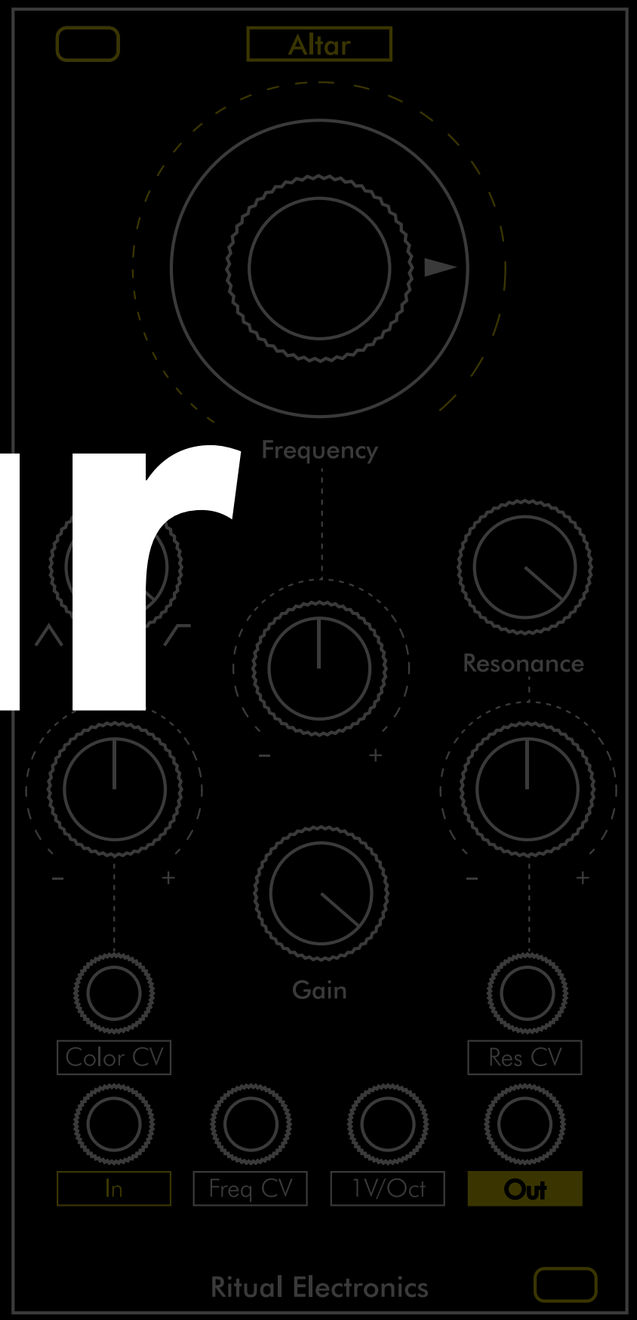
Altar

Ritual Electronics



Summary

Thank you for purchasing Ritual Electronics Altar.

Your module has been assembled with care in our studio in Marseille, France.

You can find your module on Modulargrid:
https://www.modulargrid.net/e/ritual-electronics-altar

For any remarks and informations, contact us at:
contact@ritualelectronics.com

For video demos and patch ideas check:
https://www.instagram.com/ritualelectronics/

Limited warranty

Ritual Electronics warrants this product to be free of defects in materials or construction for a period of one year from the date of purchase.

Malfunction resulting from wrong power supply voltages, backwards or reversed eurorack bus board cable connection, abuse of the product or any other causes determined by Ritual Electronics to be the fault of the user are not covered by this warranty, and normal service rates will apply.

During the warranty period, any defective products will be repaired or replaced, at the option of Ritual Electronics, on a return-to-Ritual Electronics basis with the customer paying the transit cost to Ritual Electronics. The return of your module is on us.

Ritual Electronics implies and accepts no responsibility for harm to person or apparatus caused through operation of this product.

Installation

Always turn your eurorack case off before plugging or unplugging a module.

Do not touch any electrical terminals when attaching any Eurorack bus board cable.

