PSA

PASSIVE SYSTEM ALLIANCE

WALSIN TECHNOLOGY CORPORATION

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瑞軒_Edradour

Presented by

Kerry Wu

Walsin Technology Corporation

2023/ 04/ 24

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PSA

Version	Date	Description	Author
V01	2022/09/30	New Release	Kerry
V01.1	2022/10/06	第6頁增加天線照片	Kerry
V01.2	2023/02/03	增加3D及FCC驗證資料	Kerry
V01.3	2023/03/13	增加FCC(Chamber較驗)驗證資料	Kerry
V01.4	2023/04/24	增加測試人員及測試日期	Kerry

OUTLINE

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2.4 3D Radiation Patterns

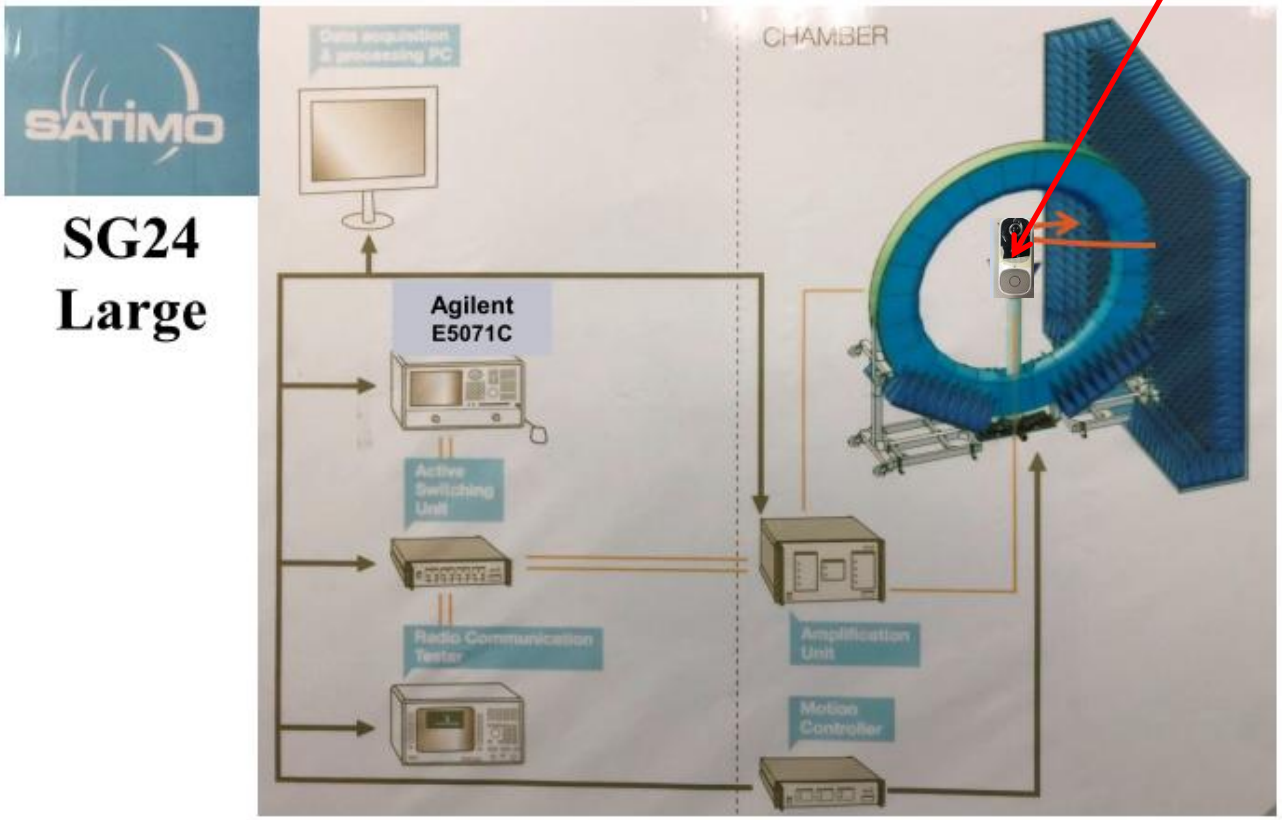
3. Summary

1. Measurement Information

1.1 Experimental Setup

Test Equipment

- **Network Analyzer : Agilent E5071C**
- **3D Antenna Chamber : SATIMO SG24 (Large)**



1. Measurement Information

1.1 Experimental Setup

Operating instructions:

1.Place the DUT at the center of the turntable,
2.Connecting the test cable to the DUT, and use the SPM software for passive measurement.
3.During the measured process, SATIMO SG24 will conduct radiation testing with the DUT through 23 probes by a vertical 360- degree; then the turntable will rotate a horizontal 180- degree.
4. After, a complete measurement of spherical 3D is completed.

Tester : Kerry Wu
Test Data : 2022/09/29

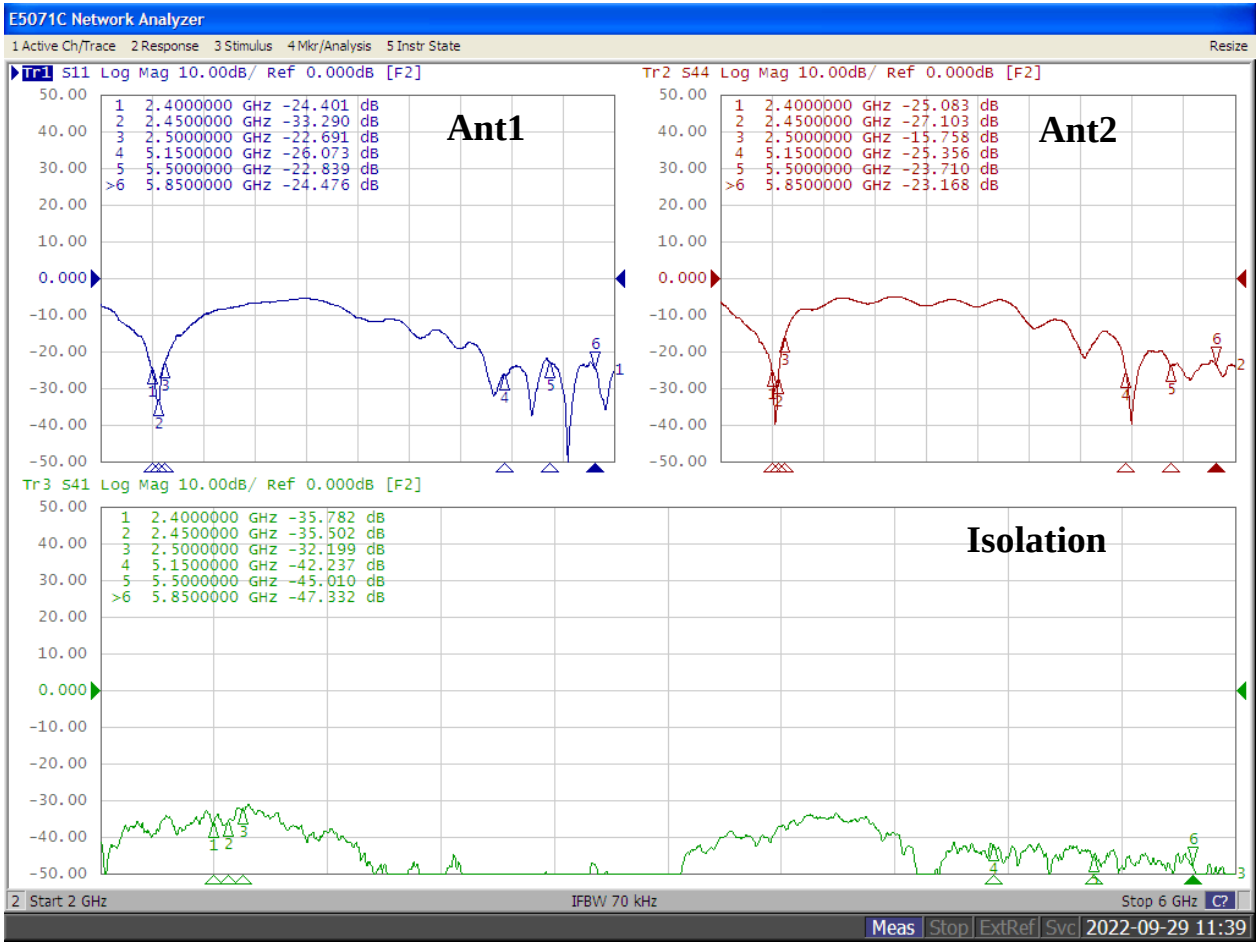
1. Measurement Information

Test equipment calibration information:

Equipment	Model No.	Calibrated Date	Calibrated Until
Satimo	SG24	2021/11/29	2022/11/29
Agilent	E5071C	2021/3/3	2024/3/3

2. Antenna Characteristics

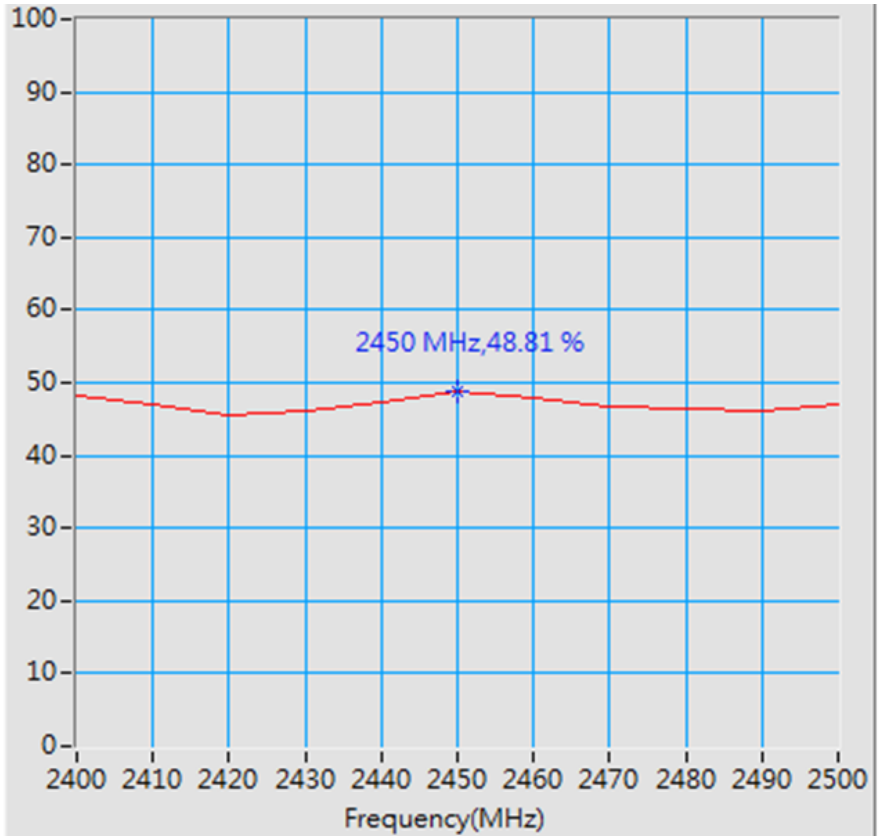
2.1 Impedance



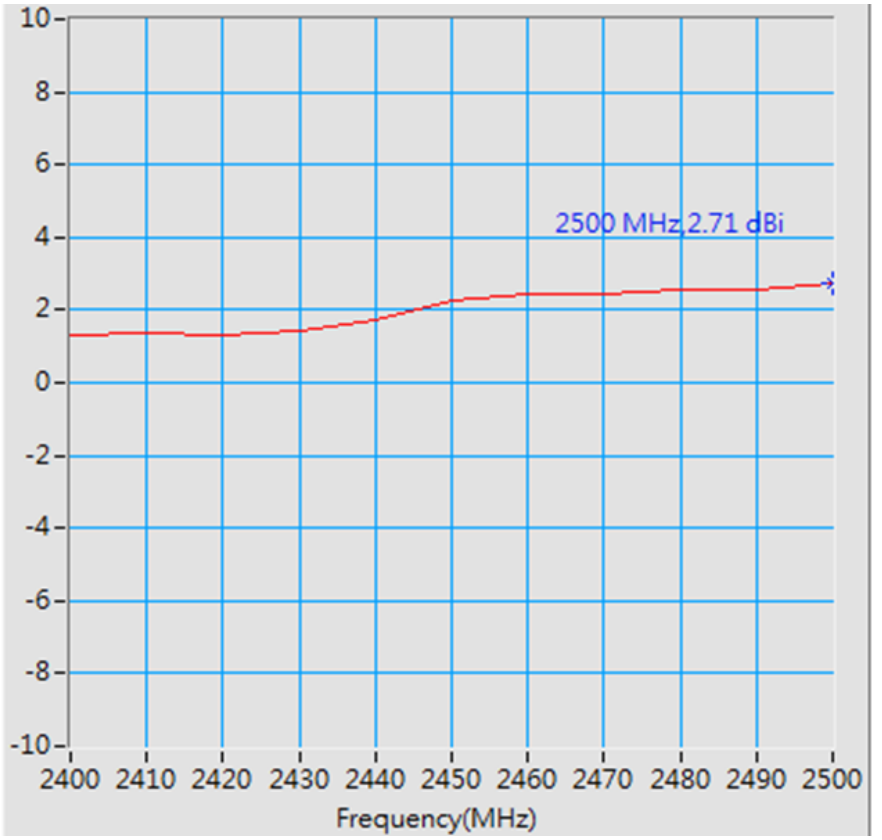
2. Antenna Characteristics

Ant1@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2450MHz : 48.81%

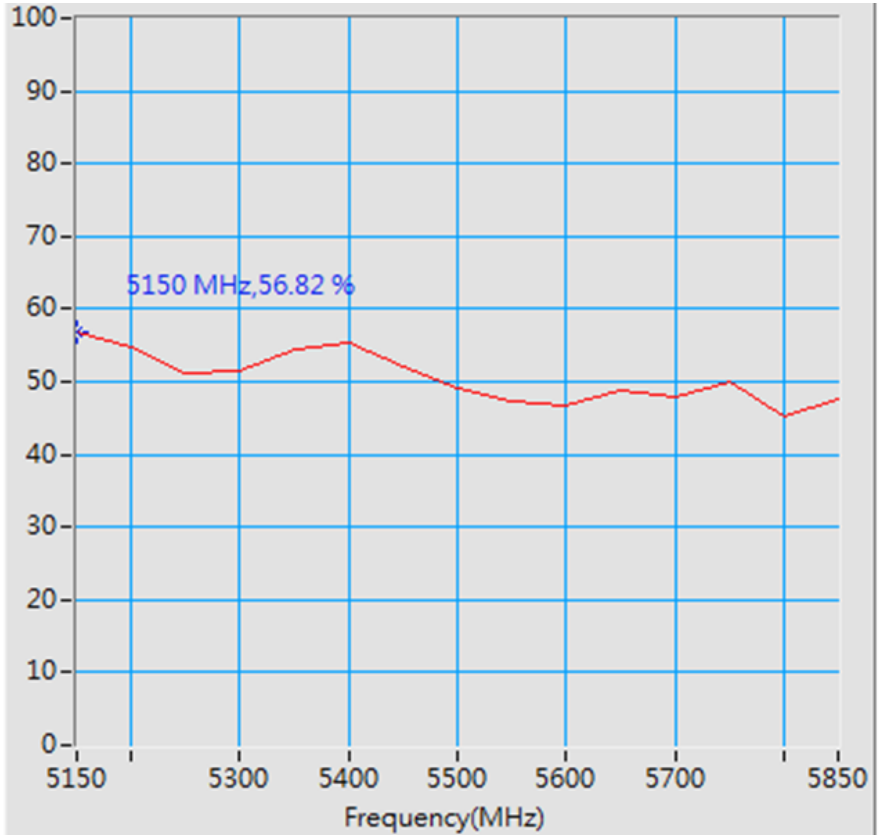


Maximum Peak Gain at 2500MHz : 2.71dBi

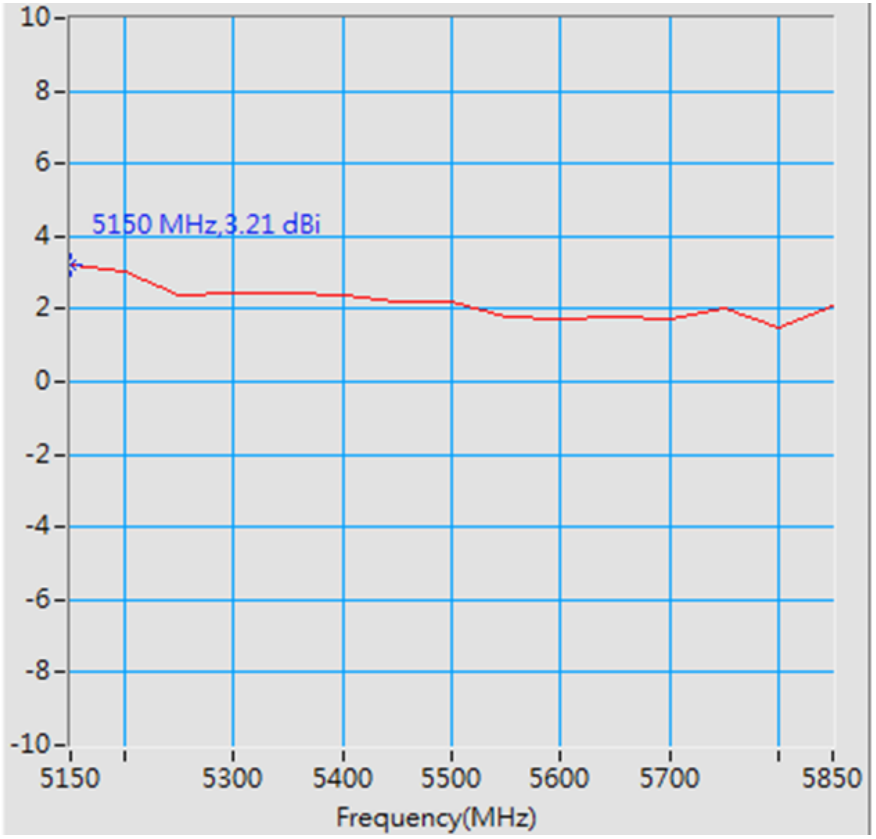
