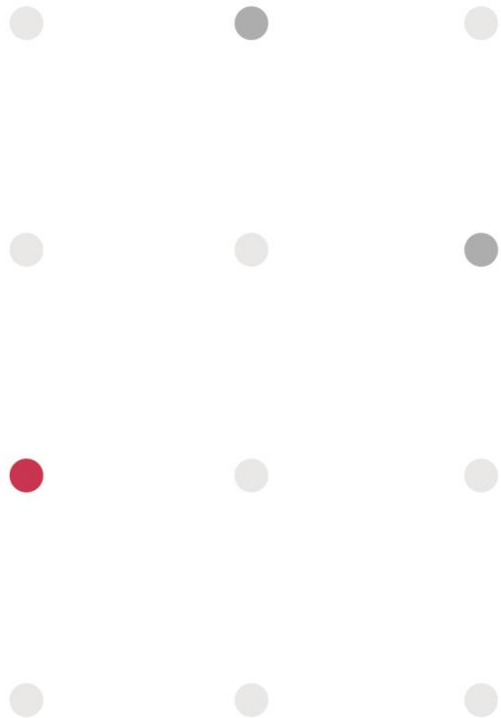


PSA

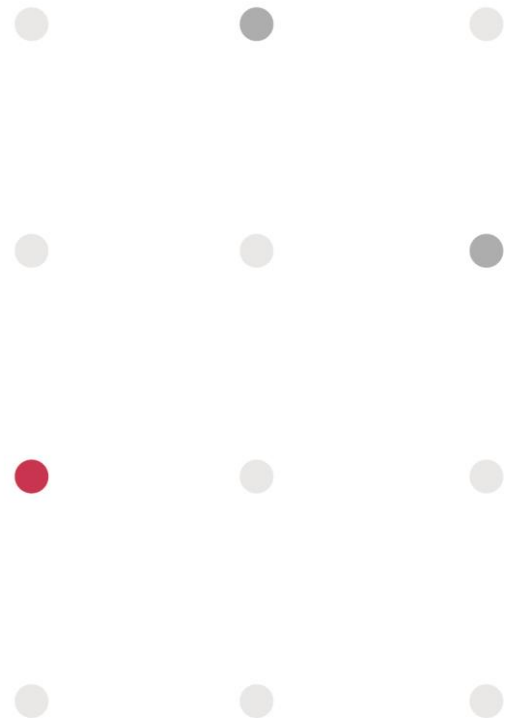
佳邦科技股份有限公司

INPAQ TECHNOLOGY CO., LTD.



PSA

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.



瑞軒_Kavalan

Presented by

Calvin

2024/ 05/ 22



Version	Date	Description	Author
V01	2023/06/21	New Release	Calvin
V02	2024/05/22	增加FCC認證資訊	Calvin

OUTLINE

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2.4 3D Radiation Patterns

3. Summary

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 : Calvin Liu

Test Data : 2023/06/19

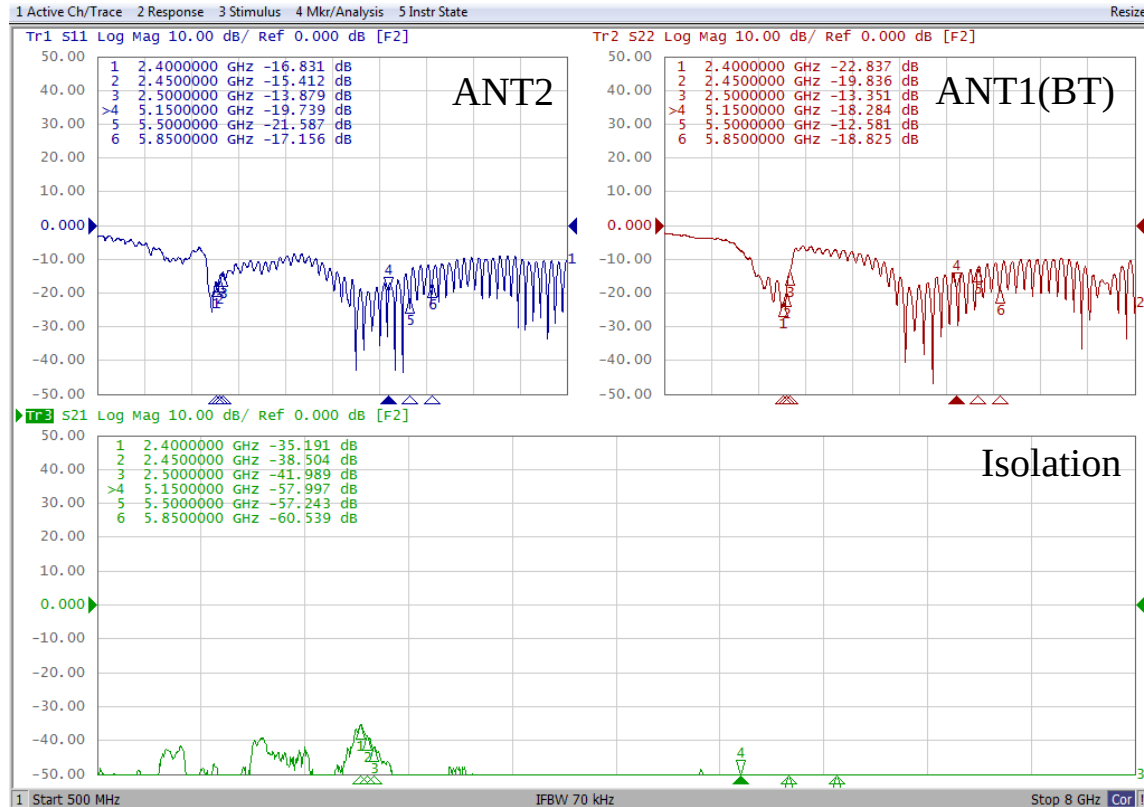
1. Measurement Information

Test equipment calibration information:

Equipment	Model No.	Calibrated Date	Calibrated Until
Satimo	SG24	2022/11/29	2023/11/29
Agilent	E5071C	2022/11/29	2023/11/29

2. Antenna Characteristics

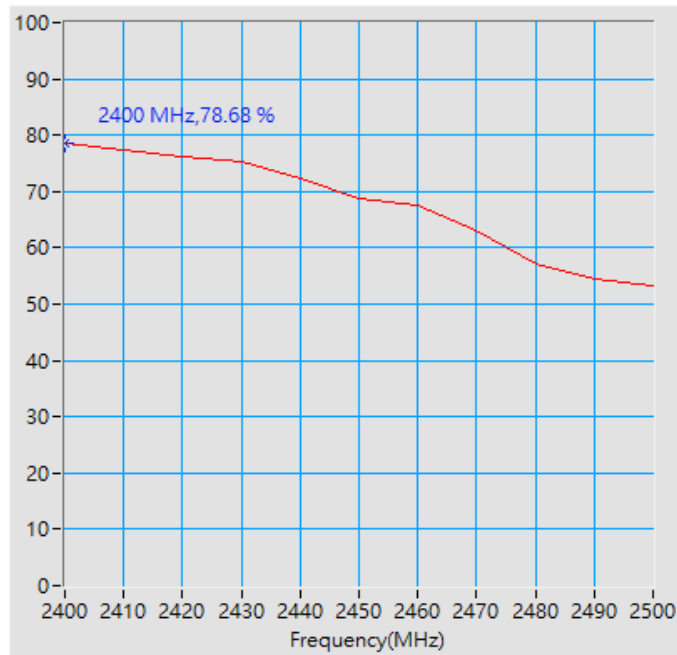
2.1 S-Parameter



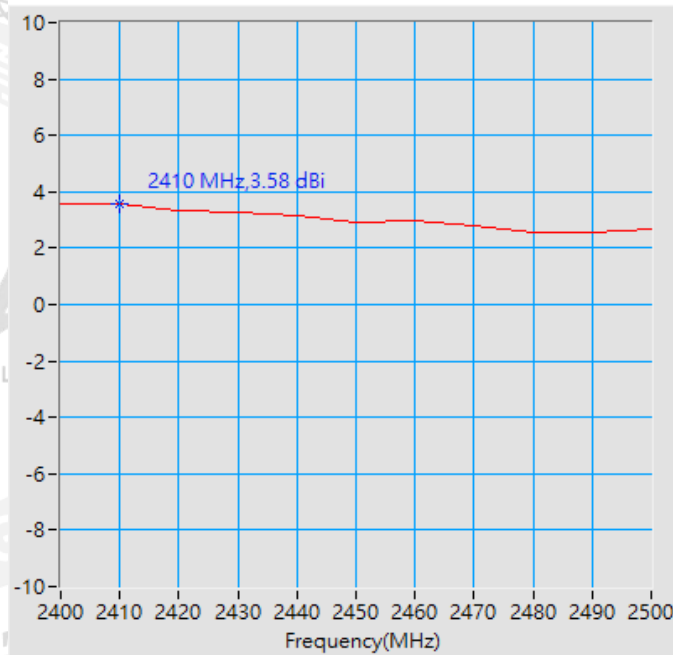
2. Antenna Characteristics

ANT1@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2400 MHz : 78.68 %

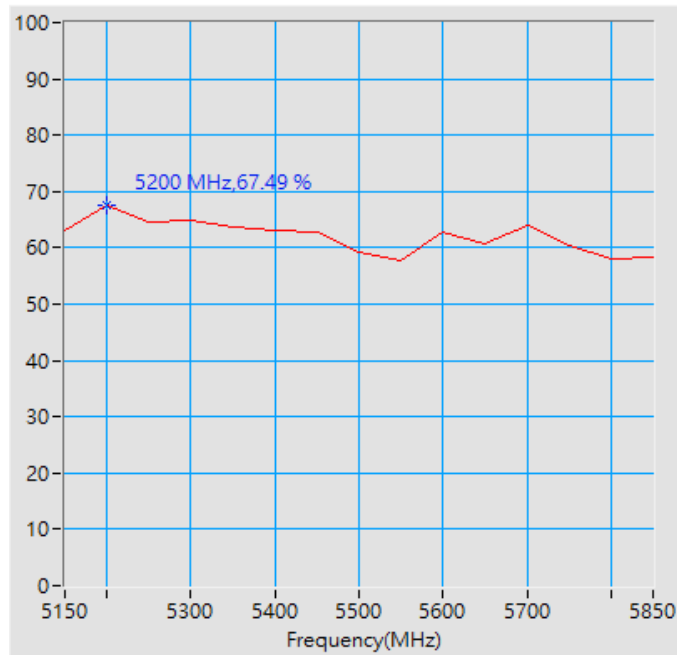


Maximum Peak Gain at 2410 MHz : 3.58 dBi

