

Equator for RISE

Creator Manual

October, 2015
Version 1

ROLI

Introduction

Hello creator, and welcome to the Creator Manual about the Equator software synthesiser that comes with your Seaboard RISE. We think of the people who buy and use ROLI's products as creators rather than customers. Our products are designed to expand the bandwidth of creative expression and thereby empower people as the creators they are. Everyone who buys and uses a Seaboard RISE is investing in this vision of creativity and therefore is also a co-creator 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, multidimensional software synthesiser and sound engine. Equator and Seaboard instruments work together to provide a seamlessly integrated hardware-software experience. With its blend of subtractive, sample, and FM synthesis and its focus on the modulation of multiple parameters in real time, Equator is a flexible and highly expressive synthesiser. It works as a standalone OS X and Windows application and as a plugin for a suite of industry-standard DAWs.

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 for updates on My ROLI. This Manual is current up to **Equator** v1.2.0, **ROLI Dashboard** v3.1.0, and **RISE** Firmware v1.0.4.

Support and Feedback

We want you to have the best experience possible with your Seaboard, and our Support team is here to help you. If you have any questions, are experiencing any problems, or have any feedback to give us about our products, please don't hesitate to get in touch with our team.

You can contact us through our Support page at www.rolicom/support or by writing us directly at support@rolicom. We will respond as soon as possible. The resources on the Support page should also help answer many questions.

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Selected Equator for RISE terms

Keywave surface:	The entire playing surface including all keywaves and ribbons. The keywave surface corresponds to a keyboard.
Keywave:	A wavelike element of the keywave surface that corresponds to a single key on a standard keyboard. Each of the Five Dimensions of Touch can be accessed on a single keywave .
Equator:	ROLI's custom-built, multidimensional software synthesiser and sound engine. Equator enables refined control of the expressive capabilities of the keywave surface. Equator and Seaboard instruments work together to provide a seamlessly integrated hardware-software experience.
MPE:	Multi-Dimensional Polyphonic Expression (MPE) is a protocol for using standard MIDI messages to communicate with and enable the operation of multidimensional instruments such as the Seaboard RISE .
Expression Mode:	A mode of playing the Seaboard RISE in which three Touch Faders control the dynamics of the Glide , Slide , and Press dimensions of touch. Expression Mode lets you modify the touch responsiveness of the Seaboard RISE to suit specific sounds and your individual playing style.
Expression Curves:	The graphical curves in ROLI Dashboard that represent the behaviour and sensitivity of the Five Dimensions of Touch
The Five Dimensions of Touch (5D Touch):	The five fundamental elements of physical interaction between a finger and a surface: 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 . Glide: Horizontal movements from side to side on a keywave and left right movement along the ribbons. Slide: Vertical movements up and down a keywave . Lift: The release velocity or speed of liftoff from a keywave .
MIDI CC Mappings:	Mappings that determine which MIDI Continuous Controller messages will be sent from the three Touch Faders and XY Touchpad.
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 keytracking.

- ROLI Dashboard:** An application for modifying and customising the internal settings of the **RISE**.
- Touch Fader:** A control for adjusting the sensitivity of the **keywave surface** to dimensions of touch.

1. Getting Started

1.1 System Requirements

OS X

- Mac OS 10.8+
- Minimum RAM: 4GB
- Recommended RAM: 8GB
- Processor: 2.5GHz i5 or faster
- Bluetooth connectivity: OS 10.10+

Windows

- Windows 7, 8, or 10
- Minimum RAM: 4GB
- Recommended RAM: 8GB
- Recommended Processor: i5 and equivalent or above

1.2 The Seaboard RISE Software Bundle

Before making music on your **Seaboard RISE** and **Equator**, you need to download the **Seaboard RISE** Software Bundle. This software bundle is available on My ROLI. Please follow the instructions below. If you have already installed the **Seaboard RISE** Software Bundle you can skip to "2. Hardware".

1.3 Register on My ROLI

Visit my.rolli.com and sign up with a username and password of your choice. When you have signed up and logged in, the website will ask you to register your product. Use your Product Registration Code. The code is printed on the Registration Card. This card is in the box marked *Make Music Now*, which comes in the package with your **RISE** (see Figure 1).

Login and Download ROLI Software

Now that you've created an account on My ROLI, you can log in and download **Equator** for **RISE** and **ROLI Dashboard**, the two applications included in the software bundle. Click either "Download Software Bundle for Mac" or "Download Software Bundle for Windows" depending upon which operating system you use.

1.4 Installation Mac & Windows

When the download is complete, open the Downloads folder on your computer and double-click the installer file(s). Follow the on-screen instructions and choose the location or disk where you want to install the software. The install will require approximately 2 GB of disk space.

Mac: After double-clicking the installer, you may see a message that says the installer is from an "unidentified developer." Don't worry. The software is safe to install. You can bypass this message by right-clicking the installer from a Finder window and selecting Open.



Figure 1

Pick up your Registration Card and find your registration code. Visit this web page to sign up for My ROLI, your portal for software downloads and product support, with a username and password of your choice. Then register using your registration code.

Windows: After double-clicking the installer, 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.

