

# APPROVAL SHEET

**Metal ANTENNA**

**2.4~2.5/5.15~7.125 GHz Working Frequency**

**Halogens Free Product**

**P/N: RFMTA311020EMMB301**

Customer : \_\_\_\_\_

Customer 's Part No. : \_\_\_\_\_

Approval No. : \_\_\_\_\_

Issue Date : \_\_\_\_\_

\*Contents in this sheet are subject to change without prior notice.

Version	Date	Description	Author
V01	2020 Aug.	New Release	SHLEE
V02	2020 Nov.	增加 Gain table	SHLEE

### ELECTRICAL CHARACTERISTICS

Item	Specification
Frequency Range	2.4~2.5 / 5.15~7.125 GHz
Impedance	50 Ohm Nominal
Return Loss	-10 dB (Max)
Peak Gain (including cable loss)	1.71 dBi @ 2.4GHz; 4.82dBi @ 5GHz 4.76 dBi @ 6GHz
2.0 (Max)	
Radiation	Omni-directional
Polarization	Linear Vertical
Admitted Power	1W
Operation Temperature	-20°C ~ +65°C

\*note-1: Electrical characteristics will depend on customer's final application.

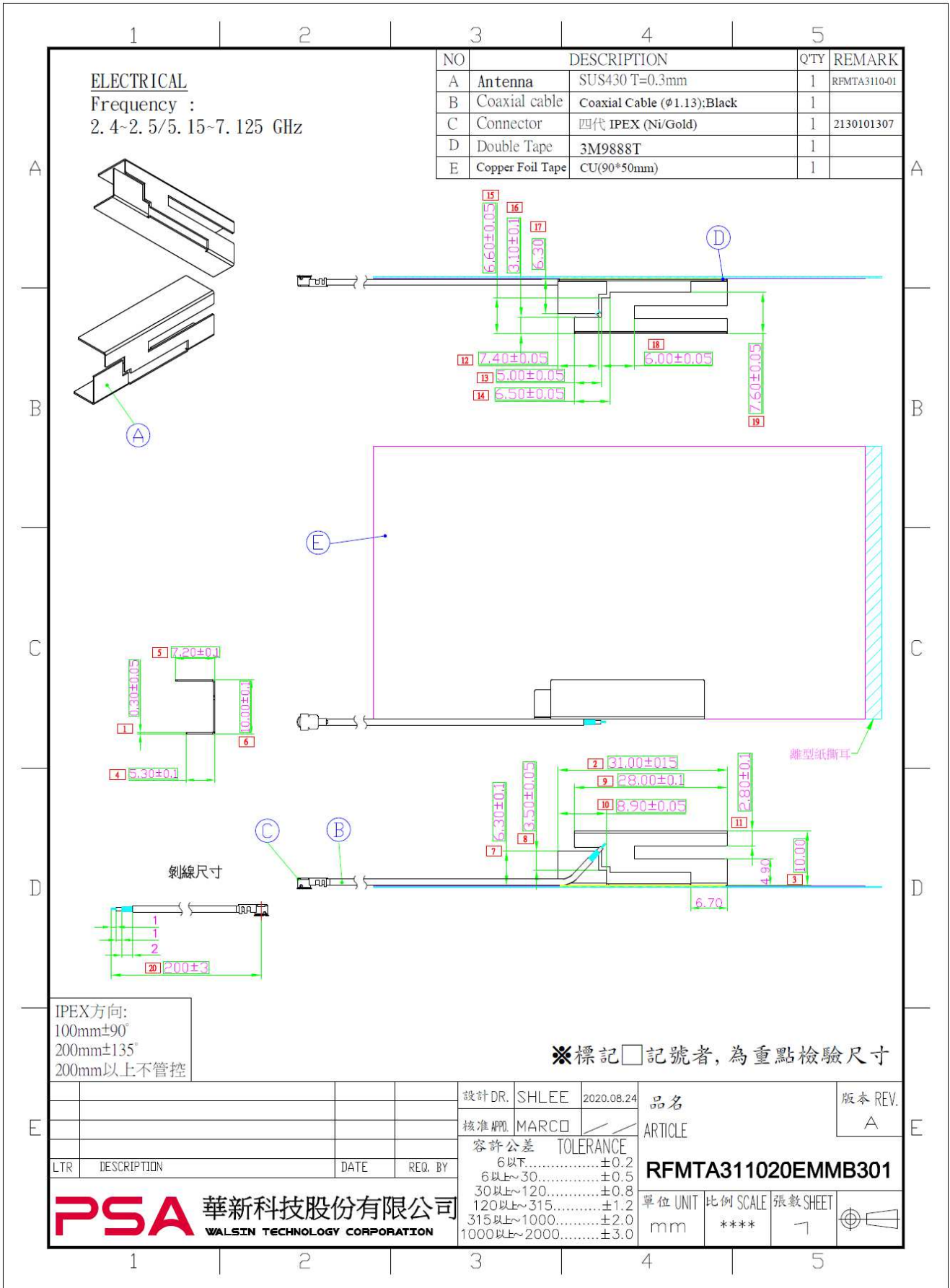
### MATERIAL TABLE

Items	Description
Metal	SUS 430 T=0.3mm(鍍鎳)
Cable	( $\phi$ 1.13) (Black)
Connector	四代 IPEX(Ni/Gold)
Double Tape	3M9888T
Copper Foil Tape	CU(90*50mm)