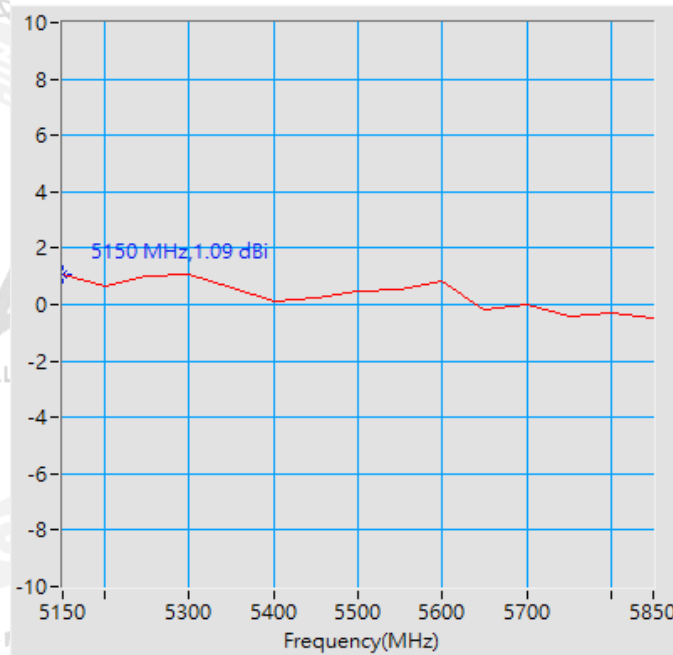
2. Antenna Characteristics

ANT1@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5200 MHz : 67.49 %

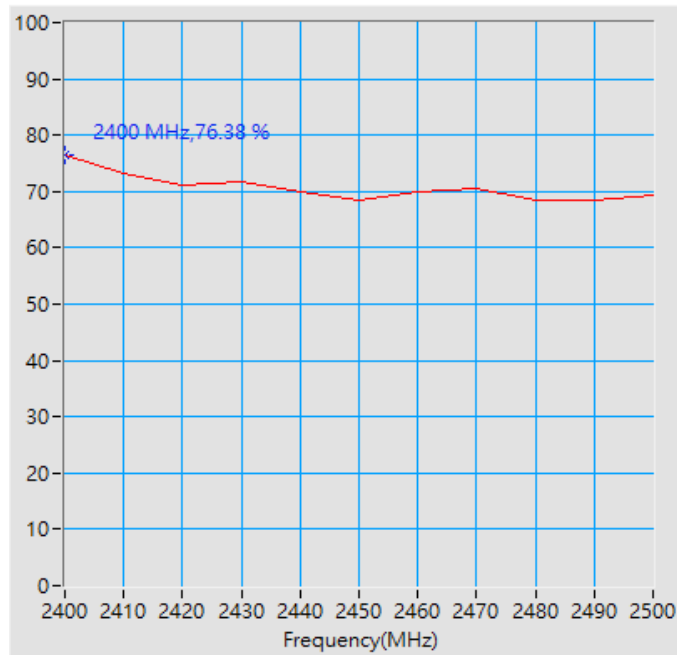


Maximum Peak Gain at 5150 MHz : 1.09 dBi

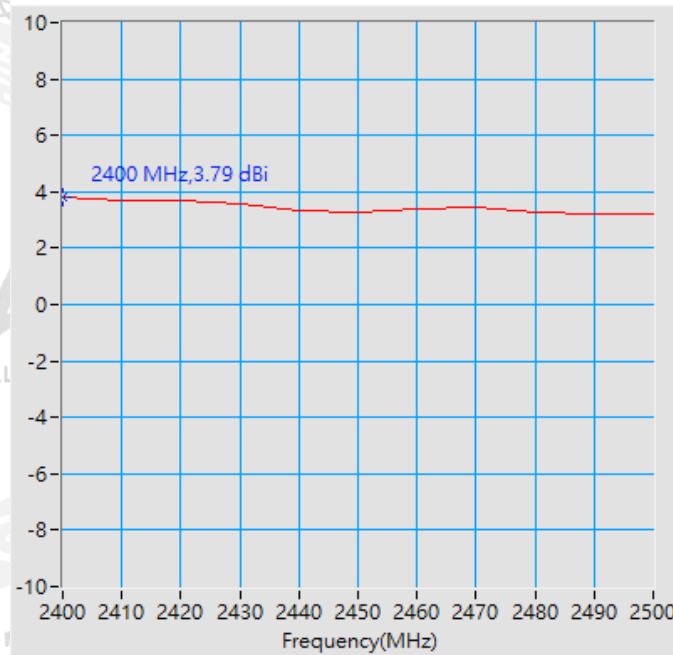
2. Antenna Characteristics

ANT2@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2400 MHz : 76.38 %

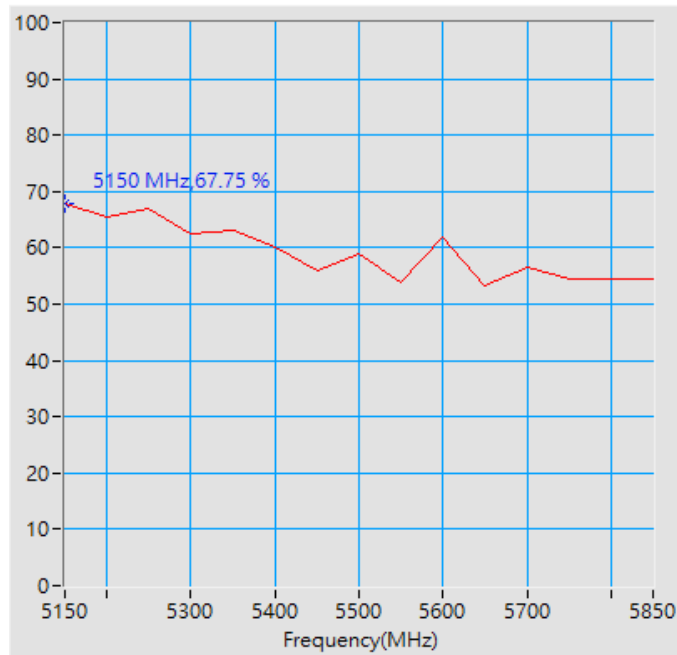


