PSA

PASSIVE SYSTEM ALLIANCE

PASSIVE SYSTEM ALLIANCE

迪芬尼_TC BAR S

Presented by

Ken Nguyen

2022/07/20

Version	Date	Description	Author
V01	2021/09/02	New Release (Simulation)	Sam
V02	2021/09/28	客戶提供樣機，建置環境調測天線	Abel
V03	2022/03/03	客戶提供樣機，更改天線位置，調測天線	Abel
V04	2022/05/17	客戶提供完整樣機，更改天線位置，調測天線	Abel
V05	2022/07/20	實機驗證天線	Ken Nguyen

OUTLINE

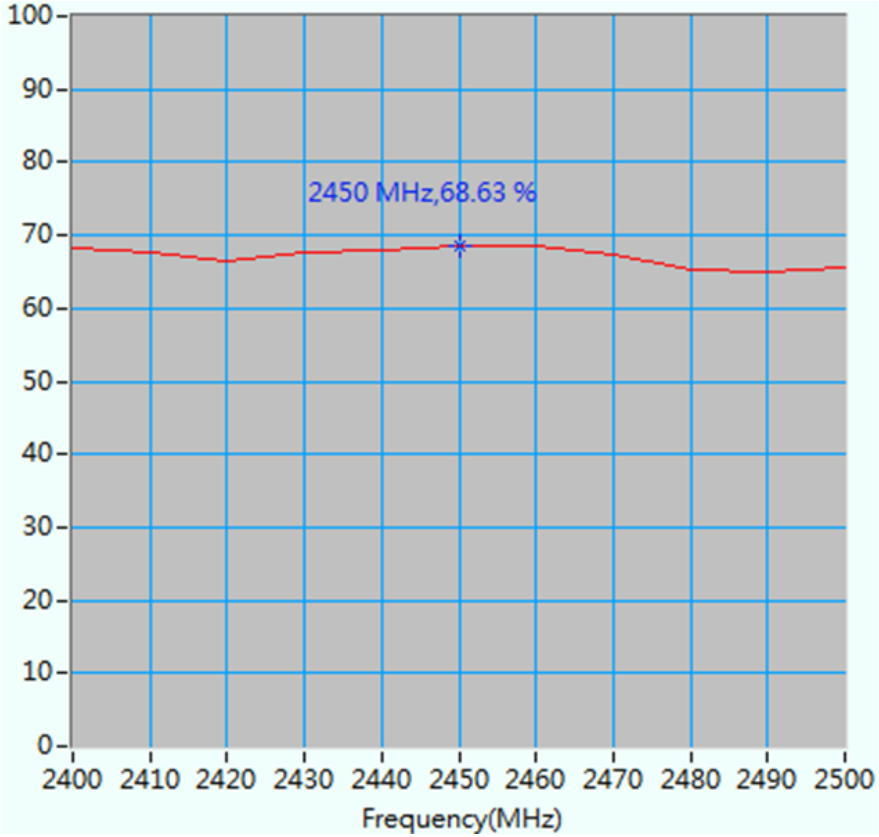
