WNC Wistron NeWeb Corp.

Zara (ZEJ00) WLAN and GPS combo A build Antenna Test Report

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Reviewed by: Jim Chiang
Date:2013-08-01
Ver:01

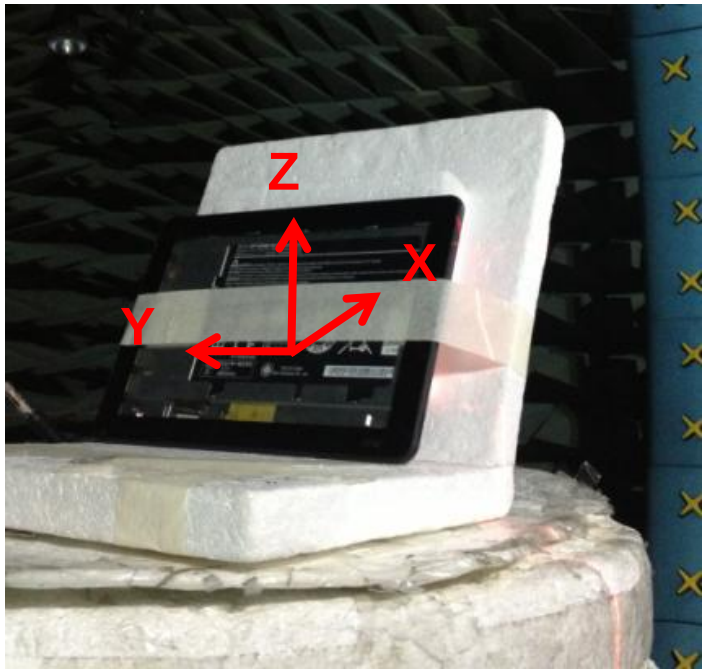
Agenda

1. Experimental Setup
2. Configuration
3. Antenna placement and picture
4. Measured Efficiency &VSWR
5. Isolation
6. Antenna 2D & 2.5D Radiation Pattern
7. VSWR Test with / without cover
8. Conclusion

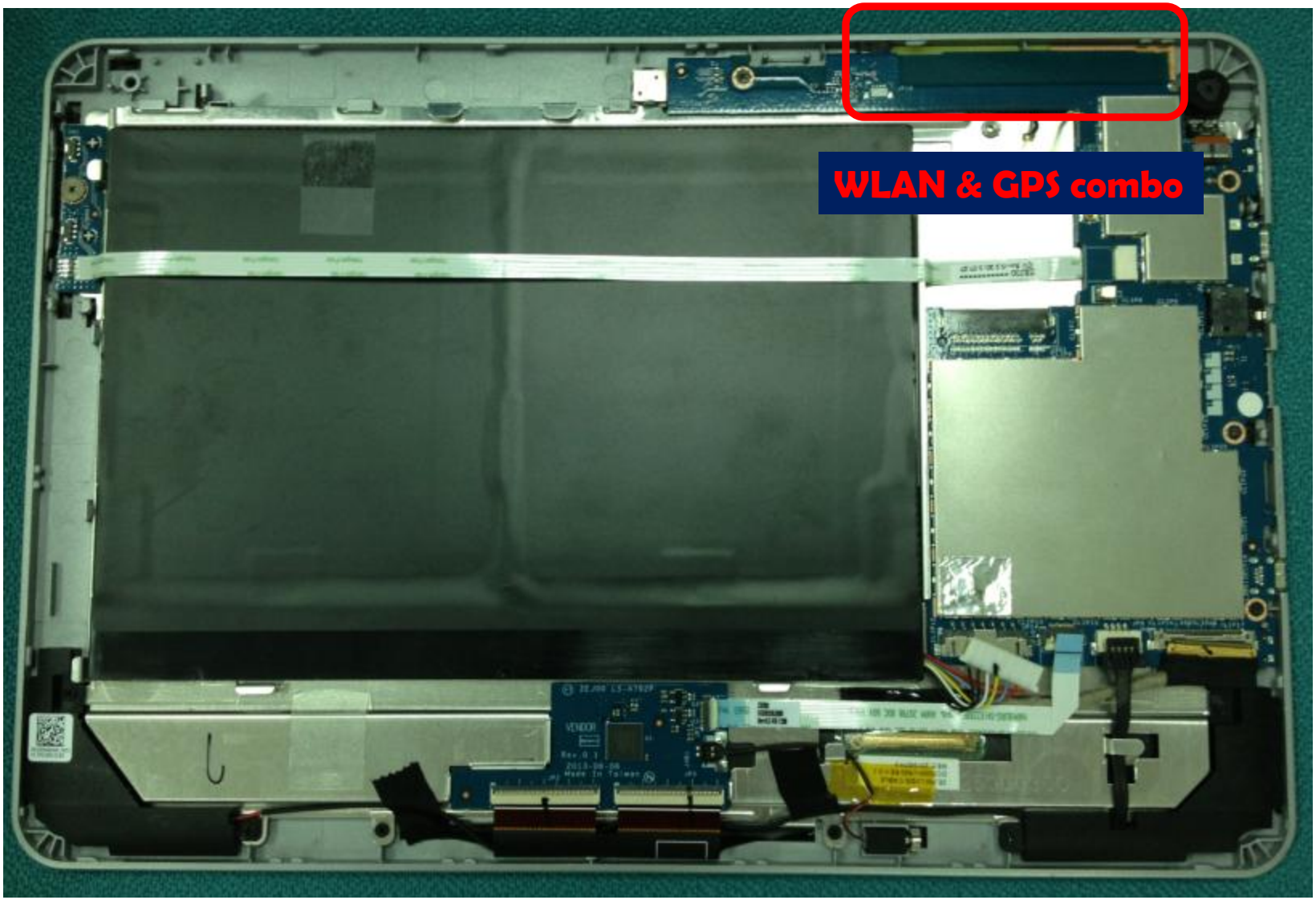
1. Experimental setup

- **Measurement Item: a. VSWR b. Radiation Pattern**

- **VSWR: a. Instrument: vector network analyzer**
  b. Calibration method: open/short/load
- **Radiation Pattern:**
  Instrument: WNC In-house 3D Antenna Measurement System
  @Satimo SG 64
- **Coordinate system:**



