



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 |
|---------------|--------------|-----------|
| APPROVED BY : | | SIGNATURE |
| DATE : | | |

WHA YU GROUP

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RF Antenna Assembly

Specification

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

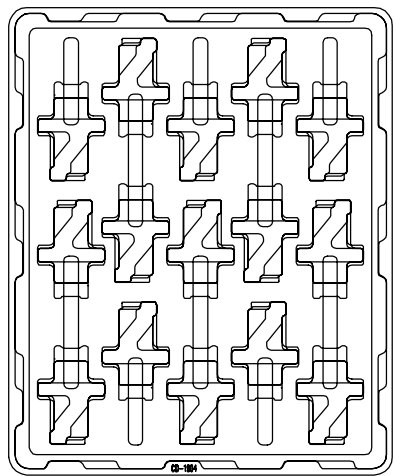
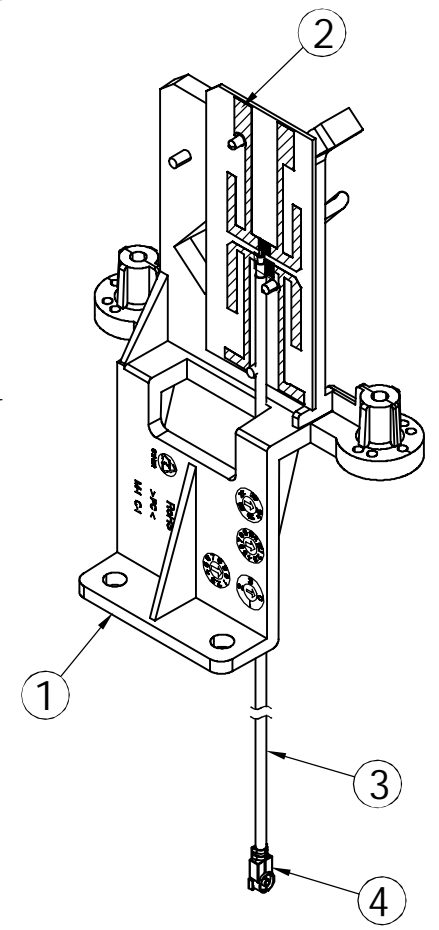
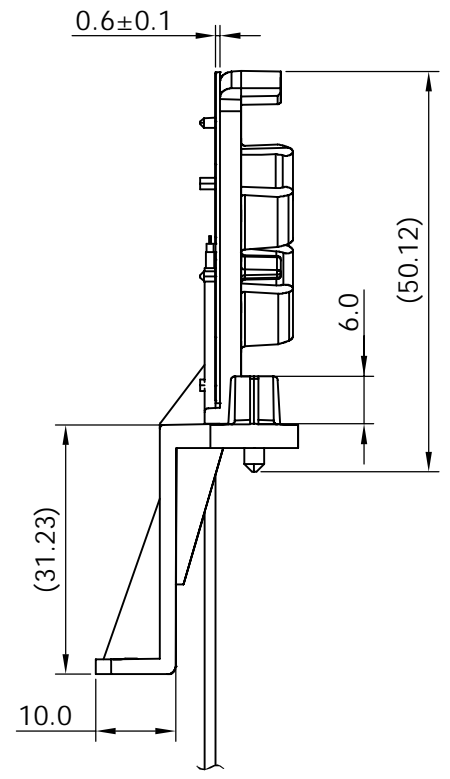
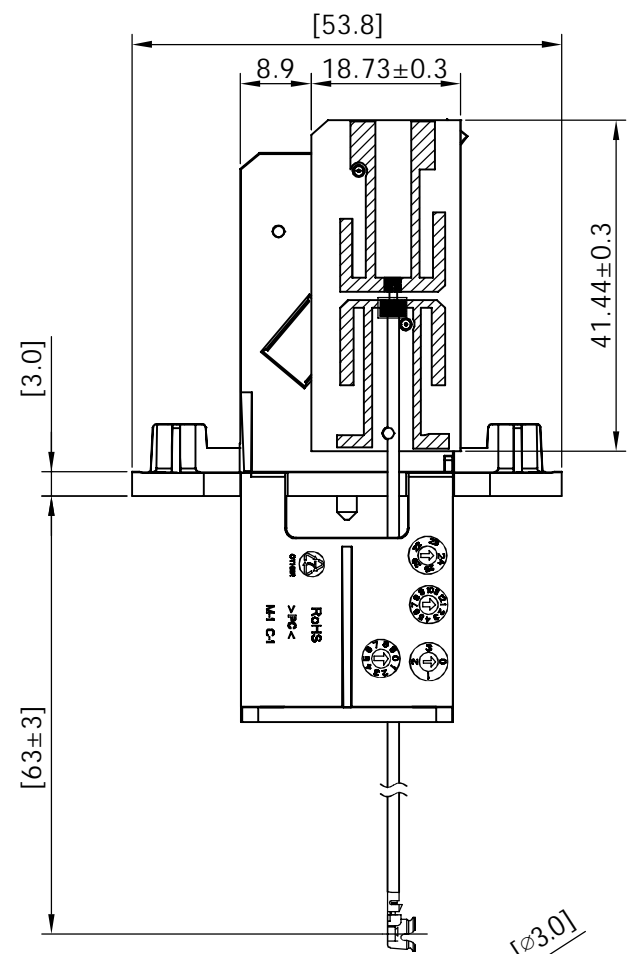
- 1.1 Frequency Range.....2.412 ~ 2.472 , 5.15~5.85 GHz
- 1.2 Impedance50Ω Nominal
- 1.3 VSWR 1.92 : 1 Max.
- 1.4 Return Loss..... 10 dB Min.
- 1.5 Radiation Omni-directional
- 1.6 2D Peak Gain.....
 - 2.45GHz 2.01dBi
 - 5.2GHz 2.51dBi
 - 5.3GHz 2.39dBi
 - 5.6GHz 2.78dBi
 - 5.785GHz 3.09dBi
- 1.7 Cable 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 :

