

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 10.1. 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

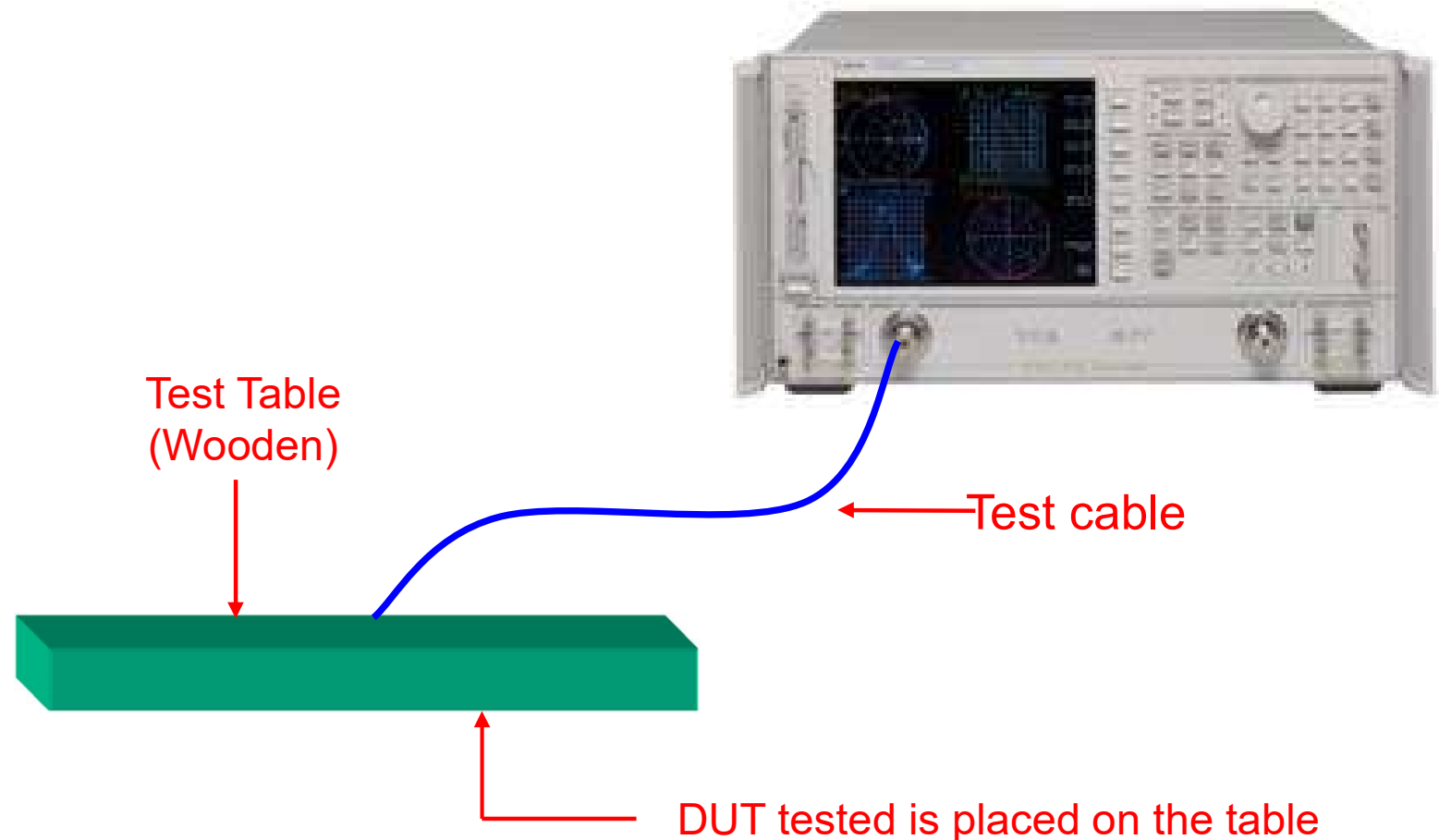
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S-Parameter test

