Noise Engineering

Lacrima Versio

The devil's autowah: features an adjustable envelope follower, variable filter type, distortion, chorus, and distinctive modulation for tone shaping.

Overview

Type	Autowah
Size	10 HP
Depth	1.5 inches
Power	2x5 Eurorack
+12 mA	70
-12 mA	70
+5 mA	0

Lacrima Versio features an envelope follower that controls a high-resonance filter. Morph the filter between lowpass, bandpass, and highpass slopes, and Lacrima covers all the sounds you'd expect from a typical wah – but this is not your typical wah. Route an adjustable distortion pre, post, or pre+post filter for some saturation crunch. Add width and motion (and just a little otherworldly tone) to your sounds with a stereo chorus. Last but not least, use the Mod parameter to add audio-rate modulation and octavizing to your signal. Cry your heart out with the Lacrima firmware, available free to all Versio owners.

Etymology

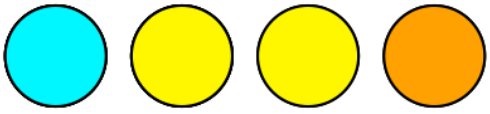
Lacrima: from Latin for tears

Versio: from Latin for versatile

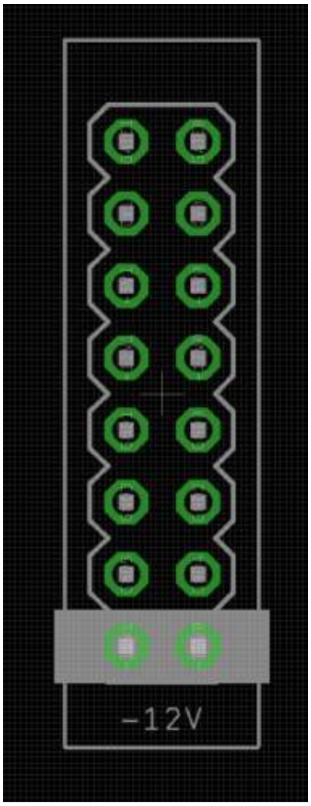
“Versatile tears”

Color code

On boot, the LV's LEDs will shine with this color pattern to indicate that it is running the current LV firmware.



Power



To power your Noise Engineering module, turn off your case. Plug one end of your ribbon cable into your power board so that the red stripe on the ribbon cable is aligned to the side that says -12v and each pin on the power header is plugged into the connector on the ribbon. Make sure no pins are overhanging the connector! If they are, unplug it and realign.

Line up the red stripe on the ribbon cable so that it matches the white stripe and/or -12v indication on the board and plug in the connector.

Screw your module into your case BEFORE powering on the module. You risk bumping the module's PCB against something metallic and damaging it if it's not properly secured when powered on.

You should be good to go if you followed these instructions. Now go make some noise!

A final note. Some modules have other headers -- they may have a different number of pins or may say NOT POWER. In general, unless a manual tells you otherwise, DO NOT CONNECT THOSE TO POWER.

Warranty

Noise Engineering backs all our products with a product warranty: we guarantee our products to be free from manufacturing defects (materials or workmanship) for one year from the date a new module is purchased from Noise Engineering or an authorized retailer (receipt or invoice required). The cost of shipping to Noise Engineering is paid by the user. Modules requiring warranty repair will either be repaired or replaced at Noise Engineering's discretion. If you believe you have a product that has a defect that is out of warranty, please contact us and we will work with you.

This warranty does not cover damage due to improper handling, storage, use, or abuse, modifications, or improper power or other voltage application.

All returns must be coordinated through Noise Engineering; returns without a Return Authorization will be refused and returned to sender.

Please contact us for the current rate and more information for repairs for modules that are not covered by our warranty.

Interface

Blend: Dry/wet balance control. When turned 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. Chorus amount is not affected by blend.

Sat: Saturation amount. Pre/Bet/Aft switch changes where the distortion happens.

L/B/H: Smoothly morphs and blends the filter from a lowpass to a bandpass to a highpass..

Freq: Sets the base frequency of the filter.

Q: Sets the amount of filter resonance.

Env (bipolar): Envelope-follower send amount. This extracts the envelope from the incoming signal's dynamics, and routes it to the filter cutoff, creating the classic "wah" effects. This control is bipolar: at 12:00, the filter is not affected by the envelope. To the right, the envelope will increase the filter's frequency. To the left, the envelope will decrease the filter's frequency.

Mod: Introduces audio-rate modulation, and an octavizing effect in the top 3rd of the knob.

Hit: Triggers the envelope follower manually.

Pre/Bet/Aft: Changes where the saturation stage is placed in the signal chain.

