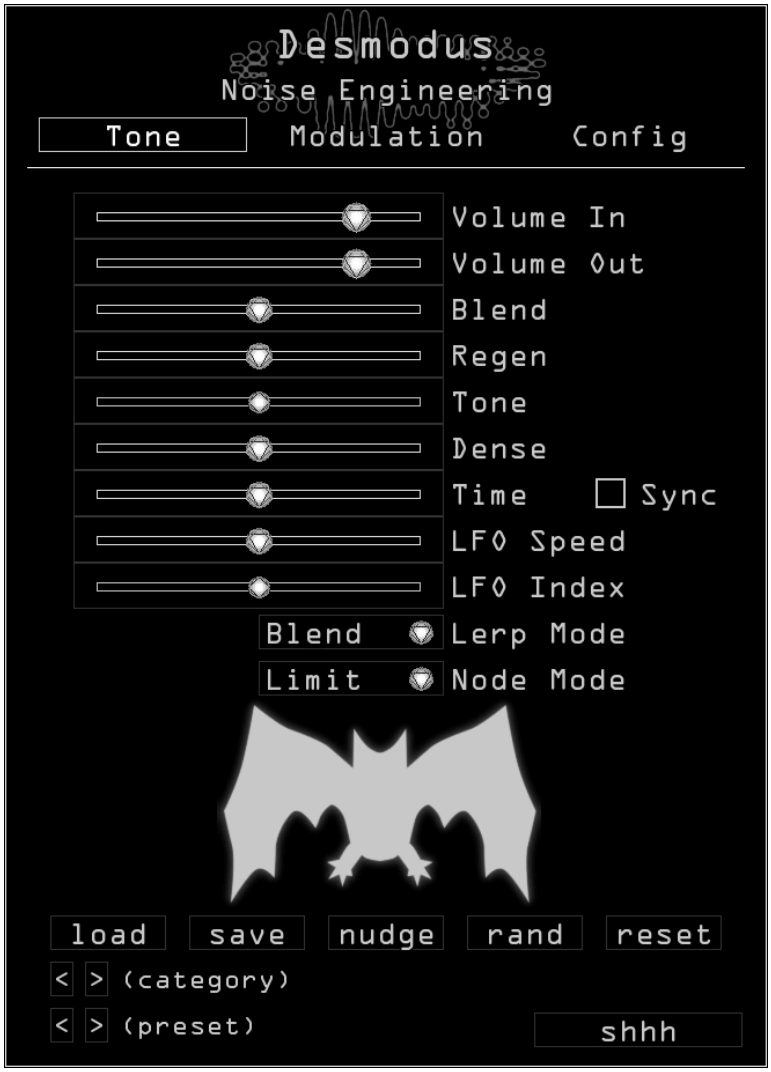
Noise Engineering

Desmodus

Synthetic tail-generator reverb and atmospheric creation tool



User Guide

Welcome to Desmodus.

Desmodus is Noise Engineering's take on a reverb. This is a true stereo in/stereo out effect. Less of a room simulator and more of a synthetic tail generator with features designed for sound design and performance, the parameters on Desmodus allow you to take the effect from a delay to a beautiful reverb to an uncanny, nightmarish atmosphere with the change of a few parameters. Desmodus isn't a reverb: it's an instrument on its own that's designed to be played, and with an extensive modulation system, it'll go beyond any effect you've heard before.

Installation

Windows

Log into portal.noiseengineering.us

Navigate to the “Plugins” tab, and click the link that says “Download for Windows”

Double-click the downloaded file to run it.

NE Products will use your web browser to authenticate your plugins. Log into your Portal account on the webpage that opens if prompted, then return to NE Products.

Click on “Install/Update Plugins.”

Close NE Products, run your DAW, and your plugins will appear!

Mac

Log into portal.noiseengineering.us

Navigate to the “Plugins” tab, and click the link that says “Download for Mac”

When the download completes, open the installer file and follow the instructions.

Open NE Products. On Mac, it can be found with Finder in Applications or with Spotlight.

NE Products will use your web browser to authenticate your plugins when you run it. Log into your Portal account on the webpage that opens if prompted, then return to NE Products.

Click on “Install/Update Plugins.”

Once plugins are installed, the message at the top of the screen will display “Your plugins are up to date.”

Close NE Products, run your DAW, and your plugins will appear!

Uninstallation

Run NE Products again, and click “Uninstall Plugins.”

If you’d like to also remove their preset files, click “Uninstall Plugins and Presets.”

Doing this removes all presets in the factory directories, **including user-created presets,** so please copy any files you’d like to save to a different location before performing this action.

Desmodus History

We have wanted to make a reverb for a long, long time. We dabbled a lot, but in hardware, our biggest block was always having a suitable computational platform. The most recent generation of microprocessors were finally what we needed and Desmodus went into the hardcore design stage in 2019. In late 2020, we released our DSP platform module, the Desmodus Versio, and it was a smashing success. We decided that as we venture into software, we wanted to bring that same reverb algorithm to the world of DAWs. After years of work in hardware and a bit more development bringing it to software we're happy to introduce Desmodus: nicknamed the Batverb, it was designed to be unlike any reverb on the market.

After Desmodus's release, we got a few requests for a tempo-syncable version of Desmodus. After a bit of development, Electus Versio was born as a variation of Desmodus with a similar sound and featureset, but with a clock input and divider/multiplier.

The Desmodus plugin includes all features from both Desmodus and Electus Versio.

Shortcuts

Cmd/Ctrl+Click or Cmd/Ctrl+Mouse wheel

For finer control, hold Cmd (Mac) or Ctrl (PC) while moving a parameter.

