

Antenna

ELO WLAN Antenna Test Report

ADVANCED-CONNECTEK INC.

Wireless Communications BU.



Executive Summary

Advanced Wireless & Antenna Inc.

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Advanced Wireless & Antenna Inc.

- **Purpose**

Antenna study for KDS 22. 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

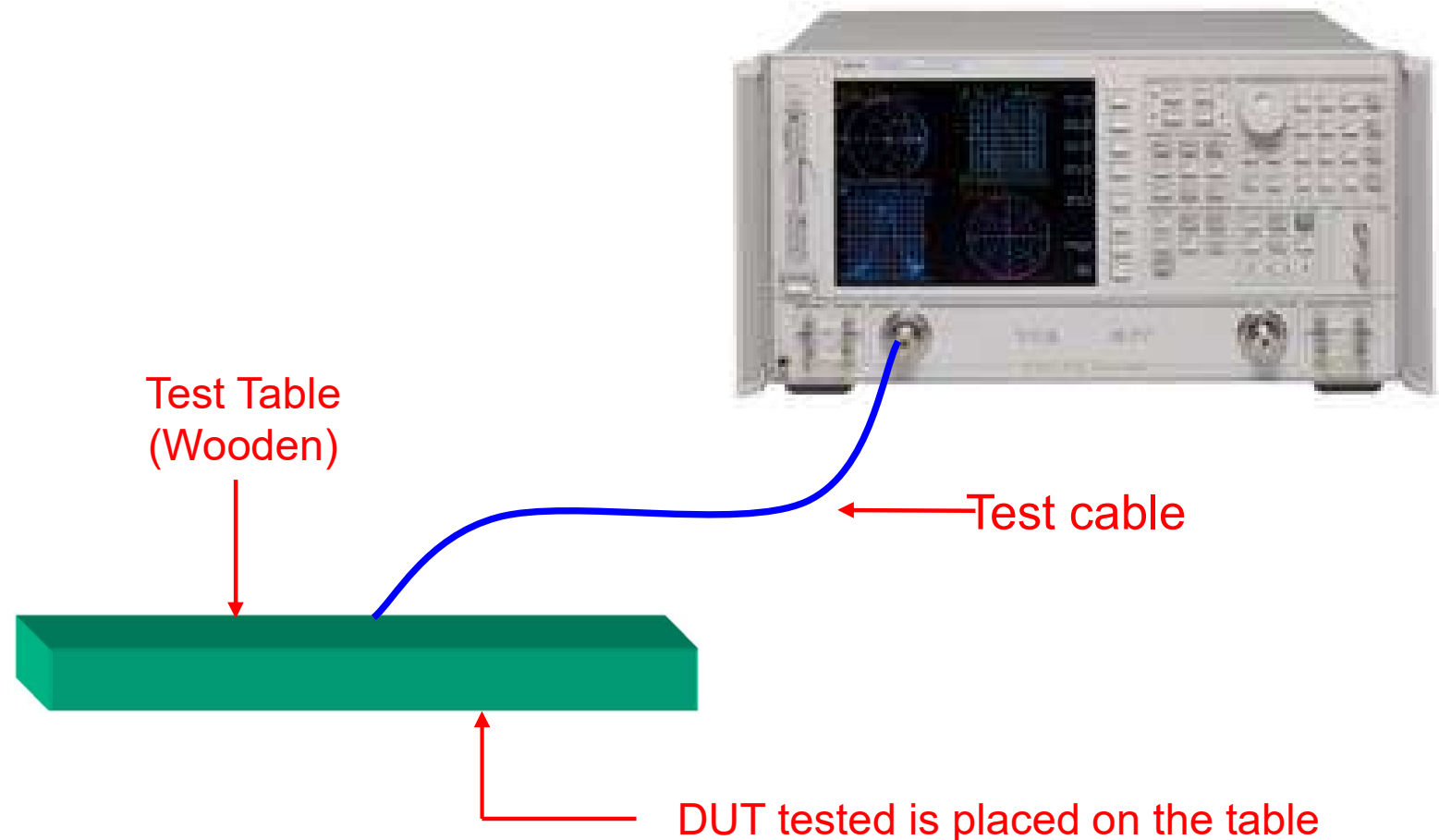
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S-Parameter test

