13cm bandpass filter from SSB-Electronic for QO-100

Matthias, DD1US, November 9th 2020

Recently I was able to buy some 13cm filters from SSB-Electronics which were originally built for receiving AO-40. Here is the datasheet for this filter.

Data Sheet

Bandpass-Filter AO40 / Art. No.: 3027

This low-loss band pass filter simply has to be inserted into the coaxial cable between 13-cm receiving antenna and UEK-3000 Down-Converter. It is working passively, so no power supply is needed.

The housing is made of weatherproof sealed aluminium, the HF-connections are N-norm sockets, mounting is very easy. The OSCAR signal is attenuated by max. 0.1 dB, but out-of-band signals are suppressed effectively.

Technical Data

Pass band range	2400 – 2500 MHz
Insertion loss	typ. 0.1 dB
Far-off selectivity	> 60 dB
Connection norm	N - socket

Do not open the unit. It does not contain any parts needing maintenance. If you need help regarding technical matters, please contact our team:
technik@ssb-electronic.de

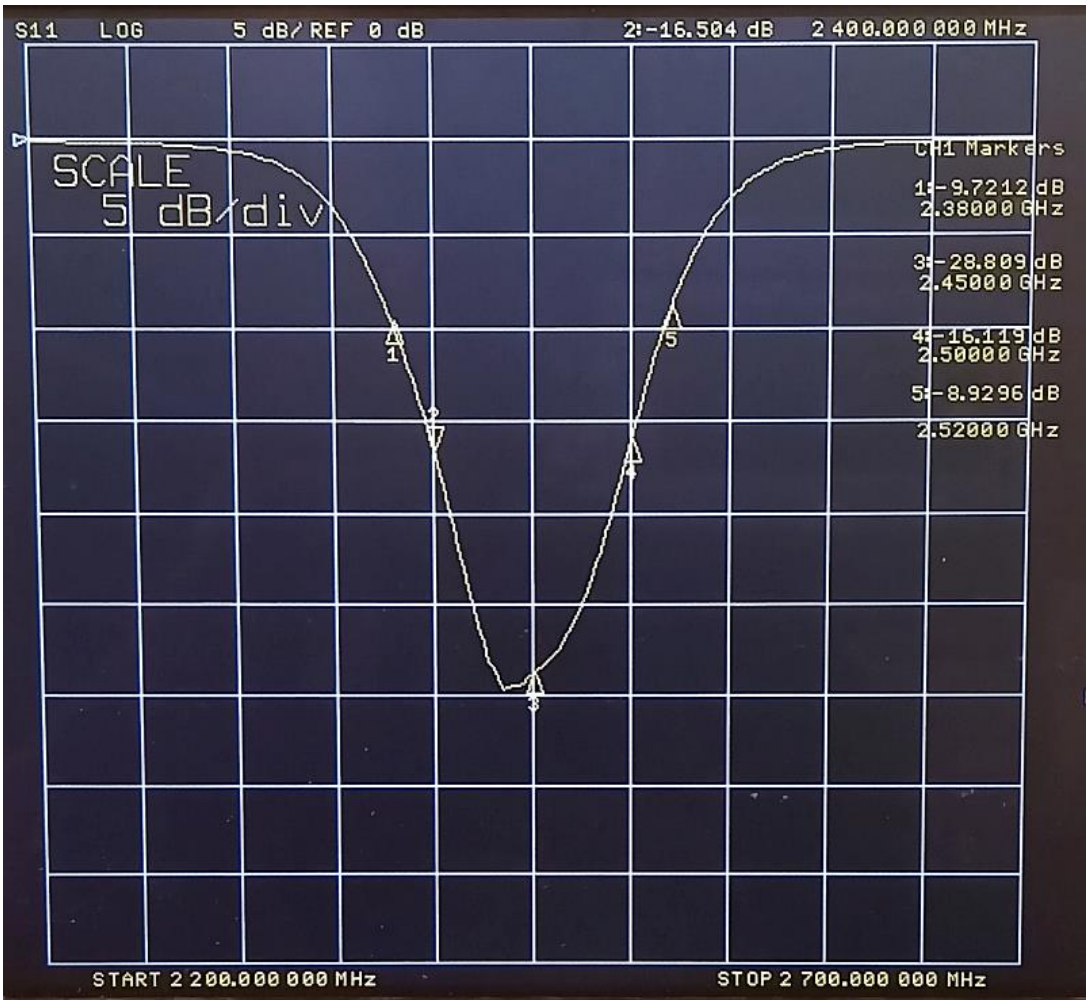
Disposal of your old appliance

