

2-4 GHz Isolator Aerotek E60-1L1FM

Matthias, DD1US, December 19th 2021

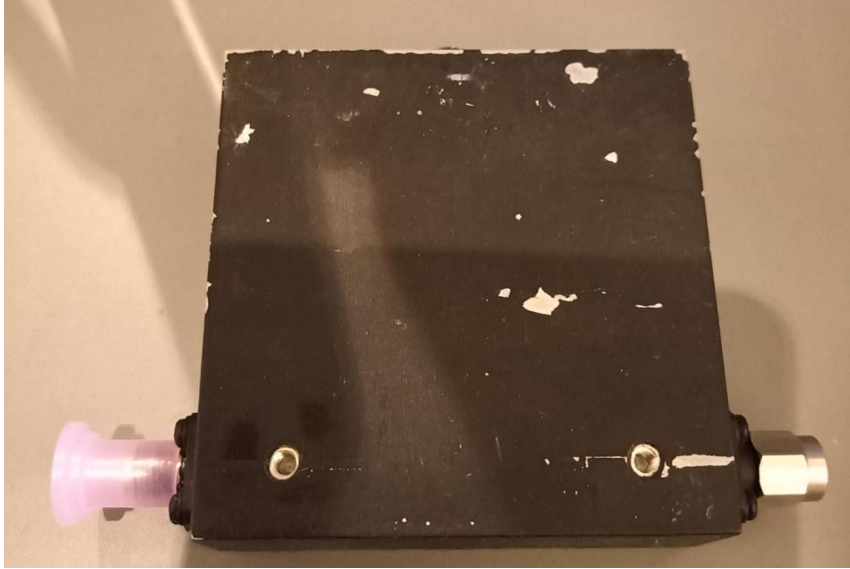
Hello,

Some days ago, I acquired some isolators which I wanted to use for 2.4 GHz. They are from Aerotek. The part number is E60-1L1FM. I only found some limited specifications on the internet:

Frequency range: 1500...3000 MHz
Isolation: 20dB min. (@25 degree C)
Insertion Loss: 0.4dB max. (@25 degree C)
Return Loss: 19dB @25 degree C)
VSWR: 1.25:1 max (@25 degree C)
Connectors: Input SMA(f), Output SMA(m)

Here are some pictures of such a device:



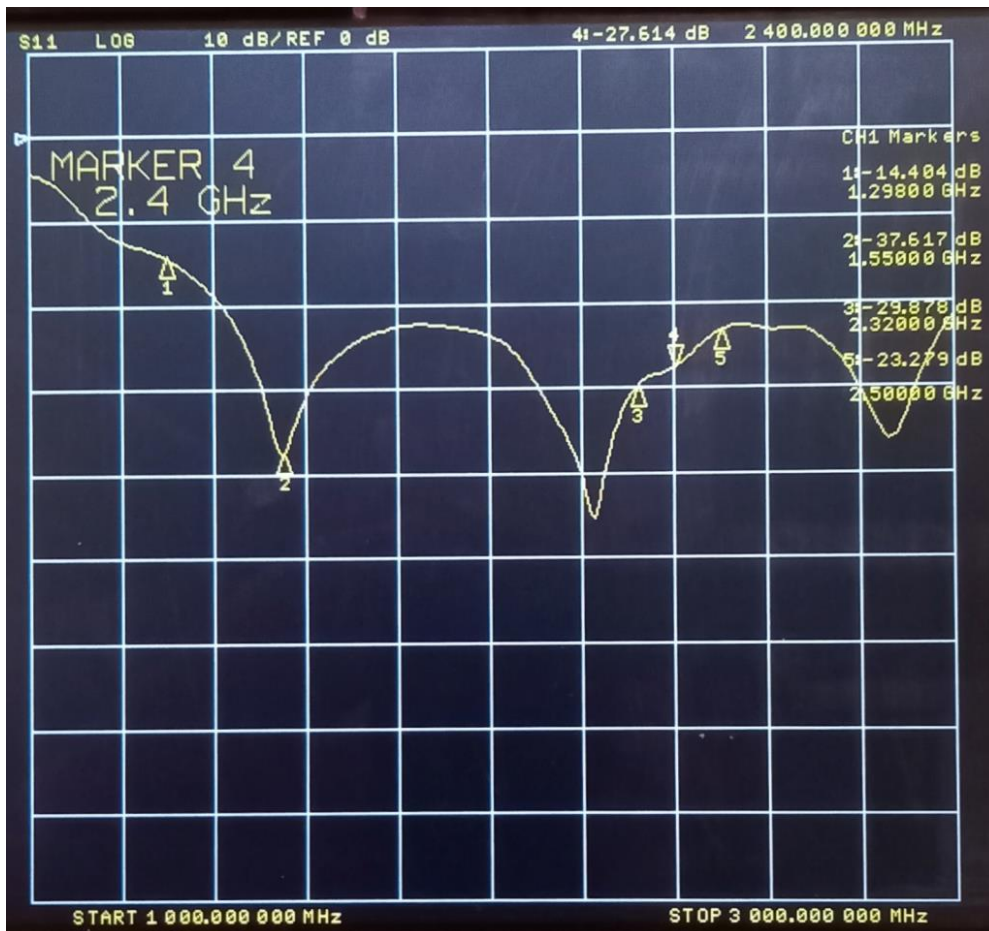


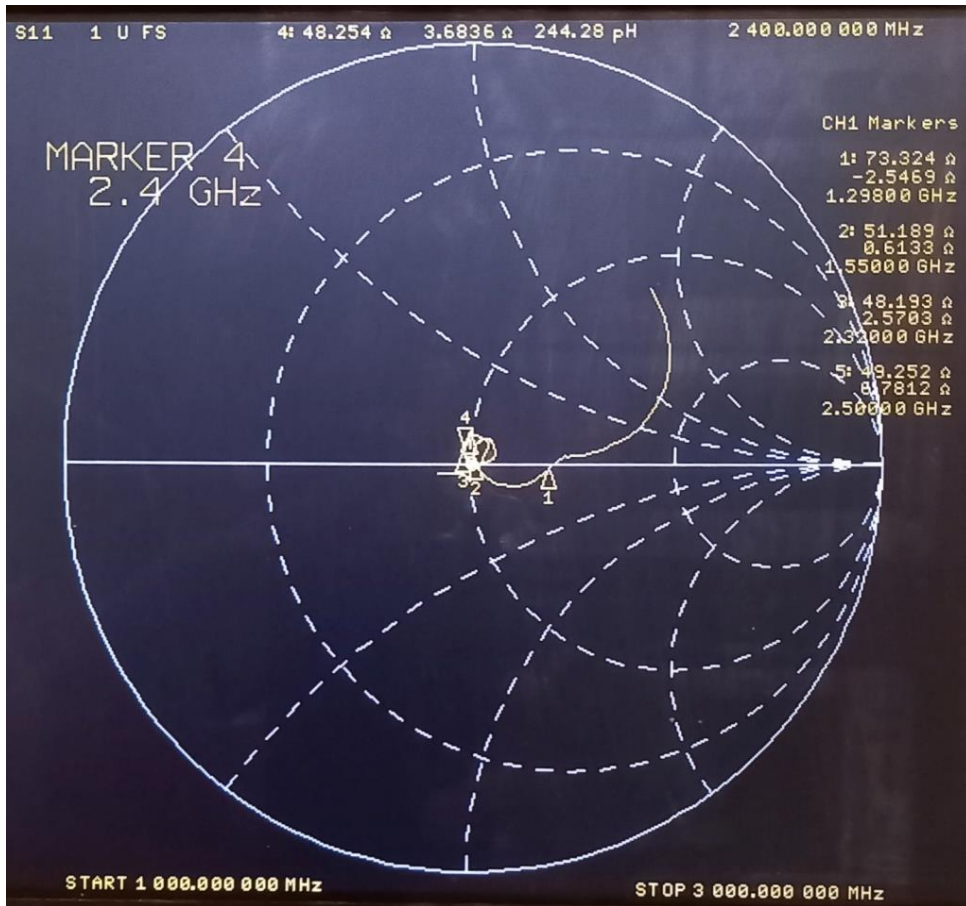
The isolator is housed in a solid metal case and a female SMA connector at the input and a male SMA connector at the output port.

