

Characterizing unknown S-band isolator 3T-74/097 REV.B

Matthias, DD1US, January 27th 2020, Rev 1.0

Hello,

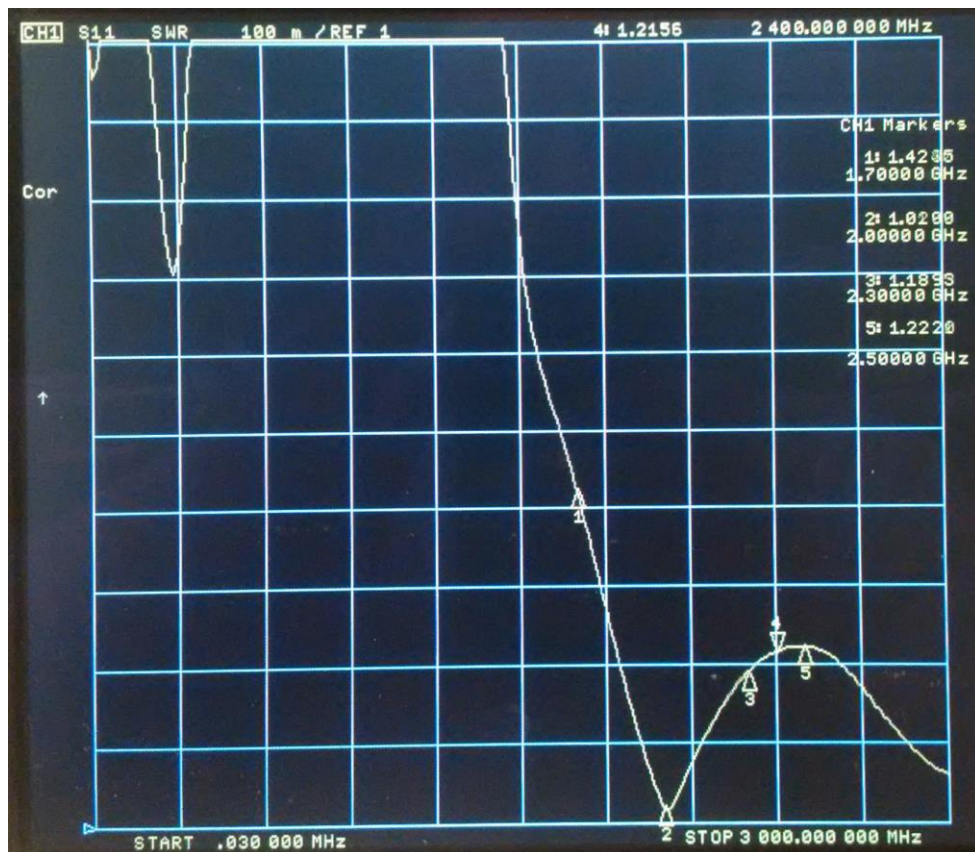
Cleaning some drawers with quite old surplus parts I came across an unknown isolator. From the size of it I guessed it is for S-Band but I did not really find any data of it. The label on it states 3T-74/097 REV.B and there are some more markings CT-40-CM208 and 587.222.001. Yet there is no hint on the supplier of this isolator. Input and output ports are using SMA connectors. Here are some pictures of the device:



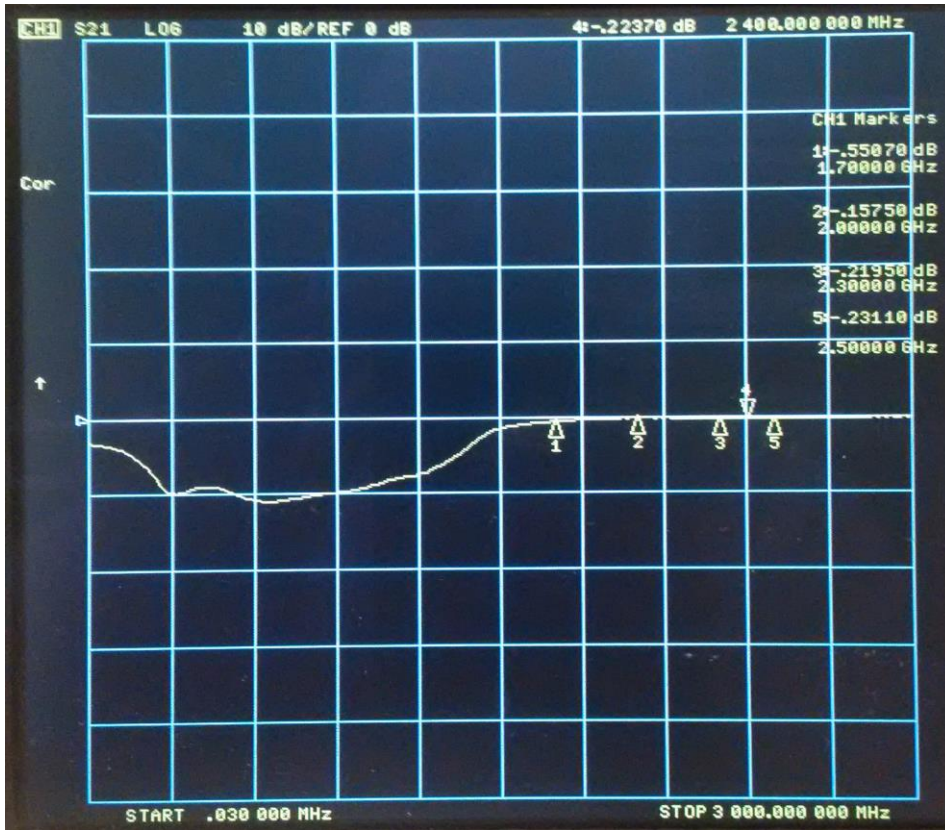


I characterized the device using my vector network analyzer. Here are the results:

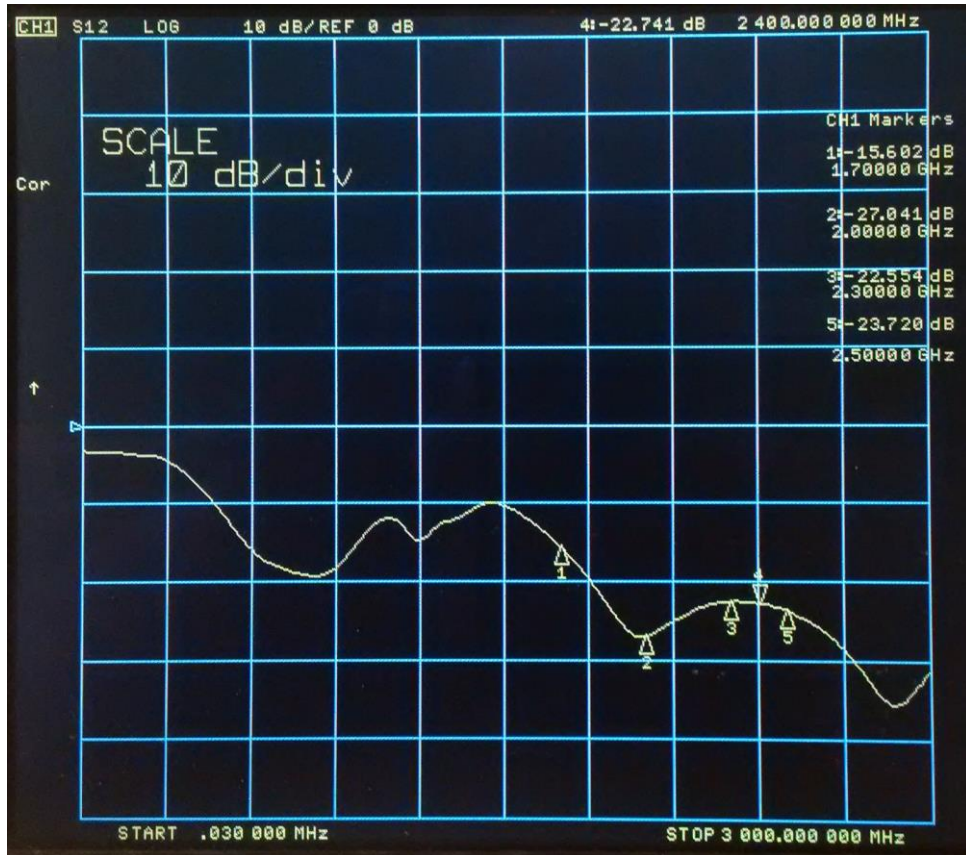
S11 input matching (return loss -15.1B@1700MHz, -40.3dB@2000MHz, -21.3B@2300MHz, -20.2dB@2400MHz, -20.0dB@2500MHz)



