EON

Envelope / Oscillator / Noise Source

EON

nrm/alt

trig

atk/freq

dcy/fine

CV

outs

QU-BIT
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Description

EON is an envelope, oscillator, and noise source in 2 HP.]
It has three modes that are quickly and easily set via a 3 position switch.

Its functionality is deep and multifaceted. The EON can be a full fledged envelope with linear or exponential shapes, a square wave oscillator that tracks 1 volt per octave, or a digital noise source with downsample control.

In addition to the three main functions, the EON also has a triangle wave LFO, random gates and cycling envelopes.

Packing more features per HP than any module before, the EON is the best way to fill any empty spot in your case.

Made by Qu-Bit in Portland, OR

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Installation

To install, locate 2 HP of space in your Eurorack case and confirm the positive 12 volts and negative 12 volts sides of the power distribution lines. Plug the connector into the power distribution board of your case, keeping in mind that the red band corresponds to negative 12 volts. In most systems the negative 12 volt supply line is at the bottom. The power cable should be connected to the EON with the red band facing the bottom of the module.

Specifications

Format: 2 HP Eurorack module

Depth: 46mm (Skiff Friendly)

Max Current: +12V = 60mA
-12V = 10mA

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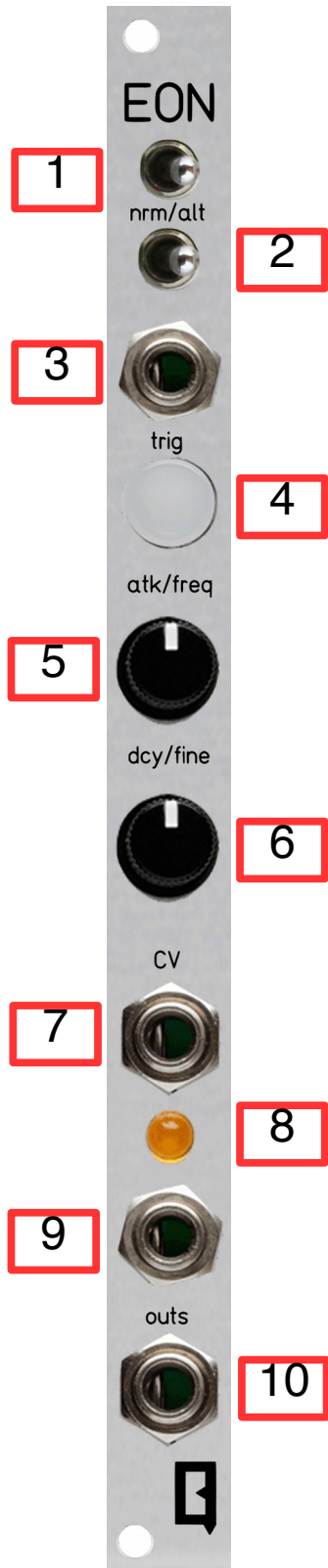
1. Mode Toggle:

- If the *mode toggle* is in the left position, then the Envelope mode is selected.
- If the *mode toggle* is in the center position, then the Oscillator mode is selected.
- If the *mode toggle* is in the right position, then the Noise mode is selected.

Note: By default, envelopes must be triggered via the *trig in* or the *trig button*. To set Envelope mode to cycle, causing envelopes to retrigger at the end of the decay segment, press and hold the *trig button* for 2 seconds. Repeat this process to return to the default setting. When envelopes are set to cycle, their phase will be reset by inserting a gate signal into *trig in* or by pressing the *trig button*.

2. Nrm/Alt Toggle:

- When Envelope mode is selected and the *nrm/alt toggle* is in the left position, envelopes are linear.
- Envelopes are exponential when the *nrm/alt toggle* is in the right position.

- When Oscillator mode is selected and the *nrm/alt toggle* is in the left position, the pitch tracking of this square wave oscillator is 1V/Oct.
- Pitch tracking of the square wave oscillator is quantized to semitones when the *nrm/alt toggle* is in the right position.

- When Noise mode is selected and the *nrm/alt toggle* is in the left position, noise will continuously output.
- When the *nrm/alt toggle* is in the right position, enveloped noise will output when the EON's *trig in* receives a gate signal or the *trig button* is pressed.

3. Trig In:
Threshold 2.5V

- Trigger input for linear and exponential envelopes in Envelope mode.
- Trigger input for reset of the envelopes when cycling is activated.

- Trigger input for reset of the triangle wave LFO in Oscillator mode.

- Trigger input for enveloped noise in Alternate Noise mode.

4. Trig Button:

- Button for triggering linear and exponential envelopes in Envelope mode.
- Button for reset of the envelopes when cycling is activated.
- When Normal or Alternate Envelope mode is selected, the *trig button* shows the shape of the envelope.

- Button for reset of the triangle wave LFO in Oscillator mode.
- When Normal or Alternate Oscillator mode is selected, the *trig button* shows the frequency of the triangle wave LFO.

- Button for enveloped noise in Alternate Noise mode.
- When Normal or Alternate Noise mode is selected, the *trig button* shows the noise output.

5. Atk/Freq:

- Attack control for linear and exponential envelopes in envelope mode.

- Coarse frequency control for square wave oscillator in both Oscillator modes.

- Downsample frequency for noise in Noise mode.
- Downsample frequency and decay time of enveloped noise in Alternate Noise mode.

6. Dcy/Fine:

- Decay control for linear and exponential envelopes in Envelope mode.

- Fine frequency control for square wave oscillator in both Oscillator modes.

- Probability control for random gates in both Noise modes.

7. CV:

- Decay time CV input for linear and exponential envelopes in Envelope mode.
  - ○ Range: 0V – 8V

- 1V/Oct pitch input for square wave oscillator in Normal Oscillator mode.
- Quantized semitone pitch input for square wave oscillator in Alternate Oscillator mode.
  - ○ Range: 0V – 8V

- Downsample frequency CV input in Normal Noise mode.
- Downsample frequency and Decay time CV input in Alternate Noise mode.
  - ○ Range: 0V – 8V

Note: Control voltage is added to the pot position.

8. LED:

- When Normal or Alternate Envelope mode is selected, the *LED* shows the end of attack gate signal output.

- When Normal or Alternate Oscillator mode is selected, the *LED* shows the square wave oscillator output.

- When Normal or Alternate Noise mode is selected, the LED shows the random gate signal output.

9. Out 1:

- End of attack gate output when Normal or Alternate Envelope mode is selected.
  - ○ Range: 0V – 10V

- Audio rate square wave output when Normal or Alternate Oscillator mode is selected
  - ○ Range: ±5V

- Random gate output when Normal or Alternate Noise mode is selected.
  - ○ Range: 0V – 10V

Note: The frequency of the LFO is directly related to the pitch of the oscillator.

10. Out 2:

- Envelope output when Normal or Alternate Envelope mode is selected.
  - Range: 0V – 5V (Jumper configuration 1)
  - Range: 0V – 10V (Jumper configuration 2)

- Triangle wave LFO when Normal or Alternate Oscillator mode is selected.
  - Range: 0V – 5V (Jumper configuration 1)
  - Range: 0V – 10V (Jumper configuration 2)

- Noise output when Normal or Alternate Noise mode is selected.
  - Range: ±2.5V (Jumper configuration 1)
  - ±5V (Jumper configuration 2)

Huge thanks to Stephen McCaul for his support during the development of the EON.

Manual written by [Collin Russell](#).

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