2. Antenna Characteristics

2.1 Return Loss

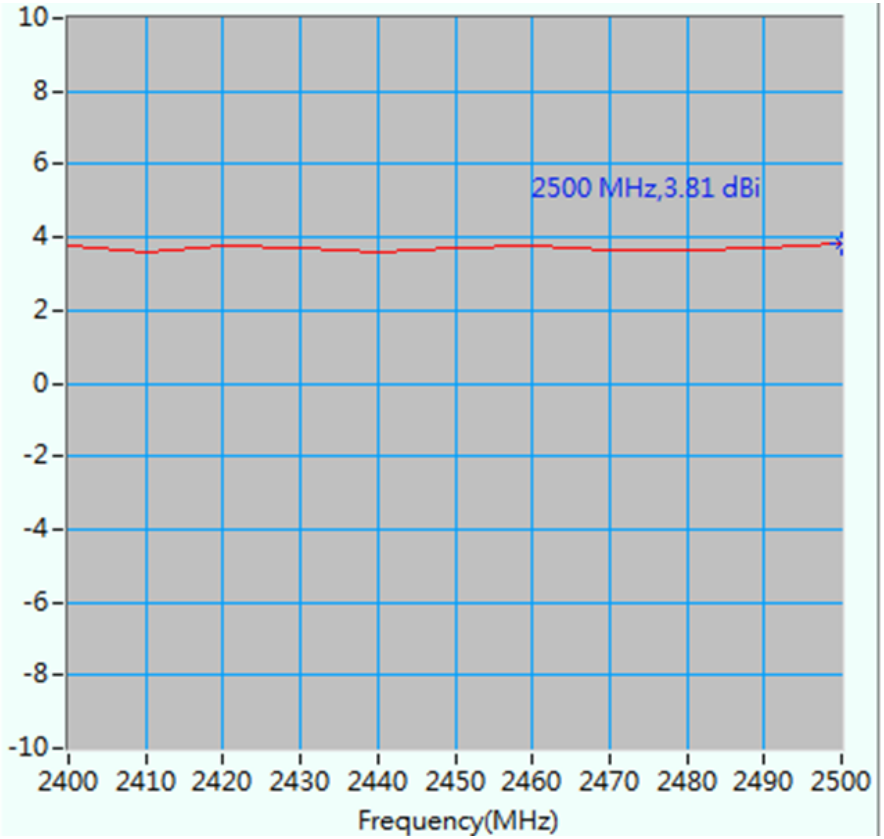
2. Antenna Characteristics

2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2450 MHz : 68.63 %

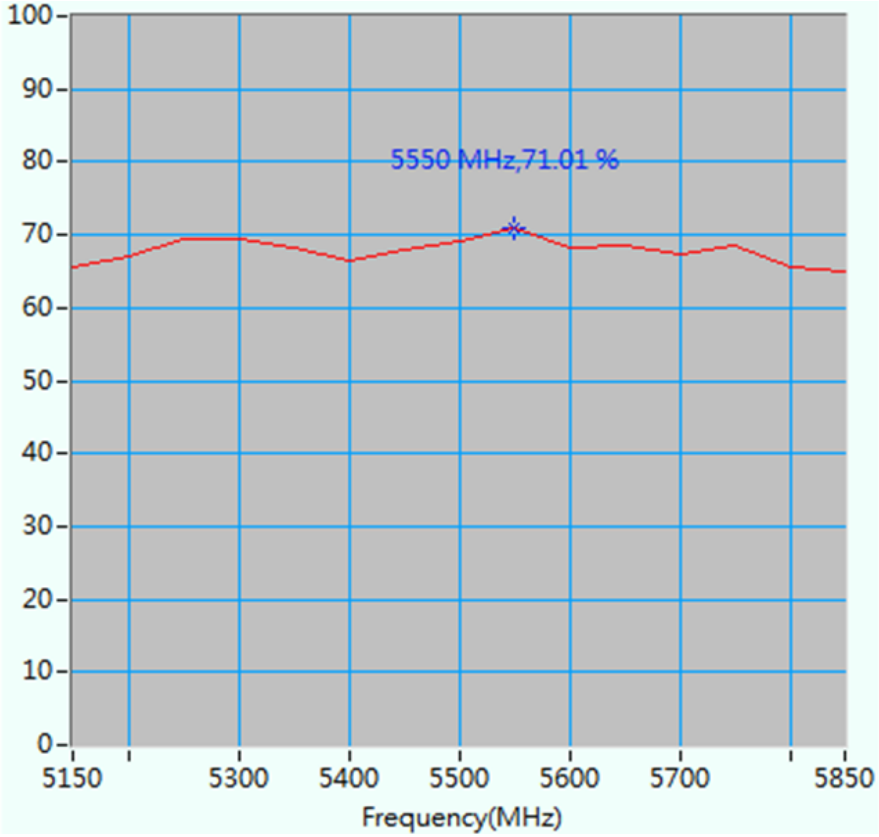


Maximum Peak Gain at 2500 MHz : 3.81 dBi

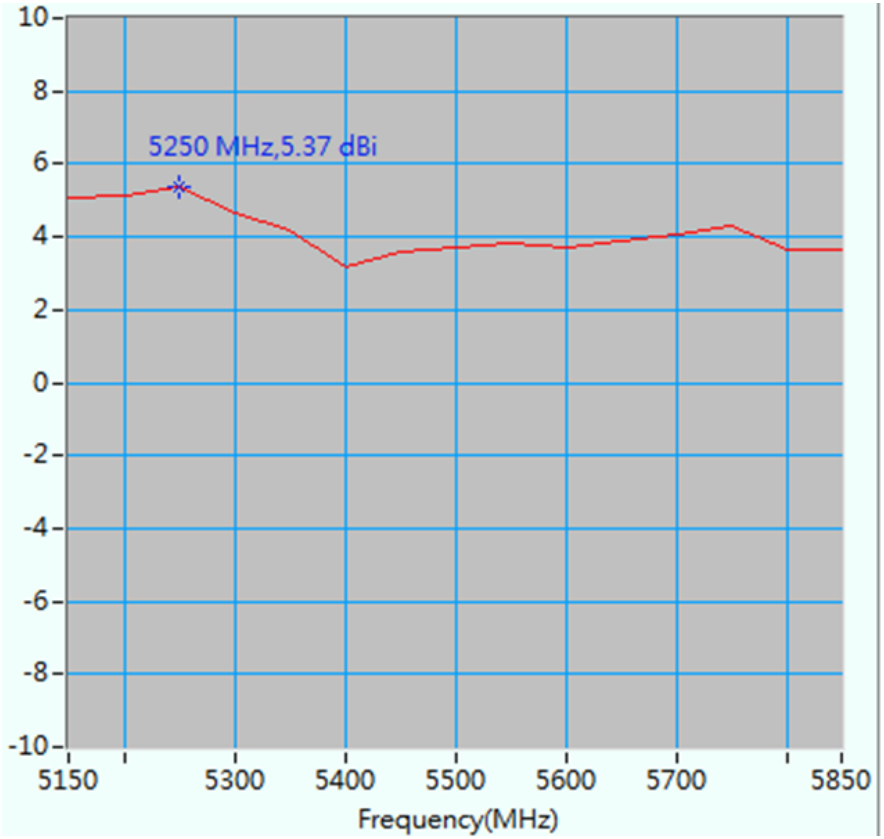
2. Antenna Characteristics

5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5550 MHz : 71.01 %



