample, then if needed search for a nearby zero-crossing.

# Chapter 10

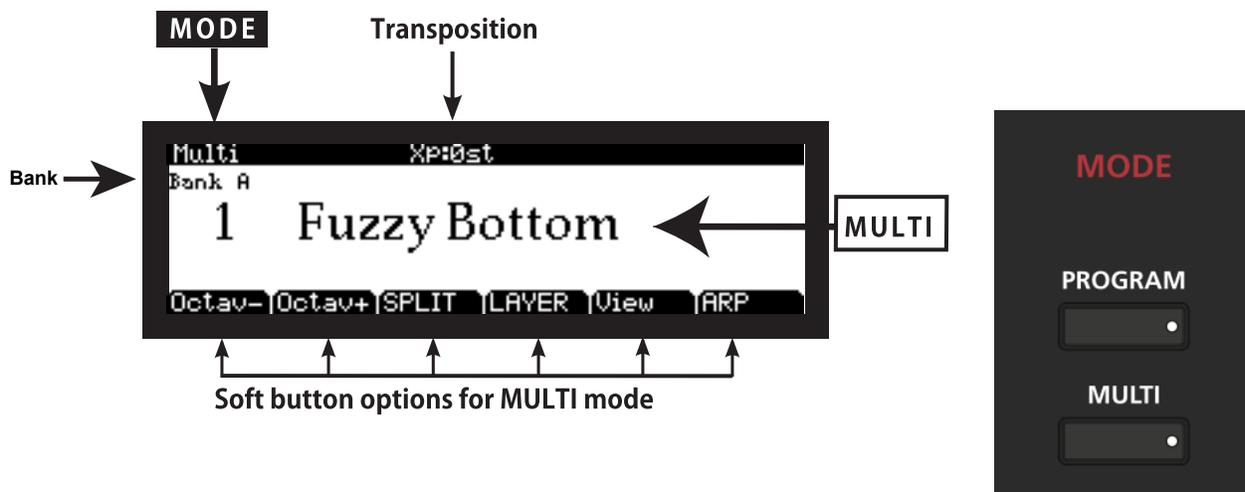
## Multi Mode

This chapter will help familiarize you with the features of Multi Mode.

Multis are configurations of up to eight Zones (explained below in About Zones), each of which may have its own Program, controller assignments, and MIDI transmit channel. A Zone can also be configured to control an external sound module or computer software through a MIDI or USB cable.

### About Multi Mode

To enter Multi Mode from another Mode, press the Multi Mode button.



While you are in Multi Mode, the Multi button's indicator LED is illuminated.

When you enter Multi Mode after powering on the Forte SE, Multi 1 will be selected, or the Multi that was selected the last time Global Mode was exited.

# Selecting Multis

The Forte SE features eight Multi Banks (Factory Banks A-D and User Banks A-D). Each Forte SE Bank has space for 256 Multis, for a total of 2048 possible Multis. Each Bank is split into 16 groups of 16 Multis each, selectable by using the Category buttons. Because each Multi can contain multiple instrument sounds, Multis are not organized by instrument category. If your Forte SE does not include Factory Banks B-D, visit [kurzweil.com](http://kurzweil.com) to download new factory Banks for free, when available.

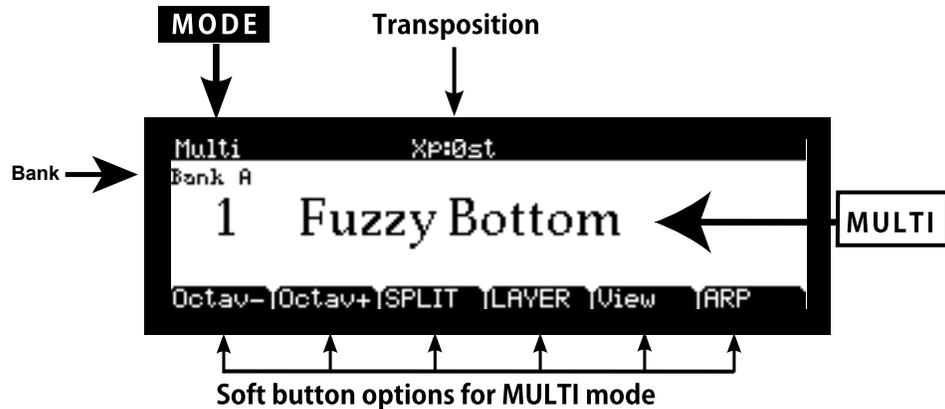
When you are in Multi Mode, there are a few ways to select Multis.

- To select any Multi in the current Category, press a Program/Multi button.
- To select a Multi in a different Category, press the Category button of choice and then the Program/Multi button to select from the 16 Multis in the Category.
- To select the Category Default Multi, simply press a Category button.
- To switch between the Factory and User Multis, press the User button, followed by a Category button and then a Program/Multi button.
- The Alpha Wheel and the Previous-/Next+ buttons allow you to advance through the Multis one at a time. When you reach the end of the Category, advancing further will go to the next Category.
- If a Multi is assigned to a Favorite button, pressing that button will go directly to the assigned Multi.
- To select a Multi in a different Forte SE Bank, press the Multi mode button while in Multi Mode to view the Select Bank page. On the Select Bank page use the navigation buttons to select a Bank and press the OK soft button, then use any of the methods above to select a Multi in that Bank.
- When the Global Mode User Type parameter is set to Advanced, and the Global Mode Sound Sel parameter is set to ID number, Multis can be selected by typing in an ID number using the numbers printed on the Program/Multi buttons, followed by pressing the Enter button.

See [Appendix](#) for a full list of factory Multis.

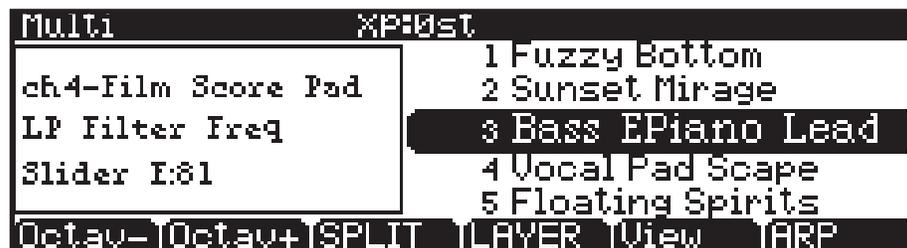
## The Display

In Multi Mode, the top of the display shows the current Mode and MIDI transposition.



## Changing View

The View soft button will toggle the display and allow you to see available Multis as a list. Buttons and controllers will behave as usual. Moving a controller will cause information to appear in the box at left of the screen:



## Pop Up Messages

Some actions cause the display to show pop up messages. After a short time the display returns to show the current Multi.

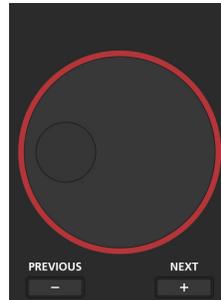
## Multi Mode

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### Selecting Multis

## Alpha Wheel & Previous– and Next+ Value Buttons

Use the Alpha Wheel or the Value buttons, to the right of the display below the Alpha Wheel, to change the current Multi. Turning the Alpha Wheel counter-clockwise or pressing the Previous button will select the previous Multi and turning the Alpha Wheel clockwise or pressing the Next button will select the next Multi. When the highest or lowest Multi is reached, the list will wrap back to the last or first Multi respectively.

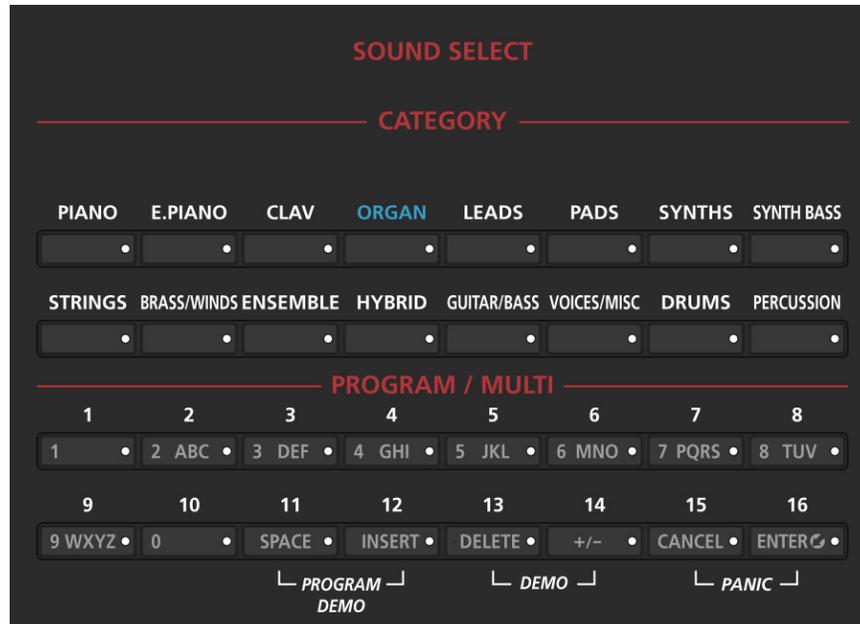


## Value Jump Buttons

In Multi Mode, the Value Jump double button press selects the first Multi of each Category, as well as the Category Default Multi of each Category (if a Category Default Multi has been set). For more information on choosing a new Category Default Multi, see [Choosing Category Default Multis on page 10-5](#). If the User button is selected, Value Jump works the same way.

## Category & Program/Multi Buttons

The Category buttons allow you to select Multis simply by pressing a button. You can select one Category button at a time and the current Category button's LED is lit. In Multi mode each category button represents a group of 16 Multis (Multis are not organized by instrument category because each Multi can contain multiple instrument sounds). First select the Category you want, then select one of its Multis by pressing any of the numbered Program/Multi buttons.



## Choosing Category Default Multis

You can choose a “Category Default Multi” from each Category that will be recalled each time you press that Category’s button. To save a Category Default Multi, first select a Multi using any Multi select method (Alpha wheel, Previous-/Next+ buttons, Category buttons, Program/Multi buttons). A button for the current Category will have a lit LED. Next, press and hold the currently lit Category button until the display shows the message “Category default multi saved.” The Category default Multi has now been successfully saved.

You can save one Category Default Multi per active Category button.

## Choosing Favorites

You can save ten Favorite Multis (or Programs) from any Category to the ten Favorite buttons beneath the display. Once saved, these Favorite Multis can be recalled from any Mode with a single button press. To save the currently selected Multi to a Favorite button, press and hold a Favorite button until the display shows the message “Favorite (#) saved.”

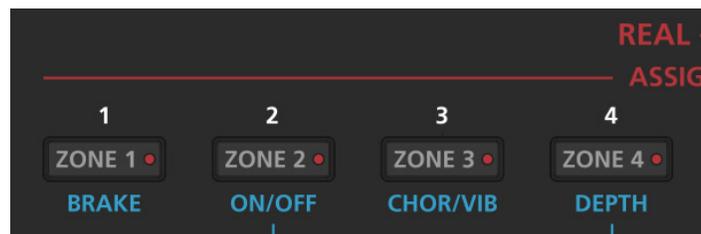
## About Zones

Zones are the independent regions of the keyboard that make up a Multi.

A Multi has up to four Zones (or eight when the Global Mode User Type parameter is set to Advanced), each one having its own Program, controller assignments, and MIDI transmit channel. Zones can be mutually exclusive regions of the keyboard, or they can overlap. A Zone can also be configured to control an external sound module or computer software through a MIDI or USB cable.

## Muting Zones

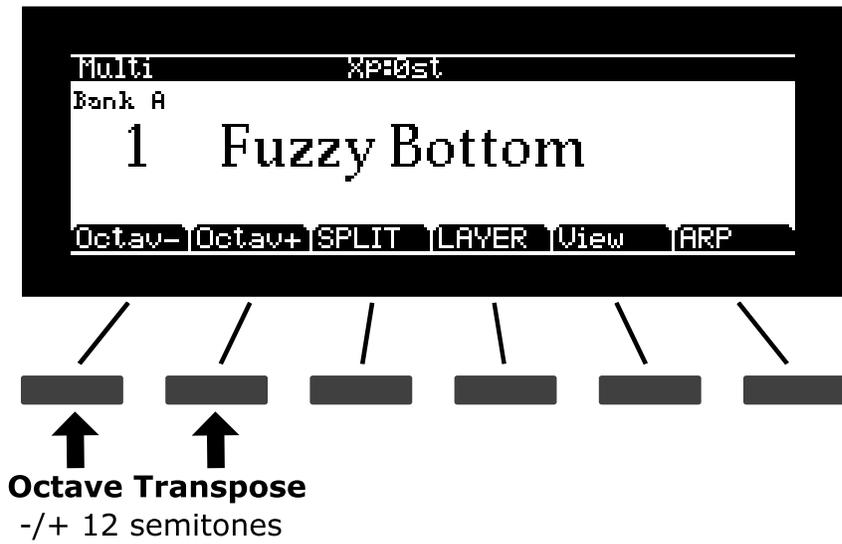
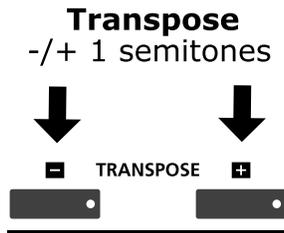
Pressing a Zone button will mute or unmute the Zone. An active/unmuted Zone button has a lit LED. The LED of an inactive/muted Zone button is not lit. See [Ch. 11 Multi Edit Mode](#) for details on adding additional Zone mute button assignments when using more than four Zones.



## Transposition

The Transpose buttons can be used to change the tuning of notes played on the Forte SE keyboard in semitones (ST), also known as half steps. This is a convenient way to change the key of a song without learning to play it in a different key. The Transpose buttons are located to the left of the keyboard, above the Pitch and Mod Wheels. The Transpose buttons also transpose MIDI notes sent to the USB and MIDI out ports.

Press the Transpose - or + buttons to transpose the Forte SE keyboard down or up by one semitone. The top line of the display shows the current transposition value. Pressing both Transpose - and + simultaneously will reset the transposition to 0. To transpose up and down by octave intervals (12 ST), press the Octav- and Octav+ soft buttons underneath the display.



The maximum transposition value possible is  $\pm 36$  semitones.

The LEDs of the Transpose buttons indicate whether the current Multi is transposed up (Transpose + LED is lit) or transposed down (Transpose – LED is lit). When there is no transposition, neither Transpose button is lit.



**NOTE:** The transposition is applied to all Programs in the Zones within the Multi. The Zone layout on the keyboard however still remains fixed.

## Parameter Assignments

In Multi Mode, each Multi has factory-set Program and Effect parameters assigned to physical controllers (Sliders, Switch buttons, Mod Wheel, and Pedals). A parameter assignment can modify an instrument sound during a performance to add variation or expression. Moving a controller changes the value of the parameter. Any time you do this, the display shows the Controller name, assigned parameter, and value. Selecting the View soft button will show current parameters on the left side of the display.

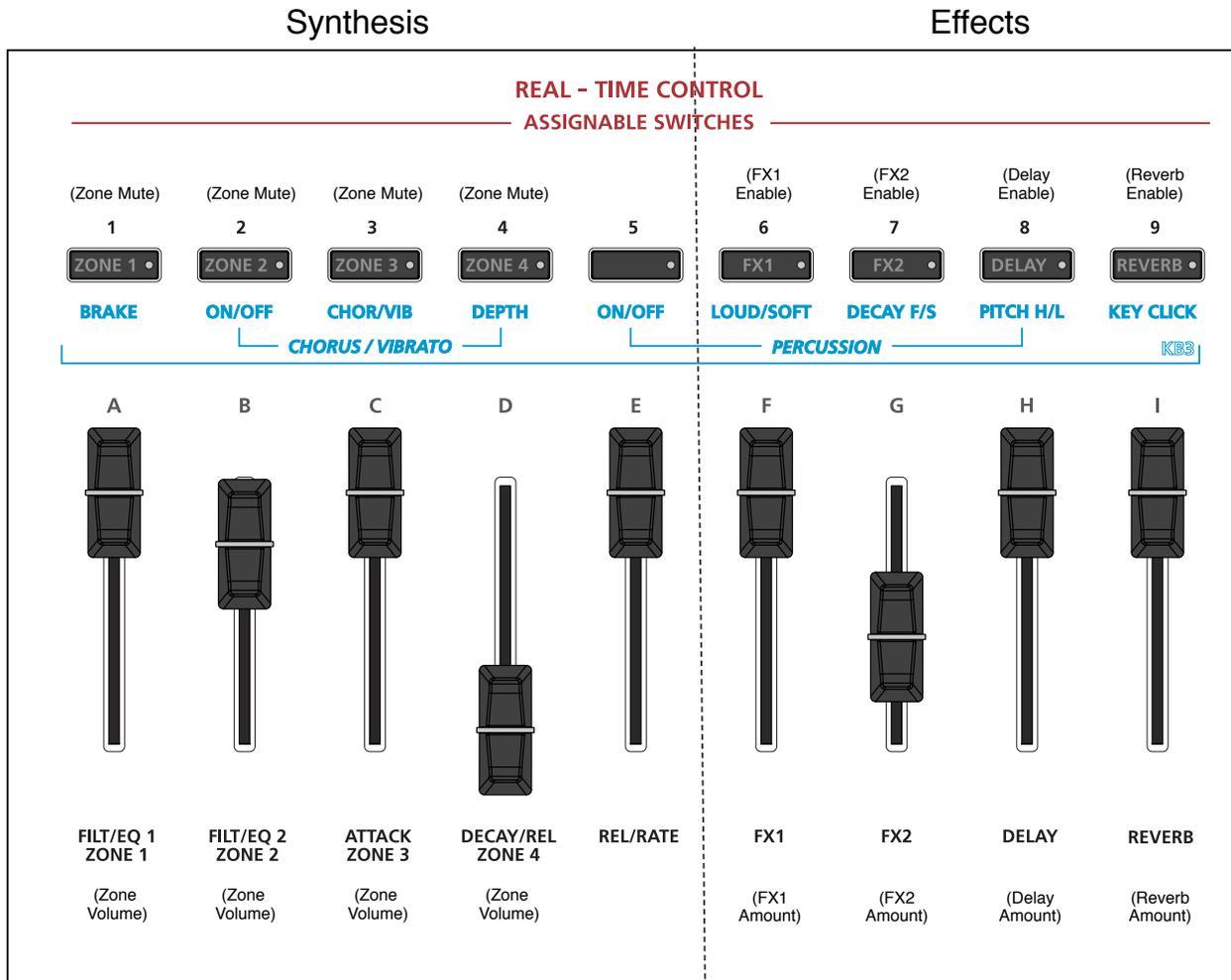
Multi	XPRST
ch4-Film Score Pad	1 Fuzzy Bottom
LP Filter Freq	2 Sunset Mirage
Slider E:81	3 Bass EPiano Lead
	4 Vocal Pad Scape
	5 Floating Spirits
Octav-   Octav+   SPLIT	LAYER   View   ARP

# Multi Mode

## Parameter Assignments

### Controller Conventions

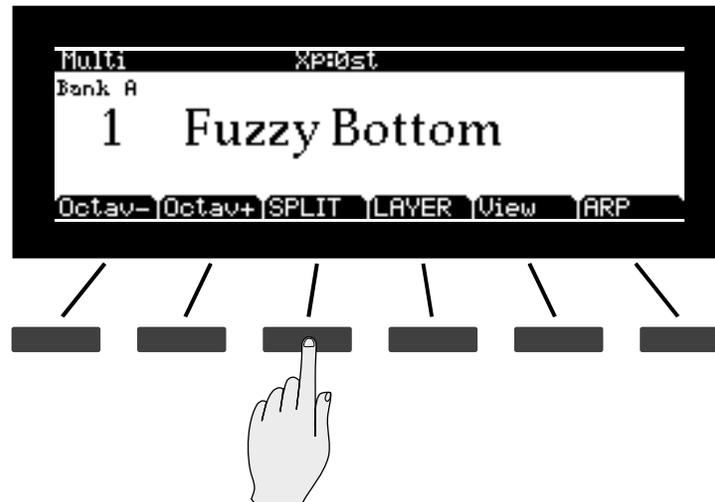
In Multi Mode, the Zone Mute Switches above Sliders A through D control the Active/Muted status of Zones 1 through 4. In the Factory Multis, Sliders A through D generally control the volume for Zones 1 through 4. Sliders H and I generally control Delay and Reverb amount. The remaining Sliders and Switches generally control various effects and synthesis parameters.



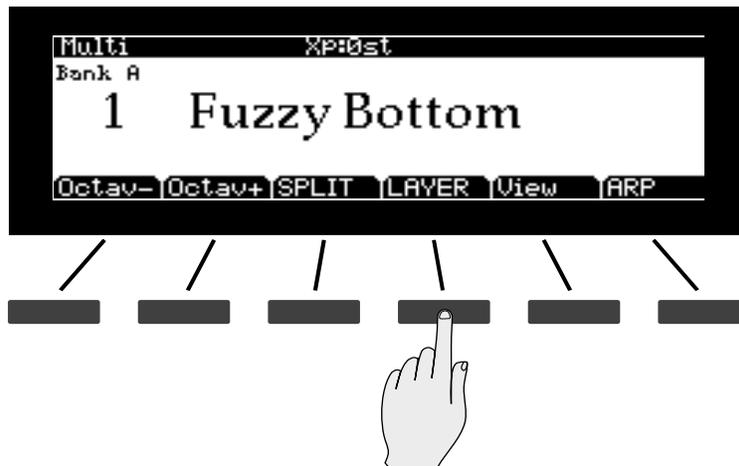
## The Split and Layer Functions

The soft buttons Split and Layer perform slightly different functions, but offer identical parameters.

The Split Function allows you to quickly create a Multi such that keys in one region of the keyboard produce different sounds than another region.



The Layer Function allows you to layer Programs and Multis such that more than one sound can be produced by striking one key.



This is convenient, as you do not need to use Multi Edit Mode to configure Zone key ranges, Programs, and volumes. You can simply hit the soft button while in Multi Mode to select the Function. You can then configure additional Zones, each of which may have its own Program and controller assignments. The result may be saved as a new Multi.

## Split Function

When you create a Split in Multi Mode, you are in fact activating a new Zone within the current Multi. If the current Multi already has the maximum number of active Zones and you press the Split Function soft button, then a message will appear on the display indicating that you have reached the maximum number of Zones. Alternatively, you can mute one of the active Zones by using the Zone Mute buttons, and then continue to create the Split.

The Multi you were using becomes the right hand of the Split. After this you can choose a Program that will be used in the left hand of the Split as the Program for another available zone.

The default Program parameter for a Split is 203 Finger Bass, and the default keyboard range is C1 - E3. These may be changed, as described below.

EDIT:Multi SPLIT/Layer							#Zone:3/4
Zn	Stat	Program	Low	Hi	Vol	Pan	
1	Active	185 TouchMeAfte	C 4	G 9	127	None	
2	Active	178 Shokudo Enka	C 4	G 9	127	None	
3	Active	203 Finger Bass	C -1	B 3	118	None	
4	Muted						

CANCEL

Other parameters that determine the behavior of the Split are described below. Use the navigation buttons to access each of the Split/Layer parameters.

## Layer Function

When you create a Layer in Multi Mode, you are in fact activating a new Zone within the current Multi. If the current Multi already has the maximum number of active Zones and you press the Layer Function soft button, then a message will appear on the display indicating that you have reached the maximum number of Zones. Alternatively, you can mute one of the active Zones by using the Zone Mute buttons, and then continue to create the Layer.

Choose a Program that will be used for the next available Zone. The active Zones of the Multi you were originally using will remain unchanged.

The default Program parameter for a Layer Multi is 130 Adagio Strings,, and the default keyboard range is C1 - G9. Use the navigation buttons to access each of the Split/Layer parameters.

EDIT:Multi SPLIT/Layer							#Zone:2/4
Zn	Stat	Program	Low	Hi	Vol	Pan	
1	Active	1 RecitalGrand 9f	C -1	G 9	127	None	
2	Active	130 Adagio String	C -1	G 9	127	None	
3	Muted						
4	Muted						

CANCEL

Other parameters that determine the behavior of the Multi are described below. Use the navigation buttons to access each of the Split/Layer parameters.

## **Split/Layer parameters**

### **Zn and Stat (Zone and Status)**

Selecting Split or Layer makes a new Zone active. You can continue to add Zones to the Multi by activating additional Zones with the Stat parameter or the front panel Zone buttons. The Forte SE will display a message if you have already reached the maximum number of active Zones (see [About Zones on page 10-6](#) for more information on Zones).

### **Program (Split/Layer Program)**

The default Program will appear in the next available Zone. Choose a different Program using the Category and Program/Multi buttons, the Alpha Wheel, or the Previous/Next buttons.

### **Low/Hi (Keyboard range)**

The Low and Hi parameters set the keyboard boundaries for each Zone.

The low and high keys for each Zone can be selected using Assign  (holding down the Enter button and then striking the desired key on the keyboard). Keys can also be selected by using the Alpha Wheel or the Previous-/Next+ buttons.

### **Vol (Zone Volume)**

The VOL parameter determines the volumes of each Zone. By default, VOL is set to 127, which results in each Zone having the same volume. To change volumes use the Alpha Wheel or Previous/Next buttons. A Zone volume can be set to any number between 0 and 127.

### **Pan (Zone Pan)**

To change the panning of a Zone (left/right stereo placement), use the navigation buttons to select the Pan parameter for one of the Zones. To set a Pan value, use the Alpha Wheel, the Previous-/Next+ buttons, or use the keypad function of the Category buttons to type a pan value (0-127) followed by the Enter button. A value of 0 is full left, 64 is center, and 127 is full right. Other values will move the stereo placement in between these positions. A value of “None” will use the last pan value used by the Zone’s MIDI channel. A value of “None” can be entered by scrolling below 0, or by using the keypad function of the Category buttons to type negative 1 by pressing the small +/- button and then the 1 button, followed by the Enter button.

## Multi Mode

### The ARP Function

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#### Saving a Split or Layer

After setting the Split/Layer parameters, the Split can be saved as a Multi so that it can easily be recalled in Multi Mode. Press the Save button to the left of the display to begin the saving process. See Save User Multis below for more details. Once you have saved your Split or Layer as a Multi, you can edit controller assignments and other Multi parameters in Multi Edit Mode (see [Ch. 11 Multi Edit Mode](#) for details).

## The ARP Function

Selecting the Arp soft button will bring up the Arpeggiator editor page Arp1. Arpeggiator options and parameters are described in detail in [“The Arpeggiator Function” on page 7-55](#). From Multi Mode, you can set Arpeggiators for each Zone in a Multi. The Arp soft button also put you into Multi Edit mode, where you can access other editor pages.

For real-time control of Arpeggiator options, see [“The Controller Destination List” on page 11-17](#) and [“Shift Key Number, Shift Key \(ShKeyNum, ShiftKey\)” on page 11-20](#).

## Save User Multis

Use the Save button to save a Split or Layer Multi as a User Multi (to save a changed Zone Mute status, switch/button state, or slider state, you must set an entry value for each controller in Multi Edit mode). Press the Save button once to view the Save Dialog. This will allow you to specify the ID number to save to, and to rename the Multi if you wish. When viewing the Save Dialog, you can quickly save the Multi to the displayed ID number by pressing the Save button again.



## Changing ID Numbers

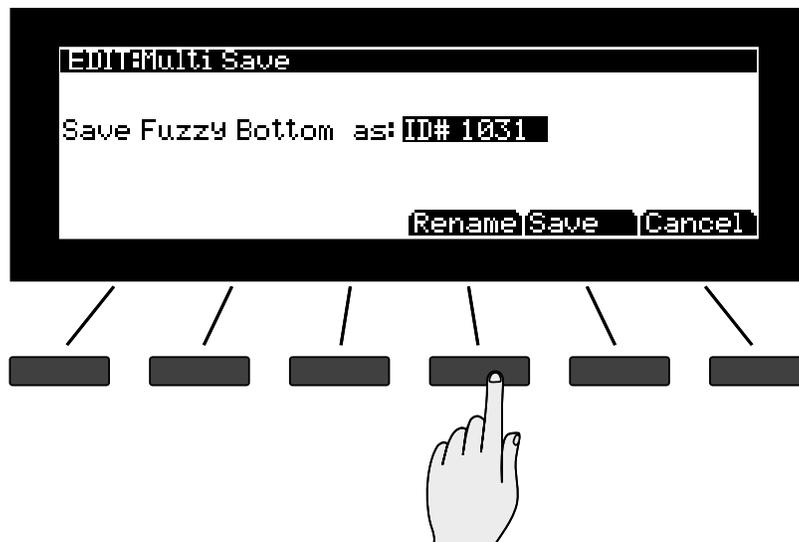
The display shows the first available ID number and the current Multi name. You can save Multis with ID numbers from 1024 to 2047. If you are saving a Multi that has not been previously edited, the next available unused ID number will be selected. If you are saving a previously edited User Multi, the ID number that the Multi was last saved with will be selected. Press the Value Jump double button press (Previous-/Next+) to toggle between selecting the ID number that the Multi was last saved with, and the next available unused ID number.

To change the ID number, turn the Alpha Wheel or use the Previous-/Next+ buttons to select the new ID number. If you select a previously used ID# the display will show a prompt to allow you to decide whether to replace it.



## Naming a User Multi

To rename the Multi, first press the Rename soft button. The display then shows the current Multi name. Multi names can total 16 characters in length.

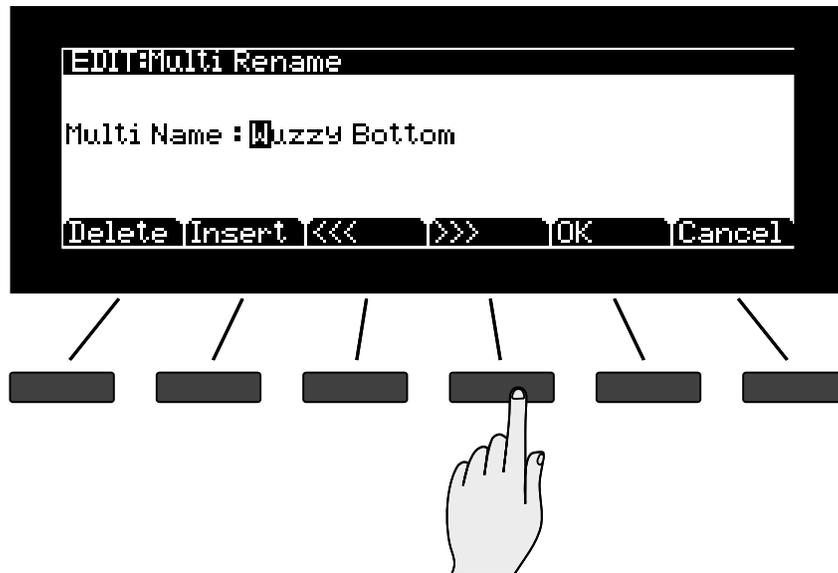


## Multi Mode

### Save User Multis

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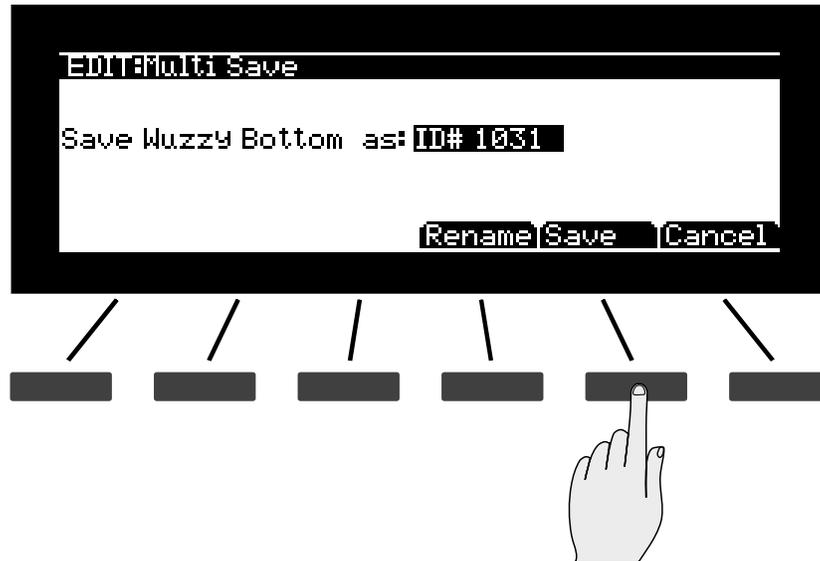
Press the center soft buttons (<<< or >>>) or the navigation buttons to move the cursor. To enter the new Multi name you may use the letters and numbers printed on the Program/Multi buttons, or use the Alpha wheel or Previous-/Next+ buttons to cycle through the alphabet. The Insert soft button will insert a blank space (the selected character and all characters to the right will move one space to the right), and the Delete button will delete the current character (all the characters to the right will move one space to the left).



When you are satisfied with your name, press the OK soft button to return to the Save screen.

## Saving a User Multi

Press the Save button or Save soft button to complete the saving process, or press the Cancel soft button to exit without saving.



After successfully saving, the Multi will be selected in Multi Mode in the selected Bank. To find the Multi again later, make sure to press the User bank button under the Mode buttons.



# Chapter 11

## Multi Edit Mode

### About Multi Edit Mode



NOTE : Before you read this chapter, be sure to read [Ch. 10 Multi Mode](#) for a full description of Multis.