The following data is printed on the device: AEROTEK Thailand E60-1L1FM S/N 24200

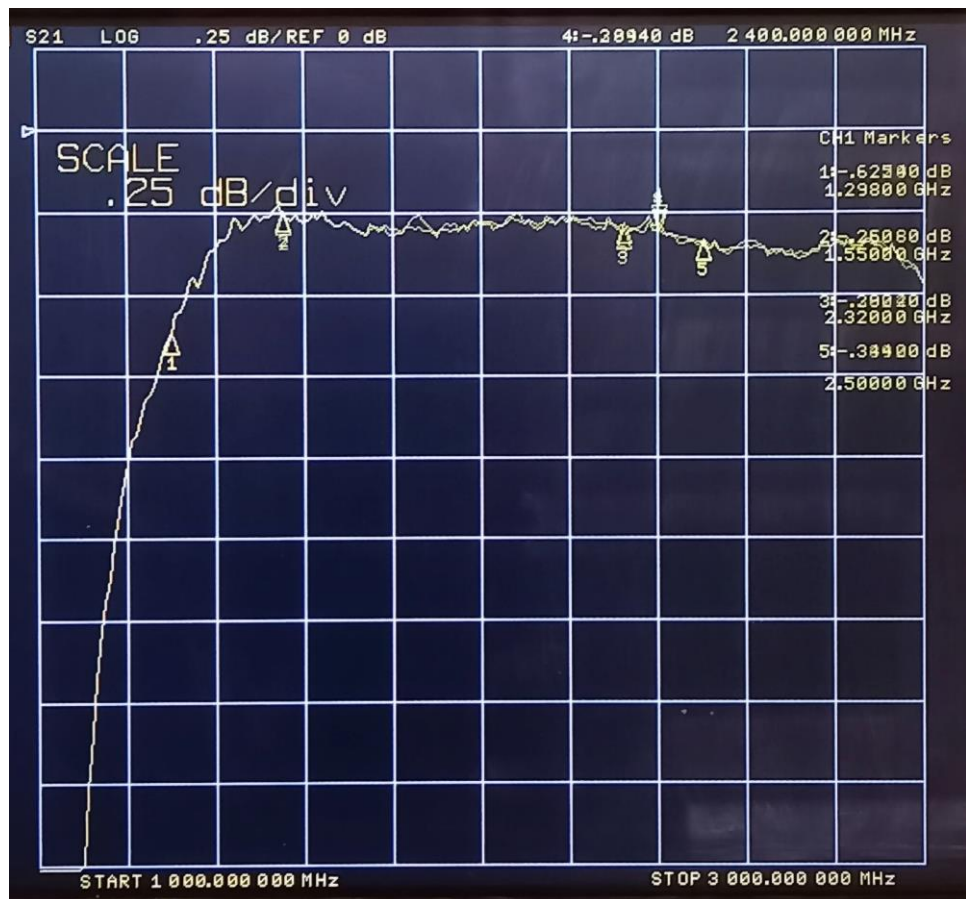
Below you will find some measurement results of this S-band isolator. All measurements were done in the frequency range 1GHz to 3GHz.

S11 input matching (return loss at 2400MHz is 27.6dB)

