

Antenna

ELO WLAN Antenna Test Report

ADVANCED-CONNECTEK INC.

Wireless Communications BU.



Executive Summary

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

- **Purpose**

Antenna study for KDS 15.6. 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

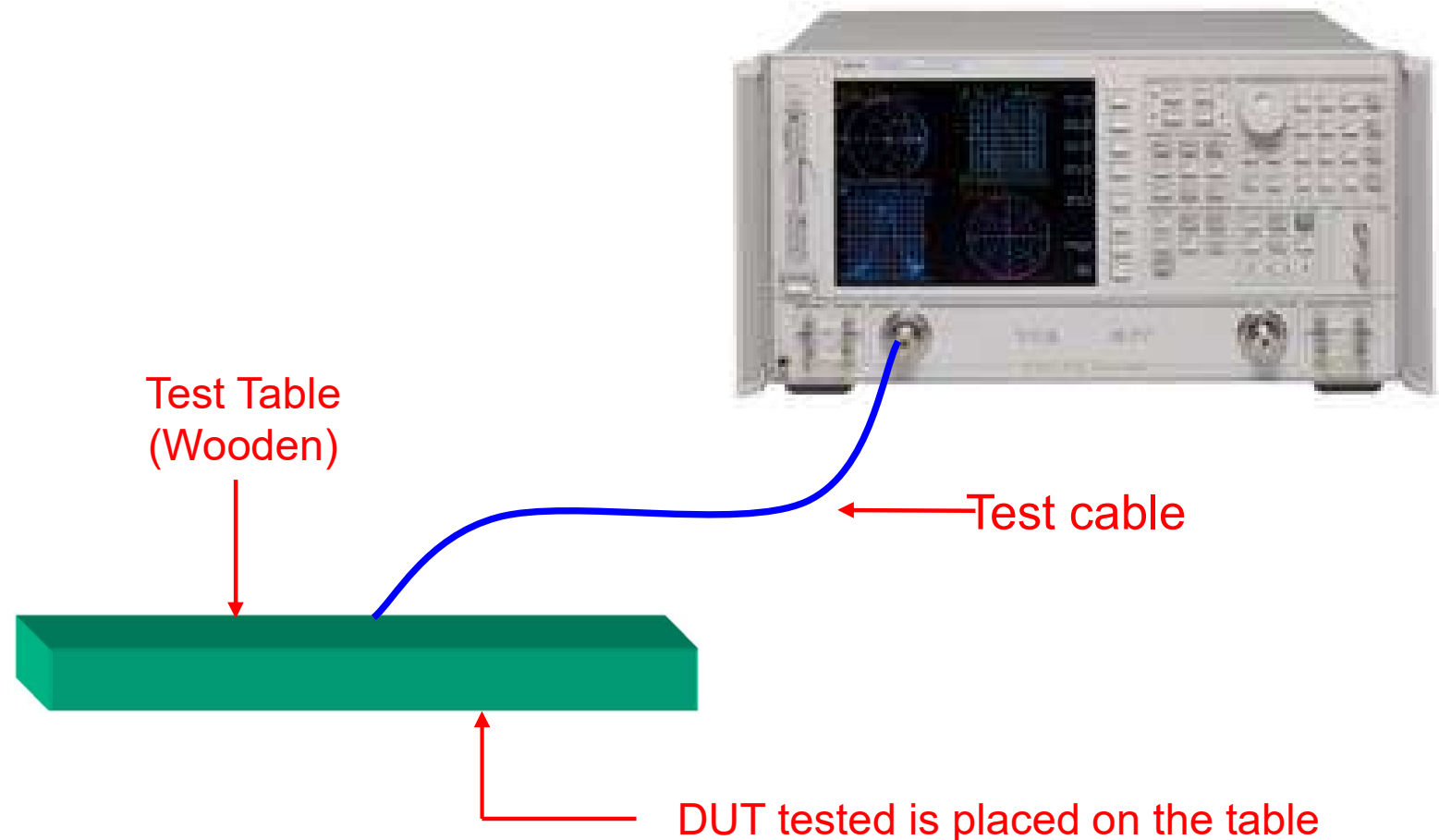
Advanced Wireless & Antenna Inc.