### ORDERING RULE

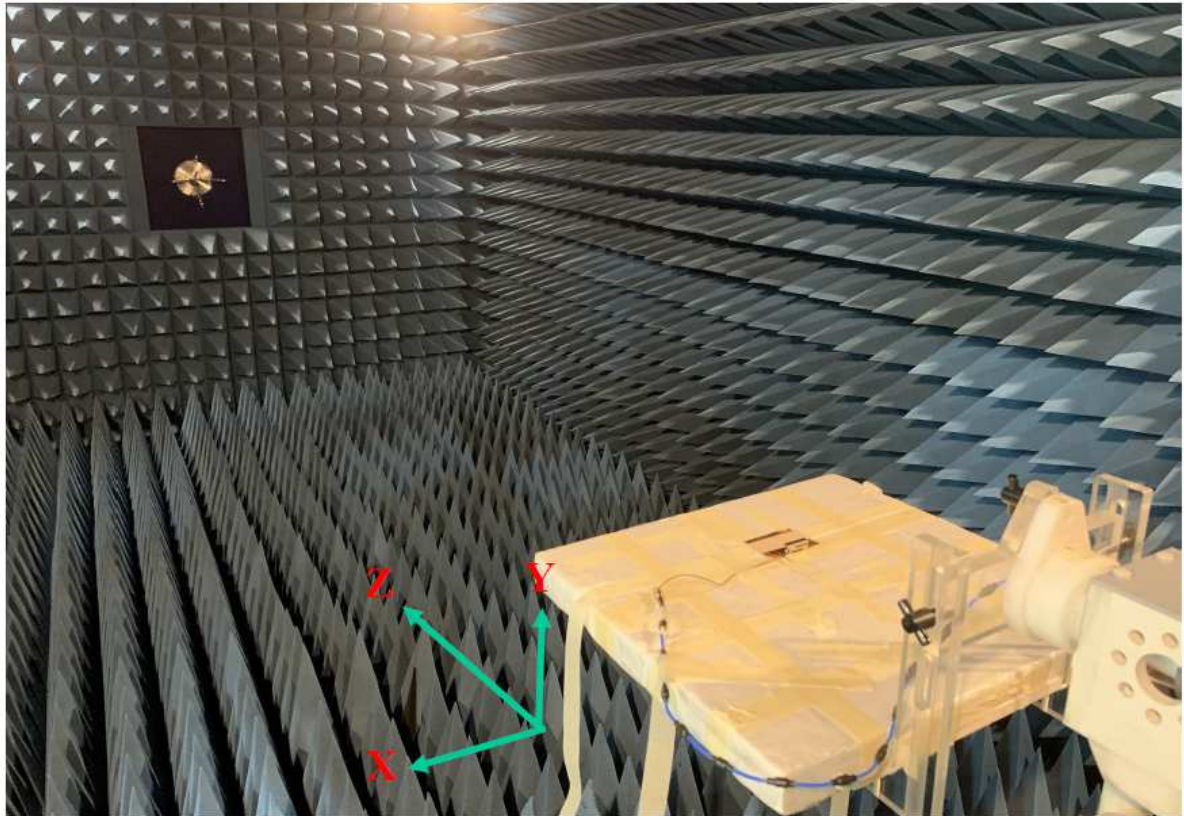
RF	MTA	3110	20	E	M	M	B	3	01
Type Code	Product Code	Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
Walsin RF Device	MTA: Metal Antenna	Per 2 digits of length, width e.g.: 3407 Length 34mm, Width 7.8mm	2 digits for cable length e.g.: 20 Cable Length:20cm	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 5: 5GHz 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: 2.4~2.5/5.15~7.125 MHz N: NFC T: LTE band W:WCDMA band	B: MP T:Durin g Test X: Pile Run	0:None 1: $\phi$ 0.81 3: $\phi$ 1.13 6:RG316 7: $\phi$ 1.37 8:RG178	01~99 series number