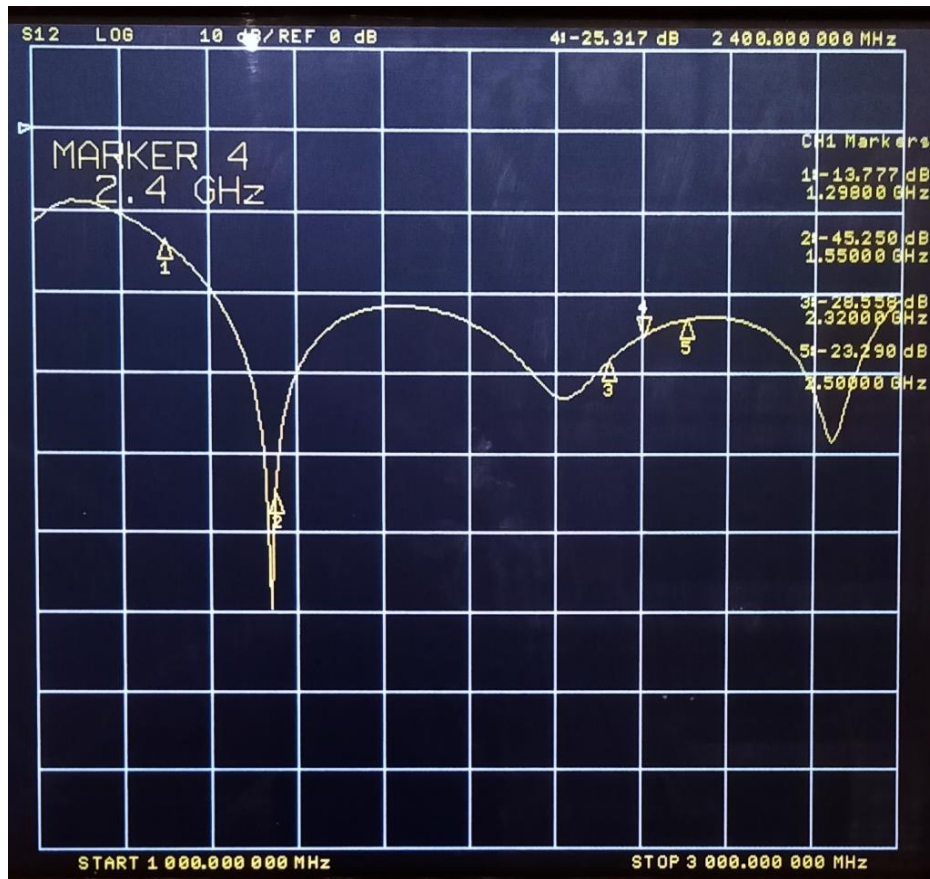




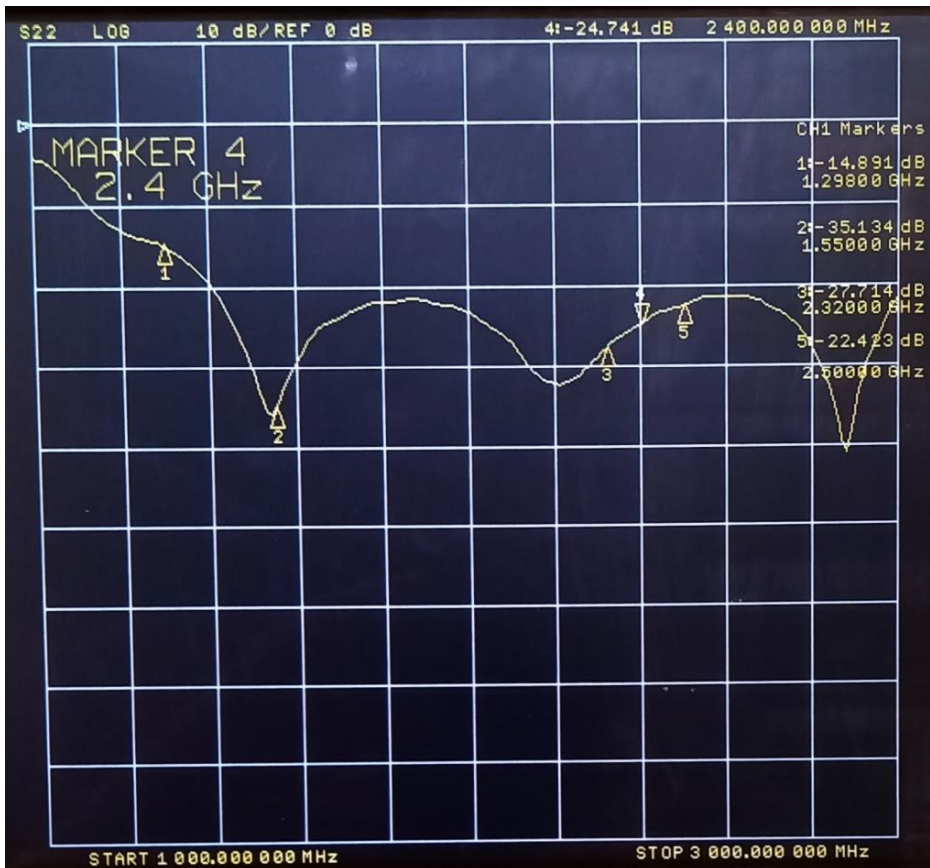
S21 forward transmission (insertion loss at 2400MHz is 0.29dB)

