electro-harmonix

OCEANS ABYSS

advanced reverb laboratory

Thank you for purchasing the EHX Oceans Abyss. The Oceans Abyss expands on Electro-Harmonix's highly acclaimed reverb technology to deliver a truly immersive FX workstation centered around independently programmable dual reverb engines with with ten full-stereo reverb algorithms including Hall, Spring, Shimmer, and more. Place two reverbs into a customizable signal path with additional FX blocks like delay, modulation, gain, and EQ. Featuring 128 presets, a stereo FX loop, expression, MIDI, and USB for preset creation and management on your PC/Mac. Dive deeper with the Oceans Abyss!

Table of Contents

IN THE BOX:

Oceans Abyss
Advanced Reverb Laboratory
9.6VDC / 500mA Power Supply
USB-C Cable
User Reference Manual
Warranty/Compliance Insert

POWER SUPPLY REQUIREMENTS:

Voltage: **9VDC** Current: **500mA**

Polarity: **Center-Negative**

This device comes equipped with an Electro-Harmonix 9.6DC-500 power supply. Use of the wrong adapter or a plug with the wrong polarity may damage the device and void the warranty. Do not exceed 10.5VDC on the power plug. Power supplies rated for less than 500mA may cause the device to act unreliably.

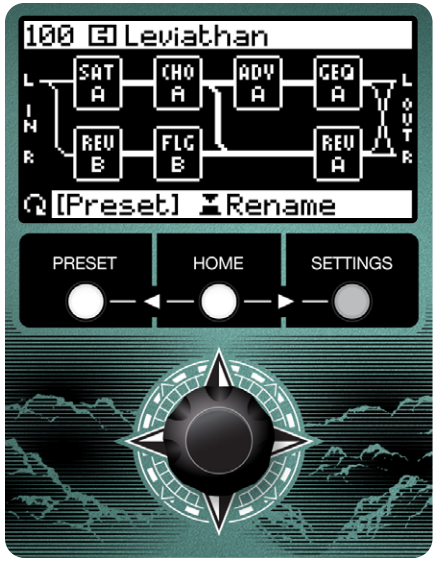
Quick Start Guide

Connecting the Oceans Abyss

1. Plug the supplied AC adapter into an AC outlet and insert its output plug into the power jack on the rear panel of the Oceans Abyss.
2. Attach your instrument, another pedal or mixer to the INPUT jack(s). Use INPUT L and R when connecting in stereo. Use INPUT L for mono connections. In mono, the Oceans Abyss internally copies the left input to the right channel.
3. Connect the OUTPUT jacks to an amplifier, mixer, audio interface or speaker monitors. If you're using a mono setup, use only the OUTPUT L jack.

Selecting and Recalling Presets

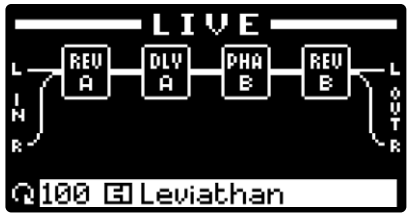
Signal Path View - Default HOME Screen



Screen Control Buttons and NavCoder

1. Press the HOME button to display the SIGNAL PATH view. The SIGNAL PATH view is referred to as the home screen throughout the manual.
2. If the PRESET button is not lit already, press it to load the preset. The PRESET button lights to indicate a preset is loaded.
3. Tilt the NavCoder upward a few times to highlight the header. The SIGNAL PATH header displays the currently loaded preset number and name.
4. Rotate the NavCoder in either direction to scroll through and load presets.
5. Simultaneously press footswitches A+EFFECT or EFFECT+B to increment/decrement through the presets and load them.
6. If a loaded preset is modified, the PRESET button blinks. Press PRESET once to reload the saved version of the preset.

Toggling LIVE / Preset Mode



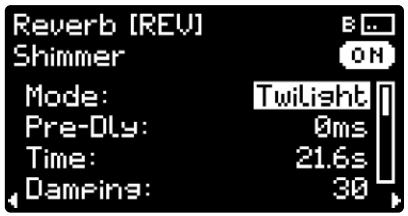
LIVE Mode View

1. The PRESET button lights up when a preset is loaded. Press the PRESET button to unload the preset and enter LIVE mode; the PRESET button turns off.
2. In LIVE mode, the physical knobs and sliders—PAN, BLEND, PRE-DELAY, TIME, EQ LOW, EQ HIGH for Reverbs A & B—are activated and directly control their respective reverb parameters.
3. In LIVE mode, press the PRESET button to load the currently queued preset. To queue a preset in LIVE mode, tilt the NavCoder upward or downward until the header or footer is highlighted, then rotate the NavCoder to change the currently queued preset.
4. Simultaneously pressing either the A+EFFECT or EFFECT+B footswitches in LIVE mode also loads the currently queued preset.

Editing the Signal Path

1. Press the HOME button to access the home screen's SIGNAL PATH view.
2. Tilt the NavCoder to navigate around the signal path. Each element blinks to indicate that it is currently selected. Elements include FX blocks, connectors and input/output ports.
3. When a block is selected (blinking), rotate the NavCoder to scroll through the full list of available effects. When you land on the desired FX type, stop rotating. The FX block is now ready.
4. When a connector is selected (blinking), rotate the NavCoder to change the connector type. ***Note:*** *The connections between blocks on top & bottom rows are handled by a single connector.*

Adjusting FX Parameters



FX Editor - Reverb B, Page 1

FX Editor - Reverb B, Page 2

1. On the SIGNAL PATH home screen, highlight an FX block and then center press the NavCoder to enter its FX Editor screen.
2. Most FX types contain multiple pages of parameters. Navigate through the parameters and pages by tilting the NavCoder in the direction you want to move. Additionally, press the PRESET+HOME or HOME+SETTINGS buttons simultaneously to page left or right, respectively.
3. For Reverb blocks, the first page displays all parameters in a vertical list; the same parameters are displayed as graphical knobs or sliders on the remaining pages. In list view, tilt the NavCoder up/down to select parameters and then rotate the NavCoder to adjust values. For graphical parameter pages, tilt the NavCoder left/right and then rotate the NavCoder to adjust the currently selected parameter.

Tip*: If there is a REV A/B block on the signal path, press the corresponding EDIT button for quick access to its FX Editor. Additional presses of the EDIT button advance through the reverb pages.*

4. For non-reverb FX blocks, most pages display parameters as graphic knobs. Tilt the NavCoder left/right to select between parameters and to proceed to the next page. When a parameter is highlighted, rotate the NavCoder to adjust its value.

Selecting Reverb Types

1. The Signal Path can hold up to two reverb blocks: REV A or REV B. Each reverb block can be one of 10 reverb types. See page 26 for the full list of effects.
2. When either REV A or B blocks are assigned in the signal path, press their respective EDIT A/B buttons at any time to enter the FX Editor screen. The reverb type field for the REV A/B block is highlighted automatically.
3. Rotate the NavCoder to change the reverb type of the REV A/B block. As you select a new reverb type, it will automatically load its default settings.
4. Alternatively, when tweaking a reverb parameter in FX Editor, tilt the NavCoder upward at any time to go to the header region and change the reverb type.

Configuring Block Groups

1. All FX blocks are assigned to one of two groups: group A or group B.
2. After adding a new FX block in SIGNAL PATH view, rotate the NavCoder clockwise to scroll through FX blocks in the A group. Rotate the NavCoder counterclockwise to scroll through FX block in the B group. Rotating in either direction will eventually bring you to the other group.
3. A block can be quickly moved between groups A and B by pressing and holding the desired destination's EDIT button. For example, to move a block to group B, highlight the block (blinking), then press & hold the EDIT B button for about 1 second, until the block's letter changes to B. The block is now part of group B.
4. Alternatively, while in a block's FX Editor screen, press & hold the EDIT A or B button to change it to group A or B respectively.

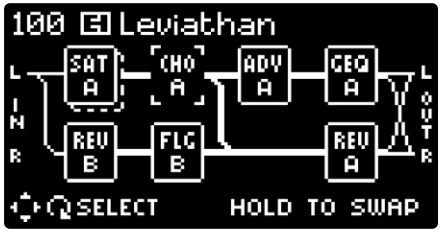
Bypassing Blocks

1. Press the A or B footswitch to bypass/engage all blocks in group A or B.
2. Alternatively, while in SIGNAL PATH view, double-click the NavCoder on a highlighted block to bypass/engage the single block.
3. Press the center footswitch to hardware bypass the entire Oceans Abyss.

Note: *See "Footswitches" on page 18 for options on configuring bypass behavior.*

Swapping Block Locations

1. When a block is highlighted in SIGNAL PATH view, press & hold the NavCoder to enter Block Rearrangement mode.
2. The highlighted block will appear "lifted." This block can now be swapped with any other location on the signal path. Rotate or tilt the NavCoder to select another block or location.



Block Rearrangement Mode

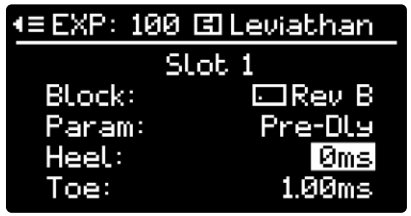
3. Press & hold the NavCoder for about 1 second to complete the block swap.
4. If you change your mind, press the HOME button to cancel and exit Block Rearrangement mode.

Deleting Blocks

1. When a block is highlighted in SIGNAL PATH view, press & hold the NavCoder to enter Block Rearrangement mode.
2. The highlighted block will appear "lifted". While highlighting the "lifted" block, press & hold the NavCoder for about 1 second to delete the block.
3. If you change your mind, press the HOME button to cancel and exit Block Rearrangement mode.

Quick Expression Assignment

1. In a block's FX Editor screen, use the NavCoder to select the parameter you wish to control.
2. Once selected, press and hold the NavCoder to enter the EXP Assignment Editor screen. Use the NavCoder to select and edit the heel & toe values of the controlled parameter.



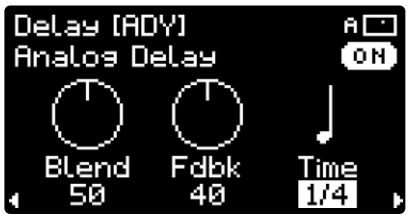
Expression Assignment Editor

Note: *By default, EXP is assigned to Input Volume in LIVE mode. See page 16 "Expression" on how to turn it off as well as managing all EXP assignments in the current preset or LIVE mode.*

Using Tap Tempo

1. In a delay or modulation block's FX Editor screen, use the NavCoder to select a Time or Rate parameter you wish to control with Tap Tempo.
2. Once selected, rotate the NavCoder in either direction until the knob graphic changes to note division graphics. Rotate the NavCoder to select the note division you wish to use. ***Note:*** *See page 35 for a table of tap-tempo divisions.*
3. Tap footswitch A or B, depending on the current block's FX group, to adjust the tempo of that group. The PERFORMANCE view, entered by pressing the PRESET+HOME buttons twice from the home screen, displays the current BPM values of active FX groups at the bottom of the OLED display.

Tip: *Set up note divisions for multiple FX blocks in the same group to synchronize them.*



Tap Tempo Parameters

Performance View

Adjusting Signal Path Input/Output Levels

1. In the SIGNAL PATH view, tilt the NavCoder to the left or right several times to select the input or output port. See page 14.
2. When the input/output port is highlighted, center press the NavCoder to enter the Signal Path I/O Levels screen. Both the input and output ports lead to the same I/O screen.
3. This screen shows three parameters that act on the entire signal chain: input level to the signal chain, wet/dry blend of the entire signal chain and output level from the signal chain. Push the NavCoder left/right to select between parameters. When a parameter is highlighted, rotate the NavCoder to adjust its value.

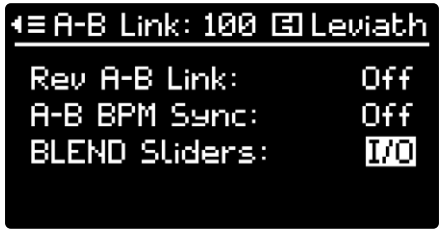
Tip: *Set up a full wet signal path and use the input/output blend knob on this screen to control the overall dry/wet blend of the signal path.*

Note: *These parameters are different from the global input/output level settings. The signal path I/O settings are saved within each preset.*

Input/Output Level Settings

Controlling Signal Path I/O Blend using physical BLEND Sliders

1. In SIGNAL PATH view, press the HOME+SETTINGS buttons together to go to the SIGNAL PATH SETTINGS view.
2. Rotate the NavCoder clockwise two clicks so that A-B Link is highlighted.
3. Press the NavCoder to enter the A-B Link Settings screen.
4. Rotate the NavCoder to change BLEND Sliders from Reverb to I/O.
5. When at least one reverb is assigned, use the corresponding BLEND slider to control the signal path's overall wet/dry blend. When both reverbs are assigned, both BLEND sliders control the signal path's overall wet/dry blend.



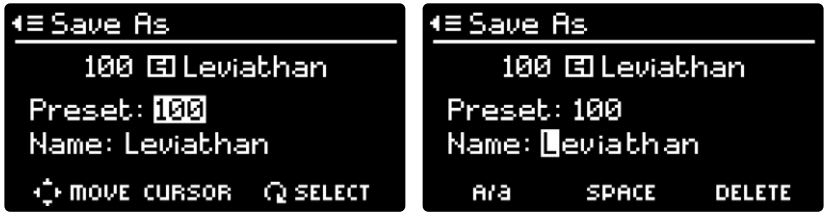
Set BLEND Sliders to Control Input/Output Blend

Saving Presets from LIVE Mode

1. Save a LIVE mode setting by pressing & holding the PRESET button for just over a second. The Save As screen is displayed.
2. Rotate the NavCoder to select the preset you wish to overwrite.
3. Tilt the NavCoder down once to edit the preset name.
4. Press & hold the NavCoder to complete the Save As process.

