



Affogato

Engineer : Vicky

Report date : 2019/08/26 REV.05



Antenna Note

1. Speaker wires weren't shorted to required and agreed length (as we have provided in our report)
 - Update the picture on page 4..
2. Based on photo and resonant shifting - it looks like GND PAD of antenna wasn't soldered. As we talked with Jerry and described in our report. This could be one of reasons why resonant is shifted.
 - Update the picture on page 4..
3. Shunting capacitor tolerance applied by Wieson was +/-0.25pF. We are using in our test setup much precise capacitor with tolerance of +/- 0.1pF. In this particular matching case - shunting capacitor has the major influence to resonant frequency.
 - We are using GJM1555C1H1R3BB01, the specification is **1.3pF +/- 0.1pF** instead of 1.3pF +/- 0.25pF, we have corrected.
4. Port extension was performed only to the end of the test coaxial cable. But we highlighted in report that port extension must be performed up to FIRST MATCHING ELEMENT with taking into account RF Trace influence (for eliminating this effect).
 - This report we have charge the port extension to first matching element.

Antenna specification

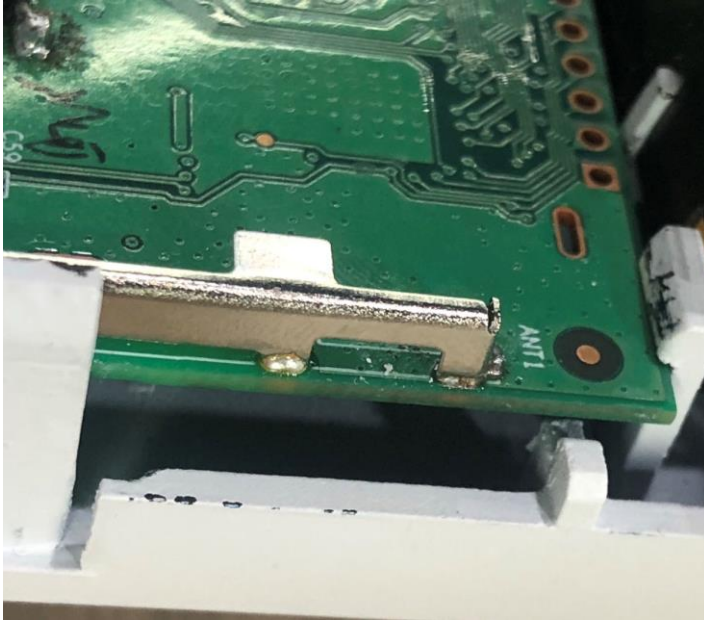
Antenna specification

Wi-Fi Antenna * 1

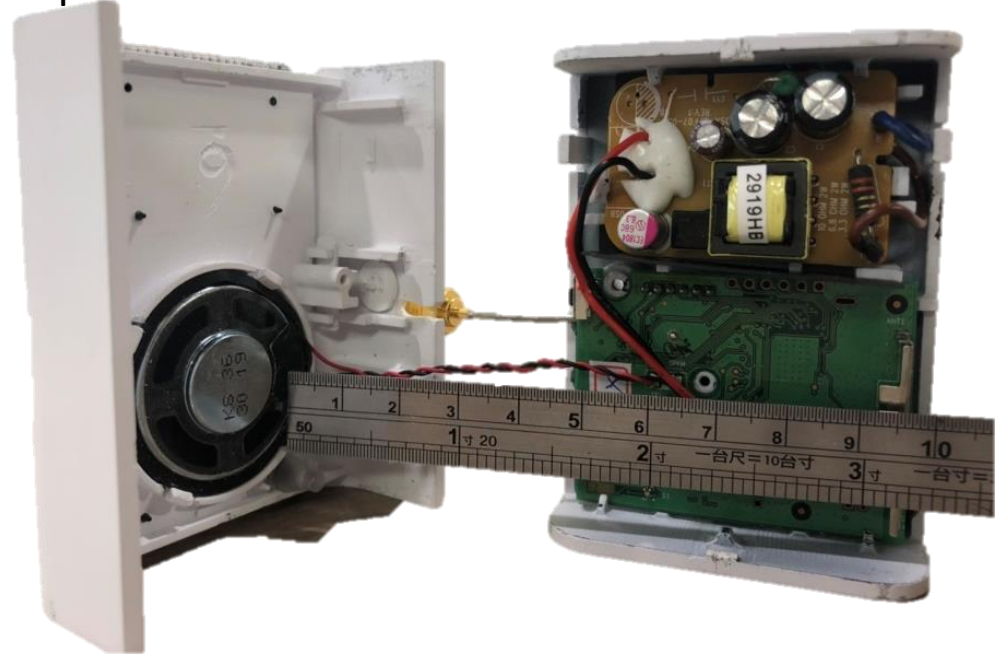
Frequency Range : 2400-2500MHz

Antenna photo

GND PAD



Speaker wires



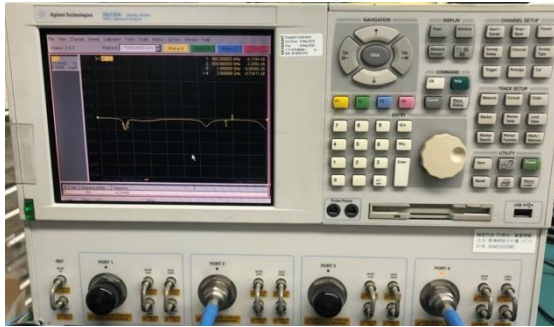
Antenna Measurement Vector Network Analyzer

Calibration Process

Equipment : Agilent N5230A (300kHz-20GHz)

Calibration kit : Agilent 85052D

1.VNA Equipment

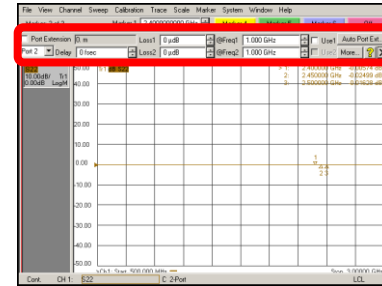


2.calibration kit

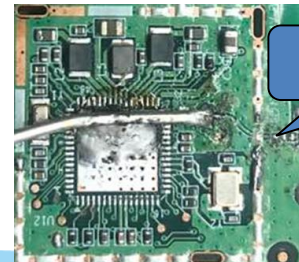


3.Calibration Process :