2. Antenna Characteristics

Ant1@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5150MHz : 56.82%

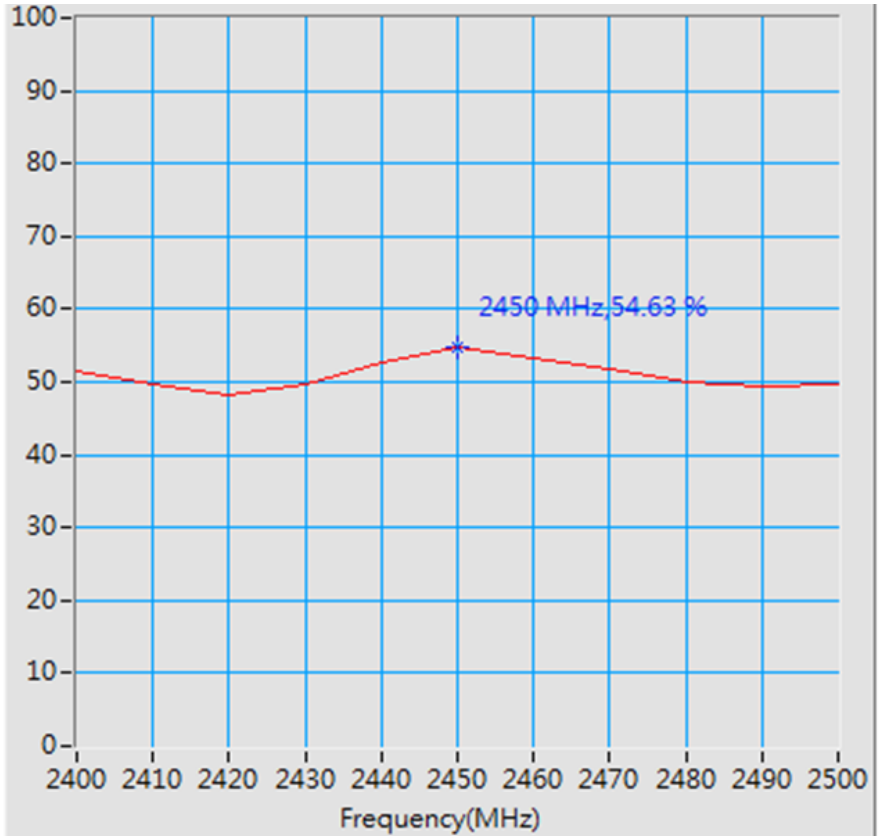


Maximum Peak Gain at 5150MHz : 3.21dBi

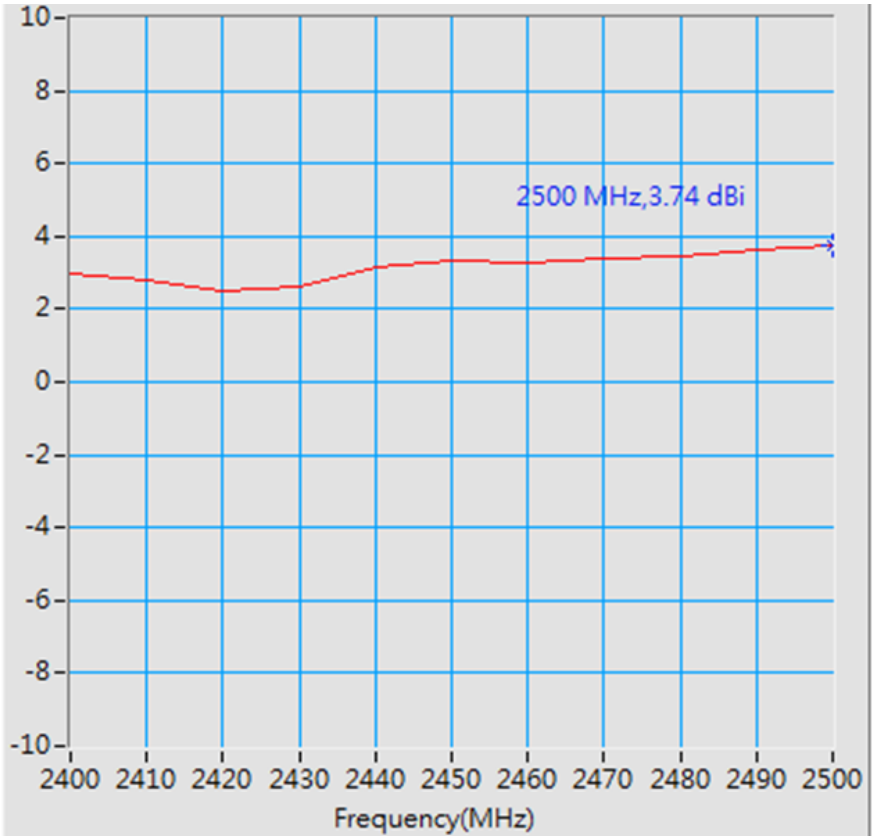
2. Antenna Characteristics

Ant2@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2450MHz : 54.63%

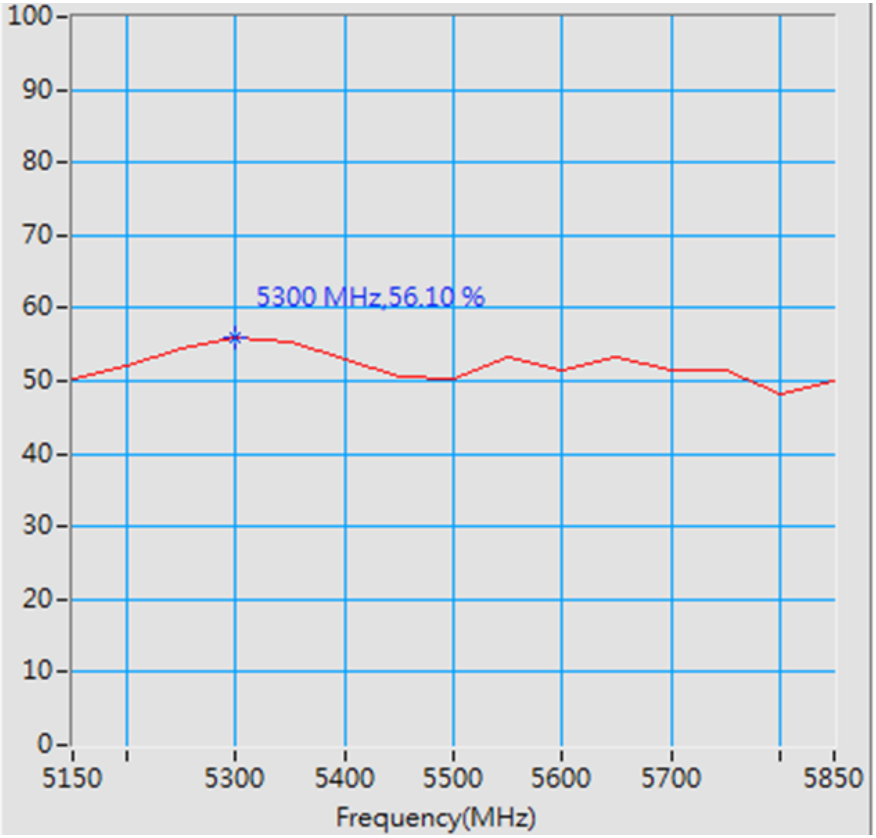


Maximum Peak Gain at 2500MHz : 3.74dBi

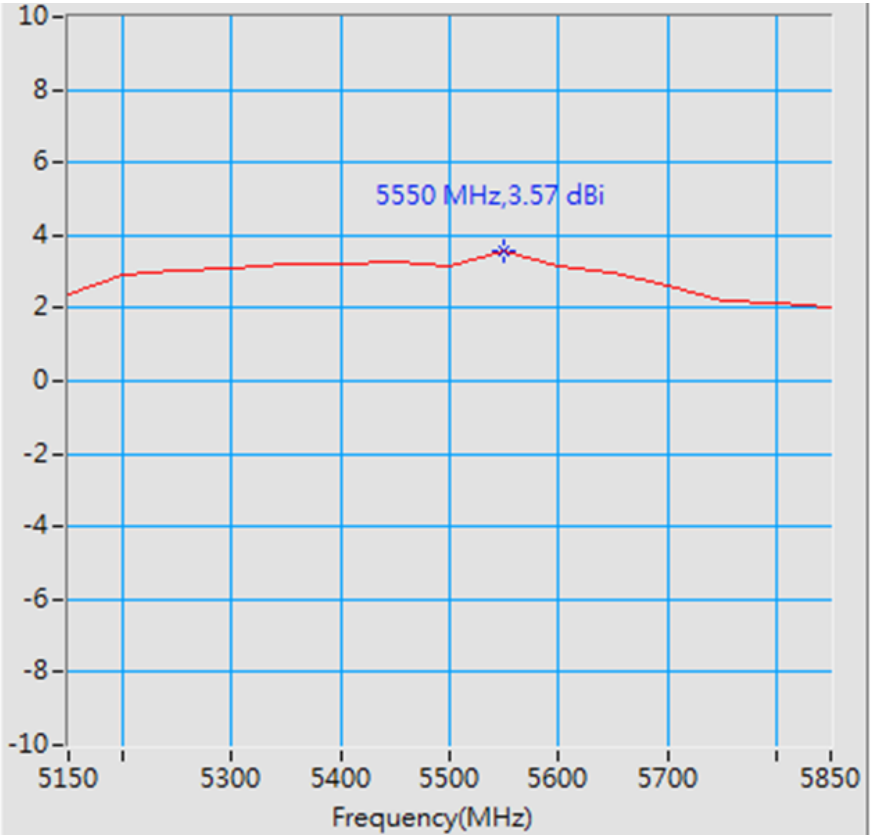
2. Antenna Characteristics

