Equator Creator Manual

1 Introduction

Hello, creator, and welcome to the Creator Manual for the Equator software synthesizer that comes with your Seaboard. We think of the people who buy and use ROLI's products as *creators* more than customers. Our products are designed to expand musicians' possibilities for creative expression and thereby empower you as the creator you are. Everyone who buys and uses a Seaboard is investing in this vision of creativity and therefore is also a co-creator with and partner of ROLI.

You may already be exploring Equator and discovering its creative possibilities. This comprehensive Creator Manual explains all of the details about Equator to ensure that you get the most out of it.

Equator is ROLI's custom-built, multi-dimensional software synthesizer and sound engine. Equator and the Seaboard work together to provide a seamlessly integrated hardware-software experience, and it's optimized for the

multiple *dimensions of touch* (playing gestures) that your Seaboard RISE or GRAND hardware makes possible. With its blend of subtractive, sample-based, and FM synthesis, as well as its focus on the modulation of multiple parameters in real time, Equator is a flexible and highly expressive synthesizer. It works as a stand-alone virtual instrument in the Apple Mac OS and Microsoft Windows operating systems and as an AU or VST plug-in for use with all popular DAW (digital audio workstation) host programs.

On the next page we have included a short list of terms specific to Equator and Seaboard instruments. We will refer to these terms throughout the Creator Manual.

Please note that this is a digital manual updated regularly to reflect software updates and other improvements. Be sure to check your updates at my.roli.com. This Manual is current up to **Equator** v1.9.7, **ROLI Dashboard** v3.2.7, and **Seaboard RISE** firmware v1.1.5.

Support and Feedback
We want you to have the best experience possible with our products and would love to hear your feedback. Should you have any questions, experience any problems, or just want to say hello, please don't hesitate to get in touch. The easiest way to reach us is to send a support enquiry directly from www.roli.com/support. We will respond as soon as possible.

2 Glossary of Selected Equator Terms

Dimensions of Touch: The feature of real-time control and modulation of sound through the basic finger gestures of **Strike**, **Press**, **Glide**, **Slide**, and **Lift**.

- **Strike:** The velocity and force with which a finger makes contact with a keywave.
- **Press:** The pressure and continuous touch applied to the keywave after the initial strike. Known as "aftertouch" in traditional synth terminology.
- **Glide:** Horizontal movements from side to side on a keywave or along the ribbons located above and below the keywaves. This typically controls pitch and allows smooth movements from one pitch to another. It also lets you bend notes and add vibrato by moving your finger.
- **Slide:** Vertical movements up and down the Y-axis of a keywave. (*Seaboard RISE only.*)
- **Lift:** The release velocity or speed with which your finger lifts off from a keywave.

Note: The Seaboard RISE has "5D Touch," which includes all of the above gestures. The Seaboard GRAND has "4D Touch," including all of the above except *Slide*.

Equator: ROLI's custom-built, multi-dimensional sound engine and software synthesiser. Equator is designed to communicate with Seaboard instruments and take advantage of their real-time dimensions of touch, maximizing your ability to express yourself using just the motions of your fingers on your Seaboard's keywaves.

Expression Curves: The graphical curves in Equator that represent the behaviour and sensitivity of the *Five Dimensions of Touch* on Seaboard RISE; four dimensions on Seaboard GRAND.

Expression Mode: The mode of operation in which the three Touch Faders of the Seaboard RISE control the dynamics of the **Glide**, **Slide**, and **Press** dimensions of touch. Expression Mode is designed to let you modify the

expressiveness of the Seaboard RISE to suit specific sounds and your individual playing style.

Keywave: A wavelike element of the keywave surface that corresponds to a single key on a standard keyboard. Each of the available dimensions of touch can be accessed on a single keywave.

Keywave surface: The entire playing surface of the Seaboard, including all **keywaves** and the ribbons above and below them. The keywave surface corresponds to a keyboard.

MIDI CC Mappings: Mappings that determine which MIDI Continuous Controller messages will be sent from the three Touch Faders and X/Y Touchpad when using a Seaboard RISE.

MIDI Mode: A mode of operation in which the Touch Faders can be assigned to any MIDI CCs for additional customisation of sound.

Modulation Panel: A panel on the main view of Equator that lets you change the settings for the RISE controls, the Five Dimensions of Touch, LFOs, envelopes, and key tracking.

MPE : Multi-dimensional polyphonic expression (MPE) is a protocol for using standard MIDI messages to communicate with and enable the operation of multi-dimensional instruments such as the Seaboard RISE and GRAND. MPE enables these instruments to control multiple parameters–such as pitch, brightness (usually via filter cutoff frequency), vibrato, and much more–on a *per-note basis*. You do this with playing gestures such as velocity, aftertouch, and sliding up and down the keywaves–what we've called the *Dimensions of Touch*–and importantly, a gesture you perform on one note affects only that

note, not all of the others along with it, which is what happens on most conventional MIDI controllers and synthesizers.

MPE accomplishes this by spreading MIDI data that pertain to each note across a range of MIDI channels, while reserving one channel (usually the lowest) for global MIDI messages such as program change, pedal, and fader positions. These global messages affect all notes equally.

ROLI Dashboard: An application for modifying and customising the internal settings of the Seaboard. (*See "ROLI Dashboard Creator Manual" for more information.*)

3 Getting Started

3.1 System Requirements

Macintosh

- Mac OS 10.9 (Mavericks) or later
- Minimum RAM: 4GB
- Recommended RAM: 8GB
- Processor: 2.5GHz Intel Core i5 or faster
- Bluetooth connectivity: OS 10.10+

Windows

- Windows 7, 8, or 10
- Minimum RAM: 4GB
- Recommended RAM: 8GB
- Processor: Intel Core i5/equivalent or faster

3.2 The Seaboard Software Bundle

The Seaboard Software Bundle will give you everything you need to start making music with your Seaboard.

To access the Seaboard Software Bundle you should first register your Seaboard by following the instructions in section 1.3 of your Seaboard RISE or Seaboard GRAND Creator Manual. After registering you can download the Seaboard Software Bundle from your account page on my.roli.com.

We kept the download size of the Seaboard Software Bundle relatively small (500MB) so you could download it quickly and start making music. However you will notice that many presets are missing samples. These missing samples are located in the Equator Extended Library.

Equator Extended Factory Library

The Equator Extended Library was created in order to split up a big download, so that creators could download and install the smaller Seaboard Bundle, which includes the necessary ROLI software, to get started making music. Creators should then download the larger Extended Factory Library in the background to install later. The two downloads are necessary and complete the installation process.

Additional Sounds

We are constantly adding new presets and making them available to our registered creators. New presets are downloadable from within Equator and can be found in the Browser window. Navigate to the Browser window by clicking the preset name or selecting "Browser" from the Equator Menu in the top right hand corner of the screen. Presets that appear with a cloud icon to the right of them have not been downloaded yet. Clicking on a preset will also download ay associated samples that make it up. Click here for more information about downloading them.

3.3 Installation: Mac and Windows

When the download is complete, open the Downloads folder on your computer. Follow the on-screen instructions and choose the location or disk where you want to install the software. The installation will require approximately 1GB of disk space.

Mac: Unzip the downloaded file and double click on the installer file to begin installation.

Windows: Right-click on the installer ZIP file and click on "Extract all." This will create a new folder next to the ZIP file, which contains the unzipped items. Double-click the installer inside the new folder to begin the installation.

You may see a message that says, "Windows has protected your PC by stopping an unrecognised application from opening." Don't worry. The software is safe to install. You can bypass this message by clicking "more info" on the message, then clicking the "run anyway" button.

File Locations

After completing the installation Equator can be opened as a stand-alone application or as a plug-in which can be launched from within your DAW.

Below is a list of the locations where the standalone and plug-in versions of Equator will be installed as well as the locations of both Factory and User Presets, Samples, and Playlists.

Mac File Locations

Equator Application: ~/Applications/Equator

ROLI Dashboard Application: ~/Applications/Dashboard

Factory [Presets, Samples, Playlists]: Macintosh HD/Users/Shared/ROLI/Equator/Factory Library/[Presets, Samples, Playlists]/[GRAND, RISE]

Downloaded [Presets, Samples, Playlists]: Macintosh HD/Users/Shared/ROLI/Equator/Downloaded Library/[Presets, Samples, Playlists]/

User [Presets, Samples, Playlists]: ~/Documents/ROLI/Equator/[Presets, Samples, Playlists]/

Legacy User [Presets, Samples, Playlists]: ~/Documents/ROLI/Equator for RISE/[Presets, Samples, Playlists]/

VST Plug-in: Mac HD/Library/Audio/Plug-Ins/VST/Equator.vst

AU Plug-in: Mac HD/Library/Audio/Plug-Ins/Components/Equator.component

Windows File Locations

Equator Application (64-bit): C:/Program Files/ROLI/Equator/Equator.exe

Equator Application (32-bit): C:/Program Files(x86)/ROLI/Equator/Equator.exe

Dashboard Application: C:/Program Files(x86)/ROLI/ROLI Dashboard/ROLI Dashboard.exe

Factory [Presets, Samples, Playlists]:
C:/Users/Public/Documents/ROLI/Equator/Factory Library/[Presets, Samples, Playlists]/

Downloaded [Presets, Samples, Playlists]:
C:/Users/Public/Documents/ROLI/Equator/Downloaded Library/[Presets, Samples, Playlists]/

User [Presets, Samples, Playlists]:
C:/Users/[User]/Documents/ROLI/Equator/[Presets, **Samples, Playlists]/[GRAND, RISE]**

Legacy User [Presets, Samples, Playlists]:
C:/Users/[User]/Documents/ROLI/Equator for RISE/[Presets, Samples, Playlists]/

VST Plug-in (64-bit): C:/Program Files/Common Files/Steinberg/VST2/Equator x64.dll

VST Plug-in (32-bit): C:/Program Files/Common Files(x86)/Steinberg/VST2/Equator 32-bit.dll

4 Overview and Layout

Above is the main view of Equator, showing the Synth Panel at the top half of the screen and the Modulation Panel at the bottom half of the screen.

The Navigation Bar at the very top of the screen shows a range of available settings including presets and Audio/MIDI settings.

While the image above shows the Synth Panel, you can toggle the top half of the Equator screen to show either the Synth Panel, the Mixer Panel, or the Global Panel. The Synth Panel gives you access to the parameters of the synth modules in the signal chain. The Mixer Panel routes, configures and mixes these modules. The Global Panel gives you access to "per-preset" settings

such as Voice mode. More information about these panels is found in this section, Section 3, and Section 6.

In the lower half of the screen are tabs for three modulation views. While the view above shows the Modulation Panel (the default view), you can click on the other tabs to show the Modulation List and 5D Touch Zoom views as well.

