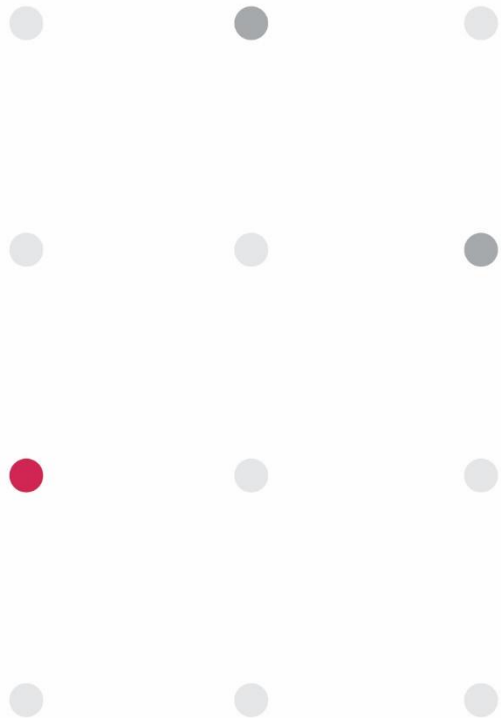


PSA

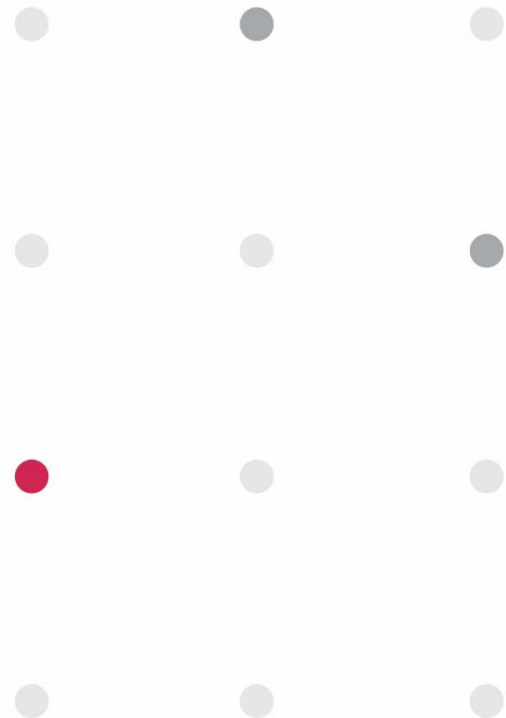
佳邦科技股份有限公司

INPAQ TECHNOLOGY CO., LTD.



PSA

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.



仲琦

Aria_3629

Presented by

Wilson

2024/12/19

Version	Date	Description	Author
V01	2023/11/30	New Release	Bruno Huang
V02	2024/01/17	Holder Change	Bruno Huang
V03	2024/04/9	T-Put Optimize Data	Wilson
V04	2024/08/15	Add the number of the antenna corresponding to the board end	Wilson

OUTLINE

1. Measurement Information

- 1.1 Experimental Setup
- 1.2 Antenna Solution Detail
- 1.3 Operation Mode and Antenna Information

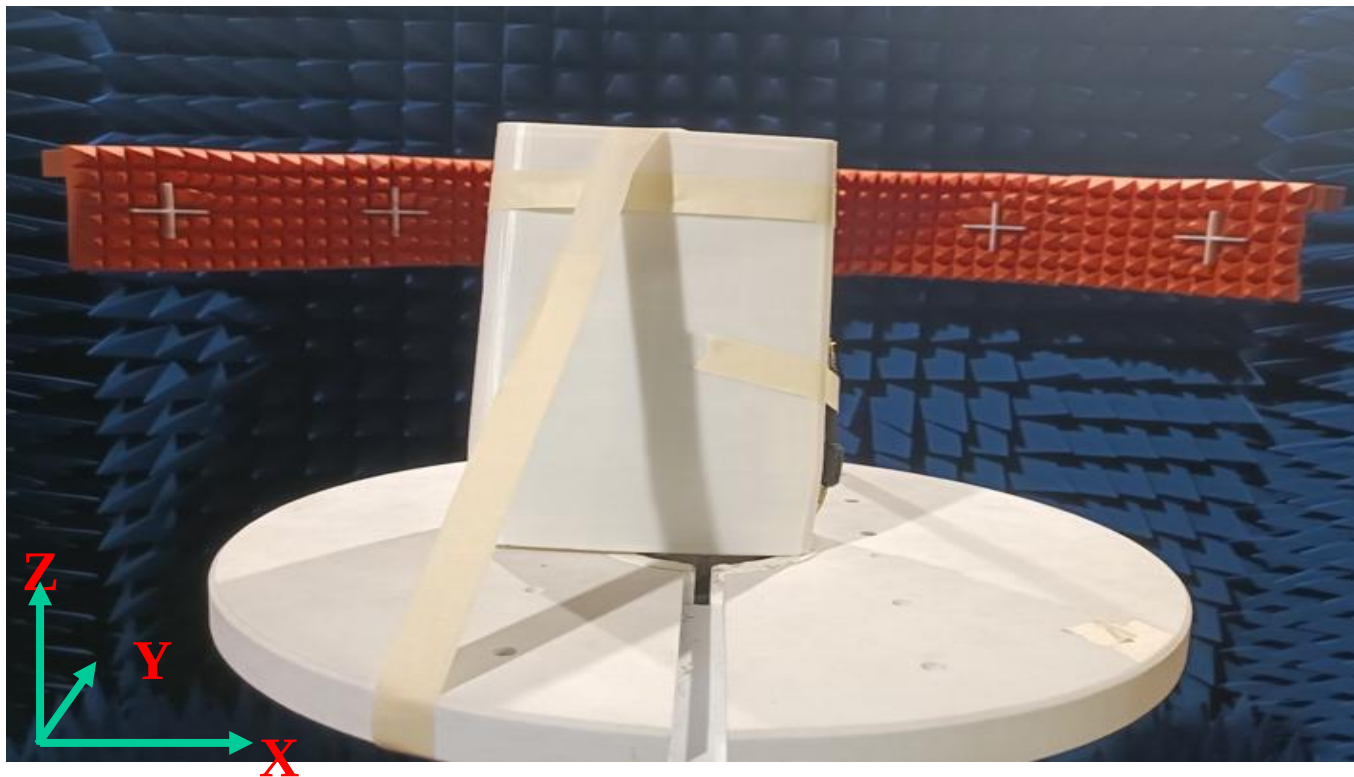
2. Antenna Characteristics

- 2.1 S-Parameter
- 2.2 Antenna Efficiency 、 Peak Gain
- 2.3 3 views of antenna & 2D Radiation Patterns
- 2.4 2D Radiation Patterns (Combine)

3. Summary

1. Measurement Information

1.1 Experimental Setup

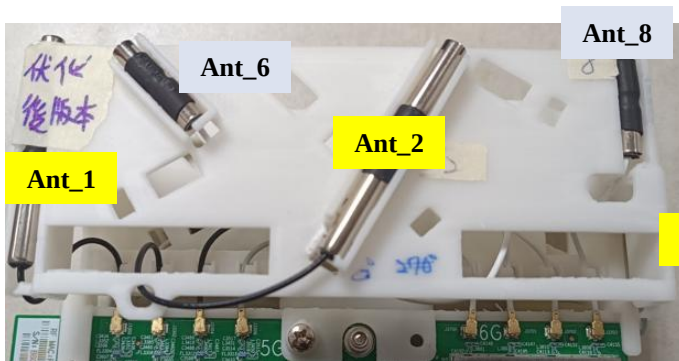


1. Measurement Information

1.2 Antenna Solution Detail



PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.



