Antenna

awan
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 21.5 WLAN Antenna Test Report

ADVANCED-CONNECTEK INC.

Wireless Communications BU.

2023.02.20

ACON
ACON-HOLDING INC.

Executive Summary

- **Purpose**

  Antenna study for I-series 5.0 Value 21.5 . Result as following.

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

    Test Result : Antenna VSWR

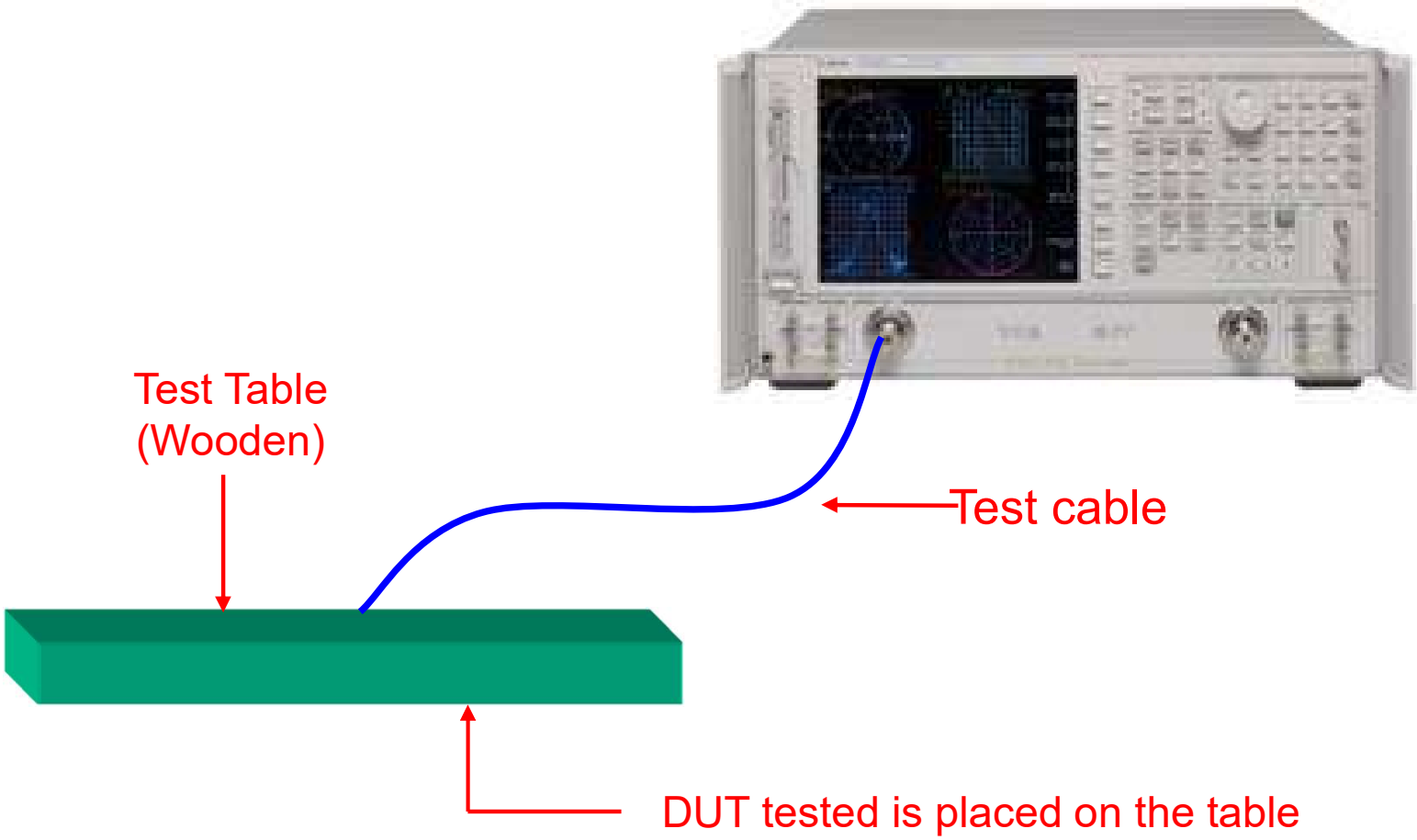
    Test Result : Antenna Efficiency & Peak Gain

    Test Result : Antenna 2D Radiation Patternn

Test Environment and Equipments

S-Parameter test

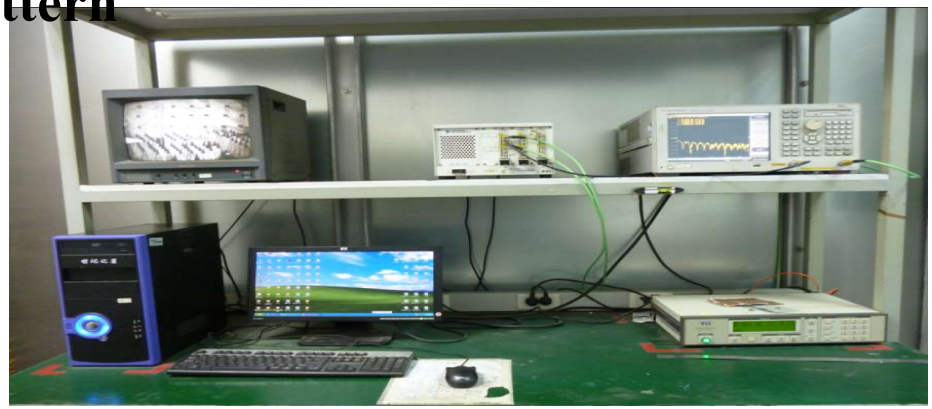
- Network Analyzer(Agilent-E5071C)
- Testing range from 9KHz to 8.5GHz

