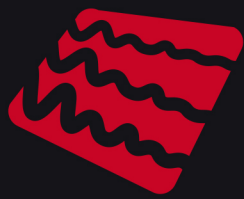


Operation Manual



ANIMA

Matthias Klag, Michael Ruf

Cristina Bachmann, Heiko Bischoff, Lillie Harris, Christina Kaboth, Insa Mingers, Matthias Obrecht, Sabine Pfeifer, Benjamin Schütte, Marita Sladek

This PDF provides improved access for vision-impaired users. Please note that due to the complexity and number of images in this document, it is not possible to include text descriptions of images.

The information in this document is subject to change without notice and does not represent a commitment on the part of Steinberg Media Technologies GmbH. The software described by this document is subject to a License Agreement and may not be copied to other media except as specifically allowed in the License Agreement. No part of this publication may be copied, reproduced, or otherwise transmitted or recorded, for any purpose, without prior written permission by Steinberg Media Technologies GmbH. Registered licensees of the product described herein may print one copy of this document for their personal use.

All product and company names are ™ or ® trademarks of their respective owners. For more information, please visit www.steinberg.net/trademarks.

© Steinberg Media Technologies GmbH, 2019.

All rights reserved.

Anima_1.0.0_en-US_2019-11-28

Table of Contents

4	Anima
5	Oscillator Pages
8	Sub Page
9	Mod Page
13	Voice Page
15	Filter Section
17	Amplifier and Amplifier Envelope
17	Env 3 Section
18	LFO Section
19	Arp Page

Anima

The Anima synth is a wavetable instrument using HALion's wavetable synthesis which crossfades the waves smoothly in real time based on an integrated wavetable envelope. This envelope makes it very easy to control the playback of the wavetable, because no further modulation settings are required. All you have to do is set up the **Speed** parameter. The modulation matrix allows you to control the playback position of the oscillator using one of the integrated LFOs, the velocity, or the modulation wheel, for example.



Anima provides two wavetable oscillators that can be used in parallel. Each oscillator features a multi-oscillator that allows you to create up to eight additional voices for each oscillator and then separately detune them and distribute them in the stereo panorama.

The sub oscillator comes with classic oscillator waves like sine, triangle, saw, square and two different pulses, and also features a noise generator. The noise generator delivers a large number of different noise types. These range from classic noises like white and pink noise over drum attacks and rhythmical noises to specifically filtered colored noises and unique circuit noises, recorded from various electronic devices. This powerful collection of noises can be used to add inharmonic frequencies to create atmospheric sound or add transients for rich and percussive attacks, for example. The integrated arpeggiator and step sequencer allows you to play rhythmic patterns and/or add modulations to the synthesis parameters using the three available controller lanes.

The oscillator is followed by a multi-mode filter that offers a large number of different filter shapes. The filter can be modulated by modulation sources like the keyboard, velocity, and LFO, but also by the controller lanes of the step sequencer, for example.

Anima includes two monophonic LFOs that can be synchronized to the host tempo and allow you to modulate a large number of modulation destinations using the modulation matrix. In addition, a user-defined envelope can be assigned to destinations like **Pitch**, **Pan**, or **Wavetable** parameters in the modulation matrix.

Anima contains six pages: **Osc1**, **Osc2**, **Sub**, **Mod**, **Voice**, and **Arp**. To show the settings for a page, click the corresponding page button.

If a page button itself contains an **On/Off** button, which is the case for the **Arp** page button, for example, you can use this to activate/deactivate the corresponding element without having to open the page first.

Oscillator Pages

The **Osc 1** and **Osc 2** pages contain the settings for the two main oscillators.



- To show the settings for oscillator 1 or oscillator 2, click the corresponding button.
- To activate/deactivate an oscillator, click the **On/Off** button on the right of the corresponding page button.

Select Wavetable

This pop-up menu allows you to select one of the included wavetables for the wavetable oscillator.

Show 3D Wavetable Map/2D Wave

Toggles between displaying a single cycle of the current waveform and a topographic map of the entire wavetable.

Retrigger Mode

- If **Free Phase** is selected, the behavior of analog synthesizers is emulated. The oscillator is running freely and continuously.
- If **Random Phase** is selected, the start phase is randomly set to a different value each time that you trigger a note. In contrast to **Free Phase**, there is no continuity in the phase of the waveform.
- If **Fixed Phase** is selected, the oscillator runs with a fixed start phase that can be specified between 0 and 360 degrees.

Octave

Adjusts the pitch in octave steps.

Coarse

Adjusts the pitch in semitone steps.

Fine

Adjusts the pitch in cent steps. This allows you to fine-tune the oscillator sound.

Level

Adjusts the output level of the oscillator.

Pan

Adjusts the position of the oscillator in the stereo panorama. At a setting of -100 %, the sound is panned hard left, and at +100 %, it is panned hard right.

