NEWFANGLED AUDIO

Contents

Chapter 1

Newfangled Audio Generate

cha·os

1. (Physics) behavior so unpredictable as to appear random, owing to great sensitivity to small changes in conditions. Generate is a synthesizer built on a chaotic oscillator.

2. the formless matter supposed to have existed before the creation of the universe.

Generate is a novel synthesizer based on a chaotic generator (essentially an oscillator). The chaos adds a complex, and at times unpredictable, character to the synthesizer, allowing it to make sounds I'm sure you've never heard before, but which you'll want to hear again. There are 5 flavors of chaotic generator, which are run through a wavefolder section, and followed by a low pass gate. Every parameter in these sections can be modulated by two envelope generators, two LFOs, a sample and hold module, and a step sequencer. This synth architecture is available in 1, 4, or 8 voices, which are also routable through eq, limiter, chorus, delay, and reverb effects.The manual will break out each of these sections and give you some tips about how to get most out of this unique synth.

Chapter 2

Navigation Bar

At the very top of the plug-in is a navigation bar which allows you to undo and redo changes, access the preset librarian, settings, and manage several other global features of the plug-in.

| UNDO | REDO | A / B | A > B | LIBRARY | ✳ | *Echoes* | ◀ ▶ | SAVE | MPE | RND | SETTINGS |
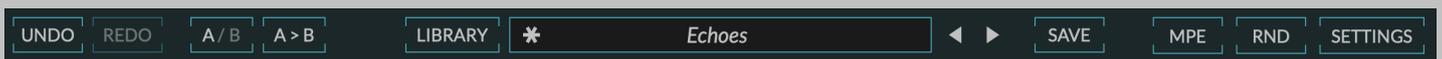
2.1   UNDO/REDO

On the far left is an UNDO and REDO button. After changing any plug-in parameter in the plug-in interface the UNDO button will activate. Pressing it at this point will undo this action. At this point the REDO button will become active, and pressing it will redo this action. Multiple levels of undo are available and you can move back through several changes to reach an earlier state.

2.2   A/B COMPARE

Next you'll find buttons labeled A/B and A>B. These two buttons allow you to easily toggle between two states of the plug-in and compare the sounds. By default the plug-in is in the A state and you'll notice that the "A" is highlighted. In this state pressing the A>B button will copy the A state to the B state. Toggling the A/B button will switch to the B state, highlighting the "B" and switching the A>B button to B>A (allowing you to copy the B state to the A state).

Any changes you make in the plug-in interface will update the highlighted state. In this way, you can copy the A state of the plug-in to the B state, make changes to the A state, and use the A/B button to compare these two states.

2.3   LIBRARY

The Library button launches the Preset Librarian which can be used to explore the plug-ins presets based on any combination of category, author, tags, or favorites.
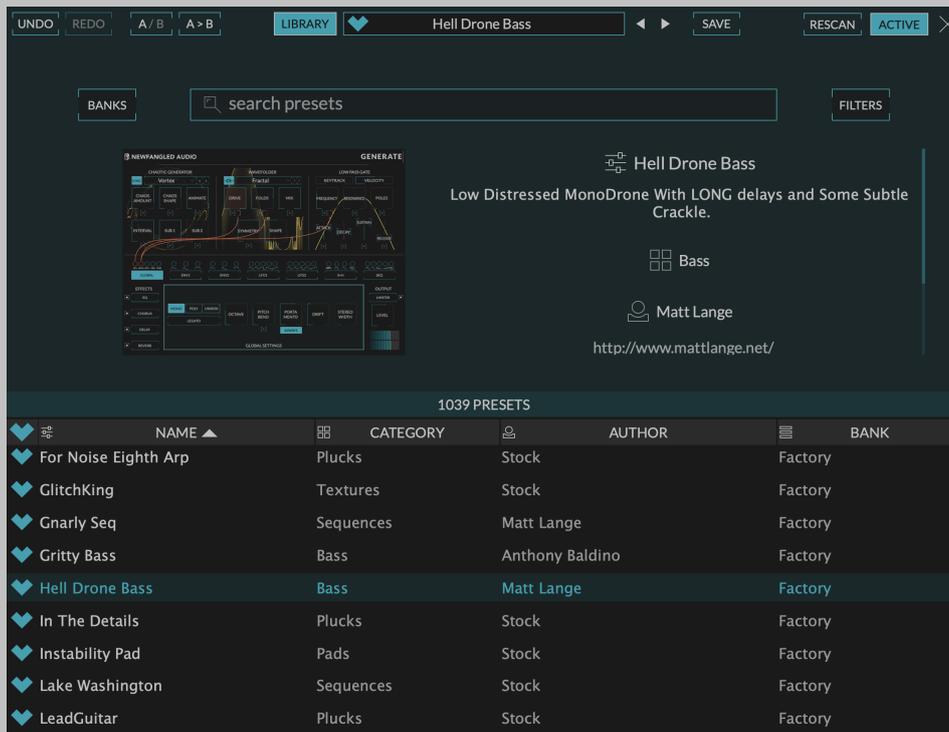
The Preset Librarian is split into four main sections.

2.3.1   SEARCH and FILTERS

The top of the Preset Librarian shows the BANKS, SEARCH BAR, and FILTERS.

Typing a phrase into the search bar will allow you to search all the presets by a given phrase. You can further restrict this search by selecting a BANK or FILTERS.

Pressing the BANKS button opens a screen which allows you to restrict your search to the presets in either the FACTORY or USER bank. Or additional preset banks if you have any installed.

Pressing the FILTERS button opens a screen which allows you to restrict your search to presets matching a specific CATEGORY, AUTHOR, or one of several TAGS. Additionally, you can restrict your search to FAVORITES if desired.

| BANKS | search presets | | FILTERS |

CATEGORY

Textures 188 | Pads 179 | Bass 168 | Leads 143 | Sequences 99 | Keys 69 | Rhythmic 57 | Plucks 50 | Fx 33 | Impacts 24 | Texture 16
Signal 7 | Soundscapes 3 | Brass 1 | Guitar 1 | Swells 1

AUTHOR

Spektralisk 183 | Stock 170 | Black Sheep 163 | SonalSystem 80 | Matthew Wang 42 | Matt Lange 30 | Anthony Baldino 20 | Hunnidyard 20
Robert Dudzic 20 | The Unfinished 20 | nkurence 15 | ROCASound 13 | taut (Jacob Bergson) 13 | Adam Schatz 11 | DHLA 10

2.3.2 PRESET LIST

The bottom of the Preset Librarian shows the list of presets which match the current criteria. It displays the FAVORITE status using a heart icon, the preset NAME, the preset CATEGORY, the preset AUTHOR, and the preset BANK. You can sort the list by any of these. The up and down arrows on your keyboard will allow you to toggle through the presets.

2.3.3 PRESET INFO

The center right of the Preset Librarian displays information about the currently loaded preset. This area shows the preset name, a short description if available, the category, the preset author - including a link to their work, the preset's tags, and its bank.

2.3.4 PLUGIN UI

The center left of the Preset Librarian displays a miniature version of the plug-in UI. This plug-in UI is not editable, but it is live and will show you the current settings of the plug-in, as well as any meters. We've found it incredibly useful to see this display as we've toggled through presets to get a sense of what each preset does.