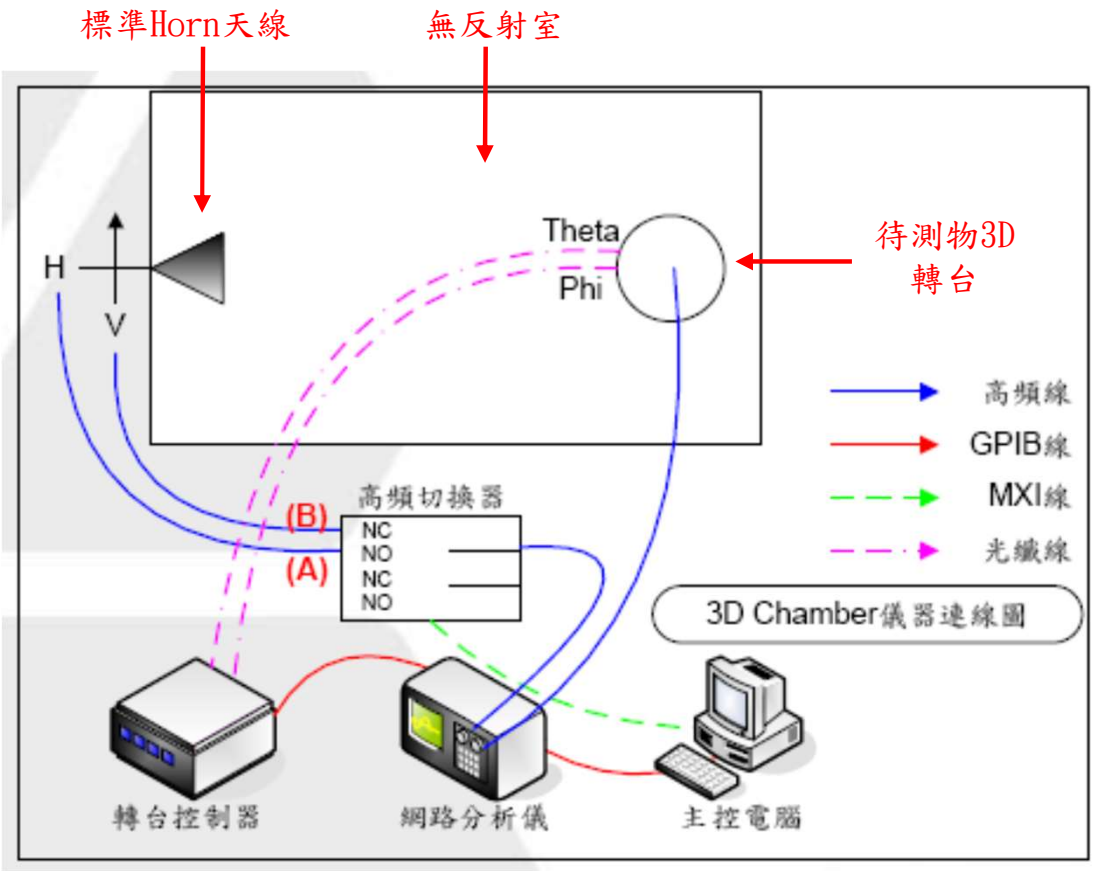


Test Environment and Equipments

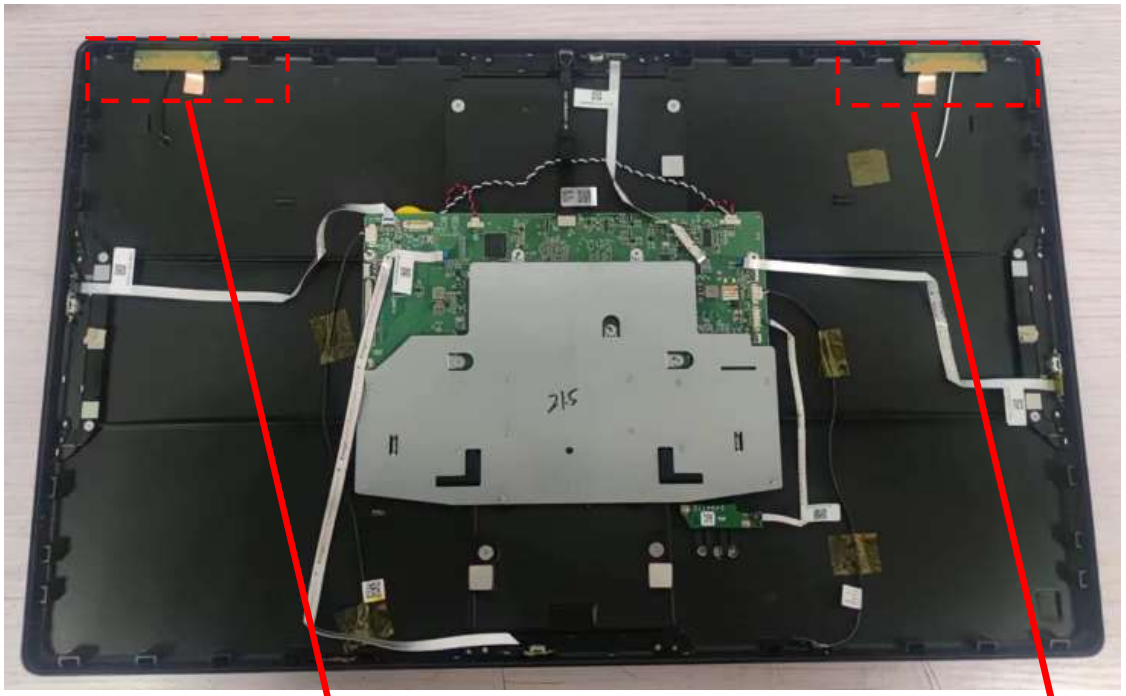
The Gain, Efficiency,Directivity and 2D/3D Pattern

