

Antenna



連騰科技股份有限公司

The Most Appropriate Antenna for Your Design!

Advanced Wireless & Antenna Inc.

I-series 5.0 Value 10.1 WLAN Antenna Test Report

ADVANCED-CONNECTEK INC.

Wireless Communications BU.

2023.02.20



Executive Summary

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

- **Purpose**

Antenna study for I-series 5.0 Value10.1. Result as following.

- **Agenda**

- Test Environment and Equipment
- Antenna Positions and Dimensions
- Antenna Test Data

Test Result : Antenna VSWR

Test Result : Antenna Efficiency & Peak Gain

Test Result : Antenna 2D Radiation Patternn

Test Environment and Equipments

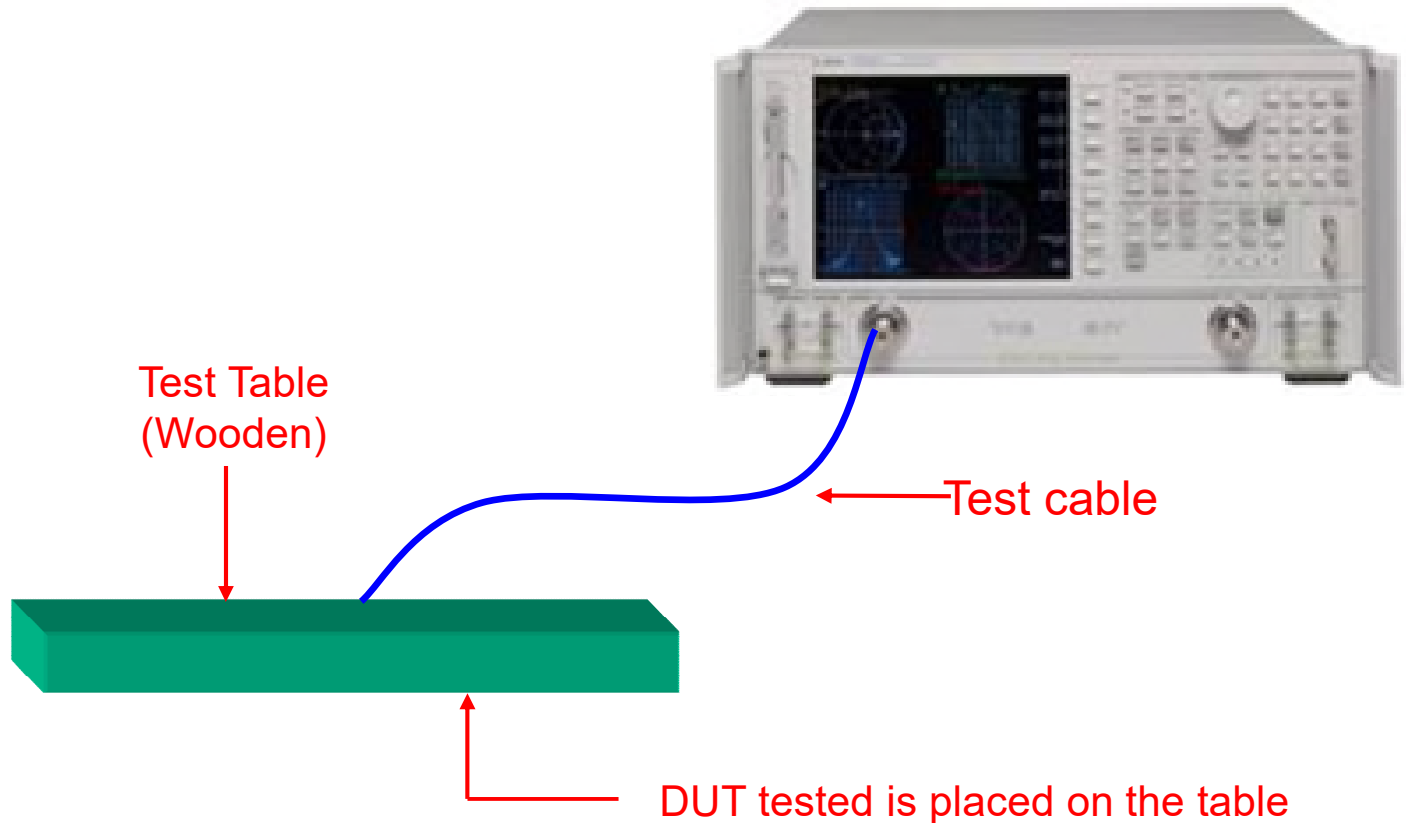
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