PCB: single layer 0.6 mm
Cable :Low Loss Ø1.37 mm ipex1 heat shrink tube(Ø8_thickness_length 15 mm)
2G tube(OD5.2x23.5 mm upper and down tube ; down tube with bottom plug_15 x 3 x 1 mm black foam)
6G tube(OD5.2x10.5 mm upper and down tube ; down tube with bottom plug_15 x 3 x 1 mm black foam)

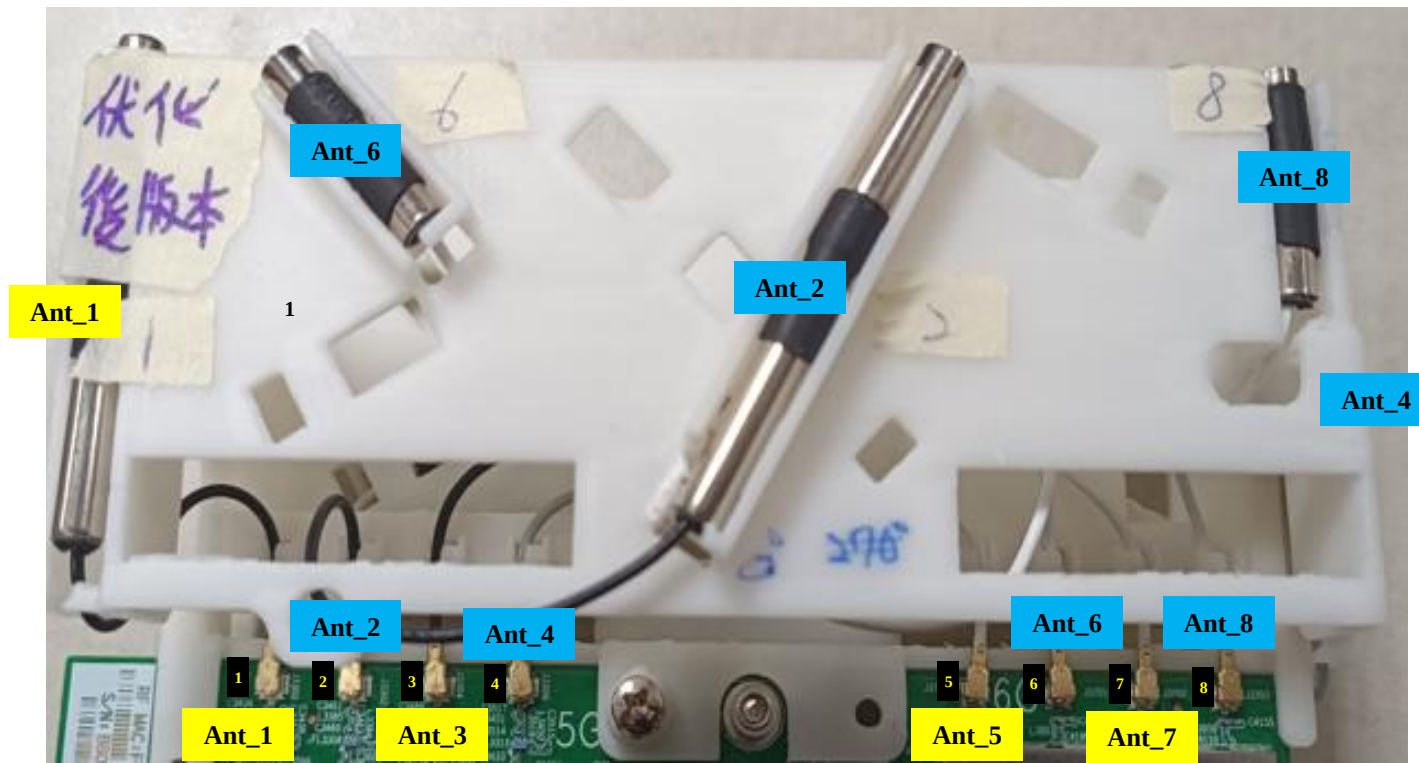
Ant_1(25-1): cable length 80 mm ; stripping ratio :1-4-2 color:black
Ant_2(25-2): cable length 120 mm ; stripping ratio :1-4-2 color:black
Ant_3(25-3): cable length 160 mm ; stripping ratio :1-4-2 color:black
Ant_4(25-4): cable length 110 mm ; stripping ratio :1-4-2 color:black
Ant_5(6G-1): cable length 140 mm ; stripping ratio :1-2-2 color:white
Ant_6(6G-2): cable length 60 mm ; stripping ratio :1-2-2 color:white
Ant_7(6G-3): cable length 70 mm ; stripping ratio :1-2-2 color:white
Ant_8(6G-4): cable length 130 mm ; stripping ratio :1-2-2 color:white

Ant_9(BLE): antenna size_30 x 14.2 x 0.6 mm ; cable length 190 mm ; stripping ratio :1-1-2 color:gray

