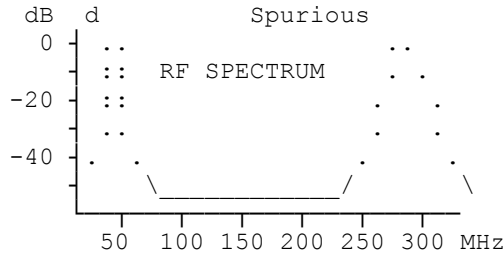
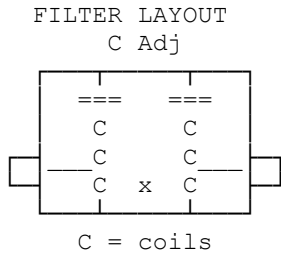


Subject: 6m VHF Filter Design
 From: G8MNY@GB7CIP.#32.GBR.EU
 To : TECH@WW

Hi readers.

(April 04)

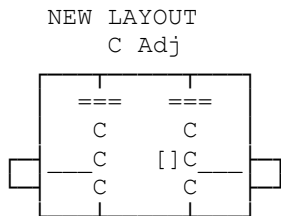
The other day I took my spectrum analyser to a club test night! I also took my RF pulse flat noise source (as published on packet) & put it through a standard 50MHz 2 pole filter, as in many text books.



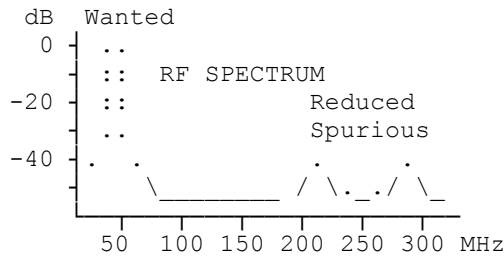
To my surprise on the analyser I noticed a strong broad peak at 280MHz that was about as strong as the 50MHz signal! This spurious response was unaffected by the 2 tuning Cs on the ends of the 2 coils!

It looks to me as though the driving turns taps on the coils were coupling directly with each other because when we tried some earthed metal in the inter coil gap near the cold ends (x) the spurious reduced.

But on later testing I measured only a few dB improvement with small plates at that point! But I found by experimenting, that an earthed 6mm wide copper strip between the coils 3/4 of the way up to the hot end & bent very near one of the coils did the trick!



[] Added Metal strip



What this did was to upset the 280MHz overtone resonance of 1 of the coils to give 2 peaks, one @ 210MHz & the another @ 290MHz, but both peaks 40dB lower in level! This is much better than 1 big peak @ 280MHz @ 0dB Loss.

Increasing the screening between the coils may have worked eventually, but will have had detrimental effect on the coupling factor, that is critical for best filter shape & minimum loss.

I expect for 2 pole filters the ideal is to make sure that the 2 asymmetrical tuned circuits do not have identical spurious resonances!

Anyone else tested there filters?

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP
 /EX