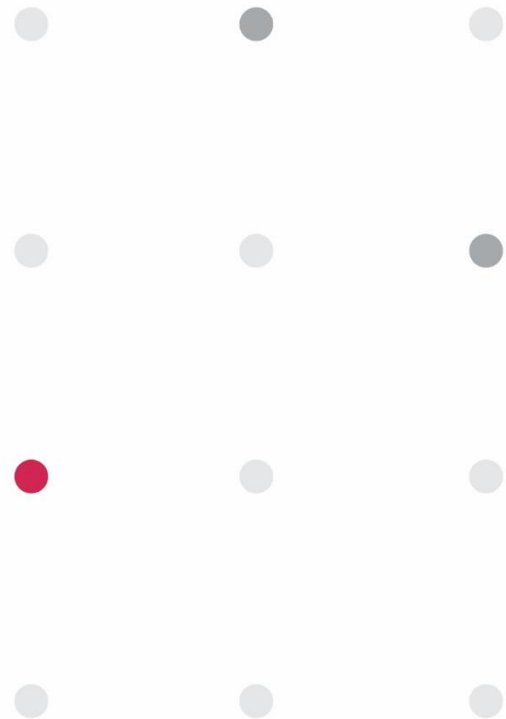


PSA

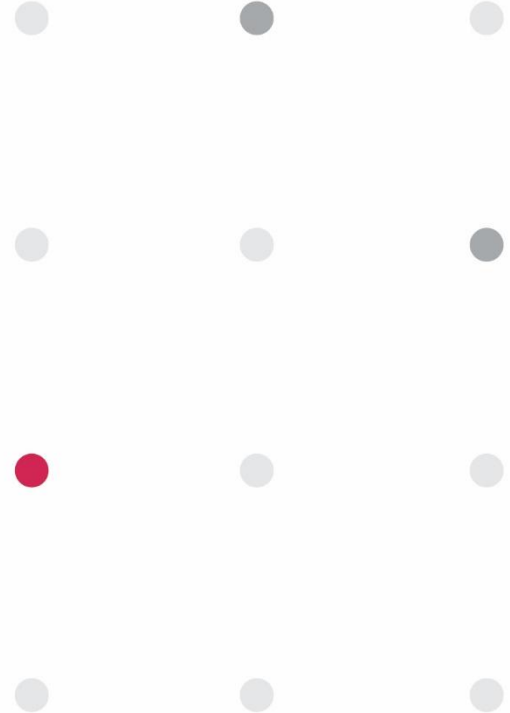
佳邦科技股份有限公司

INPAQ TECHNOLOGY CO., LTD.



PSA

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.



D-Link_DBR560 A1

Presented by

Wilson

2025/ 01/ 06



Version	Date	Description	Author
V01	2024/11/01	New Release	Wilson
V02	2024/12/26	Update data	Wilson
V02	2025/01/06	變更天線編號	Wilson



OUTLINE

1. Measurement Information

1.1 Experimental Setup

1.2 Antenna Solution Detail

2. Antenna Characteristics

2.1 Return Loss & Isolation

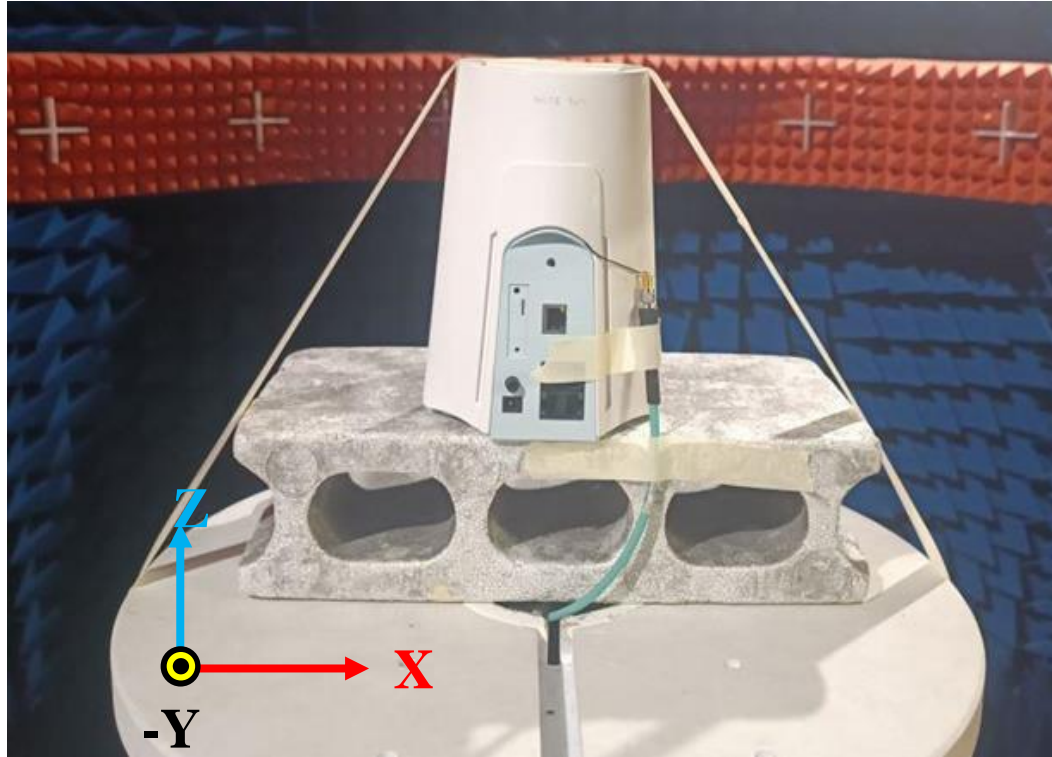
2.2 Antenna Efficiency and Peak Gain

2.3 3 views of antenna & 2D Radiation Patterns

3. Summary

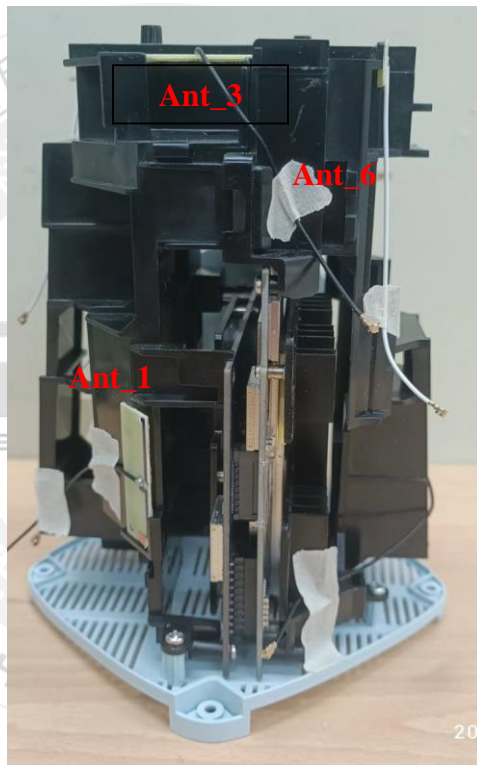
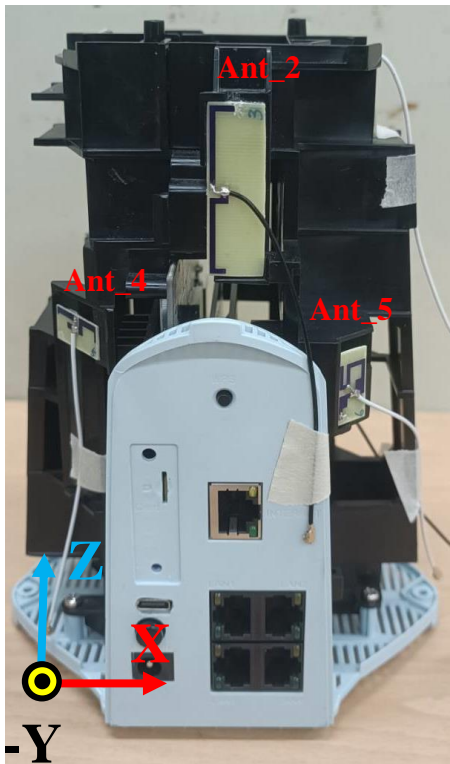
1. Measurement Information

1.1 Experimental Setup



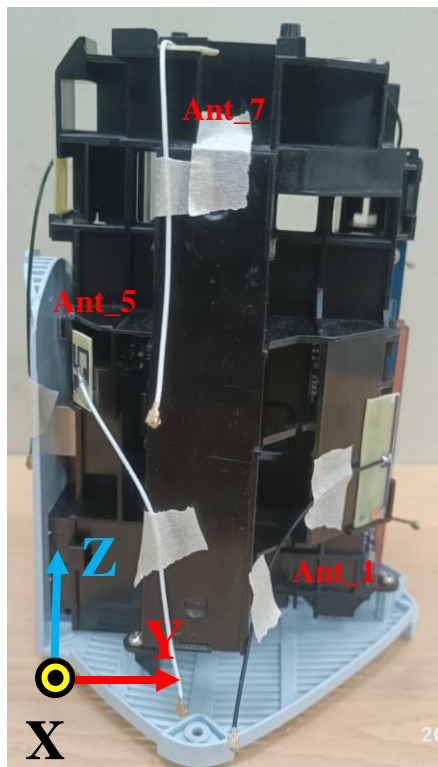
1. Measurement Information

1.2 Antenna Solution Detail



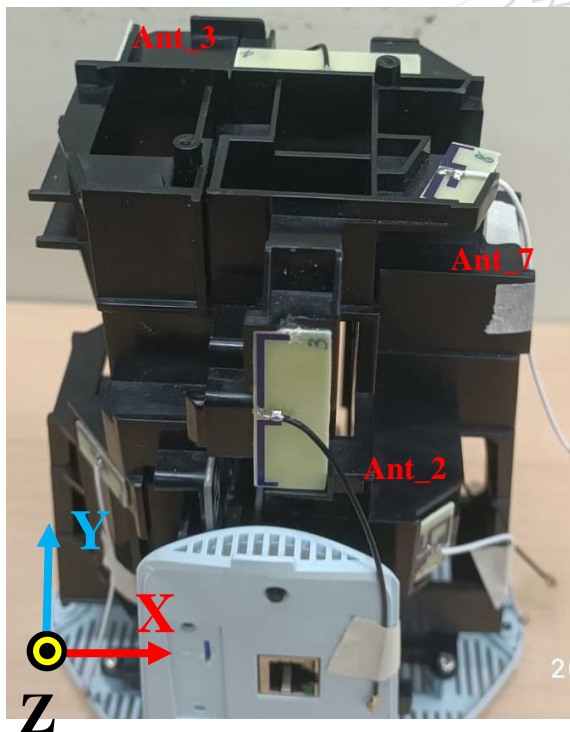
1. Measurement Information

1.2 Antenna Solution Detail



1. Measurement Information

1.2 Antenna Solution Detail



Ant_0 : PCB 40 x 13 x 0.8

Ant_1 : PCB 40 x 13 x 0.8

Ant_2 : PCB 40 x 13 x 0.8

Ant_3 : PCB 40 x 13 x 0.8

Ant_4 : PCB 20 x 10 x 0.8

Ant_5 : PCB 20 x 10 x 0.8

Ant_6 : PCB 18 x 10 x 0.8

Ant_7 : PCB 20 x 10 x 0.8

Cable皆為1.13 normal

總長100 (暫定)