Maximum Peak Gain at 2400 MHz : 3.79 dBi

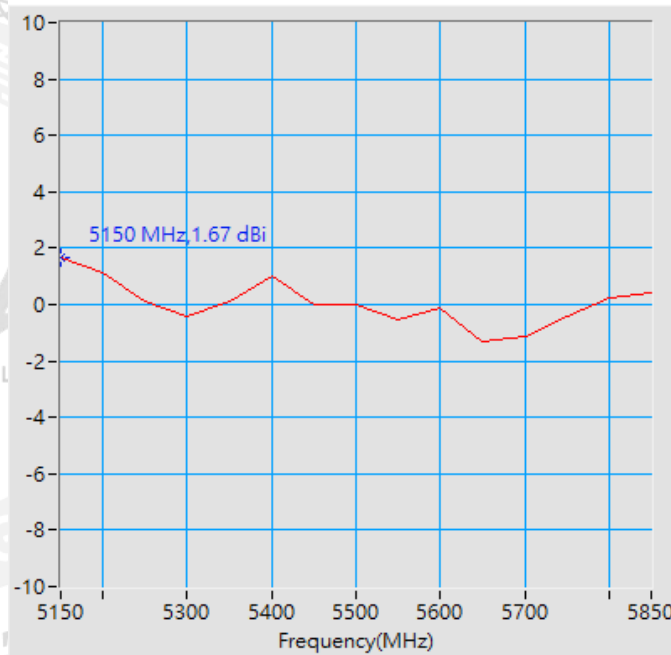
2. Antenna Characteristics

ANT2@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5150 MHz : 67.75 %



Maximum Peak Gain at 5150 MHz : 1.67 dBi

2. Antenna Characteristics

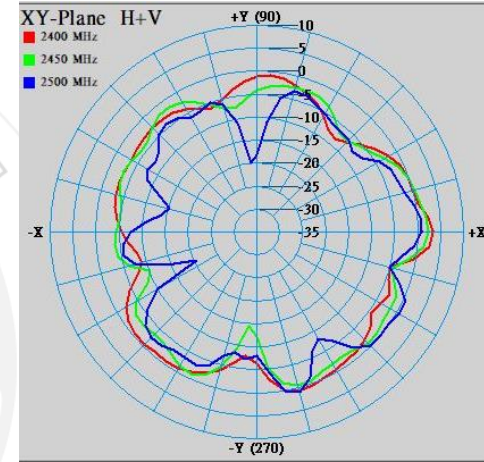
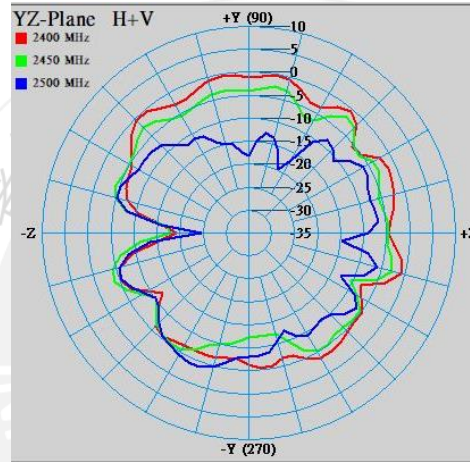
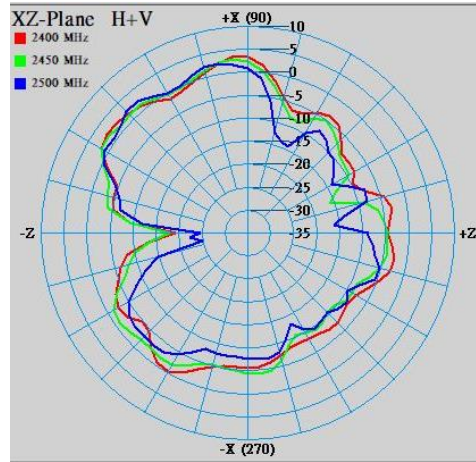
2.2 Antenna Efficiency and Peak Gain

