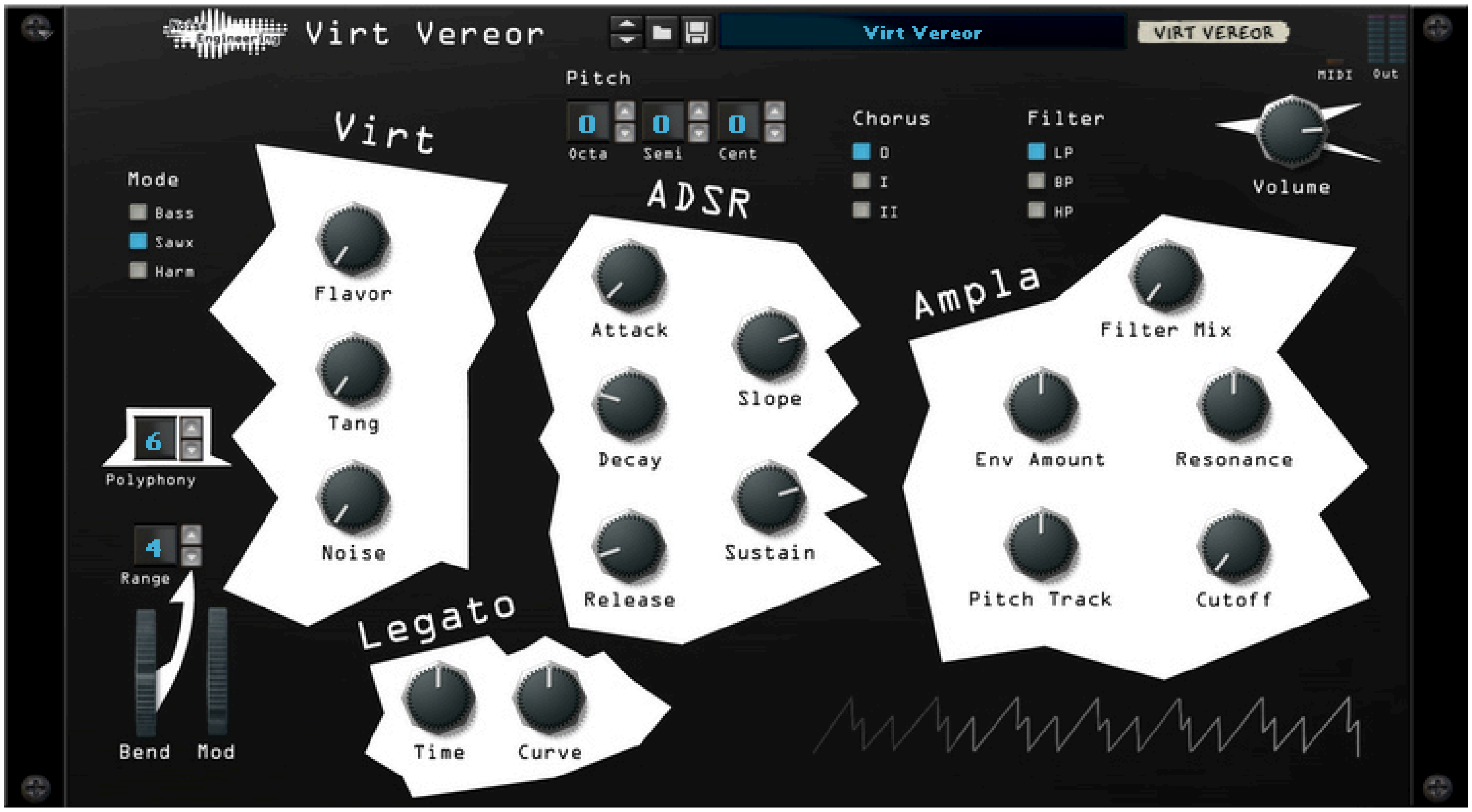
Virt Vereor

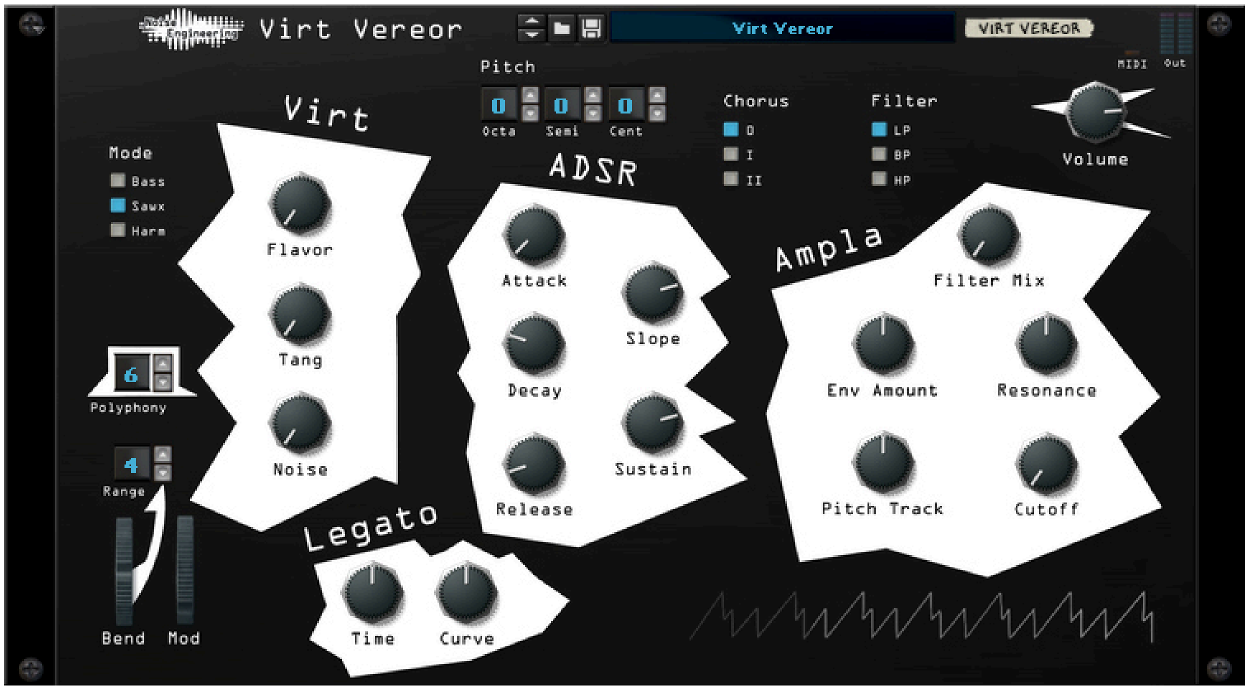
Esoteric synthesizer with multimode gate/filter and vintage-inspired chorus



User Guide

Welcome to Virt Vereor.

Virt Vereor is a powerful synthesizer based on a unique set of synthesis algorithms. Bass is based on a quadrature algorithm described in Bernie Hutchins' seminal series Electronotes. Sawx is a supersaw-inspired beast. Harm is an additive algorithm with spectral control and distortion of partials. Virt Vereor makes a tremendous amount of unique sounds with an immediate and usable interface. Astute users will recognize these algorithms from Noise Engineering's contribution to Arturia's Microfreak V3 firmware and our upcoming Virt Iter module. We've paired the Virt oscillator section with Vereor, our easily manipulated dynamics section using an ADSR envelope controlling a variable slope and analog-inspired multimode gate/filter. Add to that a vintage-inspired chorus and a load of presets, and Virt Vereor has something for anyone looking for basses, leads, or just new and innovative sounds.



Virt (Oscillator)

Mode: Selects one of the three synthesis algorithms used for sound generation. Learn more in the section titled “Tone Generation.”

Flavor/Tang/Noise: The three tonal parameters change depending on the mode. Learn more about these parameters and the different synthesis algorithms in the section titled “Tone Generation”.