Must complete OPEN ,Short ,Match and Through process as below

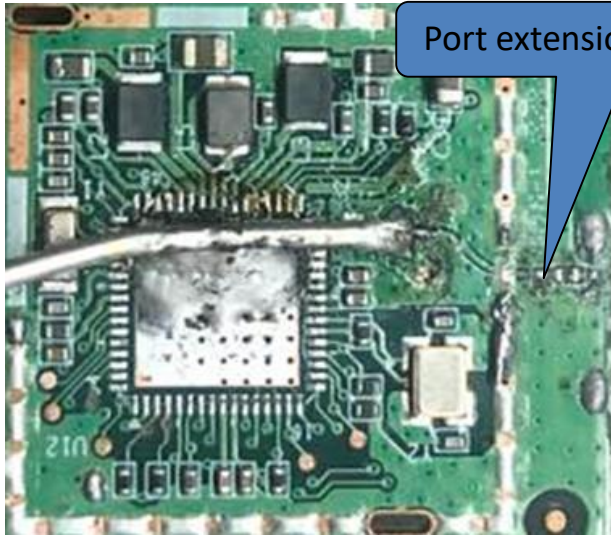


4. Port extension : Use port extensions to "tell" the analyzer you have added the length to a specific port.



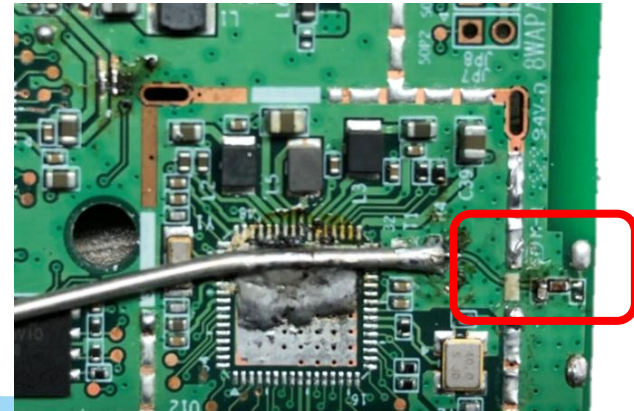
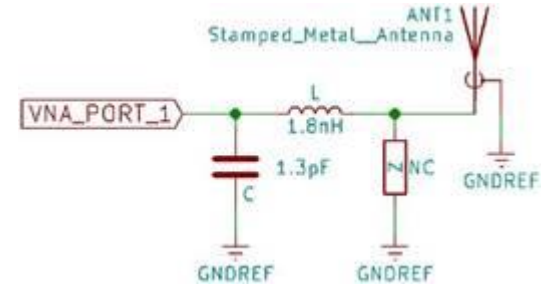
Port extension

Wifi Antenna Front work



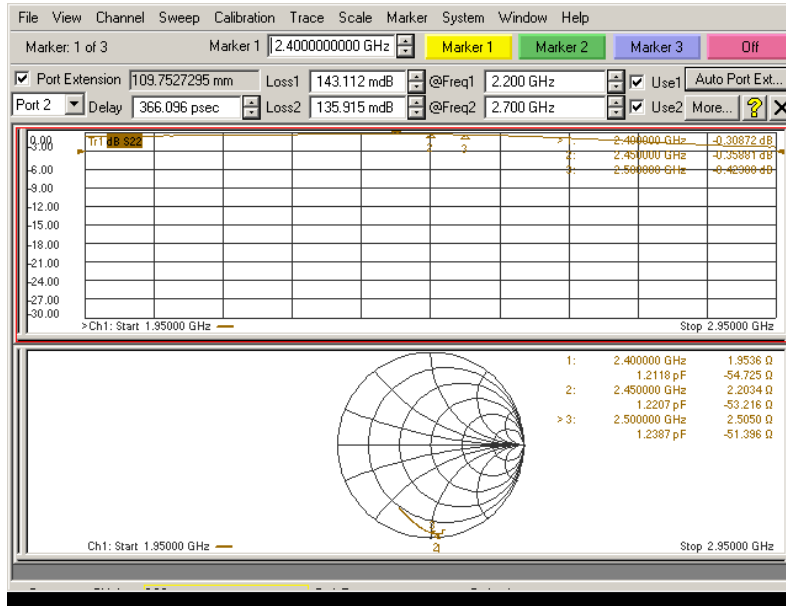
Port extension

GJM1555C1H1R3BB01 Murata 1.3pF +/- 0.25pF 0.1pF
 LQP15MN1N8B02 0402 Murata 1.8nH +/- 0.1 nH

