Noise Engineering

Loquelic Vereor

A synthesizer built around interpretations of three classic synthesis algorithms

User Guide

Welcome to Loquelic Vereor.

Loquelic Vereor is built around interpretations of three classic synthesis algorithms with dual pitch control. It creates a huge variety of sounds parameterized by four tone and two pitch controls. Despite its old-school roots, Loquelic Vereor excels in the context of contemporary sound design. If you need some leads for your house track or a drone or otherworldly sounds for your newest film score, Loquelic Vereor's easy-to-use timbral controls and deep modulation system make up an inspiring palette for any application.

Loquelic Vereor is heavily inspired by our hardware roots, and its structure is similar to complex oscillator modules, which are rarely found in the world of software. Loquelic Vereor has two oscillators, but they are used to modulate each other in different ways instead of simply being mixed together, creating unique timbres that are far more complex and varied than those found in more traditional multi-oscillator subtractive synthesizers. Loquelic Vereor is a perfect extension to any producer's toolkit. Creating the perfect melody, bassline, or sound effect has never been easier – and you've never heard anything quite like Loquelic Vereor.

Function Descriptions

Complex oscillators come from the world of hardware, starting with the famed Buchla synthesizers. In contemporary hardware, a complex oscillator is a pair of oscillators that modulate each other and are often processed by wavefolders. Here at NE, we like to put our own spin on things, so our complex oscillator uses three unique algorithms, giving you sounds you have never heard.

- Fold: Wavefolders increase complexity and harmonics of the sound in most cases, and often make it more metallic sounding as it is increased.
- Morph: Changes the waveform of the sound for different characters and tonalities.
- Modulate: Phase shifts the oscillator(s) for fun effects and new waveform shaping.

The tone parameters behave slightly differently in each mode, as described below.

VO

The VO algorithm is roughly based off of the VOSIM algorithm described in Curtis Roads's epic Microsounds. This algorithm amplitude modulates a carrier by an exponential to create a more complex harmonic structure. The simplest carrier is a sinusoid which produces a spectrum with a Gaussian distribution centered on the carrier. More complicated waveforms produce Gaussians around each harmonic, producing spectra similar to comb filtered noise.

Pitch A is the fundamental frequency of the carrier. Pitch B is the retrigger frequency of the exponential decay.

FOLD

Sets the wavefold threshold on the final wavefolder

MORPH

Changes the waveform of oscillator A

MOD

Phase modulates oscillator A by oscillator B

DAMP

Sets the decay constant on oscillator B relative to its period

SS

Algorithm SS is a highly modified version of summation synthesis originally developed by James Moorer.

FOLD

Sets the wavefold threshold on the final wavefolder

MORPH

Changes the waveform of all oscillators

MOD

Phase modulates oscillator A by oscillator B

DAMP

Controls the generated spectra with higher values producing higher power harmonics.

PM

The PM algorithm is a naive time-domain two-oscillator phase-modulation implementation that combines both oscillators with amplitude modulation.

FOLD

Sets the wavefold threshold on the final wavefolder

MORPH

Changes the waveform of both oscillators

MOD

Phase modulates the oscillators by each other

DAMP

Blends between oscillator A and B through their product (AM)

Interface

Octa/Semi/Cent (Pitch A/Pitch B)

Changes the pitch of the oscillator by octaves, semitones, or cents..

Principal

Enables oscillator sync.

- **A**: Oscillator B syncs to oscillator A.
- **X**: Sync is disabled.
- **B**: Oscillator A syncs to oscillator B.

Algorithm

Selects the synthesis algorithm used to generate sound.

- **VO**: VOSIM
- **SS**: Summation Synthesis
- **PM**: Phase Modulation

Descriptions of the different modes can be found above in the section titled “Function Descriptions.”

Polyphony

Sets the maximum number of simultaneous notes the synth can play.

Bend/Bend Range

Pitch bend control. Range setting changes the maximum amount of bend. Use this to smoothly warp the tonality of the sound.

