

TRIDENT

Multi-Synchronic Oscillator Ensemble

Thanks for purchasing (or otherwise acquiring) Trident. This guide will get you up and running with a minimum of fuss. For lots more details, be sure to check out the full owners manual at:

www.rossum-electro.com/support/documentation

What is this thing?

Trident is a 100% analog, triple oscillator module that opens up a universe of dynamic timbral textures.

At its most basic, Trident is three precision VCOs, each sporting a unique variety of control voltage inputs. And while each VCO can be used independently if desired, it's when they're combined into a synchronous ensemble that the real sonic magic happens.

That magic is what we call Zing Modulation, where one or both of the 2 Mod Oscillators can modulate each of the main Carrier Oscillator's outputs in an amount controlled by the Zing parameter.

When a Mod Oscillator's Sync button is on, the typical aharmonic sidetones of ring modulation transform into complex but purely harmonic overtone spectra, which vary dramatically with the frequency and waveshape of the Mod Oscillators. Each change of a Mod Oscillator's parameter will have a different effect on the timbre of each of the three Carrier waveshape outputs.

Installation

While all Rossum Electro-Music modules are protected against damage to the module or your system from reverse polarity, care should still be taken to connect the power cable correctly.

Plug the 16-pin connector into the header on the rear of the module such that the red stripe on the cable (the -12V side) is on the same end of the header as the "Red Stripe (-12V)" text on the PCB.

Trident requires a maximum of 290mA of +12V and 270mA of -12V.

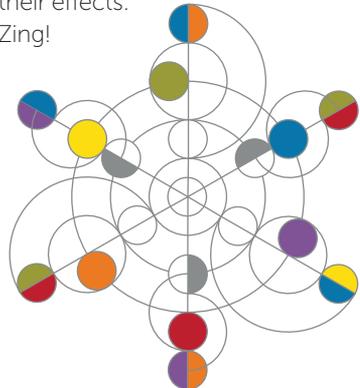
We have included both M3 and M2.5 (for vector rails) mounting screws. Use what fits your system.

If rack rash is of concern to you, use the included nylon washers when mounting Trident in your case.

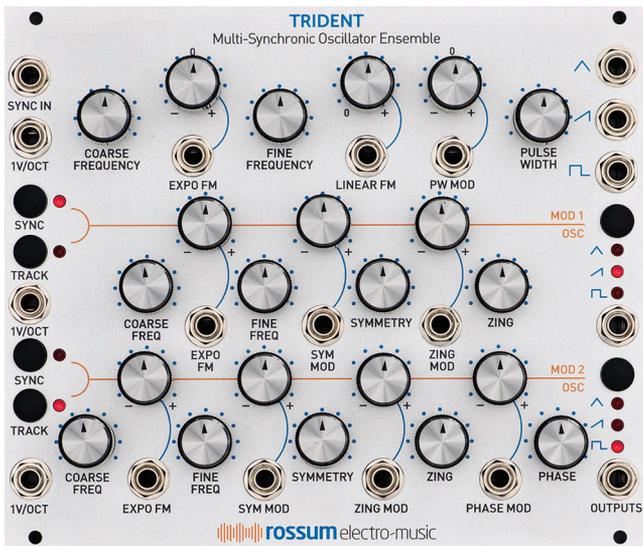
Make some noise!

Given Trident's plethora of knobs and mod inputs, experimentation is the order of the day. To get you started:

- > Monitor the triangle output of the Carrier Oscillator.
- > Turn up the Zing level of Mod 1 and turn down the Zing level of Mod 2. Ensure that Mod 1's Sync and Track are enabled.
- > Vary Mod 1's Frequency, Symmetry, Zing settings, and waveform and listen to their effect. Try modulating the parameters with external signals (or with the output of Mod 2).
- > For dual Zing Modulation, turn up the Zing on Mod 2 and vary its parameters and waveform.
- > Try disengaging Sync and/or Tracking on each Mod Oscillator and listen to their effects.
- > Zing!



Functional Overview



COARSE & FINE FREQUENCY

Controls an oscillator's initial frequency over a range of 20Hz to 20kHz. Modulated ranges are from 0.01Hz to 25kHz.

1V/OCT INPUTS Calibrated 1 volt per octave Frequency CV inputs (accurate over 10 octaves).

EXPONENTIAL & LINEAR (Carrier Oscillator only) FREQUENCY MODULATION CV inputs into attenuverters.

PULSE WIDTH & PW MODULATION

Sets the Carrier Oscillator's initial pulse width from 0% to 100% and modulates it via the CV input through an attenuverter. Note that at audio rates, 0% or 100% pulse width results in no audio.

SYMMETRY & SYM MODULATION (Mod Oscillators)

Varies the duty cycle of the triangle wave output from sawtooth to triangle back to time reversed sawtooth, and also varies the sawtooth output to have an upward or downward kink in the middle. Sets the pulse width when the pulse waveform is selected. Symmetry can be modulated via the CV input through an attenuverter.

ZING LEVEL & ZING MODULATION (Mod Oscillators)

Sets the amount of a Mod Oscillator's Zing modulation of the Carrier Oscillator and modulates it via the CV input through an attenuverter.

PHASE & PHASE MODULATION (Mod 2 Oscillator only) Varies the phase of the Mod 2 Oscillator compared to the Carrier when Mod 2 Sync is enabled. Modulates it via the CV input through an attenuverter.

SYNC BUTTONS (Mod Oscillators) When engaged (with the LED lit), syncs the Mod Oscillator to the Carrier Oscillator's frequency.

TRACK BUTTONS (Mod Oscillators) When engaged (with the LED lit), causes the Mod Oscillator to track precisely the Carrier Oscillator's frequency.

CARRIER OSCILLATOR SYNC IN Hard syncs the Carrier Oscillator to the rising edge of an external source or to either of the Mod Oscillators (by patching their output to this input).

OUTPUTS The Carrier Oscillator provides simultaneous triangle, sawtooth, and pulse outputs. The Mod Oscillators each have a single output with selectable waveforms.