WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

DONGGUAN AEON TECH CO.,LTD.(CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER:	*訊動科技股份有限公司*
PART NAME:	*PCB Antenna Assembly*
PART NO.:	*REVISION:*
W. Y. P/NO.:	*C787-510181-A(SRF2026908)* *REV.: X1*

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :	H.T Cheng	
DATE :		

WHA YU GROUP

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RF Antenna Assembly

Specification

1. Electrical Properties : With housing/With Cable loss(Ant-1/Ant-4)

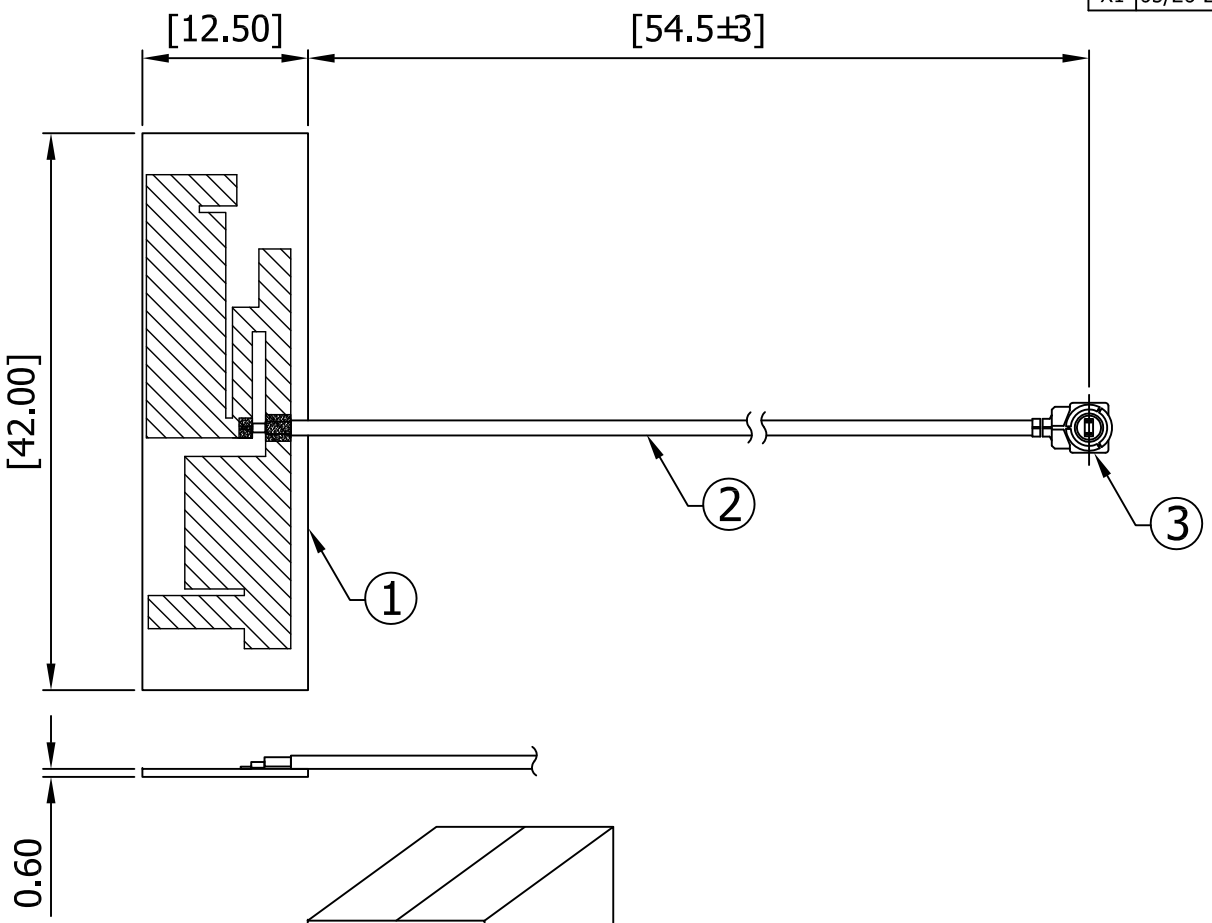
1.1	Frequency Range……	2.4 ~ 2.5 , 5.15~5.85 GHz
1.2	Impedance ……	50Ω Nominal
1.3	VSWR ……	1.92：1 Max.
1.4	Return Loss……	10 dB Min.
1.5	Radiation ……	Omni-directional
1.6	Peak Gain……	2.4 ~ 2.5GHz < 5.65dBi
		5.15~5.85GHz < 5.60dBi
1.7	Cable Loss……	0.19 dB Max.@2.4 ~ 2.5GHz
		0.29 dB Max.@5.15~5.85GHz
1.8	Polarization……	Linear
1.9	Cable……	1.13mm Coaxial Cable
1.10	Connector……	I-PEX MHF Connector

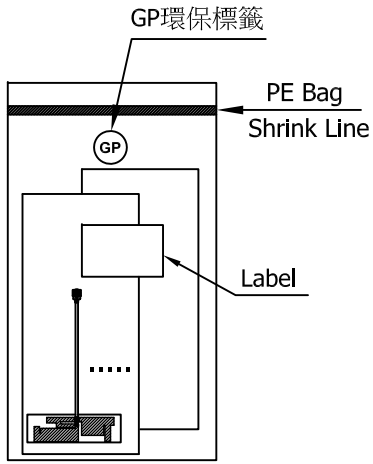
2. Physical Properties :