Unit : mm

2400 MHz – 2500MHz

Ant_0 , Ant_1 , Ant_2 , Ant_3

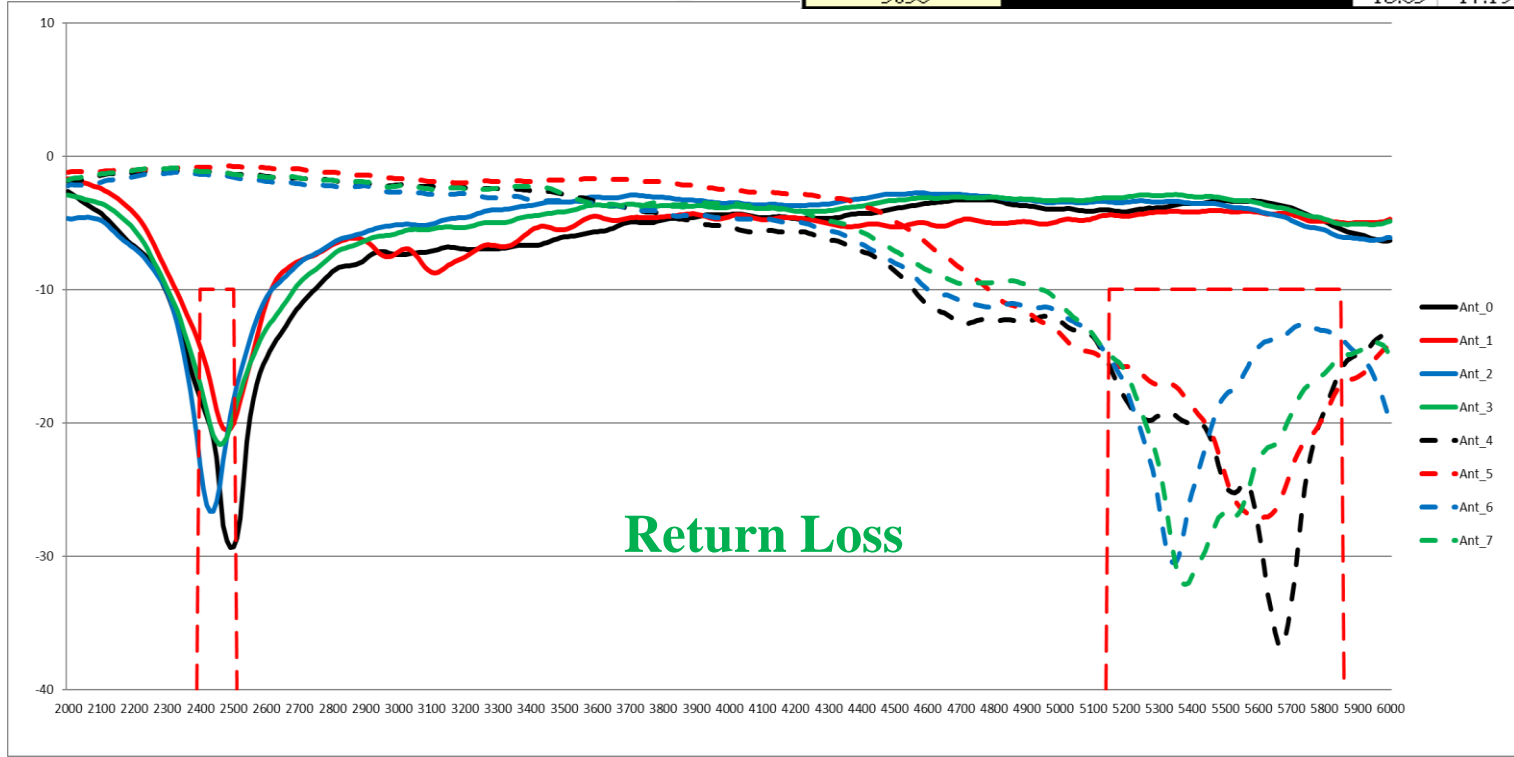
5150 MHz – 5850 MHz

Ant_4 , Ant_5 , Ant_6 , Ant_7

2. Antenna Characteristics

2.1 Return Loss & Isolation

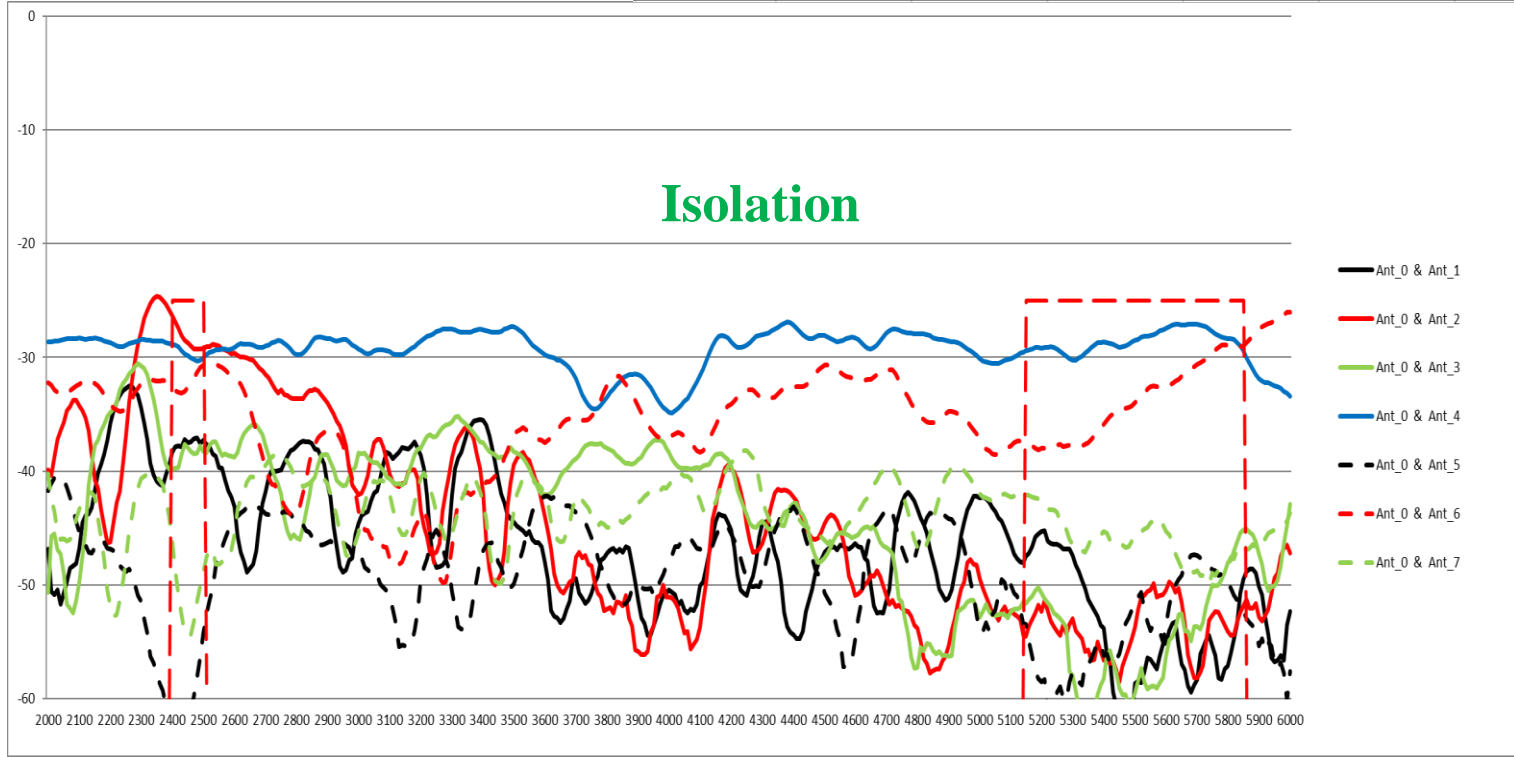
Frequency(MHz)	Ant 0	Ant 1	Ant 2	Ant 3	Ant 4	Ant 5	Ant 6	Ant 7
2400	-18.12	-14.29	-23.15	-17.06				
2450	-22.57	-19.04	-25.91	-21.34				
2500	-29.28	-20.02	-18.24	-19.39				
5150					-15.69	-15.45	-15.07	-14.89
5500					-24.67	-23.87	-17.95	-26.68
5850					-16.05	-17.19	-13.63	-15.08



2. Antenna Characteristics

2.1 Return Loss & Isolation

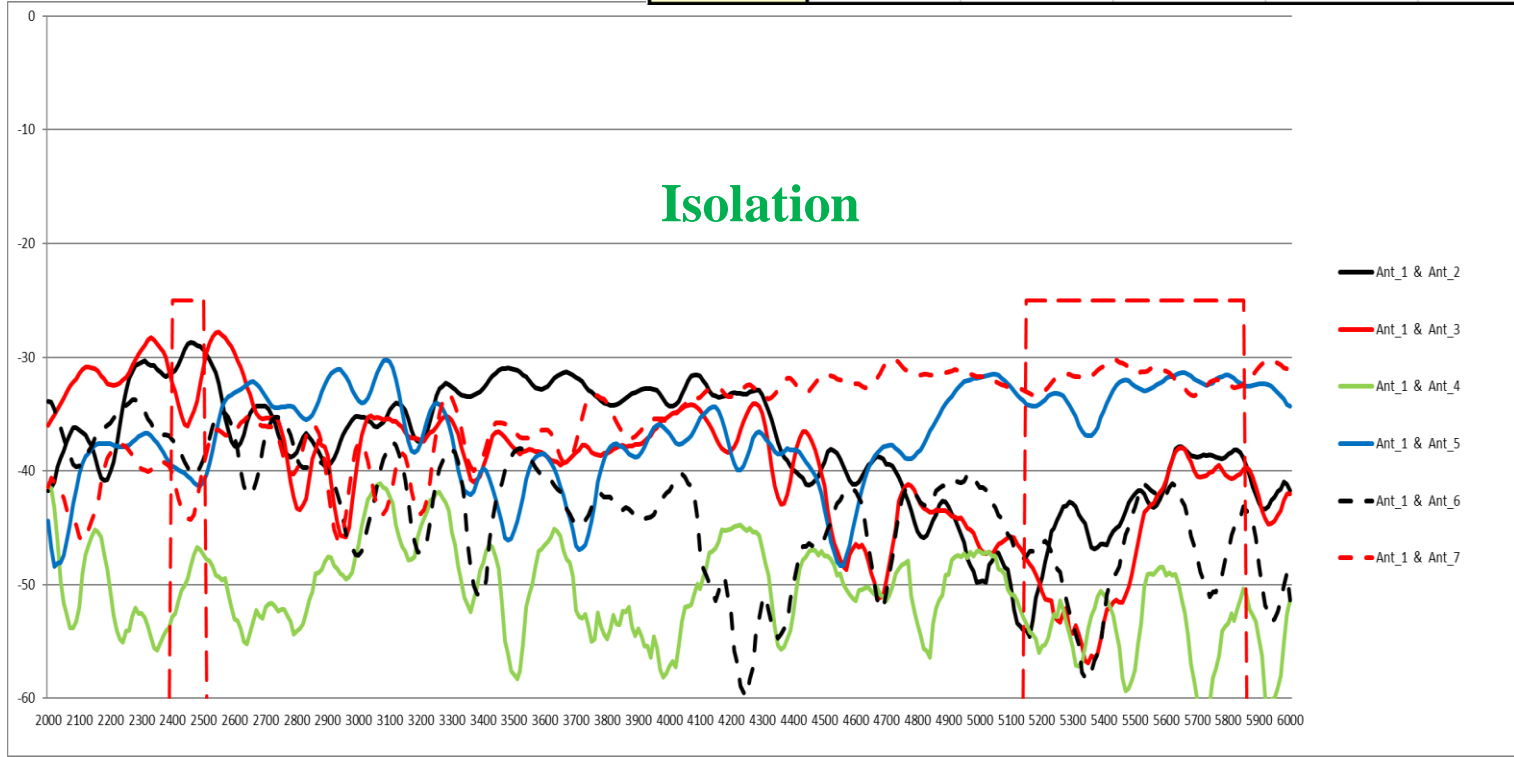
Frequency(MHz)	Ant_0 & Ant_1	Ant_0 & Ant_2	Ant_0 & Ant_3	Ant_0 & Ant_4	Ant_0 & Ant_5	Ant_0 & Ant_6	Ant_0 & Ant_7
2400	-38.36	-26.30	-39.84	-28.82	-61.43	-32.56	-46.08
2450	-37.46	-28.72	-37.95	-29.83	-61.75	-32.65	-54.39
2500	-37.26	-29.22	-38.26	-30.04	-54.26	-30.66	-48.98
5150	-47.51	-54.52	-51.66	-29.40	-53.50	-37.57	-42.09
5500	-58.67	-53.75	-59.51	-28.51	-51.29	-33.97	-45.98
5850	-49.56	-51.88	-45.19	-29.43	-52.25	-28.97	-46.67



