

Antenna

ELO WLAN Antenna Test Report

ADVANCED-CONNECTEK INC.

Wireless Communications BU.

2023.02.08



Executive Summary

Advanced Wireless & Antenna Inc.

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- **Purpose**

Antenna study for I-series 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

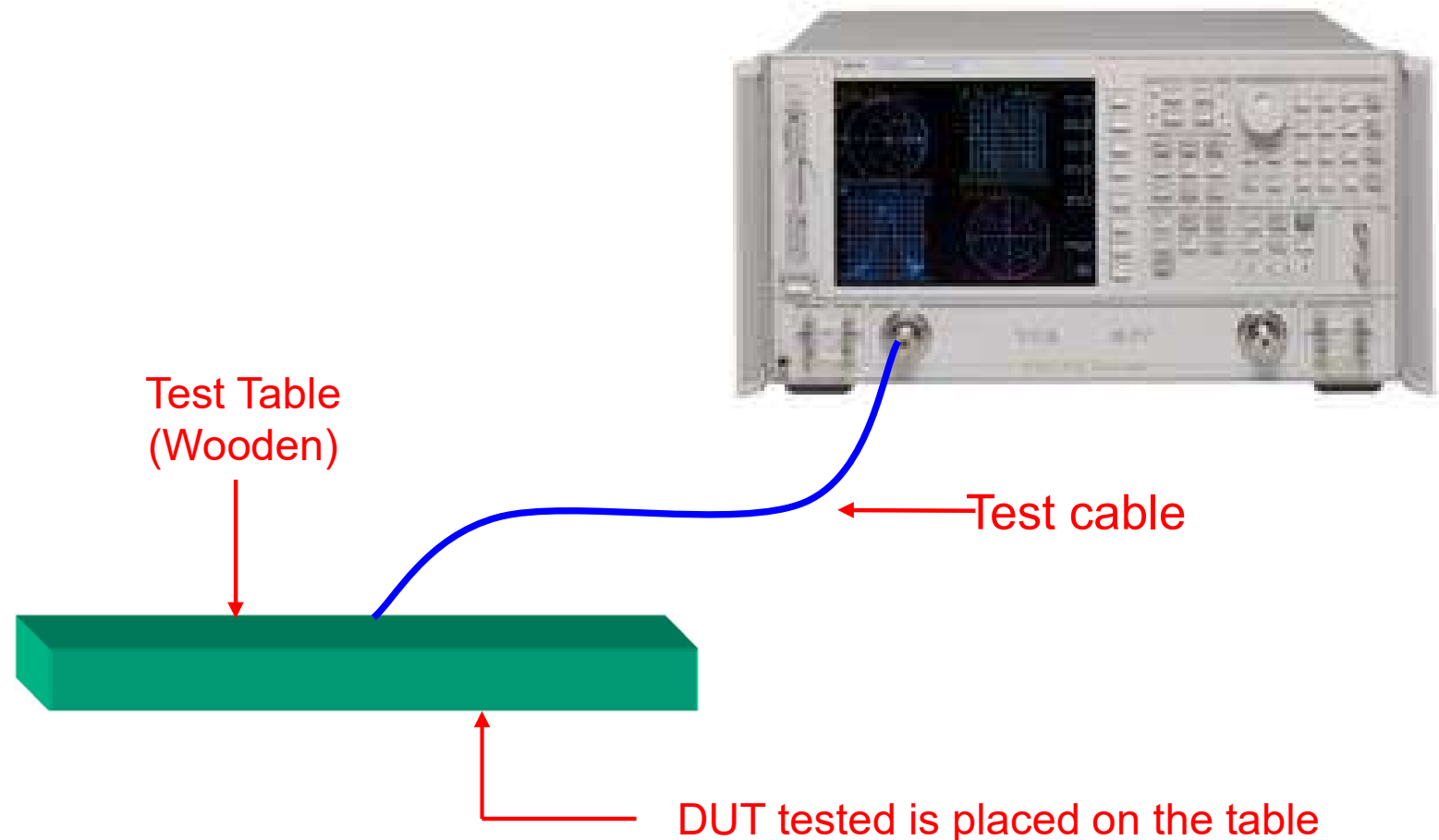
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S-Parameter test