The *Modulation Panel* view controls multiple modulation sources such as the Dimensions of Touch, LFOs, envelopes, and on the Seaboard RISE, the touch faders and X/Y pad. This lets you create modulation paths quickly.
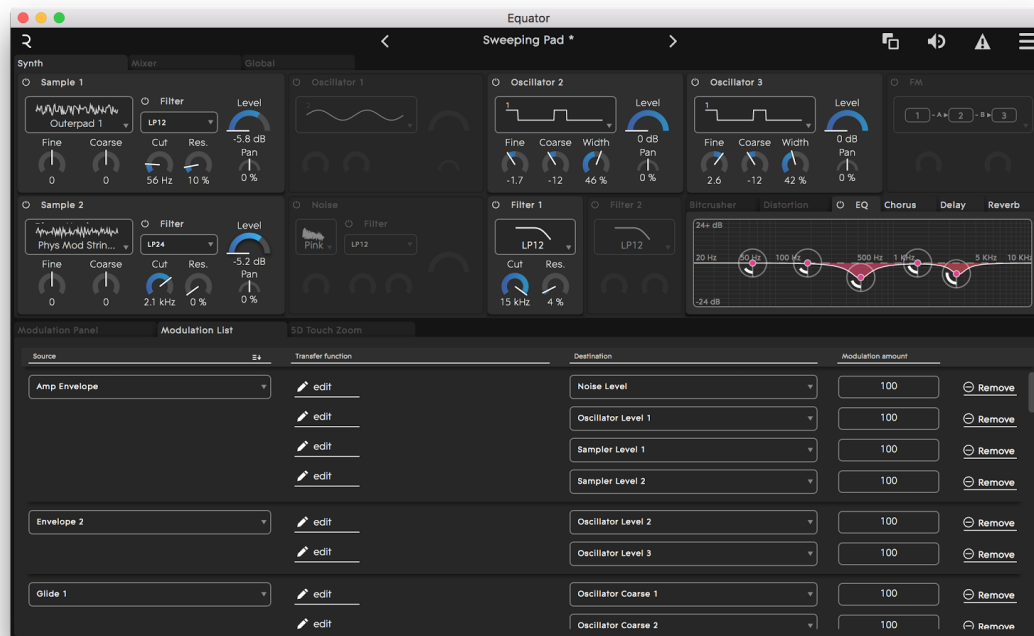
The *Modulation List* view gives a more linear, list view of the relationships between modulation sources and destinations. If you prefer, you can quickly assign the same source to multiple destinations via drop-down menu options.

The *5D Touch Zoom* view devotes more onscreen "real estate" to letting you graphically edit the response curves of of your Seaboard instrument's Dimensions of Touch.

More information about the modulation views and specific parameters therein is found in Sections 5 and 7.

4.1 The Navigation Bar

The following icons are located in the top right corner of the Navigation Bar. From left to right:

Compare: This icon compares an original preset with any changes you've made to that preset. Click and hold the icon to preview your changes to the preset.
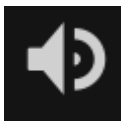
Master Volume: In the stand-alone application of Equator, this slider adjusts the overall output level of the instrument. This is a global setting and is not saved at the preset level. Double clicking on the volume fader resets the volume level to its default position. When Equator is used as a plug-in, its overall volume is determined by the level of the instrument track in your DAW program.

MIDI Panic: This button will clear the MIDI buffer and turn off any active notes. Click the button to reset stuck notes and unusual MIDI messages.

Equator Menu: This icon takes you to Equator functions including New, Save As, Undo/Redo, and the Audio and MIDI Settings.

Preset Settings in the Navigation Bar:

The Navigation Bar displays the current preset in the center of the bar (In Figure 2 above, the preset is "Smoky Rhodes"). Arrows on either side let you quickly switch presets. Clicking on the preset also brings up the Preset Browser window, which we explain in detail in Section 2.2 below.

4.2 Working With the Presets

Selecting or changing presets:

Open the Preset Browser by clicking on the preset name in the center of the Navigation Bar. Single click a preset name in the rightmost column of the screen to load the preset.
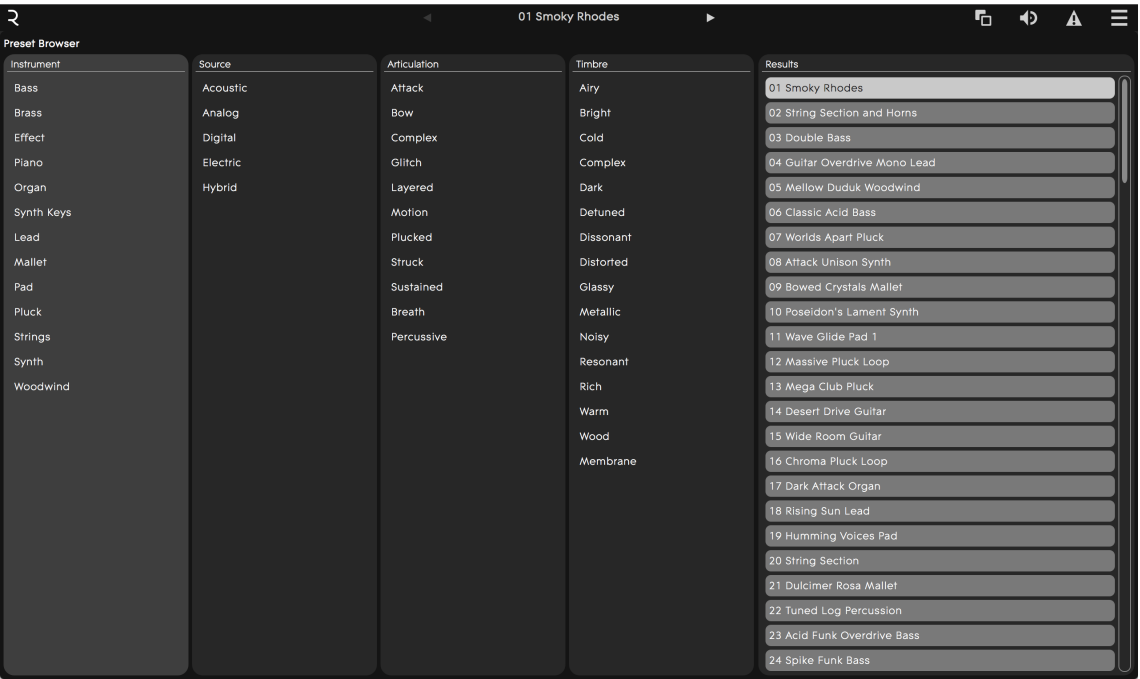
Filtering Presets:

You can narrow down the range of available presets for your specific musical needs via the six panes of attributes (also known as tags) that show up on the Preset Browser screen. From left to right, these are:

Location: Local or online. Local presets are stored on your computer. If connected to the internet, you can download presets directly within the Equator software. *Note*: Presets must be downloaded to the Local section to be playable.

Device: Filters presets based on whether they're optimized for the Seaboard RISE or the Seaboard GRAND. This principally has to do with whether the *Slide* Dimension of touch (motion along the Y axis of a keywave) is implemented. Otherwise, all presets are compatible across both Seaboard models.

Instrument: Selects main instrument type such as bass, piano, strings, synths, etc. This is an "either or" choice; you can select one category at a time or "all" categories at the very top.

Source: This offers five choices of what sub-categories of Instrument are offered: acoustic, analog, digital, electric, and hybrid. With Source and following columns, you can select or deselect as many attribute tags as you want, increasing or decreasing the preset choices that then show up in the rightmost column.

Articulation: Options in this column flag presets according to how the sound begins: attacked, bowed, struck, plucked, and so on.

Timbre: These choices run a gamut of more subjective terms, from airy and ambient to metallic and sharp.

Of course, it is not *required* that you filter your presets; simply selecting "All" in the instrument column (and nothing else) will give you the full list included with Equator.
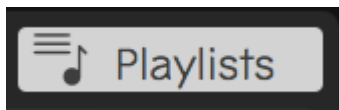
Saving presets:

If you've made any changes or edits to a preset, save it by clicking "Save As" in the Equator menu. Here, you can also assign attribute tags that will later let you or another creator discover that preset in the Preset Browser.

When you save a preset and are working with a Seaboard RISE, the most recent positions of the RISE's three Touch Faders and the X/Y Touchpad are also stored. * When using Equator as a plug-in (as opposed to in stand-alone mode), it is not guaranteed that these stored positions will be sent back to the RISE when you recall a preset. This is because your DAW is acting as the host and determining that kind of controller traffic, but most likely it can save (and automate) controller settings as part of your recording session.

Note: When you edit a Factory Preset and select "Save," you will be prompted to "Save As" because the Factory Presets cannot be overwritten. However, selecting "Save" after editing one of your *own* presets (*i.e.* one you've previously "Saved As") will immediately overwrite that preset. Be sure to select "Save As" if you wish to preserve your original and store the new preset.

4.3 Working with Playlists

Near the top right of the screen, just under the MIDI Panic and Equator Menu icons, is the Playlists button. Click on it to toggle a playlists column, which will appear as the rightmost column on your screen.

Playlists in Equator offer a convenient means for organizing presets according to, for example, the order of songs in your set list for a live performance. You can step forward or backward through presets using Seaboard hardware controls or standard MIDI program-change and bank-change messages.

Seaboard RISE: Use the Preset Switch (left-right rocker control) located at the top of the control panel section to the left of the keywave surface.

Seaboard GRAND: Use the SoundDial located at top center of the instrument.
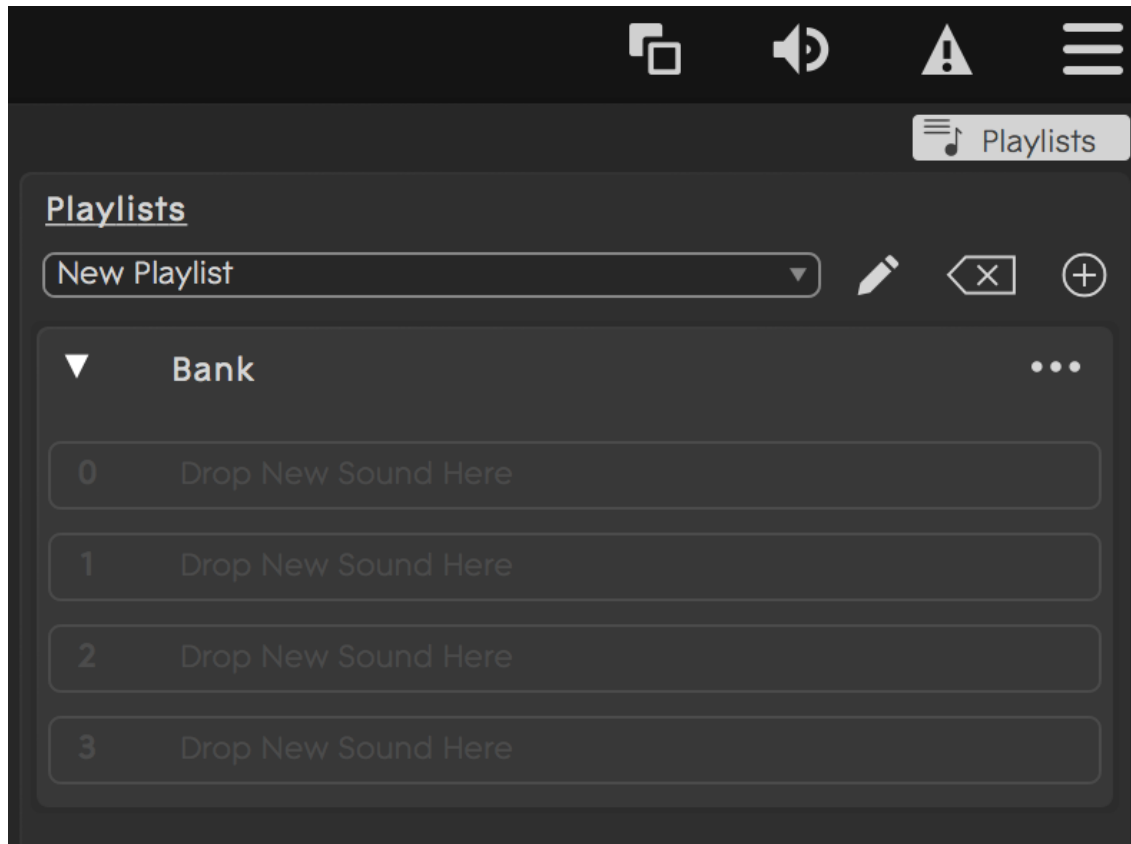
Across the top of the Playlists column is an information area with, left to right:

- Playlist name bar / drop-down selector
- Rename Playlist (pencil) icon
- Delete Playlist icon
- Create New Playlist icon

Note: The rename and delete functions are inactive for factory playlists.

