



HF SuperPacker Pro 100W Amp Low Pass Filter Module LPF-100 R3A

Coil Winding Data: All coils wound in the direction shown in Figure 1



Figure 1

Item	Ref	Part Description	Band	uH	Inch	Turns	Note
1	L1,L2	T50-1 BLUE	160	5.08	16	21	Tight
2	L3,L4	T50-2 RED	80	2.51	16	21	Tight
3	L5	T50-2 RED	60/40	1.37	13	15	Tight
4	L6	T50-2 RED	60/40	1.17	125	13	Tight
5	L7	T50-10 BLACK	30/20	.58	11	10	Tight
6	L8	T50-10 BLACK	30/20	.40	10	9	9-3 Clock
7	L9	T50-10 BLACK	30/20	.43	12	10	9-3 Clock
8	L10,L11	T50-10 BLACK	17/15	.47	10	9	10-2 Clock
9	L12	T50-10 BLACK	12/10	.38	10	8	Tight
10	L13,L14	T50-10 BLACK	12/10	.33	8	7	Tight

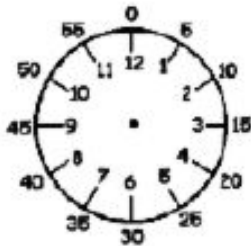


Figure 2

The clock face in figure 2 indicates where the windings begin and end. Tight means that the windings are tight with the center at 12 O'clock . The note 9-3 means that the windings are distributed evenly between 9 and 3 on the clock. Refer to Note in the last column above.

Wind all inductors. Strip and tin leads 3/8 inch. Each pass of wire through center counts as one turn. Adjust wire spacing according to the Note Column. I use a hobby knife to remove most of the insulation on the wire lead to be soldered. To insure a good solder connection, I dip the lead in rosin and tin the lead. I use an old soldering iron where I drilled down the center of the tip to make a miniature solder pot. Set aside each inductor for later assembly.



Relay Assembly

Insert Relays K1 – K12. Place a book or other object over the top of the relays and turn the assembly over to the solder side of the circuit board. Solder one pin of each relay to hold it in place. Reheat the solder joint while pressing the relay closer to the board. The idea is to make sure the relays are flat against the circuit board. Solder all pins of the relays.

Diode Assembly

Insert Diodes D1 – D6. Observe polarity mark on the diode matches the circuit board symbol. You will need to bend the leads at right angle close to the ends of the diode. You will need to pull the leads through and snug the diodes to the board. Solder all diode.

Connector Assembly

Insert J2 and J3 from the back side of the circuit board with a #4 nylon washer under pins 1 and 3 to space the connector away from the circuit board by the thickness of the spacer. These connectors have a blunt end and shaped end. The blunt ends will be soldered to the circuit board. Solder one pin on each connector. Inspect that the connector is flush against the spacers and perpendicular to the circuit board. Solder all 3 pins of each connector. Install J1 and J4 at the end of the procedure. Solder one pin. Inspect and align pin so it is perpendicular to the board and flat against the board. Solder all 5 pins on each connector.

Capacitor Assembly

Install capacitors in the following sequence and solder when indicated. Insert capacitors and bend leads 45 degrees to hold them in place. Solder and clip leads flush with the board. Reflow each solder joint after clipping.

1	C36, C20, C24, C35	
2	C9, C3, C14, C29	
3	C11, C23, C19, C26, C34, C31	
4	C2, C8, C13, C28	
5	C4, C33, C30	
6	C1, C10, C18, C27, C25	
7	C7, C12, C22, C32	