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



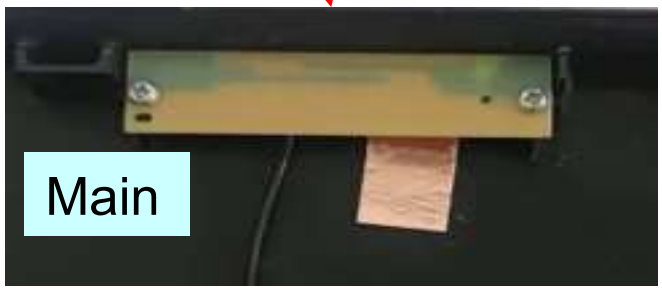


Antenna Positions and Dimensions

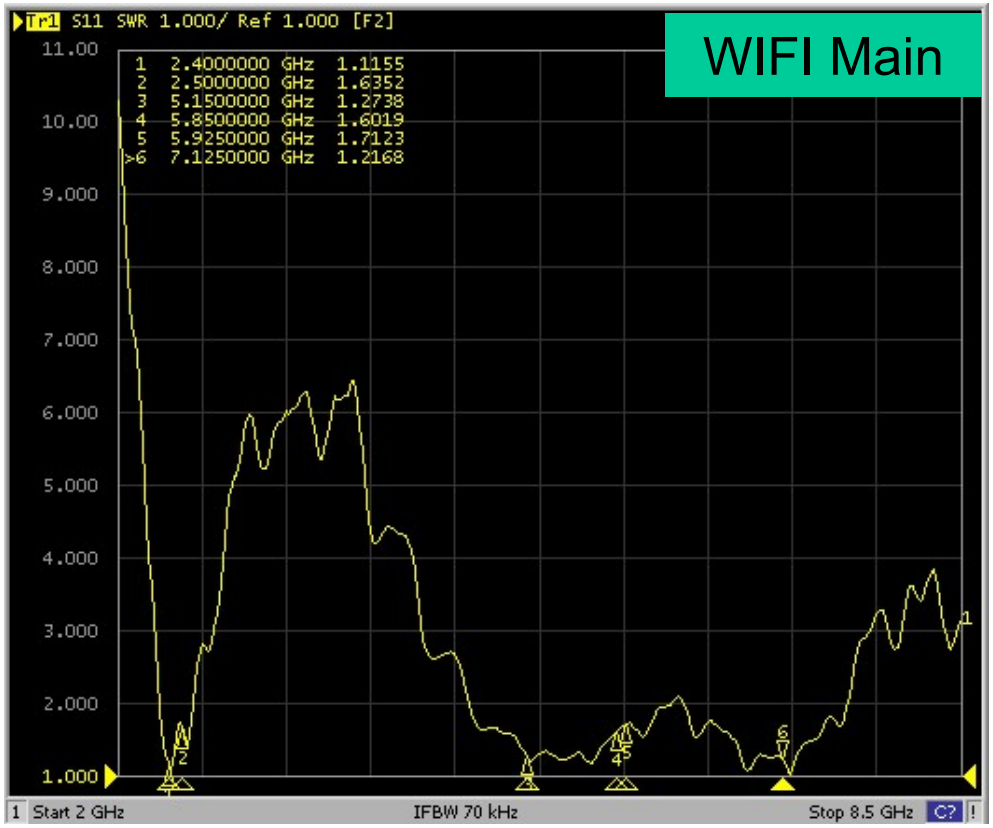


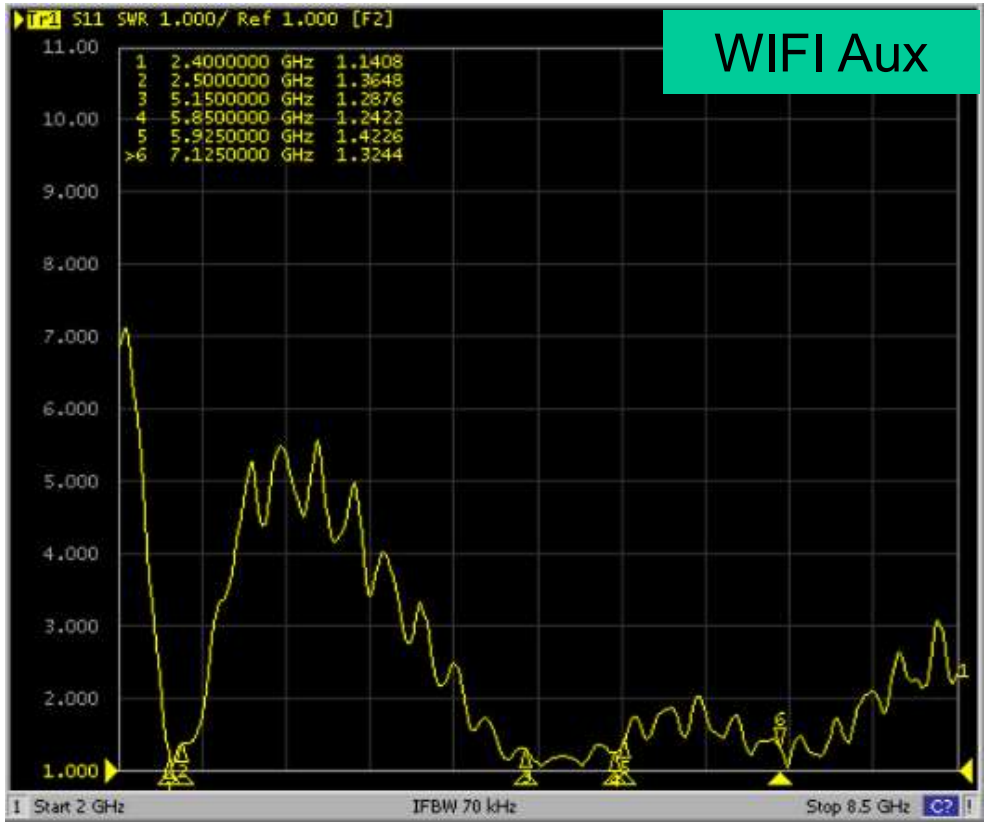
WIFI Main
Antenna Size：46mm*11mm*0.8mm
Cable Length： 220mm
Cable OD:1.37
銅箔尺寸：10mm*15.9mm