Saving Edited Presets from Preset Mode

1. The PRESET button blinks to indicate a preset is loaded but has been edited or changed in some way.
2. To save an edited preset without renaming it, press & hold the PRESET button for about one second.
3. To rename a preset and save it, tilt the NavCoder upwards so the header is highlighted. Press the NavCoder to enter Rename Preset screen.
4. Tilt the NavCoder downward once to edit the preset name. Press & hold to save the preset with the new name.
5. To save a preset to a different location, without overwriting the existing preset, press HOME+SETTINGS buttons on the SIGNAL PATH view to enter the SIGNAL PATH SETTINGS. Scroll down to Save As command.
6. Rotate the NavCoder to select the preset you wish to overwrite. Press & hold the NavCoder to complete the Save As process.

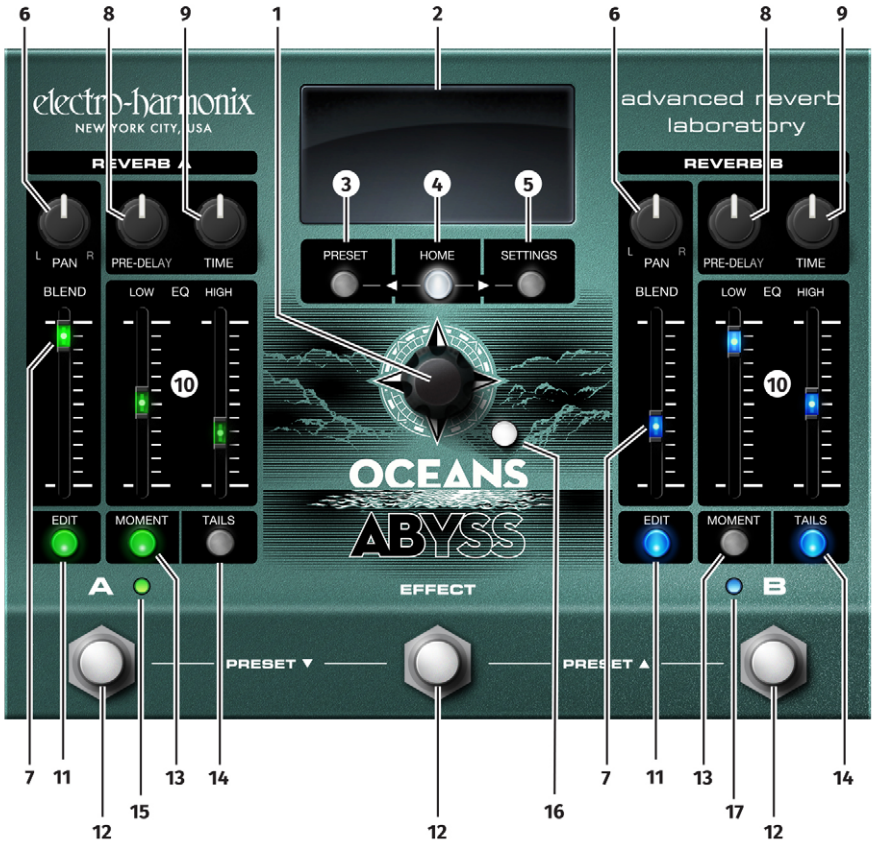


Save As Screen, Preset Location and Naming

Naming Presets

1. When on the Rename Preset or Save As screen, you may edit the preset name with a maximum of 24 characters.
2. Tilt the NavCoder left/right to move the cursor. Rotate to change the selected character.
3. Press the PRESET button to toggle letter characters between uppercase and lowercase.
4. Press the HOME button to insert a space and shift all following characters to the right.
5. Press the SETTINGS button to delete the selected character and shift all following characters to the left.
6. Press & hold the NavCoder to save the preset name.

Top Panel Controls



1. NAVCODER Knob Allows you to navigate menus, parameters, and presets as well as adjust settings. The NavCoder provides the following movements:

- Rotate clockwise and counterclockwise to scroll through values, presets, and lists.
- Center press straight down (single-click, press & hold, and double-click) for choosing menu options.
- Directional Pad (D-Pad) in four directions: up, down, left, and right, allowing for easy navigation around menus and screens.

2. OLED Graphical Display Shows essential information such as preset number, preset name, signal path, and more. Detailed descriptions of all OLED display information starts on page 13. Use the NavCoder knob to navigate around the display.

3. PRESET Button Press the PRESET button to load/unload presets on any non-Settings screens. Press & hold the PRESET button for preset save.

The PRESET button lights solid when a preset is loaded and blinks when a loaded preset has been edited. The PRESET button is off when no preset is loaded, as in LIVE mode.

4. HOME Button Press the HOME button to go back to the home screen (SIGNAL PATH view) at any time.

The HOME button lights solid to indicate the home screen is currently displayed and is off for other screens.

5. SETTINGS Button Press the SETTINGS button to enter the Global Settings menu.

The SETTINGS button lights solid when navigating the Global Settings screens and is off for other screens.

Tip: *For paging through available screens or views: press PRESET+HOME simultaneously to page left; press HOME+SETTINGS to page right. See page 13 for more details on different views.*

6. PAN Knobs Allow the output of each reverb engine to be moved within the stereo field, from hard left to hard right and anywhere in between.

7. BLEND Sliders Control the wet/dry mix within each reverb block. When BLEND is at the minimum position, the reverb block's output is only the input signal into the reverb. As the slider is pushed up, the reverb output increases in volume. As the slider is pushed past 75%, the input signal decreases in volume. When the slider is at the maximum position, the output of the block is reverb only.

Tip: *The BLEND sliders may optionally be set to control the wet/dry mix of the entire signal path. See "A-B Link" settings on page 17.*

8. PRE-DELAY Knobs Control the pre-delay time within each reverb block. Pre-delay allows the musician to put a time delay between playing a note and hearing the onset of reverb for that note. The total range of pre-delay is from 0 to 1 second. As you turn the knob clockwise, the pre-delay time increases.

9. TIME Knobs Control the decay time of each reverb engine. As this knob is turned clockwise, the reverb time gets longer and longer, reaching infinite when the TIME knob is set to maximum.

10. EQ LOW, EQ HIGH Sliders Control the low shelf and high shelf EQ of each reverb block. The total range of each EQ slider is -12dB to +12dB. The Crossover frequency between the two bands can be adjusted in the FX Editor screen (see pages 23 & 27).

11. EDIT Buttons The EDIT buttons allow for quick access to the reverb FX Editor where you can adjust all reverb parameters. Press and release the Edit button and the display immediately takes you to the corresponding reverb's editor screen. Additional presses of the EDIT button advance through the FX Editor's pages.

- The EDIT buttons light solid to indicate a reverb block in that group is available for editing.
- EDIT blinks rapidly when the reverb is in infinite sustain. Press the EDIT button while it's blinking to jump to the infinite level parameter on FX Editor screen of the corresponding reverb.
- To move any FX block between Group A and Group B, highlight the block on the signal path and then press and hold the desired destination group's EDIT button for one second.

12. A, EFFECT, B Footswitches Press A or B footswitches to bypass/engage all FX blocks in group A or B, respectively.

When reverb A or B is assigned on the signal path, press and hold the A or B footswitch to trigger infinite sustain for the corresponding reverb.

Note: *when MOMENT is enabled for a footswitch, the infinite function is*

disabled for that footswitch. Infinite may still be triggered by an external footswitch, see page 39.

Press EFFECT footswitch to toggle the Oceans Abyss between effect mode and global bypass. Global bypass is buffered analog.

Press the A and EFFECT footswitches together to load the currently queued preset, then press again to step downward through presets. Press and hold both footswitches to quickly scroll down through the presets.

Press the EFFECT and B footswitches together to load the currently queued preset, then press again to step upward through presets. Press and hold both footswitches to quickly scroll up through the presets.

Tip: *If your signal path uses one group (for example, only Group A), you can set up the unused group's footswitch (footswitch B) as a tap tempo control for the entire signal path. See page 18.*

13. MOMENT Buttons The MOMENT buttons allow you to change the A or B footswitch action from latching to momentary. When set to latching (button is unlit), each press and release of a footswitch toggles its group state between bypass and effect. When MOMENT is engaged (button is lit), each group's effect is engaged when their corresponding footswitch is held down; the group is bypassed when the footswitch is released.

Tip: *Use MOMENT in conjunction with TAILS while playing to target exactly which notes or phrases you wish to be affected.*

Note: *When MOMENT is enabled, the reverbs' infinite function is disabled on the A or B footswitches. Infinite may still be triggered by an external footswitch, see page 39.*

14. TAILS Buttons When TAILS is enabled for an FX group, the trailing echoes or wash of the delay and reverb effects in the group continue to play after being switched to bypass. Anything played after entering bypass will not go through the effects. To enable Tails for either group, press and release the TAILS button for the corresponding FX group. When TAILS is disabled, all effects in the group stop as soon as they are bypassed.

Tip: *For FX blocks in the same group, place them next to each other on the signal path to have their tails first go through one another and blend into the signal path at the end.*

Note: *The TAILS feature does not apply to global bypass on the EFFECT footswitch. It is only available with group A or B bypass.*

15. A LED The A LED lights up solid green to indicate that effect group A is active. The LED is off when group A is bypassed.

16. Moon LED The moon LED lights up solid white to indicate that the Oceans Abyss is in effect mode. The LED is off when the Oceans Abyss is in global bypass.

17. B LED The B LED lights up solid blue to indicate that effect group B is active. The LED is off when group B is bypassed.

ILLUMINATED SLIDERS

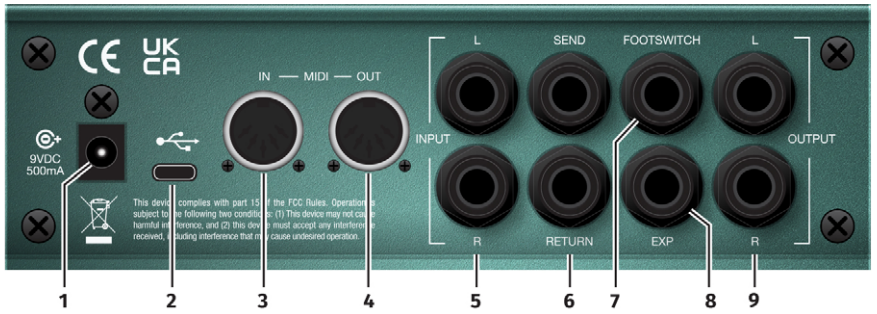
Slider values can be set by various sources including presets, NavCoder entry, expression sweeps, MIDI, the *EHXport™* application, or, in LIVE mode, the actual position of the physical slider. The Oceans Abyss uses illuminated sliders to indicate the current value of each slider parameter regardless of how it was set. As a slider parameter increases, the LED brightness on that slider also increases.

If a slider is moved after loading a preset, the slider's parameter will change based on its physical position. The slider's LED will blink, indicating that the slider has been moved and that its value no longer matches the value in the preset.

If a reverb block is changed to a different reverb type from the preset, all three sliders associated with that reverb block will stop blinking. The brightness of these slider LEDs will indicate the current values of the new reverb block type.

Helpful Hint: *the current value of any control always comes from the last source to update it. The available sources are presets, NavCoder rotations, MIDI, expression, EHXport™, or physical movement of the control.*

Connections



1. POWER Jack Connect the output plug of the factory-supplied AC adapter into the 9VDC power jack. The current requirement is 500mA at 9VDC. The polarity of the power jack is center-negative. Do not exceed 10.5 VDC at the power jack.

2. USB Port Connects to a Windows or Mac computer running the Electro-Harmonix *EHXport™* app. *EHXport™* allows you to create, edit, transfer, and rearrange presets, as well as update firmware and Global Settings.

3. MIDI IN Jack Connect a standard 5-pin DIN MIDI cable to this connector to receive MIDI Control Change (CC), Program Change (PC), and MIDI Clock messages. Using MIDI CC and PC messages, you can control every parameter on the Oceans Abyss signal path. MIDI Clock messages allow you to sync the Oceans Abyss tempo with your DAW or other MIDI Clock source. See page 38 for more details on MIDI settings.

4. MIDI OUT Jack Connect a standard 5-pin DIN MIDI cable to this connector. MIDI OUT provides a MIDI Thru connection. See page 38 for more details on MIDI settings.

5. INPUT L & R Jacks The 1/4" INPUT L & R jacks are unbalanced, high impedance inputs intended for both instruments and line level signals. When only the INPUT L jack is connected, the left input is internally copied to the right channel. The Input can accept

signal amplitudes up to +7.3dBu before clipping. The input impedance presented at each of these jacks is 2MΩ.

6. SEND & RETURN Jacks The 1/4" SEND & RETURN jacks are unbalanced stereo TRS inputs and outputs, which can be used by the FX Loop block to place external effects into your signal path. Use 1/4" TS cables when connecting mono external effect units. For stereo external effect units, use 1/4" stereo TRS to dual mono TS Y splitter cables. See page 40 for more details on the FX loop configuration. The maximum send level is +1.5dBu. The RETURN jack can accept signal amplitudes up to +5.9dBu. The output impedance sourced by the SEND jack is 400Ω. The input impedance presented at the RETURN jack is 2MΩ.

7. FOOTSWITCH Jack Connect external footswitches to this 1/4" jack to control a range of functions including Tap Tempo, Infinite, Preset Up/Down, Group Bypass and more. The external footswitch must be momentary and normally open and may be a single footswitch (TS plug), a dual footswitch (TRS plug), or a triple footswitch (TRS plug) such as the EHX Triple Foot Controller. A normally open switch makes a connection between the sleeve and either the tip, ring, or both upon activating the switch. See page 39 for more details on how to configure external footswitches.

The FOOTSWITCH jack also supports external clock signals on a TS plug for tap tempo synchronization. The external clock may also control any function assignable to external footswitches. The clock input voltage must be within 0-13V. When controlling tap tempo, the acceptable frequency range is 0.5-4Hz (30-240BPM).

8. EXP Jack Supports either an expression pedal with a 1/4" TRS plug or a control voltage ranging from 0-5V on a TS plug. Nearly all the Oceans Abyss parameters can be controlled via an expression pedal or CV, and is easy to setup via the expression menus (see page 16). The EXP jack will accept any expression pedal that uses a potentiometer ranging from 10kΩ to 100kΩ and has the wiper connected to the tip (T) of the plug.

