

## **70cm band circulator Philips 2722 162 08591**

Matthias, DD1US, May 17<sup>th</sup> 2020

Hello,

Recently I was able to acquire a surplus circulator from Philips. It is actually a double circulator with one of the circulators terminated acting as an isolator. The unit has the following marking: 2722 162 08591, Freq. 460-470 MHz, D6B4.

The circulator has female N connectors at all three ports.

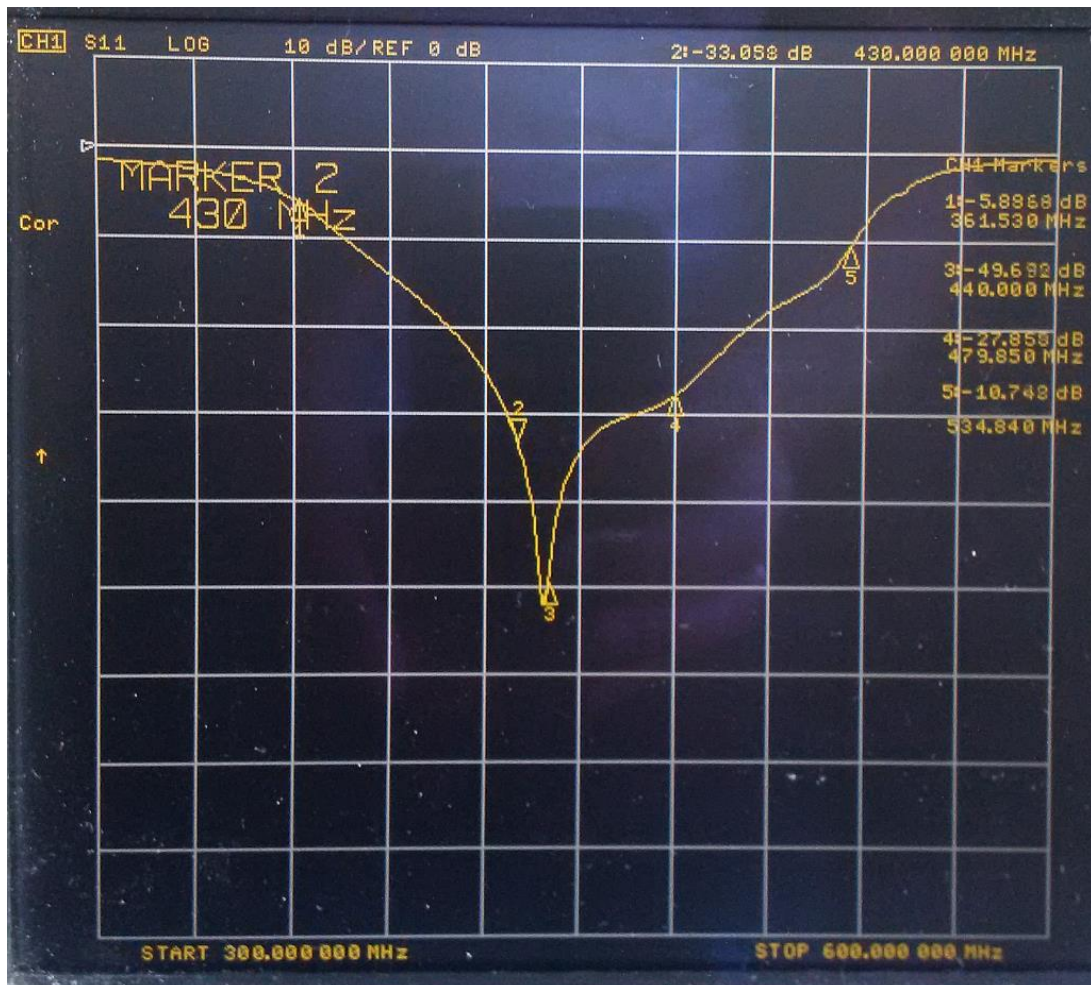
Here is a picture of the circulator:



Below you will find some measurement results of this circulator for the 70cm band. In the first series of measurements the 3<sup>rd</sup> port was terminated with 50 Ohms.