Creating a Playlist

Click the Create New Playlist icon and you will be prompted to enter a name. Do so, hit enter/return, and a greyed-out area with four empty preset slots will appear in the Playlists column.

Browse and filter presets just as explained in section 2.2; all the columns for attribute tags will still be there.

Now, drag a desired preset from the Results column to an empty slot in your Playlist. When you run out of vacant slots, the Playlist column will automatically create more. Likewise, you can re-order presets in the Playlist column via drag-and-drop.

Note: If the Location attribute is set to "Online," the Results column will show downloadable presets and the Playlists column will show expanded factory playlists that you can download with a single click. Presets must be downloaded to your "Local" area to be draggable to a Playlist.

Banks and Playlists

For working with large numbers of presets, you can also subdivide your Playlist into banks, effectively amounting to Playlists within your Playlist!

The triangle icon at the top left of your Playlist will collapse or expand the Preset name list. The three dots icon (**...**) at the top right triggers a pop-up menu from which you can add a new bank, remove an existing bank, and show/adjust the MIDI bank change values (MSB and LSB) that would select the current bank from an external hardware controller or MIDI command from your DAW. A new title and controls bar is generated for each bank added.

4.4 Interacting with Equator

Changing Parameters

In any panel of Equator, you can change parameters by manually adjusting a dial on the screen or typing in the numerical value of the parameter.

Navigate to the parameter.

- Click on the dial to adjust the base (coarse) value.

- Hold down the Command key (Mac) or the Control key (Windows) while clicking on the inner circle of the dial for fine adjustment.
- Alternatively, click on the numerical field underneath the dial and type in the numerical value of the parameter.
- Double click inside the inner circle of the dial to reset the parameter to its default value.

Modulating Parameters

You can quickly modulate parameters in the main view of Equator by setting a modulation source. Follow these steps:

1. Select a modulation source (*e.g.* an LFO, envelope, or Dimension of Touch by clicking on its main area onscreen. When activated, the box containing the modulation source will be highlighted in an orange border. [Picture: mod_interaction2; under fig 4 change the word activate to "select"]
2. Now, mouse over the dial of the parameter you would like to be the modulation destination. If it's an eligible destination, an orange outline will appear around the dial. (*Note*: Your destination will need to be a different module than your source.)
3. Drag the outer circle of the dial (such that the orange outline remains visible) to adjust the modulation depth for that parameter. An orange arc will appear on the dial showing the range of values that modulation depth produces.

- Modulation can be both positive and negative.
- Double clicking in the outer circle will reset the modulation amount.
- Remember: Orange border around an entire box on the panel denotes a modulation *source*. Orange outline around a dial denotes a *destination*.
- We'll get into modulation in far more depth in Section 7.

5 The Synth Panel

The Synth Panel shows Equator's primary sound generation and shaping tools. These include …

Sound *Generators*: Three oscillators, two stereo Sample Playback Modules, and a Noise Generator:

Sound *Modifiers*: A Frequency Modulation (FM) Module, five filters, and six effects.

In traditional "subtractive" synthesis, you start by generating a sound or several sounds from multiple sources, then use filters to sculpt away aspects of the sound you don't want. Though Equator is capable of more, on the surface it follows a basic subtractive signal path.

How oscillators, filters, effects, and other settings behave and change over time can be affected by *modulation* sources (which we've already discussed a little) such as envelopes, LFOs, and the Seaboards' Dimensions of Touch. Technically, modulation sources are a type of sound "modifier" as well, but Equator's are so extensive that we gave them their own panel on the screen, which we'll examine in detail in Section 7.

Any section in the Synth Panel may be turned on or off by clicking the "power button" icon in its title bar.
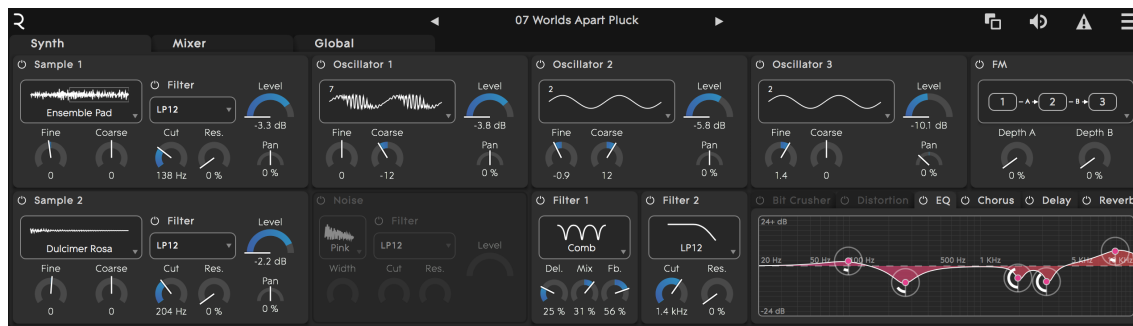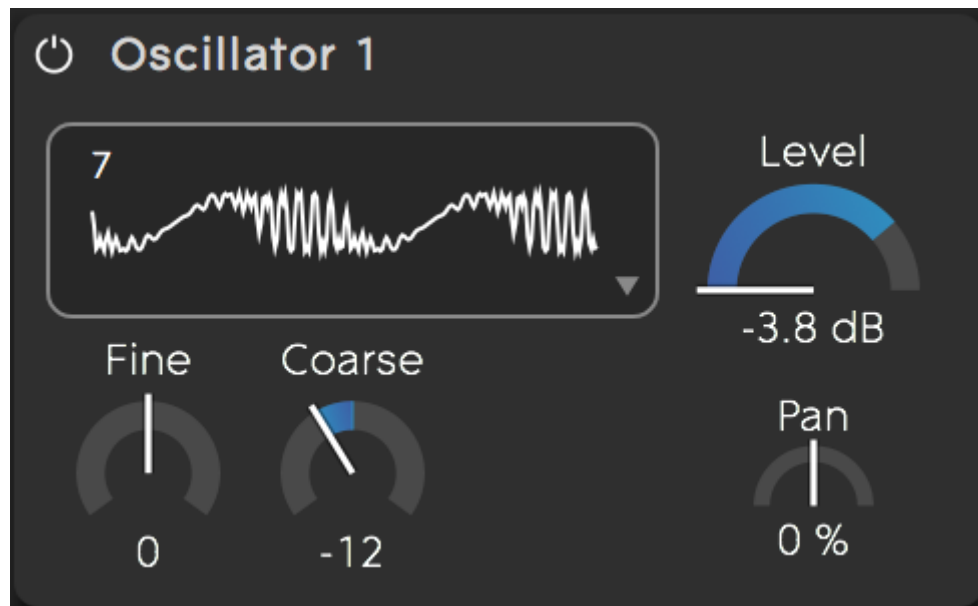

5.1 Oscillators

Oscillators are the primary tone-generating circuits in synthesizers — where the sound begins! In the early days of synthesis, analogue oscillators were all that were available for simulating any type of instrument sound as well as

creating new sounds. Today, technologies such as sample playback are better at capturing more complex sounds such as piano or guitar.

Equator offers both virtual analogue and sample playback technologies, at once in the same preset if you like. A useful (if oversimplified) way of thinking about it is to look to the Oscillators for "synthy" sounds and the Sample Playback modules for more "acoustic" or "imitative" sounds. Let's start with the Oscillators.

You can set each of Equator's three oscillators to one of 49 waveforms including classic analogue-style waves (pulse, sine, square, triangle, and sawtooth) as well as multiple complex waveforms reminiscent of the "wavetable" digital synths of the 1980s and '90s.
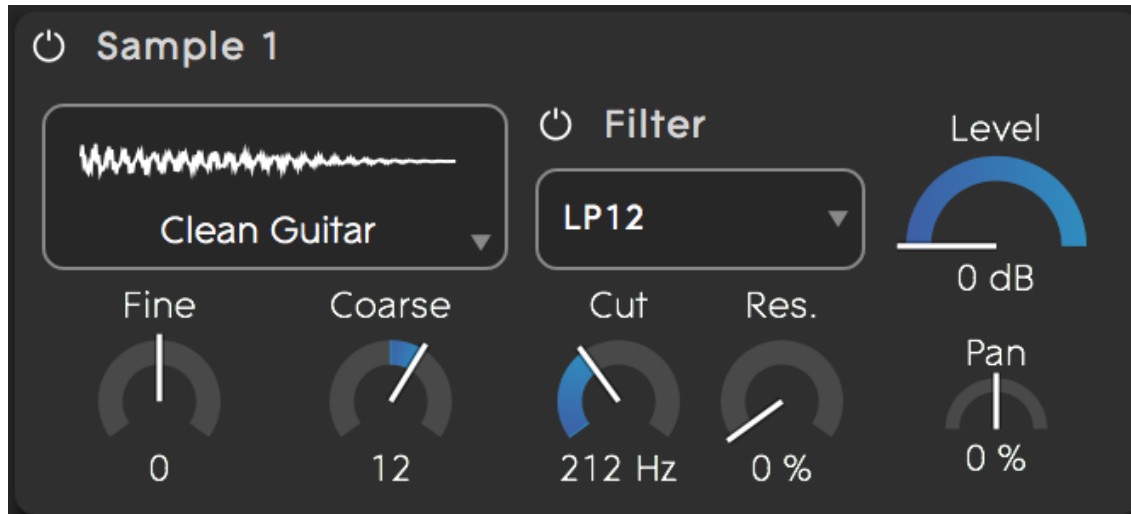

The following parameters are available for each oscillator:

- Waveform selection: 1 to 49, graphically represented

- Level: −∞ to 0dB
- Pan: hard left to hard right
- Fine Pitch: -99 to +99 cents
- Coarse Pitch: -48 to +48 semitones (-4 to +4 octaves)
- Width: Varies the pulse width of the pulse waveform (waveform 1).

If you're new to Equator, and especially if you're new to synthesis itself, a great way to start is to create a New Preset (click on the Equator Menu icon and select "New"). The initial preset will have only Oscillator 1 active, with no filtering or effects. Now, click in the waveform display box to pick different waveforms and familiarize yourself with how they sound.

5.2 Sample Playback Modules

The two Sample Playback Modules contain 24 pre-installed sample sets ranging from acoustic instruments to synthesized and layered sounds. These add an entirely other layer (in fact, two layers given that there are two

modules) to the sonic possibilities of the three waveform oscillators, making Equator an extremely flexible software instrument. Explore Equator's factory presets, and you'll find that some of them use just the Sample Playback Modules, some use the waveform Oscillators, and some use both.

The following parameters are available for each Sample Playback Module:

- Sample set selection (drop-down menu)
- Level: −∞ to 0dB
- Pan: hard left to hard right
- Fine Pitch: -99 to +99 cents
- Coarse Pitch: -48 to +48 semitones (-4 to +4 octaves)
- Filter parameters for filters dedicated to each Sample Playback module (see Section 3.5) .