Ant2@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5300MHz : 56.10%



Maximum Peak Gain at 5550MHz : 3.57dBi

2. Antenna Characteristics

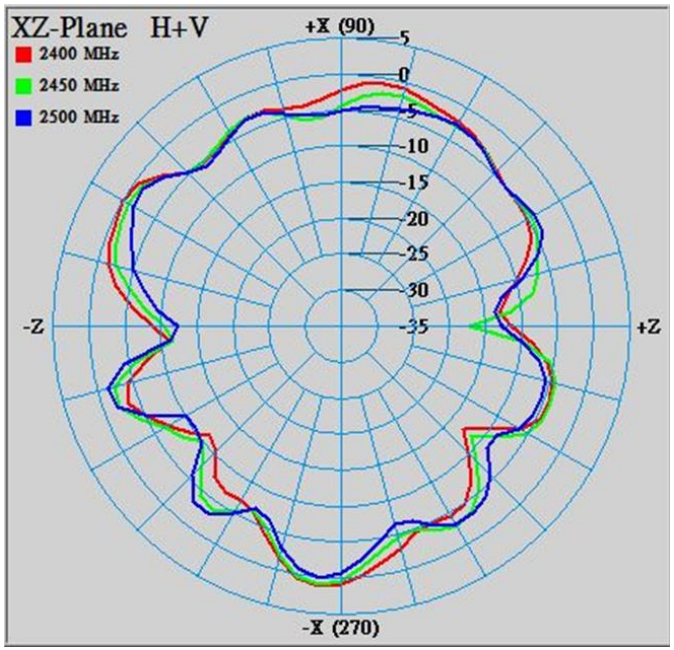
2.2 Antenna Efficiency and Peak Gain

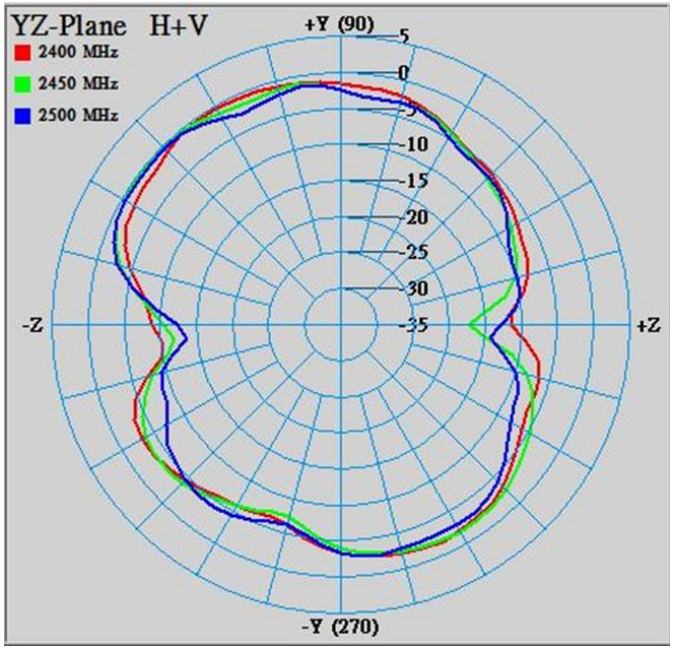
	Ant1		Ant2	
Frequency (MHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2400	48.15	1.34	51.41	2.96
2450	48.81	2.28	54.63	3.35
2500	46.90	2.71	49.69	3.74
5150	56.82	3.21	50.24	2.41
5500	49.00	2.22	50.32	3.17
5850	47.76	2.05	49.92	2.00