Ritual Electronics Altar requires:

35mA on +12V
30mA on -12V
0mA on +5V

You will need 12HP of free space in your Eurorack case to install Altar. The module is 25mm deep.

Overview

Altar is a modern voltage controlled 3-pole, 18dB/ octave state variable filter.

The configuration of the filter can be smoothly crossfaded from BP to LP to HP. This unusual filter type arrangement brings out very nice harmonics and nuances. It is really suited to CV control.
Resonance is under voltage control with attenuverter as well allowing for great timbre modulations. It is particularly useful to recreate accent patterns à la 303.
There is a gain at Altar input to beef up your signal which then distort the filter core.
The filter tracks 1V/oct for 4-5 octaves and can turn into a very sweet sine oscillator.
Altar is a completely original filter design by Mathieu Fröhlich (creator of Squarp's Hermod).

Altar controls

Frequency attenuverter knob
Going left the CV input is subtracted from the Frequency knob value. To the right the CV input is added.

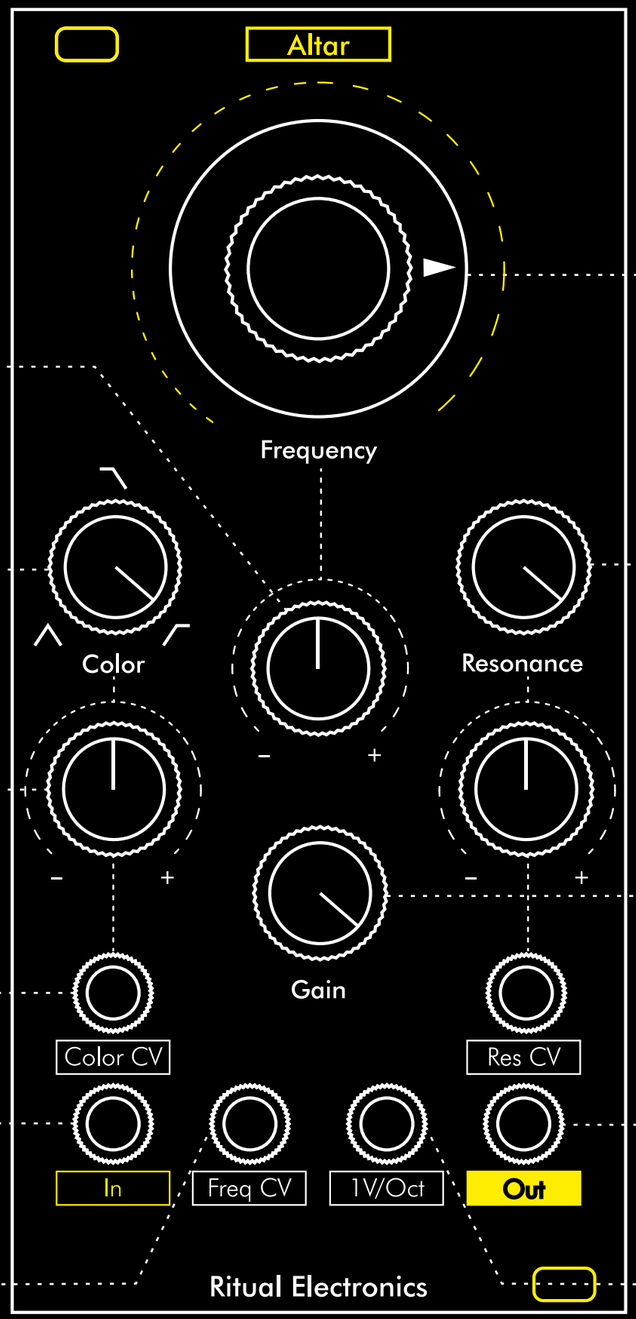
Color knob
Changes the state of the filter from band pass to low pass to high pass

Color & Resonance attenuverter knobs
Going left the CV input is subtracted from the Color/Resonance knob value. To the right the CV input is added.