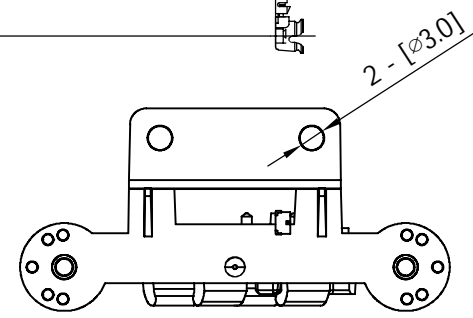
- 2.1 Operating Temp. -10°C ~ +60°C
- 2.2 Storage Temp. -10°C ~ +70°C

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 |
| 80-180 | ±0.15 | |
| 30-80 | ±0.15 | CHECKED |
| 6-30 | ±0.10 | |
| 0-6 | ±0.05 | DRAWING |
| ⊕ | | |
| ⚡ | | |

| | | |
|--------------------------------|------|-------------------|
| CUSTOMER: ASUS | | |
| PART NO : | | |
| PART NAME: RF Antenna Assembly | | |
| W.Y P/NO : C660-510603-A | | |
| REV | UNIT | FILE : SRF2023046 |
| X1 | mm | SHEET : 1/1 |

CUSTOMER'S SINGATURE

M.gear Wha Yu Group

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XC5
C660-510603-A
(PCB)Antenna
Report

Version: V 1.00

Released Date: 2023/05/26

Prepared By: Cathy

Reviewed By: Stone



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- Conclusion & Comments
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- 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

