



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

DONGGUAN AEON TECH CO.,LTD.(CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER: ASUS

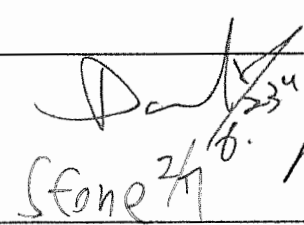
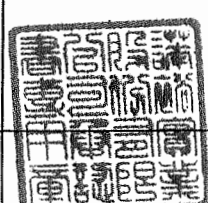
PART NAME: RF Antenna Assembly

PART NO.:

REVISION:

W. Y. P/NO.: C660-510603-A(SRF2023134)

REV.: X2

	MANUFACTURER	CUSTOMER
		SIGNATURE
APPROVED BY :	 Stone 2/11	
DATE :	 2/6	

WHA YU GROUP

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

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RF Antenna Assembly

Specification

1. Electrical Properties With housing/With Cable loss(ANT1)

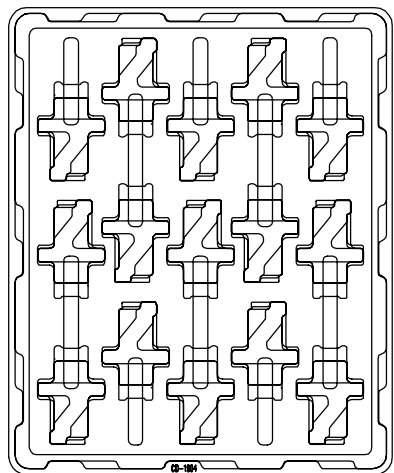
- 1.1 Frequency Range.....2.412 ~ 2.472 , 5.15~5.85 GHz
- 1.2 Impedance50Ω Nominal
- 1.3 VSWR 1.92 : 1 Max.
- 1.4 Return Loss..... 10 dB Min.
- 1.5 Radiation Omni-directional
- 1.6 2D Peak Gain.....
 - 2.45GHz 2.01dBi
 - 5.2GHz 2.51dBi
 - 5.3GHz 2.39dBi
 - 5.6GHz 2.78dBi
 - 5.785GHz 3.09dBi
- 1.7 Cable Loss..... 0.3 dB Max.
- 1.8 Polarization..... Linear
- 1.9 Cable..... 1.37 low loss Coaxial Cable
- 1.10 Connector..... I-PEX MHF Connector
- 1.11 Core.....NA