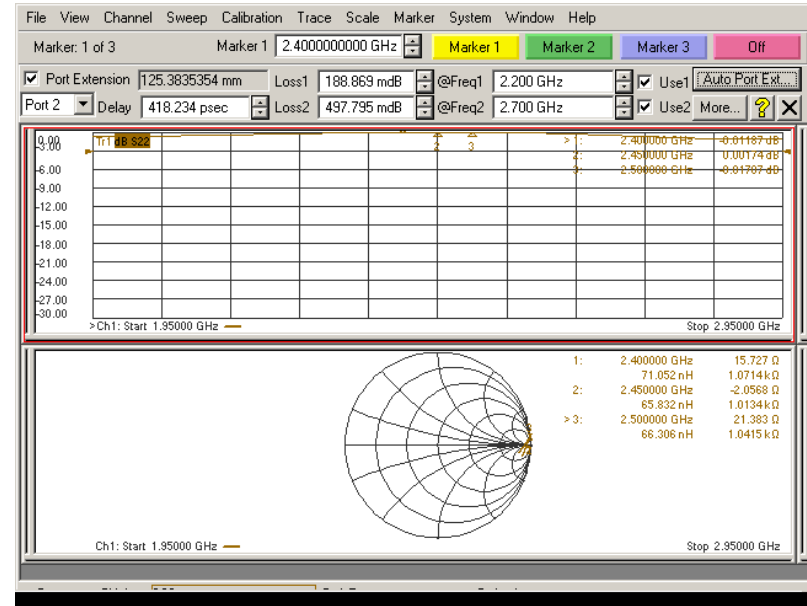


Port Extension

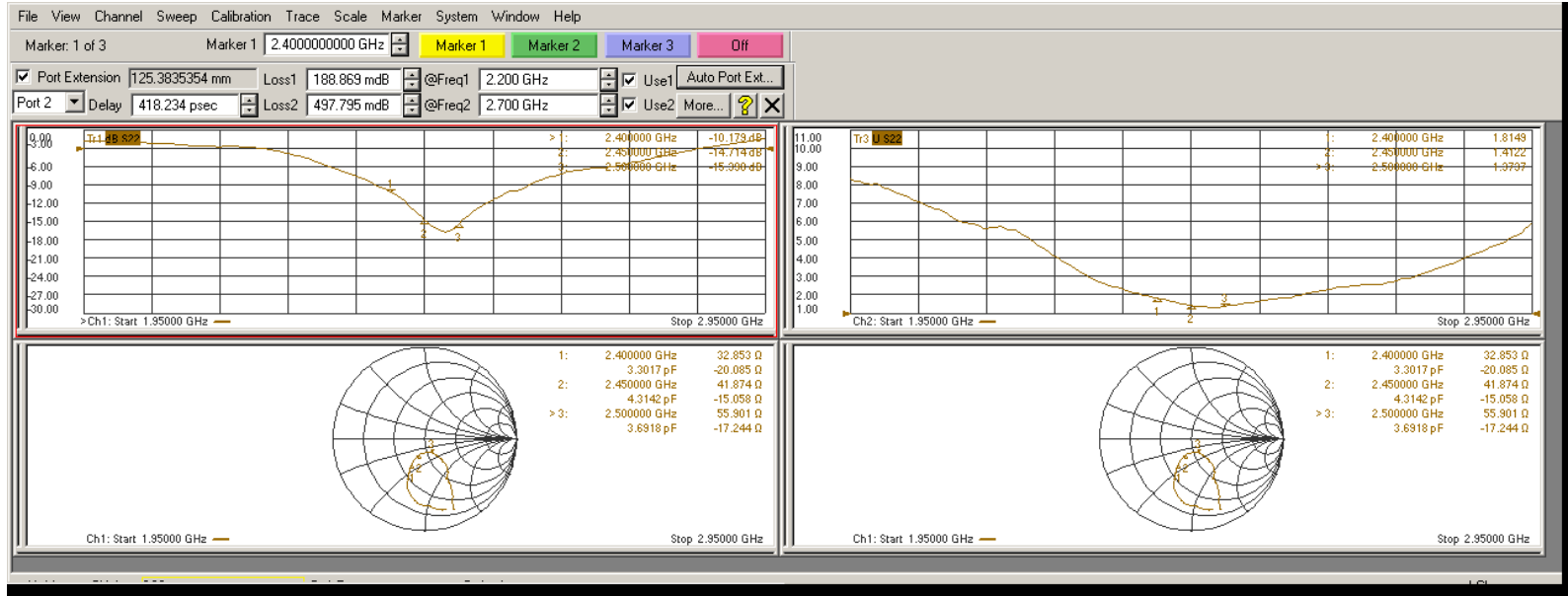
Before