Multi Edit Mode allows you to edit and create Multis and gives you access to a Multi's Common parameters and Zone specific parameters. Multis are configurations of up to eight Zones, each of which may have its own Program, controller assignments, and MIDI transmit channel. A Zone can also be configured to control an external sound module or computer software through a MIDI or USB cable.

In Multi Edit Mode, you can customize the Program, controller assignments, and MIDI transmit channel of the Zones in a Multi, in addition to many other parameters. Any Multi can be edited in Multi Edit Mode and saved to one of the 1024 User IDs.

To enter Multi Edit Mode, first press the Multi Mode button to enter Multi Mode, and then press the EDIT button.

Once you are in Multi Edit Mode, press the soft buttons at the bottom of the screen to navigate to each of the Multi Edit Mode pages. See the sections below for details on navigating and changing parameters and Zones. All parameters apply only to the currently selected Zone, except for parameters on the Common Page and certain controller parameters, which apply to all Zones. On the Multi CCs and Multi Switches pages, if a parameter is selected which applies to all Zones, "All Zones" will be displayed in the top right corner of the display.

## Multi Edit Mode

### Selecting Parameters

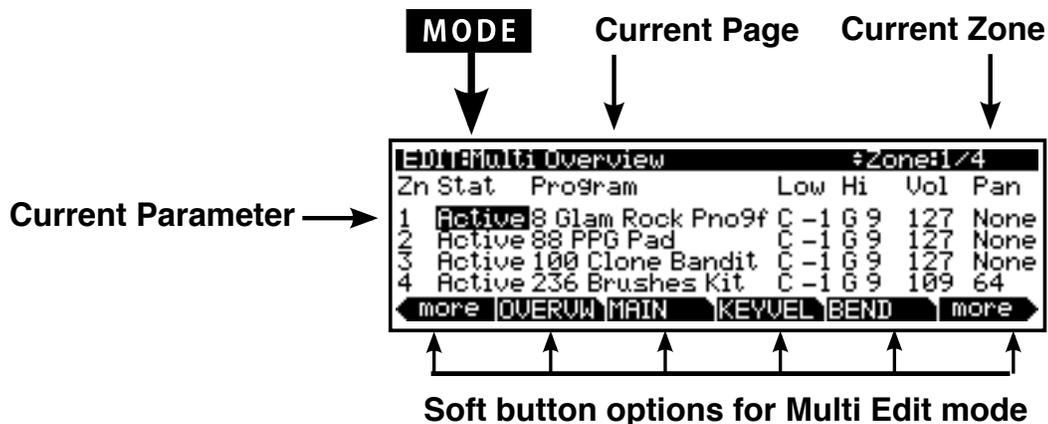
## Differences Between Regular and Advanced User Type

This chapter describes how Multi Edit Mode works when the Global Mode User Type parameter is set to Advanced. Multi Edit Mode works the same way when the Global Mode User Type parameter is set to Regular, except that the NewZn, DupZn, ImpZn, and DelZn soft buttons are not shown, and some settings will be hidden when scrolling through Arpeggiator settings.

## Selecting Parameters

### The Display

In Multi Edit Mode, the top line of the display shows the current Mode, Page, and current selected Zone.



### Changing Zones

Use the Channel/Layer/Zone ▲ and ▼ buttons to change the currently selected Zone.

The top right corner of the display of the each page shows the currently selected Zone out of all available Zones, or “All Zones” if the parameter applies to all Zones.

On the Multi Edit Overview page the Channel/Layer/Zone ▲ or ▼ buttons will change Zones in reverse order from how they do on other Multi Edit pages. Pressing Zone Down will select a higher Zone and pressing Zone Up will select a lower Zone. The buttons are reversed on this page so that pressing Zone (▲ or ▼) will move you visually up/down on the display. A simultaneous double button press of ▲/▼ will jump to Zone 1.



## Alpha Wheel & Previous (-) and Next (+) Value Buttons

Use the Alpha Wheel or the Value buttons, to the right of the display below the Alpha Wheel, to change the selected parameter value. Turning the Alpha Wheel counter-clockwise or pressing the Previous button will select the previous value and turning the Alpha Wheel clockwise or pressing the Next button will select the next value.

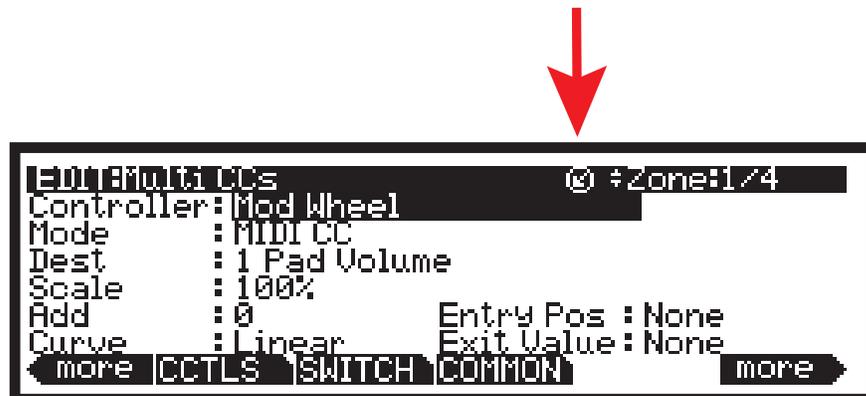
## Assign

ENTER ↻

Assign is the secondary function of the Enter button. You can use the Assign function to quickly select parameters or set values for parameters by holding the Enter button while moving Forte SE controllers (Sliders, Switch buttons, Keys, Mod Wheel, and Pedals).

Parameters that can use the Assign function are indicated by showing the Assign symbol in the top right corner of the display when selected.

### Assign Symbol



Pressing a key, switch, or moving a controller while holding down the Enter button will perform Assign in the following cases.

### Enter + Controller

On the Multi CCs or Multi Switches page, when the Controller or Switch parameter is selected, holding the Enter button and moving a controller (a Slider, Switch button, Mod Wheel or Pedal) will jump to selecting that controller in the current Zone. This allows you to quickly select a controller.

On the Multi CCs or Multi Switches page, when the Dest parameter is selected, Enter + Switch/Controller will assign the default Destination of the touched controller to the selected switch or controller. This is an easy way assign a Multi controller/switch to the same assignment it had in Program mode.

## Multi Edit Mode

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### Zone Parameters

On the Multi CCs or Multi Switches page, when the Entry Pos, Exit Value, OnValue, or OffValue parameter is selected, you can change the value of the selected parameter by holding Enter and moving any Controller or Switch.

#### **Enter + Key**

In Multi Edit Mode, on the Overview page, with the Low Key Range or High Key Range parameter selected, hold the Enter button and strike a key to set the Low Key or High Key.

On the Multi Switches page, when Mode = Chord and one of the Key1-8 parameters is selected, hold the Enter button and strike a key to set a key value.

## Zone Parameters

Each of the available Zones in a Multi has multiple parameters that determine its behavior. Since the Zones of a Multi are independent of each other, changing a parameter for a certain Zone will not affect the parameters of any other Zone. There are some exceptions to this, for example, the parameters on the Common Page are common to all available Zones. Also, on the Controllers Page for Switch Controllers, the parameters Type, Entry State, and Exit State are common to all available Zones. Lastly, on the Controllers Page for Continuous Controllers, the parameters Entry Position and Exit Value are common to all available Zones.

The top right corner of the display of the each page shows the currently selected Zone out of the available Zones, or “All Zones” if the parameter applies to all Zones.

Also, on the Multi CCs Page, the parameters Entry Position and Exit Value are common to all available Zones. Lastly, on the Multi Switches Page, the parameters Type, Entry State and Exit State are common to all available Zones.

## OVERVIEW Page

The Overview Page shows basic settings for 4 of the available Zones. The current Program, Volume and Panning position of the Zone, along with the state and active keyboard region can be quickly set on this page. If a Multi has more than 4 Zones, the other Zones can be accessed by using the Channel/Layer/Zone Up/Down buttons to the right of the display.

```

EDIT:Multi Overview          #Zone:1/4
Zn Stat  Program             Low Hi  Vol  Pan
1  Active 8 Glam Rock Pno9f C -1 G 9  127 None
2  Active 88 PPG Pad         C -1 G 9  127 None
3  Active 100 Clone Bandit  C -1 G 9  127 None
4  Active 236 Brushes Kit   C -1 G 9  109 64
more |OVERVIEW|MAIN |KEYVEL|BEND |more

```

Parameter	Range Of Values	Default Value
Status	Active, Muted	Active
Program	Program List	-
Key Range	C-1 to G9	C-1 to G9
Pan	None, 0 to 127	64
Volume	None, 0 to 127	127

### Zn and Stat (Zone and Status)

Zn lists the available Zones. The Status parameter determines whether the currently selected Zone is active or muted. You can set this parameter to either of two states: Active or Muted.

### Program

The Program parameter determines the Program to be loaded for the currently selected Zone. You can set this parameter to any Forte SE Program (1 – 2047). The display shows the Program number and name.

The Value Jump double button press (Previous and Next buttons) jumps to selecting the first Program of each Category, as well as the Category Default Program of each Category (if a Category Default Program has been set).

### Low and Hi (Key Range)

The Low and Hi parameters define the key range of the currently selected zone. Keys played within this range will trigger a note for the selected Zone. The easiest way to change these values is to select one, hold the Enter button and press the key of the note you wish to enter. You can set these values with normal data entry methods as well.

You can also set the lowest key higher than the highest key and vice versa. This allows you to split a Zone into two areas where the lowest and highest keys now define the region that the Zone does not play on.

## Multi Edit Mode

### MAIN Page

#### Vol (Zone Volume)

The VOL parameter displays the volumes of each Zone. By default, VOL is set to 127, which results in each Zone having the same volume. To change volumes use the Alpha Wheel or Previous/Next buttons. A Zone volume can be set to any number between 0 and 127.

#### Pan

The Pan parameter determines the Pan MIDI message that the currently selected Zone sends when the Multi is loaded. You can set this parameter to any pan setting from None, 0 (full left pan) to 127 (full right pan). To pan to center, select 64 for this parameter.

## MAIN Page

The Main Page shows the current settings that are specific for the currently selected Zone. The top right hand corner of the display indicates the currently selected Zone of the total available Zones.

```
EQ1A Multi Main #Zone:1/4
Program : 8 Glam Rock Pro8ft
Destination: USBMIDI+MIDI+LOCAL
Channel : 1
MidiBank : 0 BankMode : Ctl 0/32
MidiProg : 8 EntryPrgChg : On
Status : Active
more |OVERVIEW|MAIN |KEYVEL|BEND |more
```

Parameter	Range Of Values	Default Value
Program	1-1027	1
Destination	NONE, LOCAL, MIDI, MIDI+LOCAL, USB, USB+LOCAL, USB+MIDI, USB+LOCAL+MIDI	USB+LOCAL+MIDI
Channel	1 to 16	1
MidiBank	None, 0 to 16383	-
BankMode	None, Ctl 0, Ctl 32, Ctl 0/32, K2600	Ctl 0/32
MidiProg	(Depends on BankMode)	-
EntryPrgChg	On, Off	On
Status	Active, Muted	Current Zone Status

#### Program

The Program parameter determines the Program to be loaded for the currently selected Zone. You can set this parameter to any Forte SE Program (1 – 2047). The display shows the Program number and name.

The Value Jump double button press (Previous- and Next+ buttons) jumps to selecting the first Program of each Category, as well as the Category Default Program of each Category (if a Category Default Program has been set).

## Destination

The Destination parameter determines whether MIDI data generated by the keyboard and physical controllers of the currently selected Zone is sent to a Forte SE Program, through the MIDI Out/USB ports, or all three. You can set this parameter to any of the eight combinations for the three destinations for this parameter:

Note that this parameter works in conjunction with the Global parameter of the same name (see [Dest \(Destination\) on page 12-11](#)) and both are active. They act like filters, so if one is set to MIDI, and the other is set to Local + MIDI, transmission will be limited to MIDI only.



**CAUTION: It is possible to stop all MIDI transmission, in Multi Mode, if one Destination parameter is set to Local, and the other is set to MIDI.**

Setting	MIDI Out	USB	FORTE SE
NONE			
LOCAL			Yes
MIDI	Yes		
MIDI + LOCAL	Yes		Yes
USB		Yes	
USB + LOCAL		Yes	Yes
USB + MIDI	Yes	Yes	
USB + LOCAL + MIDI	Yes	Yes	Yes

### NONE

Unused Zones are set to None to avoid transmitting MIDI on these zones. The Zone will still be able to receive incoming MIDI.

### LOCAL

When Destination is set to LOCAL, MIDI data from the Zone is sent only to the Forte SE Program. MIDI data from this Zone is not sent to the MIDI Out or USB ports.

### MIDI

When Destination is set to MIDI, MIDI data from the Zone is sent only to the MIDI Out ports. MIDI data is not sent to a Forte SE Program or the USB ports from this Zone.

### MIDI + LOCAL

When Destination is set to MIDI+LOCAL, MIDI data from the Zone is sent to a Forte SE Program and to the MIDI Out ports.

## Multi Edit Mode

---

### MAIN Page

#### USB

When Destination is set to USB, MIDI data from the Zone is sent only to the USB ports.

#### USB + LOCAL

When Destination is set to USB+LOCAL, MIDI data from the Zone is sent to a Forte SE Program and to the USB ports.

#### USB + MIDI

When Destination is set to USB+MIDI, MIDI data from the Zone is sent to the USB & MIDI Out ports only. MIDI data is not sent to a Forte SE Program on this Zone.

#### USB + LOCAL + MIDI

When Destination is set to USB+LOCAL +MIDI, MIDI data from the Zone is sent to the USB & MIDI Out ports, as well as the Forte SE Program on this Zone.

### Channel

The Channel parameter determines the MIDI transmit and receive channel for the currently selected Zone. You can set this parameter to any of the 16 MIDI channels (1-16).

You can assign different Zones to the same channel, but only one Program can be loaded in a channel at a particular time. The Program loaded will be whichever program change message is received last.

### BankMode

The Bank Mode parameter determines the controller number with which MIDI Bank change messages are transmitted. For MIDI Bank change messages, various manufacturers have chosen different MIDI controller numbers. Most have chosen 0, 32, or both. In the case of the Kurzweil K2600, it responds to controller 32, but is limited to 100 programs per bank.

You can set this parameter to any of the following:

<b>None</b>	MIDI Bank change messages are disabled.
<b>Ctl0</b>	MIDI Bank change messages are sent with controller number 0.
<b>Ctl32</b>	MIDI Bank change messages are sent with controller number 32.
<b>Ctl0/32</b>	MIDI Bank change messages are sent with both controller numbers 0 and 32.
<b>K2600</b>	MIDI Bank change messages are sent with controller number 32. (K2600 Program numbers 0-99.)

## MidiBank

The MIDI Bank parameter determines the MIDI Bank change message that the currently selected Zone sends when the Multi is loaded. You can set this parameter to a MIDI Bank change message from 0 to 16383.

When using the Forte SE as a MIDI controller, sending a MIDI Bank change message (along with a MIDI Program change message) when a Multi is loaded ensures that the Program loaded on the other sound modules in your MIDI chain is the Program that you want.

For example, if you've configured a Multi to work in a specific way with Program 32 in Bank 5 of a connected sound module, then set MIDI Bank to 5 and MIDI Program to 32. This way, whenever you load this Multi, the sound module will automatically load Program 32 in Bank 5.



**NOTE :** When you change the Program parameter, the MIDI Bank and MIDI Program parameters will automatically change to match the Bank and Program numbers of the Program that you select for Local Program. For example, if you choose Program 178, then MIDI Bank will change to 1 and MIDI Program will change to 50.

## MidiProg

The MIDI Program parameter determines the MIDI Program change message that the currently selected Zone sends when the Multi is loaded. You can set this parameter to a MIDI Program change message from 0 to 127.

When using the Forte SE as a MIDI controller, sending a MIDI Program change message (along with a MIDI bank change message) when a Multi is loaded ensures that the Program loaded on the other sound modules in your MIDI chain is the Program that you want. For example, if you've configured a Multi to work in a specific way with Program 32 in Bank 5 of a connected sound module, then set MIDI Bank to 5 and MIDI Program to 32. This way, whenever you load this Multi, the sound module will automatically load Program 32 in Bank 5.

## EntryPrgChg

The Entry Program Change parameter determines whether or not the currently selected Zone will send a MIDI Program change message when the Multi is loaded. You can set this parameter to either Off or On. When set to On, the Zone will send a MIDI Program change message with the Program specified for the MIDI Program parameter.

## Status

This displays the current Zone status (active or muted).

## KEYVEL (KeyVelocity) Page

```
EDIT:Multi Key Velocity @ #Zone:1/4
LoKey   : C -1   VelMode  : Traditional
HiKey   : G 9    VelScale  : 100%
Transpose: 0ST   VelOffset : 0
Notemap : Linear  VelCurve  : Linear
                               LoVel   : 1
                               HiVel   : 127
more |OVERVIEW|MAIN |KEYVEL|BEND |more
```

### LoKey and HiKey (Key Range)

The Low and Hi parameters define the key range of the currently selected zone. Keys played within this range will trigger a note for the selected Zone. The easiest way to change these values is to select one, hold the Enter button and press the key of the note you wish to enter. You can set these values with normal data entry methods as well.

You can also set the lowest key higher than the highest key and vice versa. This allows you to split a Zone into two areas where the lowest and highest keys now define the region that the Zone does not play on.

### Transpose

The Transpose parameter changes the pitches generated by the Zone, without changing its position on the keyboard. This is done by changing the MIDI note numbers generated by the keys in the Zone. The range is -128 to 127 semitones. If you transpose out of the range of the active Zone Program, no notes will sound, though MIDI notes will still be transmitted.

### Note Map

Note Map lets you change the way notes are sent from the Forte SE.

The default setting is Linear: all notes go out as played. Pressing the Minus button takes you to Off; no notes are sent, but controllers and other non-note data are.

Setting Note Map to Inverse effectively turns the keyboard upside-down, with the highest key being A 0 and the lowest C 9. If you set Note Map to Constant, all of the keys on the keyboard will play the same note. The note defaults to C4, but you can change this with the Transpose parameter. This works well when you want the sound from a particular key to play with every note of another zone. For example, playing a ride cymbal with every note in a bass line.

Next are the alternating note maps, which let you divide the keyboard in some unique ways. If you are using two or more MIDI devices (including the Forte SE), you can expand polyphony by assigning each zone to a different alternating note map. For example, if you have two Forte SEs, you can assign two zones to each play the same program on a different Forte SE, thereby doubling polyphony.

To split a zone into one of two alternating note maps, set Note Map to 1 of 2; now the zone plays on every second key, starting on C, but won't play on any other keys. Set another zone to 2 of 2, and this zone will play on every second key, starting on C#, thus covering the remaining keys. Three and four-zone alternating notemaps work the same way, but cause each zone to play only on every third and every fourth key, respectively.

### VelMode

The Velocity Mode parameter determines the method that the Forte SE maps the keyboard's strike velocity to MIDI velocity. Set to "Traditional" the keyboard's velocity will translate to a MIDI velocity depending how hard you strike it. With a setting of "Fixed", the velocity is set to a pre-determined value regardless of how hard or soft the keyboard is played.

A setting of "Fixed" will remove some of the other Velocity settings in the MAIN page and replace it with a parameter called Velocity that has range of values from 0 to 127.

### VelScale

The Velocity Scale parameter lets you amplify or diminish velocity response from -300% to 300%. Normal response is 100%. Higher values make the keyboard more sensitive (you don't need to play as hard to get higher MIDI velocities) while lower values make it less sensitive (playing harder doesn't change MIDI velocity as much). You can also set the scale to a negative number, in which case the velocity response is turned upside-down: playing harder produces a softer sound and vice versa. This is useful for creating velocity-based crossfades between zones.

See the following section on VelOffset for ideas about negative scaling.

### VelOffset

The Velocity Offset parameter also changes the velocity response, but in a more direct way, by adding or subtracting a constant to the key velocity.

For example, if this is set to 25 (assuming a scale of 100%), then 25 is added to the velocity of every keystroke, usually making the sound that much louder. The softest possible keystroke will have a value of 25, while a keystroke with velocity of 102 will produce the same sound as a note with velocity 127 ( $102+25=127$ ). Negative values diminish the response: a setting of -25 means the loudest velocity available will be 102, while any keystroke 25 or below will produce a velocity of 1 (a velocity value of zero has a special meaning in MIDI and cannot be used for Note Ons).

You can think of Scale as being a proportional change to the velocity, while Offset is a linear change. The maximum values for Offset are  $\pm 127$ .

Offset and Scale work together. If scaling takes the velocity out of the ballpark — for example, you want to set it to 300% but that puts all of your notes at maximum velocity — using a negative offset, say around -60, can make it possible to still play at different volumes, although your curve will still be a lot steeper than normal. If you use a negative scaling, then you must use an offset: otherwise all of your velocities will end up as zeroes (well, ones

actually, since a MIDI note-on with velocity zero is interpreted by some modules as a note-off message). So to get true inverse scaling (that is, minus 100%), you must set an offset of 127 to get the full range of velocities. Setting the offset to 127 and the scale to -100% (which is the same as the reverse linear curve):



NOTE: Offset and Scale affect only MIDI velocities; that is, these parameters don't change Velocity Tracking in the programs themselves. Therefore, some programs (such as organ sounds, which often have low VelTrk values) may respond only subtly to Offset and Scale, or not at all.

### VelCurve

The Velocity Curve parameter lets you taper the velocity response. The default setting is **Linear**, which means that the output velocity changes directly proportionally to the played velocity.

**Expand** produces a curve that is less steep than the linear curve at keystrike velocities below 64, and steeper than the linear curve at keystrike velocities above 64. In other words, when you're playing softly, you'll notice velocity differences less than with a linear curve, while when you're playing hard, you'll notice velocity differences more.

**Compress** produces a velocity curve that is the opposite of the expanded curve—that is, you'll notice velocity differences more when you're playing softly than when you're playing hard.

**Crossfade** is designed to be used in tandem with the Reverse Crossfade curve, enabling you to perform smooth crossfades between different programs.

**Bump** tapers velocity response to resemble a bell curve, so that notes are loudest when your keystrike velocity is 64. Notes get softer as the keystrike velocity approaches 0 or 127.

The next four velocity curves are Reverse Linear (**Rvrs Linear**), Reverse Expand (**Rvrs Expand**), Reverse Compress (**Rvrs Compress**), and Reverse Crossfade (**Rvrs Crossfade**). These taper velocity in reverse of the five curves we just covered. For example, Reverse Linear's response is such that striking a key harder will produce a lower volume, striking it softer will produce a higher volume, and so on. This provides a convenient way to achieve negative scaling, by letting you set one parameter instead of two.

### LoVel, HiVel

LoVel (Low Velocity) and HiVel (High Velocity) set the minimum and maximum velocity limits that the current zone transmits.

A keystroke in the current zone whose velocity — *after* it has been scaled and offset — is below the minimum does not generate a Note On. Neither does a keystroke whose velocity after processing is above the maximum. These parameters are useful for “velocity switching”—having a key play different sounds depending on how hard you strike it.

The values can be anywhere from 1 to 127. As with other parameters, zones can overlap or be totally discrete, or be identical. Usually, LoVel will have a smaller value than HiVel, but as with LoKey and HiKey, you may also create a gap in velocity response, by setting HiVel to a lower value than LoVel.

## BEND Page

Parameter	Range Of Values	Default Value
Bend Up ST	Prog, 0 to 127 ST (semitones)	2 ST
Bend Down ST	Prog, 0 to 127 ST (semitones)	2 ST
Bend Up cT	0 to 100 cents	2 ST
Bend Down cT	0 to 100 cents	2 ST

### Bend Up / Down ST

Bend Up ST and Bend Down ST sends a bend range message to an internal program or a MIDI device, telling it how to define subsequent pitch bend messages. You can set this parameter to any value between 0 semitones and 127 semitones, or to Prog, which uses the Bend Range Up / Down of the currently selected Program for the Zone. The value can be entered numerically, and entering -1 will select Prog. (value that the Program would use in Program Mode).

### Bend Up / Down CT

Bend Up CT and Bend Down CT lets you fine tune the value for Bend Up ST & Bend Down ST (semitones). 100 cents equals one semitone, or one half step; you can set this parameter anywhere between 0 and 100 cents.

## CCTLS (CCs/Continuous Controllers) Page

```

EDIT:Multi CCs                               @ #Zone:1/4
Controller: Mod Wheel
Mode      : MIDI CC
Dest      : 1 Pad Volume
Scale     : 100%
Add       : 0                               Entry Pos : None
Curve    : Linear                           Exit Value : None
more CCTLS SWITCH COMMON more

```

Parameter	Range Of Values	Default Value
Controller	See Continuous Controllers List	-
Mode	Off, MIDI CC	-
Destination	See Controller Destination List	-
Scale	-300% to +300%	100%
Add	-128 to 127	0

## Multi Edit Mode

### CCTLS (CCs/Continuous Controllers) Page

Parameter	Range Of Values	Default Value
Curve	Linear, Compress, Expand, Crossfade, Bump, Rvrs Linear, Rvrs Expand, Rvrs Compress, Rvrs Crossfade	Linear
Entry Position	None, 0 to 127	-
Exit Value	None, 0 to 127	-

### Controller

The Controller parameter allows you to assign any of the Forte SE's continuous controllers (sliders, mod and pitch wheels, expression pedal and pressure) to control a program specific parameter or MIDI controller number for the currently selected Zone.

First, use the Channel/Layer/Zone buttons to the left of the display to select the desired zone that you wish to assign a controller for. Next, on the Multi CCs page, use the navigation buttons to select the "Controller" field, hold the Enter button and then move any of the Forte SE's continuous controllers. This will select that controller and display its available parameters. (You can also scroll through the list of controllers on the Control page by selecting the Controller field with the navigation buttons and using the Alpha Wheel or the Value buttons to scroll through the list.) If a pedal is selected which has a pedal override enabled in Global mode, a message "(Global Override)" will display when that pedal is viewed to remind you that the Global mode pedal override settings are being used instead of the Multi mode pedal settings.

FORTE SE CONTINUOUS CONTROLLERS		
Mod Wheel	Slider A	Slider F
Pressure	Slider B	Slider G
CC Pedal	Slider C	Slider H
Pitch Wheel Up	Slider D	Slider I
Pitch Wheel Down	Slider E	

### Mode

Continuous Controllers have two modes: Off, or MIDI CC.

With a value of Off, the controller is disabled for this zone.

With a value of MIDI CC, the controller has the ability to transmit MIDI control messages.

### Dest (Destination)

Use the Destination parameter to assign the Forte SE continuous controllers (Sliders, Wheels, Expression Pedal, or pressure) to control Program parameters or send MIDI continuous controller messages (CCs) to external MIDI gear. If a controller number (MIDI CC number) is assigned to a parameter in the Program of the current Zone, the parameter

name will be listed in the Destination list to the right of the CC number. Some CC numbers also show a default MIDI name if the CC number is not assigned in the Zone's program. For example, CC 6 is generally unassigned in programs, in which case CC 6 will show the standard MIDI name "data."

The Destination parameter determines the MIDI CC controller number that a physical controller will send to the Program in the currently selected Zone. By default, these CC messages are also sent to the MIDI Out and USB ports on the Channel of that Zone.

The list of CC controller numbers below (see [page 11-17](#)) shows the default assignments for each destination. Programs respond to some of these CCs for standard MIDI functions like volume and panning. Other external MIDI gear (sound modules, computer software) may respond to standard MIDI CC messages as well. Standard MIDI CC's range from 0-127 and can be received by the Forte SE from external devices, while destinations 128-146 are internal to the Forte SE only.

### Scale

After you've selected a continuous physical controller, you can modify the controller's response in a similar way that you can modify velocity response.

Scale lets you amplify or diminish the action of the controller. Full scale is 100%. Higher values will make the controller more sensitive, and lower values will make it less so. Setting the scale to a negative number makes the controller action work in reverse. As with velocity, you can use a controller to crossfade between two zones by setting the scaling for one zone positive and the other negative. Maximum scale values are +300% and -300%.

### Add

This adds or subtracts a constant to the controller, and at the same time sets minimum or maximum values. If Add is 25, the minimum value of the controller will be 25. If it is -25 (and scale is 100%) the first one-fifth of the controller's movement ( $25/127 \approx 1/5$ ) will send a value of 0, and the maximum value of the controller will be 102 ( $= 127-25$ ). As with velocity, Scale is a proportional change to the controller, while Add is a linear change. The values for Add range from -128 to 127.

### Curve

The Curve parameter lets you taper the velocity response. The default setting is **Linear**, which means that the output velocity changes directly proportionally to the played velocity.

**Expand** produces a curve that is less steep than the linear curve at keystrike velocities below 64, and steeper than the linear curve at keystrike velocities above 64. In other words, when you're playing softly, you'll notice velocity differences less than with a linear curve, while when you're playing hard, you'll notice velocity differences more.

**Compress** produces a velocity curve that is the opposite of the expanded curve—that is, you'll notice velocity differences more when you're playing softly than when you're playing hard.

**Crossfade** is designed to be used in tandem with the Reverse Crossfade curve, enabling you to perform smooth crossfades between different programs.

**Bump** tapers velocity response to resemble a bell curve, so that notes are loudest when your keystroke velocity is 64. Notes get softer as the keystroke velocity approaches 0 or 127.

The next four velocity curves are Reverse Linear (**Rvrs Linear**), Reverse Expand (**Rvrs Expand**), Reverse Compress (**Rvrs Compress**), and Reverse Crossfade (**Rvrs Crossfade**). These taper velocity in reverse of the five curves we just covered. For example, Reverse Linear's response is such that striking a key harder will produce a lower volume, striking it softer will produce a higher volume, and so on. This provides a convenient way to achieve negative scaling, by letting you set one parameter instead of two.

### Entry Position

The Entry Position value allows you to specify an initial value for a controller in a setup that will be sent whenever you select that Multi. For example, if you want to make sure that all of the modulation in a zone is turned off when you select a Multi, assign a physical controller to a destination of MIDI 01 (MWheel) and set Entry Value to 0.

Entry Position refers to the position of the physical controller. The Entry Position is common to all Zones, however the Curve, Scale and Add modifiers are applied to the Entry Position (and the controller value) individually on each zone, allowing the one controller to send different values to the assigned destinations on different zones, if desired.

Entry Position ignores the current position of the physical controller when the Multi is selected. In fact, if the Multi Controllers parameter in Global Mode ([page 12-5](#)) is set to Pass Entry, and the physical controller is above or below the entry value when the Multi is selected (which it often is), moving the controller will have no effect until it is past the entry value. In the modulation example above, moving the assigned controller won't turn on any modulation until it's pushed all the way down, and then up again.

If the Multi Controllers parameter is set to Instant, any movement of the physical controller will immediately be assigned to the controller. This may cause an abrupt change in the sound.

An Entry Position of None is quite different from a value of 0. None means that there will be no initial controller command when the Multi is selected, and any subsequent movement of the physical controller will be effective.

### Exit Value

The Exit Value tells the Forte SE to send a value for that controller whenever you leave the Multi, either by selecting another Multi or by selecting a different mode altogether. It can be very useful when a controller is doing something to the sound, and you don't want that effect to continue after you leave the Multi.

For example, if you want to make sure a zone's modulation wheel returns to normal whenever you leave a Multi, you would set Exit Value to 0.

A setting of None means no message is sent when exiting the Multi.

## Controlling Program Parameter Assignments from Multi Mode

Commonly you will want to assign a physical controller in a Multi to control the same Program parameter that it controlled in Program Mode. In the Destination parameter list, destinations that are assigned to parameters for the Program of the current Zone will show the Program Parameter name in place of the standard Controller Destination name. Select one of these destinations to control an assigned Program parameter.

You can also use the Enter button's secondary "Assign" function to quickly assign a Multi mode controller to a program mode assignment. First make sure you have the correct Zone selected for the program you wish to control. Next, go to the Multi CCs or Multi Switches page and select the desired control. Lastly, select the Dest parameter for the desired controller, hold the Enter button and move the desired controller. This will set the controller's destination to the same assignment it had in Program mode. You can also move a different controller if you want to set a different program mode assignment.

## The Controller Destination List

The table below contains the available values for the MIDI CC (continuous controller) destinations. The Forte SE's physical controllers can send MIDI values to these destinations in order to control the parameters of Forte SE Programs, Multis, Forte SE system parameters, or external MIDI equipment.