2.4 PRESET SELECTOR

Hell Drone Bass	◄ ►	SAVE	MPE	RND	SETTIN

⊞ All (1039) ▶	◦ Spektralisk (183) ▶
♡ Favorite (79) ▶	◦ Black Sheep (163) ▶
▽ Filtered (1039) ▶	◦ SonalSystem (80) ▶
⊞ Bass (168) ▶	◦ Matthew Wang (42) ▶
⊞ Brass (1) ▶	◦ Matt Lange (30) ▶
⊞ Fx (33) ▶	◦ Anthony Baldino (20) ▶
⊞ Guitar (1) ▶	◦ The Unfinished (20) ▶
⊞ Impacts (24) ▶	◦ Hunnidyard (20) ▶
⊞ Keys (69) ▶	◦ Robert Dudzic (20) ▶
⊞ Leads (143) ▶	◦ taut (Jacob Bergson) (13) ▶
⊞ Pads (179) ▶	◦ ROCASound (13) ▶
⊞ Plucks (50) ▶	◦ Adam Schatz (11) ▶
⊞ Rhythmic (57) ▶	◦ Symbion Project (10) ▶
⊞ Sequences (99) ▶	◦ Matthew Simms (8) ▶
⊞ Signal (7) ▶	◦ Chris Carter (8) ▶
⊞ Soundscapes (3) ▶	◦ Databroth (7) ▶
⊞ Swells (1) ▶	◦ Chris Tabron (6) ▶
⊞ Texture (16) ▶	◦ Count (6) ▶
⊞ Textures (188) ▶	◦ Jacob Shea (4) ▶
	◦ Laurie Spiegel (3) ▶
	◦ So Wylie (2) ▶

In the center of the navigation bar is a dropdown preset selector. Clicking on this preset selector will show you the plug-ins presets in several views.

1. All will show you all the presets in alphabetical order.

2. Favorite will show you all your favorite presets in alphabetical order.

3. Filtered will show you all the presets which correspond to the current filter in alphabetical order. This filter is set up in the preset librarian.

4. Underneath these the presets are displayed according to their Category, as assigned when a preset is saved.

Once you load a preset from this dropdown list the Left and Right arrow buttons allow you to toggle through the selected subgroup in order. For more advanced preset selection click the LIBRARY button to enter the preset librarian.

Additionally, if you like the sound of the current preset you can click the heart icon to set the loaded preset as a favorite. If a loaded preset is modified the heart icon will become an asterisk and the preset name is italicized, indicating that the current sate no longer matches that of the saved preset.

2.5   SAVE

The SAVE button launches the preset save screen where you can save a preset and assign categories, tags, and descriptions, as well as set the default state of the plug-in.
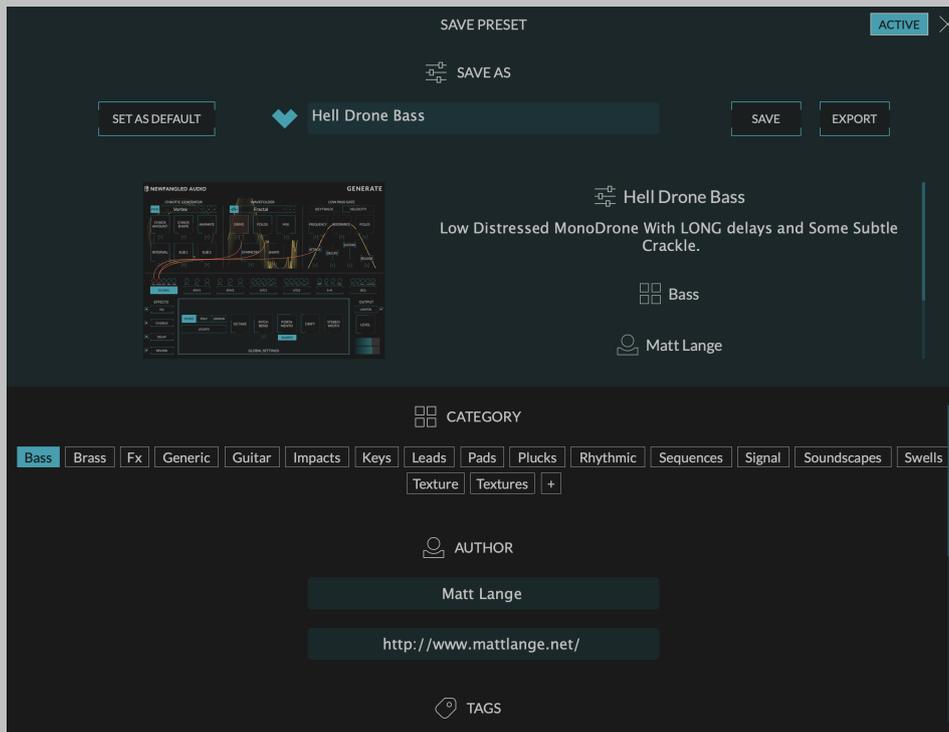
2.5.1   PRESET NAME

This field sets the preset name. There can only be one preset with a given name.

2.5.2   SET AS DEFAULT

This button will set the current state of the plug-in as a plug-ins default. This means when you load the plug-in the it will default to these settings.

2.5.3   HEART ICON

This will mark this preset as a favorite when you save it.

2.5.4   SAVE BUTTON

This button saves the preset

2.5.5 EXPORT BUTTON

In order to be browsed by the plug-in the presets are saved in a particular folder. However, if you want to save the preset elsewhere on your computer you can use the EXPORT button to export it as a file.

2.5.6 PLUGIN UI and DESCRIPTION

This section shows the current settings of the plug-in, and how it will appear in the preset librarian.

2.5.7 CATEGORY

Set the category for the preset you are saving. A preset can have only one category. If the preset doesn't fit into any of the existing categories you can use the (+) button to create a new one.

The existing categories are based on those that are found in the existing presets. If you create a new one it will appear in this list with an "X" on it. If you decide not to use the newly created CATEGORY you can remove it by clicking on the "X". However, once the preset is saved this category will be permanent and available to all newly saved presets, unless you delete all presets which use it.

2.5.8 AUTHOR

The AUTHOR section allows you to add your name and a url if you maintain a presence on the web. This will be automatically populated with the information from the last saved preset, so you will only likely need to enter it once.

2.5.9 TAGS

You can add any number of TAGS to a saved preset. These TAGS will allow your preset to be found in the preset librarian. It's best to add the tags that apply to the preset, and don't add the ones that don't. You can create a new tag using the (+) button.

The existing tags are based on those that are found in the existing presets. If you create a new one it will appear in this list with an "X" on it. If you decide not to use the newly created TAG you can remove it by clicking on the "X". However, once the preset is saved this tag will be permanent and available to all newly saved presets, unless you delete all presets which use it.

2.5.10 DESCRIPTION

If desired you can add a short description to the preset. It's best to use this field to add information about what a preset is for, or any hints for a user about how to use it.

2.6   MPE

Generate supports a relatively new MIDI mode called Midi Polyphonic Expression, or MPE. If you're using an MPE compatible controller and an MPE compatible host, turning on the MPE button will allow you to have polyphonic pitch bend, pressure, and timbre controls. Generate is already amazing with a normal midi setup, but MPE allows you to add another level of expressiveness.

2.7   RND

Generate also has a random preset generator. You can engage this by hitting the RND button.

2.8   SETTINGS

The SETTINGS button pops down a settings page which contains additional options. They are sorted into 4 tabs.

2.8.1   GENERAL

INSTALLED VERSION

This displays the version number that is currently installed. If you are running the latest version it will tell you. If there is an update an UPDATE button will appear. Clicking this button will bring you to the downloads page where you can get the latest version.

USER GUIDE

Pressing the SHOW button will launch this user guide.

2.8.2   GRAPHICS

SHOW METERS

The SHOW METERS button will show or hide the additional meters in the plug-in. Specifically, turning it off will hide the glow in the RADAR control, the envelope graph behind the LEVEL DETECTOR section, and the curve graphic behind the CURVE section.

BRIGHTNESS

The BRIGHTNESS control will control the brightness of the glow in the RADAR control, the envelope graph behind the LEVEL DETECTOR section, and the curve graphic behind the CURVE section.

OPENGL GRAPHICS RENDERING

The USE OPENGL button will enable OpenGL rendering of the UI. For this setting to take effect you must close and reopen the UI. If you that the plug-in UI renders better with OpenGL on or off on your computer you can save this as the default setting and new instantiations will always load using this setting.

COLOR SCHEME

The COLOR SCHEME dropdown will allow you to choose one of several different color schemes for your viewing pleasure.

SHOW CONTROLS

Alternatively the SHOW CONTROLS button will turn the UI controls on or off. When the UI controls are off you can't modify the settings, but you can look at the visualizations.