Main Tab



Legato

If **Legato** is deactivated, each note starts playback from the position cursor.

If **Legato** is activated, the first note starts playback from the position cursor, and any following notes start from the current playback position for as long as the first note is held.

Sync to Host

Allows you to sync the wavetable to the beats and measures of your host application.

Loop Mode

- **Off:** If **Playback Direction** is set to a positive value, the wavetable plays from the position cursor to the end.
If **Playback Direction** is set to a negative value, the wavetable plays from the position cursor to the start.
- **On:** Depending on the **Playback Direction** setting, the wavetable plays forward or backward in a loop.
- **Alt:** The wavetable plays in an alternate loop, that is, the loop is alternately played forward and backward. The first direction depends on the **Playback Direction** setting.

Speed

Determines the rate at which the envelope plays through the wavetables. At +100 %, the envelope plays back at its original speed. A value of +50 % corresponds to half the original speed, and +200 % to twice the original speed, for example.

This parameter is unipolar.

Position

Determines where the envelope starts.

Playback Direction

Allows you to set the playback speed in smaller increments. Furthermore, this parameter determines the playback direction.

- If you enter negative values, you reverse playback, that is, the playback position moves backward through the wavetable.

Random Position

Adds a random value to the current position when you play a note.

For example, if you want the position to vary between 25.0 % and 75.0 %, set **Position** to 25.0 % and **Random Position** to 50.0 %.

Random Direction

Adds a negative or positive random value to the current direction when you play a note.

For example, if you want the direction to vary between -100 % and +100 %, set **Direction** to 0.0 % and **Random Direction** to 100.0 %. If you want the direction to vary within the full positive range, set **Direction** to 50 % and **Random Direction** to 50 %, for example.

Form Tab



Formants are harmonics within the spectrum of a note which are pronounced and help to define the character of an instrument. The positions of the formants in the spectrum mainly depend on the construction of an instrument, such as the body of a guitar, the form of the vocal tract in a human body, the filter settings for electronic instruments, etc. These conditions lead to specific frequency ranges that are emphasized regardless of the pitch of the note. Playing back samples or wavetables with a different pitch than the original is usually done by increasing or decreasing the playback speed. This leads to the well-known monster or Mickey Mouse effect, because all harmonics are also affected, that is, the characteristic formants are shifted. To avoid this, you can activate the **Formant** option.

On/Off

Activates/Deactivates the formant settings.

Formant

Allows you to shift the formants of the entire wavetable by a fixed value.

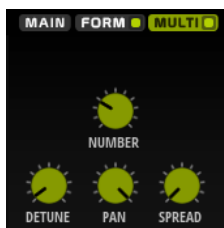
Key Follow

Allows you to shift the formants depending on the played note.

- A value of 100 % means that the formant frequency moves with the played note.
- A value of 0 % means that the formants are kept the same for all notes.

You can invert the behavior of the formant shift by setting **Key Follow** to negative values.

Multi Tab



The multi-oscillator function allows you to trigger multiple voices simultaneously with each note that you play. If you activate **Multi**, the following parameters become available:

- **Number** determines the number of oscillators that play back simultaneously. You can also set fractions of numbers. For example, with a setting of 2.5, you hear two oscillators at full level and a third one at half level.
- **Detune** detunes the oscillators.
- **Pan** narrows or widens the stereo panorama. With a setting of 0 %, you create a mono signal and with 100 %, you create a stereo signal.
- **Spread** distributes the oscillators so that each oscillator plays from a different position in the wavetable.

Sub Page

The **Sub** page contains the settings for the sub oscillator and the noise oscillator.



Sub Oscillator Section

Type

The wave shape of the sub oscillator. You can choose between **Sine**, **Triangle**, **Saw**, **Square**, **Pulse Wide**, and **Pulse Narrow**.

Retrigger Mode

- If **Free Phase** is selected, the behavior of analog synthesizers is emulated. The oscillator is running freely and continuously.
- If **Random Phase** is selected, the start phase is randomly set to a different value each time that you trigger a note. In contrast to **Free Phase**, there is no continuity in the phase of the waveform.
- If **Fixed Phase** is selected, the oscillator runs with a fixed start phase that can be specified between 0 and 360 degrees.

Level

Adjusts the output level of the sub oscillator.

Pan

Adjusts the position of the oscillator in the stereo panorama. At a setting of -100 %, the sound is panned hard left, and at +100 %, it is panned hard right.

Noise Oscillator Section

The noise oscillator offers you a large amount of different noise types that can be used to add inharmonic frequencies to the overall spectrum, either for the entire sound, with looped noises or with one-shot noise samples. This allows you to add characteristic transients to percussive instruments based on samples, for example.

