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Peplink_WiFi2G_5G_Antenna test report

Brand Name: Whayu

PN : C1980-510149-A

Description : Patch Antenna, ψ 1.13mm+MHF*4

Document Number: NE3-18090

Version: 1.1

Released Date: 2025/03/10

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Reviewed By :JH

- Revised History
- Specification
- Antenna Placement & Solution
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- S-Parameter(isolation)
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- 2D Radiation Pattern Results
- Results Summary (Peak gain 、 Efficiency 、 HPBW)

Revision History



Released Date	Version	Record
2025/02/26	1.0	Update WiFi2G_5G test data
2025/03/10	1.1	Update add antenna marking instructions.

Specification (C1980-510149-A, Patch Antenna, φ 1.13mm+MHF*4)



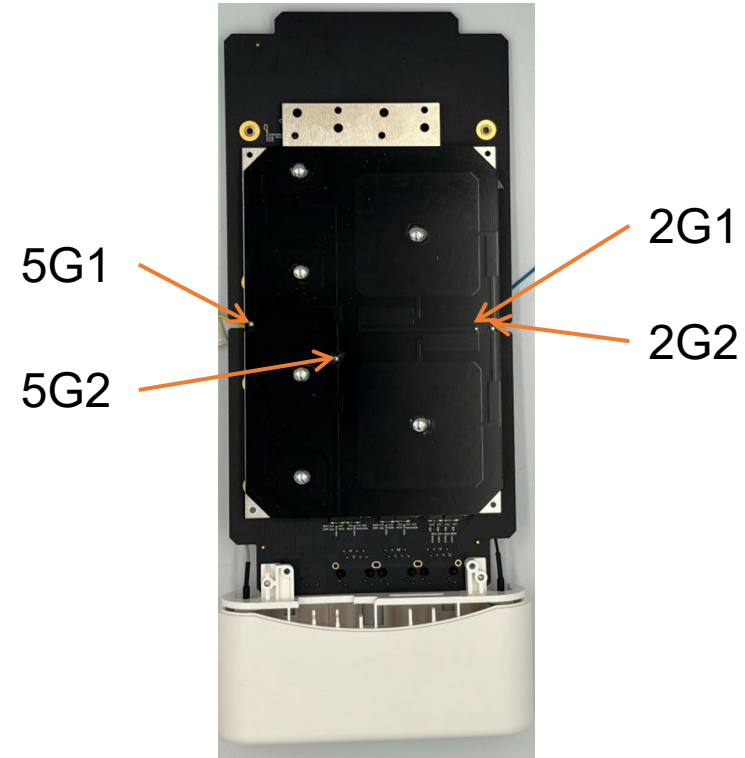
Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
WiFi2G	1~2	2400~2500 MHz	
WiFi5G	3~4	5150~5850 MHz	

