

Bandpass Filters

Four bandpass filters are used in the RX and TX path to cover all bands. Filters are implemented using standard values 0805 capacitors and inductors.

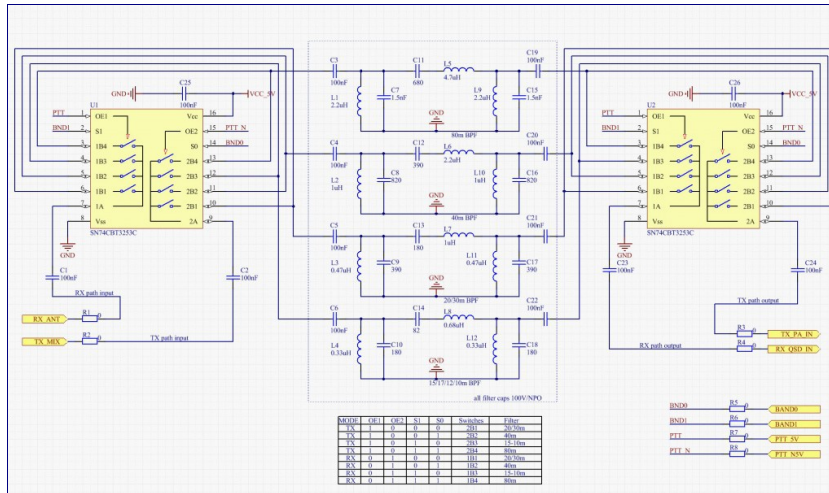


Fig1: BPF filters on the RX path(click for larger view)

Filter switching is achieved via CMOS switches (SN74CBT3253), two of them – one at the input and one at the output to prevent crosstalk. Two parallel data lines are used for control, plus the PTT/PTTN lines that selects RX or TX mode. Truth table is included in the schematics.

Filter testing was done with Hameg Spectrum Analyzer with built in Tracking generator. Below are the results of those measurements.