Appendix A: Dimensions



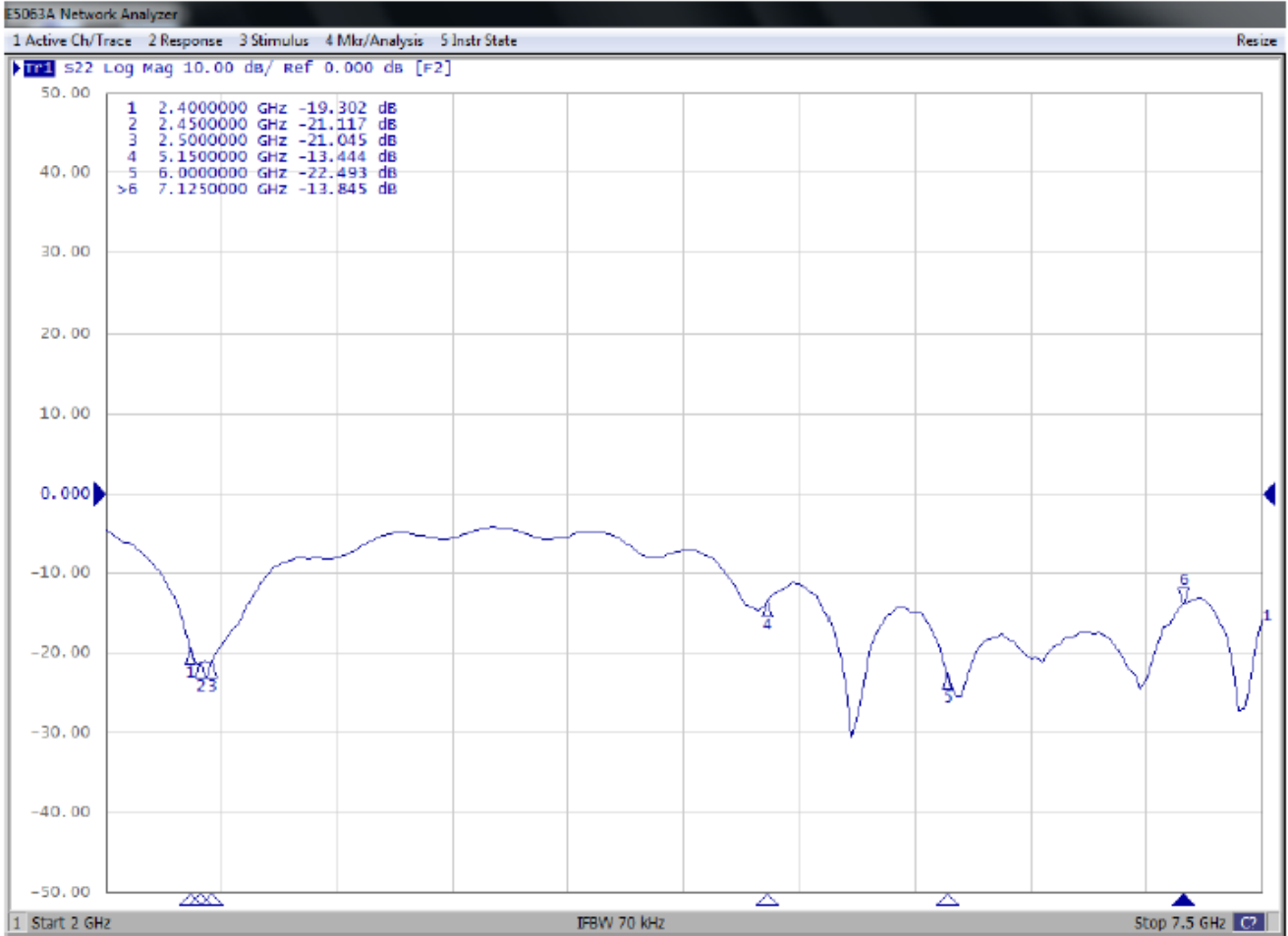
# Test Report

## ■ EXPERIMENTAL SETUP



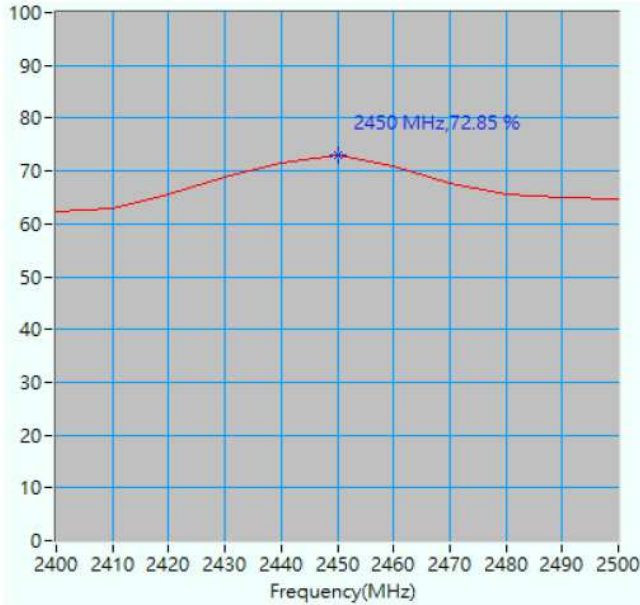
# ELECTRICAL CHARACTERISTICS

## Return Loss

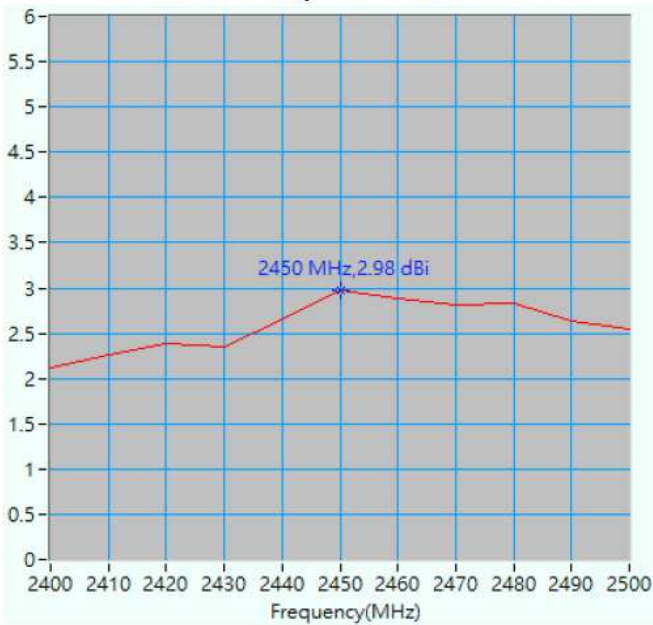


## ■ Antenna Efficiency and Peak Gain

### 