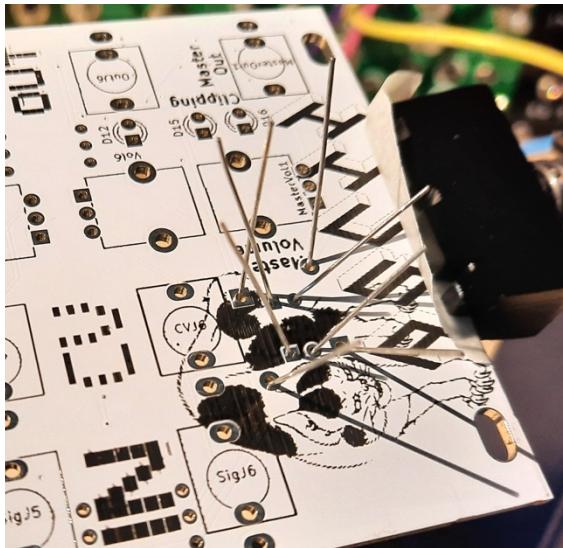


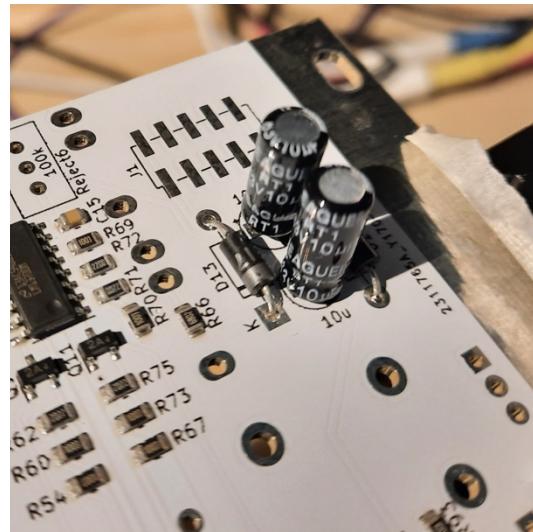
# Bare VCA

## Through-hole Build Guide

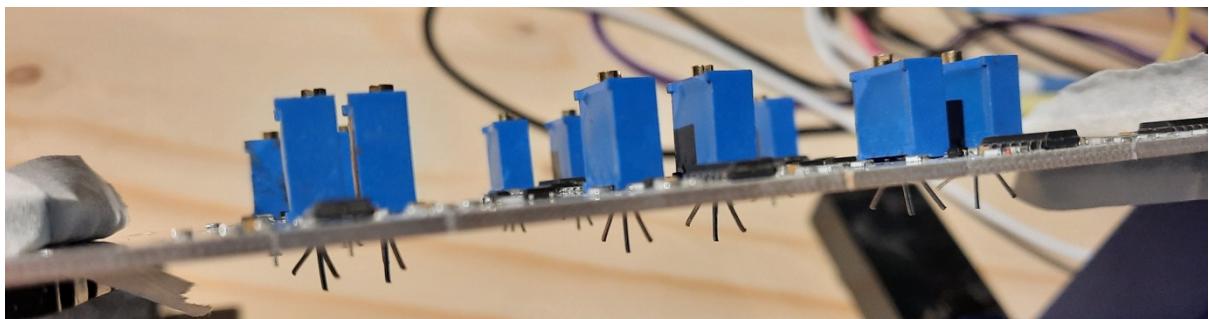
1) Reverse-protection diodes



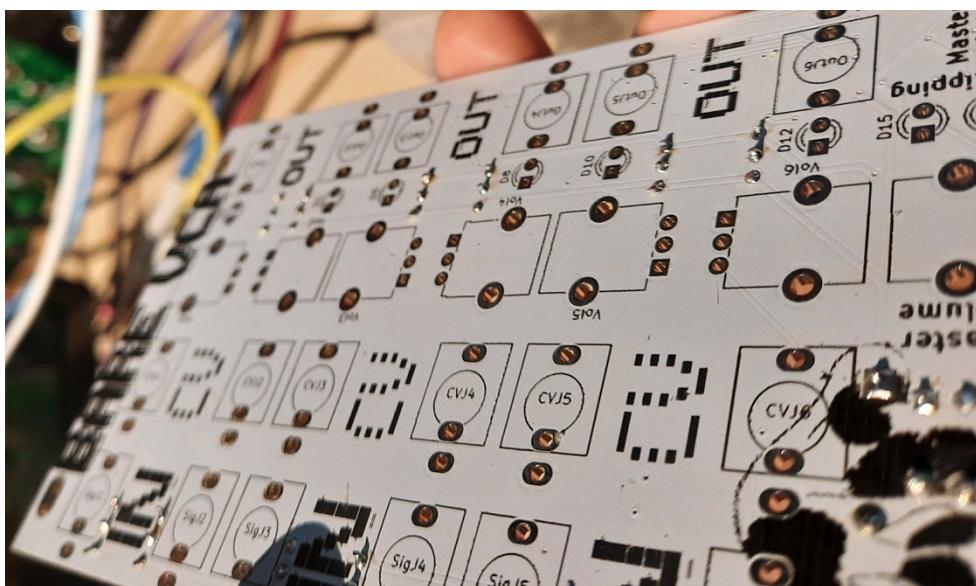
