

# NOISE REAP

## Anomaly

User Manual

### Overview

Anomaly is an analog 12dB/oct voltage controlled filter. It's an unwieldy take on a classic state variable filter topology. The lowpass and highpass outputs go through JFET harmonic saturation stages. The BAD (bonkers asymmetric distortion) output is the bandpass through an intentionally broken wavefolder.

### Technical Specifications

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

### Inputs

IN

+/-10V range. Intended for audio signals. Can be used to ping the filter.

1V

+/-10V range. Standard 1 volt per octave control over the CUTOFF frequency. Can be used to ping the filter.

CV

+/-10V range. Exponential control over CUTOFF frequency. Maximum strength approximately 2 octaves per volt. Can be used to ping the filter.

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## Outputs

### LOW

22V headroom. AC coupled. Lowpassed version of the IN signal.

### HIGH

22V headroom. AC coupled. Highpassed version of the IN signal.

### BAD

22V headroom. AC coupled. Bandpass through a broken wavfolder. At the edges of the bandpass slope, a “gating” effect can be noticed. At minimum resonance values, the BAD output behaves most like a normal bandpass output.

## Knobs

### CUTOFF

Exponential control of the cutoff frequency. Has a sub to supersonic range. This is capable of a full muting cut in either direction, although some highpass bleed may be present depending on input signal and resonance settings.

### RESONANCE

Adds a resonant peak to the edge of the cutoff slope. Non self oscillating.

### CV AMT

Attenuator for the CV input. At noon the response is approximately 1V/octave.

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## Tech History

The BAD output is based on a guitar pedal we use to make circa 2014 called the [Asstone](#). The Asstone was based on the Devi Ever Soda Meiser, but with the use of a PNP darlington pair transistor and different filter caps. And, if I were to venture a guess, the Soda Meiser is based on the Lockhart wavefolder, but with one of the transistors either intentionally or accidentally put in backwards.

## Note on CV Bleedthrough & ‘Thump’

CV bleedthrough is when the **CV input signal** can be heard from the **audio output** with nothing at the **audio input**. Most of the time CV bleedthrough is undetectable and not at all a problem. Basically all analog VCAs and VCFs will have *some* level of CV bleedthrough. The Anomaly is no exception.

Here’s a pro tip for minimizing Anomaly bleedthrough at the LOWPASS output. There is a tradeoff between CV bleedthrough and lowest possible cutoff point. To get very low CV bleedthrough, bring the cutoff knob to the lowest desirable point *but not further*. Consider not fully closing the VCF and using a VCA later in the patch to kill the audio.