2. Antenna Characteristics

Frequency(MHz)	Ant_1 & Ant_2	Ant_1 & Ant_3	Ant_1 & Ant_4	Ant_1 & Ant_5	Ant_1 & Ant_6	Ant_1 & Ant_7
2400	-31.39	-32.29	-52.83	-39.54	-37.24	-40.23
2450	-28.86	-36.07	-49.44	-40.46	-39.69	-44.20
2500	-29.35	-30.94	-47.39	-41.00	-38.98	-39.55
5150	-54.01	-47.77	-53.48	-34.15	-47.53	-33.07
5500	-42.02	-47.68	-57.54	-32.52	-43.20	-31.28
5850	-38.87	-39.87	-50.35	-32.42	-43.12	-32.42

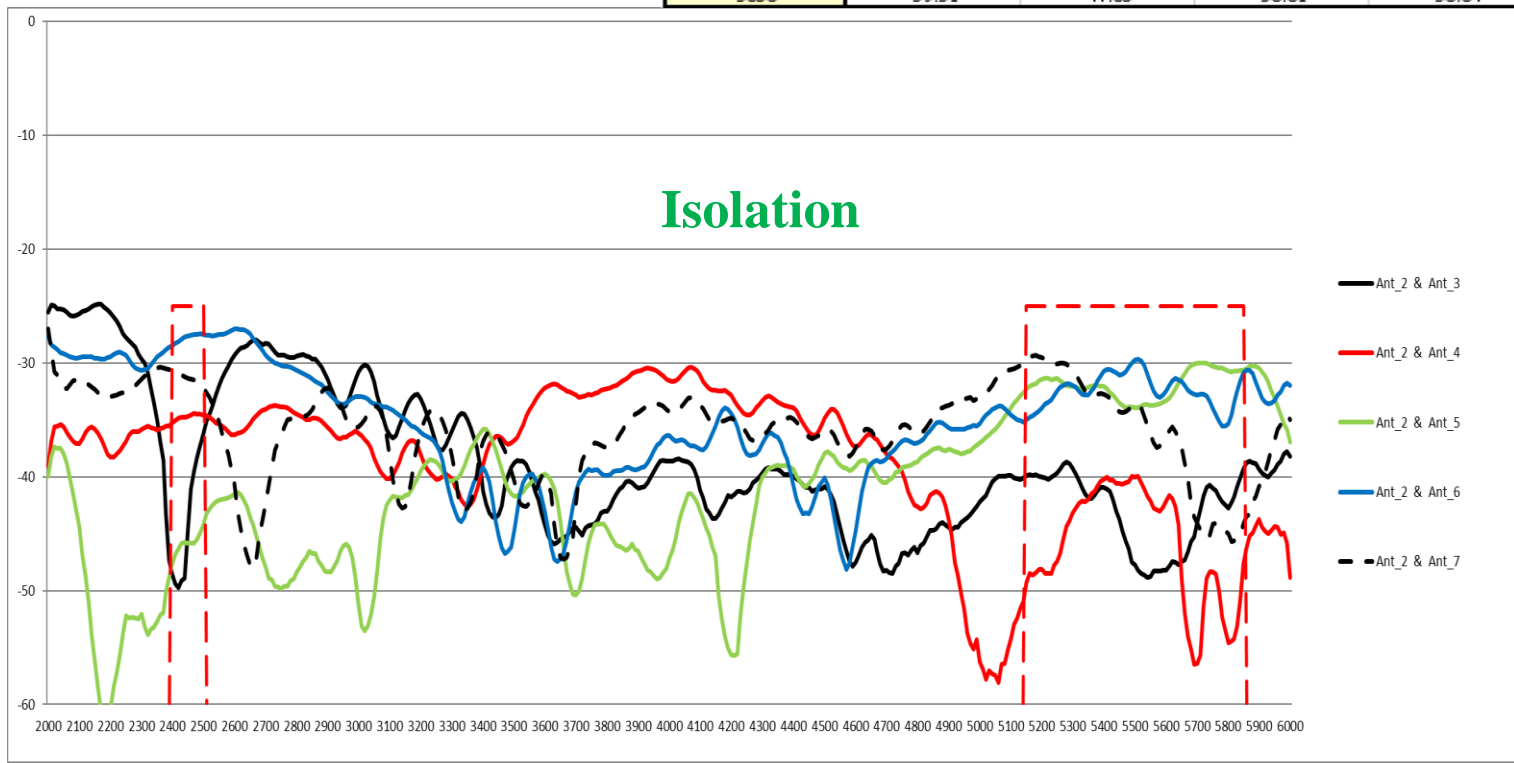
2.1 Return Loss & Isolation



2. Antenna Characteristics

2.1 Return Loss & Isolation

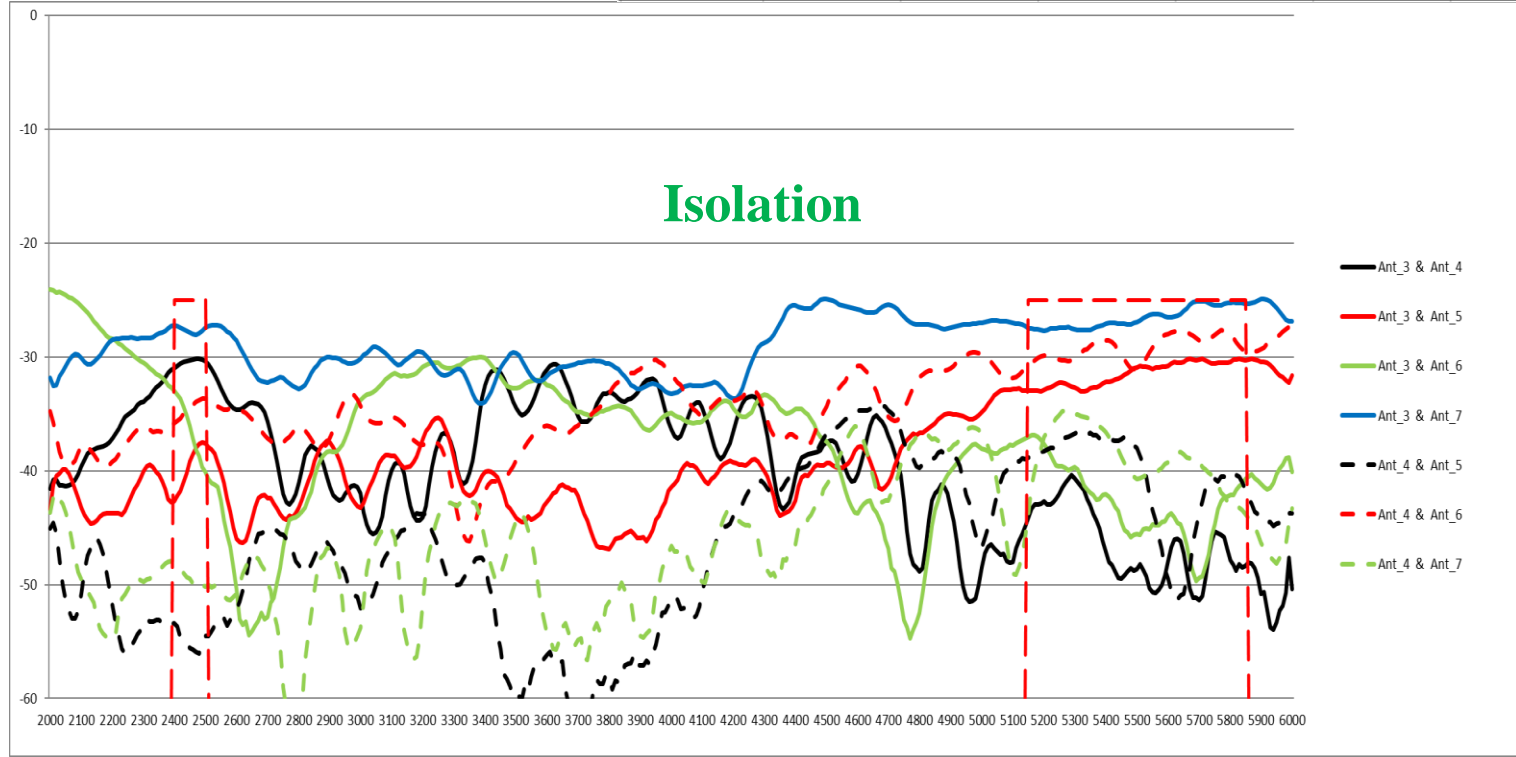
Frequency(MHz)	Ant_2 & Ant_3	Ant_2 & Ant_4	Ant_2 & Ant_5	Ant_2 & Ant_6	Ant_2 & Ant_7
2400	-48.56	-35.28	-47.67	-28.46	-30.64
2450	-44.86	-34.67	-45.83	-27.64	-31.32
2500	-36.23	-34.56	-44.19	-27.50	-32.13
5150	-39.87	-49.27	-32.28	-35.02	-29.76
5500	-47.71	-40.05	-33.92	-29.71	-33.61
5850	-39.31	-47.65	-30.61	-30.84	-44.18



