

LEGION

A LEGION OF WAVEFORMS AWAITS

OCTAVE (LEDs): In oscillator mode these LED's indicate the currently selected octave. Octaves 1-4 are displayed by one bright LED. Octaves 5-8 are displayed by one bright LED and three dim LED's. In LFO mode the LED's will scan back and forth at the rate of the lfo.

OCTAVE (Buttons): Pressing the right OCT button will increase the current frequency by one octave. Pressing the left OCT button will decrease the frequency by one octave. Pressing both buttons at the same time will toggle between oscillator and lfo mode.

WINDOWS: Pressing the right button will increase the number of discontinuities in the SAW waveform. Pressing the left button will decrease the number. When the # LED is off the SAW will have no discontinuities. Holding the left button will select window discontinuity similar to a pulse wave. Indicated by the left LED. Holding the right button will switch to phase reversal discontinuity. Indicated by the right LED.

SWARM TIMBRE: Pressing this button cycles increases the number of swarm animators. When the led is off no animators are active.

LIN / EXP FM: Attenuators for respective FM inputs.



TUNE (LED): This LED will be lit brightly when semitone tuning is active. It will be lit dimly when fine tune mode is active, and it will breathe when tuning is locked.

TUNE (Encoder): In semitone mode this encoder increases/decreases the frequency by one semitone. Fine mode functions differently in oscillator and LFO modes. In oscillator mode fine will allow you to tune the base frequency of the oscillator by + - 2 semitones. At about 2 cents per encoder click. In LFO mode fine increases/decreases the frequency by 5 cents continuously. Holding the encoder will lock the tuning leaving the encoder inactive. The octave buttons remain active.

SUB OCT: Press the button to select whether SUB wave form is -1 or -2 octave. Hold the button to cycle through the waveforms. An additional PWM waveform is selected when all three waveform LEDs are lit. The PWM source is SWARM TIMBRE animator 1. This means the PWM will be disabled if the SWARM TIMBRE LED is off.

PW / DETUNE: Shared control for pulse width and SWARM detune amount.

DETUNE (CV): CV input for the swarm detune amount. Disables the DETUNE knob from SWARM when a cable is plugged into the jack.

SYNC: Selectable Hard / Soft sync input. Select Hard sync by holding the SWARM TIMBRE button and pressing the left OCT button. Select Soft sync by holding the SWARM TIMBRE button and pressing the right OCT button.

INTRODUCTION

The Alpha in the pack. In addition to the traditional waveforms commonly found in analog oscillators, Legion has a unique saw wave section. Inspired by the oscillator in the Alpha Juno synthesizer, we've added what we call "windows" to the saw wave output. A window is essentially a negative pulse in the center of the saw wave, creating an overtone to the classic waveforms sound. Use the switch to add more windows, creating a more complex high end. Then, use pulse-width modulation to really bring this effect to life by increasing and decreasing the size of the windows with an external CV source such as an LFO. This effect really adds teeth to the waveform.

In addition to the above, Legion also has an output called Swarm, which is essentially an analog supersaw. For this output, we start with a saw wave and then use seven DAC LFOs to modulate the phase of multiple reset points within the original. What this does is create the illusion of multiple saws being stacked on top of each other, slightly going in and out of tune with each other. Control the intensity of the unison effect with the detune knob, and switch on up to seven LFOs with the Timbre switch for a powerful, detuned supersaw effect that remains 100% analog.

Legion also hosts a sub-oscillator with switchable octave and Saw, Triangle, Square, and PW waveforms, a first in Eurorack in that it also fully reacts to Thru-Zero FM! A Thru-Zero sub oscillator that's not just a square wave.

Legion is obsessively engineered and uses efficient switching power supplies to keep the power consumption and heat down resulting in significantly greater tuning stability than its predecessor. The analog circuitry in Legion is the largest engineering challenge WMD has faced, and the result is by far the most advanced compact oscillator ever created. Legion is all analog signal generation, using digital control systems.

The engineering advancements of Legion were directly affected by the semiconductor shortage resulting in a 600 piece limited run. Thank you for your purchase and your support in making the dreams of artists world wide more achievable.

SPECS

Size: 8hp
Depth: 38mm (with cables)
PCB Height: 112mm
Power: +70mA, -58mA

Frequency Range: LFO of ~2 minutes to 8kHz baseline.
CV extends well beyond.

Tuning: 7 Octaves minimum +- 2 cents. 8 Octaves nominal.

Memory:
Front panel settings save to EEPROM: Saves settings after 1 minute of button press inactivity.

W. Mathewson

WMD