2) 10u capacitors. White stripe should face the **black** segment on the silkscreen



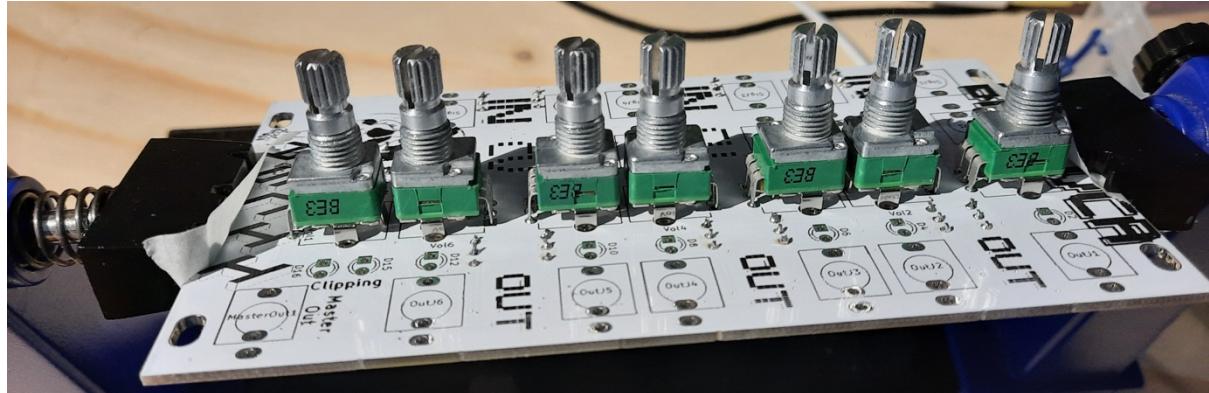
3) 100k trimpots



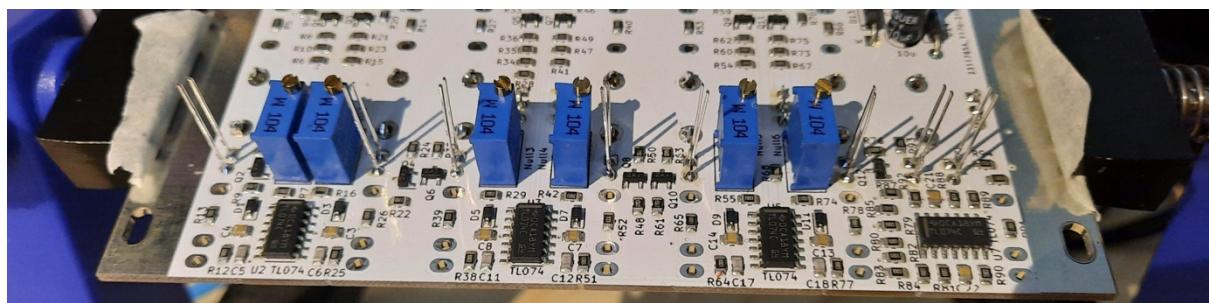
(Soldered trimpots as seen from the top of the board)