	ANT1		ANT2	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2.4	78.68	3.57	76.38	3.79
2.45	68.74	2.94	68.33	3.27
2.5	53.40	2.66	69.45	3.20
5.15	63.24	1.09	67.75	1.67
5.5	59.12	0.50	58.94	0.03
5.85	58.38	-0.48	54.52	0.39

2. Antenna Characteristics

ANT1@2G

2.3 2D Radiation Patterns

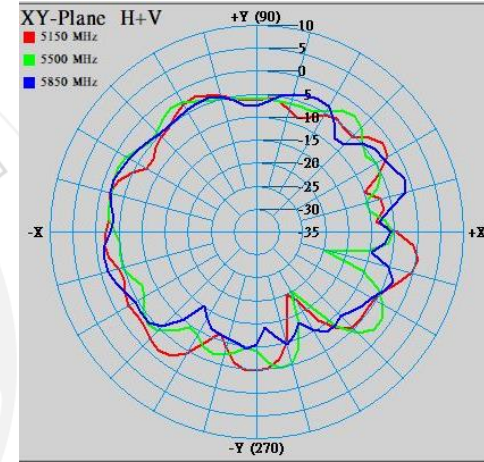
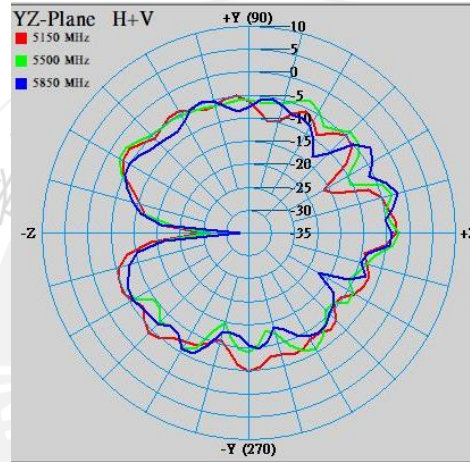
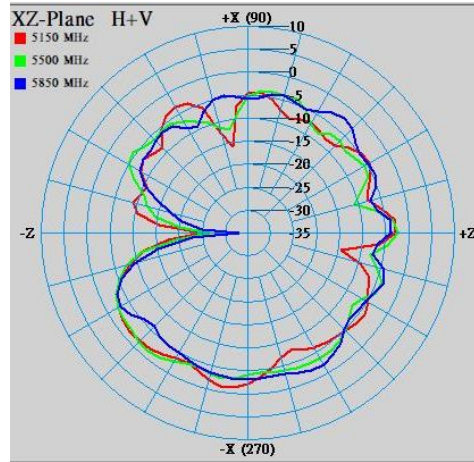


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
2400	3.57	-2.64	-0.18	-3.73	3.33	-2.15
2450	2.94	-2.94	-1.95	-5.45	2.30	-2.67
2500	2.59	-3.95	-3.81	-8.37	1.09	-3.92

2. Antenna Characteristics

ANT1@5G

2.3 2D Radiation Patterns

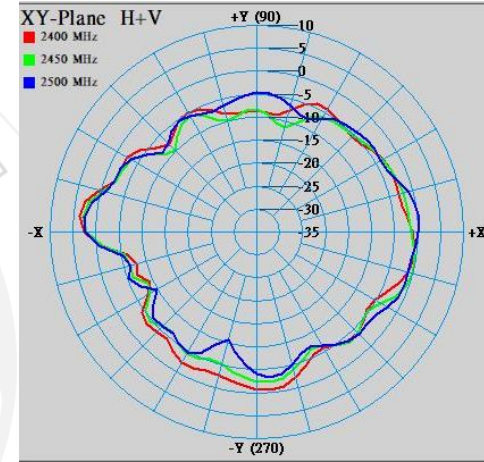
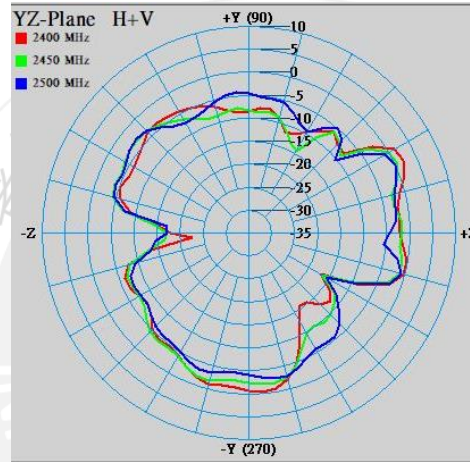
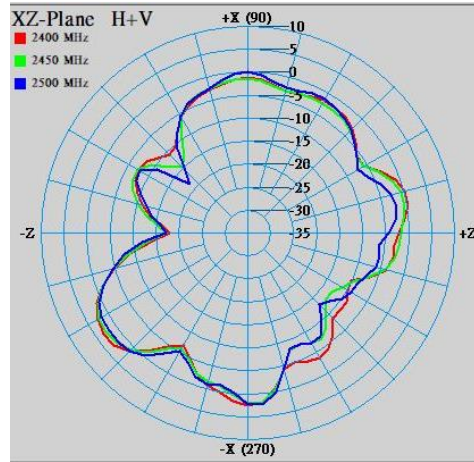