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



Test Environment and Equipments

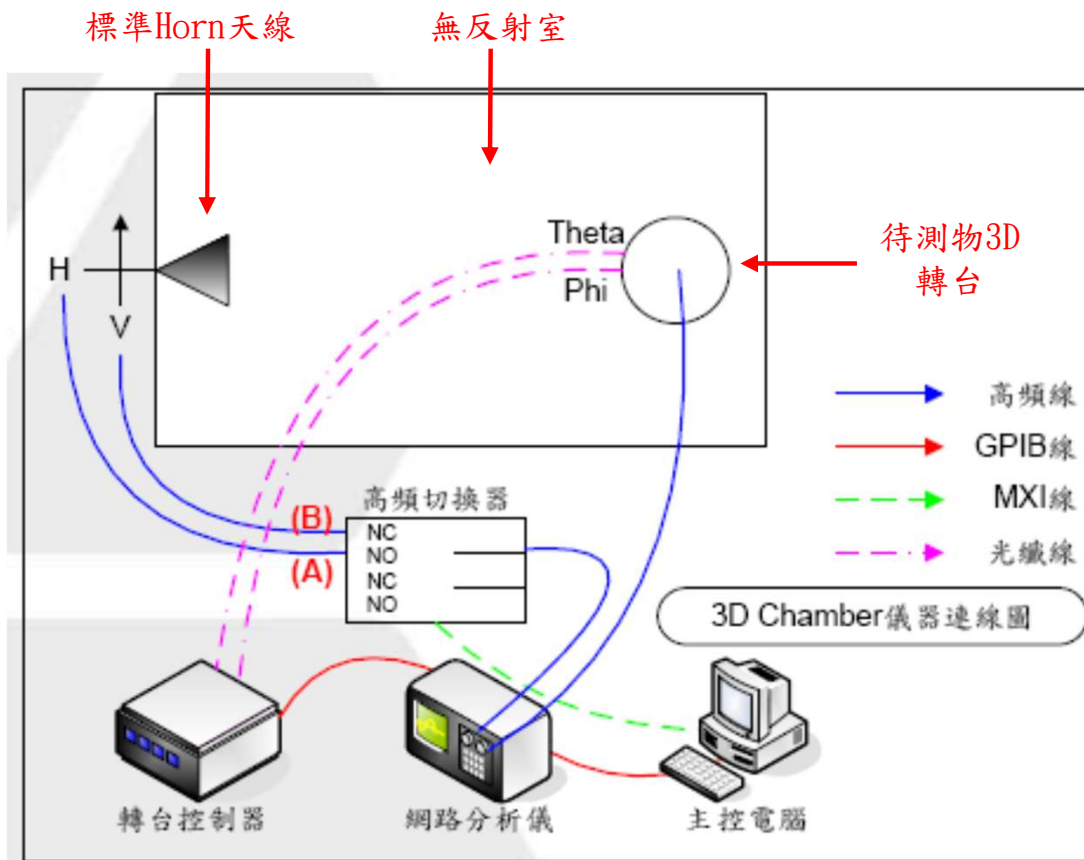
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The Gain, Efficiency, Directivity and 2D/3D Pattern