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



Test Environment and Equipments

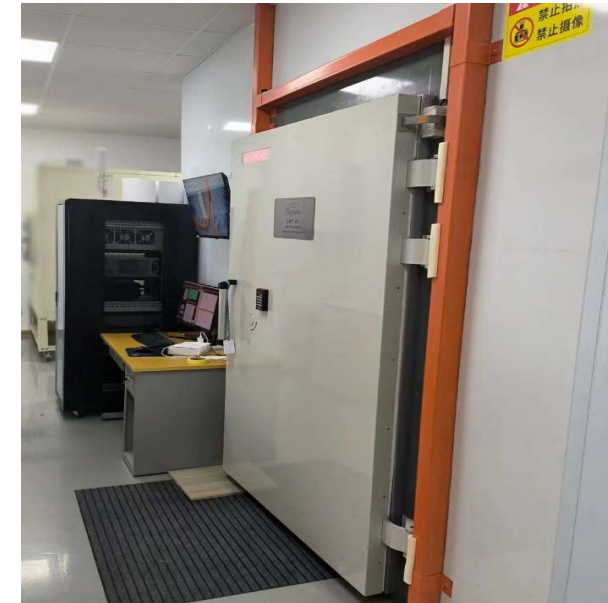
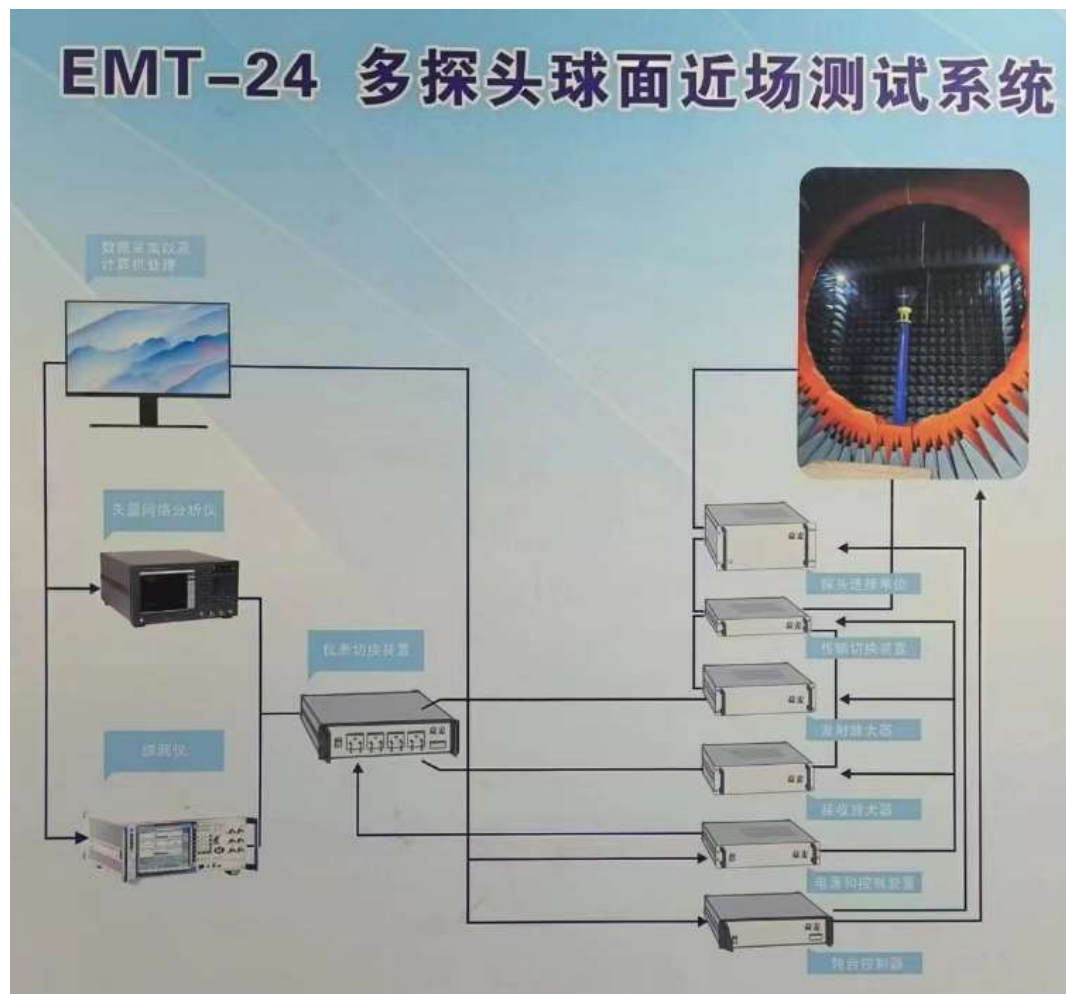
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The Gain, Efficiency, Directivity and 2D/3D Pattern

