

## Verification of KC901V VNA using Verification Attenuator Model 85033 (S/N 0470) from Kirkby Microwave Ltd for S11 and S21 measurement.

### S11 Measurement

Provided attenuator's S11 profile (attenuator-0470-S11.pdf) from Kirkby Microwave:

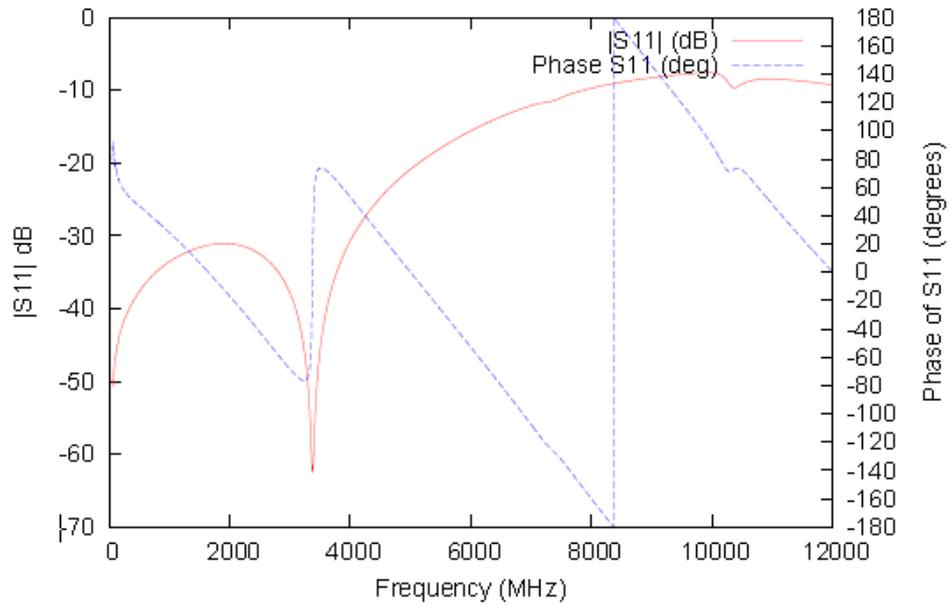


Figure 1.

After doing S11 calibration for the KC901V VNA using Kirkby Microwave 85033 SOL Kit (SMA male SOL to VNA port) verification using the provided attenuator is made, using the following setup:



Figure 2.

Calibration setting is (Open offset length = 17.357 mm, Short offset length = 17.387 mm, Load offset length = 0 mm, as advised by the manufacturer and cal kit's parameters)

The following is the S11 plot, magnitude and phase as measured by the KC901V VNA:

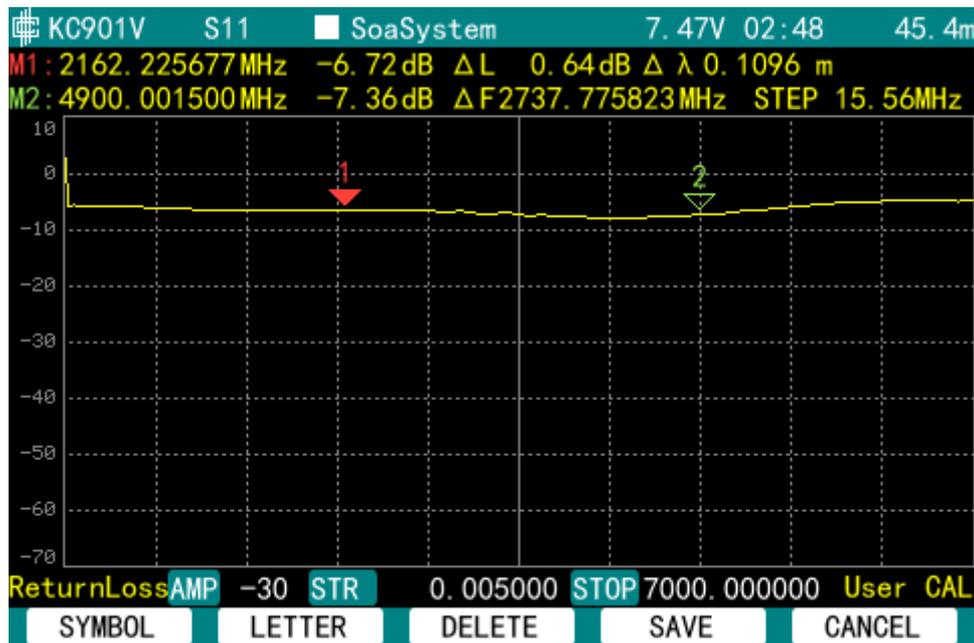


Figure 3.

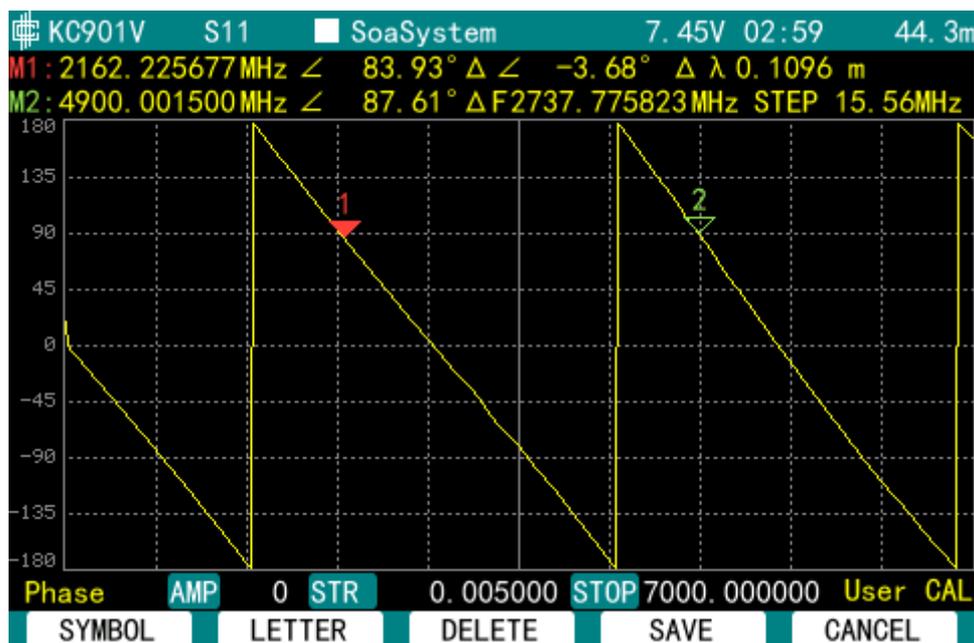


Figure 4.

Clearly the measured S11 from KC901V VNA (Figure 3 and 4) is way off from the attenuator's profile (Figure 1) provided by the Kirkby Microwave Ltd (Calibration Kit Manufacturer). **ANY THOUGHT?**

## S21 Measurement

Provided attenuator's S21 profile (attenuator-0470-S21.pdf) from Kirkby Microwave:

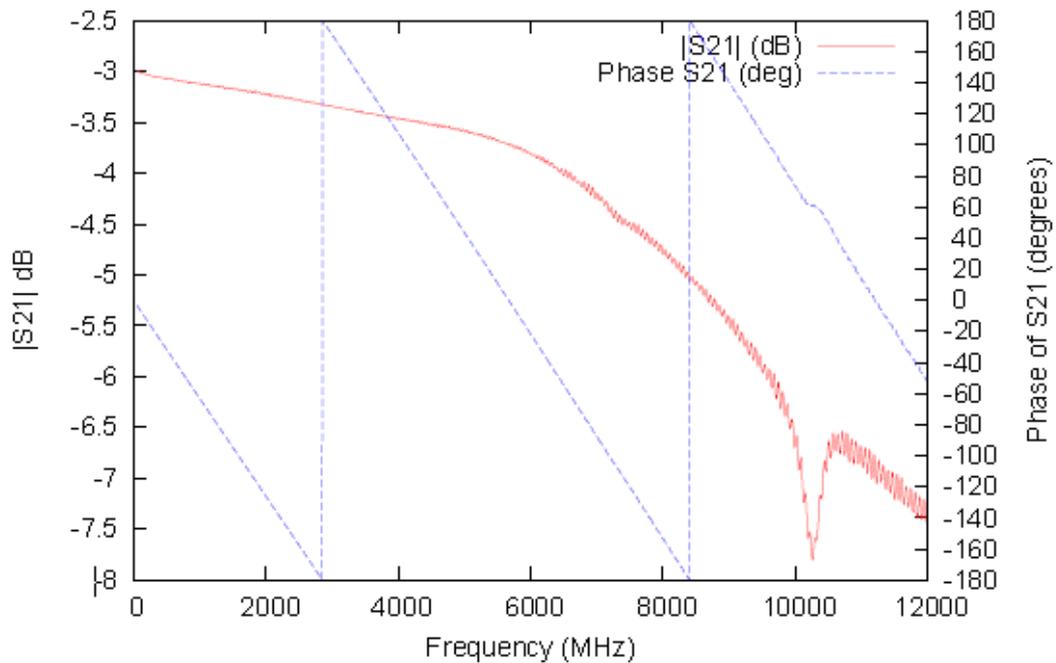


Figure 5.

After doing S21 calibration for the KC901V VNA using Kirkby Microwave 85033 Through Kit (SMA female through) verification using the provided attenuator is made, using the following setup:

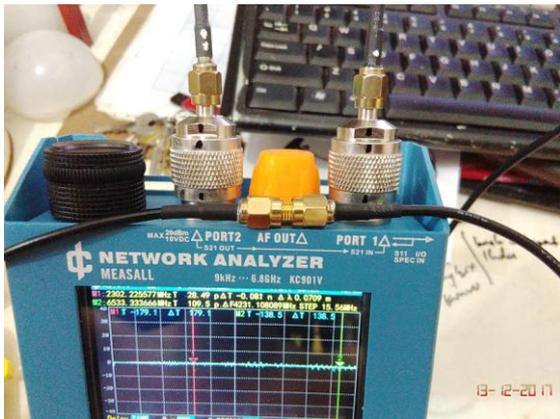


Figure 6a (Through Cal)

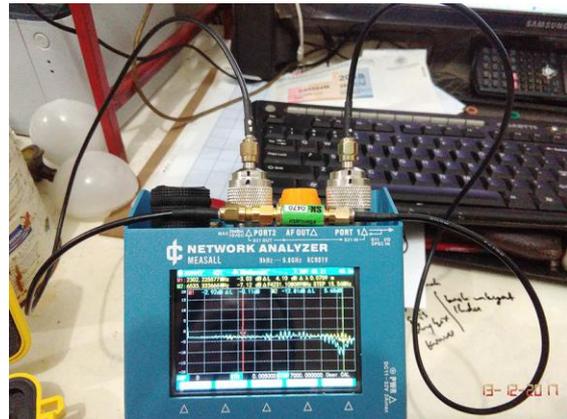


Figure 6b (Attenuator's S21 Measurement)

Calibration setting is (Through offset length = 12.405 mm, as advised by the manufacturer and cal kit's parameters)

The following is the S21 plot, magnitude and phase as measured by the KC901V VNA:

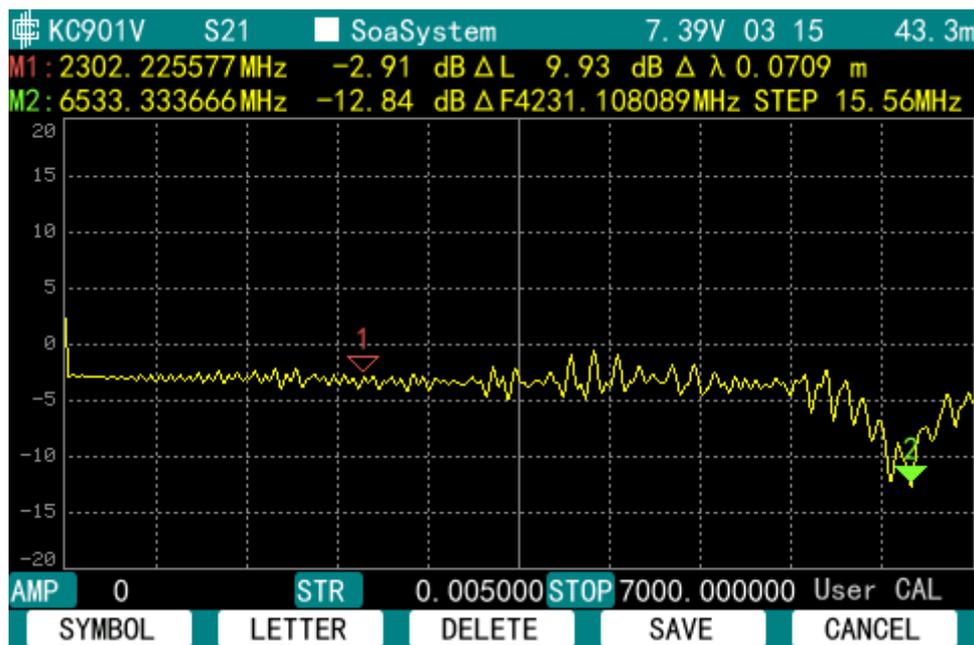


Figure 7.

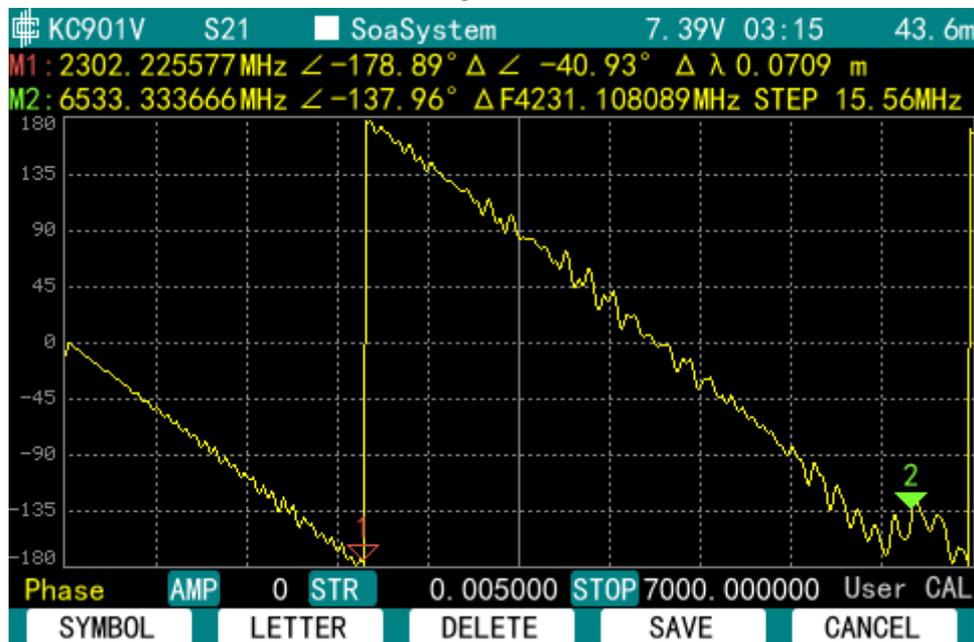


Figure 8.

The measured S21 from KC901V VNA (Figure 7 and 8) is somewhat resembling what the Figure 5 shows, with more noise and notch at 6.5GHz which the Figure 5 doesn't have. **ANY THOUGHT?**