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

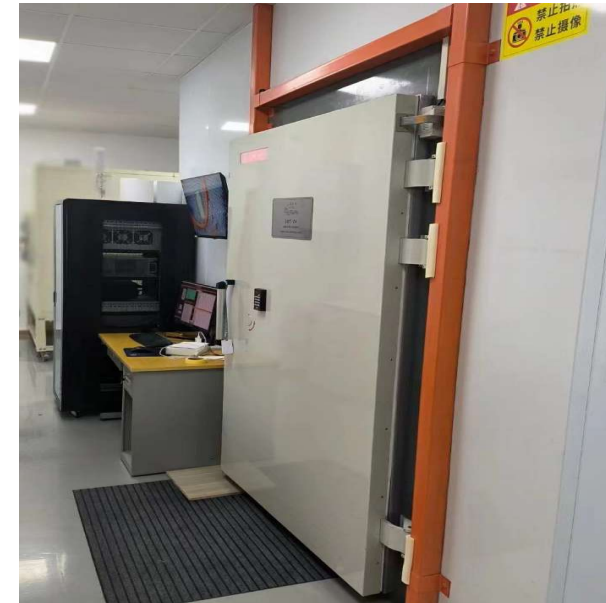
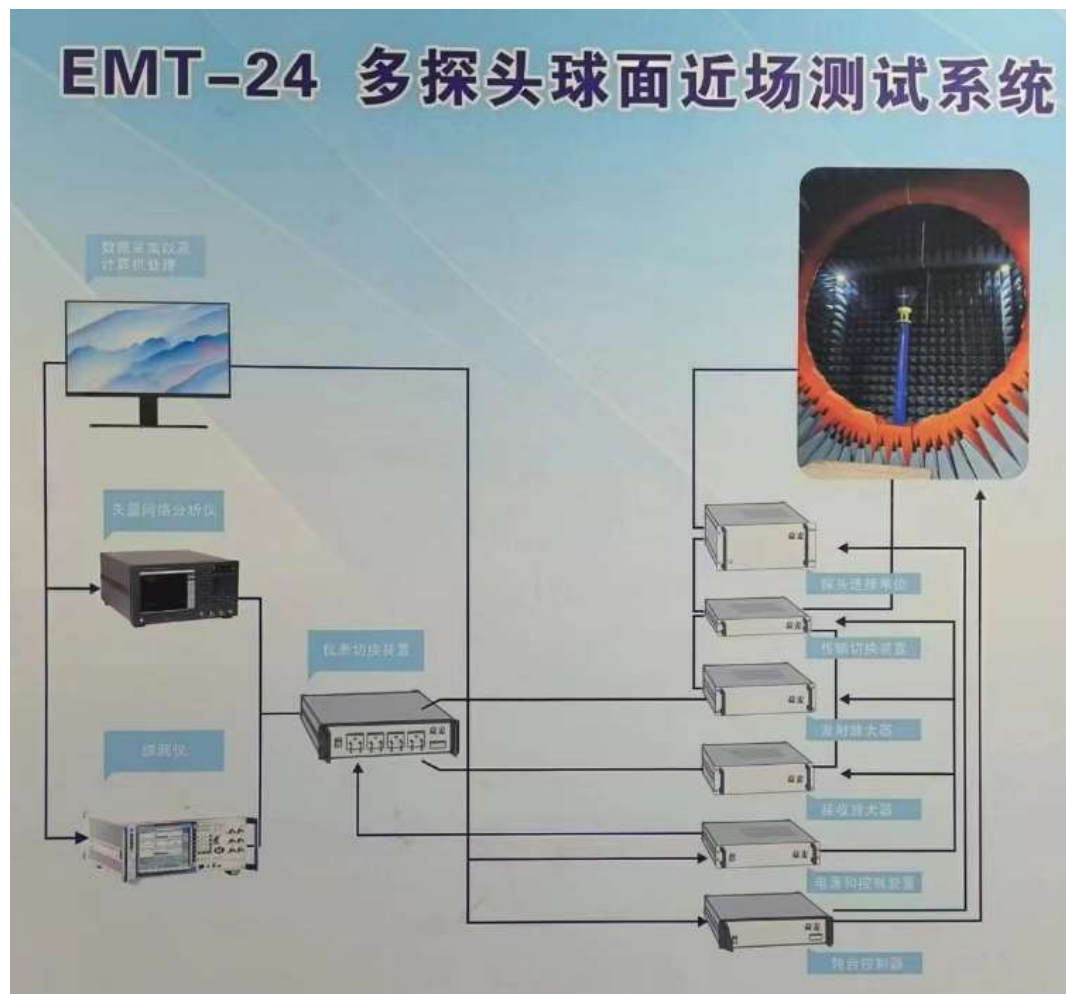
Advanced Wireless & Antenna Inc.

