K9HZ 100W LPF – CONTROL BOARD
BUILD INSTRUCTIONS for PCB V1.10
August 26, 2025

Operating Data:

Power Requirements: 12-15 VDC at 100ma max.
Frequency Range: 1.8MHz – 54Mhz/ 160M – 6M in 11 bands inclusive.
RF Input: Up to 150W Maximum.
Control: I2C or Digital and BCD Band Data for LPF Switching.

Inventory and Prework

The full BOM is given in Table 1. Note that the full BOM parts should not be ordered; it is only presented for reference. Spend some time with the list of options for this board before you order. Understand what each option does and select the best set of options for your situation. Once option selection is made, order and inventory your parts.

Board Options

Decide if the LP filters, BPF, path, antenna select etc. will be selected by addresses I2C or by band connector and LPF ACC control Connector. If I2C leave out R8, R9, R10, and R11. If no I2C, leave U15, R14, and R12 off the board and control via band connector and LPF ACC Control. This can be split up.

1.8Mhz HPF.

1.   Build.

2.   Bypass (for MF reception). Leave C14, C15, C16, L1, and L2 off the board. Put 0 Ohm resistors in positions for C14 and C16, and a 0.1uf 50V capacitor in position C15.

FOR and REF Power.

    1.   Detected by diodes:
             a. Leave C139, C147, C144, C137, C152, C154, C155, C150 L36, L41, R16, R17, R18, R22,
                 R24, R25, U14, U19 off the board.
    2.   Detected by AD8307's:
             a. Leave C149, C156, D1, D2, R19, R20, R26, R27, R28, R29 off the board.
    3.   FOR and REF Sent via I2C using the A/D:
             a. Leave R23 and R30 off the board.

4. FOR and REF analog signals sent via BANDS connector:
   a. Leave C145, C146, C151, U17, and U20 off the board.

WORK IN PROGRESS>…

Please see the "Modifications By Others" directory for some tweaks to the LPF filter coils to maximize Return loss.