

**RFDPA191900SFMB801**

## **Specification**

<b>Part Series</b>	<b>WIFI DAS Antennas</b>
<b>Part No.</b>	<b>RFDPA191900SFMB801</b>
<b>Version</b>	<b>V0.1</b>

# Contents

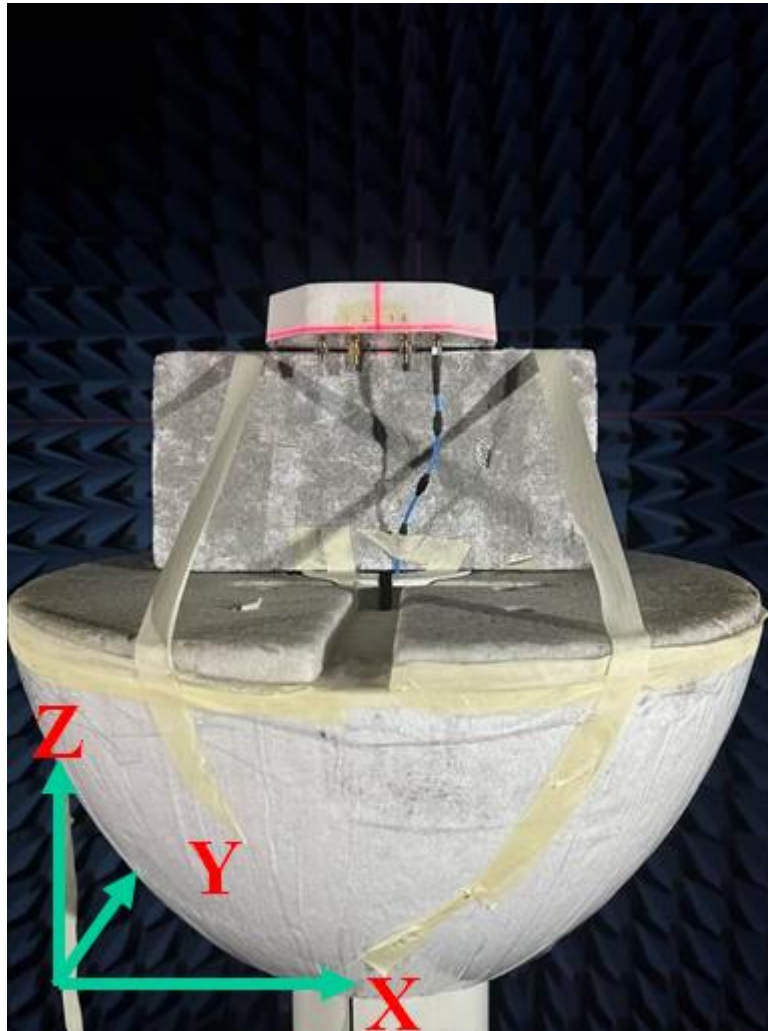
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# 1. Performance

## 1.1 Antenna Performance

Item	Specification
Frequency Range	2.4~2.5/5.15~5.85 /5.925~7.125GHz
Impedance	50 Ohm Nominal
VSWR	2.0 (Max)
Return Loss	-10dB(Max)
Peak Gain	Port 1 2.4~2.5 GHz @7.31 dBi 5.15~5.85 GHz@9.20 dBi 5.925~7.125GHz@8.49 dBi  Port 2 2.4~2.5 GHz @7.83 dBi 5.15~5.85 GHz@9.77 dBi 5.925~7.125GHz@9.37 dBi  Port 3 2.4~2.5 GHz @7.22 dBi 5.15~5.85 GHz@9.66 dBi 5.925~7.125GHz@9.59 dBi  Port 4 2.4~2.5 GHz @7.85 dBi 5.15~5.85 GHz@9.59 dBi 5.925~7.125GHz@8.81 dBi
Radiation	Directional
Polarization	Horizontal/Vertical
Operation Temperature	-20°C ~ +65°C

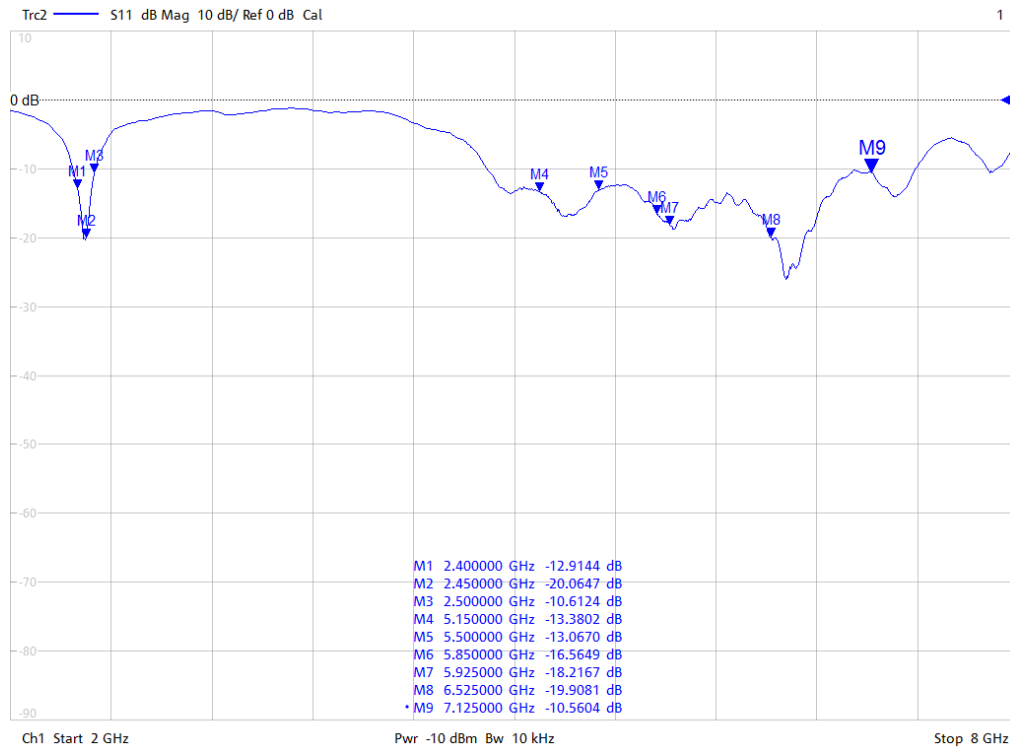
## 1.2 Experimental Setup



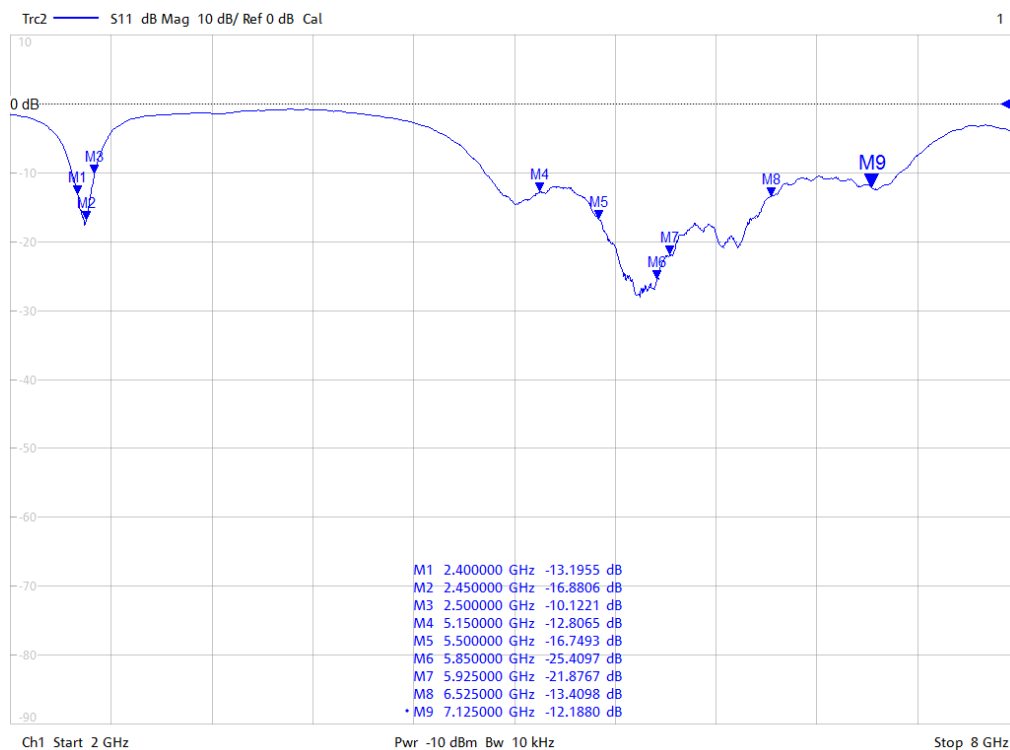
## 1.3 Antenna S-Parameter and Matching Factor