Accepted EHX expression pedals include (but are not limited to):

- Electro-Harmonix Expression Pedal
- Electro-Harmonix Dual Expression Pedal
- Electro-Harmonix Next Step Expression Pedal

Accepted expression pedals by other manufacturers include:

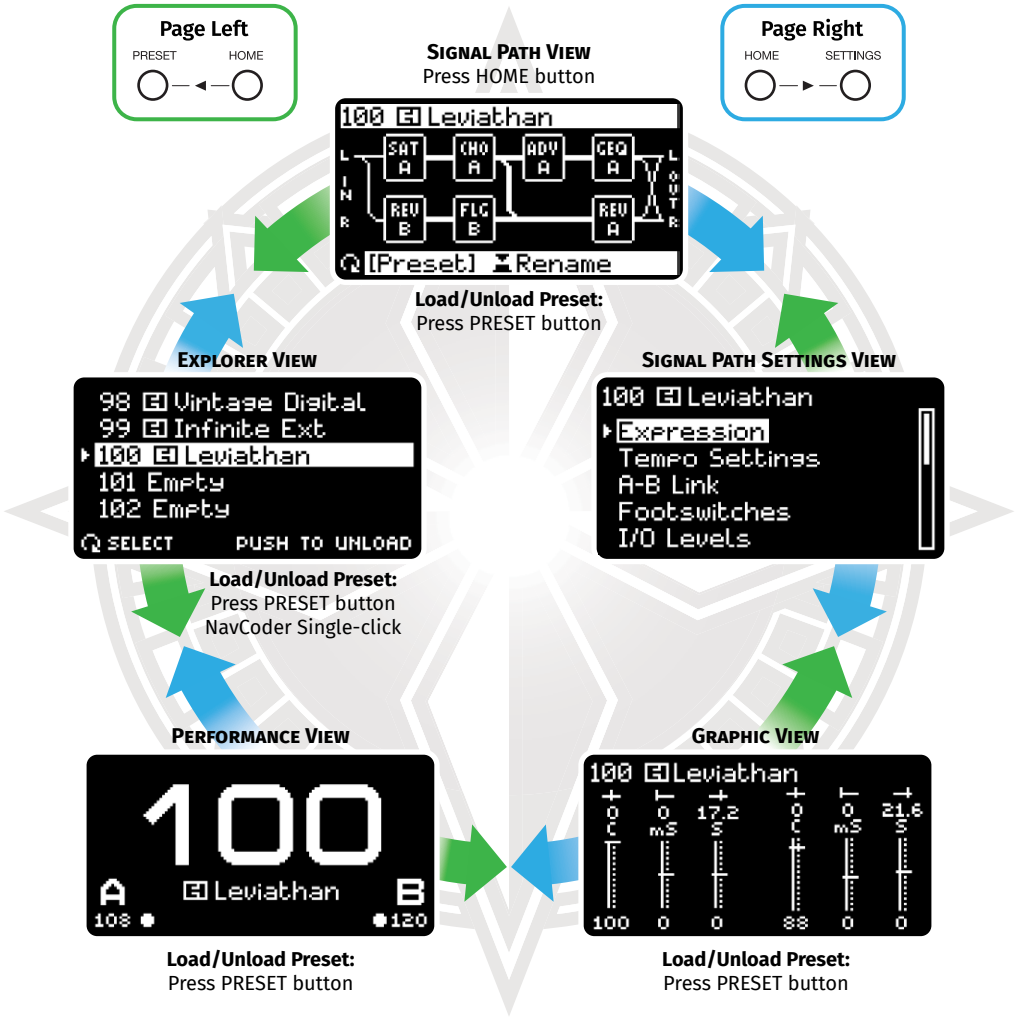
- Boss FV-500L
- Moog EP-3
- M-Audio EX-P

9. L & R OUTPUT Jacks The 1/4" L & R OUTPUT jacks are unbalanced, low impedance outputs. Connect these outputs to an amplifier, mixer, audio interface, tape recorder or any other suitable device. The maximum output level is +3.6dBu. The output impedance sourced by each of these jacks is 400Ω.

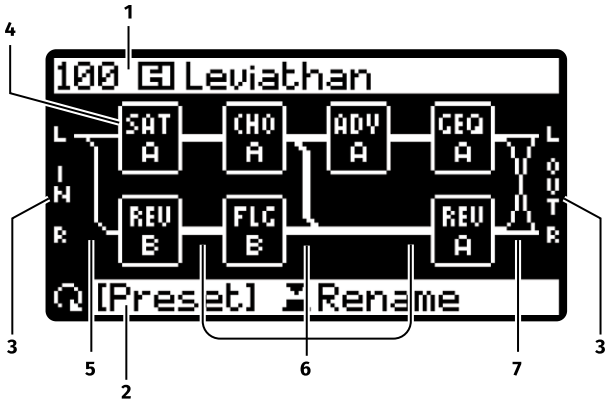
OLED Display & Main Views

The Oceans Abyss has five main views: **SIGNAL PATH, SIGNAL PATH SETTINGS, EXPLORER, GRAPHIC,** and **PERFORMANCE.**

Page left or right between different views by pressing PRESET + HOME or HOME + SETTINGS buttons simultaneously or by pushing the NavCoder left or right. On SIGNAL PATH view and SIGNAL PATH SETTINGS view, the header must be selected to page through views with the NavCoder.



Note: *The Oceans Abyss boots up in the last state it was in before removing power.*



SIGNAL PATH VIEW (Home Screen)

The SIGNAL PATH view is also the home screen. It displays the preset number, preset name, signal path and, at the bottom, information on the currently selected element. Press the HOME button at any time to return to SIGNAL PATH view. Use the NavCoder D-Pad to navigate around the home screen.

1. Header The header indicates whether the Oceans Abyss is in LIVE or Preset mode. If a preset is loaded and then modified, the preset number blinks.

When the header is highlighted in LIVE mode, you can:

a) Rotate the NavCoder to change the currently queued preset.

b) Center press the NavCoder to load the queued preset.

c) Press & hold the PRESET button or NavCoder to save the current LIVE settings as a preset.

d) Tilt the NavCoder to the left to enter PRESET BROWSER view.

e) Tilt the NavCoder to the right to enter SIGNAL PATH SETTINGS view.

When the header is highlighted in Preset mode, you can:

a) Rotate the NavCoder to select and load presets.

b) Center press the NavCoder to enter the Rename Preset screen (see page 19).

c) Press & hold the PRESET button or NavCoder to save the preset without renaming.

d) Tilt the NavCoder to the left to enter PRESET BROWSER view.

e) Tilt the NavCoder to the right to enter SIGNAL PATH SETTINGS view.

2. Info Section / Preset Queue The Info Section at the bottom displays a description of the currently selected element and, when selected, allows for queueing up a preset. Select the Info Section by tilting the NavCoder downward several times until the P icon is blinking. Rotate the NavCoder to change the currently queued preset and center press the NavCoder to load the queued preset.

3. Input/Output Ports The input/output ports are two vertical text strings, normally displayed as “L IN R” and “L OUT R”, situated to the left and right of the signal path, respectively. They represent the physical connections available through the INPUT and OUTPUT jacks. In Series Path mode, the text changes to “I” on the left, for stereo input and “O” on the right, for stereo output.

When the input/output ports are selected (blinking), press the NavCoder to enter the Signal Path I/O Levels screen (see page 18), or rotate the NavCoder to enable/disable Series Path mode (see page 15).

4. FX Block There are up to 8 FX blocks (2 rows x 4 columns) on the signal path. All FX blocks are assigned to one of two groups: group A or group B. The 3-letter abbreviation of the block type and the group label (A or B) is displayed on each Block. When a block is selected (blinking), you can:

a) Change the block type by rotating the NavCoder.

b) Enter the FX Editor screen by center pressing the NavCoder (see page 22).

c) Enter Block Rearrangement mode with a press & hold on the NavCoder.

d) Bypass/engage the block by double-clicking the NavCoder.

e) Move the block to group A or B with a press & hold onto the desired destination group’s EDIT button.

5. Input Connector When the input connector is selected, rotate the NavCoder to change the connector type. There are 3 types of stereo paired input connectors and 15 types of split mono input connectors. .

6. FX-FX Connector When an FX-FX connector is selected, rotate the NavCoder to change the connector type. There are 15 types of FX-FX connectors. All FX-FX connectors are stereo. Connections between blocks on top & bottom rows are handled by a single connector.

7. Output Connector When the output connector is selected, rotate the NavCoder to change the connector type. There are 3 types of stereo paired output connectors and 15 types of split mono output connectors.

For detailed illustrations of each connector see page 43

Block Rearrangement Mode

When an FX block is selected in SIGNAL PATH view, press & hold the NavCoder to enter Block Rearrangement mode.

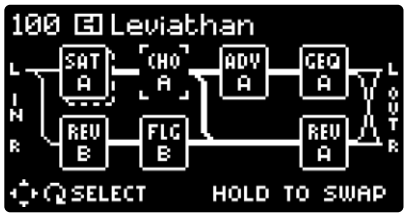
The highlighted block will appear “lifted”. This block can now be swapped with any other location on the signal path. Rotate the NavCoder or use the NavCoder D-Pad to select another block or location. Once the desired location is selected, press & hold the NavCoder for about 1 second to complete the block swap.

Alternatively, the lifted block can also be deleted. While highlighting the “lifted” block, press & hold the NavCoder for about 1 second to delete the block.

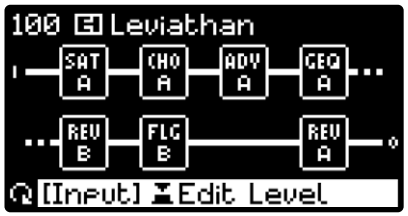
Series Path Mode

When the input or output port is selected in SIGNAL PATH view, rotate the NavCoder to enable/disable Series Path mode. The input and output display changes to “I” and “O” respectively.

This mode puts all 8 FX blocks in a stereo series path between input and output, while all connectors are fixed and cannot be selected or changed.



Block Rearrangement Mode



Series Path Mode

Signal Path Settings Menu

SIGNAL PATH SETTINGS VIEW

The SIGNAL PATH SETTINGS view allows you to edit all settings related to the current LIVE or Preset Signal Path. Unlike Global Settings, these settings are saved within each preset. Access the SIGNAL PATH SETTINGS view by pressing the HOME+SETTINGS buttons simultaneously from the home screen or selecting the home screen header and pushing the NavCoder to the right. To navigate around this menu:

a) Rotate the NavCoder or tilt the NavCoder upward/downward to select an entry.

b) Center press the NavCoder or tilt the NavCoder to the right to enter the sub-menu.

c) Tilt the NavCoder to the left to return to the upper menu.

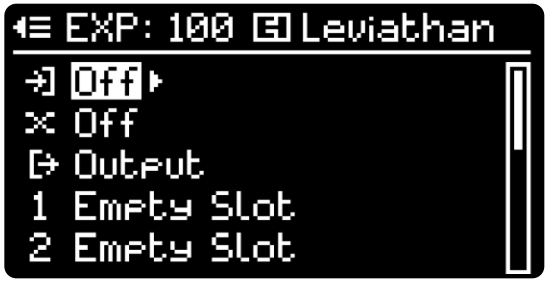
Expression

This screen displays all expression assignments of the current preset. The user can assign up to 8 parameters of any FX block to be controlled simultaneously by the expression pedal. The user can also assign the signal path's input level, dry/wet blend and output level to the expression pedal.

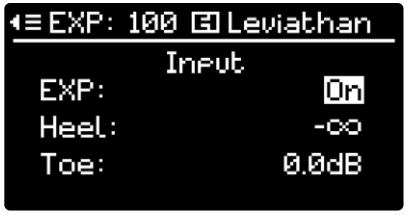
***Note:** By default, EXP is assigned to Input Level in LIVE mode. Empty presets do not have a default EXP assignment.*

Tilt the NavCoder upward/downward to select an EXP assignment slot and rotate the NavCoder to enable/disable the slot or select a parameter from the assigned FX blocks.

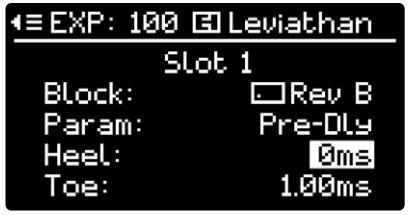
For each parameter selected on this screen, the default heel/toe values will be loaded into the assignment slot. To edit the heel/toe settings of a slot, press the NavCoder or tilt the NavCoder to the right to enter EXP Editor screen.



Expression Assignment Browser



Expression Editor, I/O Slots



Expression Editor, Slot 1

This screen displays the details of the selected EXP assignment slot in a vertical list. Tilt the NavCoder upward or downward to select an entry. Rotate the NavCoder to edit the currently selected value.

For the signal path I/O EXP slots:

EXP: enable or disable the current slot.

Heel: view and edit the heel setting of the EXP assignment.

Toe: view and edit the toe setting of the EXP assignment.

For the assignable EXP slots:

Block: select an existing block on the signal path.

Param: choose an assignable parameter within the selected block.

Heel: view and edit the heel setting of the EXP assignment.

Toe: view and edit the toe setting of the EXP assignment.

Tempo Settings

The two FX groups in the Oceans Abyss can have independent tempo settings, which can be saved within each preset. The Tempo Settings screen displays these tempo settings in a vertical list:

A/B BPM: Rotate the NavCoder to set the BPM of each group between 30 and 240.

A/B BPM Tap: option controls whether the A/B footswitch can be used for tap tempo in the current preset.

A/B Source: determines whether the tempo of FX group A/B is generated internally or synced to a MIDI clock input from the MIDI IN jack.

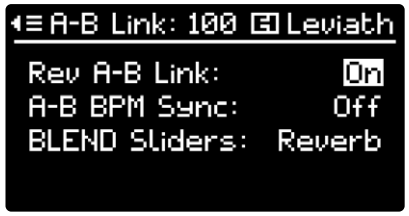
A-B BPM Sync: syncs the BPMs of group A and B to each other. When the tempo setting of one group is changed, the other group updates to the same tempo.

***Note:** If the tempo of a group is synced to MIDI clock, enabling A-B BPM Sync will change both groups' tempo source to MIDI Clock.*

A-B Link

A-B Link displays settings that connect

Tempo Settings



A-B Link Settings

reverb A and B or FX group A and B:

REV A-B Link: option forces Reverb B to be identical to Reverb A. Reverb B's controls are disabled and all reverb parameter adjustments must be made through Reverb A.