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=4*4*4 M

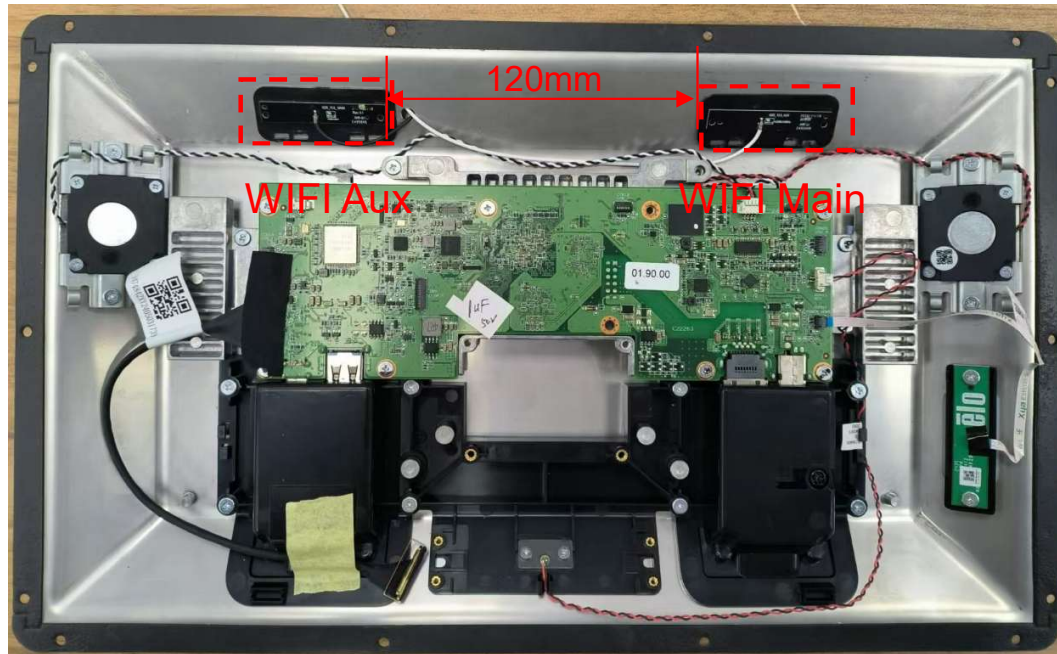


Antenna Positions and Dimensions

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.



WIFI Aux

Antenna Size : 46*7.5*0.8mm

Cable Length : 50mm

WIFI Main

Antenna Size : 46*7.5*0.8mm

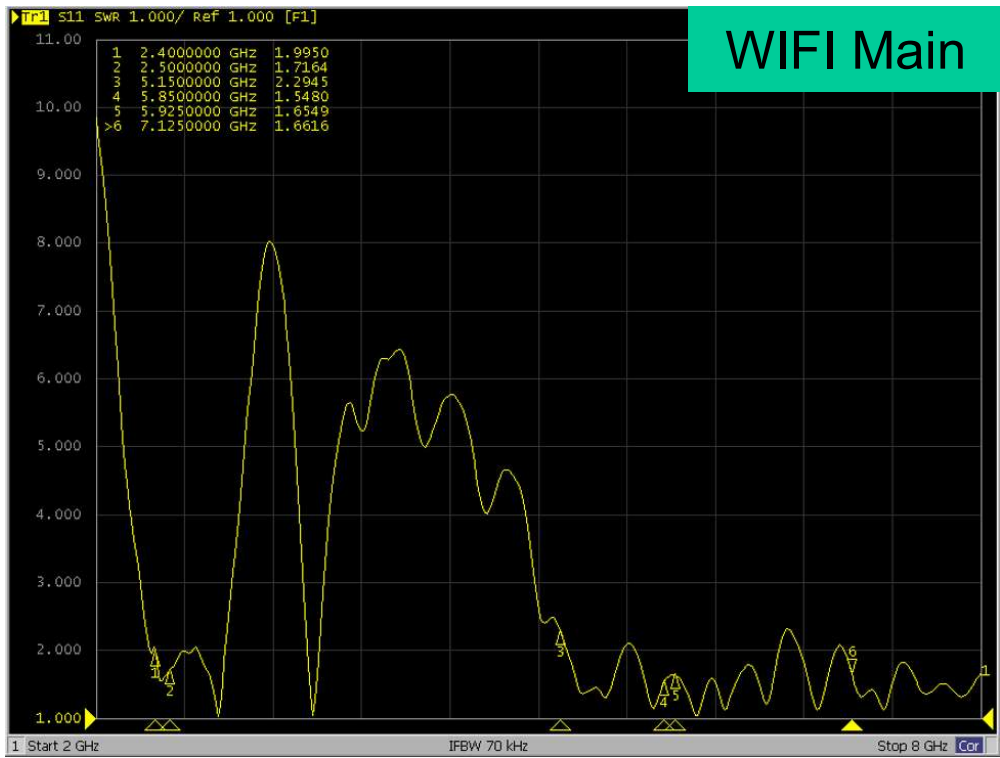
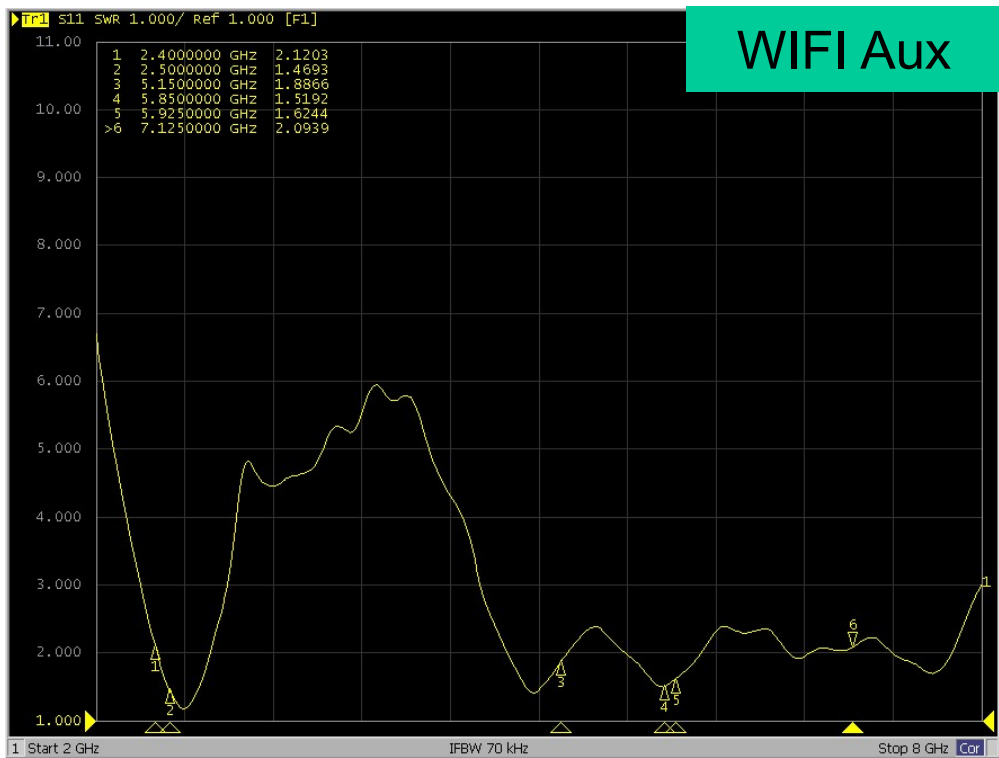
Cable Length : 230mm

