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.

Installation

Account creation

1. Go to portal.noiseengineering.us
2. Enter your email and a secure password, then press “Log in”.
3. Confirm your password by re-entering it in the next box, then fill in your desired display name.
4. Read the Terms and Conditions, End-User License Agreement, Privacy Policy, and Cookies Policy documents, then check the boxes to confirm you agree to comply with them and are over 16 years of age.
5. Click “Sign Up”.
6. Check the email account you signed up with for an email with a confirmation link. Click that link to verify your account.
7. Press “Continue” on the page that opens.
8. Enter your email and password and press “Log In”.

Plugin installation

1. While logged into portal.noiseengineering.us you'll see download links in the "Software" tab labeled "Download Plugin Manager".

2. Click the W64 link if you are using Windows, or the OSX link if you are using Mac. This will download the installer, and it is then ready to be installed.

Windows installation

1. Navigate to the installer you downloaded in the previous step and double-click on it to run it.

2. A window will appear: "Do you want to allow this app to make changes to your device?" Click "Yes".

3. If a web browser window opens, log in using your Portal account credentials.

4. Navigate back to the Plugin Manager, click "Online Install" then click "Install/Update Plugins".

Mac installation

1. Open Finder and navigate to the installer you downloaded in the last step.

2. Double-click the installer to open it and follow the instructions it provides.

3. When it finishes installing, Plugin Manager should run automatically. The installer can be closed and deleted.

4. If a web browser window opens, log in using your Portal account credentials.

5. Navigate back to the Plugin Manager, click "Online Install" then click "Install/Update Plugins".

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?

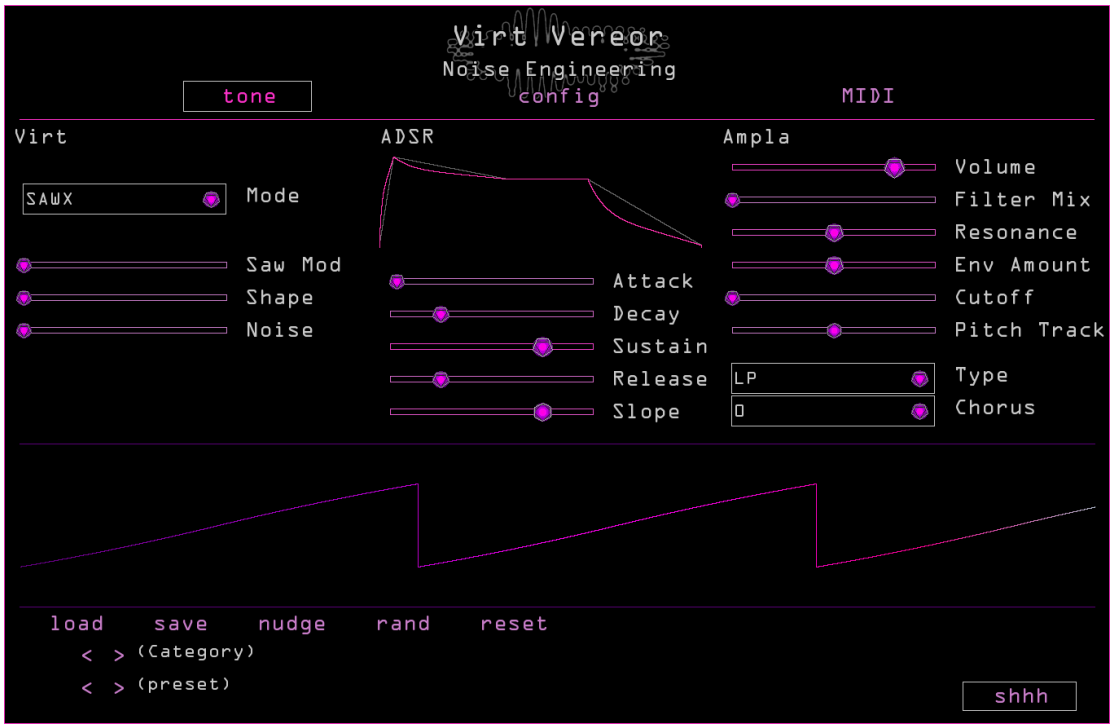
We give each plugin a load of presets meant to hit a wide range of sounds so that you can step through for a quick taste. We started out with descriptive names like everyone else uses...and then realized that even within the team, people had different perceptions of sounds and how we would name them. 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 plugin, 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 plugin. 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 plugin 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.



