

FL-4 Audio Filter

1871

MODEL FL-4
UNIVERSAL AUDIO FILTER

**OPERATOR'S
MANUAL**

Palomar Engineers

MODEL FL-4
UNIVERSAL AUDIO FILTER

I - DESCRIPTION

Model FL-4 is a multi-pole switched capacitor filter fully adjustable over the audio band 200-3500 Hz. There are three independently adjustable filters: a notch to take out heterodyne whistles, a lowpass to cut out "monkey chatter" and a highpass to cut out low frequency interference. The filter connects between the receiver phone jack and a speaker or headphones. It provides 4 watts audio.

II - INSTALLATION

Connect the audio from the receiver phone jack or speaker line to the "AUDIO IN" plug on the rear of the FL-4. Connect a 4 to 16 ohm speaker or headphones to the "SPKR" plug. Plug a Palomar PS-90 power supply or any +15-v DC supply to the "15-V DC" plug.

III - OPERATION

With the "Off" switch in off position (button up) the audio signal bypasses the filter. If the wiring is correct you should hear the receiver audio in the speaker or phones. Set the receiver to a comfortable level.

Set the three knobs on the FL-4 front panel to the black dots. This gives maximum filter bandwidth. Next depress the "Off" button. The filter should now be operating. The audio level should stay about the same as before but the passband will be 200-3500 Hz with very sharp cutoff above and below this band.

To remove low frequency rumble, hum and other interference turn the "HIGHPASS" control clockwise.

To remove high frequency interference turn the "LOWPASS" knob counterclockwise.

To remove a heterodyne turn the "NOTCH" control clockwise until the heterodyne nulls out.

The black dots on the panel are a reminder of the Off position of the filters.

SSB and AM

Adjustment when listening to SSB or AM broadcast signals is best done as described above. As the passband is narrowed the character of voice reproduction changes but, as interference is eliminated, it can be more easily understood.

CW and RTTY

With the signal tuned to the pitch you want, turn the "LOWPASS" counterclockwise until the signal peaks which it will do just before the point of attenuation. Next, turn the "HIGHPASS" clockwise until the signal starts to drop. Then back off slightly. Now you have a sharp bandpass filter set right on your signal.

For an RTTY signal you can adjust the "NOTCH" in between the high and low tones to reduce in-band interference.