Test Result: Antenna VSWR

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.



Test Result:Antenna Efficiency &Peak Gain

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-5.18	30.34	1.18
2450	-5.07	31.12	1.05
2500	-4.89	32.43	1.37
5150	-4.44	35.97	1.78
5250	-4.32	36.98	2.03
5350	-4.56	34.99	2.20
5470	-4.32	36.98	2.02
5600	-4.28	37.33	1.92
5725	-4.22	37.84	2.05
5750	-3.92	40.55	1.88
5785	-4.02	39.63	1.90
5800	-3.89	40.83	2.02
5850	-4.15	38.46	2.07

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-4.17	38.28	2.13
6025	-4.52	35.32	1.65
6125	-4.24	37.67	1.97
6225	-4.68	34.04	2.36
6325	-4.52	35.32	2.52
6425	-4.50	35.48	1.75
6525	-5.01	31.55	2.04
6625	-5.04	31.33	1.60
6725	-4.55	35.08	1.23
6825	-4.62	34.51	1.57
6925	-4.36	36.64	1.29
7025	-4.92	32.21	1.51
7125	-4.63	34.43	1.88

Test Result:Antenna Efficiency &Peak Gain

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-5.12	30.76	1.45
2450	-5.06	31.19	1.03
2500	-4.91	32.28	1.19
5150	-4.58	34.83	1.65
5250	-4.38	36.48	1.01
5350	-4.63	34.43	1.17
5470	-4.33	36.90	1.95
5600	-4.28	37.33	2.08
5725	-4.12	38.73	1.73
5750	-3.99	39.90	2.01
5785	-4.15	38.46	1.98
5800	-4.50	35.48	1.59
5850	-4.58	34.83	1.43

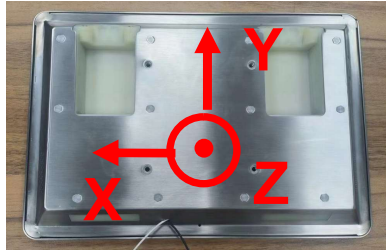
Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-4.82	32.96	1.43
6025	-4.98	31.77	1.65
6125	-5.09	30.97	1.69
6225	-5.02	31.48	1.50
6325	-5.03	31.41	1.44
6425	-4.83	32.89	1.48
6525	-4.93	32.14	1.13
6625	-4.88	32.51	1.41
6725	-4.15	38.46	1.29
6825	-4.77	33.34	1.54
6925	-4.94	32.06	1.21
7025	-4.90	32.36	1.45
7125	-4.91	32.28	1.27

Test Result: 2D/3D Radiation Pattern AUX

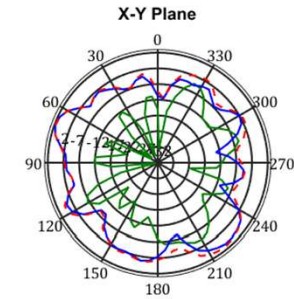
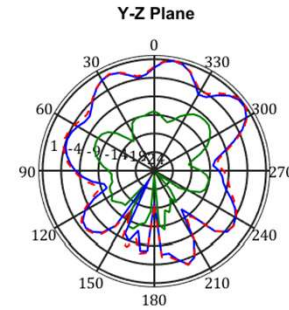
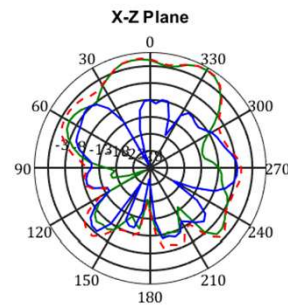
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