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

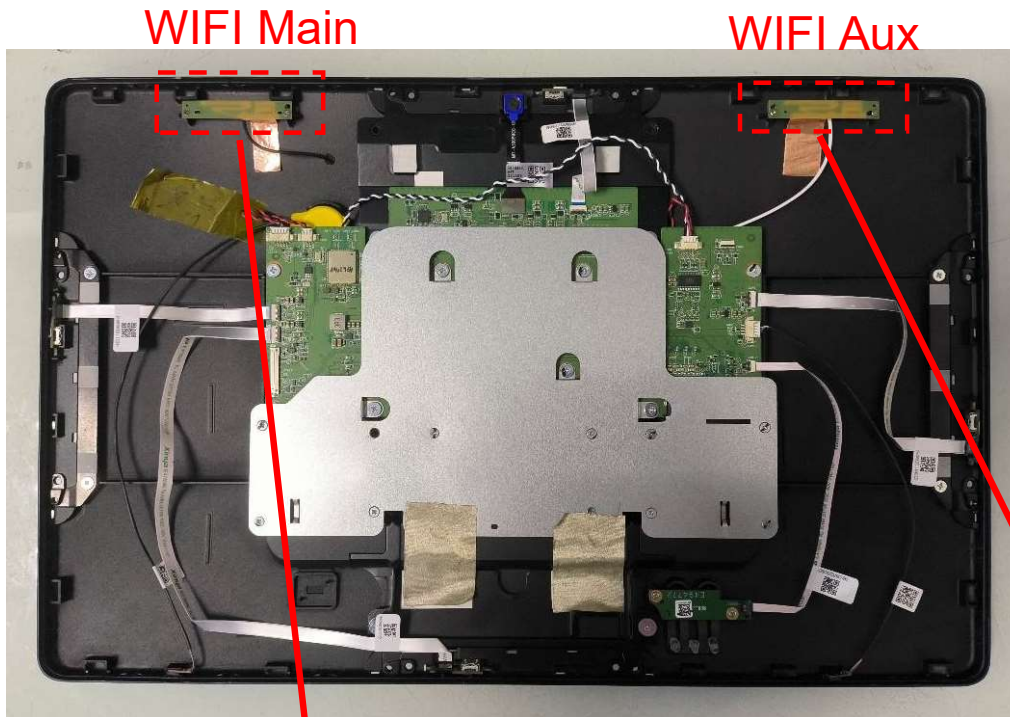


Antenna Positions and Dimensions

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WIFI Main

Antenna Size : 46*7.5*0.8mm

Cable Length : 105mm

Cable OD:1.37

銅箔尺寸：13*25mm

WIFI Aux

Antenna Size : 46*7.5*0.8mm

Cable Length : 295mm

Cable OD:1.37

銅箔尺寸：15*25mm

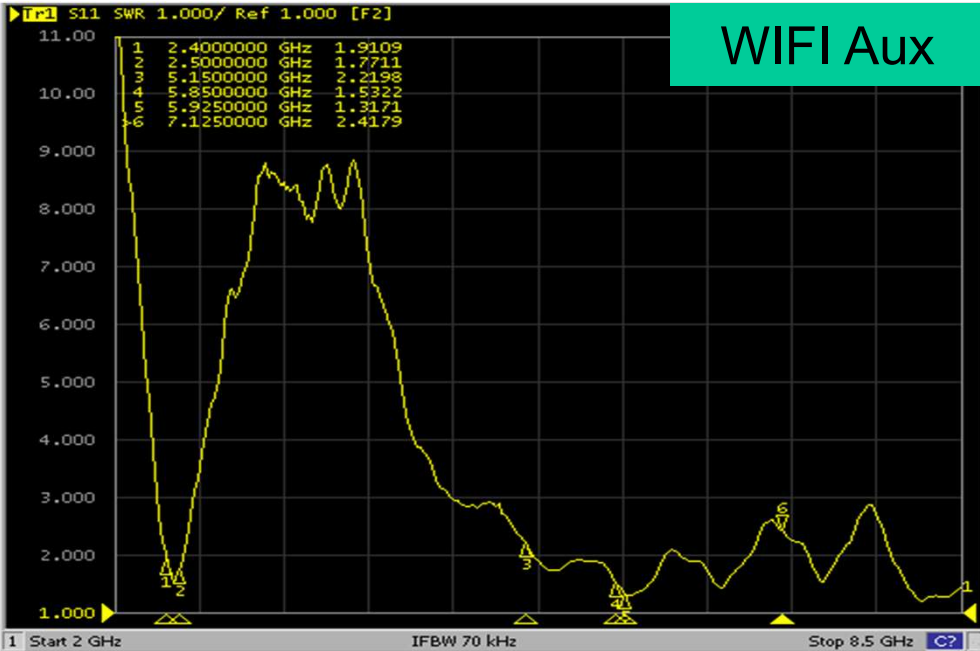
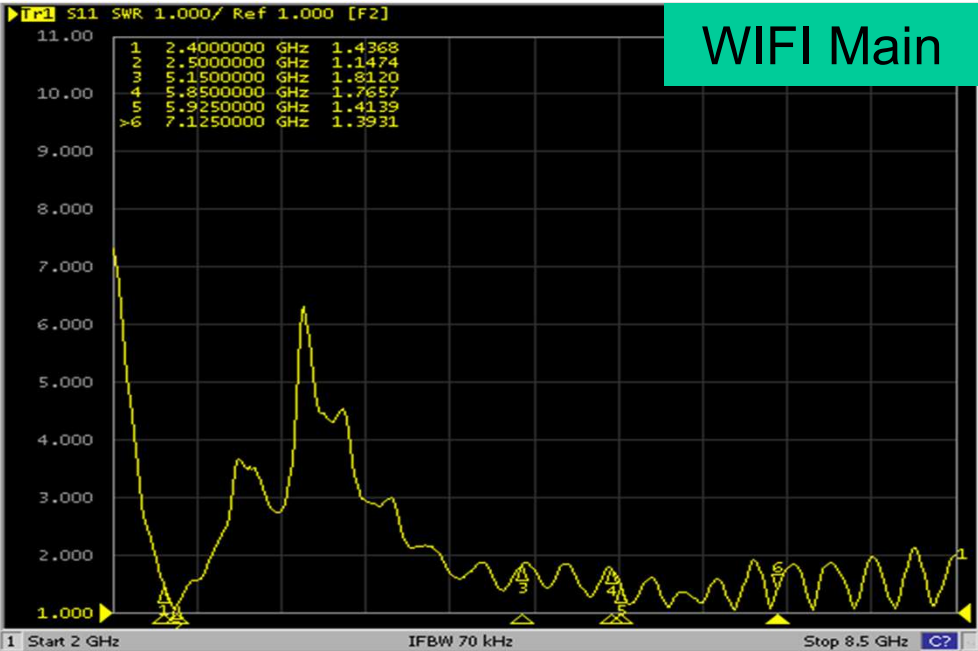


Test Result:Antenna VSWR

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Test Result:Antenna Efficiency

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Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-2.26	59.43	2.42
2450	-2.61	54.83	2.03
2500	-2.55	55.59	2.35
5150	-2.47	56.62	2.17
5250	-3.02	49.89	2.65
5350	-2.85	51.88	2.69
5470	-2.59	55.08	2.44
5600	-2.88	51.52	2.57
5725	-3.31	46.67	2.79
5750	-2.74	53.21	2.43
5785	-2.89	51.40	2.03
5800	-3.03	49.77	1.27
5850	-2.26	59.43	1.82

Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-2.62	54.70	2.21
6000	-2.79	52.60	2.48
6100	-2.62	54.70	2.32
6200	-3.11	48.87	2.41
6300	-3.26	47.21	1.85
6400	-2.95	50.70	2.31
6500	-2.86	51.76	1.68
6600	-3.14	48.53	2.44
6700	-2.62	54.70	1.73
6800	-3.34	46.34	2.07
6900	-2.90	51.29	1.89
7000	-3.21	47.75	2.19
7125	-2.76	52.97	2.44

Test Result:Antenna Efficiency

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Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-2.72	53.46	1.99
2450	-3.15	48.42	2.31
2500	-2.58	55.21	2.72
5150	-3.58	43.85	2.44
5250	-2.85	51.88	1.55
5350	-3.52	44.46	1.86
5470	-2.89	51.40	2.43
5600	-3.29	46.88	2.83
5725	-3.33	46.45	2.33
5750	-3.62	43.45	2.47
5785	-3.04	49.66	2.04
5800	-2.62	54.70	2.63
5850	-2.72	53.46	1.44

