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Hello and thank you for purchasing the WMD Triple Bipolar VCA. We hope you enjoy it whether used by itself or with the Phase Displacement Oscillator.

Design

The TBVCA is designed around an OTA (Operational Transconductance Amplifier) core. We use OTA cores for their excellent linearity, low distortion and low noise.

As an expansion to the PDO, it provides bipolar voltage controlled CV to the phase inputs. Great for stable wavefolding and voltage controlled timbers. Additionally using both inputs allows for the selection between two CV sources for the phase inputs.

Standalone operation is simple, bipolar VCA or crossfading with a dead center. IE the region between the two signals is a zero amplitude (grounded) output.

Overall, the VCA is designed so that positive CV will output what is coming in the +In jack, and negative CV will output what is coming into the -In jack. Simple as that.

Controls and I/O

+ In - This is the normal input for each VCA channel. It drives the inverting side of the Bipolar VCA. These inputs are normaled from outputs on the PDO.

- In - This is the second input for the VCA channel. Normaled through this jack is the inverted signal from the + Input. Plugging in here converts the channel from a Bipolar VCA to a dual VCA. Negative control voltages will open the **-** side, and positive control voltages will open the + side. This allows you to use two modulation sources and alternate between them, while still retaining control over amplitude.

CV - This input jack drives the CV knob. It can handle unipolar or bipolar signals.

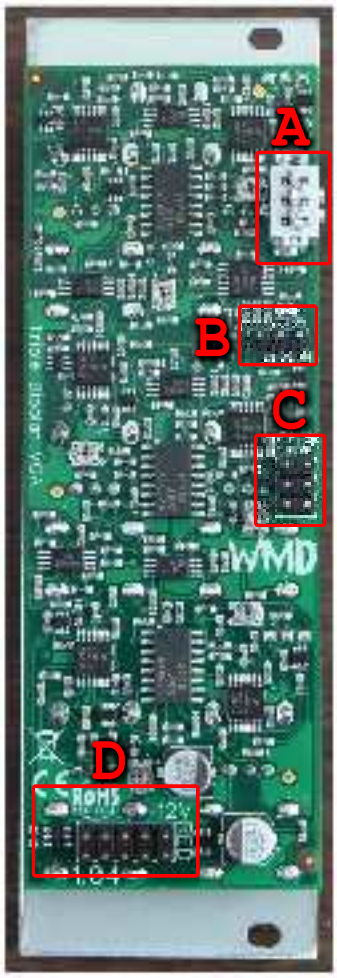
Out - This is the output of each VCA channel. They are normaled to the Phase Modulation inputs on the PDO.

Bias Knob - Sets the manual gain for the VCA. Centered will have a zero output (with 0V control voltage).

CV Knob - This knob is a bipolar attenuator for the signal applied to the CV jack. Spin clockwise from center for positive CV interactions, counterclockwise to invert the CV.

Mix Out - This output jack mixes the signals from each VCA.

Installation



(A). For standalone use, the jumper socket header must be installed as shown.

(B). The three pin header determines how the input normals are set up. To use with the PDO, Place the jumper socket to the LEFT.

If you want the standlone TBVCA to provide offset voltage if no signal is present, place the jumper to the RIGHT.

If you want the TBVCA to act as a VCA with no offset voltage, leave the jumper disconnected. We advise you to leave the jumper on one pin so it is not lost.

(C). This six pin header goes to the PDO's lower six pin header via the provided ribbon cable. Leave disconnected for standalone use.

(D).Power cable has the red stripe towards the center of the PCB. It is marked RED / -12V.

For connection to the PDO, use the below diagram to connect the ribbon cables. Remove any jumper sockets where a ribbon cable connects.

If not using the QAAF, just leave that part of the cable disconnected.



Other Notables

- The Triple Bipolar VCA is 8 HP.
- Current consumption is +80mA and -75mA
- Signal inputs have no voltage restrictions. CV signals are expected to be of 5V amplitude or greater.
- Output signal range is +-10 volts before hard clipping.
- The depth from the back of the panel is roughly 28mm with connectors.
- The TBVCA is reverse polarity protected.
- The TBVCA is RoHS and CE compliant.
- The TBVCA is warranted for 12 months after purchase. Please contact us if you ever have problems. We will take care of you.