KURZWEIL®

SP7 Grand

USER'S MANUAL

English Manual

HDC YOUNG CHANG

⚡ The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated ìdangerous voltageî within the productís 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 of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. Do not use this product near water-for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should only be used with a stand or cart that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long priod of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. This product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. This product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. This product may be equipped with a polarized line plug (one blade wider than be other). This is a safety feature. If you are unable to insert the pluginto the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.

9. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
10. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
11. The product should be serviced by qualified service personnel when:
    A. The power supply cord or the plug has 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.
12. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.
13. **WARNING :** Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

RADIO AND TELEVISION INTERFERENCE

WARNING : Changes or modifications to this instrument not expressly approved by KURZWEIL 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:
The normal function of product may be disturbed by strong electro magnetic

interference. If so, simply reset the product to resume normal operation by following the instruction manual.
In case the function could not resume, please use the product in other location.
- 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.

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 present appareil numerique n'semet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

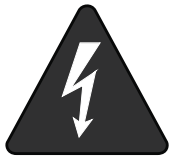# PowerSupply&Precautions

Make sure your digital piano is rated for the AC voltage supplied in the area in which the piano will be used. The voltage rating appears on the name plate on the adaptor.

To ensure proper and safe operation of the instrument, please read the manual carefully and keep it for future reference.

WARNING

1) To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

2) Please connect the designated DC adaptor to an AC outlet of the correct voltage.

3) This product should only be used with a standard voltage, if not, please use an appropriate adaptor that is recommended by the manufacturer.

4) When opening and closing the key cover, be careful not to pinch hands or fingers.

CAUTION

1) Discharge static electricity by touching a metal surface before touching the instrument.

2) Protect the keyboard and switches when moving the instrument.

3) Ensure the volume is set to the minimum level before turning on the instrument.

4) Do not open the inside of the instrument. This instrument contains precision parts which should not be touched.

5) Turn off the power after use.

6) Unplug the instrument when unused for long periods of time.

7) Do not apply excess force to the buttons and switches.

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Chapter 1. SP7 Grand Getting Started

1. What's Included

Included with the purchase of the SP7 Grand:

- SP7 Grand stage piano
- DC power adapter, AC power cord
- Sustain pedal
- Product warranty
- USB cable, balance cables

If any of the above accessories are missing, please contact your KURZWEIL dealer. When transporting the SP7 Grand, we recommend using a protective keyboard case or gig bag.

2. Power Connection

The SP7 Grand uses a DC power adapter.

After connecting the power adapter to the rear panel, plug the AC power cord into a wall outlet.
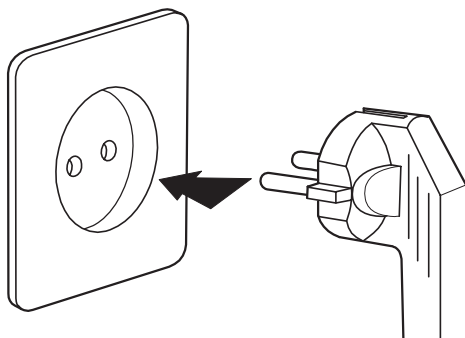
※ The shape of the plug may differ depending on global region.

> ⚠ **CAUTION**: Be sure to use the supplied DC power adapter (15V, 2.5A).
> Using the wrong DC power adapter may damage the product.
> If the adapter is damaged or missing, contact your KURZWEIL dealer.

To turn on the power, press the power button which is located on the right side of the back panel (when seated in front of the SP7 Grand).

Chapter 2. Sound Mode
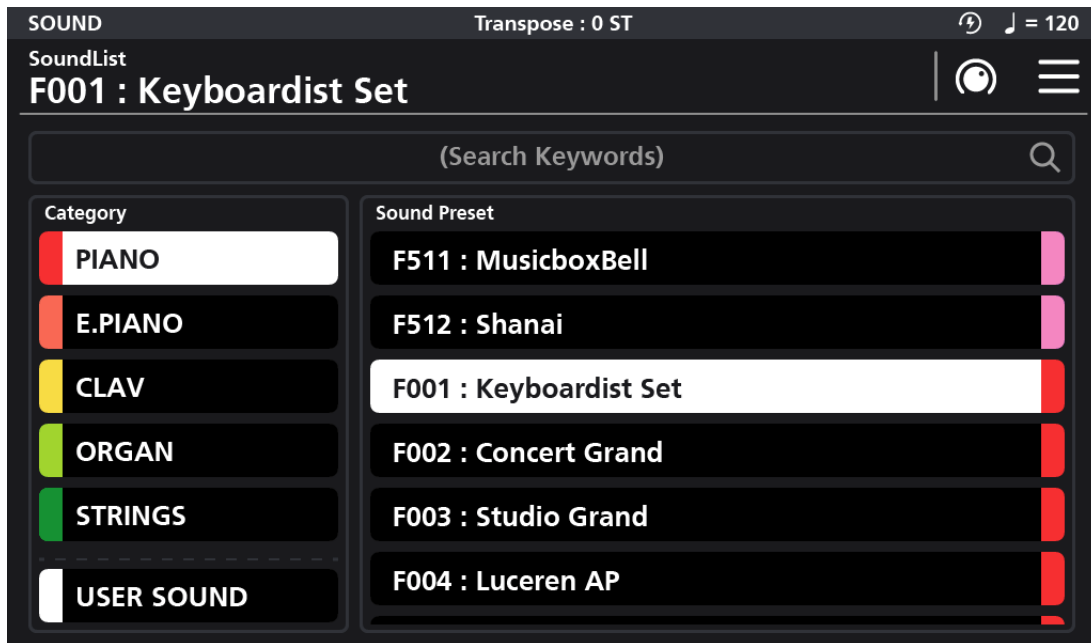
Sound mode is the default at power up and is the mode used for exploring the various multi Sound combinations available in the SP7 Grand. The SP7 Grand offers 512 multi combination Sounds drawing from a pool of 301 high-quality individual programs (many extracted from Kurzweil's flagship K2700 workstation).

To return to Sound mode from any other mode, press the Sound mode button, the second of the four mode buttons on the right side of the touch screen.

1. Selecting Sounds
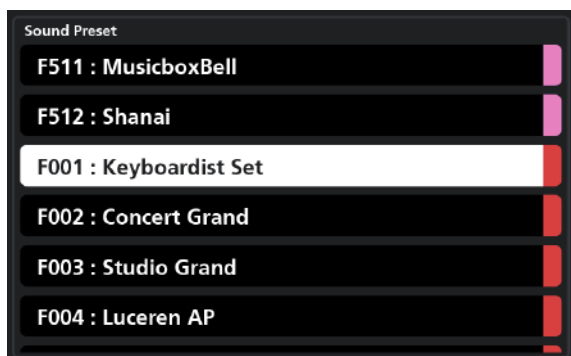
1-1 Browse all sounds

In Sound mode, the preset list is displayed on the right side of the screen. To make a selection you can either scroll with your finger through the list and tap a desired selection, use the Alpha wheel and/or the Increase (+) and Decrease (−) buttons.

Sound Mode

Category

- **PIANO**
- **E.PIANO**
- **CLAV**
- **ORGAN**
- **STRINGS**
- **USER SOUND**
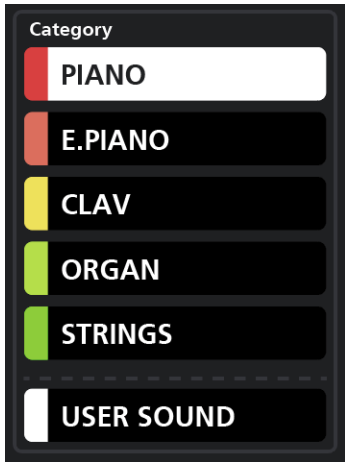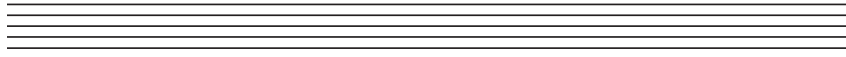
1-2 Selecting Sounds by Category

The sound presets are organized into 14 categories by type: PIANO, E.PIANO, CLAV, ORGAN, STRING, PAD, ENSEMBLE, BRASS, WINDS, SYNTH, GUITAR/BASS, DRUMS/PERC, MISC, and USER. You can select a category by pressing the desired front panel Category button or by scrolling down the list in the left part of the screen and then tapping your selection.

When a category is selected, all associated sounds of that category are displayed in a list on the right side of the screen. You can then select a specific sound by dragging/tapping through the sound list, use the Alpha wheel and/or the Increase (+) and Decrease (−) buttons.

1-3 Selecting a User Sound

Sounds you have edited and saved are stored in the User category. You can access the User category either by pressing the front panel User Category button or by tapping the on screen User Sound category tab in the lower left corner of the screen. If there are no Sounds yet stored in the User area you will see "There is no user preset" displayed in the top center of the screen.

1-4 Selecting Sounds by Keyword / ID Number Search

Touch the (Search Keywords) field at the top center of the screen to reveal a keyboard where you can type in a name or sound ID number to search by (the search is not case sensitive).

2. Touch Screen Display
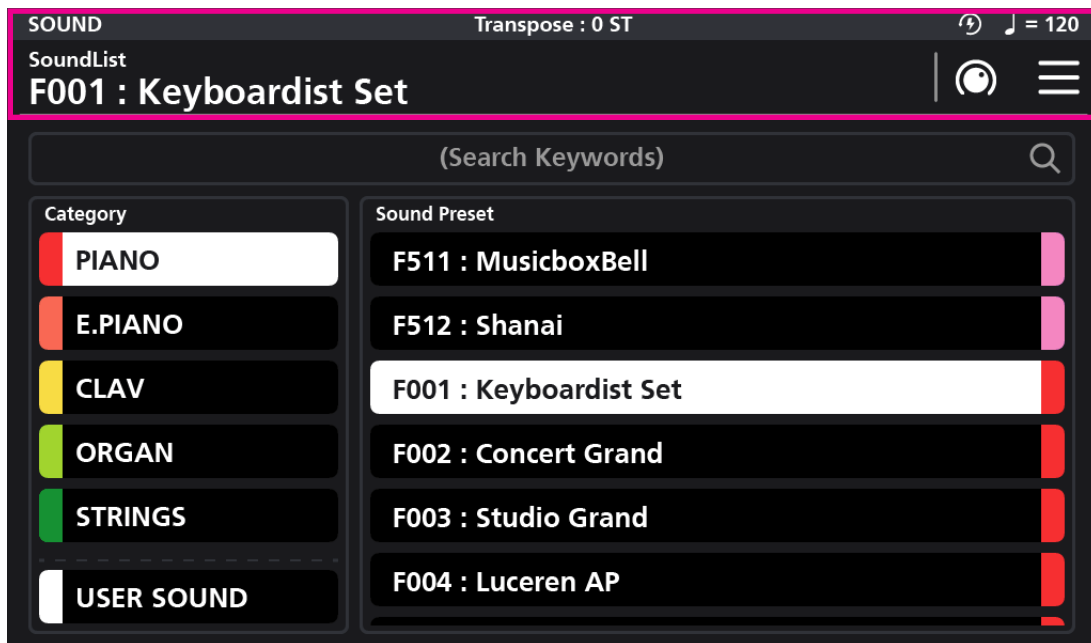
In Sound mode, the top line of the screen displays the currently selected mode, current sound, transpose status, MIDI in/out activity, auto power off and tempo information. The column on the left shows the list of Sound Categories and the column on the right displays the presets within the given category. The display is a touch screen and most operations can be selected and changed with a simple touch.

3. Controllers

The SP7 Grand offers a variety of physical controllers that can be used to enhance one's musical performance by varying an instrument's characteristics in real-time.
Controllers include knobs, buttons, X/Y joystick and pedals.

3-1 X/Y Joystick
The joystick is a multi-purpose up/down/left/right XY programmable controller that allows you to control various functions and FX while performing. By default the x-axis controls pitch and the y-axis controls modulation.

3-2 Transpose Button
Use the Transpose buttons to play in different musical keys. Each press of the + button raises the key by one semitone (half step). Conversely, each press of the − button lowers the key by one semitone.
Press both buttons at the same time to return to the non-transposed state of 0.

Chapter 2. Sound Mode

3-3 Control Knobs

A group of 8 customizable LED colored knobs are located to the upper left of the touch screen. The default controller assignments are: EQ Lo, EQ Mid Lo, EQ Mid Hi, EQ Hi, Delay Time, Delay Level, Reverb Time, and Reverb Level. These functions can be customized. Adjusting the knobs alters the values of corresponding graphic parameters displayed on screen.

3-4 Zone Buttons

A group of 8 customizable LED colored buttons are located to the lower left of the touch screen. By default, these mute and unmute the various Zones which make up the current multitimbral sound. These button functions can also be customized.

3-5 SW1 (SUSTAIN) and SW2 Pedal

The SW1 (SUSTAIN) pedal defaults to controlling piano sustain, which will sustain any note that is played while the pedal is pressed, for as long as the pedal is held.

The SW2 pedal defaults to controlling Sostenuto, which will only sustain notes for keys that are being held down before the pedal is pressed, for as long as the pedal is held.

The SW1 (SUSTAIN) and SW2 pedals can be enabled, disabled or reassigned for each Sound in the Sound Edit mode. In Global mode, you can also set up controller overrides that allow you to change the switch pedal assignments for all Sounds.

3-6 CC1 (VOLUME) Pedal

The CC (VOLUME) pedal defaults to controlling volume (pre-FX).

For Organ sounds, the CC (VOLUME) pedal controls organ swell. Organ swell is similar to volume, except the pedal operates over a narrower range and cannot be turned all the way down to silence.
The CC (VOLUME) pedal can be enabled, disabled, or reassigned for each Sound in Sound Edit Mode.

Global Mode can be used to set pedal overrides, which can change the CC pedal assignment for all Sounds.

Chapter 3. Sound Editing
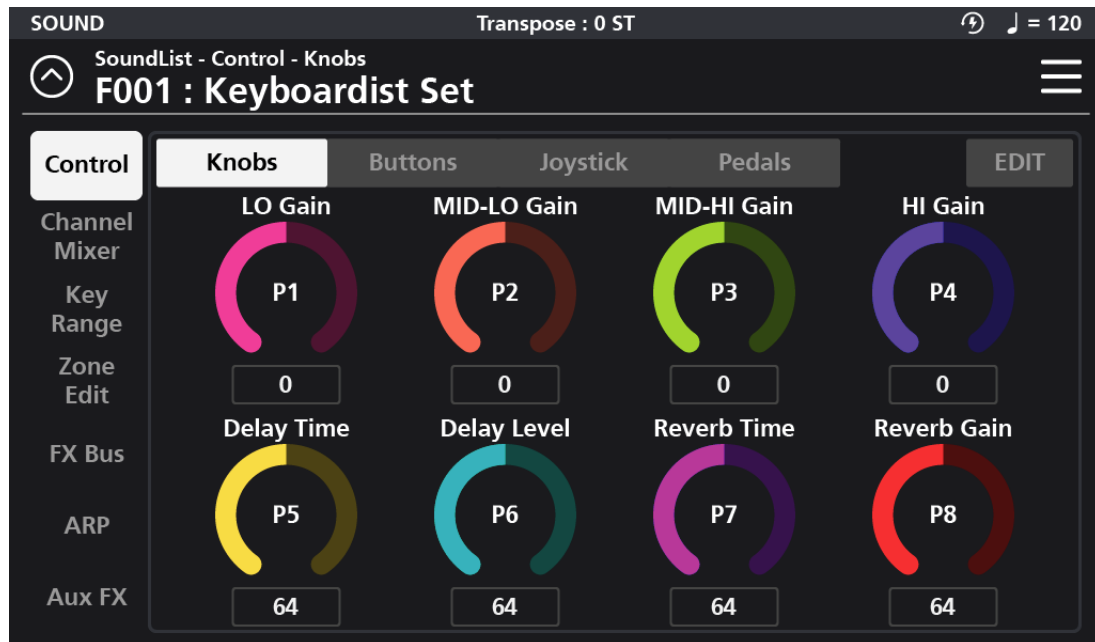
Use Sound Edit mode to edit and save custom sounds to a user ID for later recall.

In Favorite mode or Sound mode, press the knob shaped icon in the upper right hand corner of the touch screen to enter Sound Edit mode.
Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease− buttons, or tap the value field to open a numeric keypad for more precise data entry.