Double click

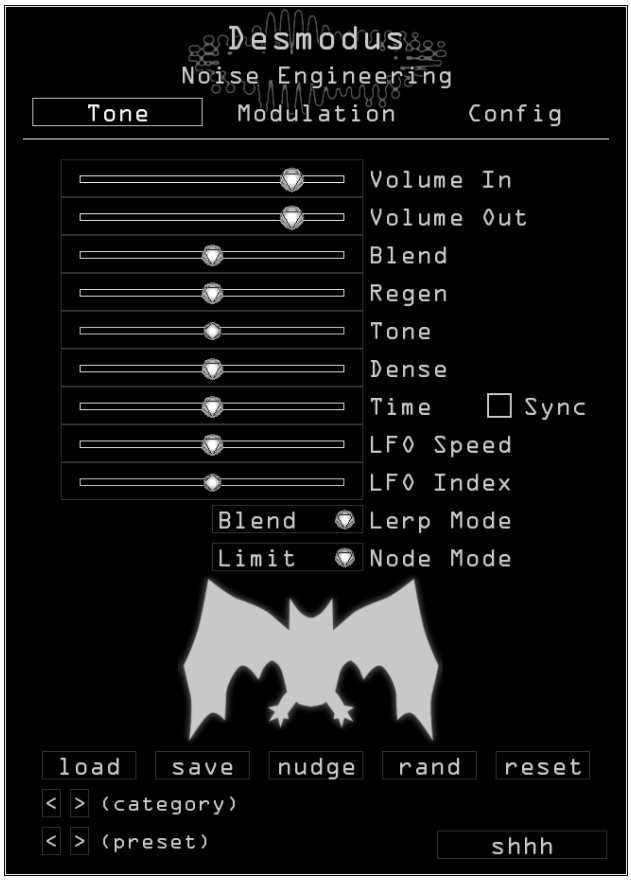
Resets any parameter to its default state.

Scroll

Hover over any parameter and scroll to adjust. Scroll+Cmd (Mac) or Scroll+Ctrl (PC) give finer control.

All of these work to edit step levels in LFO Step shape as well.

Tone page:



Volume In

Controls the level of sound coming into the Desmodus.

Volume Out

Sets the output level of the plugin.

Blend

Controls the dry/wet balance. Fully left, the unmodified input signal is passed through. Fully right, only the processed signal is heard. Points in the middle give you a mix of both.

Regen

Sets the amount of feedback in the reverb tank. Regen controls a wide range of tones and behaviors.

All the way to the left, feedback is minimized. To the left of center, Desmodus generates shorter reverbs, emulating smaller synthetic spaces. Past 50%, the reverb reaches 100% feedback, creating spaces with an infinite tail. Past 75%, the reverb tails are ducked by new sounds at the input, creating sidechain-type effects.

Dense

Sets the spacing of the delay lines. At minimum the effect sounds more like a delay; to the right, the delays are smeared into reverb.

Tone

Controls a filter in the reverb tank. This is a bipolar control: moving the parameter to the left controls a lowpass filter, and to the right controls a highpass filter. In the center, the filter is disabled.

Time or Ratio

Sets the delay time of the reverb. When Sync is unchecked, the Time slider adjusts time in seconds. When Sync is checked, the Ratio fraction sets the delay time in beats.

Sync

Sets whether the delay is clocked in seconds or beats.

LFO Speed

Sets the speed of the internal LFO. The LFO modulates the delay lines; modulation amount is controlled by the Index parameter.

LFO Index

Sets the amount of LFO sent to the delay lines that make up the reverb. This is a bipolar control: in the center the LFO is disabled. To the left, the LFO modulates the delay lines randomly. To the right, the LFO modulates the delay lines with a sine wave. The Speed parameter controls the rate of the LFO.

Lerp Mode

Changes how the delay lines respond when the controls are automated.

- **blend:** Crossfades the delay times for smoother changes.
- **lerp:** Slowly changes delay line length, has audible pitch shift effects due to the delay lines changing length.
- **jump:** Quickly changes delay line length, for audible and fast changes.

Node Mode

Sets the reverb style.

- **limit:** A clean reverb, using limiting within the reverb tank to contain feedback.
- **distort:** Similar to limit, but instead of limiting within the reverb tank, slight saturation is applied for a more distorted sound. This is a very subtle distortion: to hear it clearly, set the Regen parameter to about 80%.
- **shift:** A demonic pitch-shifting algorithm. Adds a one-octave pitch shift that feeds back into the input.

Presets

Presets are stored in the computer's file system, and the controls below allow for modification and navigation through the files and folders of presets. You can create a new preset "Category" by creating a subfolder in the preset directory, and saving new presets within it.

load

Load a preset.

save

Save a new preset.

< > (category)

Loads the next/previous folder of presets in the preset directory.

< > (preset)

Loads the next/previous preset.

nudge

Applies a small amount of randomization to all tonal parameters and modes. Randomization can be bypassed per control in their individual modulation menus. Useful for creating slight variations of sounds.

rand

Completely randomizes all tonal parameters and modes. Randomization can be bypassed per control in their individual modulation menus. Use this to create inspiring new sounds and ideas.

reset

Resets all parameters to their default settings.

shhh

Panic button; ends all sound.

Modulation

All plugins feature a comprehensive routing system making use of a variety of modulation types and sources. When modulation is enabled on a parameter, a box showing the range of enabled modulation will appear, and a small indicator will move within the range box showing the exact position of the modulation.

