
Alchemy Manual

SV Modular



October, 2019

Alchemy Users Manual



Figure 1: Alchemy

Alchemy is a Semi-Modular synthesizer. Each function is designed as a module, but are internally “pre-wired” together. Alchemy is a full synthesizer, and can produce a variety of sounds without any patching, but also provides a patch bay to allow you to create new an interesting paths for signals.

Modules

Voltage Controlled Oscillators

Alchemy contains two Voltage Controlled Oscillators, providing one volt per octave. These Voltage Controlled Oscillators provide the basic building blocks of sound by providing five possible voices.



Figure 2: VCO

The *Shape* parameter controls the voice chosen between the five possible voices:

- Sine
- Triangle
- Sawtooth
- Square
- Noise

You can adjust the *Pitch* of the voices up or down 1.1 octave, giving you the ability to offset how high or low the voice plays.

The *PW* or *Pulse Width* parameter works when the voice chosen is a Square wave. This can be adjusted from nearly zero, or nearly one hundred percent of its duty cycle.

Filters



Figure 3: Low Pass Filter

Low Pass Filter The Low Pass Filter module provides a Moog-like filter providing a *Frequency* adjustment from 200 hertz to 18000 hertz. It provides a *Resonance* filter that can be adjusted as well.



Figure 4: High Pass Filter

High Pass Filter The High Pass Filter module also provides a Moog-like filter, providing a *Frequency* adjustment from 200 hertz to 18000 hertz. It provides a *Resonance* filter that can be adjusted as well.



Figure 5: State Vector Filter

State Variable Filter The State Variable Filter provides a *Frequency* adjustment from 20 hertz to 12000 hertz, along with an adjustable *Resonance* filter. The State Variable Filter has four modes:

- Low Pass
- High Pass
- Band Pass
- Notch

Signal Modifiers

Alchemy contains four signal modifier modules: modules that can directly modify aspects of the sound. Each of these can route their output directly to either the Voltage Controlled Oscillators or the Filters.



Figure 6: Low Frequency Oscillators

Low Frequency Oscillators Alchemy provides two Low Frequency Oscillators that oscillate between 0.01 hertz and 300 hertz. These have selectable voices allowing for:

- Sine
- Triangle
- Sawtooth
- Square

The *Depth* parameter allows you to change the output from 0.1 volts to 5 volts of movement in each direction, positive and negative, making them bi-polar oscillators.



Figure 7: Envelope Generators

Envelope Generators Alchemy includes two Baronial Envelope Generators, that provide a shaped envelope that is triggered whenever the Gate is triggered. Each of these has an *Attack*, *Decay*, *Sustain*, and *Release*, along with a shape for the *Attack* as well as a shape for the *Release* and *Decay*. These shapes are either a direct linear slope, or a curved slope.

There is a *Min* and *Max* voltage as well, giving you full control over the envelope.

Routing

Signals are routed internally, using a *Route* selection. These signals are additive.

Routes can be the following:

- “OFF” - Not routed
- “PITCH-01” - Pitch value of VCO1
- “PW-01” - Pulse Width of VCO1

- “PITCH-02” - Pitch value of VCO2
- “PW-02” - Pulse Width of VCO2
- “FREQ-01” - Frequency of LPF
- “RES-01” - Resonance of LPF
- “FREQ-02” - Frequency of HPF
- “RES-02” - Resonance of HPF
- “FREQ-03” - Frequency of SVF
- “RES-03” - Resonance of SVF

In addition, Alchemy includes both input and output patch bays for manual routing.