SHOW CABLES

The SHOW CABLES button will turn the modulations cables on all the time, rather than dynamically showing them while you're patching.

2.8.3 PRESETS

PRESETS FOLDER

Clicking the REVEAL button will bring you to the presets folder. This is only necessary if you want to share you presets with someone else, or access these files for another reason.

DEFAULT SETTINGS

Pressing the SAVE button will save all the current settings as the default for the plug-in. This is useful if you'd like a different starting point than the one we've provided.

VOICE LOCK

The VOICE LOCK button prevents the number of voices from changing as you scroll through presets, allowing all poly synths to open in ei-

ther 4 voice, or 8 voice mode, allowing you to control your CPU resources.

PITCH BEND LOCK

The PITCH BEND LOCK button allows you to lock the amount of PITCH BEND as you scroll through presets. Many people prefer a certain PITCH BEND amount on all presets, and many MPE controllers require this to have the same setting as the controller.

MIDI LOCK

The MIDI LOCK button prevents preset loading from altering your midi mappings.

2.8.4   MIDI

TIMBRE MIDI CC

The TIMBRE MIDI CC knob allows you to override the MIDI controller message which is routed to the TIMBRE modulation output. By default this is set to MIDI CC #74, which is often set as the Y-Axis on MPE controllers, but you can change this to be any MIDI CC and use it to route your controller into the modulation engine. When MPE is active, Midi Learn functionality for the selected TIMBRE MIDI CC is disabled.

2.8.5   TUNING

TUNING MASTER

Generate defaults to the standard 12-TET Equal Temperament tuning, however, it has support for alternate tuning systems via the MTS-ESP system from ODDSound. When an MTS-ESP Master plug-in is instantiated (like the free MTS-ESP MINI plug-in from ODDSound) Generate will connect to it and receive scale and tuning information from it. To check connection status and active scale look for the TUNING MASTER and SCALE fields on the SETTINGS page.

2.9   Resize

The bottom right corner of the UI will allow you to resize the plug-in. To change the default plug-in size drag the plug-in to the desired size and save over the default preset.

Chapter 3

Parameters and Metering

3.1 Controls

Generate has several control types, including vertical sliders, rotary knobs, drop-down menus, and toggle and radio buttons, all of which have tooltips which will give you more information about their function if you hover your mouse above them.

In general, all sliders and knobs can be double clicked to type in a specific value, option-clicked (alt-click on windows) to return them to their default value, or command-clicked or control-clicked to enter a vernier mode for fine tuning.

3.2 Patching Modulation
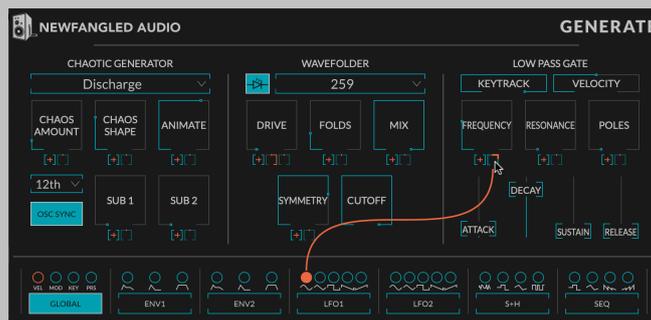
The large knobs in Generate allow you to patch up any of the Modulation Outputs to each control. There is no limit on the number of modulation connections that can be created. When you click on a Modulation Output a small square knob appears below each modulateable control. When the Modulation Output is highlighted you can patch it to a control by clicking on the small square knob, or, turn the small square

knob to dial in just a small amount of modulation. When the small square knob is set to top dead center, there is no modulation being applied. Turn to the right to add the modulation signal, or turn to the left to subtract it.

Alternatively, you can patch multiple Modulation Outputs to a knob by clicking the (+) button under a knob. Doing this will turn each Modulation Output into a knob which will control the amount of that modulation output routed to that control.

Clicking on an existing modulation knob will toggle it between its current value and off. Right clicking it will totally clear the modulation route. Moving your mouse off of a modulation route that's set to 0 will remove it from the UI.

If too many Modulation Outputs are routed to one knob the UI will display ellipses (...) to show that all the connections cannot be displayed, but you can still modify these connections by clicking the (+) button.
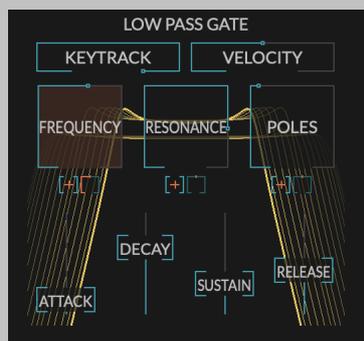
A parameter knob that is connected to a modulator will give visual feedback on the amount of modulation being applied to the signal as the orange glow becomes more saturated, the parameter is more strongly affected.

3.3   MIDI Learn
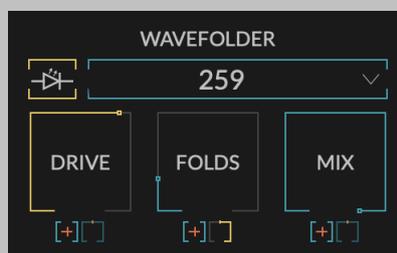
Generate's toggle buttons and knobs can be mapped to any MIDI controller number.

Hold down right click on a control to initiate MIDI Learn. The control will change colors to indicate that it's in learn mode, and will stay in learn mode for 1 second after the right click is released. While in learn mode, any incoming MIDI control messages will link the control to the message's corresponding controller number.

Once a control has been learned you can clear it by right clicking the control, this will return the control to the default color.
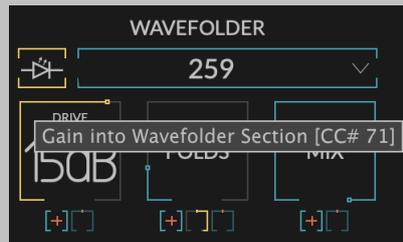

Hovering over the control to reveal the tooltip will also show the current midi controller mapping as well as an asterisk if the mapping has been disabled due to conflict with Generate's TIMBRE MIDI CC setting. In order to replace a midi mapping, simply repeat the actions outlined above—the new MIDI controller number will overwrite the existing one. In order to completely clear a midi mapping, simply right click the desired control and release the click without moving any MIDI controllers.

3.4 Main Voice

The top half of Generate is broken into three main synth voice sections, the CHAOTIC GENERATOR, the WAVEFOLDER, and the LOW PASS GATE (LPG). The bottom half contains the Modulation Outputs, the Modulation Page buttons, the Effect Page buttons, the display area for the selected page, and the Output Level section.

3.4.1 Chaotic Generator

This section is called a generator rather than an oscillator because it does more than just oscillate between two points. The Chaotic Generator page is actually comprised of 4 "oscillators": a sine wave oscillator at the keyed note, a chaotic "oscillator" called a generator which interacts with the sine wave oscillator, a sub oscillator one octave below the keyed note, and a sub oscillator 2 octaves below the keyed note.
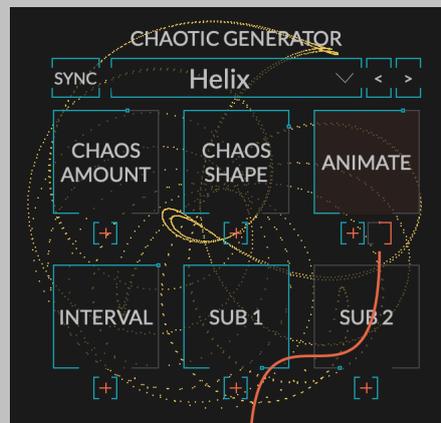
Chaotic Generator Type

The chaotic generator in the stack isn't an oscillator at all, but a chaotic nonlinear system which interacts with the keyed oscillator. Different nonlinear systems will give different results and we've spent a lot of time designing some that sound very interesting. They are:

1. **Pendulum** is based on the modified equations of a double pendulum system. If you're not familiar with double pendulums an internet search will keep you occupied for hours. Very cool for organ and bass sounds.