WIFI Aux
Antenna Size：46mm*11mm*0.8mm
Cable Length：355mm
Cable OD:1.37
銅箔尺寸：10mm*15.9mm



Test Result:Antenna VSWR





Test Result:Antenna Efficiency

Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-3.91	40.64	2.08
2450	-3.63	43.35	2.25
2500	-4.42	36.14	1.75
5150	-3.84	41.30	1.18
5250	-4.19	38.11	2.17
5350	-3.67	42.95	2.04
5470	-3.48	44.87	1.81
5600	-3.51	44.57	1.87
5725	-4.37	36.56	2.35
5750	-3.79	41.78	1.99
5785	-3.26	47.21	1.36
5800	-3.77	41.98	2.28
5850	-4.27	37.41	2.42

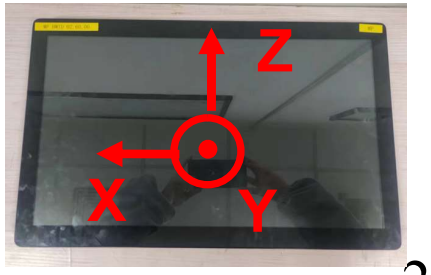
Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-4.12	38.73	1.30
6000	-3.76	42.07	2.58
6100	-3.63	43.35	1.13
6200	-3.91	40.64	2.30
6300	-3.82	41.50	1.41
6400	-3.43	45.39	2.05
6500	-3.62	43.45	1.65
6600	-3.66	43.05	1.36
6700	-4.15	38.46	2.47
6800	-3.77	41.98	2.25
6900	-3.79	41.78	1.74
7000	-4.15	38.46	2.01
7125	-3.59	43.75	2.25

Test Result:Antenna Efficiency

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-4.20	38.02	2.32
2450	-3.57	43.95	1.78
2500	-3.82	41.50	1.34
5150	-3.54	44.26	1.28
5250	-3.74	42.27	1.75
5350	-3.56	44.06	2.34
5470	-4.44	35.97	2.05
5600	-3.86	41.11	2.25
5725	-3.58	43.85	1.76
5750	-3.49	44.77	2.65
5785	-3.78	41.88	1.84
5800	-4.13	38.64	1.95
5850	-3.62	43.45	2.37

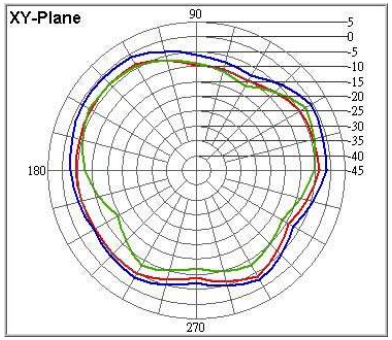
Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-3.82	41.50	1.58
6000	-4.35	36.73	2.30
6100	-3.92	40.55	2.07
6200	-3.54	44.26	2.36
6300	-3.97	40.09	1.96
6400	-4.35	36.73	1.22
6500	-3.19	47.97	1.82
6600	-4.27	37.41	2.38
6700	-3.79	41.78	2.14
6800	-3.83	41.40	1.45
6900	-3.82	41.50	2.28
7000	-3.66	43.05	1.88
7125	-3.70	42.66	1.43

