**K9HZ 100W LPF – FILTER BOARD**

**BUILD INSTRUCTIONS for PCB V1.10**

**JULY 1, 2025**

The K9HZ LPF board set is intended to be a very compact yet effective 11 band low-pass filter network to meet FCC regulations. While this board was intended to be use in a set of three, it can be used stand-alone for just using the filters.

**Operating Data**

Power Requirements: 12-15 VDC at 100ma max (provided by the Control Board).

Frequency Range: 1.8MHz – 54MHz/ 160M – 6M in 11 bands inclusive.

RF Input: 150W Maximum. Input and Output with bypass.

Control: BCD band data from the Control Board via two connectors.

Performance: N-th order harmonic reduction more than than 43 db.

**Inventory and Prework**

Spend time to determine if you want all 11 bands for 1.8MHz-54MHz/ 160M-6M (all amateur bands included in that frequency range). If you wish to delete a particular band or build that filter later, just remove those parts from the BOM before ordering. The 100W BOM is:





The filter board can also be built as a 20W maximum board for QRP operations. The BOM for that combination is listed in the BOM directory.

Keep the capacitors in their envelopes until you need them as they are hard to discern if you mix them up. A good 45W soldering pencil, solder, flux, and a good set of forcepts are all that is needed to complete this board.

**Building the LPF board**

At this point, it really makes sense to spend time winding the torroids before building the board. If you have an LCR meter or a VNA, wind each inductor… measure it, and label it. The turns numbers given in the BOM are a very good starting point and should work sufficiently. If you don’t have a way to measure the inductance of the wound inductor, stay with the number of turns suggested in the BOM.

Wind the cores to spread the turns over the entire body of the core. If you can

1. Start by wiping the board, front and back, with Isopropyl alcohol. This will make soldering parts on the board easier/

Please see the “Modifications By Others” directory for some tweaks to the LPF filter coils to maximize

Return loss.