

## 28 MHz Transmit IF Filter for K2/K60XV

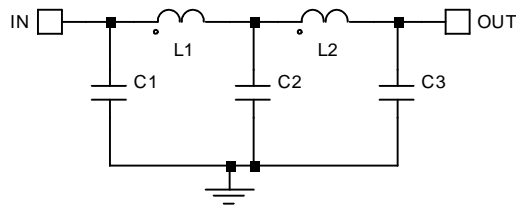
Steve Kavanagh, VE3SMA

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### 1. Background

When using the Elecraft K2/K60XV as a 28 MHz IF for the XV222 222 MHz transverter, I found that the K2 and the transverter would go into transmit when I was transmitting on other bands. It turns out that the K2 is VERY sensitive to RF entering the transmit IF output port when in receive mode. RF was getting in via the cables attached to the XV222, which is not particularly well shielded. Adding an outboard 28 MHz bandpass filter (in a shielded box) close to the K2 fixed most of these problems.

### 2. Schematic



### 3. Final Design after Experimental Optimization

L1, L2 : 7 turns #22 AWG on T30-6

C1, C3 : 166 pF - 91 pF + 75 pF in parallel (dipped silver-mica)

C2: 309 pF - 270 pF + 39 pF in parallel (dipped silver-mica)

#### 4. Measured Performance

MHz	Return Loss (dB)	Insertion Loss (dB)
20	8.6	1.4
21	9.6	0.9
22	11	0.7
23	12.4	0.5
24	15.6	0.4
25	18.7	0
26	23	0.3
27	32	0.3
28	32	0.3
29	32	0.4
30	32	0.2
31	29	0.3
32	20	0.4
33	12.2	0.8
34	7.6	1.4
35	2.7	2.4
36	0.7	3.7
40		13.6
45		25
50		33
60		34

*Note: insertion loss values at 50 & 60 MHz are minimum values (reflected power was less than 1 division on meter)*