2. **Vortex** has a nonlinearity which causes the signal path to get sucked into the center. This can cause hard transitions and high harmonics. Very biting lead sounds.

3. **Pulsar** is similar to **Pendulum**, but less stable. These unstable jumps can can add a unique, almost vintage character to your sound. Interesting for pads.

4. **Discharge** can sound almost like static, which can give either a soft or grainy quality depending on how it's set. Can be nice for vintage sounds.

5. **Turbine** can be very unpredictable, but I keep having fun with it. It's called Turbine because of the propeller shape it can often make when SYNC is on.

6. **Helix** is based on spirals, increasing the CHAOS SHAPE will add increasing number of spirals, creating a very bright sound. With SYNC on this can be very chaotic, and unlike many of the other modes the INTERVAL parameter will have a large effect even with CHAOS SHAPE up.

7. **Crescent** is a bright generator with a clean clear tone, unlike many of the other modes the INTERVAL parameter will have a large effect even with CHAOS SHAPE up.

8. **Magma** is a smooth, warm generator with a clear vintage tone, and is useful for making very playable sounds. Unlike many of the other modes the INTERVAL parameter will have a large effect even with CHAOS SHAPE up.

You can select the type by either using the combo box, or iterating through them using the left and right arrows.

Chaos Amount

The CHAOS AMOUNT knob blends between the keyed sine wave oscillator and the chaotic generator. The chaotic generator often has higher harmonics than the keyed oscillator, so it usually sounds brighter - but not always.

Chaos Shape

The CHAOS SHAPE changes the shape of the chaotic generator. This is where the magic happens, turning it up usually means less predictability but not always. Small changes can sometimes make a big difference, but hey, it's a chaos generator.

Animate

The ANIMATE knob detunes the chaotic generator from the keyed oscillator to add motion to the sound. It's a very unique effect.

Interval

The INTERVAL knob sets the relative interval between the keyed oscillator and the chaotic generator. For some Generators the effect of this is really only apparent when the Chaos Shape is at or near 0, but for others it has an important effect throughout the range.

Sync

The OSC SYNC button syncs the chaotic generator to the keyed oscillator. This can drastically change the sound and often has the effect of dropping the apparent sound an octave and adding gritty harmonics.

### Sub 1

The SUB 1 knob controls the level of the 1-octave-down sub oscillator.

Sub 2

The SUB 2 knob controls the level of the 2-octave-down sub oscillator.

3.4.2 Wavefolder

A wavefolder is a type of waveshaping that folds the wave back on it-
self several times. This creates a rich set of harmonics for the input signal
and is a type of additive synthesis originated by Buchla and common in
modular synthesis. The knobs control the shape of the wavefolding, and
therefore, the harmonics generated. Modulating the wavefolder cre-
ates a set of moving harmonics that sound quite interesting and pleas-
ant.
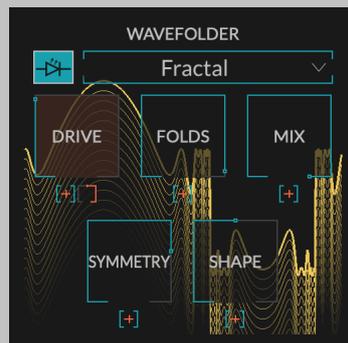
VCA Type

This button toggles the kind of VCA will be used. When active, an ana-
log modeled Vactrol VCA will be used. When inactive, a digital VCA is
used.

Wavefolder Type

This dropdown menu allows you to select one of five Wavefolder Types:

1. **259** is a model of the original Buchla 259 wavefolder

2. **Animated** is based on a warped and animated sine wave

3. **Fractal** is based on the fractal geometry of a specific mathemati-
   cal function, it can create a lot of harmonics very quickly

4. **Saturate** is based on the wave clipper used in our Saturate plugin

5. **Bent 259** is an altered model of the Buchla 259 wavefolder using
   our model bending technique

Drive

The DRIVE knob sets the amount of drive going into the wavefolder.

Folds

The FOLDS knob controls the number of folds the wavefolder is adding
to the signal. More folds produces more harmonics.

Mix

The MIX knob controls the mix between the dry input and the wavefolder output.

Symmetry (259, Fractal, Saturate and Bent 259)

The SYMMETRY knob controls the DC offset into the wavefolder, by making the fold asymmetric it can add even harmonics to the output, instead of just odd harmonics. This can sound really great when modulated.

Animate (Animated Only)

The ANIMATE knob controls the animation rate of the Animated wavefolder. This animation is actually a different effect than modulating one of the knobs, but it can still produce even harmonics.

**Shape (Animated, Fractal, Saturate and Bent 259)**

The SHAPE knob controls the shape of the wavefolder. For the Animated wavefolder this controls the warping of the sinewave. It's subtle on the display, but turning it up will make it sound brighter. For the Fractal wavefolder this controls the jaggedness of the fractal pattern. Turning it up will produce more harmonics. For the Saturate wavefolder this controls the hardness of the saturating clipper. Turning it up will produce more harmonics. For the Bent 259 wavefolder, this controls the warping of the 259 wavefolder output. Turning it up will make it sound smoother and brighter.

Cutoff (259 Only)

The CUTOFF control modulates the cutoff frequency of a gentle (6dB/octave) low pass filter. The filter's cutoff defaults at 1.3kHz, the cutoff point used in the 259's output filter.

3.4.3   Low Pass Gate

A Low Pass Gate (LPG) is a combination of a VCA and Low Pass Filter which can create a very natural, pleasing sound. The one used in Generate is a modified version of one based on a design by Don Buchla.
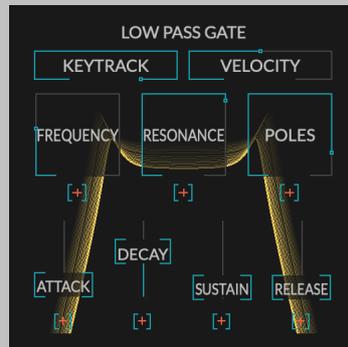
Key Track

KEY TRACK allows the cutoff frequency of the LPG to be set by the note you're playing. If KEYTRACK is 0% the cutoff frequency of the LPG is not effected by the note value and is set by the FREQUENCY knob only. If it's 100% it is modified by the FREQUENCY knob, but also scales with frequency so all notes will have the same timbre.

Frequency

The FREQUENCY knob loosely controls the maximum cutoff of the filter. It's not exact because the underlying modeled circuit doesn't really map to frequency well.

Resonance

The RESONANCE knob controls resonance of the LPG filter when the POLES control is turned greater than 1. This control is not active at all when POLES is at 1 and becomes more apparent the higher POLES is turned.

Poles

The POLES knob morphs between a VCA style Low Pass Gate (one pole low pass filter) and a resonant (three pole) Low Pass Filter. Modulate it.

Attack

The ATTACK slider controls the attack time of the ADSR which drives the LPG.

Decay

The DECAY slider controls the decay time of the ADSR which drives the LPG.

Sustain

The SUSTAIN slider controls the sustain level of the ADSR which drives the LPG.

Release

The RELEASE slider controls the release time of the ADSR which drives the LPG.

3.5   Modulators and Global Voice Settings

Generate contains seven pages of modulation sources that can be applied to the main voice.

3.5.1   Global Voice Settings

The Global Settings page allows you you to set the main parameters for voice and pitch (TK). The modulation outputs situated above the GLOBAL parameter button allows you to map MIDI and MPE modulation sources to different parameters.