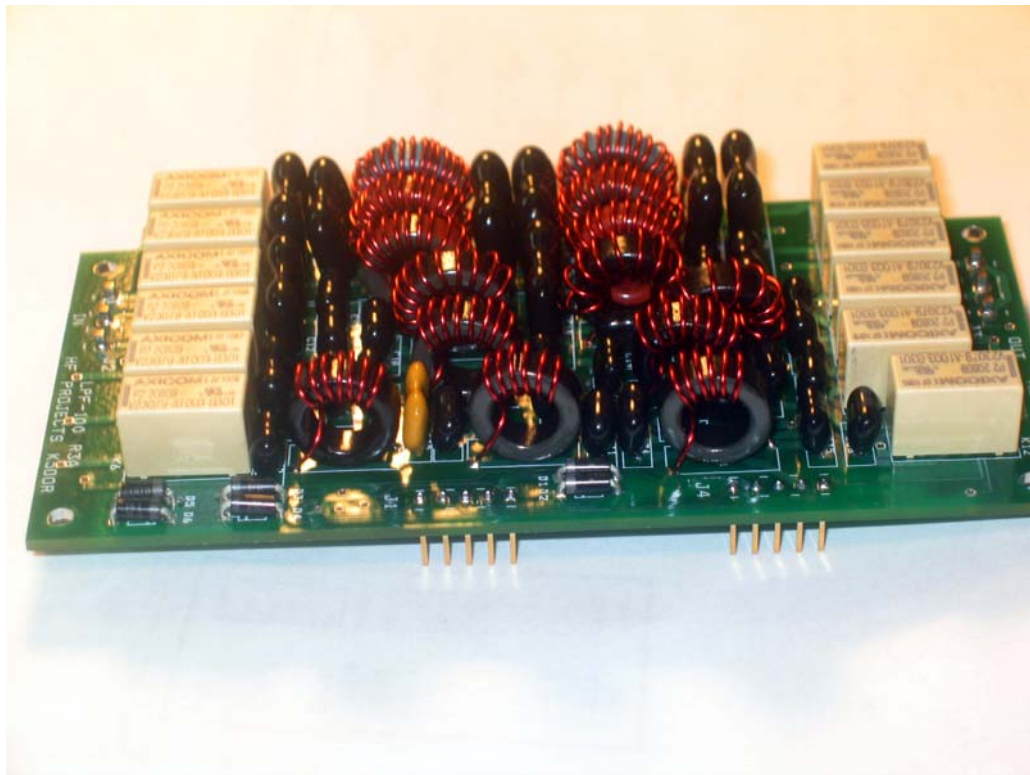


Inductor Assembly

Preform the leads at any location on the circuit board to ease assembly in tight locations. Install Inductors L1 – L14. Confirm you have the correct number of turns on the correct color core. Pull the leads tight and align the inductor in-line with the component outline. Solder and clip leads flush with the board. Reflow the solder joint after clipping lead.

Board Cleaning

I recommend board cleaning to remove residue that might provide a conduction path at high frequencies and subvert the overall frequency response of the filters. I use TechSpray Blue Shower available from Mouser Electronics (1630-16S). Use in a well ventilated area (outside) to remove solder flux from the board. Follow directions on the can.