- Pre: saturation occurs at the input.
- Bet: saturation occurs between the first and second filters.
- Aft: saturation occurs after the filters.

0/I/II: Activates a chorus. 0 is off, I is a slow chorus, and II is a faster chorus. Chorus amount is not affected by Blend.

Input and output voltages

All CV inputs expect 0-5 V. All pots act as offsets and sum with the input CV. The FSU gate input responds to signals above +2 V. The audio inputs clip around 16 V peak to peak.

Patch Tutorial

Classic wah

Autowahs react to dynamics in signals, and change their timbre based on volume.

1. Patch a dynamic signal like a synth line, a drum loop, or a recording of an acoustic instrument into In 1 (and 2 if stereo).

2. Patch Out L and R to your mixer.

3. Set Sat, Freq, Q, and Mod to minimum.

4. Set Blend to 12:00, and Env to maximum.

Try changing the Q amount to get the filter talking.

Turn up Sat and change the top switch to add in some different flavors of distortion.

Flip the bottom switch to the middle or right positions to add in some chorus and widen your sound.

Self oscillation

Lacrima has enough resonance to self-oscillate. This patch uses this capability to generate sounds from triggers.

1. Patch a trigger pattern to In L (and a second trigger pattern to R for stereo effects).

2. Patch Out L and R to your mixer.

3. Set Freq and Mod to minimum.

4. Set Q, Sat, and Env to maximum.

5. Flip the switches to the left position.

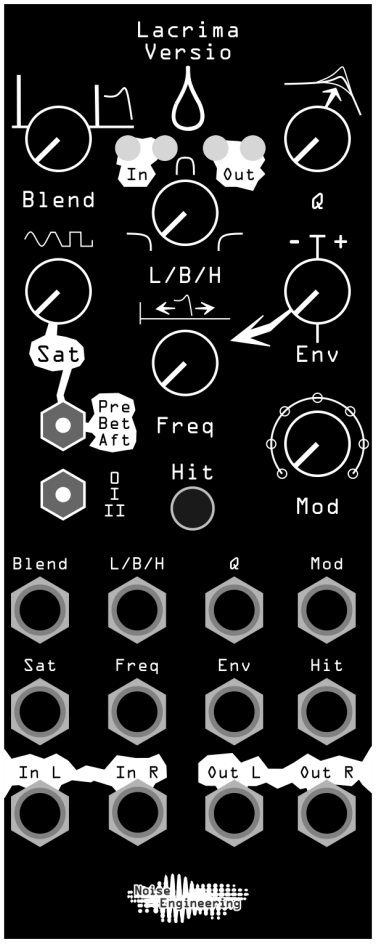
As triggers come in, they ping the envelope follower and the filter, causing a frequency sweep and a ringing sound great for percussive effects.

Try changing the frequency of the filter and the envelope amount to tune your sounds to the rest of your patch.

Change the Sat level and the top switch to change how harsh or gentle the resulting tones are.

Find more patches in the upcoming Lacrima Versio patchbook.

Updating Firmware



Melotus Versio's firmware can be changed to a growing number of alternate firmwares via our firmware webapp. In the unlikely event that the need arises, firmware patches for Melotus will also be available on that site.

Webapp link: https://portal.noiseengineering.us/

To update the firmware on your Melotus Versio:

1. Turn off the power to your case and unscrew MV.
2. Remove the power connector on the back of MV.
3. Plug a micro USB connector suitable for data transfer into the port on the pack of the module, and the other end into your computer.
4. Follow the instructions in the webapp.

Design Notes

In 2019, we launched our "Distortion of the Month," a series of analog distortions that remain near and dear to our hearts. We stopped at 5 modules but there were always more (and still are) that we wanted to do. Lacrima started its life as one of these: an analog wah that Kris dreamed up and desperately wanted to bring to Eurorack. We discussed features and started a schematic, but as work progressed on the Versio platform, we realized that we could do an even cooler, more fully featured version there. We dropped dev on the analog version and marked the letter L on our list of potential firmwares for Versio as taken.

What those features would be, though, took some time to sort through. In the end, we fused a few somewhat independent ideas to make Lacrima. We eventually agreed on the wah + distortion we had originally planned in analog combined with a virtual analog take on the Mu-Tron 3. We merged these into an envelope follower + distortion + SVF filter structure and as we developed it further we added some features from our analog distortion Viol Ruina (which has a similar structure) to round it off.

Lacrima Versio is a rare product that surprised even us when it was done. Stephen and Kris both are head over heels for this one. If you love dynamics, give Lacrima Versio a try.

Special Thanks

Eric Clapton
Jimi Hendrix
So many more, because the wah is a damn classic sound.