2400~2500 MHz



Maximum Efficiency at 2450 MHz : 72.85 %

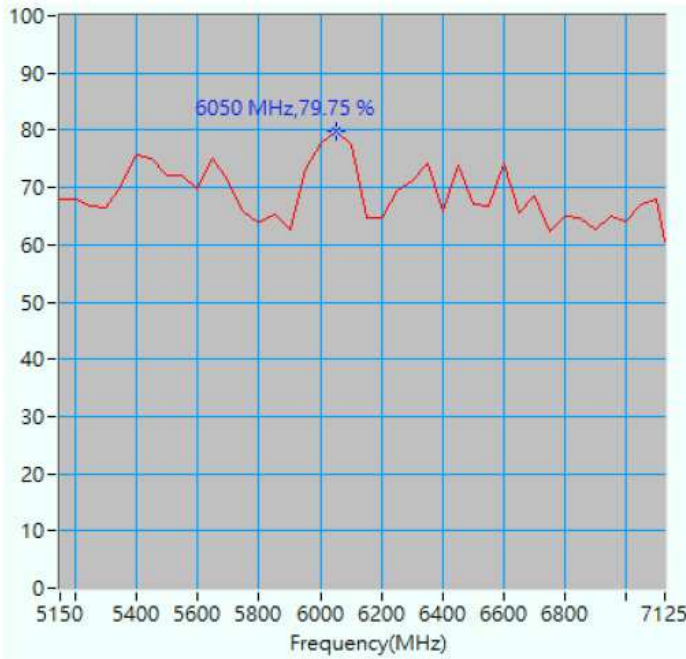


Maximum Peak Gain at 2450 MHz : 2.98 dBi

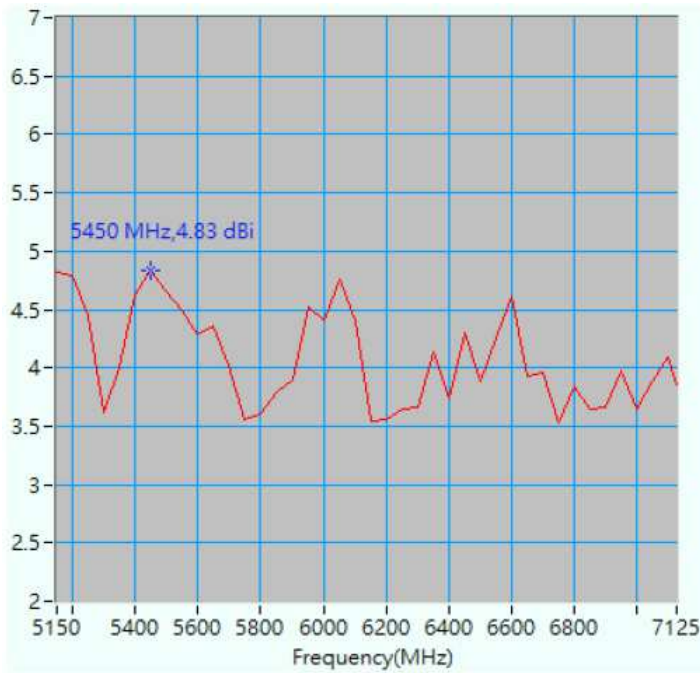
Frequency (GHz)	Efficiency (%)	Peak gain (dBi)
2.4	62.23	2.11
2.45	72.85	2.98
2.5	64.71	2.55



