10 meter bandpass filter modification

by DL1iAQ

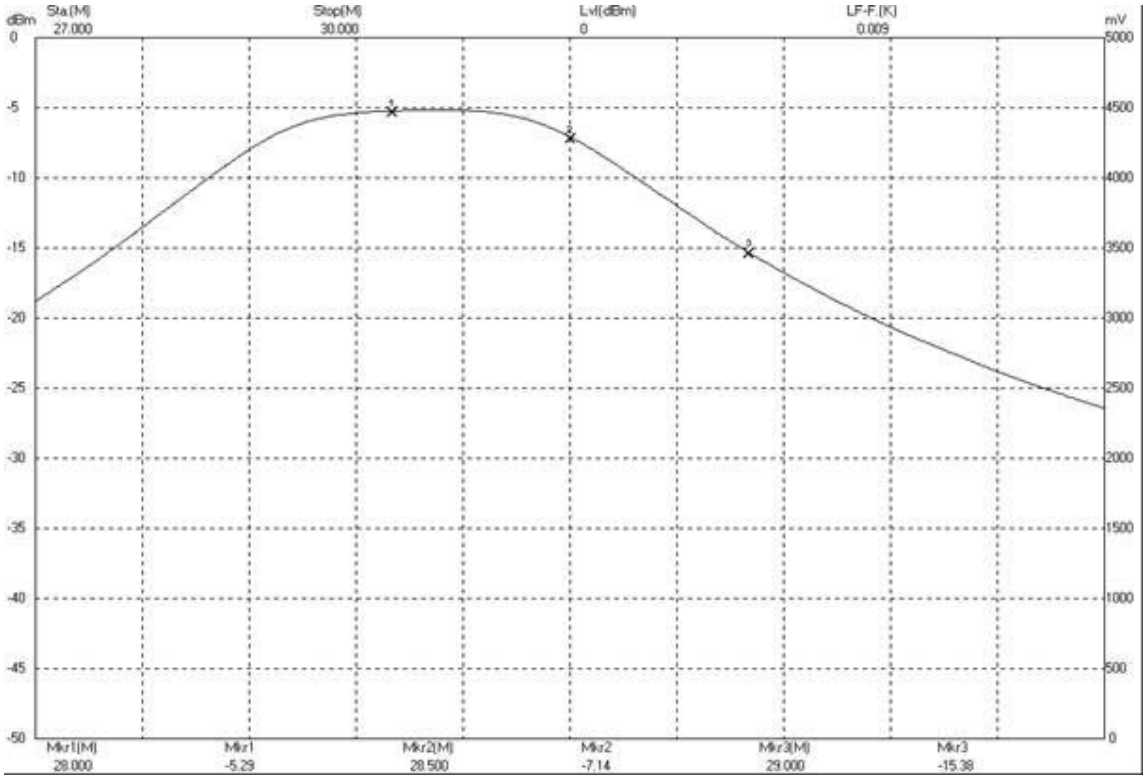
After performing the 10m BPF mod for use with the KPA-100, I was not satisfied with the performance of my K2. The range of the BPF was too narrow for my needs and sensitivity quickly dropped when tuning higher in band. I mailed to the reflector, but never got an answer from you ´crafters. So I mailed directly to Wayne, N6KR, who suggested trying a different coupling capacitor (C45).

The filters below were measured with some magic computer-aided equipment built by Volker, DF7IT, the GHz-guru of my local club. Too bad he is not an Elecrafter.....

Rev.A-board owners: If you haven´t already, do the mod now. Change C42/48 from 220pF to 330pF and read below for C45. If you make it 1 pF as Elecraft recommends, the image shows the 10m-BPF after the mod.

Rev.B-board owners: C42/48 *are* 330pF and C45 *is* 1pF. No need to modify.

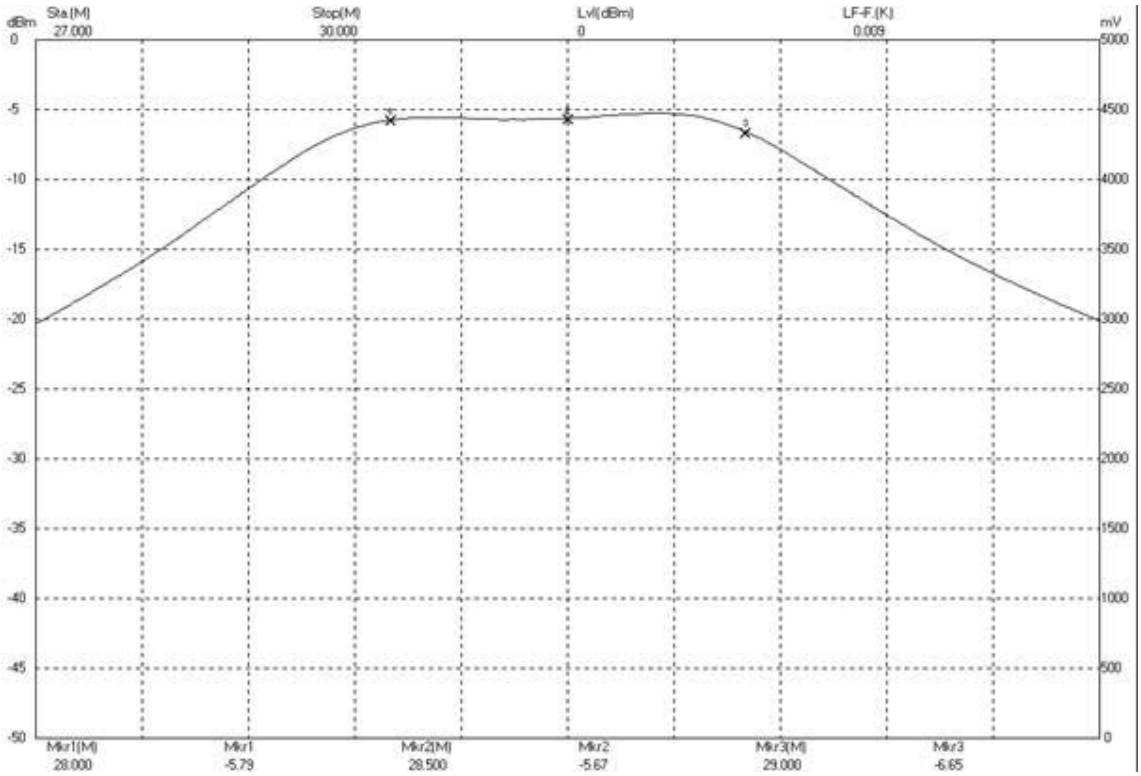
Mkr1 represents 28.000 Mhz
Mkr2 represents 28.500 MHz
Mkr3 represents 29.000 MHz
The step is 300 kHz/div and 5 dB/div..