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
5150	-1.11	-5.27	-2.68	-6.64	0.60	-4.40
5500	-1.33	-5.14	-2.28	-6.60	-1.67	-5.11
5850	-1.88	-5.07	-1.49	-7.20	-0.80	-5.01

2. Antenna Characteristics

ANT2@2G

2.3 2D Radiation Patterns

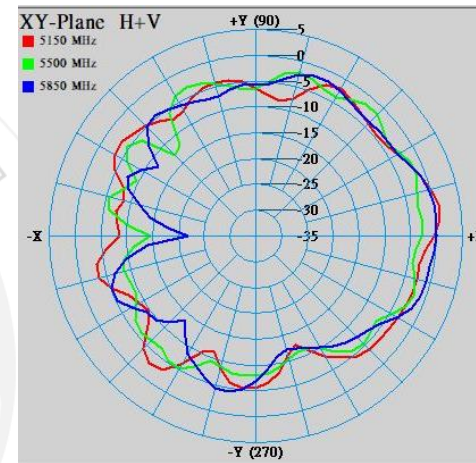
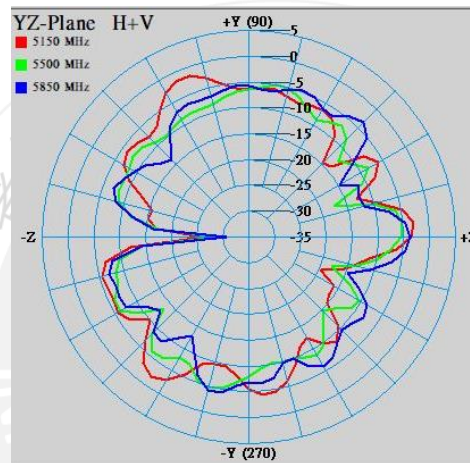
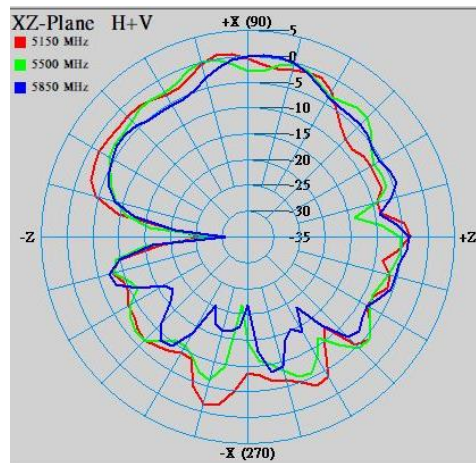


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
2400	3.28	-2.53	2.24	-4.22	3.77	-3.06
2450	2.61	-2.97	0.91	-4.72	3.04	-3.65
2500	2.67	-3.05	0.24	-4.94	2.87	-3.46

2. Antenna Characteristics

ANT2@5G

2.3 2D Radiation Patterns

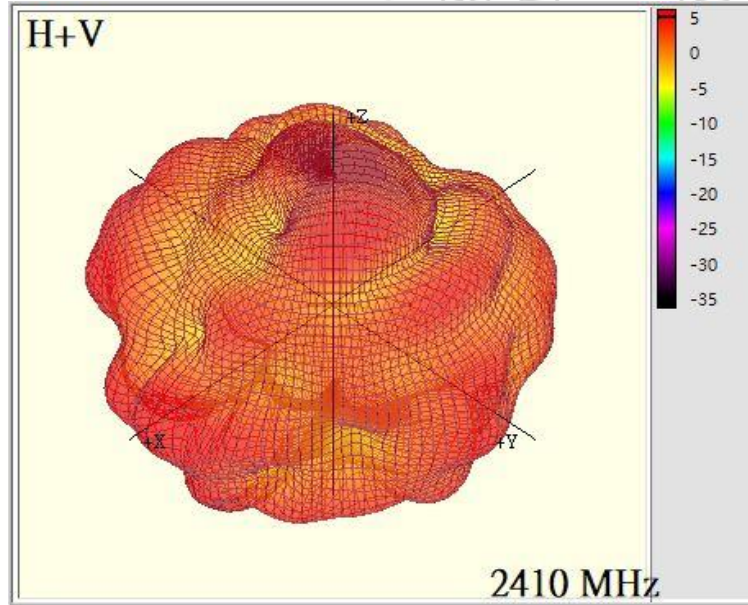


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
5150	0.71	-4.47	-1.66	-6.83	0.94	-4.45
5500	0.03	-5.17	-4.73	-8.36	-1.52	-5.22
5850	0.28	-5.80	-3.53	-7.59	0.07	-4.85

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant1@2G(Peak_Gain)