2. Physical Properties :

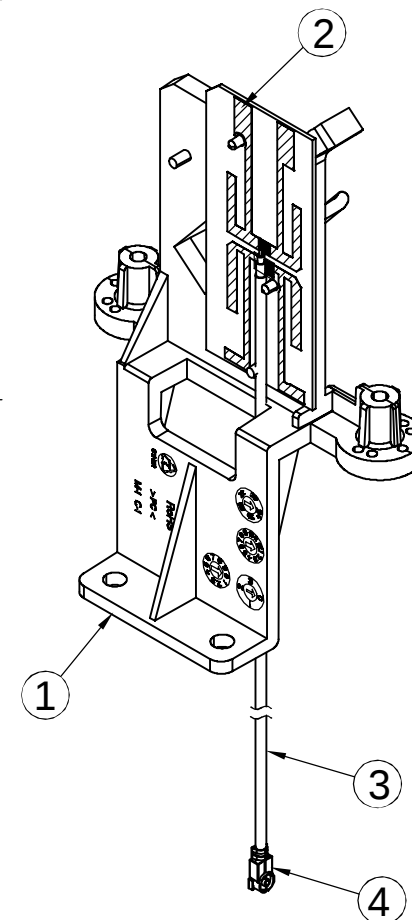
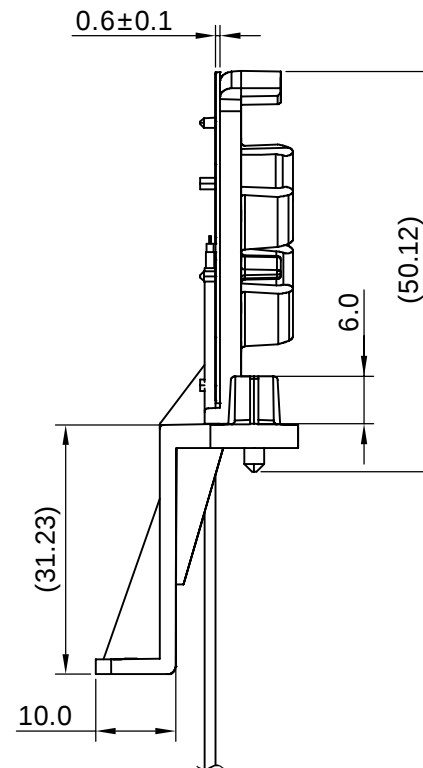
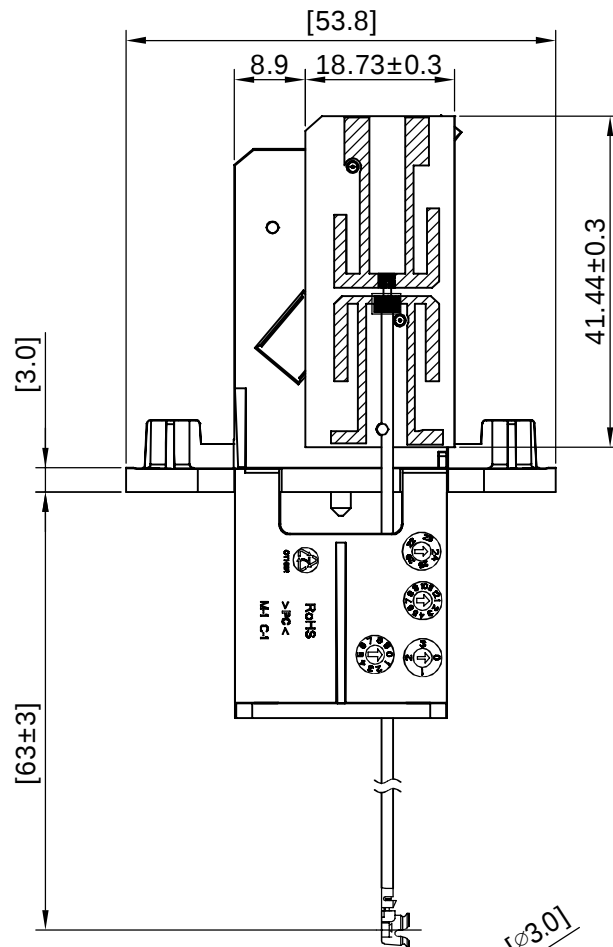
- 2.1 Operating Temp. -10°C ~ +60°C
- 2.2 Storage Temp. -10°C ~ +70°C

CG-

REV	DATE	DESCRIPTION
X1	01/10-2023	New Issue



Packing : 15pcs/Tray



※ ASUS與正文對應料號如下

ASUS料號	正文料號
C660-510603-A	C210-510593-A

NO	DESCRIPTION	Q'TY	REMARK
4	Connector I-PEX MHF Connector	1	
3	Cable Φ1.37mm Low loss Cable;L=90±3mm;Black[黑色]	1	
2	PCB FR4;24mil;1/2 Oz	1	
1	Holder PCR-PC6600 ; 白色	1	

		180~315	±0.20	APPROVED	CUSTOMER: ASUS		
		80~180	±0.15		PART NO :		
		30~80	±0.15	CHECKED	PART NAME: RF Antenna Assembly		
		6~30	±0.10		W.Y P/NO : C660-510603-A		
CUSTOMER'S SINGATURE		0~6	±0.05	DRAWING	REV	UNIT	FILE : SRF2023046
					X1	mm	SHEET : 1/1