S-Parameter test

- Network Analyzer(Agilent-E5071C)
- Testing range from 9KHz to 8.5GHz



Test Environment and Equipments

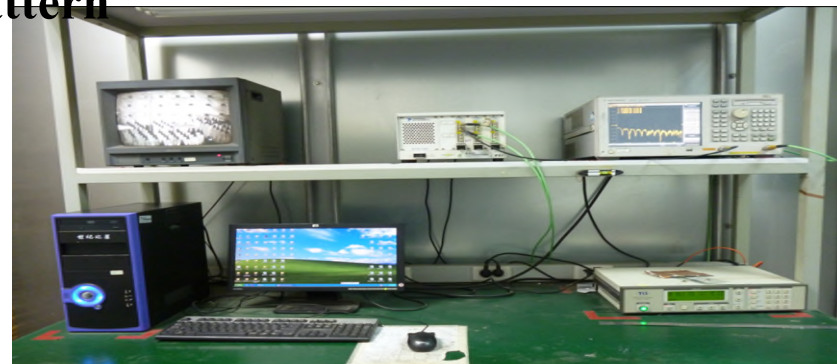
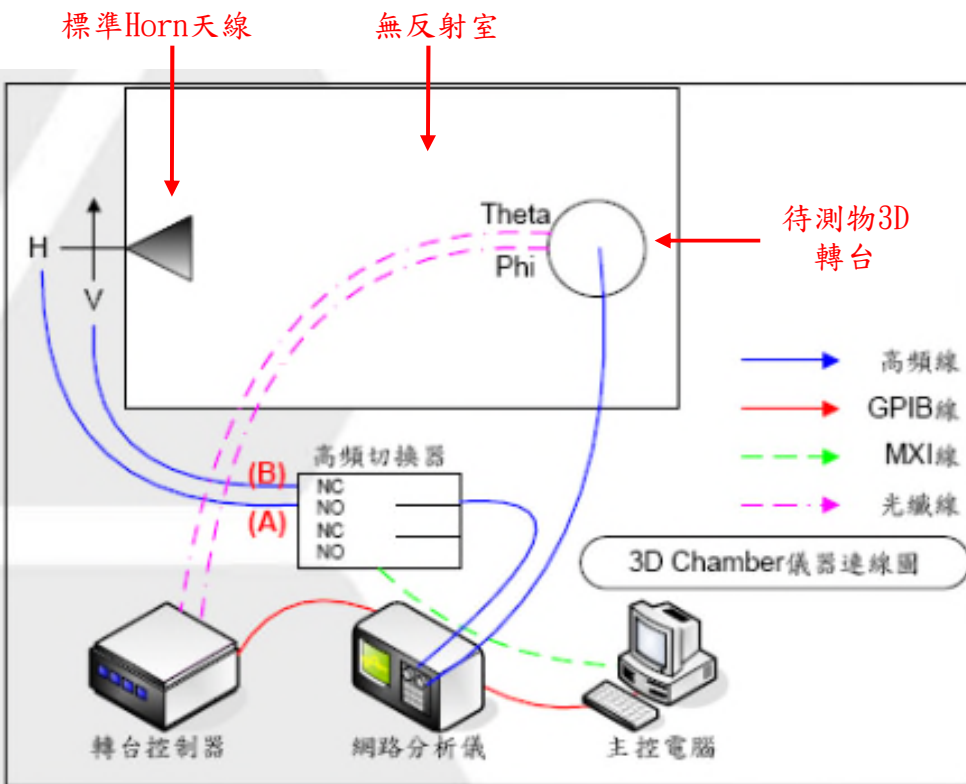
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

The Gain, Efficiency, Directivity and 2D/3D Pattern

- ACON 3D Anechoic Chamber
- Chamber Room Size: $L*W*H=9*4.7*4.7$ M



Antenna Positions and Dimensions

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.