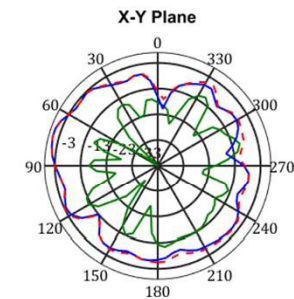
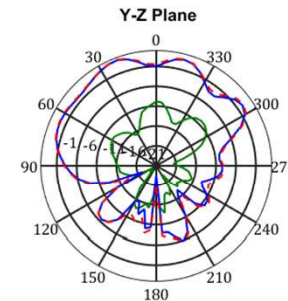
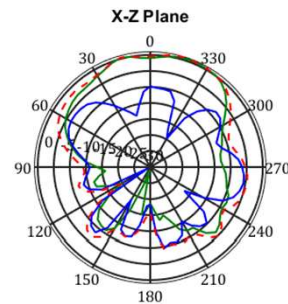


2400 MHz



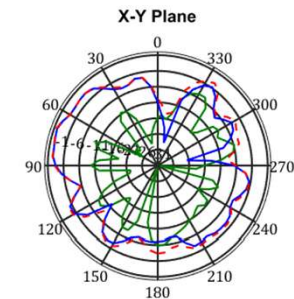
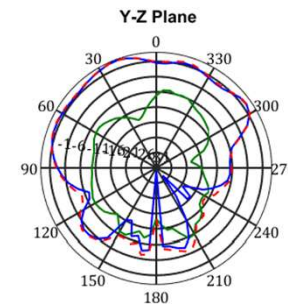
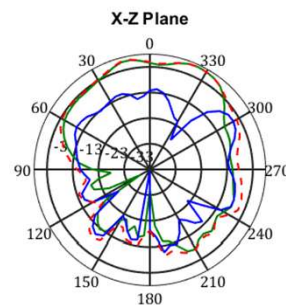
— E_h
— E_v
- - - E_{total}

2450 MHz



— E_h
— E_v
- - - E_{total}

2500 MHz



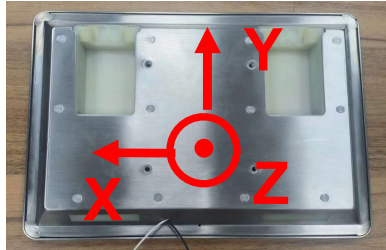
— E_h
— E_v
- - - E_{total}

Test Result: 2D/3D Radiation Pattern AUX

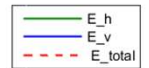
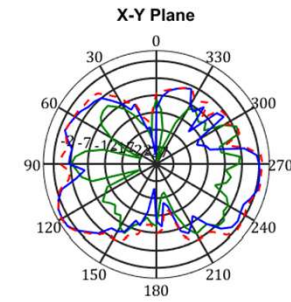
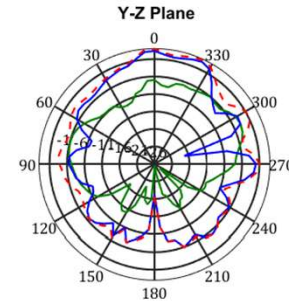
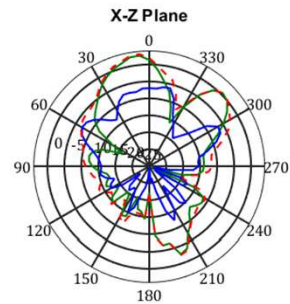
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

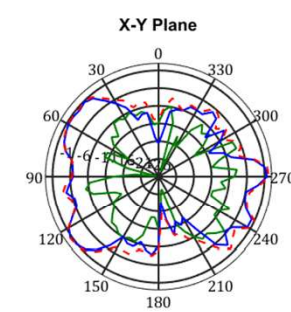
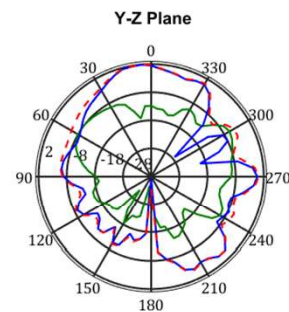
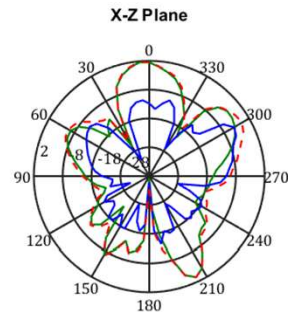
Advanced Wireless & Antenna Inc.