1. Saving User Sounds

Whenever changes are made to a sound within the Edit menu, it becomes possible to save that edited sound as a new User sound. To save, tap the MENU button in the upper right hand corner which reveals a list of options. Click the "Save" button.
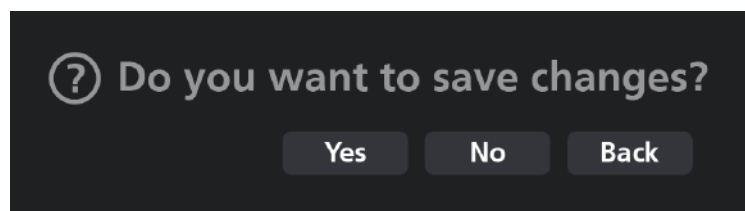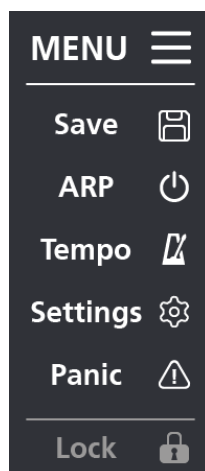
When you click the Save button, a save confirmation dialog window appears, "Do you want to save changes?" If you do not want to save the changes, press the "No" button. If you do want to save the changes, press the "Yes" button. If you want to return to the previous step, press the "Back" button.

Sound Editing

2. Rename a User Sound

You have the option to rename a user sound during the saving process. Before pressing "Okay", press the "Rename" button and a pop-up keyboard will appear allowing you to enter the new name. Press "Save" when done.

3. Controller Editing
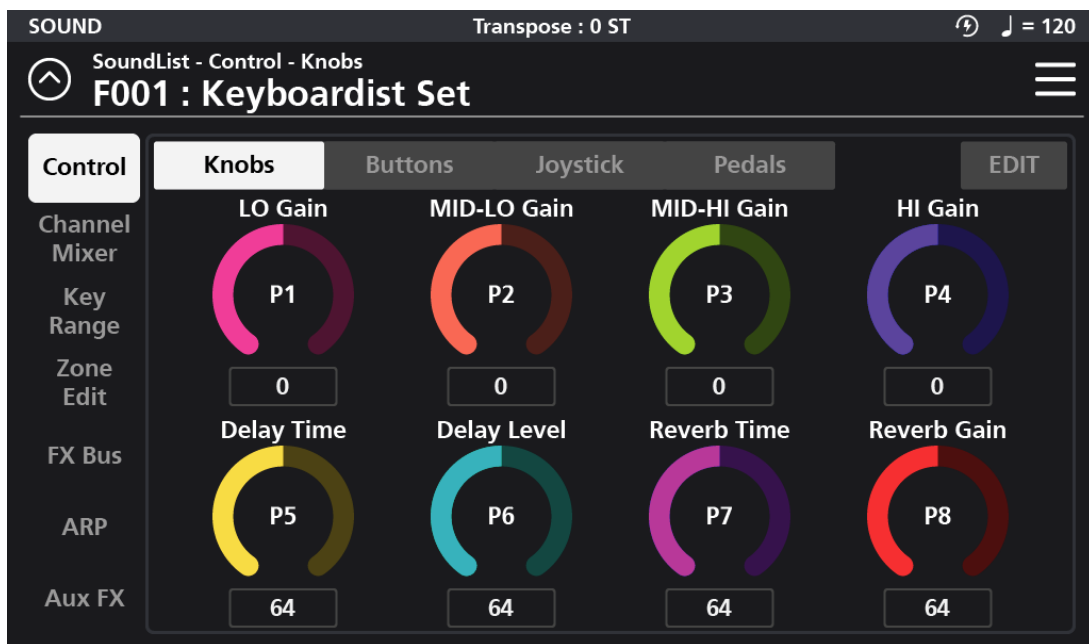
Select the "Control" tab in the top left corner to access the various Controller assignment pages: Knobs, Buttons, Joystick, and Pedals. To assign a controller, tap the desired Controller type. The initial page displays an overview of the chosen controller type and the current assignments. To make a change, click the "EDIT" button at the top right to go to the corresponding controller editing page.
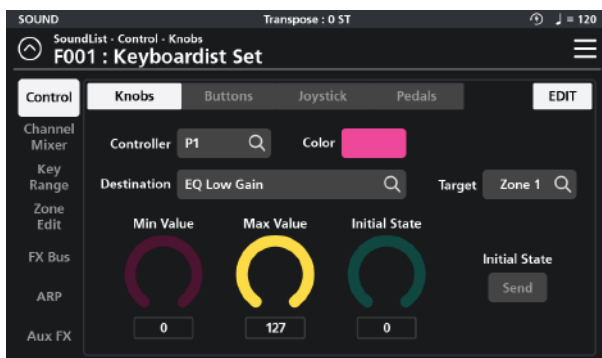
3-1 Knob Editing

There are 8 control knobs on the SP7 Grand, labeled P1 to P8. On the "Knob" Edit page, you can select the Controller knob to edit, edit the Knob Color, Destination, Target, Min/Max Value, Initial State value and Send State.

Sound Editing
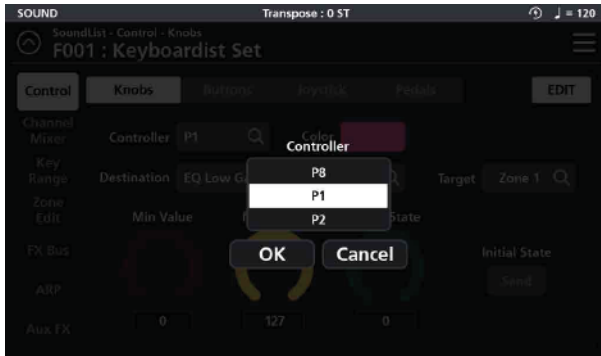
3-1-1 Assigning a Knob Controller

Tap the Controller field and select the desired Knob (P1 to P8) you want to assign. Selecting a given Knob displays that knob's parameters on screen.
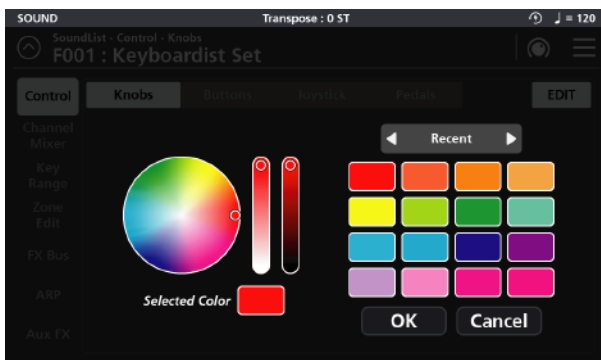
3-1-2 Assigning a Knob Color

Change the color of the knob LED ring by tapping the Color tile and, on the following screen, dragging the small circle about in the color palette wheel. Adjust the contrast and brightness using the two adjacent vertical control bars.

On the right you can also select between three groups of color palettes: The Default color set, a set of Pastels, and the most Recently used colors. The most recently used set are automatically saved for convenient repeated selection. Press OK to commit your selection.

3-1-3 Assigning a Knob Destination

The Destination parameter specifies the function of the given Knob. Tap the Destination field to access the function assignment page where you will be presented with 8 Destination types to choose from: **System, MIDI CC, AUX FX, AUX EQ, Zone IFX, Audio FX, Vocal Proc and Notes.**

3-1-3-1 Syste

The "System" tab offers a total of 9 possible choices:

Ctrl Override: When enabled*, all controller assignments mapped within the current Sound are overridden and take on the Global mode settings instead.

*Caution: Once enabled, the only means to disable this controller is to go to Global mode (Global 1 page) and manually set the "Override Controller" switch back to Off.

Blink Tempo: Enables the Alpha wheel LED ring to "blink" (strobe) along with the current Global BPM tempo.
ARP Enable: Turns the arpeggiator on/off. (Note: for an arp to run, one of the 8 available arps must first be assigned to the zone in question on the Zone Edit page – see pg 31 for more detail).
ARP Latch: This destination controls the "Arp Latch" master switch (Zone Edit / Common page). When engaged, this allows any Arp (A–H), that has its individual "Latch" parameter (ARP / Steps menu) set to "On", to continue to play its pattern even after all piano keys have been released.

Chapter 3. Sound Editing

Global BPM: This is the tempo (expressed in Beats Per Minute) applied to the entire instrument.

Pitch Bend+, Pitch Bend– : MIDI pitch bend control.

Program Change : Specify a MIDI program change (0-127) to select a given sound.Zone Activate : Enables/disables a zone.

3-1-3-2 MIDI CC

The full compliment of 128 Standard MIDI CCs can be assigned by selecting from a drop down scroll list.

3-1-3-3 AUX FX

The "Aux FX" tab offers 13 possible destinations governing the AUX FX section:

Reverb Size : Controls the size of the reverberant space.

Reverb Level : Controls the amount of reverb.

Reverb Time : Controls the length of reverb decay.

Chorus Level : Controls the amount of the chorus effect.

Chorus Feedback : Controls the level of chorus feedback.

Chorus Rate : Controls the speed of chorus modulation.

Chorus Depth : Controls the maximum detuning range of the chorus modulation.

Cho To Rev : Controls the amount of Chorus fed into the Reverb.

Delay Level : Controls the amount of delay.

Delay Time : Controls the interval of time it takes for the sound to repeat.

Delay Feedback : Controls the amount of delay feedback.

Dly To Rev : Controls the amount of Delay fed into the Reverb.

Dly To Cho : Controls the amount of Delay fed into the Chorus.

3-1-3-4 AUX EQ

The Aux EQ tab offers adjustments covering the 4 frequency bands of the Aux EQ:

EQ Low Gain : This function adjusts the low frequency range.

EQ Mid Low Gain : This function adjusts the low-mid frequency range.

EQ Mid High Gain : This function adjusts the high-mid frequency range.

EQ High Gain : This function adjusts the high frequency range.

3-1-3-5 Zone IFX (Zone Insert Effect)

The "Zone IFX" tab offers 4 possible destinations governing the IFX Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-1-3-6 Audio FX

The "Audio FX" tab offers 4 possible destinations governing the Audio Input Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-1-3-7 Vocal Proc (Vocal Processor)

The Vocal Processor tab offers 3 possible destinations governing the Vocal Processor section:

Lead Process On/Off : This function turns the Lead Processing section on/off.

Auto Harm On/Off : This function turns the Auto Harmony section on/off.

Auto Harm Volume : This function controls the volume level of the Auto Harmony section.

3-1-3-8 Notes

The Notes tab allows you to select individual MIDI note numbers (#0-127) to trigger from the selected controller knob. The selected note will be triggered throughout the rotation of the knob. The note velocity is determined by the Max Value. This function can be usefully for triggering percussion hits and sound effects.
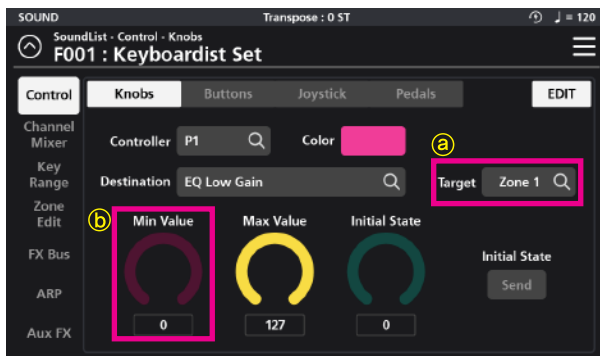
3-1-4 Assigning a Knob Target - ⓐ

A Knob's operating region is determined by its Target assignment. Depending on the chosen Destination, Target selection options can be: None, Preset, System, Zone1~16, Zone ALL, FX A~D, FX ALL, Input 1~2 and Input ALL.

3-1-5 Assigning a Knob Min Value - ⓑ

Sets the minimum adjustable value of the controller knob (value range = 0-127).
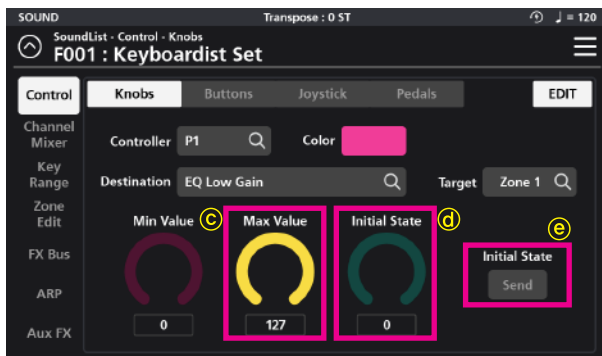
3-1-6 Assigning a Knob Max Value - ⓒ

Sets the maximum adjustable value of the controller knob (value range = 0-127).

3-1-7 Assigning a Knob Initial State - ⓓ

If the Initial State Send is enabled, the Initial State is the starting value (0-127) applied to the given knob when a Sound is first selected.

3-1-8 Knob Initial State Send - ⓔ

With the Initial State Send enabled, the Initial State value (above) is set as the knob starting point when a Sound is first selected.

Chapter 3. Sound Editing
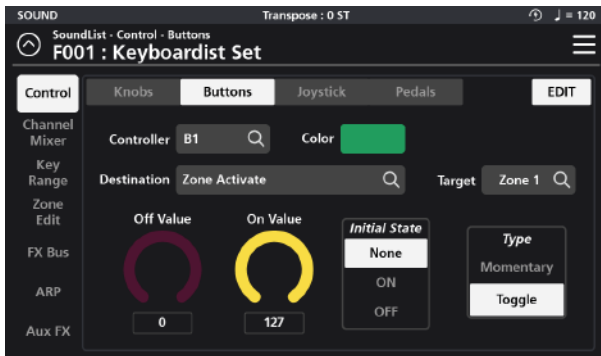
3-2 Button Editing

There are eight programmable controller buttons on the SP7 Grand, labeled B1 to B8. On the "Buttons" Edit page you can change the Color, assign a Destination, change the Target, set the Min/Max values, Initial State and button behavior Type.
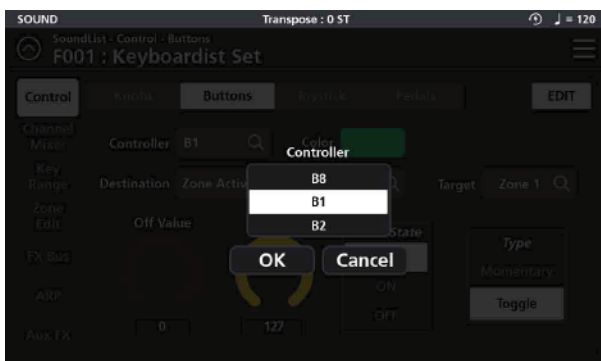
3-2-1 Assigning a Button Controller

Tap the Controller field and select the desired Button (B1-B8) to assign. Selecting a given button displays that button's parameters on screen.
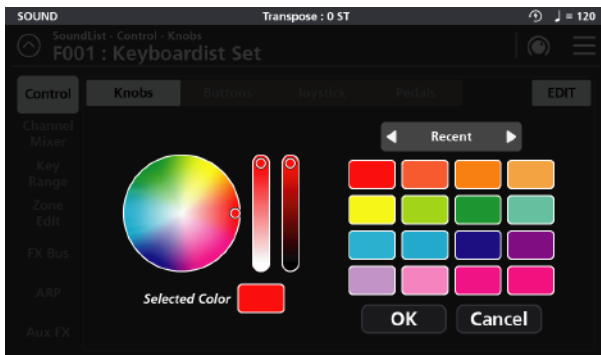
3-2-2 Assigning a Button Color

Change the color of the selected button by tapping the Color tile and, on the following screen, dragging the small circle about in the color palette wheel.
Adjust the contrast and brightness using the two adjacent vertical control bars.
On the right you can also select between three groups of color palettes: The Default color set, a set of Pastels, and the most Recently used colors. The most recently used set are automatically saved for convenient repeated selection.
Press OK to commit your selection.

3-2-3 Assigning a Button Destination

The Destination parameter specifies the function of the given Button. Tap the Destination field to access the function assignment page where you will be presented with 8 Destination types to choose from: System, MIDI CC, AUX FX, AUX EQ, Zone IFX, Audio FX, Vocal Proc and Notes.

Chapter 3. Sound Editing

3-2-3-1 System

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Ctrl Override: When enabled*, all controller assignments mapped within the current Sound are overridden and take on the Global mode settings instead.

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Blink Tempo: Enables the Alpha wheel LED ring to "blink" (strobe) along with the current Global BPM tempo.
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ARP Latch: This destination controls the "Arp Latch" master switch (Zone Edit / Common page). When engaged, this allows any Arp (A-H), that has its individual "Latch" parameter (ARP / Steps menu) set to "On", to continue to play its pattern even after all piano keys have been released.
Global BPM: This is the tempo (expressed in Beats Per Minute) applied to the entire instrument.
Pitch Bend+, Pitch Bend– : MIDI pitch bend control.
Program Change : Specify a MIDI program change (0-127) to select a given sound.Zone Activate : Enables/disables a zone.

3-2-3-2 MIDI CC

The full compliment of 128 Standard MIDI CCs can be assigned by selecting from a drop down scroll list.

3-2-3-3 AUX FX

The "Aux FX" tab offers 13 possible destinations governing the AUX FX section:

Reverb Size : Controls the size of the reverberant space.

Reverb Level : Controls the amount of reverb.

Reverb Time : Controls the length of reverb decay.

Chorus Level : Controls the amount of the chorus effect.

Chorus Feedback : Controls the level of chorus feedback.