Note: *The reverb link only takes effect when both reverbs are assigned on the signal path.*

A-B BPM Sync: option syncs the BPMs of FX group A and B. A change in tempo in either group will update the tempo for both groups.

BLEND Sliders: option controls whether the two physical BLEND sliders are linked to the signal path's overall wet/dry blend or tied to the blend parameters within reverb A and B.

Note: *The physical BLEND sliders are disabled when the corresponding reverbs are not assigned.*

Footswitches

The A and B footswitches on the Oceans Abyss allow for multiple functions:

A/B Bypass (On/Off): toggle each FX group with a single press of their respective footswitch

A/B Bypass Type (Thru/Mute): choose the bypass behavior for each FX group.

A/B Infinite (On/Off): engage infinite sustain for each reverb with a press and hold on their respective footswitch

A/B BPM Tap (On/Off): BPM entry for each FX group with two or more timed presses on a footswitch

Each footswitch function can be enabled or disabled independently on this screen and are saved within each preset.

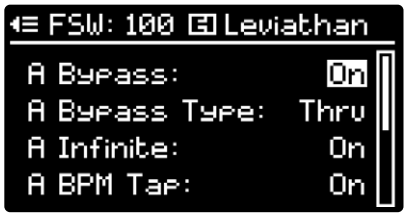
When the *Bypass Type* of an FX group is set to *Mute*, all FX blocks in this group will be muted when bypassed. When the *Bypass Type* is set to *Thru* (factory default), the blocks allow dry signals to pass through.

I/O Levels

There are three parameters that act on the entire signal path: input level, wet/dry blend and output level. When a parameter is highlighted, rotate the NavCoder to adjust its value.

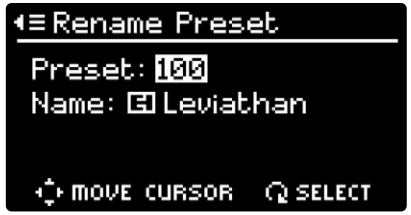
Tip: *Set up a full wet signal path and use the input/output blend knob on this screen to control the overall dry/wet blend of the signal path.*

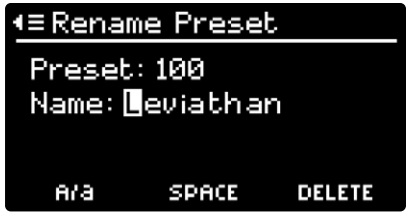
Note: *These parameters are different from the global input/output level settings. The Signal Path I/O settings are saved within each preset whereas the global input/output level settings are applied to all presets and live mode.*



Preset Footswitch Settings

Signal Path I/O Levels Settings





Rename Preset, Location and Naming

Rename Preset (Preset Mode Only)

Tilt the NavCoder downward once to edit the preset name, up to a maximum of 24 characters.

Use the NavCoder D-Pad left/right to move the cursor.

Rotate the NavCoder to change the selected character.

Press the PRESET button to toggle letter characters between uppercase and lowercase.

Press the HOME button to insert a space and shift all the following characters to the right.

Press the SETTINGS button to delete the selected character and shift all the following characters to the left.

Once you are happy with the preset name, press & hold the NavCoder to enter the confirmation screen. Tilt the NavCoder to the right once to select OK. Press the NavCoder to confirm.

Save Preset (Preset Mode Only)

Press the NavCoder on this entry to save the current preset, which leads to the confirmation screen. Select OK with the NavCoder then center press the NavCoder to confirm.

Save As

Rotate the NavCoder to select the preset you wish to overwrite.

Tilt the NavCoder downward once to edit the preset name, up to a maximum of 24 characters. See the Rename Presets section above for details on naming presets.

Once you are happy with the preset name, press & hold the NavCoder to complete the Save As process. If the selected preset location is not empty, you will be asked if you want to overwite the existing preset. Push the NavCoder to the right once to select OK. Center press the NavCoder to confirm.

Copy Preset (Preset Mode Only)

This entry leads to the Copy Preset screen in Global Settings (see page 37).

Swap Presets (Preset Mode Only)

This entry leads to the Swap Preset screen in Global Settings (see page 37).

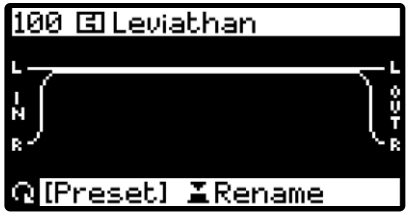
Reset Signal Path

Press the NavCoder on this entry to reset the current signal path, which leads to the confimation screen. Select OK with the NavCoder then center press the NavCoder to confirm.

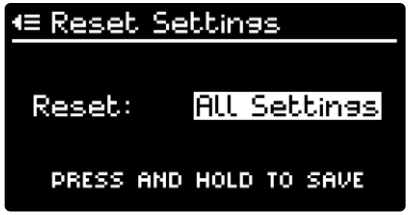
The default signal path will appear on the HOME view.

Reset Settings

Reset Settings allows you to reset certain settings within a preset. Rotate the NavCoder to select between **EXP Settings, Tempo Settings, A-B Link, FSW Settings, I/O Levels & All Settings.**



Reset Signal Path - Default State



Reset Settings Screen

Press & hold the NavCoder to enter a dialog screen. Push the NavCoder to the right once to select OK. Press the NavCoder to confirm.

Reset LIVE Mode (LIVE Mode Only)

Center press the NavCoder on this entry to reset LIVE mode to factory default, which leads to the following dialog screen. Select OK with the NavCoder then press the NavCoder to confirm.

Erase Preset (Preset Mode Only)

Center press the NavCoder on this entry to erase the current preset, which leads to the confirmation screen. Select OK with the NavCoder then press the NavCoder to confirm.

EXPLORER VIEW

The EXPLORER view displays all presets in a vertical list. It is available in both LIVE and Preset mode. When a preset is loaded, an arrow will appear on the left of the loaded preset number. If a preset is loaded and then modified, the preset number will blink. When in EXPLORER view, you can:

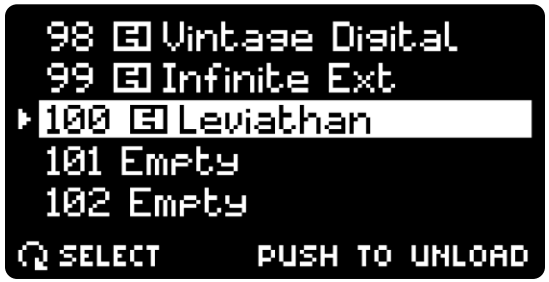
a) Rotate the NavCoder or tilt upward/downward to select a preset.

b) Center press to load, unload or reload a preset.

c) Tilt the NavCoder to the left to enter the PERFORMANCE view.

d) Tilt the NavCoder to the right to enter the SIGNAL PATH view.

d) Press & hold to enter Swap Preset screen in Global Settings (see page 37).

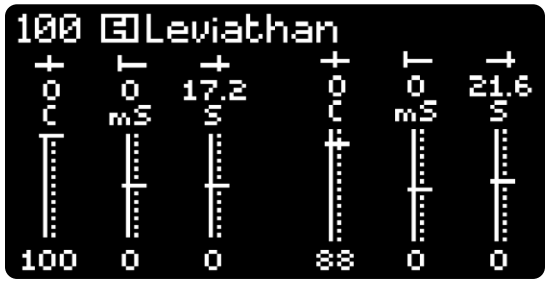


Explorer View

GRAPHIC VIEW

The GRAPHIC view's main feature is that it displays a graphical representation of the physical sliders and knobs, all of which move in real-time on the display. This view is helpful if you want to get an idea of where the controls are set after loading a preset. While in LIVE mode, GRAPHIC view displays any movement from an external source, such as an expression pedal or MIDI, which overrides the actual position of the physical controls. This view also displays either the preset number and name, or the LIVE mode header. In Preset mode, the GRAPHIC view will pop up for a few seconds when any physical slider or knob is moved on a non-Settings screen. The pop-up time can be adjusted in Global Display Settings (see page 40).

Tip: *If you move a slider or knob after loading a preset, the short end of the control's line graphic blinks and remains at the location saved in the preset while the long end of the line graphic moves in real-time with the control.*



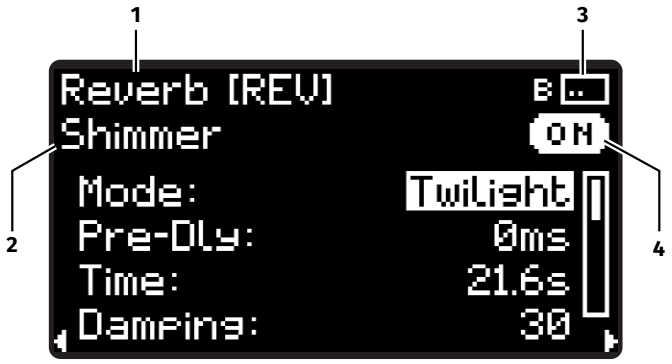
Graphic View

PERFORMANCE VIEW

The PERFORMANCE view gives the user the most minimal view possible with the preset number or LIVE displayed in large fonts and is well suited for performing live. It also displays the BPM value and a BPM blinker for FX groups A and B if there is an FX block assigned to either group.

Performance View

FX Editor



FX Editor - Reverb B, Page 1

The FX Editor screen allows for editing the parameters of the currently focused block in SIGNAL PATH view. To enter the FX Editor screen:

1. Center press the NavCoder on a block in Signal Path view.

   The first parameter of the block will be highlighted automatically.

2. If there is a REV block on the signal path, press its respective EDIT button to easily enter the reverb's FX editor screen.

   The reverb sub-type will be highlighted automatically. Alternatively, if the reverb is in infinite sustain, the Inf Level parameter will be highlighted automatically.

   Each subsequent press of the EDIT button will bring you to the next page in the Reverb block.

The screen can be divided into two separate regions: the header (the first two text lines of the screen) and parameters (the remainder of the screen).

Header

The header consists of four selectable elements that show information about the current FX block:

1. FX Type: This field displays the category of the FX block, along with the abbreviated FX type.

When it is highlighted, rotate the NavCoder to change the FX type.

2. FX Sub-Type: For reverbs, this adjustable field displays the reverb sub-type. When it is highlighted, rotate the NavCoder to change the reverb type.

For non-reverb FX, this field displays the FX type and cannot be selected or adjusted.

3. FX Group: This element displays the group of the current FX block and a thumbnail that shows the locations of all blocks from this group with the current block blinking. When it is highlighted, you may rotate the NavCoder to focus on another block in the current FX group or press the NavCoder to change the FX group.

4. Bypass State: This element displays the bypass state of the current FX block. When it is highlighted, rotate or center press the NavCoder to bypass/engage the current block.

Parameters

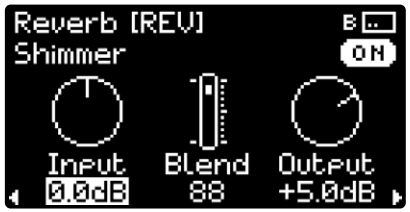
There are multiple pages of parameters. Navigate through the parameters and pages by tilting the NavCoder in the direction you want to move. Additionally, press the PRESET+HOME or HOME+SETTINGS buttons simultaneously to page left or right respectively.

Reverb Parameters

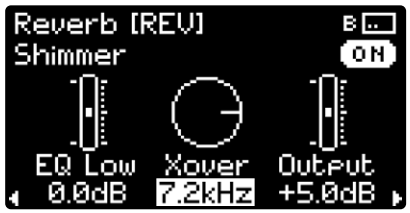
For reverb blocks, the first page displays all parameters in a vertical list; the same parameters are displayed as graphical knobs or sliders on the remaining pages. In list view, tilt the NavCoder up/down to select parameters and then rotate to adjust values. For graphical parameter pages, tilt the NavCoder left/right. Rotate the to adjust the currently selected parameter.

Tip: *If there is a REV A/B block on the signal path, press the EDIT A/B button for quick access to its FX Editor. Additional presses of the EDIT A/B button cycle through the reverb pages.*

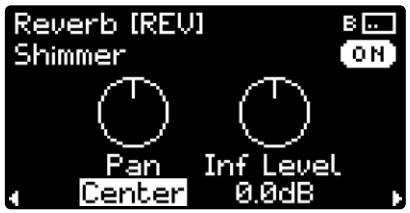
FX Editor - Reverb B, Page 2



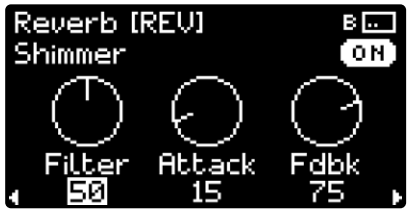
FX Editor - Reverb B, Page 3



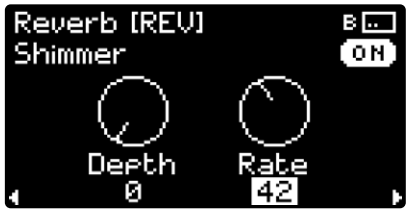
FX Editor - Reverb B, Page 4



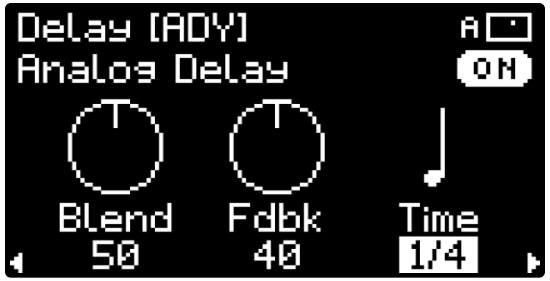
FX Editor - Reverb B, Page 5



FX Editor - Reverb B, Page 6



FX Editor - Reverb B, Page 7



Analog Delay, Note Division

Non-Reverb Parameters

For non-reverb FX blocks, most pages display parameters as graphic knobs. Tilt the NavCoder left/right to select between parameters and to proceed to the next page, or page left or right by pressing the PRESET+HOME or HOME+SETTINGS buttons simultaneously. When a parameter is highlighted, rotate the NavCoder to adjust its value.