Requirements of Measurement

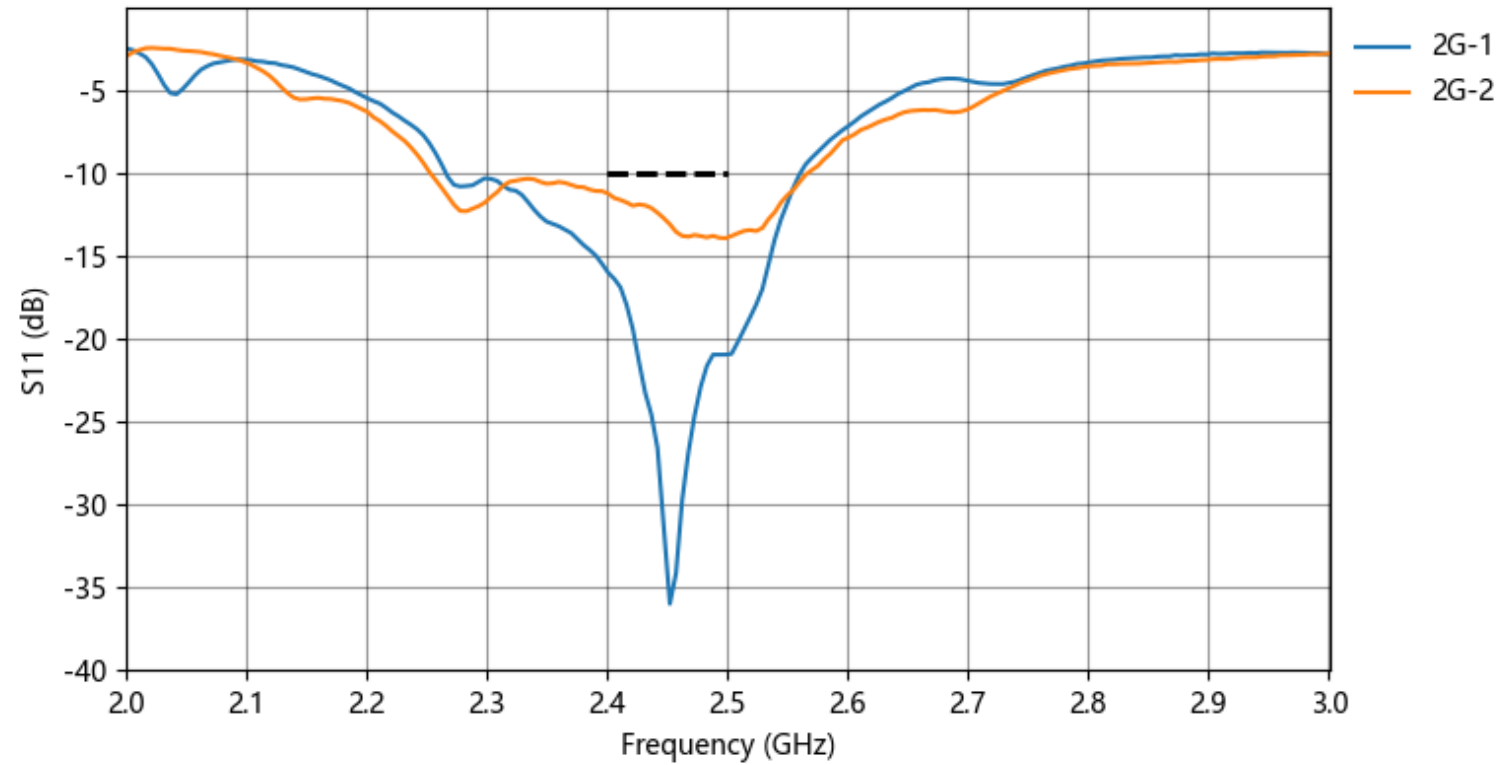
Test Item	Specification	Remark
Polarization	Linear, Vertical / Horizontal	
Return loss	≥ 10 dB	
Isolation	20 dB min.	
Efficiency	$\geq 60\%$	
Peak gain	≥ 9 dBi, 2G / ≥ 11 dBi, 5G	
Radiation pattern	Scale: +15 ~ -30 dBi	

Antenna Placement & Solution



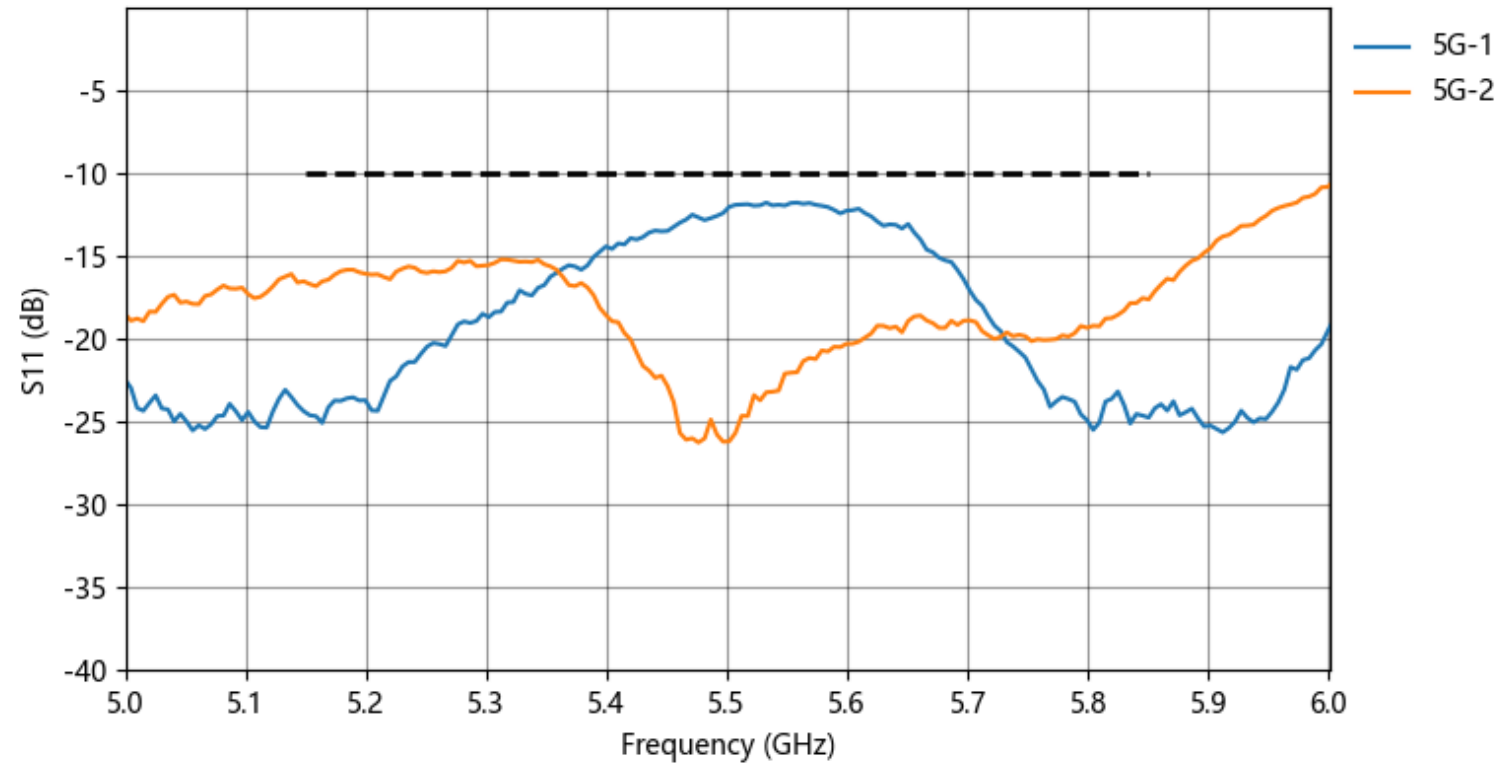
S-Parameter(Return loss)