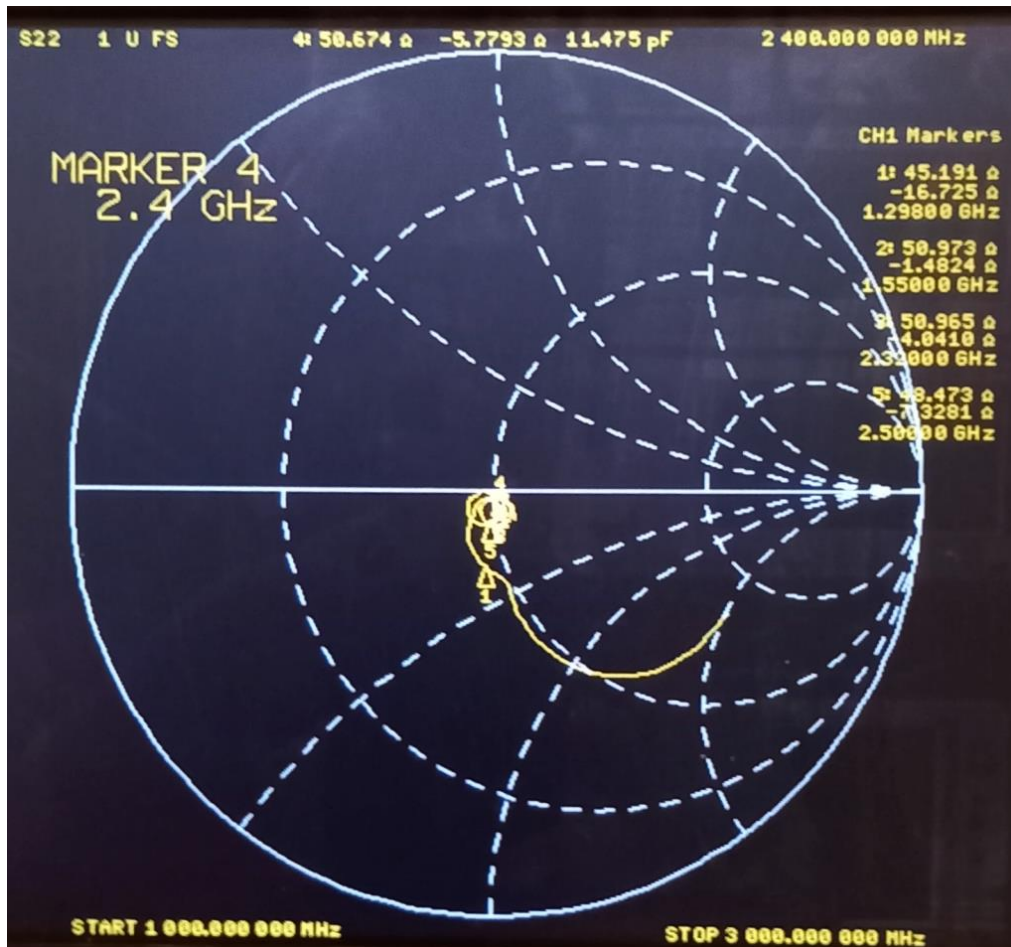


S12 reverse transmission (isolation at 2400MHz is >39dB)



S22 output matching (return loss at 2400MHz is 24.7dB)





The measurements of this isolator at 2.4 GHz are showing slightly better values in all parameters compared with the specification.

I tested the isolator for maximum RF power handling capabilities. After applying 6W RF power for 10 minutes to its input (leaving the output port open) the device got warm but not hot and the RF parameters did not change. Thus, it seems to be perfectly well suited to protect the AMSAT-DL Upconverter or AMSAT-DL 46dB Gain PA which both deliver a saturated output power of 6W.

I will be happy to answer questions and always appreciate feedback. Many thanks in advance.

Best regards

Matthias DD1US

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