Tap Tempo

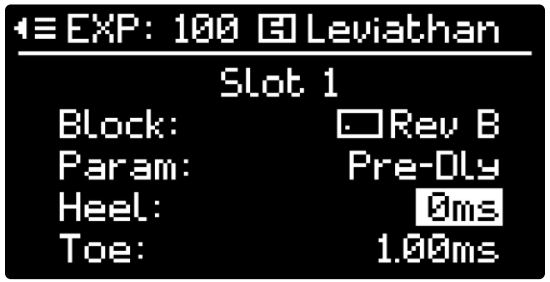
Tap tempo can be used for the Time parameter of a delay block or the Rate parameter of a modulation block. To choose tempo for a Time or Rate parameter, select the parameter then rotate the NavCoder in either direction until the knob graphic turns into note division graphics. Further rotate the NavCoder to select the note division you wish to use. Once a parameter is set to a note division, it will follow the tempo settings for its group.

Tap footswitch A or B according to the current block's FX group to change the tempo of the FX group.

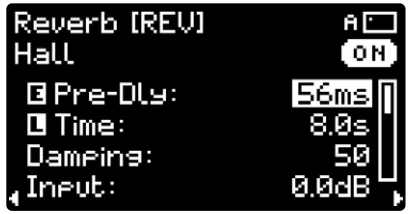
Tip: *Assign note divisions to multiple FX blocks within the same group to keep them rhythmically synchronized.*

Quick Expression Assignment

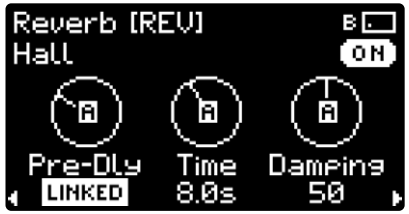
When any parameter is highlighted on the FX Editor screen, press & hold the NavCoder to enter the EXP Editor screen. Use the NavCoder to select & edit the heel and toe values of the controlled parameter. See page 16 for more details of the EXP Editor screen.



Expression Editor



LIVE Mode with Controlled Parameters



Reverb B Parameters Linked to Reverb A

Controlled Parameters

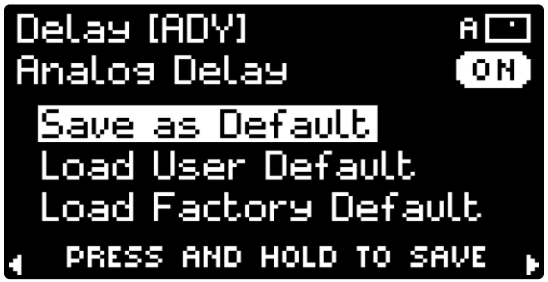
When a parameter is controlled by another source, an icon is displayed on the graphic knob or next to the listed item:

- **Expression Icon** appears when the parameter is assigned to expression.
- **LIVE Mode Icon** appears when LIVE mode is engaged, and the parameter can only be adjusted via the corresponding physical knobs and sliders: PAN, BLEND, PRE-DELAY, TIME, EQ LOW, EQ HIGH.
- **REV A Icon** appears on all Reverb B parameters when Reverb B is linked to Reverb A. Reverb B's controls are disabled and all reverb parameter adjustments must be made through Reverb A. See page 17 for more details on linking reverb A and B.

FX Type Default State

While editing an FX block, you may save all the block's current settings to be the default state for that FX Type. Future assignments of the same FX Type to any location on the signal path will automatically recall the settings of the default state.

The final page of the FX Editor allows the user to save or load the default settings at any time. Push the NavCoder up/down to select between options on this page. Press & hold the NavCoder to load or save the default state.



Save As Default Settings

FX Block Guide

Reverb Types and Descriptions

The Oceans Abyss features 10 distinct reverb types, some featuring multiple modes. Several parameters are common among all reverb types, while others are unique to the specific reverb.

REVERB TYPE	DESCRIPTION
Room	Warm and versatile reverb algorithm modeled after a lively room.
Hall	Lush reverb algorithm modeled after a large ambient hall.
Spring	Two distinct spring reverb algorithms: A vintage 1962 Fender® 6G15 emulation and the classic spring algorithm from the EHX Holy Grail.
Plate	Two emulations of a smooth, bright metal plate reverb commonly found in high-end recording studios during the 1960s and 70s. Normal and large mode.
Reverse	A rendition of the reverse reverb trick commonly performed in studios, as well as a reversed echo mode.
Dynamic	Two reverbs that are affected by your playing dynamics. Gate allows for creating the classic 80s gated reverb effect with hard muting on the reverb tail, plus reverb that may swell in. Duck creates reverb effects that decrease in volume the louder the input signal, allowing the reverb to stay out of the way of your playing but then become more lush and present as your dry signal fades.
Auto-Inf	Reverb that listens to your playing and crossfades to a new reverb wash upon detection of newly struck notes and chords. Two modes affect how the crossfade occurs: X-Fade smoothly crossfades from previous reverb wash to new reverb wash. Swell automatically mutes the previous wash while fading in the new one.
Shimmer	Two configurations of a rich, octave-shifted wash of harmony in a reverberant cloud.
Polyphonic	Two configurable bidirectional pitch-shifts that add startling dimensionality to the reverb tail. Choose between Hall or Plate reverb algorithms.
Resonant	Two distinct modes: Chimes is a reverb excited by tunable resonators. Filtered employs a configurable self-oscillating filter on the reverb tail.

COMMON REVERB PARAMETERS

Pre-Dly: Sets the pre-delay time for the reverb block. Pre-delay puts a time delay between playing a note and the onset of reverb for that note. The total range of pre-delay is 0 to 1 second.

Time: Sets the decay time of the reverb. At maximum for all reverb types, other than ***Reverse*** and the ***6G15 Spring*** mode, the decay will go on infinitely. ***Note:*** *certain other parameters, such as damping, may prevent a reverb from decaying infinitely even when Time is set to maximum.*

Damping: Sets how the frequency response of the reverb tail affects the tone and timing of the decay. On the Oceans Abyss, a higher Damping value keeps the frequency response more open, which leads to a brighter reverb tone and a longer decay. A lower value darkens the signal as it decays, shortening the decay time as well.

Input: Sets the input gain of the signal fed into the reverb block in decibels (dB). At 0dB the signal is at unity, meaning it is neither boosted nor attenuated. Total range is from -∞dB (muted) to +12dB.

Blend: Sets the wet/dry mix of the reverb block. At 0, the wet signal is muted, you will only hear dry signal, which is the input to the reverb block. At 100, the dry signal is muted, only the reverb effect is heard.

Output: Sets the output gain of the reverb block in decibels (dB), from -∞dB (muted) to +12dB.

EQ Low: Sets the gain for the lower frequencies of the reverb signal. At 0dB, the signal is neither boosted nor attenuated. Total range is from -12dB to +12dB.

Xover: Sets the crossover frequency between Low and High EQ. Frequencies below Xover are controlled by EQ Low. Frequencies above Xover are controlled by EQ High.

EQ High: Sets the gain for the higher frequencies of the reverb signal. At 0dB the signal is neither boosted nor attenuated. Total range is from -12dB to +12dB.

Pan: Sets the stereo balance of the reverb output between left and right. Pan only affects the reverb's wet signal.

Inf Level: Sets the gain of the reverb signal when infinite reverb is activated via a footswitch press.

ROOM

Early: Sets the level of the early reflections of the simulated reverb space. Early reflections are the short echoes created by sound bouncing off nearby walls.

Diffuse: Sets the level of the diffuse reverb, which is the longer, lusher portion of the reverb signal.

HALL

Early: Sets the level of the early reflections of the simulated reverb space. Early reflections are the short echoes created by sound bouncing off nearby walls.

Diffuse: Sets the level of diffusion in the reverb signal. At higher levels of Diffuse, the reverb signal is continuous and lush. As you reduce Diffuse, the echo density decreases, and you can make out individual echoes in the reverb tail.

SPRING

Mode: Offers two distinct spring reverb algorithms.

6G15: A simulation of the vintage 1962 Fender® 6G15 reverb unit.

Holy Grail: A recreation of the spring reverb in the classic EHX Holy Grail pedal.

Length: Sets one of three spring lengths. A shorter spring length condenses and shortens the initial delays of the spring's decay. A longer spring length extends and separates the initial delays of the spring.

Drive: Sets the amount of distortion at the input to the spring reverb.

Dwell: Based on the Dwell knob of the classic Fender 6G15 unit. Lower values of Dwell decrease the signal fed into the algorithm, which leads to a shorter and less intense decay. Set to maximum for an intense spring reverb. This control has no effect in ***Holy Grail*** spring mode.

PLATE

Mode: The two plate modes affect the size of the simulated plate.

Normal: A standard-sized plate commonly found in recording studios.

Large: A larger plate with a deeper, richer tone and a longer decay.

Diffuse: Sets the level of diffusion in the reverb signal. At lower levels the reverb signal is more granular and you can make out individual echoes in the sound. At higher levels the reverb signal is continuous and lush.

Depth: The plate reverb features subtle modulation. Depth sets the amount of modulation.

Rate: Sets the speed of the plate's modulation.

REVERSE

Mode: Choose between reverse reverb or reverse delay.

Swoosh: Offers a lush, continuous reverse reverb swell, the length of which is set by the Time control.

Echo: Offers a classic reverse delay effect, with the delay time set by the Time control.

Depth: Both Reverse modes feature pitch modulation. Depth sets the amount of modulation.

Rate: Sets the speed of the pitch modulation.

Fdbk: Only available in ***Echo*** mode. Sets the feedback for the delay.

DYNAMIC

Mode: Offers two distinct algorithms that respond to your playing dynamics in different ways**.**

Gate: Applies a noise gate to create reverb effects that can smoothly swell-in and/or abruptly cut off the reverb tail. The gate is opened when the input level to the reverb block crosses the threshold set by the Sense control.

Duck: Applies compression to the reverb effect causing the reverb tails to duck out of the way of your playing but become more prominent when you stop or play quieter. The compression side-chain originates from the input signal to the reverb block.

Attack: Sets the attack time for the gate or compression. In ***Gate*** mode, this affects how quickly the reverb sound fades in upon the gate opening with a new pluck or note. In ***Duck*** mode this affects how quickly the reverb sound ducks down upon a new pluck or note. Higher values of Attack equal slower attack times.

Hold: Only available in ***Gate*** mode. Sets how long, after your playing dynamics fall below the threshold (controlled by the Sense control), before the reverb level starts to fade-out. Higher values of Hold equal longer Hold times.

Release: Sets the release time for the gate or compression. In ***Gate*** mode, this affects how quickly the reverb sound fades-out after the signal falls

below the threshold. In ***Duck*** mode, it determines the speed at which the reverb level fades back in after the compressor releases. Higher values of Release equal slower release times.

Ratio: Only available in ***Duck*** mode. Sets the ducking intensity applied to the reverb. The higher the Ratio setting, the quieter the reverb level while ducking. With Ratio set to maximum (100), the reverb is fully muted when you play louder.

Comp: Applies compression to the reverb signal before it hits the gate or ducker. Notably different from the ducking compression in ***Duck*** mode, this compression is not side-chained based on your playing dynamics, it is a simple compression applied to the reverb signal that can be used to level out the reverb sound, to more precisely control it with the gate or ducking.

Sense: Controls the sensitivity and threshold of the dynamic effects. Higher values of Sense will make the gate or ducking more responsive. Sense is critical for dialing in the effect to suit your playing style, the dynamic effect you're going for, or instruments with a variety of output levels.

AUTO-INF

Mode: With Auto-Infinite, every time you pluck a new note or chord it starts a new, potentially infinite, reverb wash. Auto-Infinite's two modes affect how one reverb wash transitions to the next one. The timing is controlled by the Fade control.

Xfade: with each new pluck, the last reverb wash fades-out as the new one fades-in.

Swell: with each new pluck, the last reverb wash cuts immediately and the new one fades-in.

Fade: Sets the timing of the transition between reverb washes. A lower value of Fade makes the transition faster. In ***Xfade*** mode, Fade controls the speed of the crossfade between reverb washes. In ***Swell*** mode, the previous reverb wash always cuts immediately, and Fade sets the fade-in speed of the new reverb wash.

Sense: Controls the pluck detection sensitivity for starting a new reverb wash. Sense uses the input signal to the reverb block to detect new plucks.

SHIMMER

Mode: Shimmer reverb is a unique combination of delays, reverb, modulation, and pitch shifting to create an epic, ethereal effect. The two modes, ***Sunrise*** and ***Twilight***, change around the signal path within the Shimmer algorithm for two different flavors of the effect:

Sunrise: our standard beautiful shimmer effect.

Twilight: an alternative sparkling shimmer effect with a wider stereo field.

Attack: Controls the fade-in timing of the shimmer sound. At low values it's more instantaneous and percussive. At high values it's a slower, more ambient swell.

Fdbk: Controls the amount of feedback (repeats) within the internal delays of the shimmer algorithm.

Sub: Controls the level of a sub octave path in the shimmer algorithm.

Depth: Sets the intensity of pitch modulation.

Rate: Sets the speed of pitch modulation.

POLYPHONIC

Mode: Polyphonic reverb creates up to two polyphonic pitch shifted voices running into a reverb algorithm.

Hall: applies a hall reverb after the pitch shift.

Plate: applies a plate reverb after the pitch shift.

Voice 1: Controls the level of the first polyphonic voice.

Voice 2: Controls the level of the second polyphonic voice.

Reverb: Controls the mix of the reverb on the pitch shifted signal.

Pitch 1: Controls the pitch-shift interval of the first polyphonic voice in steps ranging from -24 (two octaves down) to +24 (two octaves up).

Detune 1: Controls the pitch-shift detune in cents of the first polyphonic voice.

Pitch 2: Controls the pitch-shift interval of the second polyphonic voice in steps ranging from -24 (two octaves down) to +24 (two octaves up).

Detune 2: Controls the pitch-shift detune in cents of the second polyphonic voice.

RESONANT

Mode: Resonant reverberation rings out in two different ways**.**

Chimes: Creates tuned resonators that reverberate and ring out with your playing.

Filtered: Applies a self-oscillating, tunable filter to the reverb algorithm. As the reverb decays, it focuses on the frequency setting of the filter.