Types of modulation

Parameters can be modulated from a variety of sources:

LFOs

Four onboard LFOs that offer a variety of modes, from simple waveforms to step sequencers. More detail on LFO modes can be found in the section below titled "Modulation page."

Macros

Four macro sliders can be assigned to any number of parameters. The macros can in turn be mapped to MIDI controllers, automated, or modulated with other LFOs.

Env

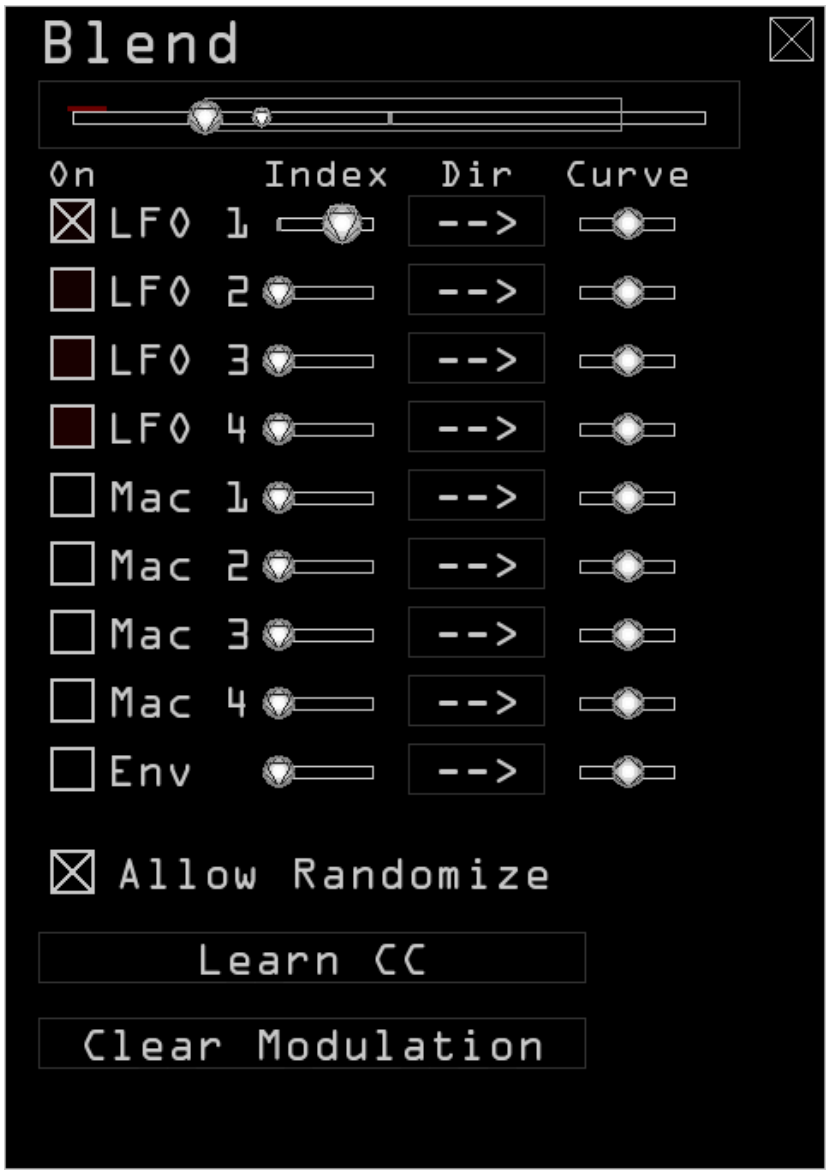
Envelope. The dynamics of the incoming signal.

MIDI CC

Parameters can be assigned to MIDI CCs. If a parameter is assigned, the CC number will appear here. (Note: In some DAWs, MIDI mapping is not supported due to limitations of the DAW.)

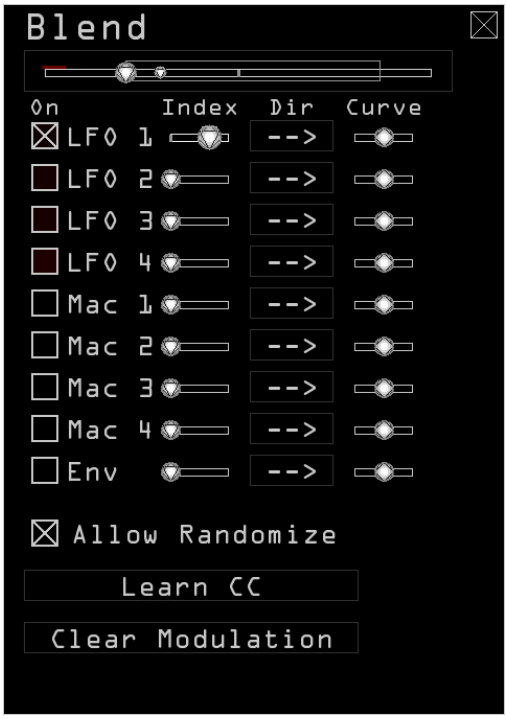
Modulation Assignment

When a parameter is right-clicked (Control+click on Mac), a context menu appears with modulation routing options:



Parameter slider

A copy of the parameter being modulated, for easy adjustment.



On

Each modulation source has a checkbox; when checked, modulation from that source is enabled. Uncheck to bypass.

Index

Sets the amount of modulation from a particular source. Fully left, modulation is bypassed.

Dir

Direction. Sets the polarity and inversion of incoming modulation.

