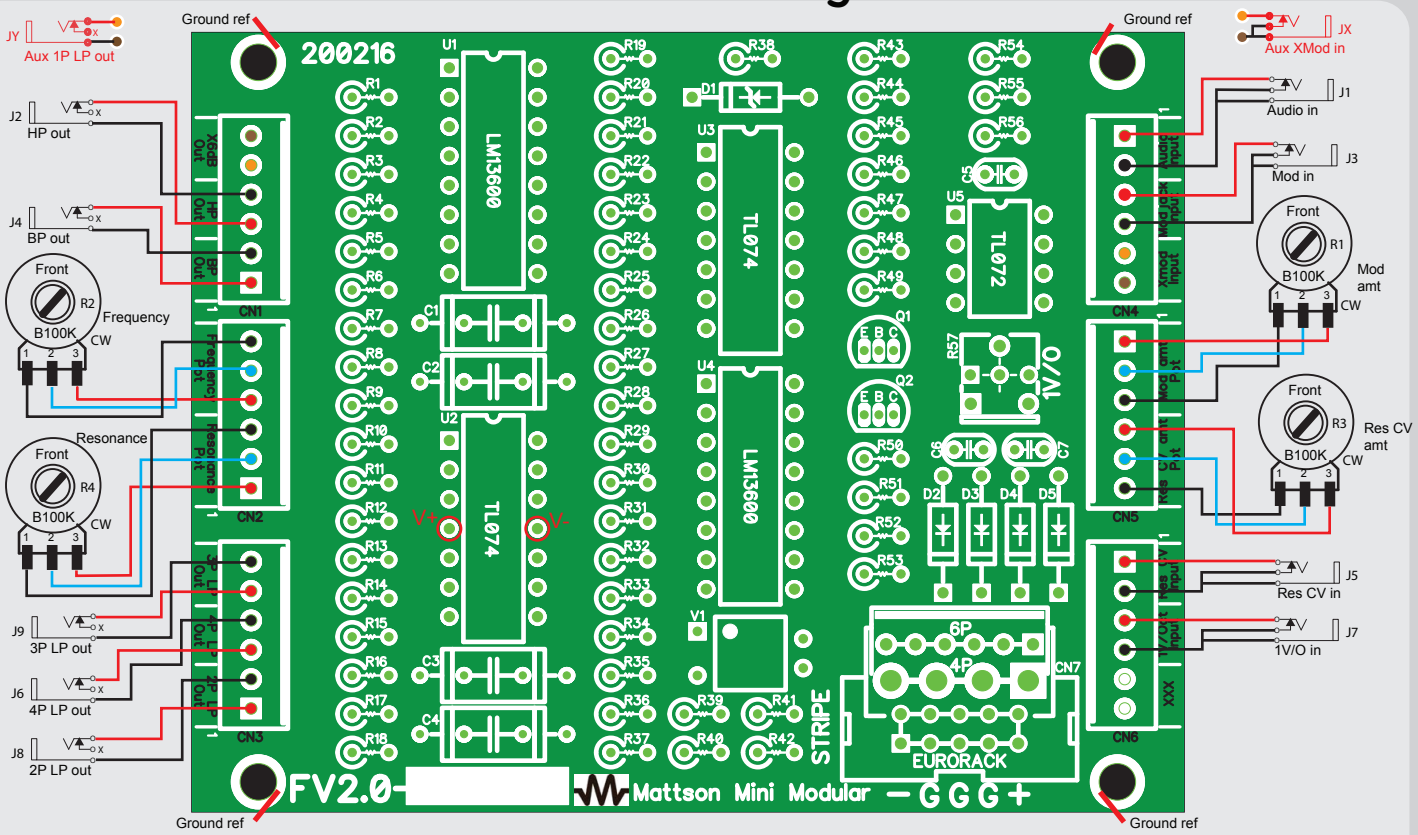
Mattson DIY VCF 2 Panel wiring and calibration



DIY builder note: **JX** can be installed to CN4-5,6 for an eXtra mod input. **JY** can be used on CN1-5,6 for a 1P, 3dB LP output if desired.

Panel components required:

Qty 9, TS Jacks, switched, Normally closed. J1-J9
Qty 4, B100K Potentiometers (Linear). R1-R4

MMM VCF 2 Calibration

Required test equipment:

*Volt meter capable of measuring DC volts.
*Pitch tuner. I Like Pitchlab available at Google play. It's free.
*1V/Oct CV source. From Keyboard or MIDI/CV converter.
*Audio amplifier or headphones.

Initial VCF 2 module configuration:

*No connection to any of the inputs or outputs.
*Set fully CCW: Mod amt and Res CV Amt.
*Set fully CW: Resonance.
*Center: Frequency.
*Center trim pot R57.

Apply power to the VCF 2 module: Either bipolar 12V or 15V.
Verify that power is available to the module:
Using a DC volt meter, measure between ground (one of the corner mounting holes) and:
*U2 (TL074) Pin 4: Should read V+ less about a volt.
*U2 (TL074) Pin 11: Should read V- plus about a volt.

Trim pot calibration:

Trim pot R57 adjusts the filter center frequency tracking. This procedure adjusts the tracking to 1 volt per octave.
The typical tracking range is around 3 to 4 octaves based on component tolerances used.

Set up the following patch:

*Patch a 1V/O source into the **1V/O in** jack.
*Patch the **24dB LP output** into an audio amplifier. Make sure the amplifier is fully attenuated before patching.
*Raise the amplifier volume to a comfortable level. You should hear a sine wave oscillation.

Apply a "C1 (0V)" from the Keyboard or MIDI/CV controller. Measure the pitch with the pitch tuner:
*Adjust the **Frequency** control to any frequency. I prefer C1 (32.7 Hz).
*Apply a C2 (1V) or, one octave up from the keyboard CV.
*Adjust **R57** until the output pitch is up one octave. Or C2 (65.4 Hz) if referencing C1.
*Continue to C3 (130.8 Hz) and C4 (261.6 Hz) adjusting R57 at each octave.
*Check the 3 octaves from C1 to C4 to verify tracking.
*Try adjusting C5 (523.2 Hz) if you wish. It may work based on the tolerance of components used. Typically, it will trend flat as the CV is increased.