Equator will by default install as a standalone app in the Applications folder. It will also install as a plug-in in the following folders:

Mac OS X

- Macintosh HD/Library/Audio/Plug-ins/VST
- Macintosh HD/Library/Audio/Plug-ins/Components

Presets and a copy of this guide will be saved in the following folder: ~/Documents/ROLI/Equator for RISE

Windows 32 bit

- C:/Programfilesx86/VST Plugins

Presets and a copy of this guide will be saved in the following folder: ~This PC/Documents/ROLI/Equator for RISE

Windows 64 bit

- C:/Programfiles/VST plug ins

Presets and a copy of this guide will be saved in the following folder: ~This PC/Documents/ROLI/Equator for RISE



2. Overview and Layout

Above is the main view of **Equator** (see Figure 2), 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. More details on the navigation bar can be found in Sections 5 and 6.

While this view shows the Synth Panel, the top half of the **Equator** screen can show either the Synth Panel or the Mixer Panel. You can toggle between them. The Synth Panel gives you access to the parameters of the modules in the signal chain. The Mixer Panel routes, configures and mixes these modules. More information about these panels is found in this section and Section 3.

In the lower half of the screen are two modulation views. While this view shows the **Modulation Panel**, the bottom half of the screen can show either the **Modulation Panel** or the Modulation List. You can toggle between them. The **Modulation Panel** gives you access to multiple modulation sources and their parameters. It also lets you create modulation paths quickly. You can view all of these paths in the Modulation List. More information about these panels is found in Section 5 and 7.

Figure 2

Above, the main view of **Equator** for RISE.

2.1 The Navigation Bar

The following icons are located in the top right corner of the Navigation Bar:



Compare: This icon compares an original preset with changes to that preset. Click and hold the icon to preview your changes to the preset.



Master Volume: In the standalone application of **Equator**, this slider adjusts the overall output level of the instrument. This parameter is not saved in the presets. Double clicking on the volume fader resets the volume level to its default position.



MIDI Panic: This button will clear the MIDI buffer and remove 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, and Undo/Redo and Audio/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 6.1.

2.2 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 (see Figure 3).

- Navigate to the parameter.
- Click on the dial to adjust the base value.
- Hold down the cmd (Command) key 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



Figure 3

An example of a modulation panel in **Equator for RISE**.