2G



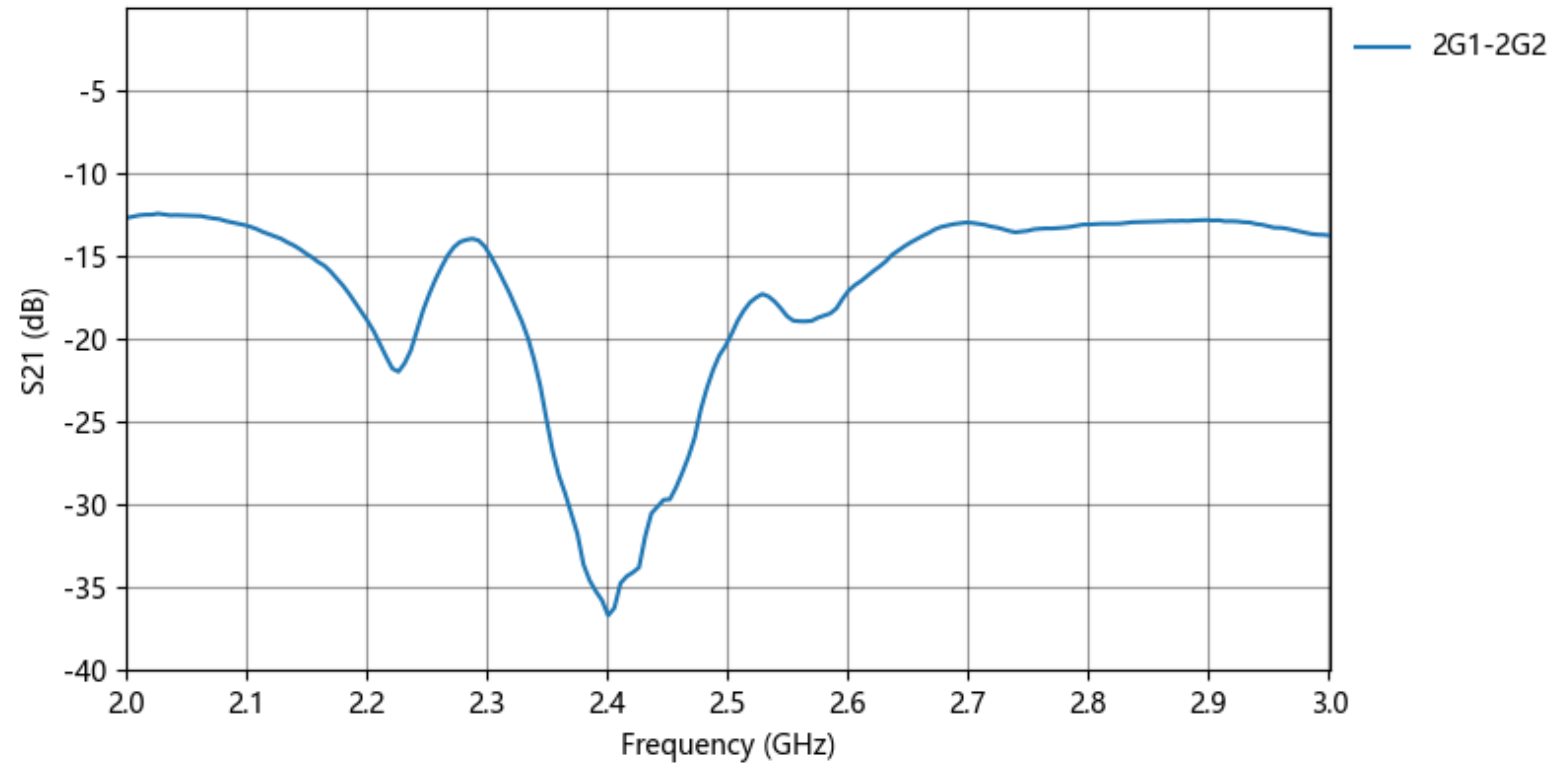
S-Parameter(Return loss)