### Return Loss

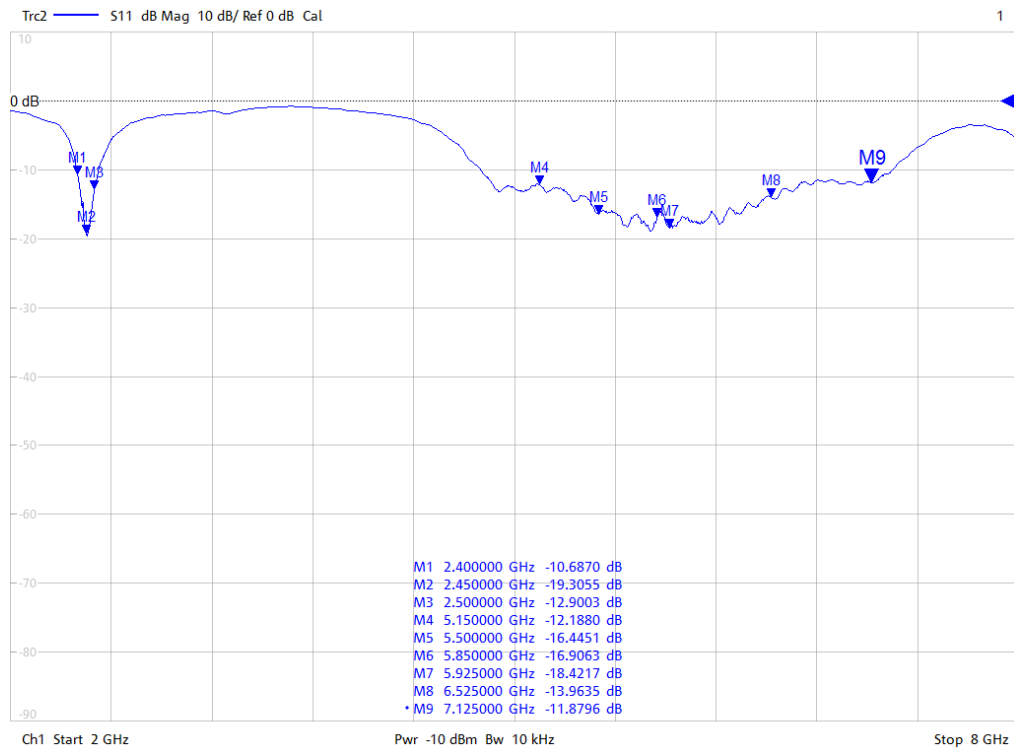
#### Port1



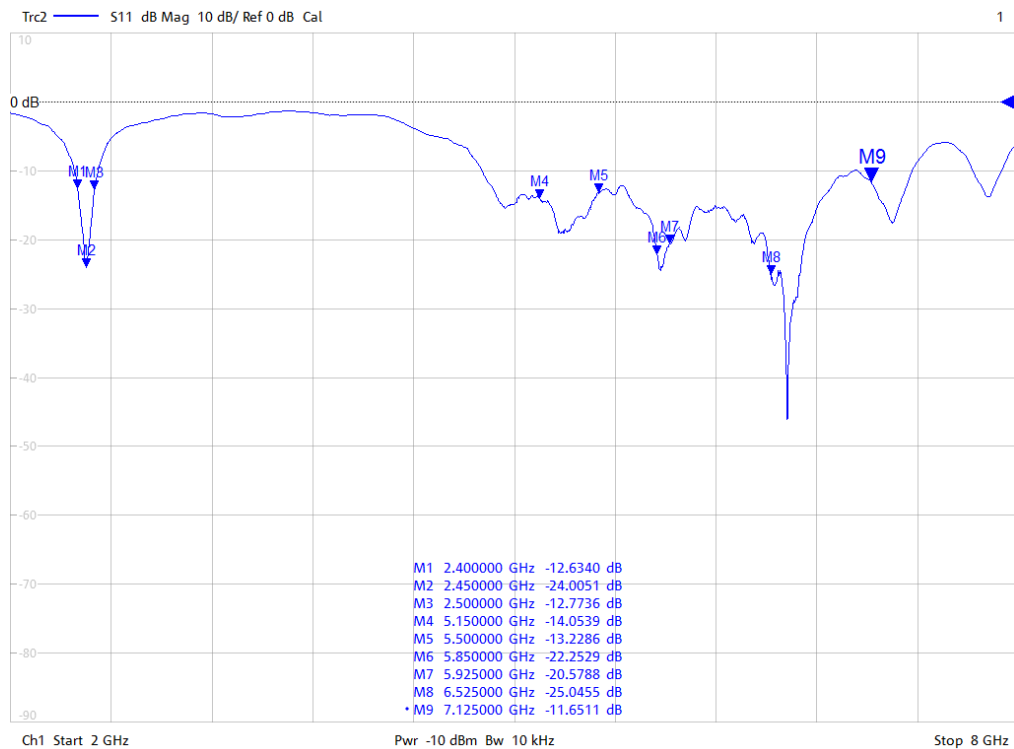
#### Port2



## Port3

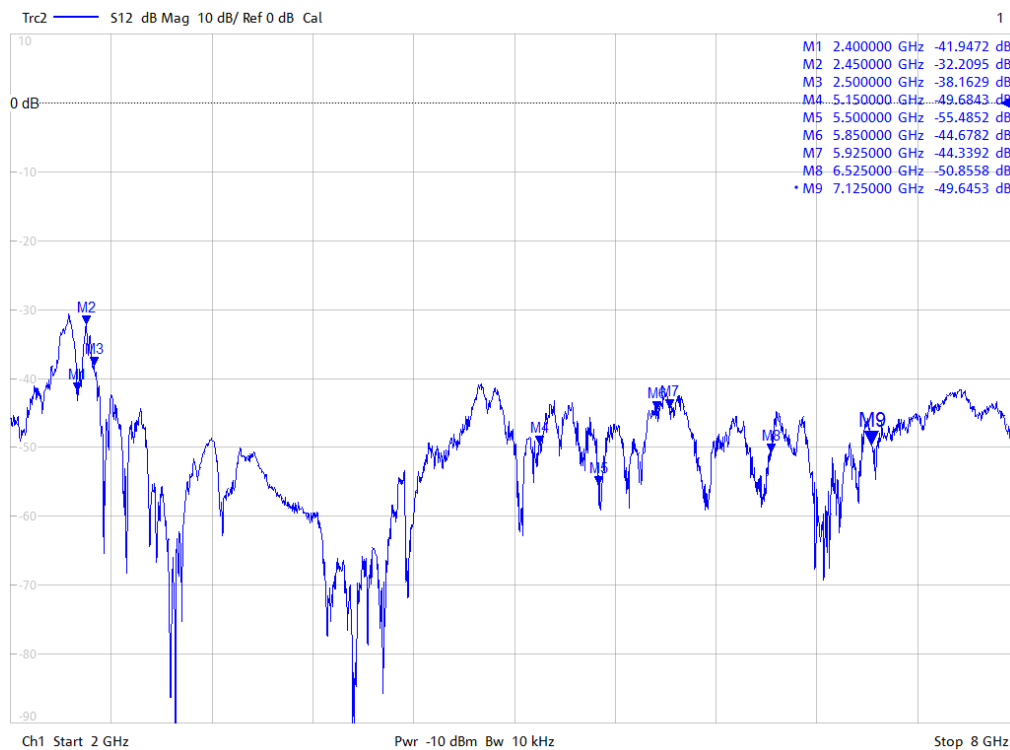


## Port4

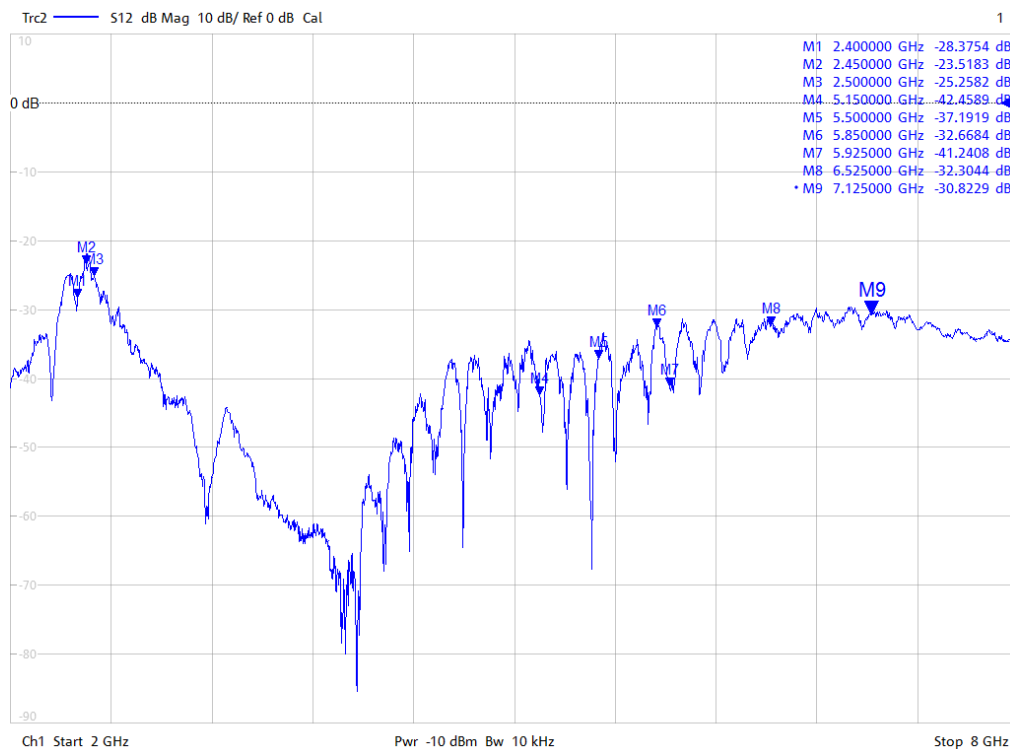


## Isolation

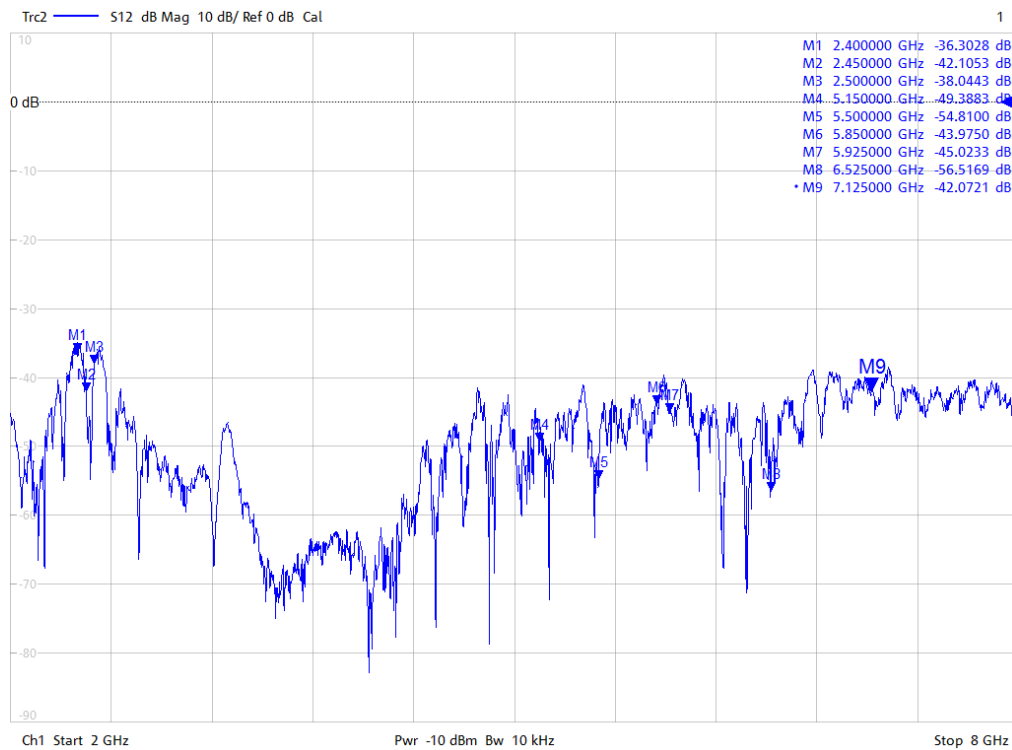
### Port1 / Port2



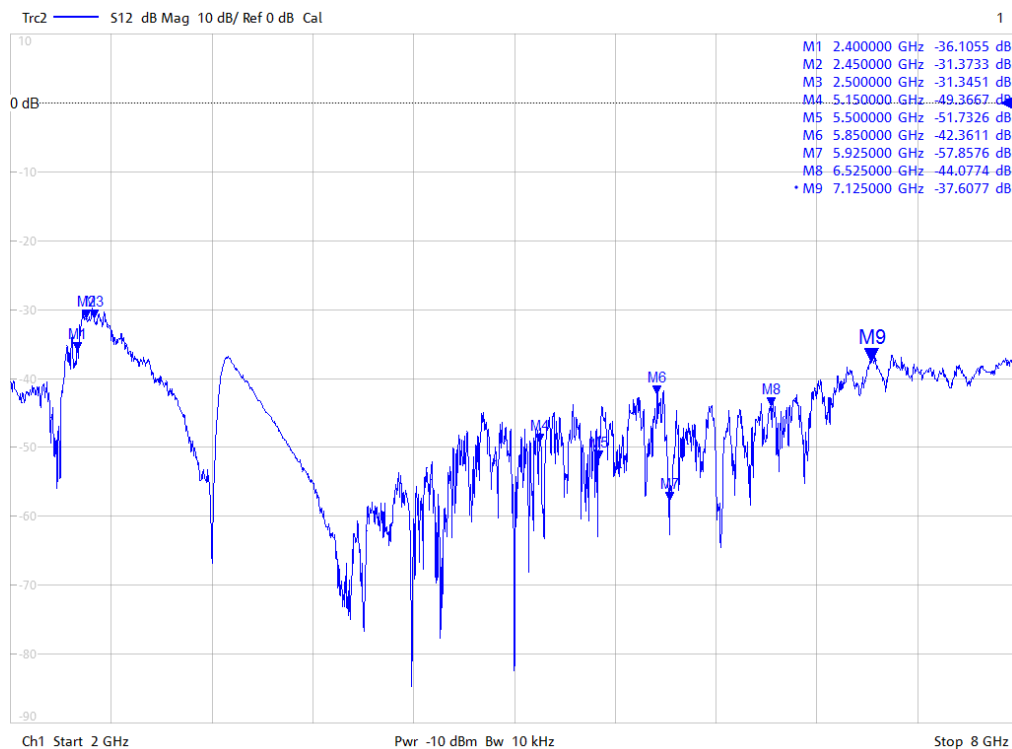
### Port1 / Port3



## Port1 / Port4

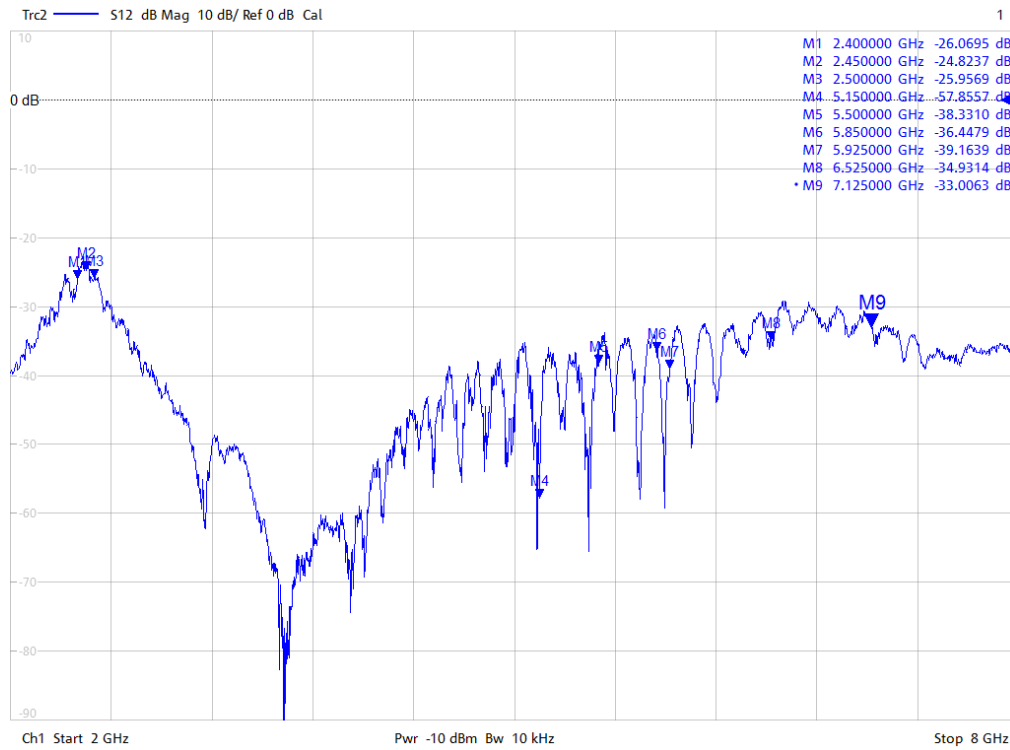


## Port2 / Port3

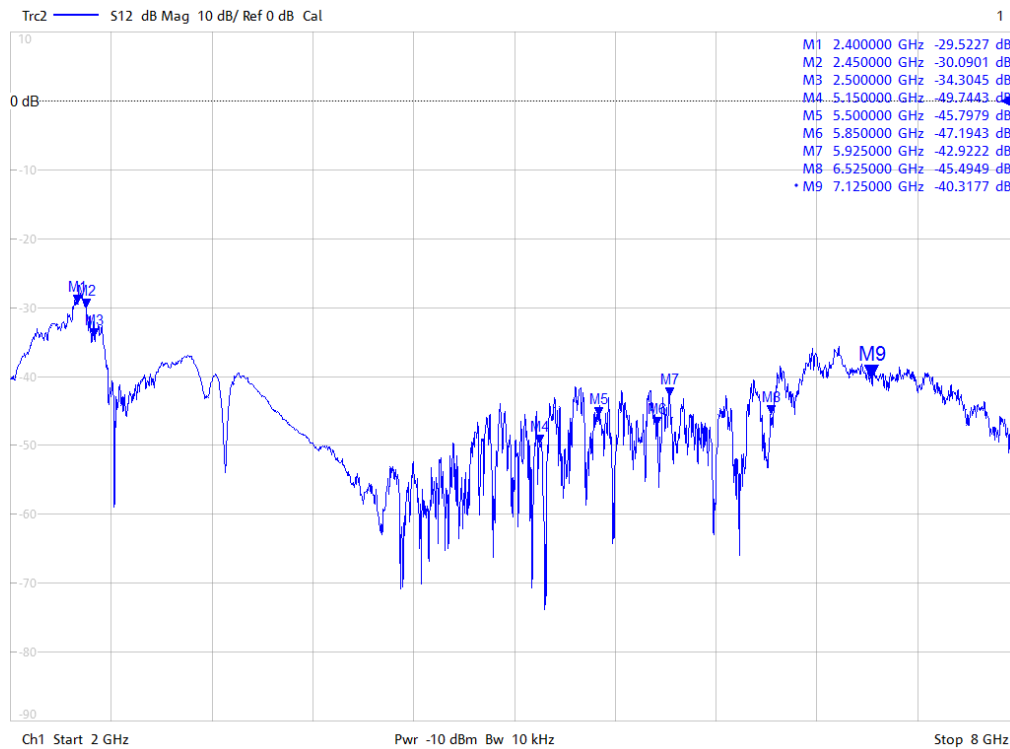




## Port2 / Port4

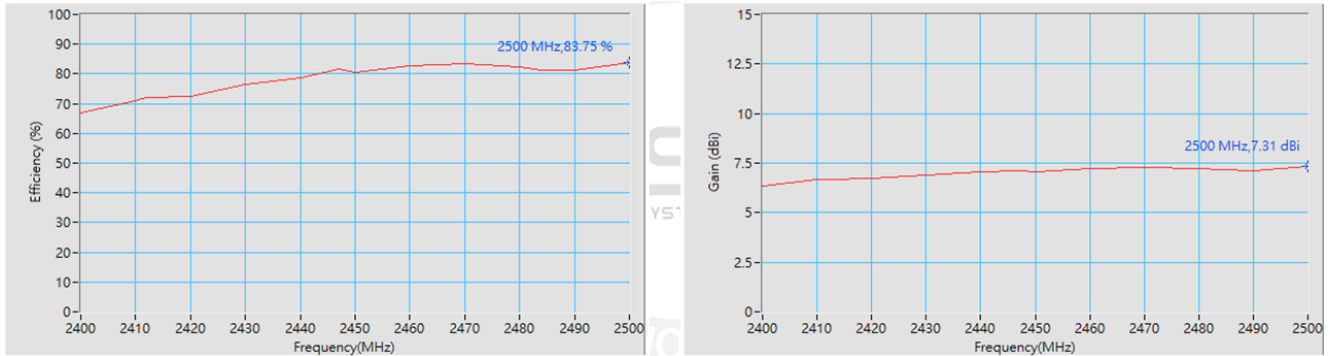


## Port3 / Port4



## 1.4 Antenna Efficiency & Peak Gain

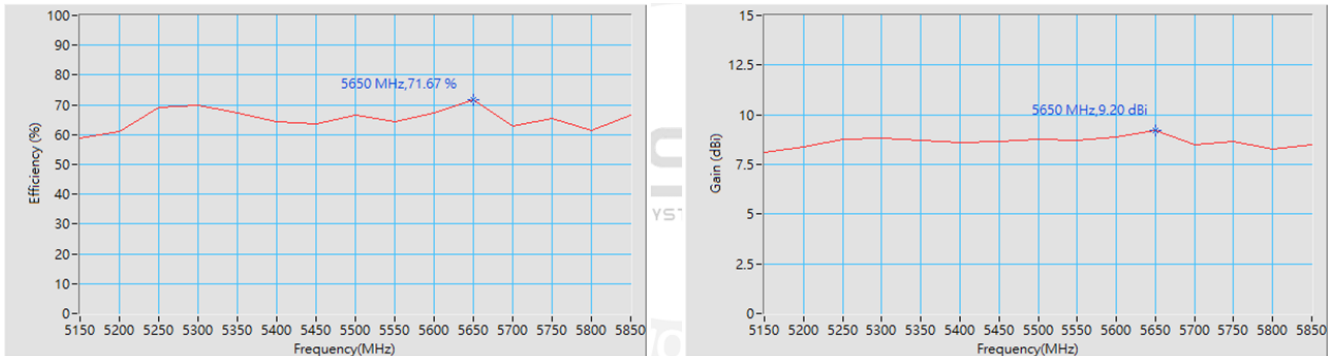
### Port1 2400-2500 MHz



Maximum Efficiency at 2500 MHz : 83.75 %

Maximum Peak Gain at 2500 MHz : 7.31 dBi

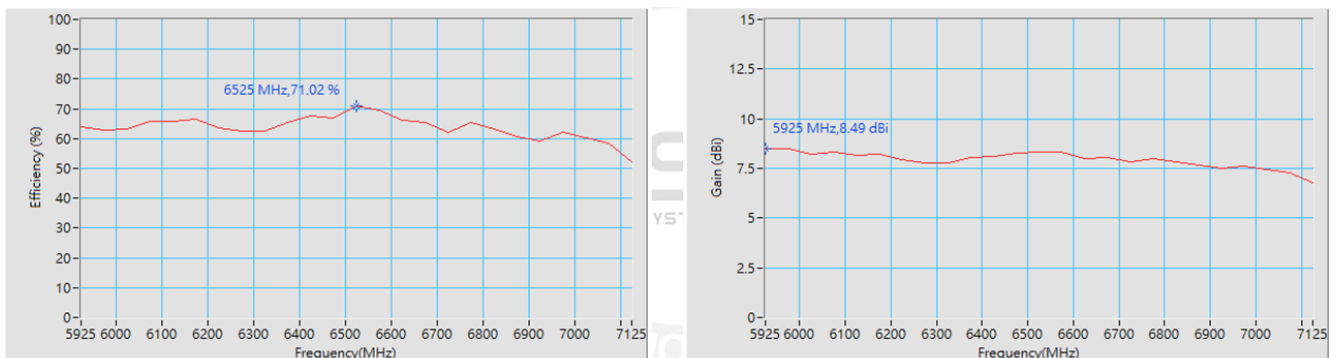
### Port1 5150-5850 MHz



Maximum Efficiency at 5650 MHz : 71.67 %

Maximum Peak Gain at 5650 MHz : 9.20 dBi

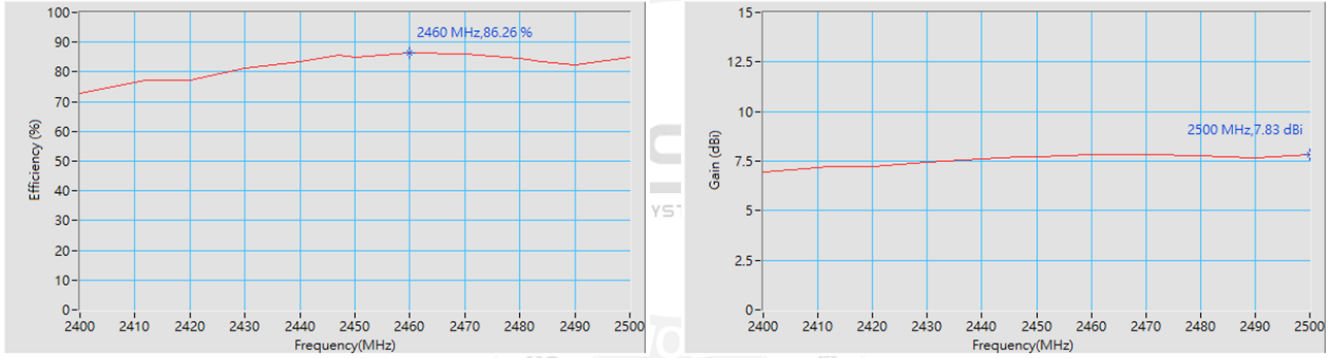
### Port1 5925-7125 MHz



Maximum Efficiency at 6525 MHz : 71.02 %

Maximum Peak Gain at 5925 MHz : 8.49 dBi

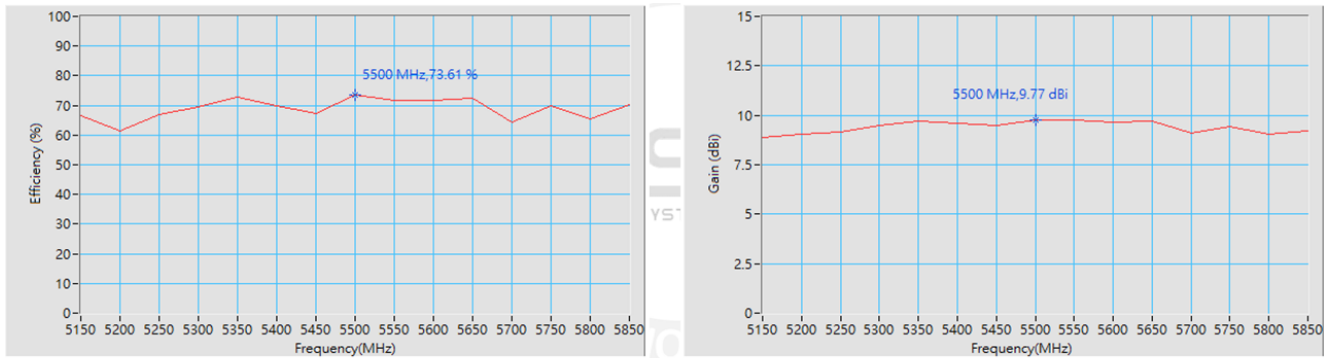
### Port2 2400-2500 MHz



Maximum Efficiency at 2460 MHz : 86.26 %

Maximum Peak Gain at 2500 MHz : 7.83 dBi

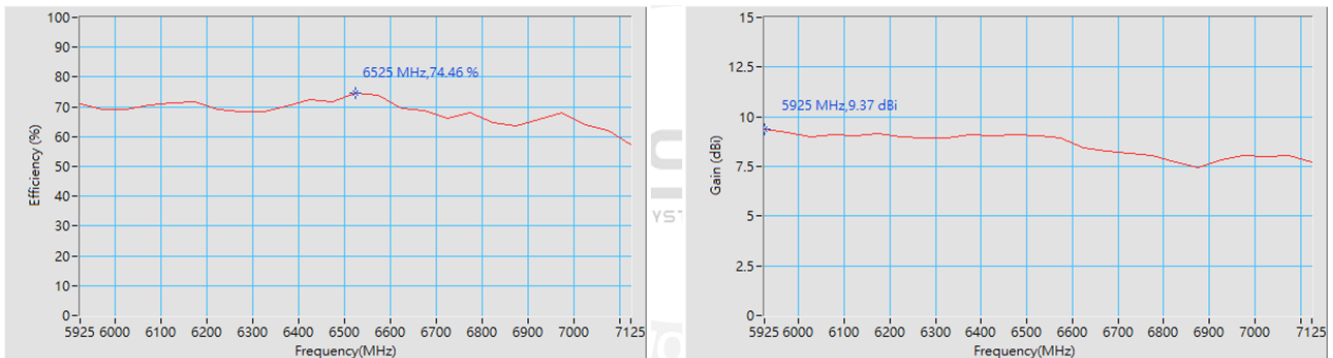
### Port2 5150-5850 MHz



Maximum Efficiency at 5500 MHz : 73.61 %

Maximum Peak Gain at 5500 MHz : 9.77 dBi

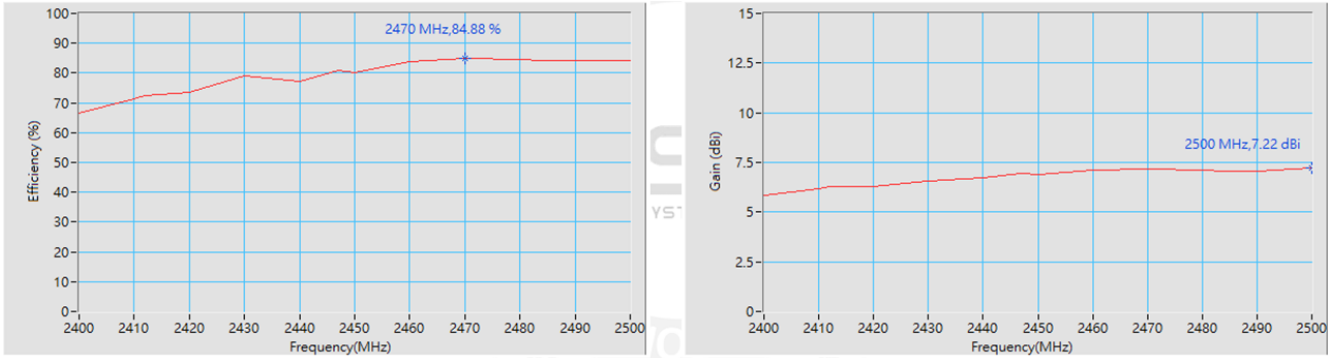
### Port2 5925-7125 MHz



Maximum Efficiency at 6525 MHz : 74.46 %

Maximum Peak Gain at 5925 MHz : 9.37 dBi

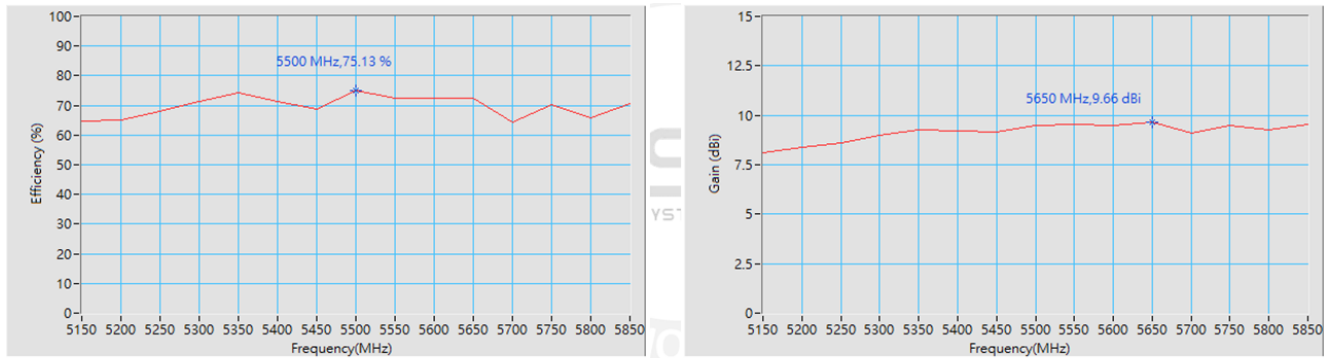
### Port3 2400-2500 MHz



Maximum Efficiency at 2470 MHz : 84.88 %

Maximum Peak Gain at 2500 MHz : 7.22 dBi

