ADSRVCA

ADSRVCA is a multi-mode envelope generator with an integrated Voltage Controlled Amplifier (VCA). This envelope generator is capable of producing a classic, gate driven Attack/Decay/Sustain/Release (ADSR) envelope as well as a self sustaining, looping Attack/Decay (AD) and Attack/Decay/Release (ADR) one shot envelopes. The integrated VCA eliminates the need for an external VCA module and can be used independently when an external control voltage is utilized. The envelope controls the shape of the VCA's amplitude response by default.

A — **ATTACK**
Controls the timing of the envelope ATTACK stage.

D — **DECAY**
Controls the timing of the envelope DECAY stage.

S — **SUSTAIN**
Controls the amplitude level of the envelope SUSTAIN stage.

R — **RELEASE**
Controls the timing of the envelope RELEASE stage.

L1 — **ENVELOPE LED**
Indicates Envelope status in RED and AD/LOOP MODE status in BLUE (ON).

L2 — **HI/LO RANGE LED**
Indicates Envelope speed range. BLUE is high speed, GREEN is low.

TG — **TRIGGER and GATE**
The TRIGGER and GATE inputs are used to initiate envelope generation and have different uses depending on the envelope mode. See ENVELOPE MODE below for details. These inputs feature comparators for processing signals into the necessary gate and trigger functions. Therefore, most positive signals can be used with these inputs as long as the signal reaches the two volt internal threshold.

M — **ENVELOPE MODE and RANGE**
HI/LO: Toggles between High and Low speed ranges.
AD/LOOP: Toggles between ADSR and AD/LOOP modes described below.
ADSR mode: With AD/LOOP mode off - patch a signal into the GATE input. The envelope will process through the A, D and S stages as long as the gate is high and immediately begin the release stage when the gate goes low. Patch a gate or trigger signal into the TRIGGER input to *re-trigger* the envelope (starting from Attack stage) while a signal at the gate input is high.
LOOPING AD mode: With AD/LOOP mode on - use the Attack and Decay controls to adjust the timing respectively. The envelope will automatically repeat at the end of the Decay stage. Nothing should be patched into the GATE and TRIGGER inputs.
TRIGGER AD mode: With AD/LOOP mode on - use the Attack and Decay controls to adjust the timing respectively. Apply a gate or trigger to the TRIGGER input.
GATED LOOPING AD/R mode: With AD/LOOP mode on - use the Attack and Decay controls to adjust the timing respectively. Apply a gate or trigger to the GATE input. When the gate is high, the envelope will behave the same as LOOPING AD mode. When the gate goes low, the envelope will enter the release stage and stop looping until a high gate is received. Use The Release control to adjust the release time.
ADR ONE-SHOT mode: With AD/LOOP mode on - use the Attack, Decay and Release controls to adjust the timing respectively. Apply the *same* gate signal to the GATE *and* TRIGGER input. When the gate is high, the envelope will process through the Attack and Decay stages. If the gate goes low before the completion of the decay stage, the envelope will enter the Release stage.

EN — **ENVELOPE OUTPUTS**
These are the normal (+OUT) and inverted (-OUT) outputs for the generated envelopes

IN — **VCA INPUT**
This is the input for the Voltage Controlled Amplifier for both audio and control voltages (CV).

CV — **VCA CV INPUT**
Control voltage input for the VCA. Patching an external CV will decouple the envelope from controlling the VCA - allowing both to be used independently.

OUT — **VCA OUTPUT**
Signal output for the VCA.

COLOR KEY LEGEND
- PANEL CONTROL
- LED INDICATOR
- INPUT
- OUTPUT
- MODE SELECTOR