The Global Page contains modulations sources that come from the keyboard or midi sequencer and parameters which are global to Generate.
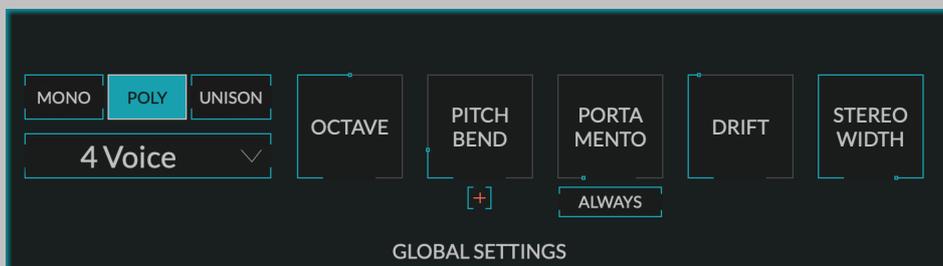
Mono/Poly/Unison

The MONO/POLY/UNISON set of radio buttons allows you to select between a monophonic synth architecture, a polyphonic synth architecture, or a unison synth architecture - which is a poly synth with all the voices representing slightly detuned versions of the same note.

Voices Selector

The VOICES dropdown selects how many voices are used in POLY or UNISON modes. In MONO mode it does nothing.

Legato

The LEGATO button toggles a legato mode. When LEGATO is off, each note press will go through the entire ADSR cycle. However, when LEGATO is on, only staccato notes will trigger a new attack, legato notes will not.

Octave

The OCTAVE knob selects the base octave for the synth. This can be anywhere from -2 to +2 octaves.

Pitch Bend

The PITCH BEND knob controls the Pitch Bend amount. This is useful in general. When MPE is active this must be set to the same amount as the MPE controller to work correctly.

To prevent this setting being overwritten when a preset loads, enable Pitch Bend Lock in the Settings menu.

Pitch Modulation

The PITCH BEND knob is also a modulation destination. This allows you to route any modulation output to the Master Pitch, allowing you to do vibrato, pitch stabs, and more. The total amount of pitch modulation available is set by the PITCH BEND knob.

Hint: To add vibrato, route an LFO Triangle wave to the master pitch. Then route the MOD WHEEL output to the LFO OUTPUT LEVEL modulation control.

Portamento

The PORTAMENTO knob controls the Portamento time in mS. For MONO and UNISON operation, this control uses the previously played note as the starting point for its transition to the newly pressed note. In POLY mode, portamento uses the active note closest to the newly played one as the starting point.

Always

When ALWAYS is active, portamento will always be applied to all new notes. When inactive, portamento will only occur for notes that have been activated while another note is already playing (staccato notes). Great when combined with LEGATO!

Drift (MONO and POLY mode)

The DRIFT knob controls the amount of pitch drift in each voice. This is an important "feature" of analog poly synths and gives a great effect when used here.

Detune (UNISON only)

The DETUNE knob controls the amount of detune applied to each voice in UNISON mode. Big. Thick. Sounds.

Stereo Width

The STEREO WIDTH knob controls the stereo image at the output of the LOW PASS GATE. In MONO mode this uses the X and Y axis of the GEN-ERATOR output to create very wide lead sounds. In POLY and UNISON mode it pans the various voices in the stereo field to create stereo width.

Global Modulation Outputs

These modulation outputs allow common MIDI and MPE controller signals to be mapped to parameters.

1. **VEL** maps the the current MIDI note's velocity to any Modulation Input.

2. **MOD** maps the MIDI Mod Wheel Output to any Modulation Input.

3. **KEY** maps the relative pitch from the currently pressed KEY to any Modulation Input. This can be used for adding key following to any parameter.

4. **PRS** maps the midi Pressure output to any Modulation Input. When MPE is active this is per note.

5. **TMB** is the MPE Timbre Modulation Output, also known as MIDI CC74. It's often mapped to the height along the key on several common MPE controllers. This is only available when MPE is enabled.

3.5.2   Envelope 1&2

There are two envelope generators which are triggered by a note on event. These each create three modulation signals when a note is pressed. These are a full ADSR envelope, an AD envelope, and an ASR envelope. All three of these envelopes can be used as modulators.
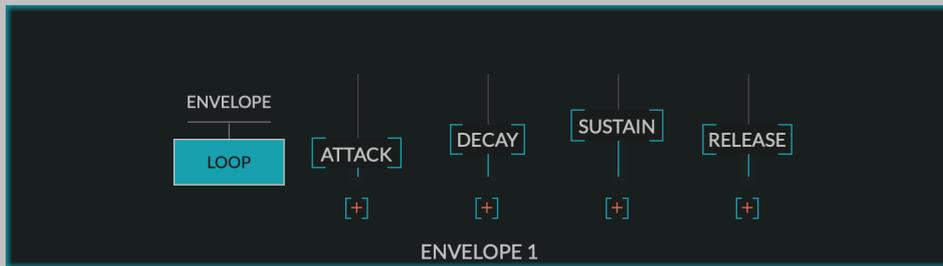
Loop

The LOOP button detaches the Mod Envelope from the note on control, and instead loops it, turning it into an LFO. Instead of setting the LFO Rate and Shape, you control the speed and shape of the looping Envelope using the ATTACK, DECAY, SUSTAIN, and RELEASE times. This can create an interesting, natural, almost throbbing modulation from each of the ADSR, AD, and ASR outputs.

Attack

The ATTACK slider is the attack time of the envelope in mS. The ATTACK time of each Envelope Generator can be modulated by any combination of Modulation Outputs.

Decay

The DECAY slider is the decay time of the envelope in mS. The DECAY time of each Envelope Generator can be modulated by any combination of Modulation Outputs.

Sustain

The SUSTAIN slider is the sustain level of the envelope. The SUSTAIN amount of each Envelope Generator can be modulated by any combination of Modulation Outputs.

Release

The RELEASE is the release time of the envelope in mS. The RELEASE time of each Envelope Generator can be modulated by any combination of Modulation Outputs.

Envelope Outputs

1. **ADSR** maps the envelope's ADSR output to a Modulation Destination.

2. **ADR** maps the envelope's ADR output to a Modulation Destination. This envelope will always return to zero when it has completed its decay phase, so the Sustain control will not affect its operation. If a note is released before the envelope has finished decaying, the signal will continue to decay using the Release time.

3. **ASR** maps the envelope's ASR output to a Modulation Destination. This envelope rises according to the Attack time and remains at the Sustain level until the note is release. The decay control does not affect its operation.

3.5.3 LFO 1&2

There are two LFOs, each of which have a sine, triangle, pulse, sawtooth, and ramp output.

BEATS

The BEATS knob to set the LFO Rate in Beats. This knob is only available when the the TEMPO button is on. This control can also be modulated.

FREQUENCY

The FREQUENCY knob to set the LFO Rate in Hz. This knob is only available when the TEMPO button is off. This control can also be modulated.

TEMPO

The TEMPO button toggles whether the BEATS or FREQUENCY knob is active.

LFO SYNC

The LFO SYNC dropdown determines what your LFO does when a new note is played.

1. **Free Run:** The LFO will never retrigger when it receives a note on event.

2. **Retrigger:** The LFO will retrigger when it receives a note on event. Retrigger is applied on a per-voice basis.

3. **Play Sync:** If your DAW's transport isn't in "Play", the LFO will retrigger when it receives a note on event. Setting your DAW's transport to "Play" will cause the LFO to retrigger and ignore note events while in "Play". Retrigger is applied across all voices.

PULSE WIDTH

The PULSE WIDTH knob will set the pulse width of the triangle and pulse waves.

PHASE

The PHASE knob will set the LFO's phase offset.

OUT LEVEL

The OUT LEVEL knob will control the master output level of the LFO. This might be considered a bit redundant, because there are already level knobs for every modulation routing, however, because you can modulate this output level control, this allows you to create more complex modulation signals by using, for instance, an Envelope to modulate the amount of LFO being applied to another control. This can be very powerful when used with MPE to allow note dependent control of LFO levels in real time.

BIPOLAR

By default the LFO outputs are unipolar, meaning they only add modulation to the position of the knob. However, some desired modulation routings, like vibrato, require the LFO to modulate around the parameters setting by both adding and subtracting from it. If you wish to do this, turn on the BIPOLAR button.

In other words, when BIPOLAR is off the LFO outputs draw their shapes between 0 and 1. When it's on they draw their shapes between -1 and 1.

LFO Outputs

1. **Sine** outputs a sine wave

2. **Triangle** outputs a triangle wave. Control the triangle's width using the Pulse Width knob.