Mod

Modulation wheel. Internally routed to Modulate and Damp.

Loquelic

Fold/Morph/Mod/Damp

The four main tonal parameters of Loquelic Vereor. Parameter functionality varies by mode and is described above in the section titled “Function Descriptions.”

Legato

Time (1 Polyphony only)

If two notes overlap, this sets the amount of time it takes one note's pitch to slide to the next. Note that legato only functions when the envelope is set to ADSR.

Curve (1 Polyphony only)

Sets the curve of legato slides. In the center, legato slides will be linear, meaning that the starting pitch will bend at a constant rate to the next. Above or below center, slides will be logarithmic or exponential.

ADSR

Attack

Controls the attack time for the envelope: this sets the amount of time it takes the envelope to go from minimum to maximum.

Decay

Controls the decay time for the envelope: this sets the amount of time it takes the envelope to go from the peak reached in the Attack stage to the level set in the Sustain stage.

Sustain

Sets the sustain level of the envelope: this is the level the envelope holds at after the Attack and Decay stages while a note is held down.

Release

Sets the release time for the envelope: this is the amount of time it takes the envelope to go from the Sustain level to minimum.

Slope

Changes the curve of the Attack, Decay, and Release stages of the envelope. In the center, the envelope segments are linear. Right of center, Attack becomes logarithmic and Decay and Release become exponential. Left of center, Attack becomes exponential and Decay and Release become logarithmic. Settings right of center are often the most natural, as they tend to be closest to the envelopes of organic sounds.

Ampla

Filter

Sets the filter type: LP (lowpass: only lower sounds are played), BP (bandpass: mid-range sounds are played), or HP (highpass: higher sounds are played). The filter will only be audible if the Filter Mix parameter is set higher than minimum.

Filter Mix

Controls the mix between a VCA and a VCA+filter.

Cutoff

Sets the minimum frequency for the filter.

Env Amount

Controls how much the envelope opens or closes the filter.

Resonance

Resonance control for the filter. At high values, the Resonance modulates the filter cutoff frequency for added harmonic content. This parameter will only be audible if the Blend parameter is set higher than minimum.

Pitch Track

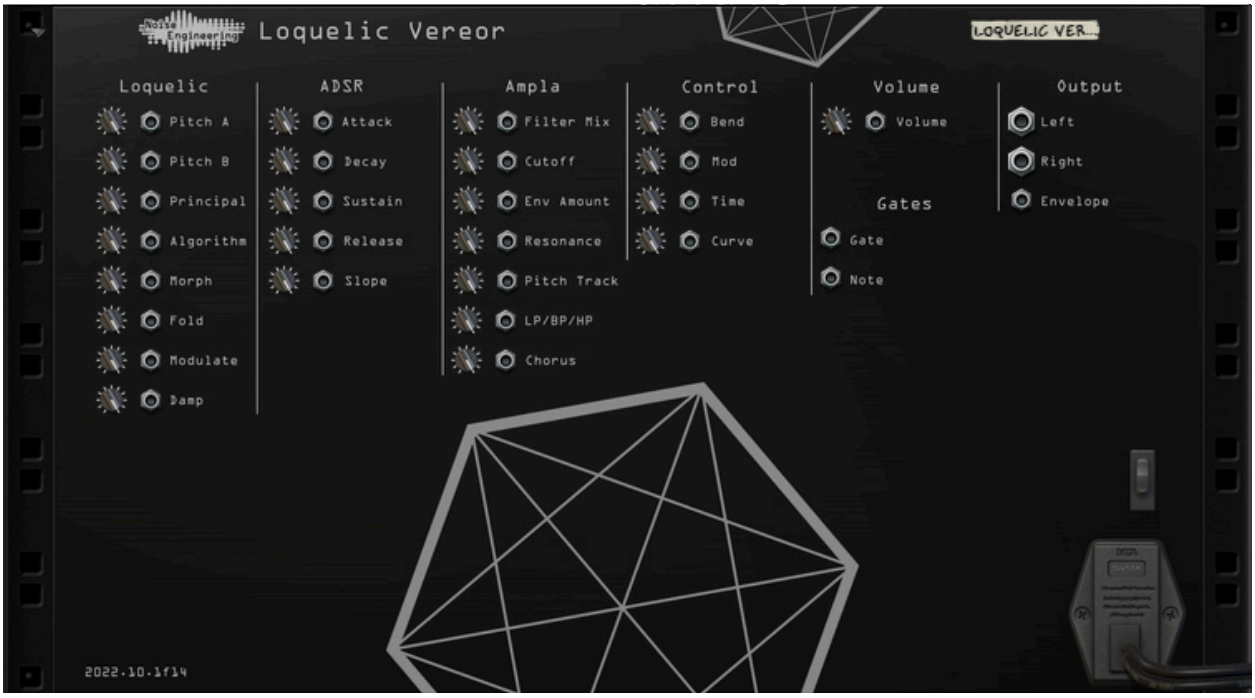
Controls how much the filter’s frequency tracks the notes being played.