Chorus Rate : Controls the speed of chorus modulation.

Chorus Depth : Controls the maximum detuning range of the chorus modulation.

Cho To Rev : Controls the amount of Chorus fed into the Reverb.

Delay Level : Controls the amount of delay.

Delay Time : Controls the interval of time it takes for the sound to repeat.

Delay Feedback : Controls the amount of delay feedback.

Dly To Rev : Controls the amount of Delay fed into the Reverb.

Dly To Cho : Controls the amount of Delay fed into the Chorus.

3-2-3-4 AUX EQ

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EQ Low Gain : This function adjusts the low frequency range.

EQ Mid Low Gain : This function adjusts the low-mid frequency range.

EQ Mid High Gain : This function adjusts the high-mid frequency range.

EQ High Gain : This function adjusts the high frequency range.

3-2-3-5 Zone IFX (Zone Insert Effect)

The "Zone IFX" tab offers 4 possible destinations governing the IFX Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-2-3-6 Audio FX

The "Audio FX" tab offers 4 possible destinations governing the Audio Input Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-2-3-7 Vocal Proc

The Vocal Processor tab offers 3 possible destinations governing the Vocal Processor section:

Lead Process On/Off : This function turns the Lead Processing section on/off.

Auto Harm On/Off : This function turns the Auto Harmony section on/off.

Auto Harm Volume : This function controls the volume level of the Auto Harmony section.

3-2-3-8 Notes

The Notes tab allows you to select individual MIDI note numbers (#0-127) to trigger from the selected controller button. The note velocity is determined by the Max Value. This function can be usefully for triggering percussion hits and sound effects.
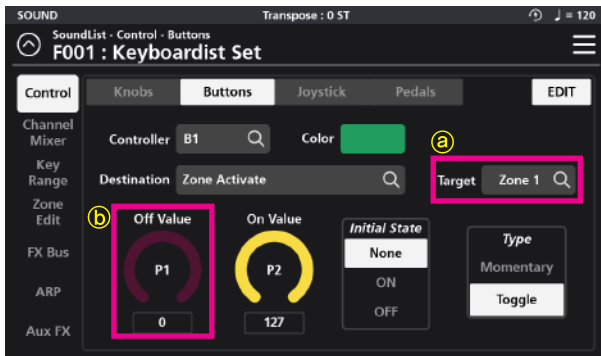
3-2-4 Assigning a Button Target - ⓐ

A Button's operating region is determined by its Target assignment. Depending on the chosen Destination, Target selection options can be: None, Preset, System, Zone1~16, Zone ALL, FX A~D, FX ALL, Input 1~2 and Input ALL.

3-2-5 Assigning a Button Off Value - ⓑ

The Off value is the value (0-127) sent when the given Button is turned Off (dim).
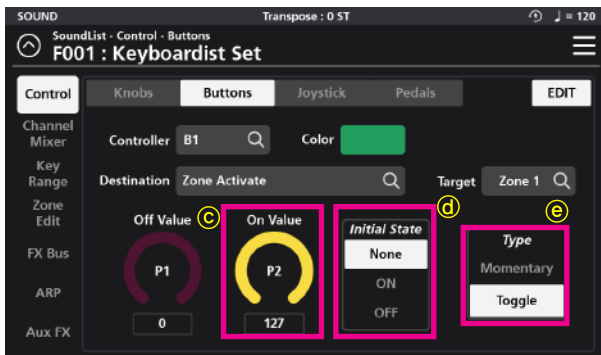
3-2-6 Assigning a Button On Value- ⓒ

The On Value is the value (0-127) sent when the given Button is turned On (lit).

3-2-7 Assigning a Button Initial State - ⓓ

The Initial State establishes a given button's default starting point when a sound is first selected. "None" sets no initial state and, as such, will adopt the state (on or off) of that same button from the previously selected sound. A setting of On or Off specifically sets the button to On (lit) or Off (dim) when the sound is first selected.

3-2-8 Assigning the Button Type - ⓔ

Use the Type parameter to set the button behavior to Momentary or Toggle.

When Type is set to Momentary, the button sends its "On Value" when pressed, and its "Off Value" when released.

When Type is set to Toggle, the button alternates between sending its "On Value" or "Off Value" each time it is pressed. No value is sent when the controller is released.
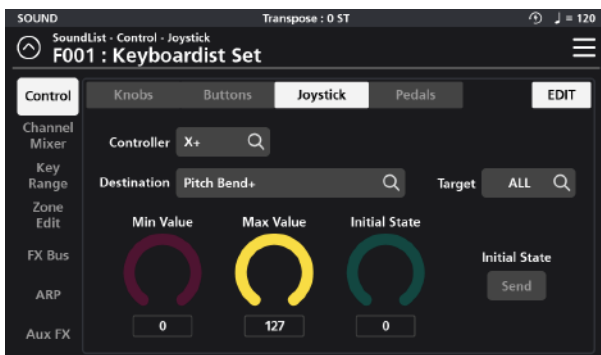
3-3 Joystick Editing

The X/Y joystick of SP7 Grand consists of four independently programmable directions: Left (X-), Right (X+), Up (Y+), and Down (Y-). On the "Joystick" Edit page, you can edit the Destination, Target, Min/Max value and Initial State for each of the four joystick directions.

Chapter 3. Sound Editing
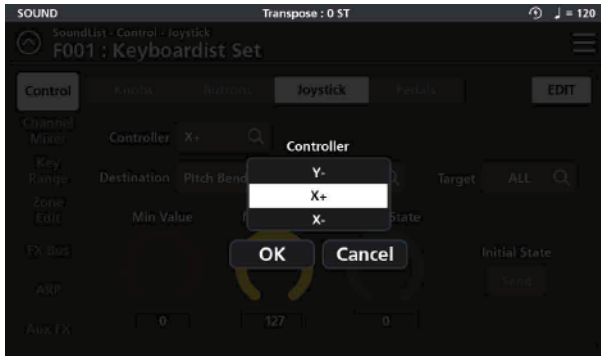
3-3-1 Assigning the Joystick Controller

Tap the Controller field and select the desired joystick direction: X+, X−, Y+ or Y− by tapping on the touch screen. Press OK to commit.

3-3-2 Assigning a Joystick Destination

The Destination parameter specifies the function of the given joystick direction. Tap the Destination field to access the function assignment page where you will be presented with 8 Destination types to choose from: System, MIDI CC, AUX FX, AUX EQ, Zone IFX, Audio FX, Vocal Proc and Notes.

3-3-2-1 System

The "System" tab offers a total of 9 possible choices:

Ctrl Override: When enabled*, all controller assignments mapped within the current Sound are overridden and take on the Global mode settings instead.

*Caution: Once enabled, the only means to disable this controller is to go to Global mode (Global 1 page) and manually set the "Override Controller" switch back to Off.

Blink Tempo: Enables the Alpha wheel LED ring to "blink" (strobe) along with the current Global BPM tempo.
ARP Enable: Turns the arpeggiator on/off. (Note: for an arp to run, one of the 8 available arps must first be assigned to the zone in question on the Zone Edit page – see pg 31 for more detail).
ARP Latch: This destination controls the "Arp Latch" master switch (Zone Edit / Common page). When engaged, this allows any Arp (A–H), that has its individual "Latch" parameter (ARP / Steps menu) set to "On", to continue to play its pattern even after all piano keys have been released.
Global BPM: This is the tempo (expressed in Beats Per Minute) applied to the entire instrument.
Pitch Bend+, Pitch Bend− : MIDI pitch bend control.
Program Change : Specify a MIDI program change (0–127) to select a given sound.Zone Activate : Enables/disables a zone.

3-3-2-2 MIDI CC

The full compliment of 128 Standard MIDI CCs can be assigned by selecting from a drop down scroll list.

3-3-2-3 AUX FX

The "Aux FX" tab offers 13 possible destinations governing the AUX FX section:

Reverb Size : Controls the size of the reverberant space.

Reverb Level : Controls the amount of reverb.

Reverb Time : Controls the length of reverb decay.

Chorus Level : Controls the amount of the chorus effect.

Chorus Feedback : Controls the level of chorus feedback.

Chorus Rate : Controls the speed of chorus modulation.

Chorus Depth : Controls the maximum detuning range of the chorus modulation.

Cho To Rev : Controls the amount of Chorus fed into the Reverb.

Delay Level : Controls the amount of delay.

Delay Time : Controls the interval of time it takes for the sound to repeat.

Delay Feedback : Controls the amount of delay feedback.

Dly To Rev : Controls the amount of Delay fed into the Reverb.

Dly To Cho : Controls the amount of Delay fed into the Chorus.

3-3-2-4 AUX EQ

The Aux EQ tab offers adjustments covering 4 frequency bands of the Aux EQ:

EQ Low Gain : This function adjusts the low frequency range.

EQ Mid Low Gain : This function adjusts the low-mid frequency range.

EQ Mid High Gain : This function adjusts the high-mid frequency range.

EQ High Gain : This function adjusts the high frequency range.

3-3-2-5 Zone IFX (Zone Insert Effect)

The "Zone IFX" tab offers 4 possible destinations governing the IFX Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-3-2-6 Audio FX

The "Audio FX" tab offers 4 possible destinations governing the Audio Input Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-3-2-7 Vocal Proc (Vocal Processor)

The Vocal Processor tab offers 3 possible destinations governing the Vocal Processor section:

Lead Process On/Off : This function turns the Lead Processing section on/off.

Auto Harm On/Off : This function turns the Auto Harmony section on/off.

Auto Harm Volume : This function controls the volume level of the Auto Harmony section.

3-3-2-8 Notes

The Notes tab allows you to select individual MIDI note numbers (#0-127) to trigger from the selected joystick direction. The selected note will be triggered throughout the joystick throw. The velocity range is determined by the Min/Max Values. This function can be usefully for triggering percussion hits and sound effects.
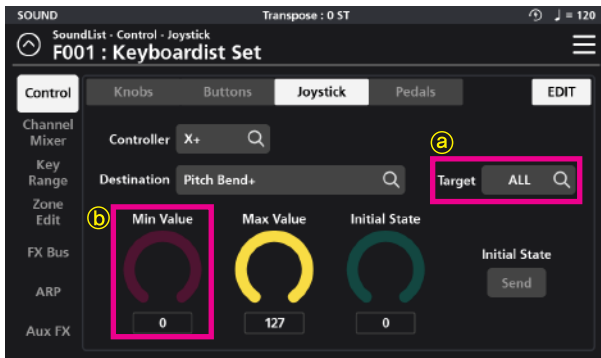
3-3-3 Assigning a Joystick Target - ⓐ

A given joystick direction's operating region is determined by its Target assignment. Depending on the chosen Destination, Target selection options can be: None, Preset, System, Zone1~16, Zone ALL, FX A~D, FX ALL, Input 1~2 and Input ALL.

3-3-4 Assigning a Joystick Min Value - ⓑ

Sets the minimum adjustable value of the selected joystick direction (value range = 0-127).
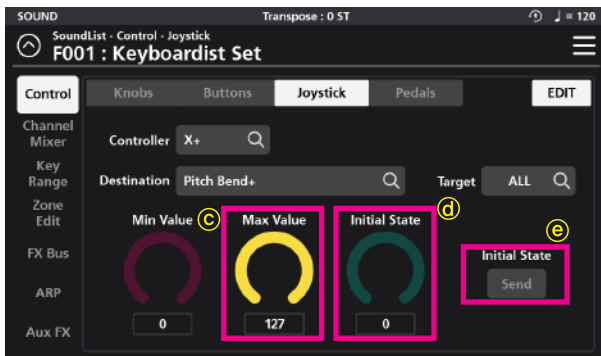
3-3-5 Assigning a Joystick Max Value - ⓒ

Sets the maximum adjustable value of the selected joystick direction (value range = 0-127).

3-3-6 Assigning a Joystick Initial State - ⓓ

If the Initial State Send is enabled, the Initial State is the starting value (0-127) applied to the given joystick direction when a Sound is first selected.

3-3-7 Joystick Initial State Send - ⓔ

With the Initial State Send enabled, the Initial State value (above) is set as the given joystick direction's starting point when a Sound is first selected.

Sound Editing
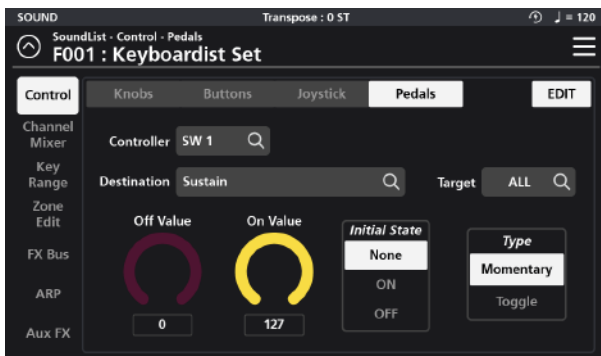
3-4 Pedal Editing

The SP7 Grand has three programmable pedals: SW1, SW2 and CC (Volume). On the "Pedals" Edit page you can assign a Destination, change the Target, set the Min/Max values, Initial State and pedal behavior Type.
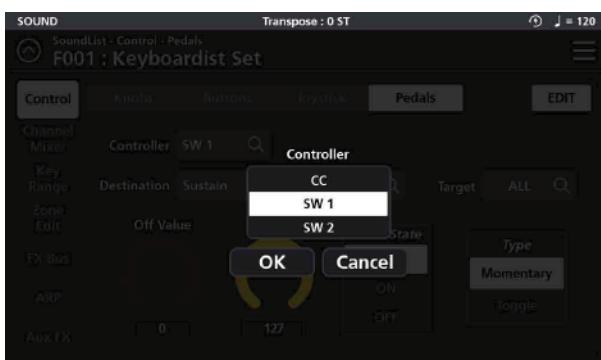
3-4-1 Assigning a Pedal Controller

Tap the Controller field and select the desired Pedal (SW1, SW2, CC) to assign. Selecting a given pedal displays that pedal's parameters on screen.

3-4-2 Assigning Destinations

The Destination parameter specifies the function of the given Pedal. Tap the Destination field to access the function assignment page where you will be presented with 8 Destination types to choose from: System, MIDI CC, AUX FX, AUX EQ, Zone IFX, Audio FX, Vocal Proc and Notes.

3-4-2-1 System

The "System" tab offers a total of 9 possible choices:

Ctrl Override: When enabled*, all controller assignments mapped within the current Sound are overridden and take on the Global mode settings instead.

*Caution: Once enabled, the only means to disable this controller is to go to Global mode (Global 1 page) and manually set the "Override Controller" switch back to Off.

Blink Tempo: Enables the Alpha wheel LED ring to "blink" (strobe) along with the current Global BPM tempo.
ARP Enable: Turns the arpeggiator on/off. (Note: for an arp to run, one of the 8 available arps must first be assigned to the zone in question on the Zone Edit page – see pg 31 for more detail).
ARP Latch: This destination controls the "Arp Latch" master switch (Zone Edit / Common page). When engaged, this allows any Arp (A–H), that has its individual "Latch" parameter (ARP / Steps menu) set to "On", to continue to play its pattern even after all piano keys have been released.

Chapter 3. Sound Editing

Global BPM: This is the tempo (expressed in Beats Per Minute) applied to the entire instrument.

Pitch Bend+, Pitch Bend- : MIDI pitch bend control.

Program Change : Specify a MIDI program change (0-127) to select a given sound.Zone Activate : Enables/disables a zone.

3-4-2-2 MIDI CC

The full compliment of 128 Standard MIDI CCs can be assigned by selecting from a drop down scroll list.

3-4-2-3 AUX FX

The "Aux FX" tab offers 13 possible destinations governing the AUX FX section:

Reverb Size : Controls the size of the reverberant space.

Reverb Level : Controls the amount of reverb.

Reverb Time : Controls the length of reverb decay.

Chorus Level : Controls the amount of the chorus effect.

Chorus Feedback : Controls the level of chorus feedback.

Chorus Rate : Controls the speed of chorus modulation.

Chorus Depth : Controls the maximum detuning range of the chorus modulation.

Cho To Rev : Controls the amount of Chorus fed into the Reverb.

Delay Level : Controls the amount of delay.

Delay Time : Controls the interval of time it takes for the sound to repeat.

Delay Feedback : Controls the amount of delay feedback.

Dly To Rev : Controls the amount of Delay fed into the Reverb.

Dly To Cho : Controls the amount of Delay fed into the Chorus.

3-4-2-4 AUX EQ

The Aux EQ tab offers adjustments covering the 4 frequency bands of the Aux EQ:

EQ Low Gain : This function adjusts the low frequency range.

EQ Mid Low Gain : This function adjusts the low-mid frequency range.

EQ Mid High Gain : This function adjusts the high-mid frequency range.

EQ High Gain : This function adjusts the high frequency range.

3-4-2-5 Zone IFX (Zone Insert Effect)

The "Zone IFX" tab offers 4 possible destinations governing the IFX Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-4-2-6 Audio FX

The "Audio FX" tab offers 4 possible destinations governing the Audio Input Mixer:

Output Volume : This function controls the volume level of the post IFX/pre Aux FX signal.

