



# VERBOS ELECTRONICS

## **AMPLITUDE & TONE CONTROLLER**

Congratulations on obtaining your Verbos Electronics Amplitude & Tone Controller. This Euro-Rack format module provides an all discrete Voltage Controlled Amplifier with a FET gain stage and Vactrol based discrete lowpass filter in front. There are no ICs in the signal path.

### **The Input Gain Stage**

The "gain" control should initially be set to the middle position. It sets the gain of the signal going into the filter and can be used to set the amount of clipping is desired on the input signal.

### **The Lowpass Filter**

The lowpass filter section has a "cutoff" control for setting the cutoff frequency initially, and a reversing attenuator on cv input mixed with the panel control. There is also a panel control to add resonance. This filter will self oscillate at higher settings and clip it's output stage. Balancing the gain and resonance controls allows a variety of timbres.

### **The Voltage Controlled Amplifier**

The "Amplitude" control sets the initial gain of the VCA. From external control voltage, both exponential and linear control can be used at the same time. Both of these inputs have reversing attenuators and unlike other "2600 style" VCAs, either can reduce the gain of the other.

The core of the VCA is built from discrete transistor pairs. The output gain stage is also a discrete opamp.



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