XC5 C660-510603-A (PCB)Antenna Report

Version: V 1.00

Released Date: 2023/05/26

Prepared By: Cathy

Reviewed By: Stone



WHA YU INDUSTRIAL CO., LTD.
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Contents

- Revised History
- Conclusion & Comments
- Specification
- Antenna Placement & Solution
- Test Setup for S-parameter Measurement
- Return Loss Results
- Isolation Results
- Test Setup for Radiation Pattern Measurement
- 2D Radiation Pattern Results
- Results Summary (return loss, isolation, peak gain, efficiency)

Revision History

Released Date	Version	Record
2023/02/03	1.00	Antenna Testing Report NEW Design
2023/05/26	1.01	客戶重新測試XC5的antenna composite gain

Specification

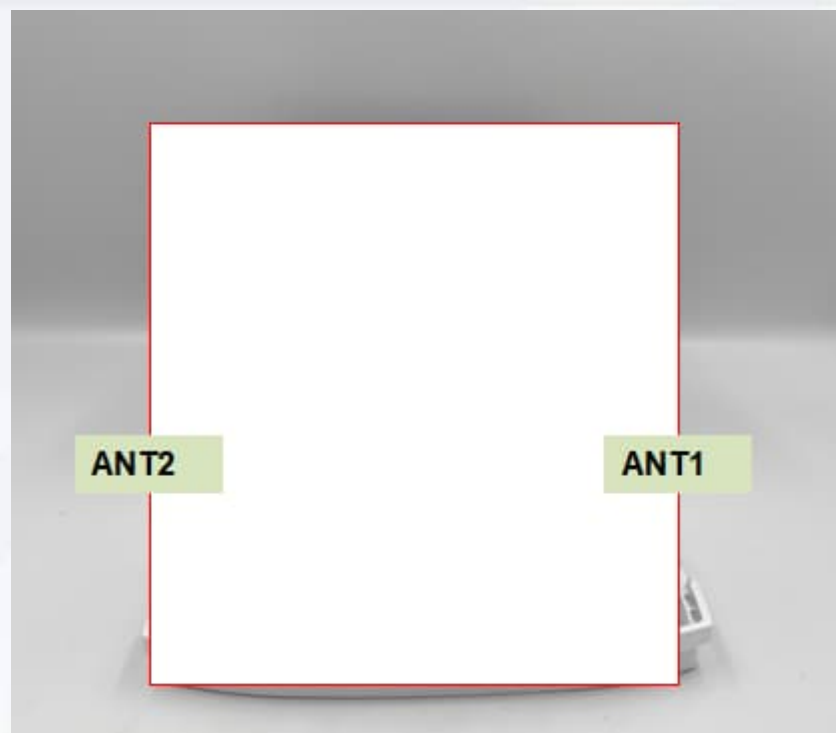
Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
WiFi	2	2.412G Hz~2.472GHz/5.15GHz~5.850GHz	

Requirements of Measurement

Test Item	Specification	Remark
Return Loss	> 10dB	
Isolation	NA	
Efficiency	2.4G> 80% / 5G>70%	
Radiation pattern	Scale: +10 ~ -40dBi, Angle step size: 5 degree	