2. Configuration



3. Antenna placement and picture

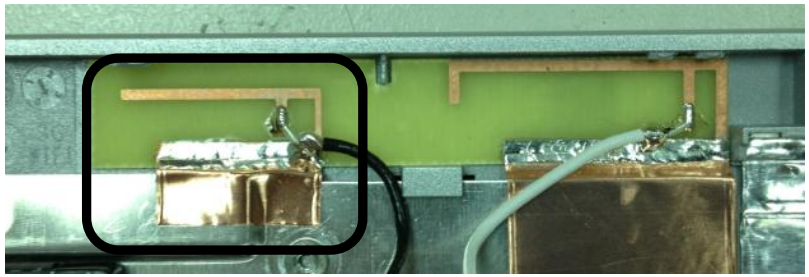
GPS & WIFI combo

Antenna Cable:Φ1.13	
Color:	**Length(mm)**
WLAN/ Black	**47**
GPS / Green	**39**

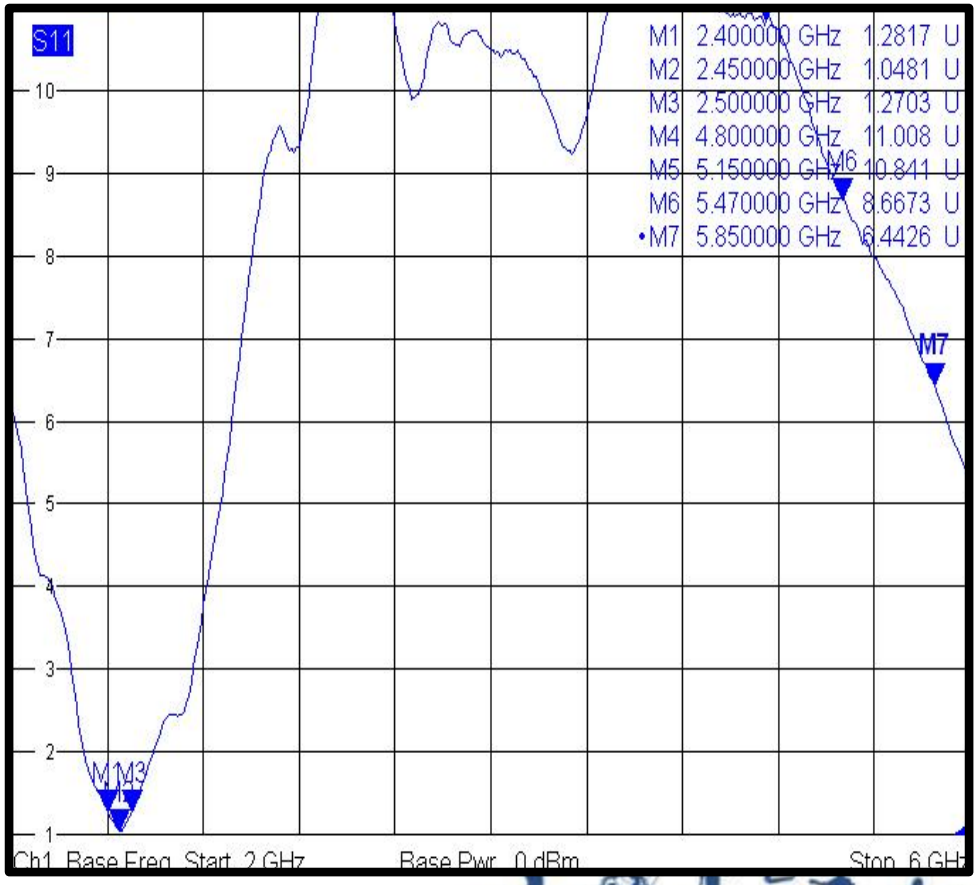
WLAN and GPS combo

4. Measured Efficiency &VSWR

WLAN



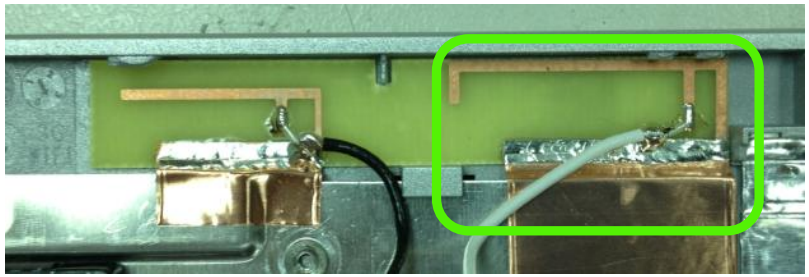
Frequency (MHZ)	X-Y Plane Peak Gain (dBi)	X-Y Plane Average Gain (dBi)	Efficiency (%) / dB	
2400	2.62	-2.19	56.97	-2.44
2450	2.73	-2.51	55.24	-2.58
2500	2.41	-2.96	54.83	-2.61
4800	-4.60	-7.88	16.93	-7.71
5150	-5.43	-8.46	17.40	-7.59
5250	-5.27	-8.14	18.82	-7.25
5350	-5.92	-8.62	17.36	-7.60
5470	-4.88	-7.99	20.06	-6.98
5600	-4.49	-7.69	21.92	-6.59
5725	-3.51	-7.23	24.81	-6.05
5850	-1.92	-6.63	28.22	-5.49