This product is covered by the European Community directive 2002/96/EC. 2.
All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or by the local authorities. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and the human health.
For more detailed information about the disposal of your old appliance, please consult your city office, waste disposal service or the shop where you purchased the product.
Within Germany, the above regulations are also valid for the disposal of batteries and accumulators accordingly.

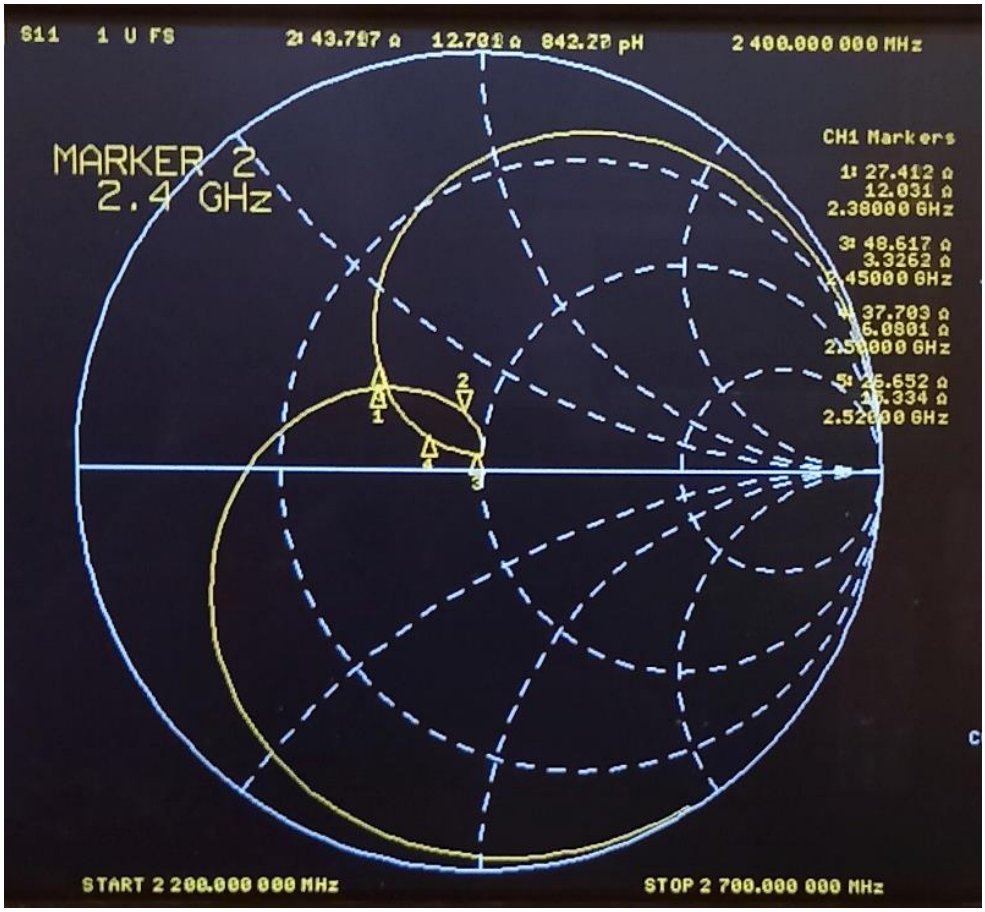
Here is a picture of one of the filters I acquired:

As mentioned above this filter was intended as receive filter for QO-40. Therefore, it is not clear what the maximum power handling capability of this filter is. As I have not (yet) opened one of the filters I cannot judge it. The filters are hermetically sealed, apparently to use them also outside. Based on the very low insertion loss I guess it is safe to use the filter up to at least 5W and thus it can be nicely inserted between the driver amplifier and the final power amplifier.