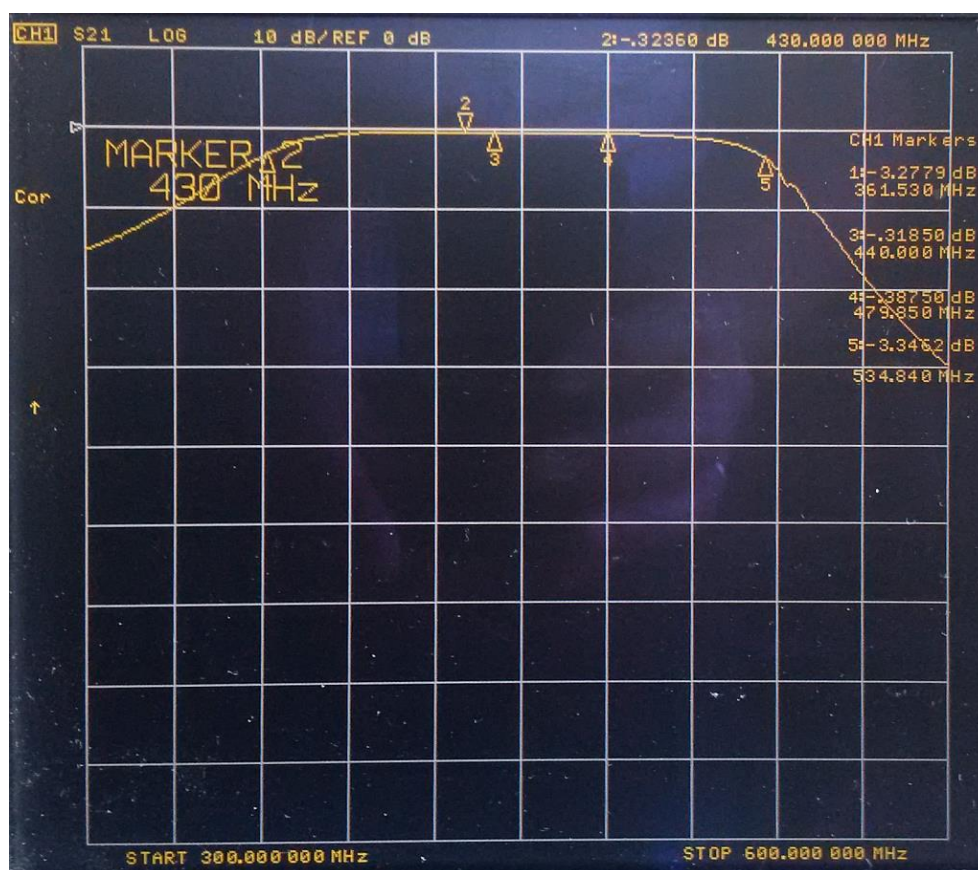


S11 input matching (return loss 33dB@430 MHz, 50dB@440MHz)