5G



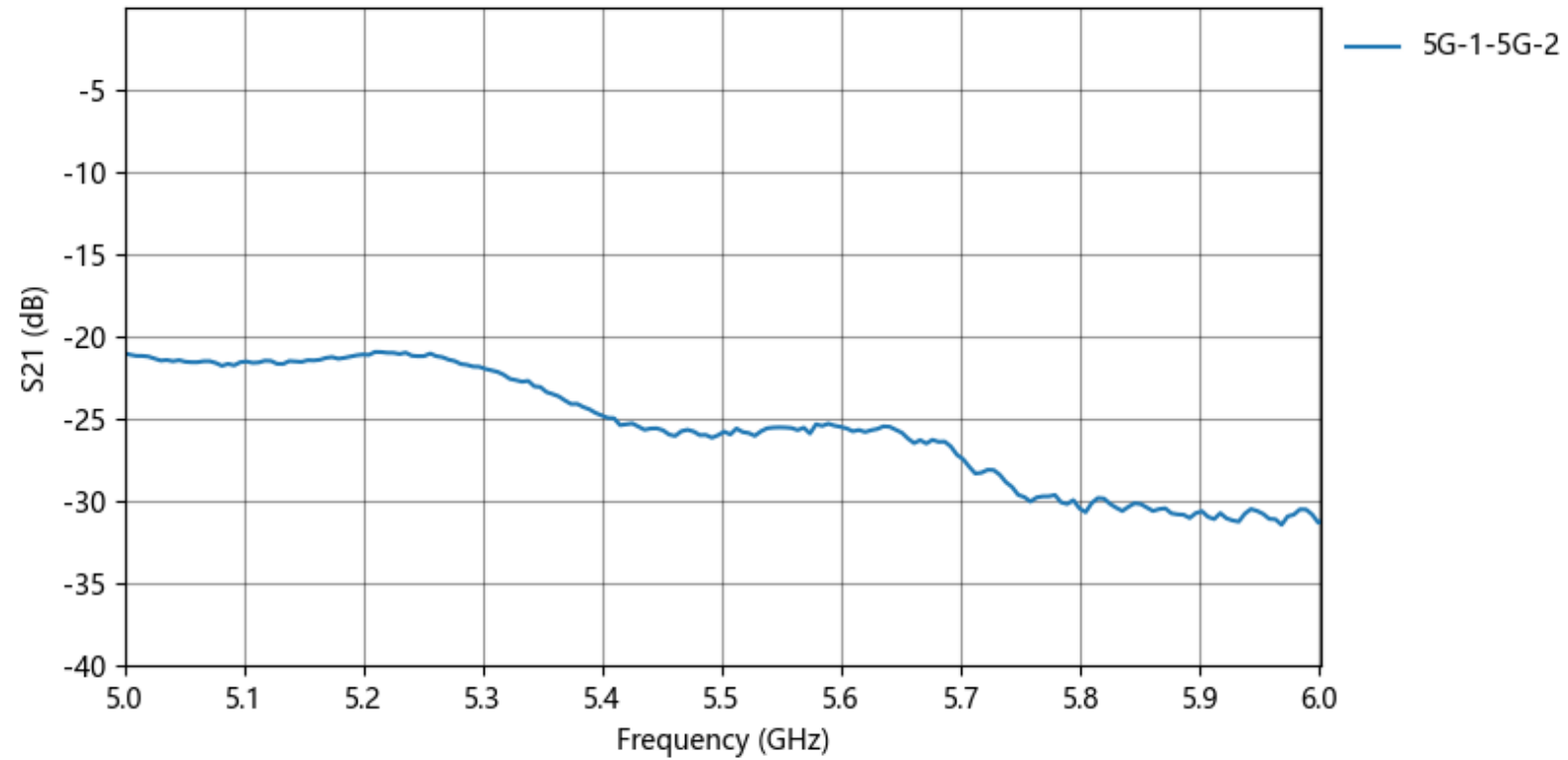
S-Parameter(Isolation)

2G



S-Parameter(Isolation)