2.1	Operating Temp. ……	-10℃ ~ +60℃
2.2	Storage Temp. ……	-10℃ ~ +70℃

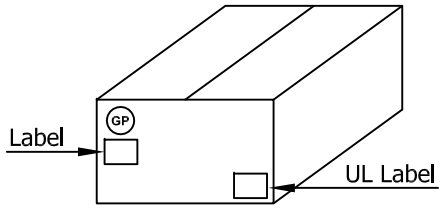
CG-

REV	DATE	DESCRIPTION
X1	05/26-2026	New Issue





(25 pcs/珍珠棉袋)
Packing : 50 pcs/bag



GP標籤貼於外箱兩邊側麥左上角
外箱標籤貼於側麥共1PCS
UL 標籤貼於外箱側麥共1PCS
麥頭標籤貼於外箱正麥共2PCS

NO	DESCRIPTION	Q'TY	REMARK
3	Connector: I-PEX Connector	1	
2	Cable: ⌀1.13mm Cable,Gray,50Ω	1	
1	PCB: FR4;24mil;1/2Oz	1	

XX.	±5.0	APPROVED
X.	±3.0	
.X	±1.0	CHECKED
.XX	±0.5	
.XXX	±0.1	DRAWING

CUSTOMER'S SINGATURE

CUSTOMER: 訊 動
PART NO :
PART NAME: PCB Antenna Assembly
W.Y P/NO : C787-510181-A

REV	UNIT	FILE : SRF2026908
X1	mm	SHEET : 1/1

M.gear Wha Yu Group

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We connect the wireless world.

Antenna Test Report (SBWD2200L-C787-510181-A)

Version: V 1.02

Released Date: 2025/01/20

Prepared By : Tim Cheng

Reviewed By :

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Contents

- Revised History
- Specification
- Antenna Placement & Solution
- Test Setup for S-parameter Measurement
- Return Loss Results , Isolation Results
- Test Setup for Radiation Pattern Measurement

  (Device Orientation in the chamber)
- 2D Radiation Pattern Results
- Results Summary (return loss, isolation, peak gain, efficiency)

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Revised History

Released Date	Version	Record
2025/01/08	V1.00	1st released
2025/01/09	V1.01	Use part number 100-40082206-AZ PCB for testing.
2025/01/20	V1.02	Modify antenna length

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Specification

Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
WiFi 2/5G	2	2400-2500(MHz) / 5150-5825(MHz)	

Requirements of Measurement

Test Item	Specification	Remark
Return loss	> 10dB	
Isolation	2G>20dB ; 5G>30dB	
Peak gain	NA	
Efficiency	> 60 %	
Radiation pattern	Scale: +10 ~ -40dBi, Angle step size: 5 degree	

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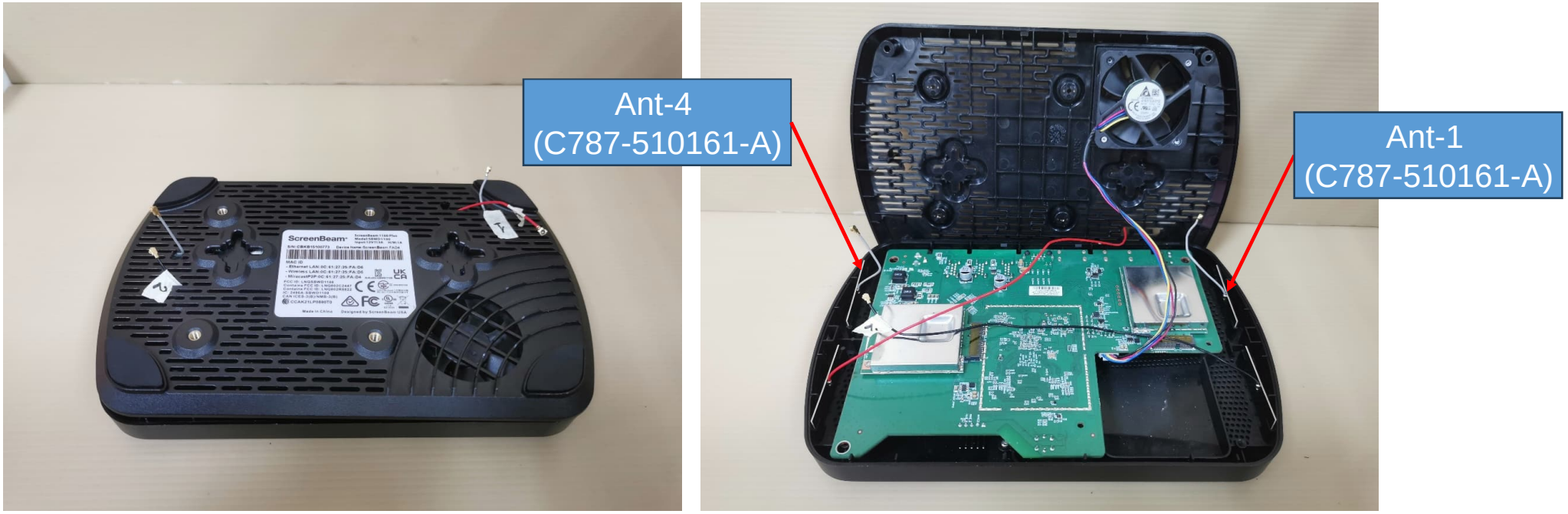
Antenna Dimension and Placement



Antenna	ANT Type	Size (L * W * H* T)	Cable Length (mm)	Cable Type
Ant.1	PCB PIFA	(L)42mm*(W)12.5mm*(T)0.6mm	54.5mm	IPEX (1.13 Gray)
Ant.4	PCB PIFA	(L)42mm*(W)12.5mm*(T)0.6mm	54.5mm	IPEX(1.13 Gray)