WE CONNECT WE PROTECT **PSA**

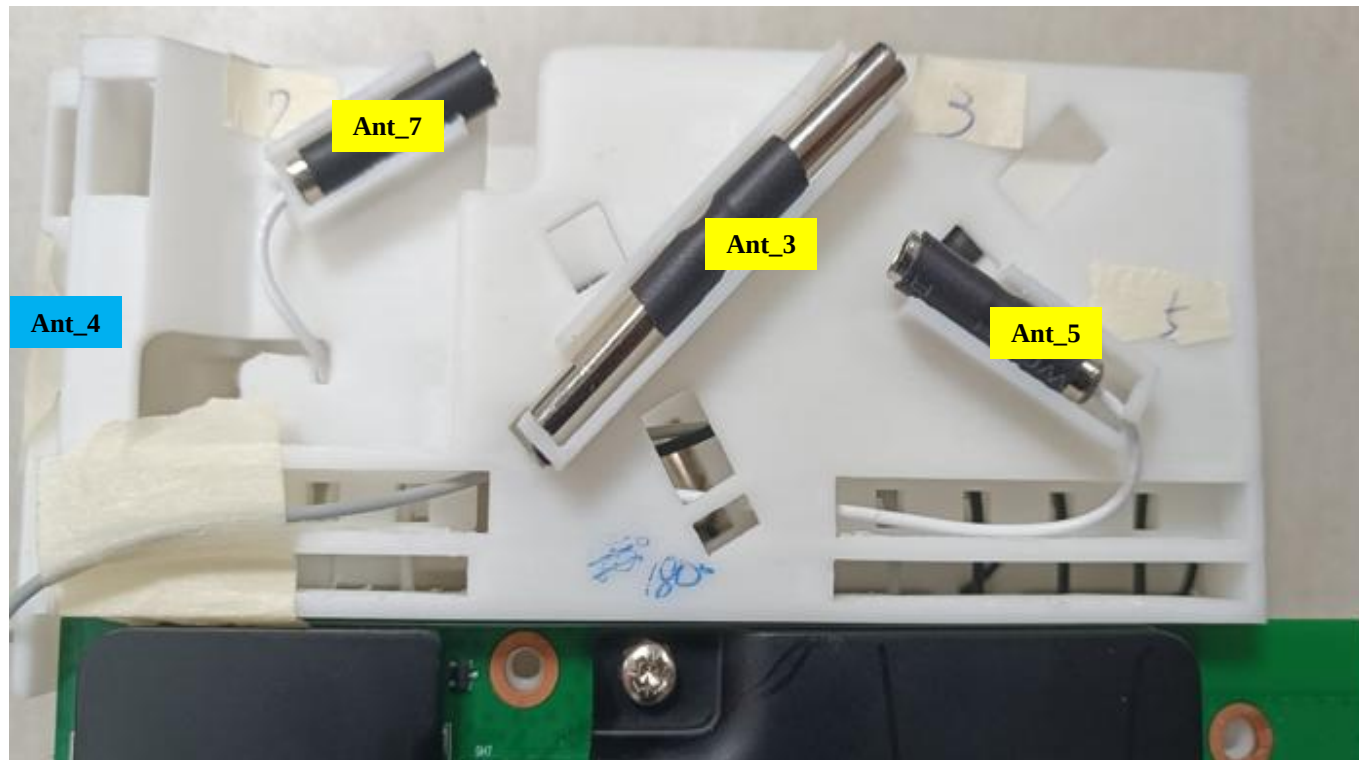
1. Measurement Information

1.2 Antenna Solution Detail



1. Measurement Information

1.2 Antenna Solution Detail



1. Measurement Information

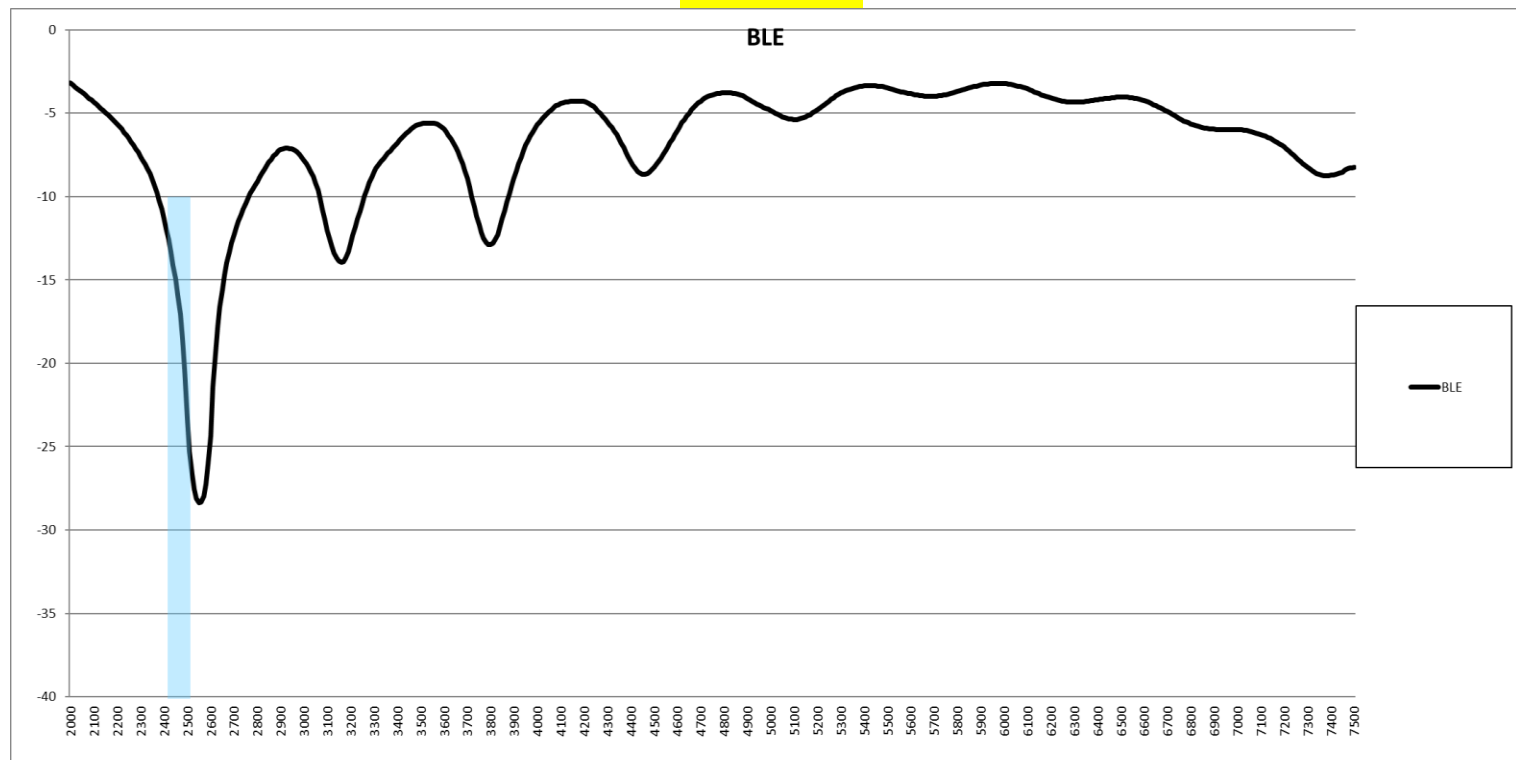
1.3 Operation Mode and Antenna Information

Antenna Position	RF Port	Brand Name	Model Name	Ant.Type	Connector
Ant_5 (6 G)	5	PSA	RFDPA100512IM6B902	Copper pipes	I-PEX
Ant_6 (6 G)	6	PSA	RFDPA100515IM6B902	Copper pipes	I-PEX
Ant_7 (6 G)	7	PSA	RFDPA100505IM6B902	Copper pipes	I-PEX
Ant_8 (6 G)	8	PSA	RFDPA100505IM6B902	Copper pipes	I-PEX
Ant_9 (BLE)	9	PSA	RFPCA301419IMAB901	PCB	I-PEX

2. Antenna Characteristics

2.1 S-Parameter

S11



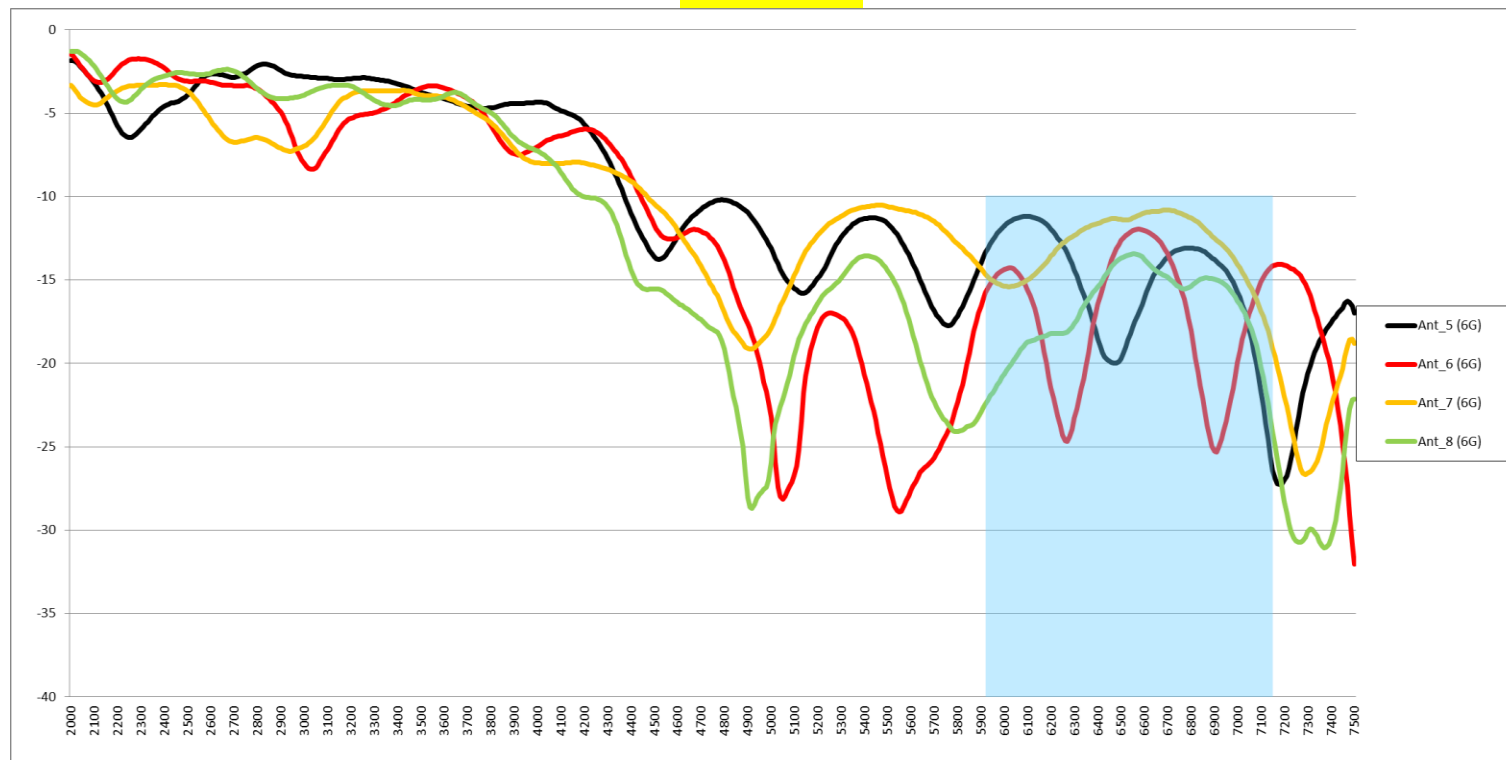
Frequency(MHz)	BLE
2400	-11.30
2450	-14.94
2500	-23.36