3. **Pulse** outputs a pulse wave, also known as a square wave. Control pulse/square's width using the Pulse Width knob.

4. **Saw** outputs a down-going sawtooth wave.

5. **Ramp** outputs an upward-going ramp wave.

3.5.4 Sample + Hold

The Sample and Hold (S+H) module provides a source of randomness to the modulation section.
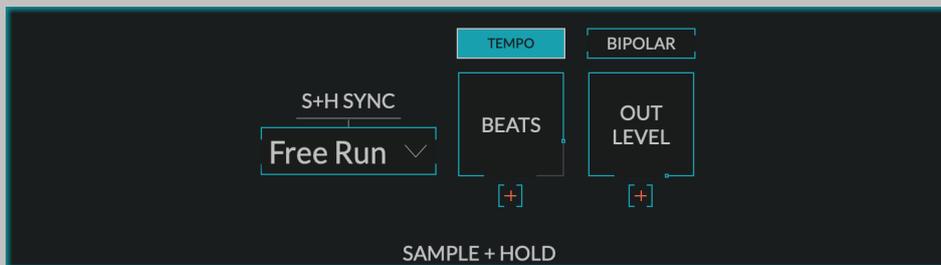
Beats

The BEATS knob sets the sample and hold sampling rate in beats. It also sets the likelihood of the glitch output flipping state. This knob is only visible when TEMPO is set to on. This control can also be modulated.

Frequency

The FREQUENCY knob sets the sample and hold sample rate in Hz. It also sets the likelihood of the glitch output flipping state. This knob is only visible when the TEMPO is set to on. This control can also be modulated.

Tempo

The TEMPO button controls whether the sample frequency is set in Beats or Hz.

S+H SYNC

Use the S+H SYNC dropdown to determine what the Sample and Hold module does when a new note is played.

1. **Free Run:** The Sample and Hold will never retrigger when it receives a note on event.

2. **Retrigger:** The Sample and Hold will retrigger, capturing a new noise sample and continuing operation at the chosen rate when it receives a note on event. Retrigger is applied on a per-voice basis. Does not affect the noise output.

3. **Play Sync:** If your DAW's transport isn't in "Play", the S+H will retrigger when it receives a note on event. Setting your DAW's transport to "Play" will cause the Sample and Hold to retrigger and ignore note events while in "Play". Retrigger is applied across all voices. Does not affect the noise output.

4. **Oneshot:** The Sample and Hold will retrigger when it receives a new note event, capturing a new noise sample value. It will output this value until another key is pressed. Glitch output is not affected by this setting.

OUT LEVEL

The OUT LEVEL knob will control the master output level of the S+H. This might be considered a bit redundant, because there are already level knobs for every modulation routing, however, because you can modulate this output level control, this allows you to create more complex modulation signals by using, for instance, an Envelope to modulate the amount of S+H being applied to another control. This can be very powerful when used with MPE to allow note dependent control of S+H levels in real time.

BIPOLAR

By default the S+H outputs are unipolar, meaning they only add modulation to the position of the knob. However, some desired modulation routings, like vibrato, require the S+H to modulate around the parameters setting by both adding and subtracting from it. If you wish to do this, turn on the BIPOLAR button.

In other words, when BIPOLAR is off the S+H outputs draw their shapes between 0 and 1. When it's on they draw their shapes between -1 and 1.


Sample and Hold Outputs

1. **Noise** outputs white noise. The Sample and Hold module controls have no effect on this output.

2. **Sample and Hold** outputs the sample and hold signal.This signal periodically samples the noise signal based on the rate and holds it until the next period.

3. **Sample and Glide** outputs the sample and glide signal. This periodically samples the noise output, but instead of holding it glides to the next value.

4. **Glitch** outputs either 0 or 1, randomly flipping between the two. How often this flip happens is random, but it's based on the rate as set by the Frequency or Beats control.

3.5.5   Step Sequencer

The SEQ module provides an 8-step step sequencer allowing you to sequence any of the Modulation Destinations. The active step is highlighted in the module.
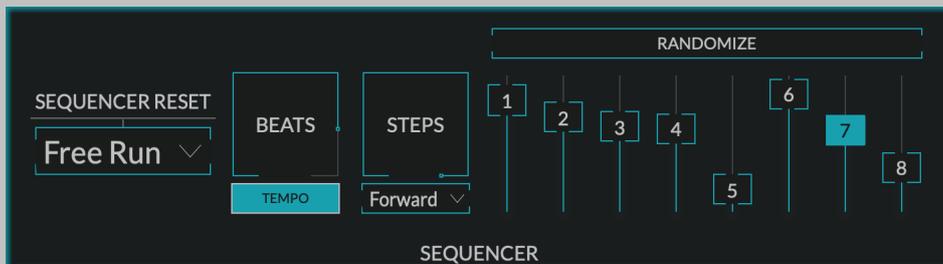
BEATS

The BEATS knob allows you to set the sequence step interval in beats. This knob is only available when the TEMPO button is on.

FREQUENCY

The FREQUENCY knob allows you to set the sequence step interval in Hz. This knob is only available when the TEMPO button is off.

TEMPO

The TEMPO button determines whether the sequence step interval is set in beats or Hz.

STEPS

The STEPS knob determines the number of steps available to the sequencer. Any steps which are made unavailable are dimmed.

SEQUENCER RESET

The SEQUENCER RESET dropdown to determine what the Sequencer module does when a new note is played.

1. **Free Run:** The sequencer will not reset when it receives a note on event.

2. **Retrigger:** The sequencer will reset when it receives a note on event. Reset is applied on a per-voice basis.

3. **Play Sync:** If your DAW's transport isn't in "Play", the sequencer will reset when it receives a note on event. Setting your DAW's transport to "Play" will cause the sequencer to reset and ignore note events while in "Play". Reset is applied across all voices.

Sequencer Direction

The SEQUENCER DIRECTION dropdown, located beneath the STEPS parameter knob, allows you to select the Sequencer direction. You can select one of four:

1. **Forward** runs through the steps left to right, then starts at 1 again.

2. **Backward** runs through the steps right to left, then starts at the highest again.

3. **Pendulum** runs the step sequencer forward, the backward, then forward again, then backward again...

4. **Random** randomly selects a new step each interval.

Sequencer Outputs

1. **Step Out** outputs the step value for the current step.

2. **Glide Out** glides from one step value to the next.

3. **Ramp Down Out** ramps from the step value to zero during each step interval.

4. **Ramp Up Out** ramps from zero to the step value during each step interval.

5. **Pulse Width** goes between zero and one, generating a series of pulses. The length of the pulse is determined by the current step.

3.6 Effects and Output

Generate also contains a series of output effects and an output section. The small knob next to each effects page controls the amount of effect being applied. Press the button and dive into the page to fine tune the effect. Each of the modules in the section also have Mini Knobs, which are placed on next to the button that reveals that module's parameter page. These Mini Knobs allow you to change how much an effect is applied to the output signal. Clicking a Mini Knob will change the bypass state of its associated module. When the module is active, a small dot will appear in the center of the associated Mini Knob. When bypassed, this dot will disappear, and the knob will dim.
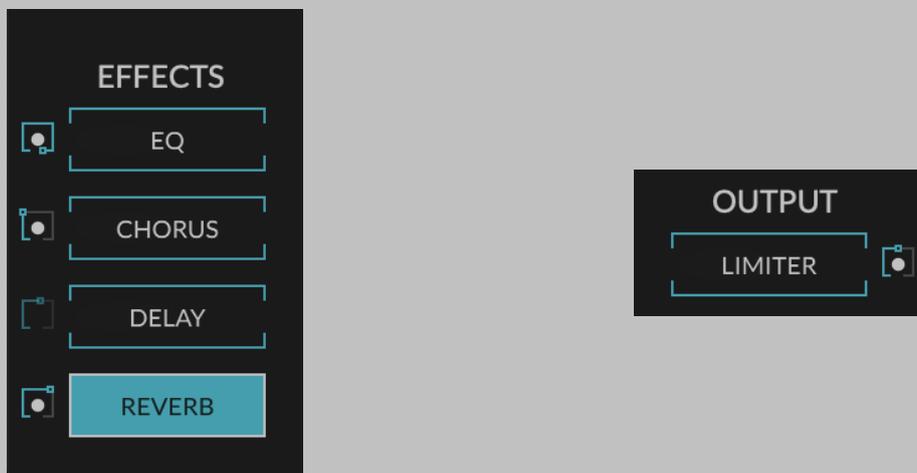
3.6.1 EQ

