

The ability to toggle between LPF and self-oscillation modes on the VCF is an aspect we'll be coming back to in various patches. Here we're using the sinusoidal output as a 2nd voice, tracking 1v/oct

along the VCO's core, either unisono or detuned from the base-frequency. The added versatility of exponential modulation input for the VCF allows us to track the Filter absolutely standalone if so desired.

**Suggested settings:** short but not too "clicky" attack phase, perceivable decay and a nice release phase "tail".

The 1v/oct modulation input is **normalized** to the VCF in the LPF and self-oscillation+1v/oct mode. Meaning it will track 1v/oct relatively to the cutoff frequency position.

VCO range switch position according to desired register of sound.

**Suggested patching:** Triangle or Sine for the 1st voice, Sinusoidal output of the VCF in self-oscillation mode as a 2nd voice

Experiment with gain ratios between 1st/2nd voice.

Set the VCF mode switch to the MID position to toggle self-oscillation + 1v/oct tracking mode.

Add a hint of sub-octave to taste.

The cutoff frequency setting control will determine the pitch of the Sinusoidal output in self-oscillation mode.

Mix to VCA Audio input on the Expander.

Toggle through the Envelope Generator's Curvature characteristics\* by pressing **mode + time** toggles simultaneously. Experiment and listen. :)

**Optionally:** Power / MIDI's modulation output can be used to modulate the VCF's pitch in self-resonance mode, to offset from the 1st voice in a dynamic manner.

Set the VCA's modulation depth. Analog saturation will occur beyond certain values.

**Suggested patching:** Power / MIDI gate output to Envelope Generator trigger/gate input. Envelope output to Expander VCA modulation input.

Use supplied MIDI-to-3.5mm Adapter to convert external MIDI data\*\* to analog Control Voltages.

\*Green LED = Linear Characteristic (default).  
\*\*Power / MIDI is set to receive MIDI via CH1 by default.

The VCA modulation input is **normalized** to the cutoff modulation input on the Expander module. In this patch we do NOT want the Envelope to affect the VCF's cutoff frequency and conversely pitch, hence the cutoff modulation depth control is all the way down.

VCF's sinusoidal output to Audio input 2 on the Mixer / Noise module.