**5150~7125 MHz**



Maximum Efficiency at 6050 MHz : 79.75 %



Maximum Peak Gain at 5450 MHz : 4.83 dBi

Freq. Range(MHz)	Ant. Net Gain(dBi)	
	Max	Min
UNI5(5925~6425)	4.76	3.54
UNI6(6425~6525)	4.29	3.89
UNI7(6525~6875)	4.61	3.53
UNI8(6875~7125)	4.09	3.64

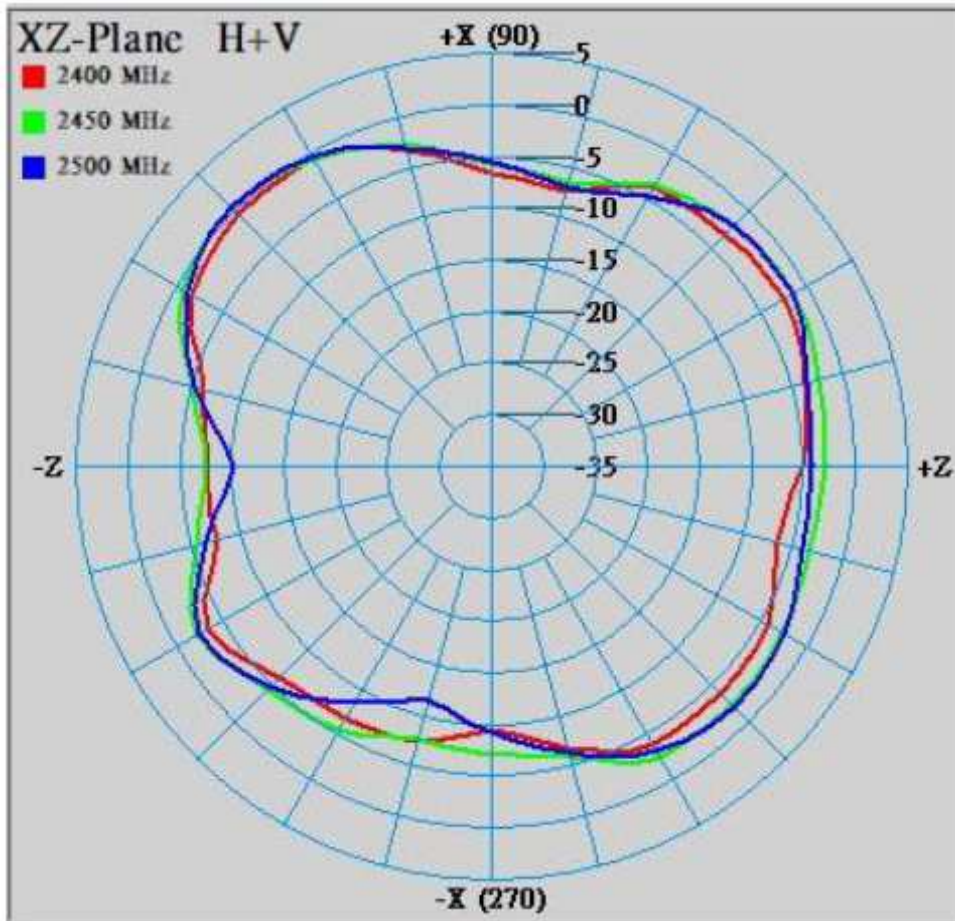


# RADIATION PATTERN

2400~2500 MHz

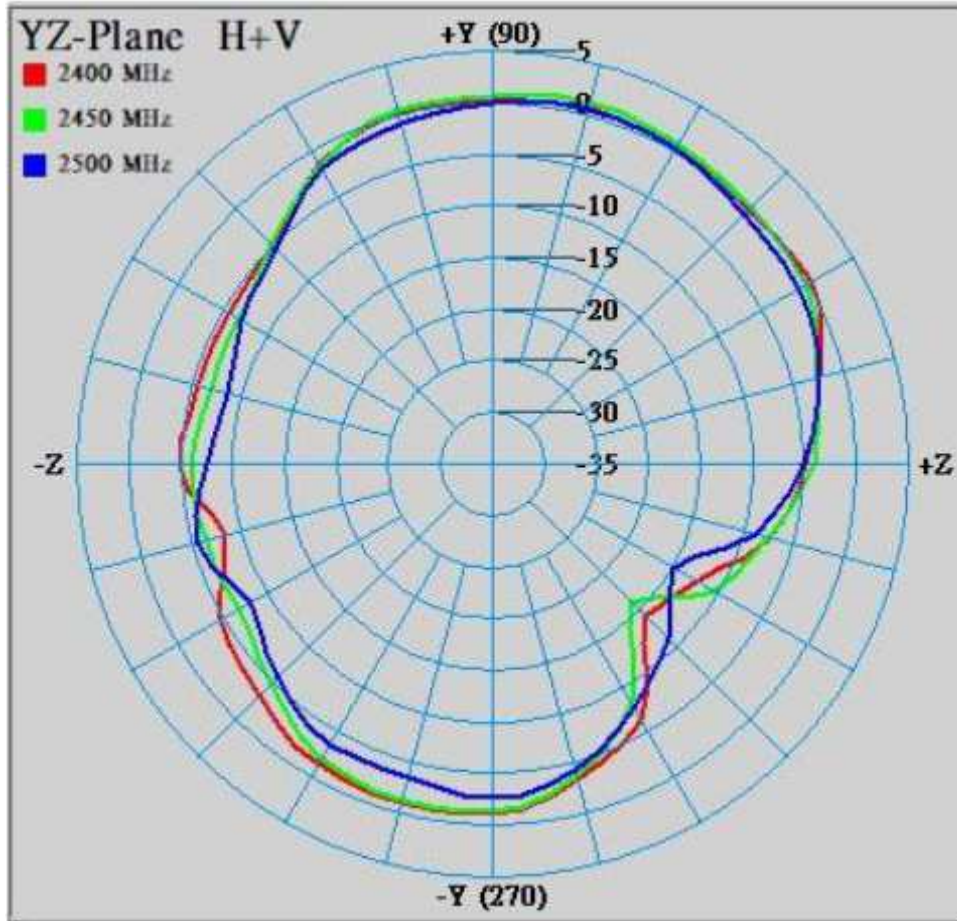
Phi=0.00deg

Gain . dB



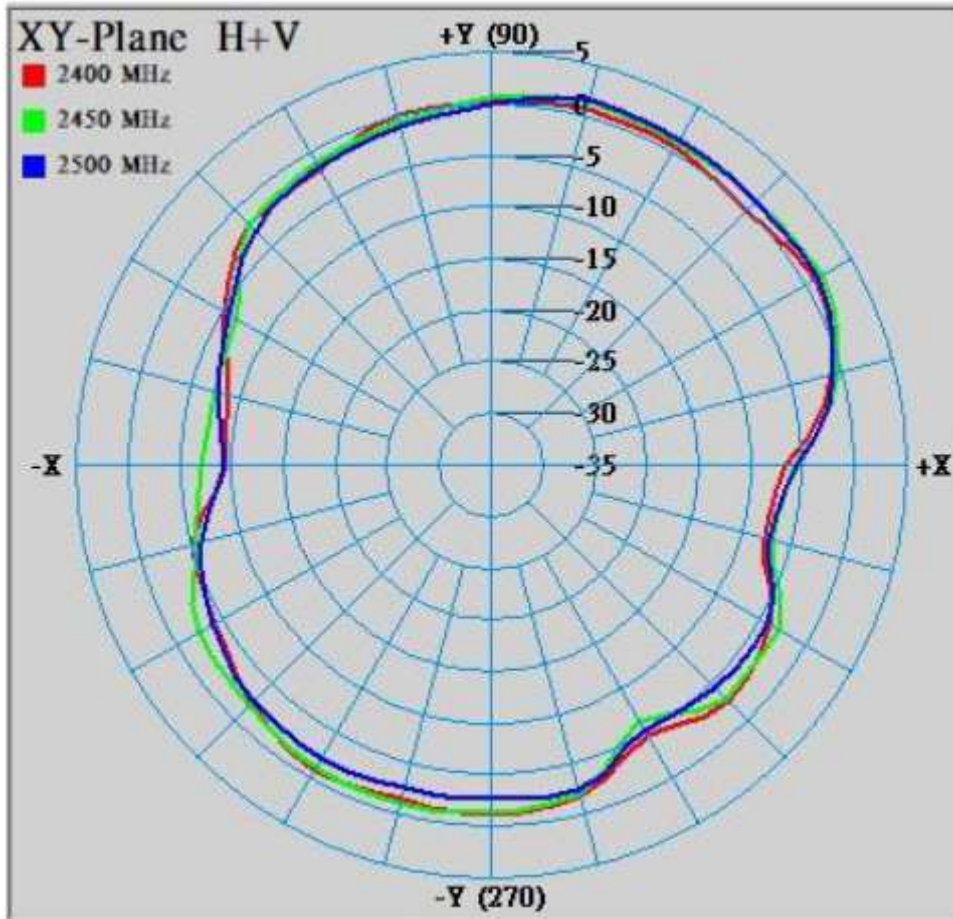
Phi=90.00deg

Gain . dB



