CF2 Two-Band Phase-Linear Crossover Filter

User Manual

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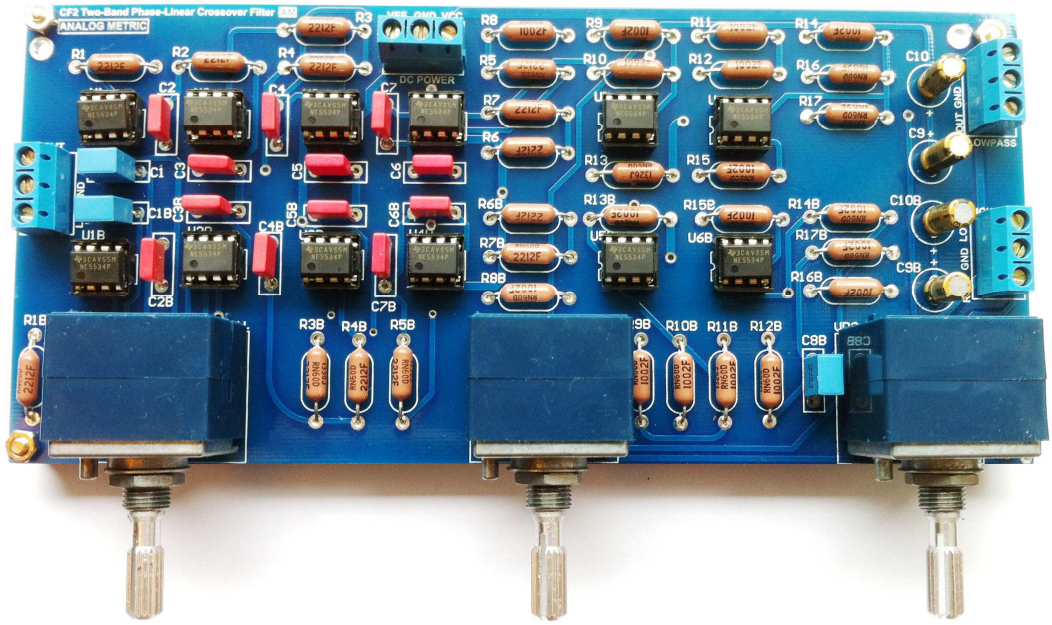


FEATURES

- Support two-band (low and high frequency) linear-phase crossover filter for stereo channel. Frequency crossover frequency can be set by different resistor sets shown in the Table I.
- Attenuation 80dB/decade or 24dB/octave, linear phase.
- Maximum input voltage: +/-18V
- Maximum output voltage: +/-16V
- Either use of very low distortion high quality audio OPAMP AD797, 0.03% at f=1k Hz typical or low noise OPAMP NE5534.
- Three APLS / STD 50K POTs are used for the volume control: gain, low and high pass, for 0dB to -100dB attenuation.
- Implement with non-inductance 1% Dale resistors, WIMA / RIFA / EVOX film capacitors, and Nichicon FW capacitors.
- High power rejection ratio: 80dB and channels isolation: 100dB
- Symmetric PCB design for both R and L channels.
- High quality PCB, blue solder mask, double layer, 2.4mm thickness, 2oz copper. PCB dimension: 188(L) x 85(W) mm.
- Required power supply: +/-15V to +/-18V DC, 80mA

APPLICATIONS

- For professional bi-amp, it requires exactly the same response time for the low and high frequency components.
- Audiophile low-pass and high pass filters.

PROCEDURES

1. Determine the resistances for crossover points by Table I.
2. Solder the components according to the part list. Notice the polarities of the electrolytic capacitors C9, C9B, C10 and C10B. There is no polarity of the thin film capacitors.
3. For easy of soldering, the suggested soldering sequence is as following: all resistors, DIP8 IC sockets (Figure 1), capacitors (Figure 2), connectors, and POTs.

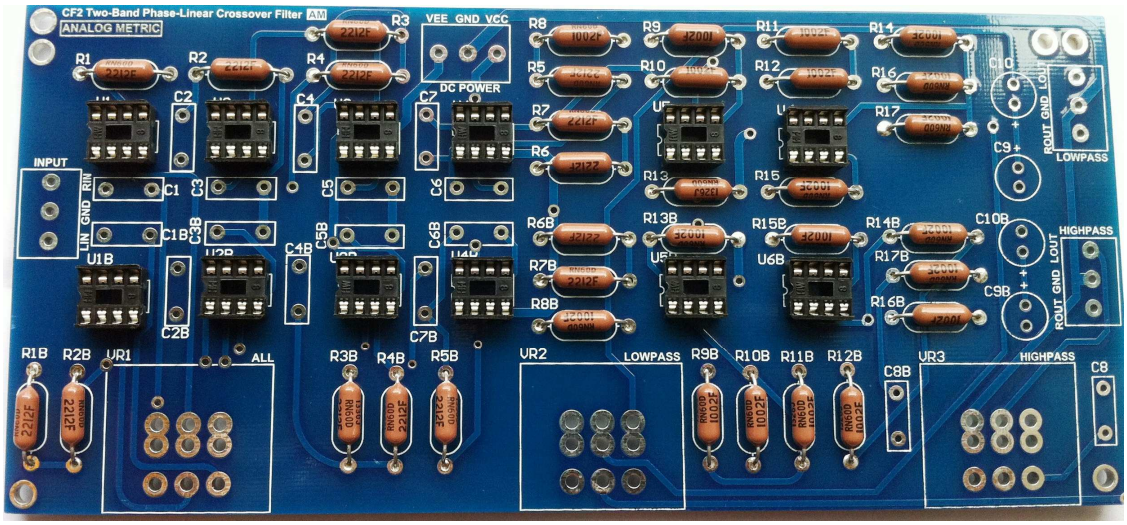


Figure 1: Soldering resistors and IC sockets.