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-2.77	52.84	2.21
6000	-3.27	47.10	2.04
6100	-2.83	52.12	2.32
6200	-3.52	44.46	2.53
6300	-2.69	53.83	1.54
6400	-2.37	57.94	1.77
6500	-3.52	44.46	2.42
6600	-3.44	45.29	2.41
6700	-2.68	53.95	1.99
6800	-3.62	43.45	1.65
6900	-3.16	48.31	2.20
7000	-2.58	55.21	2.59
7125	-3.23	47.53	1.64

Test Result:2D/3D Radiation Pattern MAIN

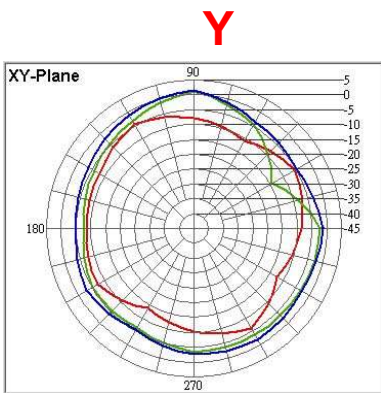
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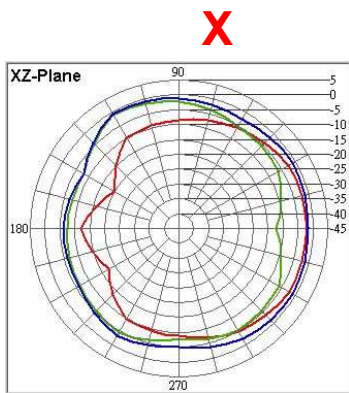
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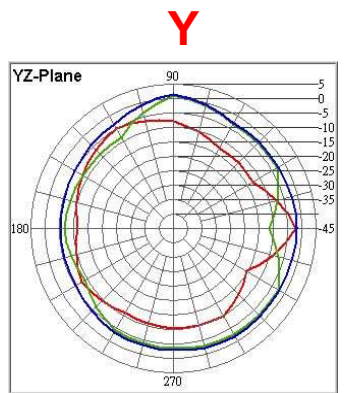
2400MHz



X

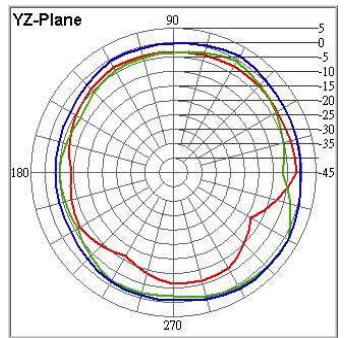
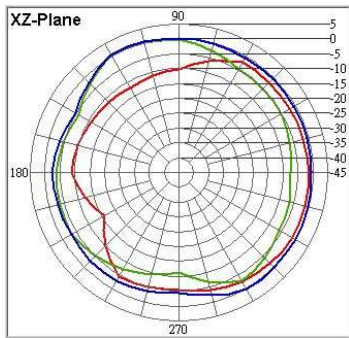
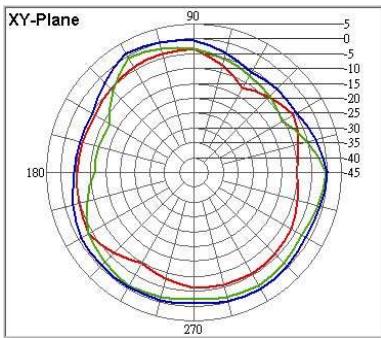


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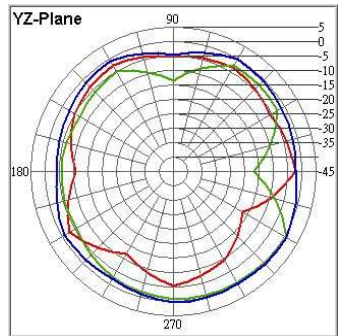
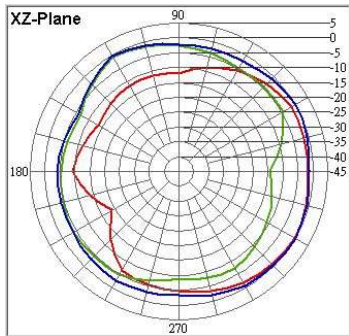
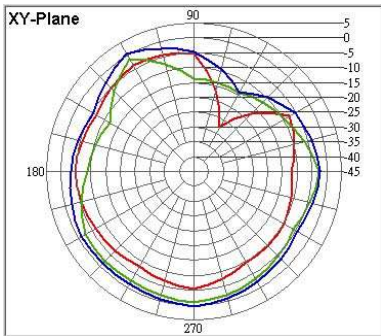


Z

2450MHz



2500MHz



— H-Pol

— V-Pol

— H+V

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Test Result:2D/3D Radiation Pattern MAIN

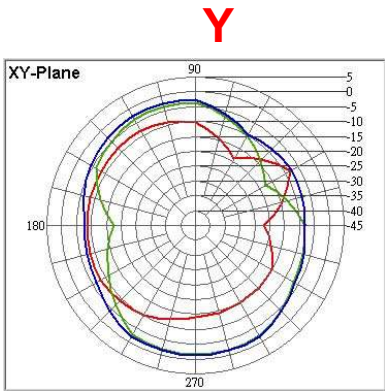
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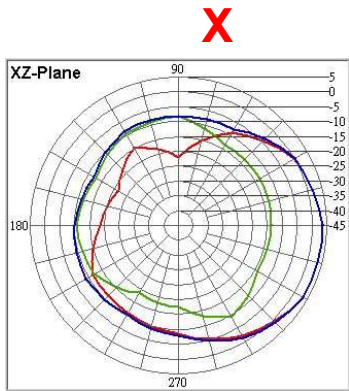
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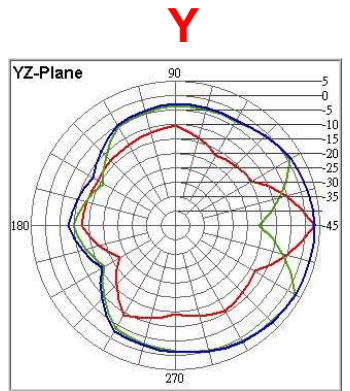
5150MHz