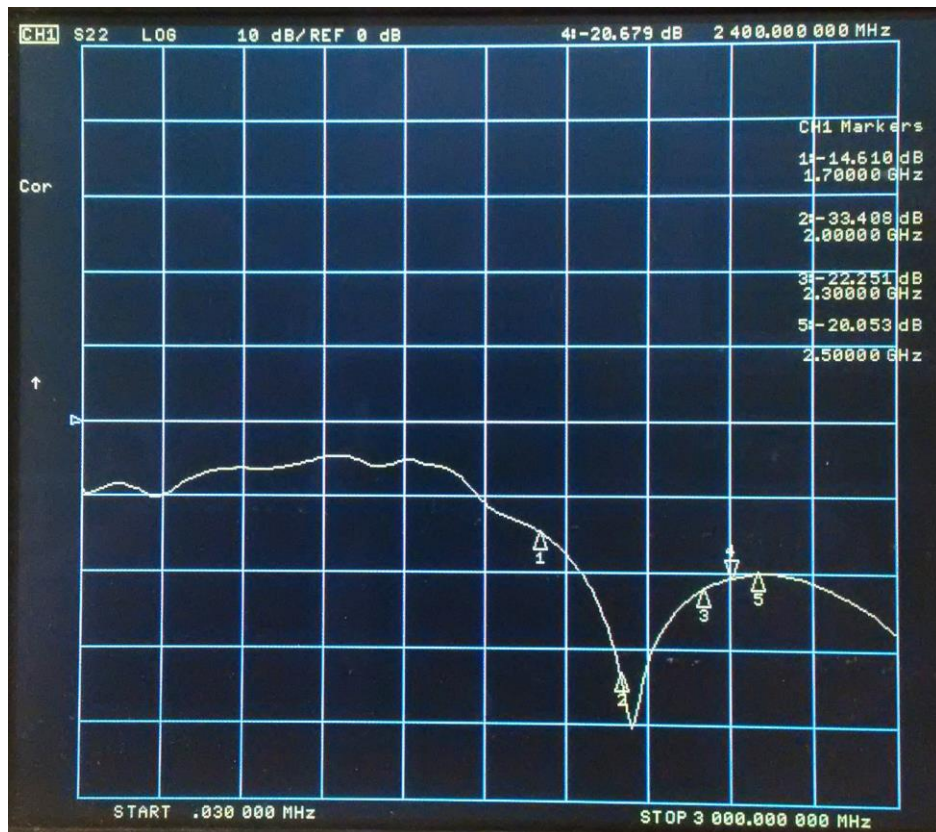
S21 forward transmission (insertion loss 0.55dB@1700MHz, 0.16dB@2000MHz, 0.22@2300MHz, 0.22dB@2400MHz, 0.22@2500MHz)