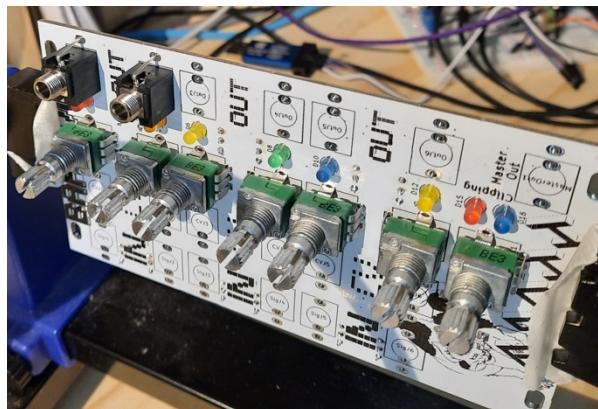
4) 9mm Alpha 100k pots (V2 boards will have 9mm trimpots, which are a bit shorter with plastic shafts)



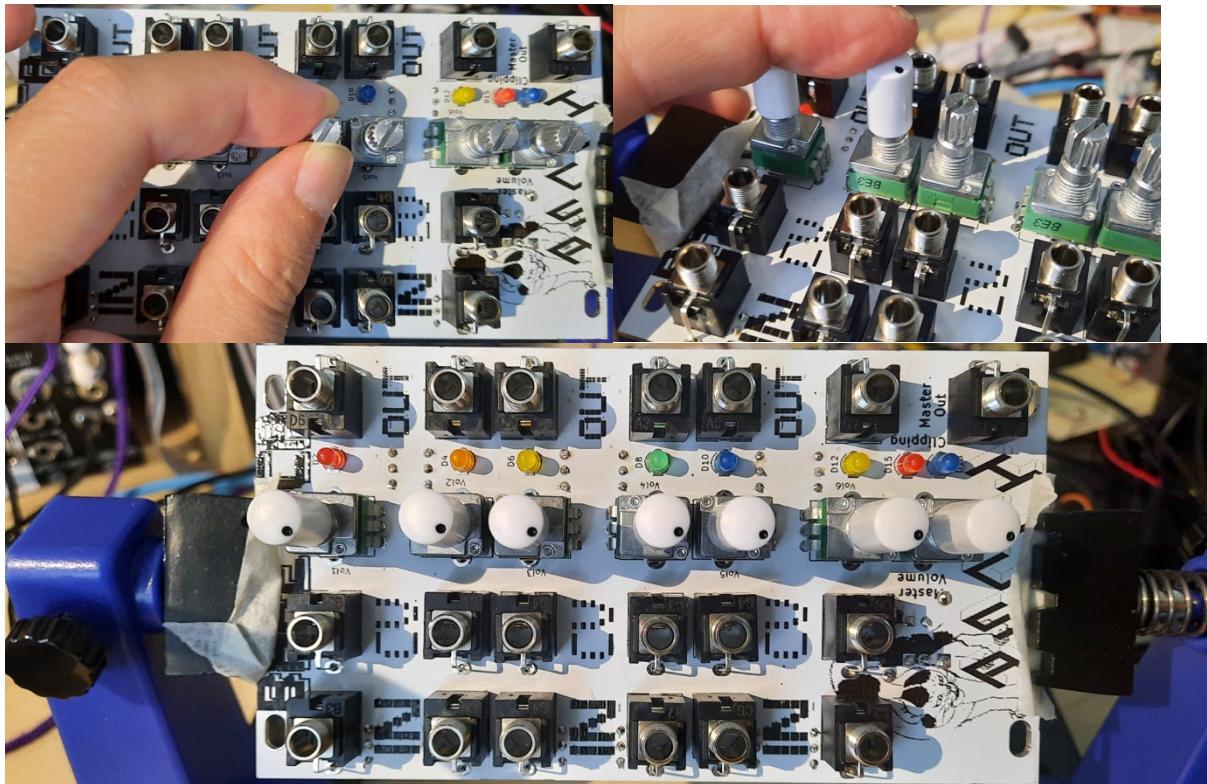
5) LEDs: The leg from the flat side of each LED should go through the hole with the square pad. any colour can be soldered anywhere, but I recommend D15 should be red and D16 should be blue, because that is the colour coding often used for +V and -V.