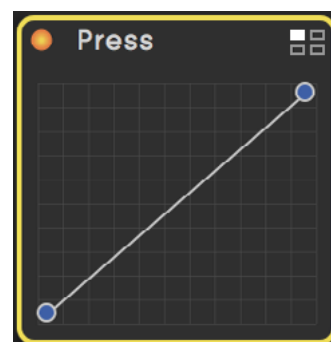


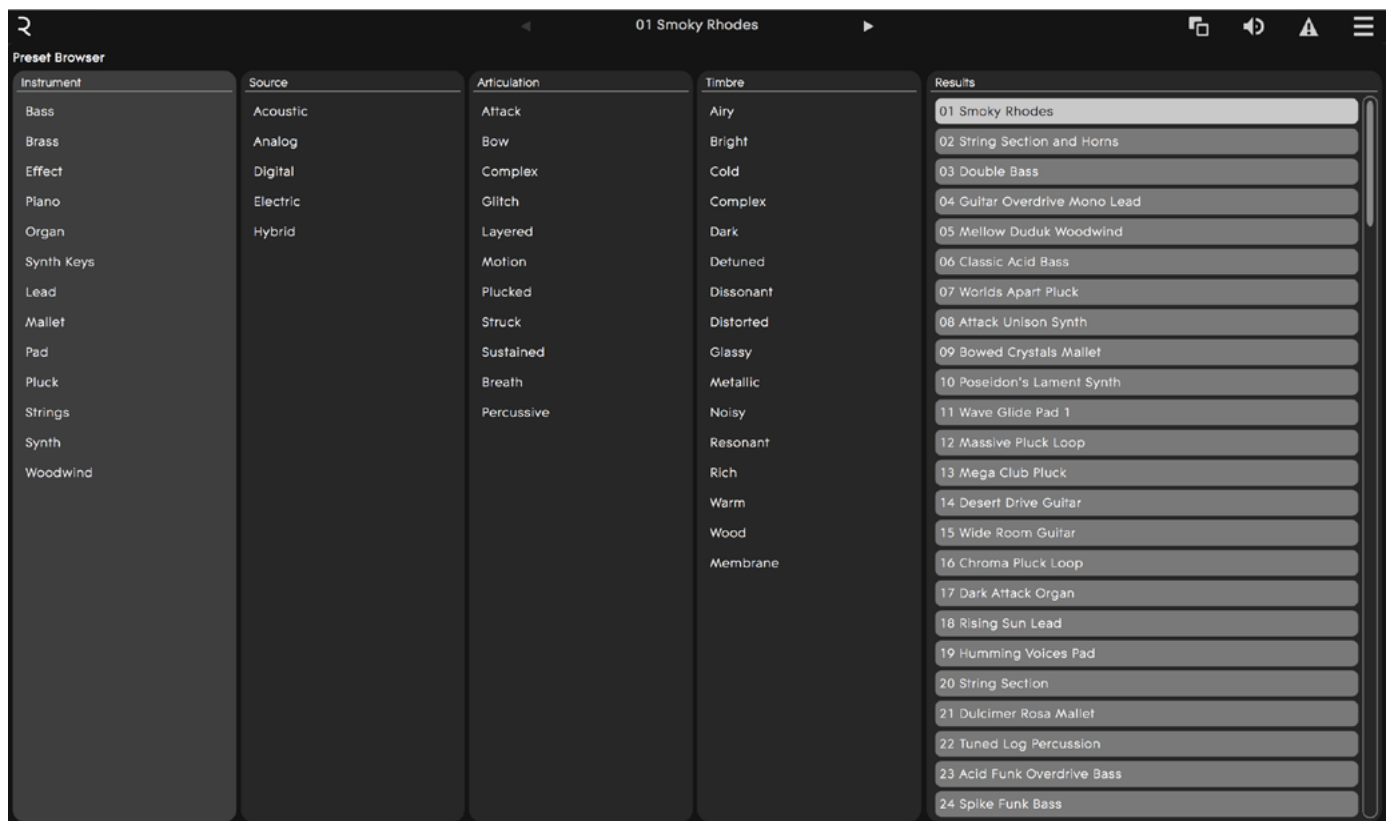
Figure 4

An orange border indicates that a modulation source is selected.



Figure 5

The orange, outer circle of a dial adjusts the modulation depth for a parameter.



Modulating Parameters

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

- 1 Select the modulation source by clicking on it. When activated, the box containing the modulation source will be highlighted in an orange border. (see Figure 4).
- 2 Click the outer circle of the dial to adjust the modulation depth for that parameter. An orange arc will appear on the dial showing the value of the parameter you are modulating (see Figure 5).

Modulation can be both positive and negative.

Double clicking in the outer circle will reset the modulation amount.

2.3 Preset Management

Changing presets

Open the Preset Browser by clicking on the preset name in the center of the Navigation Bar. Click the preset name to load the preset (see Figure 6).

Filtering presets

Filter your presets by selecting tags in each of the four categories of Instrument, Source, Articulation and Timbre.

Figure 6

Above, the Preset Browser in **Equator for RISE**.

Saving presets

Save your presets by clicking Save As in the **Equator** menu. The tags that you assign to each preset help you discover the preset within the Preset Browser.

When you save a preset, the values for the three **Touch Faders** and the XY Touchpad are also stored.

Note: When using the VST/AU plug-in version of Equator, it's important to note that if you change the Touch Faders from their default setting on the currently selected patch and then change to a new patch, the new patch will use the "changed" Touch Fader settings.



3. The Synth Panel

The Synth Panel shows **Equator**'s primary sound generation and sound shaping tools. These include three oscillators, two stereo Sample Playback Modules, a Frequency Modulation Module, a Noise Generator, five filters, and six effects (see Figure 7).

3.1 Oscillators

You can set the three wavetable oscillators (see Figure 8) to waveforms including classic analogue waves (pulse, sine, square, triangle and sawtooth) and multiple complex waveforms.

The following parameters are available for each oscillator:

- **Level:** $-\infty$ to 0dB
- **Pan:** Full Left to Full Right
- **Fine Pitch:** -99 to +99 Cents
- **Coarse Pitch:** -48 to +48 Semitones
- **Width:** Changes the pulse width of the pulse waveform (0% to 100%)

3.2 Frequency Modulation (FM) Module

Using the FM tool, you can set the frequency of one oscillator to modulate the frequency of another. This changes the timbre. The four available FM configurations are shown in (see Figure 9).

For each configuration you can control the modulation depth through Depth A and B dials (see Figure 10).

Figure 7

Above, the Synth Panel in **Equator for RISE**.

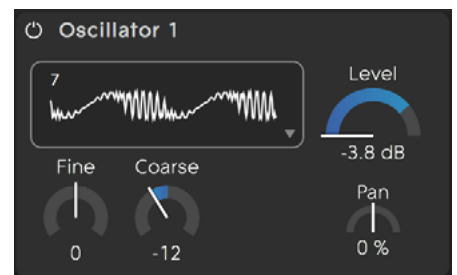


Figure 8

An oscillator in **Equator for RISE** showing a complex waveform.

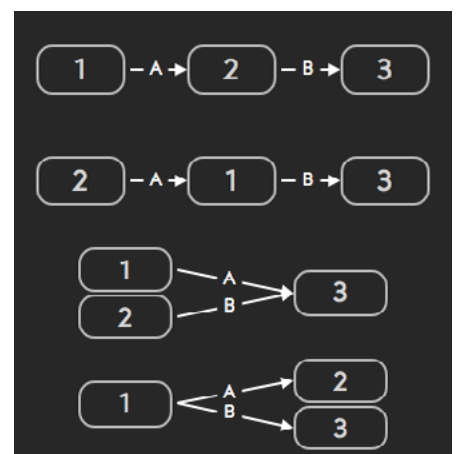


Figure 9

FM configurations in **Equator for RISE**.

3.3 Sample Playback Module

The two Sample Playback Modules contain many preinstalled samples ranging from acoustic instruments to synthesised and layered sounds (see Figure 11).

The following parameters are available for each Sample Playback Module:

- **Level:** $-\infty$ to 0dB
- **Pan:** Full Left to Full Right
- **Fine Pitch:** -99 to +99 cents
- **Coarse Pitch:** -48 to +48 semitones
- **Filter parameters** (see Section 2.5)

3.4 Noise Generator

The Noise Generator outputs either stereo white noise or stereo pink noise with adjustable stereo width and a dedicated filter section (see Figure 12). The following parameters are available:

- **Noise type:** White or Pink
- **Level:** $-\infty$ to 0dB
- **Stereo Width:** 0% (Mono) to 100% (Stereo)
- **Filter parameters** (see Section 2.5)

3.5 Filters

Equator contains five identical filters (see Figure 13). Two filters are assigned to the Sample Playback Modules, one is assigned to the Noise Module, and two are used for general routing. Set the routing of these two filters in the Mixer Panel (see Section 3.2). All filters can be modulated.