Maximum Peak Gain at 5250 MHz : 5.37 dBi

2. Antenna Characteristics

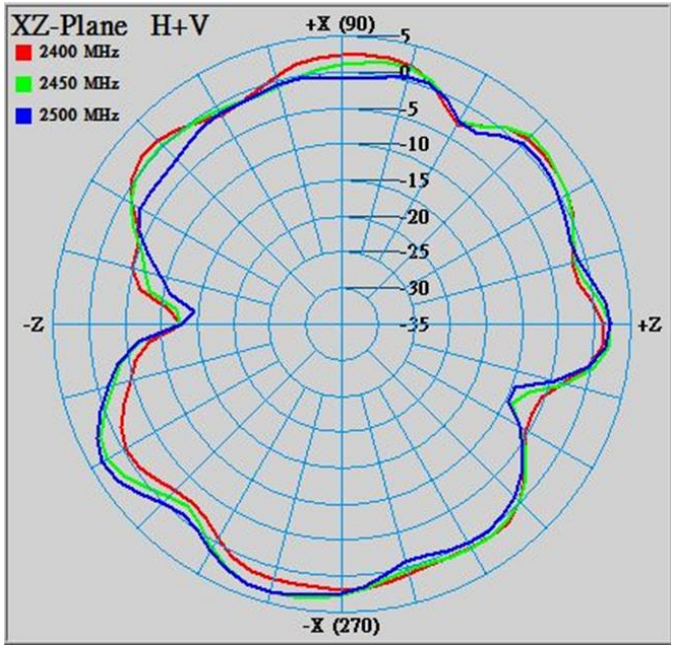
2.2 Antenna Efficiency and Peak Gain

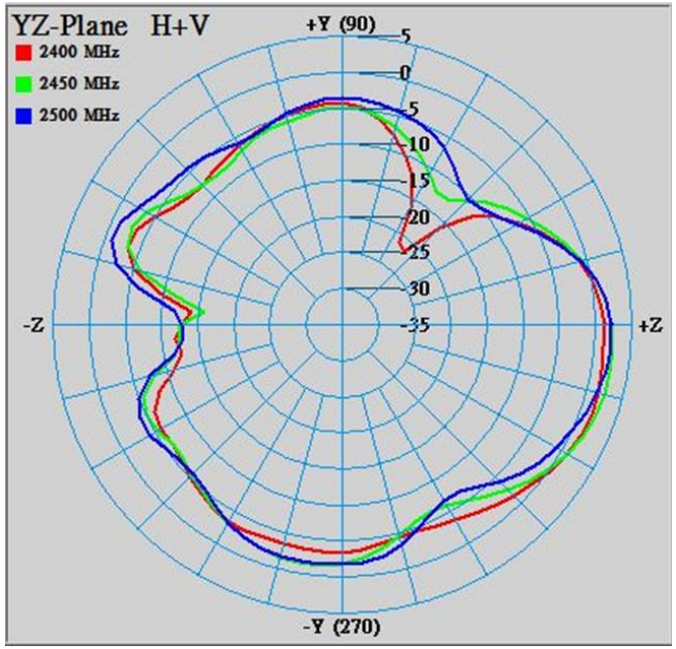
Frequency(MHz)	Efficiency (%)	Peak gain (dBi)
2400	68.30	3.77
2450	68.63	3.71
2500	65.71	3.81
5150	65.55	5.08
5250	69.40	5.37
5350	68.24	4.15
5500	69.24	3.74
5725	68.57	4.03
5850	65.01	3.66