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

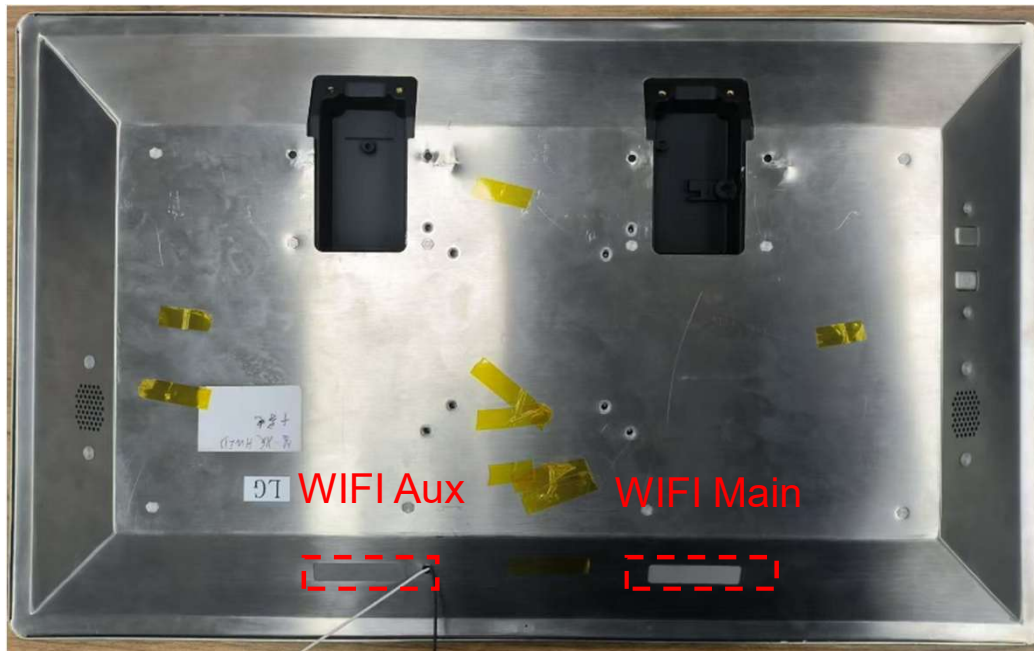
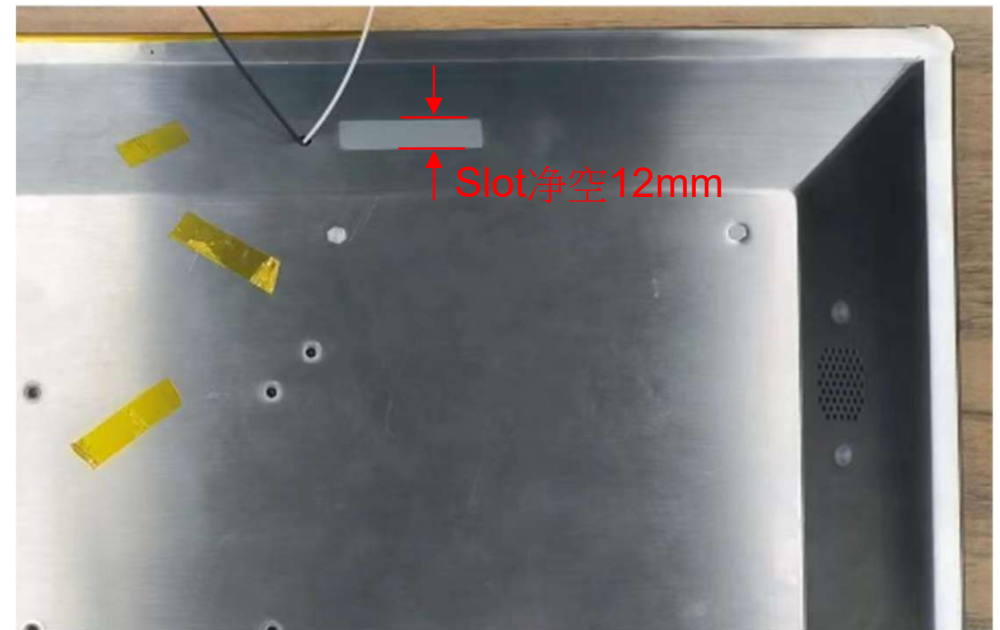
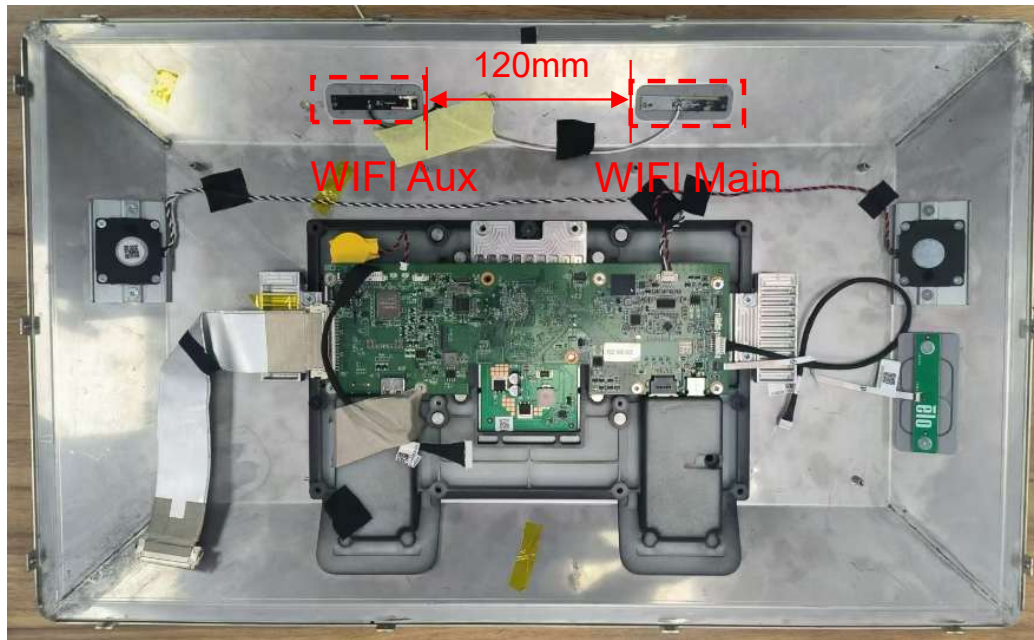