排线需贴紧
屏幕，防止
靠近天线，
影响天线性
能。

WIFI Main

Antenna Size : 46mm*7.5mm*0.8mm

Cable Length : 20mm

Cable OD:1.37

銅箔尺寸 : 10mm*11.04mm

WIFI Aux

Antenna Size : 46mm*7.5mm*0.8mm

Cable Length : 200mm

Cable OD:1.37

銅箔尺寸 : 10mm*16.54mm

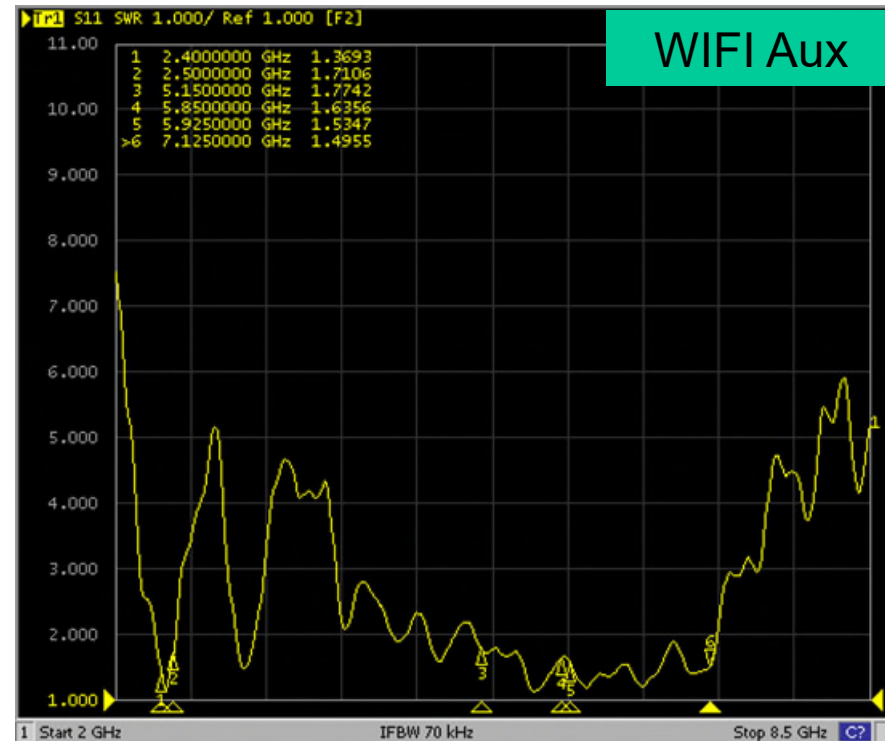
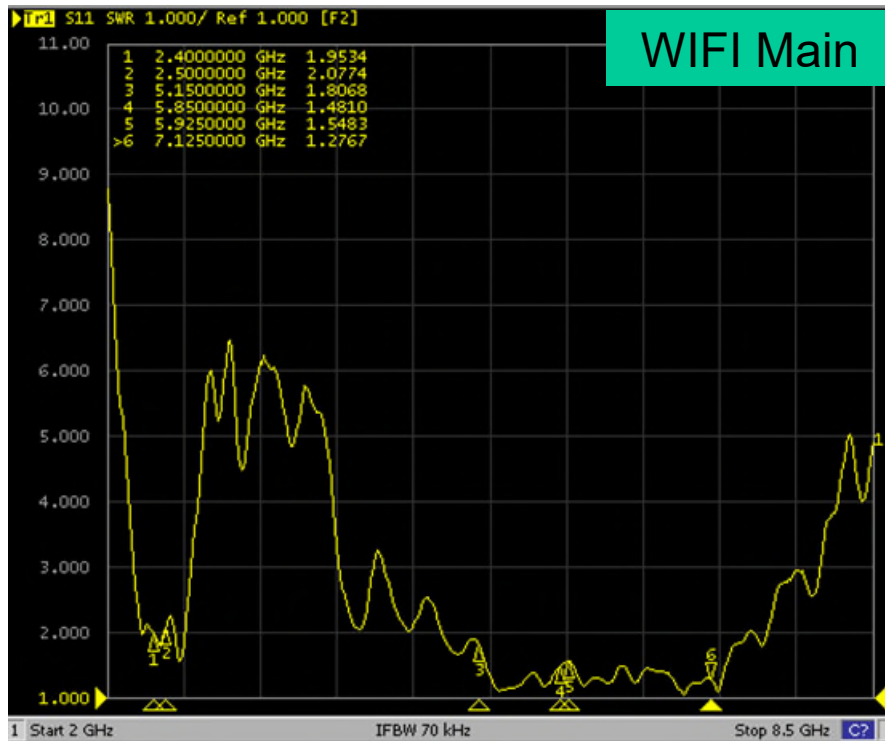


Test Result:Antenna VSWR

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.



Test Result:Antenna Efficiency

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-3.90	40.74	2.56
2450	-3.83	41.40	2.01
2500	-3.96	40.18	2.91
5150	-3.87	41.02	1.67
5250	-3.95	40.27	2.22
5350	-4.13	38.64	2.44
5470	-3.96	40.18	2.38
5600	-4.04	39.45	2.26
5725	-4.09	38.99	2.20
5750	-3.95	40.27	2.14
5785	-4.18	38.19	1.53
5800	-4.14	38.55	1.89
5850	-3.80	41.69	2.56

Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-3.95	40.27	1.56
6000	-3.86	41.11	2.19
6100	-3.57	43.95	1.82
6200	-4.11	38.82	2.54
6300	-4.16	38.37	2.12
6400	-3.92	40.55	1.85
6500	-4.01	39.72	1.86
6600	-3.73	42.36	2.84
6700	-3.96	40.18	2.35
6800	-3.91	40.64	2.14
6900	-4.12	38.73	1.84
7000	-3.93	40.46	1.75
7125	-3.69	42.76	2.28

Test Result:Antenna Efficiency

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-3.92	40.55	1.81
2450	-3.87	41.02	2.01
2500	-3.97	40.09	1.79
5150	-3.72	42.46	2.46
5250	-4.05	39.36	1.79
5350	-4.15	38.46	2.19
5470	-3.63	43.35	1.64
5600	-3.97	40.09	2.43
5725	-4.11	38.82	2.70
5750	-4.13	38.64	2.50
5785	-4.08	39.08	2.03
5800	-3.91	40.64	2.56
5850	-4.12	38.73	1.81

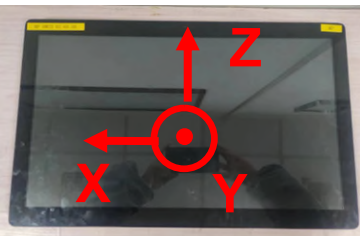
Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-3.60	43.65	2.31
6000	-4.15	38.46	2.26
6100	-3.76	42.07	2.86
6200	-3.67	42.95	2.26
6300	-3.65	43.15	2.01
6400	-3.89	40.83	2.44
6500	-3.80	41.69	2.18
6600	-3.74	42.27	2.72
6700	-3.66	43.05	2.11
6800	-3.79	41.78	2.46
6900	-3.71	42.56	1.95
7000	-3.84	41.30	2.42
7125	-3.74	42.27	2.31