Test Result:2D/3D Radiation Pattern MAIN



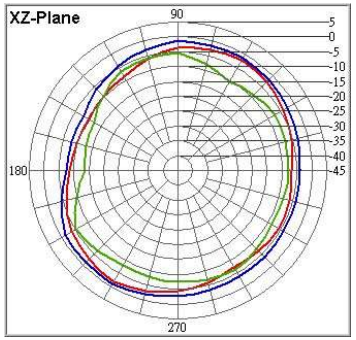
2400MHz

Y



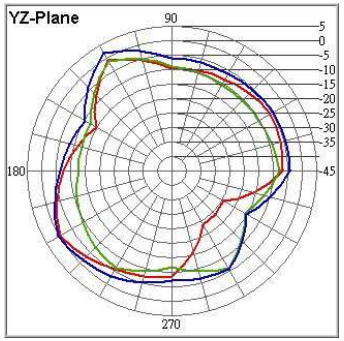
X

X



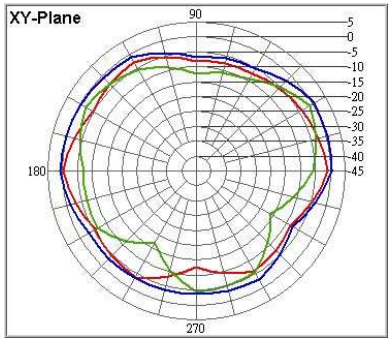
Z

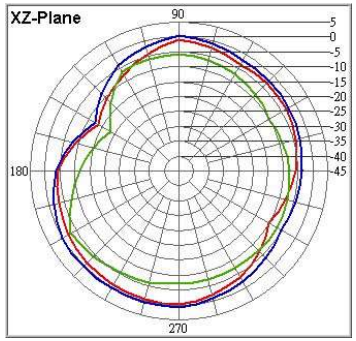
Y

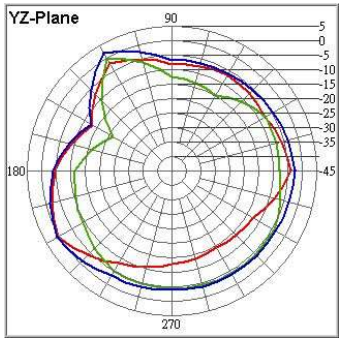


Z

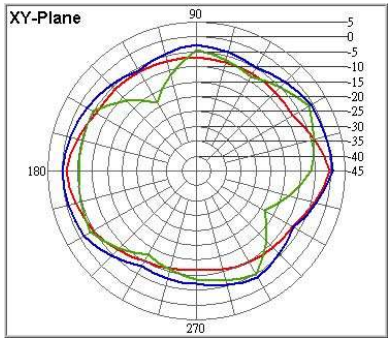
2450MHz

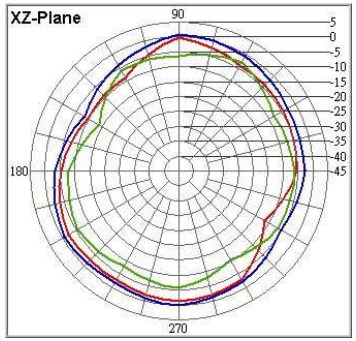


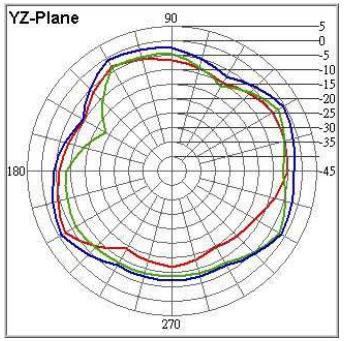




2500MHz

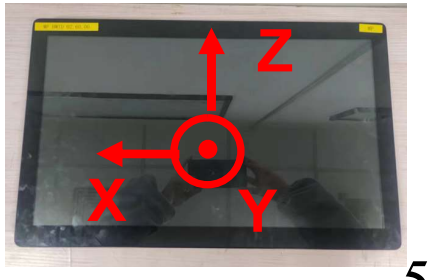






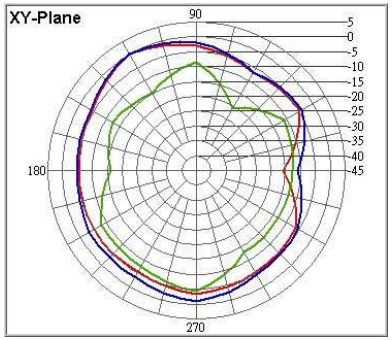
H-Pol V-Pol H+V

Test Result:2D/3D Radiation Pattern MAIN



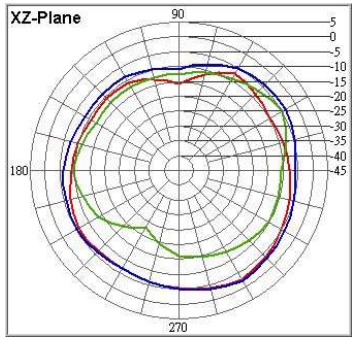
5150MHz

Y



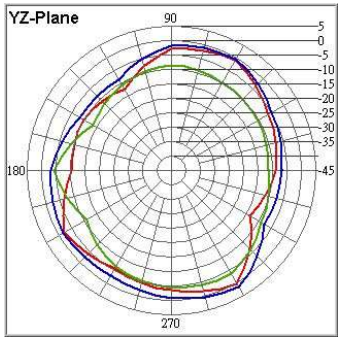
X

X



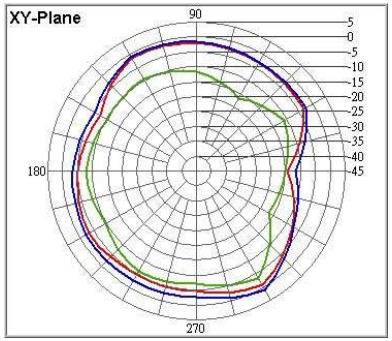
Z

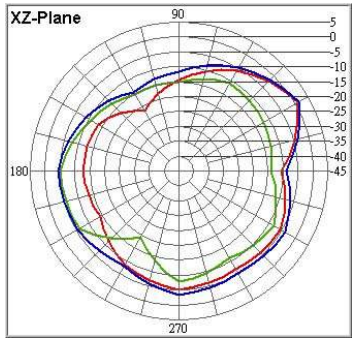