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



Test Environment and Equipments

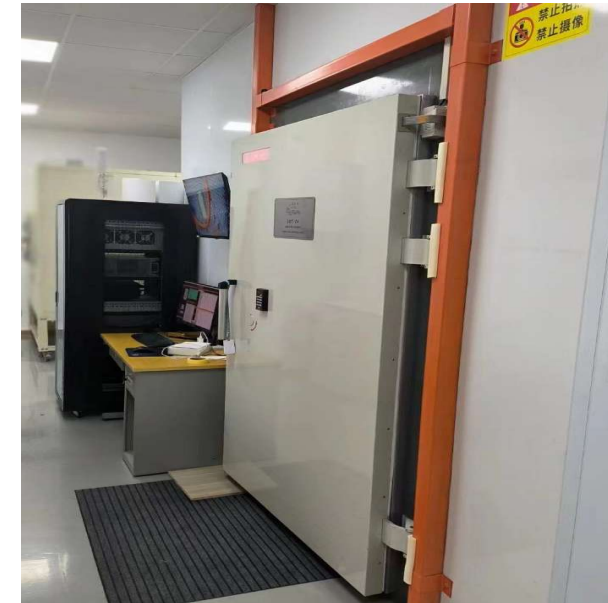
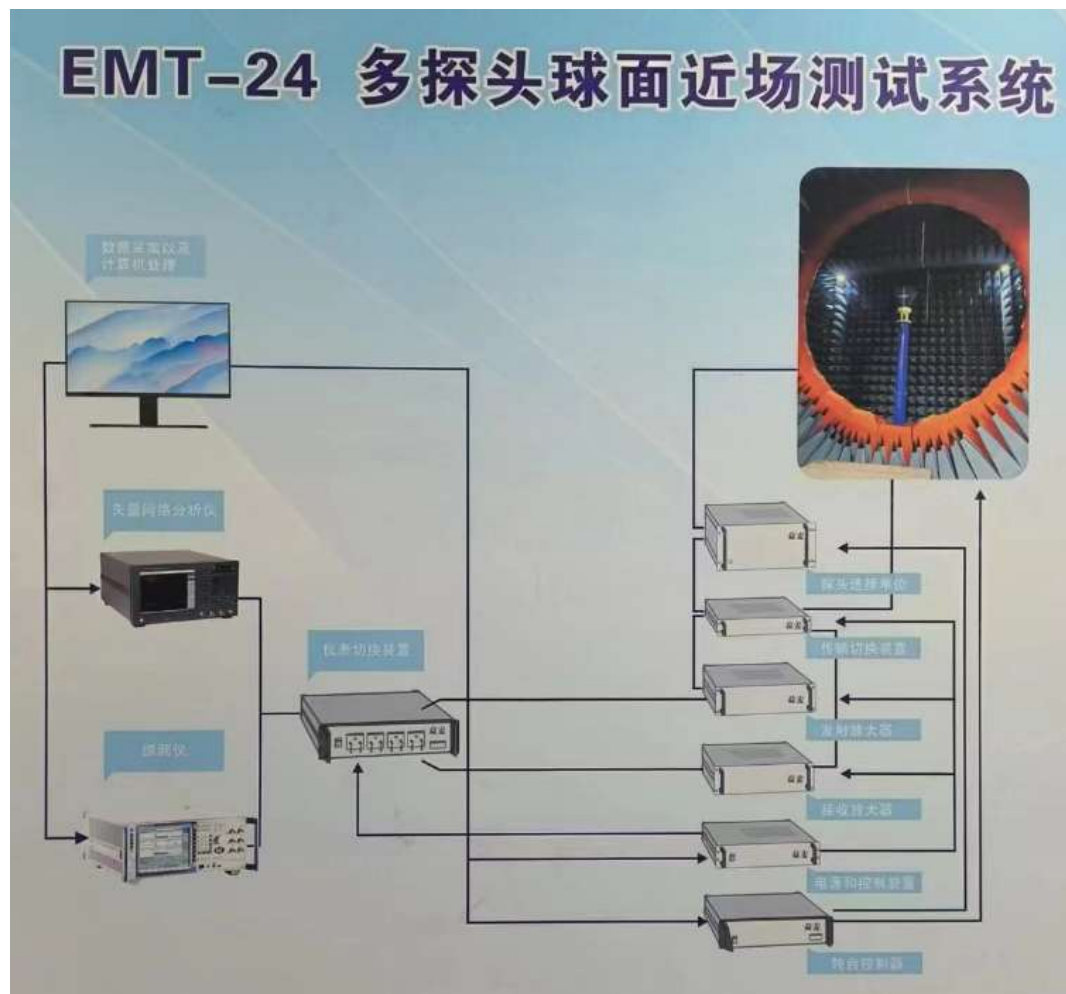
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The Gain, Efficiency, Directivity and 2D/3D Pattern