Antenna Placement & Solution



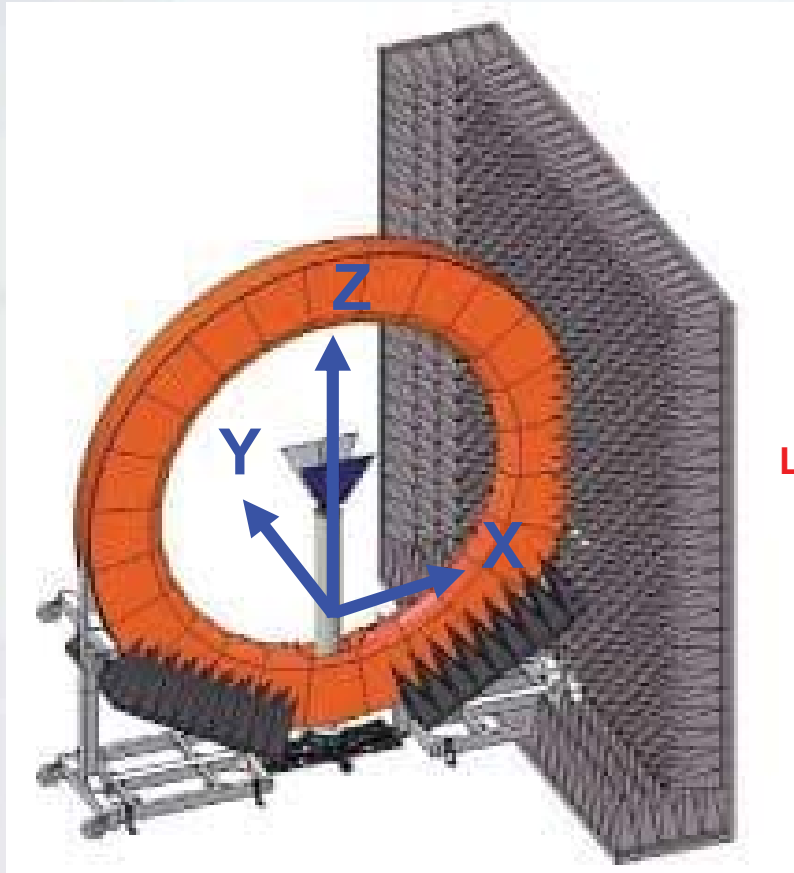
Antenna	ANT Type	Size (L * W * T)	Cable Length (mm)	Cable Type
ANT1	PCB Dipole	41*18.73*0.6	Exp 63mm	Ø1.37Black
ANT2	PCB Dipole	41*18.73*0.6	Exp 63mm	Ø1.37Black

Antenna Placement & Solution

Antenna	Previous Version	Current Version
ANT	ANT_v1.00 	

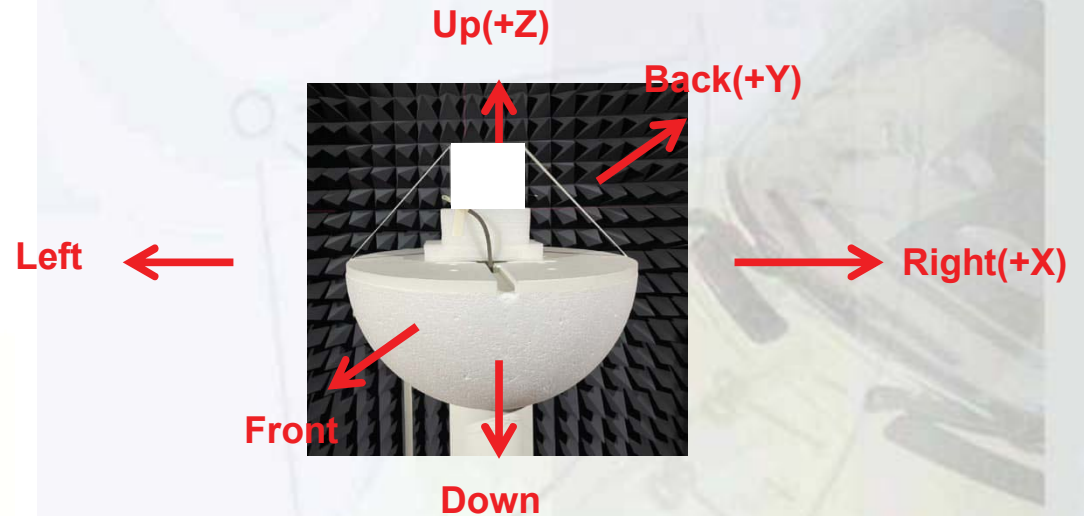
Test Setup for Radiation Pattern Measurement