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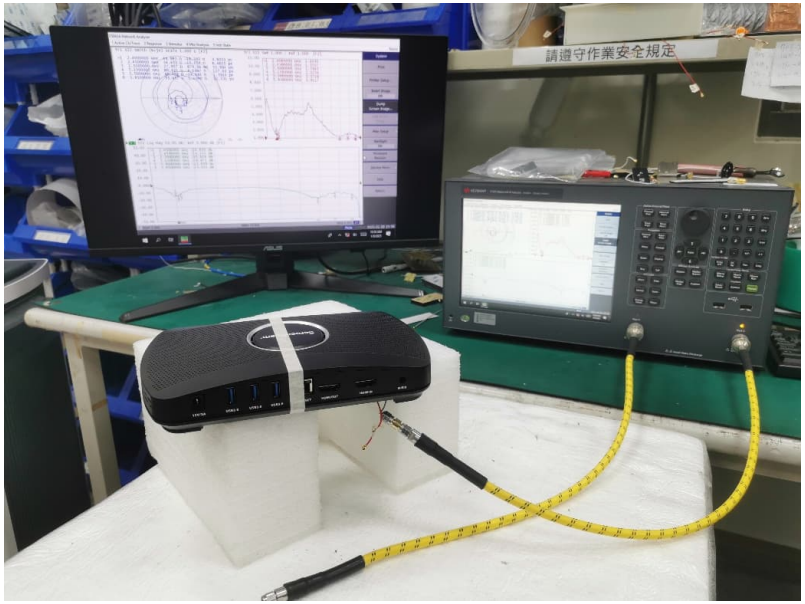
Test Setup for S-parameter Measurement

Equipment	Brand	Model	S/N
Network Analyzer	Keysight	E5063A	MY54706080



Antenna — RF Cable with I-PEX conn. — Network Analyzer

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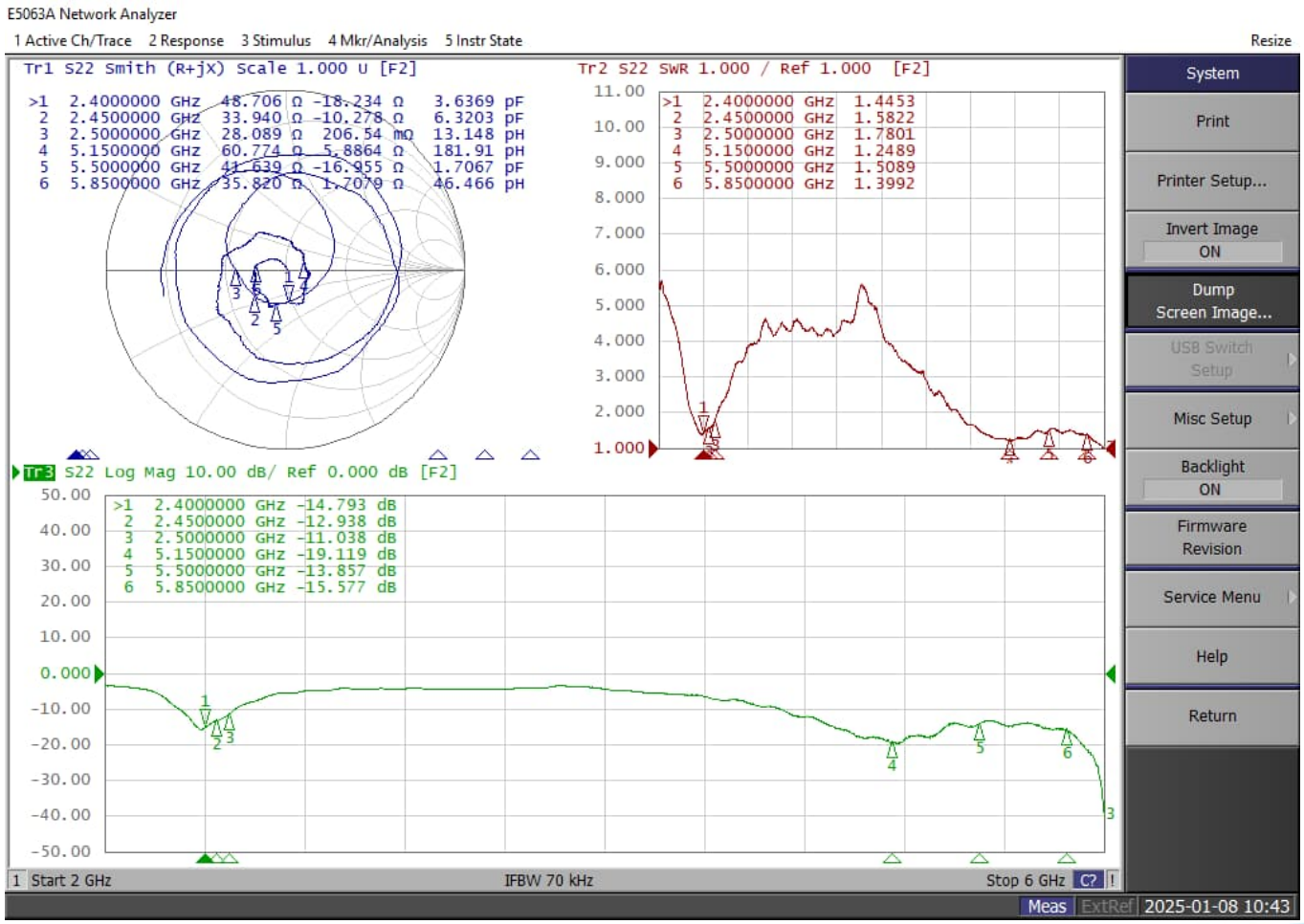
Return Loss