X

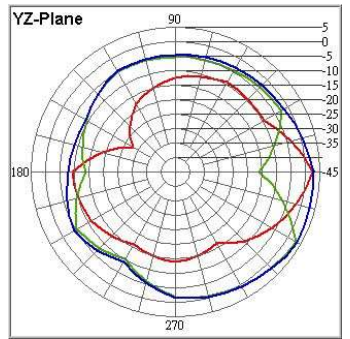
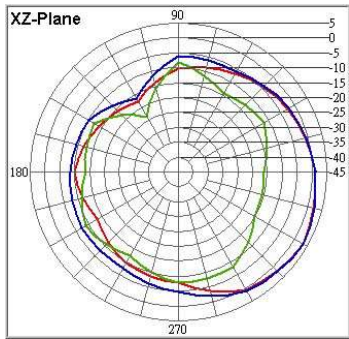
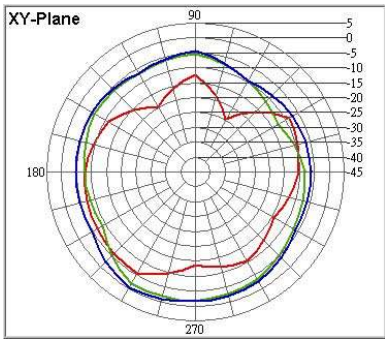


Z

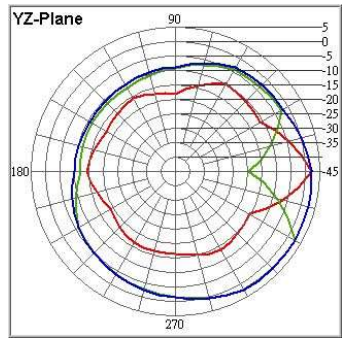
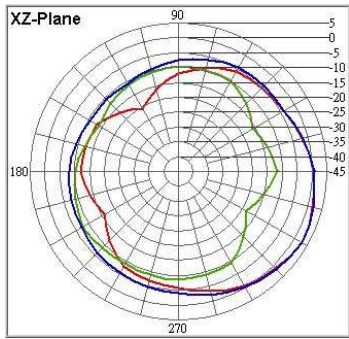
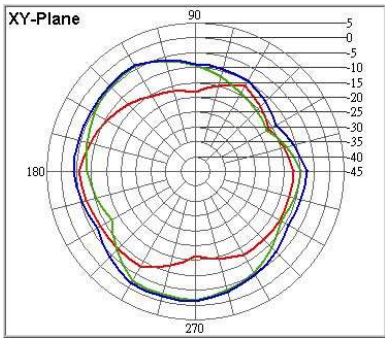