Pan : This function adjusts the left/right balance of the post IFX/pre Aux FX signal.

Reverb Send : This function controls the amount of post IFX sent to the Aux Reverb.

ChoDly Send : This function controls the amount of post IFX signal sent to the Aux Chorus and Delay.

3-4-2-7 Vocal Proc

The Vocal Processor tab offers 3 possible destinations governing the Vocal Processor section:

Lead Process On/Off : This function turns the Lead Processing section on/off.

Auto Harm On/Off : This function turns the Auto Harmony section on/off.

Auto Harm Volume : This function controls the volume level of the Auto Harmony section.

3-4-2-8 Notes

The Notes tab allows you to select individual MIDI note numbers (#0-127) to trigger from the selected pedal. The velocity is determined by the Min/Max Value (CC pedal) or Max Value (SW pedals). This function can be usefully for triggering percussion hits and sound effects.
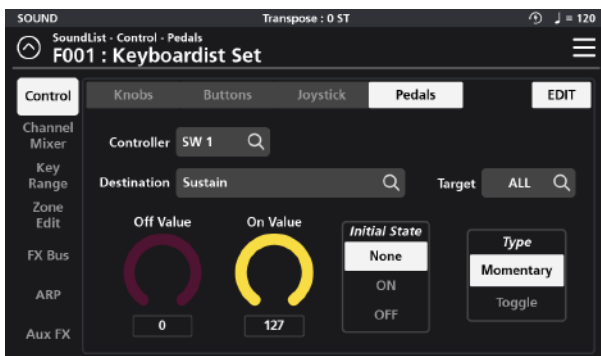
3-4-3 Assigning a Pedal Target - ⓐ

A Pedal's operating region is determined by its Target assignment. Depending on the chosen Destination, Target selection options can be: None, Preset, System, Zone1~16, Zone ALL, FX A~D, FX ALL, Input 1~2 and Input ALL.

3-4-4 Assigning a Pedal Off Value - ⓑ

For SW pedals, the Off value is the value (0-127) sent when the given Pedal is released.
For the CC pedal, the Off value sets its minimum adjustable value (value range = 0-127).

3-4-5 Assigning a Pedal On Value - ⓒ

For SW pedals, the On value is the value (0-127) sent when the given Pedal is depressed.
For the CC pedal, the On value sets its maximum adjustable value (value range = 0-127).
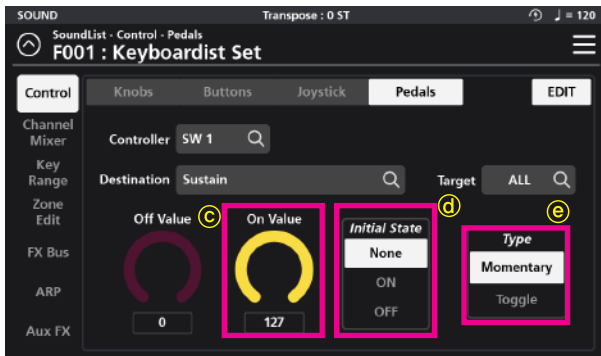
3-4-6 Assigning a Pedal Initial State – ⓓ

The Initial State establishes a given pedal's default starting point when a sound is first selected. "None" sets no initial state and, as such, will adopt the state (on or off) of that same pedal from the previously selected sound. A setting of On or Off specifically sets the pedal to the corresponding On or Off value when the sound is first selected.

3-4-7 Assigning the Pedal Type – ⓔ

Use the Type parameter to set an SW pedal behavior to Momentary or Toggle.

When Type is set to Momentary, the given SW pedal sends its "On Value" when pressed, and its "Off Value" when released.

When Type is set to Toggle, the given SW pedal alternates between sending its "On Value" or "Off Value" each time it is pressed. No value is sent when the pedal is released.

Chapter 4. Multi Sound Editing

In the SP7 Grand, all Sounds are actually comprised of up to 16 individual zones (multitimbral). Each zone can have its own sound preset, key range, mix settings and unique controller assignments. By assigning a zone controller (button, pedal or knob) to the "Zone Activate" Destination, you can conveniently mute and unmute different zones to create multi-layered/split combination sounds on the fly.

Multi sound editing is accessed from the Channel Mixer, Key Range, and Zone Edit tabs of the Sound EDIT page. Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease– buttons, or tap the value field to open a numeric keypad for more precise data entry.
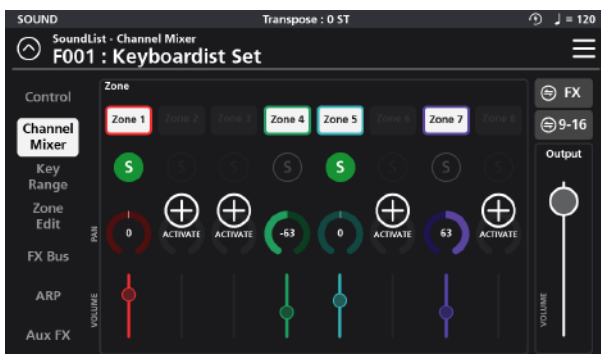
4-1 Channel Mixer

The Channel Mixer is used to adjust the mix settings of the 16 multi zones. For easier viewing and adjustment, the mixer is divided on screen into two banks of 8 channels, which you can toggle between by tapping the "9-16" (1-8) button in the upper right.

Each of the 16 mixer channel strips consists of a zone on/off status icon, solo, zone activate, pan and volume fader.

Enable a new channel (zone) by clicking the (+) ACTI-VATE icon. To disable a channel, tap the corresponding numbered zone on/off status icon (at the top of the channel strip).

Control the overall mix level using the Output volume fader on the right.
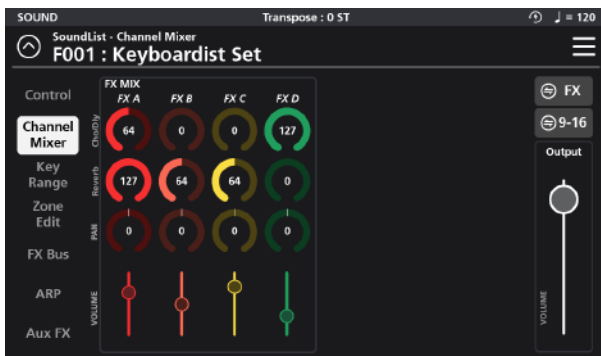
4-1-1 FX Mixer

The effects (FX) mixer conveniently displays the same FX controls as found on the individual FX Bus Mix pages but offers the advantage of viewing all four busses at a glance (FX A, FX B, FX C, and FX D).

Each FX mixer channel strip contains controls for Cho/Dly (Chorus/Delay), Reverb, Pan, and Volume.

To return to the Channel Mixer page, tap the "Zone" button in the upper right hand corner.
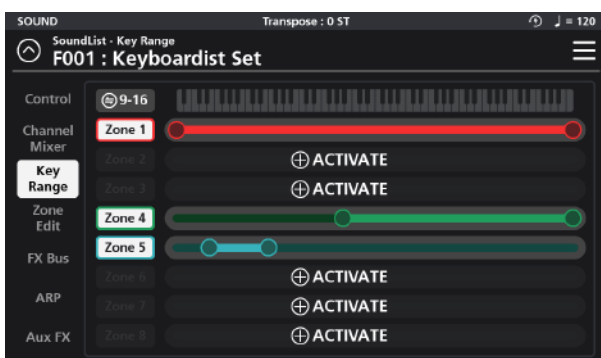
4-3 Key Range

The Key Range page allows you to define the region of the keyboard that each zone will occupy. For easier viewing and adjustment, the 16 possible zones are divided on screen into two banks of 8 zones, which you can toggle between by tapping the "9-16" (1-8) button just to the left of the graphic piano keyboard. Enable a new zone by clicking the (+) ACTIVATE icon. To disable a zone, tap the corresponding numbered zone on/off status icon (to the left of each graphic range). As needed, drag the left and right circles at the ends of each zone to determine the area over which that zone will play.
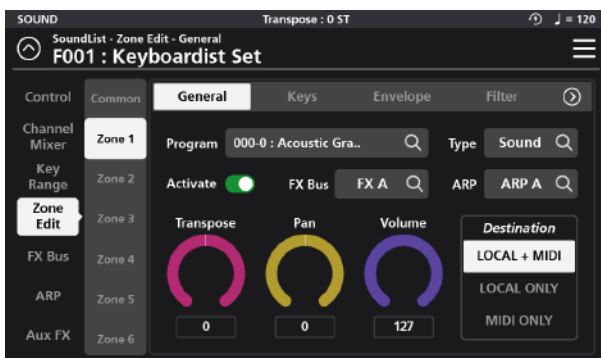
4-3 Zone Edit

The left side of the Zone Edit page displays 16 zone selector tabs (1-16) for accessing each zones' individual parameters as well as a Common tab at the top of the list for editing parameters common to all zones.
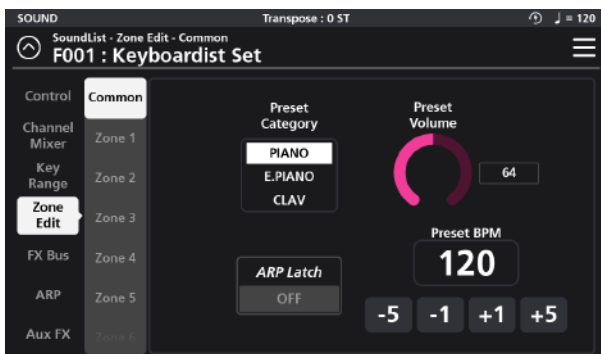
4-3-1 Common

The settings in the Common tab consist of Preset Category, Preset Volume, Arpeggiator (ARP) Latch On/Off, and Preset BPM settings.

Multi Sound Editing
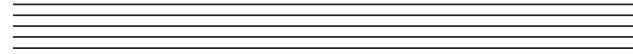
4-3-1-1 Preset Category

This parameter sets the category that the sound will be grouped into when you press one of the Category tabs or buttons from the Sound mode.

4-3-1-2 Preset Volume

With this parameter you can set the default volume for the multi as a whole.

4-3-1-3 ARP Latch

A "latched" arpeggiator allows an arp pattern, once initially triggered, to continue to run without manually holding down piano keys. The Common page "ARP Latch" function acts as a master switch, turning the arpeggiator latch on/off for the whole multi.

Each of the eight Arps (A–H), in turn, has its own individual "Latch" switch (ARP / Steps menu) which determines if that given Arp will be included in any latched arpeggiator activity.

Set the Arp Latch switch to On to enable latched arpeggiator activity. Set the Arp Latch switch to Off to stop all latched arpeggiator activity.

  Tip: Consider assigning "ARP Latch" as a destination to a button/pedal/knob for convenient use during performance.

4-3-1-3 Preset BPM

The Preset BPM parameter sets the master tempo (in beats per minute) for all tempo related elements in the multi combination including arps and tempo related effects. Change the tempo value by pressing the −5, −1, +1, +5 increment buttons or by tapping on the BPM field to access a numeric keypad and type in desired values.

4-3-2 Zone 1-16

In addition to the common parameters affecting all zones, each zone can be individually edited and further customized by selecting the desired zone from the tabs on the left. Each zone uses the same MIDI channel as its zone number (zone 1= channel 1, zone 2 = channel 2, etc). Zone Edit settings are grouped into 8 subpages: General, Keys, Envelope, Filter, Vibrato, Portamento, AuxSend, and Misc (Miscellaneous).
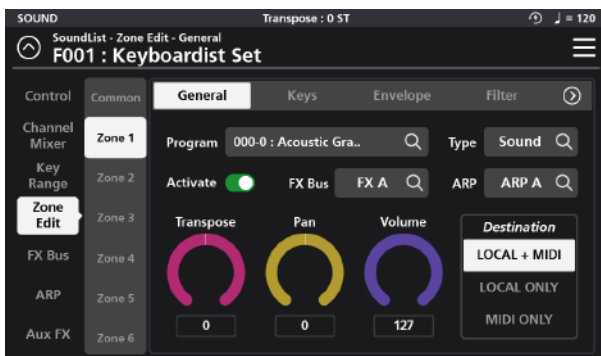
4-3-2-1 General

The General tab is for Program selection, Type (Sound vs Drum), Activate On/Off, FX Bus selection, Arpeggiator (ARP) selection, Transpose, Pan, Volume, and Destination.

Multi Sound Editing
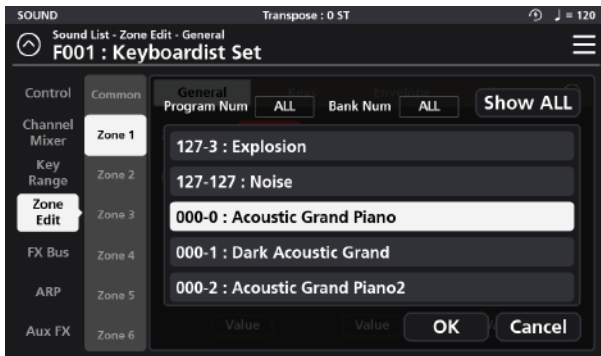
4-3-2-1-1 Program

Select the program for the current Zone. Click the magnifying glass icon to display the program list. You can select the desired program simply by scrolling through the list.

You can also filter the list by Program and/or Bank Number. Each Program ID is formatted as XXX-Y where "XXX" = program number and "Y" = Bank number.

Tap the "Program Num" and/or "Bank Num" field to access a numeric keypad to apply a filtered search.

Click the "Show All" button at any time to re-display the full list of available programs.

4-3-2-1-2 Type

Programs in the SP7 Grand are grouped into two broad categories: Sound (non-percussion) and Drum (percussion). The "Type" selector toggles between the category of Programs displayed (Sound or Drum) in the Program selection field (above). Click on the magnifying glass icon and a pop-up window will appear allowing you to make a selection.

4-3-2-1-3 Activate

The Activate On/Off switch enables (green) and disables (red) the selected zone.

Tip: Consider assigning "Zone Activate" as a destination to a button/pedal/knob to mute/unmute zones for convenient use during performance.

4-3-2-2-1-4 FX Bus

Select the insert FX Bus (A-D) to process the zone. Disable the insert effect by selecting Bypass.

4-3-2-1-5 ARP (Arpeggiator)

Tap the ARP field to assign one of the eight available arpeggiators (A-H) to trigger the current zone. Selecting None will disable the arpeggiator.

4-3-2-1-6 Transpose

The Transpose parameter shifts the pitches generated by the given Zone. You can transpose up or down in semitone steps.

4-3-2-1-7 Pan

The Pan parameter sets the panning (left/right stereo placement) of each Zone.

4-3-2-1-8 Volume

The Volume parameter sets the volume of each Zone.

4-3-2-1-9 Destination

The Destination parameter controls the MIDI output routing of the selected zone. The destination can be set as Local+MIDI (internal sound+external MIDI transmission), Local ONLY (internal sound only - no MIDI output), and MIDI ONLY (external MIDI output only - no internal sound triggering).

Multi Sound Editing
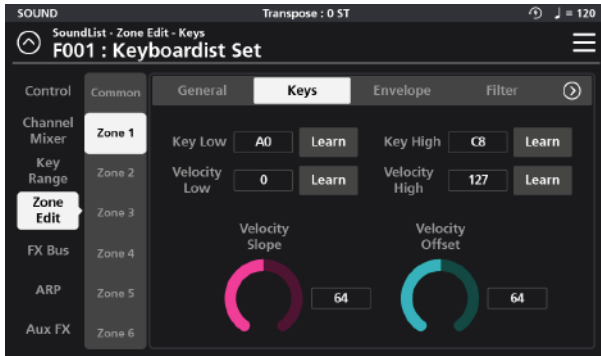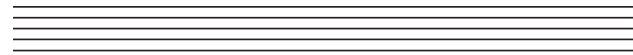
4-3-5-2 Keys

Under the Keys tab you can set both the key and velocity ranges for the current zone.

With "Key Low" and "Key High", you can select the lowest and highest notes on the keyboard that the current zone will trigger (these values mirror those on the graphic Key Range page).

With "Velocity Low" and "Velocity High", you can set the lowest and highest note velocities that will trigger the given layer.

The simplest method to change these parameters is to employ the "Learn" function associated with each. When pressed, the "Learn" icon will light, prompting you to strike the piano keyboard to enter either key or velocity ranges. When entering velocities, the note you strike does not matter, only the strength in which you strike it (0-127) is captured.

4-3-2-2-2-1 Velocity Slope

The Velocity Slope parameter allows scaling of the overall dynamic range of the layer. The default value is 64 (linear). Values above 64 increasingly amplify velocities (making the output louder with less effort) while values below 64 gradually diminish velocities (making the output quieter even with stronger velocities).

