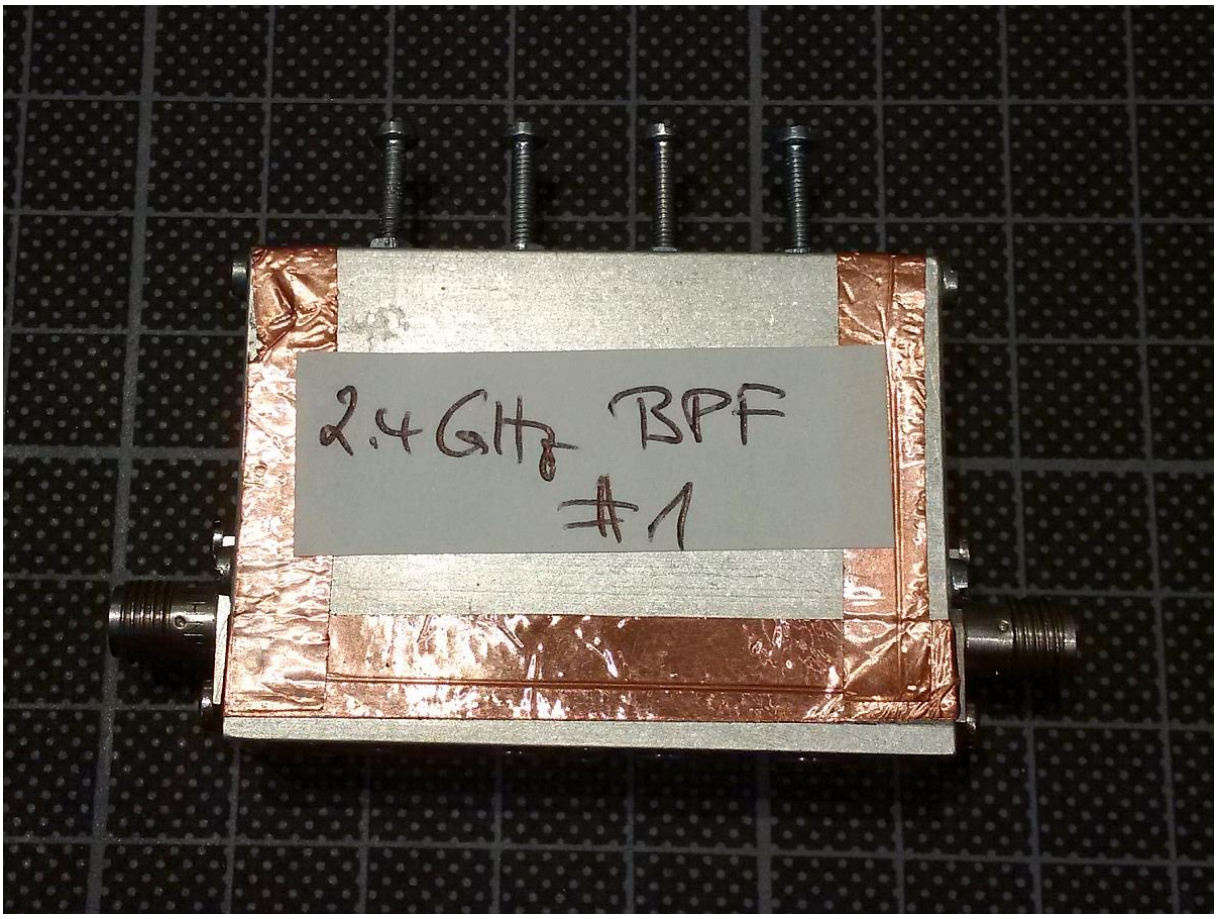
Homebrew 2.4 GHz BPF

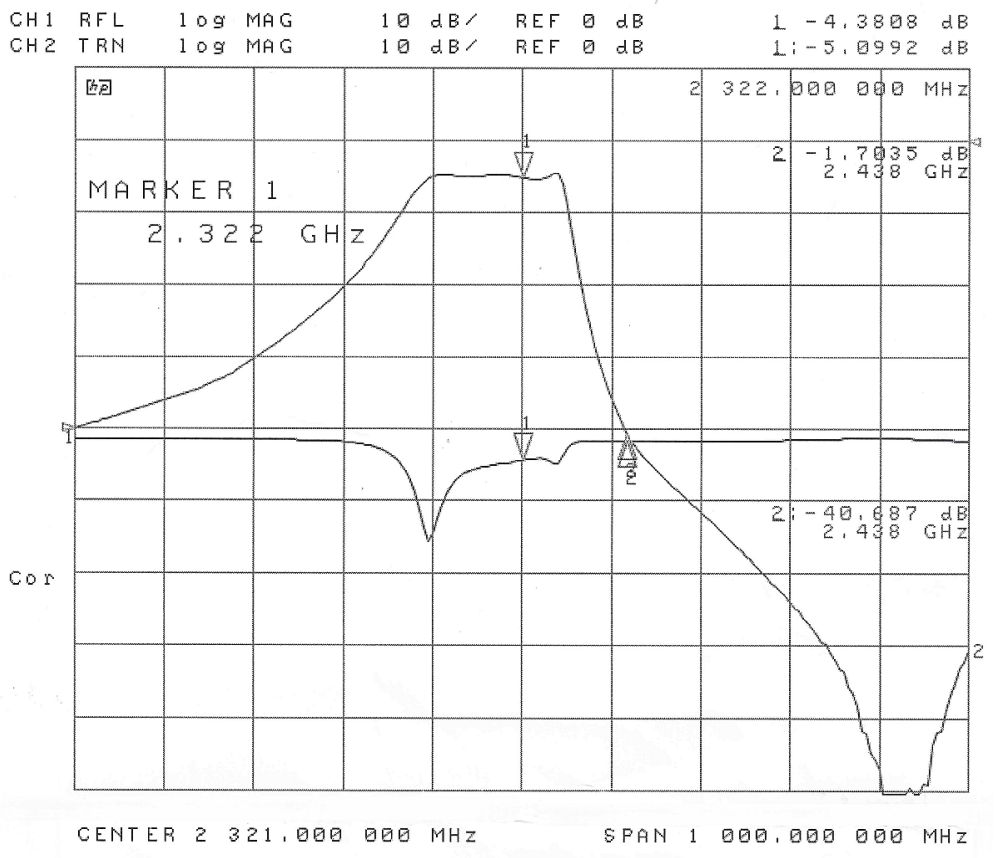
Matthias , DD1US, August 4th 2019

Already quite some time ago I bought a S-band bandpass filter on a flea market. It is apparently homebrew and it was tuned to 