ADSR

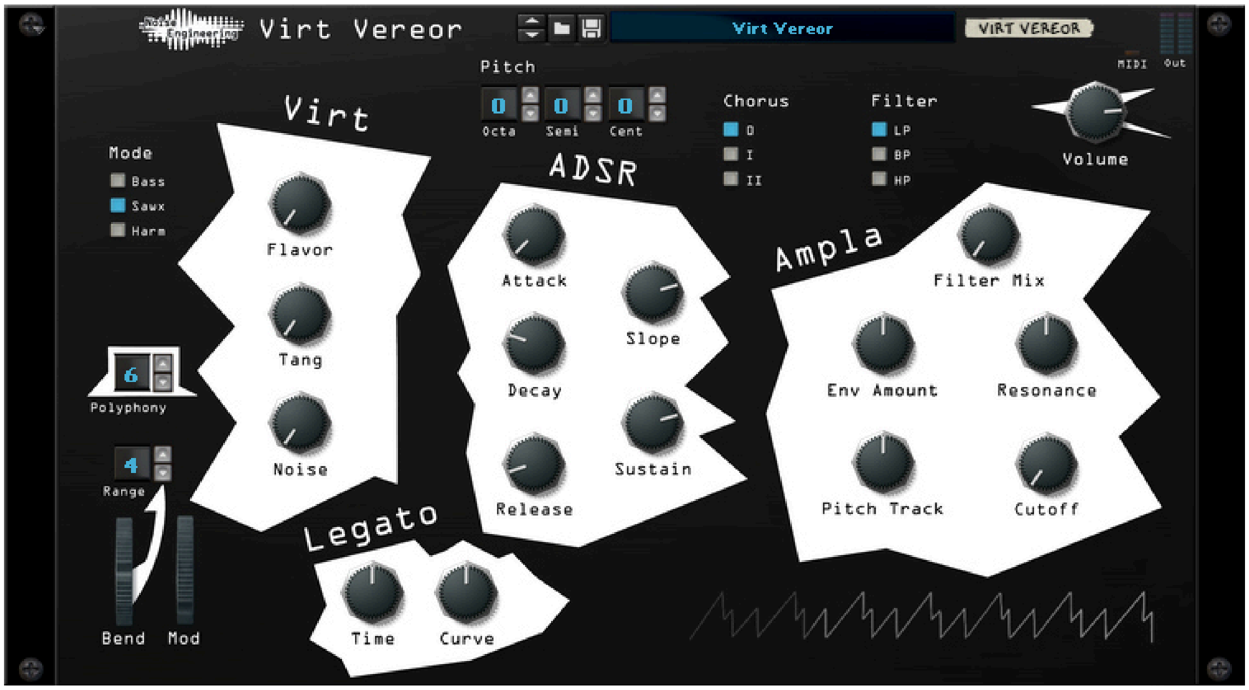
Attack: Controls the attack time for the envelope: this sets the amount of time it takes the envelope to go from minimum to maximum.

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.



Ampla (dynamics+filter) section

Volume: Sets the output level of the Rack Extension.

Chorus: A vintage-inspired chorus: 0 is off, I is some, and II is a lot.

LP/BP/HP: Sets the filter type: lowpass, bandpass, or highpass. The Filter will only be audible if the Filter Mix parameter is set higher than minimum.