Z

5470MHz



5850MHz



— H-Pol

— V-Pol

— H+V

Test Result: 2D/3D Radiation Pattern MAIN

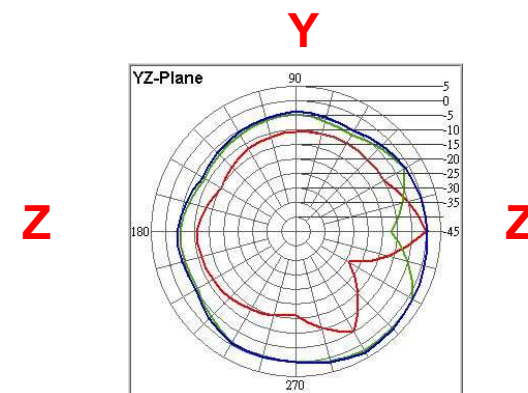
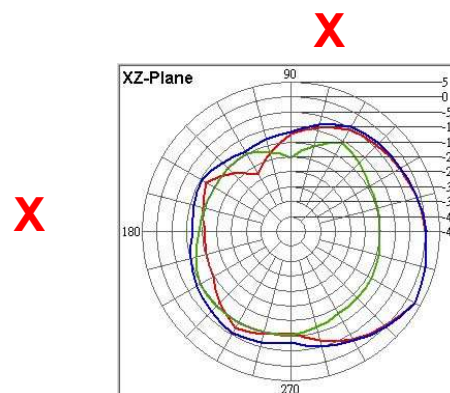
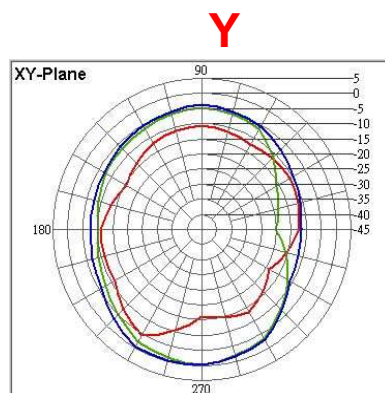
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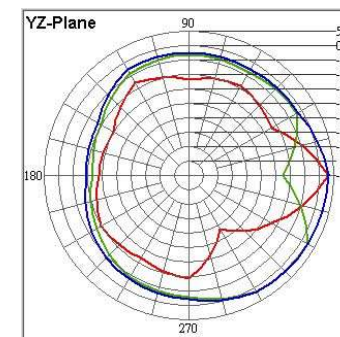
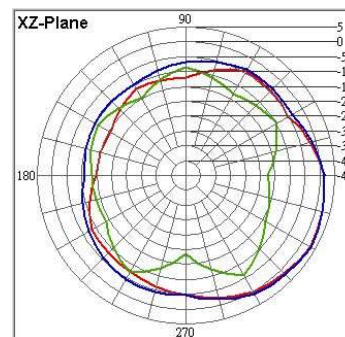
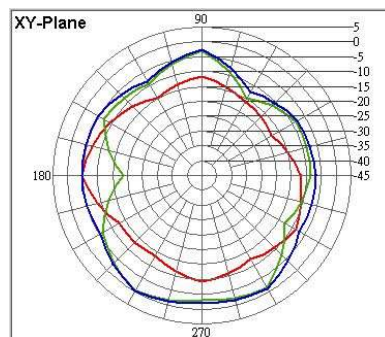
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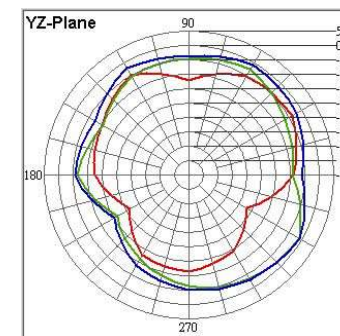
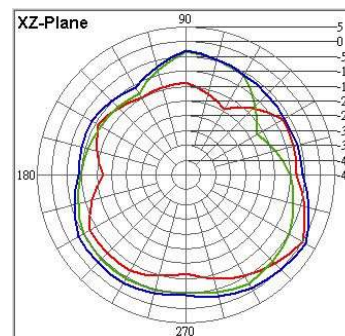
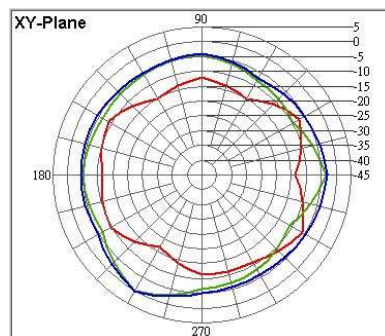
6100MHz



6500MHz



7125MHz



— H-Pol — V-Pol — H+V

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Test Result:2D/3D Radiation Pattern AUX

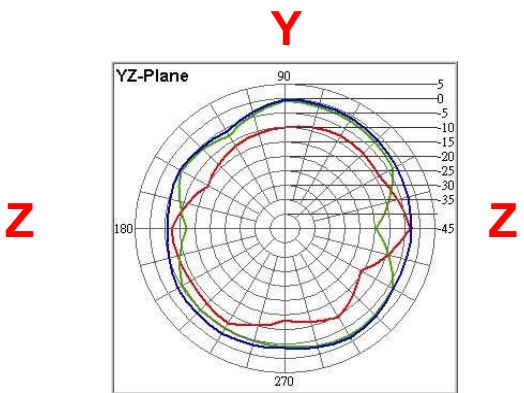
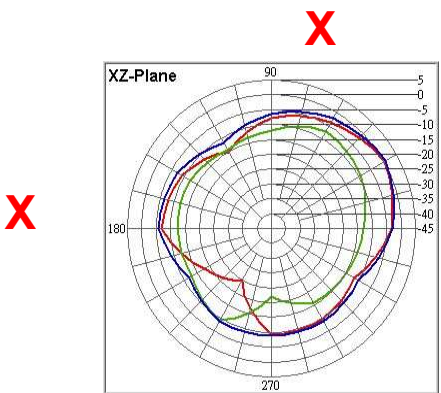
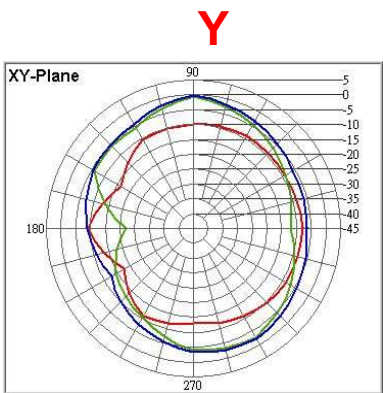
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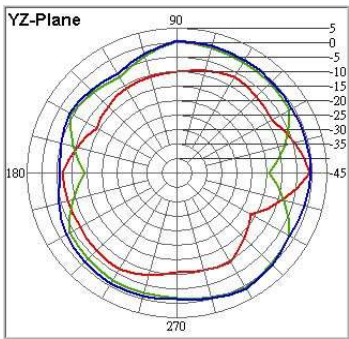
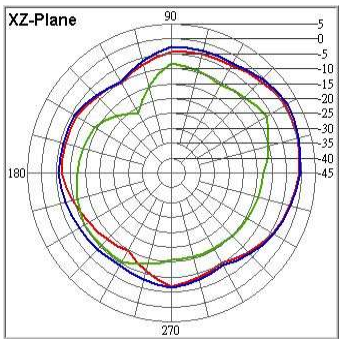
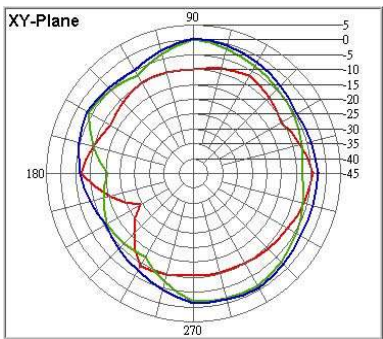
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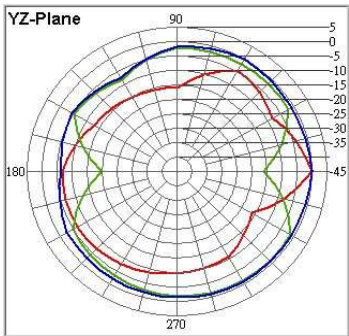
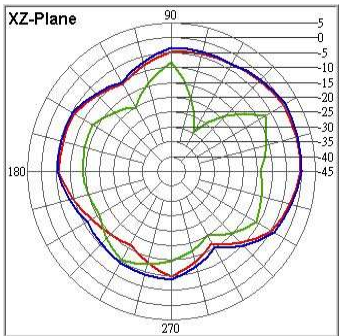
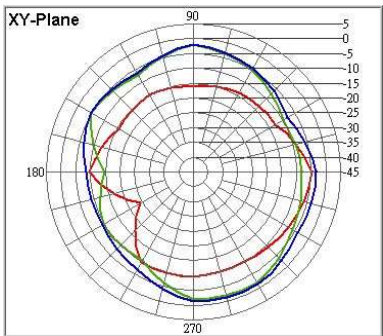
2400MHz