5.3 Noise Generator
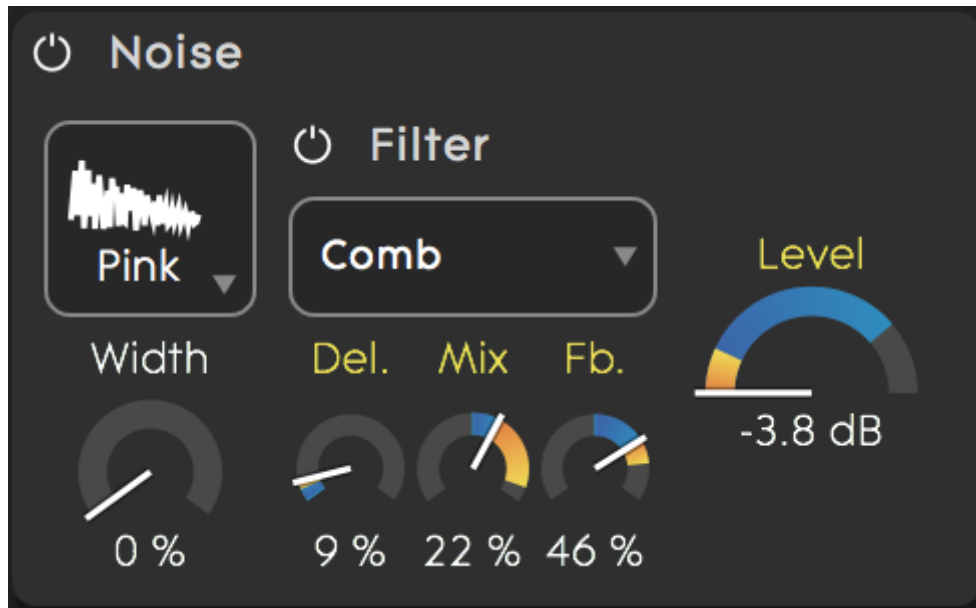
In audio, *noise* is defined as a random, chaotic signal that comprises a huge number of sine waves oscillating at every frequency. Non-technically speaking, our ears hear this as a "wind" or "radio static" sound. In practice, it's musically useful for a number of things: wind or ocean sound effects, adding realistic chiff or breathy quality to a wind instrument sound, adding dirt or grunge to synth bass sounds, and much more.

Equator's Noise Generator outputs either stereo white noise or stereo pink noise with adjustable stereo width and a dedicated filter section. (White noise has equal energy across the entire frequency spectrum. The energy of pink noise falls off as frequencies get higher, as though it were going through a low-pass filter.) The following parameters are available:

- Noise type: white or pink
- Level: –∞ to 0dB
- Stereo Width: 0% (mono) to 100% (full stereo)
- Filter parameters for filter dedicated to Noise generator (see Section 3.5).

5.4 Frequency Modulation (FM) Module

FM is a type of synthesis where complex harmonics and timbres can be created by modulating one or more oscillators with one or more *other* oscillators that are "speaking" in the audio range. Using Equator's FM tool, you can choose from four configurations for which oscillators modulate which, as indicated by the arrows in the diagrams. These are shown below:
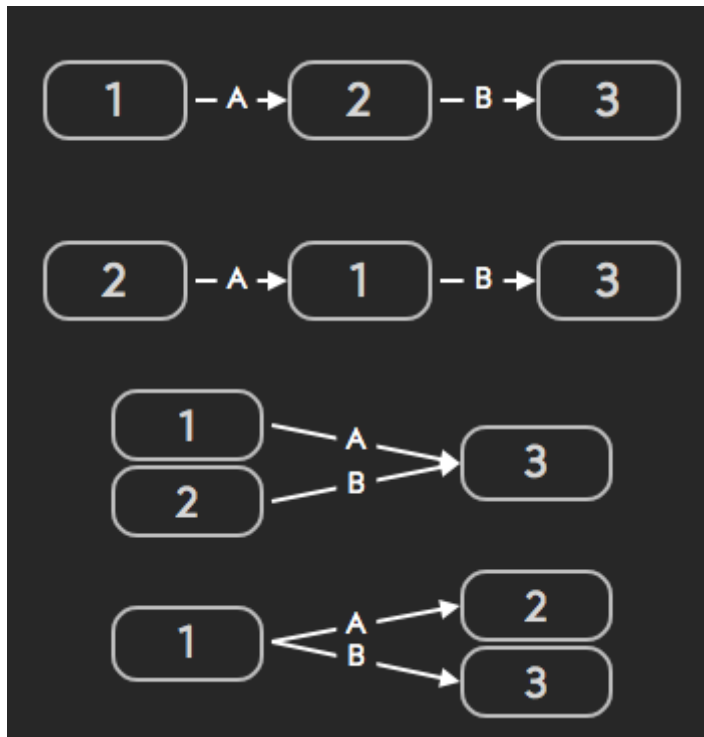
Note that each arrow is labeled with a letter A or B. You can control the depth (intensity) of each modulation segment using the corresponding Depth A and Depth B dials.
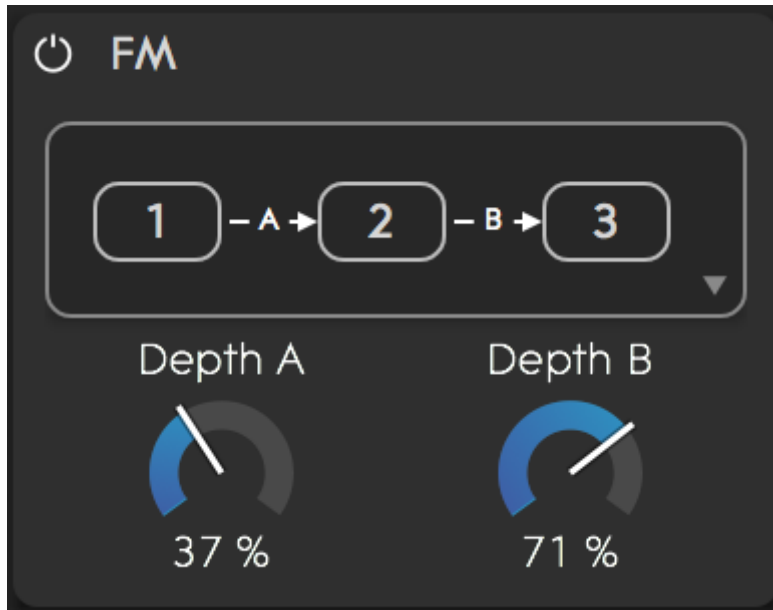
Note: FM synthesis is available only for the waveform oscillators, not for the Sample Playback modules in Equator.

5.5 Filters

In a synthesizer, a *filter* is a circuit that removes some frequencies from a signal while allowing others to pass. In its simplest form it can work like a tone control, rolling off bass or treble frequencies. More complex filters enable you to be more selective about which frequencies pass.

Filters typically do not block all the filtered-out frequencies wholesale. Instead, the volume of frequencies above and/or below the *cutoff frequency* (where the filter *starts* blocking) decreases on a curve. Common filter behaviors include:

- Low-pass: Passes lower frequencies, reduces higher ones, *i.e.* it's a treble roll-off.
- High-pass: Passes higher frequencies, reduces lower ones, *i.e.* it's a bass roll-off.
- Band-pass: Passes a band of frequencies close to a chosen center, reduces those outside the band on both the lower and higher sides.
- Notch: The opposite of band-pass. Blocks frequencies inside the band, passes those on either side.
- Comb: Several band-pass/notch filters in succession, passing and rejecting alternate frequency ranges. So called because on a graph, this looks like the teeth of a comb.

In addition, a *state-variable* filter is one whose type can be continuously varied.

Equator contains five identical filters. Two filters are assigned to the Sample Playback Modules, one is assigned to the Noise Module, and two are freely assignable to multiple simultaneous destinations via the Mixer panel. (see Section 5.2). All filters can be modulation destinations.

The following filter types are available for each of the five filters:

Models of Classic Analogue Filters

- Low-pass 12dB/octave
- Low-pass 24dB/octave
- Band-pass
- Notch
- Hi-pass 12dB/octave
- Hi-pass 24dB/octave
- Comb Filter

Standard Programmable Digital Filter Types

- State-variable low-pass 12dB/octave
- State-variable band-pass 12dB/octave
- State-variable high-pass 12dB/octave
- State-variable low-pass 24dB/octave
- State-variable band-pass 24dB/octave
- State-variable hi-pass 24dB/octave
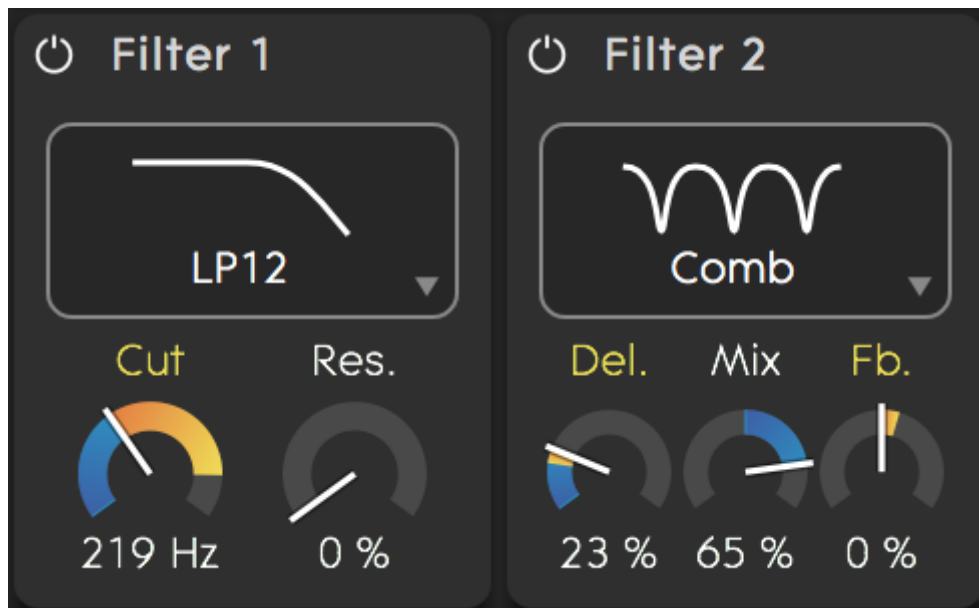
The low-pass, high-pass, band-pass and notch filters have the following parameters:

- Cutoff (or center) frequency of the chosen filter: 20Hz to 15kHz
- Resonance: 0% to 100%

Note: Resonance refers to a frequency-response peak right at the cutoff, a sort of "last hurrah" before the filter starts blocking frequencies. High resonance

settings produce a more "whistling" or "squirty" character in the sound.

The Comb Filter has a different set of parameters:

- Delay: the length of the delay line (ms)
- Mix: the amount of delayed (wet) signal added to the input (dry) signal (can be positive or negative)
- Feedback: the amount of delayed signal fed back to the input of the delay line (can be positive or negative)

6 Effects

The effects section in Equator contains the following stereo effects in series:

- Bit Crusher
- Distortion
- EQ
- Chorus
- Delay
- Reverb

Any effect may be turned on or off by clicking the "power button" icon in its viewing tab. You can use any combination of the effects or all of them, but the signal flow remains fixed in the order above. The effects section comes at the end of the signal chain. It is global for all voices.