Chamber Information



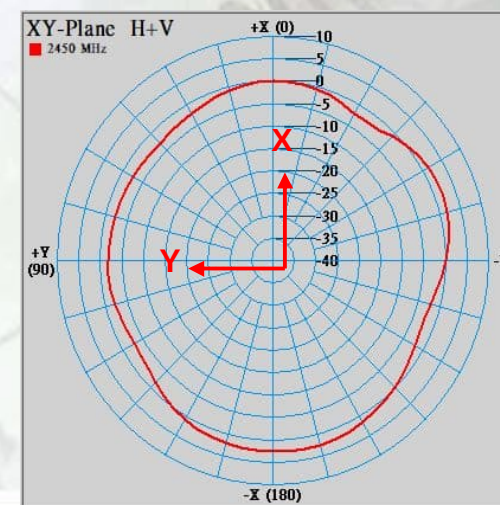
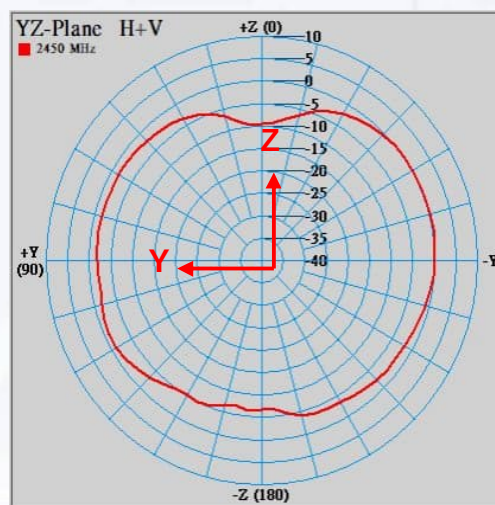
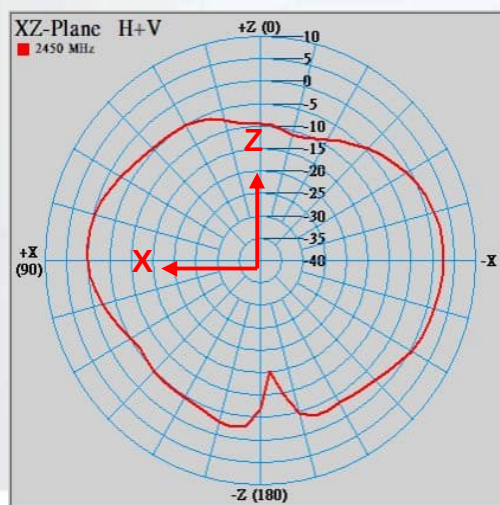
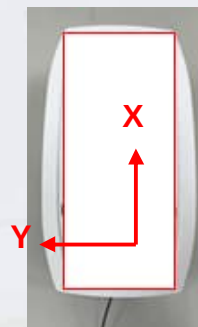
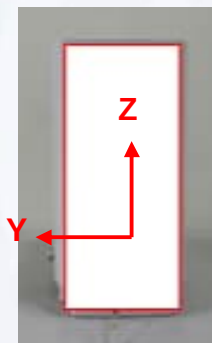
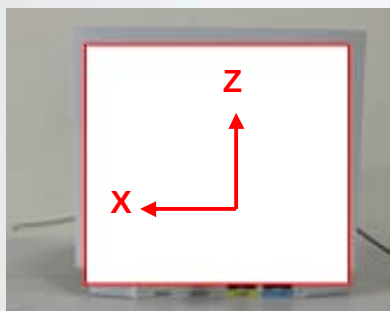
- **SATIMO SG-24L Multi-Probe Antenna Measurement System**

- Angle between probes: 15°
- Frequency range: 400 MHz – 9 GHz
- Chamber Room Size: 5m L x 5m W x 5m H