Tone page

Virt (oscillator) section

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

Three tonal parameters (automatable): 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 section

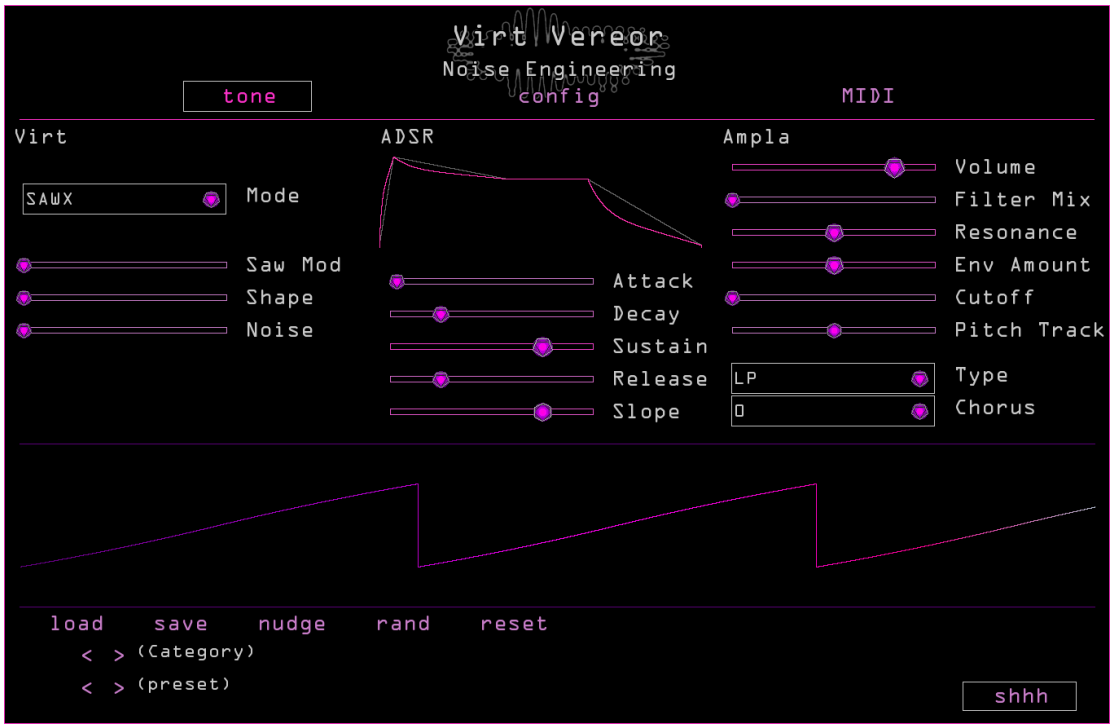
Attack (automatable): Controls the attack time for the envelope: this sets the amount of time it takes the envelope to go from minimum to maximum.

Decay (automatable): 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 (automatable): 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 (automatable): 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 (automatable): Changes the curve of the Attack, Decay, and Release stages of the envelope.



Ampla (dynamics+filter) section

Volume (automatable): Sets the output level of the plugin.

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

Resonance (automatable): 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.

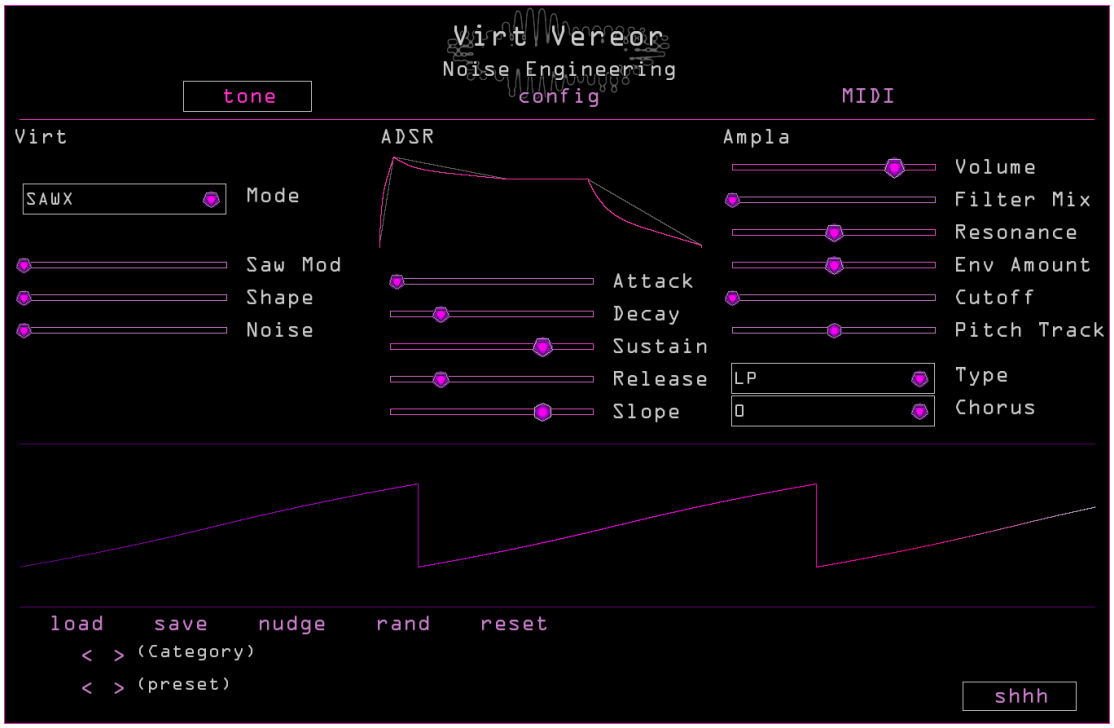
Envelope Amount (automatable): Controls how much the envelope opens the filter.