Measured in WNC SG64

Measured Efficiency &VSWR

GPS

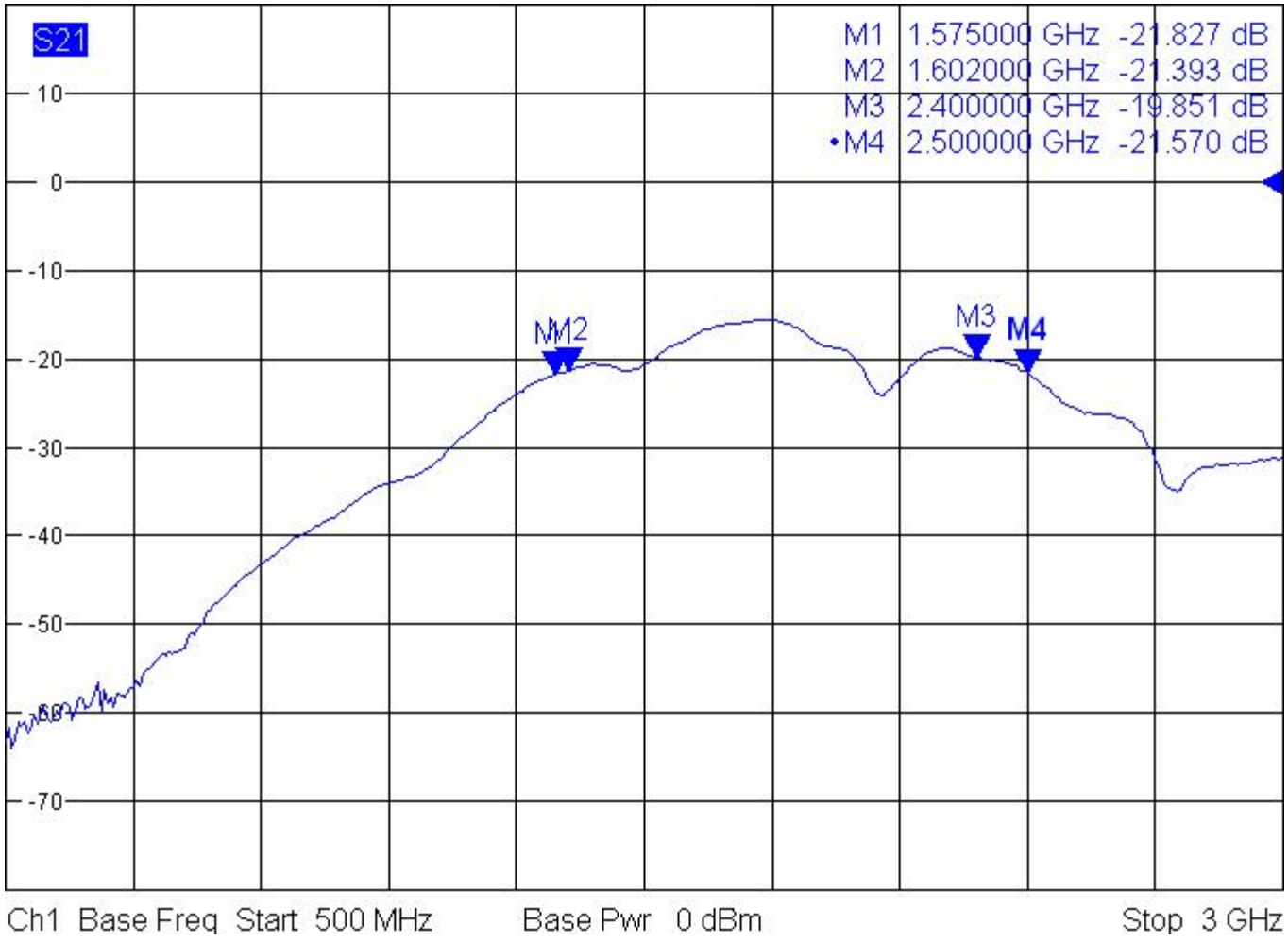


Frequency (MHZ)	X-Y Plane Peak Gain (dBi)	X-Y Plane Average Gain (dBi)	Efficiency (%)/dB	
1565	3.26	-2.26	62.02	-2.07
1575	3.51	-1.94	66.89	-1.75
1602	3.22	-1.94	64.50	-1.90