Controller Number	Controller Destination	Description
0	OFF/Bank	By default, when you enter 0 or Clear for the Destination parameter, the destination will be assigned to OFF. To select Bank as the destination, use the Value buttons.
1	MWheel	Default destination for the Modulation Wheel
2	Breath	Default assignment for breath controller in compatible synths
3	MIDI 03	MIDI Controller 3
4	Foot	Default assignment for continuous foot controller in compatible synths
5	PortTim	Monophonic Forte SE Programs respond to this Controller if portamento is turned on.
6	Data	MIDI Controller 6
7	Volume	MIDI Volume
8	Balance	MIDI Balance
9	MIDI 09	MIDI Controller 9
10	Pan	MIDI Pan
11	Express	Default assignment for CC Pedal. In most Programs it acts as a volume control. It scales between 0 and the current value of Volume.
12	MIDI 12	Default assignment for Slider A
13	MIDI 13	Default assignment for Slider B
14-21	MIDI 14-21	MIDI Controllers 14-21

## Multi Edit Mode

### CCTLs (CCs/Continuous Controllers) Page

Controller Number	Controller Destination	Description
22	MIDI 22	Default assignment for Slider C
23	MIDI 23	Default assignment for Slider D
24	MIDI 24	Default assignment for Slider E
25	MIDI 25	Default assignment for Slider F
26	MIDI 26	Default assignment for Slider G
27	MIDI 27	Default assignment for Slider H
28	MIDI 28	Default assignment for Slider I
29	MIDI 29	Default assignment for Variation switch
30-31	MIDI 30-31	MIDI Controllers 30–31
32	MIDI Bank	MIDI Bank change message
33–63	MIDI 33–63	MIDI Controllers 33–63
64	Sustain	Default destination for Sustain Pedal
65	MIDI 65	
66	Sostenuto	Default destination for Sostenuto Pedal (Sustains notes that are currently down, but not notes played subsequently.)
67	Soft	Lowers the volume by a preset amount and may soften the timbre as well.
68	Legato	Forces mono playback.
69	Freeze	Envelopes freeze at current state.
70–79	MIDI 70–79	MIDI Controllers 70–79
80	MIDI 80	Default assignment for Switch 1 (Zone 1 Switch)
81	MIDI 81	Default assignment for Switch 2 (Zone 2 Switch)
82	MIDI 82	Default assignment for Switch 3 (Zone 3 Switch)
83	MIDI 83	Default assignment for Switch 4 (Zone 4 Switch)
84	Portamento	Standard MIDI controller for setting Portamento starting note
85	MIDI 85	Default assignment for Switch 5 (Assignable Switch 5)
86	MIDI 86	Default assignment for Switch 6 (Assignable Switch 6)
87	MIDI 87	Default assignment for Switch 7 (Assignable Switch 7)
89	MIDI 89	Default assignment for Switch 8 (Assignable Switch 9)
90	MIDI 90	Default assignment for Switch 9 (Assignable Switch 5)
91–95	MIDI 91–95	MIDI Controllers 94–95
96	Data Inc	Equivalent to pressing the Next Value button
97	Data Dec	Equivalent to pressing the Previous Value button
98	NRegParL	Non-Registered Parameter Least Significant Byte
99	NRegParM	Non-Registered Parameter Most Significant Byte
100	RegParL	Registered Parameter Least Significant Byte
101	RegParM	Registered Parameter Most Significant Byte
102–109	MIDI 102–109	MIDI Controllers 102–109
110-119	MIDI 110–119	Reserved - Not available for use in the Forte SE.
120	Sound Off	Stops all sound in the corresponding channel.
121	RstCtls	Resets Controllers to defaults in the corresponding channel.
122	Local	
123	Notes Off	Sends Note Off Message to all playing notes in the corresponding channel.

Controller Number	Controller Destination	Description
124	Poly	
125	Omni	
126	Mono On	
127	Mono Off	
128	Pitch	Values above 64 and below 64 bend the pitch up and down, respectively.
129	PitchRev	Values above 64 and below 64 bend the pitch down and up, respectively
130	PitchUp	Values above 0 bend the pitch up
131	PitchDwn	Values above 0 bend the pitch down
132	Pressure	Default Destination for Pressure
133	Tempo	Tempo
134	KeyNum	Triggers playback of notes by Key Number—e.g., C4 is 60. Send a velocity first with Destination 135, KeyVel.
135	KeyVel	Key Velocity
136	ProgInc	Program Increment—increments current Program number.
137	ProgDec	Program Decrement—decrements current Program number.
138	ProgGoto	Go to Program—selects Program.
139	MultiInc	Multi Increment—increments current Multi number.
140	MultiDec	Multi Decrement—decrements current Multi number.
141	SetpGoto	Go to Multi—selects Multi.
145	TransUp	Transpose Up (ST)
146	TransDown	Transpose Down (ST)
147	Arp	Values 0-63 turn the arpeggiator Off, Values 64-127 turn the arpeggiator On
149	MuteZn	Mute Zone – Values above 64 will mute the zone that sends values to this destination, values below or equal to 64 will unmute the zone.
150	ArpOrder	Arpeggiator Order, each range of values selects one of nine options in order on parameters list: 0-14, 15-28, 29-42, 43-56, 57-70, 71-84, 85-98, 99-112, 113-127. (See <a href="#">ARP1 Page on page 7-56</a> )
151	ArpBeats	Arpeggiator Beats, each range of values selects one of seven options in order on parameters list: 0-18, 19-36, 37-54, 55-72, 73-90, 91-108, 109-127. (See <a href="#">Beats on page 7-61</a> )
152	ArpShift	The 88 Arpeggiator Shift steps are scaled over the 128 MIDI controller values, so that 0 = 0 steps and 127 = 88 steps. (See <a href="#">Shift (Shift Amount) on page 7-61</a> )
153	ArpLimit	The 60 Arpeggiator Shift Limit steps are scaled over the 128 MIDI controller values, so that 0 = 0 steps and 127 = 60 steps. (See <a href="#">Shift Limit on page 7-61</a> )
154	ArpLmtOp	Arpeggiator Shift Limit Option, each range of values selects one of seven options in order on parameters list: 0-18, 19-36, 37-54, 55-72, 73-90, 91-108, 109-127. (See <a href="#">Limit Option on page 7-59</a> )
155	ArpVel	Arpeggiator Velocity, each range of values selects one of twenty-three options in order on parameters list: 0-5, 6-10, 11-15...101-105, 106-110, 111-127. (See <a href="#">Velocity Mode on page 7-63</a> )
156	Arp Dur	The Arpeggiator Duration % values are scaled over the 128 MIDI controller values, so that 0 = 1% and 127 = 100%. (See <a href="#">Duration on page 7-66</a> )
157	Latch	For Arpeggiator Latch Pedals mode, 0-63 = off, 64-127 = on. (See <a href="#">Latch on page 7-58</a> )
158	Latch2:	For Arpeggiator Latch Pedals mode, 0-63 = off, 64-127 = on.
159	ArpGliss	Arpeggiator Gliss, 0-63 = off, 64-127 = on. When Arp Gliss is On, the Arpeggiator plays chromatically between inputted notes, and ignores the Arpeggiator Shift Amount, Shift Limit, and Limit Option parameters.
160	SusLatch	For Arpeggiator Latch Pedals mode, 0-63 = off, 64-127 = on.

## Multi Edit Mode

### CCTLS (CCs/Continuous Controllers) Page

Controller Number	Controller Destination	Description
161	Panic	Sends an "all notes off" message and an "reset all controllers" message on all 16 MIDI channels.
162	SoloZn	Solo Zone - Values above 64 will solo the zone that sends values to this destination, values below or equal to 64 will unsolo the zone. When a zone is soloed, the Zone Mute button LED for the soloed Zone will turn red. All other Zones will be muted and their Zone Mute button LEDs will turn orange. Pressing any muted/orange Zone buttons will make that Zone the soloed zone. Pressing the soloed zone button will cancel solo mode. To return to Solo mode the original controller assigned to Solo Zone (162) will need to be re-engaged.
168	TapTempo	Tap Tempo (See <a href="#">TEMPO on page 12-16</a> )
170	-Arp Shift	Sets ARPEGGIATOR values for Shift to negative. 0-63 = off, 64-127 = on. (See <a href="#">Shift (Shift Amount) on page 7-61</a> )
171	ShiftPatt	Selects one of the 128 patterns in the current ARPEGGIATOR ShiftPatt Bank. (See <a href="#">Shift Pattern (ShiftPatt) on page 7-62</a> )
172	ShiftPBank	A controller value selects the corresponding ShiftPatt Bank for the ARPEGGIATOR page of a controller's zone. For example, controller value 2 selects ShiftPatt bank 2, controller value 7 selects ShiftPatt bank 7.
173	VelPatt	Selects one of the 128 patterns in the current ARPEGGIATOR VelPatt Bank. (See <a href="#">Velocity Pat on page 7-64</a> )
174	VelPBank	A controller value selects the corresponding VelPatt Bank for the ARPEGGIATOR page of a controller's zone. For example, controller value 2 selects VelPatt bank 2, controller value 7 selects VelPatt bank 7.
175	VelFixed	Set's arpeggiator velocity when ARPEGGIATOR velocity is set to Fixed. ( <a href="#">Velocity Mode on page 7-63</a> )
176	ShKeyNum	Shift Key Number (see below)
177	ShiftKey	Shift Key (see below)
178	ShKeyNuV	Same as 176 ShKeyNum, but the Shift Pattern's velocity will be modified by the current velocity pattern of the zone.
180	Chan Intonation	Selects the Intonation Map (IDs 0-127) in a MIDI channel in real time. On the Multi Edit CONTROLS page, when setting a switch controller to this Destination the name of the selected Intonation Map will be displayed. For example: 18 (EastMed).
181	Chan Int Key	Selects the Intonation Key (C through B) in a MIDI channel in real time. On the Multi Edit CCTLS page, when setting a switch controller to this Destination the MIDI number and note name of the selected Intonation Key will be displayed. For example: 41 (D#).

## Shift Key Number, Shift Key (ShKeyNum, ShiftKey)

These controller destinations allow you to play musical scales and single note patterns on any programmable continuous controller in a Multi, without the need of playing the physical keys of the keyboard. These features are especially useful for playing fast arpeggiations. These destinations only work when combined with other destinations and features, so be sure to read this whole section to gain a complete understanding.

Shift Key Number (ShKeyNum, controller destination 176) works in a similar way to Key Number (KeyNum, controller destination 134). Both controllers basically generate a monophonic stream of notes. The difference is that Key Number plays through all notes chromatically, while Shift Key Number only plays notes relative to a Shift Pattern.

For example, when controlling Shift Key Number from a slider, notes are triggered from a Shift Pattern in forwards order as you move the slider up, and backwards order as you move the slider down. If in our zone we have selected the Shift Pattern 2: minor, the notes being played by the slider will be only the root, the minor third and fifth in the chosen key, triggering notes in any octave up and down the keyboard. (See Shift Key below for details on selecting the root note and octave.)

### **Selecting The Desired Notes:**

You must select a Shift Pattern for the desired zone in order for Shift Key Number to have an effect. To select a Shift Pattern for the current zone in a Multi, enter the Multi editor, go to the Arpeggiator 1 page and set Arp Mode to Classic. Select a Shift Pattern from the ShiftPatt field. If using multiple zones, a different pattern can be selected for each. The ShiftPatt field is usually used with the arpeggiator, but can also be used in combination with the controller destinations Shift Key Note, Shift Key, and Key Velocity. These destinations can use a zone's Shift Pattern whether the arpeggiator is on or off without conflict. For more information on Shift Patterns such as editing and saving, see Shift Pattern (ShiftPatt) on page 7-48. (Note that the ShiftPatt Up or Down options, as well as any of the arpeggiator parameters other than ShiftPatt do not have an effect on Shift Key Number.) You can also set controllers to destination 171 (ShiftPatt) to select a pattern from the current bank of 128 shift patterns, and destination 172 (ShiftPBank) to select a bank from banks of 128 shift patterns each.

### **Selecting The Desired Velocity:**

In order to have a note sound when using Shift Key Number, you first need to send a Key Velocity message (KeyVel, controller destination 135) with a non zero velocity. You must set a controller to this destination, it's useful to set a slider or other continuous controller in order to control velocity while playing. The next notes to be triggered by Shift Key Number will be played with the last received KeyVel velocity. One note triggered by these controllers sounds until another note is triggered or until a KeyVel message with velocity 0 is sent.

#### Selecting The Desired Key (Root Note):

Shift Key (ShiftKey, controller destination 177) allows the user to select the key (root note) of the Shift Pattern triggered by Shift Key Number. A Shift Pattern is a relative pattern based on a root note. All notes triggered by a Shift Pattern are shifted from the root note by the value of each pattern step (in half-steps.)

**Shift Key Settings**

Value	Key (Root note)
0-9	C
10-19	C#
20-29	D
30-39	D#
40-49	E
50-59	F
60-68	F#
69-78	G
79-88	G#
89-98	A
99-108	A#
109-118	B
119-127	Last Note Played

When using a Shift Pattern with Shift Key Number you can select the key with one or more controllers set to the Shift Key destination. You can use a continuous controller such as a slider to cycle through keys, or switches set to predetermined keys. For example, if you are playing a song that moves between 2 or 3 keys, a couple of switches could be programmed in order to send the appropriate Shift Key message for each key change. That way all the notes you are triggering with a Shift Key Number controller will be in the appropriate scale. You could also create a Multi for a song with multiple zones, each with its own pre-set key and appropriate shift pattern. That way, for each chord change you could move a different controller that would create the correct harmony.

Another way to choose a key is to set Shift Key to Last Note Played mode, in which the last note played in the zone will set the key. For example, you could set the zone being used for Shift Key Number to have a Key Range that covers only a few of the keyboard's lowest octaves. This would allow you to play root note bass lines that change the key that Shift Key Number plays in, leaving the upper octaves of the keyboard open for use by other zones.

#### A Note About Octave Range:

When using Shift Key Number, shift patterns with more than 12 steps begin triggering notes in higher octaves. This is done because longer shift patterns use up more of a controller's range, and limit the number of octaves that a single controller can trigger. Since the lowest octave of a program is often too low to be musically useful, the Forte SE will automatically start triggering notes from longer shift patterns in higher octaves. This saves room in the controller's range of values for triggering more useful octaves. See the table below for Shift Pattern step ranges and their corresponding starting octave.

If Shift Key is set to Last Note Played and no note is played, the default key is C. Each zone can have a different Shift Key, so you can have zones preprogrammed with the keys you want to use, or have them all in the same key, or just change the key in real time while you are playing.

Default Octave Shifting	
Total # of Shift Pattern Steps	Starting Octave
1-12	C0-C1
13-24	C1-C2
25-36	C2-C3
37-48	C3-C4

### Selecting The Desired Octave Range:

You adjust the starting octave manually, using the Add parameter on the corresponding controller's setup page. In the Add field, the addition or subtraction of the number of steps in your current shift pattern will raise or lower the starting octave in relationship to the default starting octave. For example, in a shift pattern with 3 steps, an Add value of 9 would cause a controller value of 0 to make Shift Key Number trigger notes in octave C3-C-4, 3 octaves above the default C0-C1. Add values that are not multiples of the number of current shift pattern steps will change which step the pattern begins on at controller value 0, thus offsetting the relationship between all of the controller's values and current shift pattern's steps.

### Adjusting Controller Range:

When using Shift Key Number, the number of steps in the Shift Pattern also affects the range of values that will cause a controller to trigger a shift pattern step, and in turn affect the useful range of the physical controller. With a shift pattern of 12 notes, the 128 different notes that the Forte SE can trigger are evenly spaced over the range of the controller. Patterns with less than 12 steps will trigger notes in every octave over a shorter range of the controller. For example, in a shift pattern with 3 steps, by default the controller values 0 to 2 will trigger notes starting in the lowest possible octave, and controller values 27 to 30 will trigger notes in the highest possible full octave. Using a slider for this controller, only about 1/4th of the length of the slider would be triggering notes. This decreased useful range makes the controller harder to use accurately. To remedy this, you can adjust a controller's behavior by using the Scale parameter on the corresponding controller's setup page (see Scale below.) Adjust the Scale value to stretch the useful values of the controller across its whole physical range. A scale value of less than 100% will be helpful for patterns with fewer than 12 steps. Experiment by adjusting the scale value until the highest desired note is triggered at the top of the controller's physical range. See [Scale on page 11-15](#) for more details on the Scale parameter. For shift patterns with more than 12 steps, you will run out of controller values before your shift pattern triggers in every octave. If you want to be able to access all of the available octaves, you can achieve this by setting multiple controllers to Shift Key Number. Next, use the Scale and Add parameters for each controller, adjusting each to trigger the desired range of octaves (see [Add on page 11-15](#))

# SWITCH (Switches) Page

Press the Switch soft button to view pages where you can set parameters for each of the Forte SE switch controllers.

```
EDM Multi Switches @ #Zone:1/4
Switch : Variation Type : Toggled
Mode : MIDI CC
Dest : 29 Pad Enable

On Value : 127 Entry State: On
Off Value : 0 Exit State : None
more CCTLS SWITCH COMMON more
```

Parameter	Range Of Values
Switch	See Switch Controllers List
Type	Momentary, Toggled
Mode	Off, MIDI CC, Chord
Dest (Destination)	See Multi Destination Control List
OnValue	None, 0 to 127
OffValue	None, 0 to 127
Entry State	None, Off, On
Exit State	None, Off, On

You can select any of the Forte SE’s switch controllers by moving the cursor to the “Switch” parameter, and using either the Alpha Wheel or Value buttons to scroll through the list. Alternatively, you can also position the cursor in the “Switch” parameter, hold down the Enter button and press the Switch you wish to edit.

## Switch

The Switch parameter allows you to assign any of the Forte SE’s physical Switches (assignable switches, switch pedals and certain buttons) to control a program specific parameter or MIDI controller number for the currently selected zone.

First, use the Channel/Layer/Zone buttons to the right of the display to select the desired Zone that you wish to assign a switch for. Next, on the Multi Switches page, use the navigation buttons to select the “Switch” field, hold the Enter button and then push the Forte SE switch you want to assign. This will select that switch and display its available parameters. (You can also scroll through the list of switches by using the Alpha Wheel or the Value buttons to scroll through the list).

If a pedal is selected which has a pedal override enabled in Global mode, a message “(Global Override)” will display when that pedal is viewed to remind you that the Global mode pedal override settings are being used instead of the Multi mode pedal settings.

FORTE SE SWITCHES	
Sw.Pedal1a	Variation Button
Sw.Pedal1b	ArpSwitch
Sw.Pedal2a	Switches 1-9
Sw.Pedal2b	Key 1-12

## Mode

Switch Controllers have three modes: Off, MIDI CC, or Chord.

With a value of Off, the controller is disabled for this zone.

With a value of MIDI CC, the controller has the ability to transmit MIDI control messages.

Switch controls can also be set to Chord mode. In Chord mode, the switch can play a chord containing up to 8 notes.

## Velocity

The Velocity parameter only appears if the Mode is set to “Chord” and is for use with switch controllers. Use the Velocity parameter to select a MIDI attack velocity (0-127) for the note(s) designated in the Key1 to Key8 field(s). Alternatively, set the Velocity field to Auto and the note’s velocity will be the velocity set by the KeyVel Multi Destination (see KeyVel on [page 11-17](#)).

## Key1.....Key8

The Key1, Key2, Key3, Key4, Key5, Key6, Key7, Key8 parameters are available when the Mode is set to “Chord”. Use the Key(1 to 8) parameters to select the note to be played. The note is displayed by MIDI note name.

To select a note, select the KeyNum field with the navigation buttons, hold the Enter button on the alphanumeric pad, then play the desired note on the keyboard. You can also change the note in the field by using the Alpha Wheel or Previous-/Next+ buttons.

## Key

When the Switch parameter is set to a Key (Key1-Key12) and Mode is set to something other than “Off”, the Key parameter appears. Use the Key parameter to select which of the Forte SE’s Keys you wish to use as a switch controller. With the Key parameter selected, you can set a key by holding the Enter button and striking the desired key.

## Do

When the Switch parameter is set to a Key (Key1-Key12) and Mode is set to something other than “Off”, the Do parameter appears. The Do parameter determines whether the key will play a note and perform a switch function, or whether the key will only perform a switch function. Set the Do parameter to “Both” to play a note and perform a switch function, or set it to “OnlySw” to only perform a switch function.

#### Dest (Destination)

Use the Destination parameter to assign Forte SE switches to control Program parameters or send MIDI continuous controller messages (CCs) to external MIDI gear. If a controller number (MIDI CC number) is assigned to a parameter in the Program of the current Zone, the parameter name will be listed in the Destination list to the right of the CC number. Some CC numbers also show a default MIDI name if the CC number is not assigned in the Zone's program. For example, CC 6 is generally unassigned in programs, in which case CC 6 will show the standard MIDI name "data."

The Destination parameter determines the MIDI controller number that a physical controller will send to the Program in the currently selected Zone. By default, these messages are also sent to the MIDI Out and USB ports on the Channel of that Zone.

The list of controller numbers below (see [page 11-17](#)) shows the default assignments for each destination. Programs respond to some of these for standard MIDI functions. Standard MIDI CC's range from 0-127 and can be received by the Forte SE from external devices, while destinations 128-146 are internal to the Forte SE only.

#### Type

The Type parameter determines the switching behavior of Switch pedals and buttons. This is a Common parameter that affects all Zones.

<b>Momentary</b>	A momentary switch is one that is only in the "on" state when it is pressed. As soon as you release the switch, it goes into the "off" state.
<b>Toggled</b>	A toggled switch is one that maintains its state after it is pressed. So, if the switch is currently in the "off" state, pressing it once will put it in the "on" state. Pressing it again will put it back in the "off" state.

#### On Value

The On Value is the MIDI value sent when a switch controller is set to On. You can set this parameter to any number between 0 and 127, or to None.

#### Off Value

The Off Value is the MIDI value sent when a switch controller is set to Off. You can set this parameter to any number between 0 and 127, or to None.

#### Entry State

The Entry State parameter determines the state of the Foot Switch or button that is sent as a MIDI message when the current Multi is loaded. You can set this parameter to None, On, or Off. This parameter is common to all Zones.

None can be entered with the alphanumeric function of the Category buttons as -1.

If Sound Select is set to None, then when you load the current Multi, no value will be transmitted. If you specify an Entry State, then a MIDI controller message with this value will be sent when you load the current Multi.

### Exit State

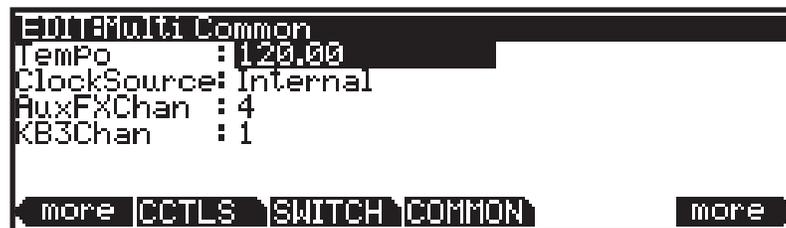
The Exit State parameter determines the state of the Foot Switch or button that is sent as a MIDI message when the current Multi is exited. You can set this parameter to None, On, or Off. This parameter is common to all Zones.

None is entered with the alphanumeric function of the Sound Select buttons as -1.

If Exit State is set to None, then when you leave the current Multi by selecting another Multi or Program, the Foot Switch or button will remain at whatever value corresponds to its current position. If you specify an Exit State, then a MIDI controller message with this value will be sent when you select a different Multi or Program.

## COMMON Page

The COMMON page contains parameters that affect every zone in the current Multi. Press the COMMON soft button to enter the COMMON page.



Parameter	Range Of Values	Default Value
Tempo	20 to 400 BPM	120
Clock Source	Internal, External	Internal
Aux FX Chan	1 to 16	1
KB3 Channel	1 to 16	1

### Tempo

When Clock Source (see [page 12-4](#)) is set to Internal, the Tempo parameter sets the Forte SE's system tempo for this Multi. The Tempo parameter values are in units of BPM (beats per minute). This controls the tempo the Arpeggiators as well as of any tempo based effects.

## Multi Edit Mode

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### ARP1 and ARP2 (Arpeggiator 1 & 2) Pages

#### Clock Source

With the Clock Source parameter, you can set the Forte SE—within the current Multi—to generate its own tempo by setting Clock Source to Internal, or you can set the Forte SE to sync up with the tempo from another device—assuming the device is sending MIDI clock data to the Forte SE via MIDI or USB—by setting Clock Source to External. When Clock Source is set to External, the Tempo parameter disappears from the display.

#### Aux FX Chan

The Aux FX Channel determines the FX channel through which the aux sends of all of the zones in the current Multi are sent.

For example, if a zone 2 in a Multi has a program with 25 Basic Delay 1/8 as an Aux FX, and zone 2 is assigned to channel 5, then setting the Aux FX Channel to 5 sends the programs of all of the zones in the Multi through zone 2's Program's Aux FX (i.e., through 25 Basic Delay 1/8).

#### KB3 Channel

If KB3 Programs are selected for more than one Zone, this parameter specifies which MIDI Channel has priority to load a KB3 Program. Only one KB3 Program can be loaded at a time. You can set this parameter to a value between 1 and 16. If you want a KB3 Program to play in a zone, you should set the KB3 channel to the channel of the Zone.

## ARP1 and ARP2 (Arpeggiator 1 & 2) Pages

The Arpeggiator in Multi Mode is very similar to the Program Mode arpeggiator. See page <?> in the Program Edit Mode Chapter for a full description of each arpeggiator parameter.

In Multi Mode, the Arpeggiator works the same as in Program Mode, except there is one arpeggiator per Zone. The Arpeggiator in each Zone can each have different settings, and they can be played at the same time. Also, in Multi Mode the Arpeggiator 1 page does not have the Tempo parameter, instead the Tempo parameter on the Multi Common page should be used.

For Most Factory Multis and Multis made by using the Split/Layer functions, the Arp On/Off button is only assigned to control the Arpeggiator in Zone 1. To assign the Arp On/Off button (or a different assignable switch) to control the Arpeggiator in other Zones, follow these steps:

1. Go to the Multi Switches page and select ArpSwitch for the Switch parameter (or select a different assignable switch if desired).
2. Use the Channel/Layer/Zone buttons to select the desired Zone.
3. Set the Mode parameter to MIDI CC.
4. Set the Type parameter to Toggled.

5. Set the Dest parameter to 147 Arp. You can select this Dest setting by selecting the Dest parameter and typing in 147 followed by the Enter button.
6. Set the On Value parameter to 127, and the Off Value parameter to 0.
7. Lastly, set the Entry State parameter to On if you want the switch to be on by default when the Multi is selected.

## FX Page

The Forte SE contains Kurzweil's acclaimed effects processor, and when combined with Multi Mode it puts the power of an entire studio of audio effects at your fingertips. This section contains everything you'll need to know in order to use the Forte SE's effects in Multi Mode.

Press the FX soft button to enter the FX page.



Parameter	Range Of Values	Default Value
Allocate FX	Y, N, (Y)	Y
Program Insert	Effects Chain List (Appendix F)	No

### Allocate FX per channel

Use the Allocate parameter to enable or disable the Insert effects Chain of the Program in each MIDI channel. (The MIDI channel for each Zone can be set on the Zone Main page.) Each MIDI channel can be set to **Y** to enable Insert effects, or to **N** to disable Insert effects. Use the Alpha Wheel or Value buttons to change between **Y** and **N**. Some MIDI channels set to **Y** may be displayed as **(Y)**. This means that there are not enough effects resources available for that channel, and that channel's Insert effects are not loaded. If you want to use the Insert effects Chain for a channel displayed as **(Y)**, try setting other channels to **N**.

### Program Insert

When each channel is selected, the Prog Insert field shows the name of the Insert Effects Chain used by the selected channel. The Chain can be enabled or disabled using the "Allocate FX per channel" section of the page. To edit or select a different Insert Effects Chain, the Program must be edited in Program Edit mode.

# AUXFX 1, AUXFX 2



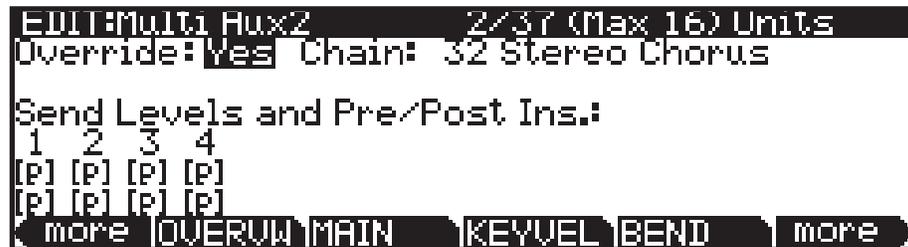
Parameter	Range Of Values	Default Value
Override	Yes, No	No
Chain	See Effects Chains, Appendix F	0 None
Send Levels	[p], 0-100%	[p]
Pre/Post	[p], pst, pre	[p]

The AUXFX1 (Auxiliary Effects 1) & AUXFX2 (Auxiliary Effects 2) pages determine the behavior of the current Multi's Auxiliary Effects. Each Multi can use up to two Aux Effects Chains, and the program in each MIDI channel can send its audio to be processed by one or both of the Chains. Send level and pre/post insert effects settings can be adjusted for the program in each MIDI channel. By default, the Aux 1 and Aux 2 Chains are determined by the program in the Aux FX Channel (set on the Multi Common page with the AuxFXChan parameter). If you don't want to use the Aux Chains from the program in the Aux FX Channel, you can use the Override parameter to select a different Chain for one or both Aux effects.

## AUX1 Override, AUX2 Override

Normally, the Aux Effects Chains are specified by the program on the specified Aux Effects channel. When Override is set to Yes, the Chain parameter appears, allowing you to choose a different Aux effect Chain.

Set Override to Yes to select an override Aux Chain on this page. Set Override to No to use the Aux FX chain of the specified Aux FX Channel.



## Chain

When AUX1 Override or AUX2 Override is set to Yes, the Chain parameter appears. The Chain parameter allows you to select an override Aux Chain for the corresponding Aux Effect. The Aux Override Chain is used instead of the chain of the specified Aux FX Channel. (See [Appendix](#) for a full list of available Effect Chains.)

## Send Levels and Pre/post Ins.

On the bottom half of the page, there are two parameters for each of the 16 MIDI channels: Send Level (top row) and Pre-/Post-Insert (bottom row).

The setting for each Send Level parameter determines if each channel's Aux Send Level is overridden, and if so, by what value (value is in dry/wet percent, 0=fully dry, 100=fully wet). A value of [p] means "no override" (i.e., use the dB or percent values specified in the program). A value of [p] can be set by entering -1 and then pressing the Enter button, or by using the Alpha wheel or +/- buttons to scroll below 0.



Note: In most factory ROM programs, the send level for Aux 1 is controlled by an Aux mod set to MIDI28 (slider I). If a send level override is set, it will be scaled by the current value of slider I.

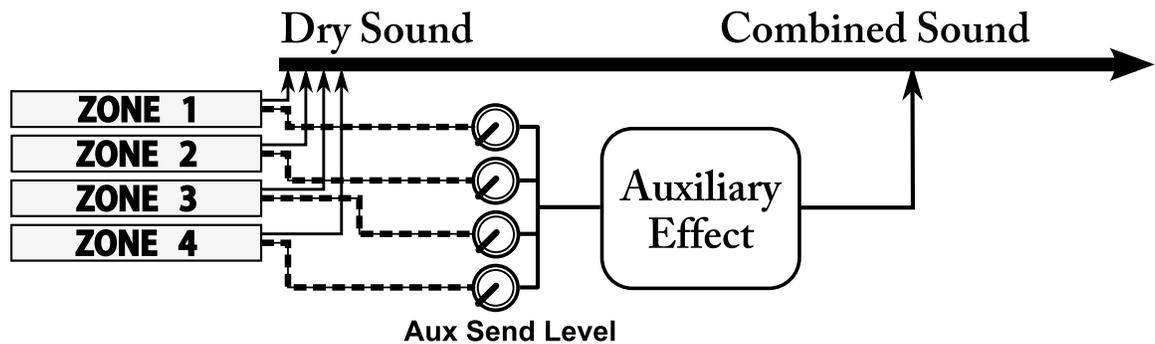
The setting for each Pre-/Post-Insert parameter determines if the Aux routing for each channel is overridden, and if so, by what routing. Pre means that the Aux Send takes place before any Insert Effect is applied, whereas a setting of Pst means that the Aux Send takes place post-Insert Effect. (Of course, if the program on the channel has no Insert Effects loaded, then this parameter will make no difference.) A value of [p] means "no override" (i.e., use the values specified in the program).

## About Auxiliary Effects

Programs and Multis both have an auxiliary effect send. An auxiliary effect is an effect that is not in the direct path of the sound, but rather, it "receives" and processes the sound applying the effect, which is mixed back with the original sound. The following diagram illustrates the signal path of a sound through the auxiliary effect: On the Forte SE, the auxiliary effects are global to all channels and Zones, Programs and Multi's. One effect chain can be loaded into each of Aux1 and Aux2, and these are used for any Program or Multi that has active Aux Sends.

## Multi Edit Mode

The Utility Soft Buttons, HELP Soft Button and Favorites Buttons Functions



The AUX1 and AUX2 parameters (on the FX page) determines the level the auxiliary effect will process the sound for that Zone.

## The Utility Soft Buttons, HELP Soft Button and Favorites Buttons Functions

Some of the soft buttons in Multi Edit Mode perform a function when pressed, as well as some of the Favorites buttons. Soft buttons that perform a function are named with a mix of lower case and capital letters. In addition to the Delete soft button, there are four additional function soft buttons (NewZn, DupZn, ImpZn, and DelZn) described below which appear when the Global Mode User Type parameter is set to Advanced.

### New Zone (NewZn)

Press NewZn to create a new Zone, which will be the highest numbered Zone.

### Duplicate Zone (DupZn)

Press DupZn to duplicate the currently selected Zone. A new zone with the same parameters as the current zone will be created, and will be the highest numbered Zone.

### Import Zone (ImpZn)

You can import, or “bring in,” any Zone from any Multi in memory. Press ImpZn to view the Import Zone page, choose a Multi and Zone to import from, then press the Import soft button. The Zone you selected will be added to the current Multi, and will be the highest numbered Zone.

### Delete Zone (DelZn)

Press DelZn to delete the currently selected Zone.