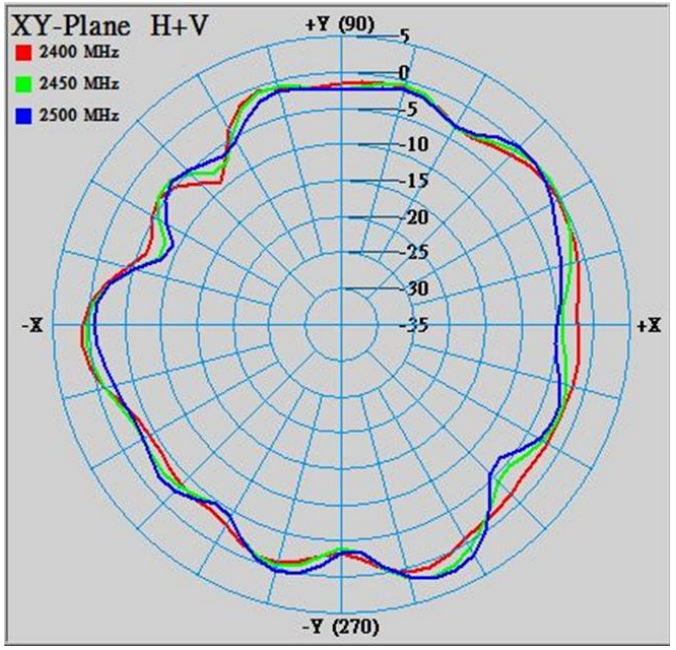
2. Antenna Characteristics

Ant1@2G

2.3 2D Radiation Patterns





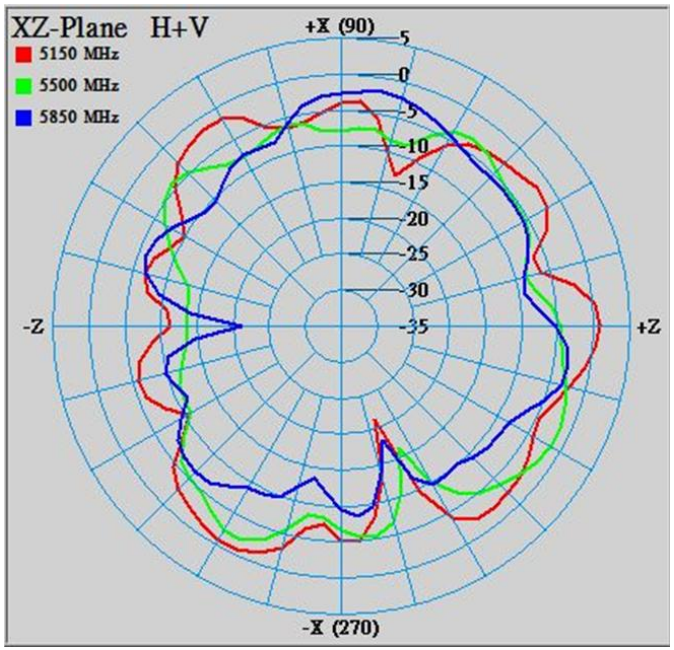


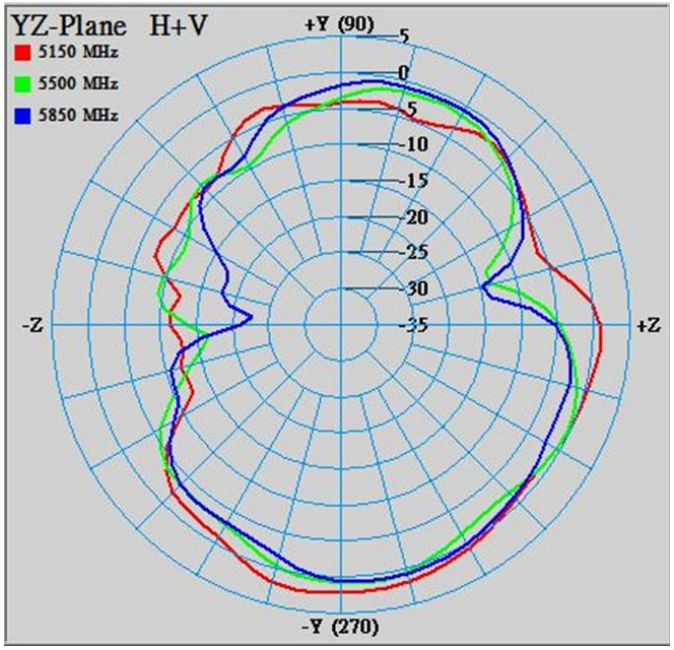
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
2400	**1.16**	**-3.82**	**-0.34**	**-3.74**	**0.90**	**-1.89**
2450	**1.05**	**-4.02**	**-0.08**	**-3.86**	**2.28**	**-1.98**
2500	**0.07**	**-4.59**	**-0.38**	**-4.30**	**2.71**	**-2.22**

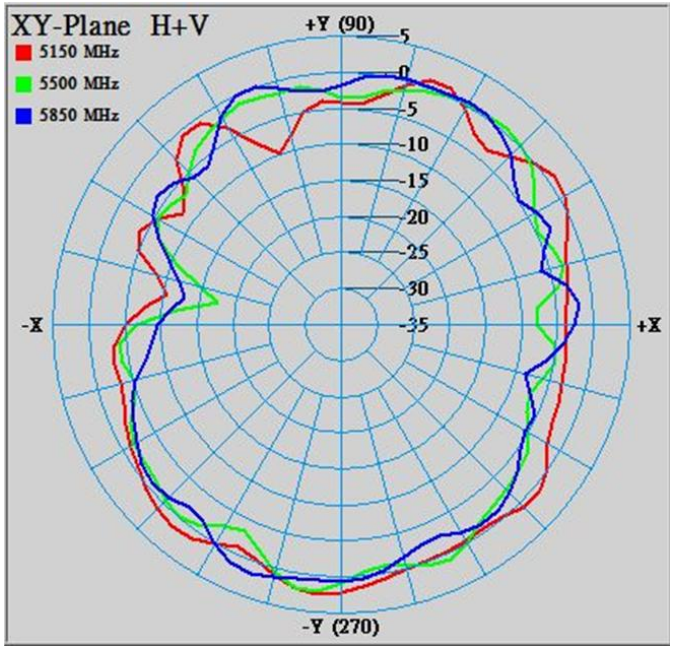
2. Antenna Characteristics

Ant1@5G

2.3 2D Radiation Patterns





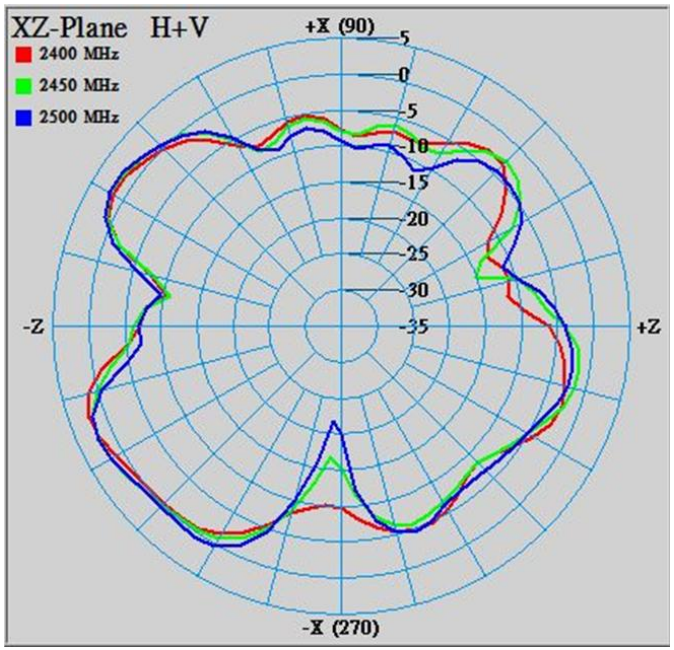


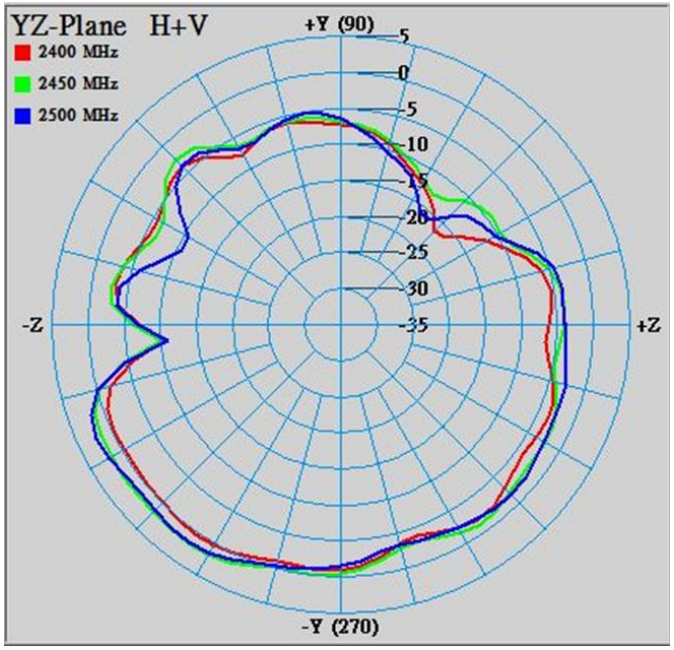
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
5150	**0.90**	**-4.06**	**2.30**	**-2.01**	**2.42**	**-1.36**
5500	**-1.41**	**-5.82**	**0.99**	**-3.34**	**2.15**	**-2.26**
5850	**-2.04**	**-6.85**	**0.81**	**-3.25**	**1.69**	**-2.16**