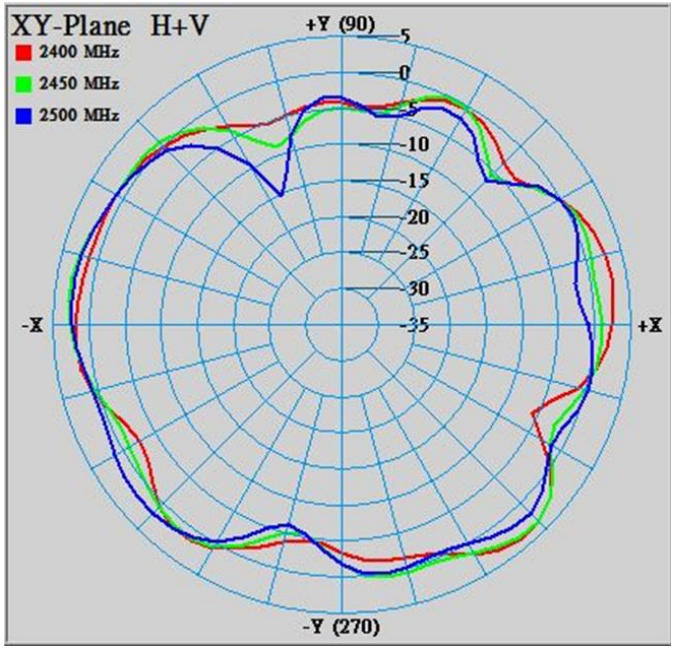
2. Antenna Characteristics

2G

2.3 2D Radiation Patterns





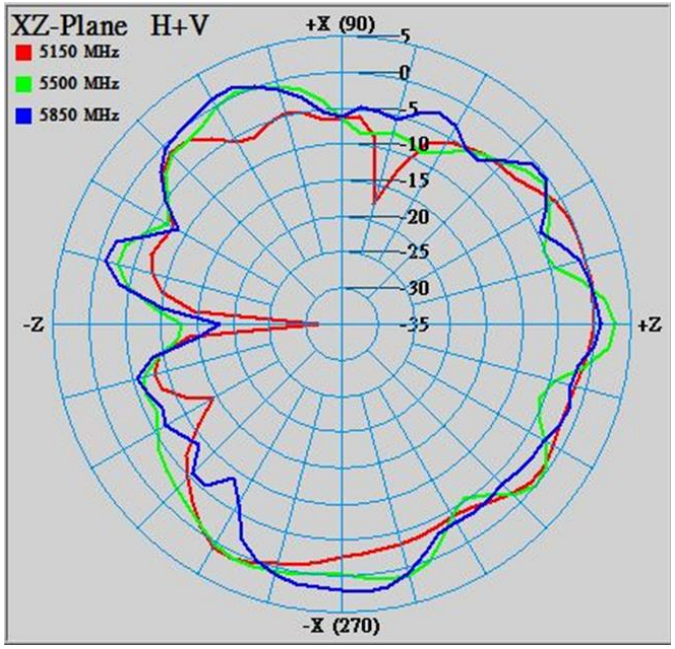


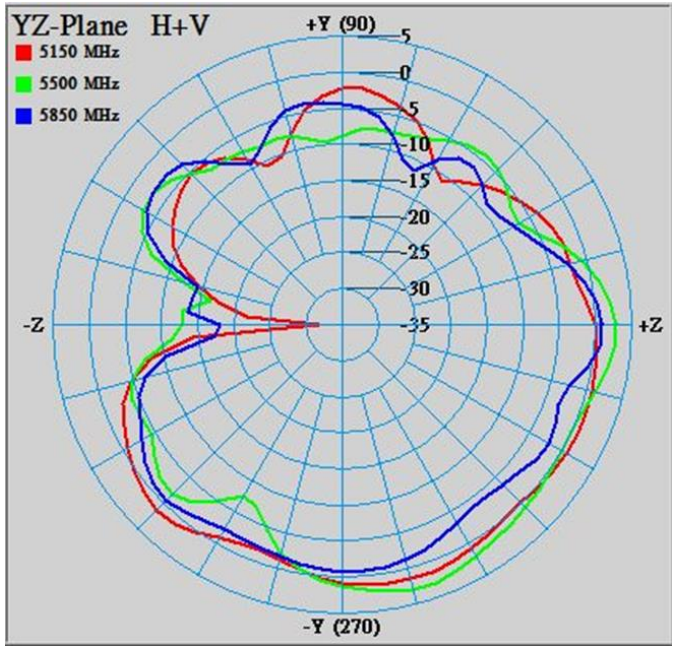
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
2400	**2.55**	**-0.28**	**1.73**	**-3.63**	**3.70**	**-0.14**
2450	**3.44**	**0.09**	**2.48**	**-3.22**	**3.47**	**-0.10**
2500	**3.42**	**-0.36**	**2.31**	**-3.13**	**2.57**	**-0.58**