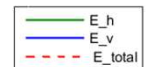
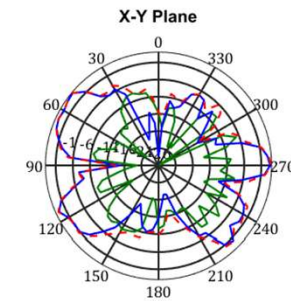
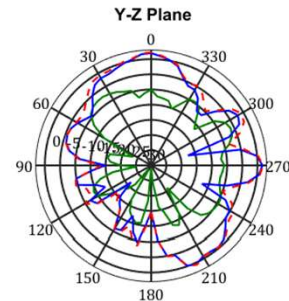
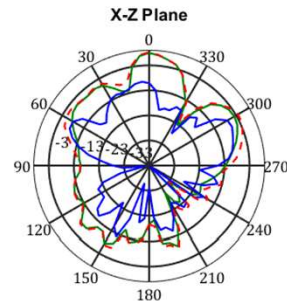
5150 MHz



5470 MHz



5850 MHz

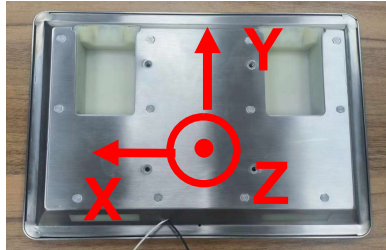


Test Result: 2D/3D Radiation Pattern AUX

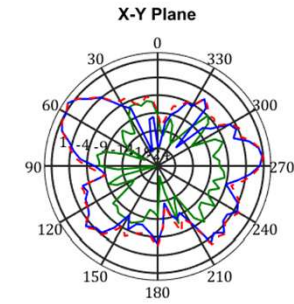
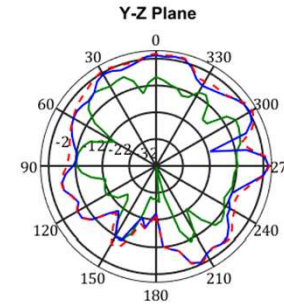
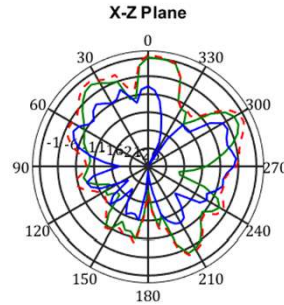
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

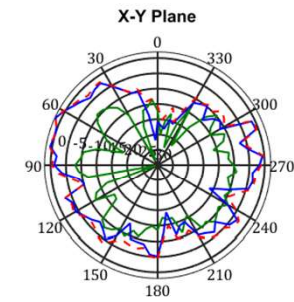
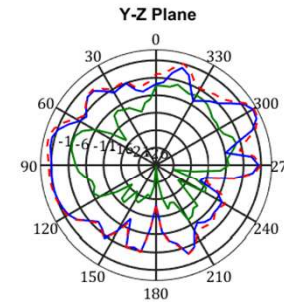
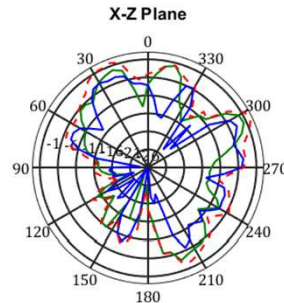


6125 MHz



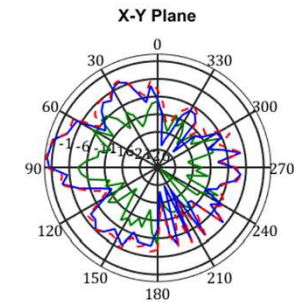
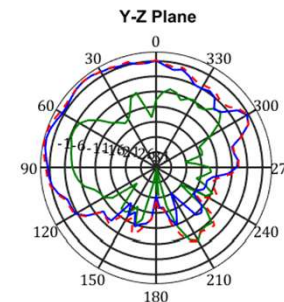
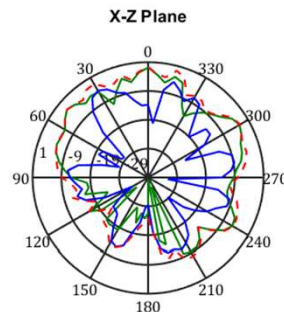
— E_h
— E_v
- - E_{total}