2. Antenna Characteristics

2.1 Return Loss & Isolation

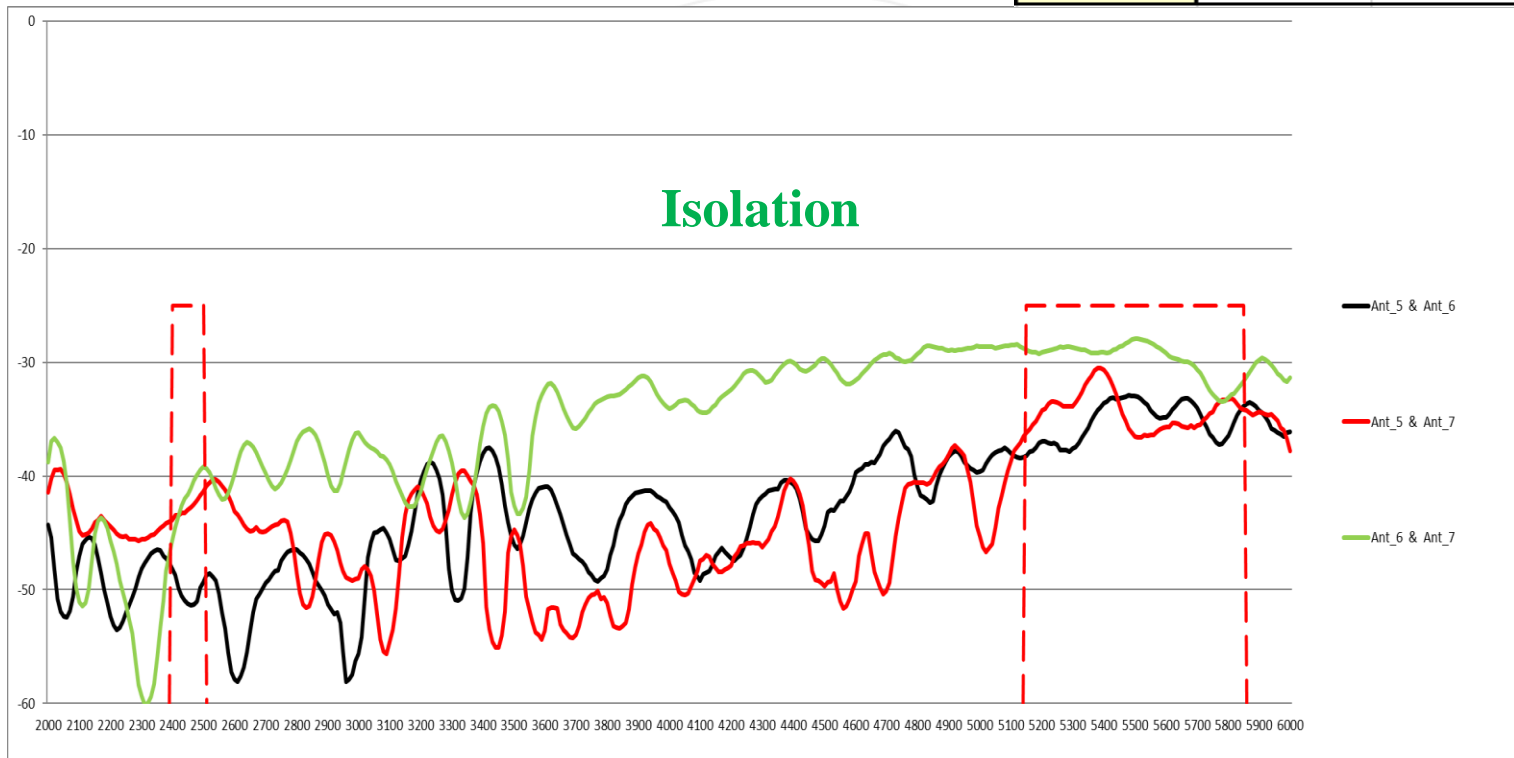
Frequency(MHz)	Ant_3 & Ant_4	Ant_3 & Ant_5	Ant_3 & Ant_6	Ant_3 & Ant_7	Ant_4 & Ant_5	Ant_4 & Ant_6	Ant_4 & Ant_7
2400	-30.96	-42.65	-32.97	-27.23	-53.42	-35.82	-48.21
2450	-30.27	-39.21	-36.05	-27.87	-55.55	-34.36	-49.46
2500	-30.39	-37.59	-40.10	-27.45	-54.51	-33.68	-50.15
5150	-44.08	-32.97	-37.02	-27.47	-38.84	-30.67	-43.66
5500	-48.60	-30.92	-45.56	-26.91	-38.01	-31.08	-40.69
5850	-48.38	-30.28	-40.72	-25.30	-41.61	-29.55	-43.82



2. Antenna Characteristics

2.1 Return Loss & Isolation

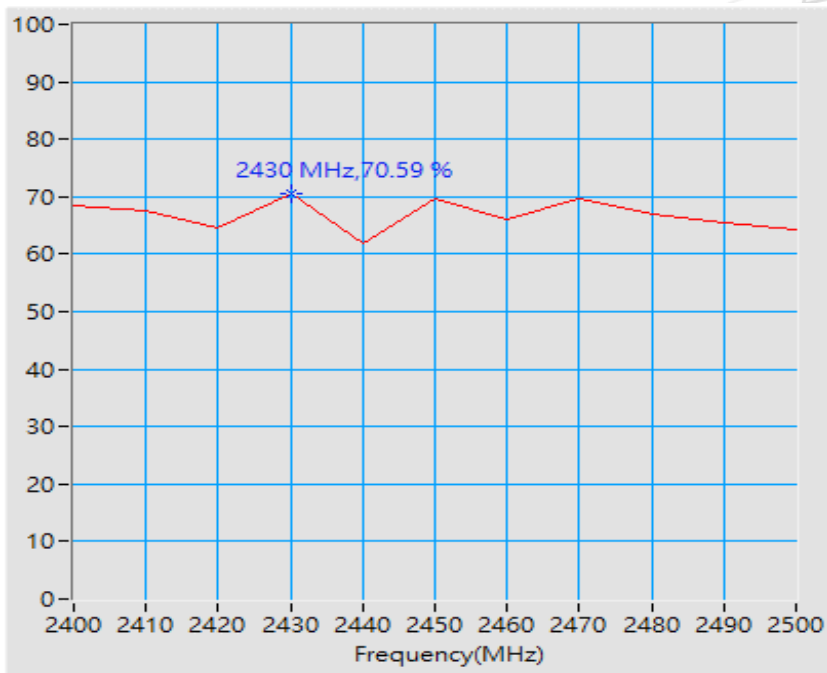
Frequency(MHz)	Ant_5 & Ant_6	Ant_5 & Ant_7	Ant_6 & Ant_7
2400	-48.15	-43.84	-45.71
2450	-51.24	-42.94	-41.63
2500	-49.31	-41.34	-39.20
5150	-38.18	-36.18	-28.90
5500	-32.94	-36.53	-27.98
5850	-33.86	-34.14	-31.69



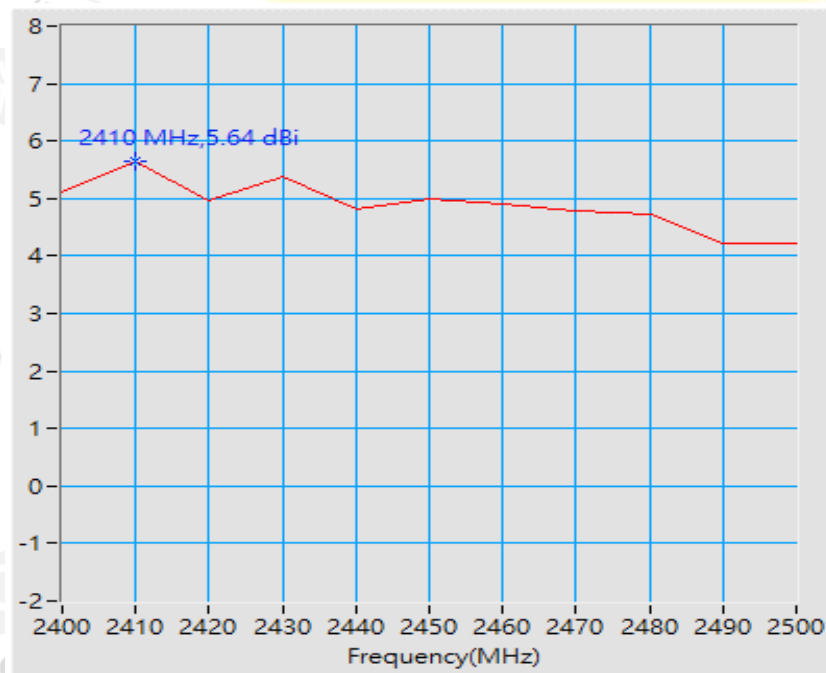
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_0
2400 – 2500 MHz



Maximum Efficiency at 2430 MHz : 70.59 %

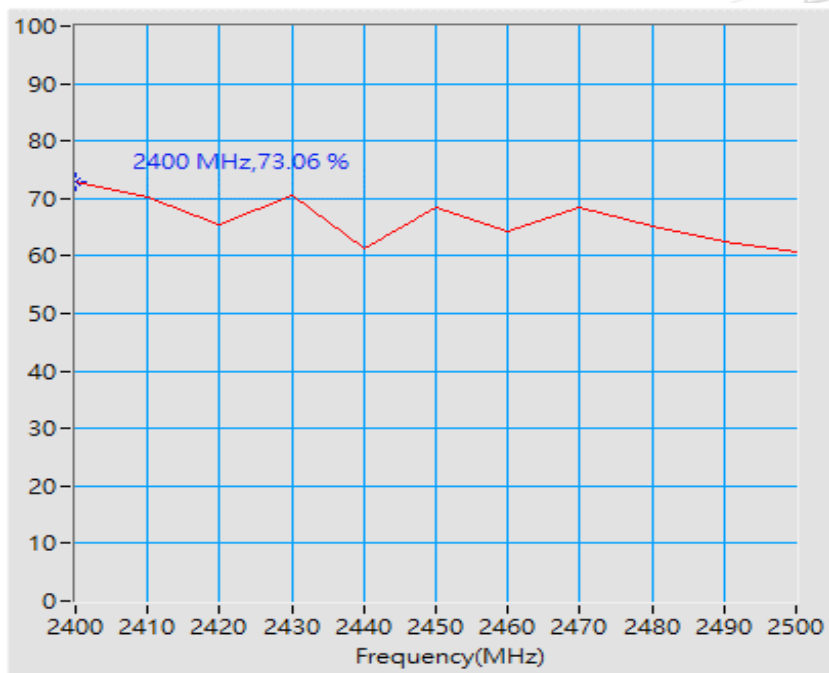


Maximum Peak Gain at 2410 MHz : 5.64 dBi

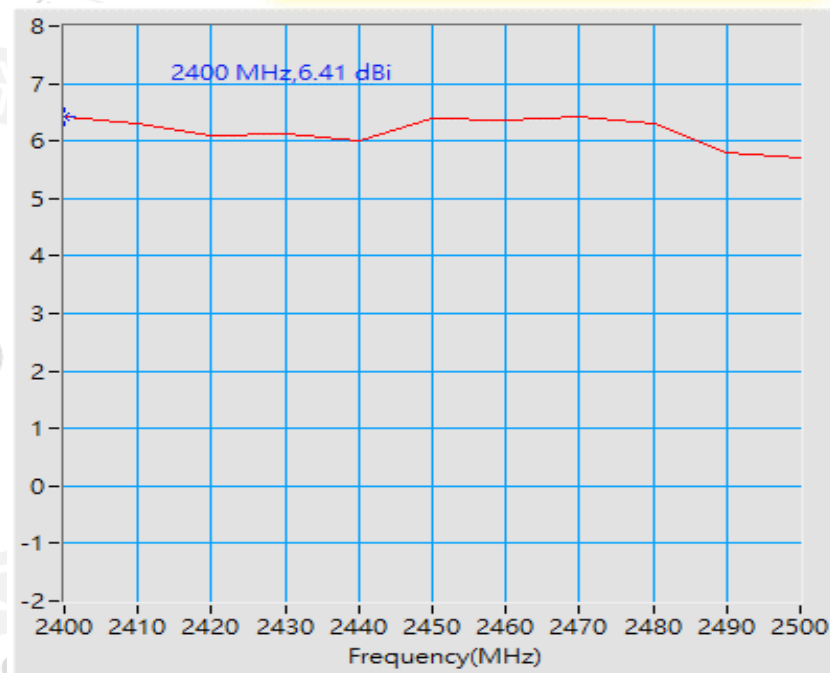
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_1
2400 – 2500 MHz