## Delete

Press the Delete soft button to delete the current Multi (factory Multis can not be deleted). Press Delete, and you will be given a choice to Delete or Cancel. Press Delete again, and an “Are You Sure?” message will appear. Press Yes to delete the Multi, or Cancel to cancel.

## HELP

Press the HELP soft button to view the Help page, where you can view a description of functions assigned to the Favorites buttons.

### **Favorites 1: Help**

Press the Favorites 1 button to view the HELP page.

### **Favorites 2: Set Mute Switches**

Press the Favorites 2 button to automatically set the Assignable switches to mute and enable each Zone. For example, in a Multi with 5 Zones, this will set Assignable switches 1-5 to mute and enable Zones 1-5, respectively.

### **Favorites 3: Set Program Switches**

Press the Favorites 3 button to automatically set the Assignable switches for each Zone to the assignments they had in Program Mode. This is an easy way to disable the default Zone Mute settings of the Assignable switches, and enable switch assignments for FX control.

## Save User Multis

For details on saving user Multis, see [Save User Multis on page 10-12](#) of the Multi Mode chapter.

# Chapter 12

## Global Mode

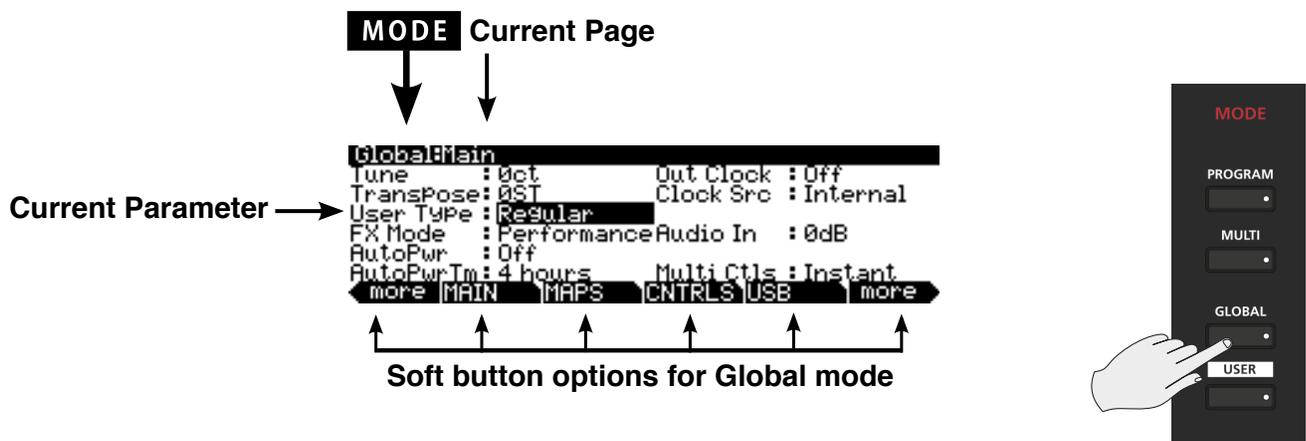
### About Global Mode

Global Mode gives you access to the global parameters of the Forte SE. It allows you to edit the master settings of the unit. It also allows you to restore factory defaults on the unit by performing a Reset.



**CAUTION: Performing a Reset will erase ALL User Programs, User Multis and reset Global settings to a factory state.**

To enter Global Mode from another Mode, press the Global Mode button.



While you are in Global Mode, the Global button's indicator LED is lit.

When you enter Global Mode, the last selected parameter since power-up (or the Tune parameter if you're entering Global Mode for the first time since power-up) will be the currently selected parameter.

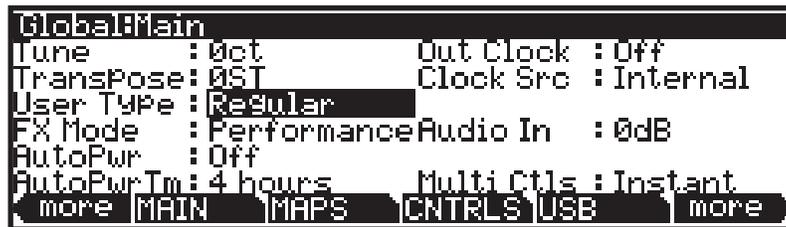
## Selecting and Editing Parameters

Use the soft buttons underneath the display to select the page you need. To scroll through the parameters of Global Mode, use the Navigation buttons.

To edit the currently selected parameter, use the Alpha Wheel or the Previous- and Next+ buttons. Some parameters can be reset to a default value by pressing the Previous-/Next+ buttons simultaneously (Value Jump).

## MAIN Page

The MAIN page in Global Mode allows you to adjust global tuning and other basic settings. Be sure to read about the User Type parameter, which enables additional features in all modes when set to Advanced.



Parameter	Range of Values	Default Value
Tune	-100 to 100 Cents (Ct)	0ct
Transpose	-128 to 127 Semitones (ST)	0ST
User Type	Regular, Advanced	Regular
FX Mode	Performance, Multitrack	Performance
Auto Power Off	On, Off	On
Power Off Time	15 & 30 mins, 1 hr, 2 hr, 4 hr, 8hr	4 hours
Out Clock	Off, On	Off
Clock Source	Internal, External	Internal
Audio Input	Off, -86dB to 10dB	0dB
Multi Controllers	Instant, Pass Entry	Instant

## Tune

The Tuning parameter allows you to fine-tune the unit in cents—one cent is one hundredth of a semitone (100 cents comprise a semitone). You can select any tuning from -100 cents to 100 cents. By default this parameter is set to 0.

## Transpose

The Transpose parameter allows you to tune the pitch of the unit in semitones. The value set here is independent from the value set with the front panel Transpose buttons, and the two values are cumulative.

## User Type

The User Type parameter allows you to show or hide advanced features of the Forte SE. By default, User Type is set to Regular. Setting User Type to Regular hides advanced features and makes some modes easier to navigate. Setting User Type to Advanced gives you access to additional features.

```
Global:Main
Tune       : Oct          Out Clock : Off
Transpose : AST          Clock Src  : Internal
User Type  : Advanced    ProgTempo: Program
FX Mode    : Performance Audio In   : 0dB
AutoPwr    : Off         Sound Sel  : Category
AutoPwrTm  : 4 hours     Multi Ctl  : Instant
more MAIN  MAPS  CNTRLS USB  more
```

See the chapter for each mode for details on Advanced features in each mode. Setting User Type to Advanced enables the following features:

- Global Mode: Access the ProgTempo and Sound Sel parameters.
- Program and Multi mode: Access 16 Banks of Favorite Programs and Multis using the Channel/Layer/Zone Up/Down buttons.
- Program Edit mode: Access all VAST editor pages.
- Multi Edit mode: Access 8 Zones.

## FX Mode

The FX Mode parameter determines how the Forte SE responds to interrupts with regards to effects. You can set this parameter to either Performance or Multitrack.

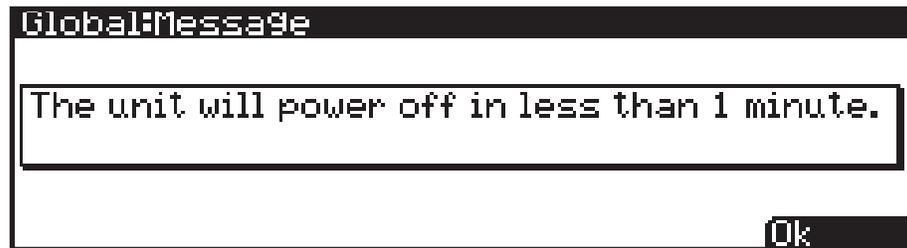
With FX Mode set to Performance, the Forte SE minimizes disruption of existing effects when changing Programs, and entry values will not disrupt sustained notes when changing Programs in Program Mode. When controlling the Forte SE from an external sequencer in Program Mode, setting FX Mode to Multitrack will minimize effect disruption.

## Auto Power Off

The auto power off parameter turns the power saving feature on. When the Auto Power Off parameter is set to On, the Forte SE will automatically power off after the Power Off Time has expired, from the last key press (physical or MIDI), button press, controller movement, or USB MIDI activity.

## Power Off Time

If the Auto Power Off parameter is set to On, then the Forte SE will power off after the time selected by the Power Off Time parameter has elapsed. The Forte SE will display the following warnings before powering off. Press a key or move any Forte SE control to dismiss the warning message. After dismissing this message, the Forte SE will wait the selected amount of time before showing this warning again.



## Out Clock

To send a MIDI clock pulse to the MIDI Out port, set this parameter to On. Otherwise, set it to Off.

## Clock Source

With the Clock Source parameter set to Internal, Forte SE plays using its own Tempo. If you wish to sync the Forte SE to the tempo of an external device, use the External setting.

## ProgTempo

The ProgTempo parameter is shown when the User Type parameter is set to Advanced.

The ProgTempo parameter determines whether each program in Program Mode will use its own tempo, or if each program will use the Global Mode System Tempo. A setting of "Program" will use the tempo from each program, and a setting of "System" will use the Global Mode System Tempo. When the User Type parameter is set to "Regular", program tempo will be used.

In Program Mode, tempo controls the rate of each Program's arpeggiator, as well as the rate of any tempo based Insert or Aux effects that each program may use. In Multi Mode, program tempos are ignored and the Multi Common Tempo of each Multi is used for all programs in a Multi.

For details on setting a tempo for each program, see the Tempo parameter on the Prog Arpeggiator page in the Program Edit Mode chapter. When the Global Mode ProgTempo parameter is set to "Program", programs can still use the System tempo by setting Tempo to "System" on the Program Edit Prog Arpeggiator page.

## Audio Input

The Audio Input parameter controls the volume of devices plugged into the rear "Audio In" jack. The default setting of 0dB should work well for most sources (such as MP3 players). Adjust this parameter if the Audio Input signal is too quiet or too loud in comparison to the sounds of the Forte SE.

## Sound Sel

The Sound Sel parameter is shown when the User Type parameter is set to Advanced.

The Sound Sel parameter determines the behavior of the Program/Multi Sound Select buttons when selecting Program or Multis. When Sound Sel is set to Category, the Program/Multi Sound Select buttons select one of the 16 IDs in the currently selected category. When Sound Sel is set to ID number, the Program/Multi Sound Select buttons behave as a numeric pad, allowing you to select any Program or Multi (regardless of the currently selected category) by typing the ID number and pressing the Enter button.

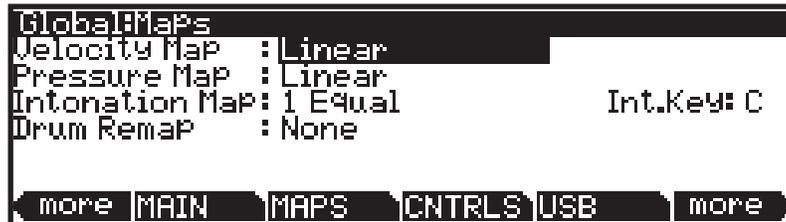
When the User Type parameter is set to "Regular", category based sound selection will be used.

## Multi Controllers

When a multi is selected, this parameter determines how the sliders respond to movement. When set to instant, moving a slider will result in the assigned parameter immediately jumping to the slider position. With some parameters an abrupt change to the sound may be undesirable. In this case set this parameter to PassEntry and the slider will only become active when the slider is moved past the Multi Entry Value. This results in smooth changes to the sound.

# MAPS Page

The MAPS page in Global Mode allows you to set up the feel and response of the Forte SE keyboard to your playing style, the intonation key of music, as well as how pianos and drums respond.



Parameter	Range of Values	Default Value
Velocity Map	Linear, Light1, Light2, Light3, Hard1, Hard2, Hard3, PianoTouch, Easy Touch, GM Receive	Linear
Pressure Map	Easiest, Easier, Easy, Linear, Hard, Harder, Hardest	Linear
Intonation Map	0 None, 1 Equal, 2 Just, 3 Just/b7th, 4 Harmonic, 5 JustHarm, 6 Werkmeister, 7 1/5thComma, 8 1/4thComma, 9 IndianRaga, 10 Arabic, 11 BaliJava1, 12 BaliJava2, 13 BaliJava3, 14 Tibetan, 15 Carlos A, 16 Pyth/aug4, 17 Pyth/dim5, 18 EastMed	1 Equal
Int. Key	C, C#, D, D#, E, F, F#, G, G#, A, A#, B	C
DrumRemap	None, GM	None

## Velocity Map

The Velocity Map parameter determines the way the Forte SE generates MIDI velocity information. Different maps generate different MIDI velocity values for the same physical key strike velocity.

The default map (Linear) provides the widest range of velocity expression, but you may want to choose a different map if the default does not suit your playing style. You can select from any of the following settings:

<b>Light3</b> <b>Light2</b> <b>Light1</b>	Makes it increasingly easier to produce high MIDI velocity values for the same key strike velocity (with Light3 being the easiest). These maps work best for those with a light touch.
<b>Linear</b>	The Forte default map. Linear, allows MIDI velocities to pass unchanged. It follows a linear response.
<b>Hard1</b> <b>Hard2</b> <b>Hard3</b>	Makes it increasingly harder to produce high MIDI velocity values for the same key strike velocity (with Hard3 being the hardest). These maps work best for those with a heavy touch.
<b>PianoTouch</b>	Simulates the general velocity response of an acoustic piano, and is best suited for playing acoustic piano programs.

<b>Easy Touch</b>	Similar to the Light1/Light2/Light3 settings. Makes higher velocities easier to play, but allows more sensitive control over playing high velocities by not boosting the MIDI velocity for fast strike velocities as much as it does for medium strike velocities.
<b>GM Receive</b>	Mimics the velocity response commonly used by keyboards that use the General MIDI (GM) sound set. The GM Receive map makes medium strike velocities produce higher MIDI velocities compared to the Linear map.

## Pressure Map

The Pressure Map parameter determines the way the Forte SE controls Pressure (Aftertouch). Different maps generate different MIDI pressure values for the same physical key depending on how hard you press and hold the key.

<b>Easiest</b> <b>Easier</b> <b>Easy</b>	Makes it increasingly easier to produce high MIDI pressure values. (with Easiest being the easiest).
<b>Linear</b>	The Forte default map. Linear, allows MIDI pressure (aftertouch) to pass unchanged. It follows a linear response.
<b>Hard</b> <b>Harder</b> <b>Hardest</b>	Makes it increasingly harder to produce high MIDI pressure values (with Hardest requiring most pressure).

## Intonation Map

Most modern western music uses what is known as equal temperament. This means that the interval between each semitone of the 12 tone octave is precisely the same as every other semitone.

However, many different intonation intervals have evolved over the centuries and across cultures and instruments, so equal temperament will not sound appropriate for certain styles of music. The Forte SE supplies you with 18 different factory intonation maps which are useful for a range of different styles. Each of these maps defines different intervals between each of the semitones in a single octave (used for all octaves) by setting pitch offsets for each note in cents.

Like many instruments before the adaptation of equal temperament, most of these intonation maps were designed to sound best in one specific key. Though some may have historically been in a different key, all of the Forte SE's factory intonation maps are set to root note C by default. You can change the root key of the current intonation map by using the Int.Key parameter (see the Intonation Key (Int.Key) section below).

<b>0 None</b>	No intonation map is used, intonation is equal.
<b>1 Equal</b>	No detuning of any intervals. The standard for modern western music.
<b>2 Just</b>	Tunings are defined based on the ratios of the frequencies between intervals. The original tuning of Classical European music.
<b>3 Just/b7th</b>	Similar to Just, but with the Dominant 7th flatted an additional 15 cents.
<b>4 Harmonic</b>	The perfect 4th, Tritone, and Dominant 7th are heavily flatted.
<b>5 JustHarm</b>	Approximation of a historical intonation.
<b>6 Werkmeister</b>	Named for its inventor, Andreas Werkmeister, it was developed to enable transposition with less dissonance than classic equal temperament.
<b>7 1/5thComma</b>	Approximation of a historical intonation based on the comma system.
<b>8 1/4thComma</b>	Approximation of a historical intonation based on the comma system.
<b>9 IndianRaga</b>	Based on the tunings for traditional Indian music.
<b>10 Arabic</b>	Oriented toward the tunings of Mid-Eastern music.
<b>11 BaliJava1</b>	Based on the pentatonic scale of Balinese and Javanese music.
<b>12 BaliJava2</b>	A variation on BaliJava1, slightly more subtle overall.
<b>13 BaliJava3</b>	A more extreme variation.
<b>14 Tibetan</b>	Based on the Chinese pentatonic scale.
<b>15 Carlos A</b>	Developed by Wendy Carlos, an innovator in microtonal tunings, this intonation map flats each interval increasingly, resulting in an octave with quarter-tone intervals.
<b>16 Pyth/aug4</b>	This is a Pythagorean tuning, based on the Greek pentatonic scale. The tritone is 12 cents sharp.
<b>17 Pyth/dim5</b>	This is a Pythagorean tuning, based on the Greek pentatonic scale. The tritone is 12 cents flat.
<b>18 EastMed</b>	Eastern Mediteranean. The Major 3rd and Major 7th are flat by 50 cents.

## Int. Key (Intonation Key)

This sets the tonic, or base note from which the currently selected intonation map calculates its intervals. If you select G as the intonation key, for example, and the intonation map you select tunes the minor 2nd down by 50 cents, then G# will be a quartertone flat relative to equal intonation. If you change the intonation key to D, then D# will be a quartertone flat. If you use nonstandard intonations, you'll want to set Int.Key to the key you're playing in.

If the Intonation parameter is set to Equal, changing Int.Key has no effect.

## Drum Remap

This parameter will remap all Drum programs to conform to the General MIDI (GM) drum map, a standard drum map used in many keyboards and synthesizers. The GM drum map isn't optimally intuitive in terms of playability, so by default the Forte SE uses a unique keymap that is more intuitive and lends better to performance. However, the GM drum map is so commonplace that many players feel more comfortable playing drum programs with the GM drum map. Because of this, the Forte SE is designed such that you can remap drum programs to the GM drum map.

When the Drum Remap is set to None, no remapping takes place in Program mode.

When the Drum Remap is set to GM, the Forte SE remaps Drum programs to the GM drum map.

## Controller Overrides (CNTRLS)

Select the CNTRLS soft button to enter this page.



## Switch Pedal Overrides

The Switch Pedal Override parameters (SW1a-SW2b Override) allow the controller assignments for the Switch Pedals to be changed for all Programs and Multis. (KB3 organ programs have a separate override for the SW1a pedal, see the Rotary Override section below for details). The alternative assignments available for the Switch Pedal Overrides include the standard pedal controls of Sustain, Sostenuto and Soft as well as DataInc, DataDec, FavoriteInc and FavoriteDec, which can be used to change Programs, Multis or Favorites by using a pedal. The Arp On/Off and Arp Latch assignments allow for easy control of arpeggiator functions.

Use the DataInc and DataDec assignments (data increment/decrement) to select the next or previous ID when you depress the pedal. If you are in Program mode, DataInc and DataDec will select the next or previous Program. If you are in Multi mode, DataInc and DataDec will select the next or previous Multi.

Use the FavoriteInc and FavoriteDec assignments (Favorite increment/decrement) to select the next or previous Favorite when you depress the pedal. If you are not playing any Favorites, FavoriteInc and FavoriteDec will select the first Favorite, or the last Favorite that was selected since turning on the Forte SE.

## Global Mode

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### Controller Overrides (CNTRLS)

Use the Arpeggiator On/Off and Arpeggiator Latch assignments to easily control arpeggiator functions. The Arpeggiator On/Off assignment allows you to toggle the arpeggiator on and off by pressing a switch pedal. The Arpeggiator Latch assignment allows you to latch held notes to be played by the arpeggiator by holding down a switch pedal. When using the Arpeggiator Latch assignment, make sure the arpeggiator is turned on. Play the notes you wish to latch, press and hold the assigned pedal, then release the notes. The notes will continue to arpeggiate until the pedal is released.

In Multi Edit Mode, if a pedal is selected which has a pedal override enabled in Global mode, a message “(Global Override)” will display when that pedal is viewed to remind you that the Global mode pedal override settings are being used instead of the Multi mode pedal settings.

In Multi Edit Mode, setting a Pedal Mode to “Off” will disable the override for that Pedal in the selected Zone. It can be useful in Multi Mode to disable the Pedal Override for some Zones. For example, you may want to use a Pedal Override to control Sustain in all Zones of a Multi, but disable Sustain for one Zone.

When a Pedal Switch Override is used, the pedal will behave in Multi Mode as if the OnValue and OffValue are set to 127 and 0 respectively (this will not be shown in Multi Edit Mode). When a Pedal Switch Override is set to Sustain, Sostenuto or Soft, the pedal will behave in Multi Mode as if Pedal Type is set to Momentary (this will not be shown in Multi Edit Mode). When set to DataInc, DataDec, FavoriteInc or FavoriteDec the pedal will behave in Multi Mode as if Pedal Type is set to Toggle (this will not be shown in Multi Edit Mode).

### CC Pedal Override (CC1 Override)

In a similar manner to Switch Pedal Overrides, the CC1 Override parameter allows the Continuous Control Pedal assignment to be changed for all Programs and Multis. The alternative assignments available for the CC Pedal Override include Mod Wheel (MIDI CC 1), Foot/Wah (MIDI CC 4), Volume (MIDI CC7), Expression (MIDI CC11) and Pressure.

In Multi Edit Mode, if a pedal is selected which has a pedal override enabled in Global mode, a message “(Global Override)” will display when that pedal is viewed to remind you that the Global mode pedal override settings are being used instead of the Multi mode pedal settings.

### Rotary Override

By default KB3 organ programs have the Slow/Fast speed control for the Rotary speaker effect assigned to the Variation Button and the Sustain Pedal (SW1a). The Rotary Override parameter allows you set the sustain pedal to function as sustain for all KB3 Programs, instead of Rotary Slow/Fast. The Variation button will always control the Rotary speed, regardless of this parameter's setting.

## MIDI Page

The Forte SE can transmit and receive MIDI via its MIDI ports and USB. The MIDI page in Global Mode allows you to configure how this will be handled.

```
Global:MIDI
Dest      : USB+MIDI+LOCAL
Chng Multi: Immediate
Bank Sel  : Ctl 0/32
PrgChgMod: Extended
LockKbdCha: None
SysEx Id  : 0
more MIDI TOOLS Delete Reset more
```

Parameter	Range of Values	Default Value
Destination	NONE, LOCAL, MIDI, MIDI+LOCAL, USB, USB+LOCAL, USB+MIDI, USB+MIDI+LOCAL	USB+MIDI+LOCAL
ChangeMultis	Immediate, AllKeysUp	Immediate
Bank Select	Ctl 0, Ctl 32, Ctl 0/32	Ctl 0/32
PrgChangeMode	Extended, K2600	Extended
LocalKbdChan	None, 1 to 16	None
SysExID	0 to 127	0

### Dest (Destination)

The Destination parameter determines the destination of MIDI data generated by striking keys or activating controllers. This data can be sent to the Forte SE sound engine, through the MIDI out ports, or both. You can set this parameter to NONE (aka Local Off), or any combination of the three available destinations.

Note that this parameter is always active and works in conjunction with the Multi Mode Destination parameter (see [Destination on page 11-7](#)). These parameters act like filters, so if the Multi Mode Destination parameter is set to USB+MIDI+LOCAL and the Global Mode parameter is set to LOCAL, the MIDI data will only be transmitted locally.

<b>NONE</b>	No MIDI data transmission from the Forte. The Forte can still receive incoming MIDI data.
<b>LOCAL</b>	MIDI data is sent only to the Forte sound engine. MIDI Out is disabled.
<b>MIDI</b>	MIDI data is sent only through MIDI Out. The sounds of the Forte are disabled
<b>MIDI+LOCAL</b>	MIDI data is sent both to the Forte sound engine and through the MIDI Out.
<b>USB</b>	MIDI data is sent only through the USB port. The sounds of the Forte are disabled
<b>USB+LOCAL</b>	MIDI data is sent both to the Forte sound engine and through the USB port.
<b>USB+MIDI</b>	MIDI data is sent both to the MIDI OUT and USB port.
<b>USB+MIDI+LOCAL</b>	MIDI data is sent to the MIDI OUT, USB port. and to the Forte sound engine.

## Global Mode

---

### MIDI Page

If you want to play the Forte SE, but not send any MIDI information to other MIDI instruments, then select LOCAL.

If you want to use the Forte SE strictly as a MIDI controller for the other modules in your MIDI chain using the MIDI port, then select MIDI.

If you want to make use of the Forte SE's sounds as well as use it as a MIDI controller (MIDI port), then select MIDI+LOCAL.

If you want to use the Forte SE strictly as a MIDI controller for the other modules in your MIDI chain using the USB (Computer) port, then select USB.

If you want to use the Forte SE strictly as a MIDI controller for the other modules in your MIDI chain using the MIDI port and the USB (Computer) port, then select USB+MIDI.

If you want make use of the Forte SE's sounds and use it as a MIDI controller for the other modules in your MIDI chain using the MIDI port and the USB (Computer) port, then select USB+MIDI+LOCAL.



**CAUTION: It is possible to stop all MIDI transmission, in Multi Mode, if the Destination parameter is set to LOCAL, and the other is set to MIDI or USB.**

## Chng Multi (Change Multis)

The Change Multis parameter determines the exact timing of Multi changes when you select a different Multi, either by a normal data entry method or via MIDI program change commands.

Choose AllKeysUp to indicate that you want Multi changes to take place only when you've released all currently held notes.

Choose Immediate to indicate that you want such changes to happen immediately when you select the Multi.

## Bank Sel (Bank Select)

The Bank Mode parameter determines the controller number with which MIDI Bank change messages are received.

For MIDI Bank change messages, various manufacturers have chosen different MIDI controller numbers. Most have chosen Ctl 0, Ctl 32, or both. You can set this parameter to any of the following three controller IDs:

<b>Ctl 0</b>	MIDI Bank change messages are sent with controller number 0.
<b>Ctl 32</b>	MIDI Bank change messages are sent with controller number 32.
<b>Ctl 0 / 32</b>	MIDI Bank change messages are sent with both controller numbers 0 and 32.

## PrgChgMod (Program Change Mode)

The Program Change Mode parameter determines the format of program change messages received by the Forte SE.

Program Change Type	For Use With
Extended	Bank changes and Program changes. A bank has 128 IDs. Note that our system will recognize 16 banks, from 0 to 15. (2048 IDs).  This is for connecting a generic MIDI device as a controller device.
K2600	Bank changes and Program changes. A bank has 100 IDs. Our system will recognize in this case 21 banks, from 0 to 20. For example, with MIDI out from a K2600 into the MIDI in of the Forte SE, if you scroll or enter a number in the K2600, you will see the same numbers in the K2600 and in the Forte if the programs exist.

## LockbldChan (Local Keyboard Channel)

Changing the setting of the Local Keyboard Channel parameter is useful only when the Forte SE is receiving MIDI information from an external source. Perhaps you have a favorite MIDI keyboard that you use to control all the gear in your studio, or you use a lot of outboard sequencing. If you're using the Forte SE as a standalone music workstation or performance keyboard, you can ignore this parameter and leave it set to None.

The local keyboard channel enables the Forte SE to receive MIDI information on a single channel, then rechannelize that information so you can play and control all Zones of a Multi, even if your MIDI source transmits on only one channel.

### Program Mode

When you're in Program Mode, the local keyboard channel remaps incoming information to the Forte SE's current channel. When using the local keyboard channel, all the MIDI information received on the Local Keyboard Channel gets sent, after being remapped to the Forte SE's MIDI Out and USB ports.

You may find it more convenient to use the local keyboard channel. In this case, the Forte SE remaps incoming MIDI to the Forte SE's current channel, so in Program Mode, you'll always play the Program on the Forte SE's current channel. Incoming MIDI also gets sent to the Forte SE's MIDI Out and USB port. When this parameter is set, you will need to transmit on the local keyboard channel from your DAW or controller keyboard for the Forte SE to respond correctly.

#### Multi Mode

Things are a bit different for playing Multis. In this case, you must use the LocalKbdChan to be able to play and control all of the Multis Zones. Set LocalKbdChan to match the channel your external MIDI source is using (for example: your MIDI source transmits on Channel 1, set LocalKbdChan to 1). All MIDI information that the Forte SE receives on the local keyboard channel gets remapped to the channels and control destinations used by the Zones in the Multi.

The Forte SE also remaps certain MIDI Controller messages that it receives on the Local Keyboard Channel so that they correspond (in most cases) to the default assignments for the Forte SE's physical controllers (Mod Wheel, sliders, etc.). Physical controller assignments are handled by Multis and are defined per Zone in Multi Edit Mode. Each Zone of a Multi has its own controller assignments.

#### Sysex ID

The SysEx ID parameter determines the ID number for the unit if you are using more than one device with the same MIDI manufacturer ID number. You can set this parameter to any number from 0 to 127.

Unless you have multiple Forte SE keyboards receiving Sysex messages from a single source, you will not need to change the Sysex ID from the default setting of 0.

If you do have multiple Forte SEs receiving Sysex messages from a single source, make sure each Forte SE has a different Sysex ID. This will allow you to direct Sysex messages to the appropriate Forte SE by specifying which unit with the Sysex ID byte that's included with every Sysex message.

To have the unit respond to Sysex messages regardless of the Sysex ID, set Sysex ID to 127.

## TOOLS Page

Pressing the TOOLS soft button calls up a page that gives you access to four analytic and diagnostic tools.



Press the "EXIT" button when finished using a Tool.

## MIDI MON

Press the MIDIMON soft button to view MIDI messages sent from the Forte SE. This is useful for making sure controls are assigned as you want them, checking note numbers and velocities, and checking controller values or other MIDI messages. The most recently sent message will be at the bottom of the list.

```

Note On      ch 01  key 069  vel 062
Note Off     ch 01  key 067  vel 042
Note Off     ch 01  key 069  vel 002
Note On      ch 01  key 071  vel 036
Note On      ch 01  key 072  vel 066
Note Off     ch 01  key 071  vel 014
Note Off     ch 01  key 072  vel 040
[ more MIDIMON VOICES TEMPO INFO more ]

```

## VOICES

Pressing the Voices soft button calls up the Voice Status page, which shows the Forte SE's active voice channels as you play. The Voice Status pages displays each active voice as a solid rectangular block—for mono voices—or displays stereo pairs of voices as a > for the left channel voice and a < for the right channel voice. Whatever symbol the page displays, when the key of a voice is released, that voice's symbol on the Voices Status page turns into a dot during the release portion of that voice's envelope. When the voice decays to silence, it is no longer active, and the dot disappears.

The Voice Status pages displays each active voice as an "M" for mono voices or displays stereo pairs of voices as an "S". Whatever symbol the page displays, when the key of a voice is released, that voice's symbol on the Voices Status page turns into a "D" during the release portion of that voice's envelope. When the voice decays to silence, it is no longer active, and the "D" disappears.

The Voices utility works a bit differently for KB3 programs. The Forte SE uses one mono voice of polyphony for every two tone wheels in a KB3 program. When a KB3 program is loaded in any of the Forte SE's 16 MIDI channels (In Program or Multi Mode), a solid rectangular block will be shown for every two tone wheels in the KB3 program, even if you're not playing any notes. KB3 voices are always on, and these voices remain dedicated to the KB3 program as long as it is loaded. KB3 voices can not be stolen by VAST programs. Any voices not dedicated to a KB3 program behave normally.

KB3 Programs that simulate Hammond™ organs do not use any of the Forte SE's 128 voices of polyphony (this does not apply to KB3 Programs that emulate Vox™ or Farfisa™ organs). Only one KB3 Program can be active on the Forte SE's 16 MIDI channels at any time. The bottom of the voices page indicates which of the Forte SE's 16 MIDI channels (if any) has an active KB3 program.

## TEMPO

Press the TEMPO soft button to go to the TEMPO page (see below). When the Clock Source parameter is set to Internal (see [Clock Source on page 12-4](#)), the Tempo parameter sets the Forte SE's System Tempo. The Tempo parameter values are in units of BPM (beats per minute).



Note: You can also call up the TEMPO page from any other page by pressing the left and right navigation buttons simultaneously.

In Program Mode, System Tempo can control the rate of each Program's arpeggiator, as well as the rate of any tempo synced Insert or Aux effects that each program may use. Most programs will default to using the System Tempo, though some programs may be programmed use their own tempo (for details see [Tempo on page 7-58](#)) All programs can be set to use the System Tempo by setting the Global Mode User Type parameter to Advanced, then setting the Global Mode ProgTempo parameter to "System". For details see [User Type on page 12-3](#) and [ProgTempo on page 12-4](#).

In Multi Mode, System Tempo is ignored and the Multi Common Tempo of each Multi is used for all programs in a Multi.

Set the Tempo parameter with the Previous-/Next+ buttons, the Alpha Wheel, or alphanumeric entry. You can also set the system tempo by tapping the Tap soft button at the desired speed. You need to tap at least twice for a tempo to be calculated, though tapping several times (like on each beat of one or more measures) works best. The newly tapped tempo is displayed in the tempo field.

Alternatively, a temporary controller can be set for use in the Temporary TAP controller field, instead of using the Tap soft button. The Temporary TAP controller field lists groups of Forte SE controllers in order of their usefulness for tapping. Listed first are the foot switches and switch buttons. After these is Note On, which lets you tap the tempo with any keyboard key. Last are the MIDI controller numbers, which includes all of the continuous controllers, though continuous controllers (such as a slider) are not easy or recommended for tapping the tempo. The Temporary TAP controller works only while on the TEMPO page and will remain selected when accessing the TEMPO page from other modes, but the selection will return to OFF the next time the Forte SE is turned on.