- ACON 3D Anechoic Chamber
- Chamber Room Size: L*W*H=4*4*4 M

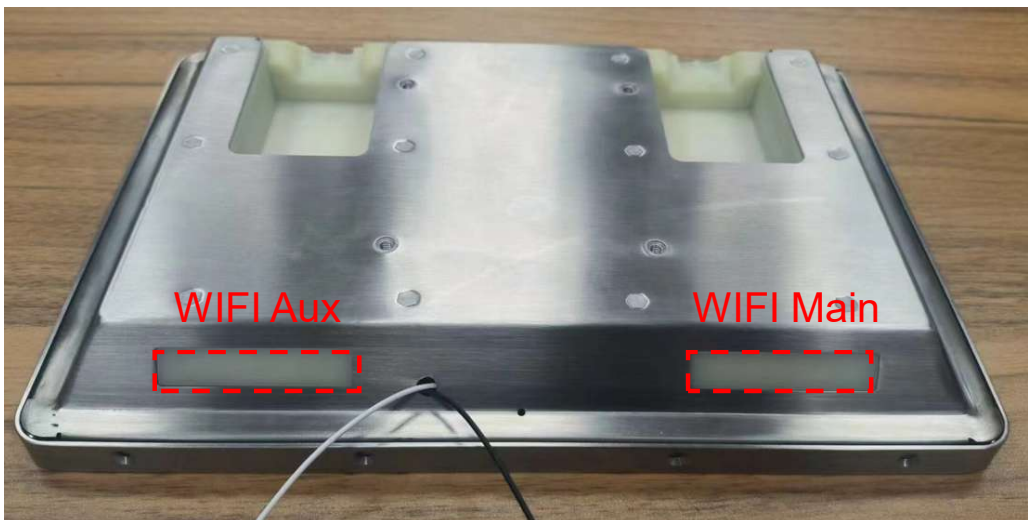
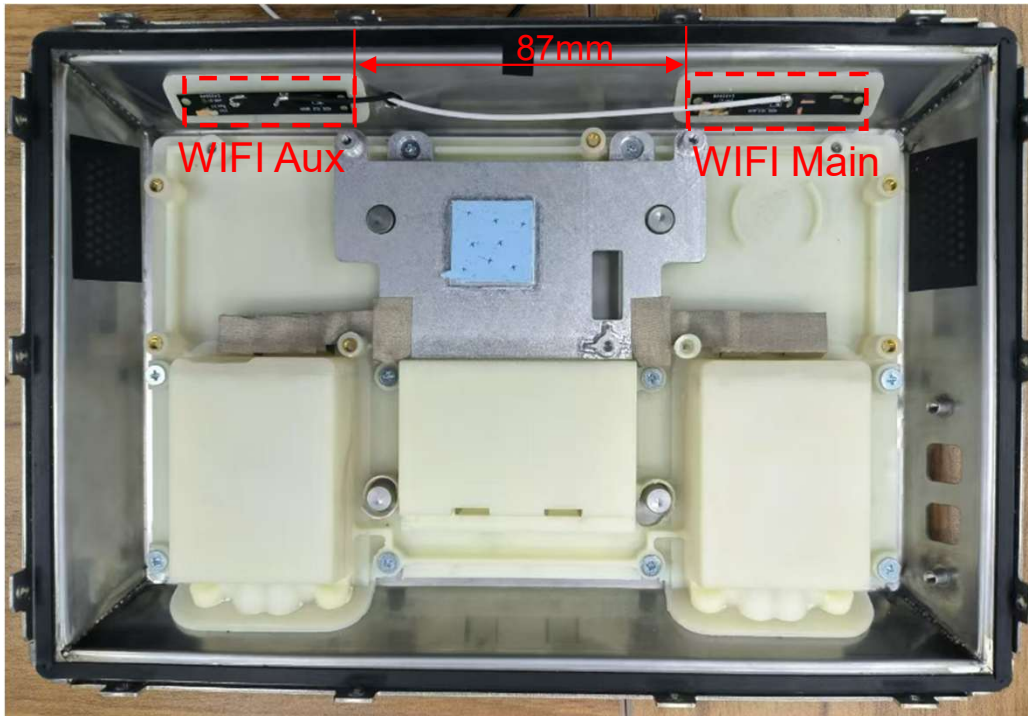


Antenna Positions and Dimensions

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WIFI Aux

Antenna Size : 46*7.5*0.8mm

Cable Length : 95mm

WIFI Main

Antenna Size : 46*7.5*0.8mm

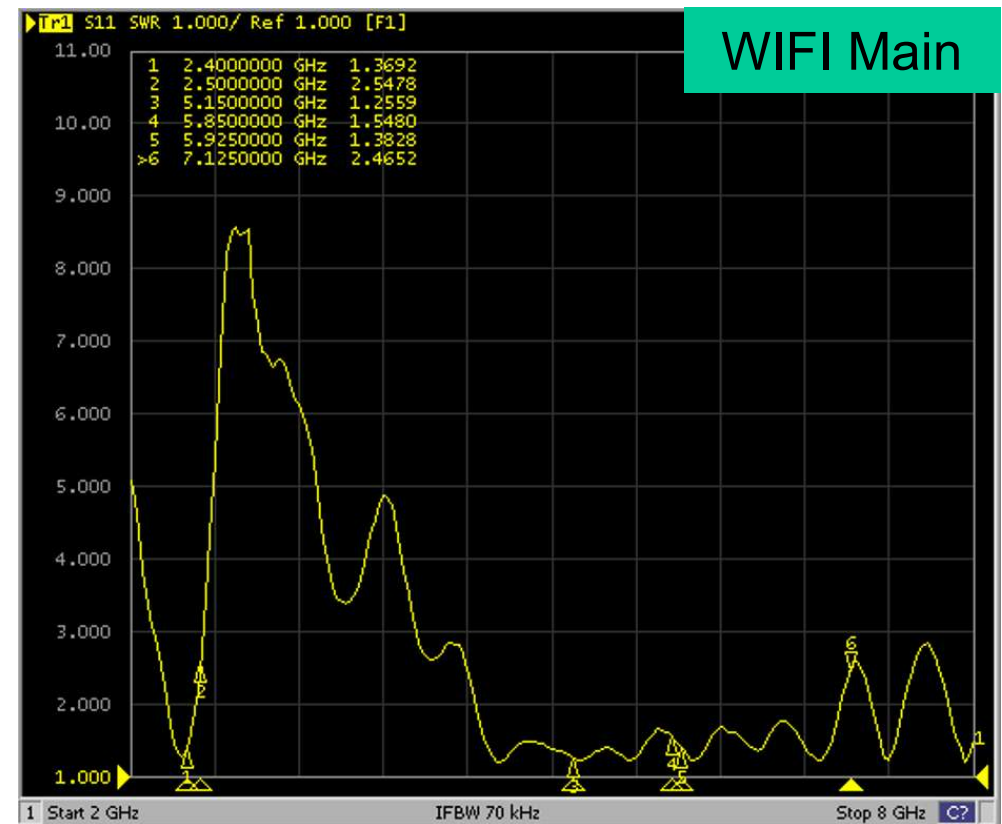
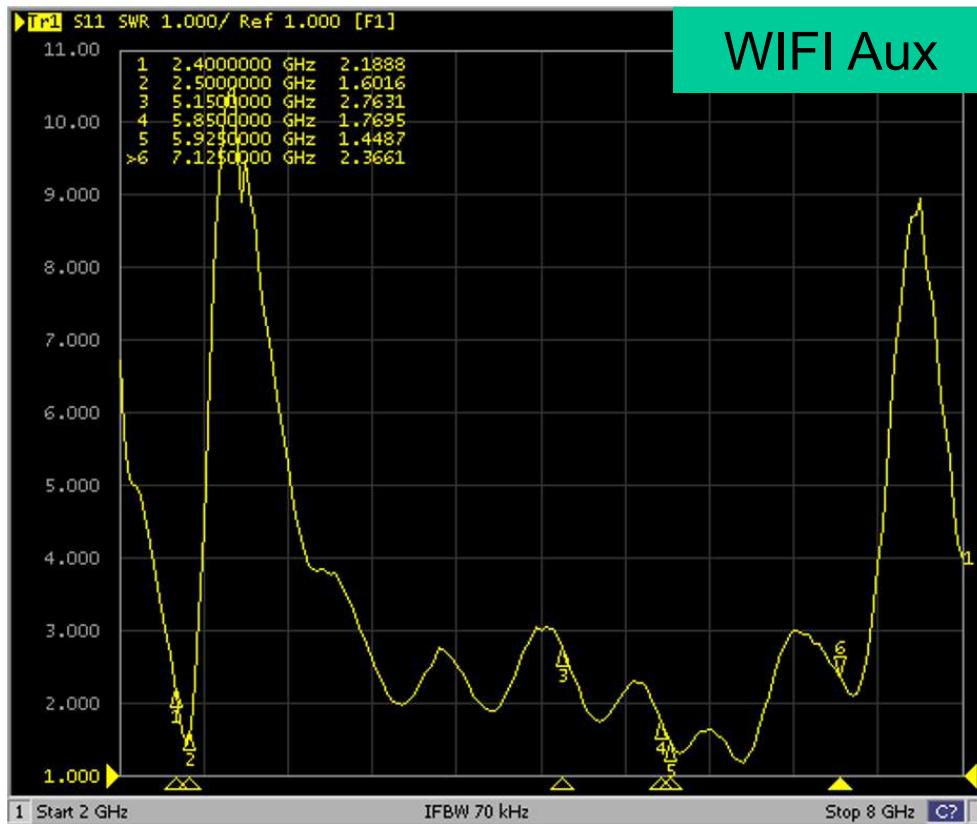
Cable Length : 140mm