Test Result:2D/3D Radiation Pattern MAIN

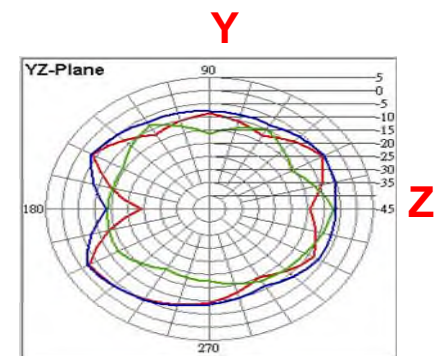
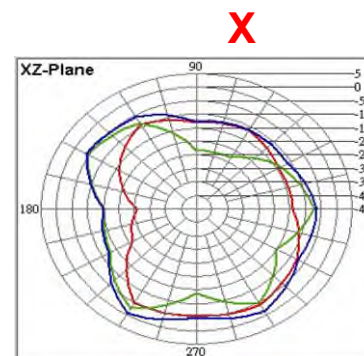
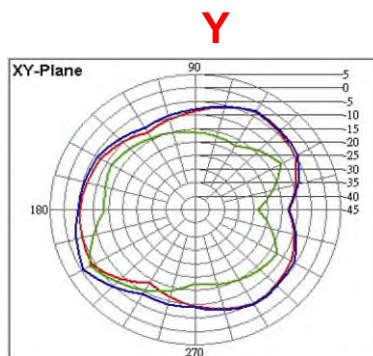
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

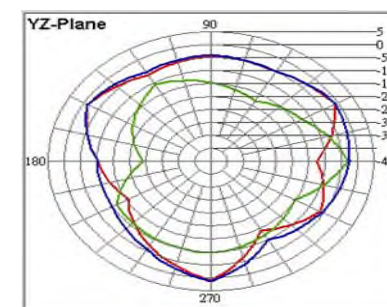
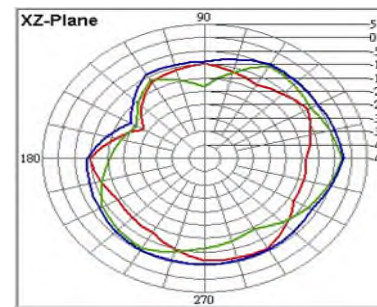
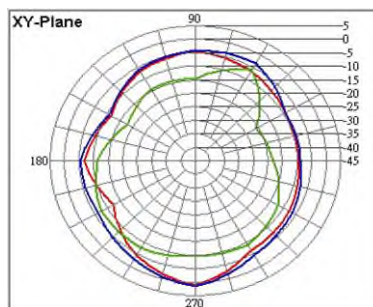
Advanced Wireless & Antenna Inc.



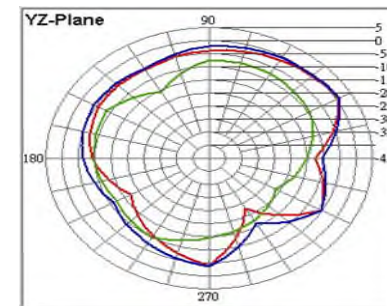
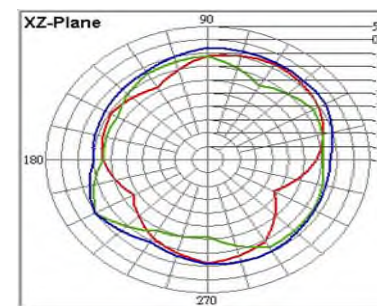
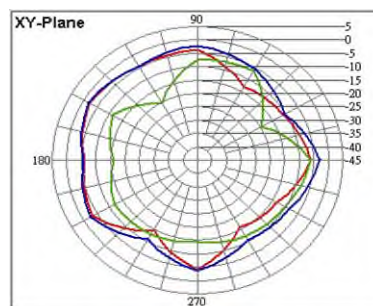
2400MHz