4-3-2-2-2 Velocity Offset

The Velocity Offset parameter applies a fixed amount (adding or subtracting) to the velocities performed. Values above the default (64) create stronger/louder velocities while values below 64 create weaker/softer velocities.
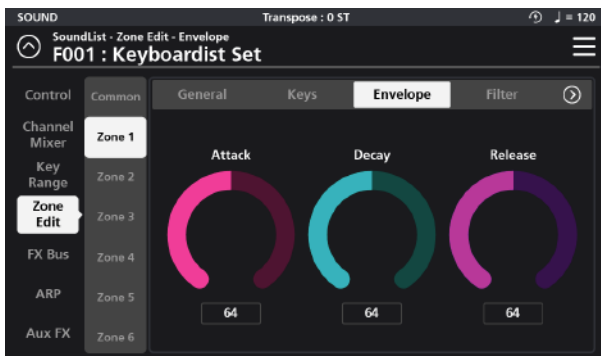
4-3-2-3 Envelope

The Envelope page offers a 3-segment amplitude envelope generator with Attack, Decay and Release controls to help shape the sound.

4-3-2-3-1 Attack

Attack is the amount of time it takes for a note, when struck, to go from silence to full volume. The greater the value the slower the attack. Smaller values equal a faster attack.

4-3-2-3-2 Decay

Decay is the amount of time it takes for a held note to transition from its maximum volume to a sustained level. The greater the value the slower the decay. Smaller values equal a faster decay.

4-3-2-3-3 Release

Once a key is let go, Release is the the amount of time it takes for the note volume to drop from its sustained level to silence. The greater the value the slower the release time. Smaller values equal a faster release time.
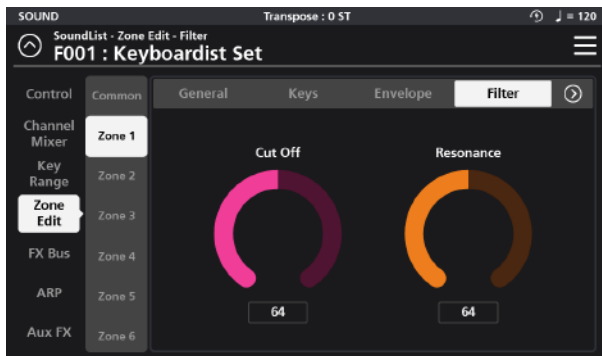
4-3-2-4 Filter

The Filter tab provides access to a low pass filter with Cut Off and Resonance controls.

4-3-2-4-1 Cut Off

The Cut Off parameter controls the frequency above which the signal is attenuated. Higher cutoff values allow higher frequencies to pass (be audible) and thus output a brighter sound. Lower cutoff frequencies gradually remove more of the upper frequency spectrum and produce darker tones.

4-3-2-4-2 Resonance

The Resonance parameter controls the amount of emphasis applied at the filter cutoff frequency (as set above) creating a distinct effect.

Chapter 4. Multi Sound Editing
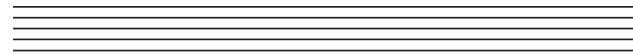
4-3-2-4-3 Vibrato

The Vibrato tab provides access to a variable low frequency oscillator (LFO) with Rate, Depth, and Delay controls that effect the pitch of the sound.
The Rate dial sets the speed of the vibrato.
The Depth dial controls the amount of pitch variation.
The Delay dial lets you set the time interval between the start of the sound and the start of the vibrato effect.
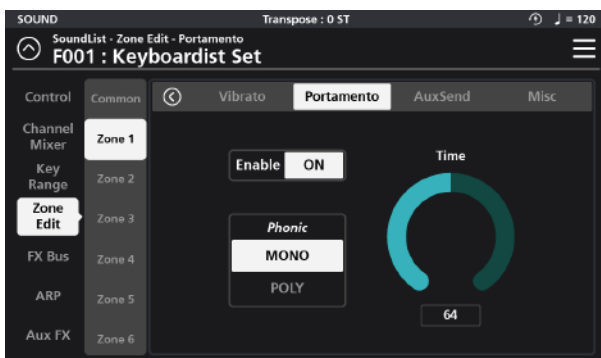
4-3-2-4-4 Portamento

With Portamento enabled, notes played in a program can glide from the pitch of the previously played note to the pitch of the currently played note.
The Portamento tab provides parameters to control the behavior of the portamento effect.
Tap the "Enable" On/Off switch to engage the effect.Use the "Phonic" parameter to select between Monophonic (Mono) and Polyphonic (Poly) performance. Mono plays only one note at a time.

Poly permits polyphonic playing and note gliding.
The "Time" parameter determines the time it takes to glide between notes. Lower values create faster transitions where higher values create slower ones.
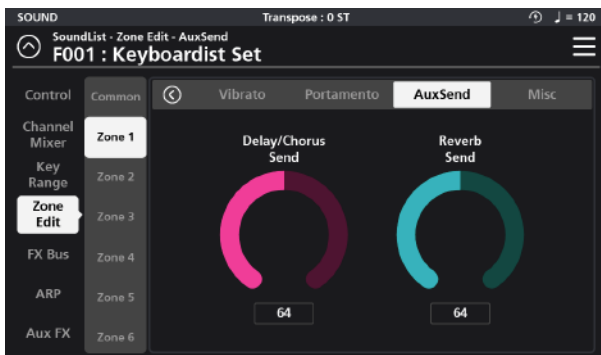
4-3-2-4-5 AuxSend

The AuxSends tab provides effects send controls for the Delay/Chorus and Reverb sections of the Aux FX
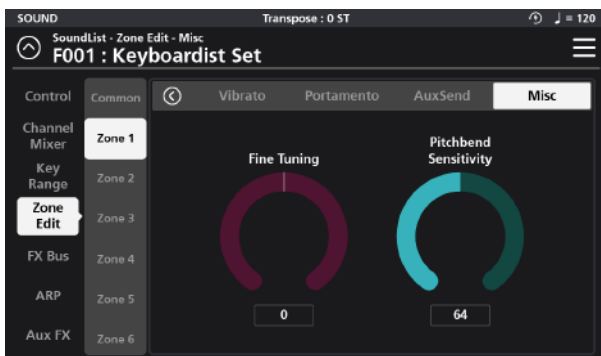
4-3-2-4-6 Misc

On the Miscellaneous (Misc) page you will find adjustments for Fine Tuning and Pitch Bend Sensitivity.
The Fine Tuning dial allows you to tune the program +/- 100 cents (+/- 1 semitone). The Pitch Bend Sensitivity controls the range of operation of any Pitch Bend activity (default controller is the x-axis of the joystick). **Pitch bend can be adjusted +/- 24 semitones (+/- 2 octaves).**

4-4 ARP (Arpeggiator)

The arpeggiator is a rhythmic/melodic pattern generator that is fed by notes played on the keyboard. The SP7 Grand has 8 independent arpeggiators (A to H) and employs a hybrid design blending traditional arpeggiator functions along with a step-based sequencer. The settings that governing all Arp operations are found on the two Arp tabs: General and Steps.
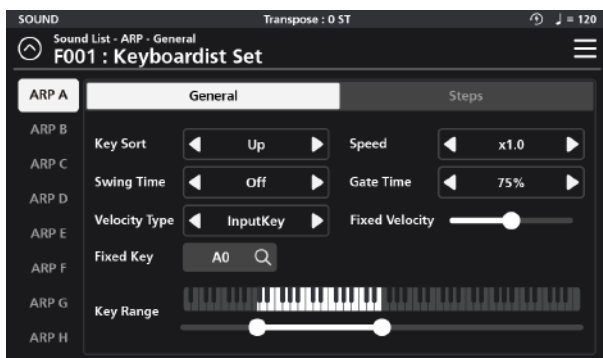
4-4-1 General

The General tab displays settings for **Key Sort, Speed, Swing Time, Gate Time, Velocity Type, Fixed Velocity, Fixed Key, and Key Range.**

4-4-1-1 Key Sort

Key Sort determines the note order in which the arpeggiator pattern will run.

The arpeggiator can run its patterns following one of 3 methods: **as played (None), upwards (Up) or downwards (Down).**

4-4-1-2 Speed

The arpeggiator plays at the root tempo specified on the Zone Edit Common page.

The Speed parameter provides 3 options that allow you to further scale the **speed of the arp: x1 (no change) x0.5 (half-time) or x2.0 (double-time).**

For example if the Common page tempo is set at 100 and you select x0.5 the resultant playback speed would be 50. Choose x2.0 and the resultant tempo would be 200.

4-4-1-3 Swing Time

Swing Time is a function that creates rhythms with a triplet feel by modifying the timing of the rhythmic intervals. The setting choices are: **OFF, 25%, 50% and 75%.** The higher the setting, the stronger the swing feel.

4-4-1-4 Gate Time

Gate Time is a function that modifies the duration of the notes played by the arpeggiator.

Value setting choices are: **90%, 75%, 50%, and 25%.** Higher percentages create more connected (legato-like) notes where smaller percentages creates more staccato-like results.

4-4-1-5 Velocity Type

The Velocity Type parameter controls the strength of the notes played by the arpeggiator. When set to "InputKey" the velocity sounded by the arpeggiator is as played. When set to "Fixed", each note sounded by the arpeggiator has the same velocity and that velocity is determined by the adjacent "Fixed Velocity" slider. With the value of "Step" assigned, the velocity of each note in the pattern is determined by the individual steps of the step sequencer (Steps tab).

Multi Sound Editing

4-4-1-6 Fixed Velocity

When the Velocity Type (above) is set to Fixed, the Fixed Velocity slider determines the uniform velocity of all notes in the pattern. Moving the slider to the right increases the intensity, while moving it to the left, decreases it.

4-4-1-7 Fixed Key

The Fixed Key field allows you to specify a single note pitch (A0–C8) that will trigger for any pattern step (Steps tab) whose "Key" parameter is set to a value of "Fixed".

4-4-1-8 Key Range

The Key Range parameter determines the range of notes played by the arpeggiator. Set the lowest and highest notes by dragging the left and right set points below the onscreen piano graphic.
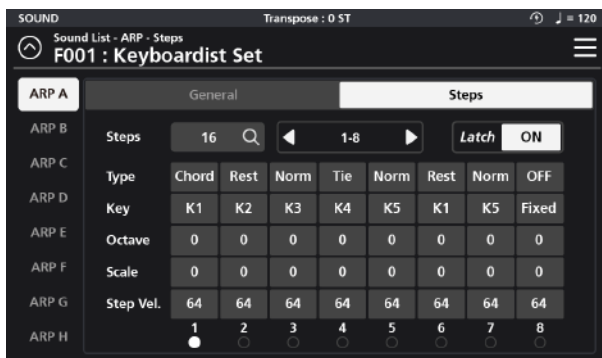
4-4-2 Steps

On the Steps tab you will find a step-sequencer grid that forms the basis of the arpeggiator pattern to be triggered. The Steps tab displays settings for **Steps, Latch, Type, Key, Octave, Pitch and Step Velocity.**

4-4-2-1 Steps

Arpeggiator patterns support up to 32 individual events (steps). The "Steps" parameter allows you to specify how many steps the pattern will contain (1–32).

Note, the grid only displays up to 8 steps at a time, as such you choose which group of 8 steps you wish to view/edit at any given moment. The selector field to the right of the "Steps" parameter allows you to choose which group of 8 steps to view (1–8, 9–16, 17–24 or 25–32).

4-4-2-2 Latch

This is an on/off switch that activates the individual arpeggiator latch function. (Note: the Zone Edit/Common " ARP Latch" master switch must be 'On' for any Arp (A–H) in the multi to run).

When Latch is engaged, this allows the given arpeggiator to continue to play its pattern even after all piano keys have been released.

The parameters of the step-sequencer grid discussed below, define the behavior of each step of the current arpeggiator pattern.

4-4-2-3 Type

The Type parameter allows you to choose the type of performance for the designated step.

There are 5 available types: **Norm, Rest, Tie, Chord.**

Norm : Plays a single note.

Rest : Adds a musical rest (silence) at the specified step.

Tie : Creates a musical tie in relation to the previous note in the pattern. A new note attack is not struck unless the pitch itself changes.

Chord : Plays a chord instead of playing a single note for that specified step.

OFF : Turns off the specified step.

4-4-2-4 Key

The Key parameter assigns the notes you play to the individual pattern steps. Up to 5 notes are possible, labeled K1 to K5. By assigning K1-K5 to the various steps, you determine which performed note(s) is triggered at each step in the pattern.

Select "Fixed" to trigger the note selected as the "Fixed Key" (General tab).

4-4-2-5 Octave

The Octave parameter sets the octave of the note of the specified step (+/- 3 oct).

4-4-2-6 Pitch

The Pitch parameter transposes the pitch of the note of the specified step (+/- 12 semitones).

4-4-2-7 Step Vel. (Step Velocity)

When the Velocity Type parameter (General tab) is set to "Step", the Step Vel. Value becomes the note velocity of the specified step.

4-4-2-8 Step Indicator

The Step Indicator is a visual aid located at the bottom of the step grid. When the arpeggiator is running, a white dot moves along in time, advancing with each pattern step, making for easier editing.
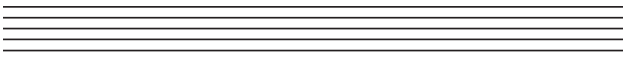
Chapter 5. FX Editing

5-1 FX Bus

The effect bus (FX Bus) menu houses the parameter controls for the four insert effect busses (FX A, FX B, FX C, and FX D). Each effects bus is comprised of 5 sections: **Dynamics(Dyn), Parametric EQ (P.EQ), Modulation/Wah-Wah (Mod/Wah), Delay/Tremolo (Dly/Trm), and Mix.** Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease- buttons, or tap the value field to open a numeric keypad for more precise data entry.

5-1-1 Dyn (Dynamic)

The Dynamics section consists of three different effects processes: **Compression, Distortion, and Bit Crusher.**

5-1-1-1 Compressor

The compressor circuit offers controls for **Gain, Threshold, Ratio, Attack, and Release.**

Gain - Amplifies the post-compression signal (aka make-up gain).
Threshold - Sets the level at which compression begins. Higher values lead to less compression whereas lower values compress more of the signal.
Ratio - Determines how much gain reduction the compressor applies when the signal passes above the set threshold level. Higher values equal more gain reduction.
Attack - Controls the time it takes for compression to begin once the signal level surpasses the threshold. Lower values equal faster attack times (reducing attack transients) where larger values equal slower attack times (allowing more of the attack transients to pass through).
Release - Controls how long it will take for the compression to relax once the signal has fallen below the threshold.

5-1-1-2 Distortion

There are 6 distortion character types available: **Overdrive, Distortion, Fuzz, Fuzz2, Tube, and Asymmetrical.** With each type, you have fine-tune adjustments for Input and Output Brightness, Drive and Output Level.

Input Brightness - A low pass filter allowing you to color the signal feeding into the distortion circuit.

Output Brightness – A low pass filter allowing you to process the post distortion signal.
Drive – Adjusts the input gain feeding into the distortion circuit. Increasing the drive will increase the given distortion effect.
Output Level – Controls the overall level of the post–distortion effects section.
Drive – Adjusts the input gain feeding into the distortion circuit. Increasing the drive will increase the given distortion effect Output Level – Controls the overall level of the post–distortion effects section.
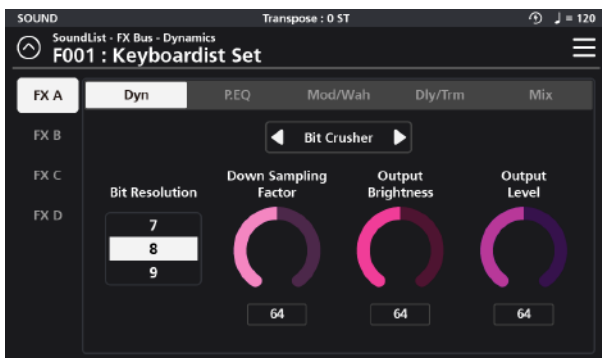
5-1-1-3 Bit Crusher

The Bit Crusher section is a digital degradation distortion. It intentionally introduces quantization noise and aliasing artifacts, allowing you to adjust the **Bit Resolution, Down Sampling Factor, Output Brightness, and Output Level.**
Bit Resolution – Allows you to set the bit depth of the signal, ranging from 24 bits down to 1 bit. Lower values increase

the number of sampling errors, generating more distortion.
Down Sampling Factor – Reduces the sample rate, introducing aliasing. A value of 1 has no effect on the signal. Higher values increase the artifacts.
Output Brightness – Is a low pass filter allowing you to color the post it–crushed signal.
Output Level – Controls the overall level of the post bit–crushed effects section.