The EQ section is first in line. It consists of 4 nodes with variable GAIN, FREQUENCY, Q and EQ TYPE and shows the resulting EQ curve. When any of the EQ parameters are modulated the EQ Curve Shadow will change colors and show the resulting modulated curve.
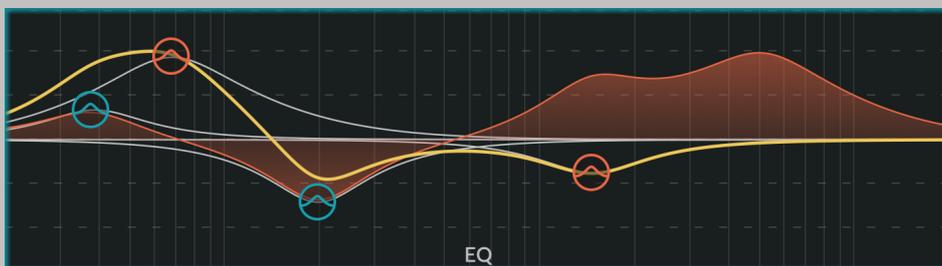
GAIN

Each EQ node can set a gain by dragging it up and down. To modulate the gain of an EQ node, hover over the node and select the Gain Mod

control on the right.

FREQUENCY

Each EQ node can set a frequency by dragging it left and right. To modulate the frequency of an EQ node, hover over the node and select the Frequency Mod control on the left.

Type

Each EQ node can function as a low/high shelf, low/high cut, and peak filter. Option-click (alt-click on Windows) a node to cycle through different types.

Q

Increasing the Q setting decreases the EQ node's bandwidth. Q affects low and high shelf Types a little differently, increasing and decreasing the gain of frequencies surrounding the center frequency. This boost/cut effect becomes more intense and localized (e.g., the bandwidth decreases) as Q increases. Increasing Q on the low shelf increases frequencies below the cutoff and decreases higher frequencies, and vice versa.

Hovering over an EQ node will reveal handles on either side. Drag these towards or away from the node to increase or decrease the Q.

Amount

Controls the amount of eq applied to the output by scaling all the gain controls. Please note that this does not scale the amount of any selected Highpass or Lowpass filters. This control does not appear on the main EQ page, but is accessible via the module's Mini Knob.

3.6.2   Chorus

The Chorus section is next, using a series of modulated all pass filters to add subtle width or seasick pitch drift to your signal.

Mix
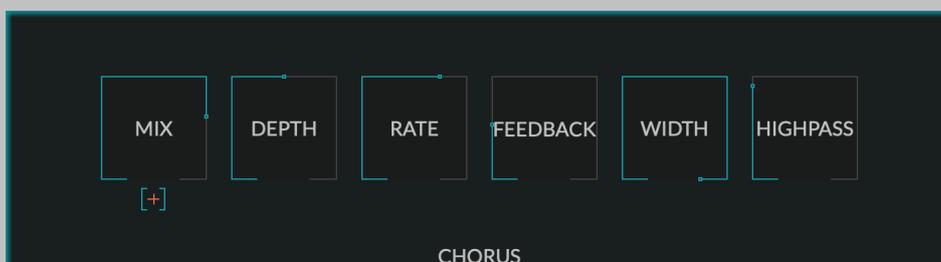
The MIX knob controls the amount of chorus applied to the output. Also mapped to the Chorus module's Mini Knob. This control can be modulated using any of the Modulation Outputs.

Depth

The DEPTH knob controls the depth of the chorus effect.

Rate

The RATE knob controls the chorus' modulation rate.

Feedback

The FEEDBACK knob controls the feedback of the chorus effect.

Width

The WIDTH knob controls the stereo width of the chorus effect.

Highpass

The HIGHPASS knob allows you to highpass the chorus effect. This can be useful for creating chorused bass sounds that still maintain their dignity.

3.6.3   Delay

Generate's Delay module can be used to achieve subtle slapback, rich echoes, or even as a free running looper. There is a limiter in the feedback path that will saturate and limit the signal, and which can be used as a ducker.
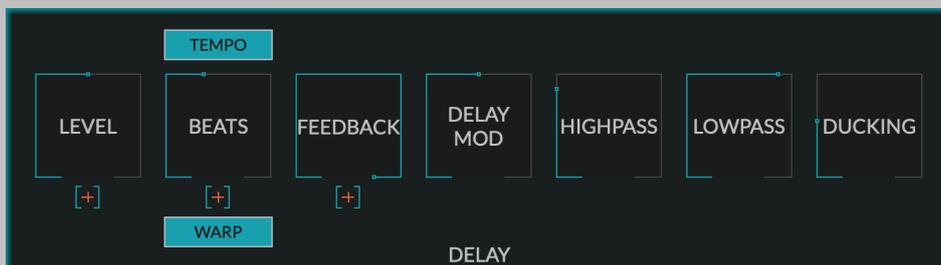
Beats

The BEATS knob controls the delay time in beats. It is only displayed when the the TEMPO button is on.

Time

The TIME knob controls the delay time in mS. It is only displayed when the TEMPO button is off. This control can be modulated using any of the Modulation Outputs. If the WARP button is on, changing or modulating the delay time will result in warping sounds.

Warp

When the WARP button is engaged, changing or modulating the TIME knob results in warping sound effects. It also changes the sound of the DELAY MOD control.

Tempo

The TEMPO button controls whether the delay time is set in Beats or mS.

Feedback

The FEEDBACK knob controls the amount of feedback in the delay. Settings this knob above 100% will cause the delayed signal to increase and volume and eventually oscillate. This control can be modulated using any of the Modulation Outputs.

Delay Mod

The DELAY MOD knob controls the amount of modulation applied to the delay.

Highpass

The HIGHPASS knob sets the frequency of a highpass filter on the delay.

Lowpass

The LOWPASS knob sets the frequency of a lowpass filter on the delay.

Ducking

The DUCKING knob set the amount of ducking applied to the delay.

Level

The LEVEL knob controls the level of the delay that is mixed in with the dry signal. Also mapped to the Delay module's Mini Knob. This control can be modulated using any of the Modulation Outputs.

3.6.4 Reverb

Generate's reverb algorithm can add a small amount of space to your sounds or create endless soundscapes from simple inputs.
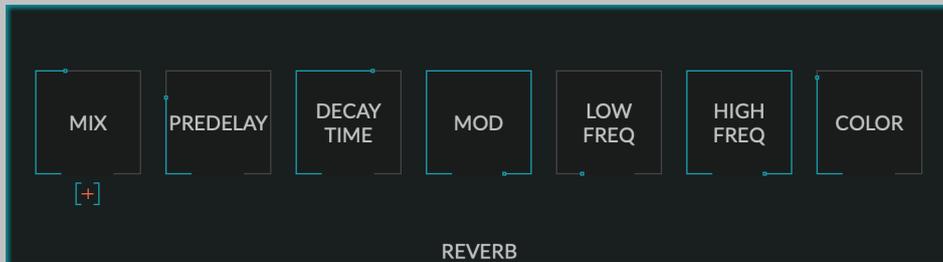
Mix

The MIX knob sets the reverb mix, or the amount of reverb that you hear at the output. Also mapped to the Reverb module's Mini Knob. This control can be modulated using any of the Modulation Outputs.

Predelay

The PREDELAY knob sets the amount of delay before the reverb tail.

Decay Time

The DECAY TIME knob sets the decay time of the reverb in seconds.

Mod

The MOD knob sets the amount of modulation applied to the Decay Time, this will create a rich detuned sound.