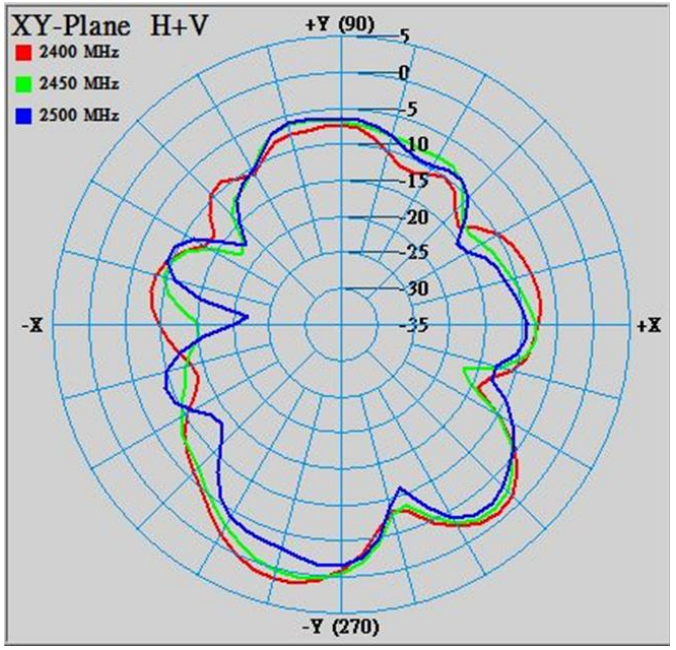
2. Antenna Characteristics

Ant2@2G

2.3 2D Radiation Patterns





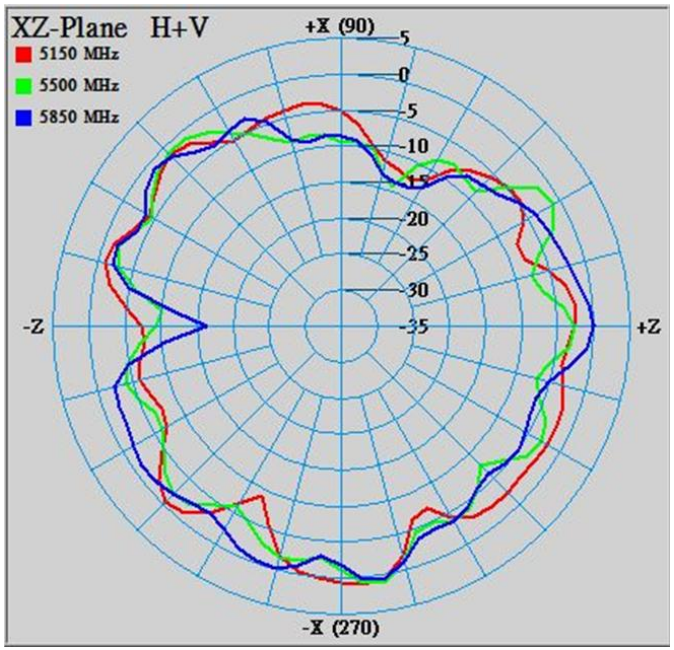


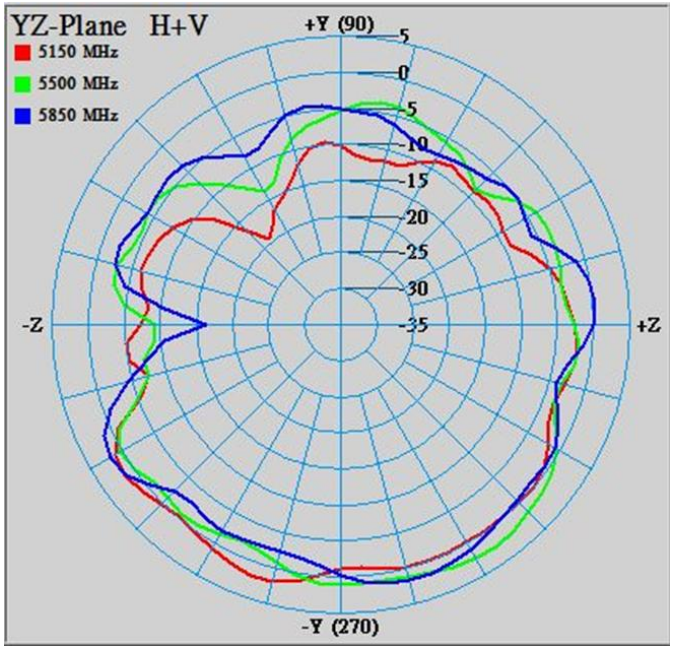
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
2400	**2.25**	**-3.44**	**0.34**	**-3.78**	**1.54**	**-5.74**
2450	**2.15**	**-3.18**	**1.95**	**-2.59**	**0.44**	**-6.25**
2500	**2.24**	**-3.22**	**2.36**	**-2.85**	**-1.41**	**-7.37**

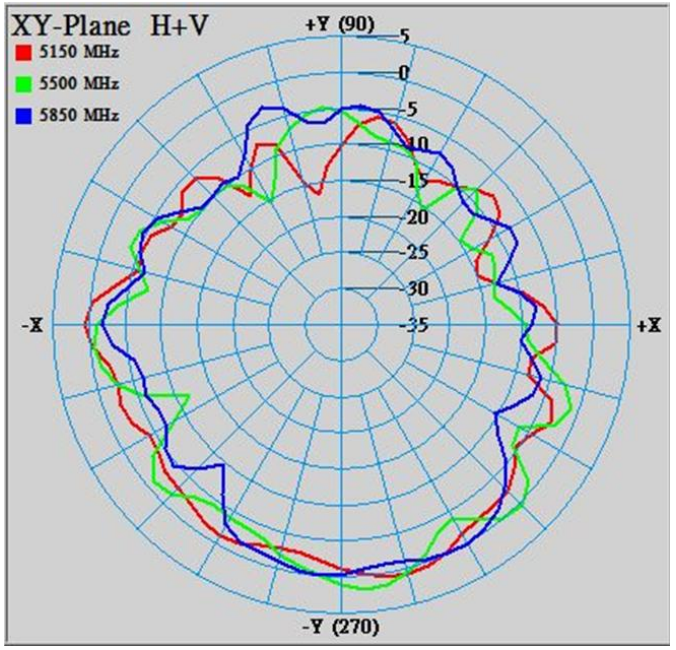
2. Antenna Characteristics

Ant2@5G

2.3 2D Radiation Patterns





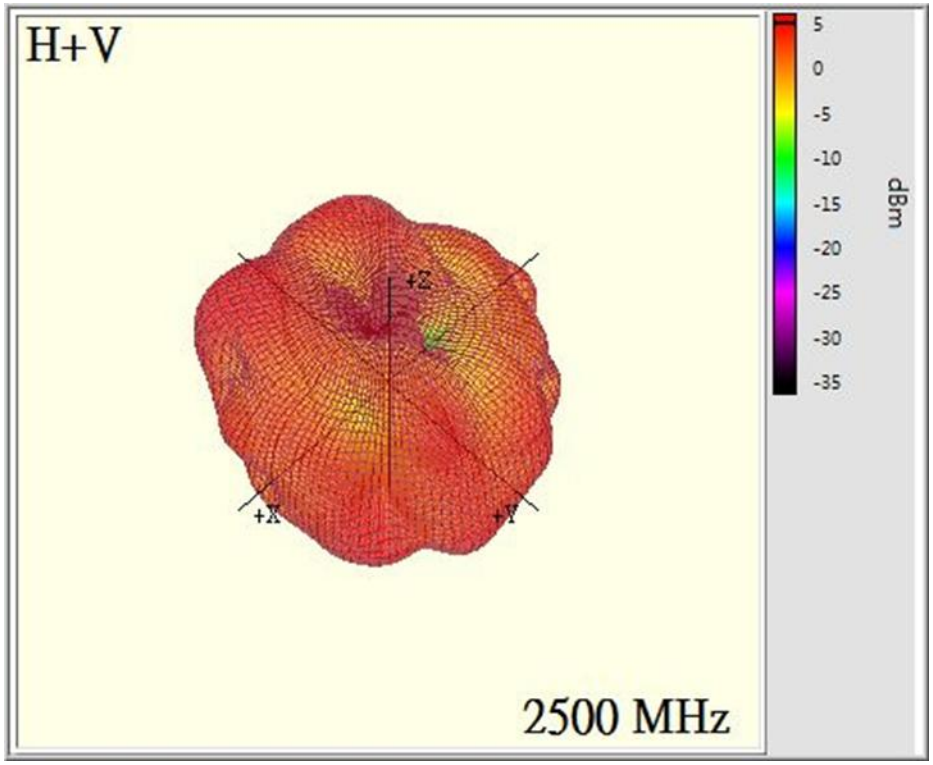


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
5150	**1.08**	**-3.60**	**1.91**	**-3.00**	**0.81**	**-4.06**
5500	**1.10**	**-4.17**	**2.52**	**-2.16**	**1.80**	**-4.07**
5850	**0.62**	**-3.52**	**1.90**	**-2.31**	**0.07**	**-4.59**