2. Antenna Characteristics

2.1 S-Parameter

S11

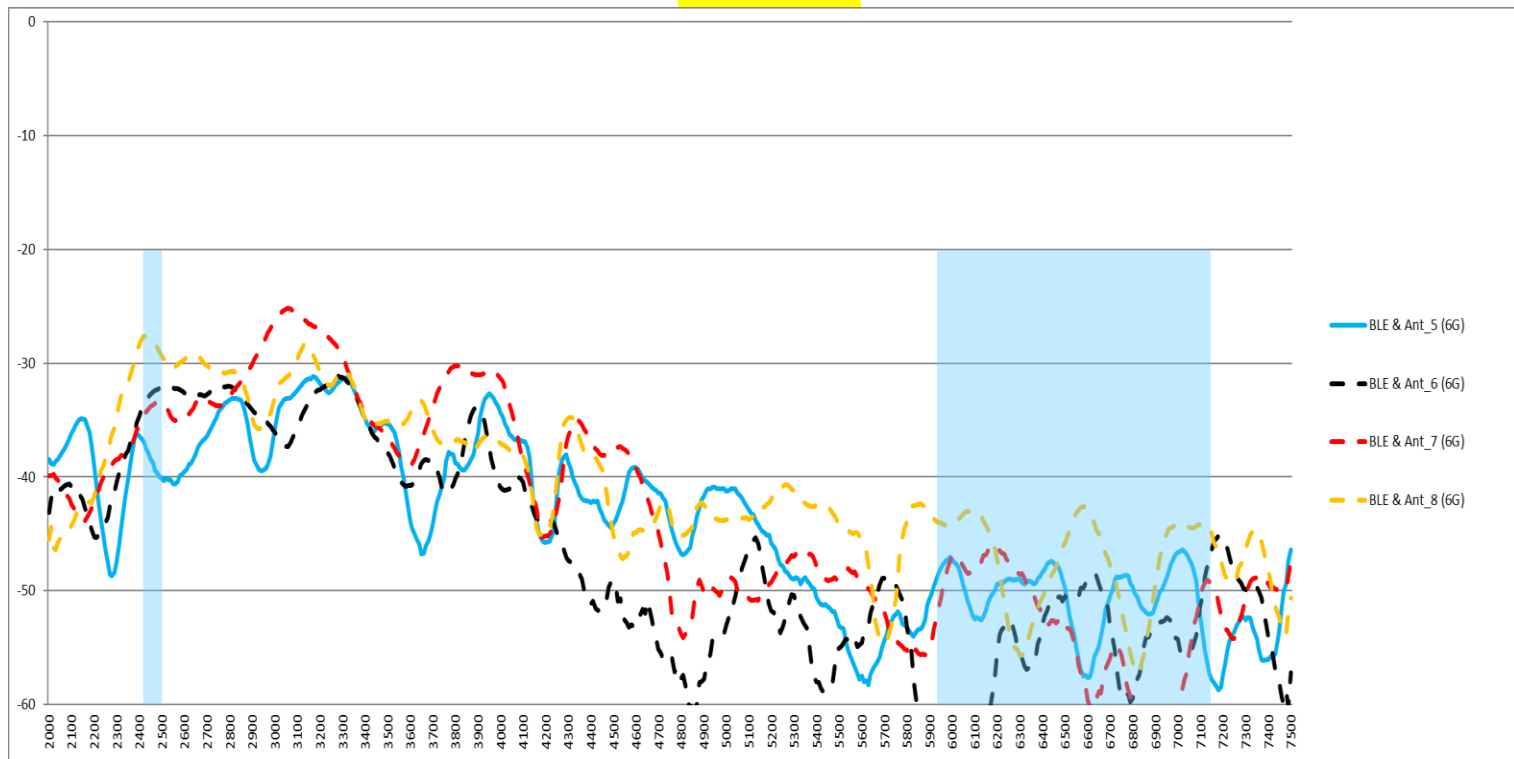
Frequency(MHz)	Ant_5 (6G)	Ant_6 (6G)	Ant_7 (6G)	Ant_8 (6G)
5925	-13.09	-15.48	-14.82	-22.19
6525	-18.61	-12.23	-11.38	-13.51
7125	-24.60	-14.42	-18.05	-22.39