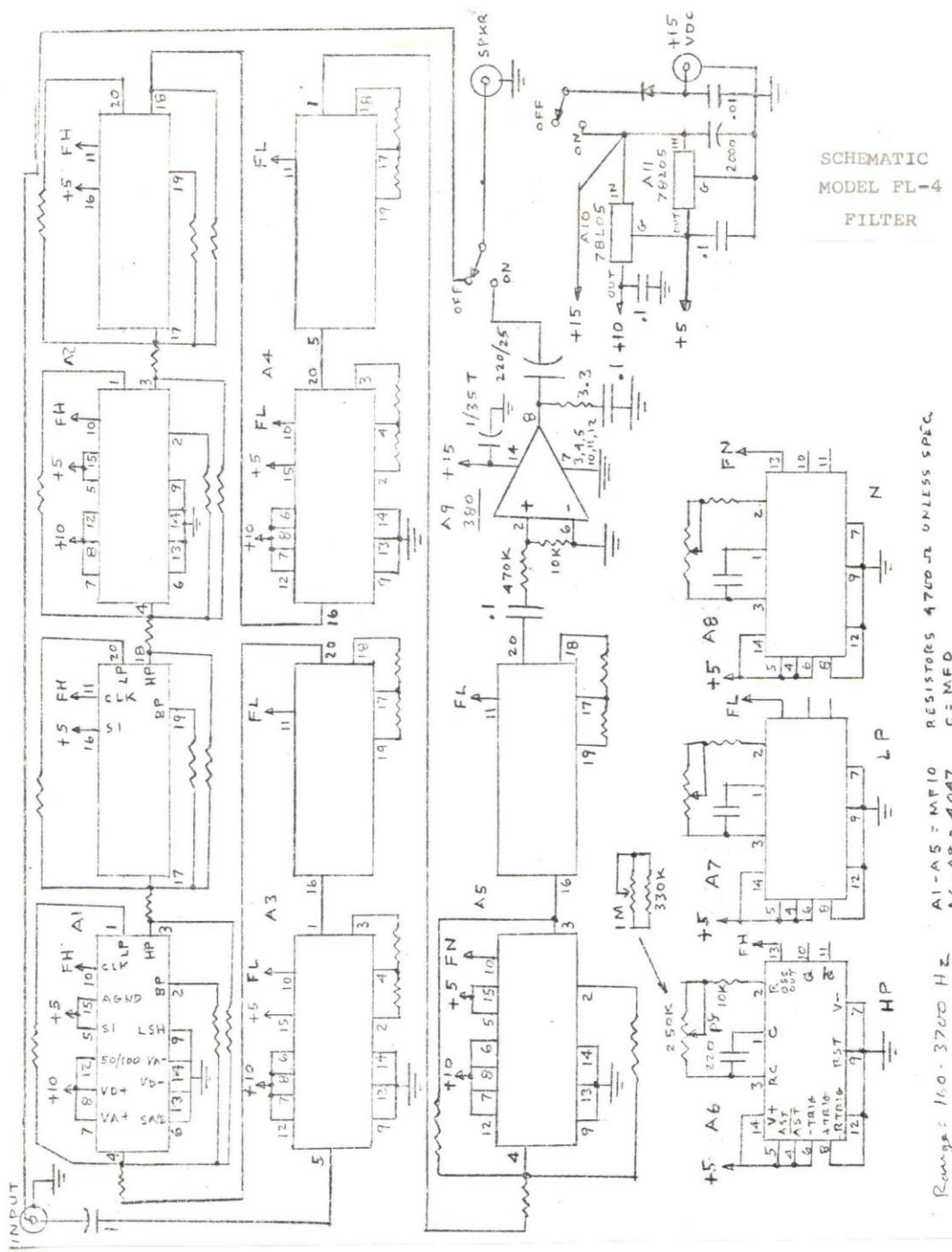
MODEL FL-4 FILTER

NOW! You can beat the QRM with this new universal audio filter. For SSB/CW/RTTY/AM.

How it works. A 10 pole low pass and an 8 pole highpass can be moved anywhere in the 200-3500 Hz range. This gives an amazingly sharp bandpass filter at any frequency and of any bandwidth. Interference disappears like magic. The lowpass takes out monkey chatter, the highpass gets rid of rumble and hum. The notch will take out a heterodyne.

Easy to use. Connect to phone jack or speaker terminals. Connect the output to a 4 to 16 ohm speaker. With the switch "Off" the filter is bypassed. With it "On" the passband drops to 200-3500 Hz with very sharp skirts. The three control knobs can then be adjusted to narrow the passband still further as required by the situation. To remove low frequency rumble, hum and other interference turn the "HIGHPASS" control clockwise. To remove high frequency interference turn the "LOWPASS" knob counterclockwise. To remove a heterodyne turn the "NOTCH" control until the heterodyne nulls out.

Specifications. Filters: Lowpass 60 db / octave rolloff, Highpass 48 db / octave rolloff, Notch 50 db null. Frequency Range: All filters tunable 200-3500 Hz. Filter Type: Switched capacitor. Audio Output: 2 watts. Controls: Notch, Lowpass, Highpass, On-Off. Filter is bypassed in "Off" position. Power Requirement: 15-v DC @ 100-ma. Connectors: Input/Output 3.5 mm phone jacks, Power 2.5 mm phone jack. Mating connectors supplied. Size: 23 x 15 x .5 cm (9 x 6 x 2 in.) Weight: 0.6 kg (1¼ lb.) Cabinet: Aluminum. Color: Brushed aluminum panel, black vinyl cover.



SCHEMATIC
MODEL FL-4
FILTER

Range: 160 - 3700 HZ
 A1-A5 = MF10 RESISTORS 4700-Ω UNLESS SPEC.
 A6-A8 = 1047 C = MFD

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