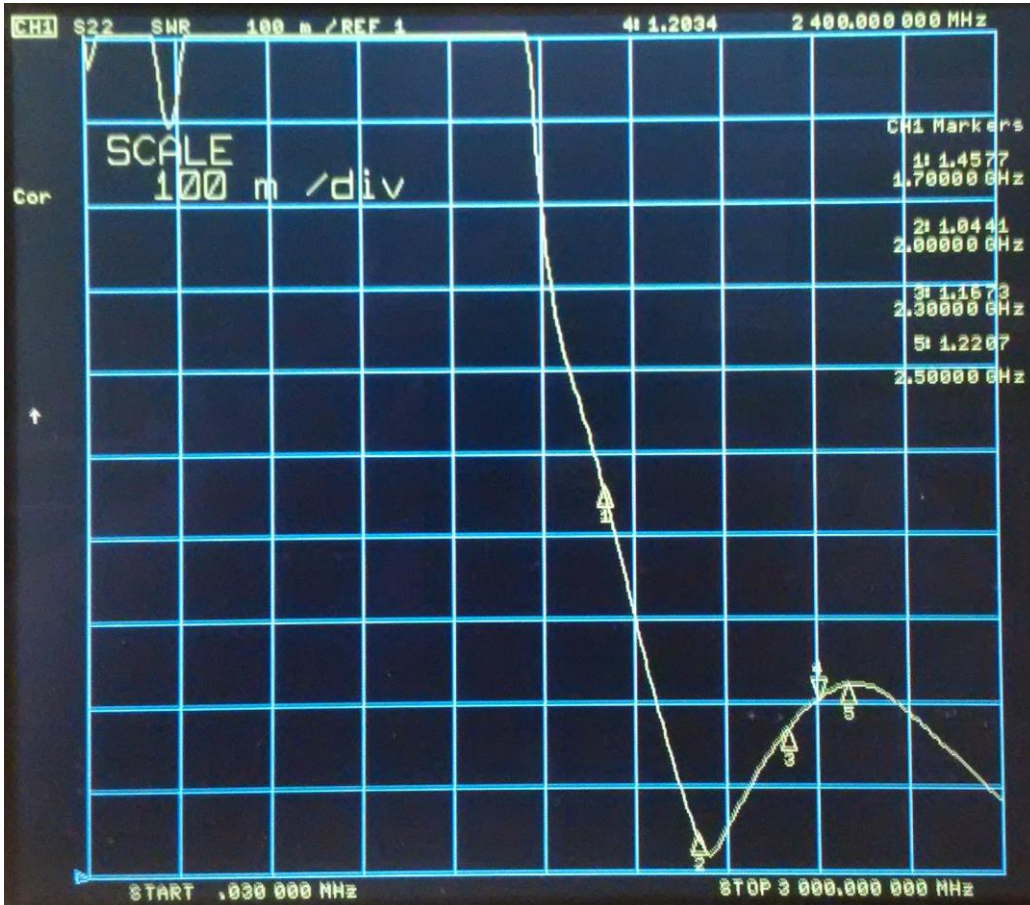
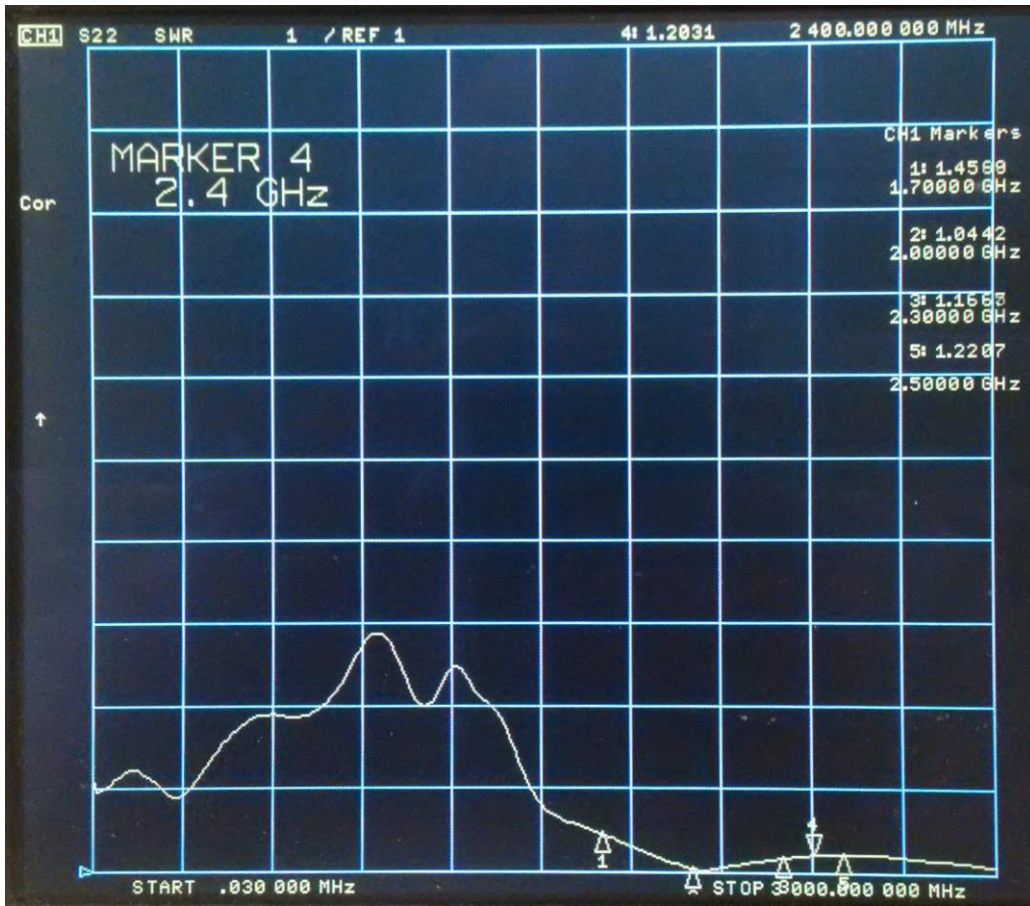


S12 reverse transmission (isolation 15.6dB@1700MHz, 27.0dB@2000MHz, 22.6dB@2300MHz, 22.7dB@2400MHz, 23.7dB@2500MHz)



S22 output matching (return loss at 14.6dB@1700MHz, 33.4dB@2000MHz, 22.3dB@2300MHz, 20.7dB@2400MHz, 20.0dB@2500MHz)





As expected this is an S-band isolator. The optimum performance in all parameters is achieved around 2 GHz. The device can still be used in the 13cm Ham Radio band from 2.3 – 2.4 GHz.

I appreciate any hints on who might have built / sold this device and I would like to get further data like the maximum power it can handle.

I always appreciate feedback. Many thanks in advance.

Best regards

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