Test Result: Antenna VSWR

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Test Result:Antenna Efficiency &Peak Gain

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Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-5.48	28.31	0.31
2450	-5.41	28.77	0.41
2500	-5.52	28.05	0.14
5150	-5.09	30.97	0.92
5250	-5.13	30.69	0.83
5350	-4.38	36.48	1.01
5470	-4.97	31.84	0.89
5600	-5.04	31.33	0.93
5725	-4.87	32.58	1.18
5750	-4.60	34.67	1.30
5785	-5.19	30.27	1.09
5800	-4.52	35.32	1.08
5850	-4.89	32.43	0.90

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-5.10	30.90	1.30
6025	-4.81	33.04	0.77
6125	-5.01	31.55	1.01
6225	-5.14	30.62	0.40
6325	-5.24	29.92	1.23
6425	-4.93	32.14	1.49
6525	-5.15	30.55	1.35
6625	-5.07	31.12	1.08
6725	-4.75	33.50	0.87
6825	-4.75	33.50	1.01
6925	-4.77	33.34	1.57
7025	-5.32	29.38	0.99
7125	-4.85	32.73	1.13

Test Result:Antenna Efficiency &Peak Gain

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Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-5.63	27.37	0.36
2450	-5.36	29.09	0.19
2500	-5.68	27.02	0.79
5150	-5.48	28.32	0.87
5250	-4.84	32.81	0.71
5350	-5.15	30.53	0.74
5470	-4.78	33.27	1.16
5600	-5.05	31.27	1.03
5725	-5.21	30.16	0.71
5750	-4.92	32.24	1.09
5785	-4.88	32.54	0.93
5800	-4.97	31.86	0.59
5850	-4.64	34.39	0.96

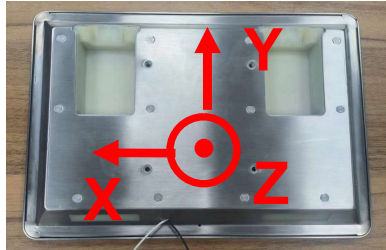
Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-4.83	32.87	1.06
6025	-4.93	32.16	0.71
6125	-5.00	31.64	1.54
6225	-4.92	32.19	0.92
6325	-4.66	34.23	1.09
6425	-4.72	33.75	1.53
6525	-5.37	29.05	1.22
6625	-4.80	33.12	1.35
6725	-4.96	31.89	1.43
6825	-5.13	30.68	1.40
6925	-4.97	31.82	1.00
7025	-4.81	33.05	1.25
7125	-4.93	32.11	1.44