Key: Only available in ***Chimes*** mode. This control, in conjunction with the Chord control, sets the frequencies of the resonators. Choose from one of 12 root notes.

Chord: Only available in ***Chimes*** mode. Based on the root note set by the Key parameter, Chord sets the frequencies of additional resonators to match the given scale or chord: Pentatonic, Major, Minor, Major 7, and Minor 7.

Mix: Only available in ***Chimes*** mode. Mixes the dry signal—into the reverb block—with the output of the resonators. The Mix output is then fed into the reverb. A setting of 100 is resonator output only.

Freq: Only available in ***Filtered*** mode. Sets the frequency of the filter.

Fdbk: Only available in ***Filtered*** mode. Sets the gain applied to the filter in the reverb path. At higher levels the effect can go into self-oscillation.

Diffuse: Sets the level of diffusion in the reverb signal. At higher levels of Diffuse, the reverb signal is continuous and lush. As you reduce Diffuse, the echo density decreases, and you can make out individual echoes in the reverb tail.

DELAY EFFECTS

The Oceans Abyss offers three unique delay effects that can be placed anywhere on the grid. The effects are:

Basic Delay [DLY] A clean, full-range digital delay. Optional filter (high pass or low pass) and delay time modulation included.

Analog Delay [ADY] A dark emulation of a bucket-brigade based analog delay featuring lush modulation reminiscent of the EHX Deluxe Memory Man.

Tape Delay [TPD] An emulation of classic lo-fi tape delay.

COMMON DELAY PARAMETERS

Blend: Sets the wet/dry mix between dry—input to the Delay block—and the delayed effect signal.

Fdbk: Sets the delay feedback, which determines the number of delay repeats.

Time: Sets the delay time from 1ms to 8s. You can also set the time to a division of the Ocean Abyss' set tempo. See page 35 for a table of tap-tempo divisions. With the Analog Delay and Tape Delay you can achieve pitch-shifted, sped up/slowed down effects by adjusting Time while you play.

Ping-Pong: Each delay features five different ping-pong modes, which allow the echo repeats to bounce between the left and right channels. Setting Ping-Pong to Off disables the ping-pong effect, keeping the left and right channel delays separate through the delay block. Set it to one of the following modes for a ping-pong effect:

Sum->L: The left and right delay channels are summed, the first repeat is heard from the left channel, then bounces right, left, right and so on.

Sum->R: The left and right delay channels are summed, the first repeat is heard from the right channel, then bounces left, right, left and so on.

Xover: The left and right delay channels remain separate, but upon each repeat flip sides. The left channel will repeat on the left, then right, then left, etc. The right channel will do the opposite. This version can be subtle depending on your setup. If the input to the delay block is mono, Xover mode does not produce a ping-pong effect.

L Only: The right channel is ignored, and only the left channel is used to ping-pong between left and right.

R Only: The left channel is ignored, and only the right channel is used to ping-pong between right and left.

Level: Sets the output gain of the delay block from -∞dB (muted) to +12dB.

BASIC DELAY [DLY]

Filter: Applies a filter to the delayed signal, where each repeat is recirculated through the filter for an increasingly filtered sound as the echoes decay. At a value of 50, the filter has no effect. Below 50, the filter acts as a low-pass-filter, allowing lower frequencies to pass while attenuating higher frequencies. The cutoff-frequency of the low-pass-filter decreases as the value of Filter approaches zero, producing a more pronounced effect. At values above 50, the filter acts as a high-pass-filter, allowing higher frequencies to pass while attenuating lower frequencies. The cutoff-frequency of the high-pass-filter increases as the Filter control is turned up.

Depth: The basic delay features delay time modulation. Depth sets the intensity of this modulation.

Rate: Sets the rate of the delay time modulation, from 0.01Hz to 50Hz. You can also set the rate to a division of the Ocean Abyss' set tempo. See page 35 for a table of tap-tempo divisions.

ANALOG DELAY [ADY]

Depth: The analog delay features delay time modulation. Depth sets the intensity of this modulation.

Rate: Sets the rate of the delay time modulation, from 0.01Hz to 50Hz. You can also set the rate to a division of the Ocean Abyss' set tempo. See page 35 for a table of tap-tempo divisions.

TAPE DELAY [TPD]

Tape: Simulates the lo-fi filtering of tape. Higher values of Tape create a more pronounced, filtered effect.

Warp: Applies a wobbly modulation to the delay simulating an old tape machine's wow and flutter as it struggles to maintain a consistent tape speed.

MODULATION EFFECTS

The Oceans Abyss offers four unique modulation effects that can be placed anywhere on the grid. The effects are:

Tremolo [TRM] A modulated volume effect.

Chorus [CHO] A modulated delay effect that can create doubling and vibrato effects reminiscent of classic chorus effects from the 80s.

Flanger [FLG] A modulated short delay time effect that can create slow, lush, resonant sweeps.

Phaser [PHA] A modulated phasing effect. Choose from 2 to 6 stages of phasing.

COMMON MODULATION PARAMETERS

Depth: Sets the modulation intensity.

Rate: Sets the rate of modulation, from 0.01Hz to 50Hz. You can also set the rate to a division of the Ocean Abyss' set tempo. See page 35 for a table of tap-tempo divisions.

Level: Sets the output gain of the modulation block from -∞dB (muted) to +12dB.

Shape: Sets the modulation's LFO shape. Choose from one of five options:

Sin: Sine wave. A smooth, natural sweep from minimum to maximum. Good for a smooth pitch-shifted sound in the Chorus and Flanger blocks.

Tri: Triangle wave. Usually found in analog modulation effects, triangle wave is similar to sine wave modulation but with a more linear transition between maximum and minimum.

Squ: Square wave. Transitions abruptly from maximum to minimum and back.

Rise: Smoothly rises from minimum to maximum before instantaneously resetting to minimum.

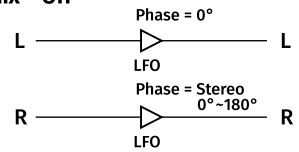
Fall: The opposite of rise; smoothly falls from maximum to minimum before instantaneously resetting to maximum.

Stereo: Sets the phase of the right channel LFO in relation to the left channel LFO, in degrees. At 0 the two LFOs are perfectly in sync. At 180 degrees they are perfectly out of phase, leading to opposite modulation in the left and right channels.

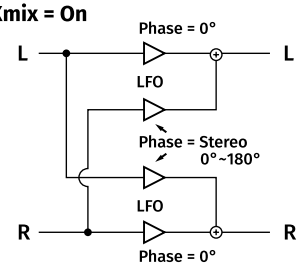
TREMOLO [TRM]

Xmix: Sets the left and right channel cross-over to allow for panning effects, as shown by the diagram below:

Xmix = Off



Xmix = On



CHORUS [CHO]

Fdbk: Sets the feedback of the modulated delay. Higher values can lead to a more metallic sound.

Blend: Sets the mix between dry—input to the Chorus block—and the modulated delay sound. A classic chorus will be a 50/50 mix. For a more subtle chorusing effect turn Blend lower. For a vibrato effect set Blend to 100.

Delay: Sets the base delay time that the chorus effect modulates. The delay time range is 5ms to 90ms.

Tone: Adjusts the EQ profile of the chorus. For a brighter sound, turn Tone above 50. For a darker sound, turn Tone below 50.

FLANGER [FLG]

Fdbk: Sets the feedback of the modulated delay. Higher values can lead to a more pronounced effect.

Blend: Adjusts the mix between dry—input to the Flanger block—and the modulated-delay sound. A classic flanger will be a 50/50 mix. For a more subtle flanging effect, turn Blend lower. For a vibrato effect, turn Blend to 100.

Noise: Allows you to add noise to your signal to enhance the flanging effect.

PHASER [PHA]

Fdbk: Sets the feedback of the phasing effect. Higher values can lead to a more pronounced effect.

Blend: Sets the blend between dry—input to the Phaser block—and the modulated signal.

Stages: Sets the number of phase stages, from 2 to 6.

Sweep: Along with the Depth control, Sweep defines the frequency range of the phaser effect. Sweep adjusts the minimum frequency, while Depth sets the maximum. Increasing Sweep shifts the focus of the phasing effect to higher frequencies.

UTILITY EFFECTS

The Oceans Abyss offers additional effect blocks that can be placed anywhere on the grid. The effects are:

Graphic EQ [GEQ] A 7-band graphic equalizer.

Saturation [SAT] An overdrive / saturation effect.

Bit Crusher [BIT] A digital Lo-Fi effect.

FX Loop [FXL] A stereo insert block that allows external equipment to be patched into the grid, via the SEND and RETURN jacks.

Volume [VOL] A simple block to adjust volume, phase and panning.

GRAPHIC EQ [GEQ]

100: Boost or cut 100Hz by up to 12dB.

200: Boost or cut 200Hz by up to 12dB.

400: Boost or cut 400Hz by up to 12dB.

800: Boost or cut 800Hz by up to 12dB.

1K6: Boost or cut 1600Hz by up to 12dB.

3K2: Boost or cut 3200Hz by up to 12dB.

6K4: Boost or cut 6400Hz by up to 12dB.

Level: Sets the output gain of the block from -∞dB (muted) to +12dB.

Φ Inv: Inverts the phase of the output.

SATURATION [SAT]

Drive: Sets the amount of saturation.

Tone: A low-pass-filter that cuts more high-end at lower values.

Output: Sets the output gain of the block from -∞dB (muted) to +12dB.

BIT CRUSHER [BIT]

Depth: Sets the bit depth of the signal. Bit depth represents the dynamic resolution of a signal. Lower values will lead to a noisier, more lo-fi sound.

SR: Sets the signal's sample rate frequency. The effect resamples the signal at the SR sample rate setting,

which allows for reducing the time resolution of a signal. At lower values, the effect creates mirrored alias frequencies above the sample rate frequency. These alias artifacts are the lower frequencies, below the sample rate, folded up above the sample rate frequency. Aliasing yields ring modulation and inharmonic effects.

Filter: Below 50, the filter acts as a low-pass-filter, allowing lower frequencies to pass while attenuating higher frequencies. The cut-off-frequency of the low-pass-filter decreases, as the Filter control is lowered. At values above 50, the filter acts as a high-pass-filter, allowing higher frequencies to pass while attenuating lower frequencies. The cutoff-frequency of the high-pass-filter increases, the higher the value of the Filter control.

Blend: Sets the mix between dry—input to the Bit Crusher block—and the bit-crushed signal.

Output: Sets the output gain of the block from -∞dB (muted) to +12dB.

FX LOOP [FXL]

Send: Sets the gain of the signal sent out of the SEND jack from -∞dB (muted) to +12dB. The signal at the input of the FX Loop is routed to the SEND jack.

Blend: Sets the mix of dry signal—input to the FX Loop block—and the signal at the RETURN jack.

Return: Sets the gain of the signal at the RETURN jack from -∞dB (muted) to +12dB.

Dry Send: Sets the gain of the dry signal sent out of the SEND jack from -∞dB (muted) to +12dB. ***Note:*** *the dry signal is the signal present at the input jacks.*

Φ Inv: Inverts the phase of the signal at the RETURN jack.

VOLUME [VOL]

Level: Sets the output gain of the block from -∞dB (muted) to +12dB.

Φ Inv: Inverts the phase of the signal through the Volume block.

Pan: Sets the stereo balance between left and right for the signal.

Tap Divisions

Many Oceans Abyss FX blocks can have their modulation rate or delay time settings based on a division of the tempo. Tempo may be set either manually, via tap-tempo, or synchronized to an external device via MIDI clock or a pulse clock. Tempo is always saved in BPM within each preset. The tempos of the A and B blocks may be independent or synchronized to each other. An explanation of how each note division relates to the set tempo is shown in the table on the next page.

TAP DIVIDE MODE	SYMBOL	DIVIDE RATIO	RATE/TIME*
Whole note		4 / 1	0.5 Hz / 2s
Whole note triplet		8 / 3	0.75 Hz / 1.333s
1/2 note + 1/8 note		5 / 2	0.8 Hz / 1.25s
1/2 note + 1/16 note		9 / 4	0.889 Hz / 1.125s
Dotted 1/2 note		3 / 1	0.66 Hz / 1.5s
1/2 note		2 / 1	1 Hz / 1s
1/2 note triplet		4 / 3	1.5 Hz / 666.667ms
1/4 note + 1/16 note		5 / 4	1.6 Hz / 625ms
1/4 note + 1/32 note		9 / 8	1.778 Hz / 562.5ms
Dotted 1/4 note		3 / 2	1.333 Hz / 750ms
1/4 note		1 / 1	2 Hz / 500ms
1/4 note triplet		2 / 3	3 Hz / 333ms
1/8 note + 1/32 note		5 / 8	3.2 Hz / 312.5ms
Dotted 1/8 note		3 / 4	2.667 Hz / 375ms
1/8 note		1 / 2	4 Hz / 250ms
1/8 note triplet		1 / 3	6 Hz / 167ms
Dotted 1/16 note		3 / 8	5.333 Hz / 187.5ms
1/16 note		1 / 4	8 Hz / 125ms
1/16 note triplet		1 / 6	12 Hz / 83.33ms
Dotted 1/32 note		3 / 16	10.667 Hz / 93.75ms
1/32 note		1 / 8	16 Hz / 62.5ms
1/32 note triplet		1 / 12	24 Hz / 41.667ms

** For a 2Hz/500ms Tap Time.*

Global Settings Menu

Menu tree with ranges and/or brief function description (see the following pages for detailed descriptions of each menu).