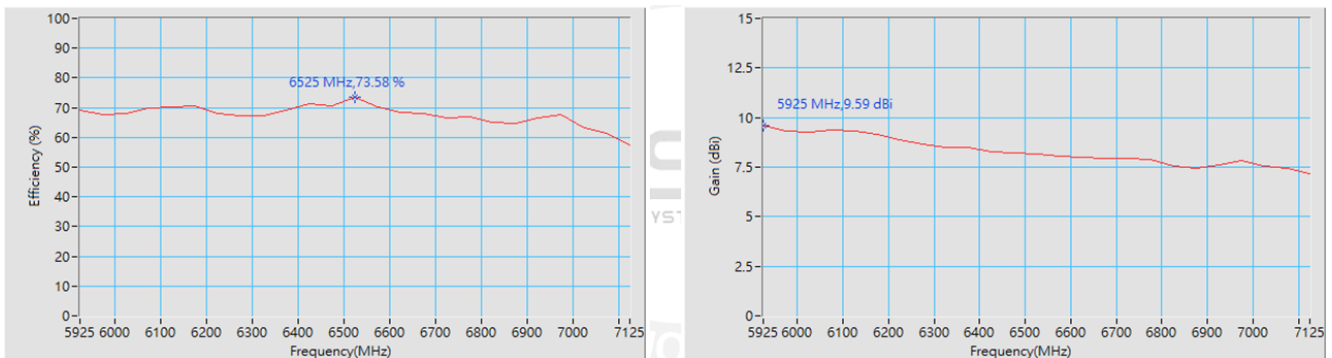
### Port3 5150-5850 MHz



Maximum Efficiency at 5500 MHz : 75.13 %

Maximum Peak Gain at 5650 MHz : 9.66 dBi

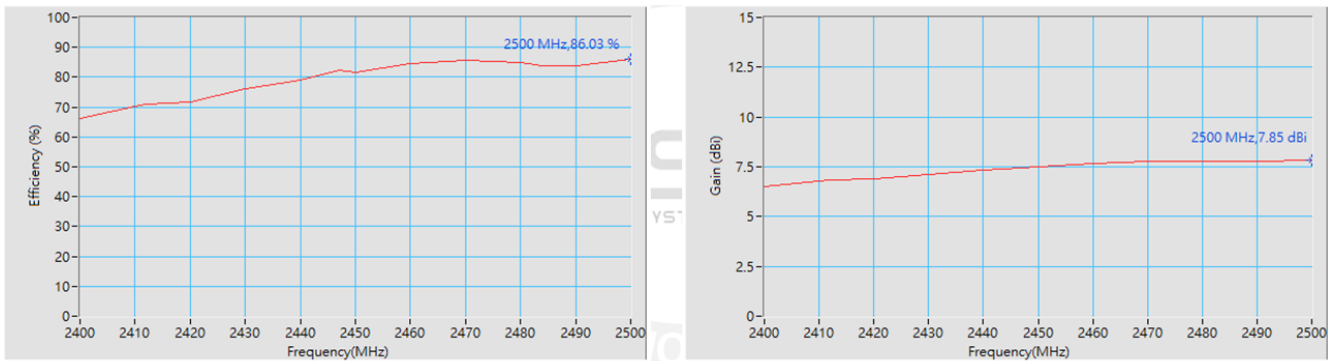
### Port3 5925-7125 MHz



Maximum Efficiency at 6525 MHz : 73.58 %

Maximum Peak Gain at 5925 MHz : 9.59 dBi

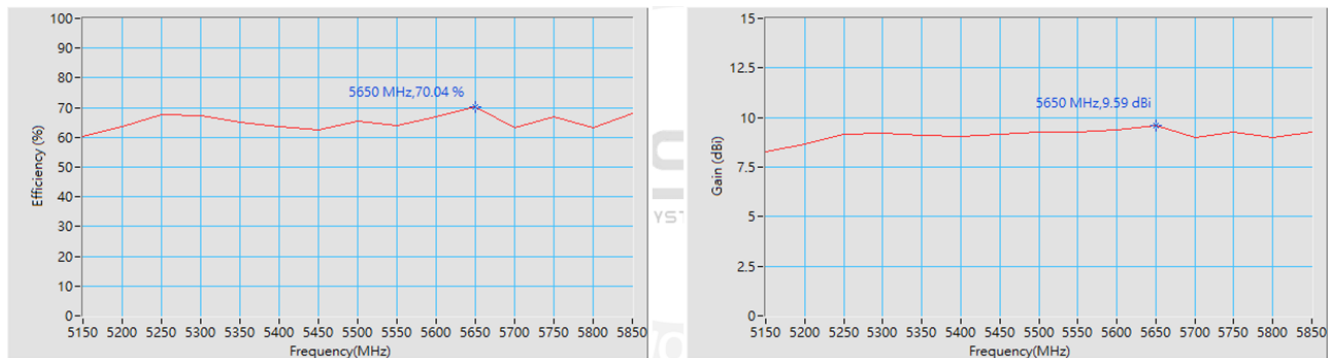
### Port4 2400-2500 MHz



Maximum Efficiency at 2500 MHz : 86.03 %

Maximum Peak Gain at 2500 MHz : 7.85 dBi

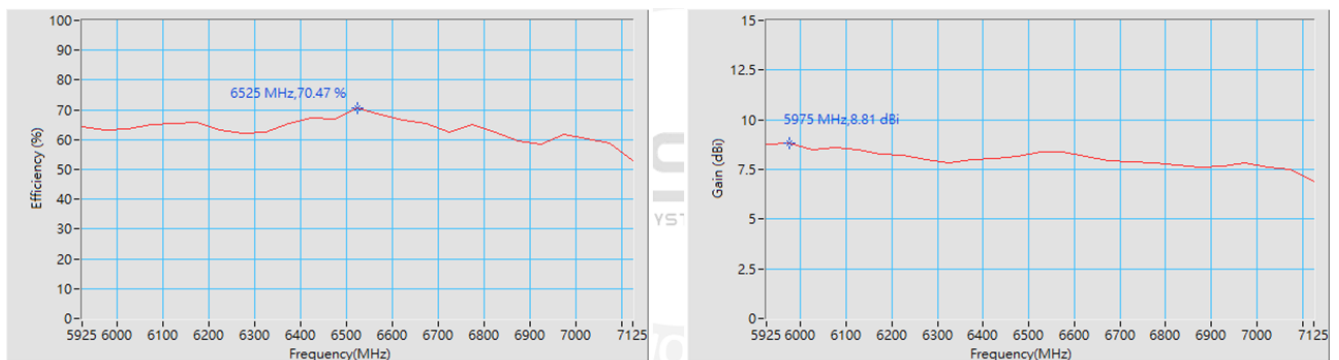
### Port4 5150-5850 MHz



Maximum Efficiency at 5650 MHz : 70.04 %

Maximum Peak Gain at 5650 MHz : 9.59 dBi

### Port4 5925-7125 MHz



Maximum Efficiency at 6525 MHz : 70.47 %

Maximum Peak Gain at 5975 MHz : 8.81 dBi

	Port1		Port2	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2.4	67.07	6.37	72.63	6.96
2.45	80.63	7.09	84.80	7.72
2.5	83.75	7.31	84.99	7.83

	Port3		Port4	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2.4	66.62	5.87	66.23	6.52
2.45	80.06	6.91	81.62	7.48
2.5	84.01	7.22	86.03	7.85

	Port1		Port2	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
5.15	58.64	8.10	66.59	8.89
5.5	66.63	8.79	73.61	9.77
5.85	66.39	8.51	70.25	9.21

	Port3		Port4	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
5.15	64.60	8.13	60.19	8.28
5.5	75.13	9.50	65.52	9.25
5.85	70.60	9.54	68.08	9.27

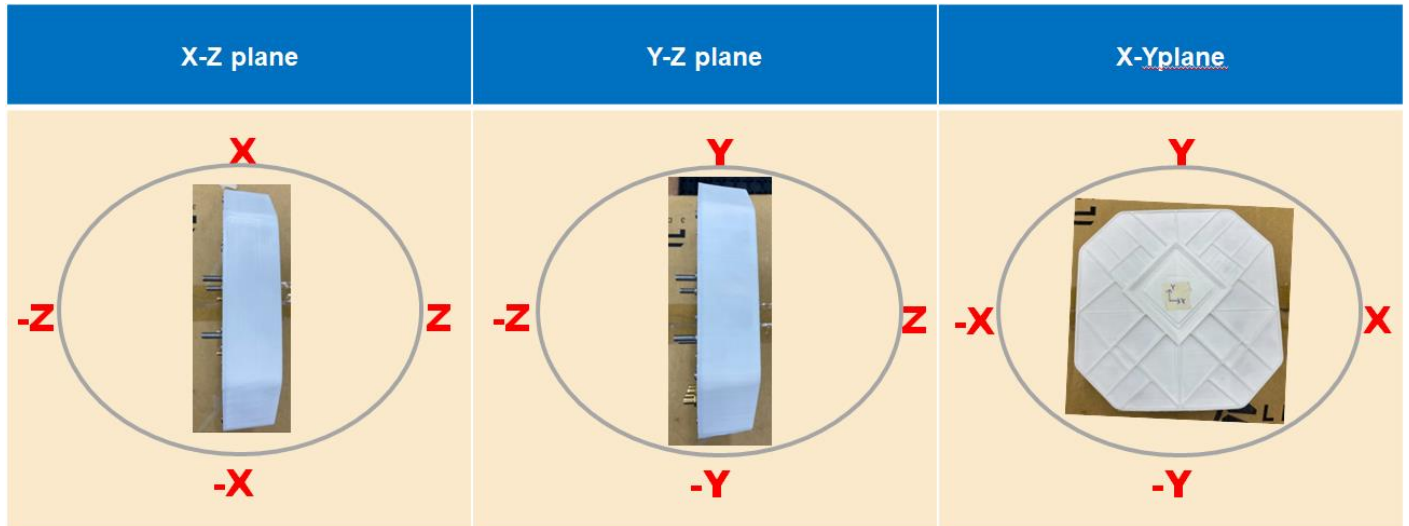
	Port1		Port2	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
5.925	63.85	8.49	70.98	9.37
6.525	71.02	8.31	74.46	9.07
7.125	52.06	6.77	57.51	7.71

	Port3		Port4	
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
5.925	69.13	9.59	64.47	8.79
6.525	73.58	8.17	70.47	8.35
7.125	57.31	7.17	52.96	6.90