## INFO

The INFO page contains the system information indicating what version of operating system and objects is currently installed in your Forte SE keyboard.

Go to the Kurzweil website at <http://www.kurzweil.com> and make sure that you have the latest operating system available.

```
Global:Info
O/S Version   : 3.45.25689
Object Ver    : 1.00.11
Scanner Ver   : 1.08
more MIDMON VOICES TEMPO INFO more
```

## STATE

This utility shows the internal state of the MIDI CCs and pitch bend in any channel at a particular time.

```
Global:MIDI State
Channel       : 1
MIDI CC      : 0
MSB          : 0
LSB          : 0
more STATE ABOUT more
```

Typical use: “My channel X does not make any sound”. Is it MIDI 7 (Volume), is it MIDI 11 (Expression) or is it something else? With STATE you can check the status for various CCs per channel. Use the navigation buttons to select the Channel or MIDI CC fields, then use the alpha wheel or previous/next buttons to select the desired Channel and MIDI CC to view.

## ABOUT

The ABOUT Page displays the Forte SE splash screen and automatically scrolls a list of credits and acknowledgments.

## DELETE Page

The DELETE page is useful in deleting unwanted user-created objects in your Forte SE.

## Global Mode

### RESET

```
GlobalDelete
Multi      1030 VouchMeRShokudo
Multi      1031 Wuzzy Bottom
Multi      1032 Buto NOX Ursa
Multi      1033 Jierce RP-Bass
Multi      1281 Rorch Lead
Delete      Cancel
```

Select the object that you wish to delete and press the delete soft button.



**CAUTION:** Be aware that deleting user objects will permanently remove them from the Forte SE. If you wish to load the object back into the Forte SE in the future, ensure that you save the object to a USB device (such as a thumb drive) or computer/tablet before deleting them.

## RESET

Press the Reset soft button to view the Global Reset page, where you can choose to reset the Forte SE to its original factory settings. This restores all Global mode settings to their factory defaults, and deletes all user Programs and Multis.



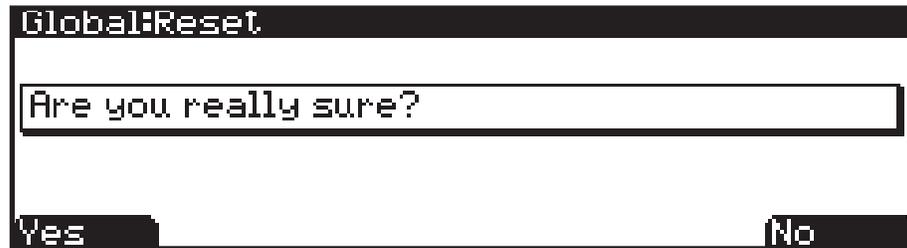
**CAUTION:** Be aware that performing a reset on the Forte will result in changes that can not be reversed. Kurzweil recommends that you save (STORE) any user objects that you wish to keep (such as user Programs and Multis) before performing a reset on the Forte SE.

Press the RESET button to enter the reset process. You can CANCEL at any time if you are unsure, or do not want to proceed.

All User objects (Programs, Multis, Chains, et cetera) will be permanently erased. This cannot be undone. Make sure you have used the Store function to backup all of the user objects that you wish to keep. All Global Mode parameters will be reset to default settings.

```
GlobalReset
This will delete all the user objects in the
system and will restore the factory ones.
Are you really sure you want to do this?
Yes Cancel
```

Press the “Yes” soft button on the Global Reset page to perform a Reset, and you will be prompted to confirm.



Press “Yes” if you wish to proceed with the Reset.

Press “No” if you are unsure, or do not wish to proceed with the Reset.

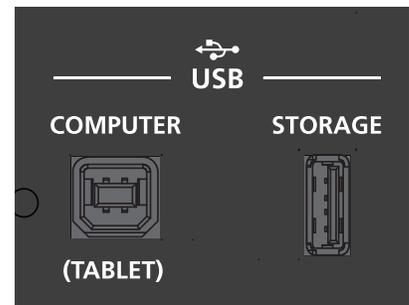
## FILE (Storage page)

Press the File soft button to view the Storage page, which lets you use a USB device (such as a thumb drive) or a computer to load, store, back up, and copy files between the Forte SE and the outside world.

The Storage page also allows you to organize files by creating directories (aka folders).

The rear panel connections used for storing and loading files are:

- USB (Type A) Storage port
- USB (Type B) Computer/Tablet port



Use this page to select the storage device you wish to use with the navigation arrows or the Alpha wheel. When a device is selected, you can then chose to Load or Store. If a storage device is not connected, Forte SE will prompt you with a message to do so.



When the temporary PC Virtual Drive is selected, there will be a prompt telling you that the USB-MIDI connection will be disconnected. You must acknowledge this prompt to continue.

When you leave Storage Mode or select the USB device, there will be a prompt telling you that the Forte SE is turning back into a USB MIDI device. You must acknowledge this prompt to continue. The Forte SE virtual drive will unmount from your computer.



**NOTE :** Depending on your computer's operating system, you may see a device removal warning on your desktop after using the Forte SE virtual drive. You may disregard such a message without worries of damage to your Forte SE or computer.

The following features are used in storage mode when saving or loading files:

### Directories

A directory lets you group files together as you might separate documents using folders in a file cabinet. By default all storage devices have at least one "root" directory. To organize files in a USB device; you can create additional directories, as well as subdirectories within directories. Directories appear in the file list with the indicator <DIR> to the right of the directory name.

### Path

When you choose the STORE or LOAD soft buttons on the Storage mode main page, you will have to choose exactly where in the storage device you wish to store to, or load from. This location is called a directory. When you need to choose a directory, you will see the Path field. The Path field shows the current directory on the current device.

When you choose a storage function for a connected device, Forte SE automatically chooses the root (top-level) directory for the Path field. The root directory is displayed as a backslash:

Path:\

When viewing a page that has the Path field, if there are any directories available in the root directory, you will be able to choose them from a list using the alpha wheel, navigation buttons, or - /+ (Previous/Next) buttons. Then, press the Open soft button to open that directory. The name of the directory will be displayed in the Path field. For example, if you have a directory called SOUNDS that is located in the current device's root directory, the Path field will appear as:

Path:\SOUNDS\

The backslash character is a directory separator, as in the following Path:

Path: \BACKUP\COVERBAND\SONGS\

This represents the directory SONGS, which is a subdirectory of the COVERBAND directory, which is a subdirectory of the BACKUP directory in the root directory. If the path is too long to fit on the display, it gets abbreviated. The maximum length of a path in the Forte SE is 64 characters (including the backslash characters).

Using the Open soft button causes you to navigate into directories and their subdirectories, away from the root directory. To navigate out of subdirectories back towards the root directory, use the Parent soft button to move one level back from the current directory

## STORE

Press the STORE soft button when you have a storage device plugged into a USB port.

If no USB connection is detected by the Forte SE, you will see the error message “Error: No valid device inserted.”

### Store All

Press the “All” soft button to store all user objects into a single file, or press Cancel to return to the previous page. Pressing “All” calls up the Select Directory dialogue. The Forte SE stores files using the file extension .FSE. After storing, the Forte SE will display a message indicating if the store was successful or if a problem occurred.

### Store Advanced

Press the “Advanced” soft button to go to the Storage Advanced page where you can select one or multiple individual objects to store, instead of saving all user objects. The Storage Advanced page shows a list of all user objects grouped by type. Use the cursor up/down buttons to navigate through the list. The object that is currently highlighted can be selected or deselected for storing by pressing the “Select” soft button. An asterisk (\*) appears between the ID and object type of selected objects.

After selecting objects to store, press the “Store” soft button to store the selected objects to the current storage device, or press Cancel to return to the previous page. Pressing “Store” calls up the Select Directory dialogue. The Forte SE stores files using the file extension .FSE. After storing, the Forte SE will display a message indicating if the store was successful or if a problem occurred.

```
Storage:Store advanced
Multi      1025 DaDaDah-Ada9io S
Mast.Table 1 FSE Master Table

Select                               Store Cancel
```

### The Select Directory Dialogue

When storing, the Forte SE will prompt you to select a directory in which to store.



There are three navigating soft buttons on the left side of the bottom of the page:

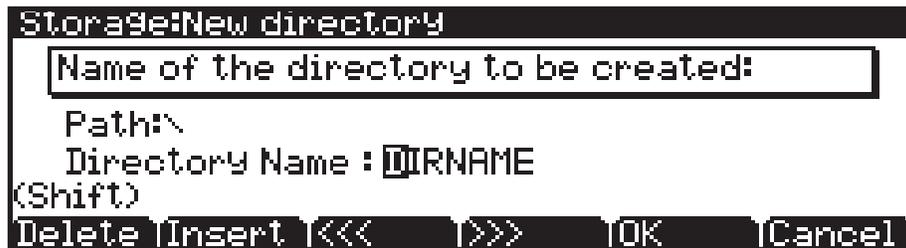
<b>NewDir</b>	Create new directory. Calls up the New Directory dialogue (see the following section)
<b>Open</b>	Opens the highlighted directory
<b>Parent</b>	Moves you up one level in the directory hierarchy. If the display is already at the root directory, this button has no effect.

When you have chosen your directory, press the OK soft button to call up the File Name dialogue (see the following section) and complete the storing process.

### The File Name / New Directory Dialogue

When you create a new file in Storage mode, or create a new directory, the Forte SE prompts you to enter the name. This File Name dialogue appears as shown below:

New file names will default to either FILENAME (after a powerup), or the name of the most recent file stored or loaded. New directory names will default to either DIRNAME (after a power up), or the name of the most recent directory created. You can edit the name using the keypad, alpha wheel, Previous-/Next+ buttons, Left and Right navigation buttons, the Delete and Insert soft buttons, and the << and >> soft buttons.



Press the OK soft button to finish the operation.

## LOAD

The LOAD button calls up the LOAD page where you can load compatible files from a storage device.

Before you press the LOAD selection button in StorageMode, make sure you have plugged the USB device containing your User Programs and/or Multis into the back of the Forte SE.

If your User Programs/Multis are located on your computer or Tablet, then use the cable that plugs into the computer/Tablet USB port on the rear panel of the Forte SE.

If your User Programs/Multis are located on a USB flash drive, plug them into the Device USB port on the rear panel of the Forte SE.

Press the LOAD button when you have the hardware containing your User Programs/Multis plugged into the USB port.

If no USB connection is detected by Forte SE, you will see the error message “Error: No valid device inserted.”.

Use the navigation buttons, Previous-/Next+ buttons or the Alpha Wheel to browse the files in the currently selected storage device.



After selecting a file to load, press the FILL or OVWRTE soft button to continue

<b>OPEN</b>	Pressing the Open soft button will open the highlighted folder.
<b>PARENT</b>	Selecting Parent will close an existing open folder.
<b>FILL</b>	Selecting FILL means you would like to keep the existing User objects. Forte SE will now load the User objects into the first empty ID slot it finds, and then subsequent empty slots.
<b>OVERWRITE (OVWRTE)</b>	Selecting OVWRTE first deletes all the existing User objects, and then loads the new User objects into the first user location at ID number 1024 onwards.

During the load process the screen will show information about the objects that are being loaded. At the end, the screen will display a message indicating if the load process was successful, or if there were errors.

## Example Using LOAD

The following example shows how each different loading methods affect how four programs load into the User bank that already contains programs.

Example: Starting with the following objects already stored in the Forte SE User bank:

Programs currently in Forte SE	
Program ID	Program Name
1024	3rd World Order
1025	PC3 Strings
1028	JuPiTaR BazZ
1031	VA1 Lead
1053	Rhoady EP

Suppose you were to load a FSE (Forte SE) file containing the following Programs:

File to be Loaded	
Program ID	Program Name
1025	Synth Horn
1026	NYJazzy
1027	Saxxy
1028	Stabbatha

The two tables below show the results if you use FILL or OVWRTE with the User Bank.

Forte SE Bank after using FILL	
Program ID	Program Name
1024	3rd World Order
1025	PC3 Strings
1026	Synth Horn
1027	NYJazzy
1028	JuPiTaR BazZ
1029	Saxxy
1030	Stabbatha
1031	VA1 Lead
1053	Rhoady EP

Forte SE Bank after using OVWRITE	
Program ID	Program Name
1025	Synth Horn
1026	NYJazzy
1027	Saxxy
1028	Stabbatha

## Compatible Files

The Forte SE can load its own .FSE files, as well as file types from other Kurzweil products such as .FOR, .ASE, .ART, .P3A, .PC3, .P3K, .PLE, and .SPX files. When loading file types other than .FSE, the Forte SE will attempt a conversion of the objects in those files. The Forte SE can often exactly match the sound and function of the original objects. In some cases object parameters may not be converted and must be adjusted by the user after conversion (see below for details.)

### Importing Program Objects

When importing a Program object from a .P3A, .P3K, .PC3, .PLE, or .SPX file, Parameter info names and some controller assignments may need to be manually adjusted.

### Importing Multi/Setup Objects

When importing a Setup or Multi object from a .FOR, .P3A, .PC3, .P3K, .PLE, or .SPX file, any Zone above Zone 8 will not be imported. Riffs will not be imported.

### Importing Forte (.FOR) and PC3K (.P3K) objects

Some Forte Programs (stored in .FOR files) may not be compatible if they use keymaps and samples that are not available on the Forte SE. It may be possible to import and edit these Programs on the Forte SE and select Forte SE keymaps that sound very similar to the incompatible Forte keymaps. For example, the Forte SE does not have the same Japanese Grand Piano keymaps and samples that the Forte has, but it does have similar keymaps that use a reduced set of the Forte Japanese Grand Piano samples.

Some Forte Programs and Multis (stored in .FOR files) may not be compatible if their effects Chains use more resources than are available in the Forte SE. It may be possible to import and edit these Programs and Multis on the Forte SE and select a different Chain or combination of Chains that sound very similar to the incompatible Forte Chains.

When importing .P3K files, any included user sample data will not be loaded, because the Forte SE can not load samples.

# Chapter 13

## System Mode



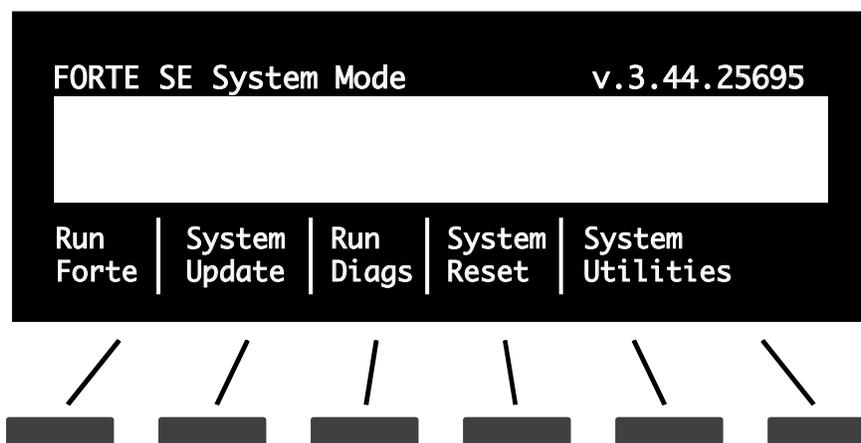
**CAUTION: DO NOT ATTEMPT TO MAKE ANY CHANGES IN SYSTEM MODE UNTIL YOU HAVE READ AND FULLY UNDERSTOOD THIS CHAPTER**

This chapter will help you familiarize yourself with the functions of System Mode.

System Mode allows you manage and upgrade the OS software of your Forte SE as well as perform diagnostic tests of the instrument's various internal systems and processes. Note that the functions that you have access to in System Mode govern the operation of your Forte SE, so only use System Mode when you must perform essential maintenance tasks.

To enter System Mode, follow these steps:

1. Power off your Forte SE.
2. Press and the hold the **ENTER** button, and power on the unit. Make sure to keep holding the **ENTER** button until the display shows the following:
3. Release the **ENTER** button—at this point, you are in System Mode.



## System Mode

Run Forte SE

# Run Forte SE

This is the first System Mode menu item.

Pressing the “**Run Forte SE**” soft button will load the OS and the Forte SE will start up as if you just switched on the unit.

If the Forte SE operating system fails to load up, you will see an error message with an error code.

## System Update



**Caution: Before Updating, back up your user objects (Programs/Multis etc.) by storing them to an external device in Global Mode.**

System Update allows you to keep your Forte SE running the latest available OS (Operating System), which you can download from the Kurzweil website.

The file that is used to install a new OS version with sounds is combined into one file called a KUF file (.KUF).

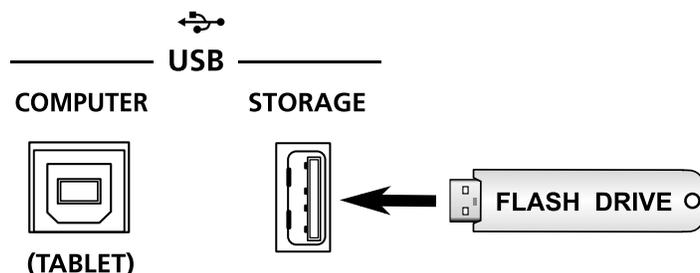
A USB flash drive or computer (using a USB cable) can be used to perform the System Update.



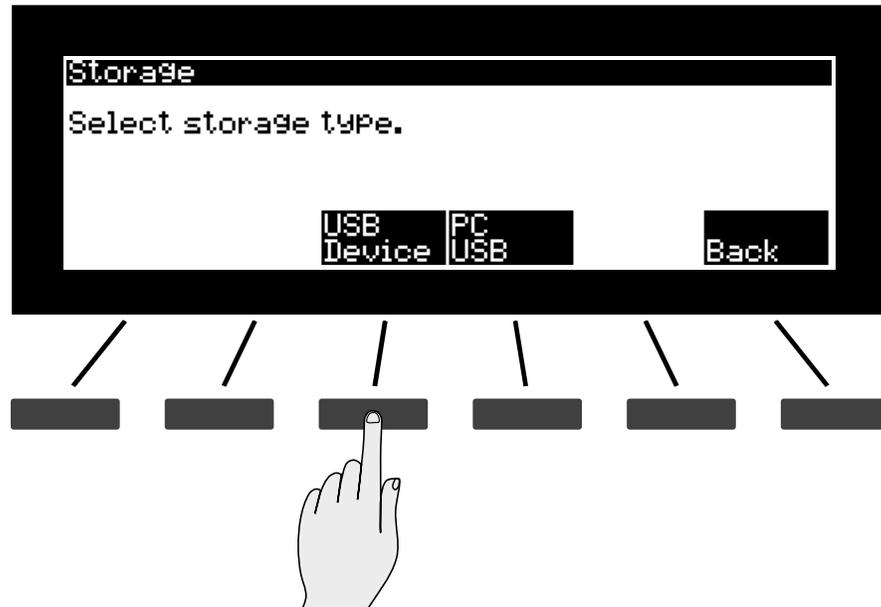
**Caution: It is important that the install is not disrupted once loading begins. Powering off the Forte or your PC, removing the USB device or USB cable in the middle of loading could leave the Forte inoperable and then require repair service to restore.**

## Install using a USB flash drive

1. Download the System Update file from the Kurzweil website or another reliable source and save it in a known folder or directory on your flash drive.



2. Connect the flash drive to the USB STORAGE slot of Forte SE.
3. Follow the instructions specified on [page 13-1](#) to enter System Mode.
4. In System Mode, select System Update.
5. Select USB Device as the storage type.

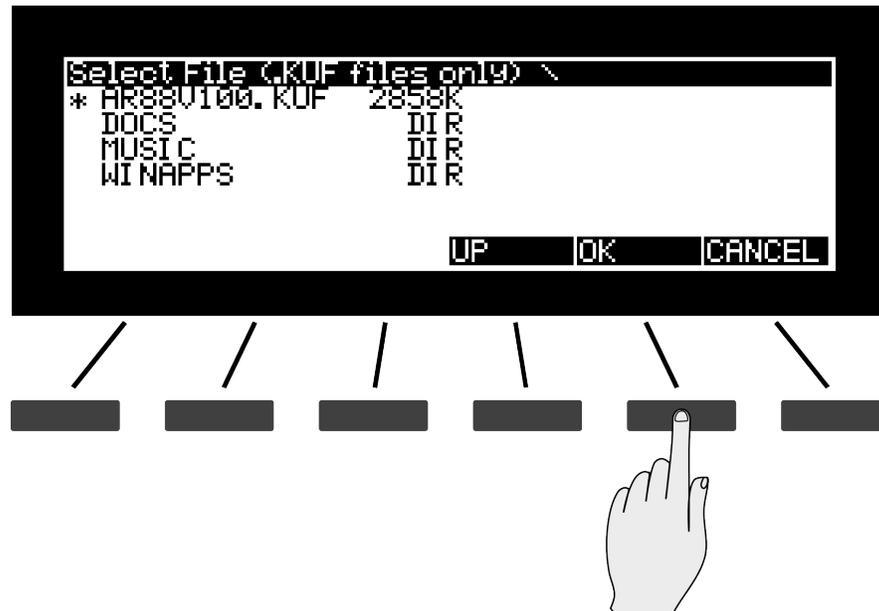


6. If the system was able to read the USB flash drive that was plugged in, it will display a list of files and folders as shown above. You can use the navigation buttons or Alpha wheel to move up and down the list. Select the UP soft button if you want to go up to the parent directory level. If the KUF file is selected, select the OK button.

## System Mode

### System Update

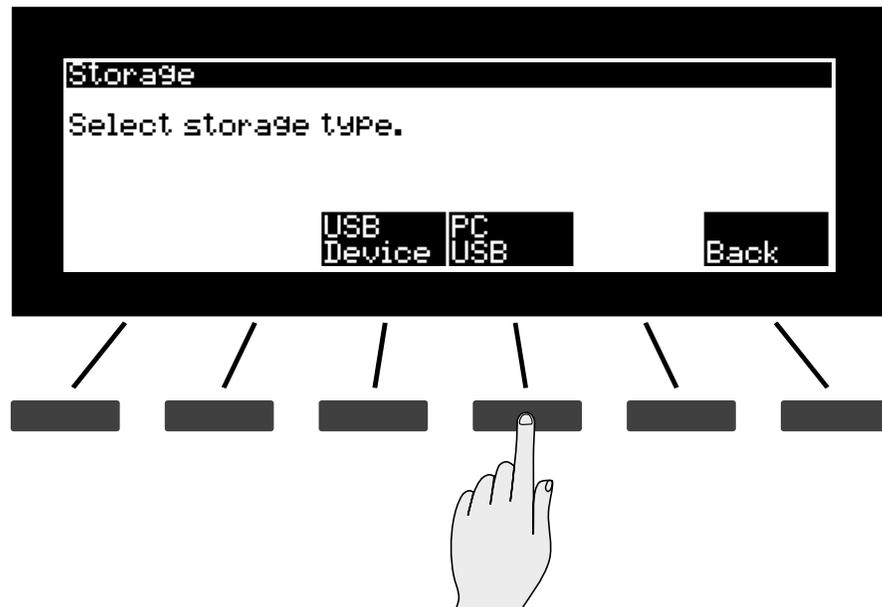
---



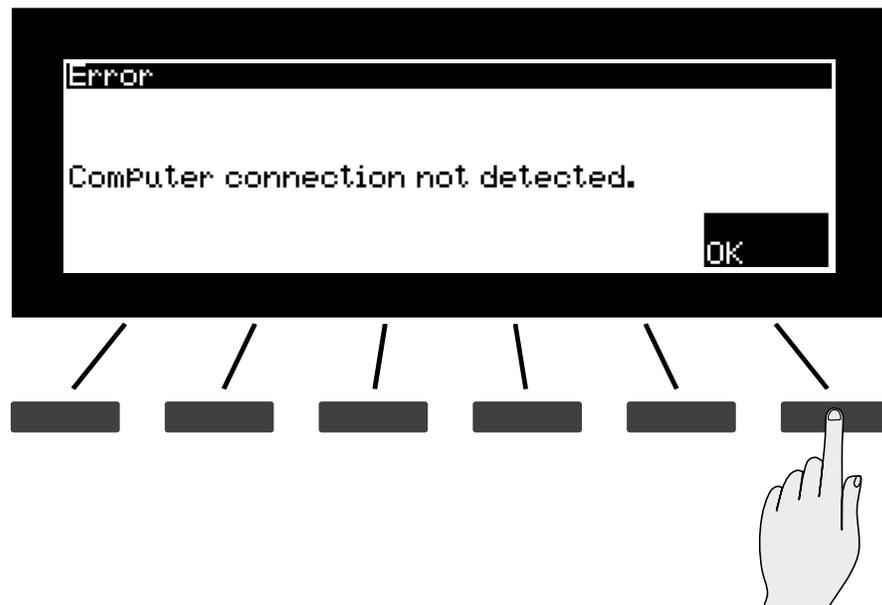
You will see a progress bar indicating the progress. If update was successful you will see a confirmation message. If there was a failure you will see a self-explanatory failure message (with error code) to indicate the failure.

## Install using a computer/tablet

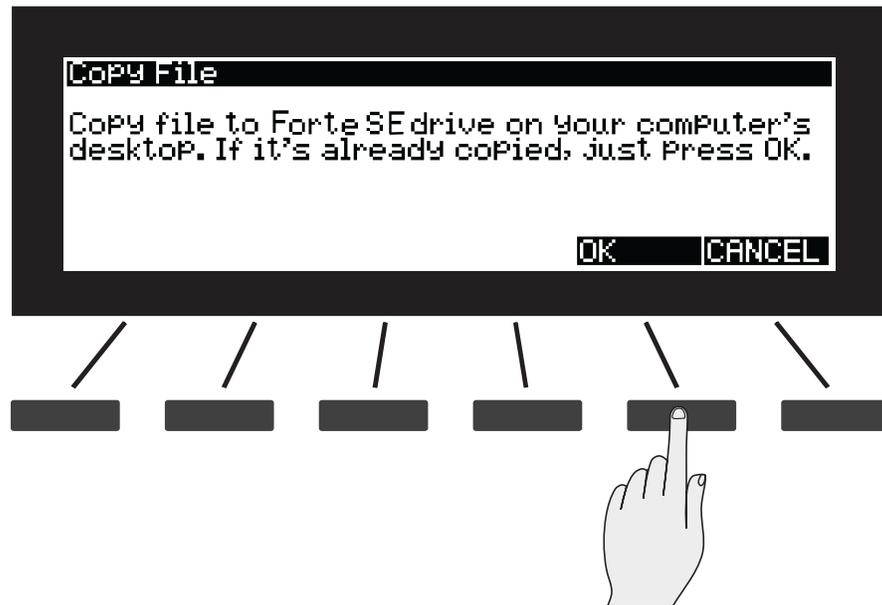
1. Download the System Update file from the Kurzweil website or another reliable source and save it in a known folder or directory on your flash drive.
2. Connect the Forte SE (powered off) to the computer/tablet with the USB cable provided into the USB COMPUTER slot.
3. Follow the instructions specified on [page 13-1](#) to enter System Mode.
4. In System Mode, select System Update.
5. Select PC USB as the storage type.



6. If the Forte SE cannot detect a connection to the computer it will display the message below.



7. If the connection was detected, you will be prompted with the above message. Copy the KUF file to the virtual drive that appears on the PC and press OK.



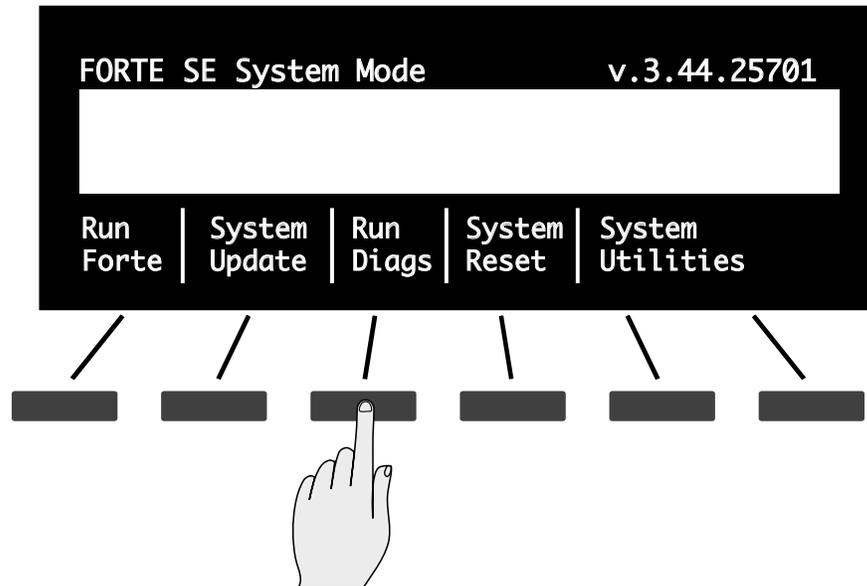
8. Select the file from the list displayed on the next screen and Press OK.

You will see a progress bar indicating the progress. If update was successful you will see a confirmation message. If there was a failure you will see a self-explanatory failure message (with error code) to indicate the failure.

## Run Diagnostics

You will most likely not need to use the Run Diagnostics operations in normal cases.

These operations are mostly used at the factory and service centers by technicians for troubleshooting hardware problems. But, in some cases you might be required to run these diagnostics for troubleshooting and diagnosing symptoms. In these cases, following the direction of Kurzweil Technical Support.



# System Reset



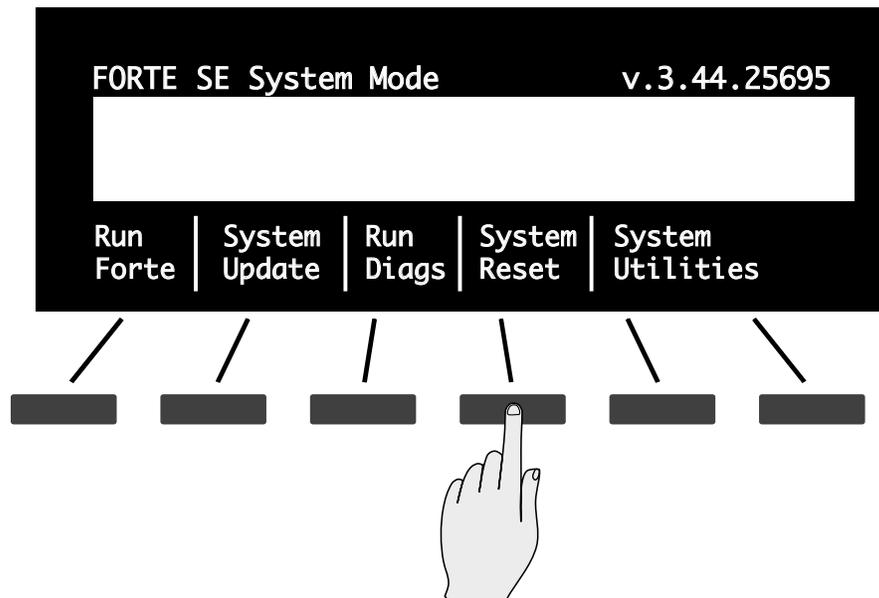
**CAUTION: THIS OPERATION ERASES ALL USER USER OBJECTS (PROGRAMS/MULTIS ETC.).**

System Reset will restore the Forte SE back to a Factory State. In addition to all user objects (Programs/Multis etc.) being deleted, Global Mode settings will be restored to factory defaults.



**Caution: Before Updating, back up your user objects (Programs/ Multis etc.) by storing them to an external device in Global Mode. See instructions in [STORE on page 12-21](#).**

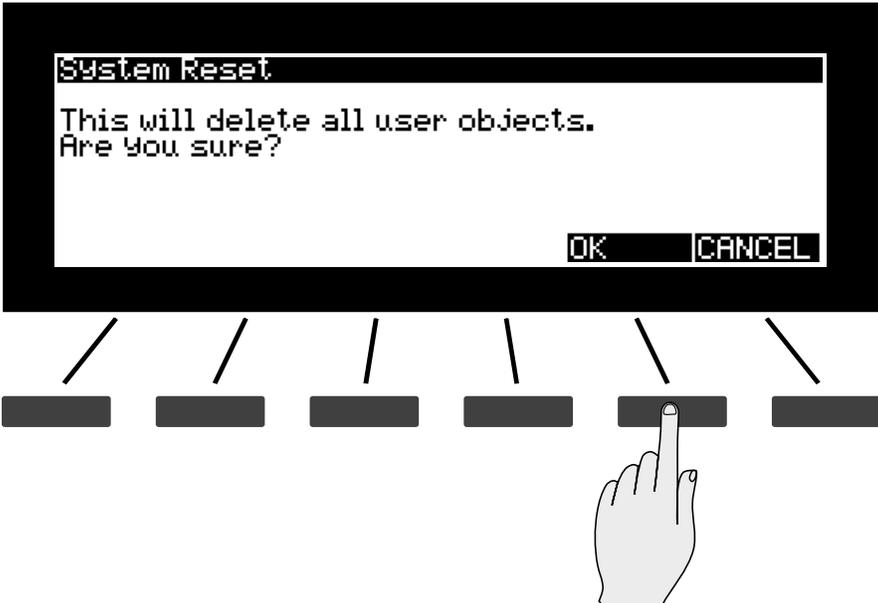
To clear all user objects (Programs/Multis etc.) and restore the factory default state, select the System Reset menu option.