Noise Type

This pop-up menu offers you a choice of classic noises, attack transients, soundscapes, and ambience noise samples.

Level

Adjusts the output level of the noise oscillator.

Sync

Activate **Sync** to synchronize the speed of the noise oscillator to the host tempo. This is particularly useful for rhythmic noises that are based on a tempo of 120 BPM.

Pan

Determines the position of the noise in the stereo panorama. At a setting of -100 %, the sound is panned hard left, and at +100 %, it is panned hard right.

Follow Pitch

If **Follow Pitch** is activated, zone pitch settings like **Octave**, **Coarse**, and **Fine**, as well as modulations like **Glide**, **Pitchbend**, or other pitch modulations, affect the duration length. A higher sample pitch leads to a shorter duration.

If **Follow Pitch** is deactivated, the duration is independent of the zone pitch and determined by the **Duration** settings.

Loop

Activate this button to play the noise sample in a loop.

If this button is not activated, the sample is played once.

Speed

Adjusts the playback speed of the noise sample. A setting of 800.0 % equals an increase of three octaves in pitch.

Speed Key Follow

Allows you to adjust the speed modulation by MIDI note number. At a setting of +100 %, the speed doubles per octave.

Start

Adjusts the start of the noise sample. With a value of 50 %, playback starts in the middle of the sample.

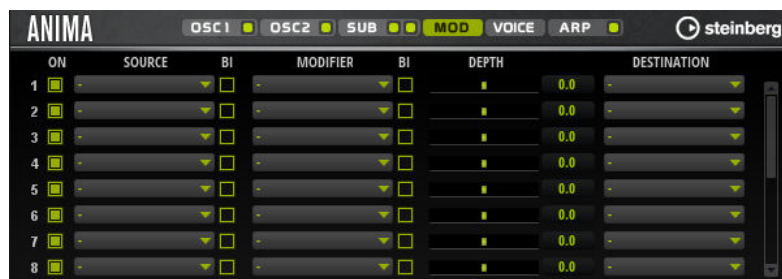
Random Start

Selects a random playback start within a specific range around the current position.

At a setting of 100 %, the playback position jumps to a random position between the specified **Start** value and the end of the noise sample.

Mod Page

The **Mod** page contains the modulation matrix.



The modulation matrix offers you up to 16 freely assignable modulations, each with a source, a modifier, and a destination with adjustable depth. The polarity of each source and each modifier can be switched between unipolar and bipolar.

Creating Modulations

You create modulations by selecting a source, a modifier, and a destination from the pop-up menus in the modulation matrix.

PROCEDURE

1. Click the modulation **Source** field and select the modulation source.
2. Optional: Click in the modulation **Modifier** field and select the parameter that you want to use to modify the modulation.

This modifier is used to scale the output of the modulation source.

3. Optional: Specify whether you want the **Source** and **Modifier** parameters to be unipolar or bipolar.
 4. Set the modulation intensity with the **Depth** parameter.
 5. Click in the modulation **Destination** field and select the parameter that you want to modulate.
-

Modulation Matrix Parameters

Modulation Sources and Modulation Modifiers

The following options are available as modulation sources and as modulation modifiers.

LFO A/B

The LFOs A and B produce cyclic modulation signals.

Amp Envelope

The amplifier envelope. The shape of the envelope determines the modulation signal.

Filter Envelope

The filter envelope. The shape of the envelope determines the modulation signal.

Env 3

A freely assignable envelope. It is suitable for pan or pitch modulation, for example.

Key Follow

This produces an exponential modulation signal derived from the MIDI note number. Exponential means this source works with destinations such as **Pitch** or **Cutoff**.

Note-on Velocity

Note-on velocity can be used as modulation signal.

Note-on Vel Squared

The squared version of **Note-on Velocity**. The harder you press the key, the higher the modulation values.

Pitchbend

The position of the pitchbend wheel can be used as modulation signal.

Modulation Wheel

The position of the modulation wheel can be used as modulation signal.

Aftertouch

Aftertouch can be used as modulation signal. Some MIDI keyboards cannot send aftertouch messages. However, most sequencer software is able to produce such messages.

Arp Controller 1-3

The 3 controllers available on this submenu correspond to the three controller lanes on the **Arp** page.

Bus 1-8

Modulations that are sent to one of the eight busses can be reused as sources. This way, you can combine several modulations to produce more complex signals.

Quick Control 1-8

The quick controls can be used as modulation signal.

Unipolar vs. Bipolar Sources

The polarity of a modulation source specifies the value range that it produces. Unipolar sources modulate between 0 and +1. Bipolar sources modulate between -1 and +1.

- To change the polarity of a modulation source or modifier from unipolar to bipolar, activate its **Bipolar** button.

Modulation Destinations

Pitch

Modulates the pitch. For example, assign one of the LFOs to create a vibrato effect. If **Pitch** is selected, the modulation depth is set in semitones.