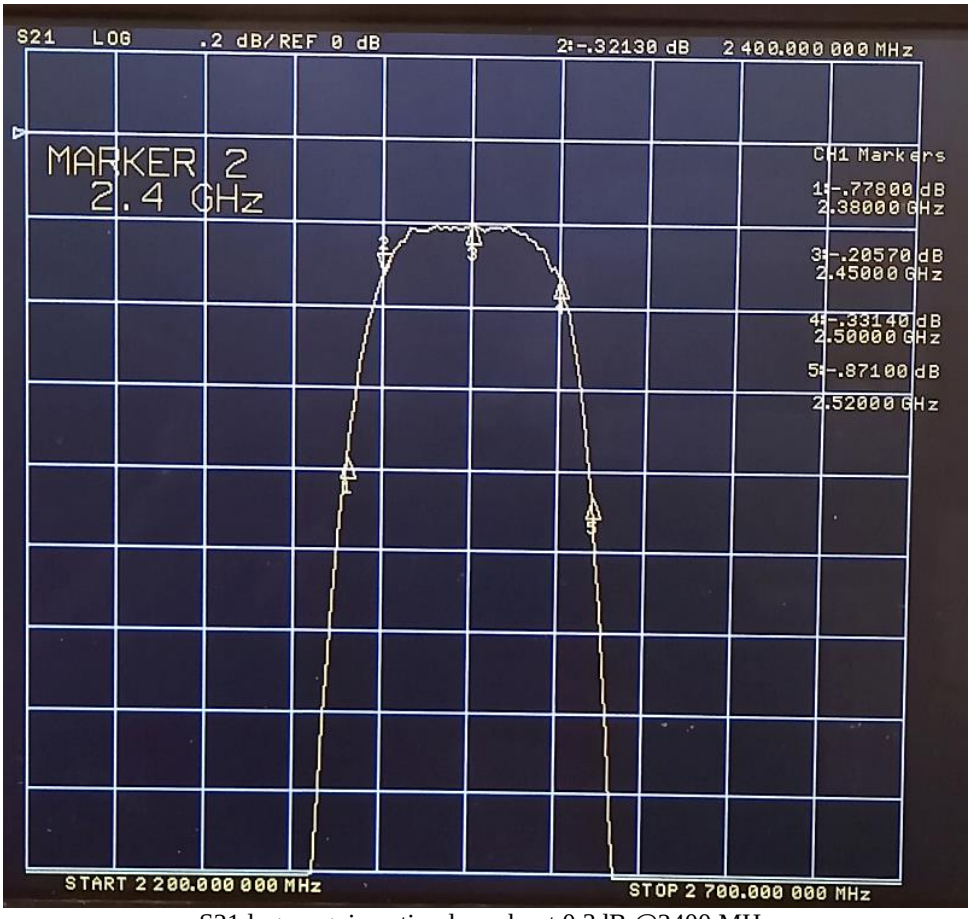
Here are the measurement results of one of the filters (the filters are very similar):