The following filter types are available for the five filters:

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

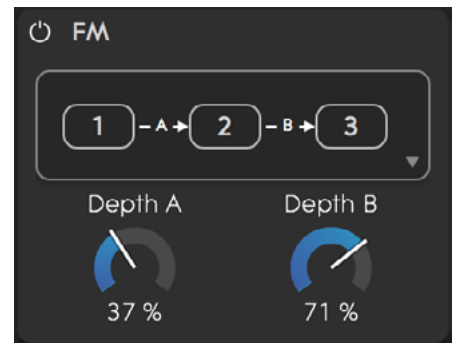


Figure 10

The Frequency Modulation (FM) Module in **Equator for RISE**.

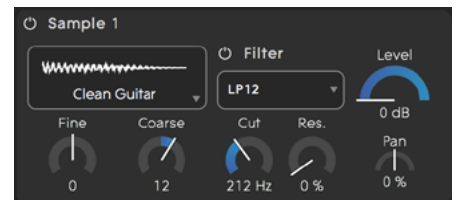


Figure 11

The Sample Playback Module in **Equator for RISE**.

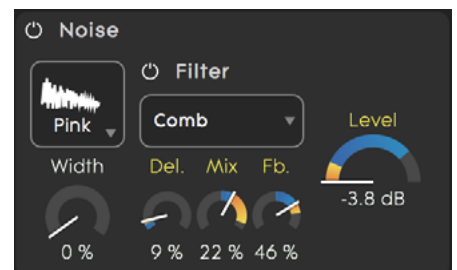


Figure 12

The Noise Generator panel in **Equator for RISE**.

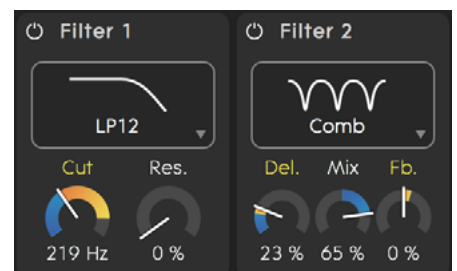


Figure 13

The Filters panel in **Equator for RISE**.

The low-pass, high-pass, band-pass and notch filters have the following parameters:

- **Cut-off (or Centre Frequency) of the chosen filter:**
20Hz to 15kHz
- **Resonance:** 0% to 100%

The Comb Filter has a different set of parameters:

- **Delay:** the length of the delay line
- **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)

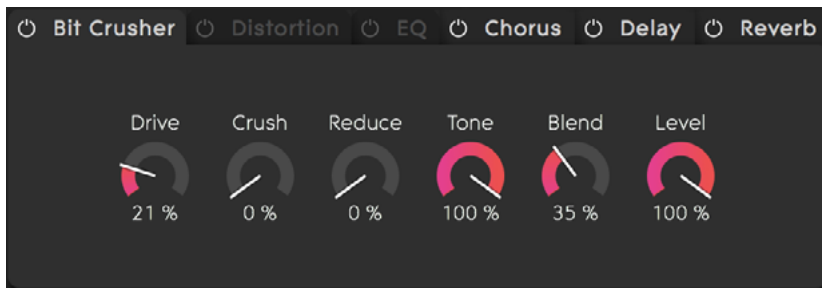


Figure 14

The Bit Crusher panel in **Equator** for RISE.

4. Effects

The effects tools in **Equator** contain the following stereo effects in series:

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

The effects section comes at the end of the signal chain. It is global for all voices. The configuration of all effects is explained in more detail in Section 3.

4.1 Bit Crusher

(see *Figure 14*)

The following parameters are available in 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 distortion.
- **Reduce** controls the amount of sample rate reduction.
- **Tone** controls the overall colour of the wet signal.
- **Blend** controls the relative amount of the dry and wet signal.
- **Level** controls the overall level of the effect.

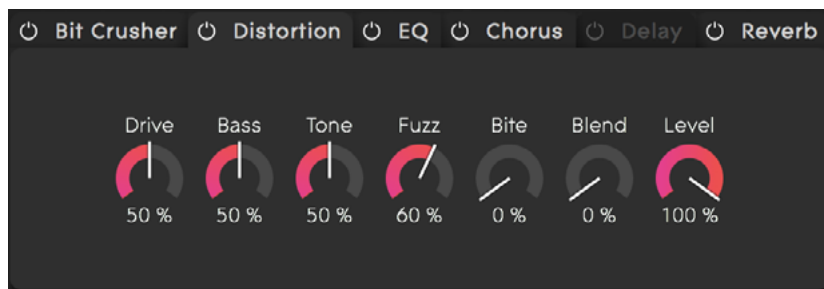


Figure 15

The Distortion panel in **Equator for RISE**.

4.2 Distortion

(see Figure 15)

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 color 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.