6.1 Bit Crusher
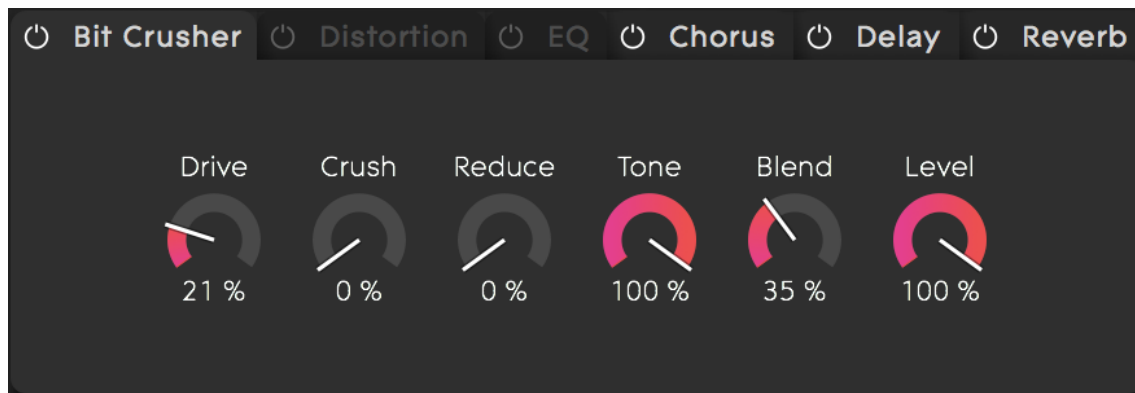
Bit crushing literally reduces the bit depth of a digital signal (for example, from 24 to 16 or even 8 or fewer bits), often to produce an intentionally "lo-fi" sound reminiscent of vintage digital synths, drum machines, and/or video games. Equator's Bit Crusher also performs sample rate reduction, giving you still more control over the lo-fi character.

The following parameters are available in the Bit Crusher:

- **Drive** controls the amount of waveshaping. Lower settings can be used to add warmth. Higher setting will result in an overdriven or distorted sound.
- **Crush** controls the effective bit depth of the signal. Higher settings will result in lower resolution and therefore more quantising.
- **Reduce** controls the amount of sample rate reduction. Higher settings will result in less treble and more aliasing distortion.
- **Tone** controls the overall color of the wet signal.
- **Blend** controls the relative amount of the dry and wet signal.
- **Level** controls the overall level of the effect.

6.2 Distortion
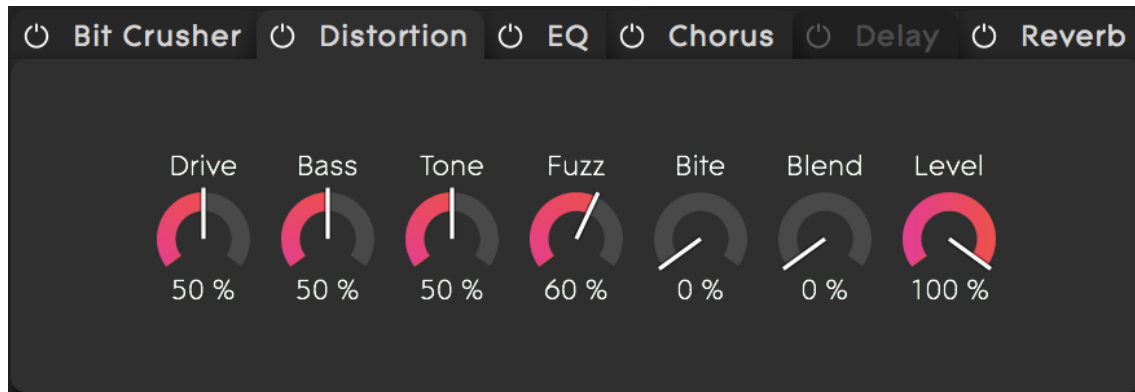
The following parameters are available in Distortion:

- **Drive** controls the amount of distortion.
- **Bass** controls the amount of low-frequency boost.
- **Tone** controls the overall colour of the wet signal. Higher settings will result in a harsher sound.
- **Fuzz** controls the amount of even harmonics. Higher settings will result in a dirtier sound.
- **Bite** controls the amount of mid-frequency boost.
- **Blend** controls the relative amount of the dry and wet signal.
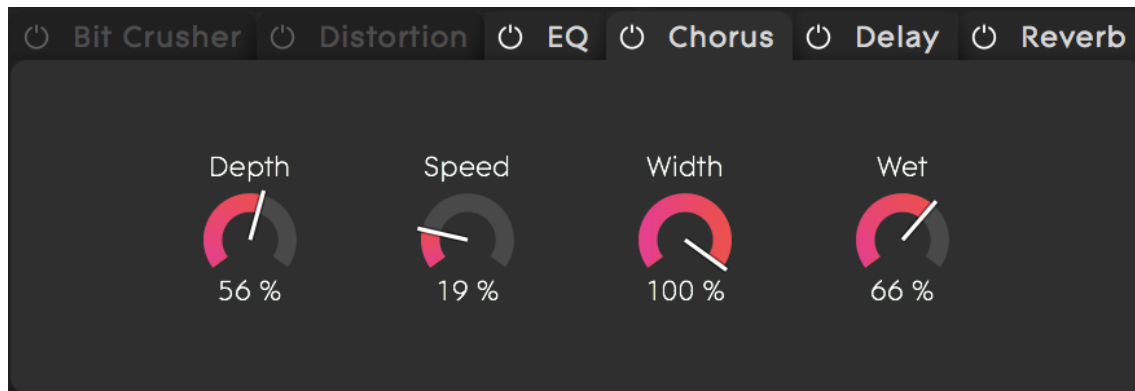- **Level** controls the overall level of the effect.

6.3 EQ
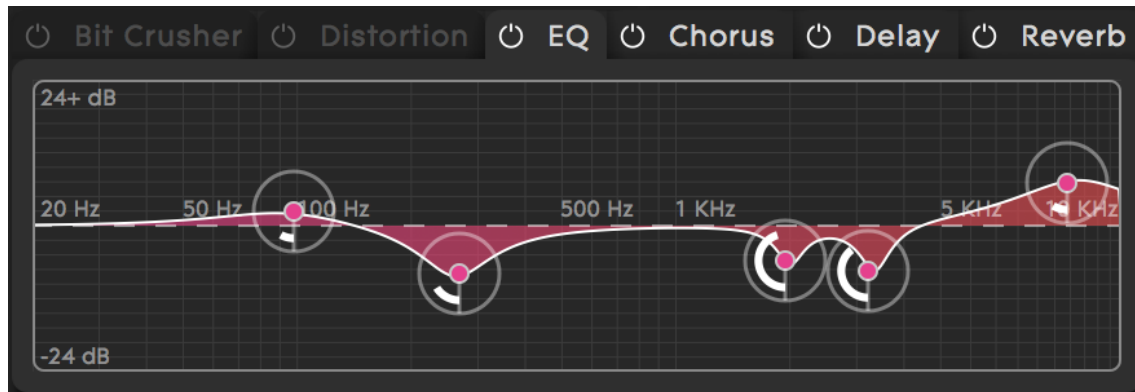
The EQ section is a five-band parametric equaliser. Each band has the following parameters:

- **Gain**: -24dB to +24dB
- **Center Frequency**: 20Hz to 15kHz
- **Q factor**: this parameter adjusts the bandwidth of the bell shape. High Q means lower bandwidth.

6.4 Chorus

The following parameters are available for the stereo Chorus:

- **Depth** controls the amount of pitch modulation applied by the effect (0% to 100%).
- **Speed** controls the rate of pitch modulation (0.2Hz to 50Hz)
- **Stereo Width** controls the width of the stereo field of the effect (0% [Mono] to 100% [Stereo]).
- **Wet** controls the amount of processed signal added to the dry signal (0% to 100%).

6.5 Delay
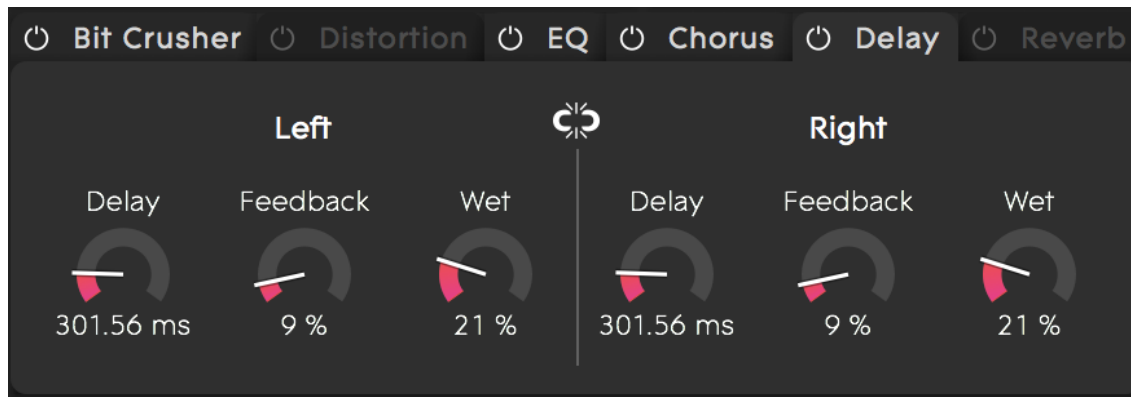
The Delay consists of two independent delay lines: left and right. The following parameters are available for each channel:

- **Delay Time** controls the length of the delay (time between the input signal and the repeated signal). If 'Sync' is disabled, the delay time can be set in milliseconds (from 0 to 2,000). If 'Sync' is enabled the delay time can be set as time signatures (1/4, 1/8, etc.) based on the current Master Clock settings.
- **Feedback** controls the amount of processed signal fed back to the input of the delay line (0% to 100%). The lowest setting will result in repeating the

input signal only once while higher settings will introduce more repeats.

- **Wet** controls the amount of processed signal added to the dry signal (0% to 100%).

The following parameters affect both sides:

- **Link L & R:** If enabled parameter changes made on one side will also apply to the other.
- **Sync** if enabled delay time will be based on the Master Clock settings. This is useful if you want the delay to follow the BPM setting of your DAW project or to keep the delay in sync with the envelopes or LFOs.

6.6 Reverb
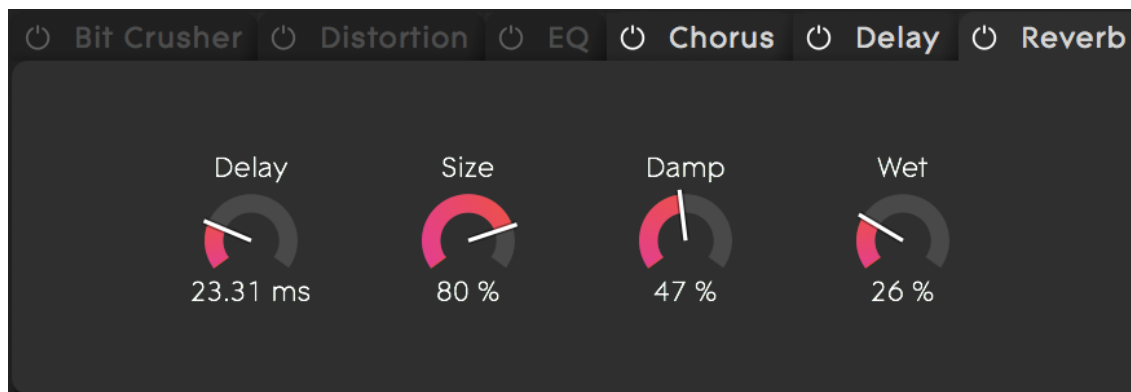
The stereo Reverb has the following parameters:

- **Pre-delay** controls the delay between the direct signal and the reverberant signal (0 to 100ms).
- **Size** controls the reverb time of the reverberant signal (0% to 100%).

- **Damp** controls the amount of low-pass filtering (absorption) applied (0% to 100%).
- **Wet** controls the amount of processed signal added to the dry signal (0% to 100%).