2. Antenna Characteristics

2.1 S-Parameter

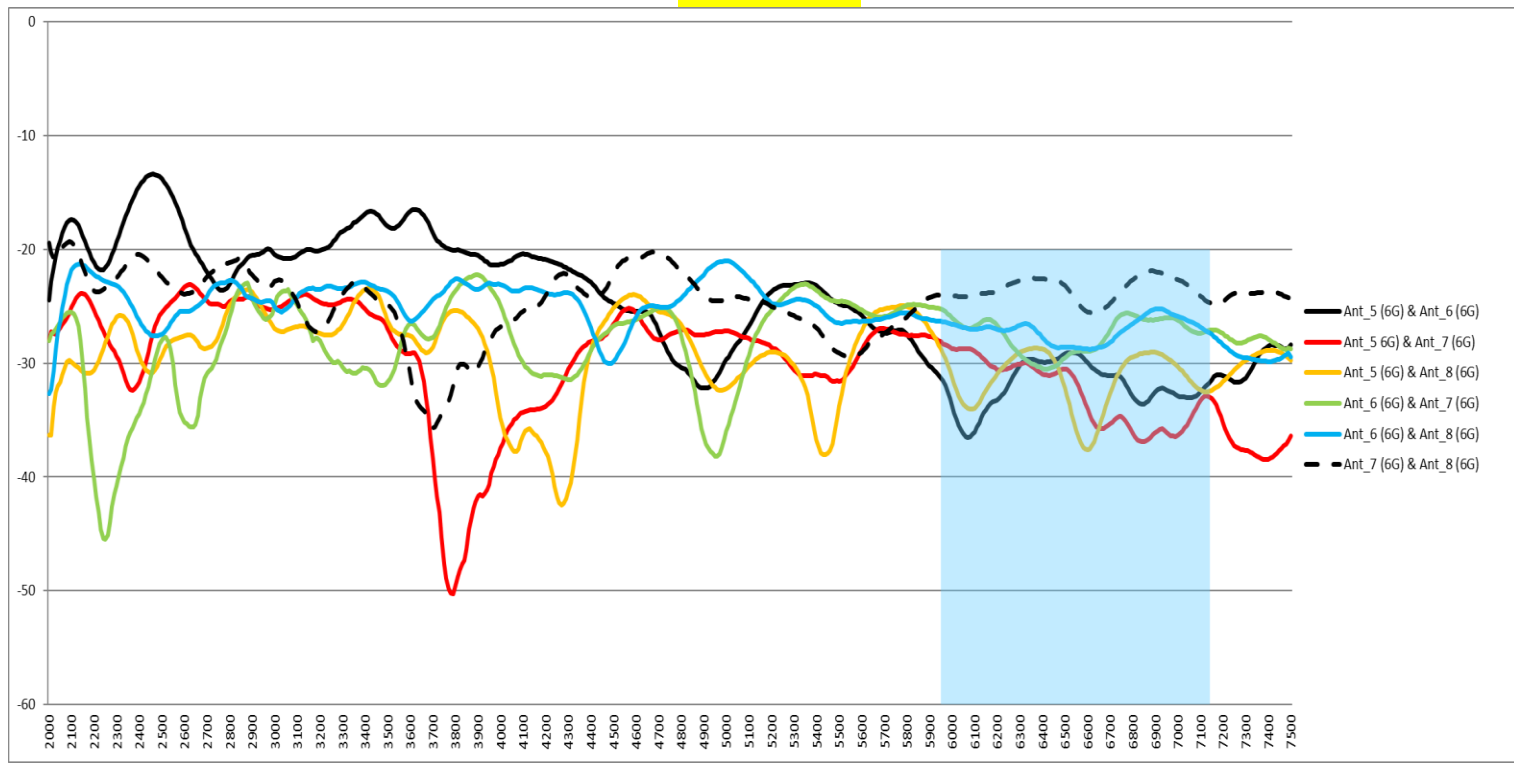
Isolation



2. Antenna Characteristics

2.1 S-Parameter

Isolation



2. Antenna Characteristics

Isolation List

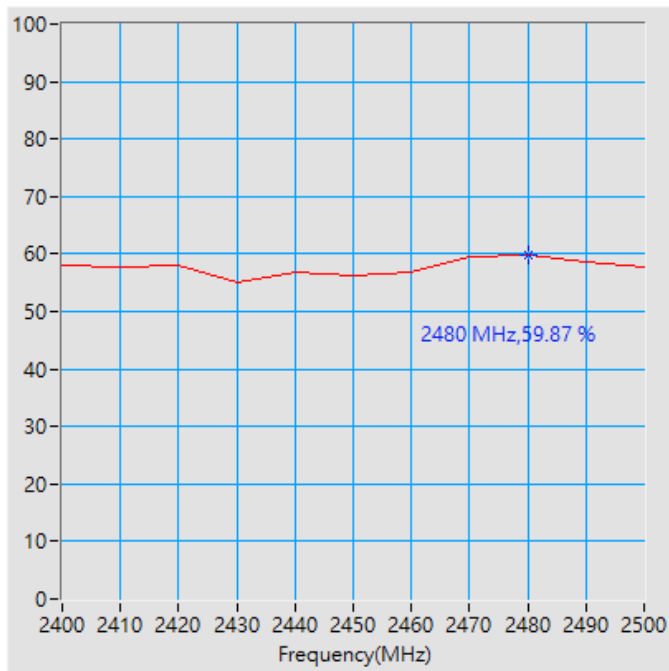
Frequency(MHz)	BLE & Ant_5 (6G)	BLE & Ant_6 (6G)	BLE & Ant_7 (6G)	BLE & Ant_8 (6G)
2400	-36.36	-34.66	-35.54	-28.37
2450	-38.42	-32.77	-33.85	-27.78
2500	-40.21	-32.20	-33.53	-29.37
5925	-49.00	-69.75	-52.49	-43.91
6525	-52.99	-50.72	-53.73	-44.15
7125	-56.36	-47.84	-49.08	-44.19

Frequency(MHz)	Ant_5 (6G) & Ant_6 (6G)	Ant_5 (6G) & Ant_7 (6G)	Ant_5 (6G) & Ant_8 (6G)	Ant_6 (6G) & Ant_7 (6G)	Ant_6 (6G) & Ant_8 (6G)	Ant_7 (6G) & Ant_8 (6G)
5925	-30.84	-27.87	-27.97	-25.15	-26.28	-24.03
6525	-29.09	-30.94	-34.44	-29.07	-28.59	-23.91
7125	-31.91	-32.88	-32.51	-27.18	-27.21	-24.56