Antenna Positions and Dimensions

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WIFI Aux

Antenna Size : 46*7.5*0.8mm

Cable Length : 105mm

WIFI Main

Antenna Size : 46*7.5*0.8mm

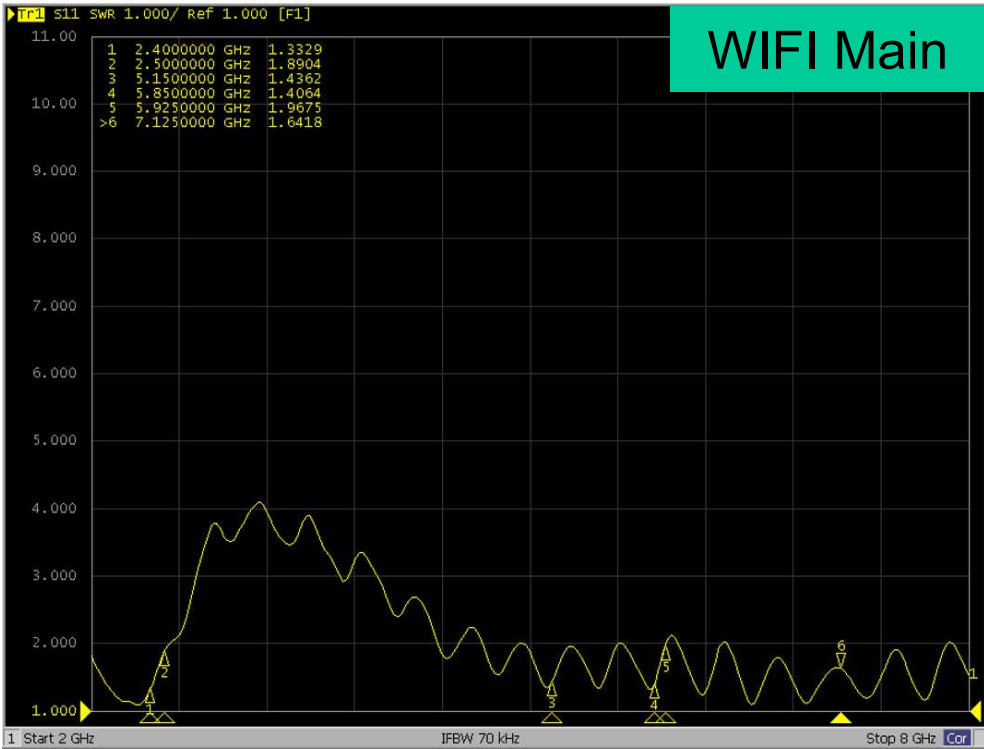
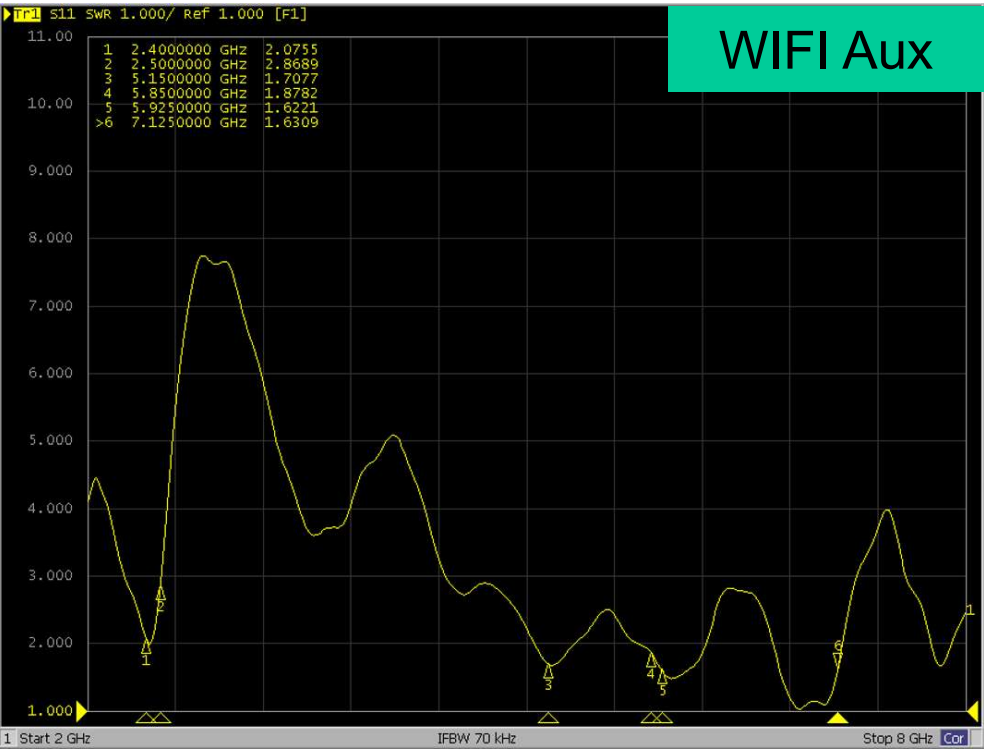
Cable Length : 280mm

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	-6.03	24.95	0.97
2450	-6.28	23.55	0.45
2500	-6.38	23.01	0.84
5150	-5.00	31.62	1.04
5250	-5.25	29.85	1.12
5350	-5.37	29.04	0.95
5470	-5.40	28.84	1.08
5600	-4.86	32.66	0.20
5725	-4.66	34.20	1.05
5750	-4.53	35.24	1.12
5785	-4.41	36.22	1.35
5800	-4.46	35.81	1.66
5850	-4.91	32.28	1.10

Aux Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-4.62	34.51	1.36
6025	-5.00	31.62	1.27
6125	-4.92	32.21	1.13
6225	-5.32	29.38	1.39
6325	-4.64	34.36	1.21
6425	-4.58	34.83	0.97
6525	-5.05	31.26	0.83
6625	-5.57	27.73	1.10
6725	-5.42	28.71	1.29
6825	-5.11	30.83	1.04
6925	-5.40	28.84	1.43
7025	-5.22	30.06	1.77
7125	-5.44	28.58	1.25