Presets

Rename Preset: Allows you to change a preset's name
Copy Preset: Allows for copying one preset to another preset location
Swap Presets: Swaps the locations of two presets
Erase Presets: Allows you to select a preset and then erase it

Expression

Reverse: Off (default)/On
Calibration: re-calibrates an attached expression pedal

MIDI

MIDI Channel: Omni (default), 1-16
Block 1-8 Channel: 1-16
MIDI PC: On (default) / Off
MIDI CC: On (default) / Off
MIDI Thru: All (default) / No Clock / Off
MIDI Clock: On (default) / Off

EXT Footswitches

Tip Mode: Choose function assigned to Tip
Ring Mode: Choose function assigned to Ring
T+R Mode: Choose function assigned to Tip + Ring

Input/Output

Input Level: -∞dB (muted) - +12dB
Output Level: -∞dB - +12dB
Send Level: -∞dB - +12dB
Return Level: -∞dB - +12dB
FX Loop Mode: Mono (default) / Stereo

Display

Contrast: 1-10, default = 10
Name Crawl: On (default) /Off
BPM Blinker: On (default) /Off
Graphic Pop-up: Off / 100ms / 200ms / ... / 1.0s / 1.1s / 1.2s / ... / 2.0s
Screensaver: Off / 10min / 20min / 30min / ... / 120min

Preferences

Default Reverb: Room / Hall / Spring / Plate / Reverse / Dynamic / AutoInf / Shimmer / Poly / Resonant
Preset ▼▲ FSW: On (default) / Off
Infinite Feed: On (default) / Off

Factory Reset

Restore: Factory Presets / Global Settings / Default Params / Everything

Firmware Version

Presets

The Presets menu handles all things presets. To enter the submenu for the highlighted function, push the NavCoder to the right.

Rename Preset: upon entering this submenu, first choose a preset by turning the NavCoder, then push the NavCoder downward to edit the name.

- For each character position, rotate the NavCoder in either direction to cycle through the available characters.
- Push the NavCoder right or left to advance to the next or previous character.
- Press the PRESET button to toggle letter characters between uppercase and lowercase.
- Press the HOME button to insert a space and shift all following characters to the right.
- Press the SETTINGS button to delete the selected character and shift all following characters to the left.
- Once the name is ready, center press and hold on the NavCoder for just over a second to complete the rename process.

Copy Preset: copy a preset to a different preset location.

- Enter the submenu and choose the source preset by rotating the NavCoder in either direction.
- Push downward on the NavCoder, and then choose the destination preset.
- When you're ready to copy the preset, press and hold the NavCoder to initiate the preset copy.
- If you are copying to an occupied preset location, the display will ask *OVERWRITE THIS PRESET?* Choose *OK* or *CANCEL*. ***Warning:*** *the overwritten preset is erased during this procedure and cannot be recovered unless it has been previously saved to your computer through the EHXport™ app.*

Swap Presets: allows two presets to swap their locations.

- Enter the submenu and choose the A preset by rotating the NavCoder in either direction.
- Push downward on the NavCoder, and then choose the B preset.
- Press and hold the NavCoder for just over one second. The display will show *Presets Swapped.*

Erase Presets: allows for deleting presets.

- Upon entering the submenu, the Erase field is highlighted. Rotate the NavCoder to choose between *Factory Presets, All Presets* or an individual preset.
- Press and hold the NavCoder for just over a second. The display will then show a dialog screen. If you choose OK, the preset(s) will be erased.

WARNING: a user preset cannot be recovered once it has been erased unless it was previously saved to your computer through the *EHXport™* app.

Expression

Please see page 16 for a more detailed description of assigning expression control to available parameters.

Reverse: Setting *Reverse* to *On* will swap the heel and toe positions, reversing the expression pedal sweep. For example, when using the expression pedal to control the signal path output level, normally the level increases as you sweep from heel to toe but set *Reverse* to *On*, and the output level decreases from heel to toe.

Calibration: We recommend you calibrate the Oceans Abyss expression pedal input either when first using the Oceans Abyss or if you change expression pedals. The calibration function is only available when an expression pedal or control-voltage is connected to the EXP / CV IN jack.

To perform the calibration procedure, do the following:

- Highlight *Calibration* with the NavCoder then tilt the NavCoder to the right.
- Rock the expression pedal back and forth through its full range, until all six bars on the display are filled. If you are using CV, attach a slow-moving waveform that sweeps the entire voltage range—within the 0-5V allowable range.
- Continue to move the expression pedal to finish up. The display will indicate when the calibration procedure is completed. The calibration data is automatically saved by the Oceans Abyss and recalled after power is cycled.

MIDI

The Oceans Abyss has both MIDI IN and OUT ports. MIDI IN is used for a number of functions, including: controlling nearly every parameter on the Oceans Abyss in real-time, choosing and loading presets, and synchronizing the Oceans Abyss tempo to MIDI clock. MIDI OUT works as a MIDI Thru connection.

MIDI Channel: 1-16, OMNI. Sets the MIDI receive channel for PC and some CC messages.

Block 1-8 Channel: 1-16. Sets a dedicated receive channel for each block on the signal path.

MIDI PC: On (default) / Off

MIDI CC: On (default) / Off

MIDI Thru: All (default) / No Clock / Off. Filters the messages to be sent from MIDI IN to MIDI OUT.

MIDI Clock: On (default) / Off

MIDI PC

The Oceans Abyss accepts MIDI Program Change (PC) messages to select presets (see below).

MIDI PC	Function	Description
1 – 128	Preset Load	Loads the preset associated with the MIDI PC number

MIDI CC

The Oceans Abyss accepts MIDI Control Change (CC) messages to control nearly every parameter. Detailed tables of accepted CC messages can be found on page 44.

MIDI Tempo Sync

To sync the Oceans Abyss with an external device via MIDI, set *MIDI Clock* to *On*. Additionally, from the home screen, press the HOME+SETTINGS buttons together to go to SIGNAL PATH SETTINGS view and then Tempo Settings screen. To sync one of the FX groups to the MIDI clock input, set *A Source* or *B Source* to *MIDI Clock*.

It is up to the external device to create and send all MIDI Real Time messages. The only MIDI Real Time commands besides MIDI Clock that the Oceans Abyss reacts to are MIDI Start and MIDI Continue. Upon receiving either command, all LFOs are hard reset. This is done to line up the beginning of a measure with the start of a song.

EXT Footswitches

The Oceans Abyss supports up to 3 external footswitches via a TRS cable. The functions for each external footswitch are fully programmable.

The EXT Footswitches menu allows you to choose the individual functions of the 3 footswitches: Tip, Ring, and Tip+Ring.

Mode	Description
Off	The footswitch is unassigned
Preset ▲	Load next preset
Preset ▼	Load previous preset
Preset ▼▲	Click: Load next preset; Hold: Load previous preset
LIVE/Preset	Toggle between LIVE mode and Preset mode
Main Bypass	Toggle global analog bypass
A Bypass	Toggle group A bypass
B Bypass	Toggle group B bypass
A Kick	Send an impulse to Reverb A, simulates kicking a spring tank
B Kick	Send an impulse to Reverb B, simulates kicking a spring tank
A Inf Latch	Toggle reverb A infinite mode (latch)
B Inf Latch	Toggle reverb B infinite mode (latch)
A Infinite	Hold to trigger reverb A infinite mode
B Infinite	Hold to trigger reverb B infinite mode
A BPM Tap*	Tap tempo for group A
B BPM Tap*	Tap tempo for group B
A Inf+Tap*	Tap: A BPM; Hold: Reverb A infinite mode
B Inf+Tap*	Tap: B BPM; Hold: Reverb B infinite mode

**Only available on the tip and ring footswitches.*

Input/Output

The Input/Output menu allows you to adjust the global input/output levels. These settings are not saved with presets but do affect all presets and Live mode. They are handy for adjusting I/O levels based on changes to external devices connected to Oceans Abyss.

Input Level: -∞dB (muted) - +12dB (default = 0.0dB): adjusts the global input level.

Output Level: -∞dB - +12dB (default = 0.0dB): adjusts the global output level.

Send Level: -∞dB - +12dB (default = 0.0dB): adjusts the global send level of the FX loop.

Return Level: -∞dB - +12dB (default = 0.0dB): adjusts the global return level of the FX loop.

FX Loop Mode: Mono/Stereo (default = Mono): determines whether the FX loop function is operated in mono or stereo configuration.

Note: *When set to Mono, the L & R inputs of the FX Loop block are summed and sent to the tip of the SEND jack. The tip of the RETURN jack is copied to both the L & R outputs of the FX Loop block.*

Note*: When set to Stereo, the L & R channels of the FX Loop block are handled separately by the tip & ring of SEND & RETURN jacks.*

Display

The Display Options menu allows for control over the OLED display of Ocean Abyss.

Contrast: 1-10 (default = 10): adjusts the brightness and contrast of the OLED display. A setting of 1 is the lowest contrast and is the darkest setting. A setting of 10 produces the highest contrast and is the brightest setting.

Name Crawl: Off/On (default = On): the Name Crawl setting comes into play when a preset is loaded with a name longer than can be fully displayed on the OLED display; usually longer than 14 or 15 characters. Oceans Abyss will scroll the name from right to left three times after the preset is loaded. The maximum preset name length is 24 characters.

BPM Blinker: Off/On (default = On): enables or disables the BPM blinkers display on the PERFORMANCE view.

Graphic Pop-up: Off/0.2s-2.0s (default = 1.0s): controls how long the pop-up GRAPHIC view is shown after adjusting any physical knobs/sliders. When set to Off, the GRAPHIC view does not pop up.

Screensaver: Off/10min-120min (default = 30min): the Oceans Abyss displays a screensaver after being idle for a designated time to prevent OLED pixel burn-in. The timeout can be configured via the Screensaver setting.

Preferences

The Preferences menu lists a few settings related to the behavior of Oceans Abyss.

Default Reverb: Room, Hall, Spring, Plate, Rvrs, Dyna, A-Inf, Shim, Poly, Res (default = Hall): determines the default reverb type when assigning a new reverb block on the signal path.

Preset ▼▲ FSW: Off/On (default = On): By default, pressing the A+EFFECT or EFFECT+B footswitches together results in preset load and decrement or increment. Preset change functionality, through local footswitch presses, can be disabled by setting *Preset ▼▲ FSW* to *Off*.

Infinite Feed: Off/On (default = On): controls whether reverbs still receive input signals during infinite sustain.

Factory Reset

The Factory Reset menu allows you to restore presets and settings back to the default factory settings.

Note: *Restoring factory settings overwrites your settings and presets. Your presets cannot be recovered after performing the Factory Presets, All Presets or Everything functions. We recommend backing up your presets to your computer using the EHXport™ application before performing a factory restore.*

Reset: *Factory Presets, Global Settings, Default Params, Everything*

Factory Presets: The factory presets are saved to Presets 1-100. Performing this function will erase the presets currently located in Presets 1-100 and overwrite them with the factory presets.

Global Settings: Restores the factory Global Settings.

Default Params: Restores the factory default parameters of all FX block types.

Everything: Erases all presets on the Oceans Abyss and then restores factory Presets 1-100. This function also resets all other settings to their factory defaults.

Note: *all of your presets should be backed up to your computer using the EHXport™ app prior to running the Everything function.*

Firmware

The last entry in the Global Settings menu displays the current firmware version of Oceans Abyss. The firmware is user updateable using the *EHXport™* application, which will alert you to when a firmware update is available.

Register your Oceans Abyss online at *www.ehx.com/production-registration.*

Stay up-to-date with your Oceans Abyss firmware by periodically running the EHXport™ app and clicking on the Device Settings/Firmware tab.

We recommend backing up your presets through EHXport prior to updating the Oceans Abyss firmware.

Specifications

- Current Draw: 500mA at 9VDC
- Maximum allowable power supply voltage: 10.5 VDC
- Power Supply: 9.6VDC/0.5A/Center-Negative
- Input Impedance: 2MΩ
- Output Impedance: 400Ω
- Maximum allowable voltage at the EXP input: 0V to 5V
- A/D & D/A: 24-bit, 96kHz

EHXport™ Computer Application

The *EHXport*™ companion software for your Oceans Abyss runs on Windows and Mac and provides:

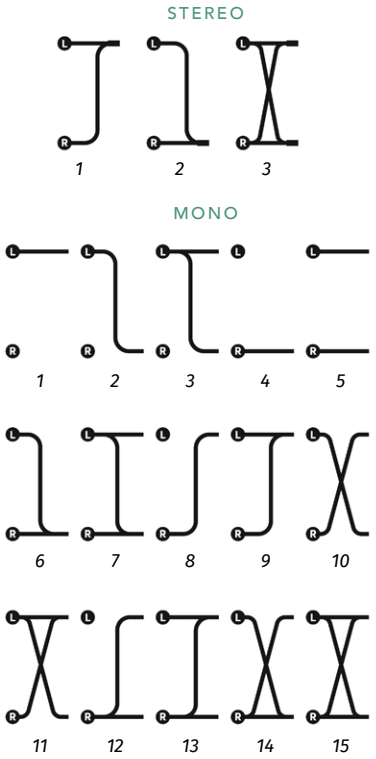
- Firmware updates
- Preset transfer and backup to and from your computer
- Preset rearrangement
- Global settings entry
- Preset editing and creation