Cutoff

Modulates the filter cutoff.

Resonance

Modulates the filter resonance. Resonance changes the character of the filter. For example, to accent the filter the harder you hit a key, assign **Velocity** to **Resonance**.

Distortion

Modulates the filter distortion.

Level

This modulation adds to the level setting. It can be used to create level offsets using the mod wheel, for example.

Volume

Modulates the gain. The volume modulation multiplies with the level.

Pan

Modulates the position of the sound in the panorama.

WT 1/2 Pitch

Modulates the **Pitch** parameter of the corresponding wavetable oscillator.

WT 1/2 Level

Modulates the **Level** parameter of the corresponding wavetable oscillator.

WT 1/2 Pan

Modulates the **Pan** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Detune

Modulates the multi-oscillator **Detune** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Pan

Modulates the multi-oscillator **Pan** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Spread

Modulates the multi-oscillator **Spread** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Voices

Modulates the multi-oscillator **Voices** parameter of the corresponding oscillator.

WT 1/2 Position

Modulates the **Position** parameter of the corresponding wavetable oscillator.

WT 1/2 Direction

Modulates the **Direction** parameter of the corresponding wavetable oscillator.

WT 1/2 Speed

Modulates the **Speed** parameter of the corresponding wavetable oscillator.

WT 1/2 Formant Shift

Modulates the **Formant Shift** parameter of the corresponding wavetable oscillator.

WT Sub Pitch

Modulates the **Pitch** parameter of the wavetable sub oscillator.

WT Sub Level

Modulates the **Level** parameter of the wavetable sub oscillator.

WT Sub Pan

Modulates the **Pan** parameter of the wavetable sub oscillator.

WT Noise Speed

Modulates the **Speed** parameter of the wavetable noise oscillator.

WT Noise Level

Modulates the **Level** parameter of the wavetable noise oscillator.

WT Noise Pan

Modulates the **Pan** parameter of the wavetable noise oscillator.

Amp Env Attack

Modulates the attack time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Amp Env Decay

Modulates the decay time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Amp Env Sustain

Modulates the sustain level of the amplitude envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Amp Env Release

Modulates the release time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Attack

Modulates the attack time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Decay

Modulates the decay time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Sustain

Modulates the sustain level of the filter envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Filter Env Release

Modulates the release time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Start Level

Modulates the start level of the user-definable envelope 3, that is, the level of the first envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Attack

Modulates the attack time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Attack Level

Modulates the attack level of the user-definable envelope 3, that is, the level of the second envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Decay

Modulates the decay time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Sustain

Modulates the sustain level of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Release

Modulates the release time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Release Level

Modulates the release level of the user-definable envelope 3, that is, the last user envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Bus 1-8

You can send any modulation to one of the 8 busses, for example, to produce more complex modulation signals. Select the bus that you want to send the signals to as a destination. To use the modulation that was sent to a bus, assign the corresponding bus as a modulation source.

Voice Page



Polyphony

If **Mono** mode is deactivated, you can use this parameter to specify how many notes can be played simultaneously.

Mono

Activates monophonic playback.

Retrigger

This option is only available in **Mono** mode. If **Retrigger** is activated, a note that was stolen by another note is retriggered if you still hold the stolen note when you release the new one.

This way, you can play trills by holding one note and quickly and repeatedly pressing and releasing another note, for example.

Trigger Mode

Defines the trigger behavior for new notes.

- **Normal** triggers a new note when the previous note gets stolen. The sample and the envelope of the new note are triggered from the start.
To minimize discontinuities, use the **Fade Out** parameter of the zone.
- **Resume** does not always trigger a new note.
If the new note stays within the same zone, the envelope is retriggered, but resumes at the level of the stolen note. The pitch of the zone is set to the new note.
If the new note plays in a different zone, the sample and the envelope of the new note are triggered from the start.
- **Legato** does not always trigger a new note.
If the new note stays within the same zone, the envelope keeps running. The pitch of the zone is set to the new note.
If the new note plays in a different zone, the sample and the envelope of the new note are triggered from the start.
- **Resume Keeps Zone** does not trigger a new note upon note stealing. The envelope resumes at the level of the stolen note and the pitch of the zone is set to the new note, even if the new note plays in a different zone.
- **Legato Keeps Zone** does not trigger a new note upon note stealing. The envelope keeps running and the pitch of the zone is set to the new note, even if the new note plays in a different zone.

Glide

Allows you to bend the pitch between notes that follow each other. You achieve the best results in **Mono** mode.

Fingered

Activate this parameter to glide the pitch only between notes that are played legato.

Glide Time

Sets the glide time, that is, the time it takes to bend the pitch from one note to the next.

Octave

Adjusts the pitch in octave steps.