5G

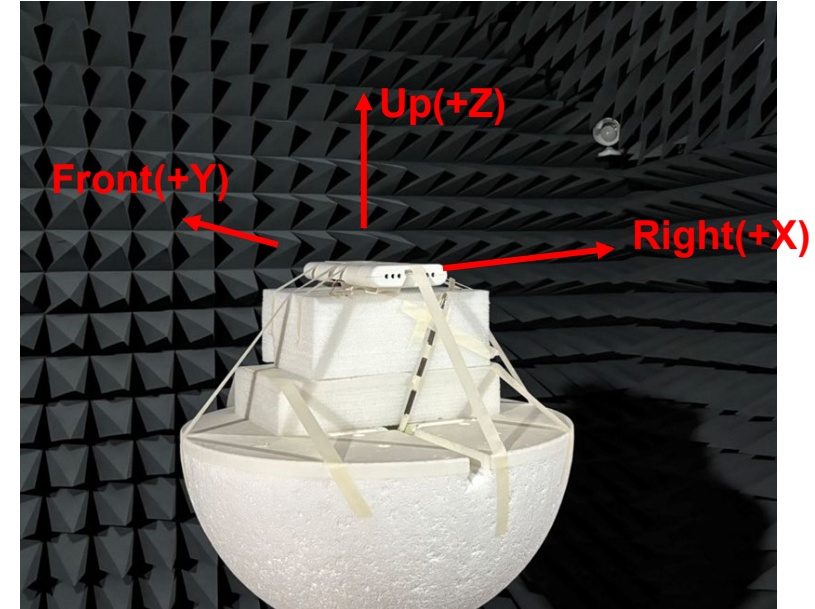
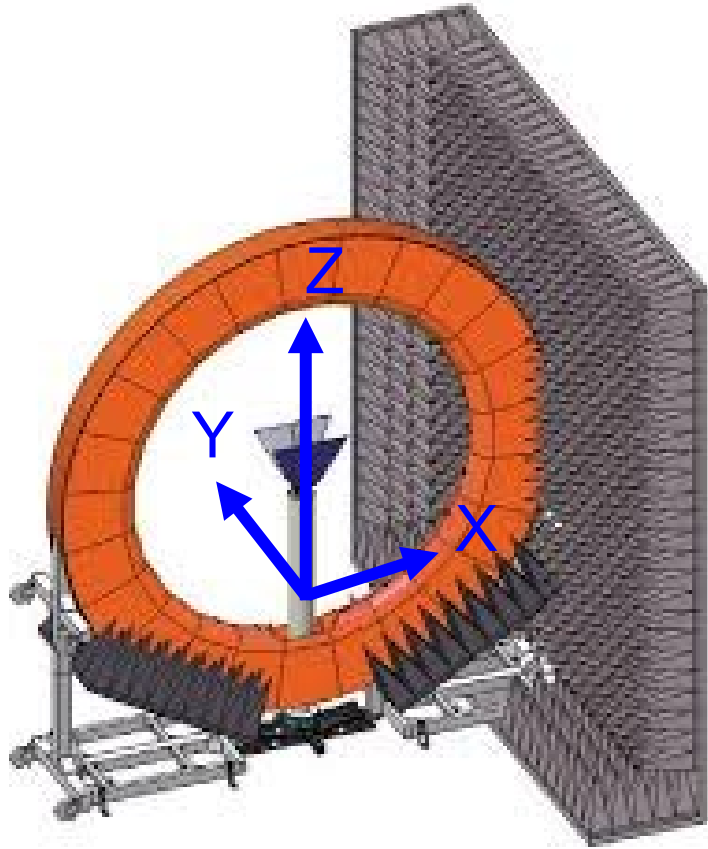


Test Setup for Radiation Pattern Measurement



Chamber Information

- SATIMO SG-24L Multi-Probe Antenna Measurement System
 - Angle between probes: 15°
 - Frequency range: 400 MHz – 9 GHz
 - Chamber Room Size: 5m L x 5m W x 5m H