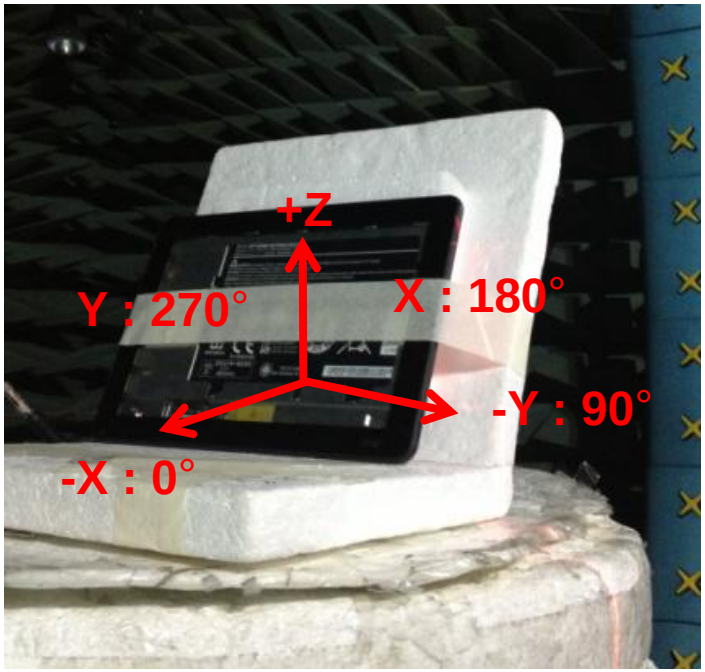
Measured in WNC SG64

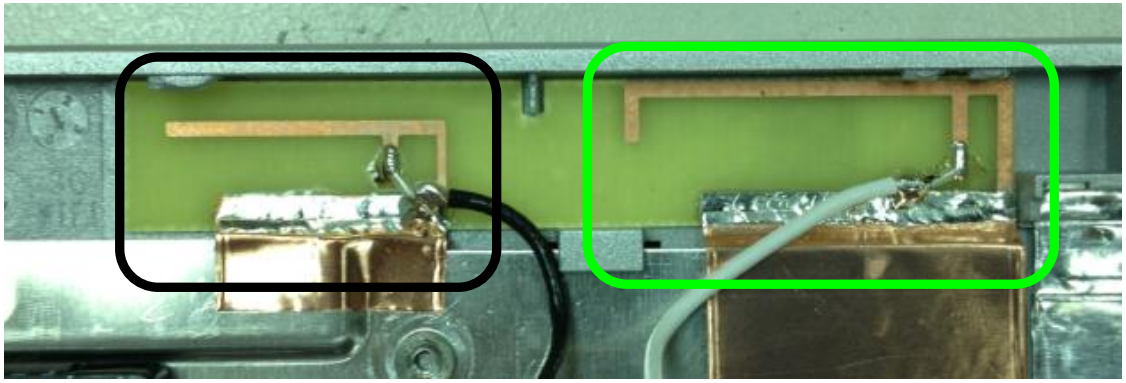
5. Isolation

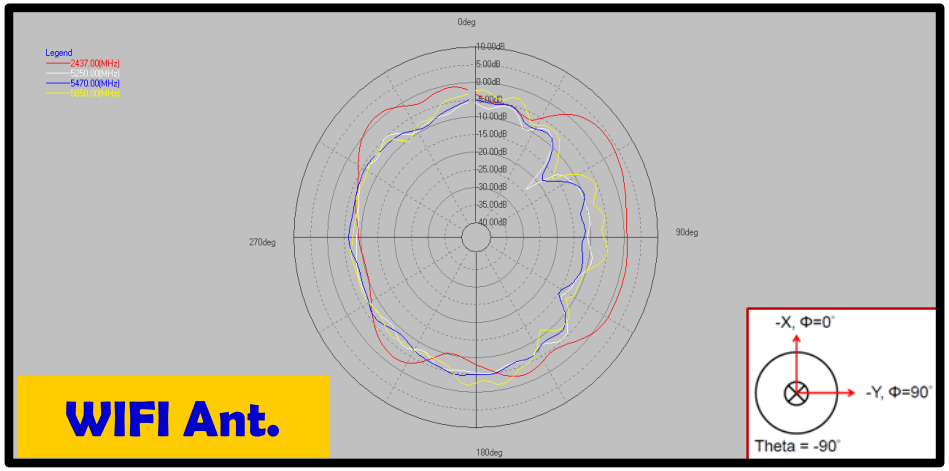
WLAN to GPS S21

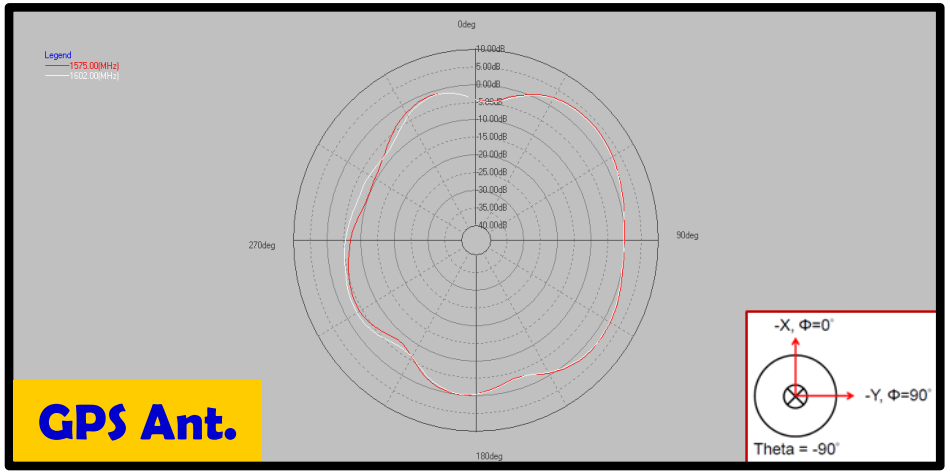


6. Antenna 2D Radiation Pattern (XY-Plane)