Test Result:Antenna Efficiency &Peak Gain

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Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
2400	-5.75	26.61	0.61
2450	-5.88	25.82	0.49
2500	-6.06	24.77	0.75
5150	-5.30	29.51	1.49
5250	-5.13	30.69	1.18
5350	-5.40	28.84	1.01
5470	-5.15	30.55	0.98
5600	-4.97	31.84	1.02
5725	-4.88	32.51	0.91
5750	-5.43	28.64	0.41
5785	-5.33	29.31	1.24
5800	-5.57	27.73	1.18
5850	-5.05	31.26	0.14

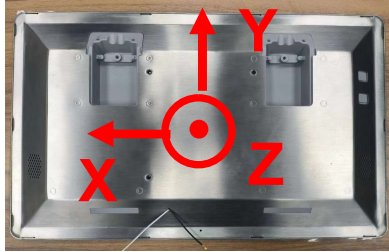
Main Antenna			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	peak gain(dB)
5925	-5.04	31.33	0.84
6025	-5.17	30.41	0.98
6125	-5.69	26.98	0.89
6225	-4.82	32.96	0.88
6325	-5.05	31.26	1.04
6425	-5.39	28.91	1.25
6525	-4.78	33.27	1.41
6625	-4.83	32.89	1.22
6725	-4.48	35.65	1.09
6825	-4.63	34.43	1.21
6925	-5.03	31.41	1.11
7025	-5.17	30.41	1.75
7125	-5.43	28.64	1.15

Test Result: 2D/3D Radiation Pattern AUX

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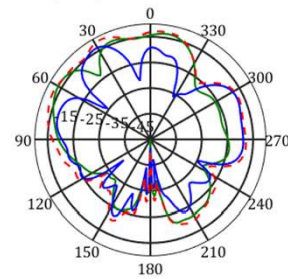
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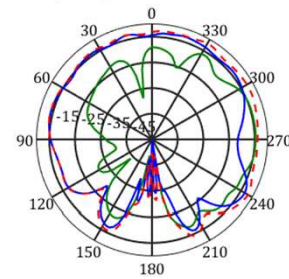


2400 MHz

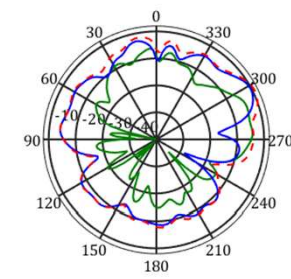
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frequency=2400MHz, Y-Z Plane



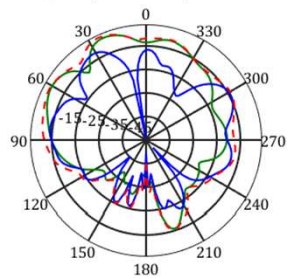
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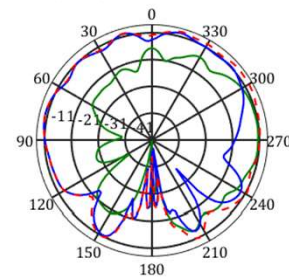
— E_h
— E_v
- - E_total

2450 MHz

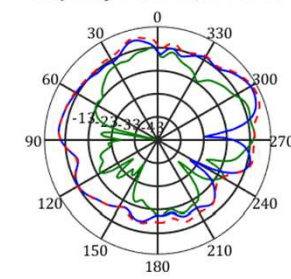
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frequency=2450MHz, Y-Z Plane



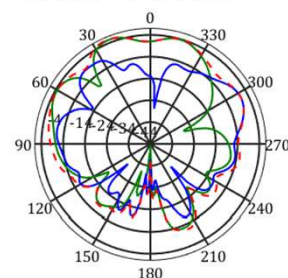
frequency=2450MHz, X-Y Plane



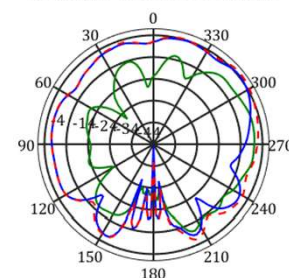
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— E_v
- - E_total

2500 MHz

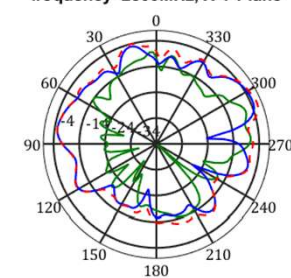
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frequency=2500MHz, Y-Z Plane



frequency=2500MHz, X-Y Plane



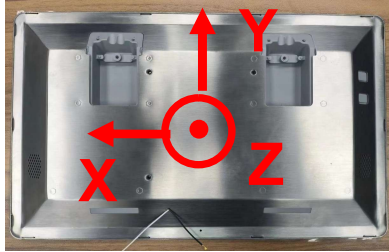
— E_h
— E_v
- - E_total

Test Result:2D/3D Radiation Pattern AUX

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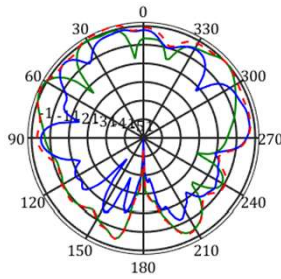
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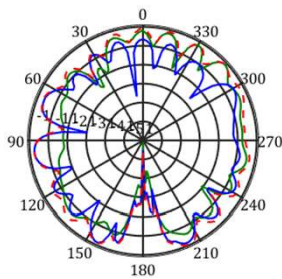