## 1.5 Radiation Pattern

3 views of antenna



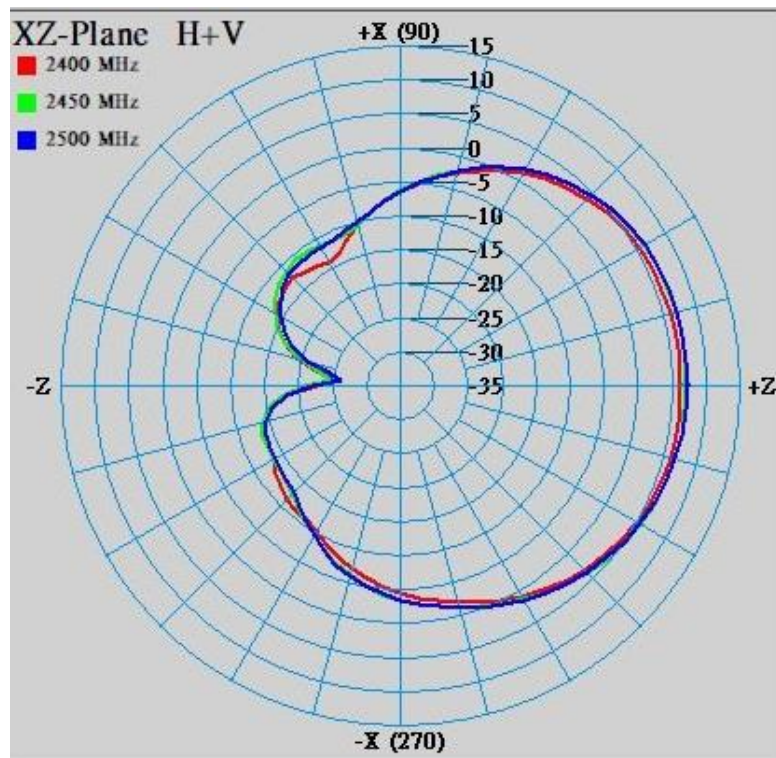


## Port1 2400 - 2500 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

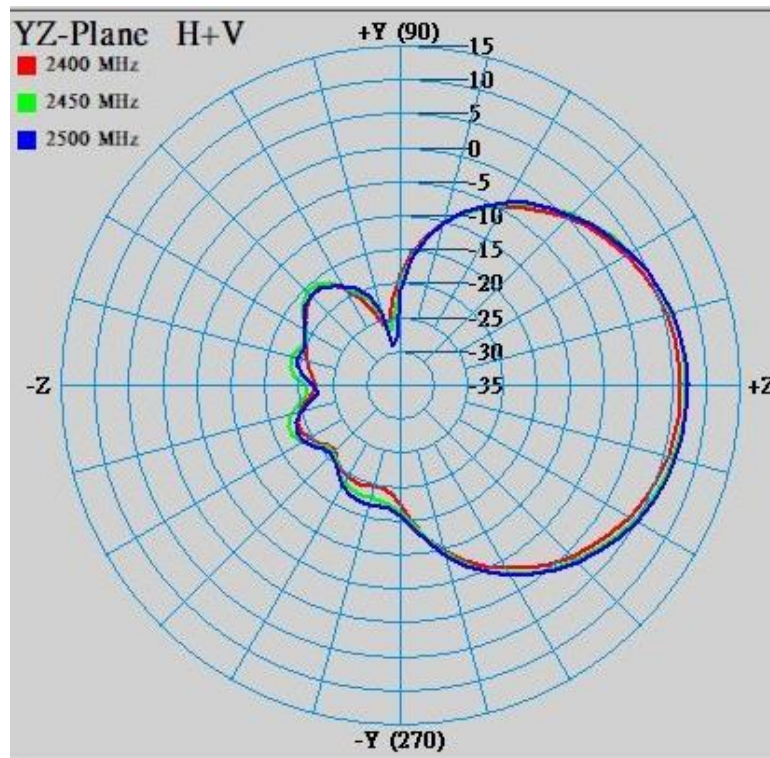


## Port1 2400 - 2500 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

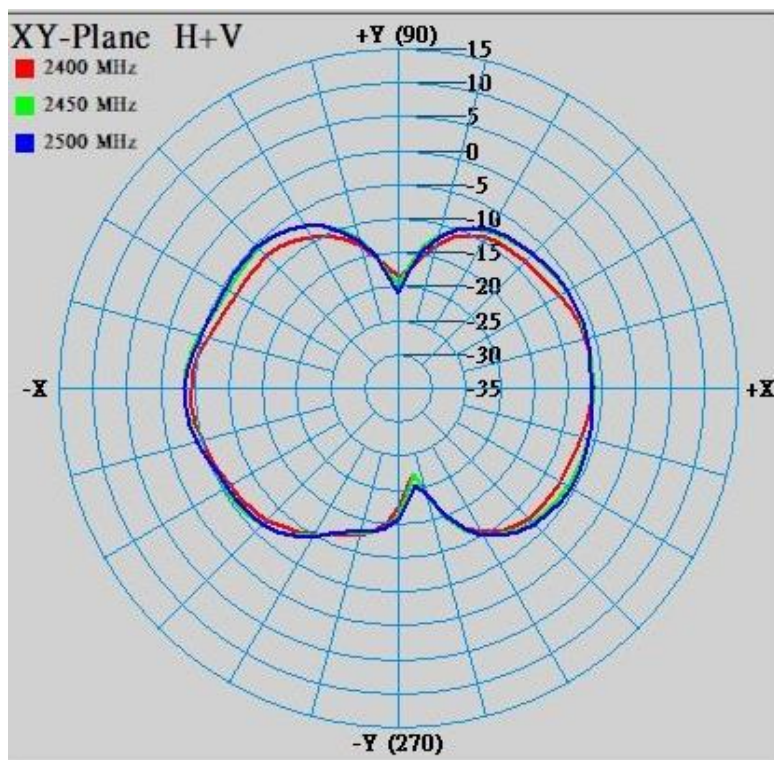


## Port1 2400 - 2500 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



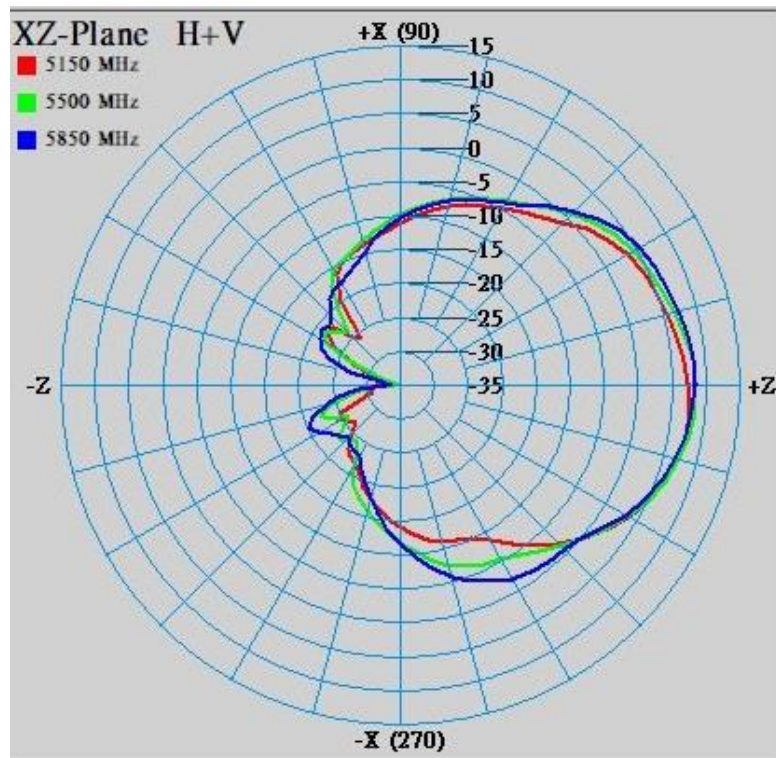
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
2400	6.37	95	6.32	66	-4.47	-8.24
2450	7.07	94	7.08	67	-3.42	-7.27
2500	7.28	91	7.29	65	-3.47	-7.18

## Port1 5150 - 5850 MHz

X-Z Plane

Phi=0.00deg

Gain . dB



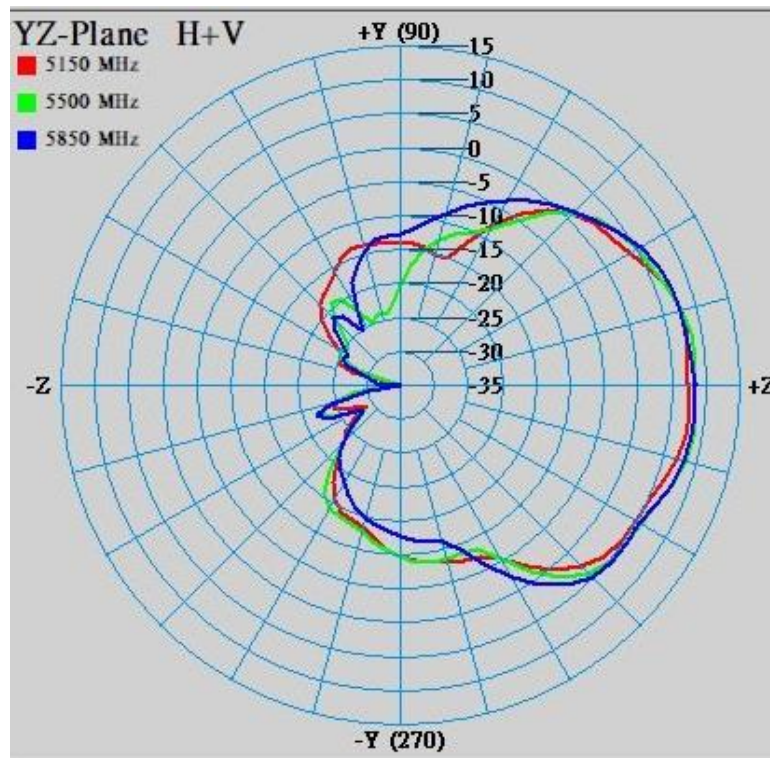


## Port1 5150 - 5850 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

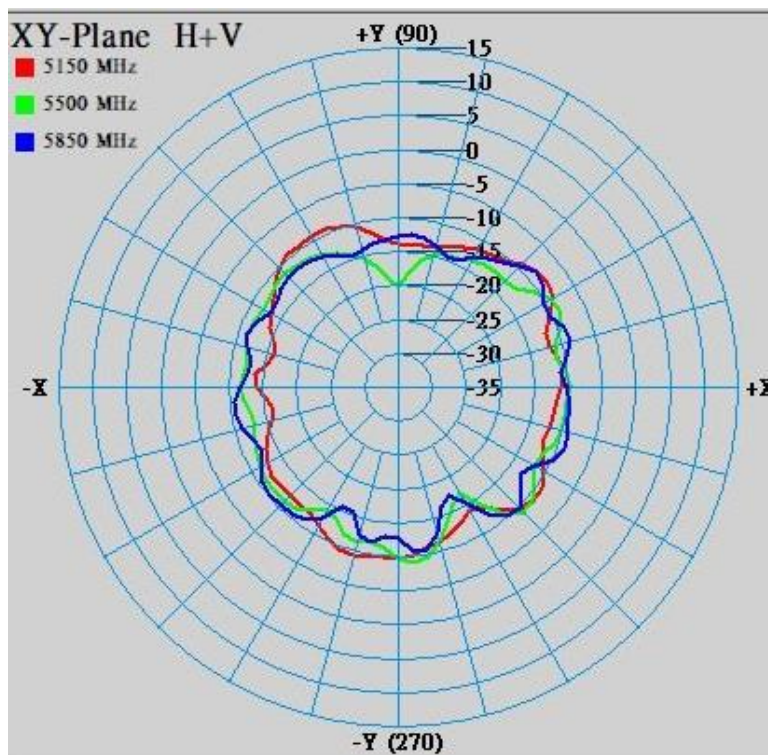


## Port1 5150 - 5850 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



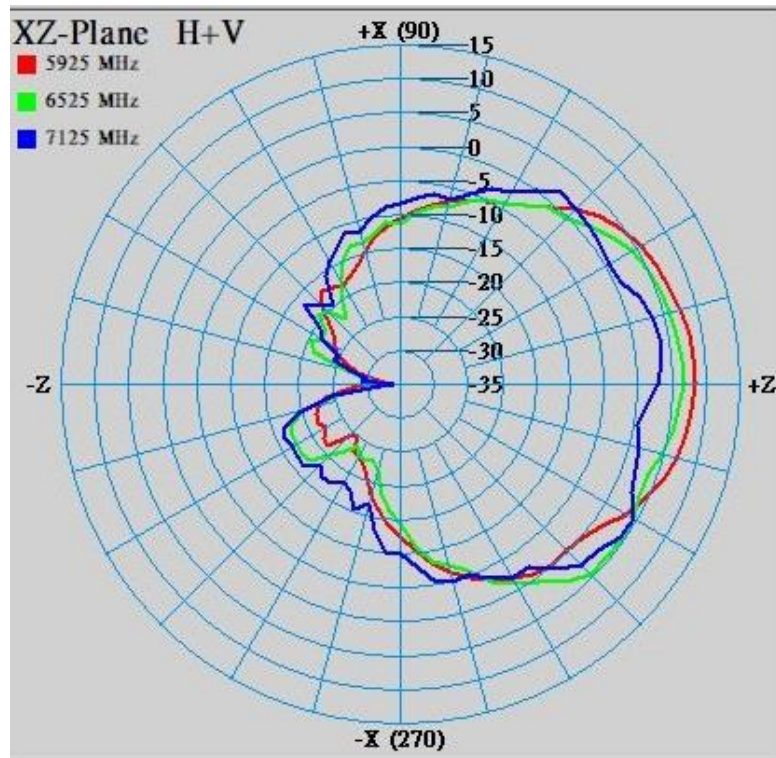
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5150	7.66	54	7.95	62	-7.97	-11.36
5500	8.58	48	8.75	61	-8.66	-11.79
5850	8.47	55	8.5	76	-8.52	-11.52

## Port1 5925 - 7125 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

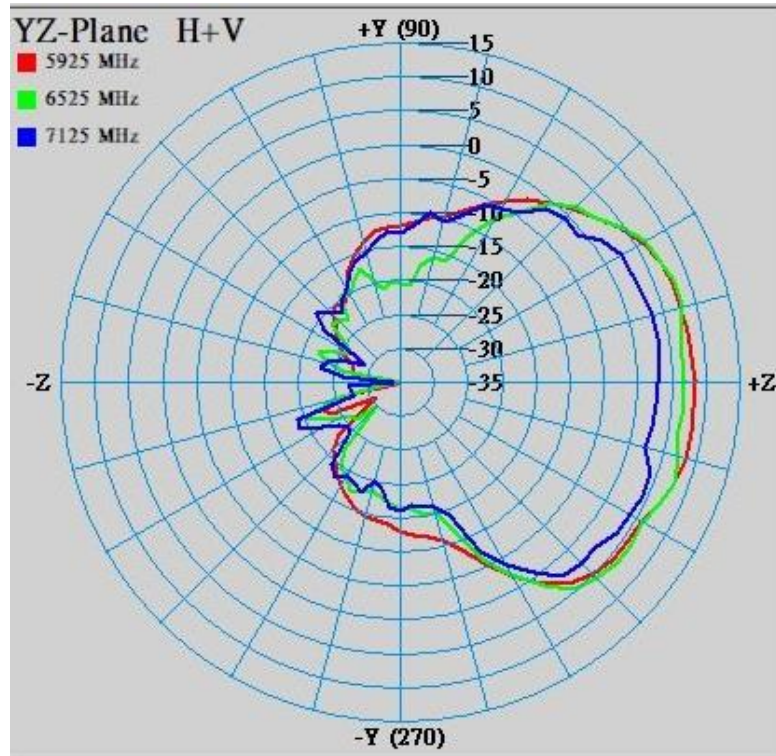


## Port1 5925 - 7125 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB



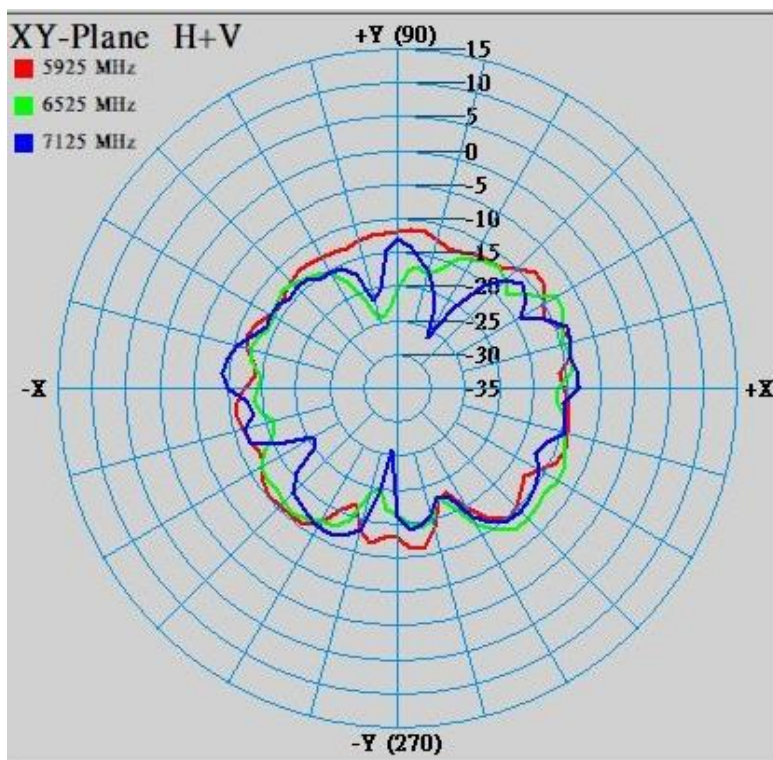


## Port1 5925 - 7125 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



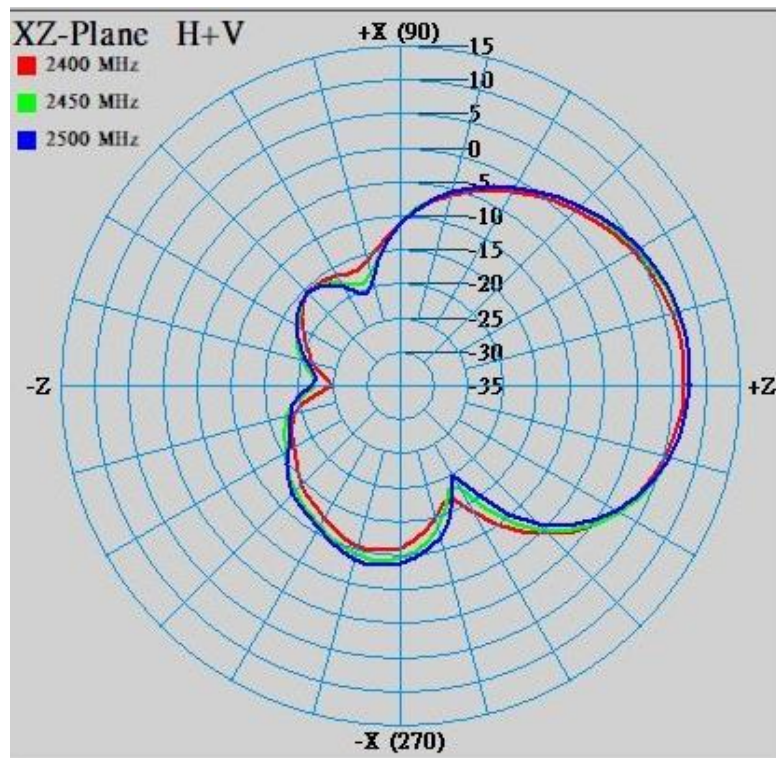
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5925	8.41	57	8.48	78	-8.31	-11.47
6525	6.76	55	8.24	85	-7.59	-12.08
7125	4.96	26	4.67	87	-8.07	-12.48

## Port2 2400-2500 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

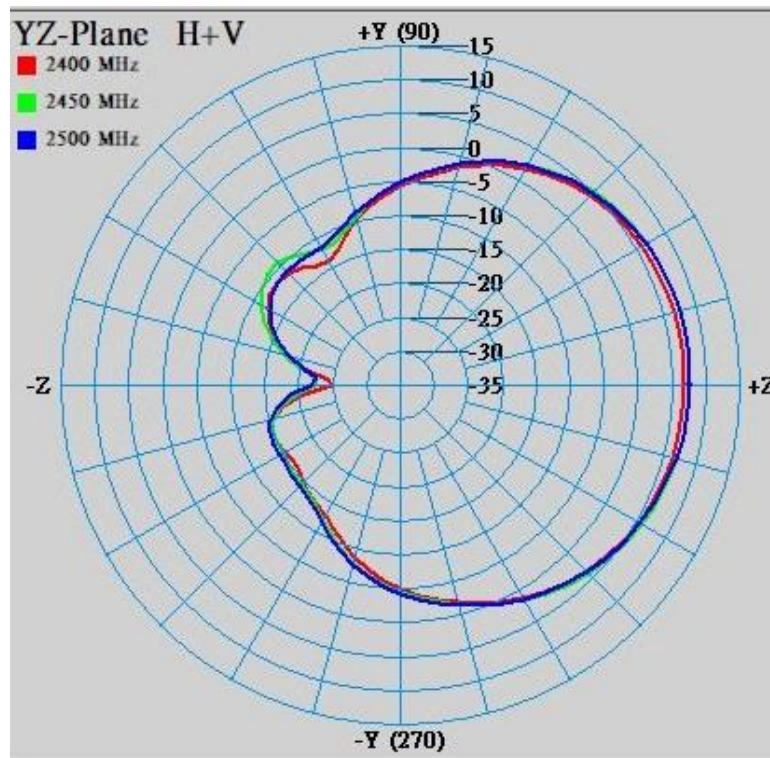


## Port2 2400-2500 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

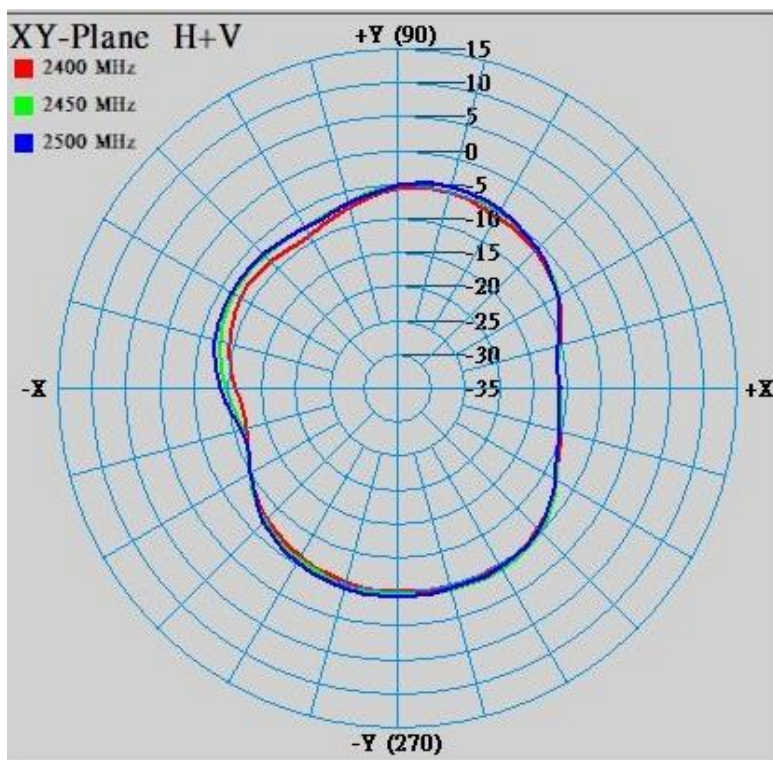


## Port2 2400 - 2500 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
2400	6.92	58	6.88	95	-4.8	-7.24
2450	7.69	57	7.66	92	-4.18	-6.62
2500	7.8	56	7.74	88	-4.27	-6.55