After



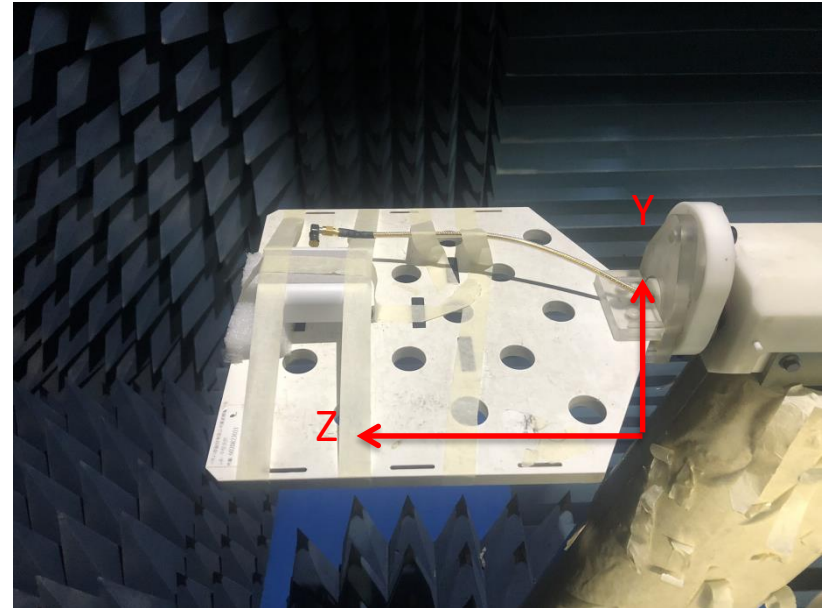
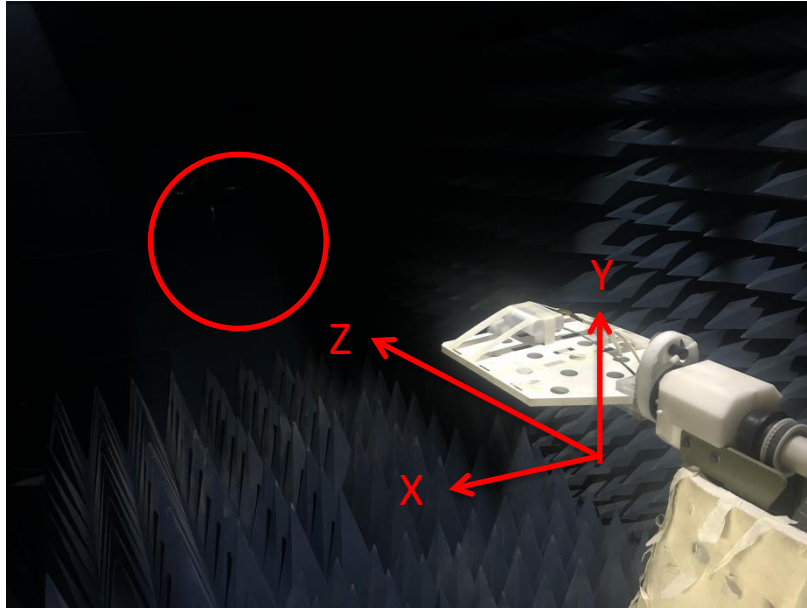
Return Loss