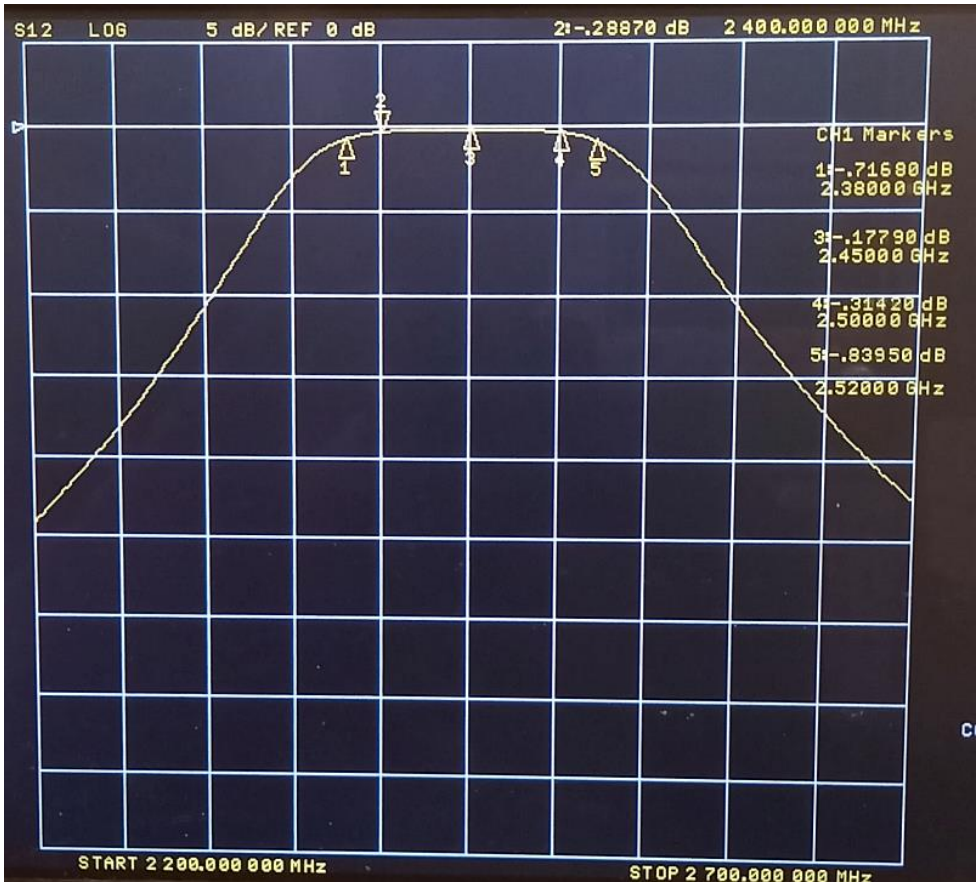
S11 log mag: return loss 16.5dB @2400MHz, 29dB@2450MHz