- **-->** unipolar; modulates from the point selected on the parameter up to the level indicated by the Index setting
- **<->** bipolar; modulates around the center point set by the parameter
- **<--** inverted unipolar; opposite modulation from unipolar
- **>-<** inverted bipolar; opposite modulation from bipolar

Curve

Each modulation source has a Curve slider that changes how modulation affects the parameter. In the center, modulation is linear, and the parameter movement matches incoming modulation exactly. To the right modulation is more logarithmic, and to the left more exponential.

Allow Randomize

When checked, this parameter can be randomized when “rand” (Tone page) is clicked.

Learn CC

Click this to enable MIDI CC learn on a parameter. Move a parameter on your MIDI controller and the plugin will exit learn mode and the parameter will now respond to that CC. If clicked by mistake, click “waiting on CC” to exit learn mode. Click “forget CC” to remove an assignment.

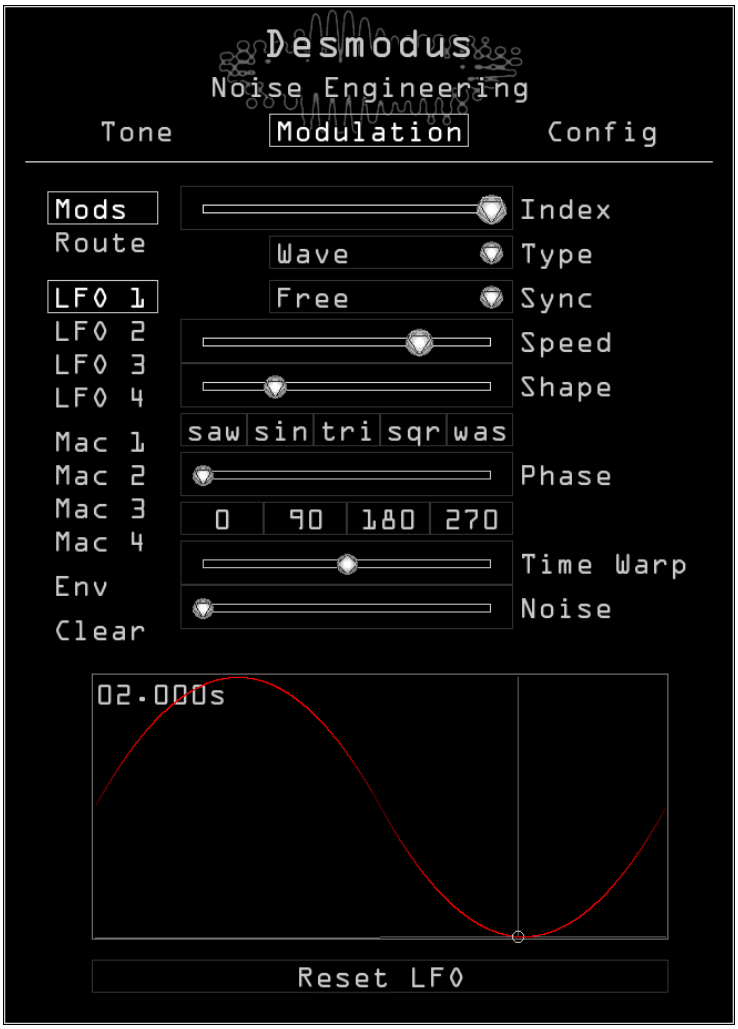
Clear modulation

Resets modulation checkboxes, amounts, direction, and curve. Does not affect CC assignments.

Modulation Page

Click the sections in the left column to navigate to that page and edit modulator settings.

The MODS page shows the modulator settings, and the ROUTE page shows modulation assignments for the selected modulator.



LFO 1-4

Index

Sets the modulation range of the LFO.

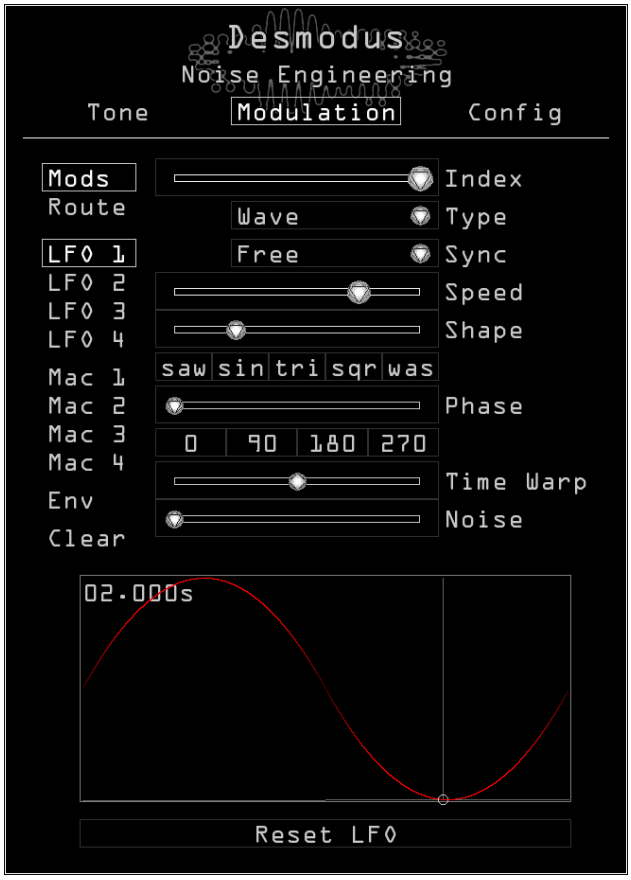
Type

Sets the type of LFO. Options include Wave and Step and are described in detail in the sections below.

Reset LFO

Resets the LFO back to its default state, respecting Type.

Type: Wave



Sync

Sets the source of timing for the modulator.