Test Result: 2D/3D Radiation Pattern AUX

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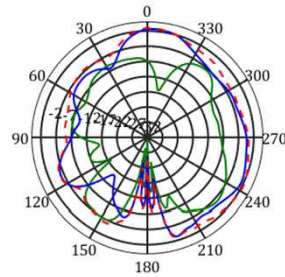
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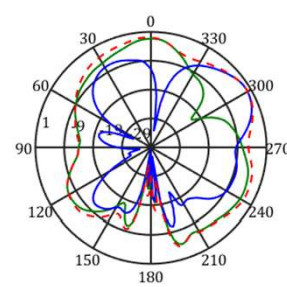


2400 MHz

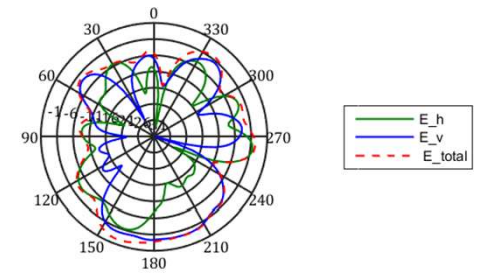
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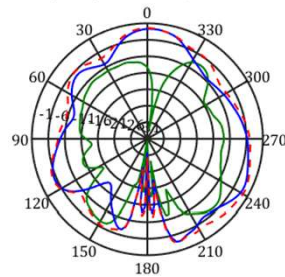
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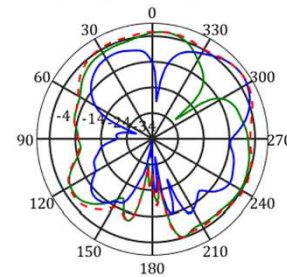
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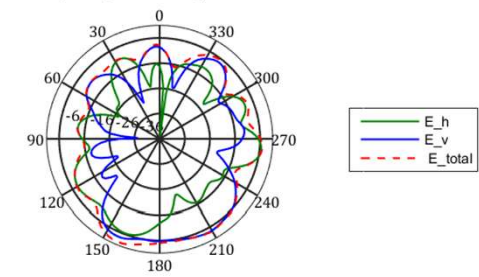
frequency=2450MHz, X-Z Plane



frequency=2450MHz, Y-Z Plane

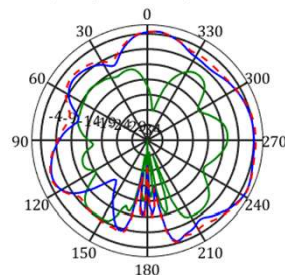


frequency=2450MHz, X-Y Plane

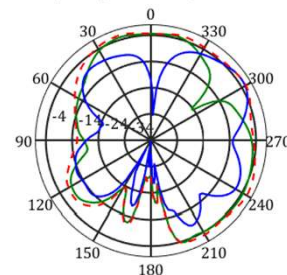


2450 MHz

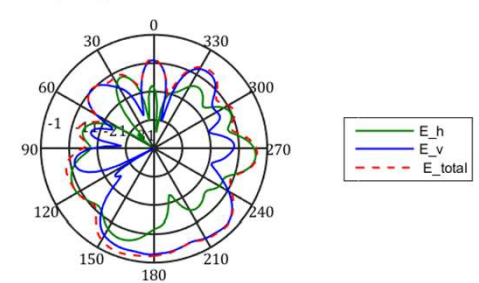
frequency=2500MHz, X-Z Plane



frequency=2500MHz, Y-Z Plane



frequency=2500MHz, X-Y Plane



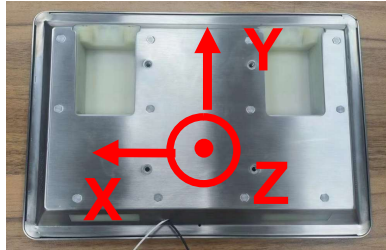
2500 MHz

Test Result:2D/3D Radiation Pattern AUX

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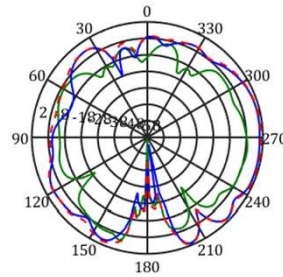
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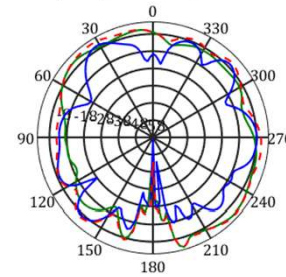


5150 MHz

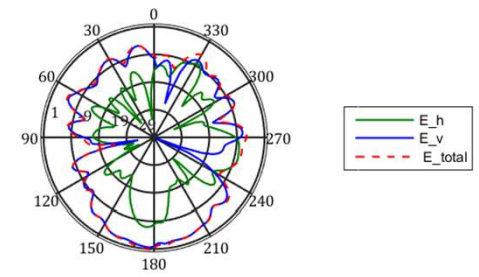
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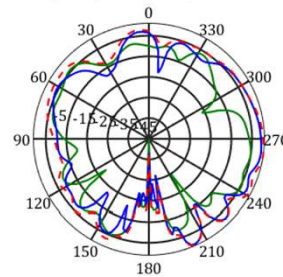
frequency=5150MHz, Y-Z Plane