Color & Res[onance] CV inputs
External control for each parameter

Audio input
Usually everything starts here

Freq[uency] CV input
External control for the filter frequency



Frequency knob
Sets the cutoff
From sub-audio (≈2.5Hz anti clockwise) to ultrasonic (43.5kHz fully clockwise)

Resonance
Controls the resonance peak

Gain knob
Attenuate or amplify the input to generate different filter responses

Out
Outputs filtered signal

1V/Oct
Use the 1V/Oct calibrated input for pitch tracking

Character

Patched very simply Altar is a relatively smooth filter. It is not what you would expect from a noise worshipping company.

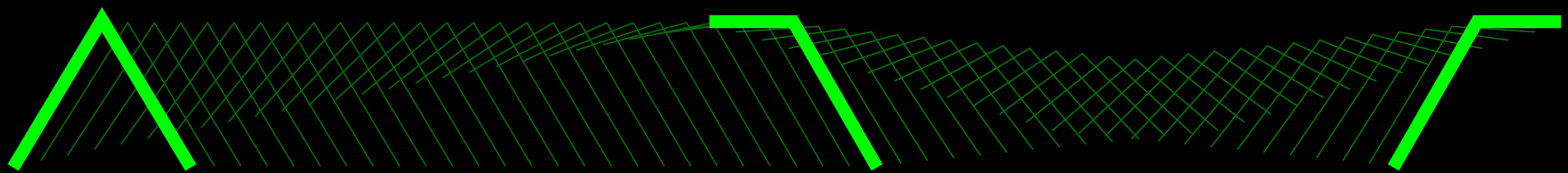
If you keep the gain relatively low, crank the resonance up a bit, you'll find throat singing like harmonic series hidden in the simplest square waves. One of the filter's quirks is the frequency range. It goes from sub audio (2.5Hz) all the way down to ultra sonic (43.5kHz) all the way up. Keep this in mind while experimenting.

The resonance is not out of control and self oscillating until the very last degrees of the pot. This way you can get nuanced frequency bumps.

If you want to unlock wilder timbres, self patching and audio rate modulations are your friends, as usual. More on this in the following pages.

Do not under estimate the gain knob. Its neutral position is around 2 o'clock.
This very knob changes the character of the filter quite a lot. Specially for resonance.
Be aware that less gain can result in ess than the standard 10Vpp waveform. But it is worth exploring these sounds too.

Colors



The Colour act as a three input crossfader.
It transitions smoothly from band pass to low pass to high pass.

This unusual BP-LP-HP filter arrangement is very suited for voltage controlled transition giving a more pleasant sweep than the usual LP-BP-HP.

1V/Oct

Altar's 1V/Oct input allows for filter tracking and sine oscillator functionality.

It tracks over 4-5 octaves. You can adjust the tracking using the onboard vertical trimmer, located on the right side of the PCB.

Calibration procedure

You'll need a way to measure frequency. The Spectrum or Tuner in Ableton Live can help you if you don't have an oscilloscope or multimeter.

Patch a stable 1V/Oct source in the input and play octaves. If the upper octaves are flat, turn the trimmer clockwise. If they are sharp, turn counter clockwise.

Usually the knob fully clockwise has given the best results!