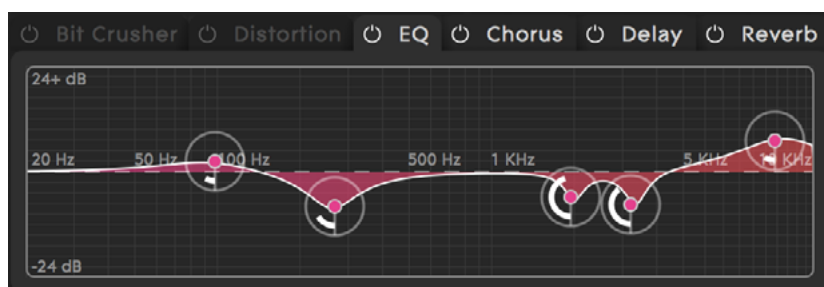


Figure 16

The EQ panel in **Equator for RISE**.

4.3 EQ

(see Figure 16)

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

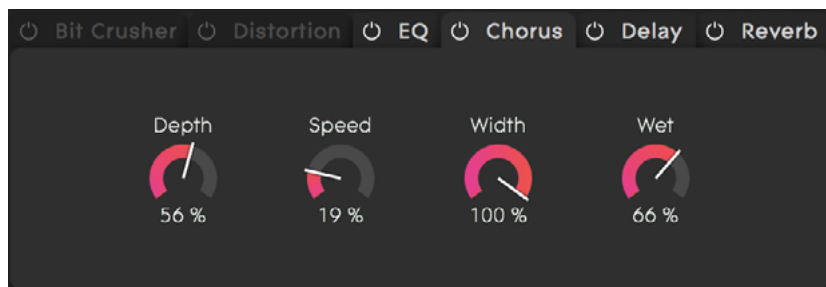


Figure 17

The Chorus panel in **Equator for RISE**.

4.4 Chorus

(see Figure 17)

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%).

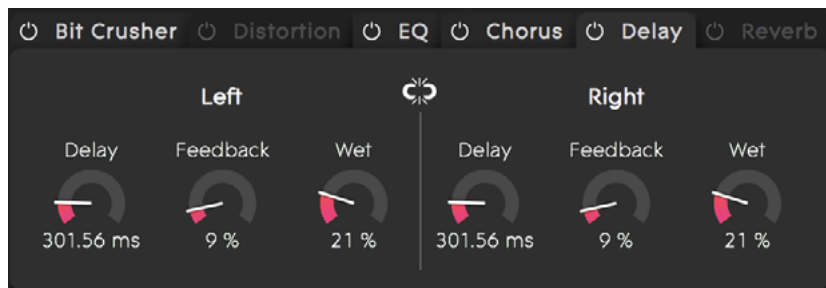


Figure 18

The Delay panel in **Equator for RISE**.

4.5 Delay

(see Figure 18)

Delay consists of two independent delay lines (left and right).

The following parameters are available for each channel:

- **Delay Time** controls the time between the initial signal and the repeated signal (0 to 2000ms).
- **Feedback** controls the gain of the repeated signal (0% to 100%).
- **Wet** controls the amount of processed signal added to the dry signal (0% to 100%).

You can link the parameters of the two channels by clicking on the middle icon. When linked, parameter changes made on one side will also apply to the other.

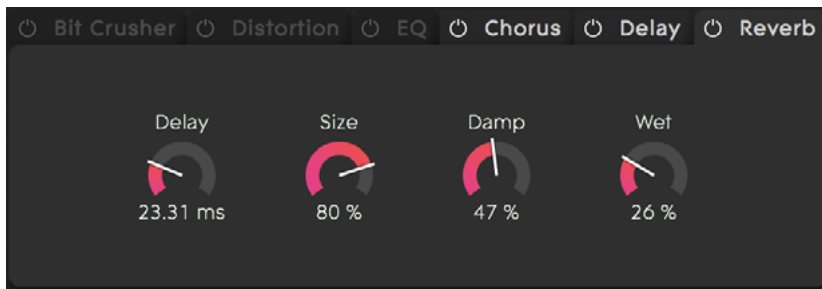


Figure 19

The Reverb panel in **Equator for RISE**.

4.6 Reverb

(see *Figure 19*)

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%).



Figure 20

Above, the Mixer Panel in **Equator for RISE**.

5. Mixer

5.1 Sends

The Mixer Panel (see Figure 20) routes the output of each audio source (Oscillators, Sample Playback Modules, Noise Generator, Ring Modulator*) independently to any of the following destinations:

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

*The Ring Modulator multiplies the outputs of Oscillator 1 and 2.

5.2 Filter Configuration

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 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 pots below each filter output determine the output level feeding into the effects, reverb and main output.

5.3 Output Gains

You can vary the overall gain going to the effects, reverb and main output with the final dials in the signal chain.

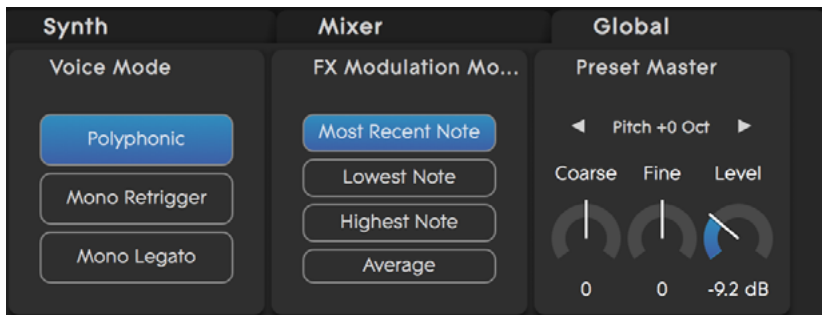


Figure 21

The Global Controls tab in Equator for RISE.