5-1-2 P.EQ (Parametric Equalizer)

The EQ section is a 4–band parametric. With each band you can choose between 7 EQ types using the selector tabs at the top of each band: **a LPF 6dB, LPF 12dB, LowShelf, Peak/Notch, HighShelf, HPF 6dB and HPF12dB.**
For each EQ type (excluding the LPF/HPF) you can set the **frequency (Freq), quality factor (Q), and gain (Gain).**

LPF 6dB and LPF 12dB – Low pass filters that reduce high frequencies above the set frequency. 6dB and 12dB slopes are available. The higher the slope, the steeper the cut off.
LowShelf – A low shelving filter that cuts or boosts frequencies below the set frequency.
Peak/Notch – A fully parametric filter with controls for specifying the center frequency (Freq), width of the frequency band around the center frequency (Q) and amount of boost/cut (gain) for the specified area..
HighShelf – A high shelving filter that cuts or boosts frequencies above the set frequency.
HPF 6dB, HPF 12dB – High pass filters that reduce low frequencies below the set frequency. 6dB and 12dB slopes are available. The higher the slope, the steeper the cut off.

5-1-3 Mod/Wah (Modulation, Wah)

The Mod/Wah section offers separate **modulation** and **"wah–wah"** effects. Only one of these effects can be used at a time, so you must designate one or the other by way of the selector tab at the top center of the parameter area.

Modulation

The Modulation effect consists of 5 options: **Rotary, Chorus, Vibrato, Flanger, and Phaser.** These are chosen using the selector tab to the right of the main Modulation/Wah selector.

Chapter 5. FX Editing
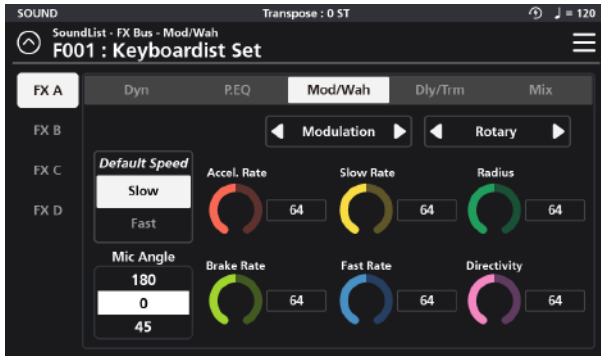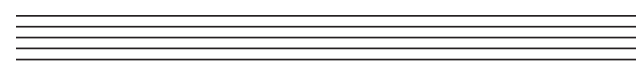
5-1-3-1 Rotary

Rotary reproduces the effect of a rotating speaker and is commonly paired with classic tonewheel organ sounds. There are 8 detailed settings:

Default Speed – Select the default rotation speed of the speaker, Slow or Fast.

Mic Angle – Select the angle of the microphone relative to the front of the rotating speaker. It can be set to 45 degrees, 90 degrees, or 135 degrees.

Accel.Rate – The Acceleration Rate equals the time it takes for the speaker to transition from its Slow to Fast Rate settings.

Brake Rate – The Brake Rate equals the time it takes for the speaker to transition from its Fast to Slow Rate settings.

Slow Rate – The Slow Rate defines the rate of rotation for the speaker's Slow rotation speed. Lower values spin the speaker more slowly. Higher values equate to a faster rotation.

Fast Rate – The Fast Rate defines the rate of rotation for the speaker's Fast rotation speed. Lower values spin the speaker more slowly. Higher values equate to a faster rotation.

Radius– Radius sets the effective sizes of the rotating speakers. Lower values equal a smaller size.

Directivity – Directivity a function related to the dispersion of the horn. Lower values produce a narrower field where higher values generate and increasingly wider and more pronounced doppler effect.

5-1-3-2 Chorus

The Chorus effect provides 5 parameter settings:

Waveform – Select from 3 waveforms shapes: Triangle, Sine, and Async sine.

Rate – Determines the frequency of signal modulation. Higher values equal faster rates.

Depth – Sets the depth of the pitch modulation. Higher values equal wider pitch variations.

Delay – Adds delay in front of the modulated signal. Higher values equal longer delay line times and thus phase variations.

Dry/Wet – Determines the balance between unaffected (dry) and effected (wet) signals. Higher values equal a more effected signal.
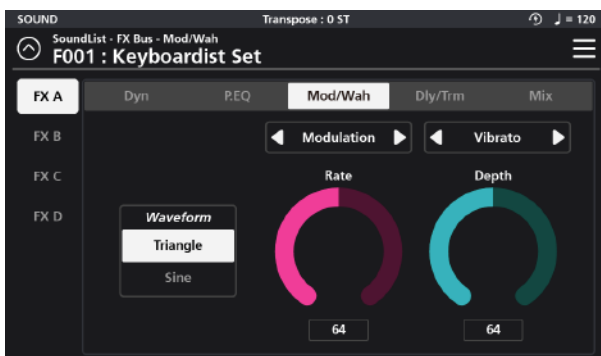
5-1-3-3 Vibrato

The Vibrato effect provides 3 parameter settings:

Waveform – Select from 2 waveforms shapes: Triangle and Sine.

Rate – Determines the rate of vibrato. Higher values equal faster modulation rates.

Depth – Sets the depth of the pitch modulation. Higher values equal wider pitch variations.

5-1-3-4 Flanger

The Flanger effect provides 6 parameter settings:
Waveform – Select from 2 waveforms shapes: Triangle and Sine.
Rate – Determines the frequency of the LFO modulation. Higher values equal faster modulation rates.
Depth – Sets the range of delay time modulation. Higher values equal deeper comb filtering variations.
Feedback – Controls the amount of effected signal fed back into the input to intensify the flanging effect.

Delay – Adds delay in front of the modulated signal. Higher values equal longer delay line times and thus phase variations.

Dry/Wet – Determines the balance between unaffected (dry) and effected (wet) signals. Higher values equal a more effected signal.

5-1-3-5 Phaser

The Phaser effect provides 5 parameter settings:
Waveform – Select from 2 waveforms shapes: Triangle and Sine.
**Rate** – Determines the frequency of signal modulation. Higher values equal faster rates.
Depth – Sets the range of peaks and notches created in the modulated signal.
Feedback – Controls the amount of effected signal fed back into the input to intensify the phasing effect.

Dry/Wet – Determines the balance between unaffected (dry) and effected (wet) signals. Higher values equal a more effected signal.

5-1-3-6 Wah-Wah

There are 4 types of "Wah-Wah" effect available: **Dynamic Up (Dyn Up), Dynamic Down (Dyn Down), Dynamic Up Sharp (DynUp Sharp), and Low Frequency Oscillator (LFO).**

Dynamic Up (Dyn Up) – This flavor of wah-wah increasingly opens the filter with higher (harder) velocity playing.
Dynamic Down (Dyn Down) – 'Dyn Up' behaves in reverse of 'Dyn Up' and increasingly opens the filter with softer (lighter) velocity playing. Harder playing increasingly closes the filter.

Dynamic Up Sharp (Dyn Up Sharp) – This is similar to 'Dyn Up' but with a sharper resonant response.
Low Frequency Oscillator (LFO) – The LFO option creates a tempo-sync'ed 'auto-wah' effect.
The editable wah-wah parameters are: Filter Type, Frequency, Resonance, Dyn Sensitivity (Dyn options only), Decay (Dyn options only), LFO Rate (LFO option only) and LFO Depth (LFO option only).

Filter Type – Select from Low Pass and Band Pass options. The 'low pass' filters out higher frequencies whereas the 'band pass' allows frequencies within a certain range to pass and rejects (attenuates) frequencies above and below that range.
Frequency – Sets the reference frequency of the above filter. For the Low Pass option this sets the frequency above which sound get attenuated. For the Band Pass, this defines the center of the frequency region allowed to pass through the filter.

Resonance – This adds emphasis to the filter cut-off frequencies.

Dyn Sensitivity (Dyn options only) – Determines the range that the filter cut-off increases/decreases due to note velocity. Higher values create a more pronounced wah-wah effect.

Decay (Dyn options only) – Determines the speed of the wah-wah envelope decay. Lower values create faster/snappier filter decay times whereas higher values create a slower/smoother response.

LFO Rate (LFO option only) – With the "LFO" wah-wah option selected, the "Dyn Sensitivity" dial is replaced with an LFO Rate parameter. Instead of velocity triggering the wah-wah effect, a low frequency oscillator (LFO) controls a sustained modulation of the filter, creating an auto-wah effect which is time sync'd to the value set for the LFO Rate parameter. **Available values are: 8 bar, 4 bar, 2 bar, 1 bar, 2d, 1/1t, 1/2, 1/4d, 1/2t, 1/4, 1/8d, 1/4t, 1/8. (Note: "d" = dotted values; "t" = triplet values).** All rates are relative to the Preset BPM tempo (as set on the Zone Edit / Common page).

LFO Depth – With the "LFO" wah-wah option selected, the "Decay" dial is replaced with an LFO Depth parameter which controls the range of filter modulation. Lower values create a subtler wah-wah effect whereas higher values create a more pronounced effect.

5-1-4 Dly/Trm (Delay/Tremolo)

The Delay/Tremolo section offers separate delay and tremolo effects. Only one of these effects can be used at a time, so you must designate one or the other by way of the selector tab at the top center of the parameter area.

5-1-4-1 Delay

The Delay effect provides 5 parameter settings: **Type, Time, Feedback, High Damp, Pre LP and Level.**

Type – Two types of delay are available: Mono and Stereo. Mono produces a mono-centered delay signal whereas Stereo produces a L/R "ping-pong" style delay.

Time – Sets the "delay time" based on note values: 1/2, 1/4d, 1/2t, 1/4, 1/8d, 1/4t, 1/8, 1/16d. 1/8t, 1/16, 1/32d, 1/16t, 1/32, 1/64d, 1/32t, 1/64 (Note: "d" = dotted values; "t" = triplet values). All values are relative to the Preset BPM tempo (as set on the Zone Edit / Common page).

Feedback – Set the amount of delayed signal that is routed back to the input. Set to the lowest possible value to generate a single echo. Set to the max value to endlessly repeat the signal.

High Damp – A lowpass filter placed after the delay line can be used to attenuate and color the high frequencies of the delayed signal.

Pre LP – A lowpass filter placed in front of the feedback loop can be used to attenuate the high frequencies of the signal. Lower values produce progressively darker echoes.

Level – Adjusts the volume level of the delayed signal.
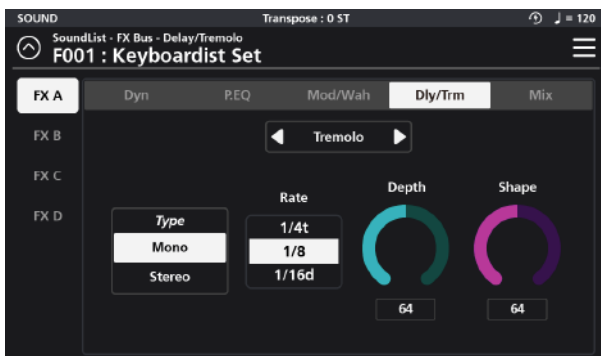
5-1-4-2 Tremolo

The Tremolo effect provides 4 parameter settings: **Type, Rate, Depth and Shape.**

Type – Two types of tremolo behavior are available: Mono and Stereo. Mono produces a mono-centered effect whereas Stereo produces a L/R "ping-pong" style image.

Rate – Sets the tremolo speed based on note values: 1/4, 1/8d, 1/4t, 1/8, 1/16d. 1/8t, 1/16, 1/32d, 1/16t,

1/32 (Note: "d" = dotted values; "t" = triplet values). All values are relative to the Preset BPM tempo (as set on the Zone Edit / Common page).

Depth – Controls the range of amplitude modulation. Lower values equal less change; higher values equal larger swings in volume.

Shape – Controls the curvature of the modulation waveform. Lower values generate smoother/subtler (sine wave) shapes where as higher values have a sharper, more abrupt character (square wave).

5-1-5 Mix

Mix is the final tab of the FX Bus and last process in the chain. The Mix settings govern the post FX Bus (pre Aux FX) sends for the aux Chorus/Delay and aux Reverb as well as Pan and Volume settings.

Chorus/Delay – This controls the amount of post FX Bus signal sent to the aux Chorus/Delay.

Reverb – This controls the amount of post FX Bus signal sent to the aux Reverb.

Pan – Balance the post FX Bus signal left to right in the stereo field.

Volume – This controls the output level of the post FX Bus chain.

5-2 AUX FX

The SP7 Grand features a 4 part Aux FX section which is comprised of a separate **Delay, Chorus, Reverb, and Equalizer.** Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease– buttons, or tap the value field to open a numeric keypad for more precise data entry.
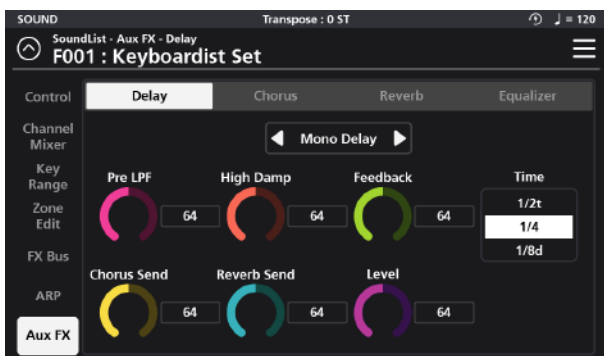
5-2-1 Delay

The Delay tab consists of a **Mono/Stereo selector, Pre LPF, High Damp, Feedback, Time, Chorus Send, Reverb Send, and Level parameters.**

Mono/Stereo Selector – Use the selector tab at the top center of the screen to configure the delay as either mono, stereo or off. "Mono Delay" produces a mono-centered delay signal whereas "Stereo Delay" produces a L/R "ping-pong" style delay.

Pre LPF – A lowpass filter placed in front of the feedback loop can be used to attenuate the high frequencies of the signal. Lower values produce progressively darker echoes.

High Damp – A lowpass filter placed after the delay line can be used to attenuate and color the high frequencies of the delayed signal.

Feedback – Set the amount of delayed signal that is routed back to the input. Set to the lowest possible value to generate a single echo. Set to the max value to endlessly repeat the signal.

Time – Sets the "delay time" based on note values: 1/2, 1/4d, 1/2t, 1/4, 1/8d, 1/4t, 1/8, 1/16d. 1/8t, 1/16, 1/32d, 1/16t, 1/32, 1/64d, 1/32t, 1/64 (Note: "d" = dotted values; "t" = triplet values). All values are relative to the Preset BPM tempo (as set on the Zone Edit / Common page).

Chorus Send – This controls the amount of delayed signal sent to the Chorus effect section.

Reverb Send – This controls the amount of the delayed signal sent to the Reverb effect section.

Level – Adjusts the volume level of the delayed signal.

FX Editing
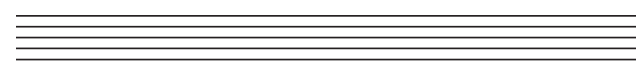
5-2-2 Chorus

The Chorus tab consists of a **Chorus type selector, Waveform selector, Pre LPF, Rate, Depth, Delay Time, Feedback, Reverb Send and Level controls.**

Chorus Type Selector – There are various character types of Chorus available: Chorus 1, 2, 3, 4, Feedback Chorus (FB Chorus), Flanger, Short Delay and Feedback Delay (FB Delay).

Waveform Selector – Select from 3 waveforms shapes: Triangle, Sine and Async Sine.

Pre LPF – A lowpass filter placed in front of the feedback loop can be used to attenuate the high frequencies of the signal. Lower values produce progressively darker tones.

Rate – Determines the frequency of signal modulation. Higher values equal faster rates.

Depth – Sets the depth of the pitch modulation. Higher values equal wider pitch variations.

Delay Time – Adds delay in front of the modulated signal. Higher values equal longer delay line times and can color the chorusing effect.

Feedback – Controls the amount of effected signal fed back into the input to intensify the chorusing effect.

Reverb Send – ontrols the amount of chorus signal sent to the Reverb effect section.

Level – Adjusts the volume level of the chorus effect.
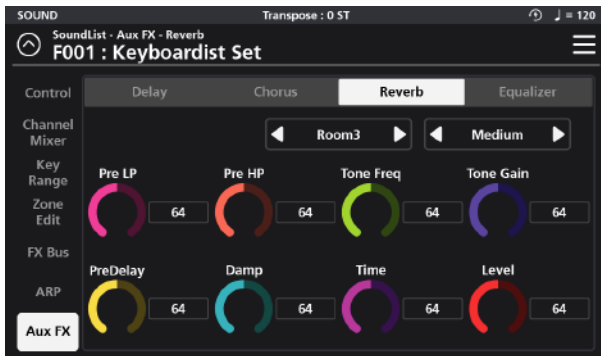
5-2-3 Reverb

he Reverb tab consists of **Reverb Type selector, Size selector, Pre LP, Pre HP, Tone Gain, Pre Delay, Damp, Time and Level controls.**

Reverb Type Selector – There are various types of reverbs available: Room 1, 2, 3, Plate, Hall 1, and Hall 2.

Reverb Size Selector – There are 3 reverb sizes available: Small, Medium, and Large.

Pre Low Pass (Pre LP) – A lowpass filter applied to the signal feeding the reverb. Lower values produce progressively darker colors by attenuating the high frequencies.

Pre High Pass (Pre HP) – A high pass filter applied to the signal feeding the reverb. Higher values progressively attenuate bass frequencies.