6) 3.5mm jacks - a soldering stand really helps here, so you can hold them as you solder

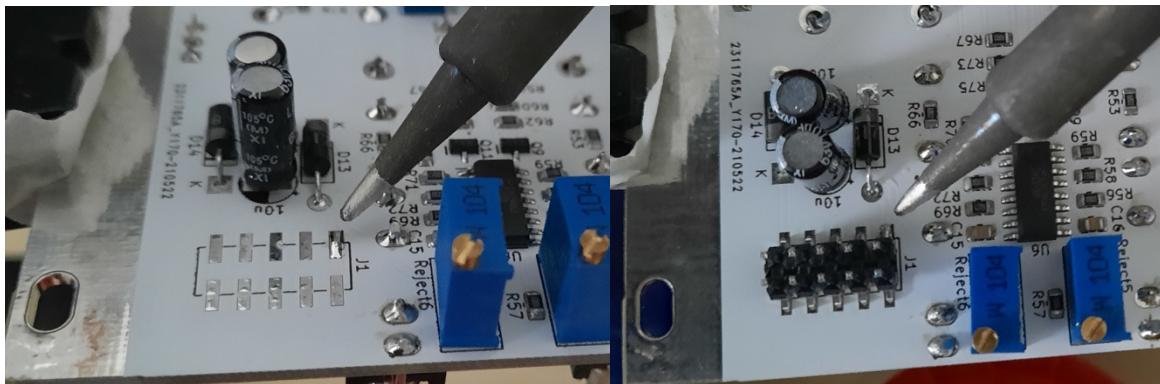


7) If your kit came with black - shafted pots marked with a white dash, skip this step.  
Before pushing on the white knob-caps, turn all the pot shafts as far anticlockwise as they will go. Push on the knob-caps with the dot pointing to 7 o'clock.

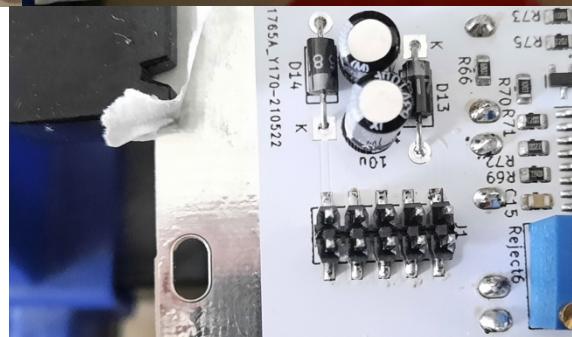


8) J1: Power connector - surface-mounted 2x5 pin header. These photos show my preferred surface-mounting method, but there are lots of videos on YouTube showing various methods.

Melt solder onto one of the PCB pads. Next, press the pin header into position while re-melting the solder.



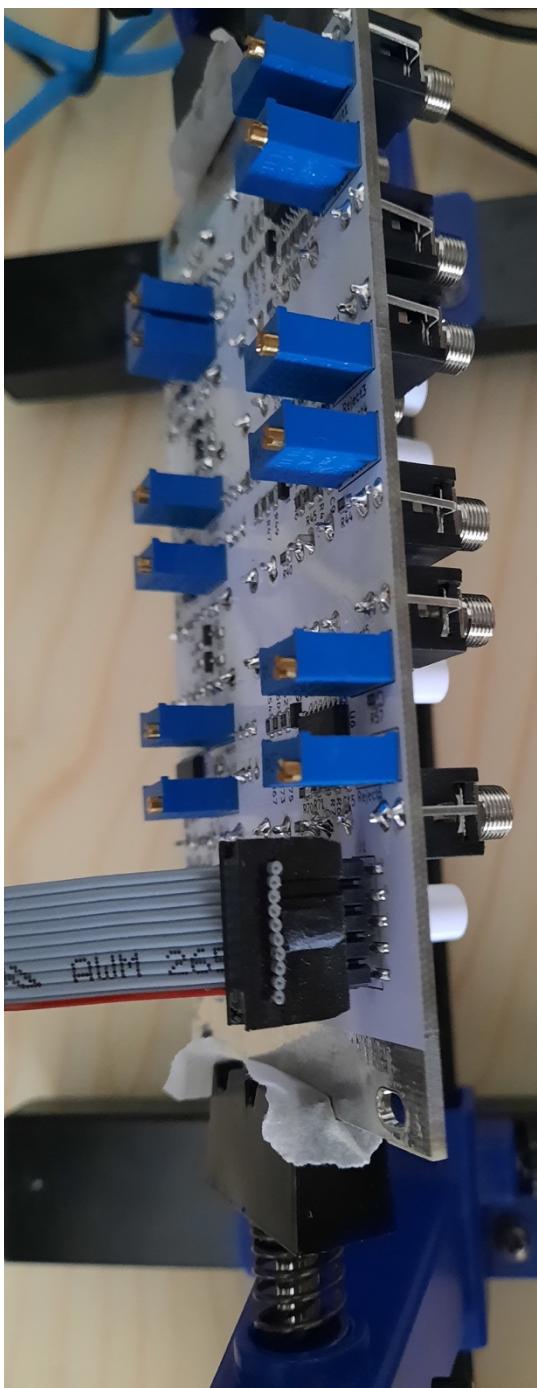
With that soldered pad holding the part in place, solder the rest of the pins. Finally, neaten up the first pad if necessary.