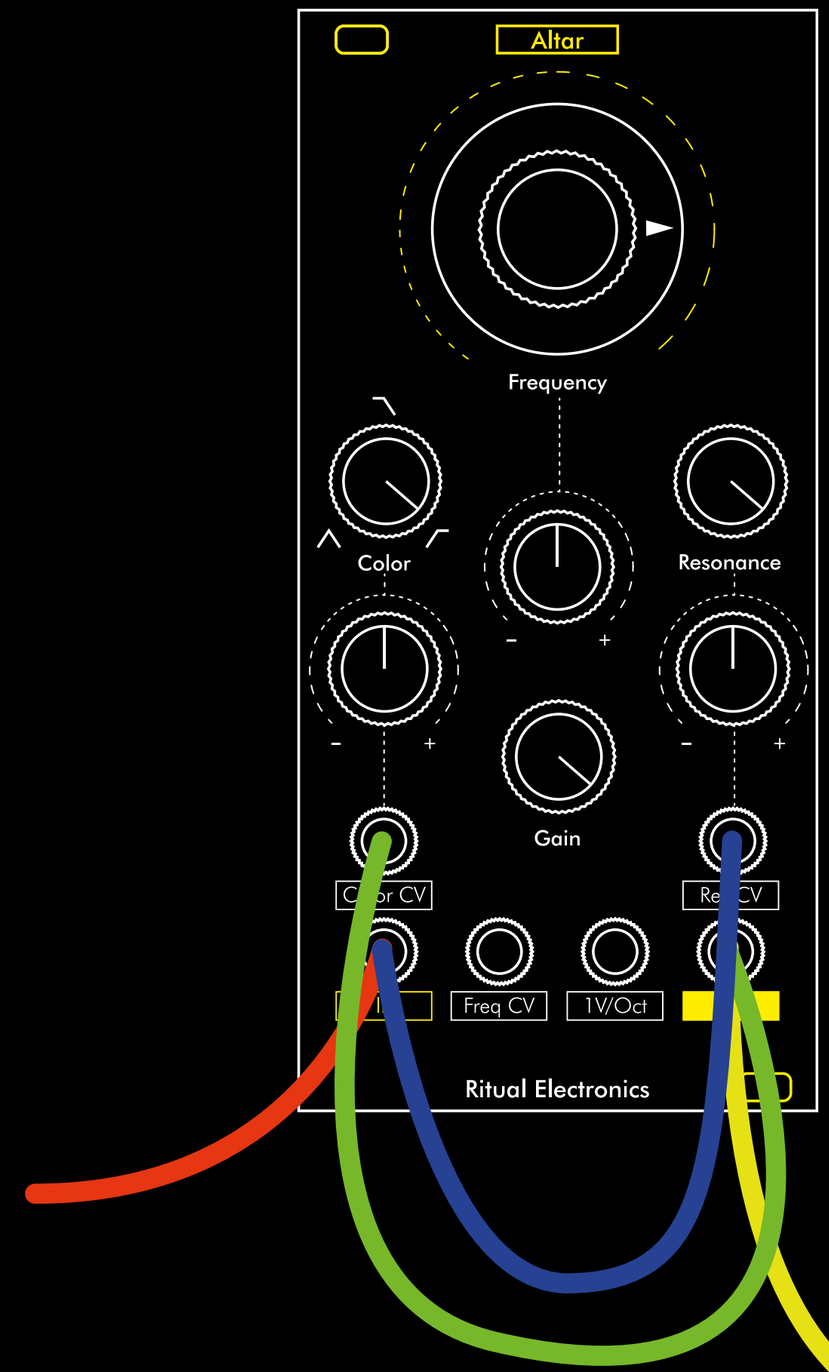
Self patching

New tones can be unlocked by patching the input or the output of the filter to its different CV inputs.