2450MHz



2500MHz



H-Pol



V-Pol



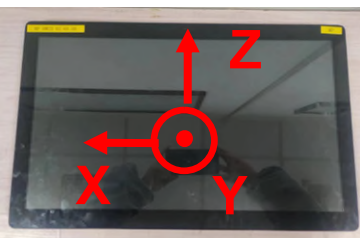
H+V

Test Result:2D/3D Radiation Pattern MAIN

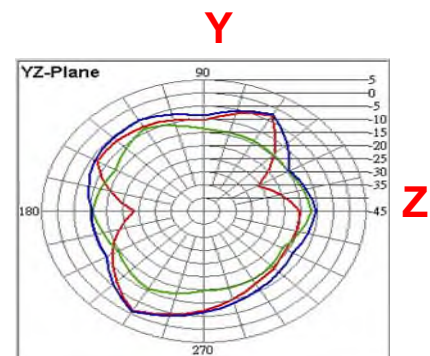
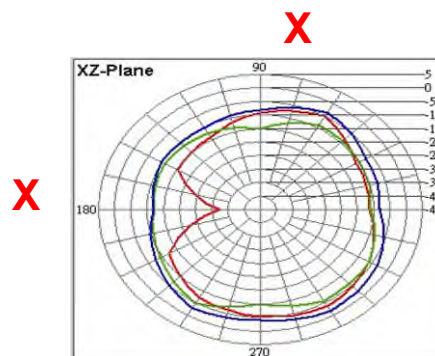
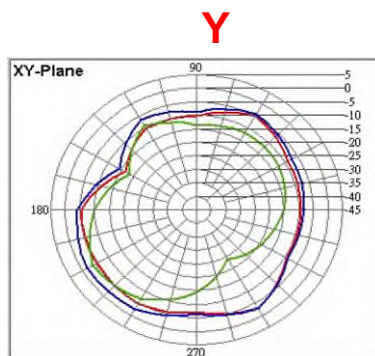
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

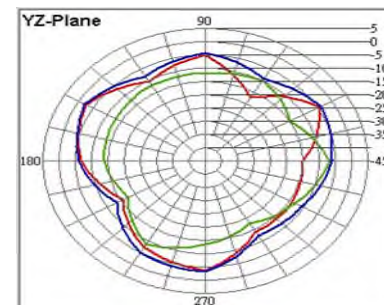
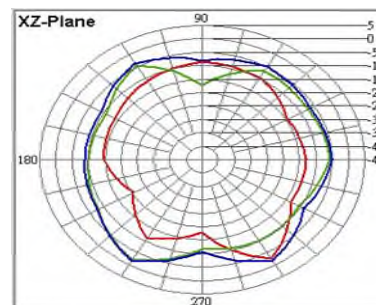
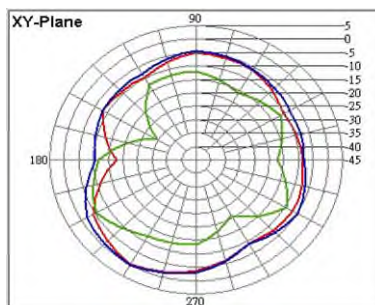
Advanced Wireless & Antenna Inc.



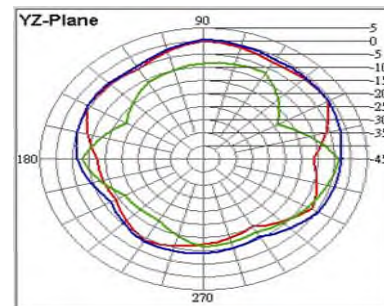
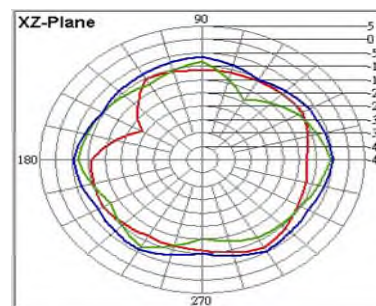
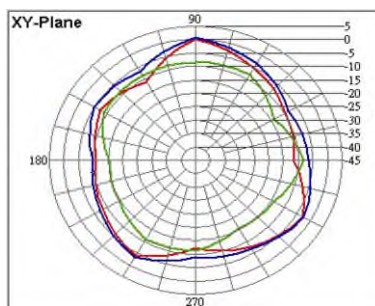
5150MHz



5470MHz



5850MHz



H-Pol



V-Pol



H+V

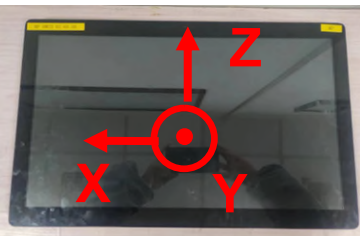
www.awan-ant.com

Test Result:2D/3D Radiation Pattern MAIN

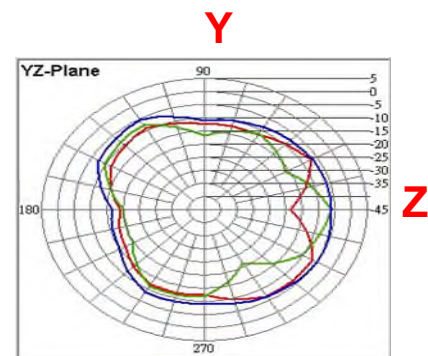
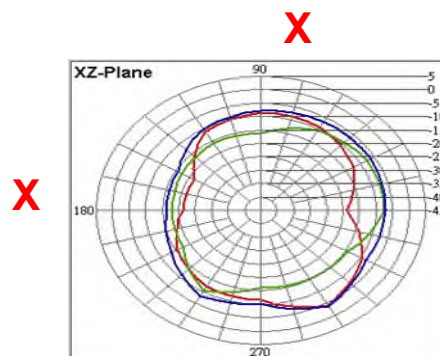
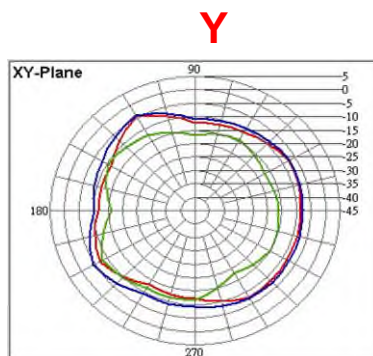
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