7 Mixer

7.1 Sends

The Mixer Panel routes the output of each audio source (Oscillators, Sample Playback Modules, and Noise Generator, plus a Ring Modulator) independently to any of the following destinations:

- Filter 1
- Filter 2
- Effects Section (EQ, Chorus, and Delay)
- Reverb
- Main Output

This increases Equator's sonic flexibility even further because a preset can contain a mix of filtered and unfiltered sound as well as "dry" versus effects-processed sound. Sound *sources* are shown as vertical "channel strips" with their names across the top. Sound *destinations* are listed in the leftmost column. To increase a source's level to a given destination, simply turn up the dial in the source's column that corresponds to the destination's row.

A couple of points to keep in mind:

- Filter 1 and Filter 2 correspond to the "free" filters in the Synth Panel, not any of the filters dedicated to the Sample Playback or Noise Generator modules.
- All send levels can be modulation destinations, affected by sources in the Modulation Panel.

The Ring Modulator

Ring modulation is a process in which the outputs of two sound sources are combined in such a way that a new timbre is produced. Equator's ring modulator combines Oscillators 1 and 2, amounting to its own sound source that can be routed to any mixer destination.

At lower settings this adds interesting harmonic content. At higher ones it produces an aggressive and clangorous sound that's sometimes described as robot-like.
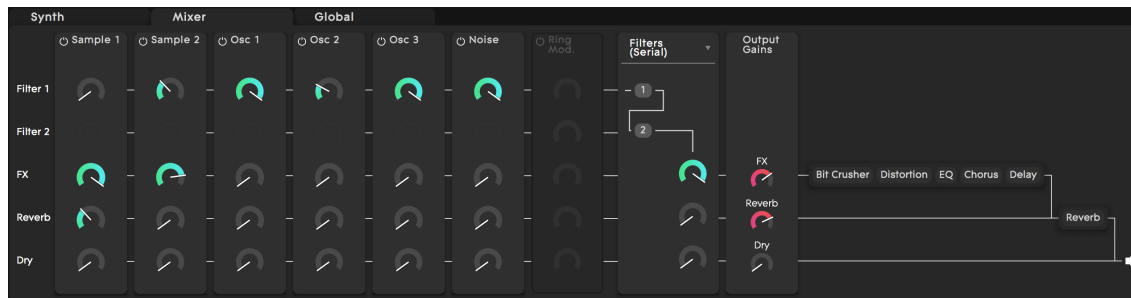
7.2 Filter Configuration

To the right of the Ring Modulator is a vertical control strip that governs filter routing. The routing of Filter 1 and Filter 2 can be configured in the following ways:

- **Serial**: Filter 1 feeds into Filter 2. In this configuration the mixer's sends to Filter 2 are disabled.
- **Parallel**: The signal flow of Filter 1 and Filter 2 are separate and their outputs can be mixed separately.
- **Summed**: Filter 1 and 2 are parallel but their outputs are summed together.
- **Mixed**: Filter 1 has its own output but also feeds into Filter 2.

The controls below each filter output set the output level feeding into the effects, reverb and main output.

7.3 Output Gains

To the right of the filter routing area is a vertical strip where you can vary the overall gain going to the effects, reverb, and main output. These are the final dials in the signal chain. The rightmost area is a graphical representation of these signal paths.

Note that hovering your cursor above any dial in the mixer will highlight the lines depicting the signal path downstream of it, giving a clear picture of which destinations any source is feeding.

8 Global Controls
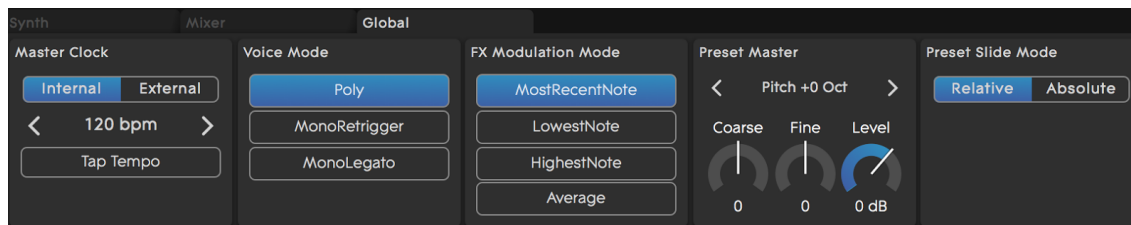
The Global tab lets you access controls that are global to the current preset. These include:

8.1 Master Clock

The master clock affects the time parameters of envelopes, LFOs, and the delay effect if the corresponding 'Sync' switch is enabled (see section 4.5). This is useful for creating presets with complex internal motion that nonetheless synchronize rhythmically with an overall tempo — especially since envelopes and LFOs can modulate other things. Two settings are available:

Internal: Equator's internal clock is used as a master clock. The tempo can be set by repeatedly clicking on the 'Tap Tempo' button at the desired rate, or manually by clicking on the arrow buttons.

External: this mode can be used to synchronise Equator's clock to external tempo sources. Currently, this is only supported in the plug-in version, which can use the tempo set in the host application (DAW).

8.2 Voice Mode

This determines whether Equator plays multiple notes (voices) at a time or one note at a time.

Polyphonic: Maximum of 16 voices with a new active note triggering each voice.

Mono Retrigger: Monophonic (one voice) with a new active note re-triggering all envelopes.

Mono Legato: Monophonic (one voice) with all envelopes only re-triggered when there are no active notes.

Legato mode is useful for soloing in a way that new notes come in more subtly if you strike them without fully letting go of previous notes on your Seaboard's keywaves. Only when you lift your fingers completely off the playing surface will new notes sound beginning with the attack phase of the envelope.

8.3 FX Modulation Mode

FX Modulation Mode controls how the effects (which are global to all voices) react when modulated by per-voice modulation sources such as *Strike*, *Press*, *Glide*, *Slide*, and *Lift.*

Most Recent Note: The last voice activated modulates the effect.

Lowest Note: The lowest pitched note activated modulates the effect.

Highest Note: The highest pitched note activated modulates the effect.

Average: The average of all voices modulates the effect.

8.4 Preset Master

Octave Shift shifts the pitch by octave steps (+/- 3 octaves).

Coarse Pitch adjusts the overall pitch of the preset (+/- 11 semitones).

Fine Pitch adjusts the overall pitch of the preset (+/- 99 cents).

Preset Level adjusts the level of the preset (-∞ to +6dB).

8.5 Preset Slide Mode

Relative Mode: On the Seaboard RISE, the interaction with *Slide* behaves as a bi-polar modulation source, where, movement up and down the Y-axis of the keywave after the initial strike will cause a change in value. Due to it being bi-polar, the value will always start at 64 (midway). Reducing the *Slide* Touch Fader position on the RISE will reduce the distance you have to "Slide" to reach the maximum and minimum *Slide* value.

Absolute Mode: The values generated by *Slide* are determined by the positions at which you *Strike* the keywave and *Slide* your finger to afterwards. For instance striking the keywave on the top ribbon and then *Sliding* down the keywave to the bottom ribbon will generate a value change from maximum to minimum. Reducing the *Slide* Touch Fader position on the RISE in this mode will also reduce the distance you have to "Slide" from the initial point of contact to reach the maximum (or minimum) *Slide* value. In other words initial contact is absolute and additional movement is relative. *Note*: The RISE will need to be in MPE mode (see section 9.3) to support Absolute Slide Mode.
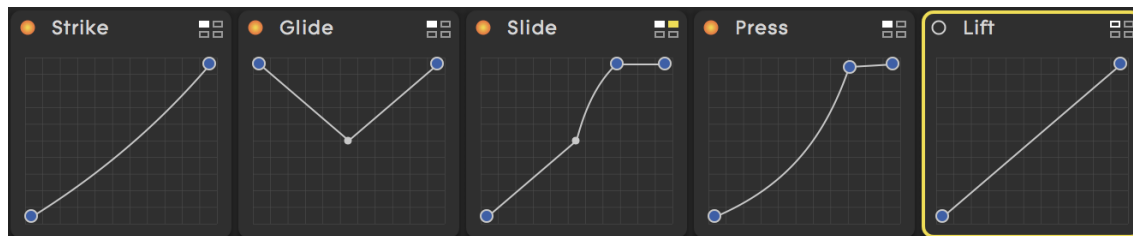
9 Modulation

The Modulation section in the lower half of Equator makes it easy to shape sounds and apply modulation to different parameters. The sources of modulation include:

- Seaboard RISE Controls
- The Five Dimensions of Touch (**Strike, Press, Slide, Glide,** and **Lift**)
- Envelopes
- Low Frequency Oscillators (LFOs)
- Keytracking
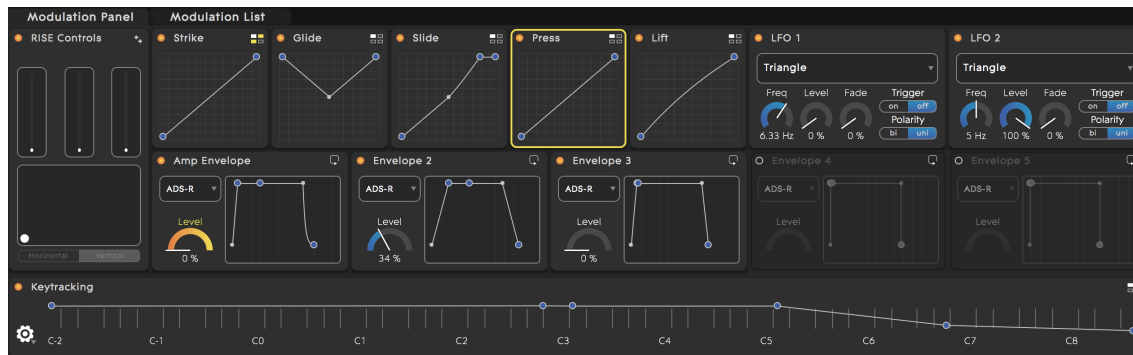
9.1 The Five Dimensions of Touch

The Seaboard RISE is a multidimensional instrument that lets you modulate sound via five *Dimensions of Touch*, each of them affecting each note independently. Through simple movements and gestures, you can shape

sound easily and discover new modes of expression. The Five Dimensions of Touch are:

Strike: The velocity and force with which a finger makes contact with a keywave. This dimension of touch corresponds to Strike on a standard keyboard.

Press: The pressure applied to the keywave after the initial Strike. The keywaves respond to each moment of continuous touch, transmitting minute variations of pressure to sound. This continuous pressure-sensitivity allows for swells, fades, and other detailed expressions. (*Note*: Press is also called *aftertouch* on many synthesizers.)

Glide: Horizontal left and right movements on a keywave or along the ribbons. **Glide** movements bend and adjust pitch as naturally as on a string instrument, allowing effects such as vibrato, portamento, and glissando, all on a polyphonic basis. **Glide** is typically assigned to pitch, but it can be assigned to other sound parameters.

Slide: Vertical movements up and down the Y axis of a keywave. You can assign Slide to most sound parameters in Equator. For example, an upward movement can open a filter that turns an organ sound into a brassy sound, while a downward movement can close the filter. Your initial point of contact with the keywave, no matter where this point is, becomes the basis for sound modulation on the Y axis above and below that point.

Lift: The release velocity or speed of liftoff from a keywave. You can assign Lift to most sound parameters in Equator. For example, different speeds of lift can create a lingering resonance or a hard pluck. (*Note*: Lift is also called *release velocity* on many synthesizers.)

Four Dimensions of Touch on the Seaboard GRAND

Note: The Seaboard Grand offers each Dimension of Touch described above except for **Slide**. Otherwise, the per-note behavior is the same.