Maximum Efficiency at 2400 MHz : 73.06 %

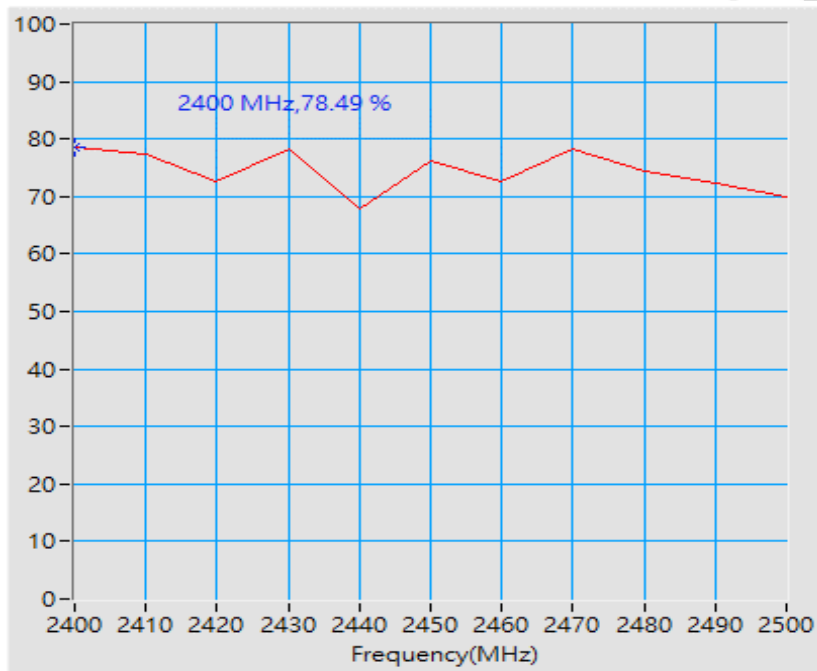


Maximum Peak Gain at 2400 MHz : 6.41 dBi

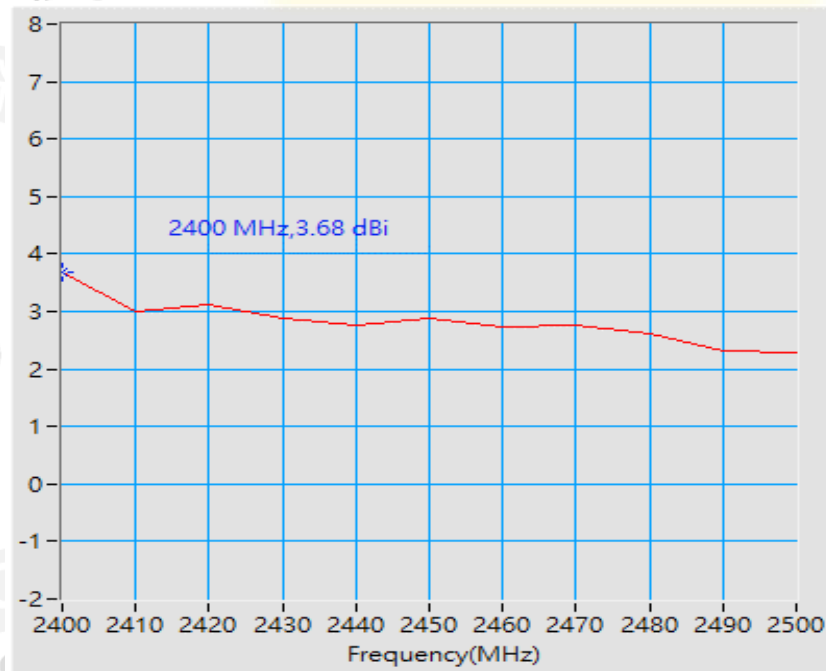
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_2
2400 – 2500 MHz



Maximum Efficiency at 2400 MHz : 78.49 %

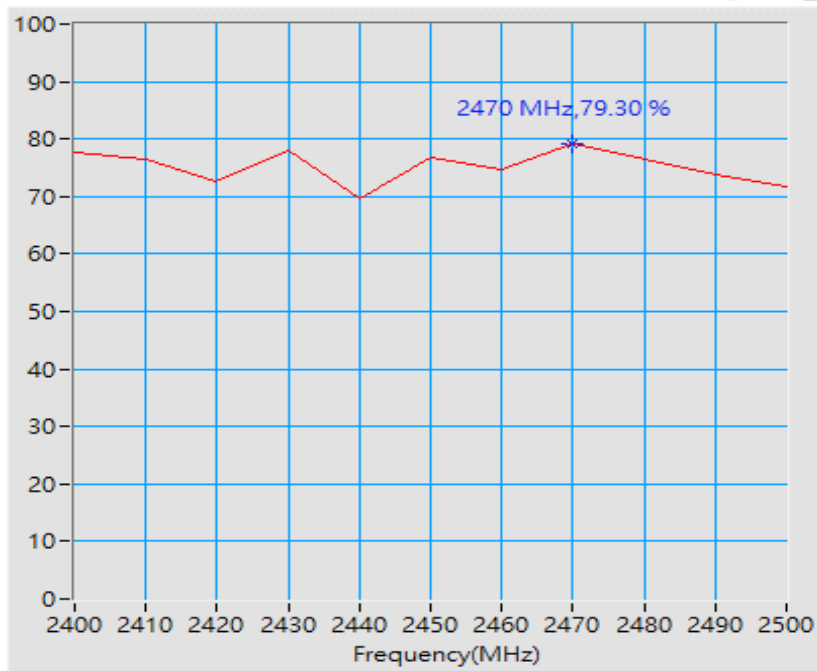


Maximum Peak Gain at 2400 MHz : 3.68 dBi

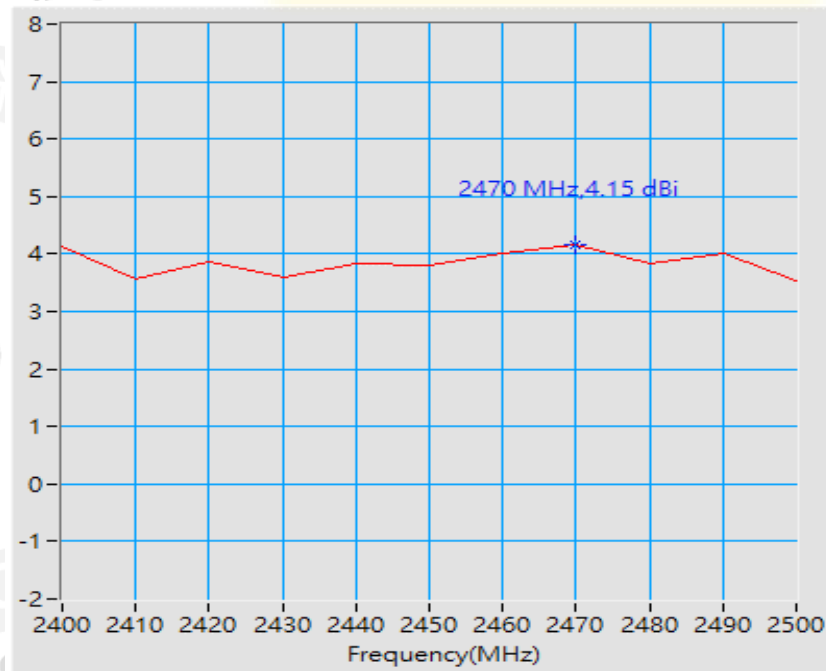
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_3
2400 – 2500 MHz



Maximum Efficiency at 2470 MHz : 79.30 %

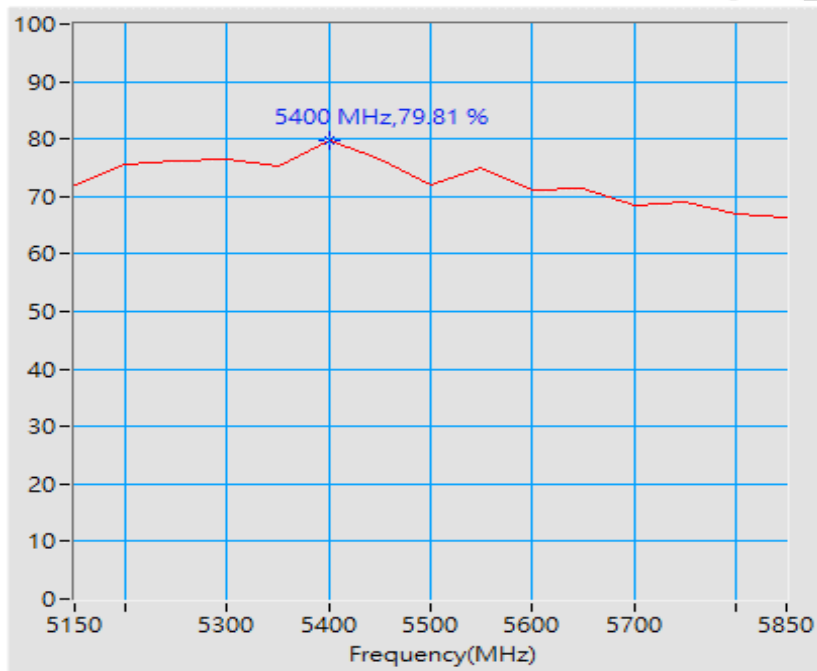


Maximum Peak Gain at 2470 MHz : 4.15 dBi

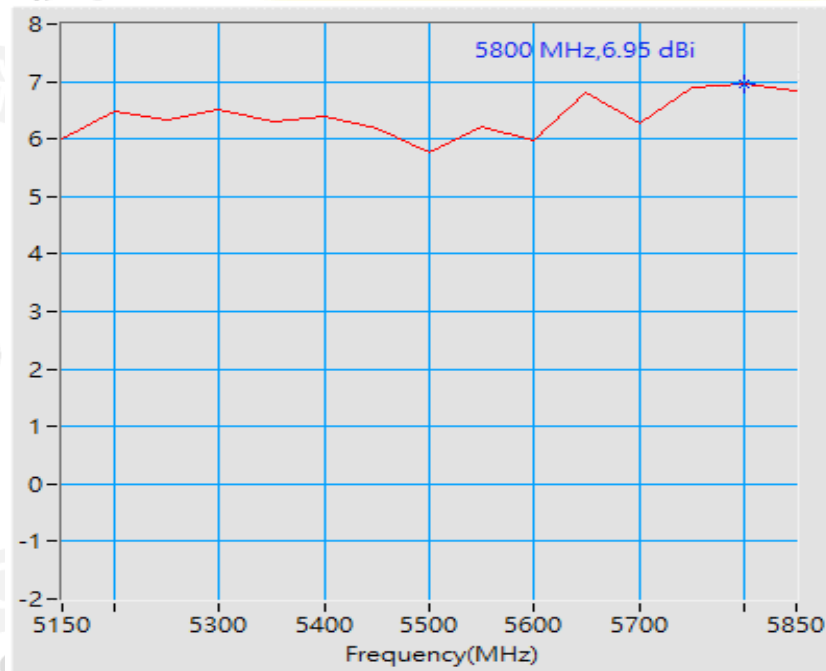
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_4
5150 – 5850 MHz