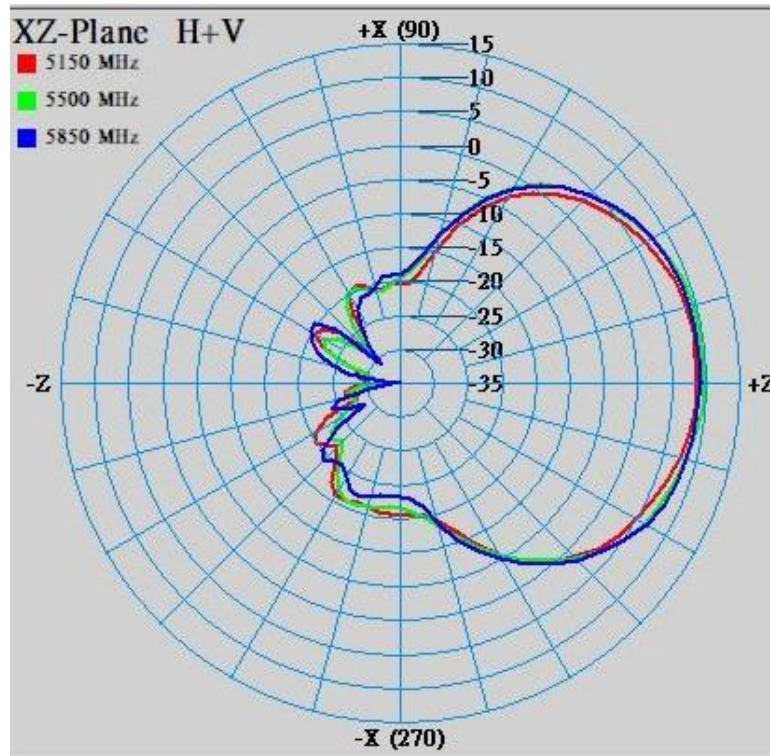


## Port2 5150 - 5850 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

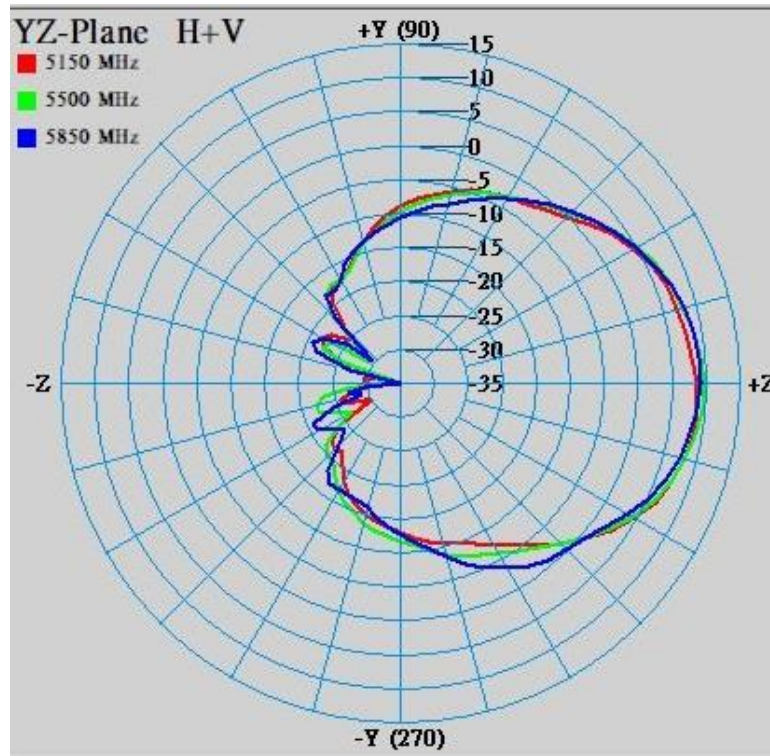


## Port2 5150 - 5850 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

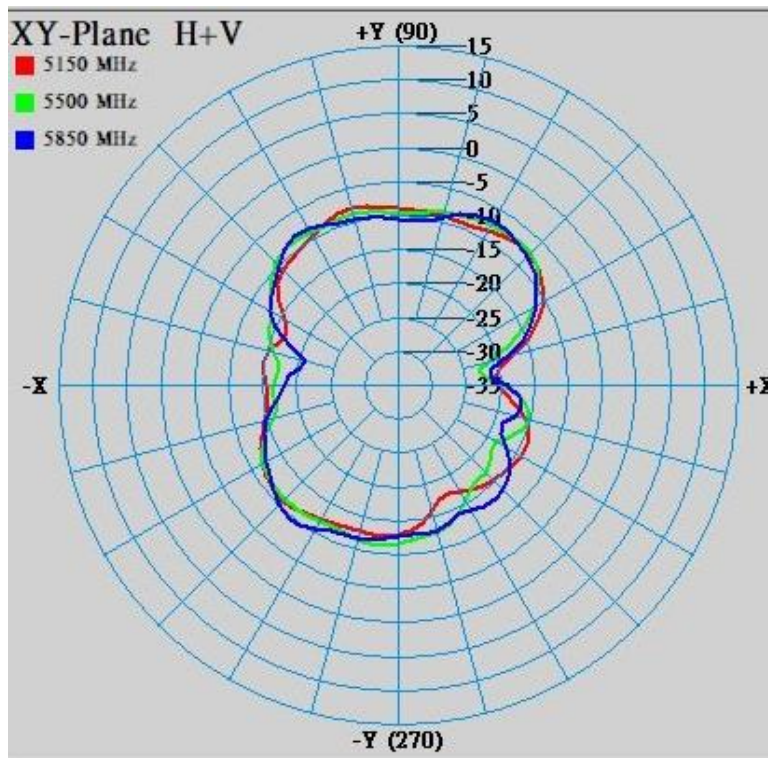


## Port2 5150 - 5850 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



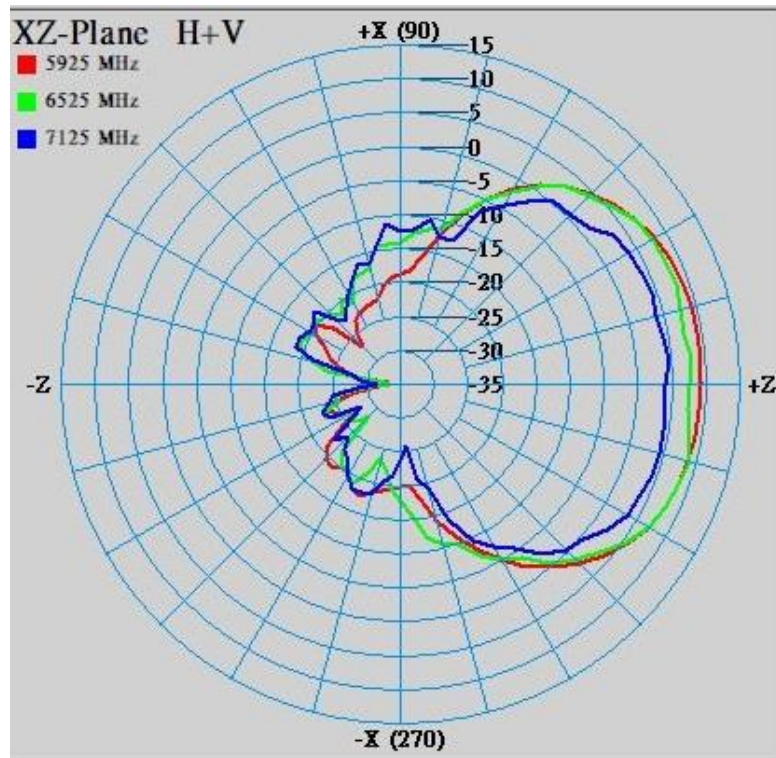
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5150	8.74	63	8.8	55	-7.66	-11.8
5500	9.74	66	9.75	48	-7.31	-11.62
5850	9.18	73	9.2	49	-7.23	-11.65

## Port2 5925 - 7125 MHz

X-Z Plane

Phi=0.00deg

Gain . dB



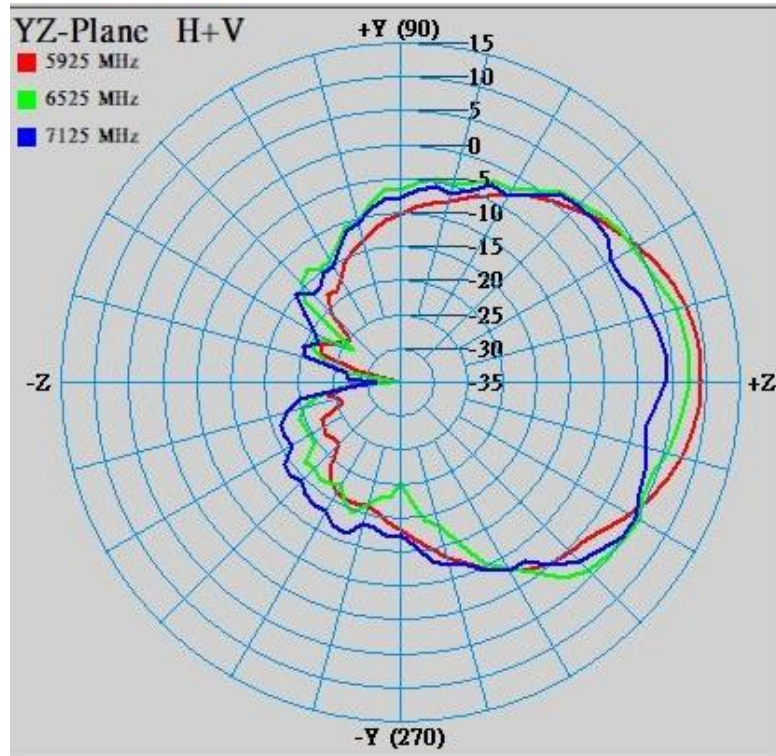


## Port2 5925 - 7125 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

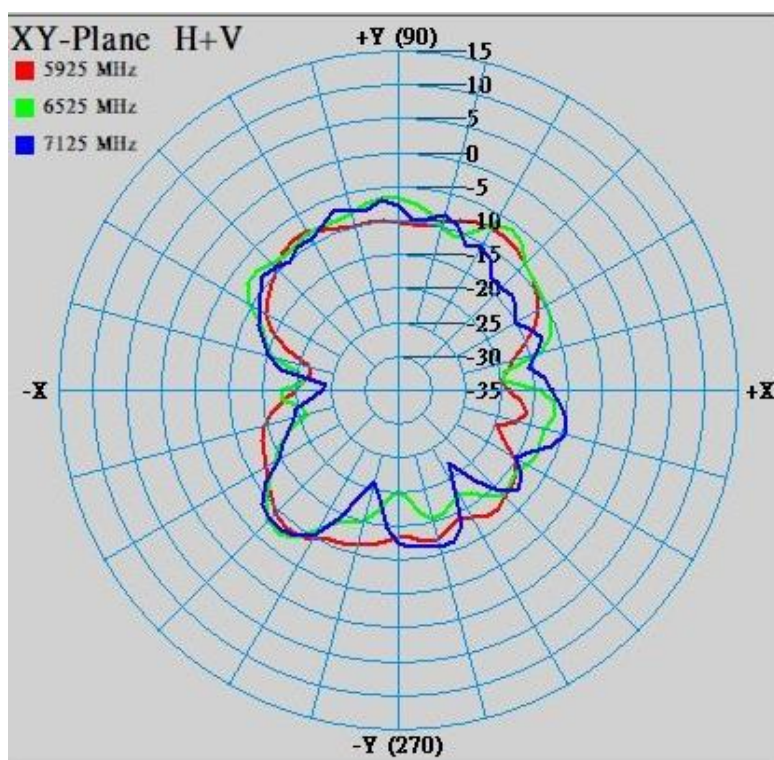


## Port2 5925 - 7125 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



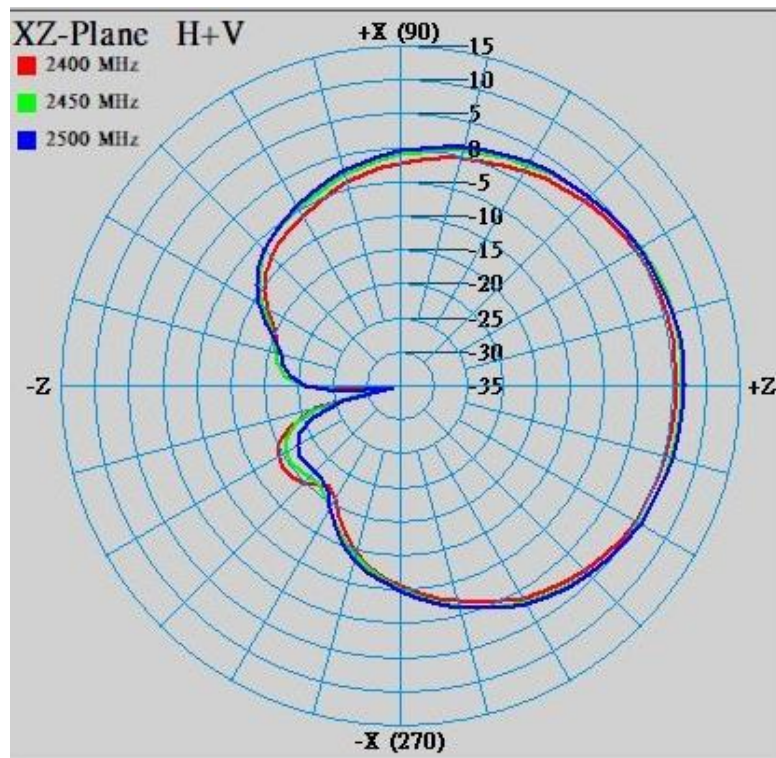
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5925	9.33	74	9.36	50	-7.48	-11.47
6525	9	76	7.8	47	-6.02	-10.82
7125	4.7	77	5.33	31	-6.83	-11.46

## Port3 2400 - 2500 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

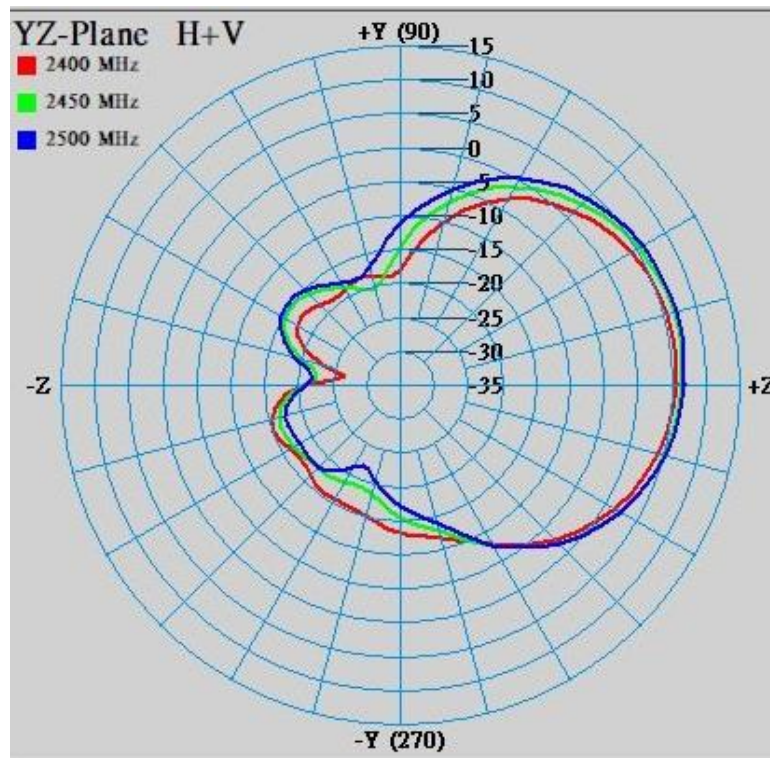


## Port3 2400 - 2500 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB



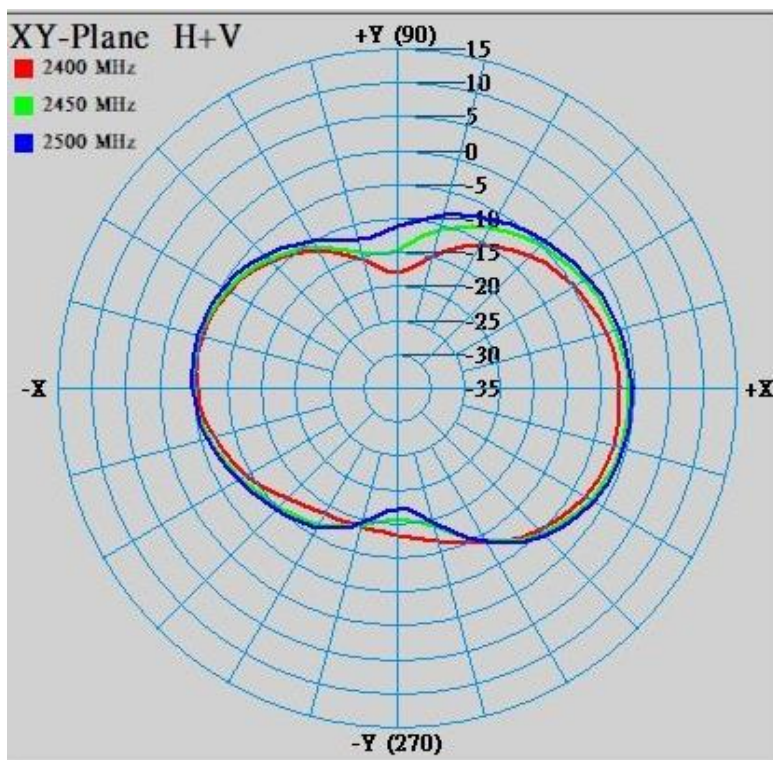


## Port3 2400 - 2500 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



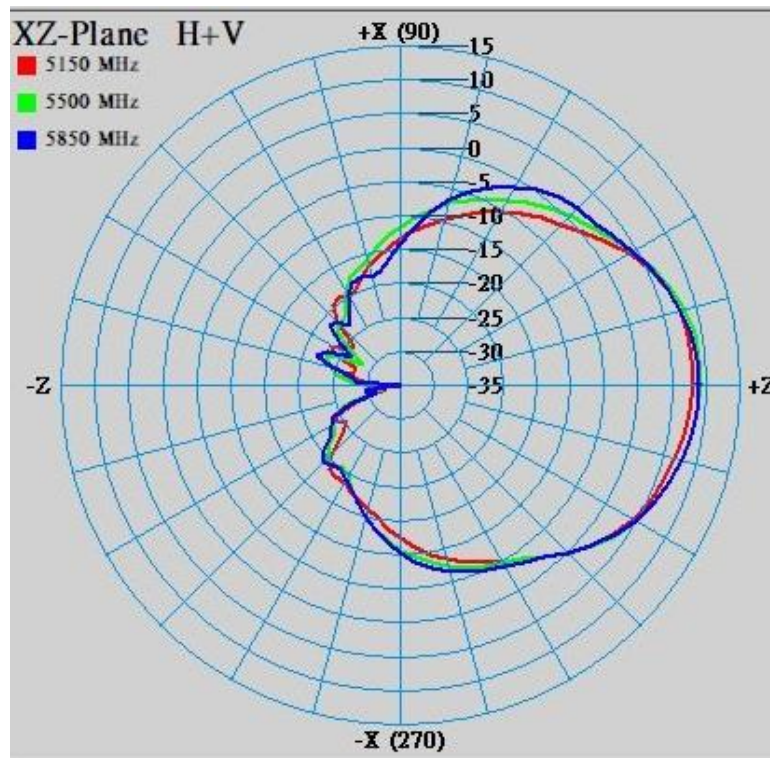
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
2400	5.71	103	5.77	64	-2.03	-6.92
2450	6.64	103	6.78	66	-0.88	-5.88
2500	6.82	101	7.08	69	-0.39	-5.31