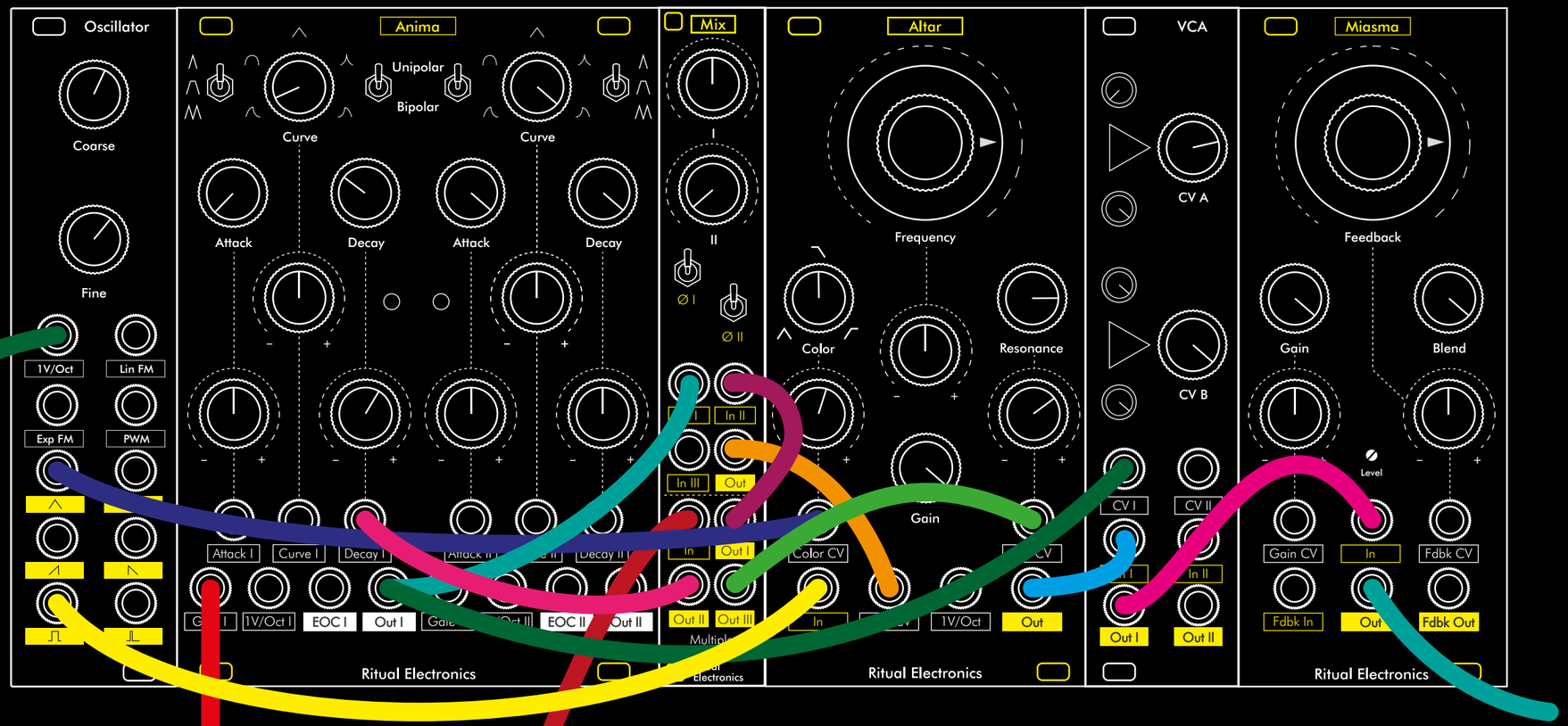
As all our modules, Altar shines when self patched. Try patching its output in the Colour input to add thickness to the sound.
Use multiples and stackcables and experiment!

Auto oscillation self patching trick

Altar does not provide a 10Vpp sine across the whole frequency range when oscillating. You can however patch the output in the input to get a higher output. Prefer the low pass mode for such use and ride the gain. Careful, in band pass you can go as high as 22Vpp using this technique!
See Patch Idea #2 on page 12 for more.