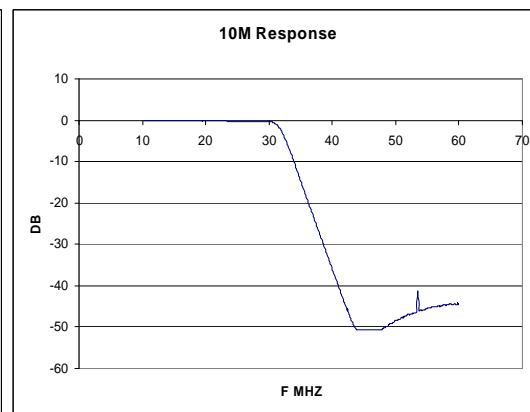
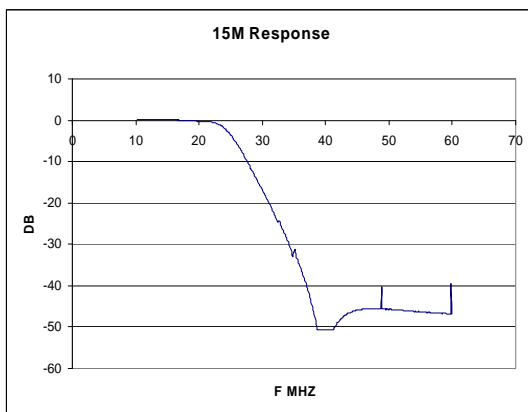
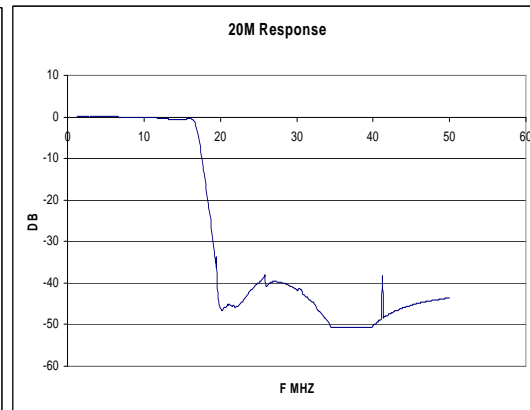
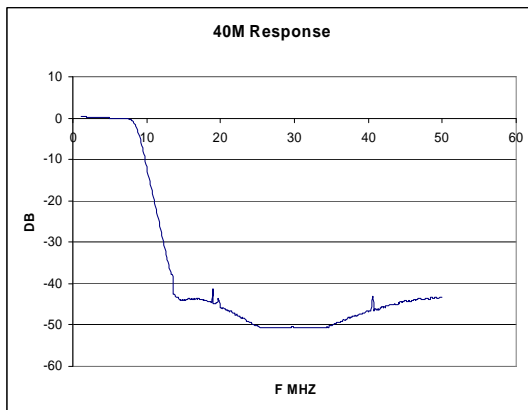
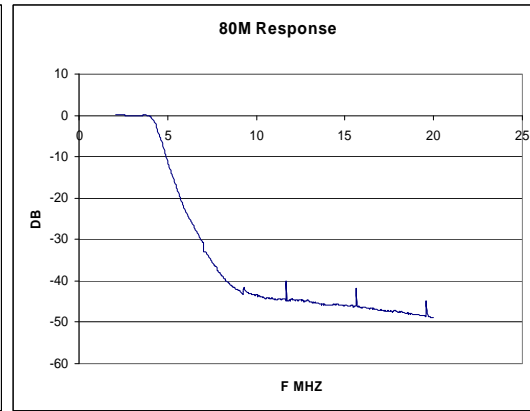
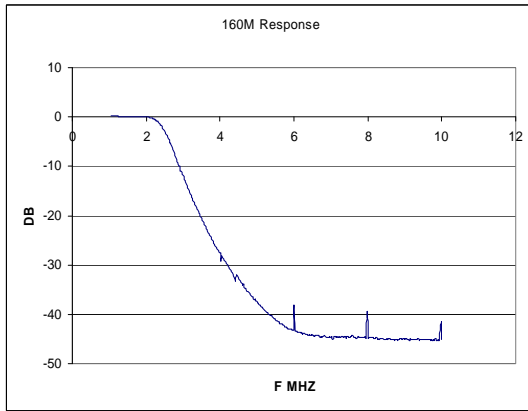


Bill Of Materials

Item	Qty	Ref	Part Description
1	1		Circuit Board LPF-100 R3A blank
2	6	D1,D2,D3,D4,D5,D6	Diode 1N4007
3	12	K1,K2,K3,K4,K5,K6,K7,K8,K9,K10,K11,K12	Relay DPDT
4	2	L1,L2	Inductor T50-1 (BLUE)
5	4	L3,L4,L5,L6	Inductor T50-2 (RED)
6	8	L7,L8,L9,L10,L11,L12,L13,L14	Inductor T50-10 (BLACK)
7	2	J1,J4	CON5
8	2	J3,J2	CON3
9	1	C25	Cap 12p
10	1	C30	Cap 18p
11	1	C18	Cap 27p
12	1	C35	Cap 33p
13	2	C10,C26	Cap 39p
14	2	C31,C24	Cap 47p
15	1	C32	Cap 68p
16	1	C36	Cap 82p
17	2	C21,C29	Cap 100p
18	1	C11	Cap 110p
19	1	C20	Cap 120p
20	4	C19,C27,C33,C34	Cap 150p
21	3	C22,C23,C28	Cap 220p
22	1	C14	Cap 330p
23	1	C12	Cap 390p
24	1	C13	Cap 680p
25	2	C7,C9	Cap 1200p
26	2	C1,C3	Cap 1500p
27	1	C8	Cap 1800p
28	1	C2	Cap 2700p
29	1	C4	Cap 0.01uF
30	20ft	Extra wire provided for screw ups	Wire, 22AWG