Cutoff (automatable): Sets the minimum frequency for the filter.

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

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

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



Preset controls

load: Opens the preset directory in the file browser**.**

save: Saves the current settings to the selected preset.

saveas: Opens the file browser to save/rename a preset.

nudge: Applies a small amount of randomization to all tonal parameters. Useful for creating slight variations of sounds.

rand: Applies a small amount of randomization to all tonal parameters and settings. Use this to create inspiring new sounds and ideas.

reset: Resets all parameters to their default settings.

Arrow buttons < >: The top pair of arrows navigate through preset categories, and the bottom through presets within those categories.

shhh: Panic button. Sends a note-off signal to all notes.

Config

pitch

Polyphony (automatable): Sets the maximum number of simultaneous voices the plugin 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.

Pitch of A4: Offsets the base pitch of the synthesizer; defaults to contemporary "concert pitch" (A=440hz).

Bend Range (automatable): Sets the pitch bend range in semitones.

Tuning: The "12-tet" button sets the pitch scaling of the plugin to the default twelve-tone equal temperament tuning. The "load scl" button allows the user to load Scala files for different tuning systems.

graphics

Hue (automatable): Sets the color scheme of the plugin.

Size: Sets the size of the plugin window. Note that “Tiny” is optimized for monitors 800px in height.

Fire: Adds some attitude to the plugin GUI.

help

Frequently Asked Questions: Opens the FAQ page on our website.

Report Problem: Sends anonymized system information to our server for use in support tickets, and opens the plugin contact page on our website.

MIDI Page

This page contains a list of all parameters with adjustable counters next to each. The number on each counter represents the MIDI CC that the parameter will respond to; change the number with the arrows next to each number to change the CC the control responds to.

reset from: This button allows all MIDI CC's to be reassigned in one click. The number on the counter to the right is the first CC, and the reset of the parameters are assigned numerically ascending CC's from there.

CC Enabled: This button enables or disables CC control of Virt Vereor's parameters.

Vel Enabled: This button enables or disables velocity control of Virt Vereor's dynamics.

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 now we've fleshed them out and turned them into a full synthesizer plugin.

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. In Bass mode, the parameters become Saturate, Fold, and Noise.

Saturate controls the saturation of the cos oscillator.

Fold 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. In SawX mode, the parameters become Saw Mod, Shape, and Noise.

SawMod controls the gain into a modulus stage.

Shape 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. In Harm mode, the sliders control Spread, Rectification, and Noise.

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

Rectification 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 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

Arturia

Matt Lange

starthief

Rene G Boscio

Daniel Awbry

Pino Grzybowsky

Christian Gibson

Jake Patel

iVardensphere

Stephan Eibel

Drem Bruinsma

Hans Besselink

Ilario Sorace

Douglas Hill

Boris Kopeinig

Seb Rochard

Jeffrey Horton

Adam Ritchie

Nelson Milum

Josh Martines

William Sager

James Safko

Raul Lizarraga

John Matter

Paul Nadin

Thomas Fredricks

Justin Randell

Matthew Ashmore

Michael Modern

James Tobias

And a huge thank you to every single one of our beta testers!