2.320 GHz. Working now quite frequently on the QO-100 satellite and planning to increase the output power I thought it would be a good idea to add a bandpass filter in the 2.4 GHz uplink.

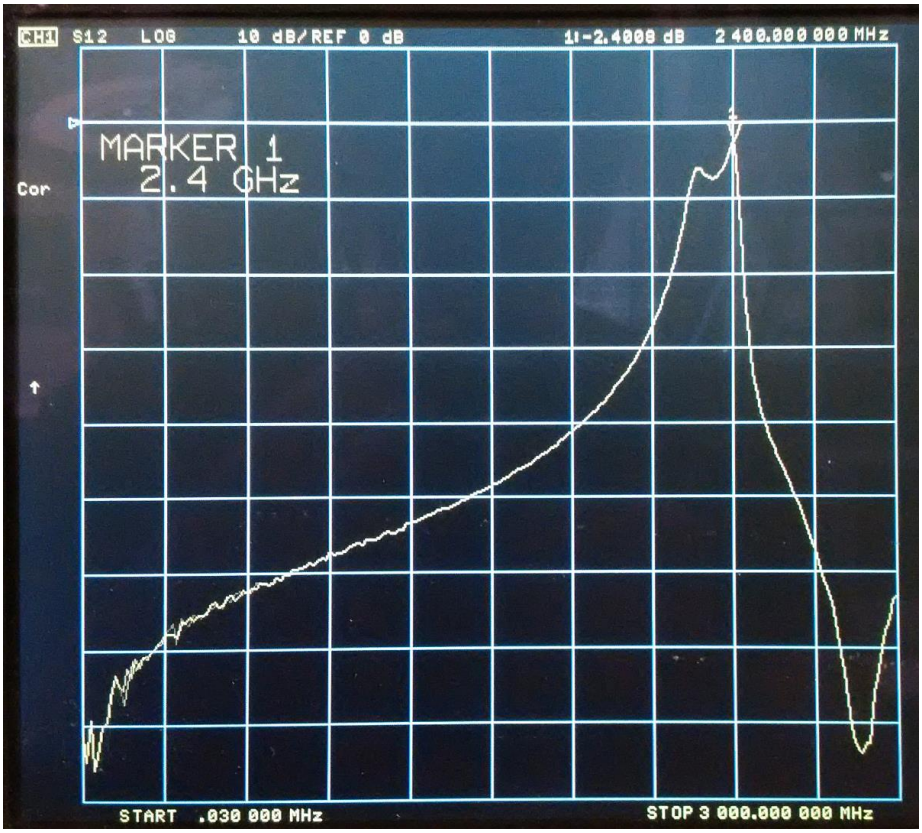
Here are some pictures of the filter:

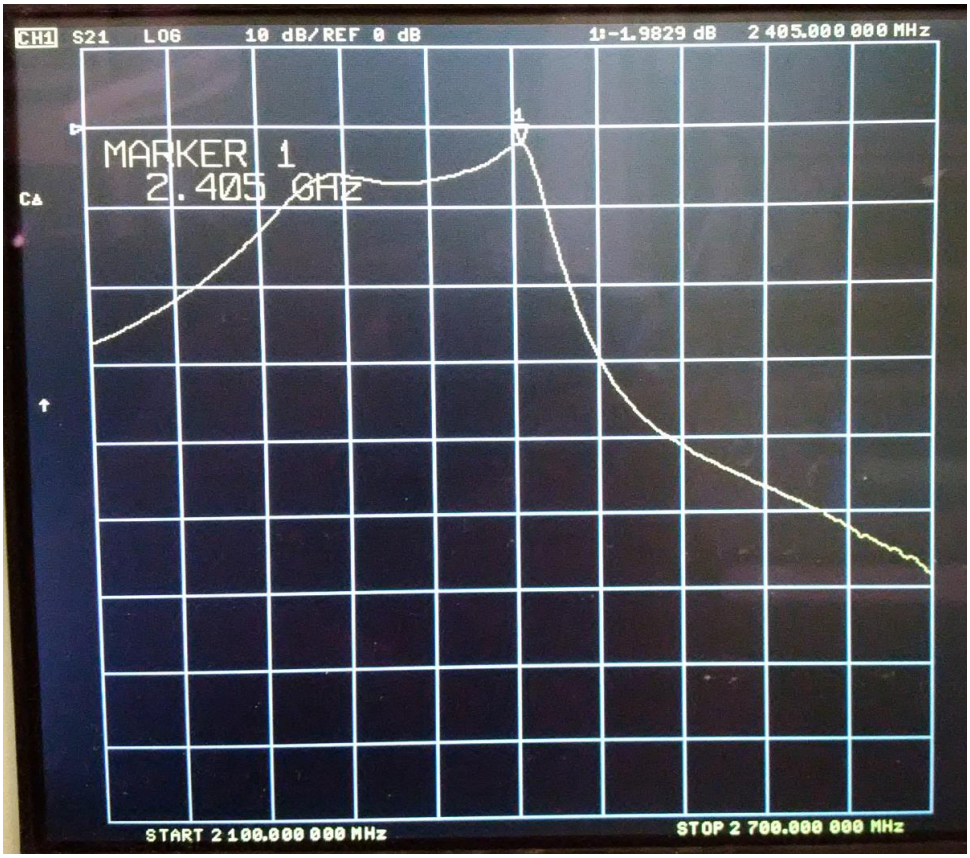


Here is the measurement data I got with the filter when I bought it:



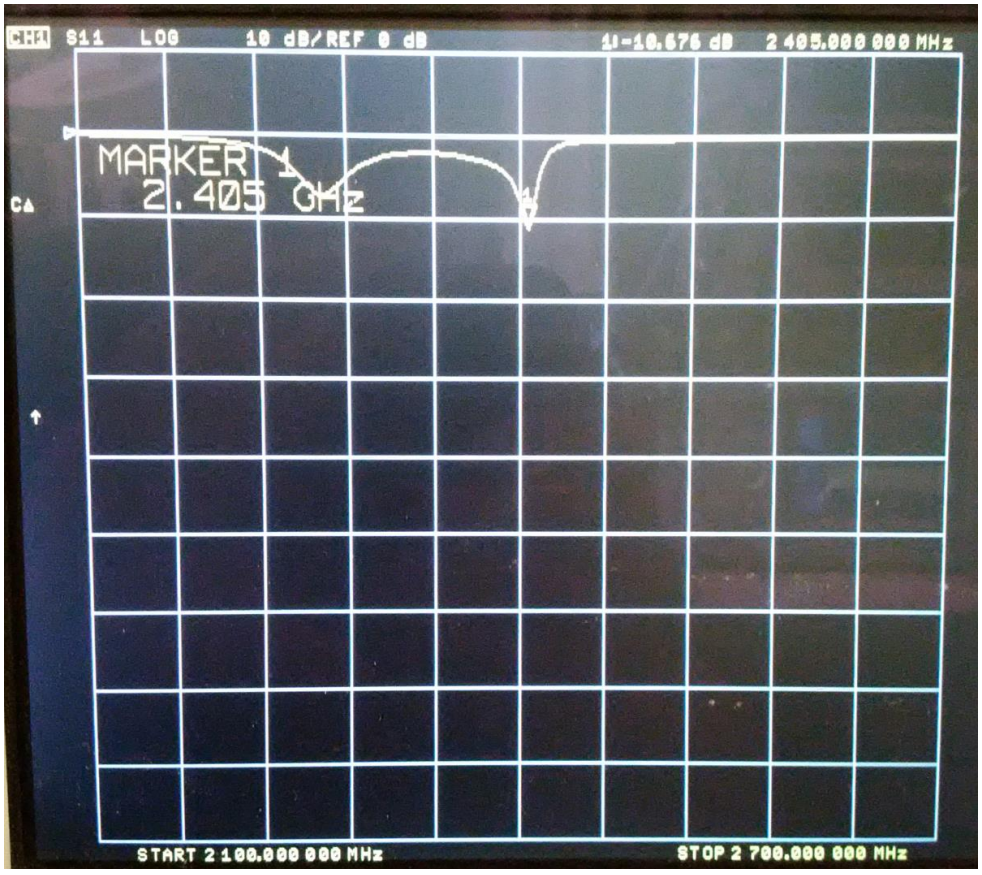
Here is the S21 transfer characteristic after retuning the filter to 2.4 GHz:

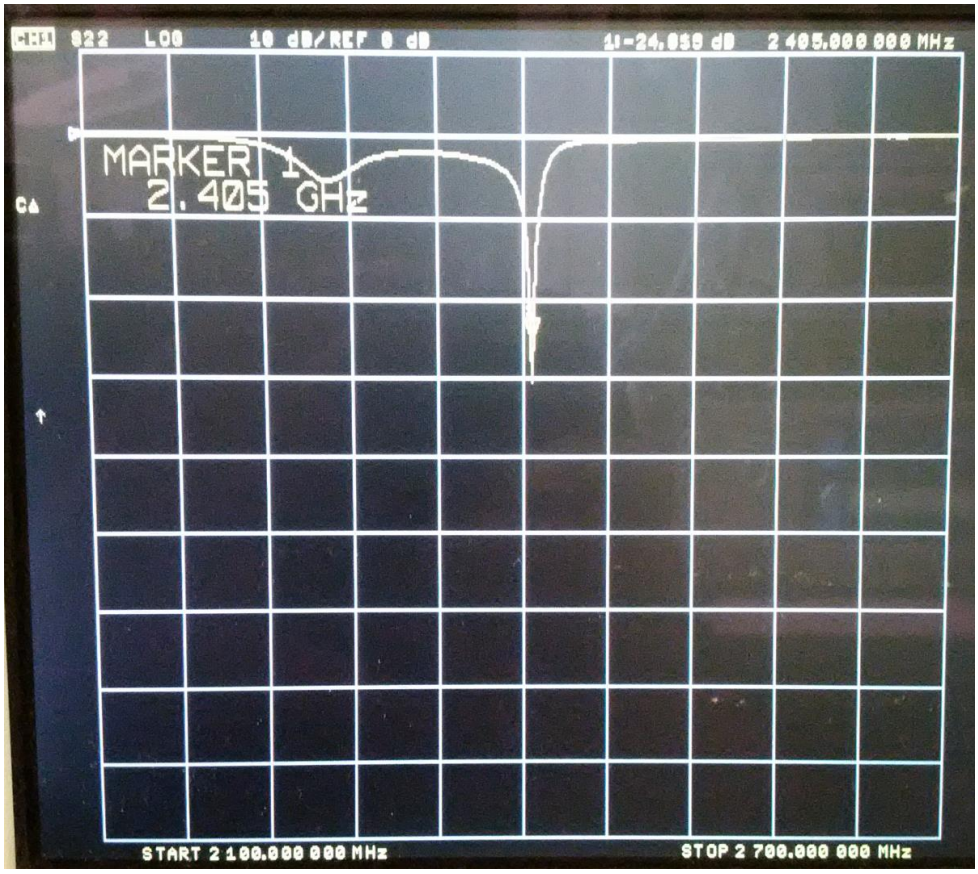




The transfer curve is basically the same and the insertion loss increased only by 0.2dB. With an insertion loss of 2dB it is still well suited to use it in the transmit path, most likely before the final amplifier.

In the next 2 diagrams the input matching S11 and output match S22 in the passband are shown:





I always appreciate feedback and will be happy to answer questions. Please send them to the Email address given below. Many thanks in advance.

Best regards

Matthias DD1US

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