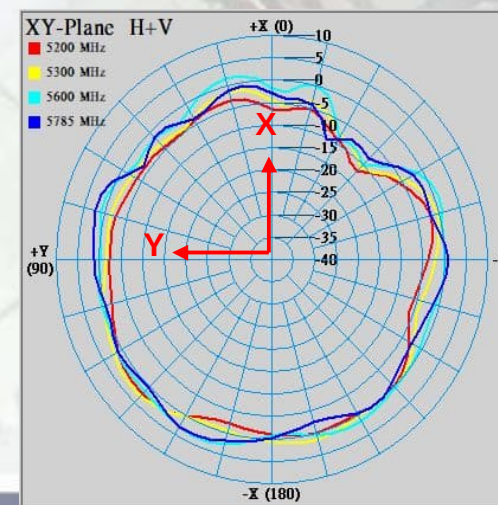
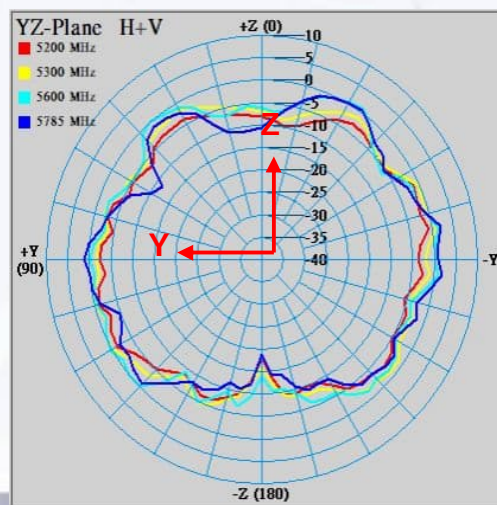
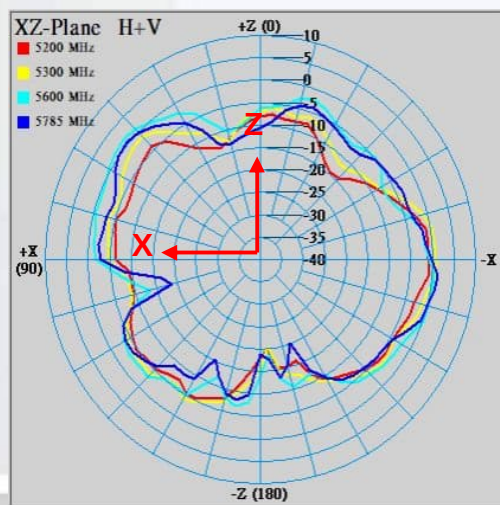
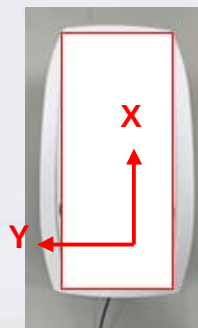
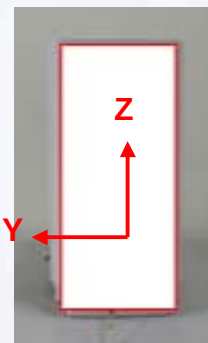
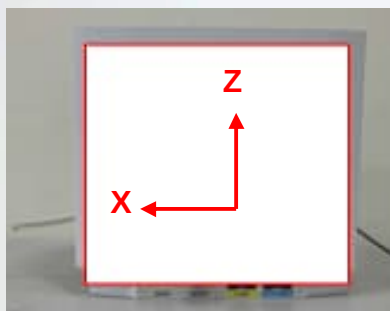
2D Radiation Pattern Results

(Dual Band)_ANT1 (2.4G)