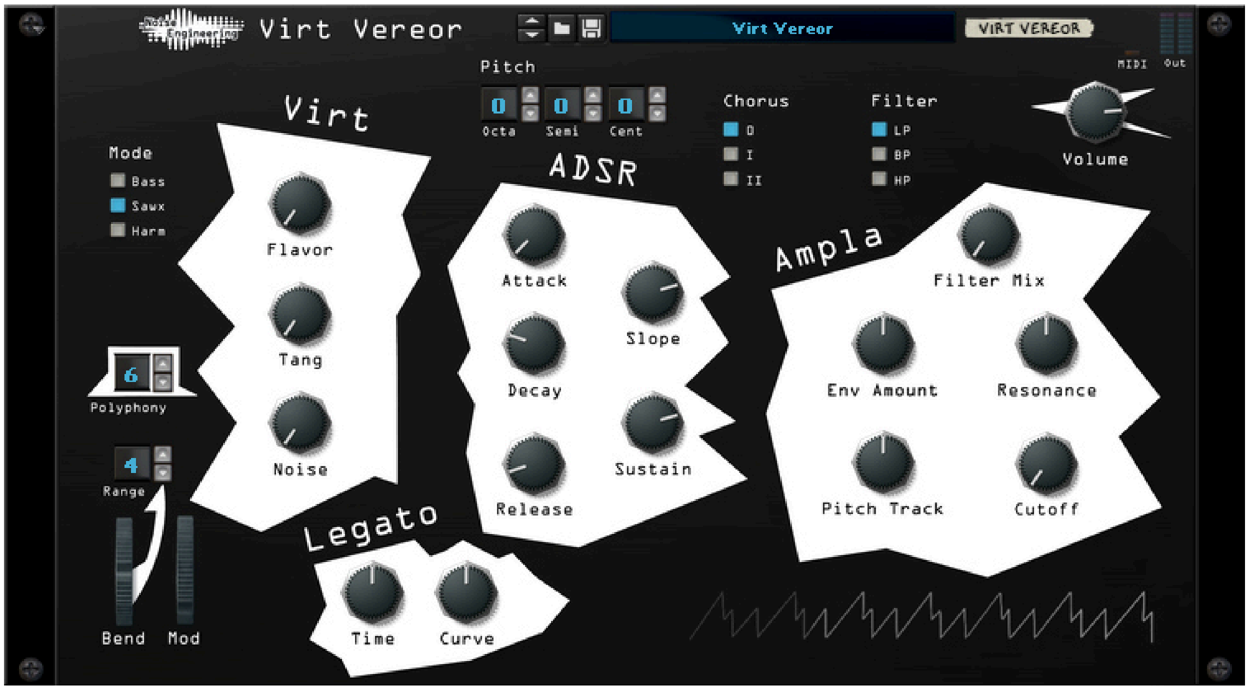
Filter Mix: Controls the mix of unfiltered and filtered signals. To the left, no filter is heard. To the right, only the filtered signal is heard.

Envelope Amount: Controls how much the envelope opens 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 Filter Mix parameter is set higher than minimum.

Pitch Track: Controls how much the filter's frequency tracks the notes being played.

Cutoff: Sets the minimum frequency for the filter.



Note control

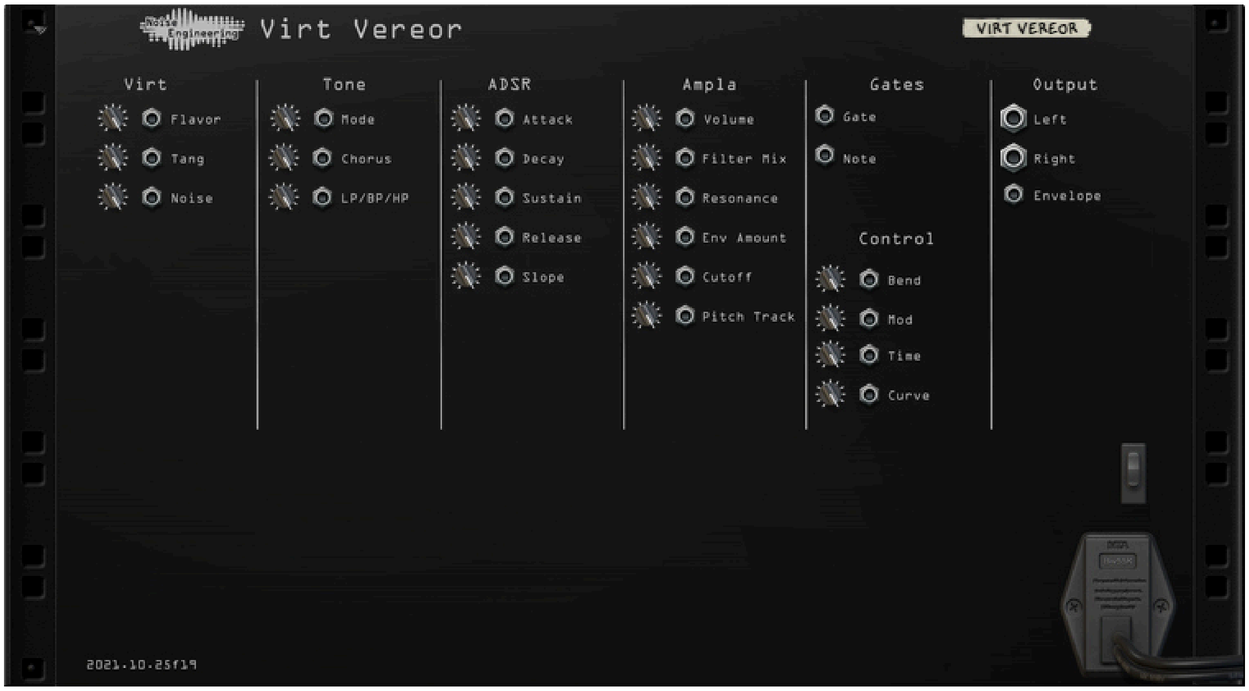
Polyphony: Sets the maximum number of simultaneous voices the Rack Extension can play. The number to the right in parentheses indicates the number of voices currently playing.