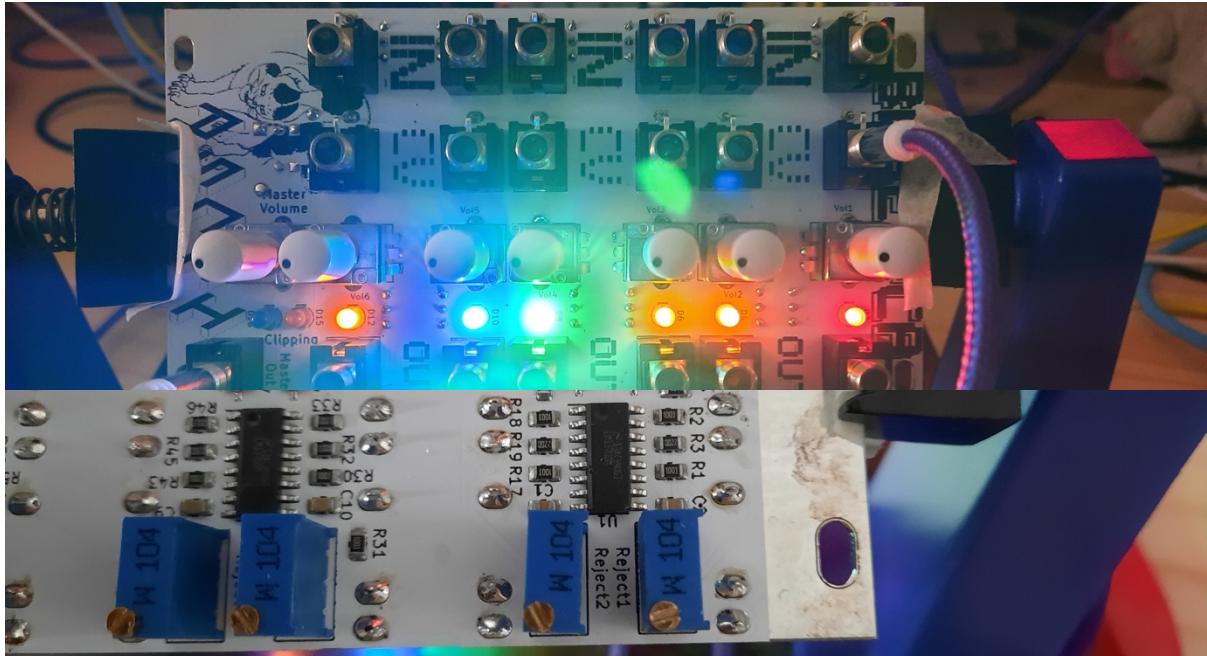
## Power connection and calibration

To calibrate the module, you will need an audio source (EG a VCO), a CV source (EG an LFO), and you'll need to connect to an audio output - a mixing desk or whatever you use to listen to audio from your Eurorack. You will also need a flat-tipped screwdriver that's small enough to turn trimpots. A soldering stand is useful to hold the module while allowing you to access the trimpots on the back, but this is not necessary.