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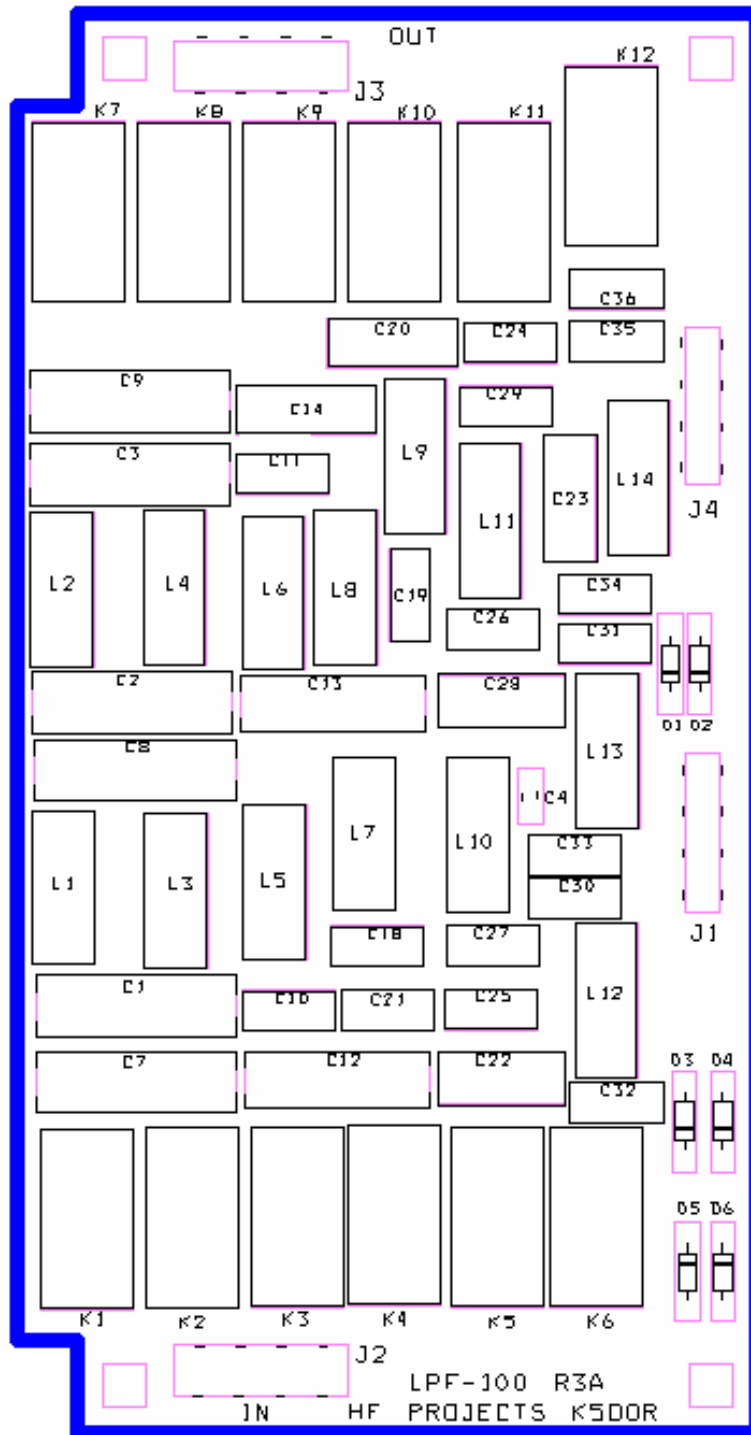