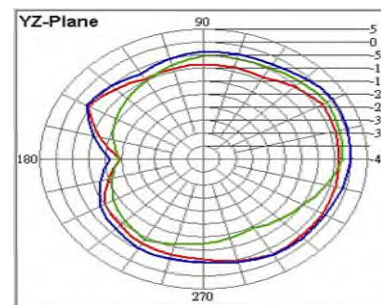
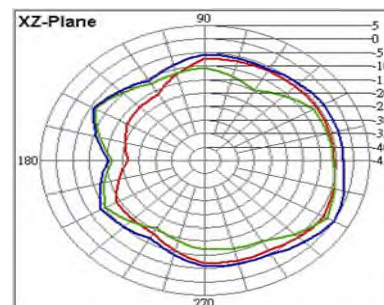
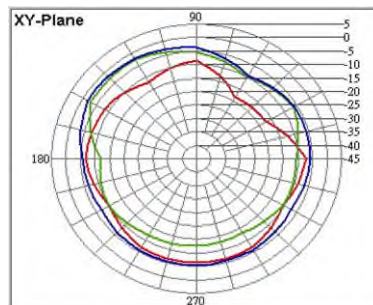
Advanced Wireless & Antenna Inc.



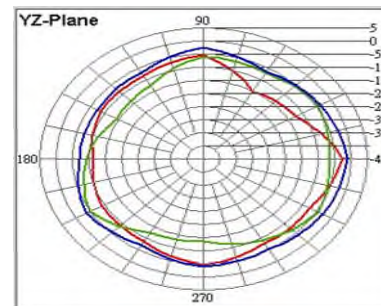
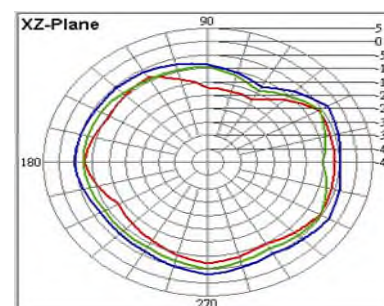
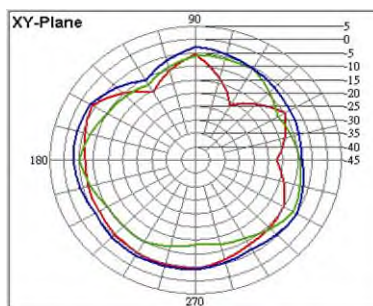
6100MHz



6500MHz



7125MHz

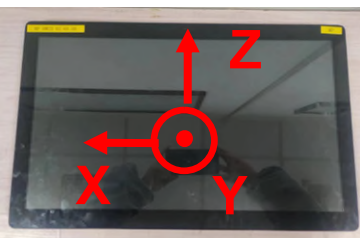


Test Result: 2D/3D Radiation Pattern AUX

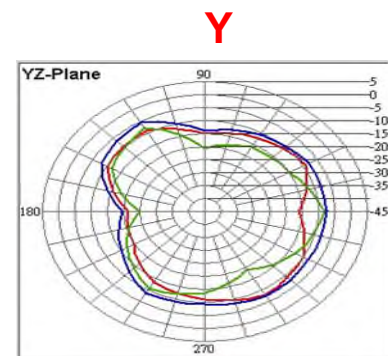
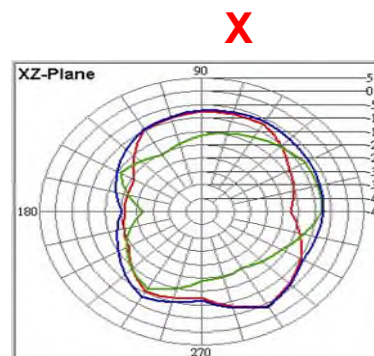
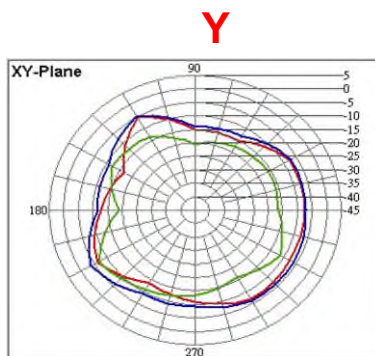
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

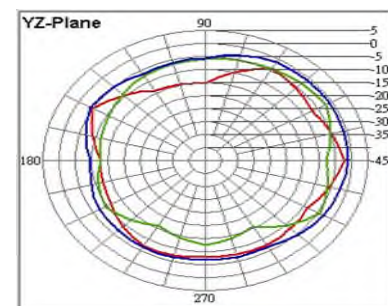
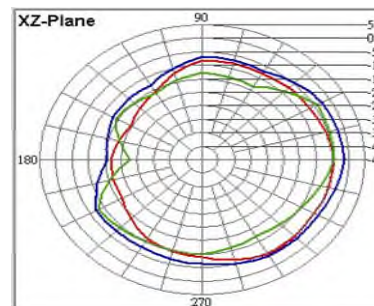
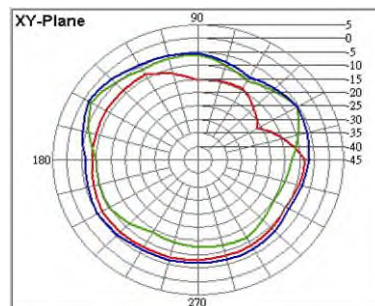
Advanced Wireless & Antenna Inc.