Ant-1



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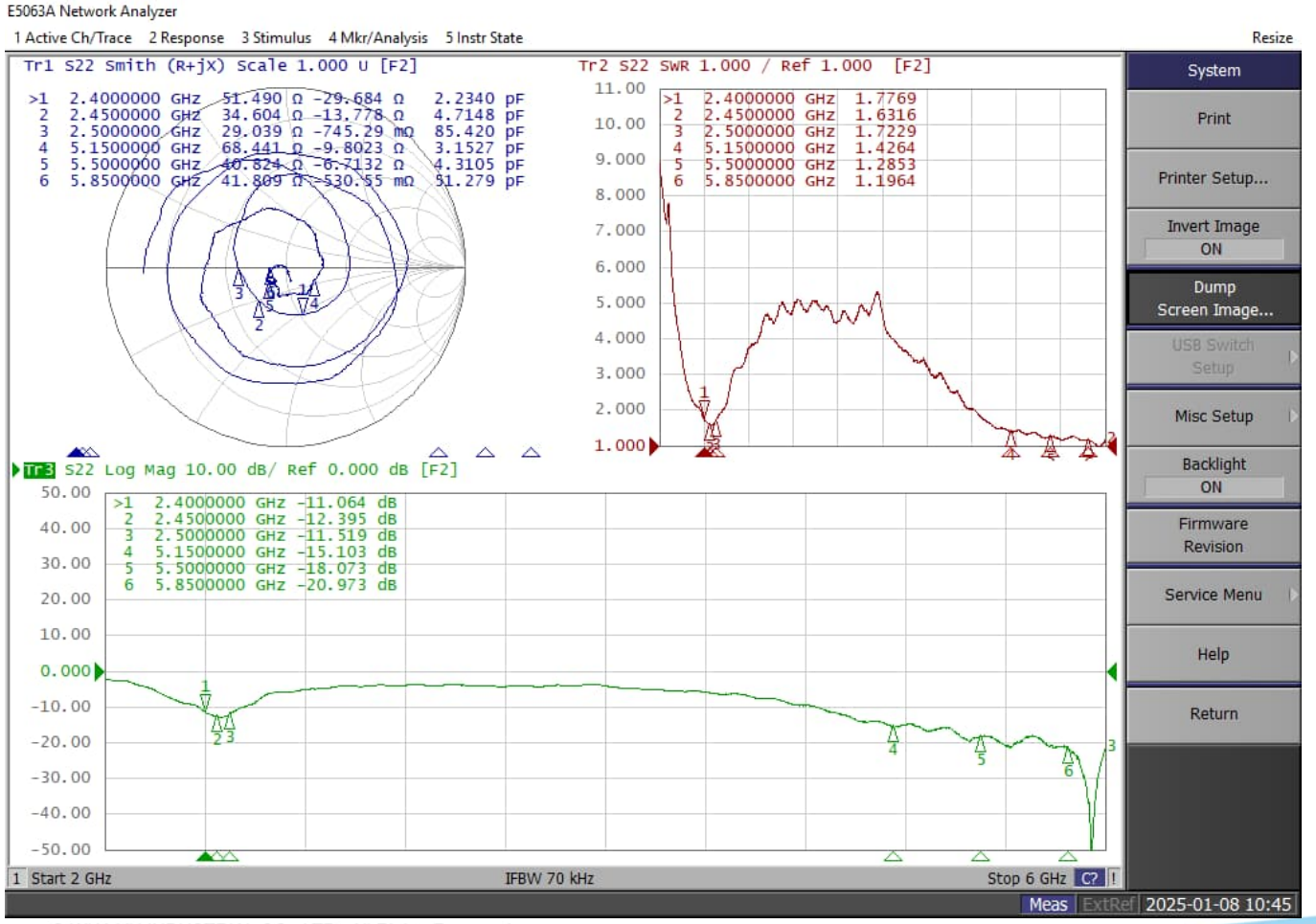
Return Loss

Ant-4



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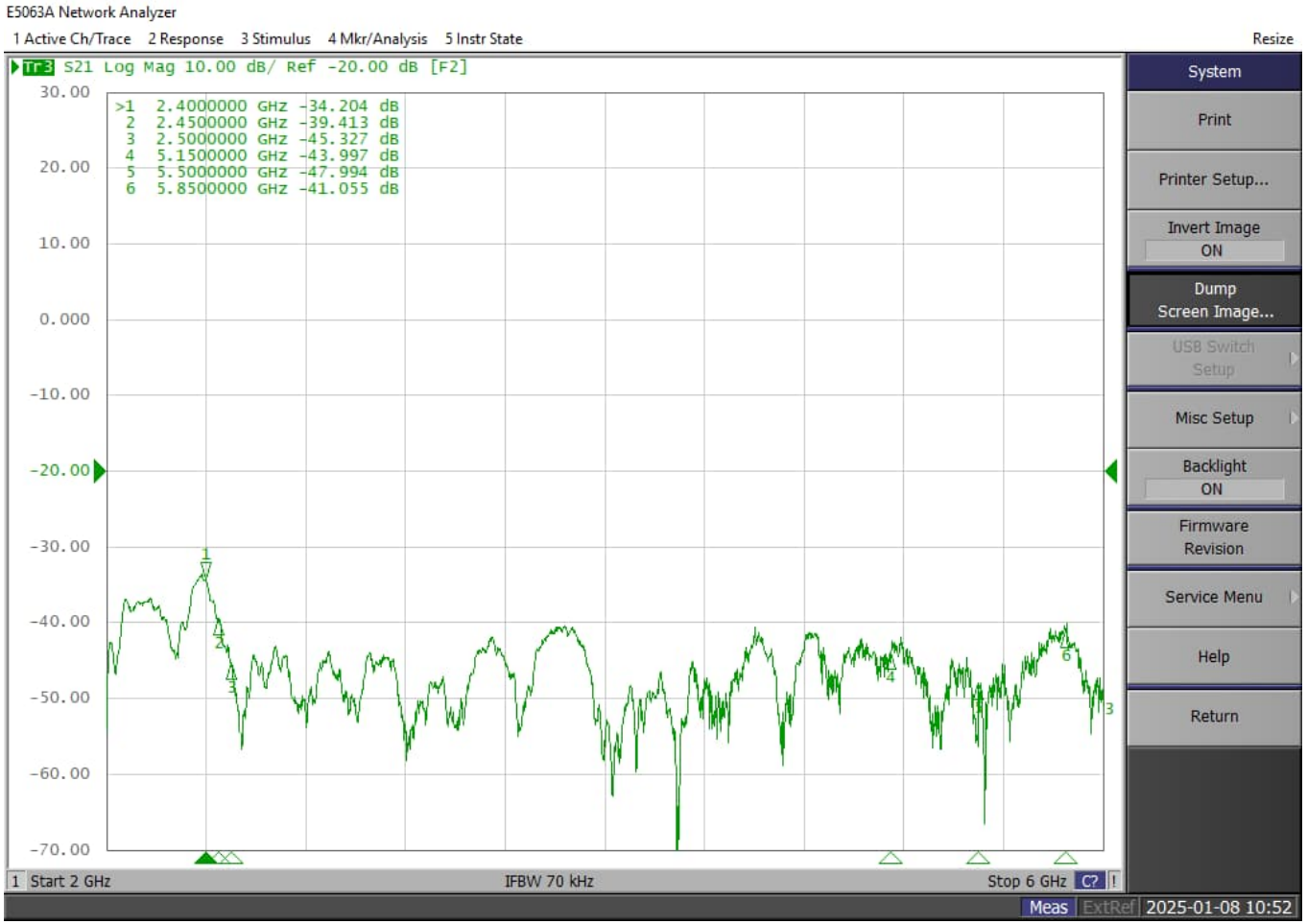
Isolation