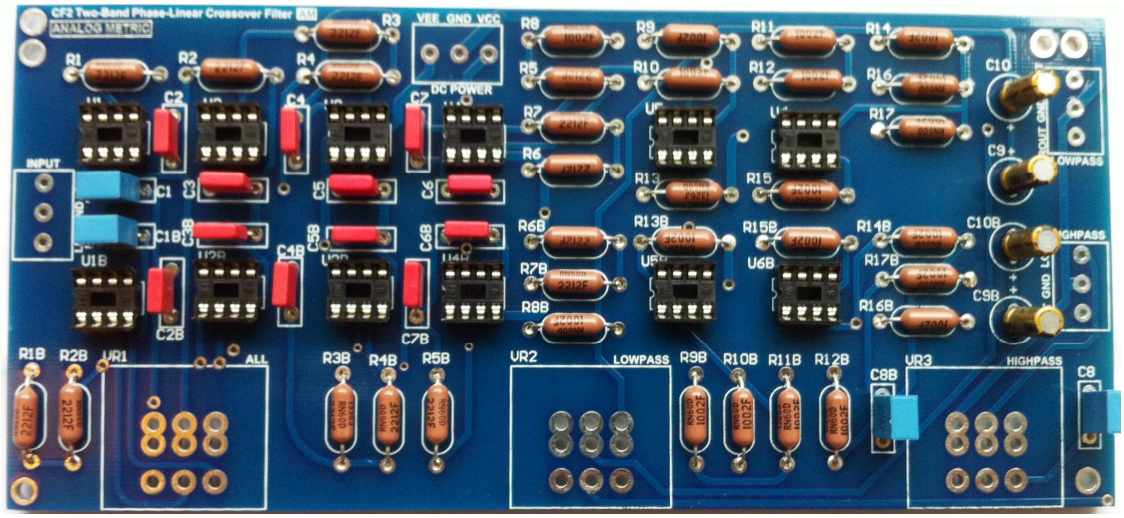
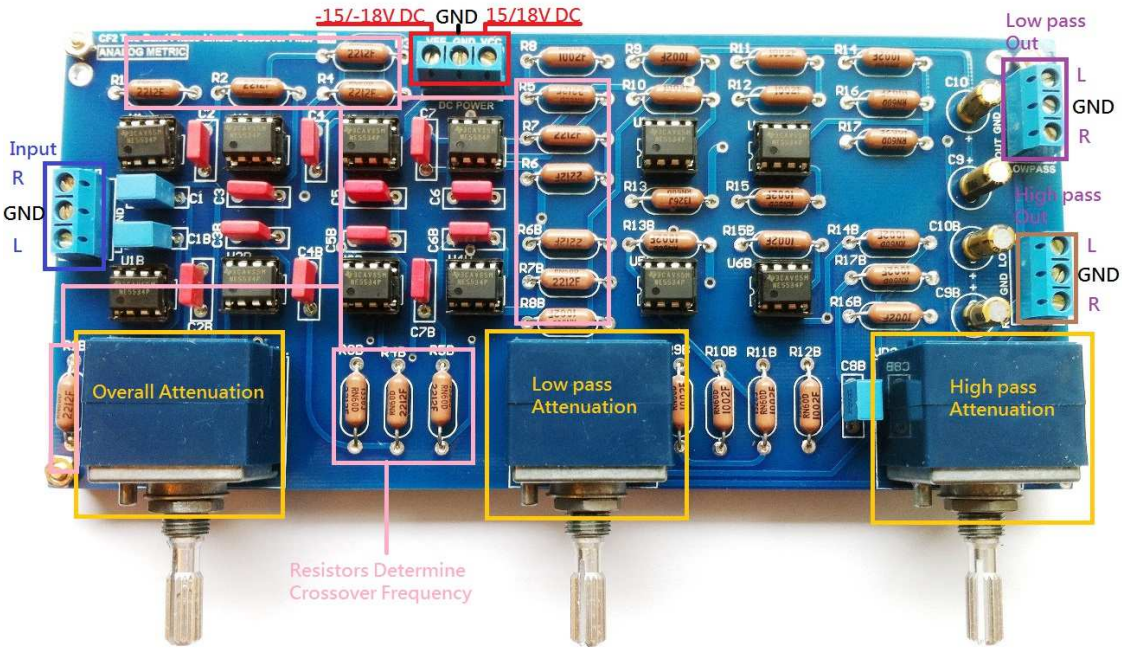


Figure 2: Soldering capactors

4. Apply DC voltage +15V and -15V to connector (DC) without plug in the opamp U1-6 and U1B-6B.
5. If everything is ok, plug back the opamp U1-6 and U1B-6B and apply input signals.
6. The volume for the overall gain, low pass and high pass, can be changed by the three POTs (VR1, VR2 and VR3, respectively). The response curve are shown Table II (The crossover frequency are 500Hz corresponding to resistor set 22k Ohms)



If you have any questions on assembly, please contact us by tech@analogmetric.com.

Table I

Resistance for the Frequency Crossover Point

R1, R1B, R2, R2B, R3, R3B, R4, R4B, R5, R5B, R6, R6B, R7, R7B	1: 220K 1/4W for 50Hz 2: 200K 1/4W for 60Hz 3: 110K 1/4W for 100Hz 4: 56K 1/4W for 200Hz 5: 47K 1/4W for 250Hz 6: 36K 1/4W for 300Hz 7: 33K 1/4W for 350Hz 8: 22K 1/4W for 500Hz 9: 15K 1/4W for 750Hz 10: 14K 1/4W for 800Hz

Table II

Frequency Response of the Crossover Filter