Maximum Efficiency at 5400 MHz : 79.81 %

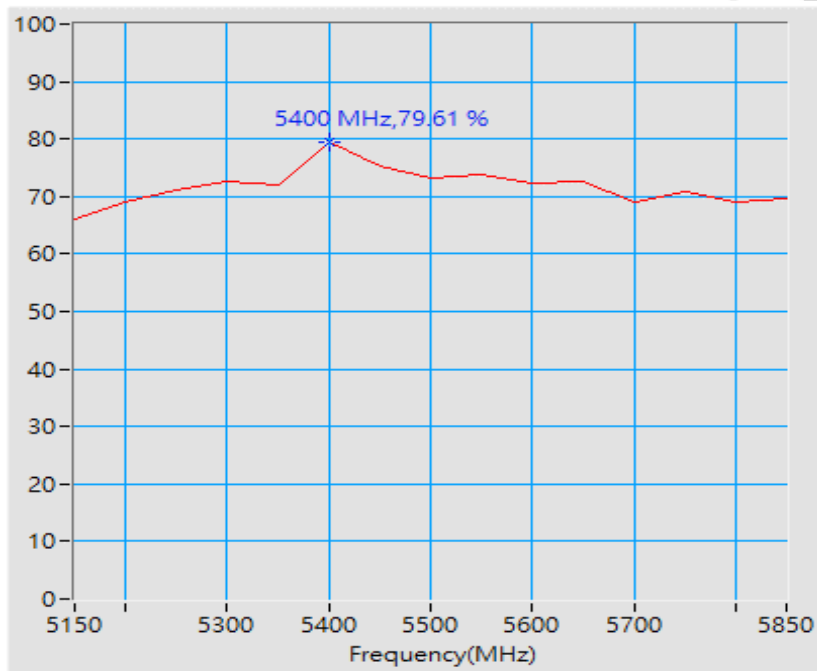


Maximum Peak Gain at 5800 MHz : 6.95 dBi

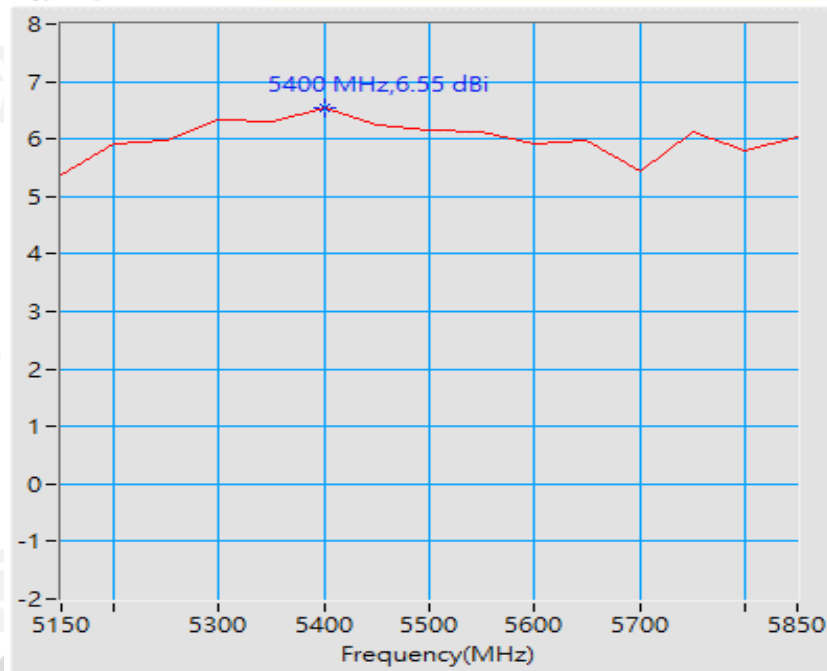
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_5
5150 – 5850 MHz



Maximum Efficiency at 5400 MHz : 79.61 %

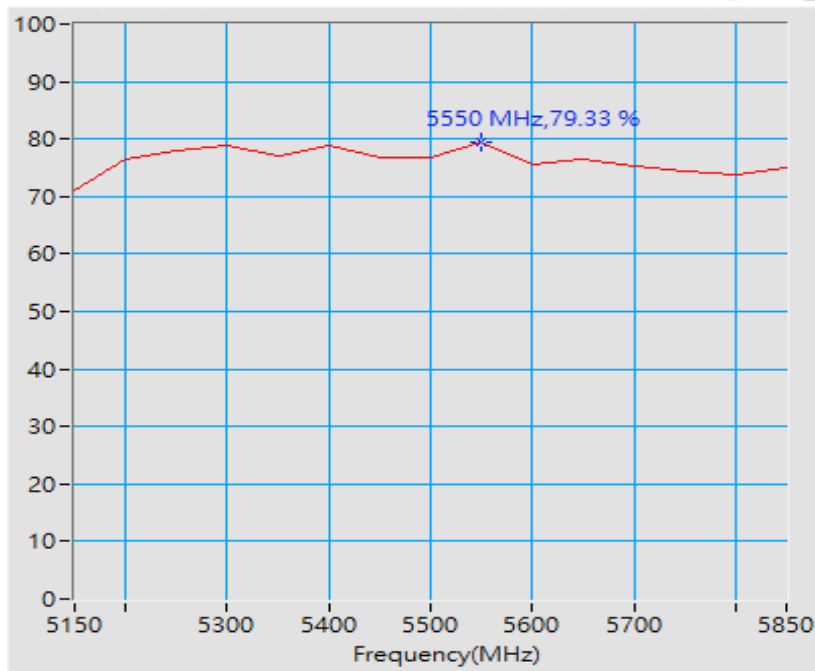


Maximum Peak Gain at 5400 MHz : 6.55 dBi

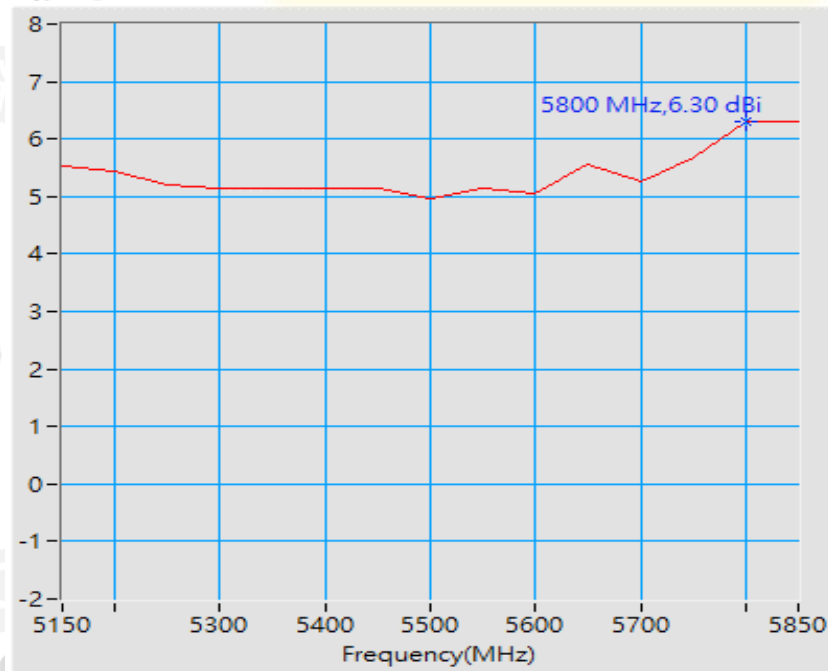
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_6
5150 – 5850 MHz



Maximum Efficiency at 5550 MHz : 79.33 %

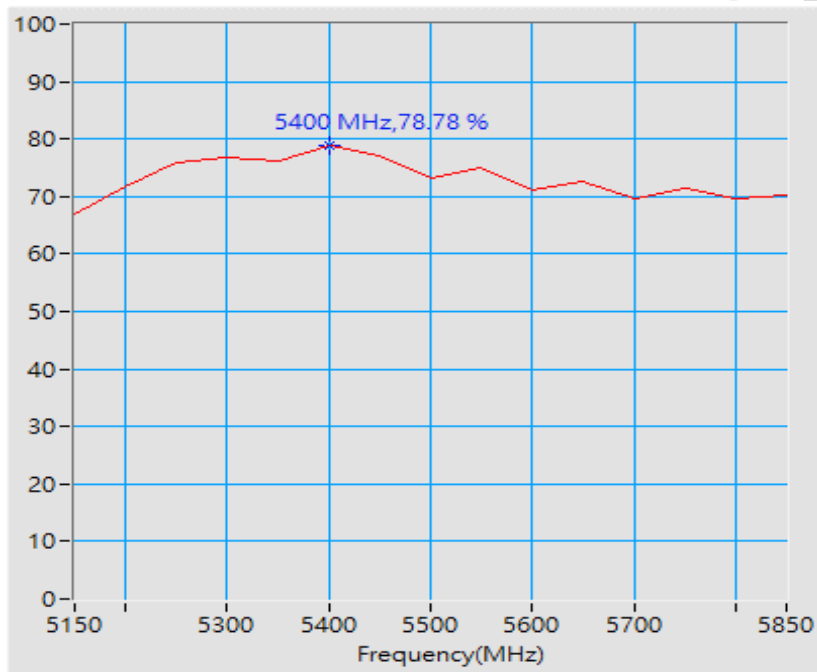


Maximum Peak Gain at 5800 MHz : 6.30 dBi

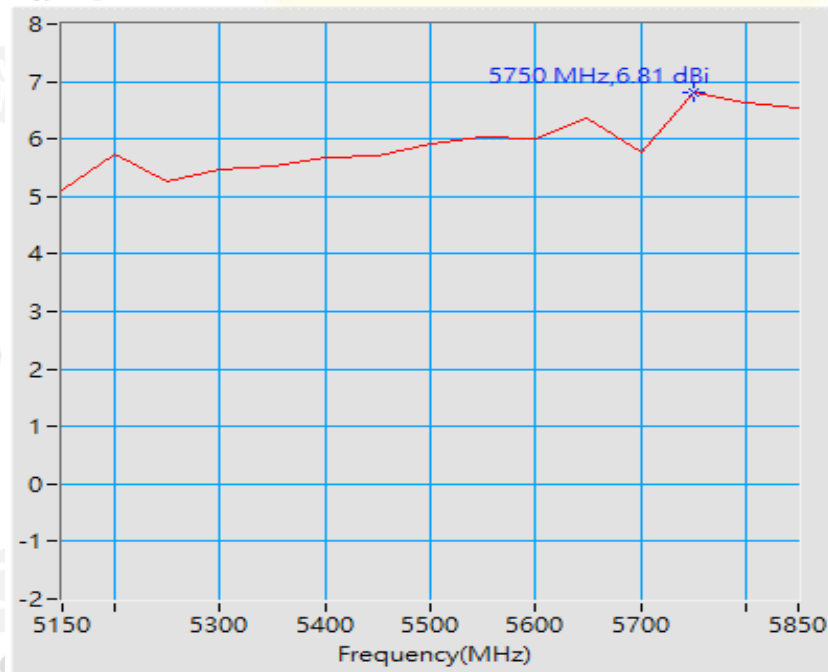
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

Ant_7
5150 – 5850 MHz



Maximum Efficiency at 5400 MHz : 78.78 %



Maximum Peak Gain at 5750 MHz : 6.81 dBi

2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

	Ant_0		Ant_1		Ant_2		Ant_3	
Frequency (MHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2400	68.32	5.11	73.06	6.41	78.49	3.68	77.60	4.12
2450	69.64	5.00	68.34	6.39	76.21	2.89	76.68	3.81
2500	64.36	4.22	60.81	5.70	69.82	2.29	71.81	3.54