Ant-1 to Ant-4



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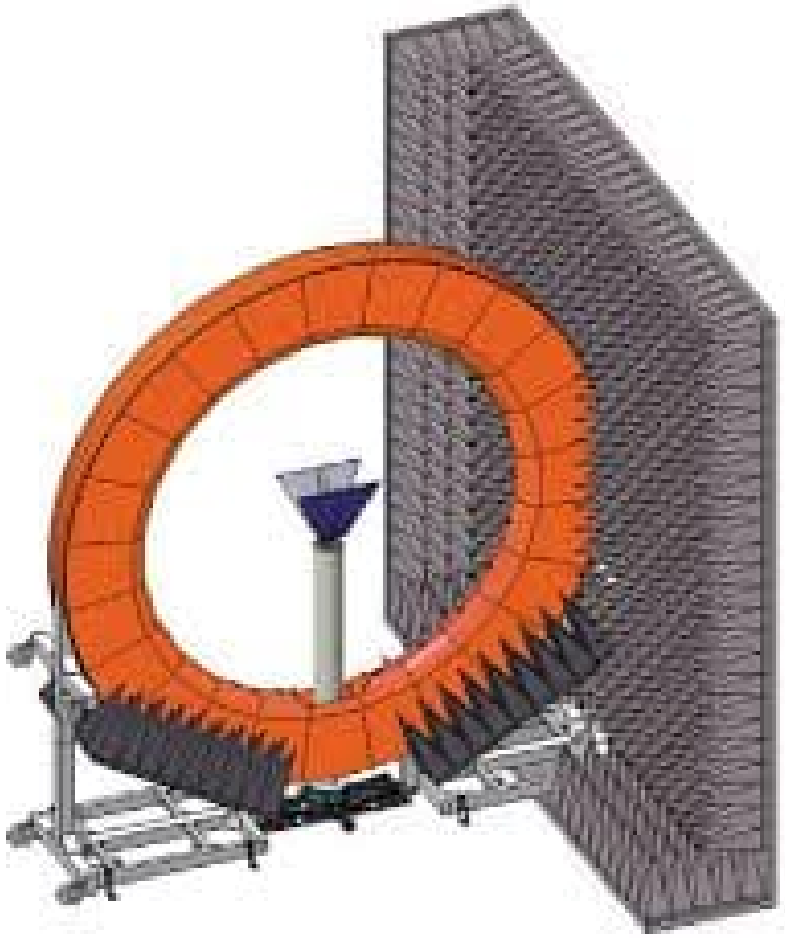
Test Setup for Radiation Pattern Measurement



- **SATIMO SG-24L Multi-Probe Antenna Measurement System**
  - **Angle between probes: 15˚**
  - **Frequency range: 400 MHz – 8.5 GHz**
  - **Chamber Room Size: 5m L x 5m W x 5m H**
  - **Software: Wave Studio**