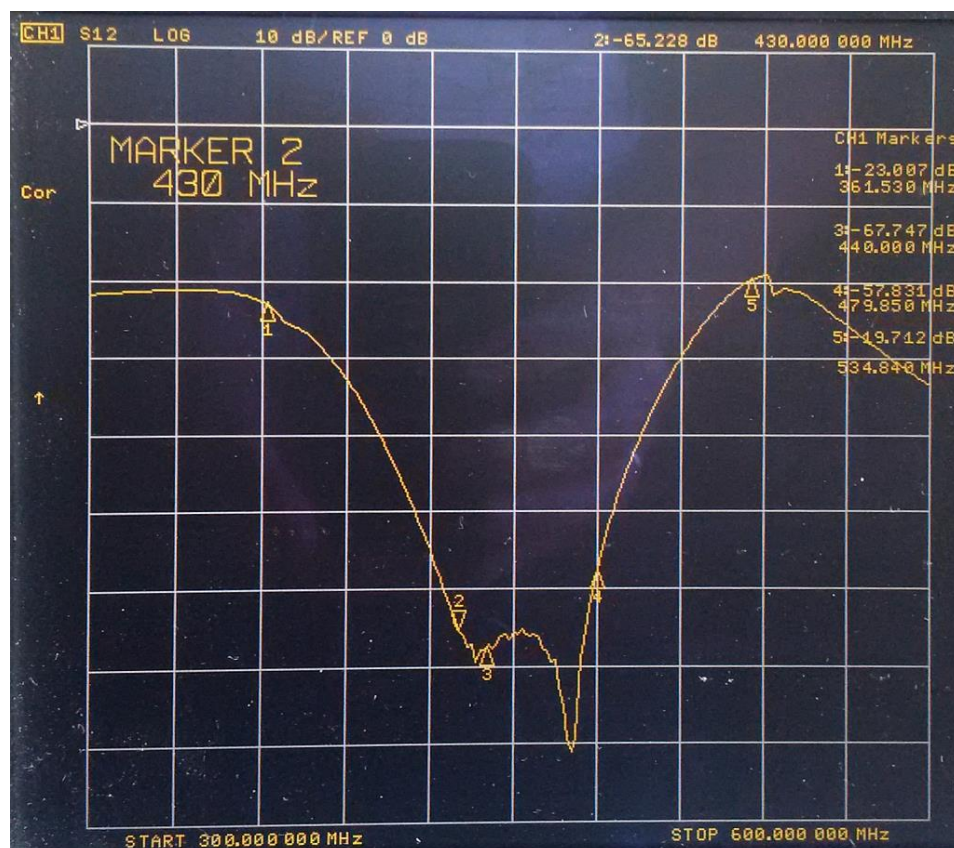




S21 forward transmission (insertion loss at 0.32dB@430MHz and @440MHz)