Y

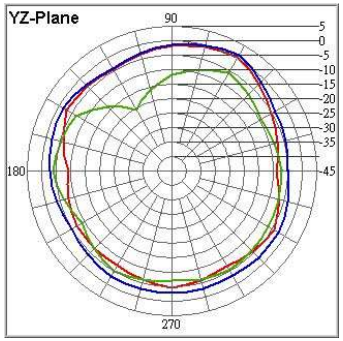


Z

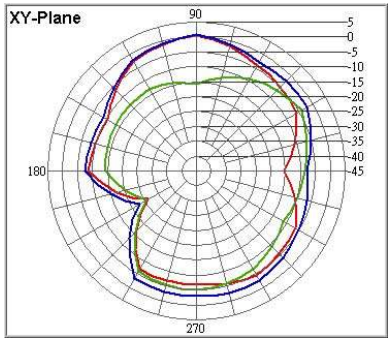
5470MHz

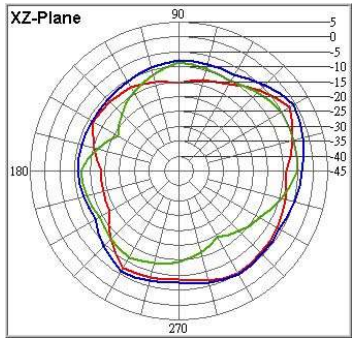


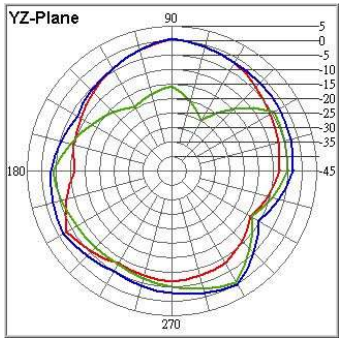




5850MHz

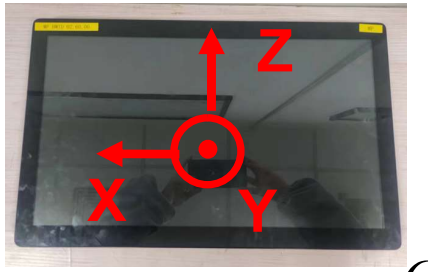






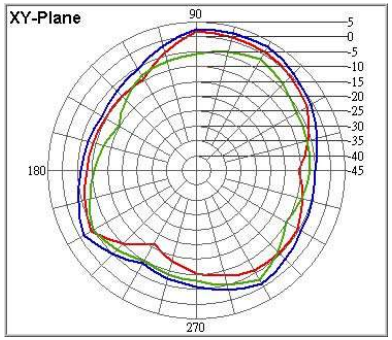
H-Pol V-Pol H+V

Test Result:2D/3D Radiation Pattern MAIN



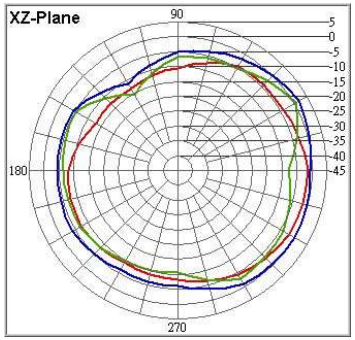
6100MHz

Y



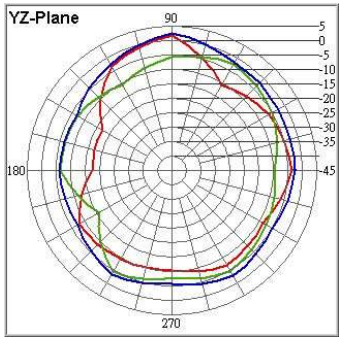
X

X



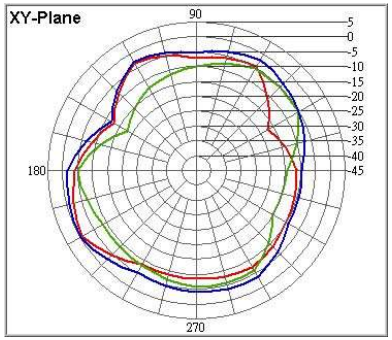
Z

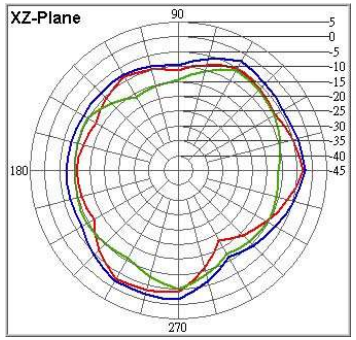
Y

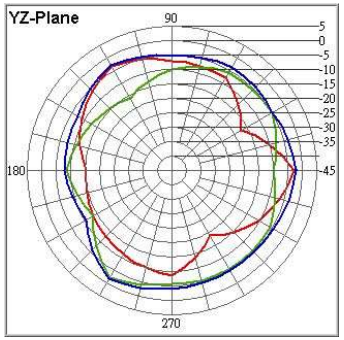


Z

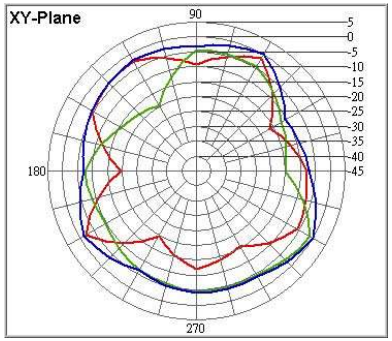
6500MHz

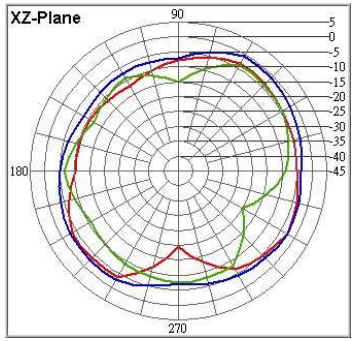


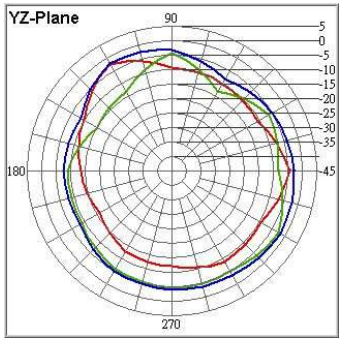




7125MHz

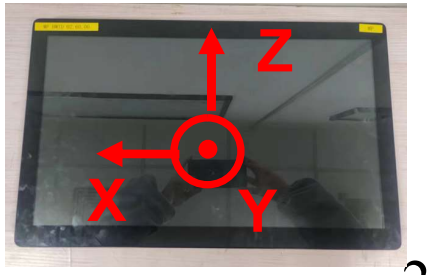