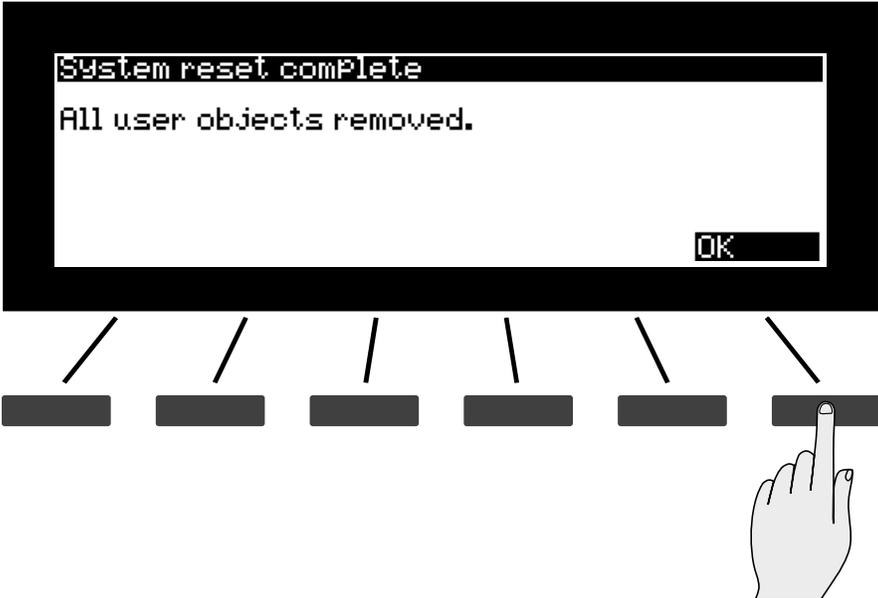
The Forte SE will now ask the question “This will delete all user objects. Are you sure?”

If you are not sure what you are about to do, select CANCEL. This will exit the System Reset process and take you back to the System Mode menu.

If you select OK you are now erasing all the user objects (Programs/Multis etc.) in the Forte SE and restoring the instrument back to a Factory State.

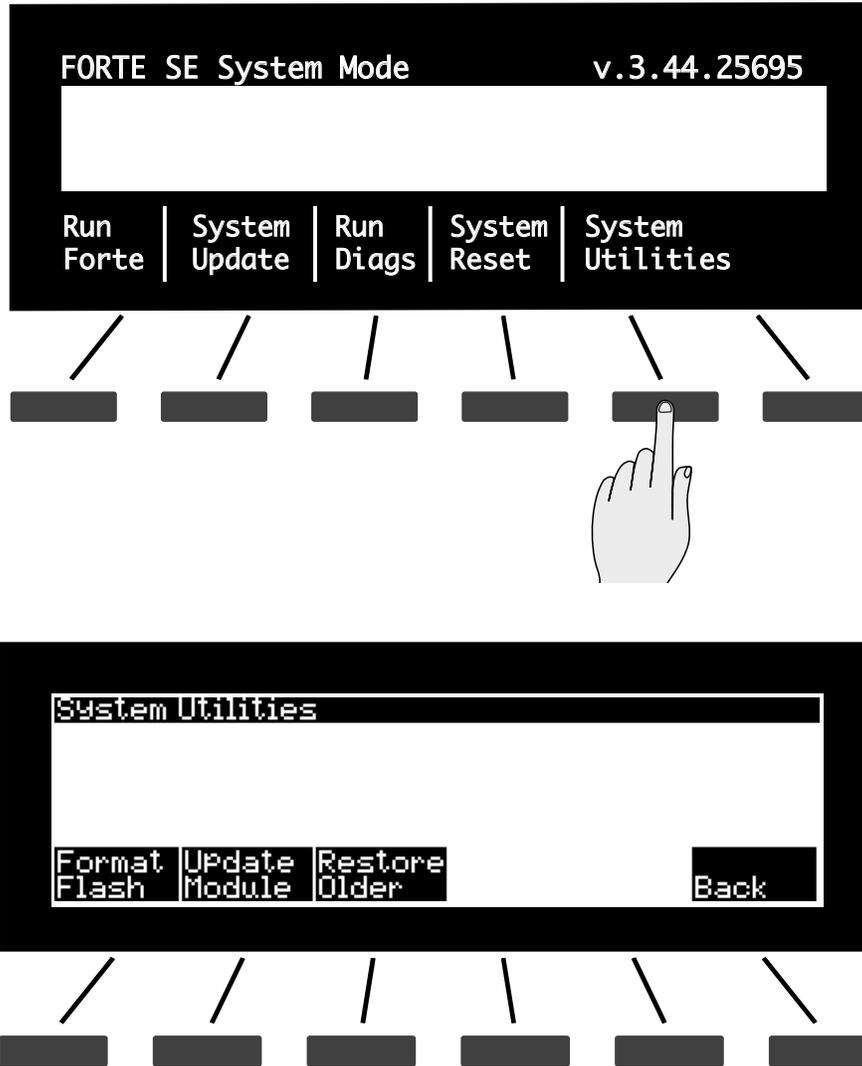


If you have completed the System Reset, select OK.



## System Utilities

You will most likely not need to use the System Utilities. In some cases you might be required to use these utilities for troubleshooting and diagnosing symptoms. In these cases, following the direction of Kurzweil Technical Support.



Select "Back" if you wish to exit and return back to the System Mode menu.

## Format Flash



**CAUTION: THIS OPERATION ERASES THE OPERATING SYSTEM, ALL FACTORY OBJECTS AND ALL USER OBJECTS.**

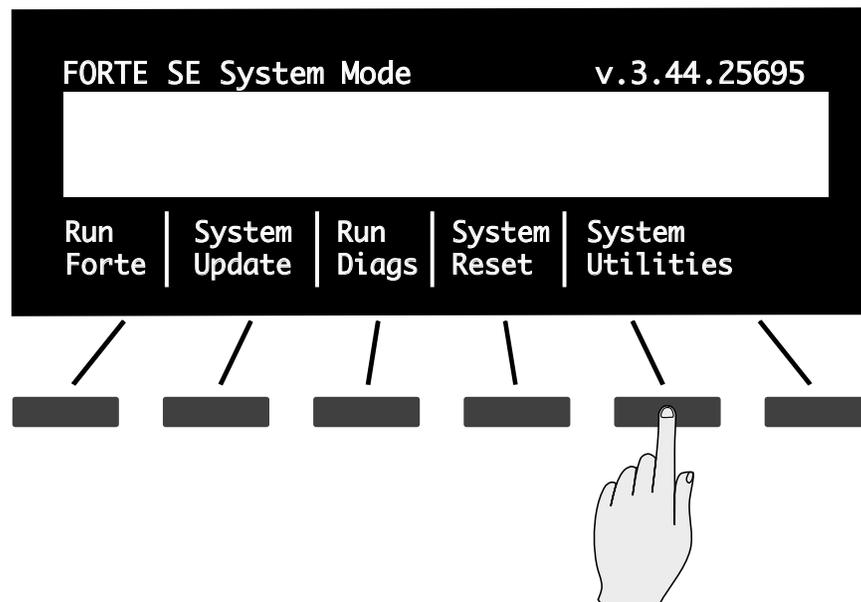
Performing this operation will format the Forte SE's system flash memory and erase the OS software as well as *all* Objects. Do not do this unless you think it is necessary in order to improve the performance of your Forte SE. Should you decide to do so, be sure to back up all of your files and software. After you do this, System Mode will still be available, so you can run updates and get your Forte SE up-and-running again. After a Format the unit will come up in System Mode by default.



**Caution: Before formatting, back up your user objects (Programs/Multis etc.) by storing them to an external device in Global Mode.**

To perform a Format, follow these steps:

1. Follow the instructions specified on [page 13-1](#) to enter System Mode.
2. Select System Utilities.

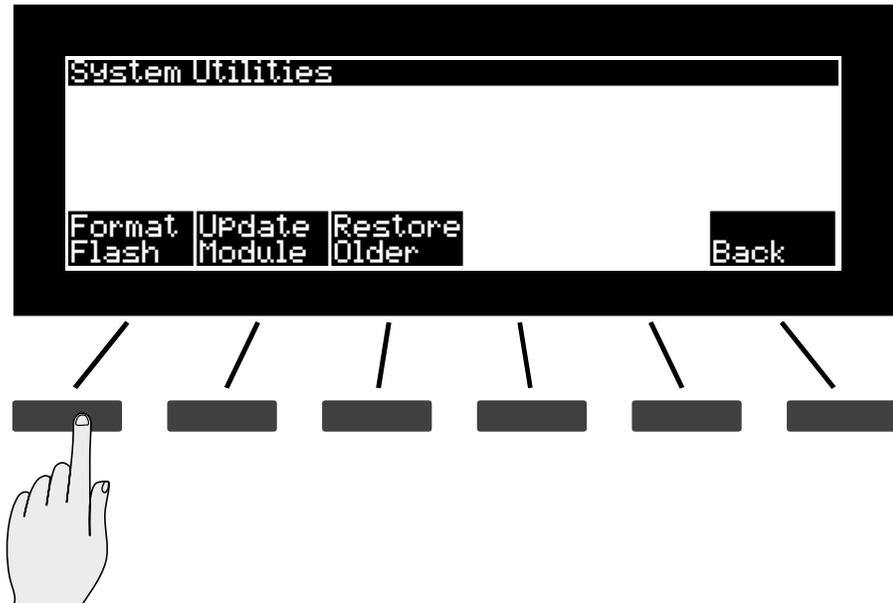


## System Mode

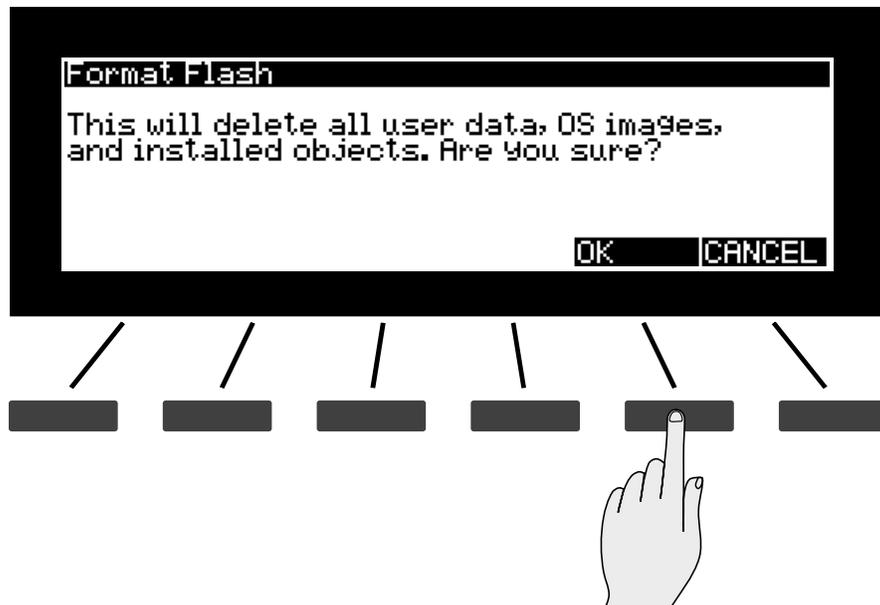
### System Utilities

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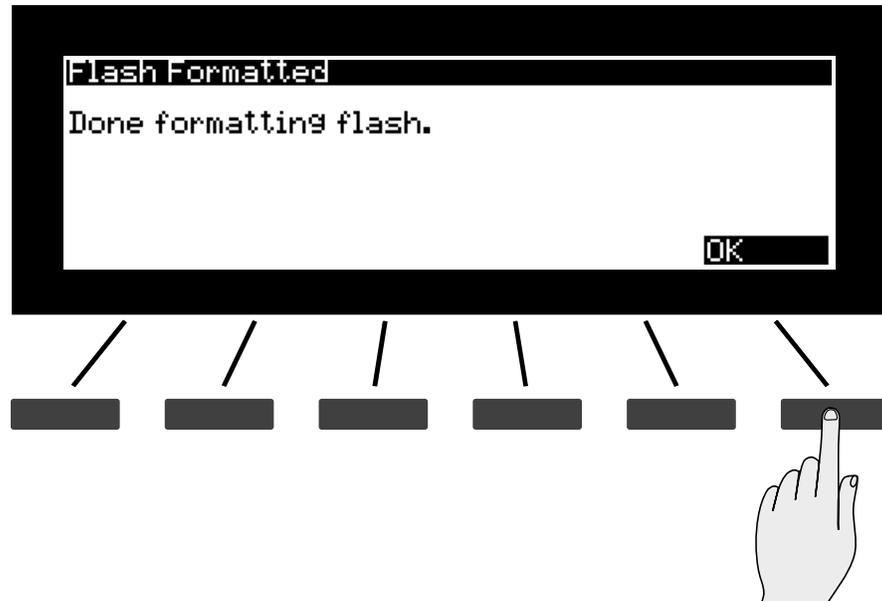
3. Press Format Flash.



4. The next screen wants to make sure that formatting the flash and deleting everything is really what you want to do. Select OK to format the internal flash memory. Select CANCEL if you do not wish to proceed.



- When formatting of the internal flash memory is completed, the display will show the message “Done formatting flash.” Press OK.



## Update Module

This option allows the installation of individual files. You may be guided by Kurzweil Technical Support to use this option if needed.

## Restore Older

This option allows the restoration of a previously installed OS or Objects version. You may be guided by Kurzweil Technical Support to use this option if needed.

# Chapter 14

## Troubleshooting

### Maintenance

Aside from normal care in handling and use, your Forte SE requires no regular maintenance. Clean with a soft cloth dampened with water. Never use abrasives or solvents as they may damage the unit's paint, markings and display lens. There are no batteries inside to replace—ever. Instead of volatile SRAM used in most other instruments, your Forte SE uses nonvolatile Flash Memory for storage, which retains information without power.

### Common Problems

Below is a list of the most commonly encountered problems and diagnoses for each.

#### Power Problems

This is the normal power-up sequence:

1. The display backlight turns on.
2. “Loading...” appears on the display for a few seconds.
3. The Forte SE enters Program Mode with Program 1 or the default boot up program selected.

If nothing at all happens when you turn the power switch on, check if one of the following might be the issue:

**The power cable is not plugged securely into the wall outlet.**

Plug the power cable securely into the wall outlet.

**The power cable is not plugged securely into the Forte SE power jack.**

Plug the power cable securely into the Forte SE power jack.

## Troubleshooting

---

### Common Problems

**The wall outlet, power strip, or extension cord is defective or damaged.**

Use a different wall outlet, power strip, or extension cord.

If there's evidence of the unit receiving power, but operation is abnormal, check if one of the following might be the issue:

**The wall outlet voltage is below 90 volts due to overload.**

Try a different outlet on a different circuit.

### Powers up, Display is Blank

**The Display is blank or difficult to read.**

Slowly turn the Display contrast knob (located above the Alpha Wheel) to adjust the Display.

### Audio Problems



**CAUTION: Do not trouble shoot audio problems using headphones. Additionally, always be aware of the volume levels on the Forte SE and on the connected audio system or mixer.**



**NOTE:** When diagnosing audio problems, set the Forte SE to play its Demo Song rather than intermittently pressing keys. This will prevent any unexpectedly loud volume changes.

If there is no sound from your Forte SE, check if one of the following might be the issue:

**The volume slider is turned down.**

Slowly push the volume slider up.

**The volume control on the audio system or mixer is turned down.**

Slowly turn the volume control up.

**The signal source selection on the audio system or mixer is incorrect.**

Set the volume of the audio or mixer to the lowest level, select the correct signal source, and then slowly turn up the volume.

**The audio cables are not securely plugged into the Forte SE, audio system, or mixer.**

Set the volume of the audio or mixer to the lowest level, securely plug in the audio cables on both ends, and then slowly turn up the volume.

**The Destination parameter stops MIDI Data**

Change the Global Destination parameter to USBMIDI+MIDI+LOCAL (see [page 12-11](#))

**The audio cable is of an incorrect type.**

Obtain and securely connect an audio cable of the correct type. The Forte SE accepts both balanced (TRS) and unbalanced (TS) 1/4-inch audio cables.

If you can hear sound but it is low or distorted, check if one of the following might be the issue:

**The audio cables are not securely plugged into the Forte SE, audio system, or mixer.**

Set the volume of the audio system or mixer to the lowest level, securely plug in the audio cables on both ends, and then slowly turn up the volume.

**A received MIDI volume message has specified a low volume.**

Set the volume of the audio system or mixer to the lowest level. Disconnect all MIDI cables, set the Destination parameter in Global Mode to Local or USBMIDI+MIDI+LOCAL, and reset the volume level on the Forte SE, by pressing Panic (see [page 3-17](#)). Finally, slowly turn up the volume level of the audio system or mixer.

**The current Multi has another controller assigned to volume, and it is turned down.**

Select a different Multi. Or change the problematic controller setting by editing the Multi in Multi Edit Mode.

**The input to the audio system is set for low impedance instead of high impedance.**

Set the volume of the audio or mixer to the lowest level, change the impedance setting, and then slowly turn up the volume of the audio system or mixer.

**The input trim to the audio system or mixer is set too low.**

Slowly turn up the trim.

## MIDI Problems

If you are experiencing problems sending MIDI to an external module, check if one of the following might be the issue:

**The MIDI cable is not securely plugged in at both ends.**

Securely plug in the MIDI cable at both ends.

**The MIDI connections are wrong.**

To send MIDI, plug the MIDI cable into the Forte SE' MIDI Out port and into the module's MIDI In port.

**The MIDI cable is defective.**

Obtain and securely connect a new MIDI cable.

**The MIDI transmit channel does not match that of the receiving device.**

Change the channel on either the Forte SE or on the device such that the channels match.

If there are problems with the internal sound module receiving MIDI from an external device like a computer sequencer, check if one of the following might be the issue:

**The MIDI transmit channel of transmitting device does not match that of the receiving Program or Zone on the Forte SE.**

Change the channel on either the Forte SE or on the computer such that the channels match.

**The MIDI cable is not securely plugged in at both ends.**

Securely plug in the MIDI cable at both ends.

**The MIDI connections are wrong.**

To receive MIDI, plug the MIDI cable into the Forte SE' MIDI In port and into the module's MIDI Out port.

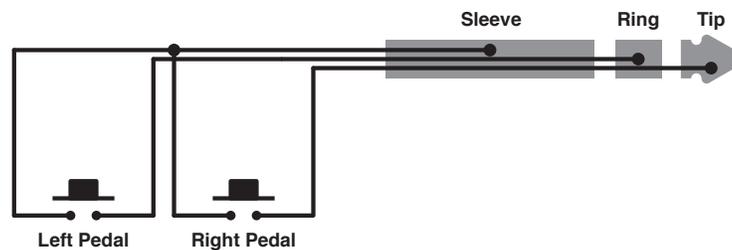
## Pedal Problems

Before you consult this section, be sure to read [The Pedal Jacks on page 2-4](#).

### Switch Pedal Problems

If you are having problems with connecting or using a switch pedal, check if one of the following might be the issue:

- Sustain or Sostenuto is stuck “on”. Be sure the pedal is plugged in before switching on the power. Turn power off, then on, if necessary.
- The pedal is acting backwards (“on” when up instead of down). Power cycle the unit making sure to NOT press on the pedal during startup.
- A dual switch pedal is not working correctly, see [Connecting a Dual Switch Pedal on page 2-6](#). A dual switch pedal must be wired as shown below. Any other wiring pattern will not work correctly.

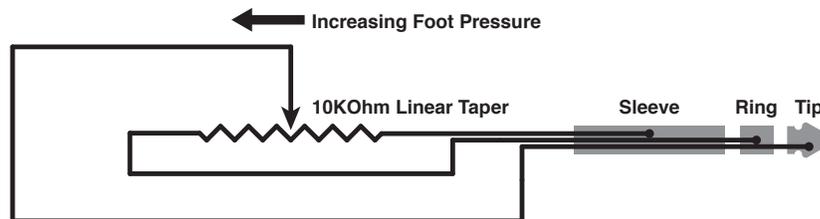


### Continuous Control and Half Damper Pedal Problems

The continuous control pedal must be wired to a single stereo 1/4-inch plug as follows:

- Wiper to Tip
- Top end of resistance element to Ring
- Bottom end of resistance element to Sleeve

These connections are shown schematically below:



Use the correct impedance, taper, and range

## Troubleshooting

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### If None of the Above...

For best results, use a Kurzweil CC-1 continuous control pedal, available from your dealer. The CC-1 meets all of the requirements described above at an economical price. A continuous control pedal should have an impedance between 5,000 and 100,000 ohms. An impedance less than 5,000 may overload the reference voltage source in the Forte SE and interfere with operation of other controls like the Master Volume slider or the other sliders. An impedance more than 100,000 may result in electrically noisy operation, which may cause your Forte SE to send MIDI controller messages constantly.

The taper of the control should be linear for easy, predictable control. Pedals designed for volume control typically have an exponential (or anti log) taper, which results in most of their range being concentrated in the upper half of pedal's path of travel.

Pedals may have a control range that is less than 100%. Make sure that when the pedal is in the fully down position, its impedance is 0, and when it is in the fully up position, the impedance is at its maximum rating.

## If None of the Above...

If your problem is not covered above, or none of the suggestions seems to work, first check back and review the relevant sections of this manual. Many difficulties are just programming problems caused by settings of Multi parameters. If you want to be sure that all of the factory defaults are in place, see [“Restoring Factory Defaults”](#) below.

Also be sure to check out Kurzweil's website for additional Forte SE information that may have been published since this manual was written: [www.kurzweil.com](http://www.kurzweil.com).

If you still have problems, contact Kurzweil support in your country or at [www.kurzweil.com/support/](http://www.kurzweil.com/support/). You may also find unofficial help at some of the internet communities listed at [www.kurzweil.com/community/](http://www.kurzweil.com/community/).

## Service Centers

Contact the nearest Young Chang office Kurzweil service representative. See [page iv](#) in the front matter of this manual for contact information.

## Restoring Factory Defaults

There are two ways to restore factory defaults, both of which delete all User Programs and User Multis. The first method is described on [RESET on page 12-18](#). The second is described in [System Reset on page 13-8](#).



**CAUTION: Restoring factory defaults cannot be undone. Back up your files before doing so by following the procedure in [STORE on page 12-21](#).**

## **Diagnostics**

You will most likely not need to use the System Mode diagnostic operations in normal cases. These operations are mostly used at the factory and service centers by engineers for troubleshooting hardware problems. But, in some cases you might be required to run these diagnostics for troubleshooting and diagnosing symptoms. In these cases, follow the direction of an authorized Kurzweil technician.

# Appendix A

## MIDI Implementation

Function		Transmitted	Recognized	Remarks
<b>Basic Channel</b>	Default	1	1	Memorized
	Changed	1–16	1–16	
<b>Mode</b>	Default	Mode 3	Mode 3	Use Multi-track mode (see FX Mode (Global Mode) on <a href="#">page 12-3</a> for multi-timbral applications)
	Messages			
	Altered			
<b>Note Number</b>			0–127	
	True Voice	0–127	0–127	
<b>Velocity</b>	Note ON	0	0	
	Note OFF	0	0	
<b>Aftertouch</b>	Keys	0	0	
	Channels	0	0	
<b>Pitch Bender</b>		0	0	
<b>Control Change</b>		<input type="checkbox"/> 0–31 <input type="checkbox"/> 32–63 (LSB) <input type="checkbox"/> 64–127	<input type="checkbox"/> 0–31 <input type="checkbox"/> 32–63 (LSB) <input type="checkbox"/> 64–127	Controller assignments are programmable
<b>Program Change</b>		0 to 2,097,151	0–511	Standard and custom formats
	True #	0–127	0–127	
<b>System Exclusive</b>		0	0	
<b>System Common</b>	Song Pos.	X	X	
	Song Sel.	X	X	
	Tune	X	X	
<b>System Real Time</b>	Clock	0	0	
	Messages	0	0	
<b>Aux Messages</b>	Local Control	0	0	
	All Notes Off	0	0	
	Active Sense	X	X	
	Reset	X	X	
<b>Notes</b>		Manufacturer's ID = 07 Device ID: default = 0; programmable 0–127		
<b>Mode 1: Omni On, Poly</b> <b>Mode 3: Omni Off, Poly</b>		<b>Mode 2: Omni On, Mono</b> <b>Mode 4: Omni Off, Mono</b>		O = Yes X = No

# Appendix B

## Physical Specifications<sup>1</sup>

<b>Keyboard:</b>	88-key, fully-weighted hammer-action with velocity and pressure (After Touch) sensitive adjustable keys. 88-key model uses Fatar TP100LR with pressure.
<b>Display:</b>	240x64 pixel monochrome LCD with front-panel contrast adjust.
<b>Polyphony:</b>	128 Voice Polyphony, dynamically allocated.
<b>Multitimbral:</b>	16 parts (one per MIDI channel).
<b>Quick Split / Layer:</b>	Easy access with adjustable volume and panning.
<b>Programs:</b>	Space for 1024 Factory and 1024 User Programs (in 16 instrument Categories)
<b>Multis:</b>	Space for 1024 Factory Multis, plus 1024 User Multi locations with up to 8 programmable zones for splits and layers.
<b>Effects:</b>	Hundreds of editable effects chains.
<b>Controllers:</b>	<ul style="list-style-type: none"> <li>• Pitch wheel</li> <li>• Modulation wheel</li> <li>• Volume Slider</li> <li>• 9 front panel sliders</li> <li>• 11 switches (assignable / zone mutes / KB3 control)</li> <li>• 1 Variation switch</li> <li>• 4 Master EQ Knobs with one EQ On/Off switch</li> <li>• 2 switch pedal inputs, each supporting a dual switch pedal or single half damper pedal.</li> <li>• 1 continuous control pedal input</li> <li>• 2 Transpose buttons</li> </ul>
<b>Analog Outputs:</b>	<p>Two 1/4" TRS Balanced Outputs (Stereo Pair)            24-bit D-to-A Converters            Frequency Response 20Hz-20kHz +/- 0.1dB            +21dBu Maximum Output Level            -113dB Signal-to-Noise Ratio (A-weighted)            0.003% THD+N (1kHz @ -1 dBFS)</p>
<b>Headphones:</b>	<p>1/4" Rear-Mounted Stereo Headphone Output            Frequency Response 20Hz-20kHz +/- 0.5dB            Maximum Output Power 130mW into 32 Ohms            -100dB Signal-to-Noise Ratio (A-weighted)            0.03% THD+N (1kHz @ 100mW Output into 32 Ohm Load)            Output Impedance: &lt; 1 Ohms            Load Impedance: &gt; 24 Ohms</p>
<b>MIDI:</b>	IN, OUT
<b>USB:</b>	<p>Complete MIDI functionality over USB            User Program / Multi file transfer to/from PC / Mac / Tablet/ USB Flash Drives.            Operating System updates from PC / Mac / USB Flash Drive</p>
<b>Height:</b>	(5.2") (13.2cm)
<b>Depth:</b>	(15.2") (38.6cm)
<b>Length:</b>	(48.9") (124.2cm)
<b>Weight:</b>	(40.8 lb.) (18.5 kg)
<b>Power:</b>	Internal Power Supply, free voltage 100-265VAC 50/60Hz, 10W max

<sup>1</sup> Specifications subject to change without notice

# Appendix C

## Programs

Object Version : 1.01

ID	PIANO	ID	E. PIANO	ID	CLAV
1	RecitalGrand 9ft	17	StereoSuitcaseEP	33	Clav BC Env Filt
2	Solo Grand 7ft	18	Classic Wurly EP	34	Clavi BC
3	Fierce Rock 9ft	19	EZ Touch Tube EP	35	Clavi AC
4	Studio Grand 7ft	20	Fagen's Phase EP	36	Clavi BC Phaser
5	Rich Grand 7ft	21	FM+Tines EPiano	37	Clavi AC Wah
6	Bright Jazz 9ft	22	Daft Wurly EP	38	AC Clav Tube
7	Bright PnoPad7ft	23	Tube & Trem EP	39	BC Clav Tube
8	Glam Rock Pno9ft	24	Thick FM Digital	40	Slap Wah Clav
9	Smooth Grand 9ft	25	E Acoustic Grand	41	Classic Harpsi
10	VintageGrand 7ft	26	Sly Ballad EP	42	Simple Harpsi
11	Upright Piano	27	Bright Fusion EP	43	HarpsiTar
12	Intimate Pno 7ft	28	Tube Amp EP	44	Harpsi Flute
13	Piano & Strings	29	FM Growler EP	45	Harpsi Lute
14	R&B Stack	30	Dyno Suitcase EP	46	Harp-Secco-Rd.
15	Dark & Distant	31	Warble Rd. EP	47	Must Be Harpsick
16	Olde Pub Piano	32	BrokenSparkleEP	48	PPG Comp
ID	ORGAN	ID	LEADS	ID	PADS
49	Classic B3	65	AlaskanWild Lead	81	Prophet Pad
50	Soul Perc Organ	66	80's Lead Synth	82	Arpeggi Pad
51	Prog Drawbars	67	Prophet Sync	83	OBX Pad
52	Hot Tube Gospel	68	Cars Square Lead	84	MW S&H Filt
53	Magic Carpet B3	69	SimpleHipHopLead	85	Film Score Pad
54	Mr. Smith	70	Dark Wobbles	86	JunoWhatIMean?
55	VAST-ly Organ	71	Robin's Org Lead	87	Omni Strings
56	VAST Bars1-3,8&9	72	Keytar Hero(Wah)	88	PPG Pad
57	Doors Vox Organ	73	Squeeze Lead	89	Pan Strings
58	Farfisa Draws	74	5ths Lead MP	90	Warm Encounter
59	Farfisa Leslie	75	Seongdeok Lead	91	Wavetable Pad
60	AllStops AllVox	76	SquareChirpLead	92	Mesosphere Pad
61	Chapel Organ	77	Snap Lead	93	Pan Motion Pad
62	Pipes & Voices	78	Dogs Lead	94	5th-Scape
63	Accordian Brazil	79	2 Hand Tap Lead	95	Water Buffalo
64	ParisCmboAccordn	80	Soy Incident	96	Insta - Spooky

## Programs

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ID	SYNTH	ID	SYNTH/BASS
97	Quadra Comp	113	Dolby Bass
98	80s Saws	114	The Phattest
99	Super Saw Stabs	115	The Way It Is
100	Clone Bandit	116	Dread Bass
101	Detuned Polysyn	117	Smooth Mooger
102	OBX Filter Sweep	118	MiniFunk Bass
103	Tomita's Tomato	119	ANGRYBass
104	Frozen Sawdust	120	Uptown Bass
105	Poly Vector Lead	121	Dub Wob
106	Pattern Machine	122	Leviathan Bass
107	Prophesied Six	123	Poppit SynBass
108	Vintage Woobler	124	Woodhouse Bass
109	Throaty S&H	125	Alias Bass
110	Cosmic Intervals	126	Instaprince
111	Poly Arpeggiator	127	APG-ish Bass
112	Static Charge	128	Decepticon Bass
ID	STRINGS	ID	BRASS/WINDS
129	Arco Strings Ens	145	MiamiBrassSects
130	Adagio Strings	146	High-End Horns
131	Weeping Strings	147	Sax Section
132	Punchy Strings	148	Lorde Bari Hits
133	Power Trem Strgs	149	Sax Splits+Flute
134	OversizedQuartet	150	Sylvan Dbl Reeds
135	ProperPizzicatos	151	Clarinet
136	DBass & Violins	152	SoloBassoon&Oboe
137	MarmaladeStrings	153	BClar/Clar/Flute
138	Dulcet Strings	154	Full Blown
139	Tutti Strings	155	Epic Low Brass
140	BritishMTStrings	156	Lead Trumpet
141	Moby Tron-table	157	Solo Trombone
142	Solo Violin fast	158	Dyn Orch Fr Horns
143	Solo Cello fast	159	Fruity Floot
144	Gliss/Arp Harp	160	Classic SynBrass

ID	ENSEMBLE	ID	HYBRID
161	Epic Vox&Strings	177	Ambience
162	LayeredStrgsWnds	178	Shokudo Enka
163	Full Fellowship	179	Cirque du Synth
164	Strings/ClarOboe	180	Pizzynth
165	Cello & Reeds	181	Pressure Cooker
166	Gothic Climax	182	Analog Sparkle
167	3Way Split MTron	183	Armonica Wurly
168	AvengersAssemble	184	Yucatan Vibe
169	Broadway Backup	185	TouchMeAfter3pm
170	Matadores (sftP)	186	Jet Set Martini
171	Mandolinese	187	Touch Vocoder
172	Dave & David	188	Dulciliere
173	Gypsy Reggae	189	DigitalFairyDust
174	Singapore Sling	190	ChirpingStompbox
175	CelesteGlockHarp	191	Mixed Strummah
176	H'Arps & Harp	192	BrimstonCalliope
ID	GUITAR/BASS	ID	VOICES/MISC
193	Rob's Caster	209	Ooh So G'ooHD
194	Boutique 6 Str	210	OohDBopTouchEcho
195	Boutique 12 Str	211	EnvelopingVoices
196	Real Nylon	212	In A Good Place
197	SuperflyWahCast	213	Choir Redux
198	Chunky Comper	214	DapPer Dudes
199	Twin Peaks	215	Bummer Dudes
200	Noisy Feedbacker	216	BaDaDah-Doop
201	P-Bass	217	Flesh&TheMachine
202	Motown Bass	218	Carnival Ricoche
203	Finger Bass	219	Metal Vibe Pulse
204	Flea/Bootsy	220	Suspense Scene
205	Jaco Fretless	221	Creepy Crawlies
206	AC Buzzer Bass	222	Drowning At 7
207	Beasties Bass	223	Scorby-Doo
208	Levin/GabrlFrtls	224	Blues Harmonica

## Programs

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DRUMS		PERCUSSION	
225	Full Room Kit	241	Essential Perc
226	Copper Ring Kit	242	Orchestral Perc
227	East Space Kit	243	Just Jammin'
228	Birch Wood Kit	244	Vocal Percussion
229	25th Anniv Kit	245	Tabla Bars
230	Los Angeles Kit	246	Steel Drum
231	Ring-tone Kit	247	Xylophone
232	Superfly Kit	248	Real Vibes
233	Fin-Essence Kit	249	Stereo Marimba
234	Procs'd Pop Kit	250	Bell Keys
235	80's Power Kit	251	Celeste
236	Brushes Kit	252	Crotales Hits
237	Touch Tone Kit	253	Bowed Crotales
238	DJ- Dub Kit	254	Chimes
239	Rhythmcon Kit	255	Hit'n Chew
240	Radio Echo Kit	256	Tabla Arp

ID	Utility
1022	Silent Program
1023	Editor Template
1024	Clear Program

# Appendix D

## KB3 Programs

### Introducing KB3 Programs

There's nothing quite like the sound of the classic Hammond™ B-3 tone wheel organ, especially when played through a Leslie™ rotating speaker system. We've done extensive testing and analysis with several tone wheel organs, and created our own models to emulate the unique tone wheel sound. We even took into account the way that older organs start to sound different (and arguably better) as their capacitors begin to leak—and we included a parameter that varies the amount of grunge (leakage) in your sound.