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant1@2G(Peak_Gain)

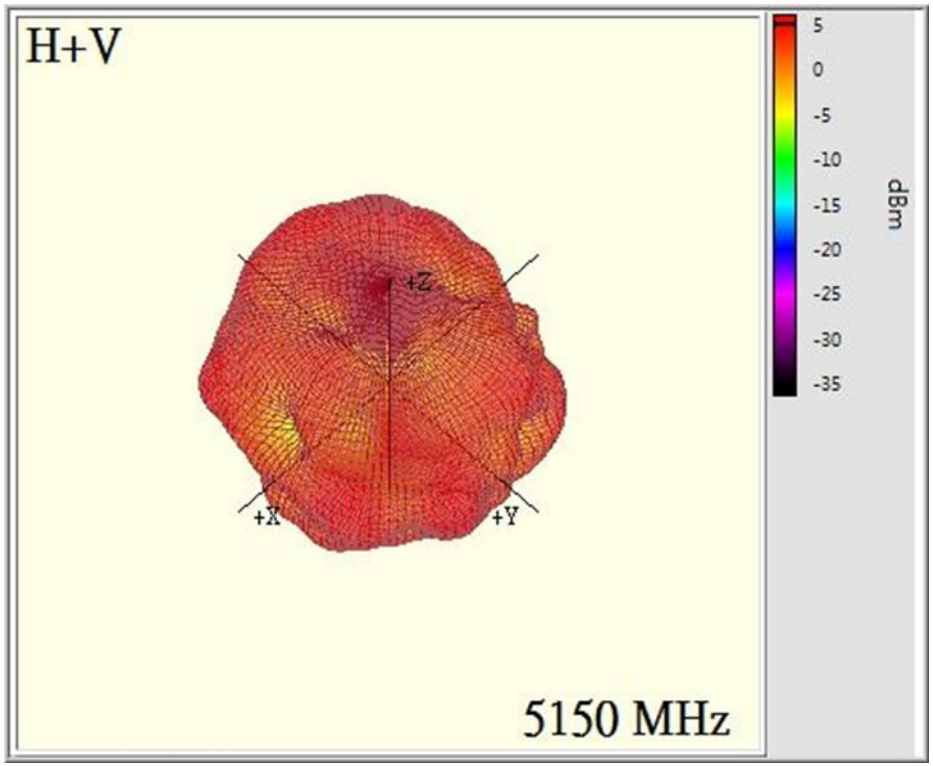


Gain (dBi)	2.71
Peak Phi Angle	294
Peak Theta Angle	90

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant1@5G(Peak_Gain)

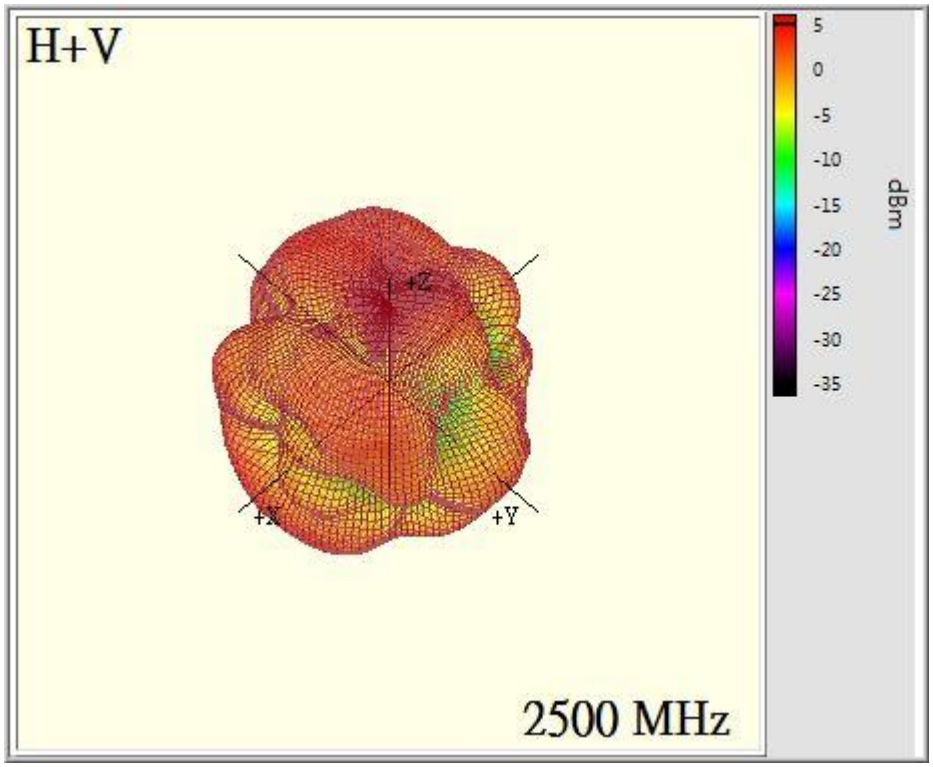


Gain (dBi)	3.21
Peak Phi Angle	230
Peak Theta Angle	80

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant2@2G(Peak_Gain)

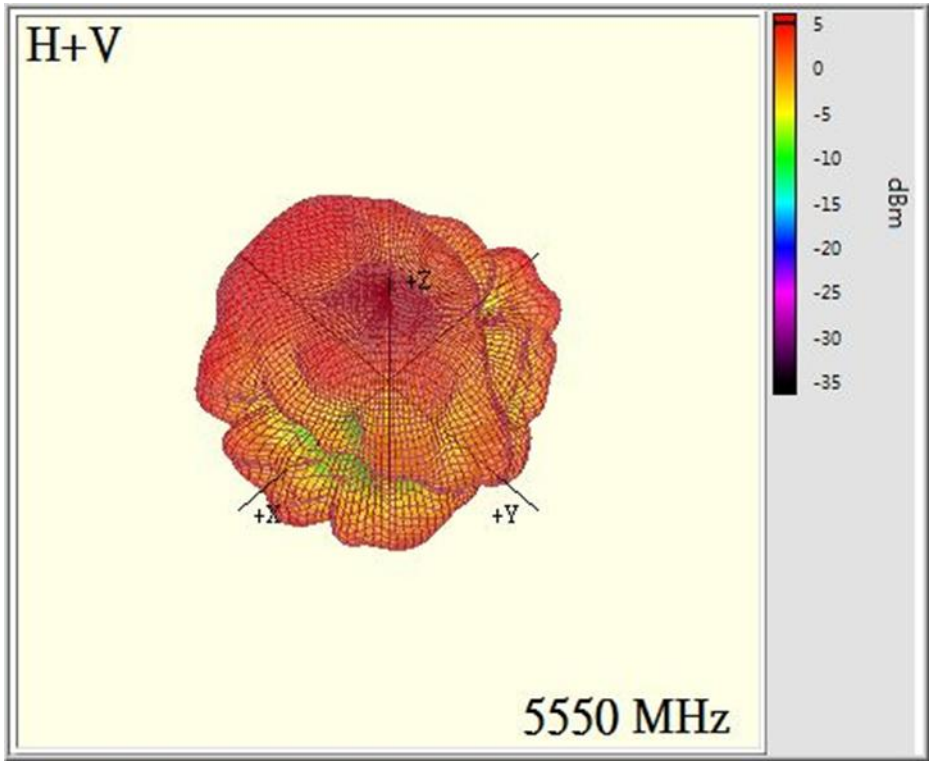


Gain (dBi)	3.74
Peak Phi Angle	226
Peak Theta Angle	152

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant2@5G(Peak_Gain)