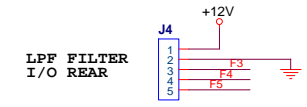
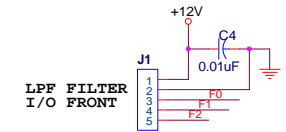
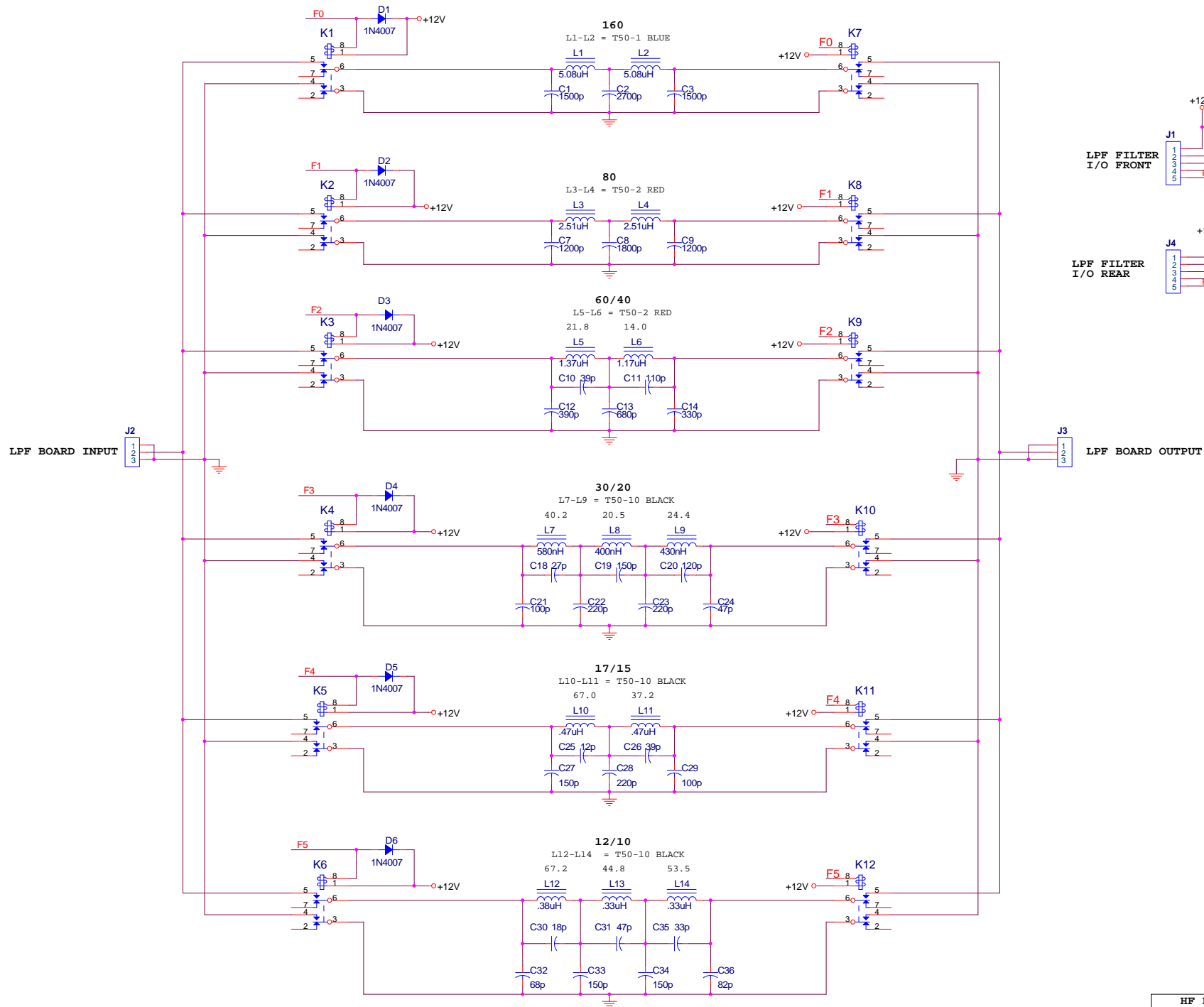
Response curves captured on a MINIVNA

Note: the random spikes was a pickup problem using the MINIVNA



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HF PROJECTS - K500R		
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C	LPF-100 R3A	
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