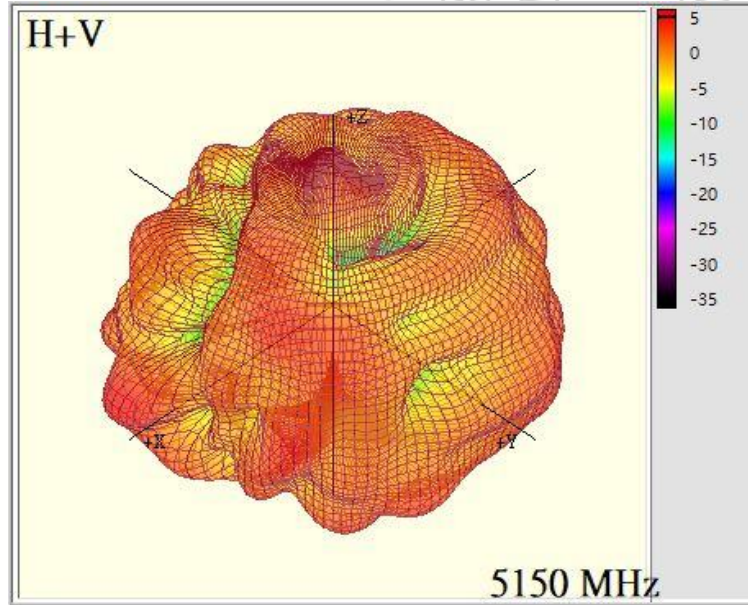


Gain (dBi)	3.58
Peak Phi Angle	0
Peak Theta Angle	94

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant1@5G(Peak_Gain)

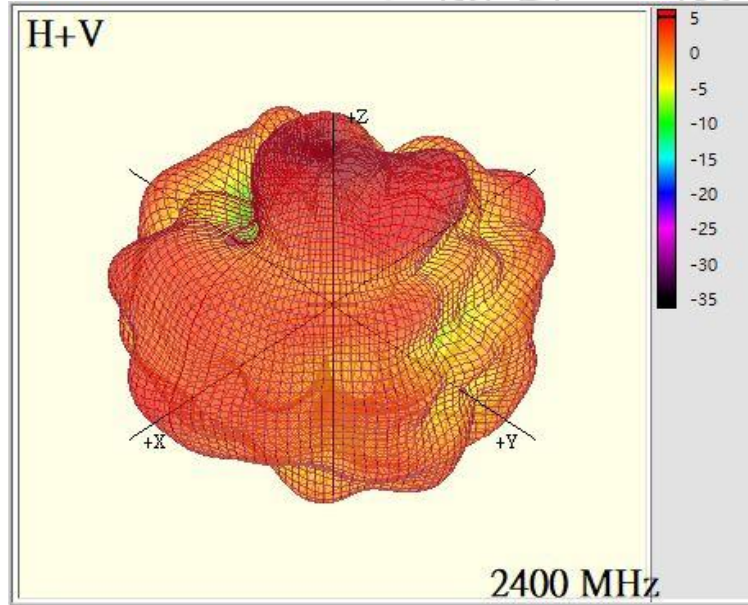


Gain (dBi)	1.09
Peak Phi Angle	348
Peak Theta Angle	94

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant2@2G(Peak_Gain)

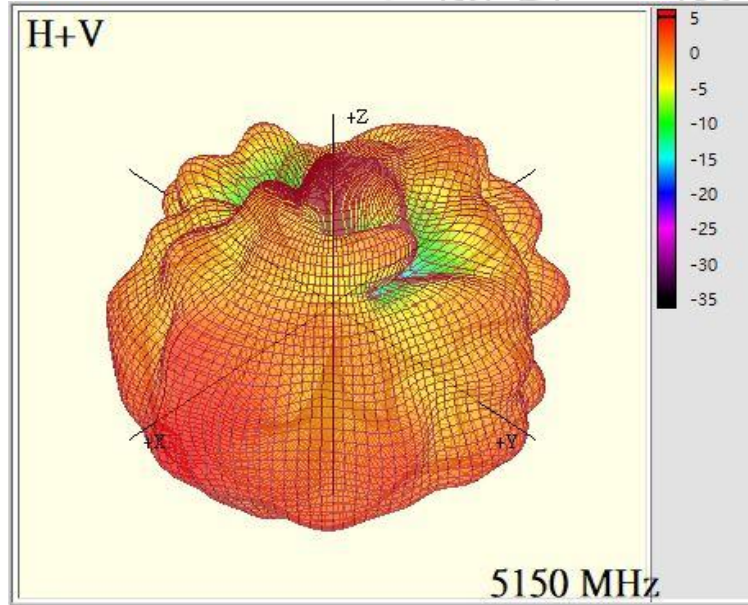


Gain (dBi)	3.79
Peak Phi Angle	184
Peak Theta Angle	144

2. Antenna Characteristics

2.4 3D Radiation Patterns

Ant2@5G(Peak_Gain)