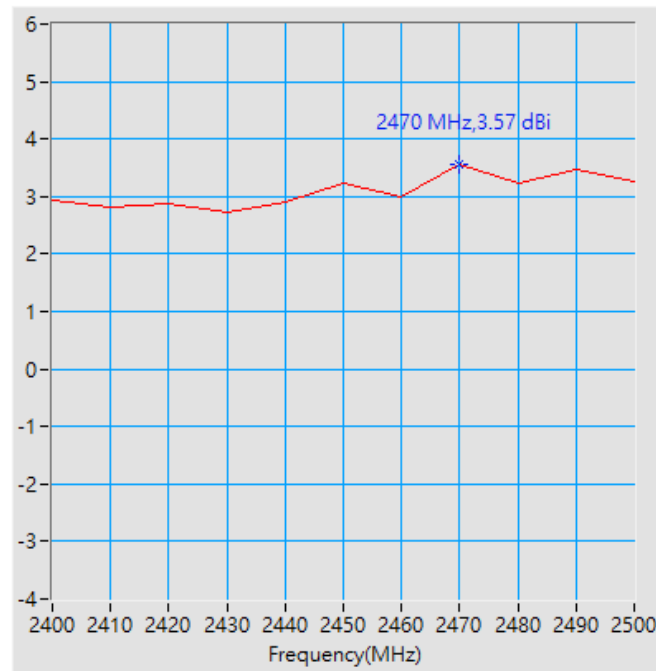
2. Antenna Characteristics

**BLE(2G)
(2400 ~ 2500) MHz**

2.2 Antenna Efficiency 、 Peak Gain and Half Power Beam Width



Maximum Efficiency at 2480 MHz : 59.87 %

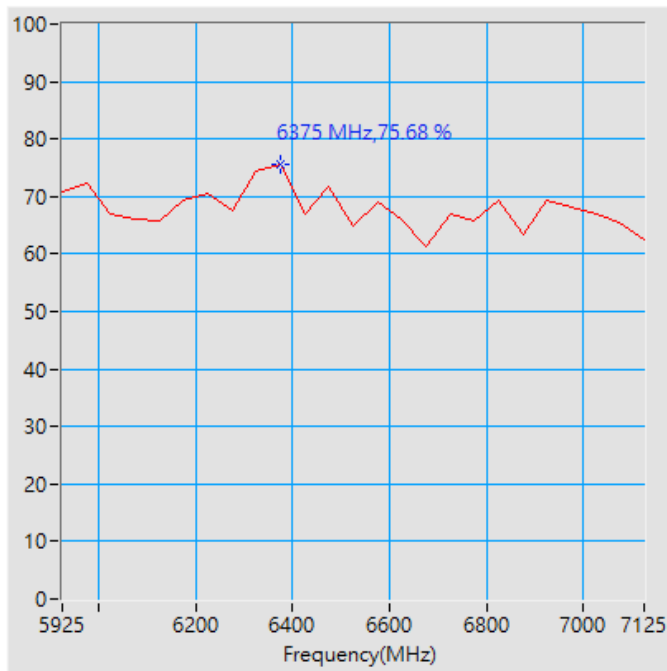


Maximum Peak Gain at 2470 MHz : 3.57 dBi

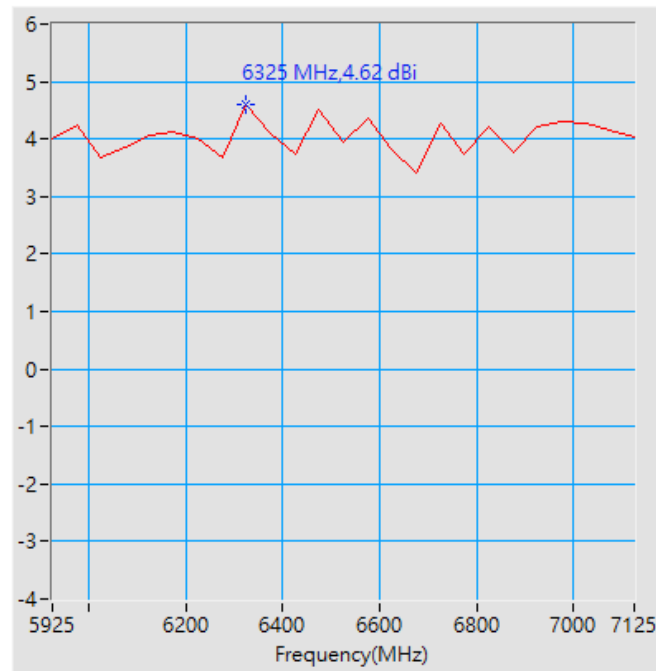
2. Antenna Characteristics

Ant_5(6G)
(5925 ~ 7125) MHz

2.2 Antenna Efficiency 、 Peak Gain and Half Power Beam Width



Maximum Efficiency at 6375 MHz : 75.68 %

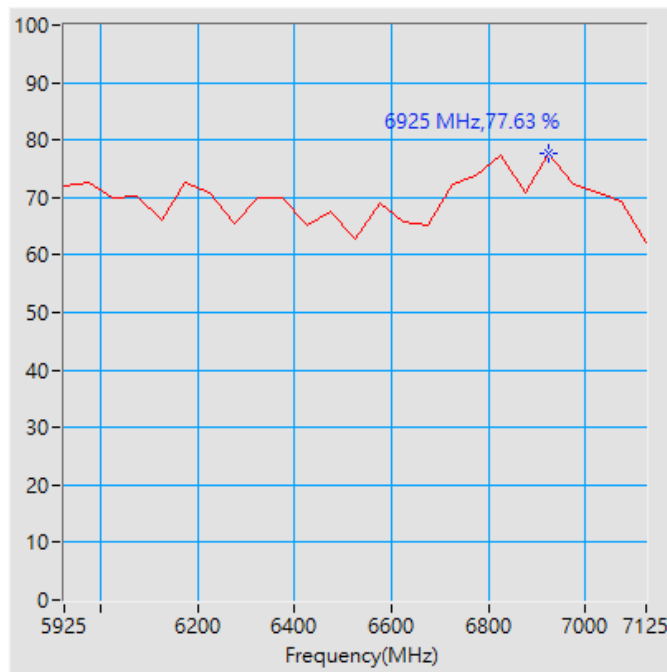


Maximum Peak Gain at 6325 MHz : 4.62 dBi

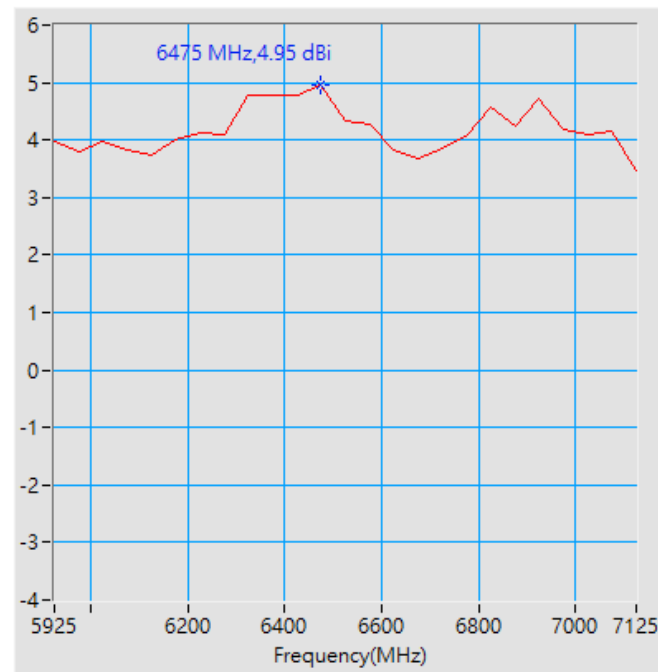
2. Antenna Characteristics

Ant_6(6G)
(5925 ~ 7125) MHz

2.2 Antenna Efficiency 、 Peak Gain and Half Power Beam Width



Maximum Efficiency at 6925 MHz : 77.63 %

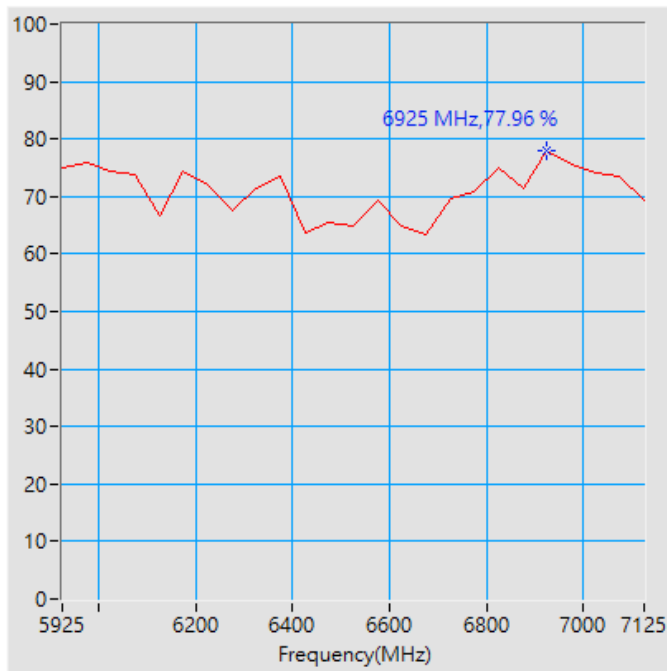


Maximum Peak Gain at 6475 MHz : 4.95 dBi

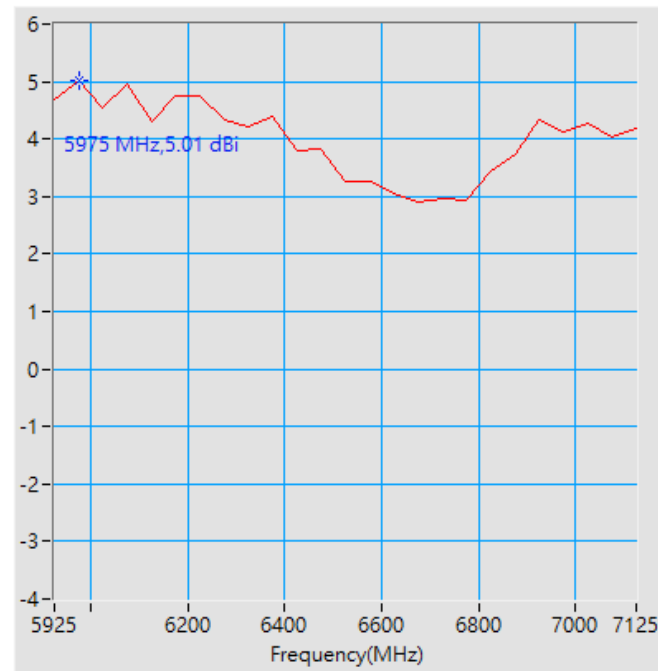
2. Antenna Characteristics

Ant_7(6G)
(5925 ~ 7125) MHz

2.2 Antenna Efficiency 、 Peak Gain and Half Power Beam Width