- **Free:** A single completely freerunning LFO; never resets.
- **Transport:** Speed is set in seconds, but the LFO follows the transport of the DAW.
- **Tempo:** A single LFO that is synced to the tempo and transport of the DAW.

Speed/Beats

Sets the rate of the LFO. In unsynced modes, this is a slider that sets the rate in seconds. In Tempo mode, this is a fraction that sets the rate in beats and, the rate can be doubled or halved with the *2 and /2 buttons respectively.

Shape

Morphs between different waveforms.

saw/sin/tri/sqr/was

Selects a shape preset for the waveform. Choose saw, sine, triangle, square, or inverted saw.

Phase

Changes the starting point of the wave.

0/90/180/270

Selects a preset for the phase of the waveform.

Time Warp

Skews the timing of the waveform.

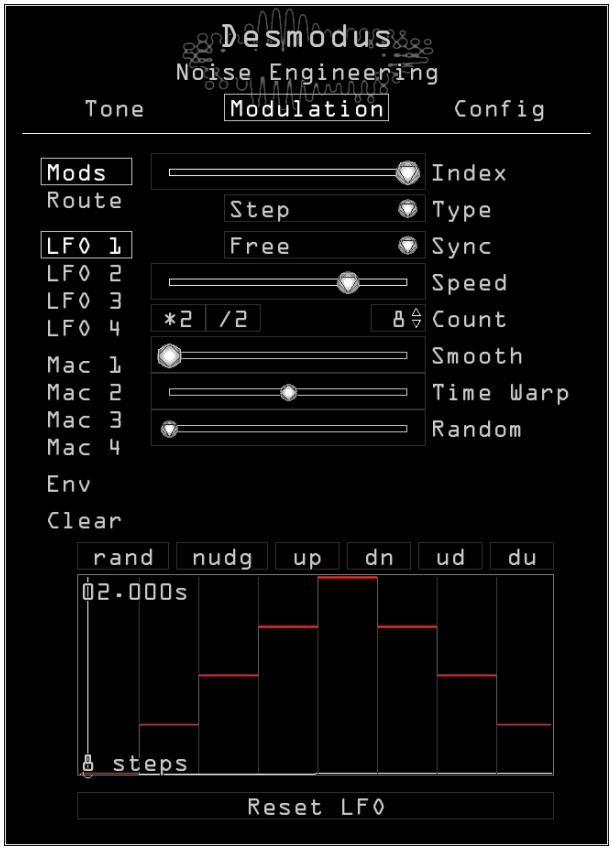
Noise

Adds randomness to the waveform.

Color (only visible when Noise is above minimum)

Changes the intensity of randomness added to the waveform.

Type: Step



Sync

Sets the source of timing for the modulator.

- **Free:** A single completely freerunning LFO; never resets.
- **Transport:** Speed is set in seconds, but the LFO follows the transport of the DAW.
- **Tempo:** A single LFO that is synced to the tempo and transport of the DAW.

Speed/Beats

Sets the rate of the sequencer. In unsynced modes, this is a slider that sets the rate in seconds. In Tempo mode, this is a fraction that sets the rate in beats and the rate can be doubled or halved with the *2 and /2 buttons respectively.

Count

Sets the steps in the sequencer; the up and down arrows change the count by one, and the *2 and /2 buttons respectively double or halve the count.

Smooth

Adjusts how smooth the transition between steps is.

Time Warp

Skews the timing of the sequencer.

Random

Adds per-step randomization to the sequence.

Graph

Edit your sequence here by clicking and dragging.

rand: Randomizes the sequence entirely.

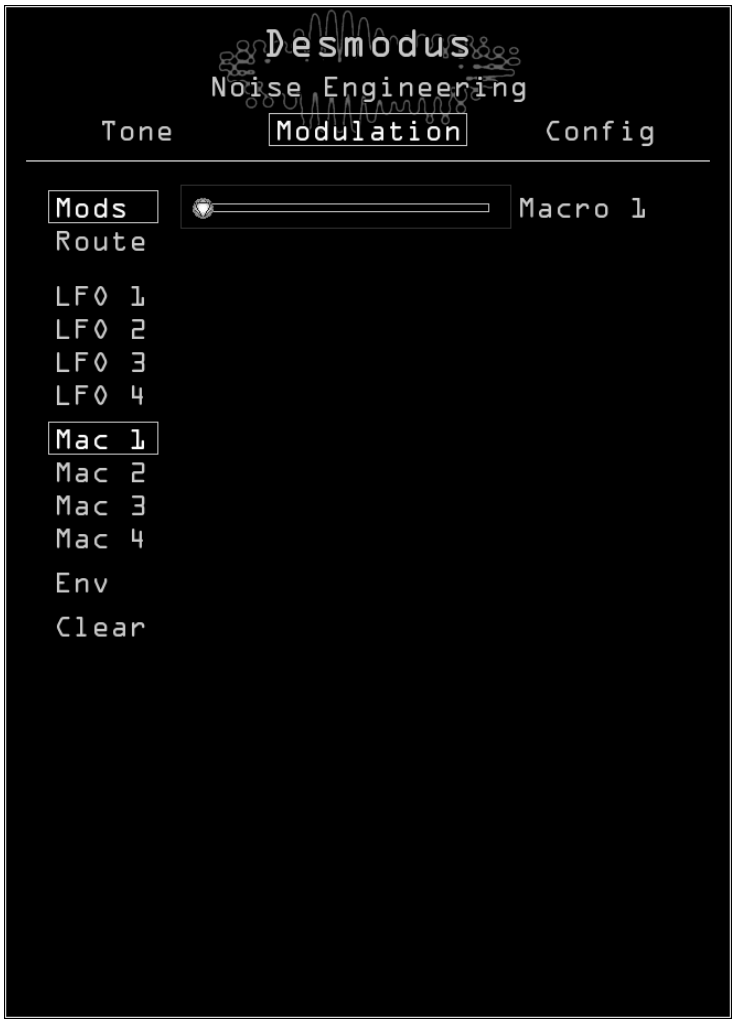
nudg: Slightly changes the values of each step.

up: Generates an ascending pattern across the steps.

dn: Generates a descending pattern across the steps.

ud: Creates a triangle pattern across the steps.