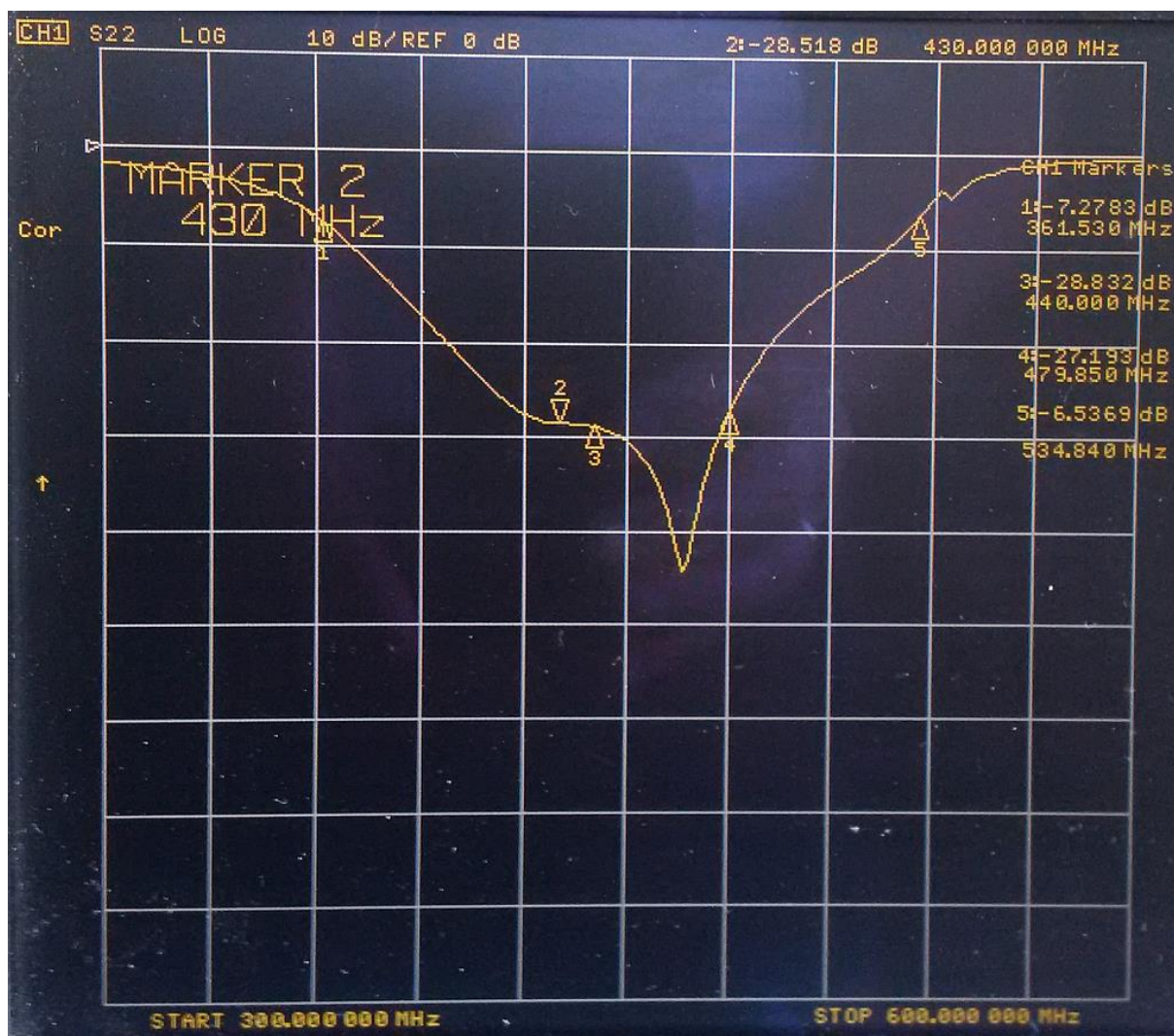


S12 reverse transmission (isolation is 65dB@430MHz and 68dB@440MHz)

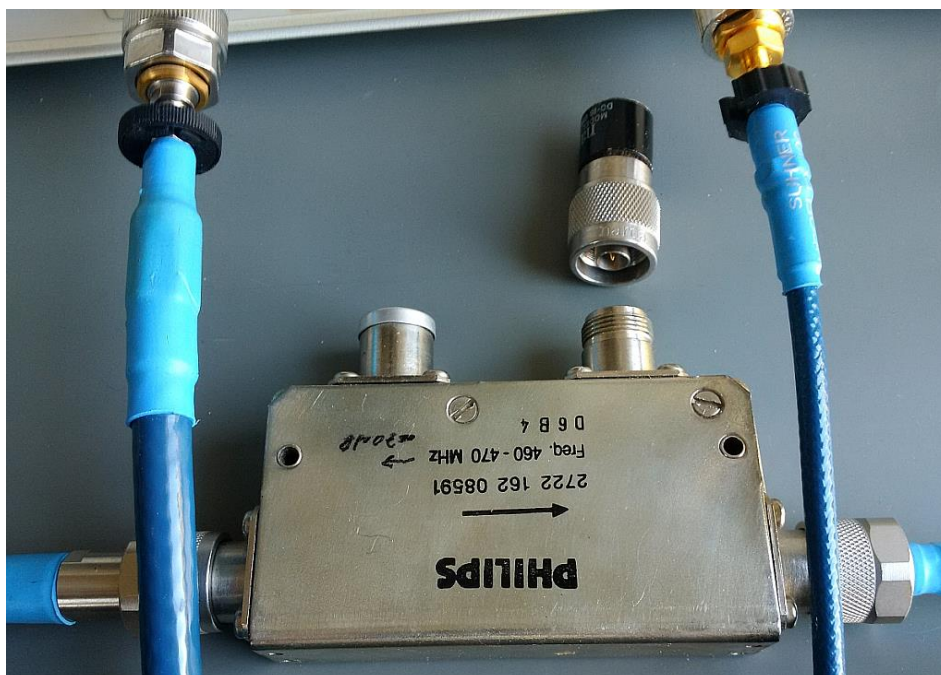




S22 output matching (return loss is 28.5dB@430MHz and 440MHz)