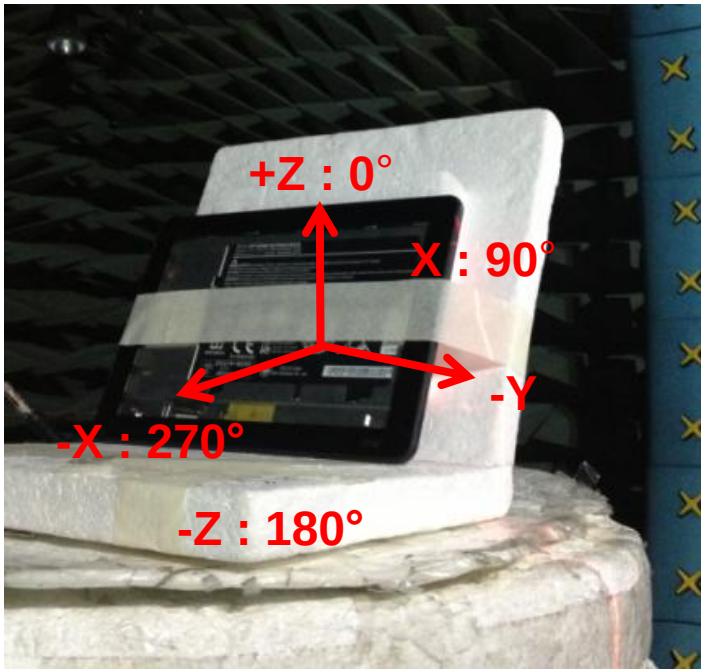


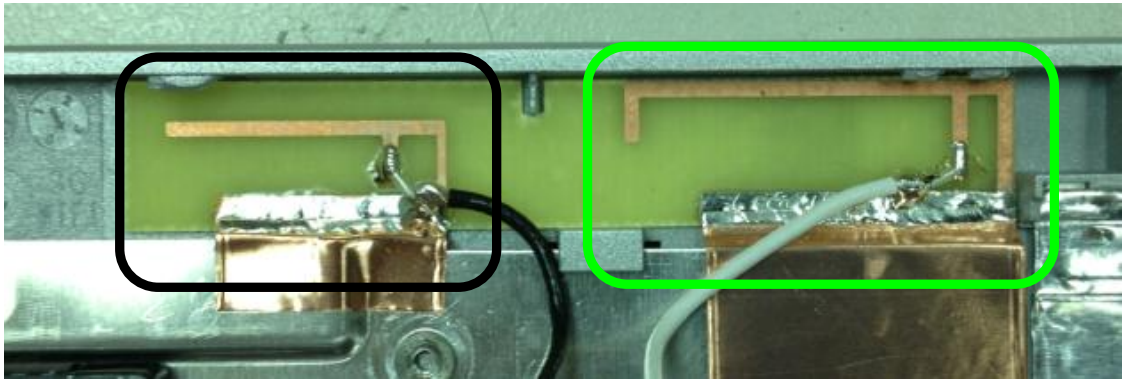


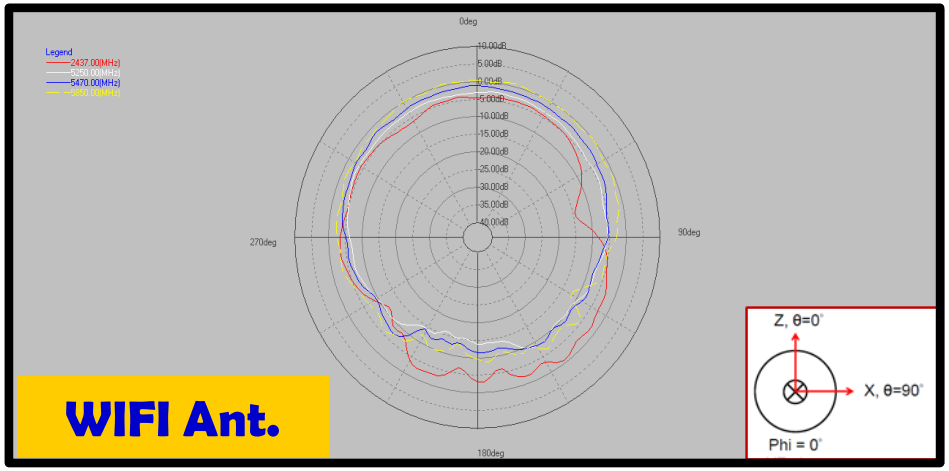


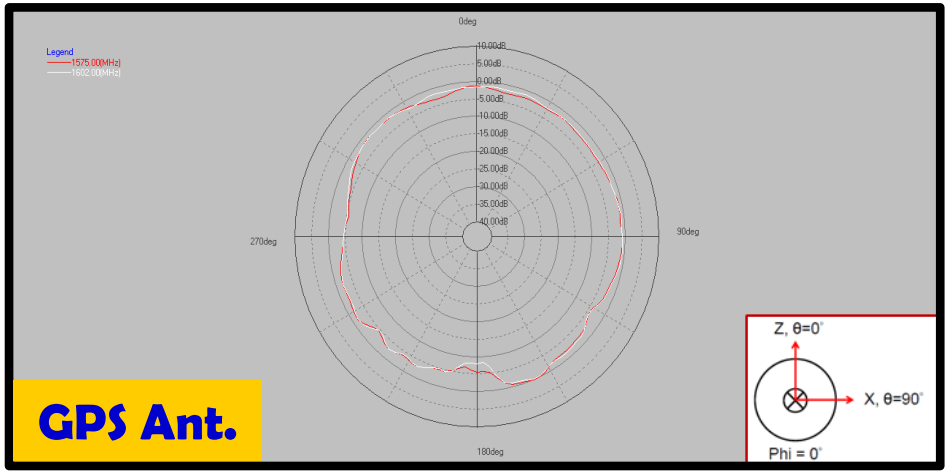
Measured in WNC SG64

Antenna 2D Radiation Pattern (XZ-Plane)