Maximum Efficiency at 6925 MHz : 77.96 %

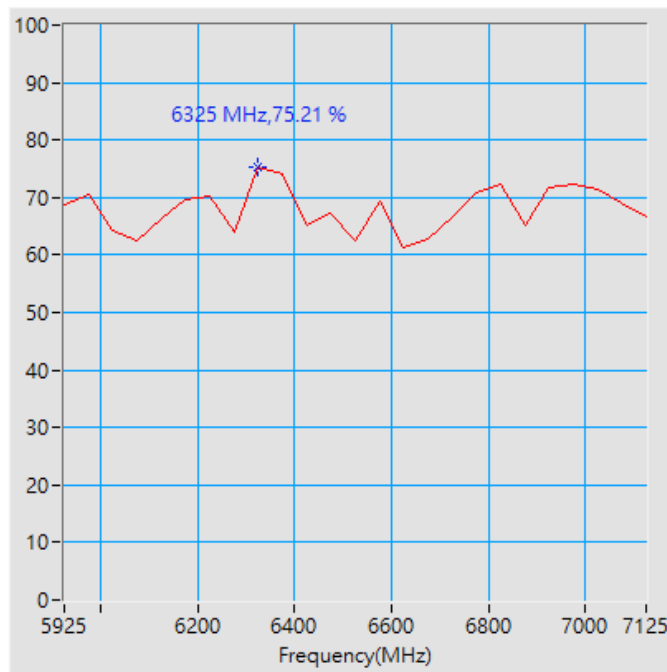


Maximum Peak Gain at 5975 MHz : 5.01 dBi

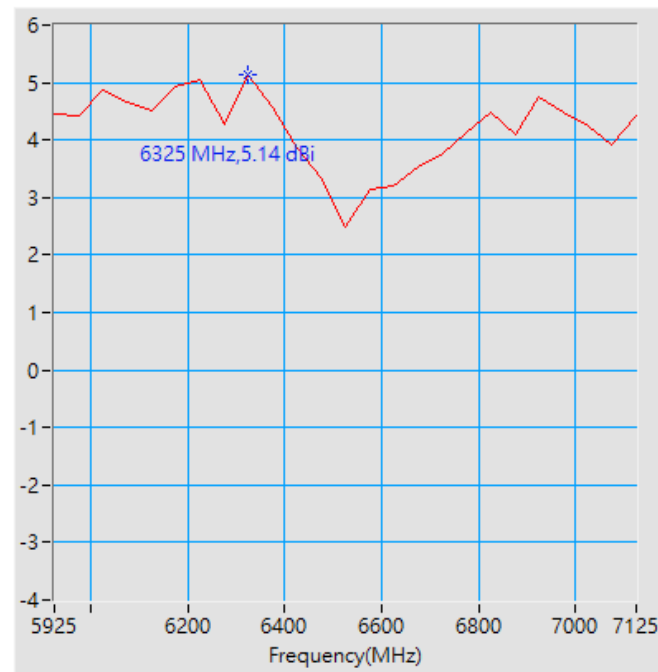
2. Antenna Characteristics

Ant_8(6G)
(5925 ~ 7125) MHz

2.2 Antenna Efficiency 、 Peak Gain and Half Power Beam Width



Maximum Efficiency at 6325 MHz : 75.21 %

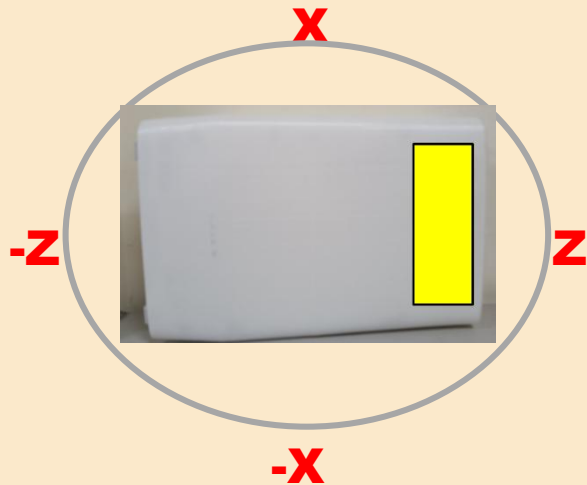


Maximum Peak Gain at 6325 MHz : 5.14 dBi

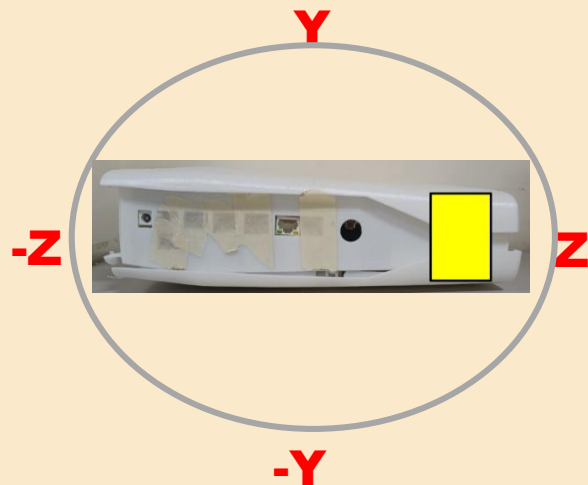
2. Antenna Characteristics

2.3 3 views of antenna & 2D Radiation Patterns

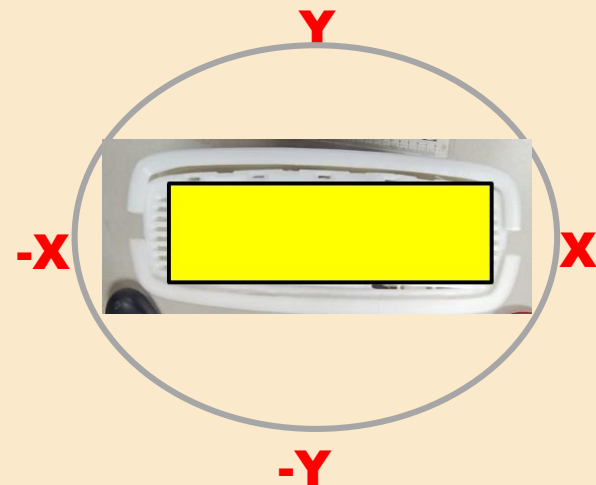
X-Z plane



Y-Z plane



X-Y plane

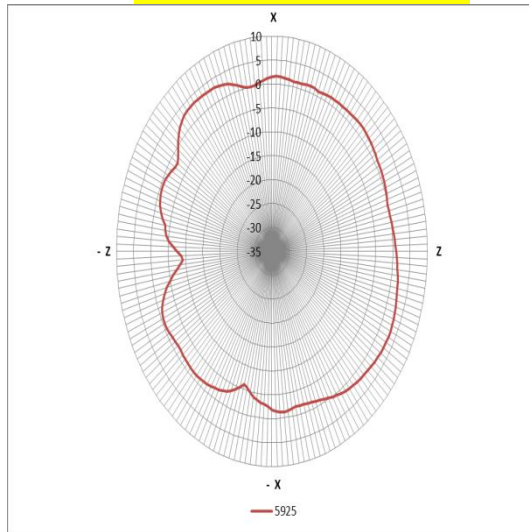


2. Antenna Characteristics

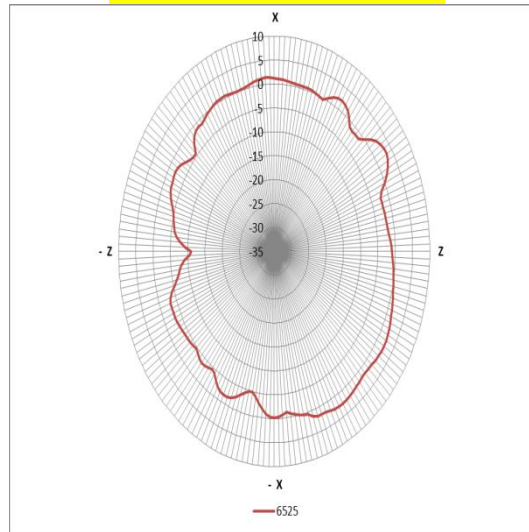
2.4 2D Radiation Patterns (**Combine**)

XZ-Plane (Ant_5 & Ant_6 & Ant_7 & Ant_8)

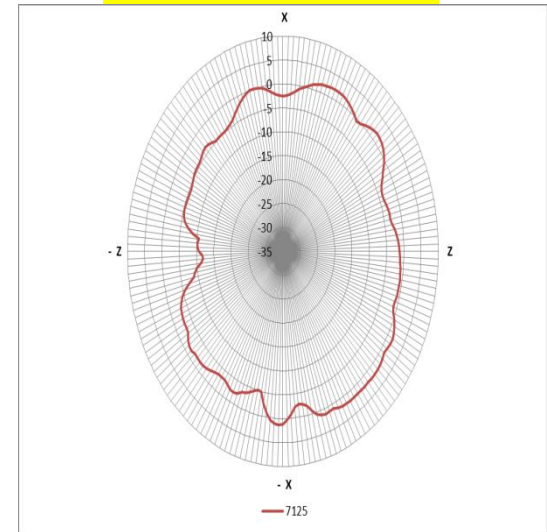
5925 MHz



6525 MHz



7125 MHz

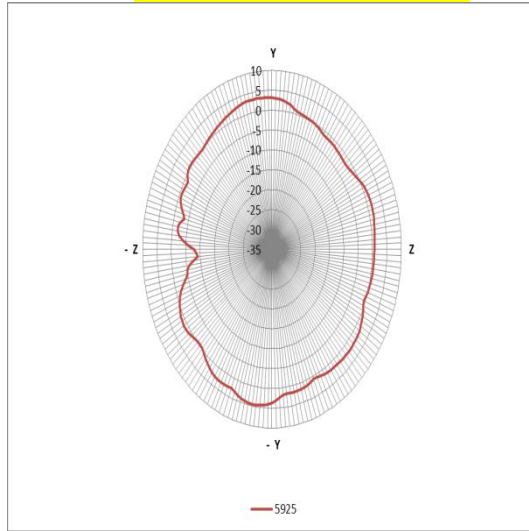


2. Antenna Characteristics

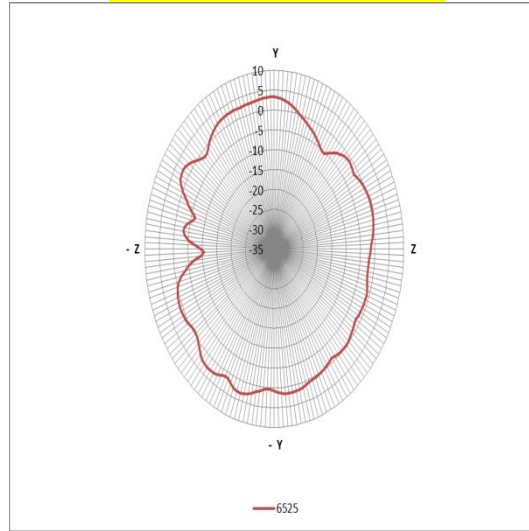
2.4 2D Radiation Patterns (**Combine**)