Patch ideas



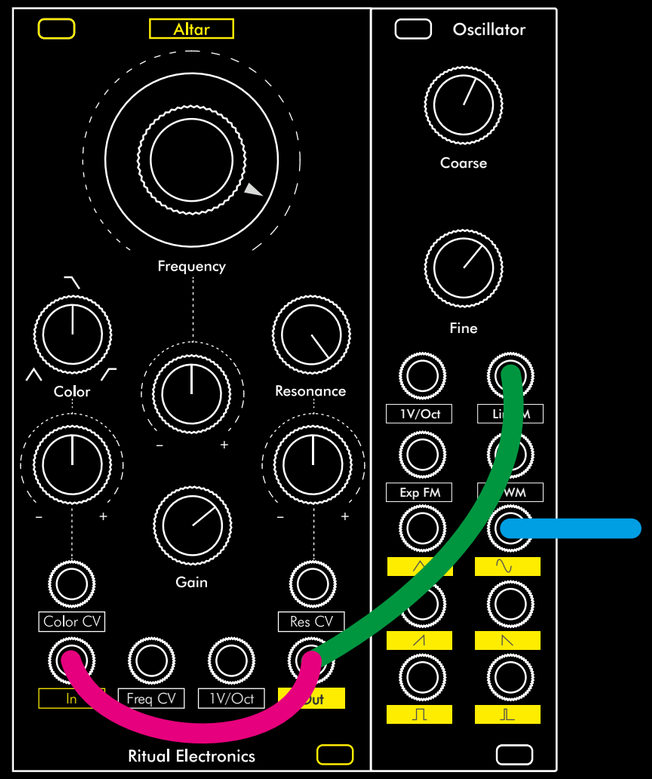
Patch #1 - 3Ø3

Using the Resonance attenuverter you can use a gate as a resonance accent. Mix it with the cutoff enveloppe to brighten the filter too. You can also patch it to the Decay CV of your enveloppe to make it slightly longer as in the original machine.
Try using the triangle waveform of your oscillator to modulate the Color CV of Altar for a slightly fizzier timbre.
Send this overly complicated mess to your favorite distortion to finish it off.

Patch notes

Oscillator, Out Square/Saw ——— Altar, In
Altar, out ——— VCA, In
VCA, Out ——— Miasma, In
Oscillator, Out Triangle ——— Altar, Color CV
Anima, Out ——— VCA, CV In
Anima, Out ——— Mixer, In I
Accent gate ——— Mixer, In II
Mixer, Out ——— Altar, Freq CV
Accent gate ——— Anima, Decay CV
Accent gate ——— Resonance CV

Patch ideas



Patch #2 - Supersonic modulator

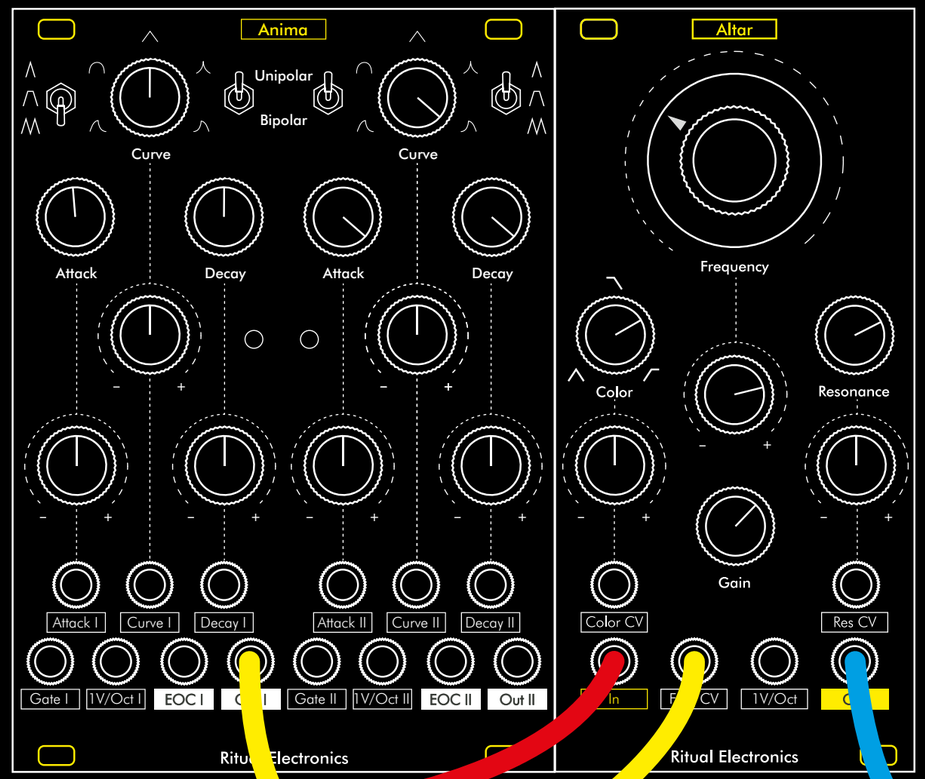
Use the 10Vpp self oscillation trick described page 9. From ≈3 o'clock to 5 the filter's frequency is supersonic (20kHz to 43.5kHz). Use this to FM an other oscillator for incredible frequency sweeps!
Pro tip: one can also use the self oscillation compensation to have a 10Vpp emergency LFO out of Altar. It goes down to 2.5Hz. There are better uses of the filter though.