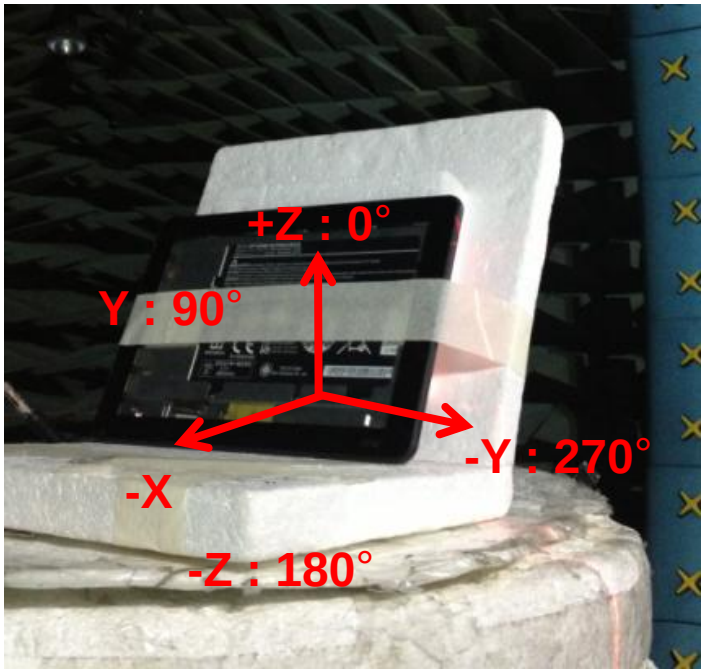


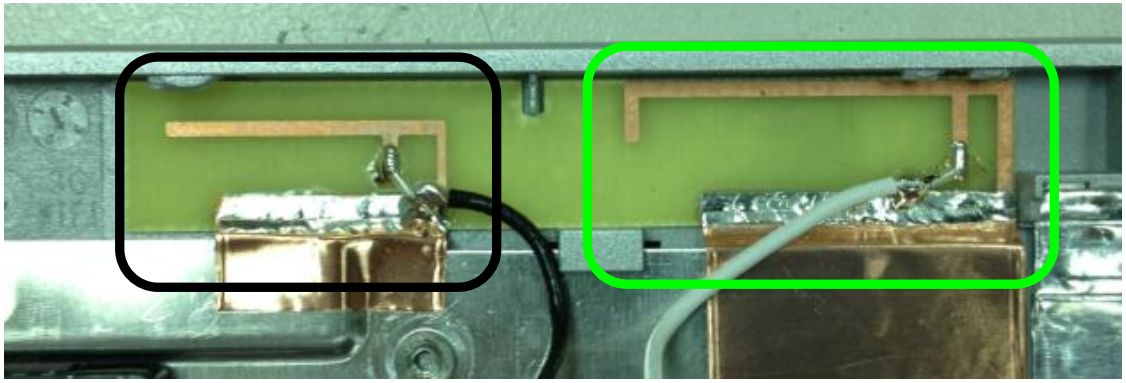


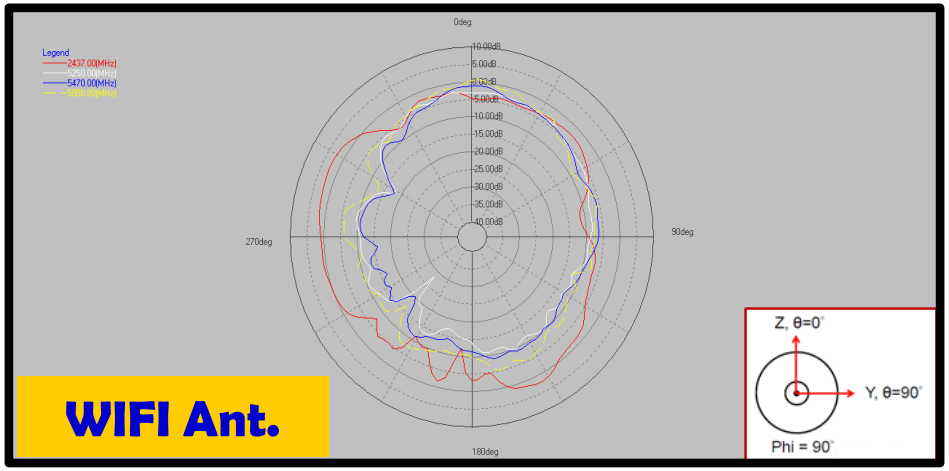


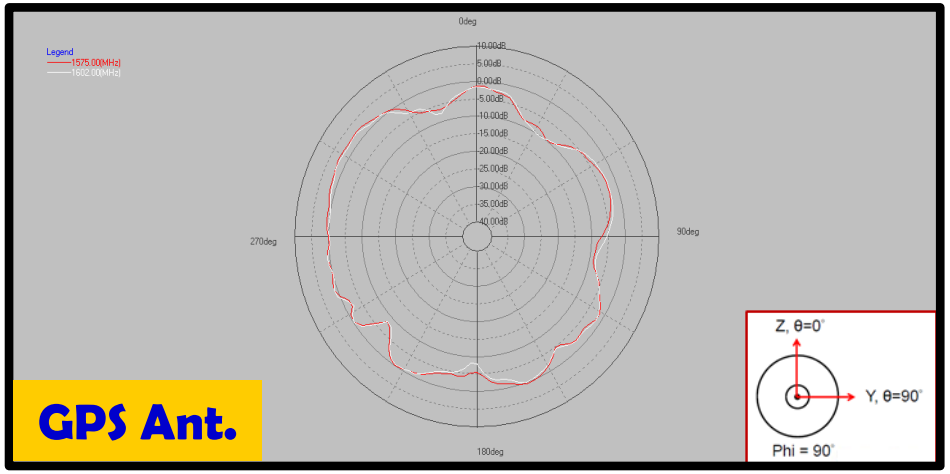
Measured in WNC SG64

Antenna 2D Radiation Pattern (YZ-Plane)