YZ-Plane (Ant_5 & Ant_6 & Ant_7 & Ant_8)

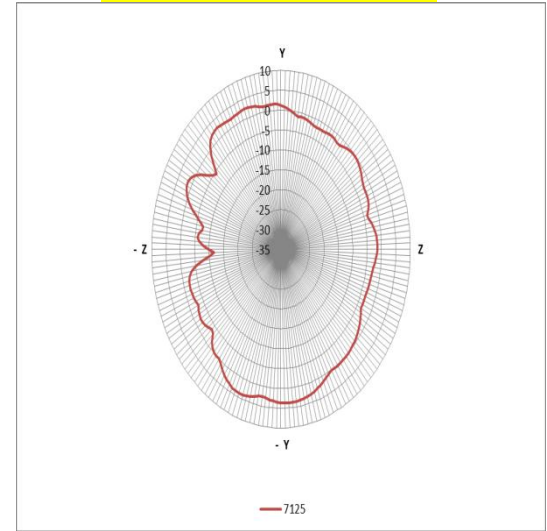
5925 MHz



6525 MHz



7125 MHz

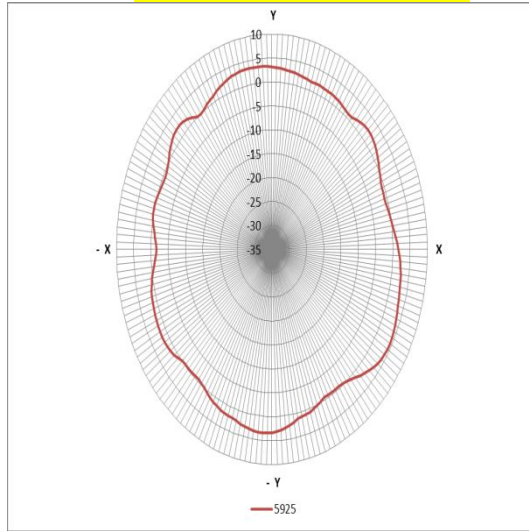


2. Antenna Characteristics

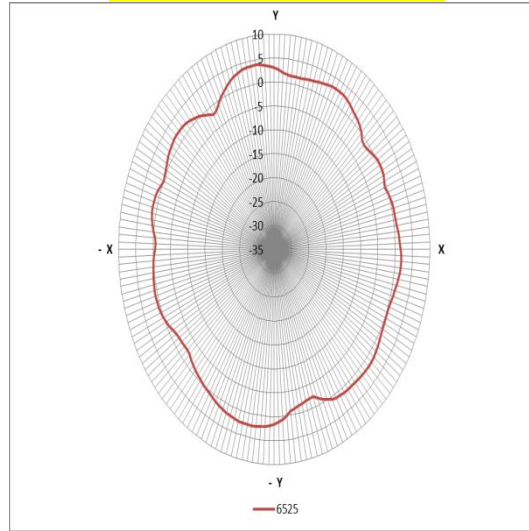
2.4 2D Radiation Patterns (**Combine**)

XY-Plane (Ant_5 & Ant_6 & Ant_7 & Ant_8)

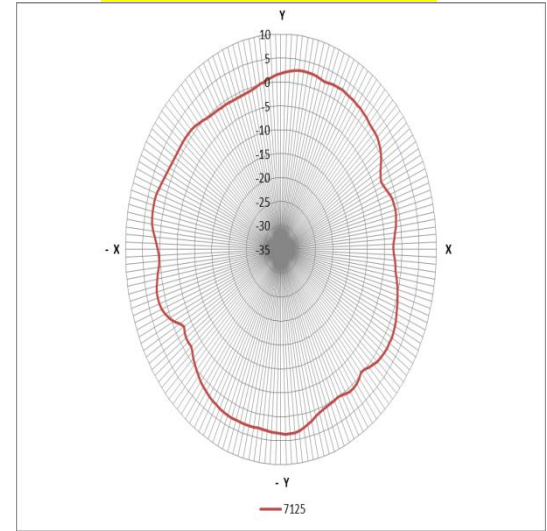
5925 MHz



6525 MHz



7125 MHz



4.FCC

Antenna Vendor : INPAQ TECHNOLOGY CO., LTD.

Test date: 2024/08/15

Test Engineer: Wilson Wang

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	2024/03/03	2025/03/02
Keysight Network Analyzer	E5071C	2024/2/27	2025/2/26

-Setup:

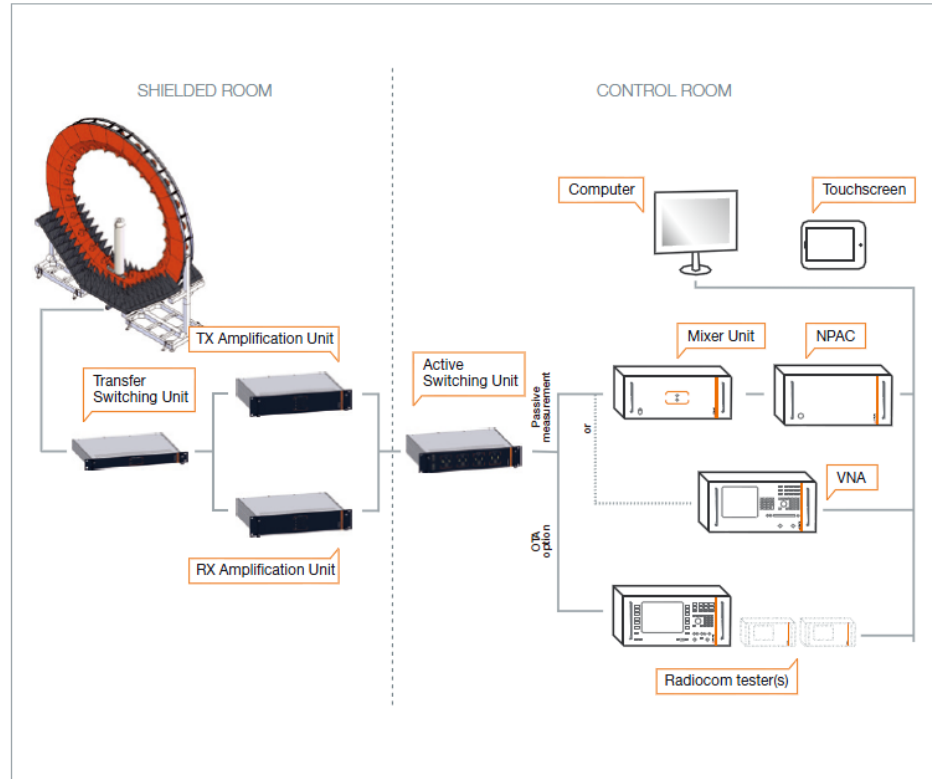
Pattern Measurement:

-Chamber : Satimo

-Test Program: SPM V15

-Setup Photo:

System overview



Experimental Setup

Operating instructions:

- 1.Place the DUT at the center of the turntable.
- 2.Conneccting 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.