6. Global Controls

The Global tab (see Figure 21) lets you access controls that are global to the current preset. These include:

6.1 Voice Mode

- **Polyphonic:** Maximum of 16 voices with a new active note triggering each voice.
- **Mono Retrigger:** Monophonic (one voice) with a new active note retriggering all envelopes.
- **Mono Legato:** Monophonic (one voice) with all envelopes only retriggered when there are no active notes.

6.2 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 note activated modulates the effect.
- **Highest Note:** The highest note activated modulates the effect.
- **Average:** The average of all voices modulates the effect.

6.3 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 (-inf to +6dB).

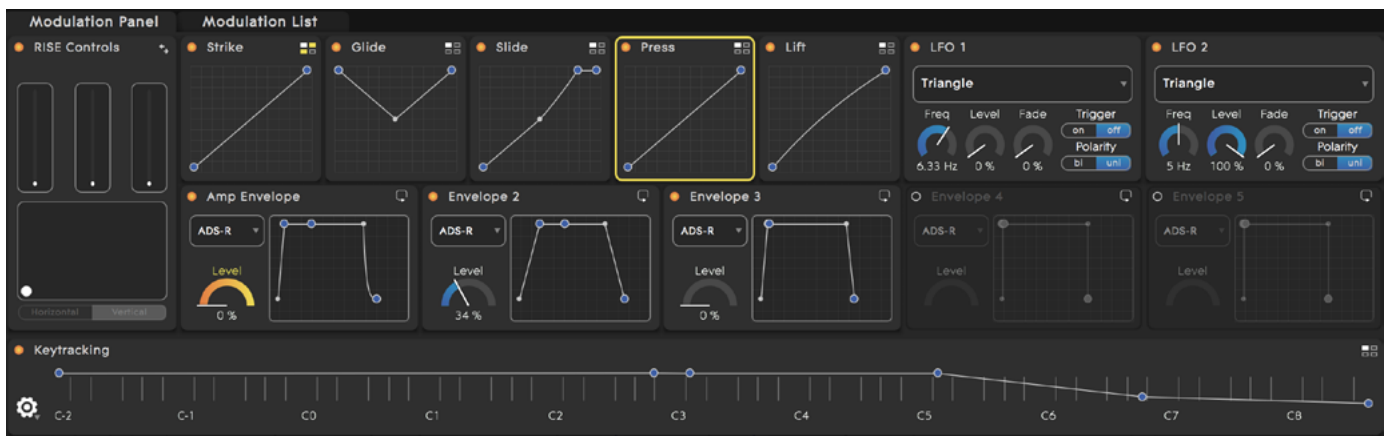


Figure 22

Above, the **Modulation Panel** in **Equator** for **RISE**.

7. Modulation

The Modulation section in the lower half of **Equator** (see Figure 22) makes it easy to shape sounds and apply modulation to different parameters. The sources of modulation include:

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

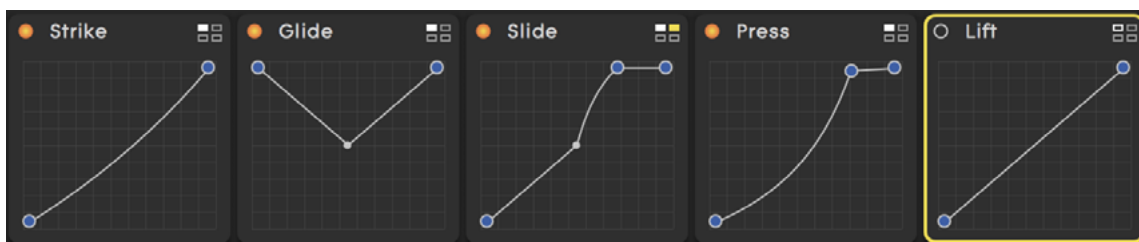


Figure 23

Above, the **Five Dimensions of Touch**.

7.1 The Five Dimensions of Touch

The **Seaboard RISE** is a multidimensional instrument that lets you modulate sound through five dimensions of touch (see Figure 23). 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.

Glide: Horizontal movements from side to side on a **keywave** and left right movement along the ribbons. **Glide** movements bend and adjust pitch as naturally as on a string instrument, allowing effects such as vibrato 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 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 **key-wave**. You can assign **Lift** to most sound parameters in **Equator**. For example, a rapid lift can create a lingering resonance or a hard pluck.

7.2 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 icon in the top right-hand corner of the box for **Strike**, **Press**, **Glide**, **Slide**, and **Lift**. Then click on the curve you wish to use (see Figure 24).

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 and more complex transfer curves. To remove a point, just double-click on the one that needs removing.

7.3 RISE Controls

(see Figure 25)

The **RISE Controls** feature lets you map the **Touch Faders** and XY 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**, XY Touchpad, and **MIDI Mode**.