Chamber	Brand	Model	Location
SATIMO	SATIMO	SG-24	Taiwan HsinChu

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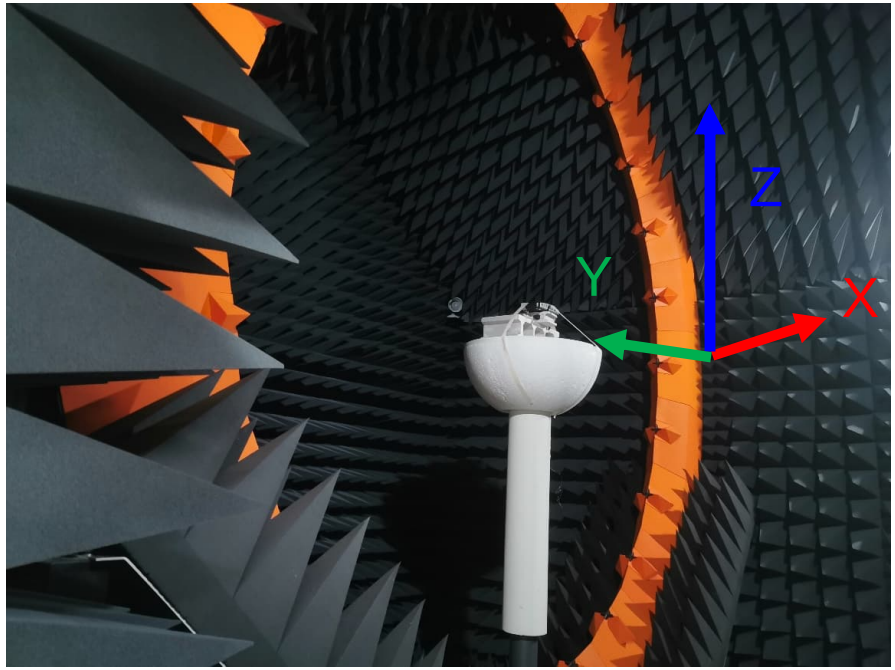
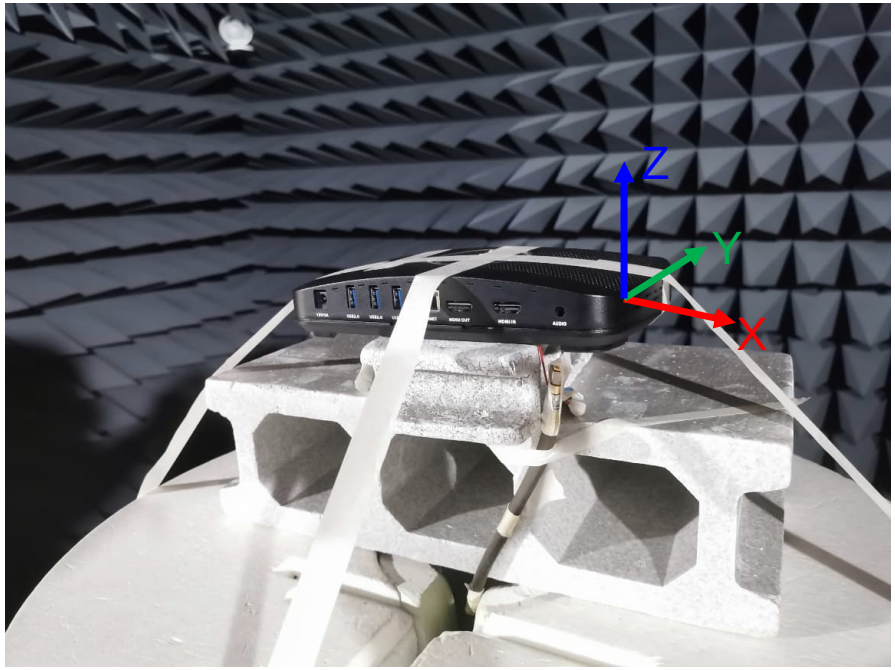
Test Setup for Radiation Pattern Measurement

Device orientation & measurement setup in the chamber





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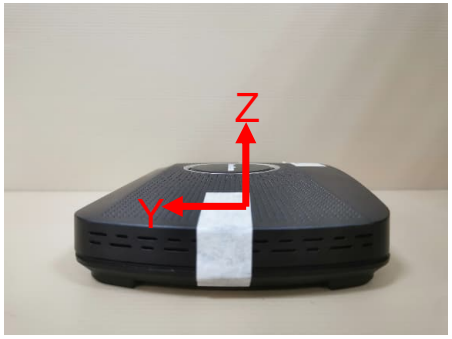
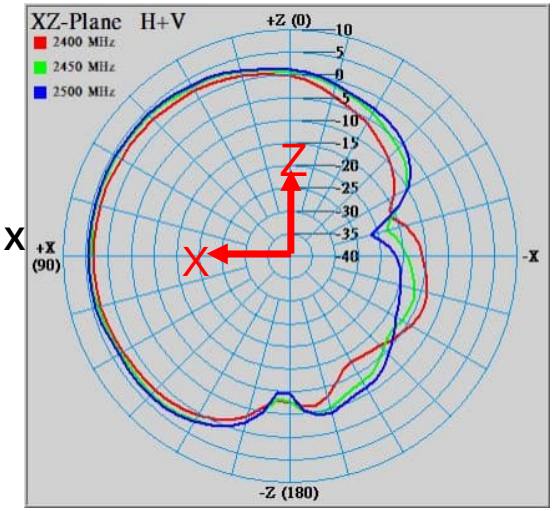
2D Radiation Pattern Results

Ant-1 (2G)



Z

X



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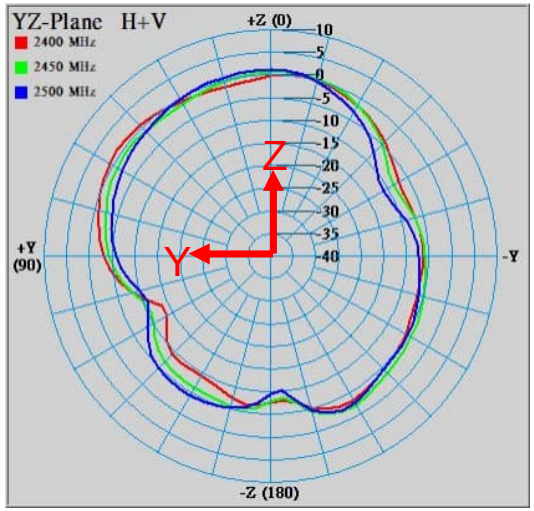
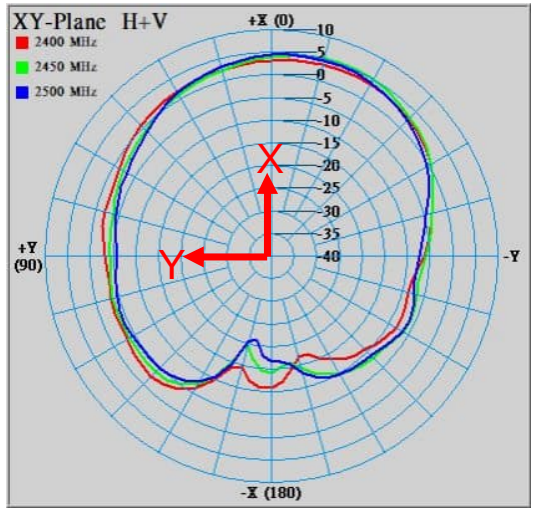