Pitch Key Follow

Allows you to adjust the pitch modulation by MIDI note number. Set this parameter to positive values in order to raise the pitch the higher you play. Use negative values to lower the pitch the higher you play. At a setting of +100 %, the pitch follows the played note exactly.

Distribution

Allows you to specify how unison voices are spread in pitch. Changing the unison voice distribution will create different modulations between the unison voices.

- If this is set to 0, the distribution is linear, that is, all voices have an equal distance in their pitch offset.
- Raising the value stretches the distribution using an exponential curve, so that the first unison voices have a smaller pitch offset than the second and third.
- Decreasing the value stretches the distribution using a negative exponential curve, so that the first unison voices have a larger pitch offset than the second and third voices.

Pitchbend Up/Pitchbend Down

Determines the range for the modulation that is applied when you move the pitchbend wheel.

Filter Section

In the filter section in the lower left, you can activate and set up the filter.



Filter On/Off

Activates/Deactivates the filter.

Filter Shape

- LP 24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.
- BP 12 and BP 24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.
- HP 6+LP 18 and HP 6+LP 12 are combinations of a high-pass filter with 6 dB/oct and a low-pass filter with 18 and 12 dB/oct, respectively (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies above the cutoff.
- HP 12+LP 6 and HP 18+LP 6 are combinations of a high-pass filter with 12 and 18 dB/oct and a low-pass filter with 6 dB/oct (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies below the cutoff.
- HP 24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.
- BR 12 and BR 24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.
- BR 12+LP 6 and BR 12+LP 12 are combinations of a band-reject filter with 12 dB/oct and a low-pass filter with 6 and 12 dB/oct, respectively. Frequencies around and above the cutoff are attenuated.
- BP 12+BR 12 is a band-pass filter with 12 dB/oct plus a band-reject filter with 12 dB/oct. Frequencies below, above, and around the cutoff are attenuated.

- HP 6+BR 12 and HP 12+BR 12 are combinations of a high-pass filter with 6 and 12 dB/oct and a band-reject filter with 12 dB/oct. Frequencies below and around the cutoff are attenuated.
- AP is an all-pass filter with 18 dB/oct. Frequencies around the cutoff are attenuated.
- AP+LP 6 is an all-pass filter with 18 dB/oct plus a low-pass filter with 6 dB/oct. Frequencies around and above the cutoff are attenuated.
- HP 6+AP is a high-pass filter with 6 dB/oct plus an all-pass filter with 18 dB/oct. Frequencies around and below the cutoff are attenuated.

Cutoff

Controls the cutoff frequency of the filter.

Resonance

Emphasizes the frequencies around the cutoff. At higher settings, the filter self-oscillates, which results in a ringing tone.

Distortion

Adds distortion to the signal. The following distortion types are available:

- **Tube** adds warm, tube-like distortion.
- **Hard Clip** adds bright, transistor-like distortion.
- **Bit Reduction** adds digital distortion by means of quantization noise.
- **Rate Reduction** adds digital distortion by means of aliasing.
- **Rate Reduction Key Follow** adds digital distortion by means of aliasing, but with **Key Follow**. The rate reduction follows the keyboard, so the higher you play, the higher the sample rate.

Envelope Amount

Controls the cutoff modulation from the filter envelope.

Cutoff Velocity

Controls the cutoff modulation from velocity.

Cutoff Key Follow

Adjusts the cutoff modulation using the note number. Increase this parameter to raise the cutoff with higher notes. At 100 %, the cutoff follows the played pitch exactly.

Filter Envelope

On the left on the **Env F/A** tab, you can set up the filter envelope.



Attack

Controls the attack time of the filter envelope.

Decay

Controls the decay time of the filter envelope.

Sustain

Controls the sustain level of the filter envelope.

Release

Controls the release time of the filter envelope.

Amplifier and Amplifier Envelope

On the right of the **Env F/A** tab, you can make settings for the amplifier and the amplifier envelope.



Amplifier Parameters

Level

Controls the overall volume of the sound.

Velocity

Controls the level modulation from velocity. At 0, all notes are played with the same level.

Amplifier Envelope Parameters

Attack

Controls the attack time of the amplifier envelope.

Decay

Controls the decay time of the amplifier envelope.

Sustain

Controls the sustain level of the amplifier envelope.

Release

Controls the release time of the amplifier envelope.

Env 3 Section

The **Env 3** section provides an additional envelope that can be routed freely in the modulation matrix. This envelope is bipolar, therefore, it is particularly suited to modulate destinations like pan or pitch, for example.



The faders below the envelope display set the following parameters:

- **L0** sets the start level.
- **A** sets the attack time.
- **L1** sets the attack level.
- **D** sets the decay time.
- **S** sets the sustain level.
- **R** sets the release time.
- **L4** sets the end level.
- **Vel** determines how much the envelope intensity depends on the velocity.
If this fader is set to 0, the envelope is fully applied. Higher values reduce the intensity for lower velocities.