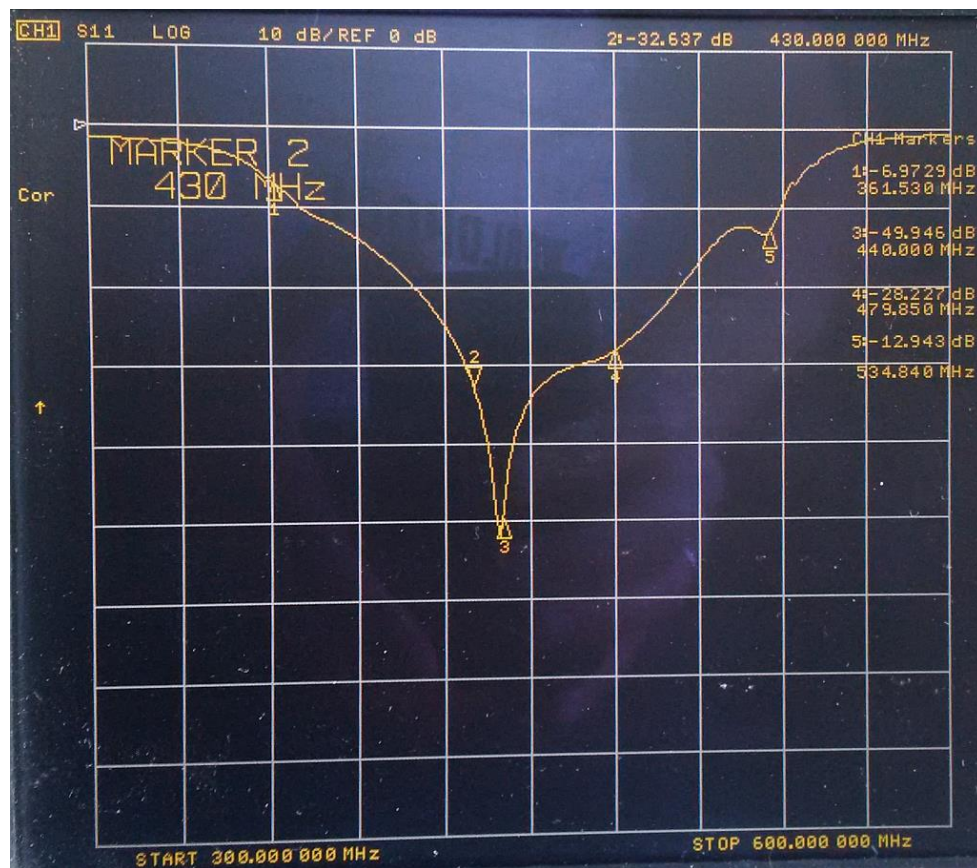


In the second series of measurements the 3<sup>rd</sup> port was left open.