EHXport™ is available as a free download at *ehx.com/oceans-abyss*

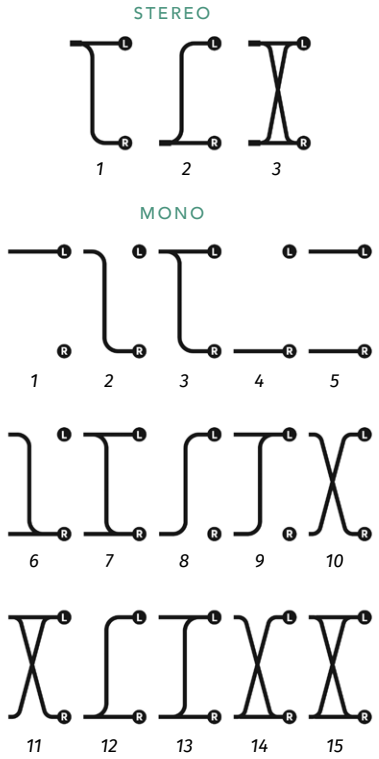
EHXport™ for Oceans Abyss

Appendix

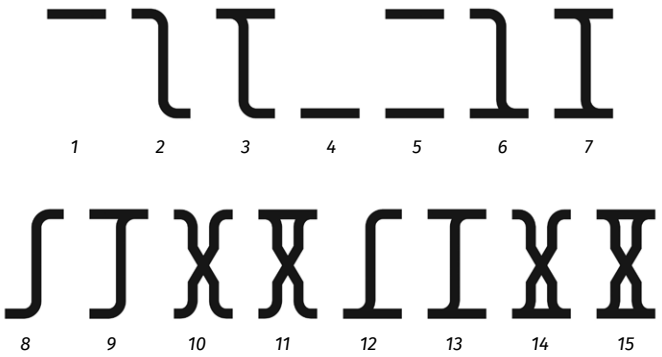
Input Connectors



Output Connectors



Stereo FX-FX Connectors



Global MIDI CC Map

MIDI CC	Function	Description	Data Range
1 (Mod Wheel)	Global Mod Depth	The mod wheel takes control of the depth of all modulation blocks.	0...127
3	LIVE/Preset Mode	Toggles between LIVE/Preset mode	≤63 LIVE ≥64 Preset
4	Main Bypass	Bypass/engage the Oceans Abyss	≤63 Bypass ≥64 Engage
6	I/O Input Level	Controls preset/LIVE signal path Intput Level	0...127
7	I/O Output Level	Controls preset/LIVE signal path Output Level	0...127
8	I/O Blend	Controls preset/LIVE signal path Blend	0...127
9	A Bypass	Bypass/engage all FX blocks in group A	≤63 Bypass ≥64 Engage
11	Expression pedal	Controls the expression pedal function	0...127
35	Individual Block Bypass	Bypass/engage an individual block	See table on page 45
41	B Bypass	Bypass/engage all FX blocks in group B	≤63 Bypass ≥64 Engage
64	A Infinite	Controls reverb A infinite sustain	≤63 Off ≥64 On
65	B Infinite	Controls reverb B infinite sustain	≤63 Off ≥64 On
66	A Tap Tempo	Tap Tempo for FX group A	0=None 1...127=Tap
67	B Tap Tempo	Tap Tempo for FX group B	0=None 1...127=Tap
68	A Kick	Sends an impulse into reverb A. The strength of the impulse scales with the CC value. NOTE: Kick is disabled for Reverse reverb.	0=None 1...127=Kick
69	B Kick	Sends an impulse into reverb B. The strength of the impulse scales with the CC value. NOTE: Kick is disabled for Reverse reverb.	0=None 1...127=Kick
122	Local Control On/Off	Enables or disables physical control of all sliders and knobs. Default is Local Control set to On.	0=Local Off, 127=Local On
124	Omni Mode Off	Disables OMNI MIDI Channel control	0...127
125	Omni Mode On	Enables OMNI MIDI Channel control	0...127

Individual Block Bypass Control through CC35:

To bypass/engage individual block(s), send a specific data value through CC35, see the following table.

MIDI CC	Data Value	Description
35	0	Bypass Block 1 (Column 1, Row 1)
	1	Engage Block 1 (Column 1, Row 1)
	2	Bypass Block 2 (Column 1, Row 2)
	3	Engage Block 2 (Column 1, Row 2)
	4	Bypass Block 3 (Column 2, Row 1)
	5	Engage Block 3 (Column 2, Row 1)
	6	Bypass Block 4 (Column 2, Row 2)
	7	Engage Block 4 (Column 2, Row 2)
	8	Bypass Block 5 (Column 3, Row 1)
	9	Engage Block 5 (Column 3, Row 1)
	10	Bypass Block 6 (Column 3, Row 2)
	11	Engage Block 6 (Column 3, Row 2)
	12	Bypass Block 7 (Column 4, Row 1)
	13	Engage Block 7 (Column 4, Row 1)
	14	Bypass Block 8 (Column 4, Row 2)
	15	Engage Block 8 (Column 4, Row 2)
	16	Bypass Reverb A
	17	Engage Reverb A
	18	Bypass Reverb B
	19	Engage Reverb B
	20	Bypass FX Loop
	21	Engage FX Loop
	22	Bypass Block(s) of Current Channel (see page 38)
	23	Engage Block(s) of Current Channel (see page 38)

Reverb CC Map

Every parameter of reverb A and B has a dedicated CC number. Each reverb block in the signal chain responds to both the global MIDI channel setting for the unit and the MIDI channel assigned to the specific FX block location. For example, if the global RX channel is 2 and the reverb A block channel is 3, Reverb A responds to both channels 2 and 3.

MIDI CC	Function	Description	Data Range
12	REV A Mode	Controls reverb A mode	≤63 Mode 1 ≥64 Mode 2
13	REV A Pre-Delay	Controls reverb A pre-delay time	0...127
14	REV A Time	Controls reverb A decay time	0...127
15	REV A Damping	Controls reverb A damping	0...127
16	REV A Input Level	Controls reverb A input level	0...127
17	REV A Blend	Controls reverb A dry/wet blend	0...127
18	REV A Output Level	Controls reverb A output level	0...127
19	REV A EQ Low	Controls reverb A low frequency EQ gain	0...127
20	REV A EQ Xover Freq	Controls reverb A EQ crossover frequency	0...127
21	REV A EQ High	Controls reverb A high frequency EQ gain	0...127
22	REV A Pan	Controls reverb A output panning	0...127
23	REV A Infinite Level	Controls reverb A infinite sustain level	0...127
24-31	REV A Unique Params (see table below)	Controls the unique parameters of each reverb sub-type/mode	
44	REV B Mode	Controls reverb B mode	≤63 Mode 1 ≥64 Mode 2
45	REV B Pre-Delay	Controls reverb B pre-delay time	0...127
46	REV B Time	Controls reverb B decay time	0...127
47	REV B Damping	Controls reverb B damping	0...127
48	REV B Input Level	Controls reverb B input level	0...127
49	REV B Blend	Controls reverb B dry/wet blend	0...127
50	REV B Output Level	Controls reverb B output level	0...127
51	REV B EQ Low	Controls reverb B low frequency EQ gain	0...127
52	REV B EQ Xover Freq	Controls reverb B EQ crossover frequency	0...127
53	REV B EQ High	Controls reverb B high frequency EQ gain	0...127
54	REV B Pan	Controls reverb B output panning	0...127
55	REV B Infinite Level	Controls reverb B infinite sustain level	0...127
56-63	REV B Unique Params (see table below)	Controls the unique parameters of each reverb sub-type/mode	

Unique Reverb Parameters CC Map

MIDI CC	Function	Description	Data Range
ROOM			
24/56	Early Reflections	Controls Room reverb A/B early reflections	0...127
25/57	Diffusion	Controls Room reverb A/B diffusion	0...127
HALL			
24/56	Early Reflections	Controls Hall reverb A/B early reflections	0...127
25/57	Diffusion	Controls Hall reverb A/B diffusion	0...127
SPRING			
24/56	Spring Length	Controls Spring reverb A/B length	0 Short 1 Medium 2 Long
25/57	Drive	Controls Spring reverb A/B drive	0...127
26/58	Dwell	Controls Spring reverb A/B dwell	0...127
PLATE			
24/56	Diffusion	Controls Plate reverb A/B diffusion	0...127
25/57	Mod Depth	Controls Plate reverb A/B modulation depth	0...127
26/58	Mod Rate	Controls Plate reverb A/B modulation rate	0...127
REVERSE			
24/56	Mod Depth	Controls Reverse reverb A/B modulation depth	0...127
25/57	Mod Rate	Controls Reverse reverb A/B modulation rate	0...127
26/58	Feedback	Controls Reverse reverb A/B feedback	0...127
DYNAMIC			
24/56	Attack	Controls Dynamic reverb A/B attack time	0...127
25/57	Hold	Controls Dynamic reverb A/B hold time	0...127
26/58	Ratio	Controls Dynamic reverb A/B ducking ratio	0...127
27/59	Release	Controls Dynamic reverb A/B release time	0...127
28/60	Compression	Controls Dynamic reverb A/B compression	0...127
29/61	Sensitivity	Controls Dynamic reverb A/B sensitivity	0...127
AUTO-INFINITE			
24/56	Fade Time	Controls Auto-Infinite reverb A/B fade time	0...127
25/57	Sensitivity	Controls Auto-Infinite reverb A/B sensitivity	0...127

SHIMMER			
24/56	Attack	Controls Shimmer reverb A/B attack time	0...127
25/57	Feedback	Controls Shimmer reverb A/B feedback	0...127
26/58	Sub-Octave Level	Controls Shimmer reverb A/B sub-octave level	0...127
27/59	Mod Depth	Controls Shimmer reverb A/B modulation depth	0...127
28/60	Mod Rate	Controls Shimmer reverb A/B modulation rate	0...127
POLYPHONIC			
24/56	Voice 1 Level	Controls Polyphonic reverb A/B voice 1 level	0...127
25/57	Voice 2 Level	Controls Polyphonic reverb A/B voice 2 level	0...127
26/58	Reverb Mix	Controls Polyphonic reverb A/B reverb mix	0...127
27/59	Pitch 1	Controls Polyphonic reverb A/B voice 1 pitch	0...48
28/60	Detune 1	Controls Polyphonic reverb A/B voice 1 detune	0...100
29/61	Pitch 2	Controls Polyphonic reverb A/B voice 2 pitch	0...48
30/62	Detune 2	Controls Polyphonic reverb A/B voice 2 detune	0...100
RESONANT			
24/56	Key	Controls Resonant reverb A/B key	0...11
25/57	Chord	Controls Resonant reverb A/B chord	0 Pentatonic 1 Major 2 Minor 3 Major 7 4 Minor 7
26/58	Chime Mix	Controls Resonant reverb A/B chime mix	0...127
27/59	Resonant Freq	Controls Resonant reverb A/B res frequency	0...127
28/60	Feedback	Controls Resonant reverb A/B feedback	0...127
29/61	Diffusion	Controls Resonant reverb A/B diffusion	0...127

FX Loop CC Map

Since there can only be one FXL block on the signal path, every parameter of FX Loop block has a dedicated CC number.

MIDI CC	Function	Description	Data Range
70	Send Level	Controls FX Loop send level	0...127
71	Blend	Controls FX Loop send/return blend	0...127
72	Return Level	Controls FX Loop return level	0...127
73	Dry Send Level	Controls FX Loop dry send level	0...127
74	Phase Invert	Controls FX Loop block phase invert on/off	≤63 Off ≥64 On

Delay & Modulation CC Map

The parameters for the delay, modulation and utility FX blocks do not have dedicated CC numbers for each block. Instead, multiple FX blocks of the same FX type share the same CC numbers. To differentiate the CC messages sent to each block, assign the Block 1-8 MIDI Channels in the global MIDI settings to set up dedicated MIDI channels for each block.

MIDI CC	Function	Description	Data Range
DELAY - COMMON PARAMETERS			
75	Blend	Controls delay dry/wet blend	0...127
76	Feedback	Controls delay feedback	0...127
77	Delay Time	Controls delay time	0...127
78	Ping-Pong Mode	Controls delay ping-pong mode	0 Off 1 Sum->L 2 Sum->R 3 Xover 4 L Only 5 R Only
79	Output Level	Controls delay output level	0...127
80-82	Delay Unique Params (see below)	Controls the unique parameters of each delay type	
BASIC DELAY			
80	Filter	Controls Basic Delay filter	0...127
81	Mod Depth	Controls Basic Delay modulation depth	0...127
82	Mod Rate	Controls Basic Delay modulation rate	0...127

ANALOG DELAY			
80	Filter	Controls Basic Delay filter	0...127
81	Mod Depth	Controls Basic Delay modulation depth	0...127
82	Mod Rate	Controls Basic Delay modulation rate	0...127
TAPE DELAY			
80	Tape	Controls Tape Delay tape effect	0...127
81	Warp	Controls Tape Delay warp	0...127
MODULATION - COMMON PARAMETERS			
102	Depth	Controls modulation depth	0...127
103	Rate	Controls modulation rate	0...127
104	Output Level	Controls modulation output level	0...127
105	LFO Shape	Controls modulation LFO shape	0 Sin 1 Tri 2 Squ 3 Rise 4 Fall
106	Stereo	Controls modulation stereo phase difference	0...127
107-110	Modulation Unique Params (see below)	Controls the unique parameters of each modulation type	
TREMOLO			
107	Crossmix	Controls Tremolo crossmix on/off	≤63 Off ≥64 On
CHORUS			
107	Feedback	Controls Chorus feedback	0...127
108	Blend	Controls Chorus dry/wet blend	0...127
109	Delay	Controls Chorus base delay time	0...127
110	Tone	Controls Chorus tone	0...127
FLANGER			
107	Feedback	Controls Flanger feedback	0...127
108	Blend	Controls Flanger dry/wet blend	0...127
109	Noise	Controls Flanger noise level	0...127
PHASER			
107	Feedback	Controls Phaser feedback	0...127
108	Blend	Controls Phaser dry/wet blend	0...127
109	Stage Count	Controls Phaser stage count	2...6
110	Sweep	Controls Phaser sweep range	0...127

Utility FX CC Map

MIDI CC	Function	Description	Data Range
GRAPHIC EQ			
111	100Hz	Controls Graphic EQ 100Hz band	0...24
112	200Hz	Controls Graphic EQ 200Hz band	0...24
113	400Hz	Controls Graphic EQ 400Hz band	0...24
114	800Hz	Controls Graphic EQ 800Hz band	0...24
115	1.6kHz	Controls Graphic EQ 1.6kHz band	0...24
116	3.2kHz	Controls Graphic EQ 3.2kHz band	0...24
117	6.4kHz	Controls Graphic EQ 6.4kHz band	0...24
118	Output Level	Controls Graphic EQ output level	0...127
119	Phase Invert	Controls Graphic EQ block phase invert on/off	≤63 Off ≥64 On
SATURATION			
83	Drive	Controls Saturation drive	0...127
84	Tone	Controls Saturation tone	0...127
85	Output Level	Controls Saturation output level	0...127
BIT CRUSHER			
86	Bit Depth	Controls Bit Crusher bit depth	1...24
87	Sample Rate	Controls Bit Crusher sample rate	0...127
88	Filter	Controls Bit Crusher filter	0...127
89	Blend	Controls Bit Crusher dry/wet blend	0...127
90	Output Level	Controls Bit Crusher output level	0...127
VOLUME			
91	Output Level	Controls Volume block output level	0...127
92	Phase Invert	Controls Volume block phase invert on/off	≤63 Off ≥64 On
93	Pan	Controls Volume block output panning	0...127

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