

NOISE REAP

3xVCA

User Manual v1.1

Overview

3xVCA is a trio of VCAs. They have a **linear** response to CV input, and are equally suited to controlling the amplitude of audio or CV signals.

The VCAs are made using no special ICs. Rather each is made with matched transistors and 0.1% components.

Technical Specifications

- Width 6hp
- Depth 28mm
- Current draw 20mA @ +12V
- Current draw 30mA @ -12V

Inputs

IN

+/-10V range. DC coupled. 100K impedance. These are the main inputs for the signal to be manipulated.

The IN jacks are normalled together from the top down. For instance, a signal patched to the top IN will be present at all three OUTs. Patching into a lower IN will break this normalled connection.

CV

+/-10 range. DC coupled. 100K impedance. The voltage applied here controls the gain of the VCA. A positive signal increases gain, and a negative signal decreases gain. A +5V signal opens the VCA to unity. A max gain of 1.6 is possible if CV is applied “on top” of a fully clockwise LEVEL control.

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Outputs

OUT

21.5V headroom. 1K impedance. The main output of the VCA. Low CV bleedthrough. Theoretical harmonic distortion around 1%.

Knobs

LEVEL

This control serves two related functions - attenuation & gain.

Rotating clockwise from noon *increases* the gain of the VCA. LEVEL fully clockwise corresponds to a gain of 1 or unity. A max gain of 1.6 is possible if CV is applied "on top" of a fully clockwise LEVEL control.

Rotating counter-clockwise from noon *subtracts* or attenuates the CV input. Rotating fully counter-clockwise will completely null the channel even with a strong 10.5V envelope applied.

Using with...

LFOs

A standard +/-2.5V LFO will fully open and close the VCA with the LEVEL knob around 2 - 3 o'clock.

Envelopes

With LEVEL at noon, a standard 8 to 10V envelope will increase gain beyond unity. If this is undesirable, or if clipping occurs, trim the incoming CV by rotating the LEVEL control to around 10 - 11 o'clock.