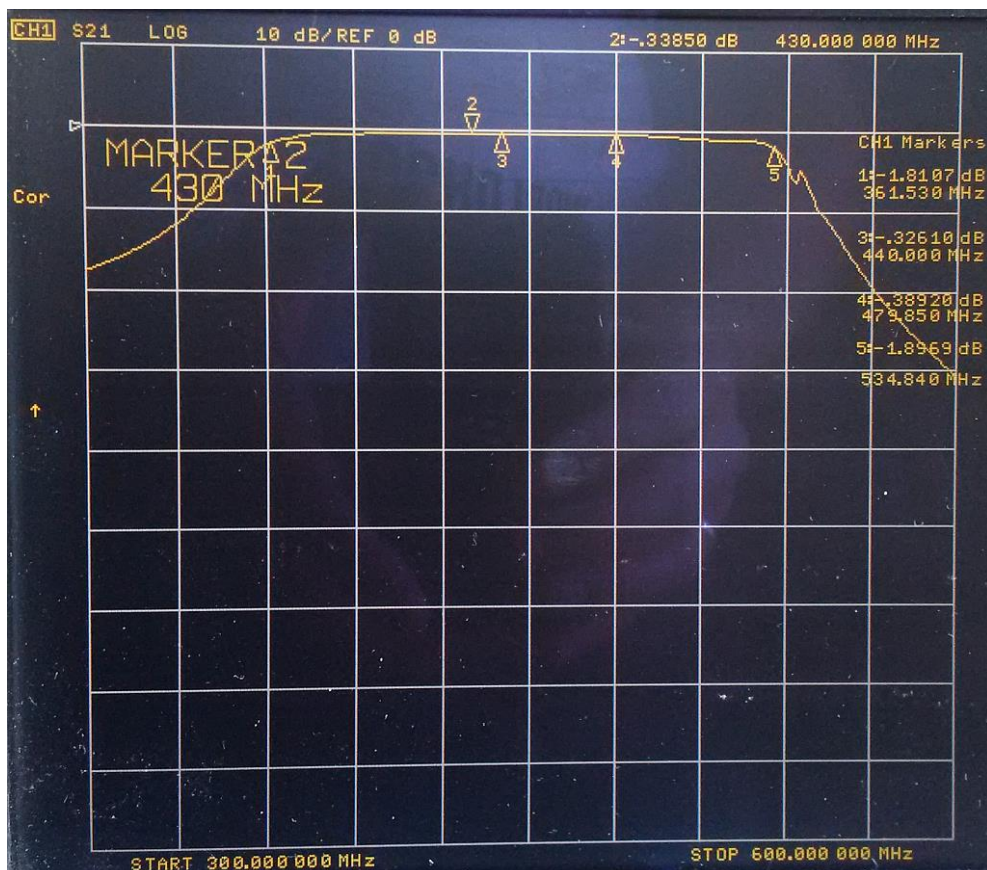




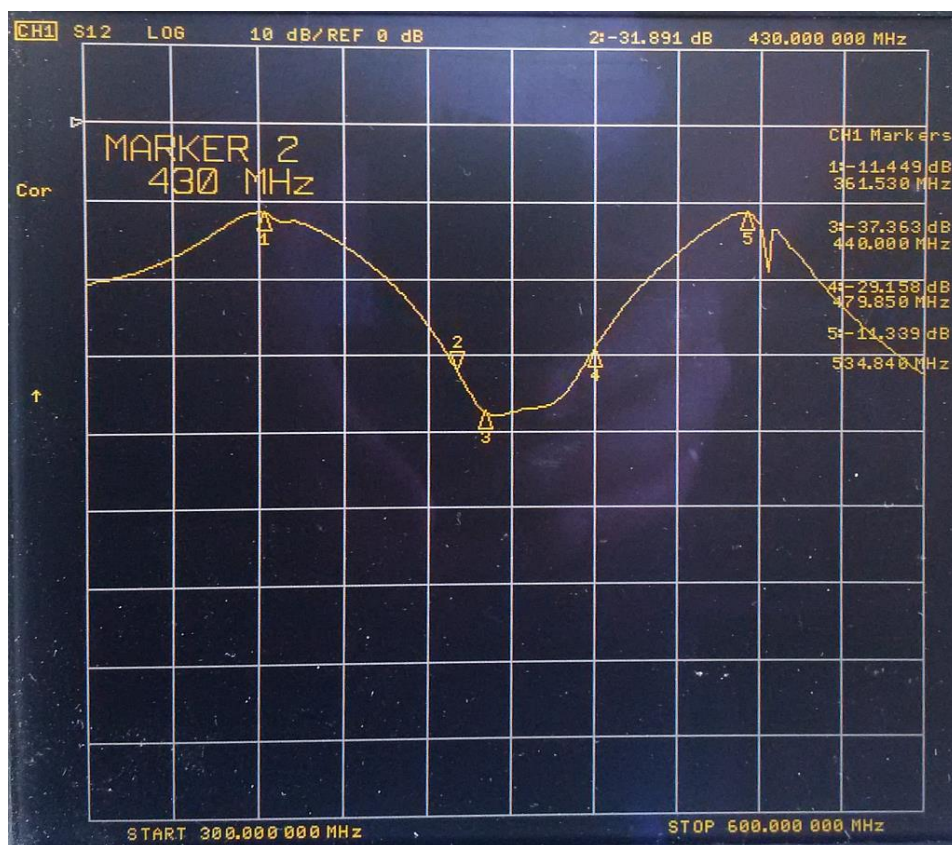
S11 input matching (return loss 33dB@430 MHz, 50dB@440MHz, same as with termination of port 3)