Theta=90.00deg

Gain . dB

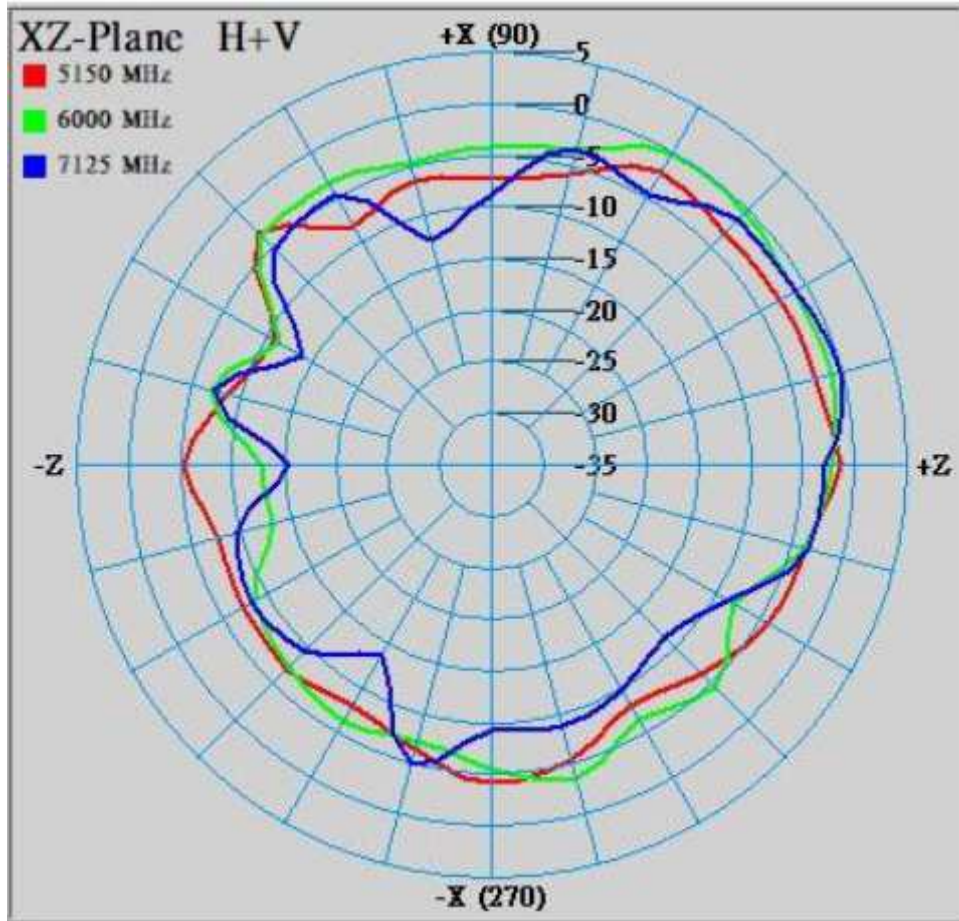


Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
2400	-0.54	-4.34	0.62	-2.55	1.08	-2.05
2450	0.42	-3.22	1.28	-2.65	1.71	-1.69
2500	0.48	-3.68	0.54	-3.50	1.56	-2.13