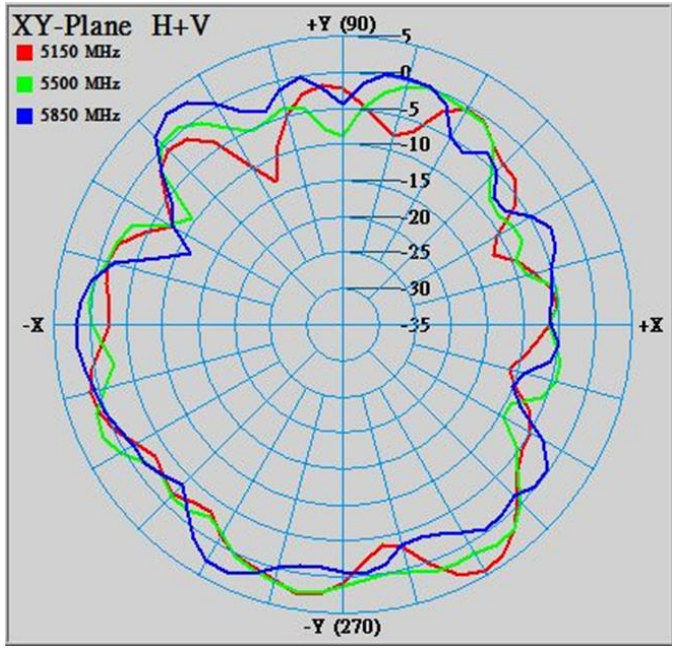
2. Antenna Characteristics

5G

2.3 2D Radiation Patterns





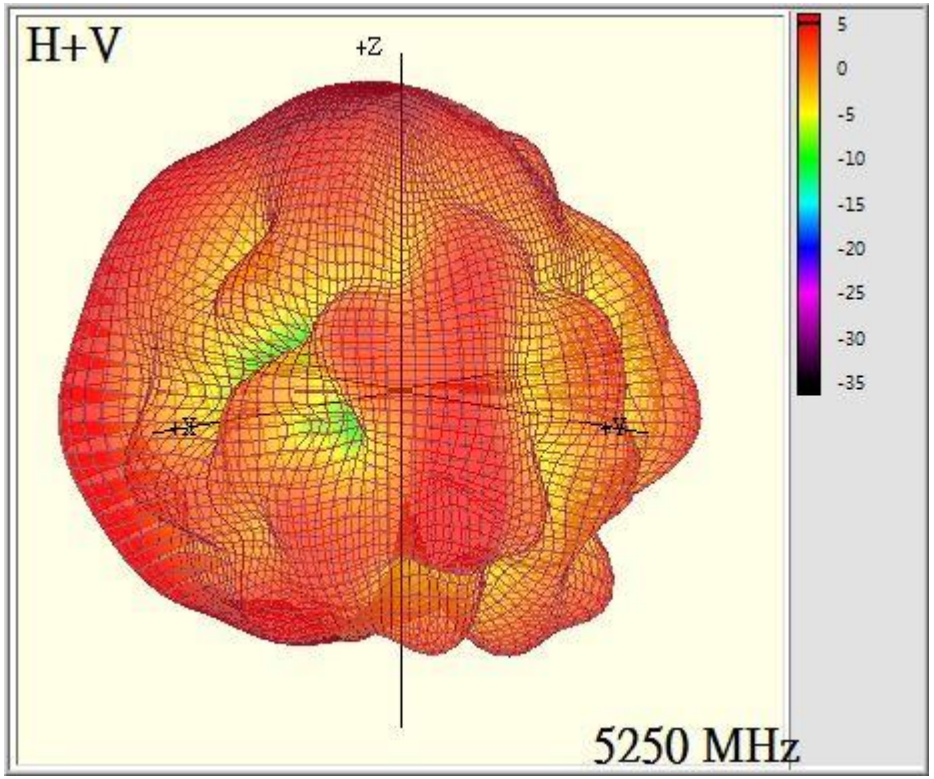


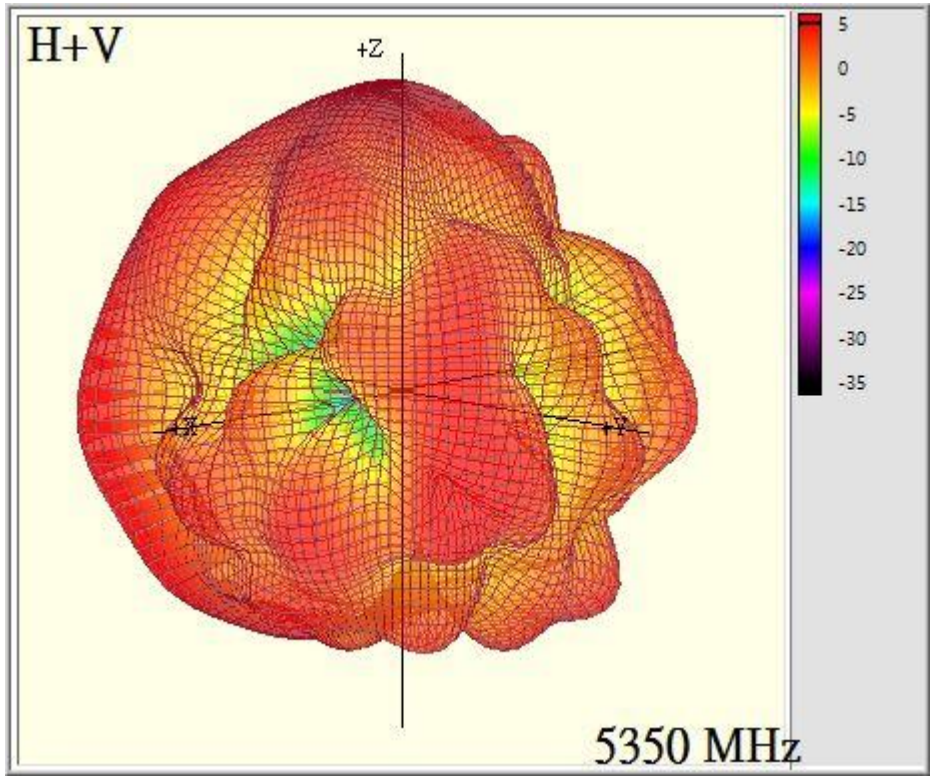
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**	**Max Value [dB]**	**Average [dB]**
5150	**1.03**	**-3.24**	**1.48**	**-1.96**	**4.42**	**-1.84**
5500	**2.82**	**-2.16**	**3.10**	**-1.84**	**2.62**	**-1.46**
5850	**2.30**	**-2.07**	**0.88**	**-3.54**	**3.10**	**-1.37**

2. Antenna Characteristics

2.4 3D Realized Gain Radiation Patterns

5G_Band2 (5250MHz~5350MHz)