LFO Section

In the **LFO** section, you can make settings for the two included LFOs.



LFO Waveform and Shape

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50 %, a square wave is produced.
- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces randomly stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal when fully turned right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal when fully turned right.

Sync

If **Sync** is activated, the frequency is set in fractions of beats.

Freq

Controls the frequency of the modulation, that is, the speed of the LFO.

Phase

Sets the initial phase of the waveform when the LFO is retriggered.

Sync

If **Sync** is activated, the frequency is set in fractions of beats.

Freq

Controls the frequency of the modulation, that is, the speed of the LFO.

Phase

Sets the initial phase of the waveform when the LFO is retriggered.

Rnd (Random Phase)

If this button is activated, each note starts with a randomized start phase.

NOTE

The **Phase** control cannot be used if **Rnd** is activated.

Arp Page

This page contains the integrated arpeggiator.



Arpeggiator On/Off

Activates/Deactivates the arpeggiator.

User Mode On/Off

Activates/Deactivates the user phrase and the user phrase editor.

Variations

Click the variation buttons to switch between the available variations.

Phrase

Allows you to select a phrase.

Drag Recorded MIDI to Sequencer

Allows you to drag the recorded MIDI phrase to your host sequencer.

Record Output

Allows you to record the MIDI output of the arpeggiator.

Loop

If this option is activated, the phrase plays in a loop.

Sync

Synchronizes the phrase to the tempo of your host application.

NOTE

In addition, you can set **Restart Mode** to **Sync to Host**. This aligns the phrase with the beats and measures of your host application.

Mute

Mutes playback. The phrase still plays in the background. If you deactivate **Mute**, playback resumes immediately.

Hold

Allows you to prevent the phrase from stopping or changing when the keys are released.

- If **Off** is selected, the phrase changes as soon as you release a key. The phrase stops immediately when you release all keys.
- If **On** is selected, the phrase plays to the end, even if the keys are released. If **Loop** is activated, the phrase repeats continuously.
- If **Gated** is selected, the phrase starts to play when the first key is played. It plays silently in the background, even if the keys are released, and resumes playback at the current position when you press any of the keys again. This way, you can gate the playback of the phrase.

Tempo

If **Sync** is deactivated, you can use the **Tempo** control to set the internal playback speed of the arpeggiator. The playback speed of the phrase is specified in BPM.

If **Sync** is activated, the **Tempo** parameter is not available.

Tempo Scale

Defines the rate at which notes are triggered, that is, the speed at which the phrase is running. In addition to the **Tempo** parameter, this gives you further control over the playback speed. You can specify a value in fractions of beats. You can also set dotted and triplet note values.

For example, if you change the **Tempo Scale** setting from 1/16 to 1/8, the speed is cut in half. If you set it to 1/32, the speed is doubled.

Trigger Mode

Determines at which moment the arpeggiator scans for new notes that you play on the keyboard.

- If **Immediately** is selected, the arpeggiator continuously scans for new notes. The phrase changes immediately in reaction to your playing.
- If **Next Beat** is selected, the arpeggiator scans for new notes at every new beat. The phrase changes in reaction to your playing on each new beat.
- If **Next Measure** is selected, the arpeggiator scans for new notes at the start of new measures. The phrase changes in reaction to your playing on each new measure.

Restart Mode

- If this is set to **Off**, the phrase runs continuously and does not restart at chord or note changes.
- **New Chord** restarts the phrase on new chords.

NOTE

The phrase does not restart upon notes that are played legato.

- **New Note** restarts the phrase with each new note that you play.
- **Sync to Host** aligns the phrase with the beats and measures of your host application each time that you start the transport.

RstVar (Restart on Variation Change)

This option is available for new chords and new notes. If this button is activated, changing a variation restarts the arpeggiator, even if no new notes or chords were triggered.

Key Mode

Defines whether the order in which the notes are played on the keyboard affects the playback of the phrase.

- If **Sort** is selected, the notes are played in the order of the selected phrase. The chronological order does not have any influence.
- If **As Played** is selected, the notes are played in the order in which you play them on the keyboard.
- If **Direct** is selected, the phrase creates controller events instead of notes. You hear the notes that you play plus any controller events of the phrase, such as pitch bend, volume, pan, etc.

NOTE

Not all phrases contain controller data.

Vel Mode

- If **Original** is selected, the notes of the phrase play with the velocity that is saved in the phrase.
- If **As Played** is selected, the notes of the phrase use the velocity of the played note.
- If **Original + As Played** is selected, the phrase velocity is determined by the combination of the velocity saved in the phrase and the velocity of the played note.