The Switch View button (in the top right-hand corner of the **RISE Controls** section) displays the assignable macros (see Figure 26). Macros can be assigned to MIDI CC messages of any external MIDI controller connected to the **RISE**. Macros default to these settings:

- Macro 1: RISE Glide (Left) Fader
- Macro 2: RISE Slide (Middle) Fader
- Macro 3: RISE Press (Right) Fader

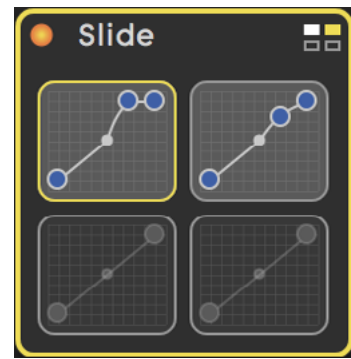


Figure 24
The **Slide** panel in **Equator for RISE**.

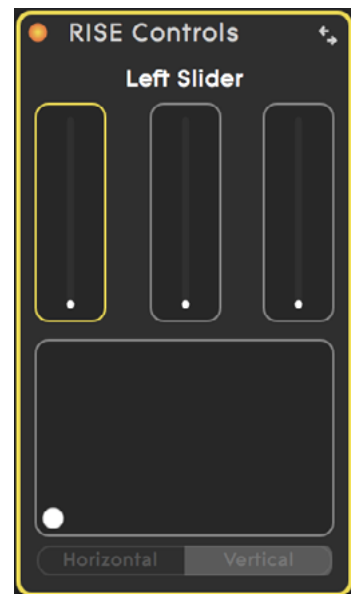


Figure 25
RISE Controls in **Equator for RISE**.



Figure 26
The **Macros** panel in **Equator for RISE**.

- Macro 4: RISE XY Touchpad X Axis
- Macro 5: RISE XY Touchpad Y Axis
- Macro 6: Assignable
- Macro 7: Assignable
- Macro 8: Assignable

The MIDI Learn button automatically assigns **Equator** parameters to external controls from **Seaboard RISE** and other compatible MIDI controllers.

7.4 Envelopes 1–5

Equator has five independent envelopes. You can view them as a curve or a dial (Curve View and Dial View). To switch between the two views click on the icon in the top right-hand section of the envelope panel (see Figure 27).

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.

- **Fast Attack:** fast repeat note
- **Slow Attack:** slow repeat note
- **Fast Decay:** fast repeat note
- **Slow Decay:** slow repeat note

- **ADS-PR (pluck-off):** Acts like an ADSR envelope, but when you release a note the envelope will peak with a set level and width before the release section. You can use ADS-PR to simulate such gestures and sounds as the fret sound produced on plucked instruments.

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

- **Level:** 0% to 100%
- **Attack Time:** 0-5 seconds
- **Decay Time:** 0-5 seconds
- **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.

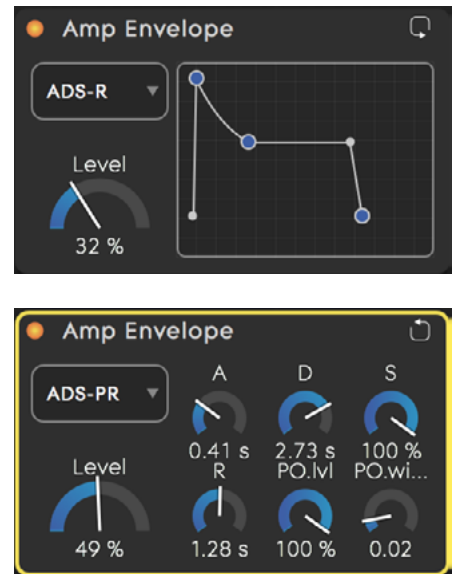


Figure 27

Top, Amp Envelope Curve View.
Bottom, Amp Envelope Dial View.

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 can not be achieved in the graphic envelopes.*
- *The graphic envelope can be used to set the exponential, linear, or logarithmic curves. This can't be done in the dial envelope mode.*

7.5 LFO 1–2

(see *Figure 28*)

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
- **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)
- **Trigger:**
On: the LFO for each voice is triggered 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

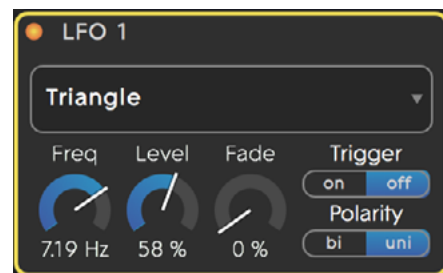


Figure 28

The LFO panel in in **Equator for RISE**.



7.6 Keytracking

Each **keywave** displays the current note being played. You can also use each **keywave** as a modulation source to perform keytracking on a parameter. Set the behaviour and level of the keytracking on the multi-point curve that overlays the **keywave** display. When you double-click anywhere on the curve you will add nodes, and you can then use those nodes to edit the slope of the curve (see Figure 29).

Figure 29

Above, Keytracking in Equator for RISE.