Freq(MHz)	2400	2450	2500
dB	-10.17	-14.71	-15.00

The antenna anechoic chamber measurement

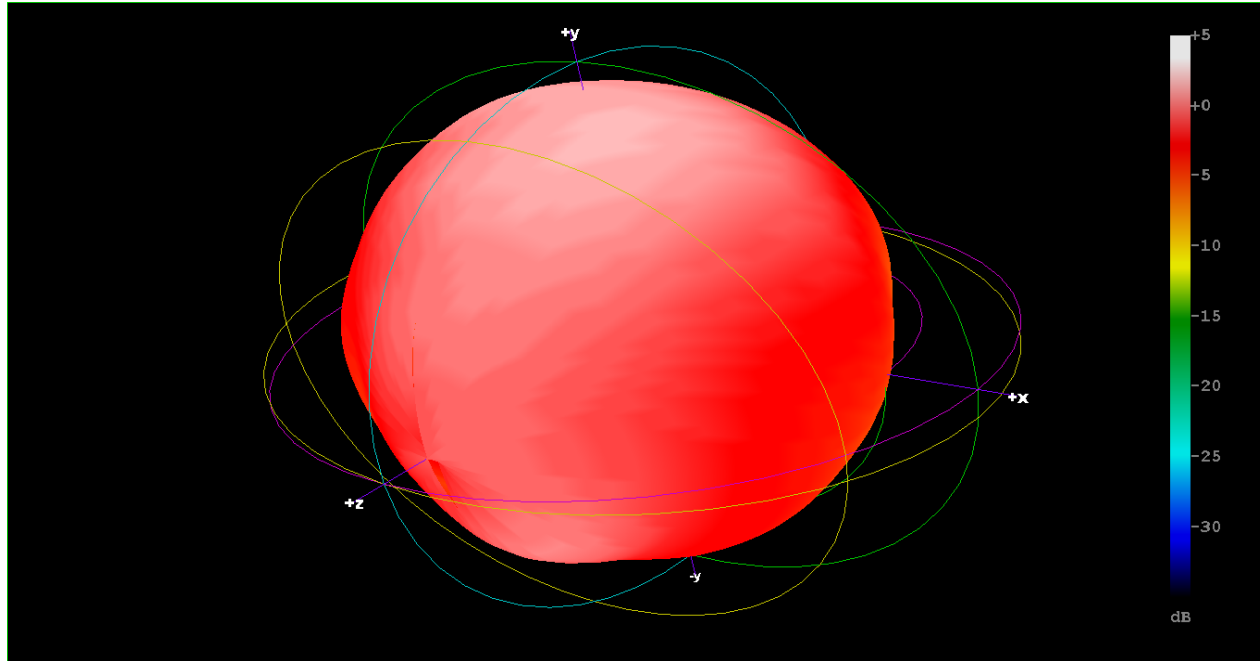
Chamber measurement photo



3D Gain Total




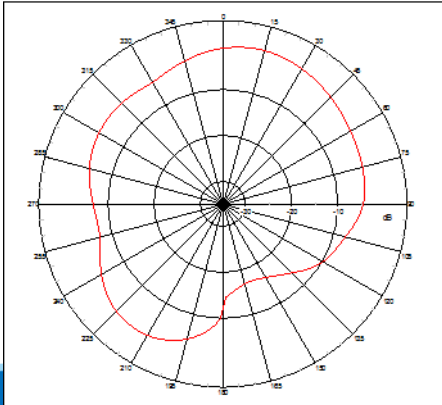
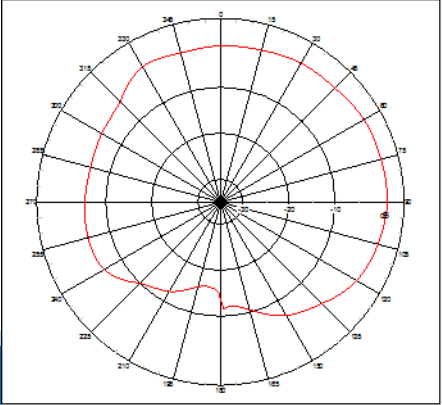
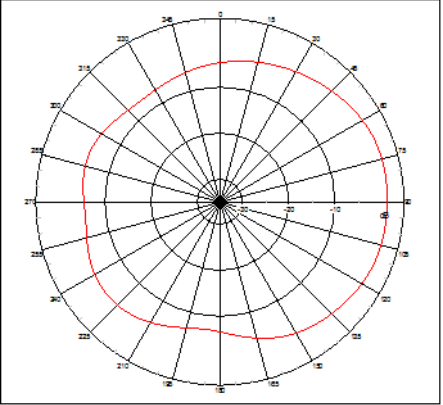
Freq(MHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2400	0.66	-3.28	47
2450	1.62	-2.58	55
2500	1.8	-2.73	53

Antenna Pattern-2450 MHz



Antenna Pattern-2450 MHz



Z-X plane	Z-Y plane	X-Y plane
<p data-bbox="338 223 376 245">0°</p>  <p data-bbox="550 409 589 431">90°</p> <p data-bbox="86 414 164 436">270°</p> <p data-bbox="338 611 396 633">180°</p>	<p data-bbox="956 218 994 240">0°</p>  <p data-bbox="1168 398 1207 420">90°</p> <p data-bbox="714 404 792 425">270°</p> <p data-bbox="956 600 1014 622">180°</p>	<p data-bbox="1555 218 1593 240">0°</p>  <p data-bbox="1767 398 1806 420">90°</p> <p data-bbox="1304 404 1381 425">270°</p> <p data-bbox="1555 600 1613 622">180°</p>
		



創造完美連結

MAKING THE PERFECT CONNECTION

www.wieson.com