Tone Freq. – Set the frequency for a high shelving filter that boosts reverb frequencies above the designated point.

Tone Gain – Determines the amount of gain applied at the chosen Tone Freq and above.

Time – This parameter controls the reverb decay time (RT60). Larger values equal longer reverb times.

Damp –This high frequency dampening control places a lowpass filter after the reverb and can be used to attenuate the high frequencies present in the reverb.

Pre Delay – Set the time between the start of the original signal and early reflections.

Chapter 6. Favorite Mode

5-2-4 Equalizer

The Equalizer is a 4-band design consisting of **Low (shelving), Mid-Low, Mid-High, and High (shelving) bands.**

Low (Shelf) – A low shelving filter that cuts or boosts (Gain) frequencies below the set frequency (Freq).

Mid-Low / Mid-High (Peak/Notch) – Fully parametric bands with controls for specifying the center frequency (Freq), width of the frequency band around the center frequency (Q) and amount of boost/cut (Gain) for the specified area.

High (Shelf) – A high shelving filter that cuts or boosts (Gain +/-12dB) frequencies above the set frequency (Freq).

Chapter 6. Favorite Mode
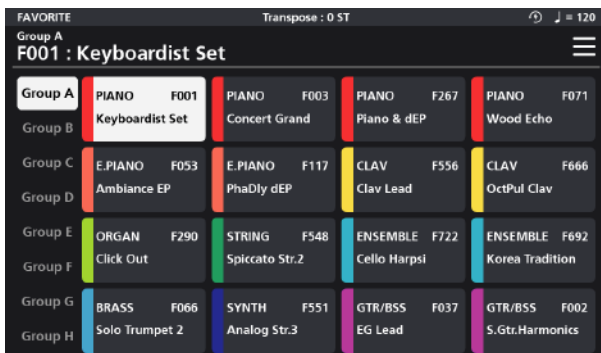
Press the front panel FAVORITE mode button (above Sound) to access Favorite mode. Favorite Mode allows you to conveniently store and quickly recall up to 128 of your most used sounds. There are 8 groups of favorites (A – H) that are selectable down the left hand column. Each group is comprised of 16 tiles organized in a 4x4 grid. Each tile displays the Sound name, ID number and is color coded by category making it easy to distinguish each selection.

6-1 Assigning Favorites
1. Go to Sound Mode. Navigate to and select the sound you want to assign as a favorite.
2. Once the desired sound is selected, press the Favorite Mode button to enter Favorite Mode.
3. Select the desired Group (A-H) from the left hand column.
4. Press and hold the selected sound Favorite tile for 3 seconds to store your selection to that tile location.
5. Repeat for any other Favorites you wish to store.

6-2 Recalling Favorites
1. Press the Favorite Mode button to enter Favorite Mode.
2. As needed, select the desired Group (A-H) from the left hand column.
3. To recall a specific favorite from the current group, either tap the on-screen tile or press the corresponding front panel Sound Category button. Note the Category buttons light to match the on-screen tile selection.

Chapter 7. Audio Mode

This chapter provides details on optimal use of the front panel Audio Interface section and rear panel Audio In jacks. Use the rear panel Audio In jacks to mix external audio sources with the sounds of the SP7 Grand, apply effects to external audio sources, or route external audio sources to a computer for recording or processing in a DAW. This is useful for playing along with backing trac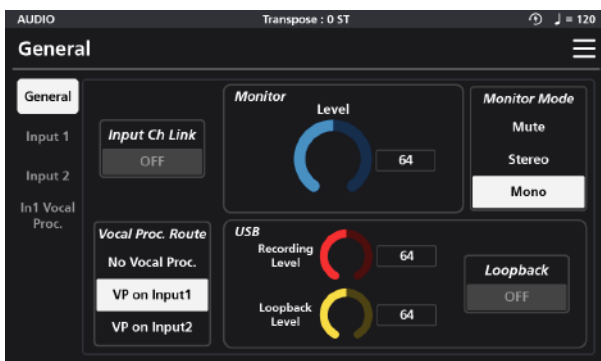ks from a portable music player, computer, or other electronic instrument. Audio mode consists of three menus: General, Input 1, and Input 2.

Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease− buttons, or tap the value field to open a numeric keypad for more precise data entry.

7-1 General

The General tab contains settings for **Input Ch Link, Monitor Level, Monitor Mode, Vocal Proc. Route, USB Recording/Playback Levels and Loopback.**

Input Channel Link − This parameter toggles the input channels' configuration between dual mono and stereo. When enabled, this gangs Inputs 1 and 2 together as a stereo pair. When engaged, input settings are controlled by the Input 1 page settings and Input 2 settings are inactive.

Monitor Level − This dial adjusts the volume of the signal entering the back panel Audio In jacks.

Monitor Mode − This switch controls the monitoring configuration of the signal entering the back panel Audio In jacks. Setting choices include: Mute, Stereo, and Mono.

Vocal Proc. Route − The Vocal Processing can only be used on one input at a time. The Vocal Proc Route switch determines which input has vocal processing applied to it. You can select: No Vocal Proc., VP on Input 1, or VP on Input 2.

No Vocal Proc.− Disables all vocal processing.

VP on Input 1 / VP on Input 2 − Select either Input 1 or 2 to have the vocal processing applied to it. Note: when selecting either input, a new tab menu appears in the left−hand column ("In1 Vocal Proc." or "In2 Vocal Proc.") corresponding to your selection.

USB Recording Level − This dial controls the audio level being sent over USB from the the SP7 Grand to your computer.

USB Playback Level −This dial controls the audio level being returned over USB from your computer to the SP7 Grand.

Loopback − When enabled, USB audio arriving at the SP7 input is fed back to the USB audio output. This can be useful for combining backing tracks from your computer/DAW with the output from the SP7 Grand and sending back to your computer for live recording/streaming. Caution: be sure to disable any input monitoring in your computer DAW/software to avoid feedback.

7-2 Input 1, 2

Each Input page features the same set of tabs governing each channel's operation: **Input, Dynamics (Dyn), Parametric EQ (P.EQ), Simulation/Wah (Mod/Wah), Delay/Tremolo (Dly/Trm), and Mix.**

7-2-1 Input

The Input tab consists of controls for Gain, Lo-Cut filter and a Noise Gate.

Gain – Sets the amount of post input gain feeding into the input processing chain.

Lo-Cut – When enabled, this engages a gentle high-pass filter that reduces unwanted low frequencies.

Noise Gate Enable – This turns the noise gate on (green) and off (red).

Noise Gate Threshold – Sounds below the Threshold value are completely suppressed. Signals louder than the Threshold, open the gate and are audible.

Noise Gate Release – This sets the time it takes for the gate to close once sound levels drop below the threshold. Higher values allow for a slower/smoother action while lower values cause the gate to close more quickly.

For details on the following effects tabs and their parameters, please refer back to the earlier noted sections:
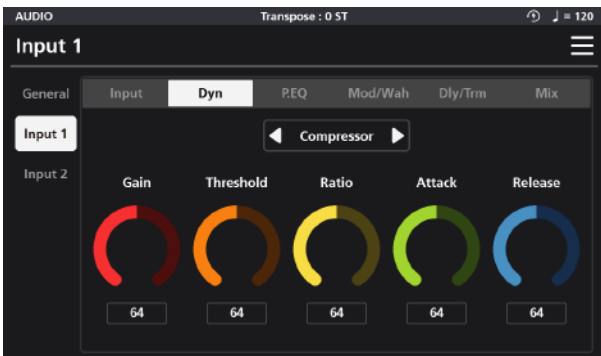
7-2-2 Dyn (Dynamic)

see pg 38 (section 5-1-1)

7-2-3 P.EQ (Parametric Equalizer)

The EQ section is a 4-band parametric. With each band, you can choose from 7 EQ types using the selector tab at the top of each band: **LPF 6dB, LPF 12dB, LowShelf, Peak/Notch, HighShelf, HPF 6dB and HPF12dB.**

For each EQ type (excluding the LPF/HPF) you can set the frequency (Freq), quality factor (Q), and gain (Gain).

LPF 6dB and LPF 12dB – Low pass filters that reduce high frequencies above the set frequency. 6dB and 12dB slopes are available. The higher the slope, the steeper the cut off.

LowShelf – A low shelving filter that cuts or boosts frequencies below the set frequency.

Peak/Notch – A fully parametric filter with controls for specifying the center frequency (Freq), width of the frequency band around the center frequency (Q) and amount of boost/cut (gain) for the specified area.

HighShelf – A high shelving filter that cuts or boosts frequencies above the set frequency.

HPF 6dB, HPF 12dB – High pass filters that reduce low frequencies below the set frequency. 6dB and 12dB slopes are available. The higher the slope, the steeper the cut off.
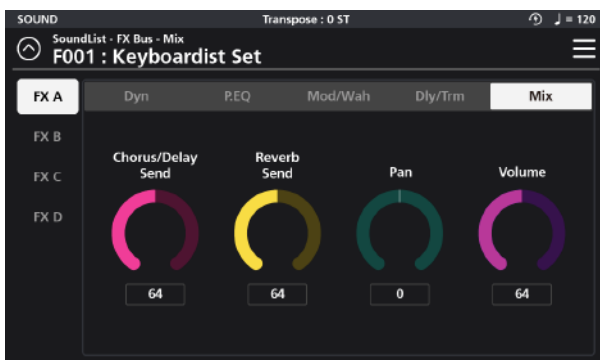

7-2-4 Mod/Wah (Modulation, Wah)

see pg 39 (section 5-1-3)

7-2-5 Mix

see pg 43 (section 5-1-5)

7-3 In 1, 2 Vocal Proc

The SP7 Grand's Input 1 and 2 Vocal Processors (In 1, 2 Vocal Proc.) provide vocal-specific tools: pitch correction and auto-harmony generation.

Reminder: the Vocal Processor menu item only appears (in the left column) when you select one of the inputs for the "Vocal Proc. Route" parameter (Audio / General menu).

The Vocal Processor page is divided into two separate tabs: Lead Processing and Auto Harmony. At the top center of the page is a preset selector switch which offers the following factory presets with preconfigured pitch correction and auto-harmony treatments dialed in for you to get you started: Pitch Correction (PchCor), Pitch Correction + Vibration (PchCor + Vib), Pitch Correction + Harmony (PchCor + Har), Tight Pitch, Digi Vocal (Digi Vox), Shaky Vibrato, Fixed Pitch, Robot Vox, Robot Vox2, Octave Up, Flea, Select Harm.
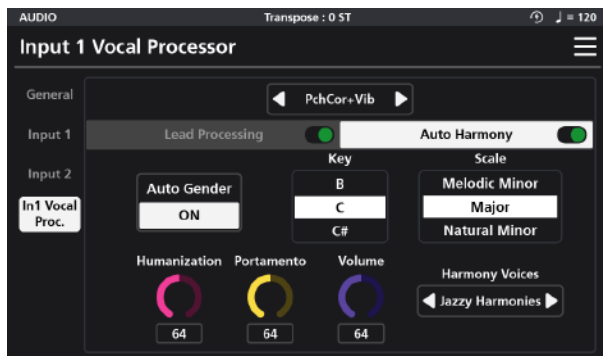
Each process can be manually edited.

7-3-1 Lead Processing

The Lead Processing section consists of the following parameters: **Octave, Gender, Mode, Chromatic Scale On/Off, Smooth/Pitch, Vibrato Style, Vibrato Rate (Vib.Rate), Vibrato Depth (Vib.Depth), and Vibrato Delay (Vib.Delay).**

7-3-1-1 Octave

Change the octave of the input signal +/– 3 octaves.

7-3-1-2 Gender

Gender alters the input signal to emphasize more male (lower values) or female (higher values) sounding formants. The default level is 64.

7-3-1-3 Mode

The Mode switch enables/disables the pitch correcting functions and can be set to Constant Pitch, Pitch Correction or Off.

Set to "Off", no pitch correction is applied.

Set to "Constant Pitch", the input signal is forced to play a single fixed pitch as designated by the Smooth/Pitch dial. Note, when engaged, the Octave setting is inactive.

Set to "Pitch Correction", the input signal's pitch is auto-corrected to try and match the absolute pitch.

7-3-1-4 Chromatic Scale

When the Mode is set to Pitch Correction, setting Chromatic Scale "On" attempts to quantize all pitches to the chromatic scale.

7-3-1-5 Smooth/Pitch

The Smooth/Pitch dial serves a dual purpose.

When the Mode is set to Pitch Correction, the dial acts to smooth the transition between the source and corrected pitches. Higher values create slower/smoother transitions compared to lower values which are faster/tighter.

When the Mode is set to Constant Pitch, the dial designates the fixed pitch that will be output regardless of the tuning of the input signal. The parameter value equates to the MIDI note # (Ex 60=C4 (middle C).

7-3-1-6 Vib.Style

The Vibrato Style parameter allows you to select from 10 different shapes of vibrato (0-9).

7-3-1-7 Vib. Rate

Vibrato Rate sets the speed (rate) of vibrato. Higher values generate a faster vibrato. A value of zero (0) effectively disables the vibrato effect altogether.

7-3-1-8 Vib. Depth

Vibrato Depth sets the range of pitch change. Higher values generate a deeper vibrato. A value of zero (0) effectively disables the vibrato effect altogether.

7-3-1-9 Vib. Delay

Vibrato Delay determines how long after a note begins that the vibrato effect will engage. By delaying the onset of the effect you can create more natural sounding vibratos. Higher values generate longer delay times.

7-3-2 Auto Harmony

Auto Harmony is a function that automatically creates harmonies based off the pitch of the input signal. Parameter settings include: Auto Gender, Key, Scale, Humanization, Portamento, Volume, and Harmony voices.

7-3-2-1 Auto Gender

When enabled, Auto Gender automatically recognizes the gender of the input voice and adjusts the formants of the generated harmonies to match.

7-3-2-2 Key

Key is used to specify the musical key center that the auto-harmonies will be built around.

7-3-2-3 Scale

Scale defines the musical mode that the harmonies will be generated in.
Choose from: Major, Natural Minor, Harmonic Minor and Melodic Minor.

7-3-2-4 Humanization

Humanization intentionally creates random inaccuracies in the timing and pitch of the generated harmonies, lending to a more human-like performance. Higher values create a more intense effect. A value of zero (0) effectively disables the effect altogether.

7-3-2-5 Portamento

Portamento creates a smooth pitch transition between generated harmony notes. Higher values create a slower, more intense effect. A value of zero (0) effectively disables the effect altogether.

7-3-2-6 Volume

Volume sets the level of the auto-generated harmony parts.

7-3-2-7 Harmony Voices

Harmony Voices determines the structure of the generated harmonies. Selections include: Doubling, Big Unison, Harmonics 1, Harmonics 2, Jazz Harmonies, Pure Harmonies, Deep Harmonies, Funny Choir, Scary Choir, and Vocoder.
"Off" effectively disables the Auto Harmony processor.

Chapter 8. Global Mode

Global Mode allows you to adjust performance settings common to all modes of operation. To enter Global Mode, press the GLOBAL Mode button.

Global mode contains settings for: tuning, power-saving options, touch screen settings, demo song playback, accessing the user manuals and for restoring factory settings.

Global mode is divided into 6 pages which are listed down the left side of the screen: Global 1, Global 2, Global Control, LED Color, Demo Song and Info.

Adjust all parameter dials by touch, alpha wheel (once selected), Increase+/Decrease- buttons, or tap the value field to open a numeric keypad for more precise data entry.
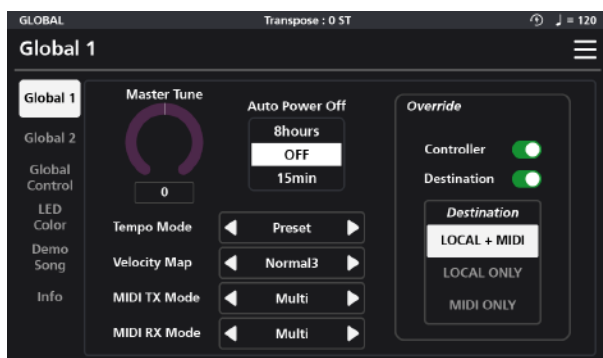
8-1 Global 1

Global 1 parameters allow you to adjust the Master Tune, Auto Power Off, Tempo Mode, Velocity Map, MIDI Transmit Data Mode (MIDI TX Mode), MIDI Receive Data Mode (MIDI RX Mode) and Override settings.

8-1-1 Master Tune

Master Tune adjusts the overall pitch of the SP7 Grand (+/- 100 cents).

8-1-2 Auto Power Off

Auto Power Off is a power saving feature. Set the time interval from the last system activity after which the unit will power itself down (15 min up to 8 hours). The "Off" setting disables the auto power-off feature.

8-1-3 Tempo Mode

Tempo Mode designates whether the current individual Sound or Global Tempo will be the active tempo. When set to "Preset", the tempo applied is as specified by the "Preset BPM" tempo parameter for each Sound (Zone Edit/Common page). When set to "Global" the tempo applied is as specified by the "Tempo" parameter in the upper right-hand corner drop MENU.