Patch notes

Altar, Out ——— Altar, In
Altar, Out ——— Oscillator, Lin FM In

Try using one of the oscillator's outputs to CV the Color or Freq on Altar for a slightly chaotic behavior

Patch ideas



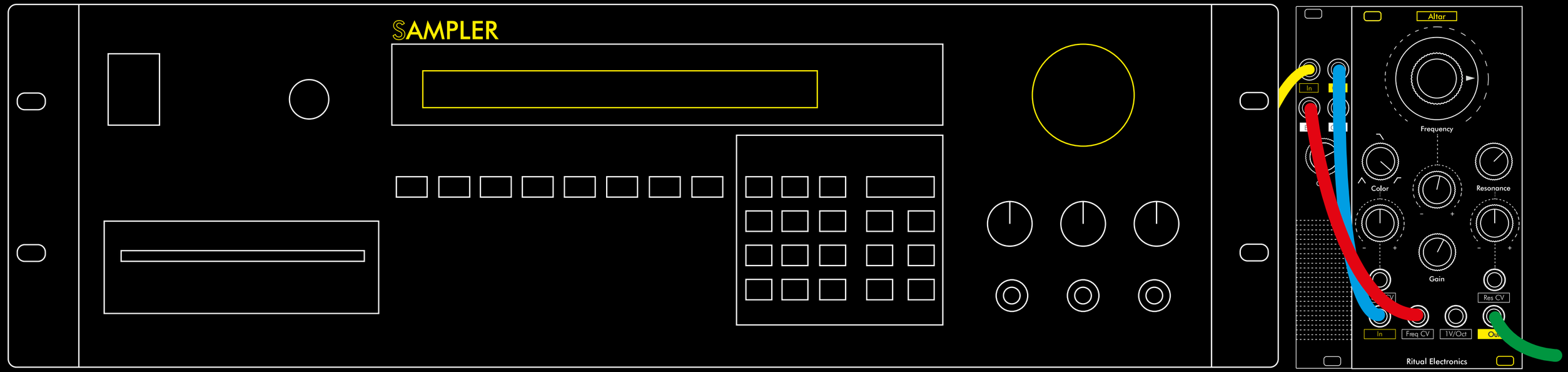
Patch #3 - Pseudo phaser

Right in between the Low Pass and High Pass lies a pseudo All Pass filter. It doesn't filter that much but it shifts the phase at the cutoff point. Add in resonance to taste to hear the effect. LFO the frequency and voilà, pseudo phaser for your Schulze needs.

Patch n es

Anima, LFO Out ——— Altar, Freq CV

Pay attention to the knobs positions



Patch #4 - French filtered house

We dared. The high pass filter in Altar is sooo good you need to try filtering your favorite disco loops and 909 beats at least once.
Get that old sampler out or use one of the great eurorack ones. A touch of envelope following can add to the patch.
Keep it simple, with a healthy dose of resonance to achieve this great silky dance sound.
Cocorico.

Patch notes

Sampler, Out ——— Envelope Follower, In
Envelope Follower, Out ——— Altar, Freq CV
Sampler, Out ——— Preamp, In
Preamp, Out ——— Altar, In

Music sounds better with you