Low Freq

The LOW FREQ knob sets the cutoff frequency of the Reverb's highpass filter.

High Freq

The HIGH FREQ knob sets the cutoff frequency of the Reverb's lowpass filter.

Color

The COLOR knob sets affects the resonance of the reverbs modes. Turning it down will result in a flatter tail, while turning it up will result in a more resonant effect. Both sound nice.

3.6.5   Limiter

By default, the limiter is placed after EQ processing, but it can also be placed before the EQ or at the very end of the effects chain.
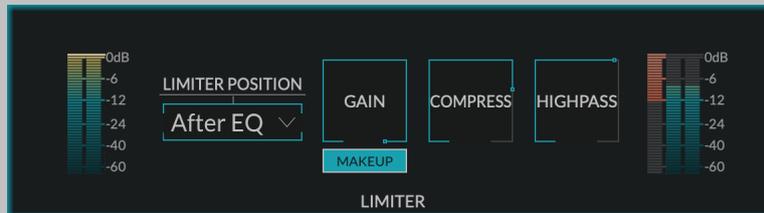
Input Level Meter

This meter shows the input level to the Limiter section from -60dB to 0dB. The peak hold meter is there simply to show if the peak was above 0dB, but no clipping occurs at this point. It can be clicked to be cleared.

Limiter Position

The LIMITER POSITION dropdown allows the limiter to be placed before or after the EQ module, or at the end of the effects chain.

Gain

The GAIN knob sets the gain that is applied to the signal before limiting. This can be set negative if you're settings are very loud and you want to decrease them, or it can be pushed up to +24dB if you want to really overdrive the limiter.

Make Up

Activating the MAKE UP button will turn up the signal's gain after limiting based on the Gain setting. Turning it off will reduce the threshold of the limiter as you turn up the GAIN.

Compress

The COMPRESS knob increases the amount of compression applied in the limiter. When it's turned down the limiter will create distortion, when turned up with limiter will create compression instead.

Highpass

The HIGHPASS knob sets the cutoff frequency of the highpass filter applied to the sidechain signal. Use this to decrease the limiter's sensitivity to low frequencies.

Output Level Meter

This meter shows the output level of the limiter, as well as the gain reduction being applied.

3.6.6 Output

This is the final output of the effects section and the level control for the whole instrument. Turning the OUTPUT knob down to -100dB will mute the output.

The output level meter shows the final output level of the plug-in from -60dB to 0dB. A peak hold meter shows if any clipping of the output occurred and can be cleared by clicking.

Chapter 4

Installation and Instantiation

Newfangled Audio plug-ins are distributed by Eventide and like other plug-ins Eventide distributes, Generate uses PACE's ilok.com licensing system, with or without and iLok hardware dongle. Each license provides two activations which can reside on either your computer or on an iLok license dongle. Once you've purchased your plug-in, you'll need to register it on Eventide's website, activate your license, and install the plug-in on to your computer

4.1   Registering Your Plug-in

When you purchase Generate, you'll receive a Serial Number and License Key. The Serial Number will be two letters followed by 6 numbers. If you have an individual Generate license, the Serial Number will start with NQ (i.e. NQ-######). The License Key will be 3 sets of 4 characters, a letter or a number, each; like XXXX-XXXX-XXXX.

Once you've received these codes, you can register your plug-in on the Eventide website. To do so, please log in to `http://www.eventideaudio.com`, navigate to My Account in the top right corner, and select Register a New Product. Then, fill out the form by selecting Native Plug-in (VST, AU, AAX) in the Product Category field, select Generate in the Product list, and enter your Serial Number, License Key, and iLok.com account name. If you don't yet have an ilok.com account, you can create one for free at `http://www.ilok.com`. Once you've done so, press Register.

Once you've entered this information and pressed the Register button, Eventide will send the applicable plug-in license to your ilok.com account, which you will need to activate to your computer or iLok dongle.

4.2   Activating Your License

To activate and manage your plug-in licenses you'll need to install PACE's iLok License Manager software which you can download from `http://www.ilok.com`. If you don't have this software installed, please download and install it now.

Once you have installed and launched iLok License Manager you should be able to log in to your account by clicking the large "Sign In" button in the upper left hand corner of the application. Once you have, you should be able to see available licenses by choosing the Available tab at the top of the iLok License Manager application. If you have successfully registered your plugin, your Generate Native license will be available in this list. Please activate this license by dragging it to either your computer or iLok dongle listed on the left. When you do so, you will be asked to confirm the activation, and you will be able to see it by clicking on the location you have chosen. At this point your license is activated.

4.3   Installing Your Plug-In

You should have been given a link to the Generate plug-in installer when you purchased your plug-in, but if you haven't, you can find downloads for all of our plug-ins at `http://www.newfangledaudio.com/downloads`. Please download and launch the correct installer for your system.

Once you've launched the plug-in installer, it will take you through several pages of options. We have tried to choose defaults for these options which will best serve the majority of users, but it is worth a minute to make sure you understand these options before clicking through to the next page. A common issue with Windows VST plug-ins is choosing the correct VST directory, which can be different on each system. Please pay special attention to this setting. Once you have followed through the installer, your plug-ins and presets should be in your chosen locations, and you can hit finish to end the installer application.

At this point, you should be ready to use your Generate Plug-In.

4.4   Moving or Removing an Activation

If at any point, you decide to move your plug-in activation, you can do so in iLok license manager. To move an activation between an iLok dongle and your computer, simply plug in the iLok, locate the license in its current location, and drag it to its new location. To deactivate a license, find it in its location, right click on it, and choose deactivate.

Remember that each Generate Plug-In License comes with two activations, which can be used on either a computer or iLok dongle, meaning you can use Generate in two locations at the same time.

4.5   Removing or Uninstalling your Plug-In

We're sure you'll love your Newfangled Audio plug-ins, but if you ever want to remove them from your machine it's as easy as removing the following files.

For Mac:

- Macintosh HD/Library/Audio/Plug-Ins/Components/<Plug-In Name>.component
- Macintosh HD/Library/Audio/Plug-Ins/VST/Newfangled Audio/<Plug-In Name>.vst
- Macintosh HD/Library/Audio/Plug-Ins/VST3/Newfangled Audio/<Plug-In Name>.vst3
- Macintosh HD/Library/Application Support/Avid/Audio/Plug-Ins/Newfangled Audio/<Plug-In Name>.aaxplugin
- /Music/Newfangled Audio/<Plug-In Name>/

For Windows:

- c:\Program Files\Common\Steinberg\VST2\Newfangled Audio\<Plug-In Name>.dll
- c:\Program Files\Common\VST3\Newfangled Audio\<Plug-In Name>.vst3
- c:\Program Files\Common\Avid\Audio\Plug-Ins\Newfangled Audio
  <Plug-In Name>.aaxplugin
- My Documents\Newfangled Audio\<Plug-In Name>\

Chapter 5

Conclusion

We hope you enjoy Newfangled Audio's Generate plug-in. If you have
any questions, comments, or concerns please write us at support@newfangledaudio.com

Chapter 6

About Newfangled Audio

The Oxford English Dictionary defines Newfangled as "objectionably new".

Music technology can sometimes be a backward looking pursuit. This is understandable, the purpose of music technology should be to help musicians make great music. There have been many great pieces of gear in the past and we should seek to keep these pieces and make them available to people who want to use them, and the time and dedication required to master a musical instrument means that changes in their design are often evolutionary rather than revolutionary.

However, the great pieces of gear from yesteryear are more often than not those that contained new ideas in their time. The reverence we have for these pieces can sometimes turn into fetishism, and mindless re-creation of classic gear can fail to inspire musicians and artists to take new risks. It's important to make sure artists and engineers have access to good tools that inspire them and don't stand in their way, but these tools should never be used as a security blanket to stand in the way of an artist or engineers ears and taste.

Newfangled Audio seeks to only make gear that incorporates new ideas. We want to make gear that is great, but only using ideas that others are not. We realize that deviation from the norm might sometimes be objectionable. The Oxford English Dictionary defines Newfangled as "objectionably new".