## 9.2 Transfer Curves for 5D Touch

Each of the Five Dimensions of Touch has four independent transfer curves that you can assign to different modulation destinations. These act like master controls with individual transfer curves available in the Modulation List view. Use the transfer curves to fine-tune the responsiveness of each dimension of touch. To select one of the four curves, click on the small "four-pane" icon in the top right-hand corner of the box for **Strike, Press, Glide, Slide,** or **Lift**. Then click on the curve you wish to use.
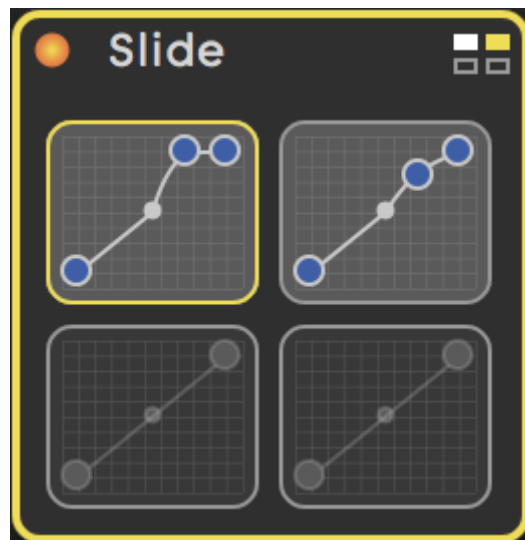
For each source, you can add points along the transfer curve by double-clicking on the curve. This can be used to create unipolar responses as well as more complex transfer curves. To remove a point, just double-click on the one that needs removing.

9.3 RISE Controls

The RISE Controls feature lets you map the Touch Faders and X/Y Touchpad to any of Equator's assignable parameters while in MIDI Mode. Refer to the Seaboard RISE Creator Manual for details about the Touch Faders, X/Y Touchpad, and MIDI Mode.
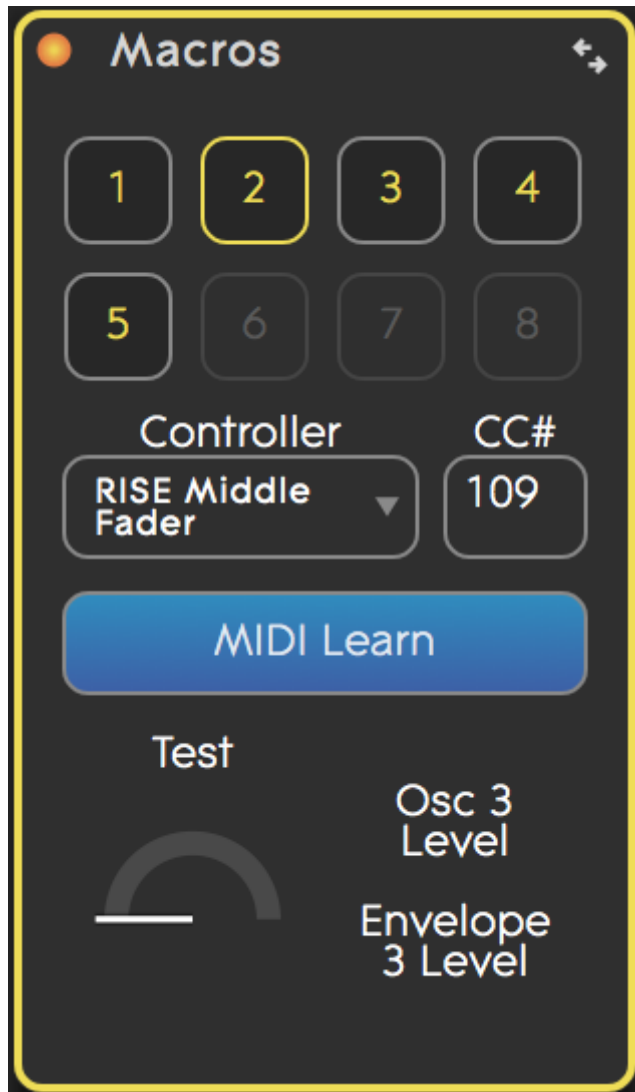
The Switch View button (in the top right-hand corner of the RISE Controls section) displays the assignable macros. Macros can be assigned to MIDI CC messages of any external MIDI controller connected to Equator. Macros default to these settings:

- Macro 1: RISE **Glide** (Left) Fader
- Macro 2: RISE **Slide** (Middle) Fader

- Macro 3: RISE **Press** (Right) Fader
- Macro 4: RISE X/Y Touchpad X Axis
- Macro 5: RISE X/Y Touchpad Y Axis
- Macro 6: Assignable
- Macro 7: Assignable
- Macro 8: Assignable

If you select "Other Controller" from the drop-down menu after selecting any macro, you'll have the option to type in a CC you want the macro to "listen" for, as well as a MIDI Learn button.The MIDI Learn button automatically assigns Equator parameters to external controls from Seaboard RISE and other compatible MIDI controllers. To do this, click the button and then manipulate the external control.

9.4 Envelopes 1 - 5

Equator has five independent envelopes. You can view them as a graphical curve or as a group of dial (Curve View and Dial View). To switch between the two views, click on the icon in the top right-hand section of each envelope panel.
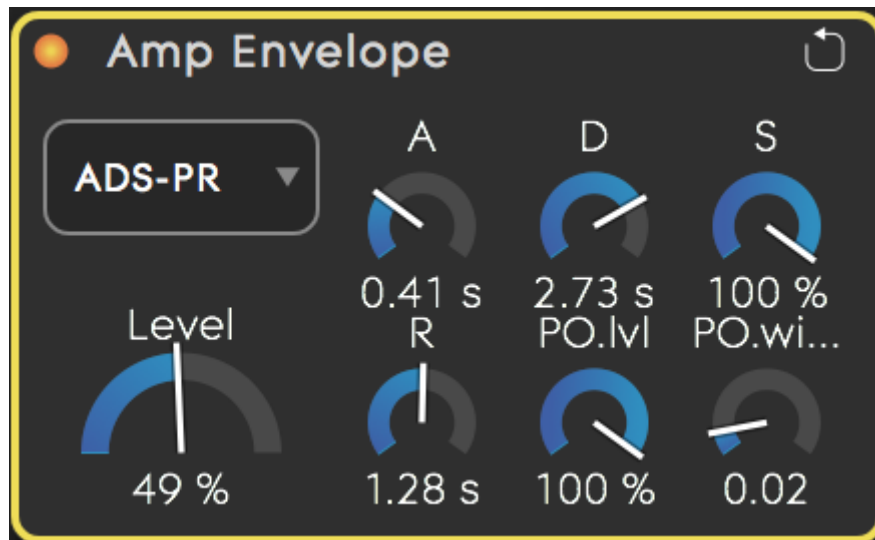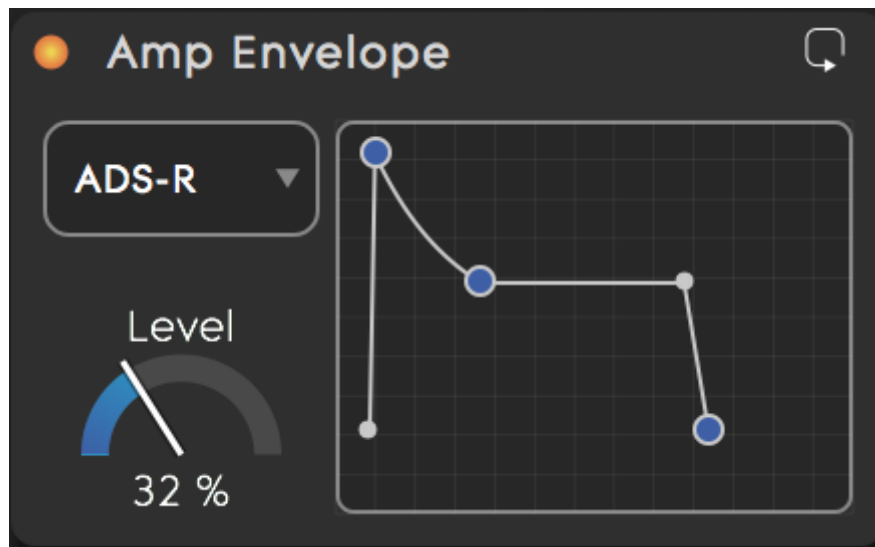
The following envelope types are available:

- **ADS-R**: This mode works as a typical ADSR envelope. Hitting a note triggers the Attack-Decay-Sustain section. Releasing the note triggers the Release section.

- **ADR (one-shot)**: The Attack-Decay-Release section is played once without pause even if the note has not been released.
- **ADADR (looped)**: The Attack-Decay section is repeated until you release the note, triggering the Release section. In this mode, the envelope operates as an LFO with a shape defined by the Attack/Decay settings.
- **ADS-PR (pluck-off)**: Acts like an ADSR envelope, but when you release a note the envelope will rise to a set level and width before the release section. You can use ADS-PR to simulate gestures and sounds such as the fingers muting a plucked string.

For each envelope the following parameters are controllable and can also be modulated:

- **Level**: 0% to 100%
- **Attack Time**: 0-5 seconds if 'Sync' is disabled, otherwise in time signatures based on the Master Clock settings
- **Decay Time**: 0-5 seconds if 'Sync' is disabled, otherwise according to time signatures based on the Master Clock settings
- **Sustain Level**: 0% to 100%
- **Release Time**: 0-5 seconds
- **"Pluck Off" Level**: 0% to 100%. This parameter only works when using ADS-PR.
- **"Pluck Off" Width**: 0-2 seconds. This parameter only works when using ADS-PR.

The **Sync** switch determines whether the Attack and Decay times should be based on the Master Clock settings. This is useful if the Attack/Decay times should follow the BPM (tempo) setting of your DAW project or you want to keep an envelope in sync with the Delay, the LFOs or with other envelopes.

By default the envelope lines for Attack, Decay, and Release increase and decrease at a constant rate. By clicking and dragging above and below each line, however, you can change the curve and therefore the response.

Note: The difference between envelope modes is:

- The dial envelope can be used to modulate its ADSR stages, but this cannot be achieved in the graphic envelopes.
- Any envelope can modulate a selected dial on a different envelope. The destination envelope must be in Dial View for this to occur; the source envelope may be in Dial View or Curve View.
- The graphic envelope can be used to set the exponential, linear, or logarithmic curves. This can't be done in the dial envelope mode.

9.5 LFO 1 - 2
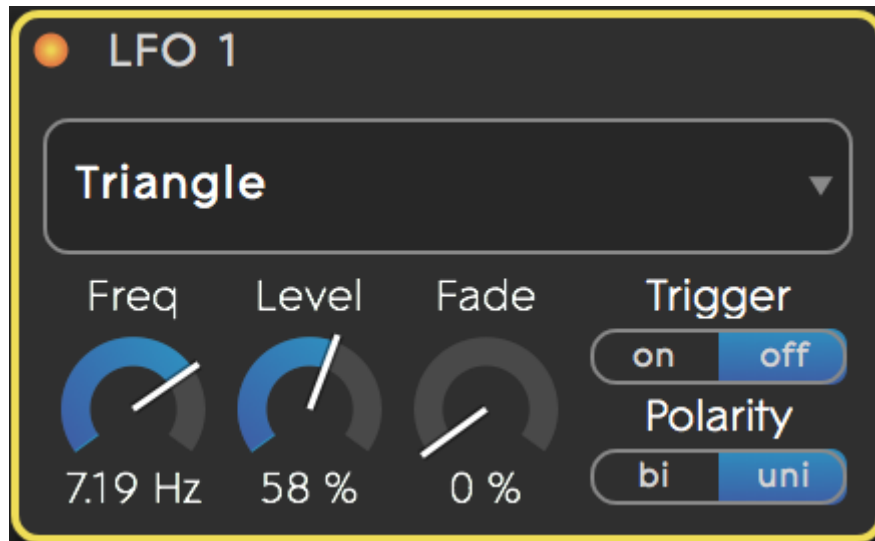
The two independent Low Frequency Oscillators (LFOs) have the following waveforms available:

- Square
- Rising sawtooth
- Falling sawtooth
- Sine
- Triangle
- Random (smooth waveform)
- Random (Sample and Hold) (stepped waveform)

Each LFO has the following additional parameters:

Frequency: 0 to 10 Hz if 'Sync' is disabled, otherwise according to time signatures based on the Master Clock settings

- **Level**: 0% to 100%
- **Fade In**: This determines the time it takes for the level of the LFO to rise from zero to the desired level (0–5 Seconds).
- **Sync:** This parameter determines whether the Frequency should be based on the Master Clock settings. This is useful if you want the LFO to follow the BPM (tempo) setting of your DAW project or to keep an LFO in sync with the Delay, the envelopes, or the other LFO.
- **Trigger:**
  - On: The LFO for each voice is retriggered when the voice becomes active.
  - Off: the LFO is free running, meaning the LFOs across all voices are in phase.
- **Polarity:**
  - Bi: The output of the LFO is bipolar.