5150 MHz

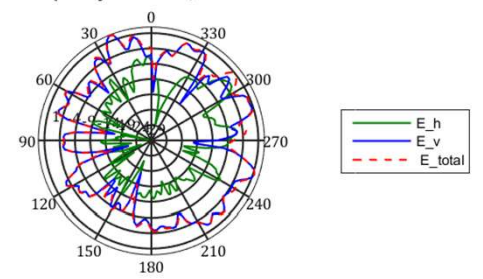
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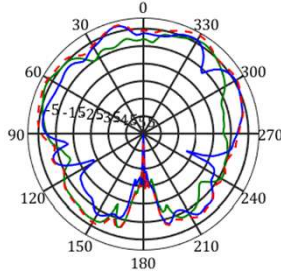
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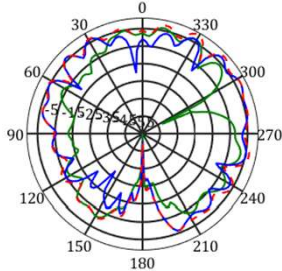
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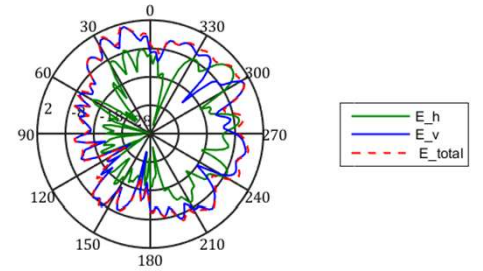
frequency=5470MHz, X-Z Plane



frequency=5470MHz, Y-Z Plane

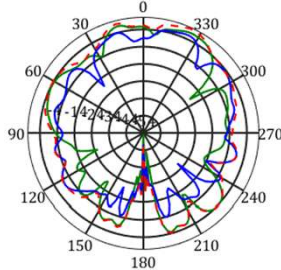


frequency=5470MHz, X-Y Plane

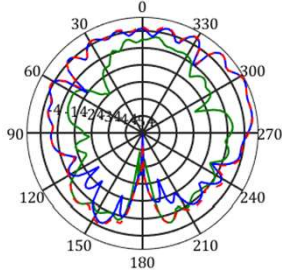


5470 MHz

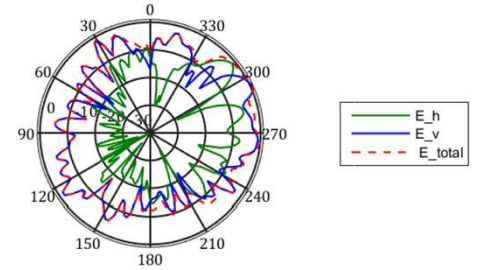
frequency=5850MHz, X-Z Plane



frequency=5850MHz, Y-Z Plane



frequency=5850MHz, X-Y Plane



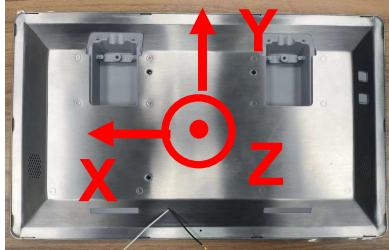
5850 MHz

Test Result:2D/3D Radiation Pattern AUX

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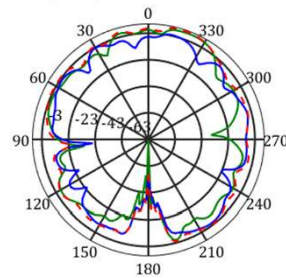
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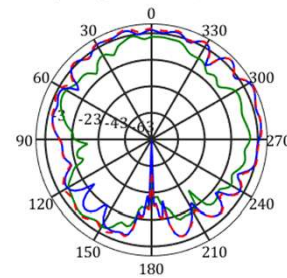


6125 MHz

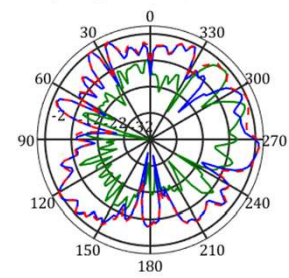
frequency=6125MHz, X-Z Plane



frequency=6125MHz, Y-Z Plane



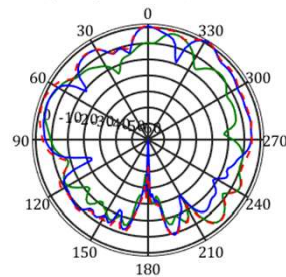
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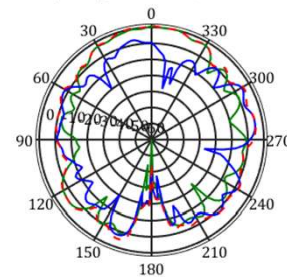
E_h
E_v
E_total

6525 MHz

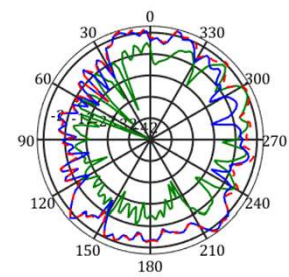
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frequency=6525MHz, Y-Z Plane



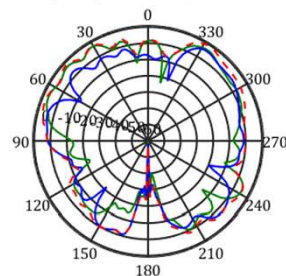
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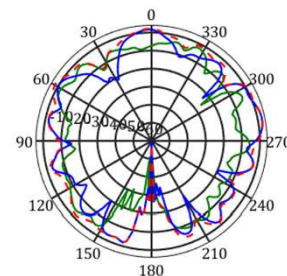
E_h
E_v
E_total