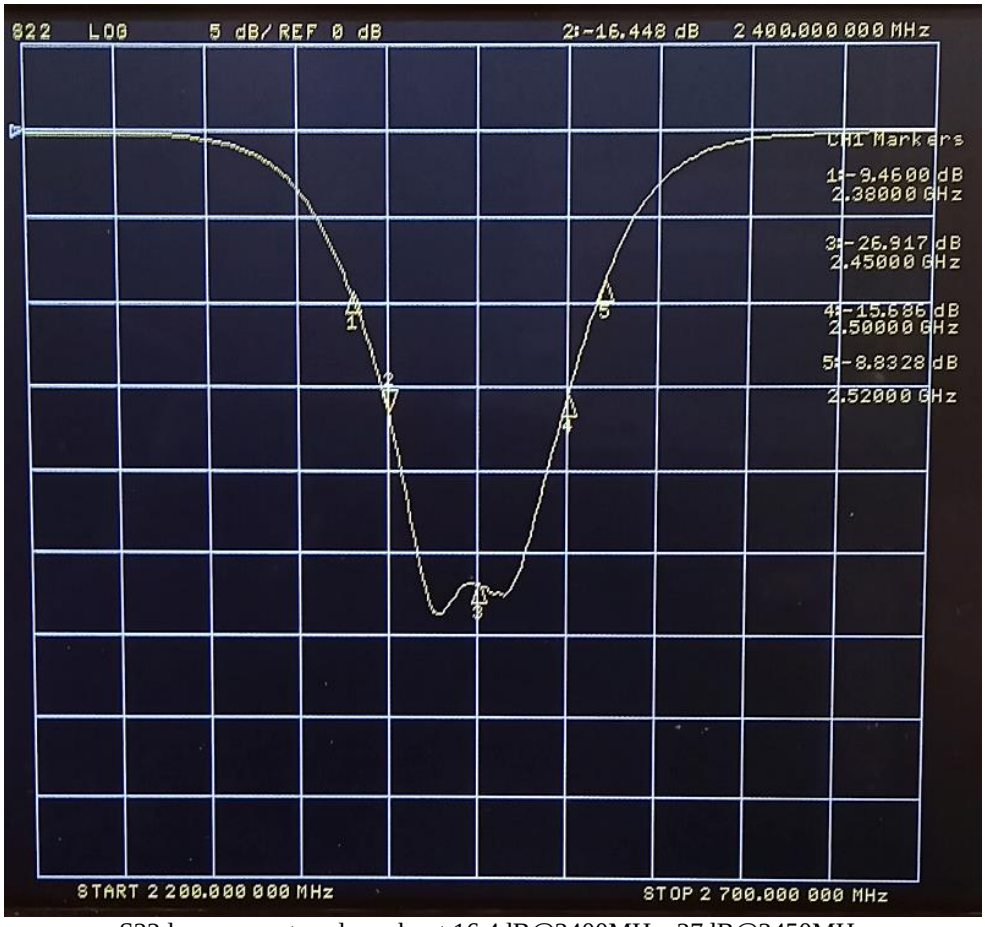
S11 Smith Chart



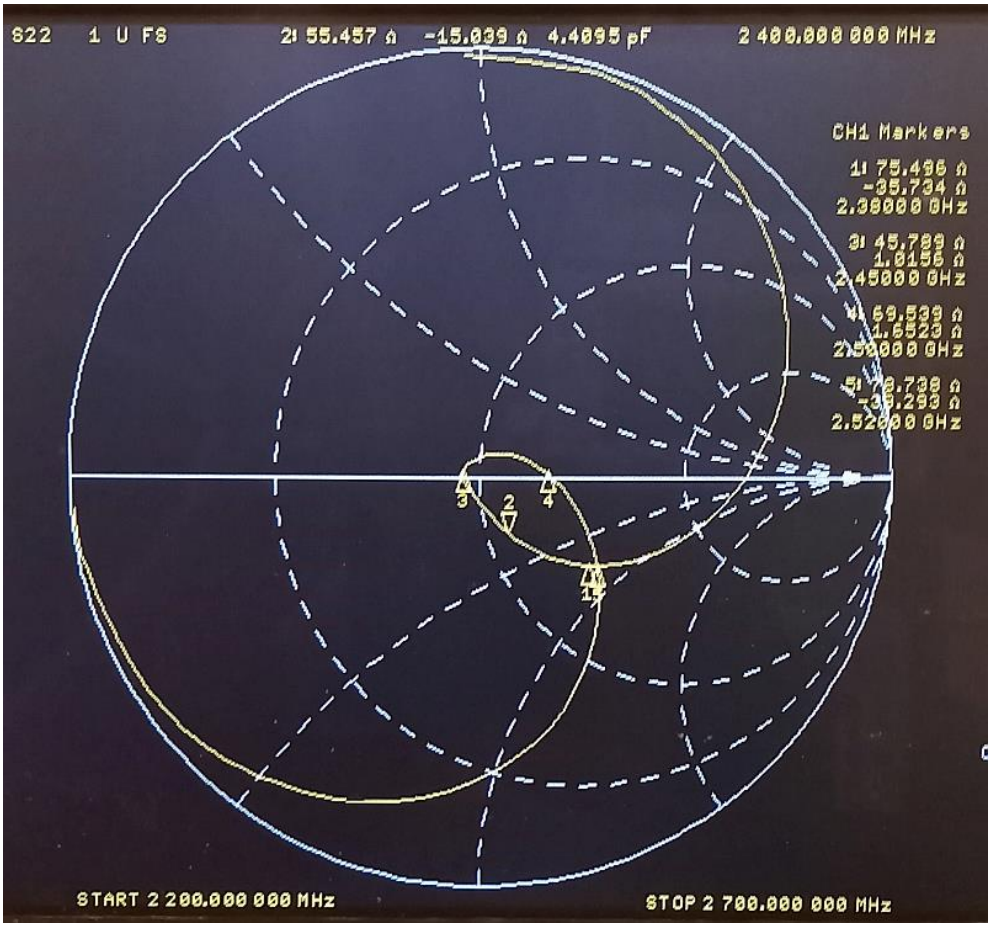
S21 log mag: insertion loss about 0.3dB @2400 MHz



S21 log mag: insertion loss about 0.3dB @2400 MHz



S22 log mag: return loss about 16.4dB@2400MHz, 27dB@2450MHz



S22 Smith Chart

In summary this filter with a center frequency of 2450MHz, which was originally designed for AO-40, can be very nicely used for QO-100.

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

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