Chorus

Enables a vintage-inspired chorus. 0 is off, I is some, and II is a lot.

Volume

Sets the output level of the Rack Extension.



Back Panel

Back-panel knobs act as attenuators for all inputs.

Inputs Left/Right

Audio inputs. For mono operation, patch signals to L.

Outputs Left/Right

Stereo audio outputs.

Output Envelope

CV output for the ADSR envelope.

About the Preset Names

Preset names are often weird. It's true. But you may find ours a little strange. Let us explain.

At Noise Eng, we are a small team of nerds. And faced with a daunting task like names for 500 presets for a single synth, we do what we do best: we automate. We briefly considered using a dictionary, but if you've ever read a dictionary (at least one of us has), you'll know there are some words in there that at least one of our users is bound to not want popping up in their session. So we did a workaround.

Stephen, our chief noisemaker and also head engineer, went to the nerdiest resource he could find: the IETF, or the Internet Engineering Task Force. They produce documents for voluntary Internet standards. They are technical and cover things like Network File Systems, MD5, ISCSI, Secure Shell-2, and others. Want a nerdy list? Check it out here.

The Requests for Comments series contain technical and organizational notes about the Internet. So we grabbed some of those and made our own dictionary. If some of the presets have very weird terms -- there is probably an esoteric technical meaning to it. If Joseph or some other name pops up, you can thank them for their contribution to trying to make the Internet a slightly more sane place.

Of course there was still the occasional questionable word here or there, so we went in and made a few adjustments. Now you may one day find a preset with the name Puppies_rainbows or with Unicorn in the name. You can thank Kris for that. Did we miss a questionable word you think we should take out? Get in touch and let us know!

And the categories? During early beta test (alpha beta?) of our first plugins, one of our great testers let us know that some of the category names seemed like they were meant to be descriptive, but then were somewhat misleading. He was completely right, so we took a look at this and decided to revise. One thing we think about a fair amount here at Noise Engineering is creativity. In particular, we don't like telling people how to use something. This is part of why we name our products as we do (but that's a story for another day), and we decided to apply the same logic to the preset categories. But we wanted to bring our normal sense of play to it so you'll find that each Rack Extension has the presets categorized as themes suggested by the team here.

About NE

Noise Engineering is located in Los Angeles, California. We started around 2014 when Chief Noisemaker Stephen McCaul wanted a hobby for his off time from his day job and started making Eurorack modules in a spare bedroom at home. One thing led to another and a couple of years later, he and wife Kris Kaiser quit their day jobs and took the company full time. Noise Engineering has since grown in size and has established itself as a well-regarded and innovative synthesizer brand, with products in Eurorack, 5U, and multiple software platforms.

Special Thanks

Loptimiste

NaviRetlav

nisse

joeyluck

laurensvansteenbergen

andrehorst

MattiasHG

dioxide

lincolnjet

EpiGenetik

OddIction

saibotsemaj