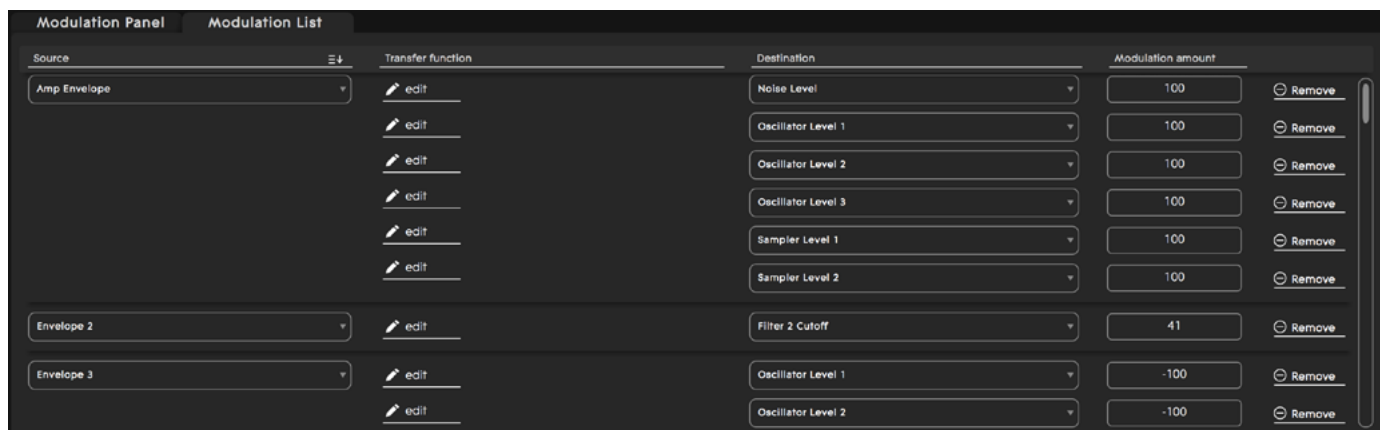
Equator allows up to four independent sources for keytracking, and each can have its own response (see Figure 30). The button at the top right-hand corner of the keytracking section lets you switch between four different assignments for keytracking.

Figure 30

Above, tracking multiple keys.

Four modes are available for each keytracking source. The modes change how keytracking behaves as a modulation source when each is applied with another source to a modulation destination (for example, keytracking and **Press** applied to the Filter 1 Cut-off). 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.



7.7 Modulation List View

The Modulation List (see Figure 31) shows all modulation paths of the preset you are using. 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 preset you are using. 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. Sort the list of modulation paths by clicking on the source selection header.
- **Transfer function** adjusts the transfer between a modulation source and a destination to have a non-linear response. Click on the Edit icon to access this function.
- **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. Sort the list of modulation paths by clicking on the destination section 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.

Figure 31

Above, the Modulation List in **Equator for RISE**.

8. Equator Menu

Clicking the far right icon in the Navigation Panel opens up the **Equator** Menu (see Figure 32), giving you access to the preset management, editing and Audio/MIDI settings of **Equator**.

Presets

- **New** reverts the synth to the Init (Initial) preset, letting you build a patch from scratch.
- **Browse** opens up the browser windows, where you can search all presets through the tags you have chosen to identify them.
- **Save** (Mac: cmd+s, PC : ctrl+s) saves the changes to the current preset and the values of the three **Touch Faders** in standalone mode only.
- **Save As** allows presets to be named and tagged.
- **Delete Current Preset** deletes the currently selected preset.

Edit

- **Undo** (Mac: cmd+z, PC ctrl+z) will undo the last change made to a preset in standalone mode only.
- **Redo** (Mac: cmd+y, PC ctrl+y) will redo the last change made to a preset in standalone mode only.

Settings

- **Audio/MIDI Settings** lets you access the audio output device, the sample rate, buffer size and the available MIDI inputs. Please ensure you have selected "**Seaboard RISE**" from the list of MIDI devices to use **Equator**. (This menu is not available when using **Equator** as a plug-in, because MIDI devices are managed by the host.)
- **Disable/Enable Animation** lets you disable or enable the animations that come with **Equator**. **Equator** includes many animations to show you how to modulate sound parameters.
- **About** shows you the version number of **Equator** that you are using. It also links you directly to ROLI Support.

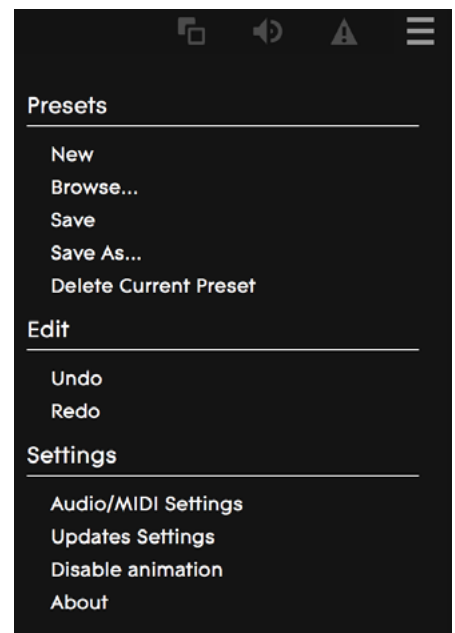


Figure 32

The **Equator** Menu.

9. ROLI Support

The **Seaboard RISE** Creator Manual and other resources on My ROLI should help answer questions about the initial set-up of **Equator** and your **Seaboard RISE**. Visit our Support page at www.roli.com/support for a wider range of resources that should help answer questions about **Equator** and the **Seaboard RISE**. The page includes frequently asked questions, tutorial videos, and guides for connecting the **RISE** with third-party plug-ins and DAWs.

9.2 Contact our support team

Contact the ROLI support team directly on www.roli.com/support for any questions. We will respond as soon as possible. Our support team is here to help you.