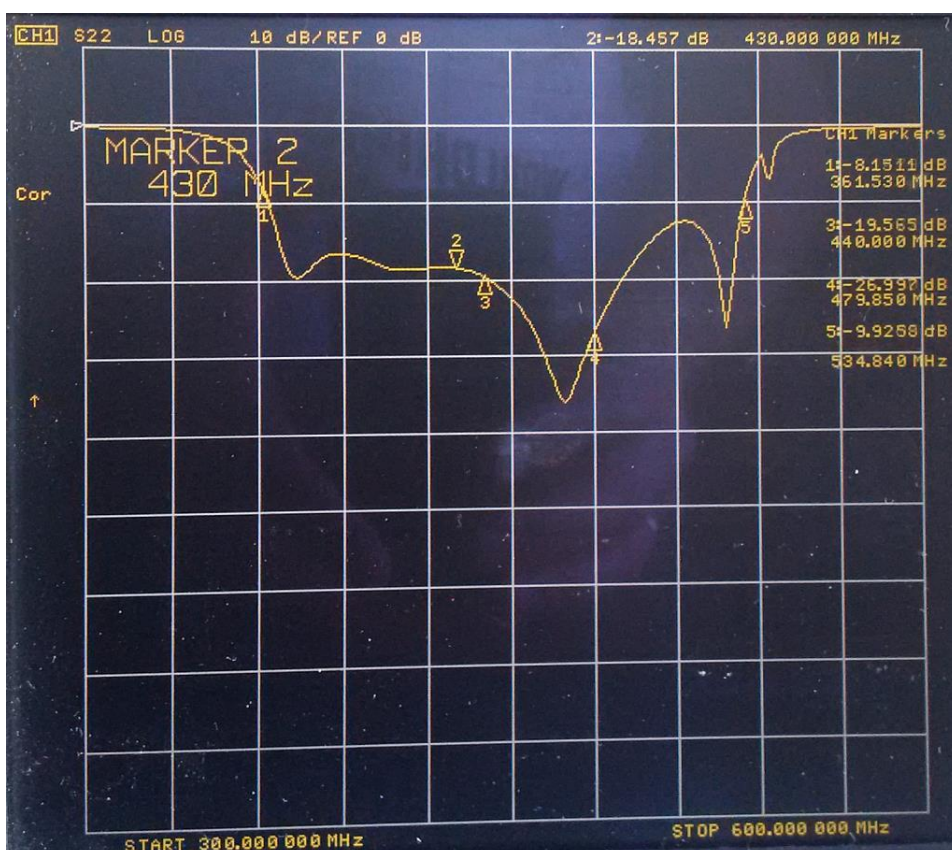
S21 forward transmission (insertion loss at 0.34dB@430MHz and 0.33dB@440MHz, almost unchanged)



S12 reverse transmission (isolation is 32dB@430MHz and 37dB@440MHz, much reduced due to the open port)



S22 output matching (return loss is 18.5dB@430MHz and 19.6dB@440MHz, also quite worse)





This double circulator shows excellent performance in the 70cm ham radio band.

I wonder what the maximum power is, which this device can handle. I estimate that at least 30Watt should be possible.

If you might have a datasheet of this isolator, I appreciate getting an electronic copy.

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

Best regards

Matthias DD1US

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