## Port3 5150 - 5850 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

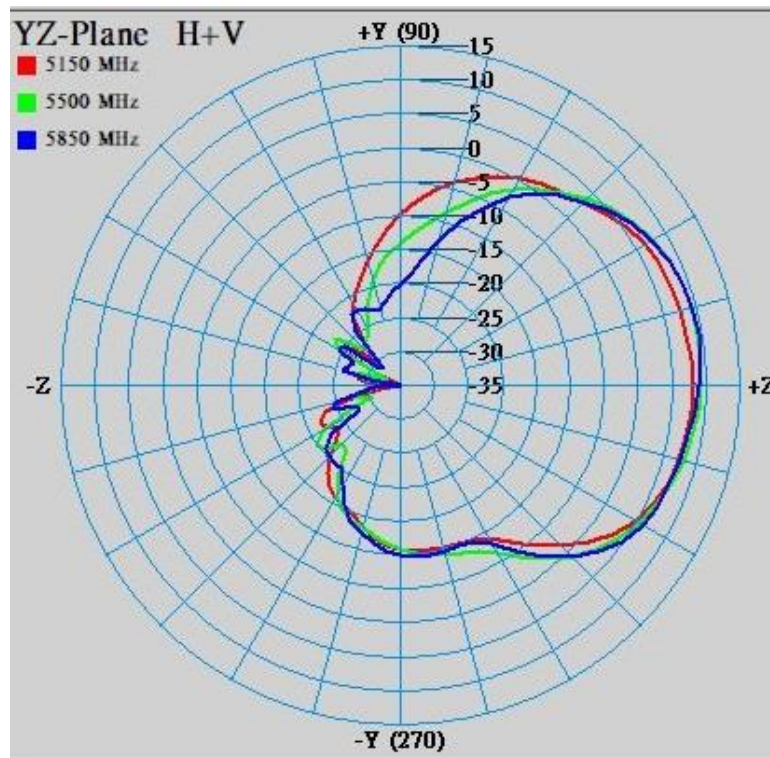


## Port3 5150 - 5850 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

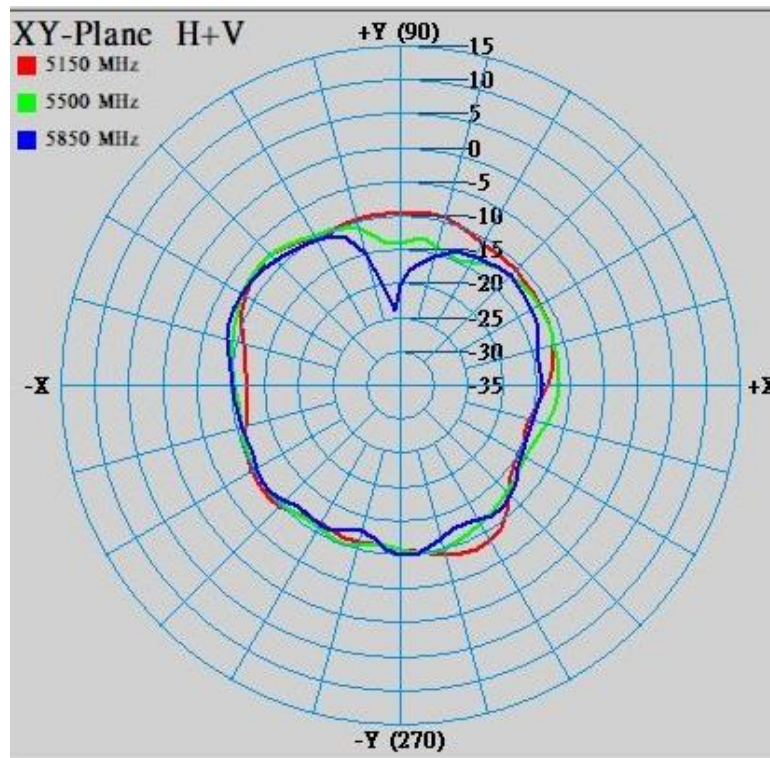


## Port3 5150 - 5850 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5150	8.11	56	8.03	69	-7.86	-10.55
5500	9.27	50	9.4	65	-7.59	-10.91
5850	8.96	52	9.53	65	-7.99	-11.58

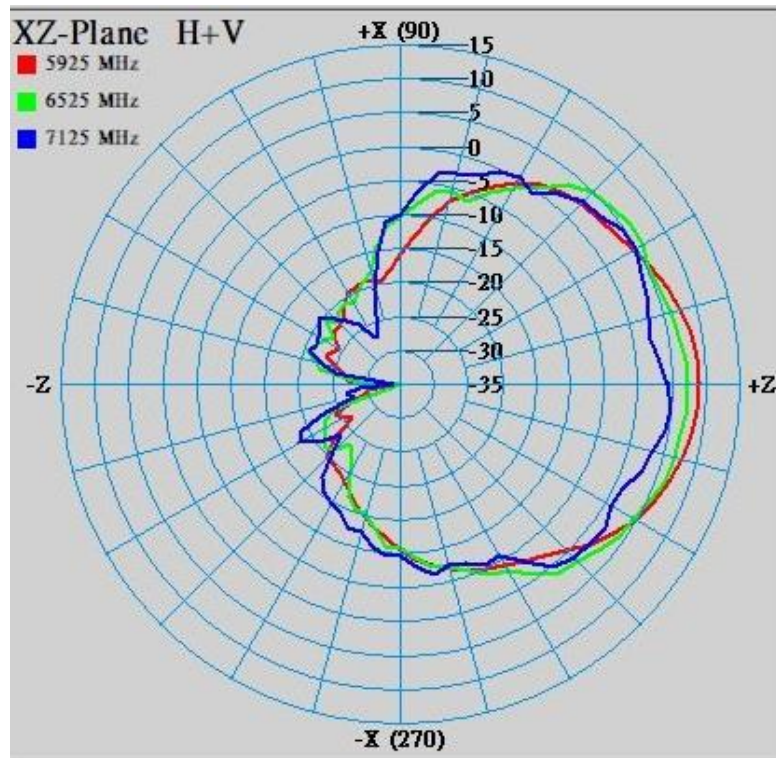


## Port3 5925 - 7125 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

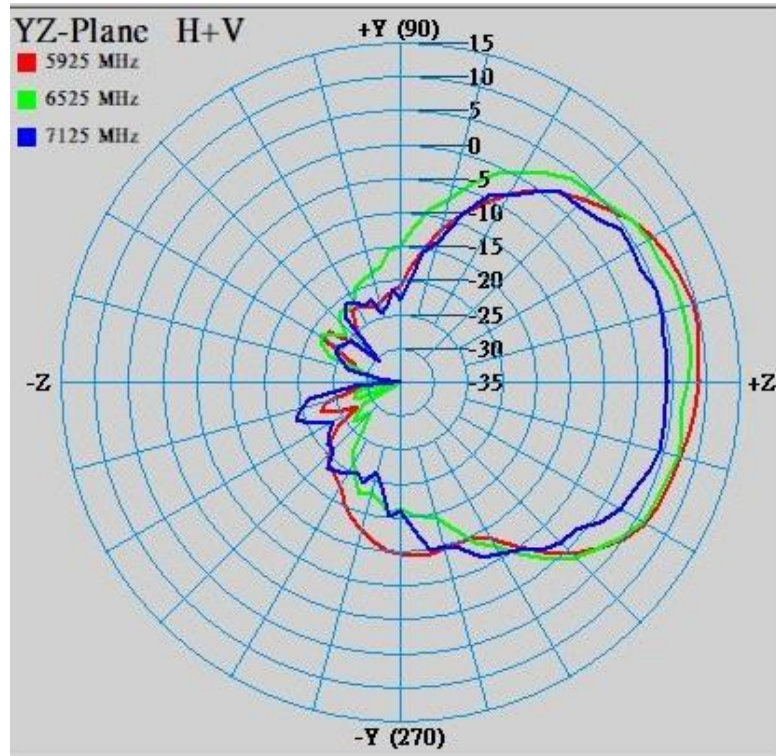


## Port3 5925 - 7125 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

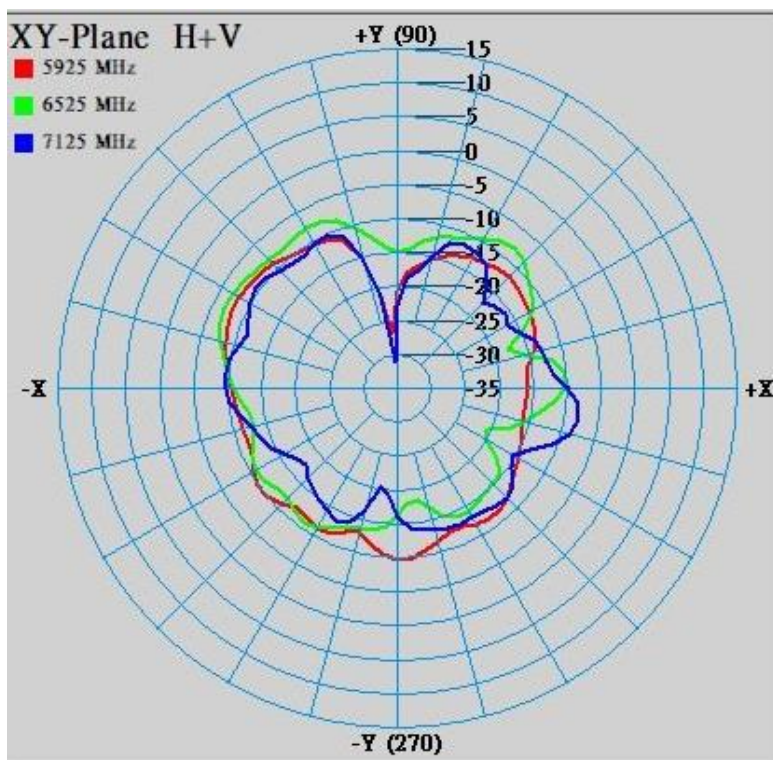


## Port3 5925 - 7125 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



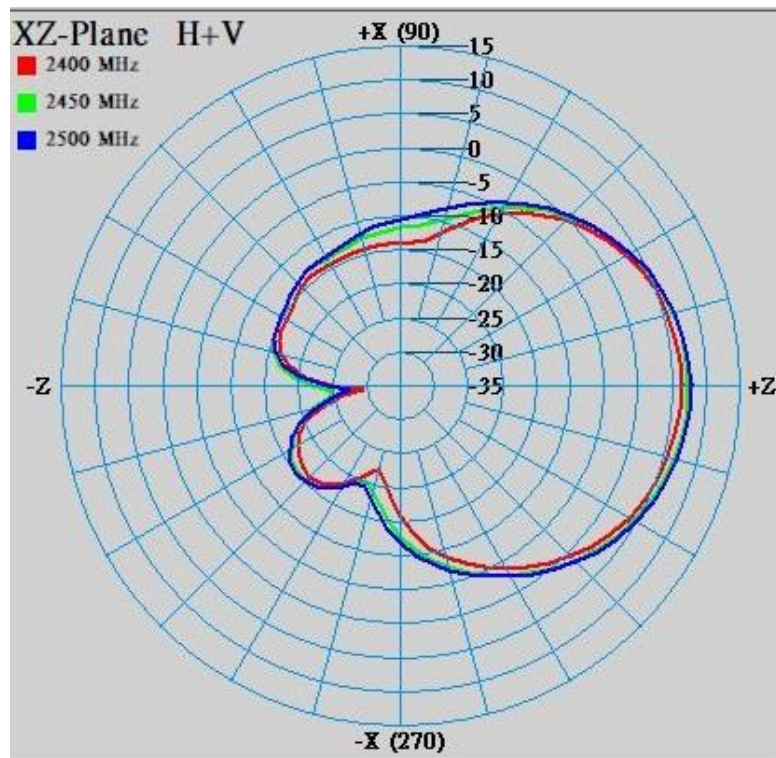
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5925	8.91	53	9.56	66	-8.08	-11.73
6525	7.52	81	8.09	78	-6.89	-11.16
7125	5.33	37	5.26	75	-7.91	-12.57

## Port4 2400 - 2500 MHz

X-Z Plane

Phi=0.00deg

Gain . dB



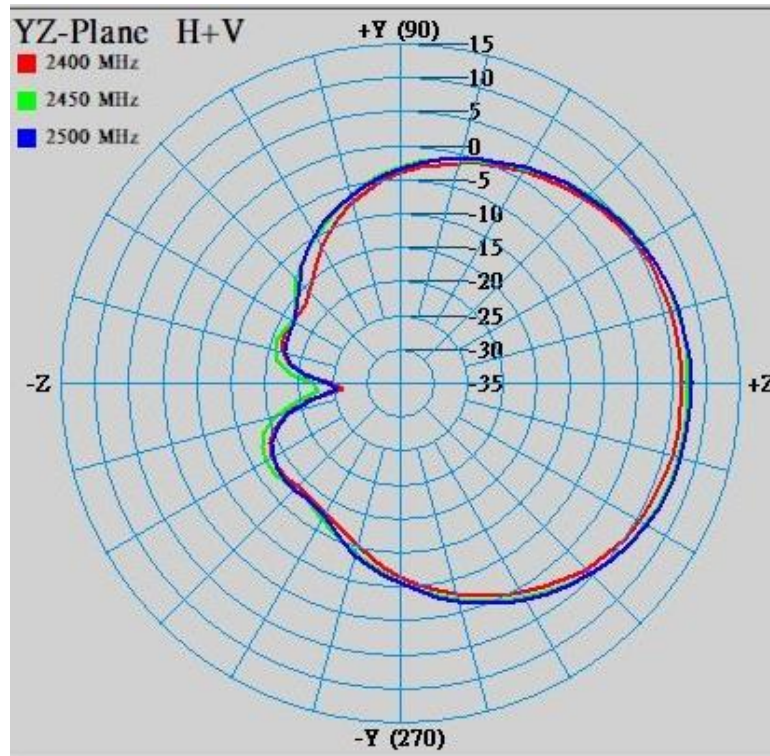


## Port4 2400 - 2500 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

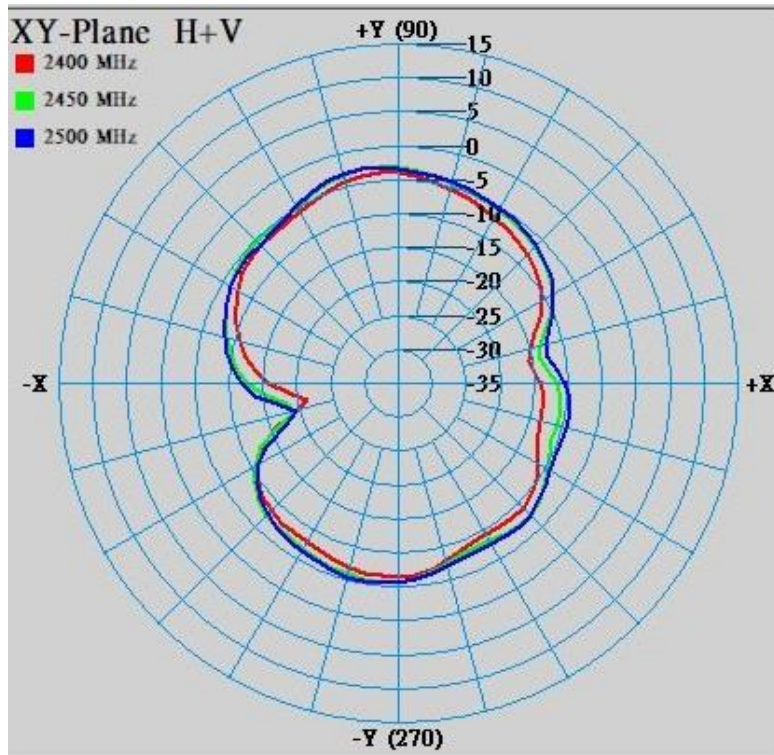


## Port4 2400 - 2500 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
2400	6.37	66	6.43	94	-3.9	-8.12
2450	7.41	62	7.46	91	-2.92	-7.01
2500	7.74	61	7.82	86	-3.04	-6.86