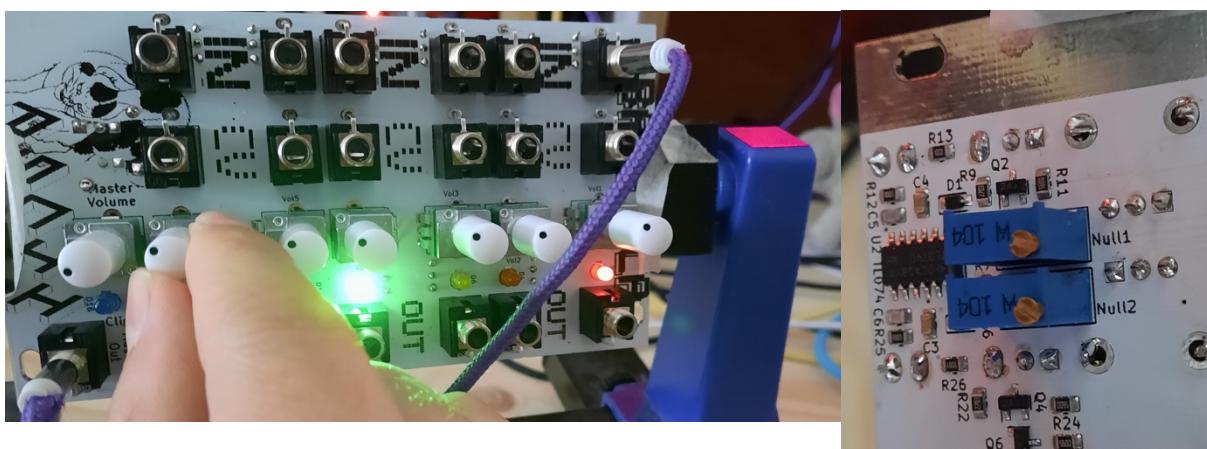
- 1) Power connection: the module doesn't have +12V/-12V marked on the silkscreen. On the power connector, +12V is on top nearest the 'J1' text, and -12V is towards the bottom of the module. I would say 'red stripe down' but this only works if 'red' signifies -12V on your wiring!



2) Calibrate all the Reject trimpots: Turn all 7 volume knobs on the front of the board all the way to the right (full volume). Connect the Master Out jack to your audio output (eg speaker, mixing desk, etc). Set your LFO to pulse every second or so and patch it to the first CV jack. Adjust Reject1 until you hear the LFO clicking. Then reduce Reject1 until it is just no longer audible. Repeat that step with the other 5 channels.



3) Calibrate all the Null trimpots: Turn the 6 channel volume knobs on the front of the board all the way to the left (all the way down) but leave the Master Volume all the way to the right. Patch your VCO into the first IN jack. Turn up Null1 if you don't hear any audio, then turn it down until the audio is 'just' no longer audible. Repeat this for the 5 other channels.



If any LEDs are still glowing, adjust the Null trimpots on those channels down a bit more until they stop glowing.

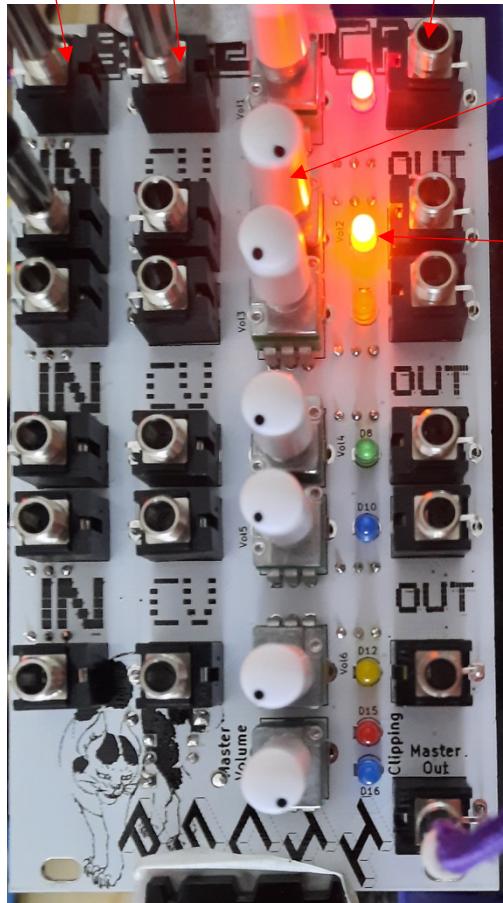


# Using the module

IN: The signal you want to amplitude-modulate

CV: Control Voltage - the modulator signal

OUT: Each row has a dedicated output



Knob: With no CV plugged into the jack, it controls the channel volume. With CV plugged in, it attenuates the CV

Channel LEDs: indicate volume / CV level on each channel



Master Volume: Controls the volume of the Master Out mix

Clipping: indicates if the Master Out signal has hit the +V (D15) and/or -V (D16) maximum

Master Out: The mixed signal from the 6 OUTs