X

Y



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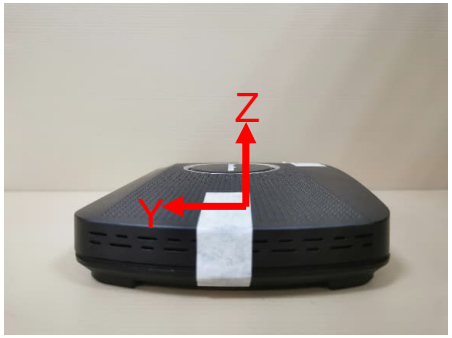
2D Radiation Pattern Results

Ant-1 (5G)



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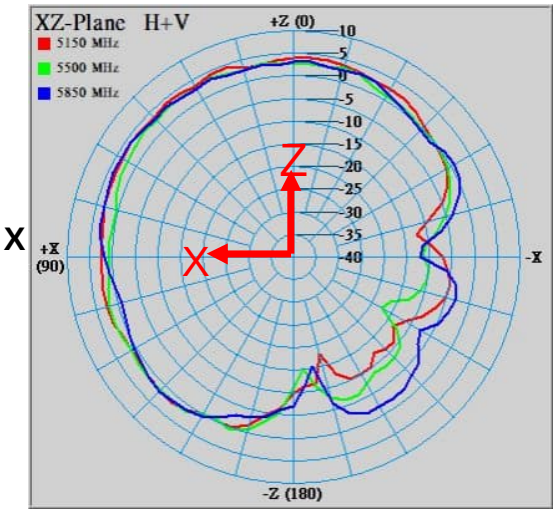
X



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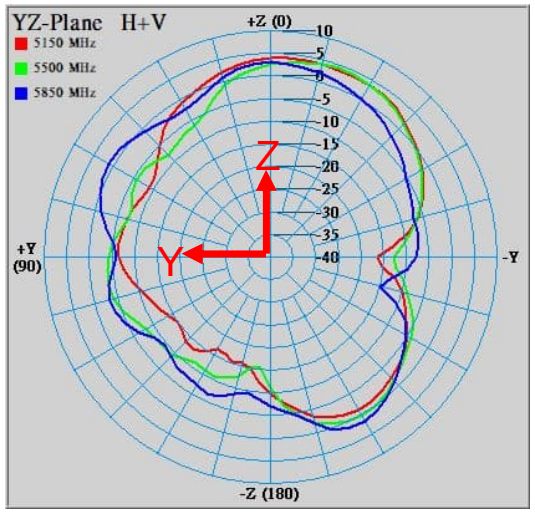
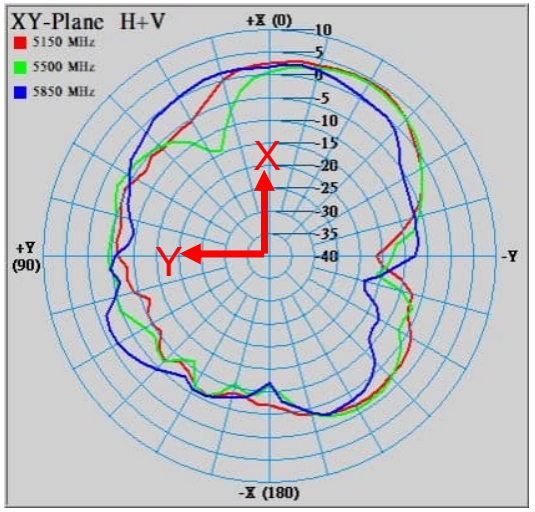
Y



X

Y



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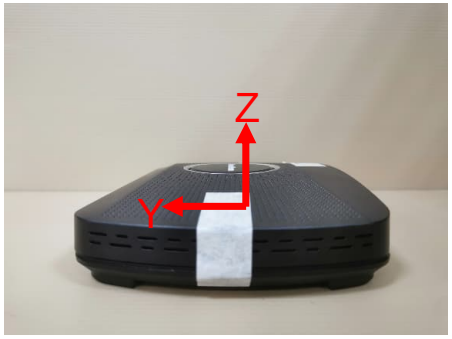
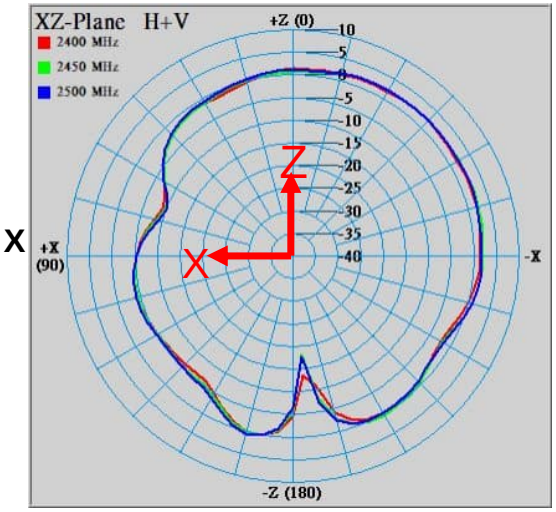
2D Radiation Pattern Results

Ant-4 (2G)