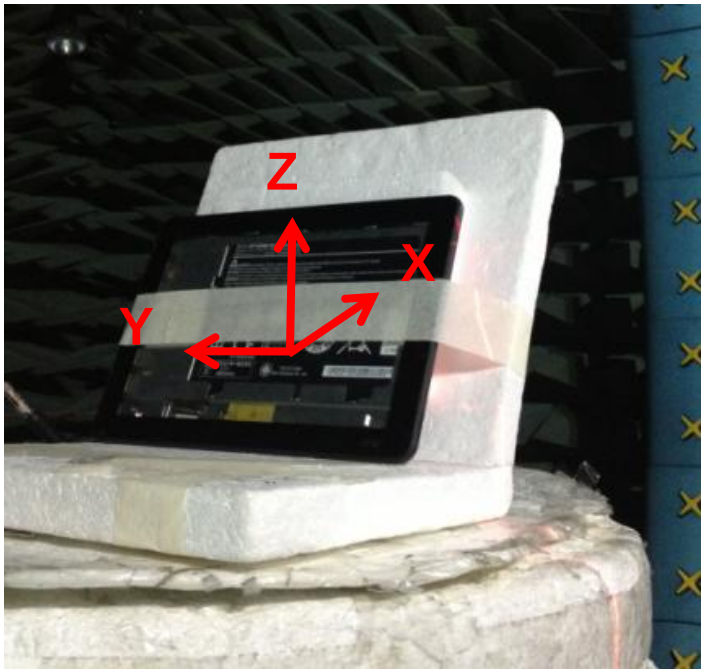


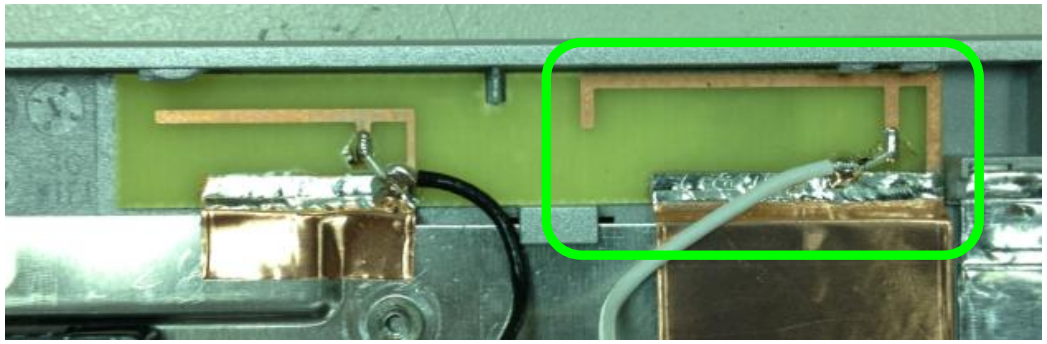


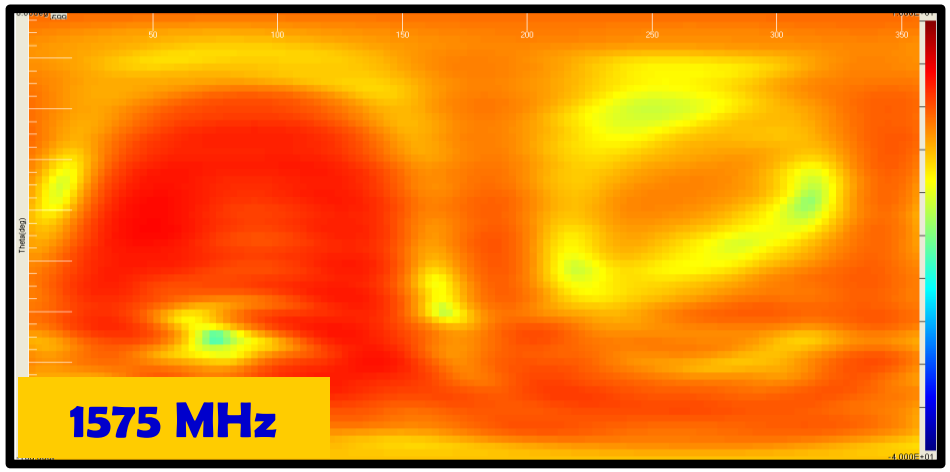


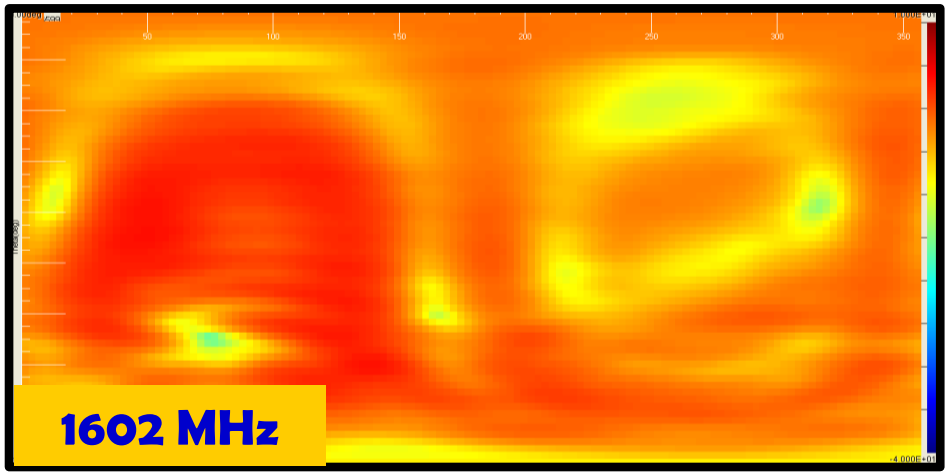
Measured in WNC SG64

Antenna 2.5D Radiation Pattern (GPS)