Swing

Shifts the timing of notes on even-numbered beats. This way, the phrase gets a swing feeling. Negative values shift the timing backward and the notes are played earlier. Positive values shift the timing forward and the notes are played later.

Gate Scale

Allows you to shorten or lengthen the notes of the phrase. At a value of 100 %, the notes play with their original gate length.

Vel Scale

Allows you to raise or lower the note-on velocities of the phrase. At a value of 100 %, the notes are played with their original velocity.

Octaves

Extends the phrase playback to include higher or lower octaves. Positive settings extend the playback to higher and negative settings to lower octaves. For example, a value of +1 first plays the phrase in the octave range that you originally played. Then, it repeats the phrase one octave higher.

Velocity Range

The **Low Vel** and **High Vel** parameters determine the velocity range that is used to trigger phrase playback.

Key Range

The **Low Key** and **High Key** parameters determine the key range that is used to trigger phrase playback.

User Mode Parameters



Save Phrase/Delete Phrase

The two buttons on the right of the phrase field allow you to save/delete your phrases.

Mode

Determines how the notes are played back.

- If **Step** is selected, the last note that is received triggers a monophonic sequence.
- If **Chord** is selected, the notes are triggered as chords.
- If **Up** is selected, the notes are arpeggiated in ascending order.
- If **Down** is selected, the notes are arpeggiated in descending order.
- If **Up/Down 1** is selected, the notes are arpeggiated first in ascending, then in descending order.
- If **Up/Down 2** is selected, the notes are arpeggiated first in ascending, then in descending order. This mode depends on the set **Key Mode**.
If **Key Mode** is set to **Sort**, the highest and the lowest note are repeated.
If **Key Mode** is set to **As Played**, the first and the last note are repeated.
- If **Down/Up 1** is selected, the notes are arpeggiated first in descending, then in ascending order.
- If **Down/Up 2** is selected, the notes are arpeggiated first in descending, then in ascending order. This mode depends on the set **Key Mode**.
If **Key Mode** is set to **Sort**, the highest and the lowest note are repeated.
If **Key Mode** is set to **As Played**, the first and the last note are repeated.
- If **Random** is selected, the notes are arpeggiated in random order.

Key Replace

With this parameter, you can deactivate the **Key Select** function or specify how missing keys are replaced.

For example, if **Key Select** is set to 1 - 2 - 3 - 4 and you play a chord with 3 notes, key 4 is considered missing.

- **Off** deactivates **Key Replace** and **Key Select**. The selected arpeggio plays back normally.
- **Arp** replaces the missing keys with the note that the arpeggio would normally play.
- **Rest** does not replace any missing keys. The arpeggio plays a rest instead.
- **1st** replaces the missing keys with the first note in the note buffer.
- **Last** replaces the missing keys with the last note in the note buffer.
- **All** replaces the missing keys with all notes in the note buffer. The notes are played as a chord.

NOTE

Key Replace can be set separately for each variation.

Wrap

For all modes except **Step** and **Chord**, you can use this parameter to restart the arpeggio after a specified number of steps.

NOTE

Deactivated steps are taken into account.

In **Step** and **Chord** mode, this parameter only affects the **Octaves** setting.

If the **Octaves** parameter is active, the arpeggio traverses the octaves and restarts from the original octave after the specified number of steps.

Groove Quantize

To adapt the timing of a phrase to an external MIDI file, you can drop this MIDI file on the **Groove Quantize** drop field.

The **Groove Quantize Depth** parameter to the right of the drop field determines how accurately the phrase follows the timing of the MIDI file.

Key Select

The arpeggiator scans the keyboard and writes the keys that are pressed into a note buffer.

Depending on the selected **Key Mode**, this note buffer is sorted either by pitch or in the order in which you play the keys.

Key Select allows you to play back a defined key from the note buffer. You can set up **Key Select** for each step separately, which allows you to create very elaborate phrases.

NOTE

Key Select cannot be used in **Step** or **Chord** mode.

- To access the **Key Select** values of the steps, click **Show Transpose or Key Select** to the left of the editor, so that a keyboard icon is shown.
- To switch between the available **Key Select** values for a step, click the value and drag up/down or use the scroll wheel.
The following options are available:

- **P** (Phrase) plays the note of the user phrase, according to the selected mode, for example, **Up**, **Down**, **Up/Down 1**, etc.
- The settings **1 - 8** play the corresponding keys from the note list. Which key is played depends on the **Key Mode** setting. For example, if **Key Mode** is set to **Sort**, the setting **1** plays the lowest key.
- **L** (Last) always plays the last key from the note buffer. Depending on the **Key Mode**, this is the highest note or the last note in the note buffer.
- **A** (All) plays all keys from the note buffer as a chord.