	Ant_4		Ant_5		Ant_6		Ant_7	
Frequency (MHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
5150	72.16	6.02	66.08	5.38	71.12	5.52	67.10	5.11
5500	72.10	5.76	73.16	6.17	76.64	4.97	73.21	5.91
5850	66.27	6.83	69.72	6.03	75.01	6.30	70.14	6.55

2. Antenna Characteristics

2.3 3 views of antenna

X-Z plane



Y-Z plane



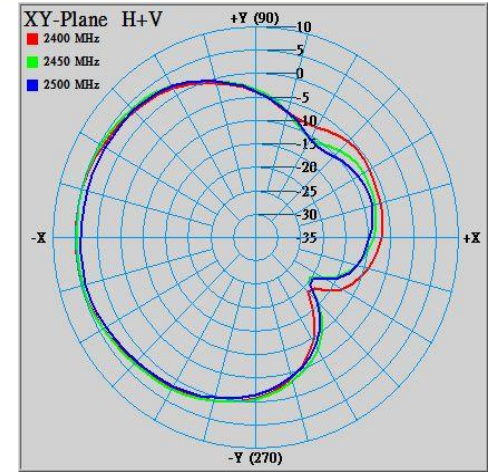
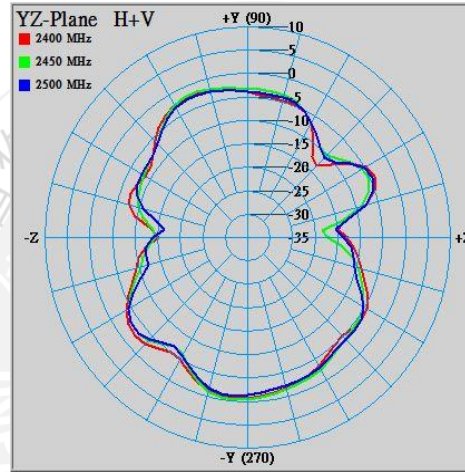
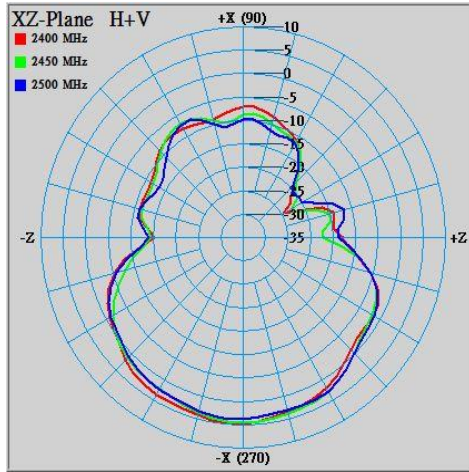
X-Y plane



2. Antenna Characteristics

Ant_0
2400 – 2500 MHz

2.3 2D Radiation Patterns

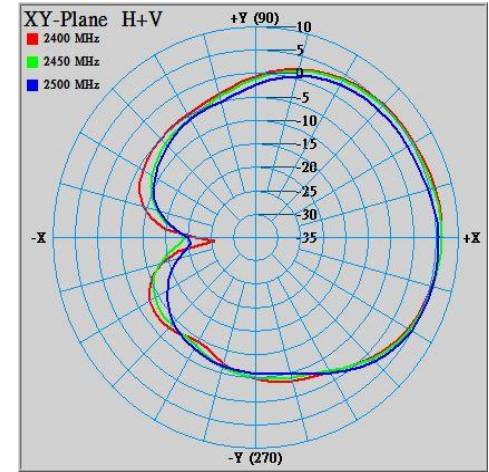
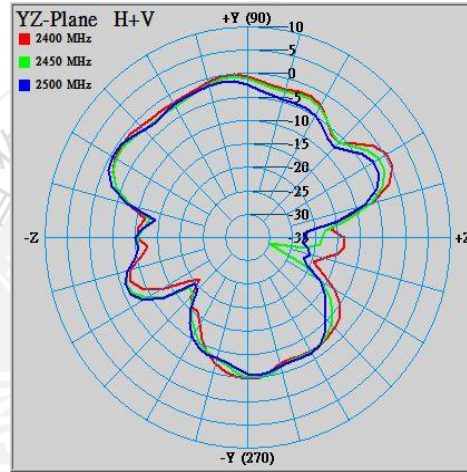
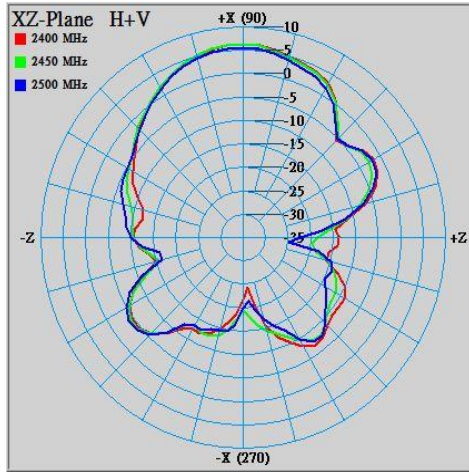


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	4.961	-1.369	-0.403	-4.665	4.946	0.498
2450	4.578	-1.629	-0.217	-4.71	5.005	0.629
2500	3.881	-1.911	-1.068	-5.071	4.051	-0.129

2. Antenna Characteristics

Ant_1
2400 – 2500 MHz

2.3 2D Radiation Patterns

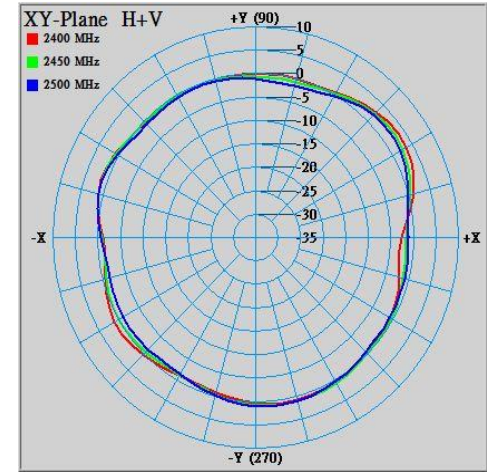
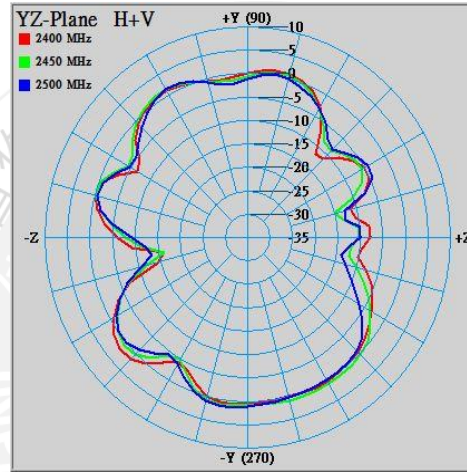
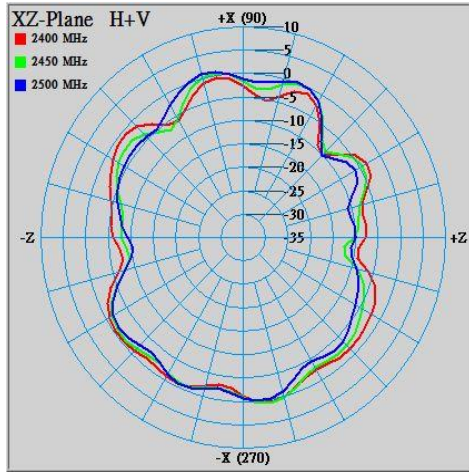


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	6.36	-1.42	0.794	-4.543	6.413	1.171
2450	6.376	-1.41	-0.397	-5.11	6.366	0.995
2500	5.597	-1.917	-0.323	-5.607	5.697	0.347

2. Antenna Characteristics

Ant_2
2400 – 2500 MHz

2.3 2D Radiation Patterns

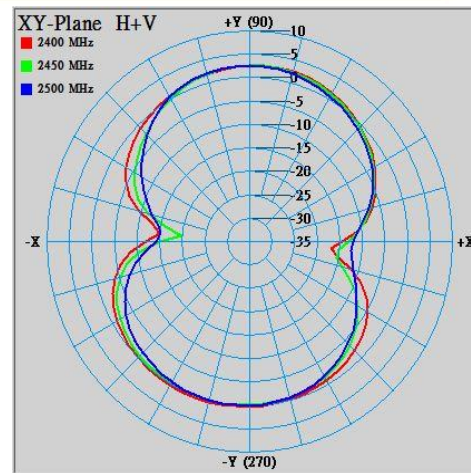
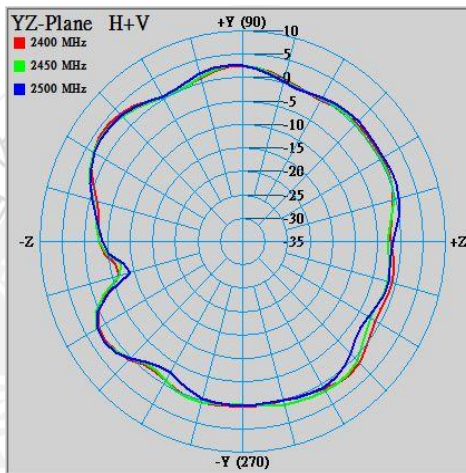
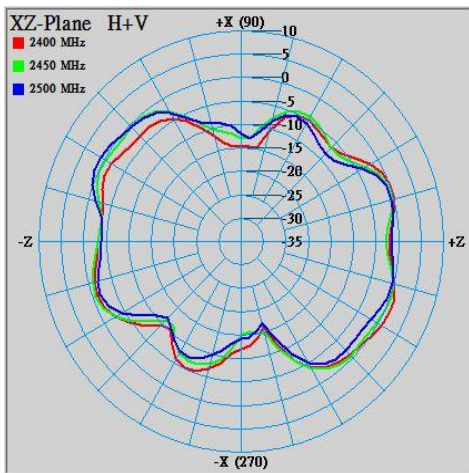


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	0.733	-2.73	1.981	-1.653	3.597	0.406
2450	0.848	-2.988	1.498	-1.643	2.894	0.263
2500	1.007	-3.222	1.531	-2.015	2.292	-0.076

2. Antenna Characteristics

Ant_3
2400 – 2500 MHz

2.3 2D Radiation Patterns

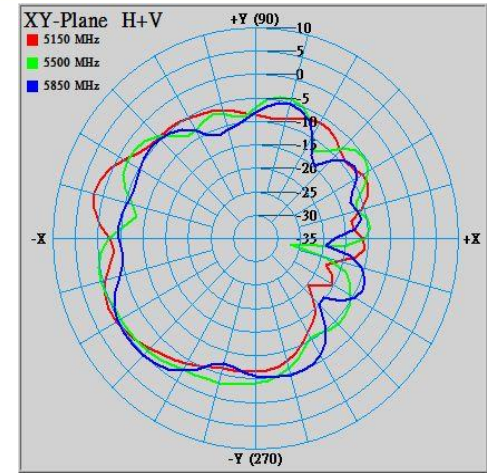
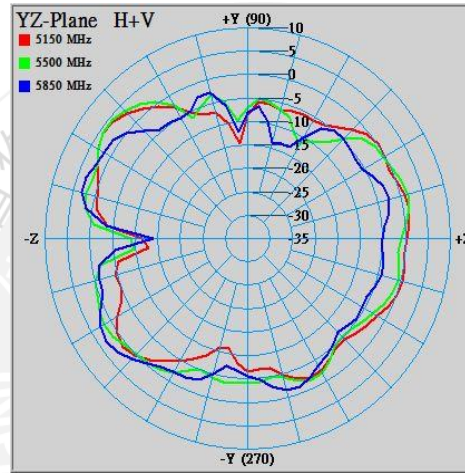
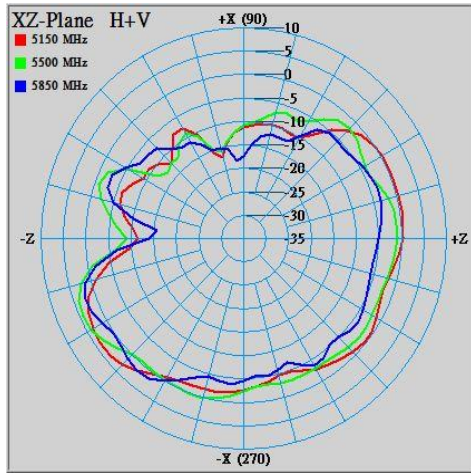