#### First Some History

Countless blues, jazz, and rock recordings have centered around the distinctive sound created by classic tone wheel organs (such as the Hammond B-3) played through rotating speaker systems like the Leslie. Not only is the sound great, but it's supremely versatile, since the player can control timbre in real-time by adjusting drawbars that add or remove harmonics from the fundamental tone. Other cool sound-shaping tools include a percussive emphasis that can be added to each note and the capability to change speaker rotation speed. Many people, in fact, feel that the tone wheel organ was the first popular synthesizer. And although these organs haven't been made for years, they are still sought after, restored, and lugged about by legions of dedicated keyboard players. This despite archaic electronics, inscrutable wiring, and an unwieldy heft that tops 400 pounds.

Duplicating the sound and flexibility of these organs – without the nasty side effects – is the goal of KB3 Mode.

## Drawbars

The drawbars on a tone wheel organ emulate pipes of different lengths on a pipe organ. In either case, they are controlled by changing the positions of a number of “stops”. As the organist pulls out or pushes in these stops, he adds or reduces harmonics. Whether it’s pipes or drawbars, though, the stops work like this: pull one out to add more of an overtone; push it in to reduce the volume of the overtone.

The stops on the most popular tone wheel organs are: 16’, 5 $\frac{1}{3}$ ’, 8’, 4’, 2 $\frac{2}{3}$ ’, 2’, 1 $\frac{3}{5}$ ’, 1 $\frac{1}{3}$ ’ and 1’. Note that they are still measured in feet, a carryover from pipe organ days. The 16’ and 5 $\frac{1}{3}$ ’ stops are considered the subharmonic group, while the third stop, 8’, produces the fundamental of a tone, and stops 4-9 produce harmonics above the fundamental. By making use of different combinations of these harmonics, a rich sort of additive synthesis is possible. Best of all, you can make radical changes to the tone dynamically as you play.

The nine sliders of the Forte SE are set to control the drawbars. Pulling the slider towards the keyboard increases the amount of the drawbar that is heard.

## KB3 Mode Buttons

The nine buttons above the sliders on the Forte SE have special capabilities in KB3 Mode that are listed in blue, below the Multi Zone Mute Buttons and Programmable Switches. These are:

### Brake

Brake starts and stops the rotary speaker effect. This effect is not immediate, instead the rotary speaker effect gradually slows down and speeds up, in a similar way that a real rotary speaker reacts.

### Chorus/Vibrato

#### On/Off

This parameter turns the chorus or vibrato effect on and off.

#### Chor/Vib

This parameter determines which modulation effect is used. The choice is Vibrato or Chorus.

### **Chorus/Vibrato Depth**

This parameter determines how much of the effect is applied to the KB3 sounds. There are two levels of both Chorus and Vibrato available, depending on the setting for the Chor/Vib button.

## **Percussion**

Percussion is a characteristic feature of tone wheel organs. It's especially useful while soloing, since percussion adds an extra plink (actually an extra tone at a defined harmonic) to the attack of individual notes. When you play more than one note simultaneously, only the first note you play will trigger the envelope of the percussion tone, though notes played shortly afterwards will also be affected by this envelope. When you play chords, all of the notes played simultaneously will get the percussive effect (provided percussion hasn't already been triggered.)

### **Percussion On/Off**

This is where you turn the percussion effect on or off. Percussion is created by a decaying envelope applied to one of the nine drawbars (usually the 4th drawbar for the low pitch and the 5th drawbar for high pitch. The highest drawbar is normally stolen to generate the percussion sound). The percussion effect is "single-triggered", which means that once it's triggered, it won't trigger again until all keys go up.

The KB3 engine in the Forte SE is capable of generating the Percussion effect without stealing any of the drawbars, and while not authentic, is occasionally used on Forte SE Programs.

### **Percussion Loud/Soft**

This parameter switches between loud and soft percussion settings.

### **Percussion Decay F/S**

This parameter switches between fast and slow percussion settings.

### **Percussion Pitch H/L**

This parameter switches between high and low harmonic percussion settings.

## **KeyClick**

The Key Click feature adds a decaying burst of pitched noise to the attack of notes. Unlike the percussion, the key click is "multi-triggered", which means that every new note will trigger it. The parameters on this page primarily control the decay, volume, and pitch of the key click.

This button controls whether the Keyclick parameter is switched on or off.

## Rotary S/F

The Rotary S/F button acts as a Slow/Fast switch for the Rotary speaker effect. By default, the sustain pedal (SW1) also controls Rotary Slow/Fast. You can set the sustain pedal to function as sustain for all KB3 Programs (instead of Rotary Slow/Fast) by using the Rotary Override parameter in Global mode. You can also make different Rotary Slow/Fast controller assignments for each Program or Multi by using the Parameters page in Program Edit Mode or the Multi Switches page in Multi Edit Mode.

# Appendix E

## Multis

Object Version : 1.01

ID	MULTI	ID	MULTI	ID	MULTI
1	Fuzzy Bottom	36	Tribute	71	4-Piece Suit
2	Sunset Mirage	37	Yankee Doodle	72	Nervous Eaters
3	Bass EPiano Lead	38	Coronation	73	UnderGroundRails
4	Vocal Pad Scape	39	Organic Organ	74	Mind Of It's Own
5	Floating Spirits	40	Pad Machine	75	Chill Kit/Chords
6	Flowing Orinico	41	Gospel B3 & Pno	76	Daydream EP
7	Mello Keys	42	Min Ho Worship	77	Big Choir 5ths
8	Menagerie Motif	43	Universe Pad	78	Plucked Sus Strs
9	Dummer Dudes	44	Triumphant!	79	Synth & Strings
10	Bummer&Bummer	45	Massive Mono	80	Pizz & Glock
11	Dreamy Calliope	46	Sea Breeze	81	Torch Lead
12	Sm-Oo-th David	47	The Shire w Oboe	82	Introspektakular
13	Dulce De Luthier	48	Futurescape	83	Pad Organ
14	VOX Versa Combo	49	Vox n Glox	84	Celestial Mallet
15	Vivaldi's Mando	50	Blues Harp Jam	85	Mohawk Monophono
16	Organ & Strings	51	Cloudwalk Keys	86	LatinLoungeSplit
17	Auto VOX Versa	52	Hollow Keys	87	Glass Zimmer
18	Harpsic n Pad	53	Gtr/Bass Ballad	88	Jazzy Key Trigs
19	CallMeInTheDark	54	Piano, Steel+Pad	89	Piano Rave
20	Woodland Stroll	55	Hip Hop Thirds	90	Aftermath
21	Harp & Flute	56	Euro Chords	91	Traveler
22	Effervescence	57	Distorted Stack	92	Expansive Pad
23	Soft Landing	58	CP, FM & Pad	93	Pan N' Jam
24	Piano & Friends	59	EP & Synbass	94	Hero's Journey
25	The Combo-ista	60	AsTheWorldTurns	95	Electric LeadPad
26	Sweet Celeste	61	The Day After	96	Metallicscape
27	Ben's Goodmen	62	Tranquil Moods	97	Arping Weird
28	Guitano Tender	63	DreamWorks Segue	98	XxxOoo
29	The Maestro	64	Synths In Abyss	99	Apollo
30	Belle Aires	65	Lonely Companion	100	Boson Dance
31	Flutey Organ	66	Sunrizer Synth	101	Dunmire's Court
32	Strgs & Harpsich	67	Dream on Windham	253	Split Default
33	Concert Harpsi	68	Helter Skelter	254	Layer Default
34	Hallelujah!	69	Clock Shop	255	Forte Control
35	Your Majesty	70	Pluck The Stars	256	Clear Multi

# Appendix F

## Effects

Object Version : 1.01

ID	EFFECT	ID	EFFECT	ID	EFFECT
1	Little Booth	34	Soft Flange	67	Reverse Reverb
2	Soundboard	35	Wetlip Flange	68	Reverse Reverb 2
3	Small Dark Room	36	Flanged Taps	69	Oil Tank Reverb
4	Sax Chamber	37	Slow Deep Phaser	70	Laser Reverb
5	Small Hall	38	Fast&Slow Phaser	71	Gated Laserverb
6	Medium Hall	39	Phaser EGT	72	ReverseLaserverb
7	Green Room	40	Thin Phase Sweep	73	Envelope Followr
8	Opera House	41	Tremolo BPM	74	Envelope Filter2
9	Real Nice Verb	42	Simple Panner	75	Trip Filter
10	Empty Stage	43	Thin Phase Sweep	76	Stereoizer
11	Med Drum Room	44	Leslie start	77	Barberpole Phzr
12	AbbeyPianoHall	45	SubtleDistortion	78	Laser Dly Reverb
13	Predelay Hall	46	EPiano Distortzn	79	Degenerator
14	Sweeter Hall	47	Distortion + EQ	80	Basic Delay 1/8
15	Concert Hall	48	Ray's EP	81	Arp Delay Loop
16	Symphony Hall	49	Scooped Distort	82	HipHop Piano DDL
17	Cathedral Chorus	50	Burning Tubes!	121	Sly Leslie K
18	DeepChorsDlyHall	51	3BandDrumComp	129	Basic Delay 1/8
19	Omni Stage	52	Snare Compressor	147	Deeper Water
20	Classic Plate	53	Snare Cmp w/Rvb	176	Lead EGT6
21	MediumWarm Plate	54	Kick Compressor	193	LitePad2
22	Real Plate	55	Hard Knee Compr	203	PhaseDly1
23	Smooth Plate	56	Bass Comp Mutrn	204	ThinphaseSweep
24	Gated Plate	57	PnoEnhancement	206	hhpitchr1
25	Basic Delay 1/8	58	LA2A for Strings	209	Snarcmp1
26	4-Tap Delay BPM	59	Resonant Filter	210	SymphonyHall 1
27	Echo Plecks BPM	60	Aux Echoplex	211	SymphonyHall 2
28	Timbered Taps	61	Bandsweep Filter	212	SymphonyHall 3
29	Dub Delay	62	Hi FrequencyStim	213	Jazz Stage
30	Sm Stereo Chorus	63	Ring Modulation	214	Live Room
31	Chorusier	64	Frequency Offset	215	String Chamber
32	Stereo Chorus	65	Lazer Tag Flange	216	Fife Stage
33	Dense Chorus	66	Fallout PitchLFO	217	Live RecitalHall

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
218	AbbeyBrasHall2	274	OmniStage	333	CrunchLesl122 K
219	Smooth Long Hall	275	gshot vrb	334	HotLeslie122b K
220	kickcmp3	276	deep part1	335	BostonLeslieK
223	kickcmp4	277	DbISloFlangeCmp	336	CrunchLesl122 K
224	snarcmp4	278	alphacentauri1	337	Hot Leslie 122e
226	kickcmp5	279	Timbered Taps 2	338	HotLeslie122f K
229	Bright Hat Room	300	GospelDistLes K	339	Soul Leslie122 4
230	BrightFlange	301	GimmeSumLeslieK	340	Leslie B 122 K
233	snarshaper6	302	DF OrganRoom	341	JoeyLeslie122 K
240	Reverb2	303	GimmeSomeLesl	342	HotLeslie122g K
241	500msDelay K	304	GimmeSomeLesl2	343	HotLeslie122h K
242	Organ Chamber1	305	500msDelay K	344	TapChorusLes K
243	TapChorusLes LE2	306	Organ Chamber1	345	SlwPhasdLeslieK
244	Organ Latch 1/8	307	Organ Latch 1/8	363	NonKB3 A K
245	Organ Phaser	308	Organ Phaser	364	Warm Leslie12 K
246	Organ CDR 1	309	Organ CDR 1	365	WrmDstlLes1dwK
247	nuLeslie122K	310	AcceleratLes2 K	366	BrighDistlLes1K
248	Mitch's Leslie K	312	ExpressLeslie K	367	DistleratLes6 K
249	TapChorusLes K2	313	Leslie 122 a K	368	BrightDistlLesK
255	Flange+Delay	314	Mitch's LeslieK	369	DistlLes HotGs
257	Empty Stage II	315	Melvin'sLeslieK	370	Prog Leslie1K
258	AbbeyPianoHall 2	316	Greg's Leslie K	371	LightDistlLes2K
259	Opera House II	317	RoomyLeslie122K	372	DW Leslie13 K
260	Vintage Strings2	318	SoftLeslie122 K	373	LeeMichaels 1 K
261	Classic Plate II	319	CrnchLesli147 K	374	NonKB3 A K
262	Recital Hall II	320	Thimmer Leslie	375	DWLeslie12 K
263	Small Hall II	321	Jimmy's Leslie 2	376	DistlLes 5 K
264	Real Niceverb II	323	Organ Taps	377	Sly Leslie K
265	Medium Hall II	324	Leslie Clean K	378	LightDistlLes K
266	Small Dark Room2	325	Leslie 122 K	379	FisherLeslie
267	PnoRvb II	326	Jimmy'sBrake	380	SoulLeslie122 K
268	ShortPnoRvb III	327	Jimmy'sBrake K	381	Big Pop PianoCmp
269	PnoEnhancRvb3	328	Greg's LatcherK	382	PianoVerb1
270	RevComp5	329	Nice Leslie K	383	Pro Piano Cmp
271	Clunker II	330	Clean Leslie K	384	DistlLes HotGs
272	St CHDly II	331	Warm Leslie K	385	NewLord 1
273	OmniStage	332	NewLord 1 K	386	SystemTemp Tap

ID	EFFECT	ID	EFFECT	ID	EFFECT
387	WaterDistSynth	427	Phaser EGT	468	MyJacoART
388	FlangeVoiceHall	428	SnareComp1	469	UprightBassRoom
389	BrightFlangeHall	429	ASDrumComp1	470	Levin Chorus
390	SoulLeslie122 K	430	KickComp1	472	Bright Room
391	FlnGRecitalHall	431	60's BigDrumRoom	473	Med Dark Room
392	Med Drum Room	432	AS SynthDist2	474	BasicReverb
393	Dual Filters +	433	AS CmpVerb4Drms	477	Medium Hall 4U
394	Dual Filterzz	434	AGT EnhCD	478	KickComp2
395	Cathedral Vx	435	CDRecitalHall	479	ColdPliano 2
396	BurningTubes5	436	Nylon EnhCD	480	FDR PercRoom
397	PunchBassAmp	437	RealDrmComp3	482	NylonAgtVerb
399	RevverLeslie	439	ChrsDbIRoom	483	3BandDrumComp
400	Bradley's Barn 1	440	EnhcBassAmp	484	KikComp 4:1
401	Bradley's Barn 2	441	FlangVoiceHall2	485	ToxicStrings
403	LA2A for Strings	442	Vocals w FXnMic	486	3BandDrumComp2
405	DrmCDR 1	443	RealDrmComp4	487	Scoopd Dist EGT2
406	DrumFatty	445	Harpolicious	488	NotScoopd Dist
407	DrumFattyDry	446	ChrsDly	489	HeavyBuckers
408	AS Drum Room2	447	EGT Hall	491	ProBassComp
409	DrumFattyRoom	448	Burning Tubes	492	NYCTripStrings
410	RealDrmComp2	449	Chorus AGT	493	ProBassComp2
411	ChrsDly	450	SynthLead	496	DirtLordAmp LE
412	RealDrmComp	451	SynthBassAmp	500	Setup Aux Verb
413	DrumSlap Sys	452	MosqueySwirl	501	Setup Aux DDL
414	RealDrmComp2	454	PadFX2	517	Early Reflection
415	TiteDrmComp	455	PadFX1	518	Pad Depth Pt1
416	Marimba Hall	456	Chr & Echo	519	Gunshot Verb
417	Gated Plate 144m	457	Vocals w FX	520	AlphaCentauri 1
418	AS Dub Delay	458	DrySynthCDR	521	BasicCDR
419	HipHop Hall	459	WetSynthCDR	522	Synthorc BPM
420	AGT Reverb	461	VibesRoom	523	BPM Flange Dly
421	Gated Plate2144m	462	PercussionRoom	524	DbISloFlangeCmp
422	WarmCruncher	463	CagesRoom	525	Deep ChorusVerb
423	DrumFatty3	464	CmpRecitalHall	526	ChorDlyWet26-28
424	Fierce Lead	465	StrRecitalHall1	527	Light ChorusVerb
425	CompTrem	466	StrRecitalHall2	528	Chor Delay 26 27
426	12StWarmCrunch	467	RecitalHall	529	Pitcher Slider A

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
530	Pad Depth Pt1	564	EnhCD4DRUMS2	605	JA RI Nce Verb
531	PolyPitcher 2	565	Little Booth2	606	JADrumAmp1
532	LFO Pitcher	566	DrmFIngDlyVrbCm2	607	JADrumAmp2
533	Wet Hall for Pad	567	CmEqDeRe4DrmsSTa	608	DrumFXcmpdly1
534	DrmCMP4PrgFX2	568	CmEqDeRe4DrmsSTb	609	Drum Freq Offset
535	Kick Compressor2	569	DrumFattyDry2	610	CheapDrmDist
536	Snare Compresso2	570	DrumFattyDry3	611	SynthDist4Drms
537	DrmCMP4PrgFX	571	AS Drum Room2a	612	DrmCMP4PrgFX4
538	Kick Compressor2	572	Gated Plate2144b	613	DrmThnphseSweep
539	Snare Compresso3	573	DrumFatty4	614	StereoizerW/Verb
540	Snare Compresso4	574	DrumFattyRoom3	615	DrmCMP4PrgFX2
541	HOP Drum Reverb5	575	ASDrumComp1a	616	CmPhDiRe4Drms
542	Stereoizer2/Verb	576	AS Drum Room2a	617	CmPhDeRe4Drms
543	CmPhDiRe4Drms2	577	DrumFatty3a	618	CmEqDeRe4Drms
544	Stereoizer3/Verb	578	AS SynthDist2b	619	CmEqDeRe4DrmsST
545	Stereoizer5/Verb	579	HipHop Hall2	620	DrmFatener/ Ech
546	DrmCMP4PrgFX5	580	AS CmpVerb4Drms4	621	DrmPhaseVerb
547	HOP Drum Reverb5	581	DrumFattyRoom4	622	DrmFIngDlyVrbCmp
548	Stereoizer6/Verb	582	DrumFattyRoom5	623	Drum VerbW/Ster
549	DrmCMP4PrgFX6	583	AbbeyBrushHall	624	Verb/Str/Cmp
550	CmPhDiRe4Drms2	584	HOP Drum Reverb6	625	Verb/Str/Dist
551	CmPhDiRe4Drms3	585	HOP Drum Reverb7	626	EnhCD4DRUMS
552	DrumFXcmpdly1a	586	CmPhDiRe4Drms	627	GatePltPhs3bnd
553	CmEqDeRe4DrmsST2	587	DrmFatener/ Ech2	628	RevVrbFlgV
554	GatePltPhs3bnd2	588	Tuna Hall	629	DrmCMPVb4PrgFX2
555	SynthDist4Drms2	589	Gated Plywood	630	3BndCmp4Snr
556	CmPhDiRe4Drms4	590	PlywoodDrumFuzz	631	HOP Drum Reverb1
557	DirtLordAmp 2	591	AnvilDrumFuzz	632	StereoW/VerbHFD
558	JADrumAmp2a	592	Drum Pad Reverb1	633	SnrFatener& Ech
559	CmEqDeRe4DrmsST3	600	DrumFuzz	634	Warm Drum Plate
560	CmPhDiRe4Drms5	601	Snare Comp/EQ	635	Dly/vrb BPM
561	JADrumAmp2b	602	hhpitchrja	636	Drm vrb Long
562	DrmFatener/ Ech2	603	Gated Plate	637	Real drm plate
563	DrmCMP4PrgFX7	604	JAJazzCmps	638	Deep Fuzz Vrb
558	JADrumAmp2a	601	Snare Comp/EQ	637	Real drm plate
559	CmEqDeRe4DrmsST3	602	hhpitchrja	638	Deep Fuzz Vrb

ID	EFFECT	ID	EFFECT	ID	EFFECT
639	Flange+Delay	691	Blueman1	730	BasicChorusDly 2
640	MySynthDist	692	CompDelay12	731	Double Leslie 8
641	DrmphseDlySweep	694	SmallDarkRoom3	732	Wallflower Ch
642	CmDeRe4Drms	695	PlainComp15	733	ChPanDlyComp
643	Sweet drum Hall	696	RevComp4	734	CheeseChorus
644	StevieTrem EP 1	697	EP RotoAmp12	735	Double Leslie 14
645	Beater EP1	700	HiMutron 1	736	CompDelay
646	Jamerson1	701	Sax Chamber 21	737	SynFatener& Ech3
648	SlyBASSComp1	702	BigDarkRoomDW	738	BIGCompDelay
651	Trampler 1	703	New Gtr 31	739	UprightPiano
652	HipHop Drms1	704	PnoRvb 14	740	SitarCmpRvb
654	HipHop Drms2	705	Small Hall11	741	AC Bass 3
655	TOP Drum Reverb1	706	PnoRvb21	742	VoxKB3
656	HOP Drum Reverb1	707	Empty Stage 11	743	Blackfriday
657	HopKickcmp1	708	Mutron 2	744	Blackestfriday
658	NoQuarter	709	Double Leslie 12	745	Flange 4
659	TechnoHHDly 1/8	710	Double Leslie 5	746	DoubldistLsli20
660	HOP Drum Reverb3	711	PlainComp12	747	Double Leslie15
661	HopKickcmp7	712	Double Leslie 11	750	Good Leslie1
662	Roomverb1	713	CDR Synth	754	Good Leslie4
663	Kickcmp6	714	SynthFlangenDely	756	GoodLeslie 6
664	Snarcmp11	715	QuantzEnhanceSyn	757	WhitrShadeLeslie
665	Reverb3	716	BladerunnrRvb	758	Inagadadavita
666	Small Dark Room	717	Deep FuzzBass 1	759	GoodLordLeslie
667	Snarcmp12	718	Eber Bass	760	Small HallComp1
668	Kickcmp13	719	SynFatener& Ech2	762	GoodLeslie 5
670	BeastieDrums	720	CP80Enhanc1	764	ShortPnoRvb31
671	Clunker13	721	Fisher'sHarm Mic	765	St CHDly
675	Funksnare9	722	AbbeyPianoHall2	766	Synphase1
676	Funksnare8	723	Medium Hall 2	768	St CHDly
680	EPDistPhase1	724	Fagen Phaser	771	Walrus EP
681	RayEP 1	725	Double Leslie 10	772	EPChr16
682	Deep Fuzz 1	726	SmallWurly	773	Siberia
685	Deep Fuzz 31	727	Basic WurlyEP	775	Deep Fuzz 5
687	ReverseVerb1	728	Double Leslie 13	780	Flange Echo 2
690	Acidflute	729	Cheese Horns	781	ARPMosque Room

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
782	Chr & Echo	823	ChrsDly4	861	Little Mu
784	Mutron Clav 2	824	Leslie Basic	862	SmallHornChamber
785	Siberia II	825	MoogBASSComp5	863	OmniStageDW
786	EnhanceComp1	827	EPChr1 Dyno	864	Clunker50
787	Shaper->Reverb2	828	Synphase17	865	PnoEQCmp3
788	Clav Phase1	829	Leslie Comp 1	866	Comp4
790	SynlaserFlange 1	830	PhaseDly104	867	3DogEP 1
792	RockyRaccoon	831	GoodLeslie 52	868	CompDelay
793	Squire	832	CPChrRvb1	869	PnoEnhanc22
794	Flange 4	833	DistLeslie Basic	870	cheap Chamber
795	Deep Fuzz Clav	834	CompKit111	871	EPChr11
797	Clav Comp1	835	CarlosSyn	872	Old Chamber
798	SmallClav	836	MaroonSynbass	873	ChefAid 1
799	Synth Shimmer	838	FloydEP1	874	Zep Fuzz 1
801	PhaseDly1	839	PnoCmpSndBoard 1	875	Bernie Clav
802	Shredlead1	840	SuperTrmpPhase	876	ClavRotoAmp
803	ThinphaseSweep	841	Wurly 1	877	Dark Niceverb
804	EnvComp41	842	ShortPlate4EPs	878	Basic RayEP 3
805	MoogBASSComp11	843	ShortPlate4EPs2	879	LatinHornCmp
806	SynFatener& Ech4	844	Aux Dark Room 2	880	Basic RayEP 2
807	Shredlead15	845	Elton1	881	Raffas DX7
808	PlainComp21	846	Aux Chamber	882	EPChr6
809	Garth	847	BowiePno1	883	PnoEnhanc3
810	BassFleaCompMu	848	BluesPnoCmpRvb 1	884	SynEnhancement
811	Chr & Echo 2	849	New Gtr 31	885	CompKik11
812	BasicCDR2	850	Soundboard 3	886	VintChamber
813	ShaperFuzzLead 2	851	OmniStage	887	SmallWurly2
814	AM Big Band	852	Double Leslie	888	Deep FuzzPnt 1
815	Clunker20	853	MedPlateJazFlute	889	Comp70
816	PadFX3	854	MistyMntn EP 2	890	FooldAgainVox
817	SynFatener& Ech5	855	PnoEnhanc22	891	CompKik111
818	MarleyClav1	856	ClavPhase1	892	Vintage Horns 3
819	Flange Echo 4	857	MedRoom10	893	Leslie Gospl
820	Deep Fuzz Clav 3	858	EPChr11	894	EPChr60
821	GetBack1	859	HardRhds1	895	Syn Lead A
822	Deep Fuzz Clav 5	860	PnoEnhancement	896	Deep Fuzz 51

ID	EFFECT	ID	EFFECT	ID	EFFECT
897	4-Tap Delay BPM2	933	Cheese Horns2	969	Blackfriday2
898	Shredlead3	934	SynthCDR20	970	CompDelay101
899	Synphase1	935	Vintage Horns 2	971	Sax Chamber 2
900	Synphase2	936	Chorus Pan Delay	972	Clunker501
901	SynthTrem2	937	Snarcmp101	973	Horn Plate 1
902	DWAuxRvb1	938	Filter1	974	Vintage Horns
903	Small Dark Room2	939	Syncpulsedw	975	BrightFlange2
904	Sax Chamber2	940	Kickcmp501	976	ThinphaseSweep2
905	Small Hall2	941	Snarshaper601	977	Small Comp102
906	Medium Hall2	942	ProBassComp3	978	EPPHase1
907	Real Niceverb	943	SynEnv5	979	NonKB3LesliePdl2
908	Opera House2	944	SnareComp101	980	FlangeComp3
909	Mosque Room2	945	BostonLeslie2	981	Mutron Clav 201
910	Bright Hall	946	Kickcmp104	982	SynChorusDly202
911	Echplex 1	947	Leslie MShoals	983	RayEP 1
912	AbbeyPianoHall	948	Snarcmp121	984	EnhanceComp121
913	Recital Hall 2	949	WhitrShadeLesli3	985	Clunker IIa
914	Echplex 2	950	Snarcmp112	986	Pad Depth Pt1
915	Medm Warm Plate2	951	Snarcmp113	987	AuxChorusHall
916	EQVelMorph	952	EnvKickcmp1	988	TechnoSyn1
917	Aux Echplex	953	Kickcmp602	989	Synphase102
918	Farfisa1	954	Snarcmp112	990	CompDelay
919	Good Leslie33	955	HipHop Drms101	991	CompMeltrn
920	Zep Leslie	956	PnoCmpSndBoard10	992	ARP
921	Snarcmp801	957	Epicsnare1	993	Triplet delay
922	kickcmp401	958	JumpSynth	994	Bigverb
923	Deep Fuzz 6	959	Funksnare88	995	Syncpulse
924	SynEnv4	960	Kickcmp441	996	compbass 2
925	SmallComp9	961	Upright3	997	CompDelay3
926	KickComp201	962	HopKickcmp701	998	Comp501
927	GoodLeslie 9	963	Leslie Comp 2	999	RMIPHase1
928	Falgor Gtr	964	Kickcmp301	1000	Joey Leslie 122
929	KickComp701	965	PnoRvb 1	1001	SynChorusDlydw2
930	Good Leslie34	966	PnoRvb2	1003	ECello2
931	Syncbclip	967	HipHop Drms201	1004	violin2
932	CompDelay3	968	Breakdrums1	1005	Small StringRoom

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
1006	Viola2	2206	ChessRecords1	3223	JSP Synth CDL
1007	Cello2	2207	ArtEQCMPDW7	3224	Synker1
1008	FalgorwahGtr	2208	MarquisPiano1	3225	SynCompMu1
1009	Accdn Booth	2209	MarquisPiano2	3226	Shred Gtr
1010	BRASS EQ/Comp	2210	Rachverb	3227	Shred Gtr Wah
1011	SynTrem	2211	MarquisPiano5	3228	Chunky G 1
1012	InfinSynCathedr	2212	ChessRecords2	3229	AuxGtrEchplex
1013	Delay + Plate1	2300	JK FX Template	3230	Synth Delay 1/4
1014	SEM TRldw	2303	jk AUX1	3231	Bari Sax
1015	SynthLeaddw	2500	Pianarma EQ+Cmp	3232	Electric Mermaid
1016	SynPadDW	2501	Pianarama! verb	3233	Solo Trumpet
1017	AGT EnhCDdw	2502	KikComp 4:1	3234	FLIP'n Chorus!
1018	CasterTremdw	2560	MarimbDelay BPM	3235	FLIP'n Delay!
1019	LesTremdw	3200	SEM TRI	3236	RedHot Dst/Cho
1020	StdioCasterRigdw	3201	RAVE WIND	3237	RedHot Reverb
1021	PercVerb1	3202	Chroma FM	3238	RedHot Delay
2050	Concert Piano FX	3203	Chroma FM2	3239	Miami Gated Room
2051	Studio Piano FX	3204	Iceman Bass	3240	Miami Plate Rvb
2052	Dampers Up Forte	3205	Mandocaster	3241	SnarkyDimplix Rb
2053	Pad Depth Forte	3206	Daft Lead	3242	FLIP'n Distortn!
2054	ChorVerb for Pad	3207	Tenor Sax	3243	Synth Brass Env
2055	Symphony Harpsi	3208	GANGsta Wrap	3244	Van BrownSound
2101	ChoDistDly2	3209	Basic Delay 3/16	3245	Van Reverb
2102	Dark Room 2	3210	DbISloFlangeCmp	3246	Gated Plate
2103	Carrot Rev	3211	Pan Trem BPM	3247	Van EQ
2104	Carrot 1a	3212	Pan Trem BPM OOP	3248	WarmCruncher2
2107	Cabbage 1a	3213	BPM Pad ChDeRv	3249	Scorb4Tap/Rv BPM
2108	Cab-Reverb	3214	supersaw 2	3250	Scorb-olo BPM
2110	PithrFIngDistDly	3215	Slow Phase	3251	Here Lil' Boy!
2150	MarquisPiano3	3216	BPM Trance	3252	DiPulsulator
2200	BluesPnoCmpRvb 1	3217	Lazer DUB	3253	PadmePlecks BPM
2201	BluesPnoCmpRvb 2	3218	Krafty Monks	3254	ToodleTrem
2202	BluesPnoCmpRvb 3	3219	dist Booth	3255	ToodleDelay 1/8
2203	ArtEQDW1	3220	Delay + Plate	3256	Zap Chamber
2204	ArtEQCMPDW5	3221	Dist Booth Dly	3257	CasterTrem
2205	ArtEQCMPDW6	3222	Sonny More I )	3258	LesTrem