5150~7125 MHz

Phi=0.00deg

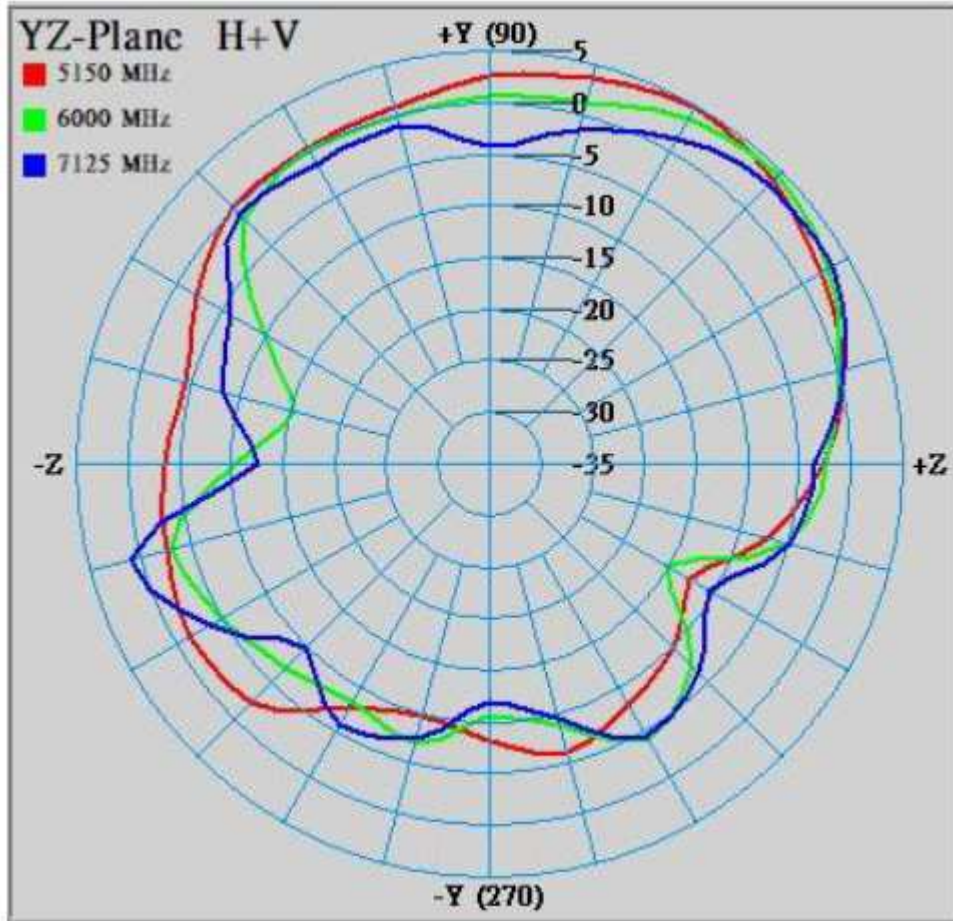
Gain . dB





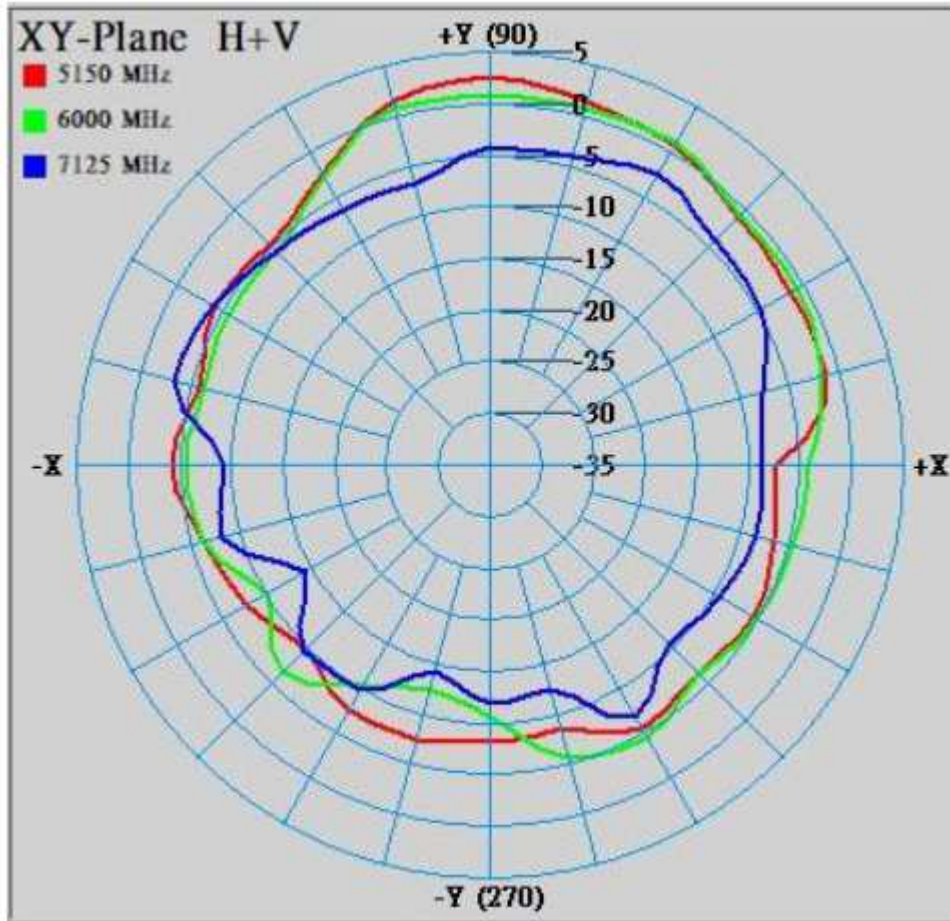
Phi=90.00deg

Gain . dB



Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]	Max Value [dB]	Average [dB]
5150	-1.32	-5.10	4.82	-0.71	2.51	-2.95
5500	-0.18	-4.25	4.40	-1.69	0.92	-3.27
7125	-0.17	-5.63	3.31	-2.23	-2.45	-6.73