2450MHz



2500MHz



— H-Pol — V-Pol — H+V

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Test Result: 2D/3D Radiation Pattern AUX

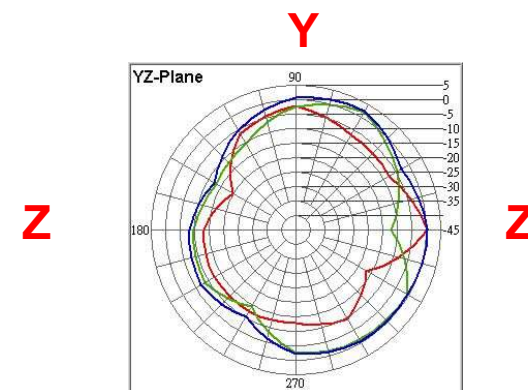
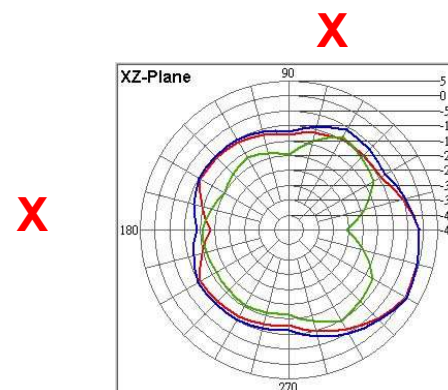
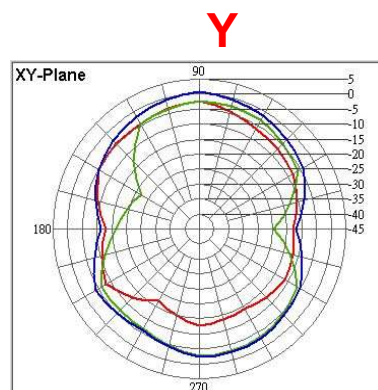
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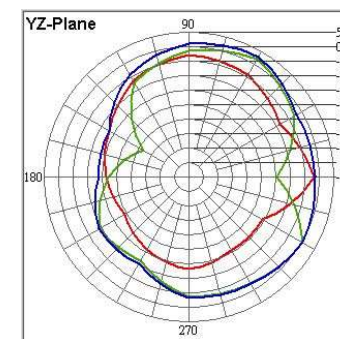
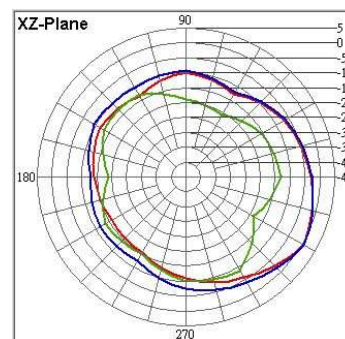
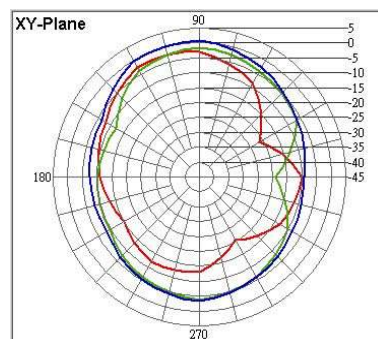
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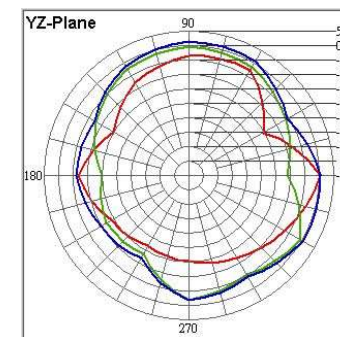
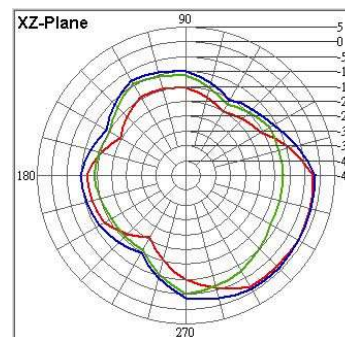
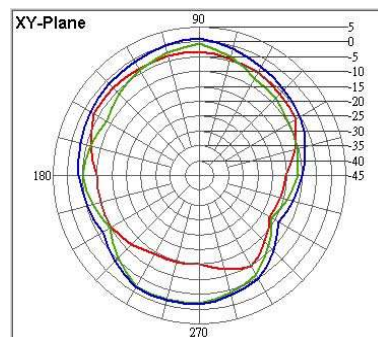
5150MHz