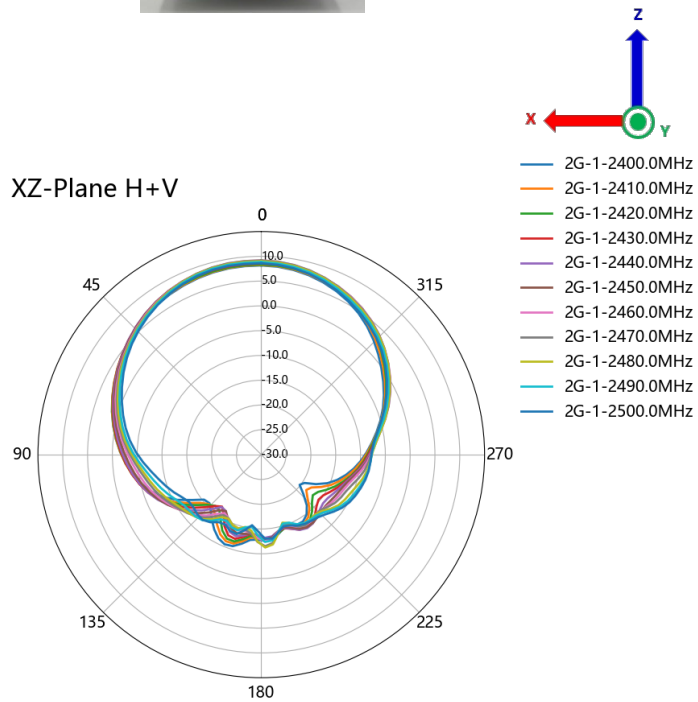
2D Radiation Pattern Result



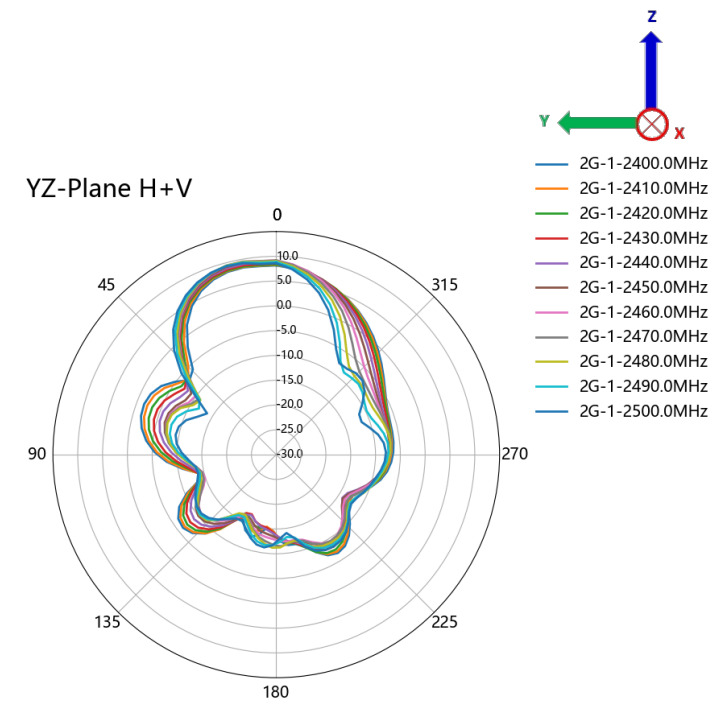
WiFi_2G-1(Vertical)