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.

Legato Curve (1 Polyphony only): Sets the curve of the pitch slide when two notes overlap.

Range: Sets the pitch bend range in semitones.

Pitch: The pitch selector adjusts the pitch of the fundamental oscillator by an octave, semitone and/or cent.



Back panel

Back-panel knobs act as attenuators for all inputs.

Gates

Gate: Gate input to trigger the module.

Note: CV input to specify note.

Output

Envelope: CV output that tracks the current envelope level.

Left/Right: Stereo output.

Tone Generation

Virt Vereor contains three different algorithms for sound creation: Bass, Sawx, and Harm. These algorithms were originally developed as oscillators for the Arturia Microfreak and Virt Iter module, and now we've fleshed them out and turned them into a full synthesizer Rack Extension.

Bass

There exists an extremely esoteric and cool series of writings called Electronotes by the amazing Bernie Hutchins, retired professor of Electrical Engineering at Cornell University. Electronotes #73 includes reference to an algorithm called Bass. It's a simple algorithm that uses nonlinearities combined with quadrature modulation to produce a variety of tones. The Bass oscillator is based off of this algorithm, with a few Noise Engineering touches (fold anyone?) for more edgy sounds.

Flavor controls the saturation of the cos oscillator.

Tang controls a two-stage asymmetric wavefolder.

Noise is phase mod of both oscillators (opposite phase) and added between fold stages; the knob controls the level of noise added.

Sawx

The SawX algorithm in Virt Vereor starts with a simple super-saw oscillator, and adds some saw-mod, and ends with something that can be ethereal or metal. SawX surprised us with its versatility.

Flavor controls the gain into a modulus stage.

Tang determines the amount of chorus added to the oscillator.

Noise sets the amount of phase modulation by subsampled white noise

Harm

The basic Harm oscillator is a sinusoidal additive synth with a slight distortion stage: this time, a digital implementation of something similar to our analog distortion module Pura Ruina.

Flavor adjusts the relationship between the partials. At zero it is unison, at max it is octaves. The middle interpolates linearly in frequency.

Tang controls an adjustable rectification of the individual partials. Think of this as sort of like a half fold.

Noise controls the amount of phase-modulated noise and master clip level.

About the Preset Names

Our names are a bit unusual. It’s true. Product names, preset names... Let us explain.

At Noise Engineering, we think it's our job to make the tools, but not our job to tell you how to use them. Often, when products are described by a specific function (e.g., "drum module"), people grab the product for that function...and then don't explore what it can do beyond that space. Our synths are designed to be versatile and not serve a single function, and our effects are generally non-standard.

So you'll find that our product names are deliberately created to not tell you what to do with them. You decide how they best fit your workflow. Is this one for percussion? Is it smooth? Is it harsh? Is it for all your pads?

We give each Rack Extension a load of presets meant to hit a wide range of sounds so that you can have a quick taste. We started out with descriptive names like everyone else uses...and then realized that even within the team, people had different perceptions of sounds and how we would name them. And so we went back to our core practice of making the tool and not telling you how to use it: we chose not to be prescriptive.

So, about those preset names.

We are a small team of nerds. And faced with a daunting task like naming 1,000 presets for a single device, 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 contains 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. You may one day find a preset with the name Puppies_rainbows or with Unicorn in the name. You can thank Kris for that.

We randomly selected names from this list. These presets were then organized into categories. Each Rack Extension has its own theme, including articles of clothing, keyboard keys, and tea. Have fun with them and explore. We hope that our products will help unleash your creativity and help inspire you to think outside the box...and then get back in.

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

Mattias Häggström Gerdt

Beta Testers

joeyluck

dioxide

Loque

aeox

tl3ss

NaviRetlav

Skullture

NisseJ

EpiGenetik

Lincolnjet

saibotsemaj