6525 MHz



— E_h
— E_v
- - E_{total}

7125 MHz



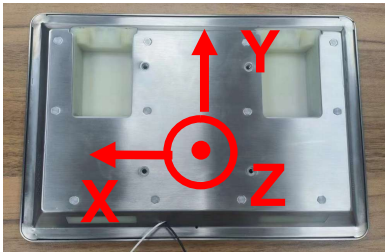
— E_h
— E_v
- - E_{total}

Test Result:2D/3D Radiation Pattern MAIN

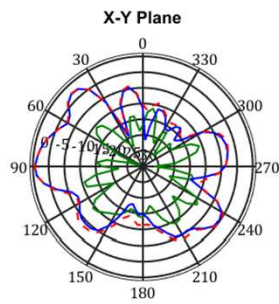
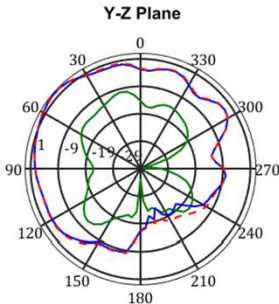
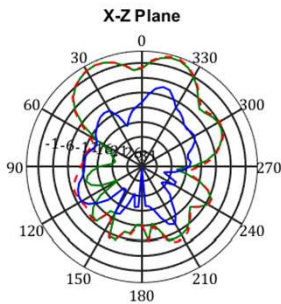
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

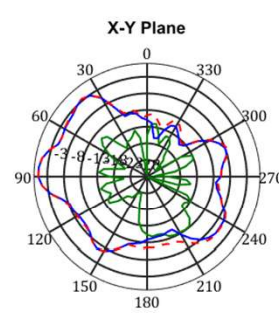
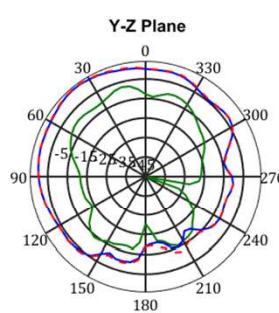
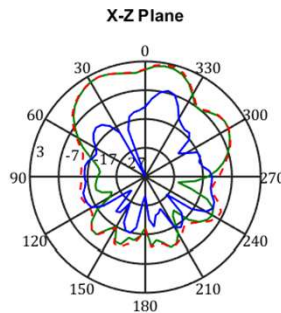


2400 MHz



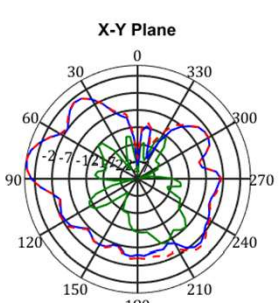
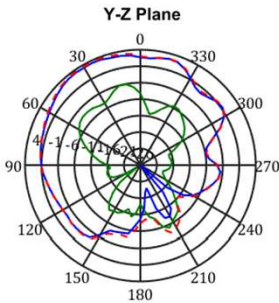
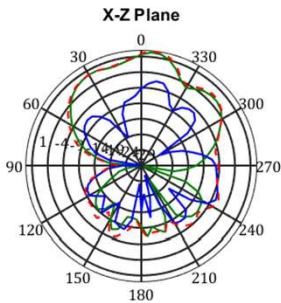
— E_h
— E_v
- - E_{total}

2450 MHz



— E_h
— E_v
- - E_{total}

2500 MHz



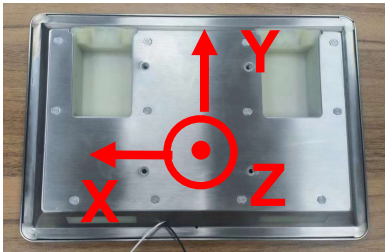
— E_h
— E_v
- - E_{total}

Test Result:2D/3D Radiation Pattern MAIN

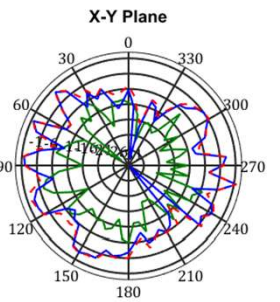
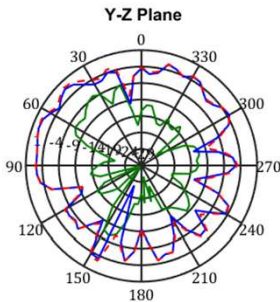
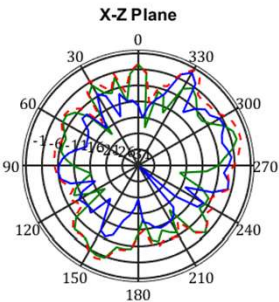
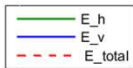
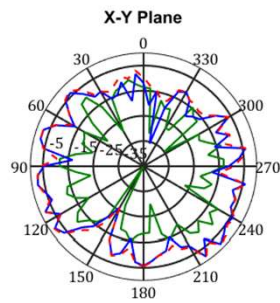
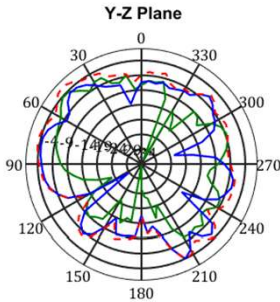
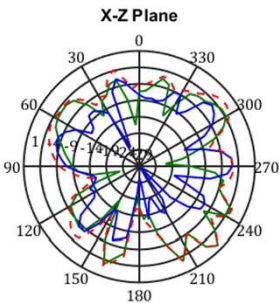
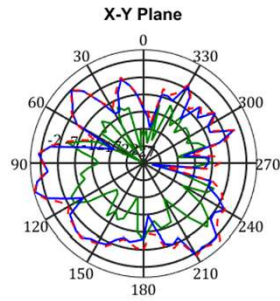
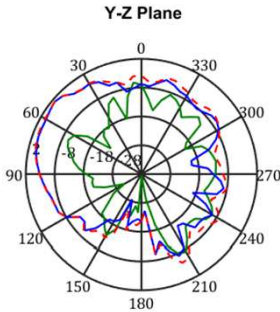
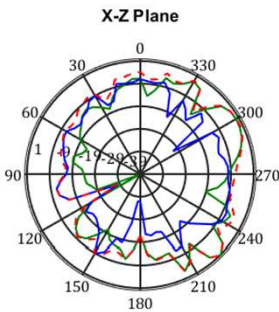
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.