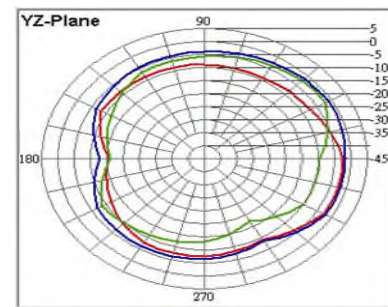
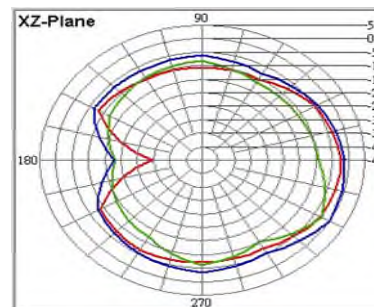
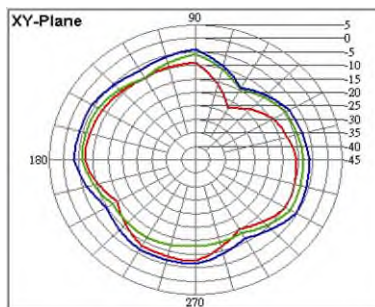
2400MHz



2450MHz



2500MHz



H-Pol



V-Pol



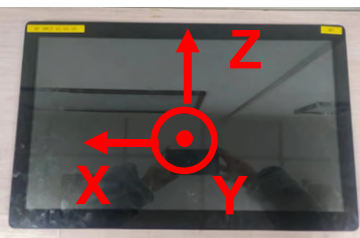
H+V

Test Result: 2D/3D Radiation Pattern AUX

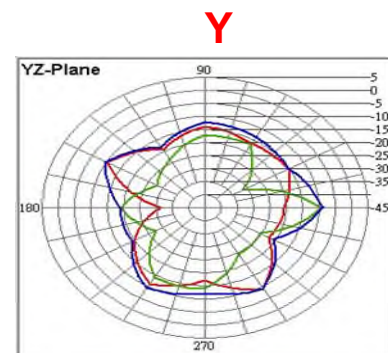
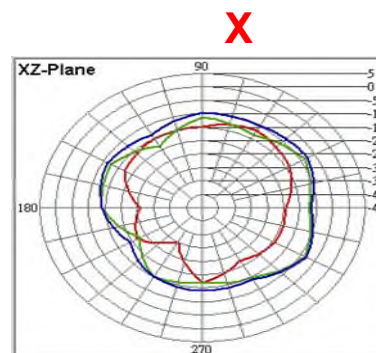
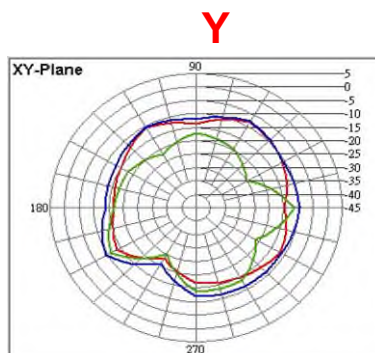
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

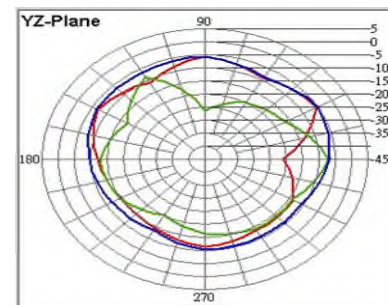
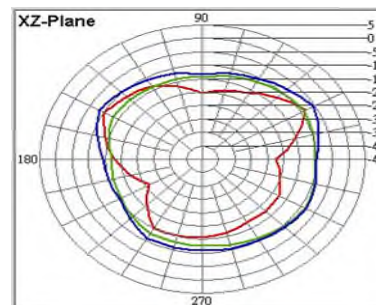
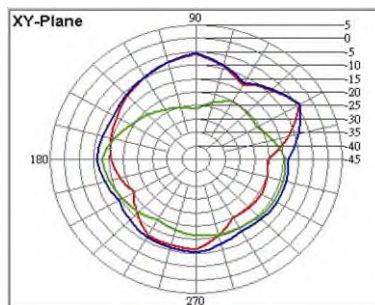
Advanced Wireless & Antenna Inc.