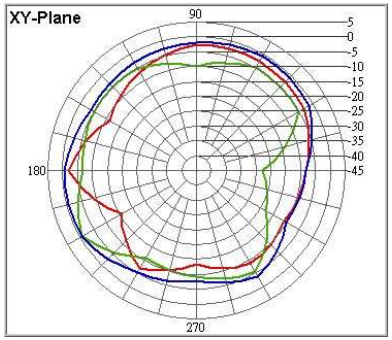
H-Pol V-Pol H+V

Test Result:2D/3D Radiation Pattern AUX



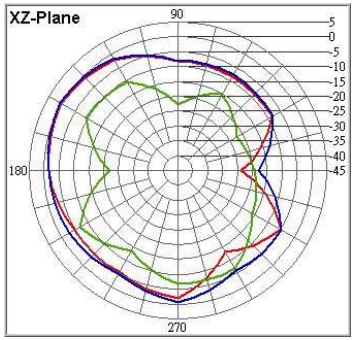
2400MHz

Y



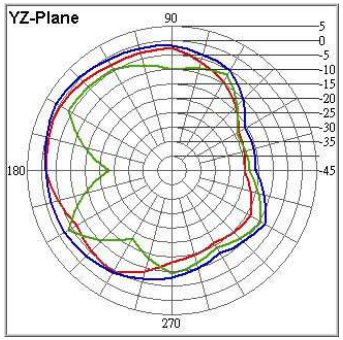
X

X



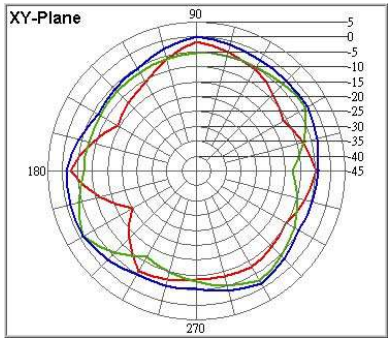
Z

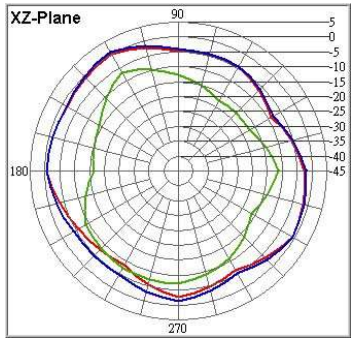
Y

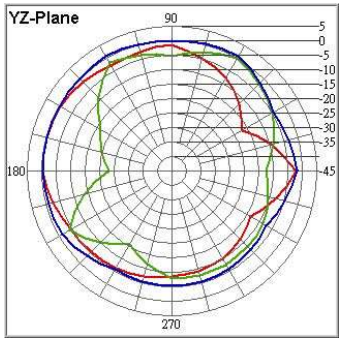


Z

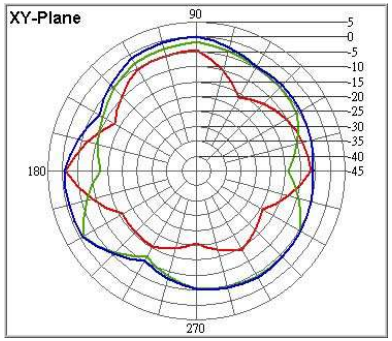
2450MHz

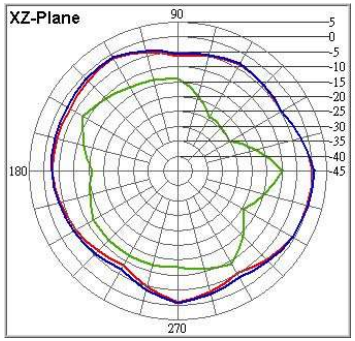


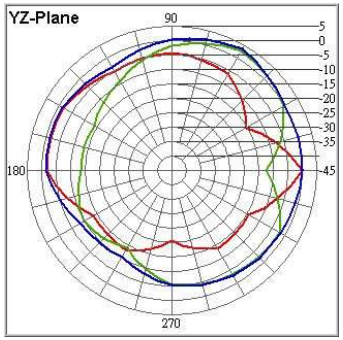




2500MHz



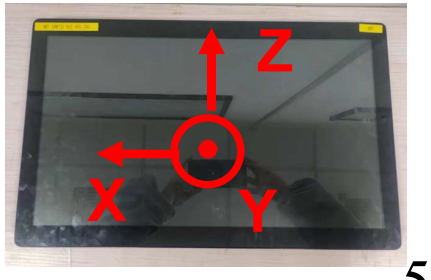




H-Pol V-Pol H+V

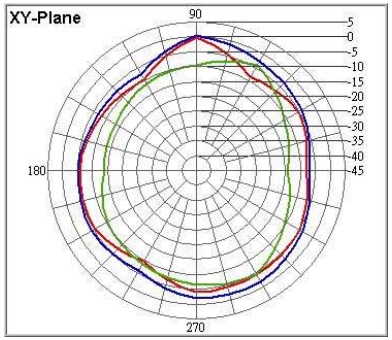
Test Result:2D/3D Radiation Pattern AUX

Advanced Wireless & Antenna Inc. | Advanced Wireless & Antenna Inc. | Advanced Wireless & Antenna Inc.