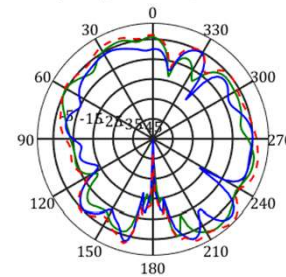
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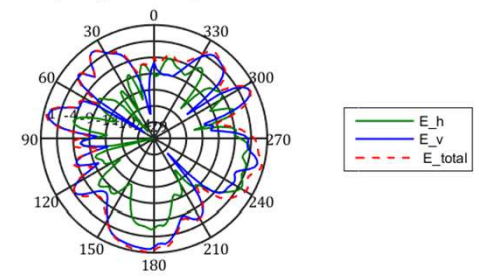
frequency=5470MHz, X-Z Plane



frequency=5470MHz, Y-Z Plane

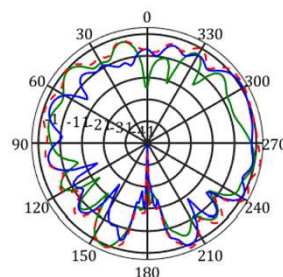


frequency=5470MHz, X-Y Plane

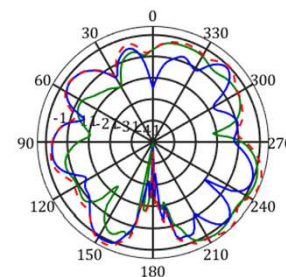


5470 MHz

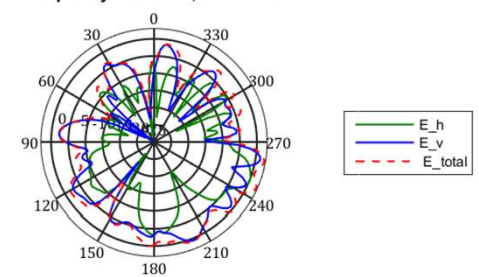
frequency=5850MHz, X-Z Plane



frequency=5850MHz, Y-Z Plane



frequency=5850MHz, X-Y Plane



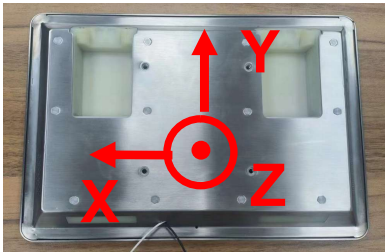
5850MHz

Test Result:2D/3D Radiation Pattern AUX

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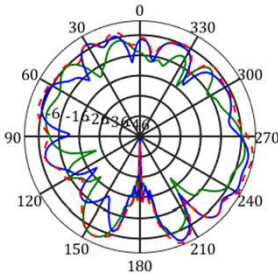
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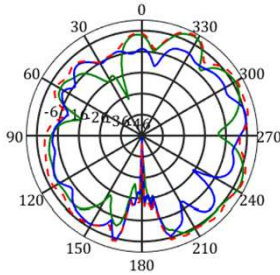


6125 MHz

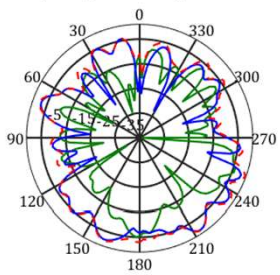
frequency=6125MHz, X-Z Plane



frequency=6125MHz, Y-Z Plane



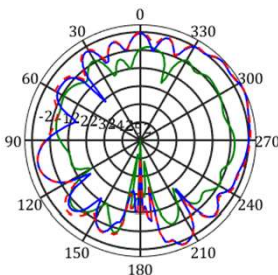
frequency=6125MHz, X-Y Plane



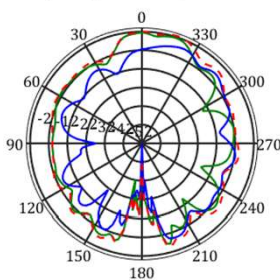
E_h
E_v
E_{total}

6525 MHz

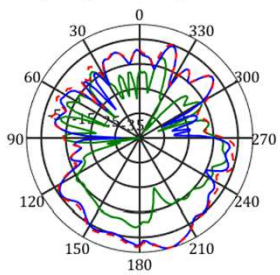
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frequency=6525MHz, Y-Z Plane



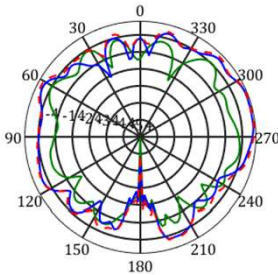
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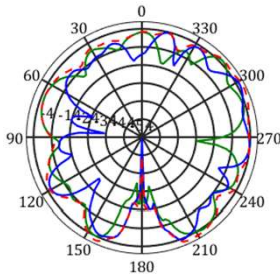
E_h
E_v
E_{total}

7125MHz

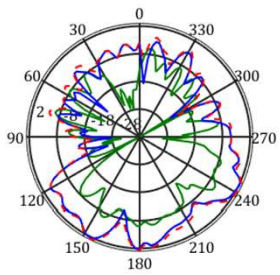
frequency=7125MHz, X-Z Plane



frequency=7125MHz, Y-Z Plane



frequency=7125MHz, X-Y Plane



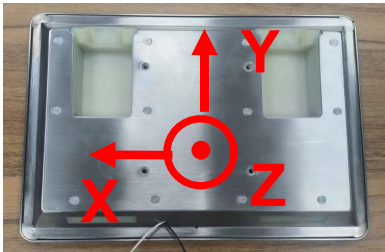
E_h
E_v
E_{total}

Test Result:2D/3D Radiation Pattern MAIN

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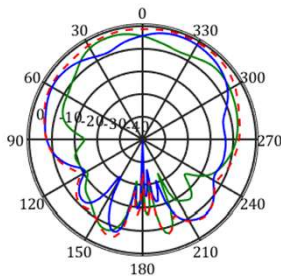
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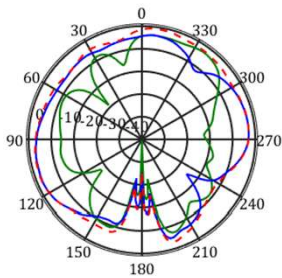