Recording the MIDI Output of the Arpeggiator

The phrases that are played by the instrument depend on the played notes and can therefore not be exported directly. However, it is possible to generate exportable phrases by recording the MIDI output of the arpeggiator.

PROCEDURE

1. Click **Record MIDI Output**.
The arrow in the **Drag MIDI** field starts blinking to indicate record mode.
 2. Play some notes.
 3. When you are done, click **Record MIDI Output** again.
Recording stops. In the **Drag MIDI** field, the arrow remains lit to indicate that a MIDI phrase can be exported.
 4. Click the **Drag MIDI** field and drag the phrase on a MIDI track in your host sequencer application.
-

Creating Variations

PROCEDURE

1. Click one of the variation buttons.
 2. You can either start from scratch or base the new variation on an existing variation.
 - To start from scratch, load a phrase and edit the settings.
 - To use an existing variation as base, use the **Copy** and **Paste** context menu commands.
-

RESULT

The variation can now be recalled by clicking the corresponding variation button.

NOTE

The parameters **Loop**, **Sync**, **Hold**, **Trigger Mode**, **Restart Mode**, **Key Mode**, **Vel Mode**, **Low/High Key**, and **Low/High Vel** are not part of the variations. You set them up only once.

Assigning Variations to Trigger Pads

If you assign the variations to trigger pads, you can use the trigger pads to switch between the variations.

PROCEDURE

1. Right-click a variation button and select the trigger pad on the **Assign Variation to** submenu.

2. Repeat this procedure for all the variations that you have created.

User Phrases

The user phrase has up to 32 steps. Each step has an adjustable **Velocity**, **Gate Length**, and **Transpose** value. By adding steps, adjusting their length, or leaving pauses, you define the rhythm of the user phrase. Consecutive steps can be combined to create longer notes. By selecting a **Mode**, you define how the notes play back. In addition, there are additional MIDI control sequences, that is, each step can also send modulation signals.

To create your own phrases, activate the **User** button.

Editing User Phrases

You can make detailed settings for the user phrase in the editor for user phrases.

- To set up the phrase, activate the **Vel** button above the step display.
- To set up a controller curve for the phrase, activate one of the controller buttons.



- To specify the number of steps for the pattern, drag the **Pattern Length** handle to the right or left.



Editing Steps

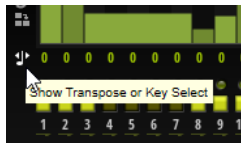
The height of a step represents its value. You can edit the steps in the following way:

- To activate all steps, select **Enable All Steps** from the context menu.
- To adjust a value, click a step and drag up or down.
- To adjust multiple steps, click and draw a curve.
- To adjust the velocity of all steps relatively, **Shift-click** and drag.
- To draw a ramp with steps, hold down **Alt** and draw a line.
- To draw symmetric ramps at the beginning and the end of the sequence, hold down **Shift-Alt** and draw a line.
- To reset the velocity of a step to 127, **Ctrl/Cmd-click** the step.
- To reset the velocity of all steps to 127, hold **Shift-Ctrl/Cmd** and click a step.

- To introduce a legato between two steps, click the number below the first of these steps, so that a small arrow is shown.
If **Legato** is activated, the **Gate Scale** parameter is not taken into account.
- To transpose a step, click in the field below it and enter the number of semitones for the transposition.

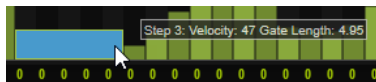
NOTE

You can only transpose steps if **Show Transpose or Key Select** is set to show the transpose values.



Adjusting the Gate Length

For velocity steps, the width of a step represents its gate length.



- To adjust the gate length of a step, drag its right border.
- To adjust the gate length of all steps, hold down **Shift** and drag the right border of a step.
You can only adjust the length this way until a step reaches the next step. If you increase the gate length of a step so that it overlaps the following step, this following step is deactivated.
- To reset the length of a step to 1, **Ctrl/Cmd**-click its highlighted right border.
- To reset the length of all steps, hold down **Shift-Ctrl/Cmd** and click on a highlighted right border.
- To fill the gaps between consecutive steps, select **Fill Gap** or **Fill All Gaps** from the context menu.

Each MIDI controller lane can send a MIDI controller. By selecting the same MIDI controller as source in the Modulation Matrix, you can modulate any of the destinations with the MIDI controller sequence.

Adjusting the Phrase

- To shift the rhythm of the phrase, click **Shift Phrase Right** or **Shift Phrase Left**.
If you shift the rhythm of the phrase to the left, the first step is moved to the end. If you shift the phrase to the right, the last step is moved to the beginning.
- To reverse the phrase, click **Reverse Phrase**.
- To duplicate short phrases, click **Duplicate Phrase**.

NOTE

The maximum number of steps is 32. Therefore, phrases that contain more than 16 steps cannot be duplicated entirely.