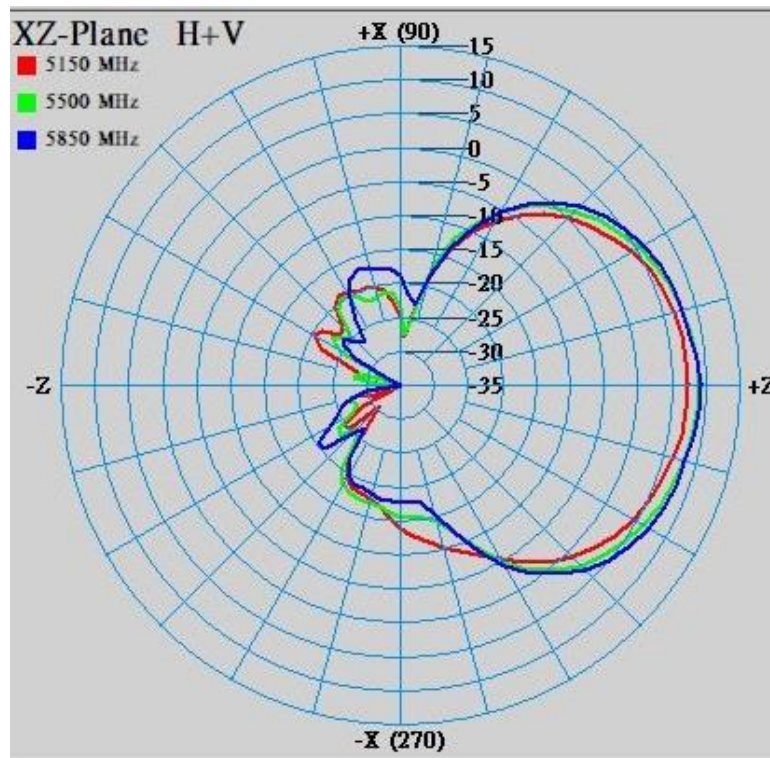


## Port4 5150 - 5850 MHz

X-Z Plane

Phi=0.00deg

Gain . dB

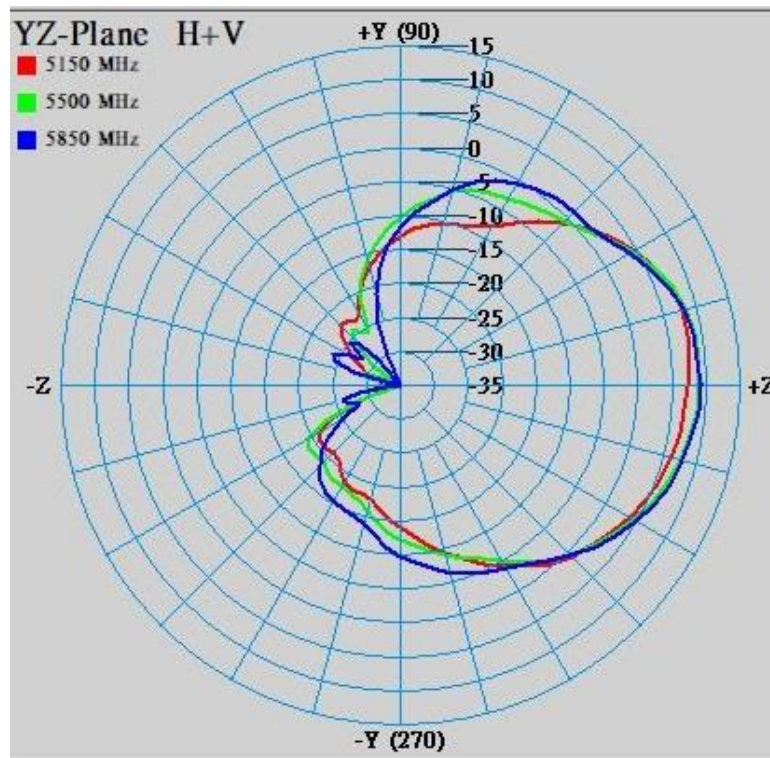


## Port4 5150 - 5850 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

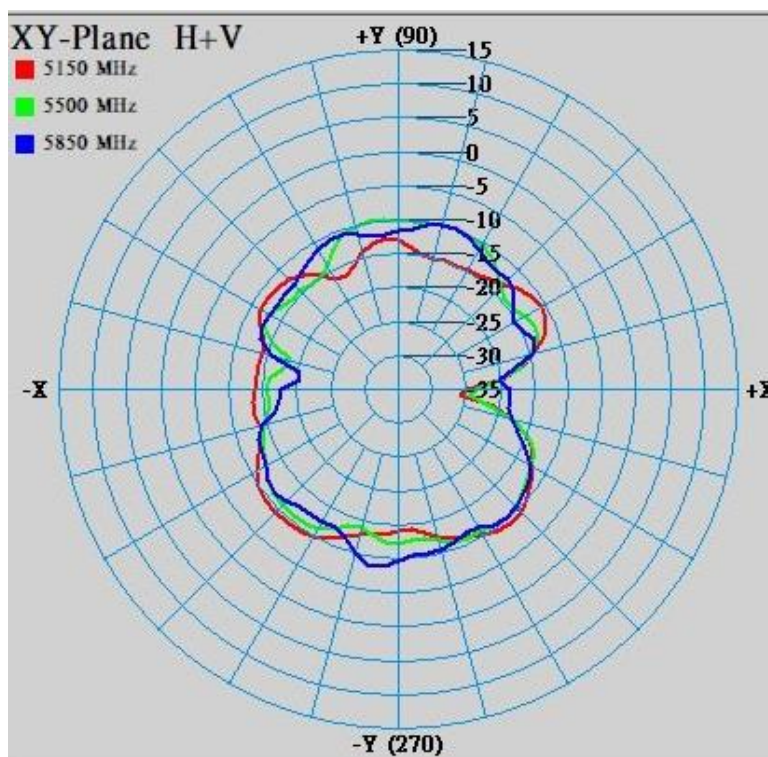


## Port4 5150 - 5850 MHz

X-Y Plane

Theta=90.00deg

Gain . dB



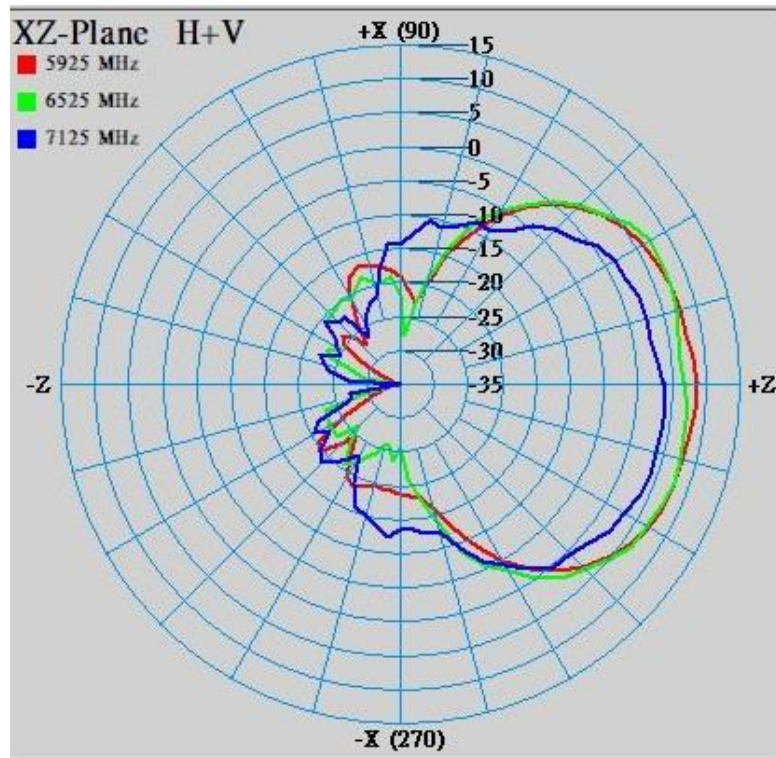
Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5150	7.34	63	8.02	56	-9.18	-12.55
5500	9.04	61	9.19	50	-9.8	-12.52
5850	9.27	68	9.23	50	-8.64	-12.32

## Port4 5925 - 7125 MHz

X-Z Plane

Phi=0.00deg

Gain . dB



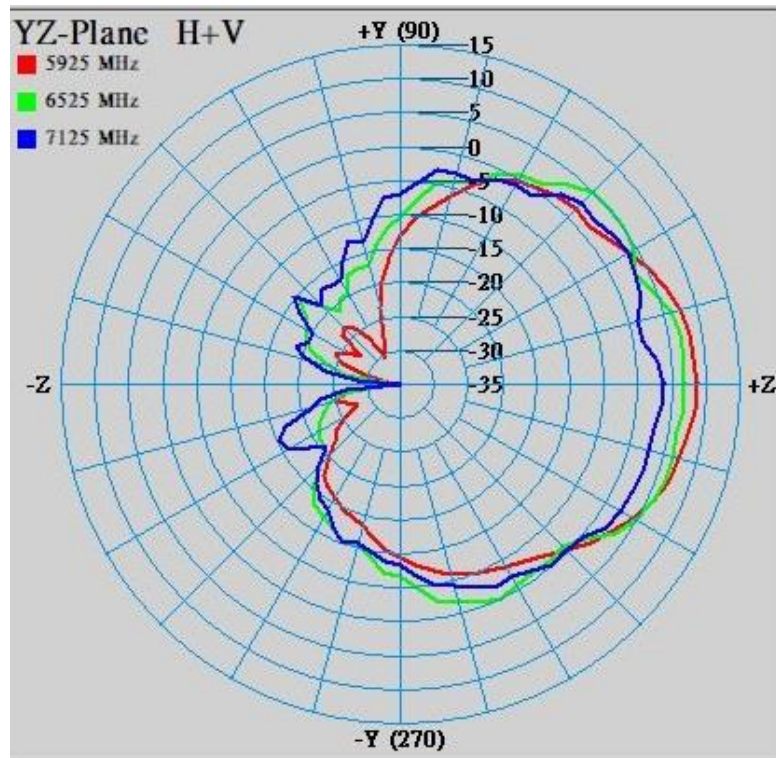


## Port4 5925 - 7125 MHz

Y-Z Plane

Phi=90.00deg

Gain . dB

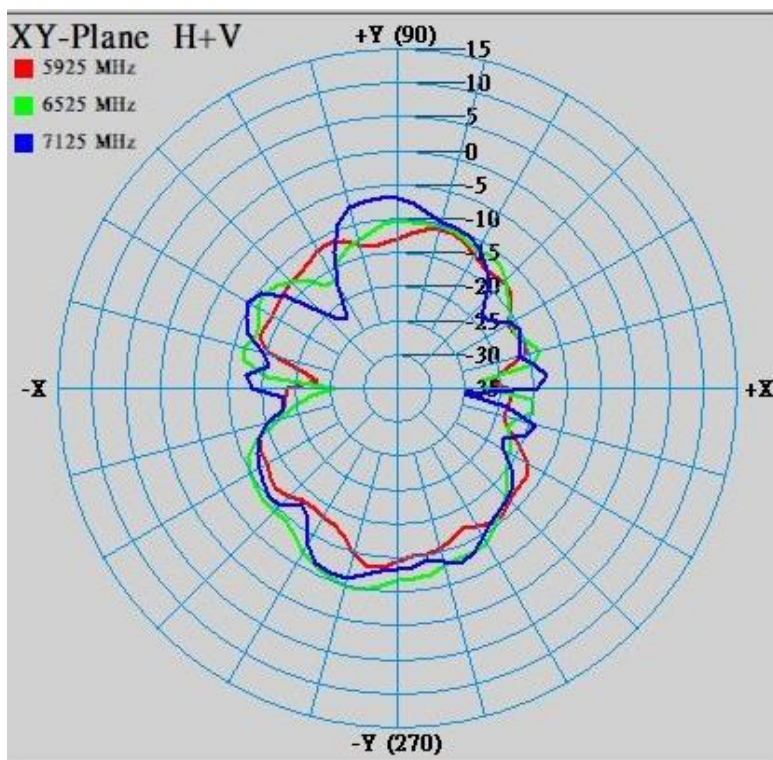


## Port4 5925 - 7125 MHz

X-Y Plane

Theta=90.00deg

Gain . dB

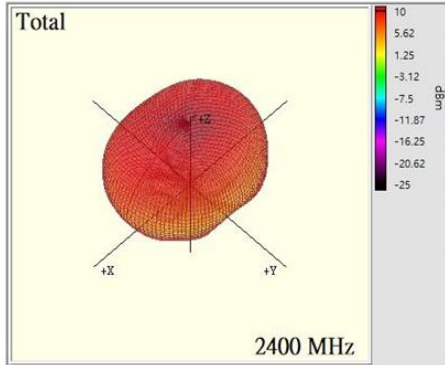


	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	3dB BW [deg]	Max Value [dB]	Average [dB]
5925	8.79	71	8.76	51	-8.33	-12.78
6525	7.9	80	6.98	57	-4.68	-10.7
7125	4.27	74	3.81	39	-5.86	-10.89