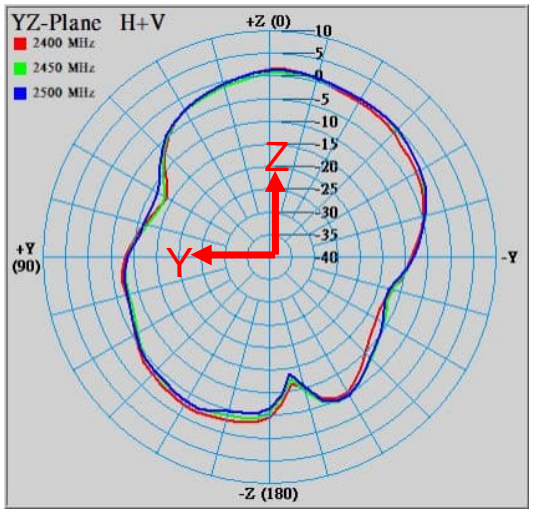
Z

X



Z

Y



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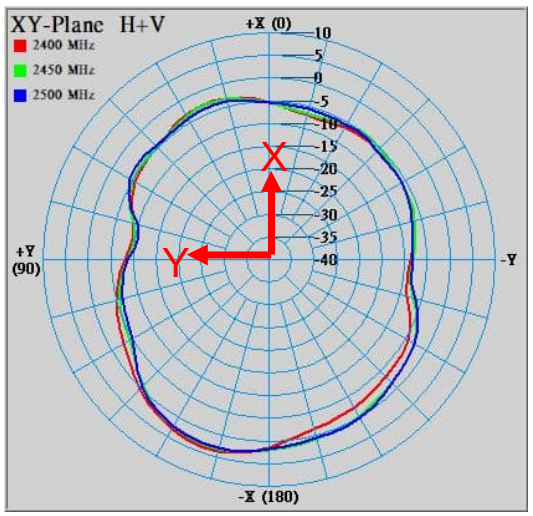

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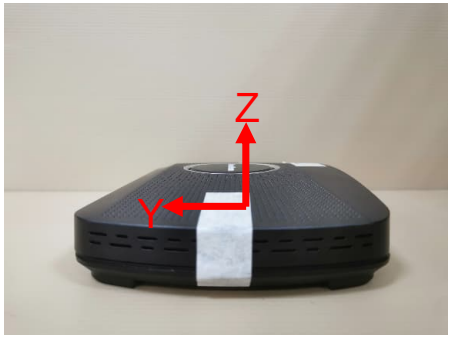
2D Radiation Pattern Results

Ant-4 (5G)



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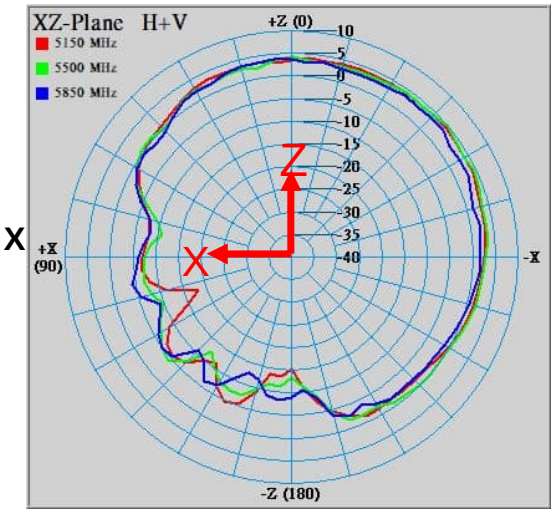

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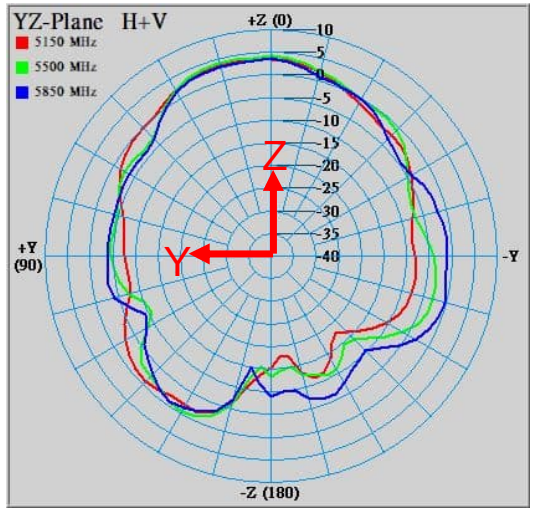

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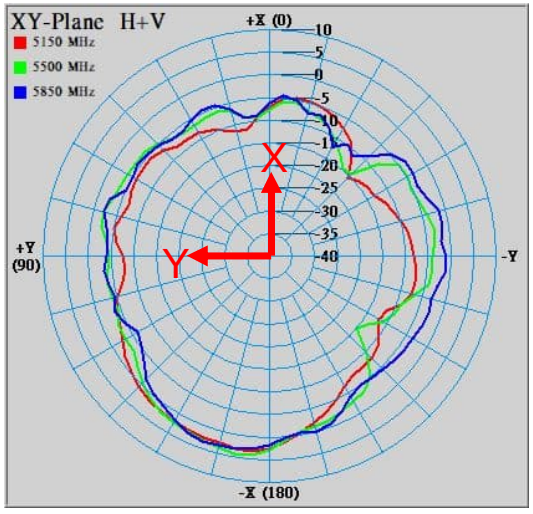

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Results Summary

Return Loss

Frequency(MHz)	Ant.1 (dB)	Ant.4 (dB)
2400	14	11
2450	12	12
2500	11	11
5150	19	15
5500	13	18
5850	15	20

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Results Summary

Isolation

Frequency(MHz)	Ant.1 To Ant.4
2400	34
2450	39
2500	45
5150	44
5500	48
5850	41

Unit: dB

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Results Summary

3D Peak gain & Efficiency

Frequency (MHz)	Ant. 1		Ant. 4	
	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)
2400	**4.14**	**74**	**4.03**	**62**
2450	**5.65**	**82**	**3.59**	**65**
2500	**5.13**	**79**	**3.18**	**65**
5150	**5.60**	**82**	**4.68**	**76**
5500	**5.36**	**74**	**5.44**	**80**
5850	**4.97**	**73**	**4.20**	**74**

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Thank You

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