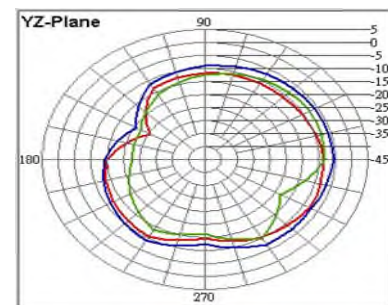
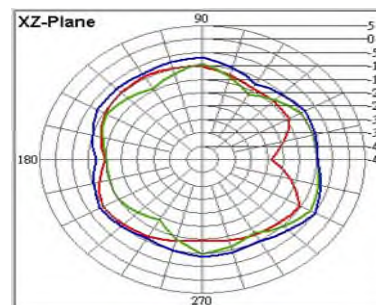
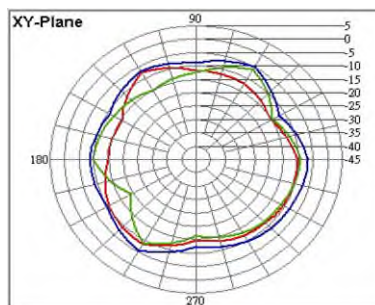
5150MHz



5470MHz



5850MHz



H-Pol



V-Pol



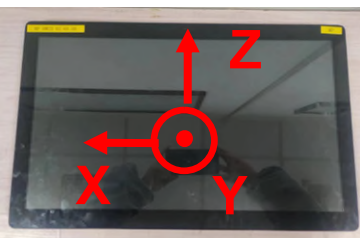
H+V

Test Result: 2D/3D Radiation Pattern AUX

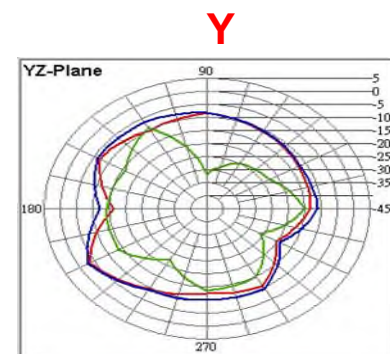
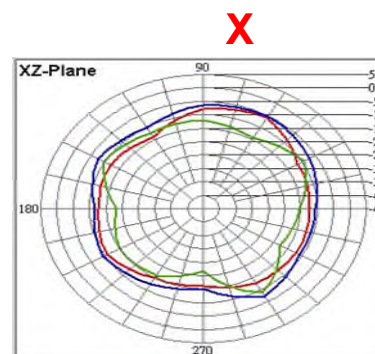
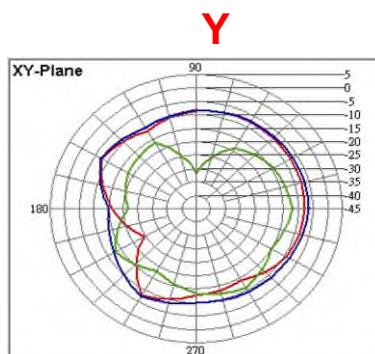
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

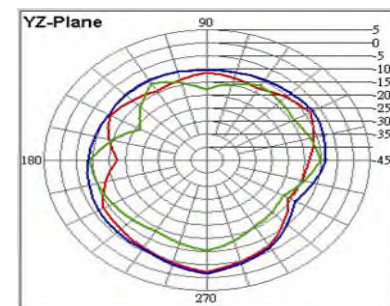
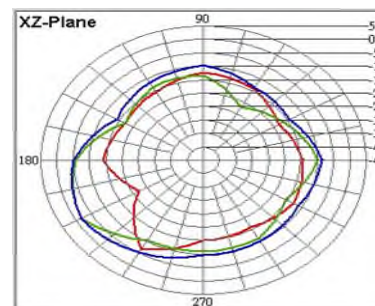
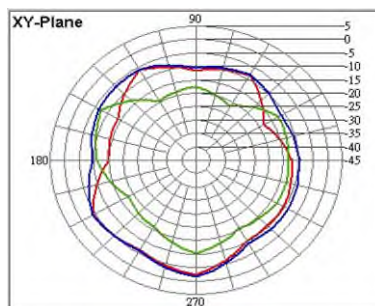
Advanced Wireless & Antenna Inc.



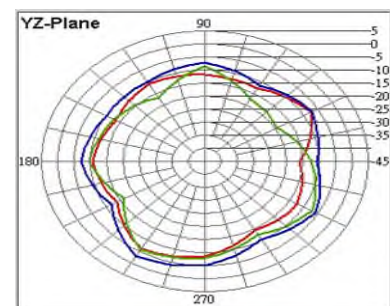
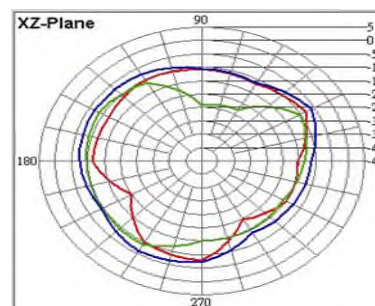
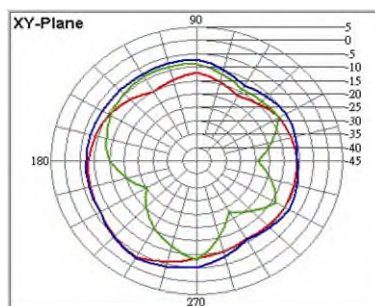
6100MHz



6500MHz



7125MHz



H-Pol



V-Pol



H+V

Thank you!