ID	EFFECT	ID	EFFECT	ID	EFFECT
3259	AS Laser Reverb	3295	EQVelMorph L	3331	Flange Mayhem2
3260	as Laser Reverb	3296	EQVelMorph R	3332	Mute Gtr1
3261	NuBeautyDist	3297	HF Stim	3333	SynthCDR
3262	AmbientPanner	3298	InstantHillbilly	3334	3str Gtr Wah2
3263	NuBeautyDist2	3299	HoRnYFIAnGePaRtY	3335	WorldMandolinCDR
3264	HammerDulceComp	3300	BRASS EQ/Comp	3336	Padme's lil' Pal
3265	Dulcimer Chorus	3301	MouthyFilter	3337	Squeeze Cmp
3266	HammerDulceRoom3	3302	Super8 Horn Dly	3338	Klockwork
3267	HammerDulceComp2	3303	BrassMod+AMRadio	3339	Bass Fishing
3268	LesChorus	3304	7thHeaven Plate	3340	Wave Rider
3269	EGT Multi 1	3305	7thHeavenCmpSlap	3341	TripleCaster6
3270	Kinda Krunchy2	3306	Bullitt PDlyHall	3342	TripleCasterWah
3271	Pan Trem BPM OOP	3307	Bunny Delay 3	3343	Mr.West Horns
3272	SEM Shape	3308	Van Brown LITE	3344	TripleCaster31
3273	Bright Syn Pad	3309	Van ChDly LITE	3345	SynPnoPhase1
3274	Synth Delay/RVB	3310	Sax-susolo Plate	3346	PBS on VHS
3275	Syn Chor DDL	3311	THX	3347	Attack Trance
3276	Syn Dist/Delay	3312	StdioCasterFXRig	3348	HPF Drum Taps
3277	huge space 2	3313	BonzoCompLTE	3349	Lectro Plate
3278	SynPad	3314	BonzoLTE GateRvb	3350	Nasty Syn Brass
3279	Synth Bass CDR	3315	Syn Brass Plate	3351	Syn Str Hall
3280	BOC Deverb	3316	Syn Str Hall	3352	BOC Deverb
3281	Gtr Niceverb	3317	E-Bow 1	3353	Popcorn Plate
3282	TripleCaster1	3318	THX	3354	Plantasia Plate
3283	TripleCaster2	3319	WorldCDR1	3355	New Horns 1
3284	TripleCaster3	3320	WarmCDR	3356	Phase DW
3285	TripleCaster4	3321	Chunky G 1	3357	SynChor&Dly1
3286	TripleCaster5	3322	OBI 1	3358	Mando EQ
3287	TripleCaster6	3323	SYnBassCompMu	3359	WorldMandolinCDR1
3288	TripleCasterWah	3324	MarimbDelay BPM	3360	Dist Booth Dly
3289	TripleCasterEQ	3325	DW GatedLaserver	3361	Synth Bass CDR
3290	TripleCaster31	3326	Chillwave Chords	3362	Infin Cathedral
3291	TrumpetWah	3327	Burning Keys 3	3363	Forte Pad Insert
3292	E-Bow	3328	EnhanceSyn	3364	Punch-a-ghost
3293	1/2-1/4DlyBPM	3329	Burning Keys 6	3365	ElecMandolin
3294	Phase	3330	StTaps1	3366	Gallo Dist+ EQ

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
3367	UnderCurrnts	3488	JK Timbered Taps	4030	Double Squash
3368	UnderCurAux	3489	JK GatedLaserver	4031	Vintage Squash
3369	DW Laser Reverb	3490	JK Marimba Hall	4032	House Piano
3370	Cathedral ChordDW	3491	JK Green Room	4033	Rooftop 73 Rhds
3456	BreakdrumsNEWKIK	3492	JK Laser Reverb	4034	Steely Dyno 77
3457	Lil' Drum Booth	3493	Dubstep Drumz	4035	Vintage Amp Wrly
3458	Small Drum Space	3494	DubDelayer	4036	Amped Bell 73
3459	Small Cmpsd Spce	4001	Rich 9 Ft Grand	4037	BarkDist 77 Rhds
3460	More Drum Air	4002	Rich 7 Ft Grand	4038	Becks Retro Wrly
3461	Full Drum Room	4003	Rock 9 Ft Grand	4039	Phasey 73 Rhds
3462	Brite Drum Space	4004	Bright 7ft Grand	4040	Mr. SparkleTop73
3463	Garage Drums	4005	Solo 9 Ft Grand	4041	Aged Tolex 77
3464	Expandn'DrumHall	4006	Solo 7 Ft Grand	4042	Smooth 70's 73
3465	Expandn'Drum 481	4007	Vintage Upright	4043	FusionChorDyno73
3466	Expandn'DrumPLTE	4008	Vintage Grand	4044	Chorus 77 Rhds
3467	Expandn'Drum GYM	4009	Elegant Grand	4045	73/77 StereoBels
3468	SnappyDrumCmpVrb	4010	New Orleans	4046	Env Filt Rhds
3469	Drum Enhancer	4011	Dark & Distant	4047	Ray's Wurly
3470	DrumComp subtle	4012	Piano + Pad	4048	Deep Fuzz Wurly
3471	Snare Enhancer	4013	Piano & Strings	4049	T-Bone Wurly
3472	SnrEnhanceComp	4014	Punchy Edge	4050	Phase Dist Wurly
3473	NewKickComp 1	4015	R&B Stack	4051	Bright Fuzz Wrly
3474	CmpVerb4Drms2	4016	Super Pop	4052	Tramp Amp Wurly
3475	DistCompRev4Drms	4017	70s Album	4053	FM EP 1
3476	DrmCMP4PrgNew	4018	Artis Grand	4054	FM EP 2
3477	Ricochet Verb	4019	Legacy Grand	4055	Rhotary Rhds 73
3478	VerbW/Stereo 2	4020	New Age Grand	4056	Elec Grand Stack
3479	DubDelayer	4021	Piano & Harp	4057	BrightRMI Pn/Hrp
3480	DarkDrumSlap Sys	4022	Piano & Choir	4058	Tight Bright FM
3481	ExpStereoDrmHall	4023	Mood Ring	4059	Gabriel's Melt
3482	Snr Enhnce HiCut	4024	Ambience	4060	CP80 Enhanced
3483	Trans DrmComp	4025	Film Piano	4061	VideoKilledRadio
3484	CmEqDeRe4DrmsSTb	4026	Soul Piano	4062	UK Pop CP70
3485	CmpDistRev4Drms	4027	Pub Piano	4063	MistyMountain EP
3486	VinylDistImage	4028	Double Grand	4064	No Quarter Pnt
3487	Dub hall	4029	Mono Upright	4065	Black Friday

ID	EFFECT	ID	EFFECT	ID	EFFECT
4066	Sly Ballad	4105	All Stops	4142	UnderCurrents
4067	RoyalKingWakeman	4106	AllStopsAllVox	4143	Fairlight Pad
4068	StageTines Soft	4107	Pipe Stops	4144	Phase Shimmer
4069	Suitcase Tines	4108	Chapel Organ	4145	Evolving Pad
4070	Rooftop 73 Rhds2	4109	Pipes & Voices	4146	Lush Pad
4071	Suitcase EP	4110	16' Open Flute	4147	Deeper Water
4072	Wurly 200	4111	16' Ped Reed	4148	Lush Rhythm Pad
4073	Chaka Clav	4112	16' Reed A	4149	Cosmic Sus Pedal
4074	SupaStevie CB	4113	16' Viol	4150	Solo Syn Orch
4075	Funkadelic Relic	4114	Leslie 122 K X	4151	Add A Pad 1
4076	ZEP Clav	4115	LightDistlLes KX	4152	Add A Pad 2
4077	HeartbreakerWAH	4116	Clean Leslie KX	4153	Super Saw
4078	Chameleon Wah	4117	Fisher'sHarm Mic	4154	Bright Vector
4079	Stevie Fuzz Amp	4118	ParisCmboAccordn	4155	Classic SynBrass
4080	OutOfPhasPickups	4119	Mellow Accordion	4156	MW S&H Filt
4081	Fr Harpsi L84U8	4120	BrasilAccordion	4157	80's Heaven
4082	Fr Harpsi L48	4121	Press Lead	4158	PolySynth Stack
4083	Fr Harpsi Lute	4122	Cars Square Lead	4159	Chillwave Chords
4084	Fr Harpsi L8	4123	Keytar Hero(Wah)	4160	Classic Saws
4085	Fr Harpsi U8	4124	Voyage Lead	4161	Big Old Jupiter
4089	ClassicBLesFstvX	4125	SimpleHipHopLead	4162	Punchy Synth
4090	FunkyPerc Les X	4126	SquareChirpLead	4163	Touch Trance
4091	SoulPerc Les X	4127	Vector Lead	4164	Square Bell
4092	FirstThree LesX	4128	80s Lead Synth	4165	Perc Vector
4093	PerfectStrLes X	4129	Dark Wobbles	4166	Tesla Coil
4094	70s Drwbars LesX	4130	Daft Lead	4167	Warbly Pong SQR
4095	Prog Bars Les X	4131	Minipulse 4Pole	4168	Gangsta Wrap
4096	Ezra II Les X	4132	Frankenstein Wah	4169	Woodhouse Bass
4097	CrunchLesl122 X	4133	Candy*O Sync	4170	Aggro OctoBass
4098	SoulLeslie122 X	4134	Raw & Bleedin	4171	KneeDeepMiniMoog
4099	Jimmy'sBrakeX	4135	Dist Filter Lead	4172	Squeeze Mini
4100	DistlLes HotGsX	4137	Film Score Pad	4173	Iceman Bass
4101	NonKB3 A KX 2	4138	Majestic Pad	4174	ANGRY Bass
4102	VoxKB3	4139	So Lush Pad	4175	Big Synth Bass
4103	VoxKB3	4140	Bladerunner ARP	4176	Noise Bass
4104	Farfisa1	4141	CrotaleScape Pad	4177	The Way It Is

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
4178	Dolby Bass	4214	Solo Alto Sax	4268	Octave Celeste
4179	Adagio Strings	4215	Solo Tenor Sax	4269	Bells
4180	Big LA Strings	4216	Flute/Clarinet	4270	Carillon
4181	Fast Strings	4217	Solo Bari Sax	4271	Basic Orch Perc
4182	Slow String Trem	4218	StrawberryFlutes	4272	Orch Timpani
4183	AdagioTutti 8ves	4219	Gothic Climax	4273	Natural Perc
4184	Adagio Octaves	4220	Winds & Strings	4274	Percussionist
4185	NashvilleStrings	4221	3Way Split Mltrn	4275	Bongo Conga
4186	Poltergeist Pad	4227	Rich 'Caster	4276	Talking Drum
4187	Full Pizzicato	4228	Rich Les	4277	Accessory
4188	Lead Violins II	4229	Studio 'Caster	4278	Carnival Perc
4189	AggressDivisiStr	4230	Phaser Elec Gtrs	4279	Vocal Percussion
4190	Yesesis Tron Str	4231	TimeWarpCaster	4280	Celeste
4191	Moby TurntblTron	4232	Kinda Krunchy	4283	Mixed Choir
4192	Solo Violin Fast	4233	Brown Sound LTE	4284	Manhattan Voices
4193	Solo Cello Fast	4234	Stompbox Les	4285	Choir Complete
4194	Solo Harp	4235	SuperFlyWahCast	4286	NYC in LA
4195	Session Hornz	4236	Jack the Ripper	4287	Crystal Voices
4196	High-End Horns	4237	Boutique Six Str	4288	Cathedral Vox
4197	Split SectionSW	4238	Boutique 12 Str	4289	Silent Sorrow
4198	Mancini Brass	4239	Real Nylon	4290	Swept Tron Voice
4199	GB Hornz+Syn	4240	Mandolin Plus	4291	Slo Orch Chorus
4200	Super-8 Horn Dly	4241	Banjo Plus	4292	Aaah Vocals
4201	Brass Fanfare	4242	Dulciere	4293	Jazzy Ballad Vox
4202	Low Orch Brass	4243	P-Bass	4294	Bright Syn Vox
4203	Lead Trumpet	4244	Motown Bass	4295	AntiqueAhhChorus
4204	Solo Trombone	4245	Finger Bass	4296	Vox Angel
4205	Jubilee Trumpets	4246	Flea/Bootsy	4297	Aaahlicious
4206	Wah Trumpet	4247	Jaco Fretless	4298	PolyTechnobreath
4207	Mr. West Horns	4248	AC Buzzer Bass	4299	Glockenspiel
4208	Bullit Brass	4249	Beasties Bass	4300	Real Vibes
4209	Dr. Stab'N SwEll	4250	Levin/Gabrlfrtls	4301	Stereo Marimba
4210	MiamiBrassSectns	4258	Motown Bass	4302	Xylophone
4211	Mostly Saxes	4259	Finger Bass	4303	XHarmonicStlDrum
4212	UniSaxSection	4260	Flea/Bootsy	4304	Chimes
4213	Bassoon/Oboe	4267	Celeste	4305	Bigger Chimes

ID	EFFECT	ID	EFFECT	ID	EFFECT
4306	Crotales Hits	4512	ART2Intimate 554	4555	Single2xLeslie
4307	Metal Marimba	4513	FSE W/Pad 4435	4558	Farfisa Delay
4308	SteamPunkMallets	4514	ART2 Warm AGG2	4559	Farfisa Leslie
4309	CeleseGlockHarp	4515	Dark & Distant	4565	Prophet Sync
4315	Celeste Palette	4516	Air Rhds 5	4567	Keytar Hero(Wah)
4316	Bellestrum VTrg	4517	74 Suitcase SE	4568	Clone Bandit
4317	Toy Piano	4518	Lite Touch Tube	4569	5ths Lead 4
4318	Bunch of Bells	4519	Rhodes+FM	4570	Robin's Org Lead
4319	Synthy 73	4520	Fagen Rhodes	4571	Snap Lead
4320	Wurzzicato	4521	Tube EP Trem	4572	Sine Stuff
4321	Comp Cro + Pad	4522	Sustain Dyno	4573	Seondek Lead
4322	Clavestrum	4523	Reduced 73 Rhds	4574	AlaskanWild Lead
4323	Bowed Crotales	4524	DX7 Chain NG	4576	Poly Vector Lead
4324	Bells and Bows	4525	DX7 Chain	4577	Dogs Lead
4325	Bass Pedal	4526	Sustain Dyno 2	4581	Omni Strings 3
4326	Creepy Crawlies	4527	Warble Rhodes	4582	OBX FX
4327	RockLesl122 X	4528	Subtle EP Verb	4583	OBX FX
4330	Reverse Universe	4529	Reduced 73 Rhdsd	4584	Juno Chorus
4331	Pan Strings 3	4530	Air Rhds 5	4585	Omni Strings
4332	5th-Scape	4531	Wurly 200 SE	4586	Detuned PolySyn
4340	SyncoDeMayo	4532	Wurly 200 SE 2	4587	OBX Pad
4350	Power Bottom	4533	Tube Amp Clav 10	4588	PPG
4351	Deception Bass	4534	Tube Amp Clav12"	4589	Arpeggi Pad
4352	Latch Bass	4535	Clavinet	4590	Prophet Pad
4353	APG-ish Bass	4536	Tube Amp Clavint	4592	Warm EncounterFX
4501	ART2 Recital 587	4537	VAST Clav	4593	Mesoshere
4502	ART2 Solo 988	4538	VAST Clav Autowa	4594	Water Buffalo
4503	ART2 Fierce 1175	4540	Harpsitar	4595	Pan Motion Pad
4504	ART2 Studio 831	4544	Classic Harpsic	4596	Deeper Water
4505	ART2 Rich 1175	4545	Simple Harpsic	4597	NG 5th Synth
4506	ART2 Jazzy 831	4546	MustBeHarpsick	4598	80s Saws
4507	ART2 Bright 2794	4547	Harp-Secco-rd	4599	Throaty S&H
4508	ART2 Modern 415	4548	Clavinet2	4600	OBX FX
4509	ART2 Smooth 440	4549	ClassicBLesFstvX	4602	Frozen Sawdust
4510	ART2 Vintage 330	4550	SoulPerc Les X	4603	Tomita's Tomato
4511	ART2 Upright 466	4552	DistlLes HotGsX	4604	Vintage Wobbler

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
4606	Quadra Comp FX	4663	Winds & Strings2	4718	Dark Wobbles
4607	Clav Template	4664	Congregation	4721	Daft Lead
4608	80s Saws	4665	Matadores	4722	Minipulse 4Pole
4609	Static Charge	4666	Cello & Reeds	4723	Frankenstein Wah
4610	Poly Arp MH	4667	Dave & David	4724	Candy*O Sync
4611	Poly Arp 3	4668	H'Arps n Harp	4741	Raw & Bleedin
4612	poly Arpeggiator	4672	Mandolinese	4742	Dist Filter Lead
4613	Dread Bass	4673	BroadwayBackup	4743	Film Score Pad
4614	Uptown Bass	4674	Gypsy Reggae	4744	Majestic Pad
4615	Phattest	4675	Delay Amount	4745	So Lush Pad
4616	Poppit SynBass	4676	Shimmer Pluck	4746	Bladerunner ARP
4617	MiniFunk	4677	Shokdo Enka	4747	CrotaleScape Pad
4618	SmoothMoogerCR	4678	Yucatan Vibe	4748	UnderCurrents
4619	RC Little Booth	4679	MR Kite1	4749	Fairlight Pad
4620	Dub Wob	4680	Mixed Strummah	4750	Phase Shimmer
4624	Uptown	4681	ChrippingStompbox	4751	Evolving Pad
4629	Phser Mod Delay	4682	TouchMeAfter3pm	4752	Lush Pad
4631	Trem Layer	4683	Pizzynth	4753	Deeper Water
4632	Strangs Chain	4684	Cirque du Synth	4757	Lush Rhythm Pad
4636	DBass & Violins	4687	PrivateVibes2	5000	Cosmic Sus Pedal
4637	MarmaladeStrings	4688	Broken Sparkle	5001	Solo Syn Orch
4638	Dulcet Strings	4689	Touch Vocoder	5002	Add A Pad 1
4639	Tutti Strings	4690	Pressure Cooker	5003	Add A Pad 2
4647	UniSaxSection	4691	Armonica Wurly2!	5004	Super Saw
4648	Lourde1	4692	Ambience	5005	Bright Vector
4649	Full Blown	4698	Chunky Comper 2	5006	Classic SynBrass
4650	Epic Low Brass	4699	Twin Peaks	5007	MW S&H Filt
4653	Solo Saxes	4700	Noisy Feedacker	5008	80's Heaven
4654	Sylvan Dbl Reeds	4709	Ooh So G'ooHD	5009	PolySynth Stack
4655	Clarinet	4710	DapPer Dudes	5010	Chillwave Chords
4656	Fruity Floom	4711	Bummer Dudes	5011	Classic Saws
4658	SoloBassoon&Oboe	4712	BaDaDah-Doop	5012	Big Old Jupiter
4659	BClar/Clar/Flute	4713	Choir Redux	5013	Punchy Synth
4660	Dyn Orch Fr Horn	4714	EnvelopingVoices	5014	Touch Trance
4661	TonyStarkAmp	4715	OohDBopTouchEcho	5015	Square Bell
4662	EPIC VOX & STRG	4716	In a good place2	5016	Perc Vector

ID	EFFECT	ID	EFFECT	ID	EFFECT
5017	Green Room	5053	Miami Plate Rvb	5089	Empty Stage
5018	AbbeyBrasHall2	5054	Tenor Sax	5090	DF OrganRoom
5019	MedRoom10	5055	Bari Sax	5091	KB3 Aux2 Booth
5020	Medium Hall	5056	Small Dark Room2	5092	KB3 Aux2 Booth 2
5021	CDR Just Reverb	5057	Small Hall II	5093	Organ Chamber2
5022	Real Niceverb	5058	Omni Stage	5094	KB3 Cab 1
5023	Small Hall	5059	DeepChorsDlyHall	5095	KB3 Cab 2
5024	Mosque w/Inf Rev	5060	AGT Reverb	5096	Plebe Chamber
5025	CDR Aux Reverb	5061	NylonAgtVerb	5097	1.6ms Hall
5026	Live RecitalHall	5062	Small Dark Room	5098	Artis KHall
5027	MosqueySwirl Aux	5063	HammerDulceRoom3	5099	2.0ms Hall
5028	BladerunnrRvb	5064	AbbeyPianoHall	5100	Sweet PnoHall 2
5029	Dark Room 2	5065	Lil' Drum Booth	5101	FM Hall
5030	UnderCurAux	5066	Gated Plate 144m	5102	.78ms Hall
5031	AbbeyPianoHall2	5067	SnappyDrumCmpVrb	5103	Album Plate
5032	JK GatedLaserver	5068	More Drum Air	5104	OmniStage
5033	SymphonyHall 1	5069	Full Drum Room	5105	Artis LrgKHall
5034	Gunshot Verb	5070	Expandn'DrumHall	5106	Sweet PnoHall 2
5035	SuperSaw Aux	5071	DrmCMPVb4PrgFX2	5107	Lrg Ambience I
5036	7ft Aux Verb1	5072	Aux Dark Room 2	5108	Upright Room
5037	Cathedral Chorus	5073	CmpVerb4Drms2	5109	Upright Room
5038	SymphonyHall Aux	5074	Garage Drums	5110	.78ms Hall
5039	Bradley's Barn 1	5075	SymphonyHall 3	5111	OmniStage 200
5040	SymphonyHall 2	5076	Med Drum Room	5112	Omni Stage Short
5041	Empty Stage II	5077	PercussionRoom	5113	Omni Stage 3
5042	AbbeyPianoHall 2	5078	PercVerb1	5114	Empty Stage
5043	Sax Chamber 21	5079	Med Drum Room	5115	Empty Stage
5044	Smooth Long Hall	5080	Elegant Hall Aux	5116	Scoring Stage
5045	Horn Plate 1	5081	FlangVoXHall2Aux	5117	ElegantHallAuxJK
5046	Super8 Horn Dly	5082	Cathedral Vx Aux	5118	SymphonyHall1 JK
5047	Solo Trumpet	5083	Classic Plate II	5119	Dulcet Hall
5048	Predelay Hall	5084	Real Niceverb II	5120	huge space 2
5049	Gtr Niceverb	5085	BigDarkRoomDW	5121	ShimphonyHall 1
5050	Bullitt PDlyHall	5086	Empty Stage 11	5122	PredelayHall2 J1
5051	7thHeaven Plate	5087	Cab-Reverb	5123	PredelayHall2 J2
5052	Miami Gated Room	5088	jk AUX1	5124	Sax Chamber21 JK

## Effects

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ID	EFFECT	ID	EFFECT	ID	EFFECT
5125	SymphonyHarp JK	6040	RSessionGTR	6118	OldSquashed D
5126	PredelayHall2 J1	6041	77DWDYNOAmp2	6119	New Age Stn 1
5127	Sax Room JK AUX	6042	77DWDYNOAmp3	6120	big warm stein
5128	PredelayHall2 J3	6043	Y DW Rock EQ	6121	big warm C
5129	Subtle EP Verb	6044	Y DW Rock EQ2	6122	Darker D
5130	VinylDistlImage2	6045	Heartbreaker	6124	damperverb 2unit
5131	Dampers Up 2.5ms	6046	S DW AlbumEQ1	6125	7ft Solo
5132	damperverb 4unit	6047	DynoChor73	6126	D TMP flat EQ
5133	Dampers Up Forte	6048	73DWPPhase2	6127	7ft Squashed
5134	damper verb	6049	Double Grand3	6128	7ft Warm Jazz
5135	DubDelayer	6050	Dampers Up Forte	6129	9ft Classic
5136	80s Saws verb	6051	ChorVerb for Pad	6130	Rhodes Multi as1
5137	SymphonyHall Inf	6052	dyn77Template	6131	77ClikFix02
5138	Harmonica Mic	6053	SynChor&Dly1	6132	7ft Smooth
5139	Ricochet Verb	6054	Dampers Up Forte	6133	9ft w Strings
5140	Brite Drum Space	6055	German Grand4	6134	German Grand
5141	Lil' Drum Booth	6056	Ezra II Les X	6135	Concert Grand
5143	Full Drum Room	6057	tmbshiftComp	6136	Warm Grand 1
5144	AS CmpVerb4Drms4	6100	Small Hall	6137	D Template 3
5146	Little Booth2	6101	steincoNcert2	6138	Rich 7 ft Grand
6000	VS Wave 122	6102	steincoNcert3	6139	7ft Vintage Rock
6025	Rhodes FX 1	6103	warm stein1	6140	Darker D
6026	Small Hall	6104	9ft ppp	6141	Oscar's Grand eq
6027	Tweet piano	6105	Studio Piano as	6142	7ft Squashed2
6028	Y Grand EQ 2	6106	dancestudioyam1	6143	Clear 9ft Grand
6029	Soundboard 3	6107	Slo Attack Hall	6144	2.0ms Hall
6030	9-Ft Piano FX2	6108	7-Ft Piano asFN	6145	Warm 7ft Grand
6031	77DWWintAmp2hi	6109	big stein 1	6146	.78ms Hall
6032	Tremolo BPM	6110	77ClikFix01	6147	House 7ft Grand
6033	Pianarama! verb	6111	crtalsdelay 1	6148	New Age Grand
6034	Solaris	6112	brtpunch yam	6149	Rhodes MultiFX 1
6035	SolarisGateLazer	6113	7ft RockVerb1	6150	Rhodes Aux Verb1
6036	Existential Taps	6114	7Ft Vintage Rock	6151	Rhodes MultiFX 2
6037	URage_CmpRvb	6115	Vintage Class C	6152	Rhodes Aux Verb2
6038	77DWDYNOAmp1	6116	Dance Studio	6153	1.6ms Hall
6039	LintBuster LD	6117	DanceStudioVerb	6154	1.6ms Plate

ID	EFFECT	ID	EFFECT	ID	EFFECT
6155	9ft Solo Grand	6207	BriteUpright EQ	6413	DWWurlyBriteAmp1
6156	9ft DarkDistant	6208	Upright Room	6414	NAMMWrllyDeepFuzz
6157	7ft C	6209	70s Blues 7ft	6415	NAMMWrllyDeepFuz2
6158	9ft Bright Grand	6210	Tramp Amp	6416	NAMMClavTrampler
6159	7ft Bright Grand	6211	Soft Rhodes	6417	NAMMClavFuzz1
6160	Harpsichord 1	6212	Soft Rhodes2	6418	ClavNAMMPhasDst1
6161	Harpsichord 2	6213	SoftStTrem Rhds	6419	ClavNAMMPhasDst2
6162	Vintage Squashed	6214	73SparkleTop	6420	73DWPHASE2
6163	House 9ft Grand	6230	Supa Clav	6421	77DWChor2
6164	Super Pop eq	6231	Heartbreaker	6422	73DWPHASDist1
6165	Scoop 9ft Grand	6232	Relic Clav	6423	73DWPHASDist2
6166	BrT Scoop 9ft	6233	Steely Fuzz	6424	73DWPHASDistWah
6167	BrT Scoop 7ft	6234	Stevie Fuzz	6425	77DWPHASDstWah1
6168	ARTISCncertPnAS1	6235	Trampler	6426	73DWPHASDistWah2
6169	9ft Solo Grand2	6236	Trampler2	6427	73DWVintamp2
6170	Dampers Upright	6237	OutaPhasePickups	6428	77DWVintAmpWah
6171	German Grand2	6238	Chaka Wah	6429	DampersUp
6172	Double Grand1	6239	ChameleonWah	6430	Sweet PnoHall
6173	Piano + Pad	6240	Beck Wurly	6431	77 cdr g1 t
6174	9ft w Strings2	6241	BlkCrows Wurly	6432	Sweet PnoHall 2
6175	FM n K EQ2	6242	Clav Chamber	6440	DeepfuzWurly1
6176	Artis Pluck EQ2	6300	Weapon Chain	6500	Rds AuxVerb Long
6177	German Grand3	6301	Double Chorus	6501	Comp Piano FX
6178	Double Grand3	6400	73DWPHASE1	6502	Piano MultiFX 1
6179	German Grand4	6401	77NAMMChor1	6503	Dist Clav FX
6181	Mono Upright	6402	77NAMMChor2	6504	Dist Clav CB FX
6182	CMartPiano 1	6403	73NAMMPHASDist1	6505	Synth HF Stim
6184	BrT Upright7ft	6404	77DWDstTrem1Wah	6506	Synth HF Stim 2
6185	Concert GrandEQ7	6405	73DWSStTrem1	6507	SuperSaw Aux
6200	JSP Comp & EQ	6406	73NAMMStTremDst1	6508	SuperSaw
6201	Album Plate	6407	73NAMMStTremDst2	6509	Chroma FM3
6202	DW 70s AlbumEQ1	6408	77NAMMVintAmp1	6510	KB3 Aux2 Booth
6203	Y DW Elton EQ2	6409	DWWurlyVintAmp1	6511	GANGsta Wrap 2
6204	DW70sAlbumEQSoft	6410	WurlyRayAmp1	6512	KB3 Aux2 Booth 2
6205	Ghost EQ Soft	6411	NAMMSuperTrmpPha	6513	Organ Chamber2
6206	DarkUpright EQ	6412	DWWurlyPhasDst1	6514	NonKB3 A KX 2

## Effects

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6520	String Multi FX1	6650	Mono EQ	6694	ClassicBLesFstv4
6521	SymphonyHall Aux	6651	RecitalHall	6696	ClassicBLesFstvX
6522	MltiFX for Stngs	6655	BigChorusPiano2	6700	kb3 cab1
6530	Rhodes-Chorus	6656	Lrg Ambience I	6701	FunkyPerc Les 01
6531	Rhodes-Flange	6657	Ambient Pno EQ	6702	SoulPerc Les 01
6532	Rhodes-Phaser	6658	Blown Spkr Ins	6703	PerfectStrLes01
6533	Rhodes-Rotary	6659	Recital Piano3	6704	70s Drwbars Les1
6534	Rhodes-Env Filt	6660	FM n K EQ	6705	Prog Bars Les01
6550	Rhodes1 Aux	6661	FM Hall	6706	FirstThree Les03
6551	Rhodes Aux Room1	6662	ConcertK lite1	6707	Ezra II Les 01
6552	DampersUp	6663	ConcertK lite2	6708	kb3 cab1
6553	Tines FX	6664	Soundboard as	6709	FunkyPerc Les 01
6554	9-Ft Piano FX	6665	ConcertK 4sc	6710	SoulPerc Les 01
6555	DampersUp	6667	ConcertK EQonly	6711	FunkyPerc Les X
6556	Sweet PnoHall	6668	Artis Y Grand2a	6712	70s Drwbars Les1
6557	Sweet PnoHall 2	6669	Artis YHall 2	6713	Prog Bars Les01
6558	Tines FX	6670	Upright Room	6714	FirstThree Les03
6559	9-Ft Piano FX	6671	ParlorPianoEQ	6715	Ezra II Les 01
6606	Artis KHall	6672	ParlorVerb	6716	SoulPerc Les X
6610	Artis LrgKHall	6673	PianoTmplateEQ1	6717	FirstThree LesX
6611	Upright EQ	6674	ModJazz K2	6718	PerfectStrLes X
6612	Artis LrgKHall	6675	Brgt Soundboard	6719	70s Drwbars LesX
6613	ConcertGrand1	6676	Recital EQ	6720	Prog Bars Les X
6617	ModJazz Plate 1	6677	Radio Pop EQ	6721	Ezra II Les X
6619	Punch Room	6680	Concert GrandEQ4	6722	CrunchLesl122 X
6627	Concert Grand EQ	6681	Soundboard 4	6723	SoulLeslie122 X
6628	Y Grand EQ 2	6682	ModJazz K3	6724	Jimmy'sBrakeX
6630	Bright Y EQ2	6683	Upright EQ2	6725	DistlLes HotGsX
6632	Artis K Pop EQ	6684	Pianarma EQ+Cm4	6726	NonKB3 A KX
6633	Dark n Distant	6685	JSP Comp & EQ2	6727	Leslie 122 K X
6634	Artis Pluck EQ1	6686	Recital Piano 3	6728	LightDistlLes KX
6635	Artis Y EQ	6687	ArtEQCMPas2	6729	Clean Leslie KX
6640	Bebop Piano	6688	Weapon Chain2	6800	Wurly Template
6643	ModJazz K1	6689	MarquisPiano3	6802	Rhodes Aux Huge
6648	Piano + Pad	6692	ClassicBLesFstv4	6803	7ft Aux Verb1
6649	Delay Piano	6693	Concert GrandEQ6	6804	9-Ft Piano FX

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<b>ID</b>	<b>EFFECT</b>
6805	Yam ppp
6806	CDR Aux Reverb
6807	Dark Wobbles
6808	Tines Aux Rev
6809	Synth Dist CDly
6810	Mosque w/Inf Rev
6811	MosqueySwirl Aux
6812	Forte Lead Insrt
6813	Comp Lead Insert
6814	CDR Just Reverb
6815	Wah Synth Insert
6816	Forte Lead GTR
6817	Phase+CH+Delay
6818	Dist/Wah Insert
6819	Comp Plex Insert
6820	Comp Mu Aliasr
6821	Elegant Hall Aux
6822	FlangVoXHall2Aux
6823	FlangVoicInsert
6824	Cathedral Vx Aux
7000	GM Reverb
7001	GM Chorus
7002	Indie Piano
7003	BluesPnoCmpRvb 2
7004	ArtEQ3
7005	ArtEQDW4
7006	ArtEQDW5
7007	ArtEQDW7
7008	ArtEQDW8
7009	ArtOddHarm
7010	SoftPnoCmpRvb 1
7011	SterPnoCmpRvb 2
7012	SoftPnoCmpRvb 2
7013	SterPnoCmpRvb 3

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