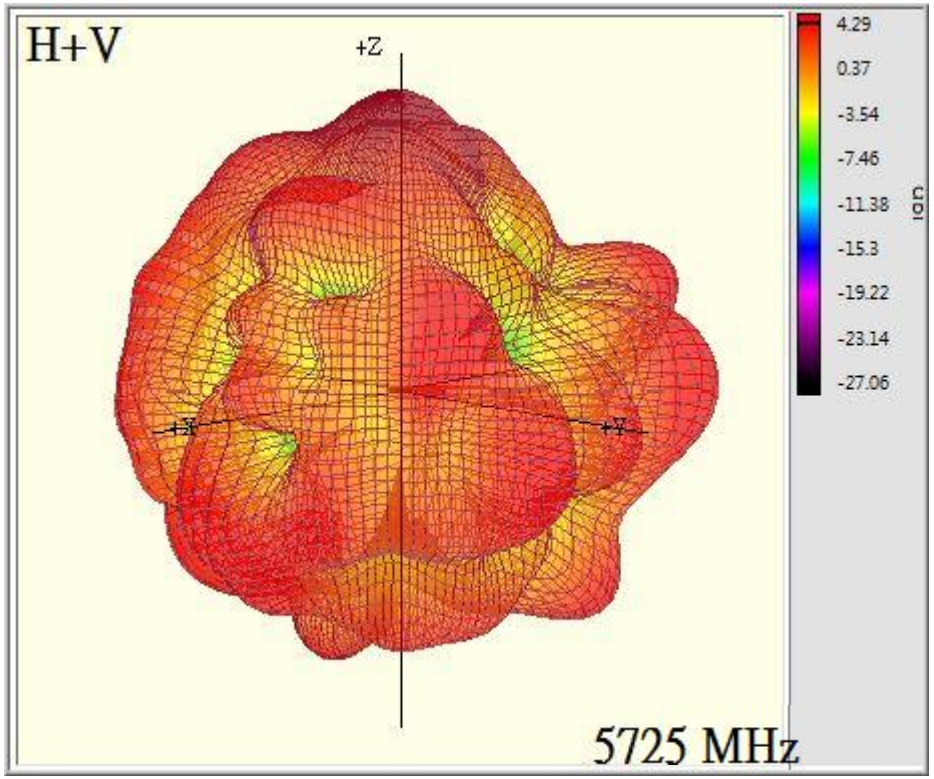


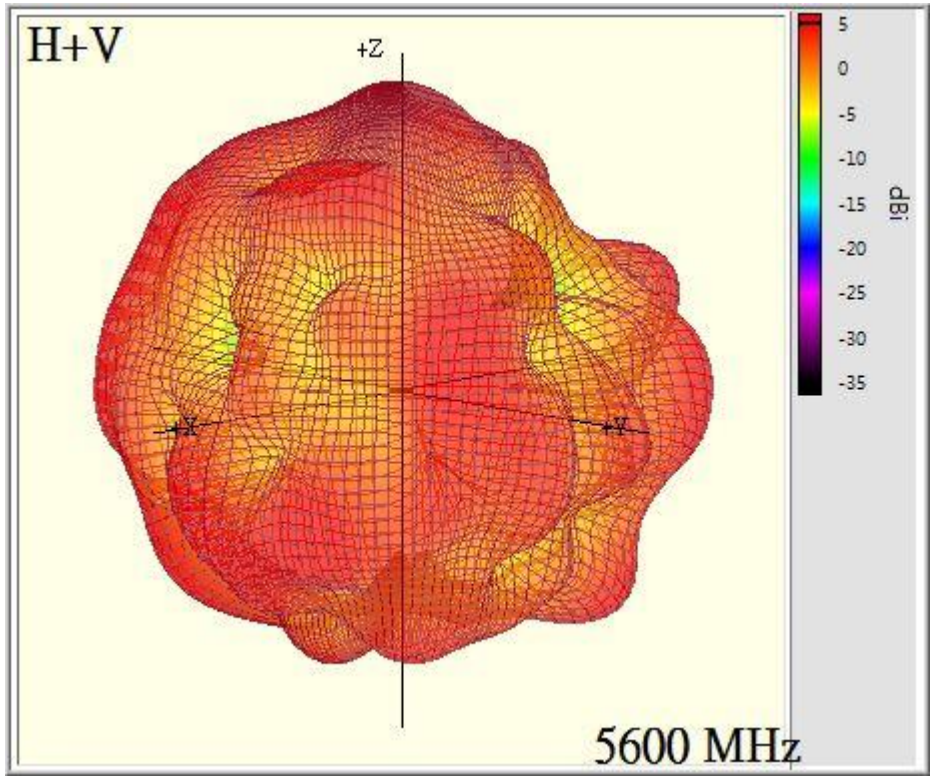


2. Antenna Characteristics

2.4 3D Realized Gain Radiation Patterns

5G_Band3 (5470MHz~5725MHz)





3. Summary

- The performance of antennas is shown in table

	2G	5G
Maximum Efficiency (%)	**68.63**	**71.01**
Maximum Gain (dBi)	**3.81**	**5.37**

	Maximum Gain (dBi)	Minimum Gain (dBi)
5G_Band2(5250MHz~5350MHz)	**5.37 at 5250MHz**	**4.15 at 5350MHz**
5G_Band3(5470MHz~5725MHz)	**4.03 at 5725MHz**	**3.72 at 5600MHz**

3. Summary

Antenna Vendor : INPAQ TECHNOLOGY CO., LTD.
Test date: 2022/07/20
Test Engineer: Ken
Address of test site: 566-1, Ko-Shi Road , Yang-Mei, Tao-Yuan, 32668, Taiwan
Measurement Setup:
Reflection Coefficient Measurement:
-Instrument : Keysight Network Analyzer

Test instrument calibration information:

Vender	Model No.	Calibrated Date	Calibrated Until
Satimo	SG24	2021/03/17	2022/11/29
Keysight Network Analyzer	E5071C	2020/3/3	2023/3/3

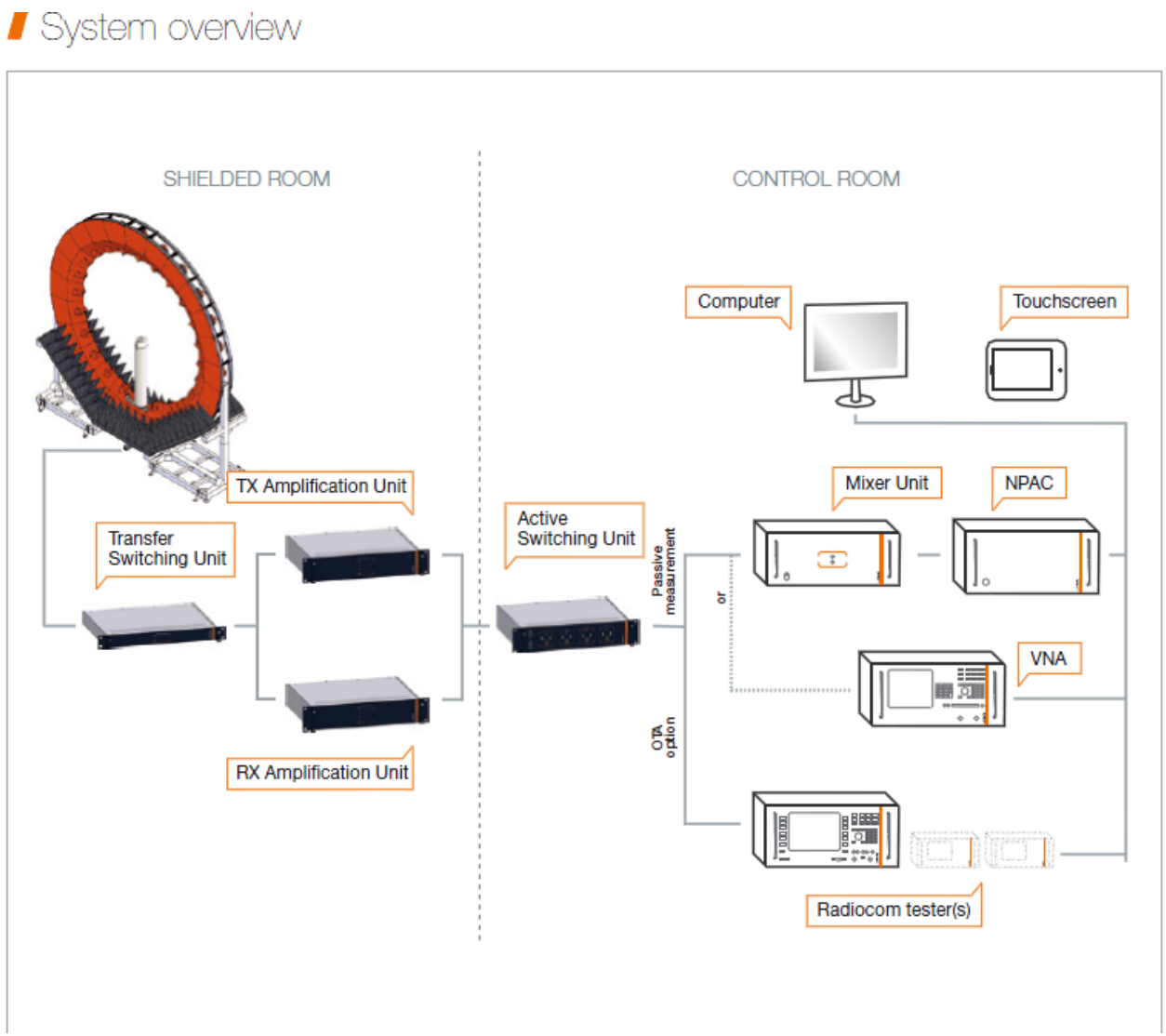
-Setup:

Pattern Measurement:

-Chamber : Satimo

-Test Program: SPM V15

-Setup Photo:



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.

The antenna gain of the antenna model:

Frequency(MHz)	Efficiency (%)	Peak gain (dBi)
2400	68.30	3.77
2450	68.63	3.71
2500	65.71	3.81
5150	65.55	5.08
5250	69.40	5.37
5350	68.24	4.15
5500	69.24	3.74
5725	68.57	4.03
5850	65.01	3.66

Thank you