XZ-Plane H+V



YZ-Plane H+V



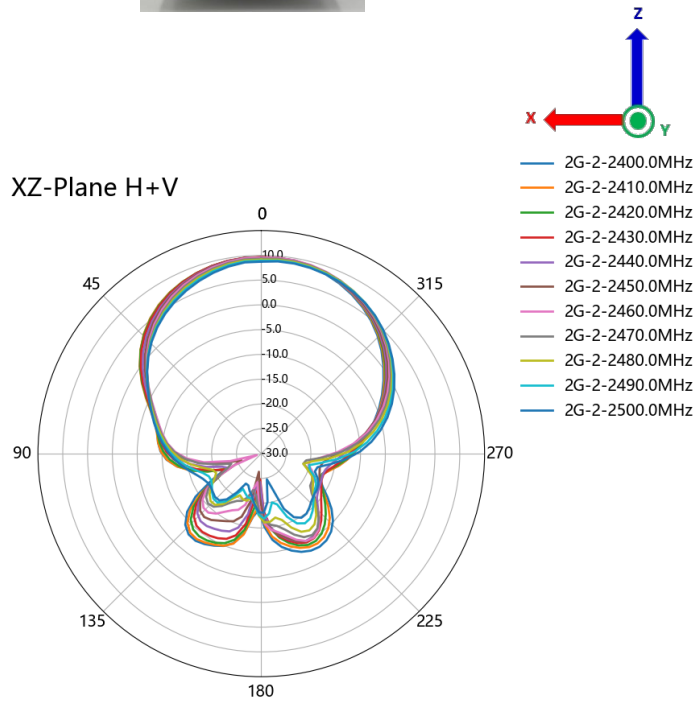
2D Radiation Pattern Result



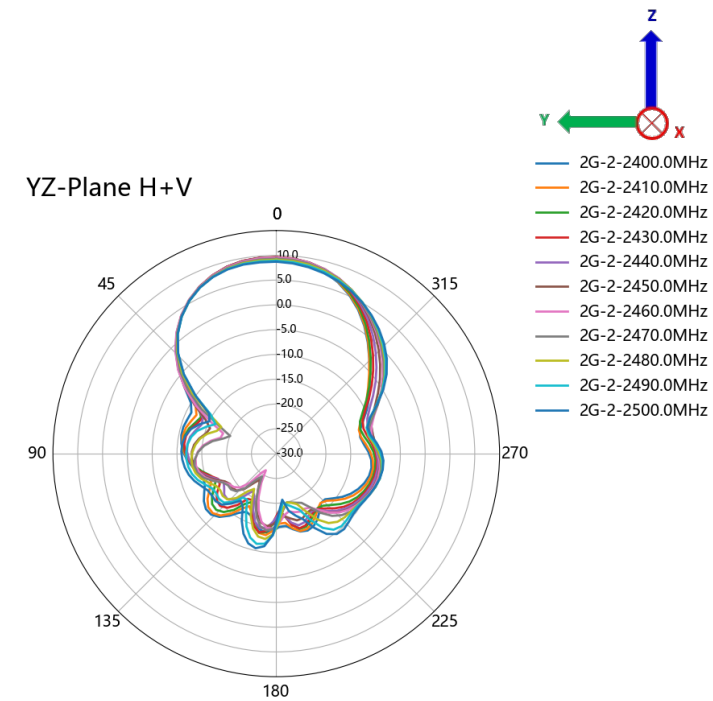
WiFi_2G-2(Horizontal)



XZ-Plane H+V



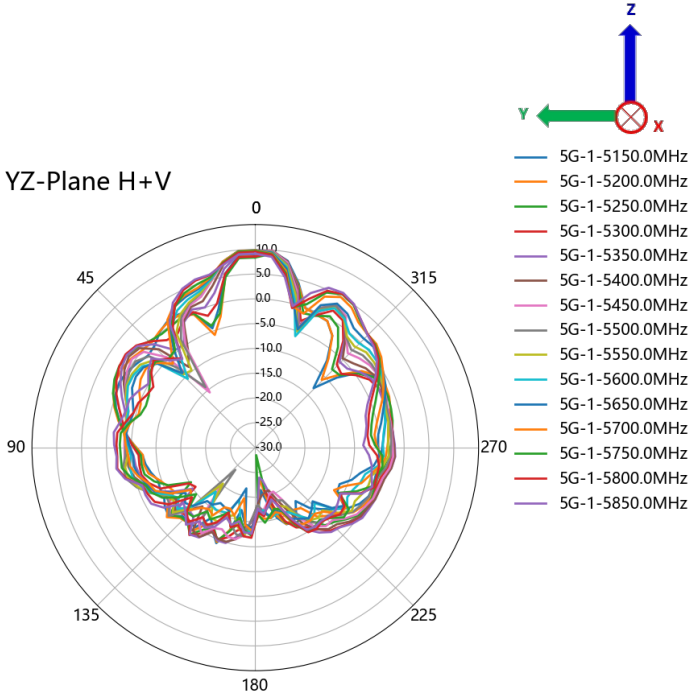
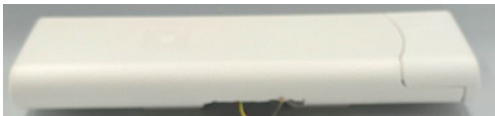
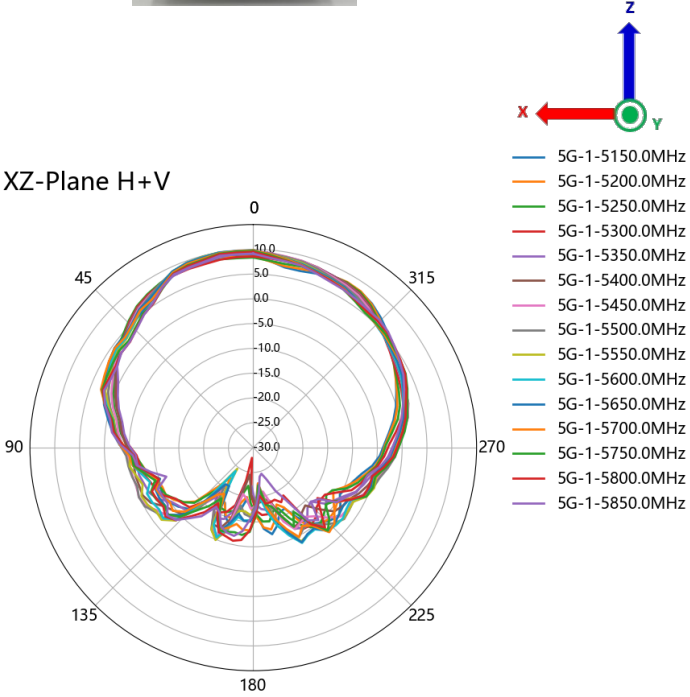
YZ-Plane H+V



2D Radiation Pattern Result



WiFi_5G-1(Vertical)