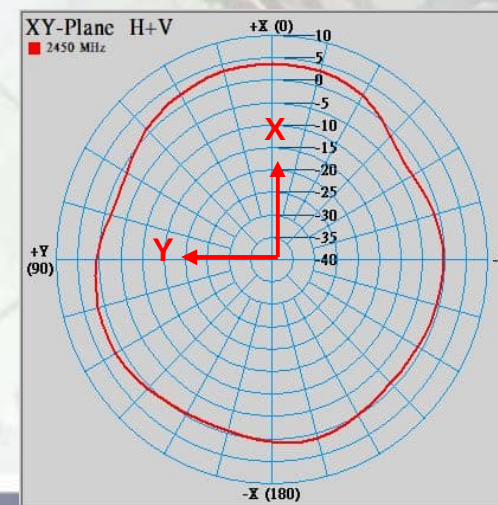
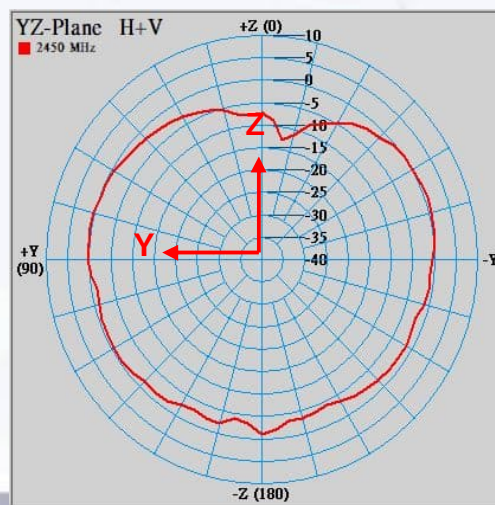
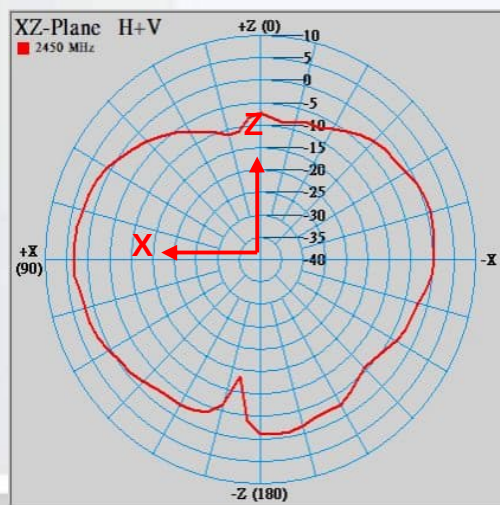
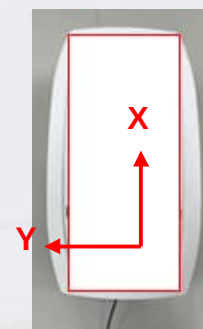
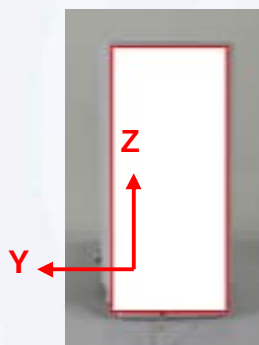
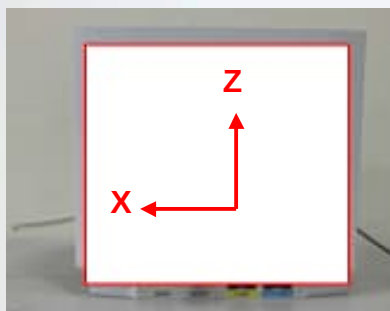
2D Radiation Pattern Results

(Dual Band)_ANT1 (5G)