Gain (dBi)	1.67
Peak Phi Angle	6
Peak Theta Angle	98

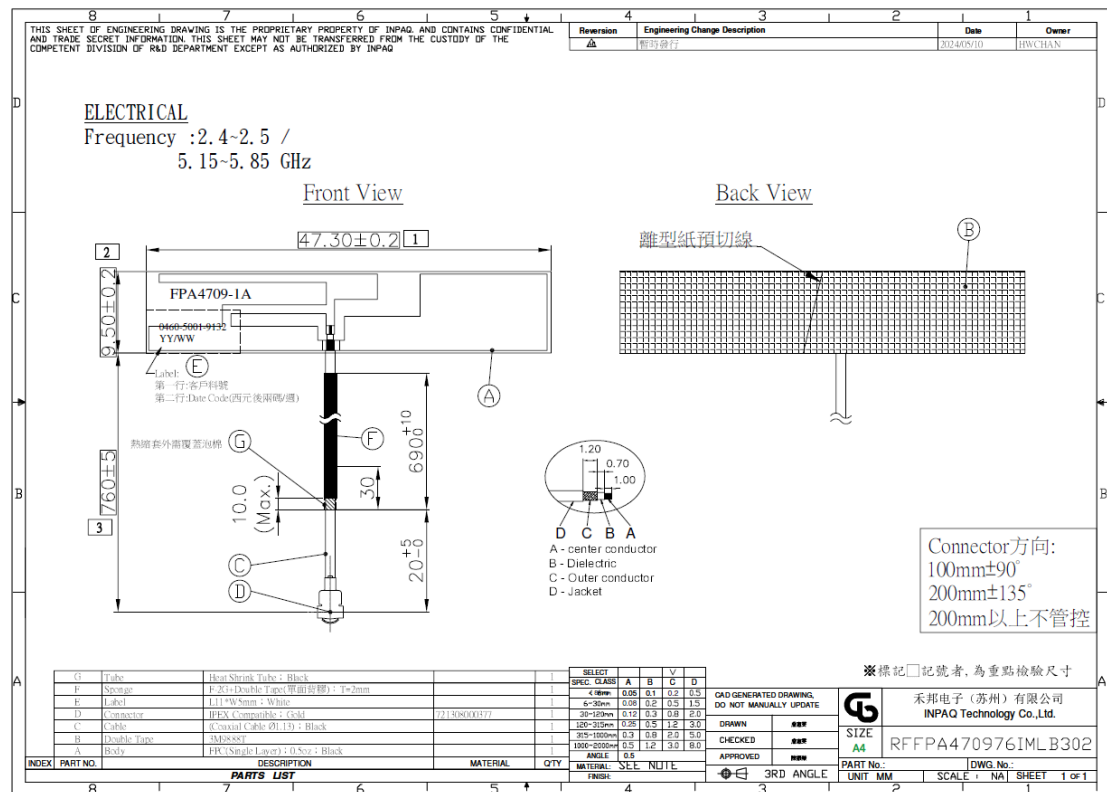
3. Summary

- The performance of antennas is shown in table

	Ant1		Ant2	
	2G	5G	2G	5G
Maximum Efficiency (%)	78.68	67.49	76.38	67.75
Maximum Gain (dBi)	3.58	1.09	3.79	1.67

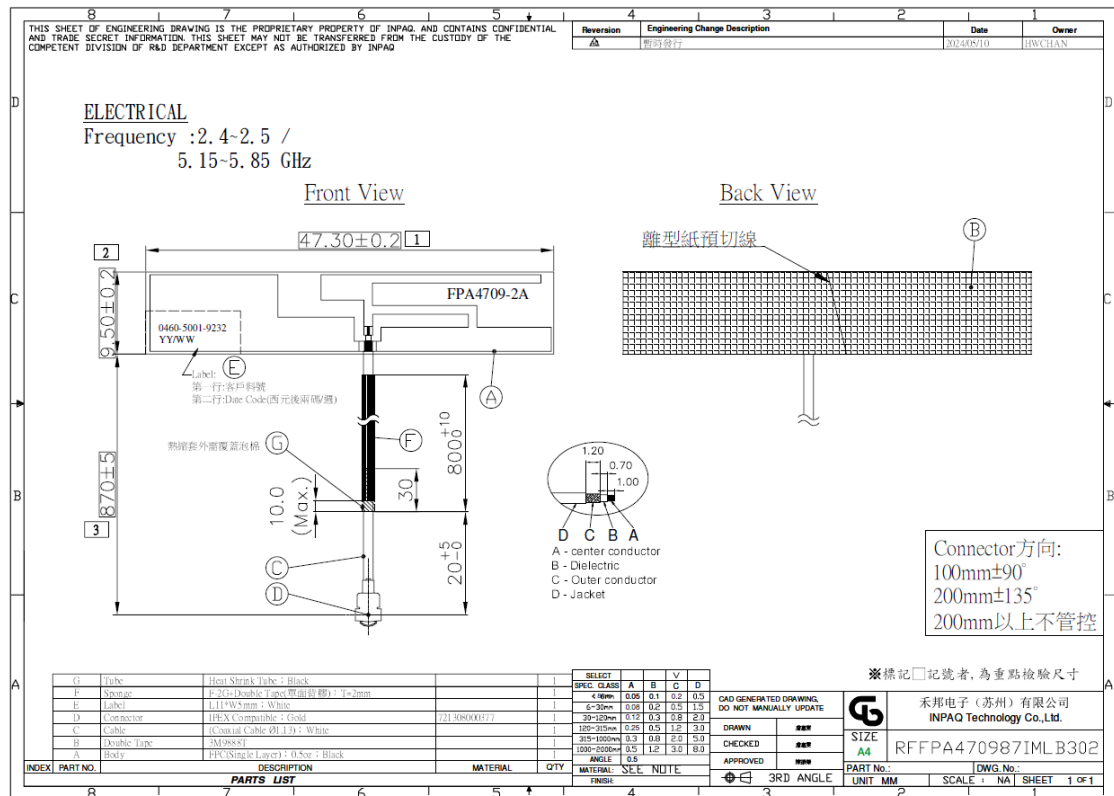
4. Antenna Information

Ant1



4. Antenna Information

Ant2



Thank you

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