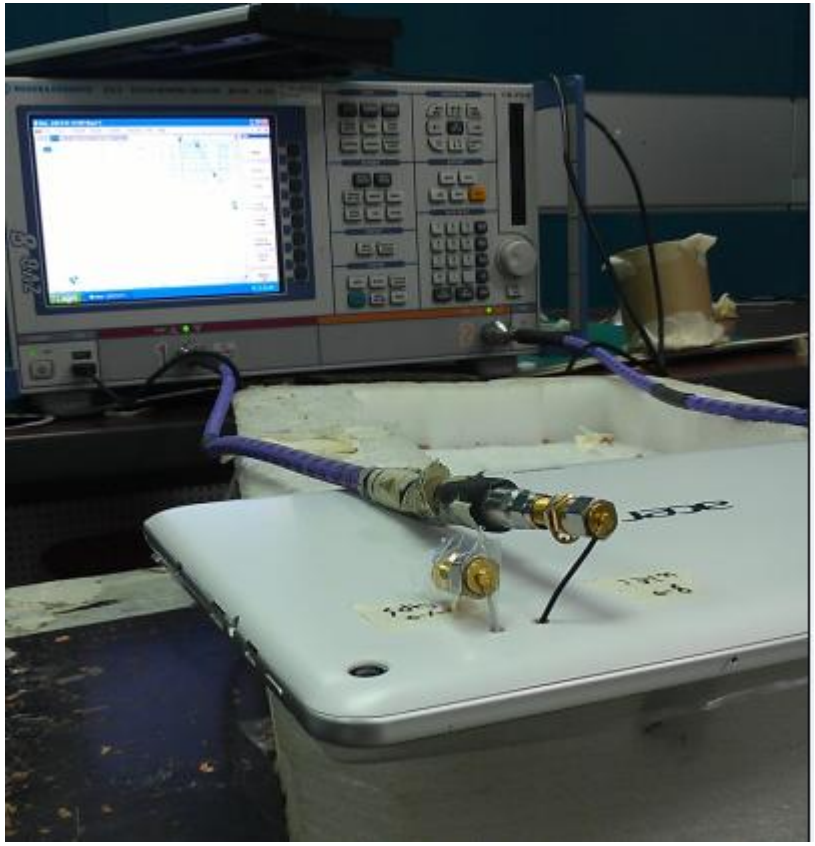




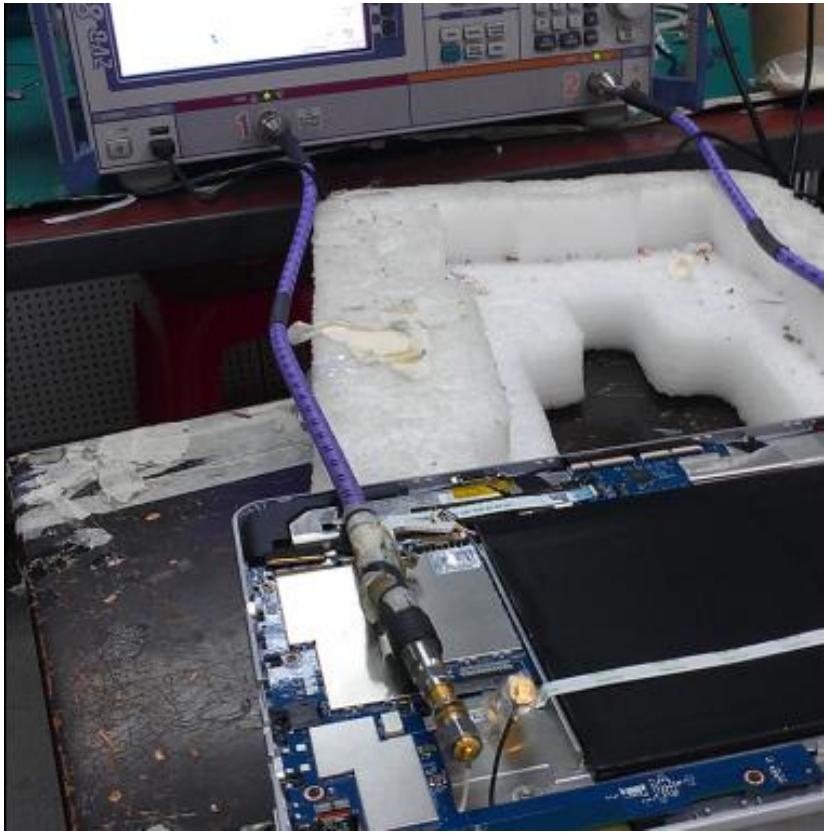


Measured in WNC SG64

7. VSWR Test with / without cover



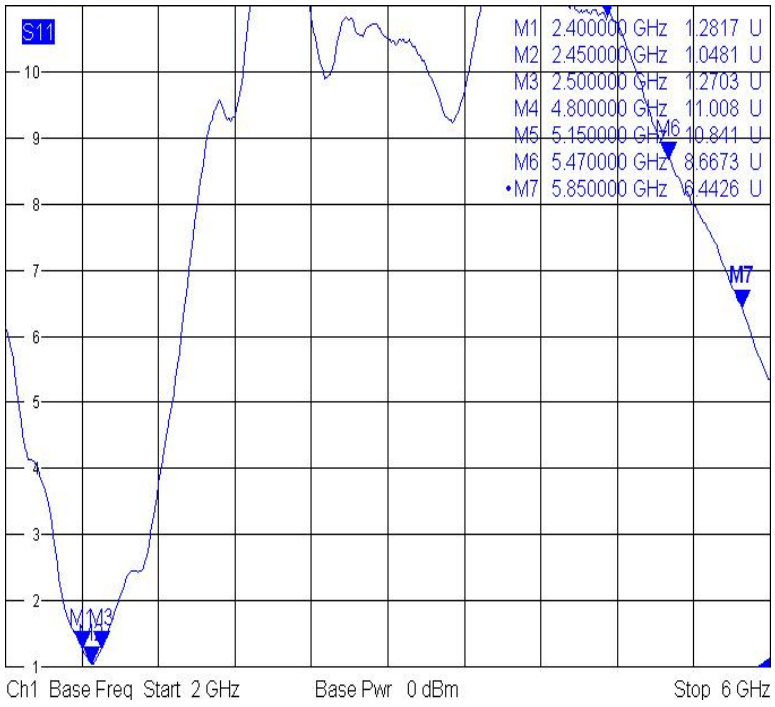
VSWR測試 w / cover



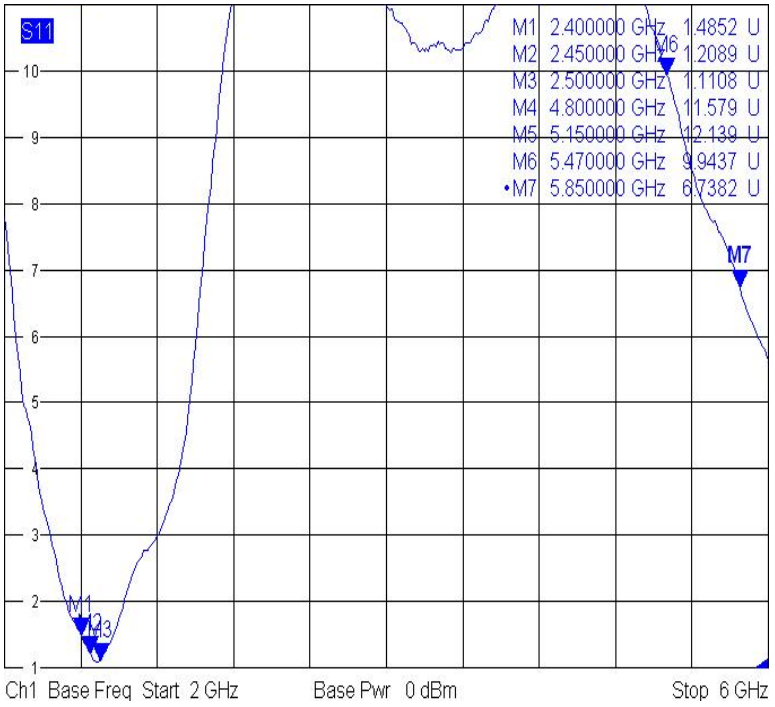
VSWR測試 w / o cover

VSWR Test with / without cover - WLAN

VSWR測試 w / cover

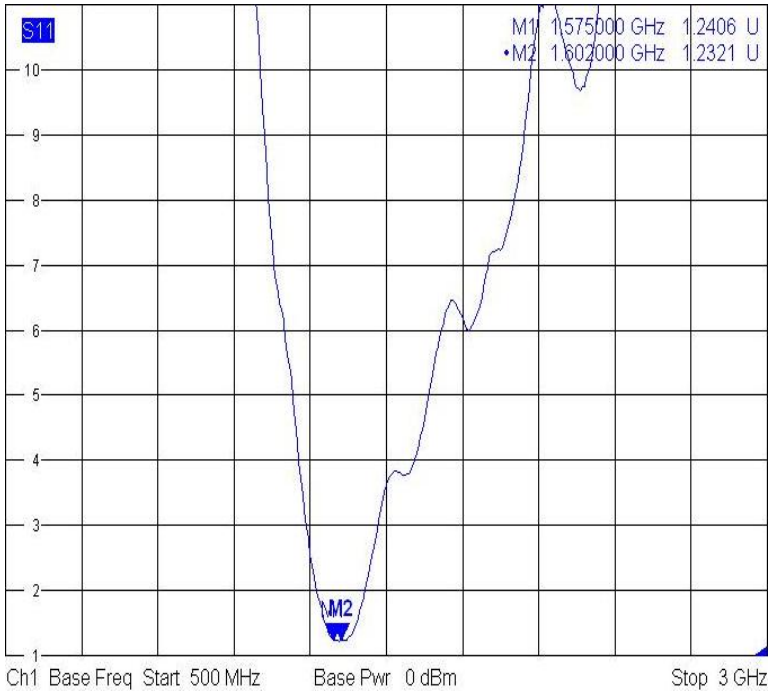


VSWR測試 w / o cover



VSWR Test with / without cover - GPS

VSWR測試 w / cover



VSWR測試 w / o cover

8. Conclusion

1. 本次測量結果在**WLAN**和**GPS**特性上都可達**SPEC**。

2. **WIFI and GPS combo**的線長較短容易造成**cable routing (**逆電流**)**產生導致裏線方式不同會導致**VSWR**有些微頻偏產生。

3. **Cover**對於**VSWR**的影響來看，當拿掉**cover**時會使頻率往高頻移動。