- Uni: The output of the LFO is unipolar.

9.6 Keytracking

The keytracking display is a strip of graphical keywaves across the bottom of Equator's screen. . A blue dot on a keywave increases in size to reflect greater Strike velocity, with a white outline corresponding to Press. You can also use each keywave as a modulation source to perform keytracking on a parameter. This is a process where any parameter may be modulated more or less steeply according to what notes are played on the Seaboard. A traditional use is to open up (or close down) a filter cutoff as you ascend the keyboard, but the possibilities are virtually limitless.

To assign keytracking as a source, click the keytracking box as you would any other modulation source, such that it's outlined in orange. Then, cursor elsewhere on the panel and assign a destination parameter as you would normally, adjusting the depth by dragging inside the orange outline you'll see around the destination's dial.

Like any other modulation source in Equator, keytracking can affect multiple destinations at once.

When you double-click anywhere on the curve (the line that runs across the keytracking strip) you will add nodes, and you can then drag these nodes both vertically and horizontally to edit the slope of the curve. You can add as many nodes as you need.
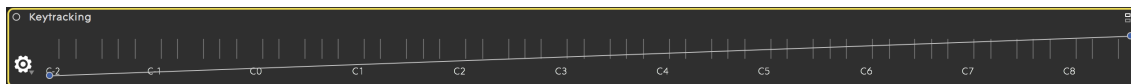
Similarly to how the Dimensions of Touch work, Equator allows up to four independent curves for keytracking, and each can have its own response. The "four-pane" button at the top right-hand corner of the keytracking section lets you switch between four different assignments for keytracking.

Four modes are available for each keytracking curve via the settings icon in the lower left corner of the keytracking strip. These modes change how keytracking behaves as a modulation source when each is applied along with another source to a modulation destination (for example, keytracking and Press applied to the Filter 1 cutoff). These modes are:

- **Add**: Keytracking is added to all other connected modulation sources.
- **Scale**: Keytracking scales the effective value of all other modulation sources.
- **Limit MAX**: Keytracking sets the maximum modulation depth of all other modulation sources. The modulated parameter cannot exceed the value set by keytracking.

Limit MIN: Keytracking limits the minimum modulation depth of all other modulation. The modulated parameter cannot go below the value set by keytracking.

9.7 Modulation List View

The Modulation List shows all modulation paths of the preset you are using. Some creators may find this provides a more immediately clear picture of

"what's modulating what" than the Modulation Panel view, especially when working with sources that are modulating multiple destinations.

You can edit each path and create new ones. The structure of the Modulation List is shown below:
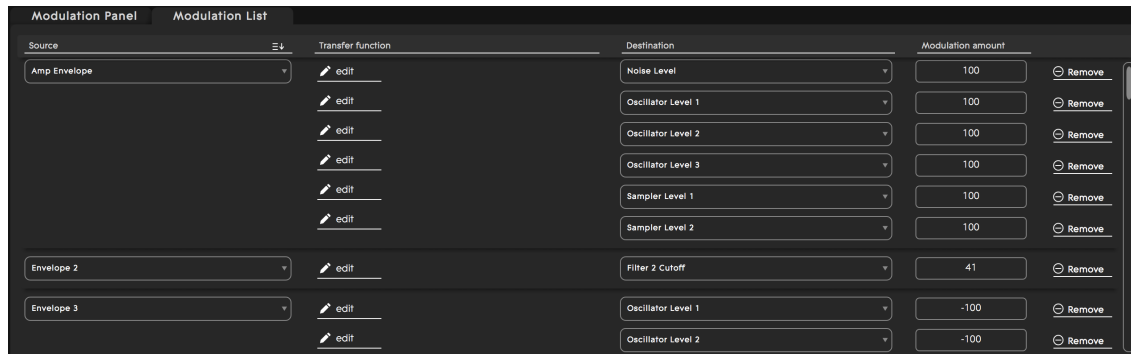
- **Source** lists all modulation sources used in the currently active preset. You can change the modulation source for a group of paths by opening up the drop-down menu for each source and choosing from the list of available modulation sources. You can sort the Modulation List view alphabetically by Sources by clicking on the Source column header.
- **Transfer function** adjusts the transfer (response curve) between a modulation source and a destination to have a non-linear response. Click on the Edit icon to access this function. Then, click and drag on the graphical curve to change its response.
- **Destination** lists all modulation destinations used in the current preset. You can change the destination for each modulation path by clicking on the drop-down menu and selecting from the list of available destinations. You can sort the Modulation List view alphabetically by destinations by licking on the Destination column header.
- **Modulation amount** determines the modulation depth of the corresponding path. To edit the depth, double-click and enter the new

value. Or click and drag up or down in the box.

- **Remove** deletes the modulation path. The Remove icon is at the far right side of each row.

New Modulation Paths can be added by scrolling to the bottom of the list and clicking on the "Select New Source" or "Select New Destination" box.

10 Connecting the Seaboard GRAND

11 Equator Menu

Clicking the far right icon in the Navigation Panel opens up the Equator Menu, giving you access to the preset management, editing, remote updates, and the Audio and MIDI settings.

Presets

New

Browse...

Save

Save As...

Delete Current Preset

GRAND Bank Manager

Edit

Undo

Redo

Settings

Audio Settings...

MIDI Settings...

RISE CC Mappings Settings...

Updates Settings

Disable animation

About

11.1 Settings

- **Audio Settings** let you choose the audio output device and output channels used, as well as adjust the sample rate and sample buffer size. Higher buffer settings reduce the load on your computer but may increase *latency*, or perceived time between playing a note and hearing it. (This menu is not available when using Equator as a plug-in, because audio settings are managed by the host software, e.g. your DAW.)

Note: If you don't see your desired audio interface or output device among the Output drop-down options, check its documentation to see if the manufacturer has drivers you need to download and install.

- **MIDI Settings** lets you determine how Equator will respond or "listen" to incoming MIDI messages.

MIDI Settings

MPE Mode:	**On** / Off
Channels:	From **2** To **16**
Global Channel:	1
Note Pitch Bend:	48
Global Pitch Bend:	2

Reset Settings

MIDI Inputs:

◉ Seaboard RISE

◉ Auto Connect To Seaboard

◉ Send Expression Settings To RISE

MPE Mode

When used with a compatible software synth, *Multi-dimensional Polyphonic Expression* (MPE) is the easiest and most direct way to take

advantage of the full expressivity that the Seaboards' *Dimensions of Touch* can provide on a polyphonic per-note basis.

MPE operates using the familiar MIDI spec, by assigning a Global channel for anything that needs to affect to all notes at once (say, a sustain pedal), then subsequent channels for information that needs to affect individual notes independently (such as whatever *Strike*, *Slide*, *Glide*, *Press*, and *Lift* are modulating.)

Parameters displayed when MPE is "On" are:

Channels From: Sets the lowest channel to be used for per-note control information. Default: channel 2.

Channels To: Sets the highest channel to be used for per-note control information. Default: channel 16.

Global Channel: This is always one note lower than the Channels From setting. Default: channel 1.

In most Seaboard use cases these defaults should be left unchanged. However, we seek to provide some flexibility for applications where certain channels on the same port may already be in use for other things.

Note Pitch Bend: Selects the pitch bend range that Equator will respond to on a per-note basis. This value should be matched with your MPE-capable hardware controller. For the Seaboard RISE 25 and RISE 49 with Equator, the default is +/- 48 semitones (four octaves). Values between 12 and 96 in one-octave increments can be selected for optimising with third party controllers.

Global Pitch Bend: When MPE mode is switched on, Global Pitch Bend sets the range if Equator receives a pitch bend value on the Global Channel. When receiving this message, it will affect all voices.

You should only switch MPE mode to "Off" if you want to play Equator using a traditional non-MPE-capable MIDI controller such as a keyboard, digital stage piano, etc. The equivalents of any *Dimensions of Touch* that controller may support (likely *Strike*, maybe *Press* or *Lift*) will work, but will affect all notes equally.

Parameters displayed when MPE is "Off" are:

Channels From / To: Determines the channel range in which Equator is "listening" for MIDI note and control information. The default is 1 through 16. If all voices need to be affected, MIDI data needs to be sent on all channels.

Pitch Bend: Sets the overall pitch bend range, which will affect all octaves equally. The range, adjustable in one-octave increments, is from +/-12 to +/-96 semitones.

Parameters displayed whether MPE is On or Off are:

Reset Settings

This button resets the MIDI settings to the factory default values of MPE "On", Channels From 2 to 16, Global Channel 1, Note Pitch Bend "48", Global Pitch Bend "2"

MIDI Inputs

Shows which Seaboard is connected to Equator: the "Seaboard RISE" or "Seaboard GRAND."

Auto Connect to Seaboard: When this option is selected, the Seaboard will automatically be connected to ROLI Dashboard when it shows up in the list of MIDI inputs.

Send Expression Settings to RISE: When this option is selected, any presets saved with the position of the RISE Touch Faders (*Glide*, *Slide*, and *Press*) will transmit these positions to a connected RISE unit. De-selecting this will mean your current RISE Touch Fader settings will be applied to any preset you select.

Note: It is not strictly necessary to use MPE to get 5D Touch (or 4D Touch on the Seaboard GRAND). For example, you could set up multiple instances of a mono-timbral software synth on multiple MIDI channels in your host. But if your soft synth is MPE-optimized (check with its manufacturer), MPE mode is by far the most efficient way.

- **RISE CC Mappings Settings**
  - If you have your RISE configured to use different CC mappings for the Touch Faders and X/Y Touchpad, you will need to make sure Equator matches these mappings. The RISE CC Mapping Settings lets you do this and also lets you reset both Equator and the RISE connected (Standalone Equator only) to their default settings.
- **Updates Settings** automatically checks to see if your version of Equator is up-to-date or if there is an update available for you to download and install. If so, you can do this without leaving the Equator software.

- **Disable/Enable Animation** lets you disable or enable the waveform and modulation graphical animations within Equator. Disabling animation can result better performance on older or lower-spec computers.

- **About** shows you the version number of Equator that you are using. It also links you directly to ROLI Support.

12 ROLI Support

12.1 My ROLI

Manuals and other resources on My ROLI should help answer initial questions about your RISE. Visit our Support page at support.roli.com for a wider range of resources that should help answer questions about the RISE and its software. The page includes frequently asked questions, tutorial videos, and guides for connecting the RISE with third-party plug-ins and DAWs.

12.2 ROLI Support

Contact the ROLI support team directly on support.roli.com for any questions. You will receive an answer within 24 hours. Our support team is here to help you.