2400 MHz

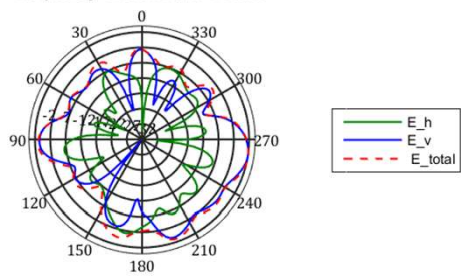
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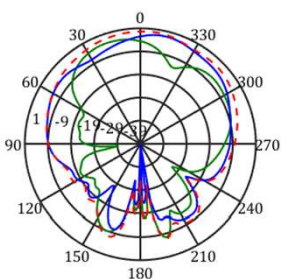
frequency=2400MHz, Y-Z Plane



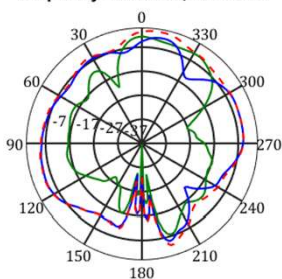
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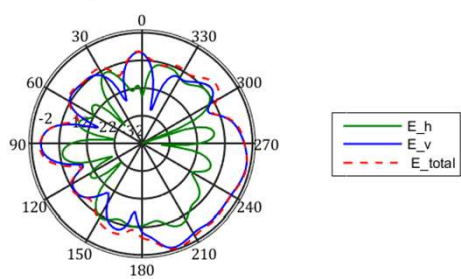
frequency=2450MHz, X-Z Plane



frequency=2450MHz, Y-Z Plane

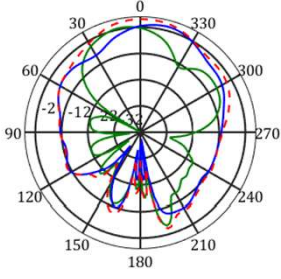


frequency=2450MHz, X-Y Plane

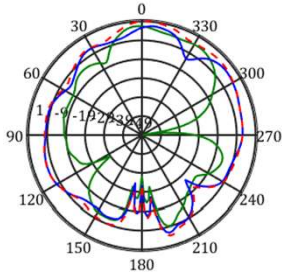


2450 MHz

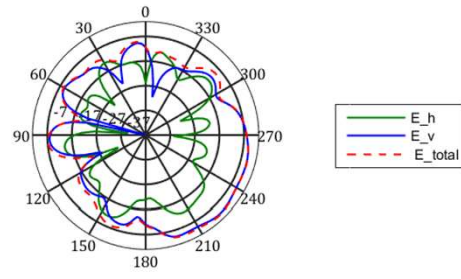
frequency=2500MHz, X-Z Plane



frequency=2500MHz, Y-Z Plane



frequency=2500MHz, X-Y Plane



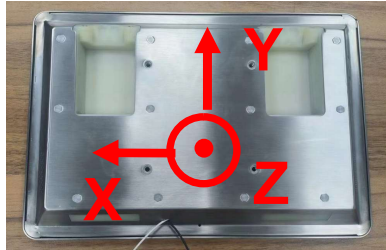
2500 MHz

Test Result:2D/3D Radiation Pattern MAIN

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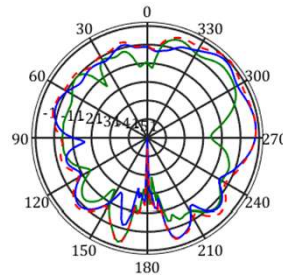
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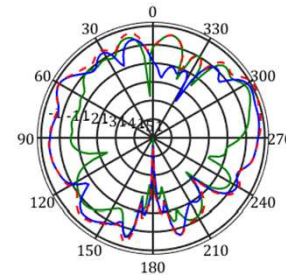


5150 MHz

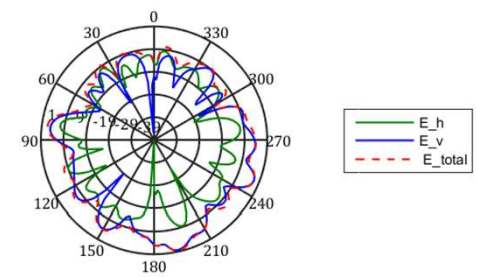
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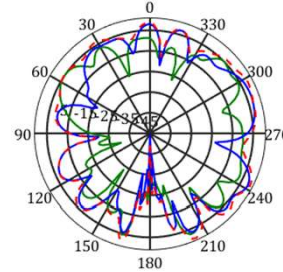
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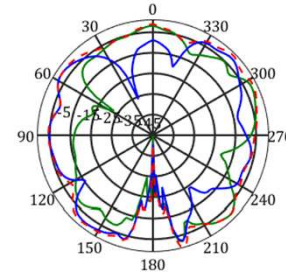
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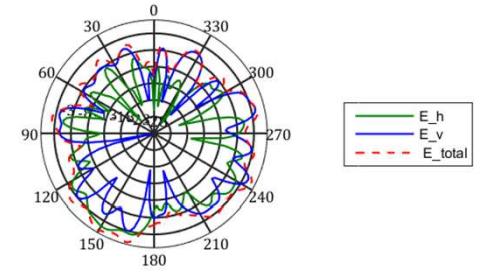
frequency=5470MHz, X-Z Plane