7125 MHz

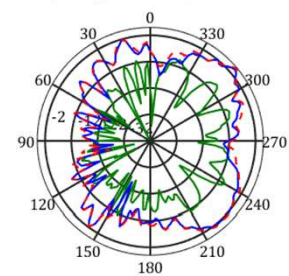
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frequency=7125MHz, Y-Z Plane



frequency=7125MHz, X-Y Plane



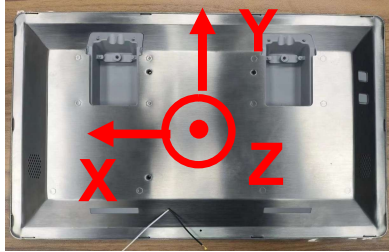
E_h
E_v
E_total

Test Result:2D/3D Radiation Pattern MAIN

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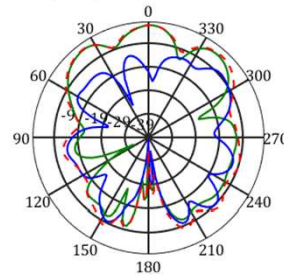
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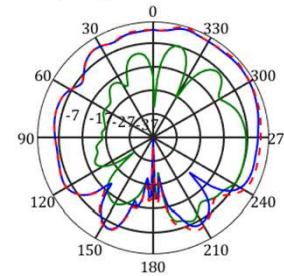


2400 MHz

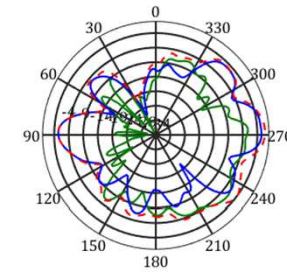
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frequency=2400MHz, Y-Z Plane

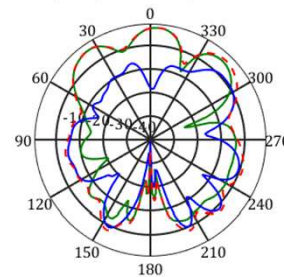


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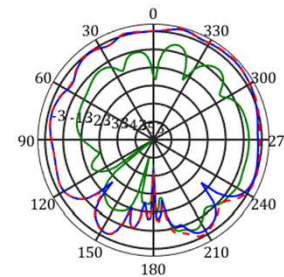


— E_h
— E_v
- - E_total

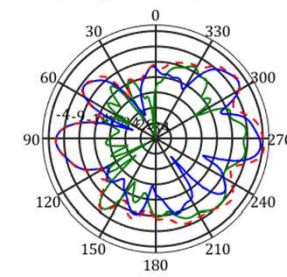
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frequency=2450MHz, Y-Z Plane

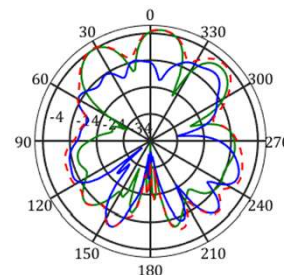


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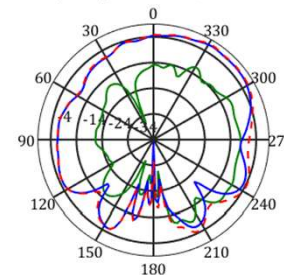


— E_h
— E_v
- - E_total

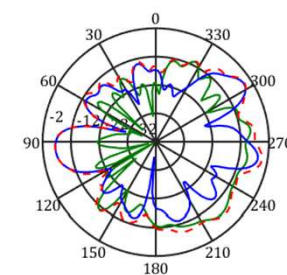
frequency=2500MHz, X-Z Plane



frequency=2500MHz, Y-Z Plane



frequency=2500MHz, X-Y Plane



— E_h
— E_v
- - E_total

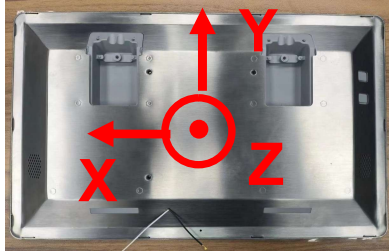
2500 MHz

Test Result:2D/3D Radiation Pattern MAIN

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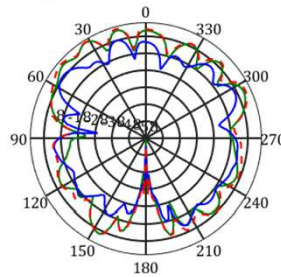
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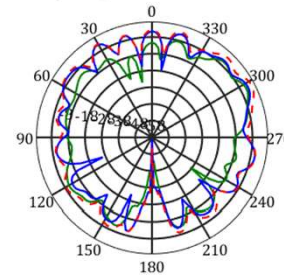


5150 MHz

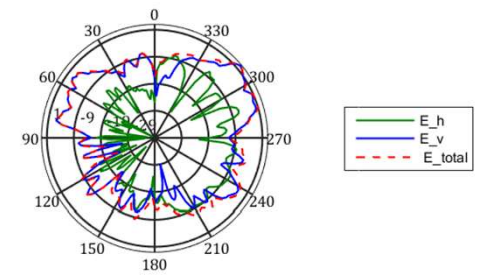
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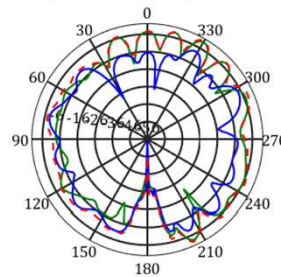
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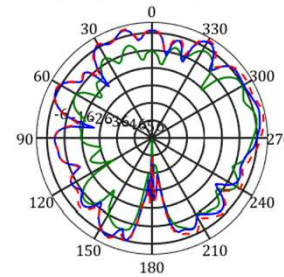
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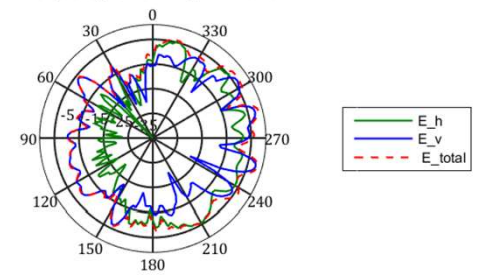
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frequency=5470MHz, Y-Z Plane