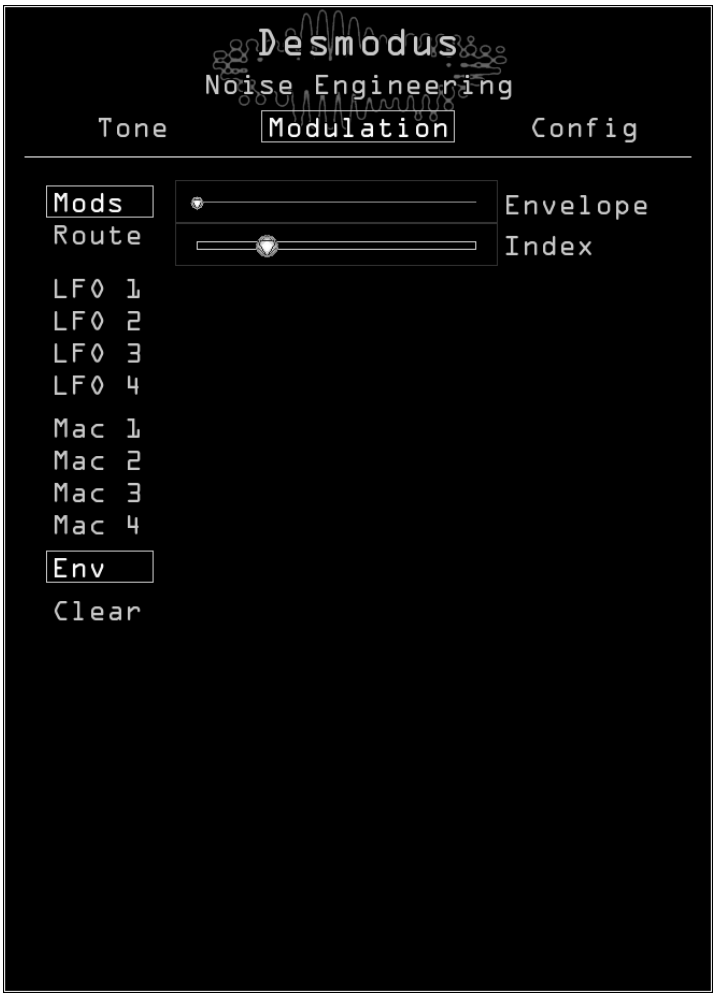
du: Creates an inverted triangle pattern across the steps.



Macro

Mac 1-4

Four sliders that can be assigned to any number of other parameters, and modulated by LFOs or MIDI CCs.



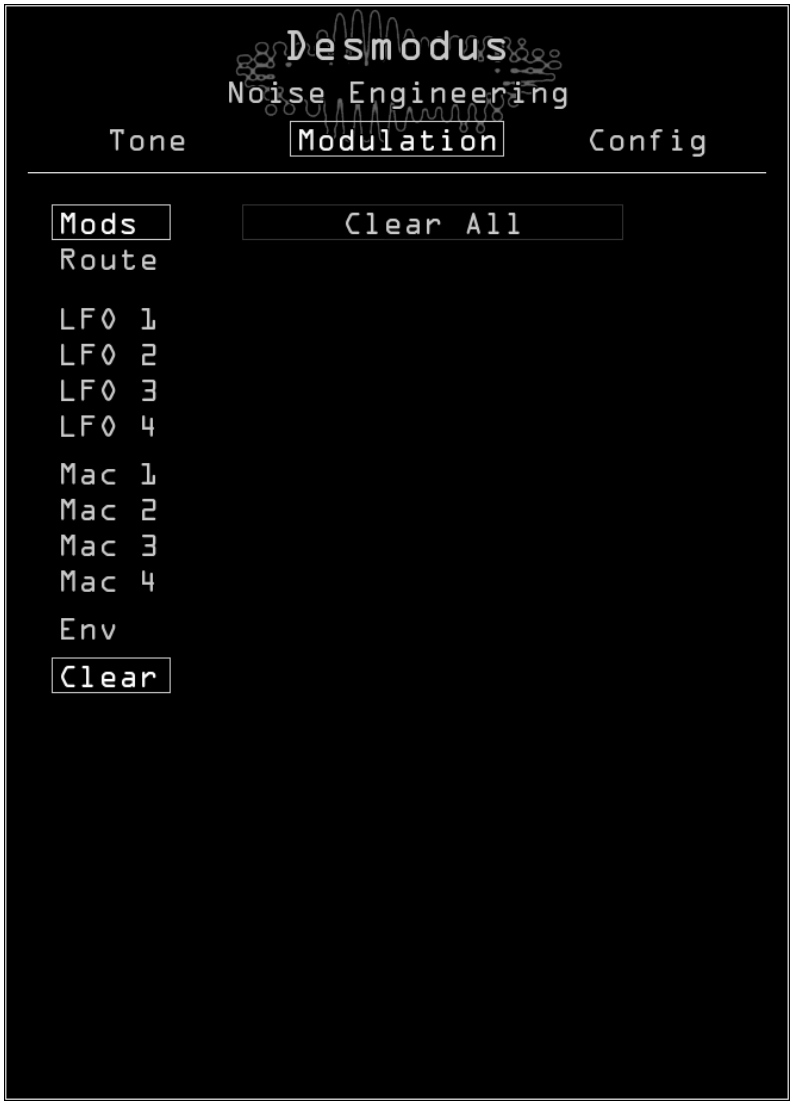
Env

Envelope

An indicator of the current Envelope modulator value.