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	1.364	-3.379	3.977	0.555	2.694	-0.941
2450	0.391	-3.236	3.516	0.475	2.69	-1.445
2500	1.133	-3.587	3.314	0.376	2.552	-1.72

2. Antenna Characteristics

Ant_4
5150 – 5850 MHz

2.3 2D Radiation Patterns

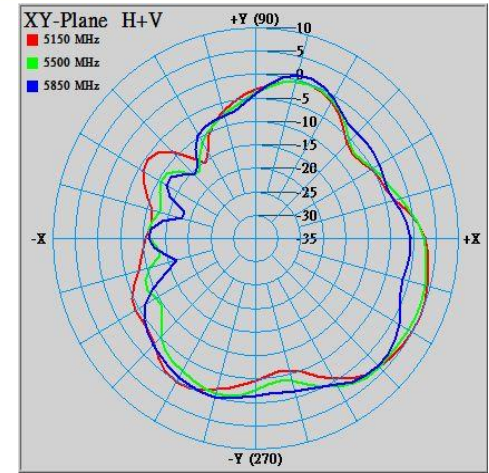
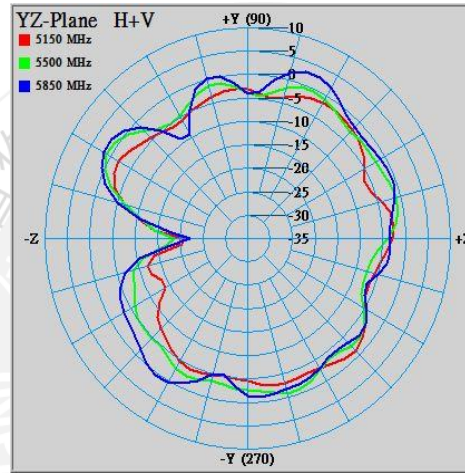
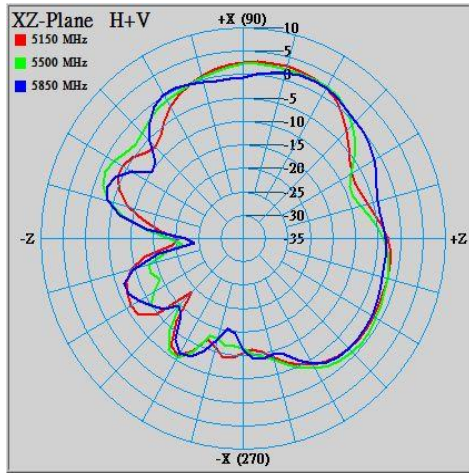


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	4.013	-1.978	4.169	-1.693	2.012	-4.476
5500	4.399	-2.031	4.515	-1.062	0.535	-4.697
5850	2.462	-3.809	3.199	-2.378	0.556	-5.556

2. Antenna Characteristics

Ant_5
5150 – 5850 MHz

2.3 2D Radiation Patterns

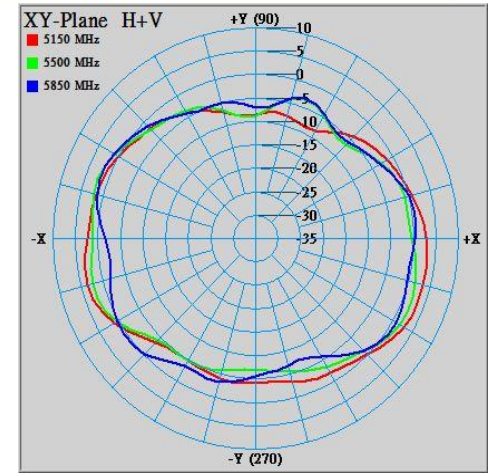
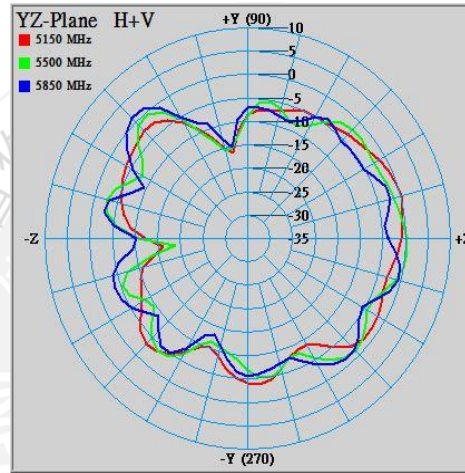
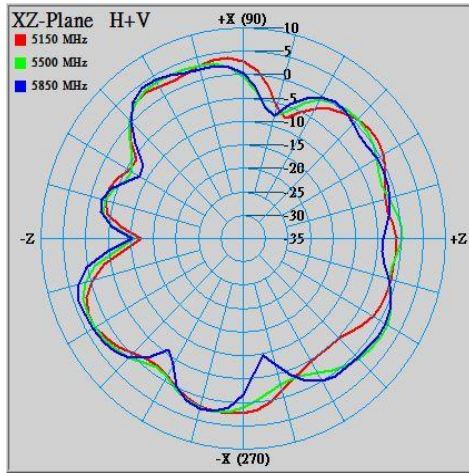


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	3.028	-2.729	-1.23	-4.301	5.158	-1.134
5500	2.459	-2.42	1.233	-2.988	4.216	-1.431
5850	2.159	-2.829	3.043	-1.8	3.578	-2.007

2. Antenna Characteristics

Ant_6
5150 – 5850 MHz

2.3 2D Radiation Patterns

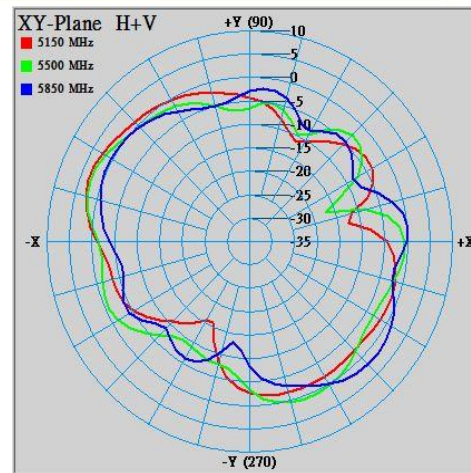
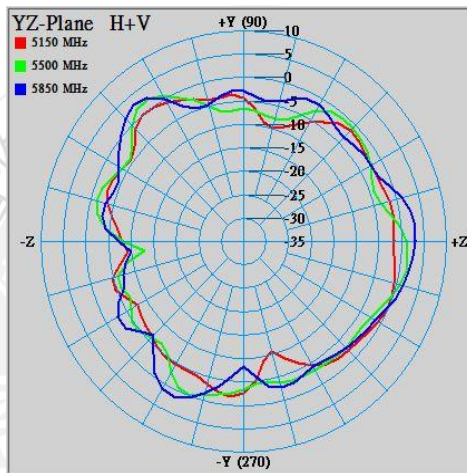
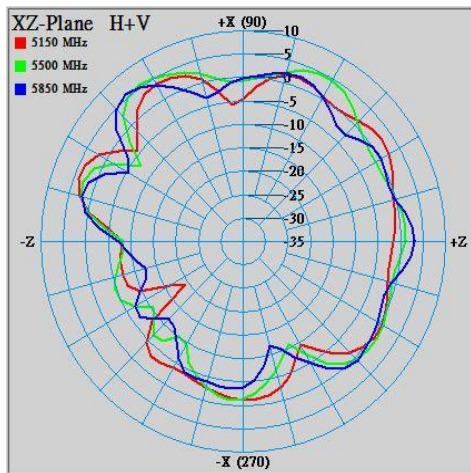


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	3.812	-0.134	0.224	-4.379	3.595	-0.43
5500	3.484	0.253	0.499	-4.25	2.473	-1.366
5850	4.289	0.077	1.625	-4.397	1.826	-1.725

2. Antenna Characteristics

Ant_7
5150 – 5850 MHz

2.3 2D Radiation Patterns

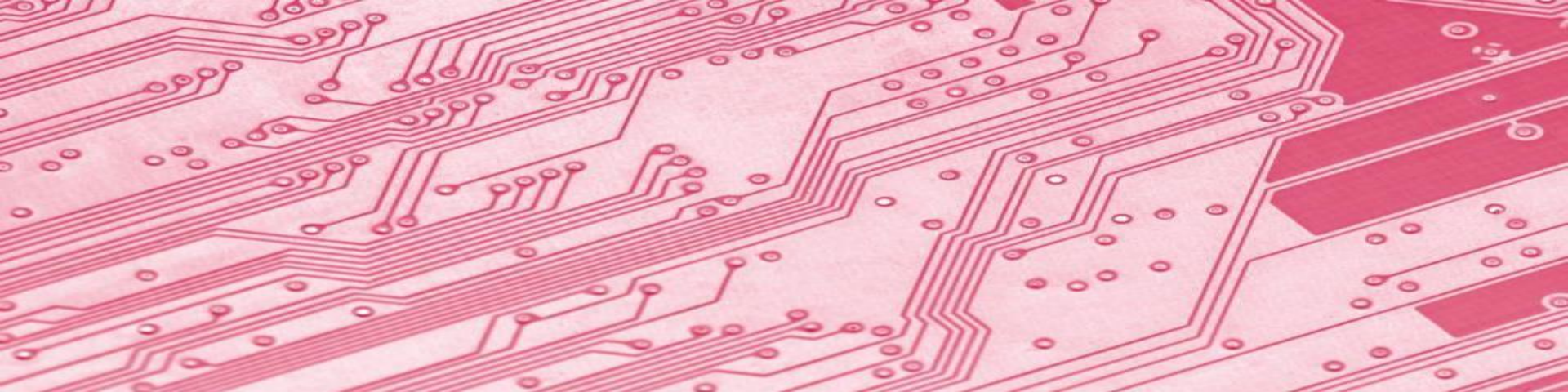


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	3.956	-0.547	0.271	-3.253	3.202	-2.331
5500	5.675	0.172	2.201	-2.444	2.722	-2.151
5850	5.86	-0.576	3.216	-1.465	2.191	-2.426

3. Summary

- The performance of antennas is shown in table

	Ant_0	Ant_1	Ant_2	Ant_3	Ant_4	Ant_5	Ant_6	Ant_7
	2400 – 2500 MHz				5150 – 5850 MHz			
Maximum Efficiency (%)	70.59	73.06	78.49	79.30	79.81	79.61	79.33	78.78
Maximum Gain (dBi)	5.64	6.41	3.68	4.15	6.95	6.55	6.30	6.81



Title for Image (above image could be replaced)

Content Details

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.

WE CONNECT WE PROTECT **PSA**

Thank you

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