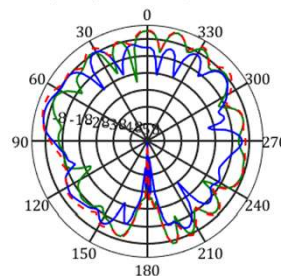


frequency=5470MHz, X-Y Plane

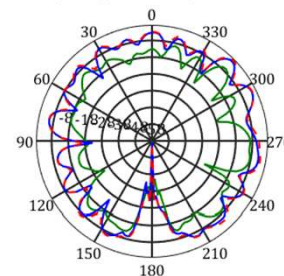


5470 MHz

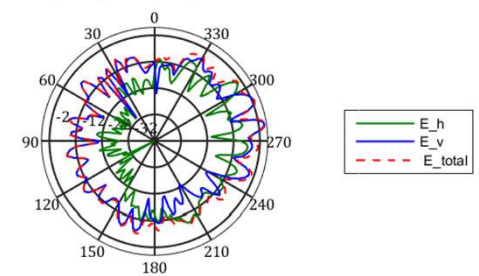
frequency=5850MHz, X-Z Plane



frequency=5850MHz, Y-Z Plane



frequency=5850MHz, X-Y Plane



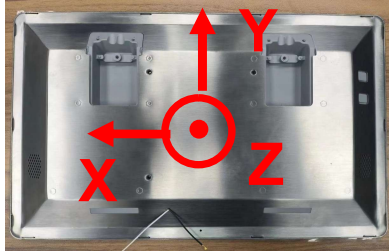
5850 MHz

Test Result:2D/3D Radiation Pattern MAIN

Advanced Wireless & Antenna Inc.

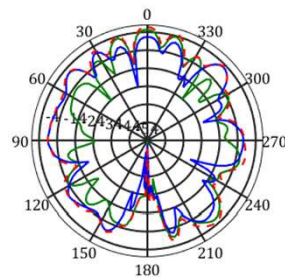
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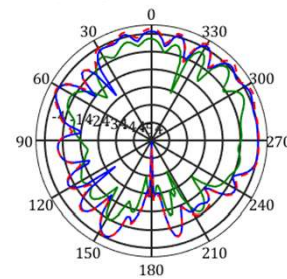


6125 MHz

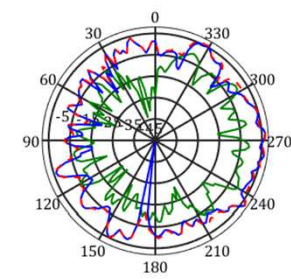
frequency=6125MHz, X-Z Plane



frequency=6125MHz, Y-Z Plane



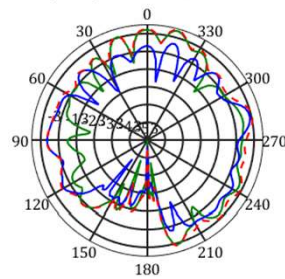
frequency=6125MHz, X-Y Plane



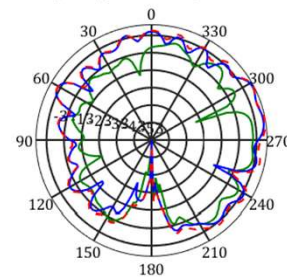
E_h
E_v
E_total

6525 MHz

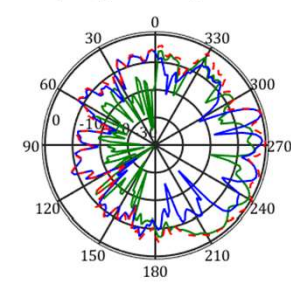
frequency=6525MHz, X-Z Plane



frequency=6525MHz, Y-Z Plane



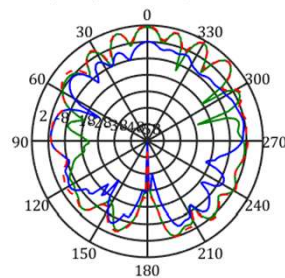
frequency=6525MHz, X-Y Plane



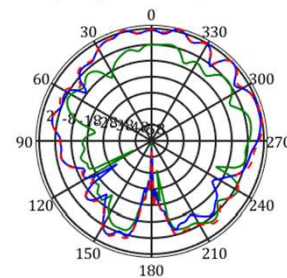
E_h
E_v
E_total

7125 MHz

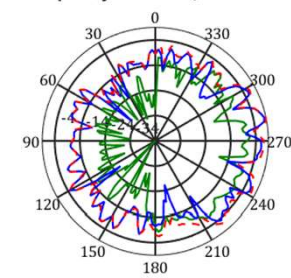
frequency=7125MHz, X-Z Plane



frequency=7125MHz, Y-Z Plane



frequency=7125MHz, X-Y Plane



E_h
E_v
E_total

Thank you!