Fig2: Filter response for 80m band



Fig3: Filter response for 40m band

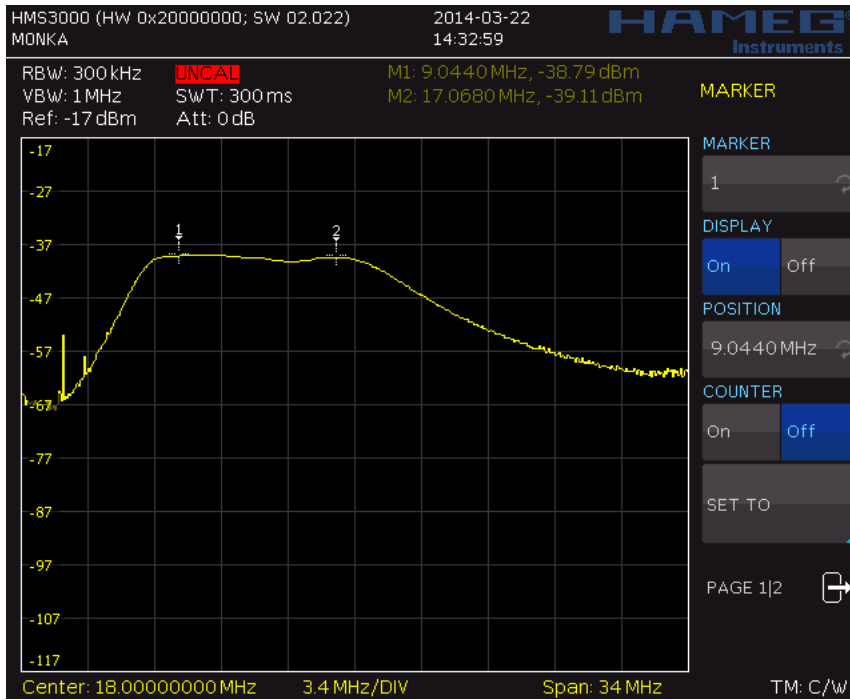


Fig4: Filter response for 20/30m bands

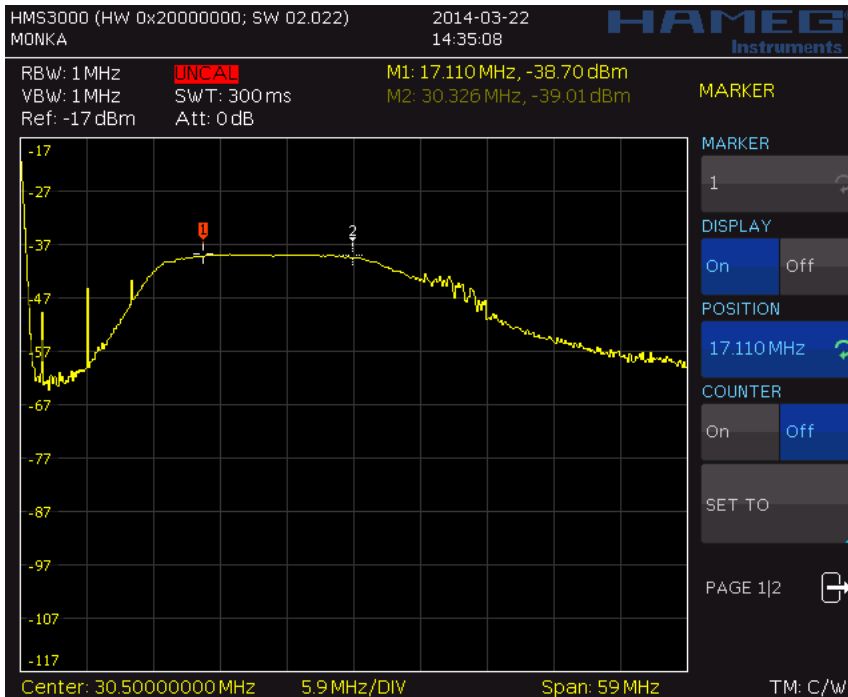


Fig5: Filter response for 15-10m bands

Why passband loss of -40dB ? Well i believe the output of my tracking generator is damaged. No way to use the 0 to -20dB built in attenuation or get 0dB output as it suppose to be. Connecting of the TG out to the Spectrum Analyzer input results in -40dB measurement.

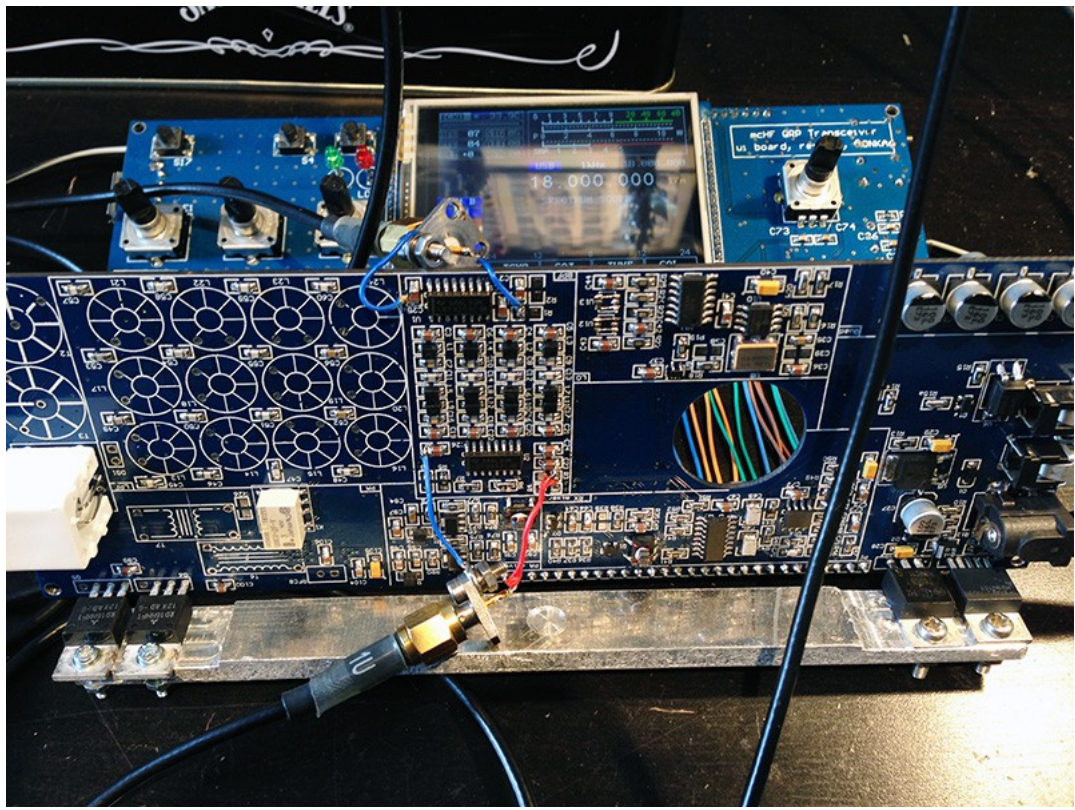


Fig6: Filter test setup