frequency=5470MHz, Y-Z Plane

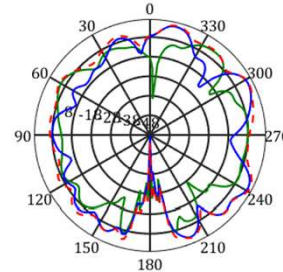


frequency=5470MHz, X-Y Plane

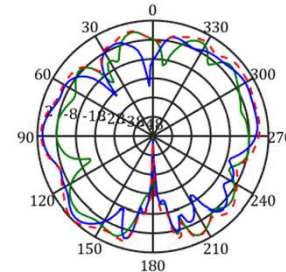


5470 MHz

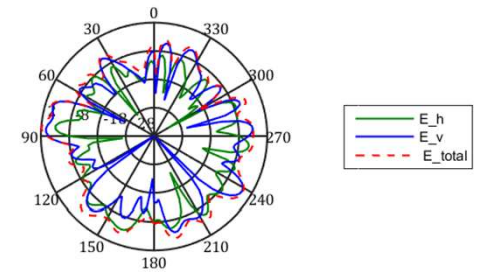
frequency=5850MHz, X-Z Plane



frequency=5850MHz, Y-Z Plane



frequency=5850MHz, X-Y Plane



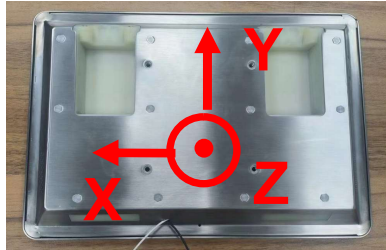
5850MHz

Test Result:2D/3D Radiation Pattern MAIN

Advanced Wireless & Antenna Inc.

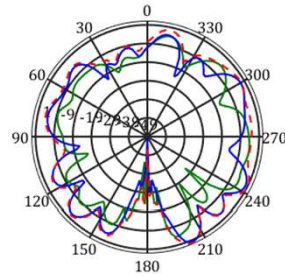
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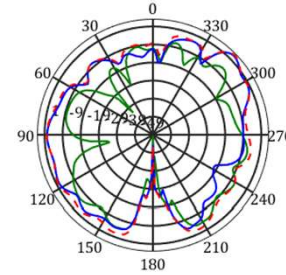


6125 MHz

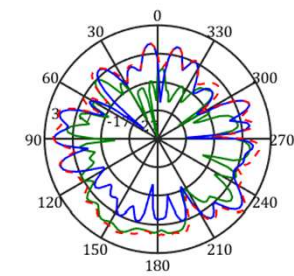
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frequency=6125MHz, Y-Z Plane



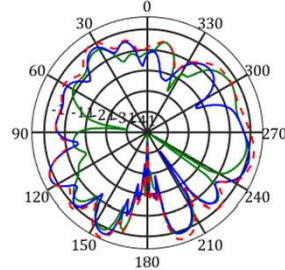
frequency=6125MHz, X-Y Plane



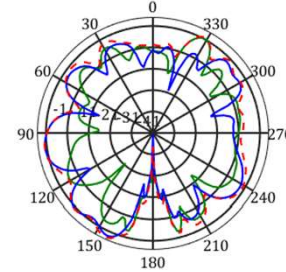
— E_h
— E_v
- - E_{total}

6525 MHz

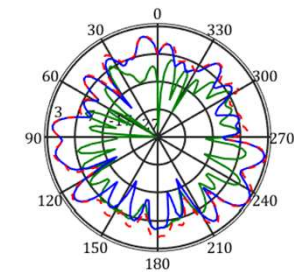
frequency=6525MHz, X-Z Plane



frequency=6525MHz, Y-Z Plane



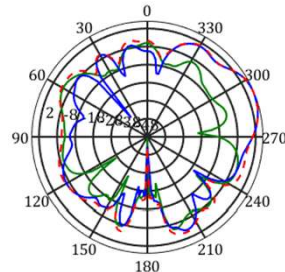
frequency=6525MHz, X-Y Plane



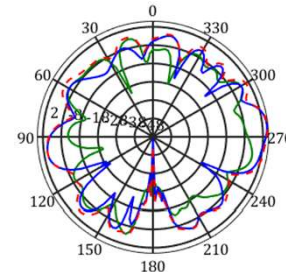
— E_h
— E_v
- - E_{total}

7125MHz

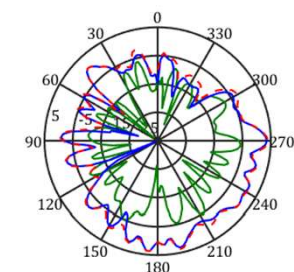
frequency=7125MHz, X-Z Plane



frequency=7125MHz, Y-Z Plane



frequency=7125MHz, X-Y Plane



— E_h
— E_v
- - E_{total}

Thank you!