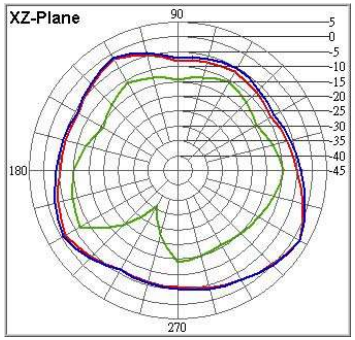
5150MHz

Y



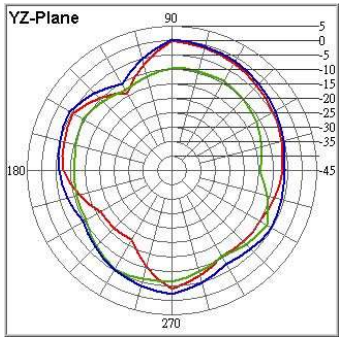
X

X



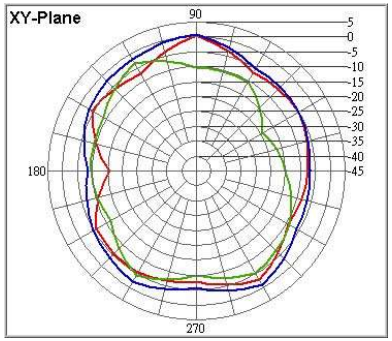
Z

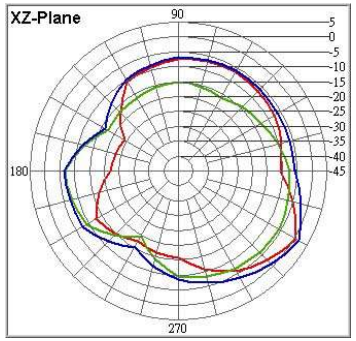
Y

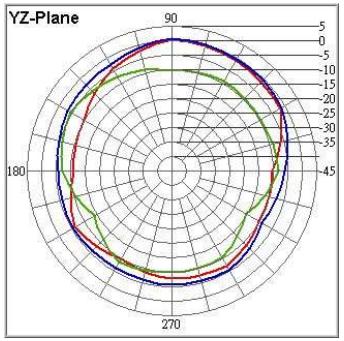


Z

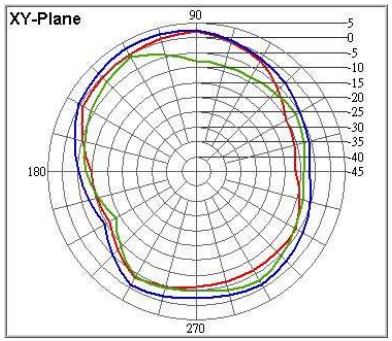
5470MHz

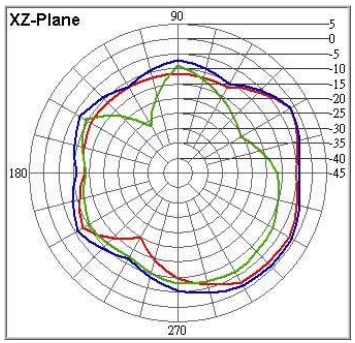


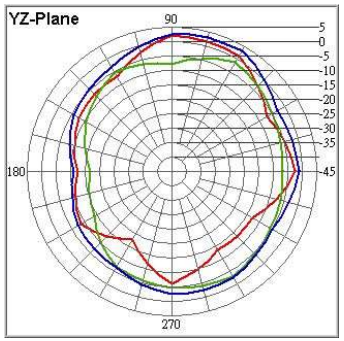




5850MHz







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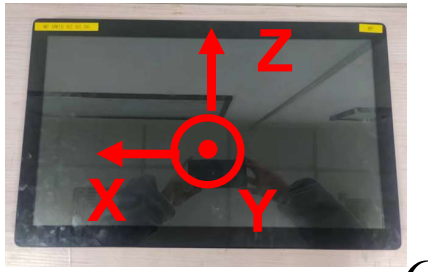
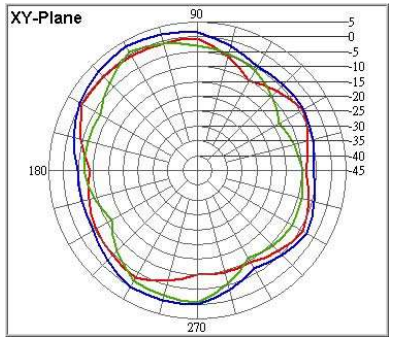
Test Result:2D/3D Radiation Pattern AUX



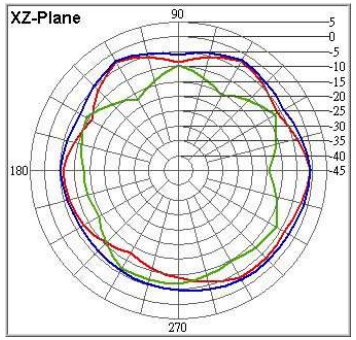
6100MHz

Y



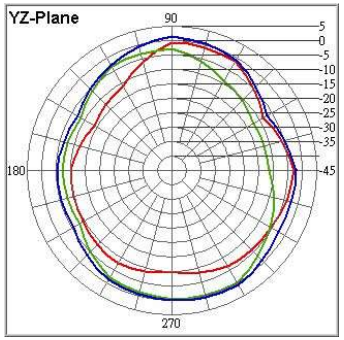
X

X



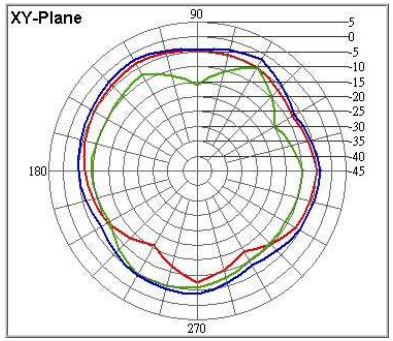
Z

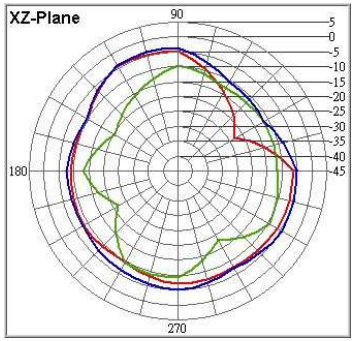
Y

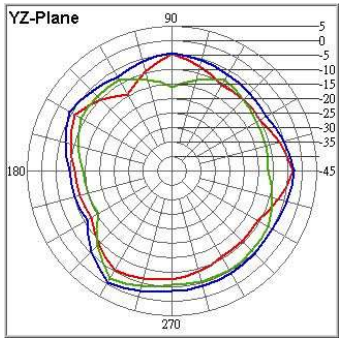


Z

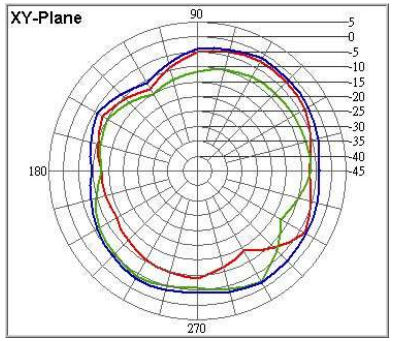
6500MHz

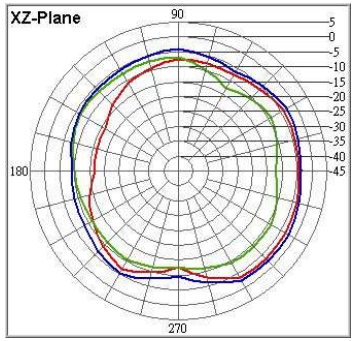


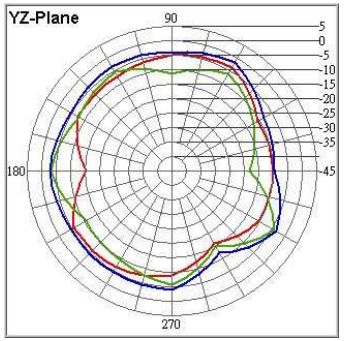




7125MHz







H-Pol V-Pol H+V

Thank you!