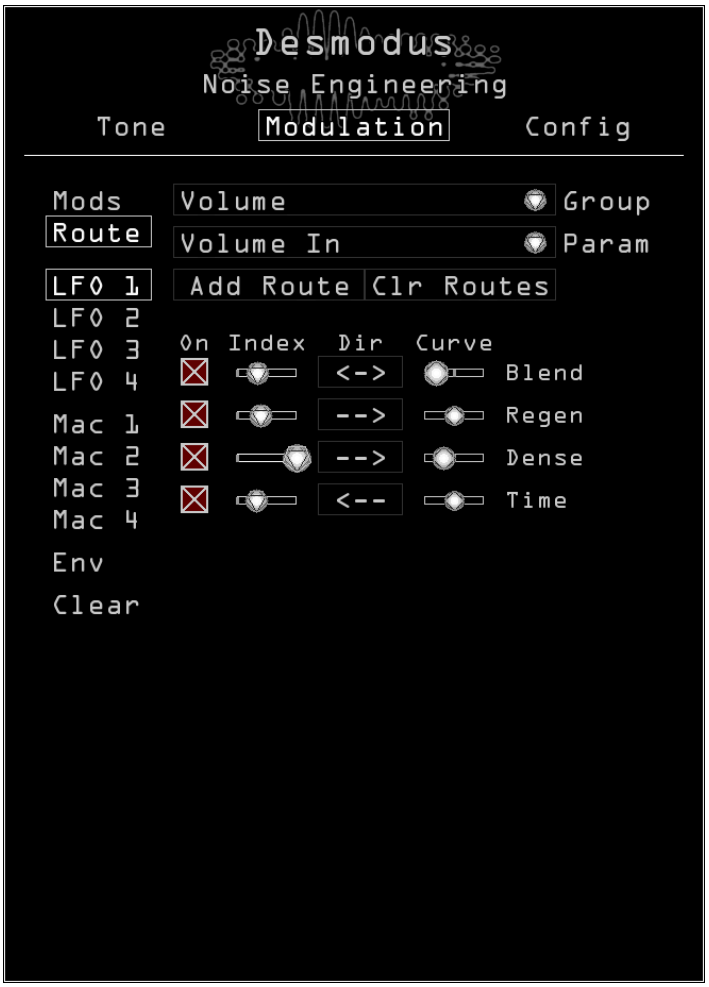
Index

Sets the range of the Envelope modulator.



Clear

This page is home to the “Clear All” button. Clicking this removes all modulation routings from the patch. Use it wisely.



Route Page

Find the parameters assigned to a modulator on its routing page For instance, if LFO 1 is modulating Blend, click LFO 1 and ROUTE to view the modulation settings for Blend (and any other LFO 1 modulated parameters).

Group

Selects a category of parameters.

Param

Selects a parameter from the current category.

Add Route

Adds modulation routing for the selected parameter from the selected modulator.

Clr Routes

Removes all modulation assignments for the current modulator.

On

Each modulation source has a checkbox; when checked, modulation from that source is enabled.

Index

Sets the amount of modulation from a particular source. Fully left, modulation is bypassed.

Dir (direction)

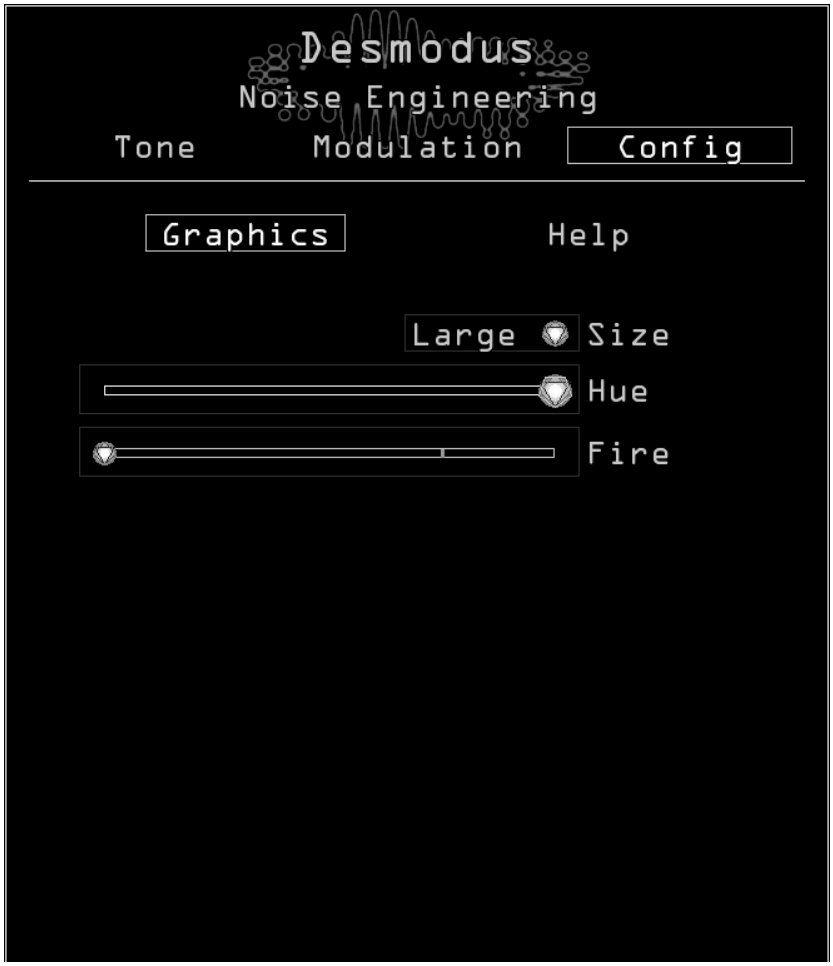
Sets the polarity and inversion of incoming modulation.