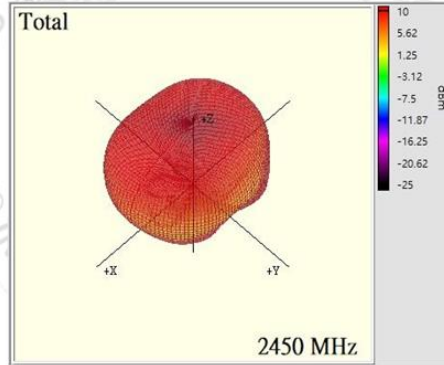


**Port1**

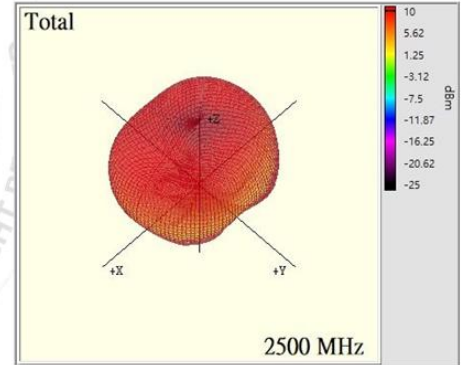
**2400MHz**



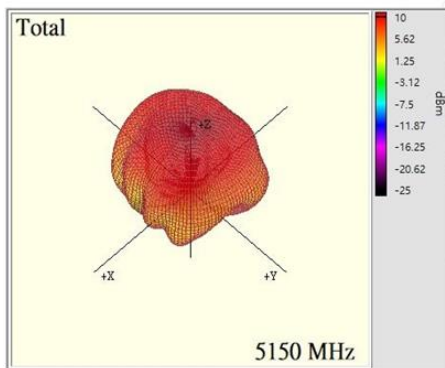
**2450MHz**



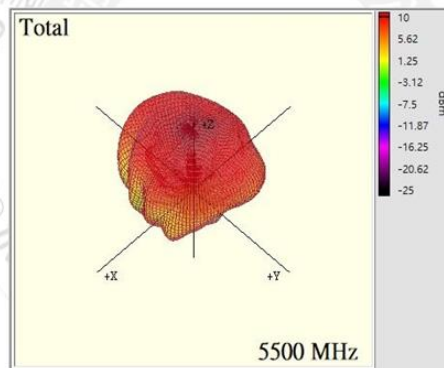
**2500MHz**



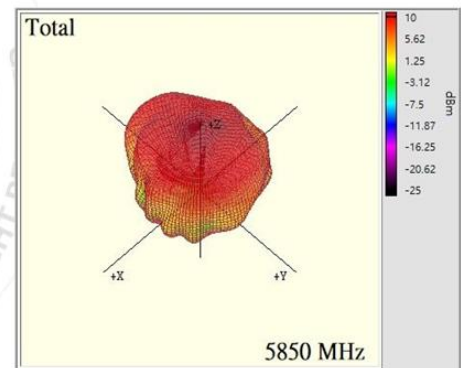
**5150MHz**



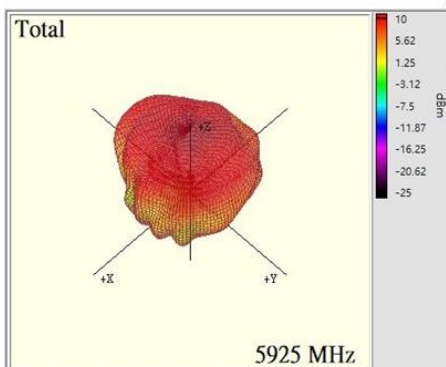
**5500MHz**



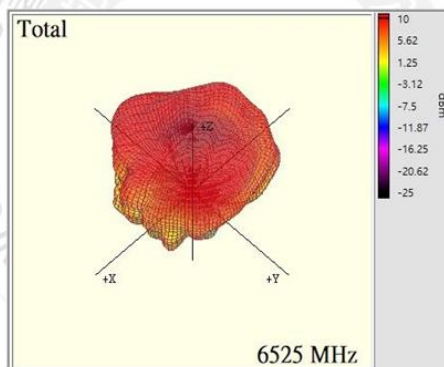
**5850MHz**



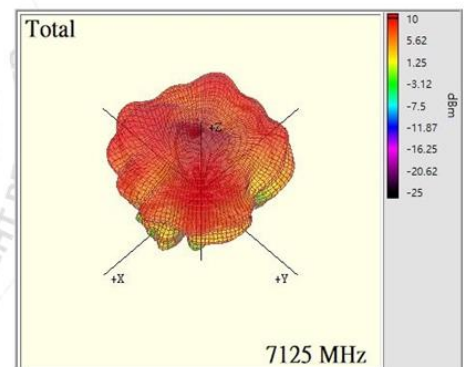
**5925MHz**



**6525MHz**

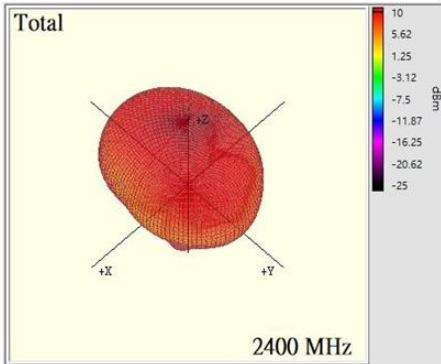


**7125MHz**

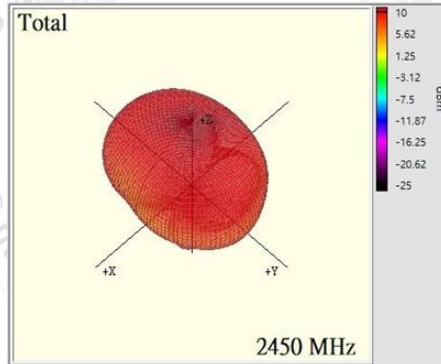


**Port2**

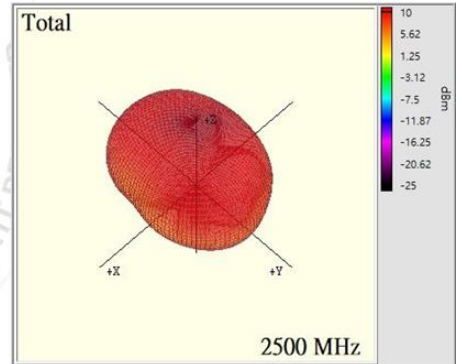
**2400MHz**



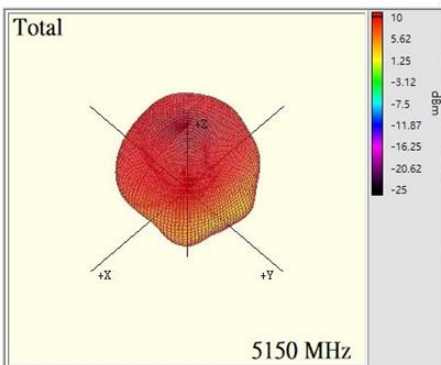
**2450MHz**



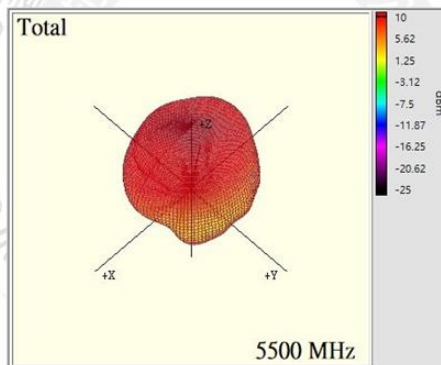
**2500MHz**



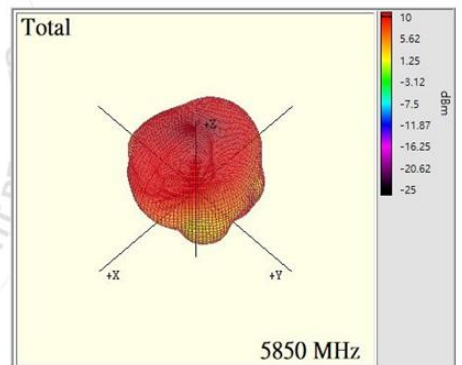
**5150MHz**



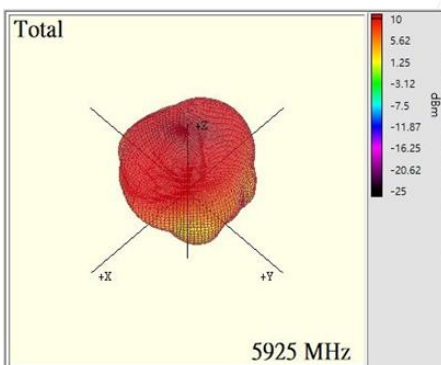
**5500MHz**



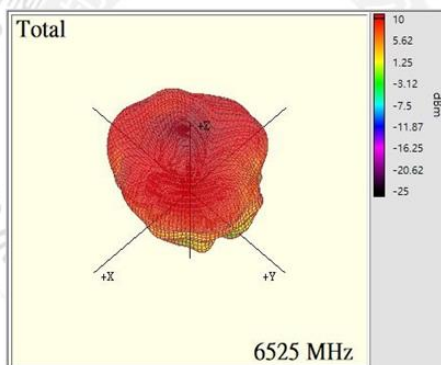
**5850MHz**



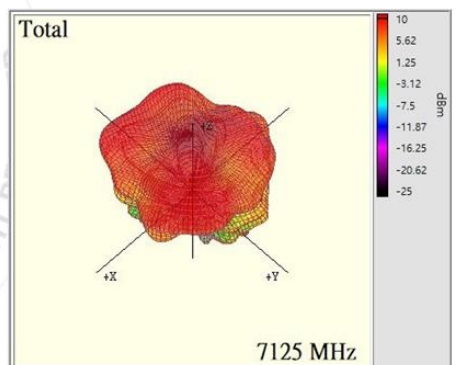
**5925MHz**



**6525MHz**

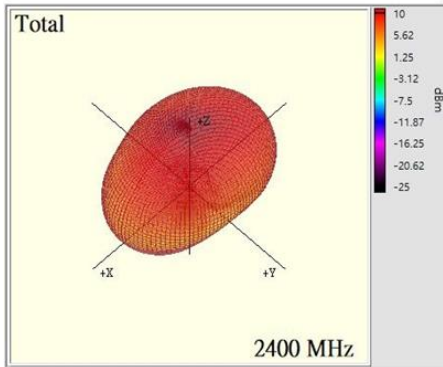


**7125MHz**

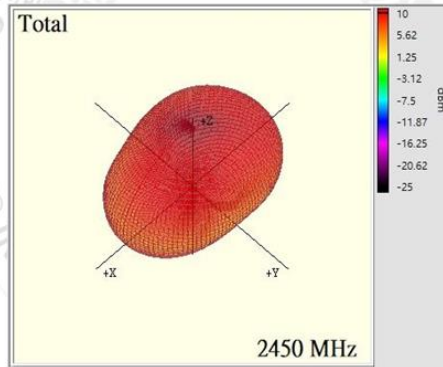


**Port3**

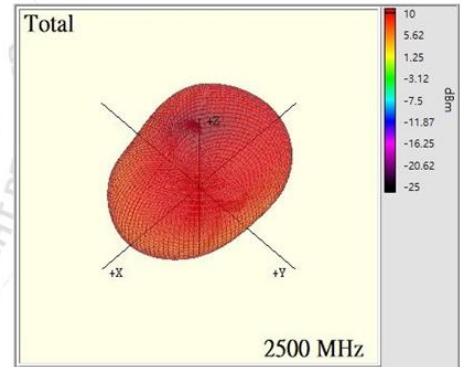
**2400MHz**



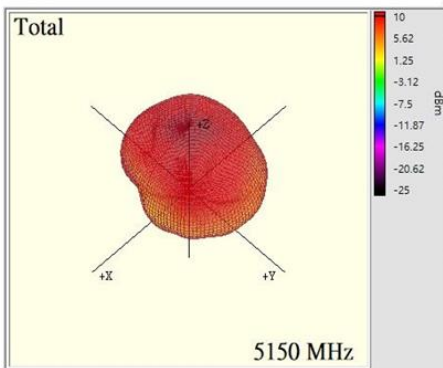
**2450MHz**



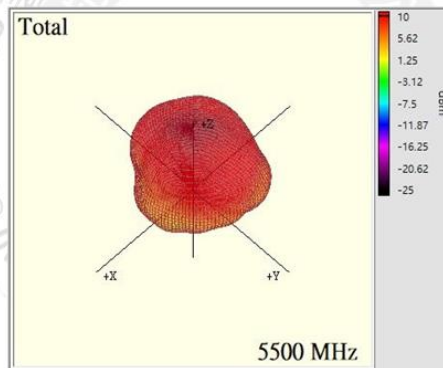
**2500MHz**



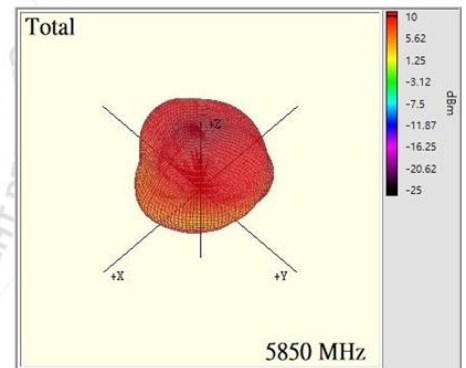
**5150MHz**



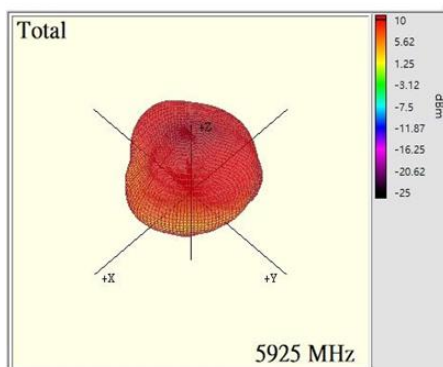
**5500MHz**



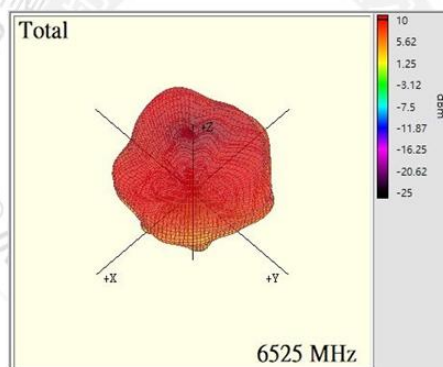
**5850MHz**



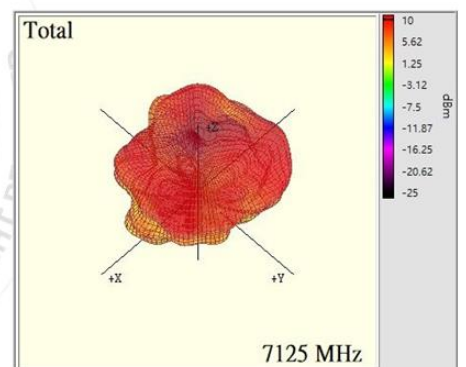
**5925MHz**



**6525MHz**



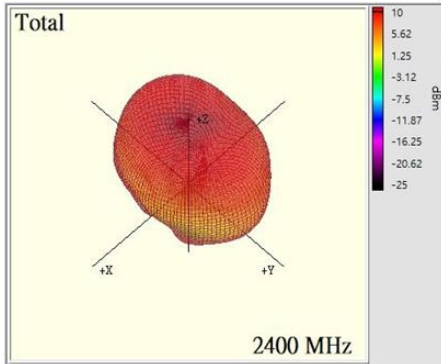
**7125MHz**



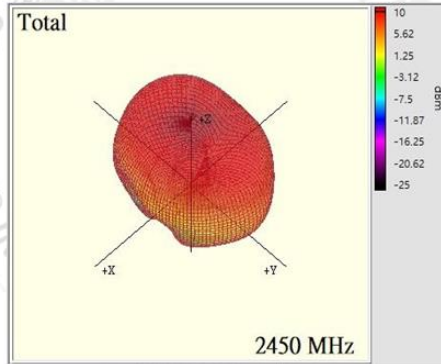


**Port4**

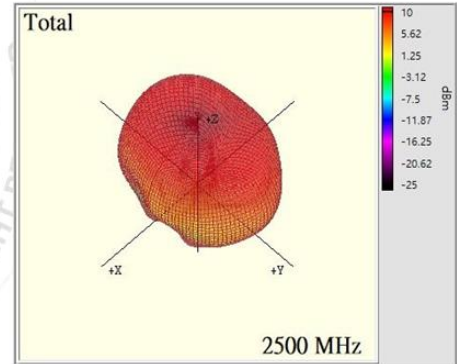
**2400MHz**



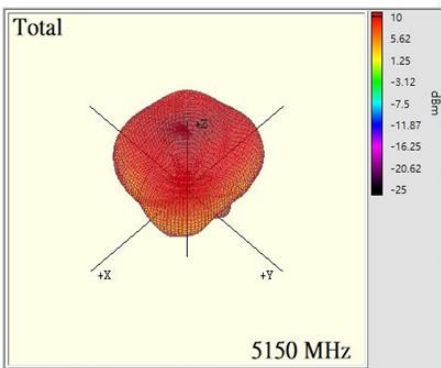
**2450MHz**



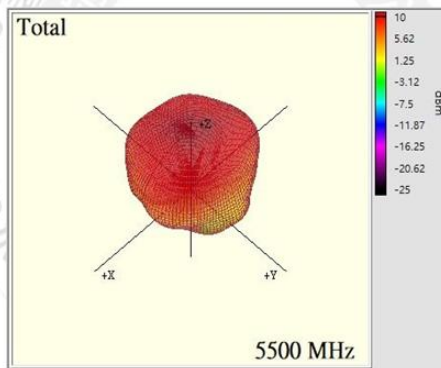
**2500MHz**



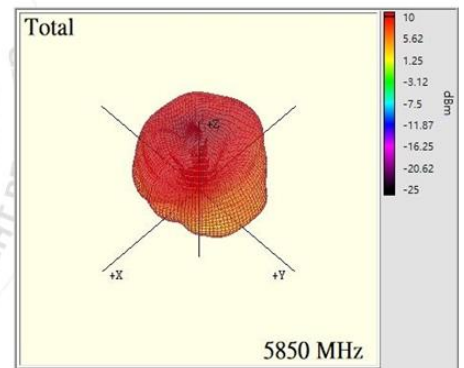
**5150MHz**



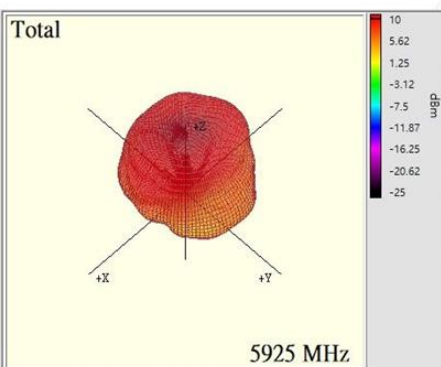
**5500MHz**



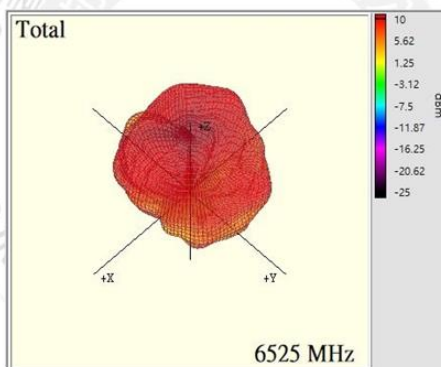
**5850MHz**



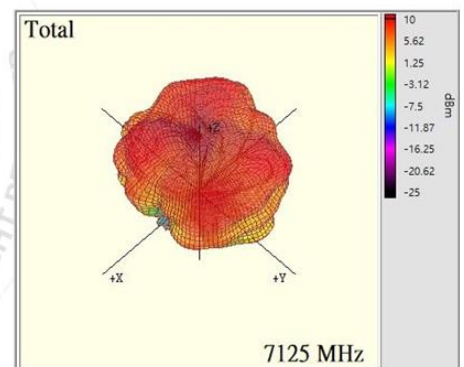
**5925MHz**



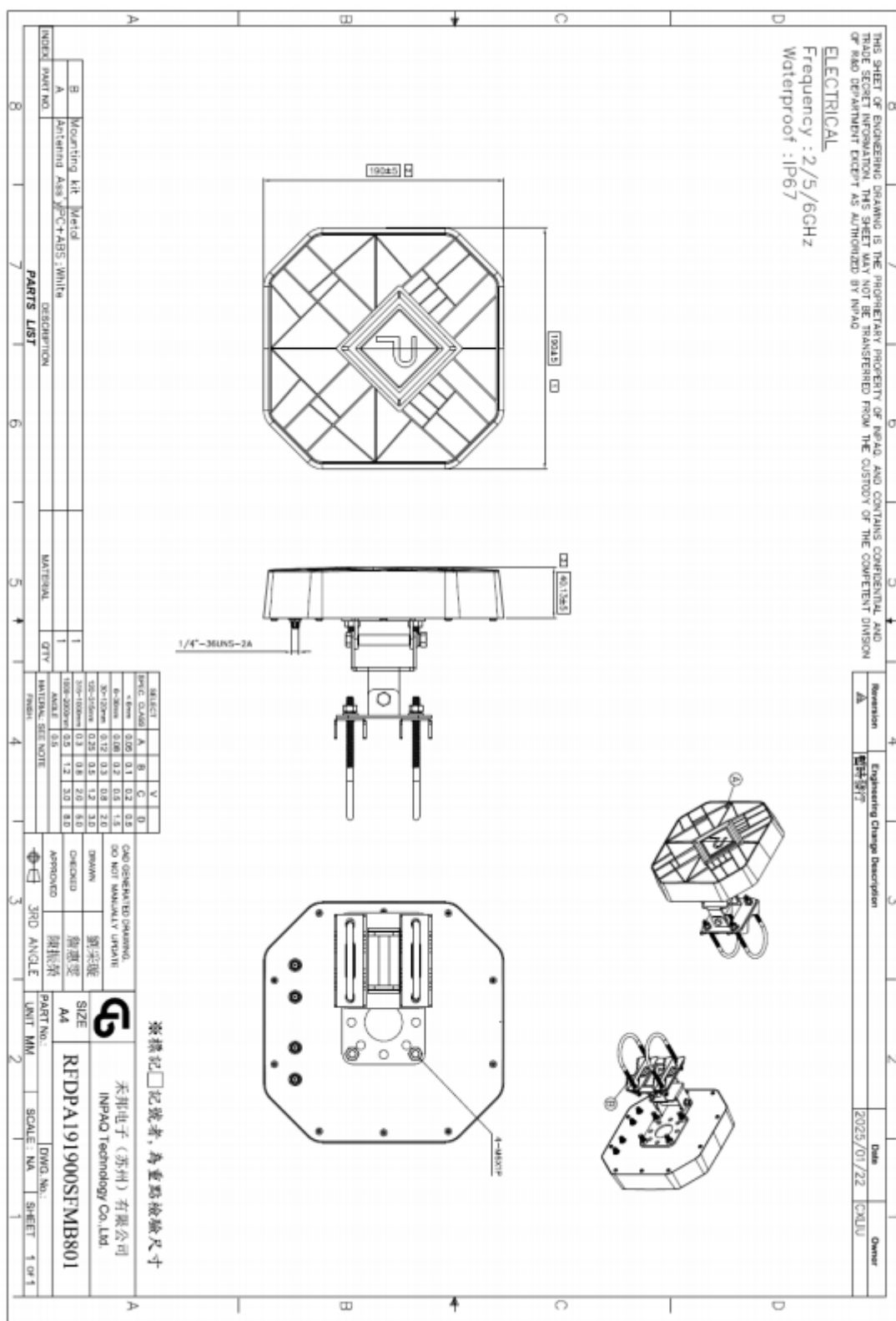
**6525MHz**



**7125MHz**



## 2. Mechanical Specification





## 3. Ordering Information

RF	DPA	1919	00	S	F	M	B	8	01
Type Code	Product Code	Dipole Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
RF Device	DPA: Dipole Antenna	Per 2 digits of length, width  e.g.: 1919 Length 190mm, Width 190mm	2 digits for cable length  e.g.: 00 None Cable	A: N C:MCX D:IPEX III E: IPEX IV F: IPEX A13 H: Hirose I: IPEX M: MMCX S: SMA T: TNC U:MURATA N: None	A: Reverse Female B: Reverse Male F: Female M: Male N: None	0: 0GHz 3: 3GHz 6: 6GHz A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.2/5.8 GHz tri-band M:LTE+Sub 6G+5G N: NFC T: LTE band W: WCDMA band	B: MP T:During Test X: Pile Run	0:None 1:Ø0.81 3:Ø1.13 6:RG316 7:Ø1.37 8:RG178	01~99 series number

4. Version

版本 REV.	修訂者 EDITOR	修訂頁次 PAGE	修訂內容 ITEMS OF CHANGE	申請日期 DATE	生效日期 VALID DATE	ECN 編號 ECN NO.
P0	CXLIU	ALL	Temporary Release	2025/01/22	According to the date of PLM Release	N/A