Note that the center of the Bandpass is a little low in Frequency (my fault), but could easily be set anywhere in the range of 28.0 – 29.7. Still it would cover only a small part of the band with steep roll-off at the upper end.

If you´re a cw-only op, you´ll just *love* this filter. You might want to set the center even lower for maximum performance. SSBers might want to set the center to 28.500Mhz.

The 2nd image shows the 10m-BPF with C 45 = 1.5pF and C42/48 = 330pF (You can either replace the 1pF cap with 1.5pF or just add 0.5pF). The range is somewhat flattened and wider.

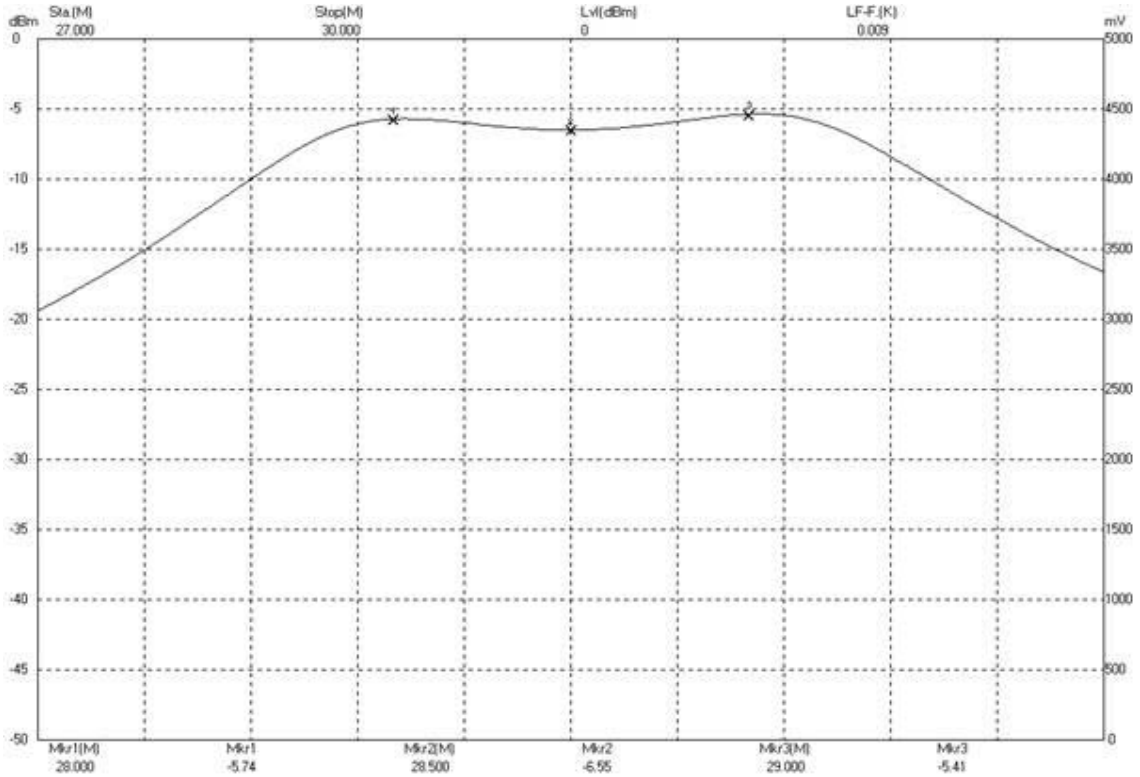


Still the BPF does not cover the entire band. Satellite users will notice this.

The 3rd image shows the 10m-BPF with C 45 = 2pF and C42/48 = 330pF. You can either replace the 1pF cap with 2pF or just add 1pF.

If you have a Rev.A- board and have *not* performed the 10m-BPF-Mod yet, then C45 *is* 2pF. In this case, leave C 45 in place. Only replace C42/48.

If you have a Rev.B-board, just replace C 45 and leave C42/48 in place.



The range is even wider and slightly “double-humped”, just as Wayne expected it. It covers most of the 10m-Band. Note the slight loss around 28.5 (Mkr2).

2pF is the value I use in the BPF. I have a 2m & 70cm transverter for satellite-work, so the wide range suits me better. Although - on shortwave- I´m a CW-only-op.

After *any* mod to the 10m-BPF you should also realign 12m.

I hope this helps those who like to cover a wider part of the 10m-band. Wayne, N6KR, doesn´t believe that spurious output will be affected.

Martin, DL1iAQ
K2 #2706 w/o KPA100 (yet).

Thanks to Sverre, LA3ZA, for providing the webspace.
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