- --> unipolar; modulates from the point selected on the parameter up to the level indicated by the Index setting
- <-> bipolar; modulates around the center point set by the parameter
- <-- inverted unipolar; opposite modulation from unipolar
- >-< inverted bipolar; opposite modulation from bipolar

Curve

Each modulation source has a Curve slider that changes how modulation affects the parameter. In the center, modulation is linear, and the parameter movement matches incoming modulation exactly. To the right modulation is more logarithmic, and to the left more exponential.

Config page



Graphics

Size

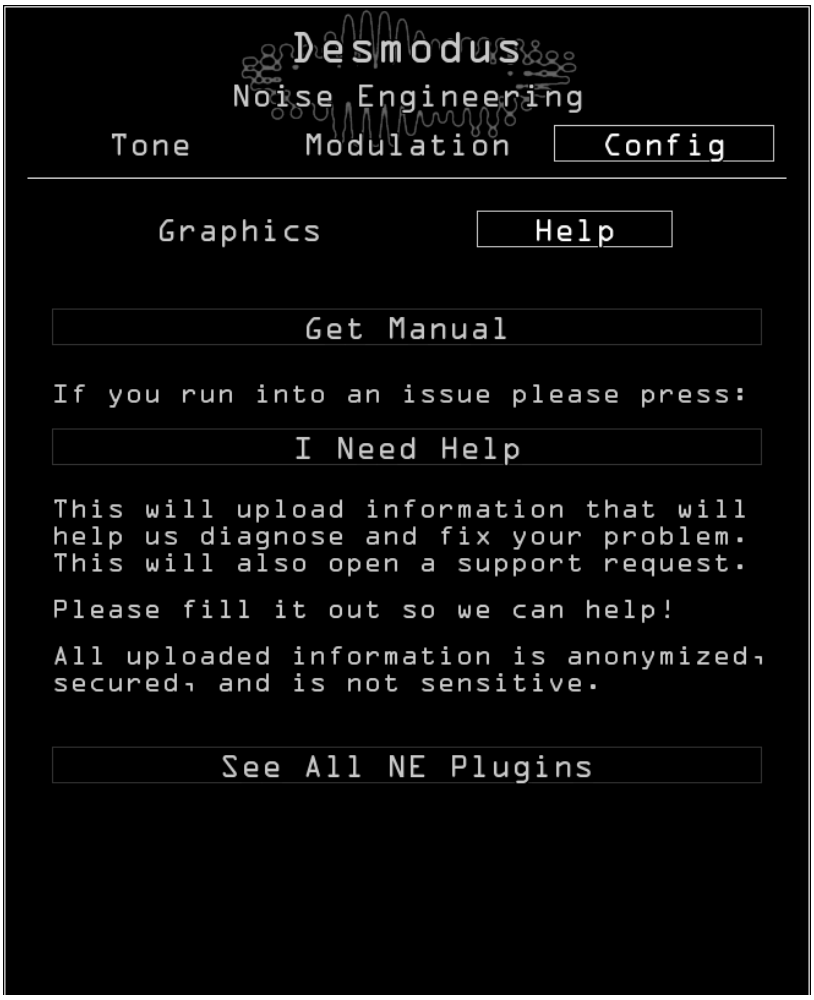
Sets the size of the plugin window.

Hue

Sets the color scheme of the plugin.

Fire

Adds some attitude to the plugin GUI.



Help

Get Manual

Opens the plugin product page.

I Need Help

Uploads anonymized system information used for troubleshooting and opens the support form. If you're having an issue please press this button and fill out the form to tell us what the problem is! You can also always reach us at noiseengineering.us/pages/contact

Drop us a line and we'll get back to you within two business days.

See All NE Plugins

Opens the plugin shop. Check out all the Noise!

Plugin locations

Plugin presets install to:

Windows: C:\Users\Public\Documents\Noise Engineering\

Mac: /Users/[name]/Library/Audio/Presets/Noise Engineering/

Noise Engineering plugins are installed to the default locations for the specified plugin formats. In a majority of cases, plugins will not need to be moved. In the rare instance that you need to move your VST plugins, find them in the following locations.

Windows: C:/Program Files/Common Files/VST3/Noise Engineering/

Mac: /Library/Audio/Plug-Ins/VST3/

Note that AU and AAX plugins cannot be moved. For reference, they are installed here:

Mac AU: /Library/Audio/Plug-Ins/Components/

Mac AAX: /Library/Application Support/Avid/Audio/Plug-Ins/Noise Engineering/

Windows AAX: C:/Program Files/Common Files/Avid/Audio/Plug-Ins/Noise Engineering/

Preset Names

Plugin 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 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 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?), 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 plugin categories. But we wanted to bring our normal sense of play to it so you'll find that each plugin 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

Starthief

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Aldo Lamana