Gain (dBi)	3.57
Peak Phi Angle	298
Peak Theta Angle	148

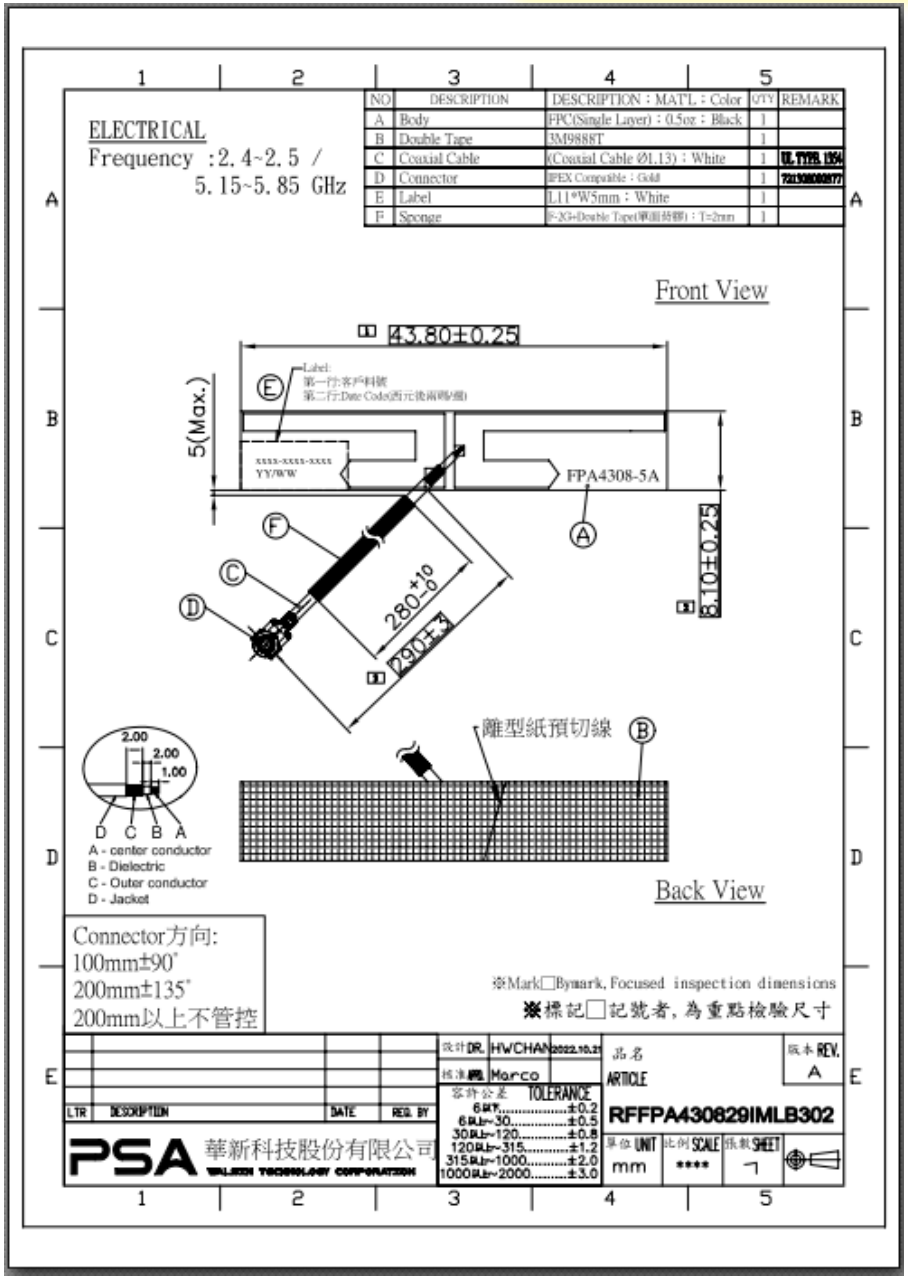
3. Summary

- The performance of antennas is shown in table

	Ant1		Ant2	
	2G	5G	2G	5G
Maximum Efficiency (%)	48.81	56.82	54.63	56.1
Maximum Gain (dBi)	2.71	3.21	3.74	3.57

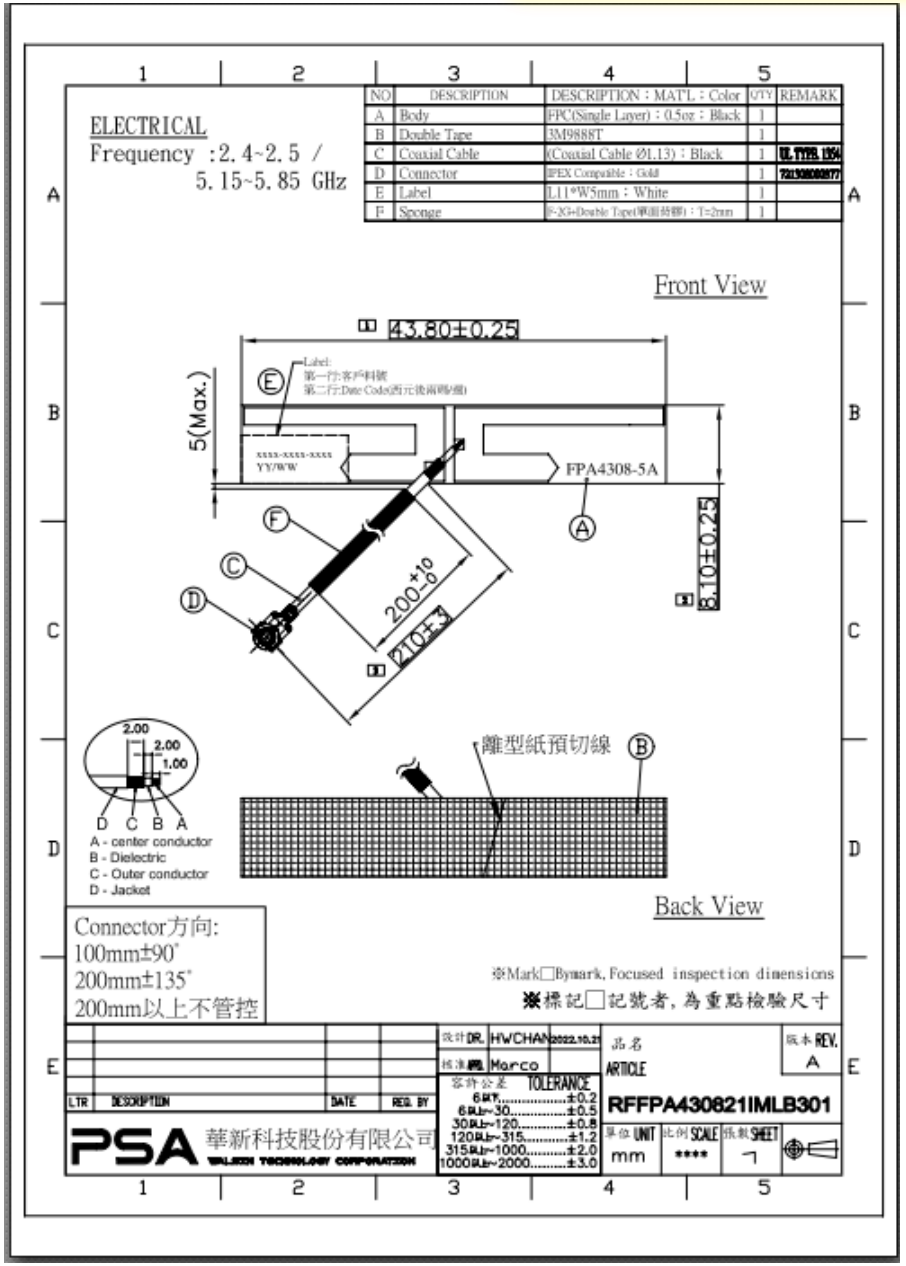
4. Antenna Informatiom

Ant1



4. Antenna Informatiom

Ant2



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