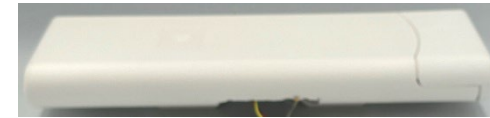
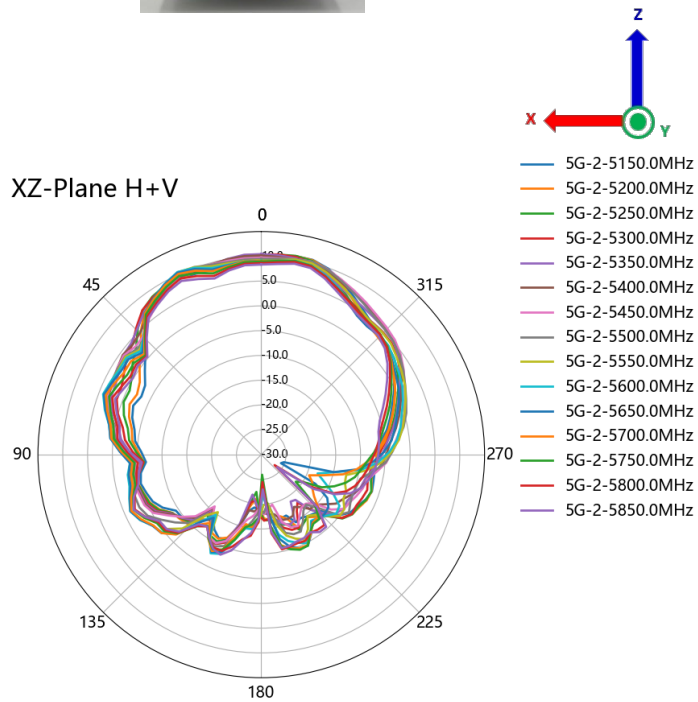
2D Radiation Pattern Result



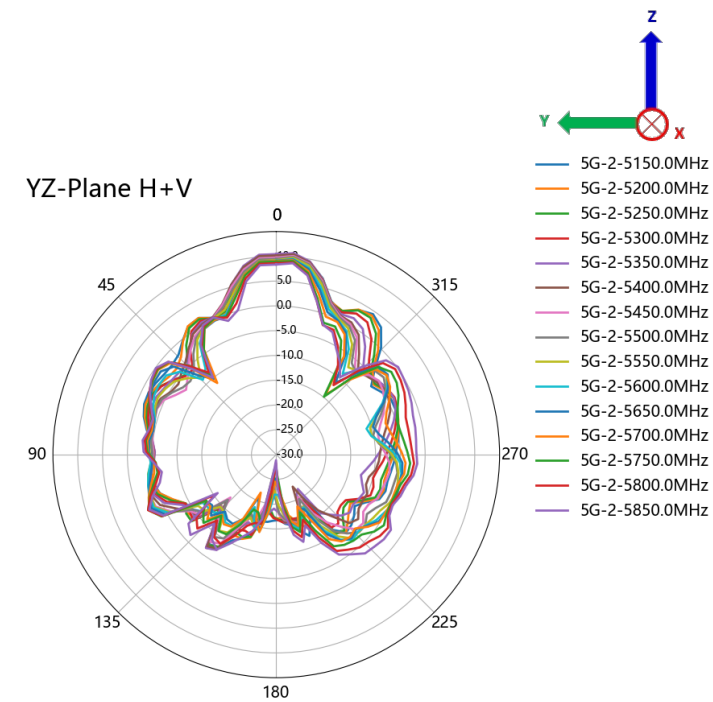
WiFi_5G-2(Horizontal)



XZ-Plane H+V



YZ-Plane H+V



Results Summary



Gain & Efficiency

	WiFi_2G-1(Vertical)		WiFi_2G-2(Horizontal)	
Frequency (MHz)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)
2400	8.33	68	9.59	70
2410	8.44	70	9.61	71
2420	8.53	71	9.58	71
2430	8.74	73	9.65	72
2440	9.02	74	9.61	71
2450	9.29	74	9.65	72
2460	9.48	74	9.64	73
2470	9.53	73	9.44	72
2480	9.46	72	9.25	72
2490	9.38	70	9.07	71
2500	9.32	69	8.97	71

	WiFi_5G-1(Vertical)		WiFi_5G-2(Horizontal)	
Frequency (MHz)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)
5150	10.44	69	11.05	70
5200	10.21	69	11.02	70
5250	9.89	67	11.04	69
5300	9.64	64	10.97	70
5350	9.91	62	10.91	70
5400	10.19	62	10.59	70
5450	10.43	62	10.44	72
5500	10.54	62	10.43	73
5550	10.34	60	10.47	72
5600	10.20	60	10.55	71
5650	10.05	63	10.45	70
5700	9.90	65	10.17	70
5750	9.80	67	9.74	69
5800	9.69	69	9.51	68
5850	9.38	69	9.13	67



Thank You

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