8-1-4 Velocity Map (refer to Appendix 2)

The Velocity Map parameter determines the way the SP7 Grand generates MIDI velocity information. Different maps generate different MIDI velocity value curves for the same physical key strike. Choose the setting which best suits your playing style. Choose from Light 1/2/3, Normal 1/2,/3, Hard 1/2/3 and Fixed. Normal 3 is the default.
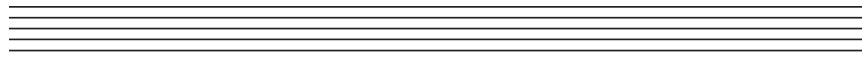
8-1-5 MIDI TX Mode

The MIDI Transmit Mode parameter designates whether the SP7 Grand will transmit on multiple MIDI channels or just channel 1.

When set to "Multi" each zone of the current multi sound will transmit on the MIDI channel which corresponds to its zone number (Zone 1 receives on channel 1, Zone 2 receives on channel 2, and so on).

When set to "Single" only zone 1/channel 1 transmits.

8-1-6 MIDI RX Mode

The MIDI Receive Mode parameter designates whether the SP7 Grand will receive on multiple MIDI channels or just channel 1.

When set to "Multi", each zone of the current multi sound will receive on the MIDI channel which corresponds to its zone number (Zone 1 receives on channel 1, Zone 2 receives on channel 2, and so on).

When set to "Single", only zone 1/channel 1 receives and further, that data is re-channelized to trigger all active zones as if being played locally on the SP7 Grand keyboard itself.

8-1-7 Override

Each Sound in the SP7 Grand can have its own unique MIDI Controller assignments and Destination routings. The Override feature allows you to suspend those assignments in lieu of using the settings found in the Global mode.
When the Controller override switch is on (green), the Controller assignments (as defined under the Global Control menu) will take precedence over the settings within each Sound.
When the Destination override switch is on (green), a routing selector tab appears allowing you to select the MIDI routing. It takes precedence over the settings within each Sound. Three configurations are available:
· LOCAL+MIDI (MIDI data is sent internally to the SP7 Grand and external devices)
· LOCAL ONLY (MIDI data is only sent internally to the SP7 Grand)
· MIDI ONLY (MIDI data is only sent to external devices).
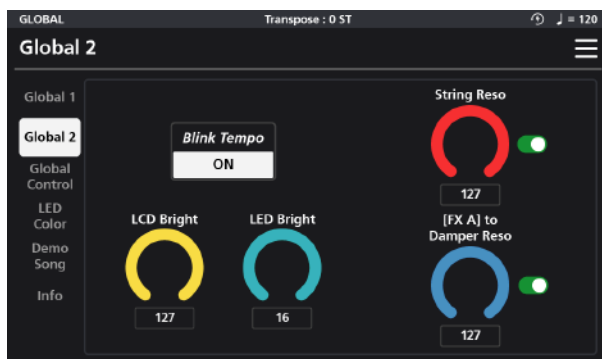
8-2 Global 2

Global 2 parameters allow you to adjust the Blink Tempo, LCD Bright, LED Bright, String Resonance, and [FX A] to Damper Resonance.

8-2-1 Blink Tempo

Blink Tempo is a visual aid. When enabled, the large LED ring surrounding the alpha wheel flashes along with the current system tempo.

8-2-2 LCD Bright

LCD Brightness adjusts the brightness of the touch screen.

8-2-3 LED Bright

LED Brightness adjusts the brightness of the front panel knobs and buttons.

8-2-4 String Resonance

When enabled (switch is green) the String Resonance (String Reso.) dial controls the amount of sympathetic string resonance generated with the acoustic pianos.

8-2-5 [FXA] to Damper Resonance

When enabled (switch is green) the [FX A] to Damper Resonance dial controls the amount of post FX A signal that gets fed through the damper resonant effect.
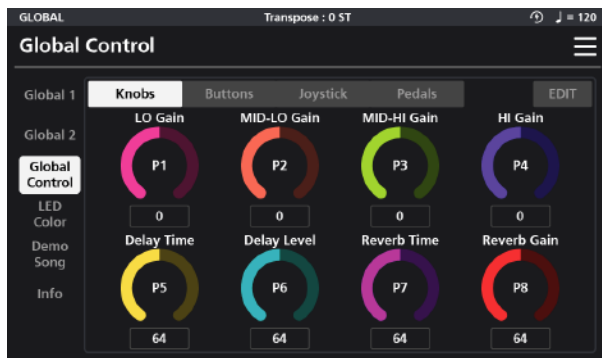

8-3 Global Control

In Global Control, you can view and edit the global assignments of the Knobs, Buttons, Joysticks and Pedals.

Note: once edited, the Controller Override parameter (Global 1 page) gets auto-enabled and the Global Control override the individual Sound settings.

*For detailed settings and contents of Global Control Editing, refer to the Controller Editing section of Chapter 3 Sound Editing.
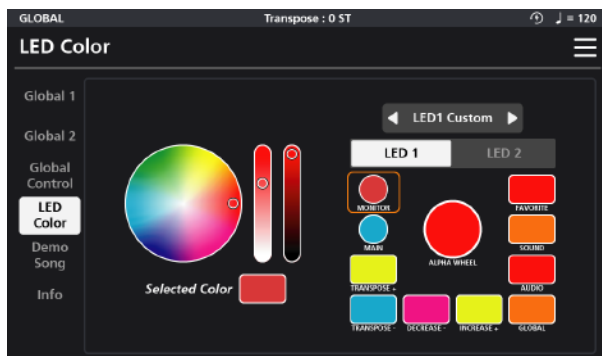

8-4 LED Color

The LED Color menu allows you to customize the colors of all of the non-programmable knobs/buttons on the front panel: **Monitor, Main, Transpose, Alpha Wheel, Increase/Decrease, Mode and Category buttons.**
The front panel controls are divided on screen into two editing groups, LED 1 and LED 2. LED 1 contains all the dials and buttons minus the Category buttons and LED 2 contains the grid of 16 Category buttons.
A Default/Custom switch above these two groups allows you to toggle between the system default color assignments and custom settings.To customize the color for any given control, select "Custom" from the Default/Custom switch, tap the intended on-screen control, then adjust the color palette wheel, brightness, and contrast control bars to taste.
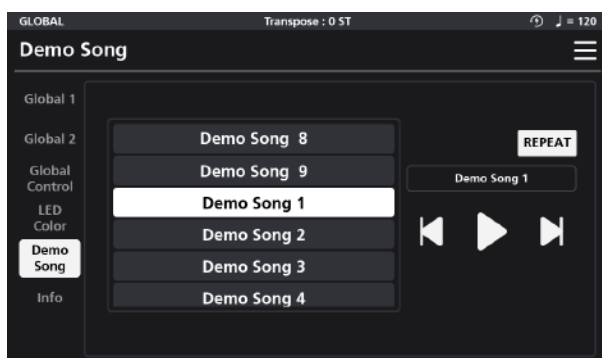
8-5 Demo Song

In the Demo Song menu you can listen to the SP7 Grand's 9 built-in song demos. Select from the list of songs and use the transport buttons on the right to control playback. Enable "Repeat" to play all of the songs in a continuous loop.
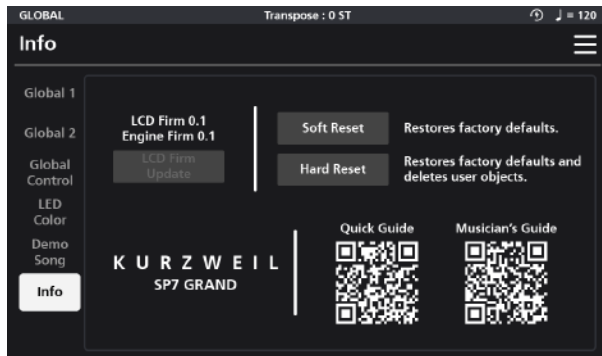
8-6 Info

In the Info menu, you can check the currently installed LCD and Engine Firmware versions as well as reset the system and gain access to the user manuals via QR code.

Soft Reset and Hard Reset initialization settings.

"Soft Reset" restores the factory default system settings while maintaining user presets.

"Hard Reset" erases all information including user presets and completely resets the SP7 Grand to its factory default settings.

Selecting either reset option will display a pop-up screen asking you to confirm the operation (Reset) or to Cancel it. Selecting Reset will clear the designated settings and the unit will power itself off. Power back on to return to normal operation.

Manuals and Updates

Easily access the SP7 Grand Quick Guide and User Manual by scanning the on-screen QR codes.

Be sure to periodically check www.kurzweil.com for the latest system updates.

8-7 Menu

In all modes, there is a 3 horizontal icon in the upper right hand corner of the display screen. This is the MENUE icon, providing quick access to the Save, Arpeggiator on/off switch, system tap Tempo, MIDI Panic, and Screen Lock functions.

Save – When in Sound Edit mode, a Save option appears in the Menu offering a shortcut to the Save dialog.

ARP (Arpeggiator On/Off) – This is a master on/off switch for all of the arpeggiators in the SP7 Grand.

This provides a fast way to temporarily disable the arp engines. Tap to toggle between active and inactive.

Tempo – This menu opens a tap tempo screen allowing you to set the current tempo in increments or by tapping.
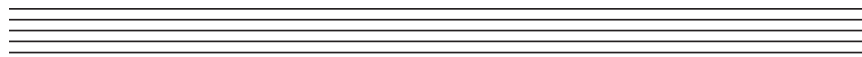
Panic – Pressing panic resets all MIDI messages and is a handy tool when stuck notes and/or other MIDI gremlins appear.

Lock – Pressing the lock icon temporarily suspends all screen and front panel input. This is a valuable feature preventing unwanted adjustments to ones settings when the keyboard is left unattended. A lock symbol will appear in the top beam of the screen when active. Simply press the lock symbol to unlock.
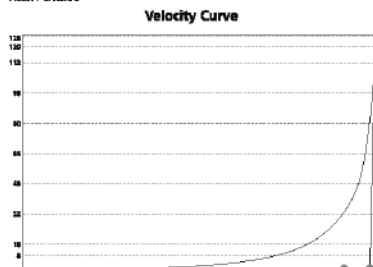
Supplementary Provisions (1)

MIDI CC	Note	MIDI CC	Note	MIDI CC	Note
0	Bank Select	43	CC 43	86	CC 86
1	Mod Wheel	44	CC 44	87	CC 87
2	CC 2	45	CC 45	88	CC 88
3	CC 3	46	CC 46	89	CC 89
4	CC 4	47	CC 47	90	CC 90
5	Porta.Time	48	CC 48	91	CC 91
6	Data Entry	49	CC 49	92	CC 92
7	Zone Volume	50	CC 50	93	CC 93
8	CC 8	51	CC 51	94	CC 94
9	CC 9	52	CC 52	95	CC 95
10	Pan	53	CC 53	96	CC 96
11	Expression	54	CC 54	97	CC 97
12	CC 12	55	CC 55	98	CC 98
13	CC 13	56	CC 56	99	CC 99
14	CC 14	57	CC 57	100	CC 100
15	CC 15	58	CC 58	101	CC 101
16	CC 16	59	CC 59	102	CC 102
17	CC 17	60	CC 60	103	CC 103
18	CC 18	61	CC 61	104	CC 104
19	CC 19	62	CC 62	105	CC 105
20	CC 20	63	CC 63	106	CC 106
21	CC 21	64	Sustain	107	CC 107
22	CC 22	65	Porta.On/Off	108	CC 108
23	CC 23	66	Sostenuto	109	CC 109
24	CC 24	67	Soft Pedal	110	CC 110
25	CC 25	68	CC 68	111	CC 111
26	CC 26	69	CC 69	112	CC 112
27	CC 27	70	CC 70	113	CC 113
28	CC 28	71	Resonance	114	CC 114
29	CC 29	72	Env release	115	CC 115
30	CC 30	73	Env attack	116	CC 116
31	CC 31	74	Cutoff	117	CC 117
32	CC 32	75	Env decay	118	CC 118
33	CC 33	76	Vib rate	119	CC 119
34	CC 34	77	Vib depth	120	CC 120
35	CC 35	78	Vib delay	121	CC 121
36	CC 36	79	CC 79	122	CC 122
37	CC 37	80	CC 80	123	CC 123
38	CC 38	81	CC 81	124	CC 124
39	CC 39	82	CC 82	125	CC 125
40	CC 40	83	CC 83	126	CC 126
41	CC 41	84	CC 84	127	CC 127
42	CC 42	85	CC 85		

Supplementary
Provisions (2)

Preset : 0: Hard 3
Velocity Curve
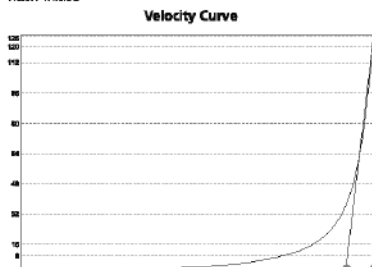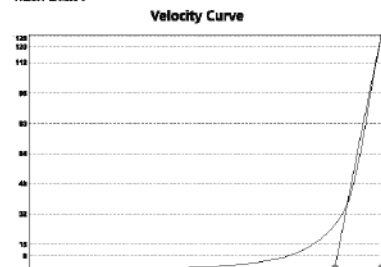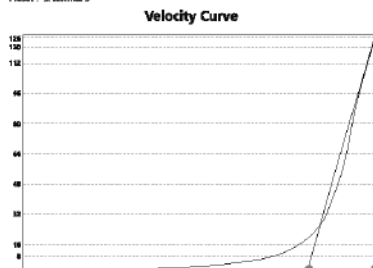
Preset : 1: Hard 2
Velocity Curve

Preset : 2: Hard 1
Velocity Curve

MIDI CC

Preset : 3: Normal 3
Velocity Curve

Preset : 4: Normal 2
Velocity Curve

Preset : 5: Hard 1
Velocity Curve

Preset : 6: Light 3
Velocity Curve
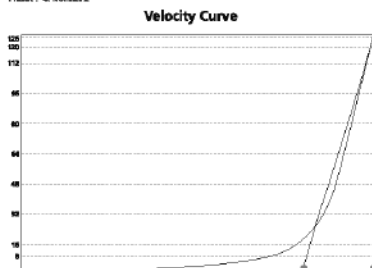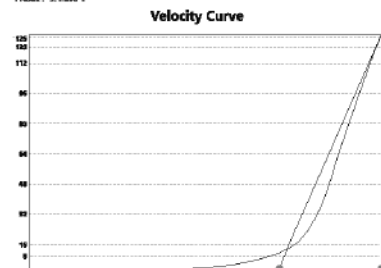
Preset : 7: Light 2
Velocity Curve
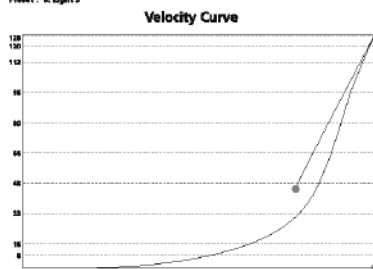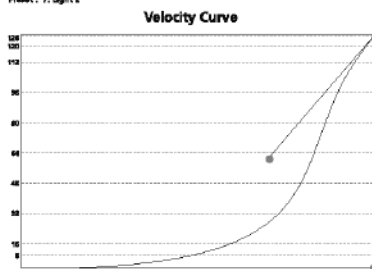
Preset : 8: Light 1
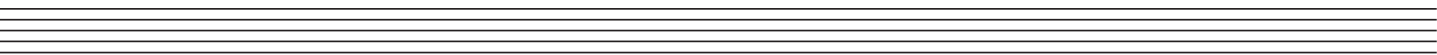**Velocity Curve**
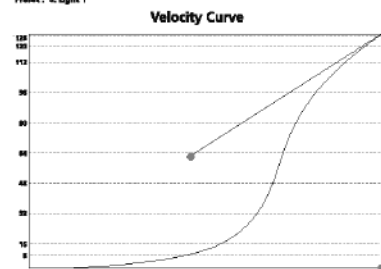
Product Specification

Keyboard	Italian 88-note, fully-weighted hammer-action keyboard (Fatar TP/110).
Display	1024 x 600 pixel, high resolution 7″ color LCD touch screen
Polyphony	256
Programs	512 factory multis.
USB	MIDI & Audio Interface
Line I/O	2 XLR combo inputs
Headphone output	1/4" stereo headphone output.
Pedal Input	2 Switch pedal inputs; supports a single half-damper pedal (1 switch/sustain pedal is included; half-damper pedals sold separately) 1 Continuous Control Pedal Input (pedal sold separately)
Additional accessories	Acrylic music board (sold separately)
Product size	1320mm X 377mm X 120mm
Weight	16.6Kg
Power	DC Power adapter : 15V , 2.5A

Memo

KURZWEIL®

HDC YOUNG CHANG