5150 MHz



5470 MHz

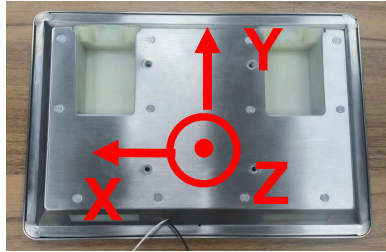
5850 MHz

Test Result:2D/3D Radiation Pattern MAIN

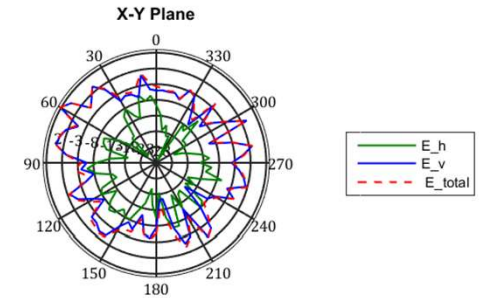
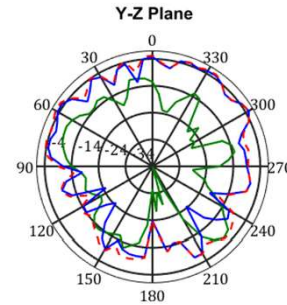
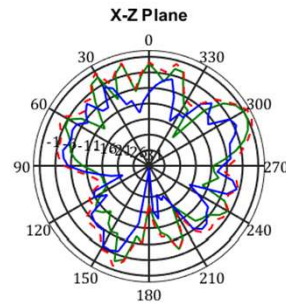
Advanced Wireless & Antenna Inc.

Advanced Wireless & Antenna Inc.

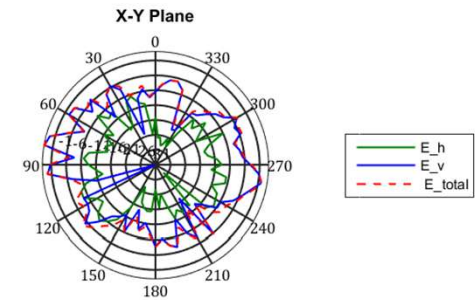
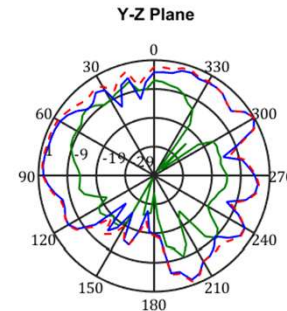
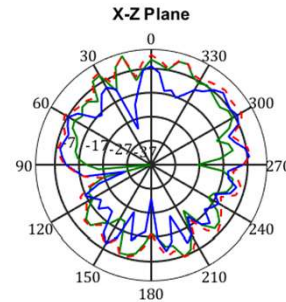
Advanced Wireless & Antenna Inc.



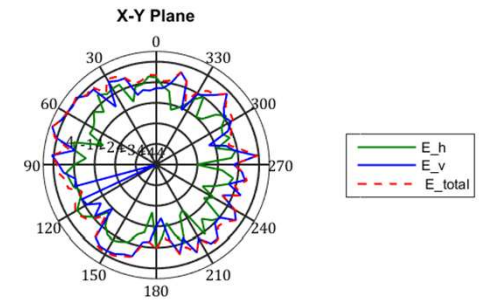
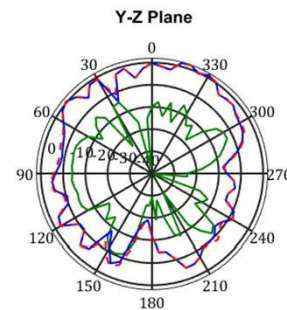
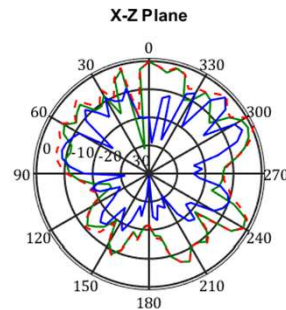
6125 MHz



6525 MHz



7125 MHz



Thank you!