5470MHz



5850MHz



— H-Pol

— V-Pol

— H+V

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Test Result: 2D/3D Radiation Pattern AUX

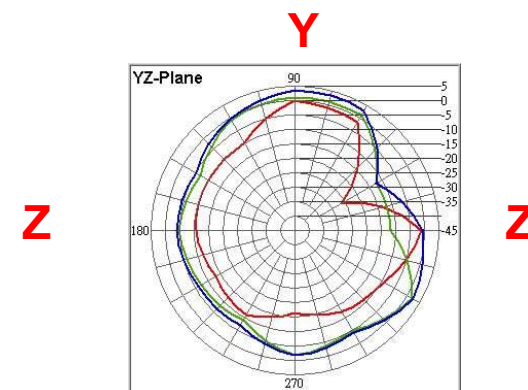
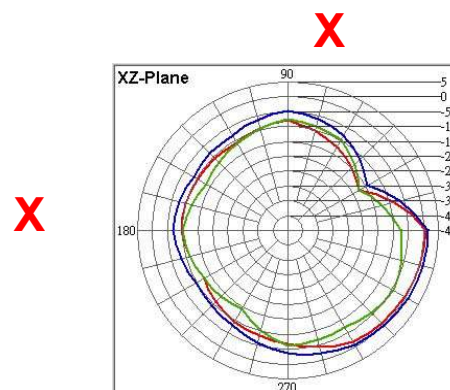
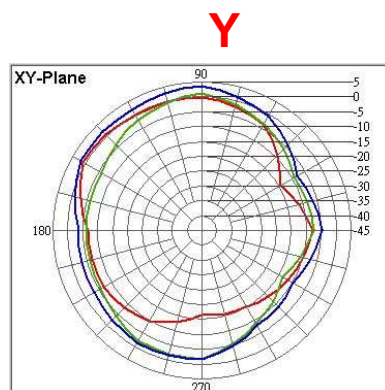
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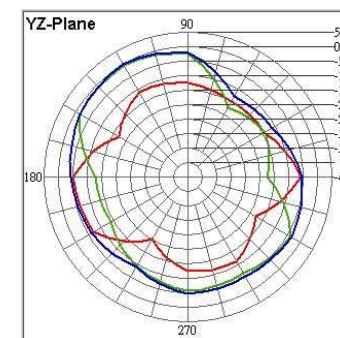
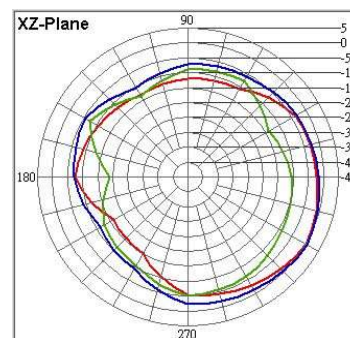
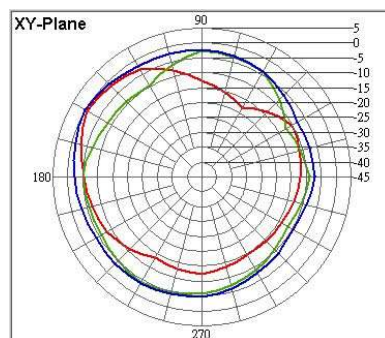
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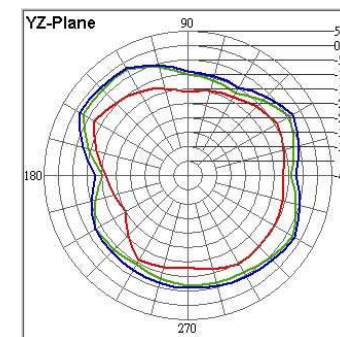
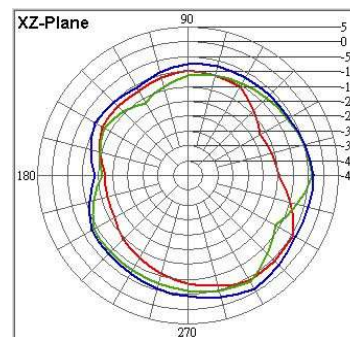
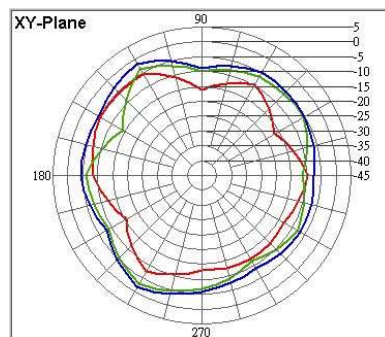
6100MHz



6500MHz



7125MHz



— H-Pol

— V-Pol

— H+V

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Thank you!