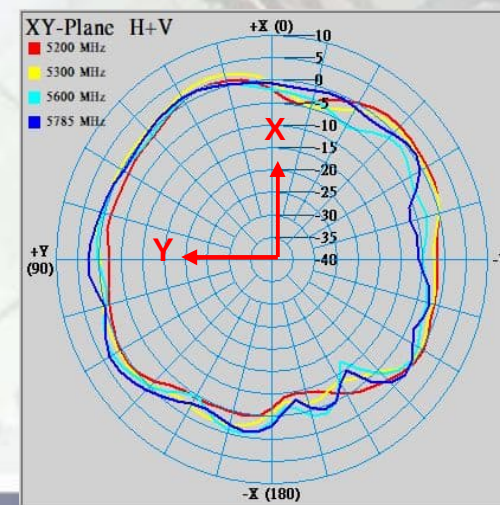
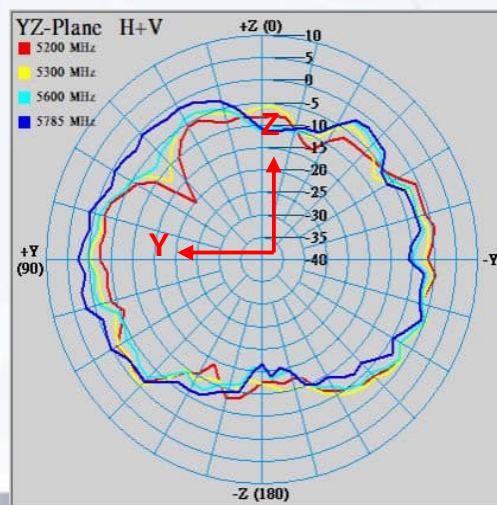
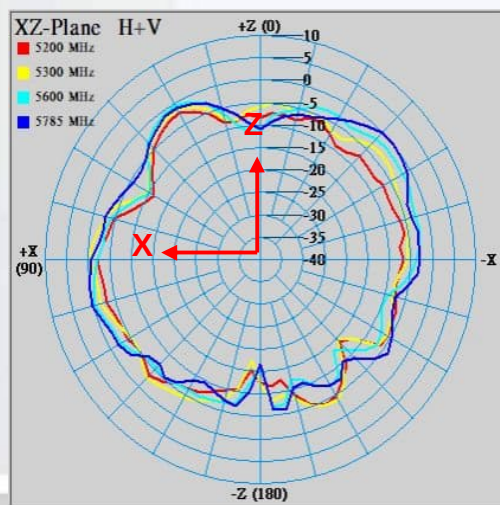
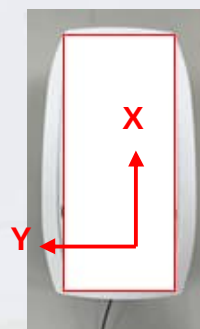
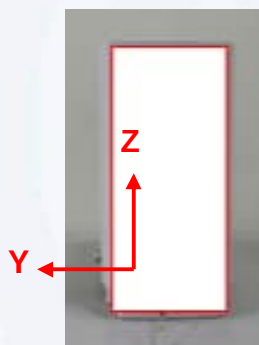
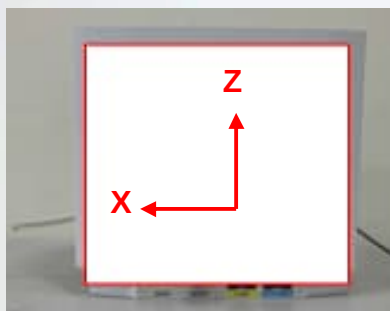
2D Radiation Pattern Results

(Dual Band)_ANT2 (2.4G)



2D Radiation Pattern Results

(Dual Band)_ANT2 (5G)



Results Summary

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant.1 Max Gain(dBi)	2.01	2.51	2.39	2.78	3.09
Ant.2 Max Gain(dBi)	3.33	2.12	2.96	2.58	3.35
Ant. 1 Polarization/ Θ (°) / Φ (°)	Theta/82.5/105	Theta/52.5/150	Theta/75/150	Theta/45/150	Theta/75/120
Ant. 2 Polarization/ Θ (°) / Φ (°)	Theta/97.5/172.5	Theta/45/315	Theta/45/315	Theta/45/307.5	Theta/45/315

peak gain = reading value + factor