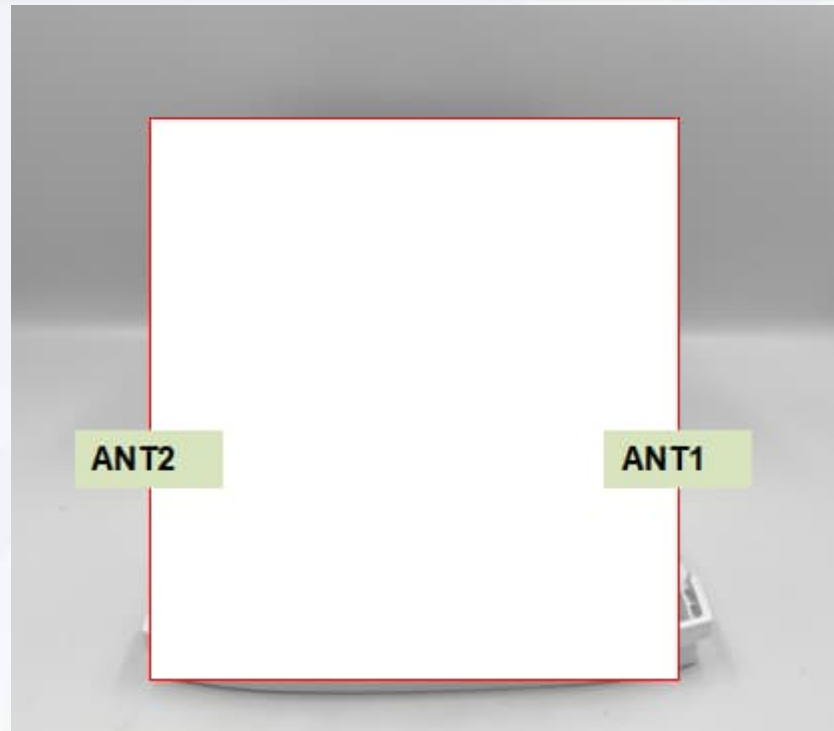
Requirements of Antenna Design

| 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



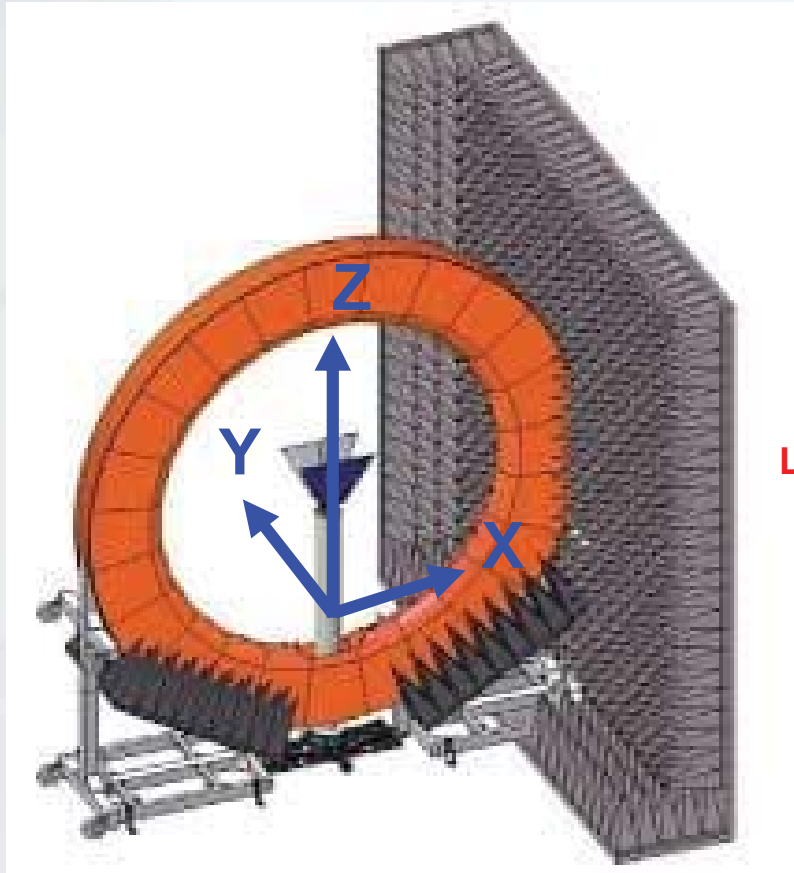
| Antenna | ANT Type | Size (L * W * T) | Cable Length (mm) | Cable Type |
|---------|------------|------------------|-------------------|------------|
| ANT1 | PCB Dipole | 41*18.73*0.6 | Exp 63mm | Ø1.37Black |
| ANT2 | PCB Dipole | 41*18.73*0.6 | Exp 63mm | Ø1.37Black |

Antenna Placement & Solution

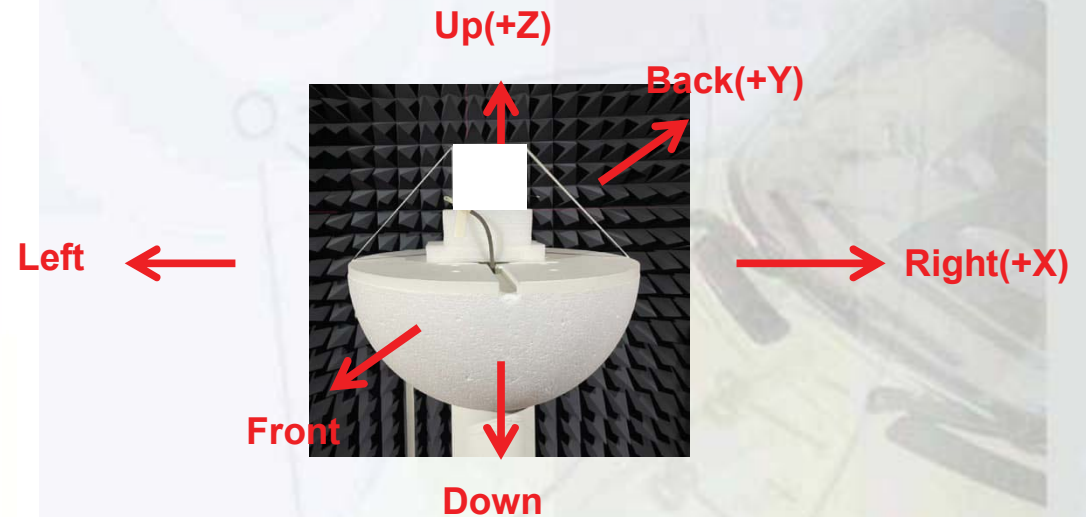
| Antenna | Previous Version | Current Version |
|---------|--|-----------------|
| ANT | ANT_v1.00  | |
| | | |
| | | |

Test Setup for Radiation Pattern Measurement

Chamber Information

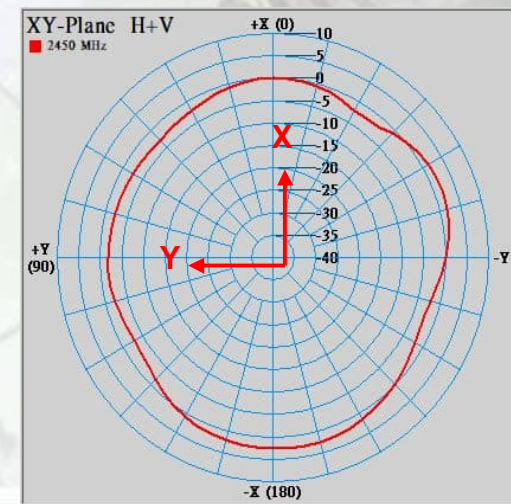
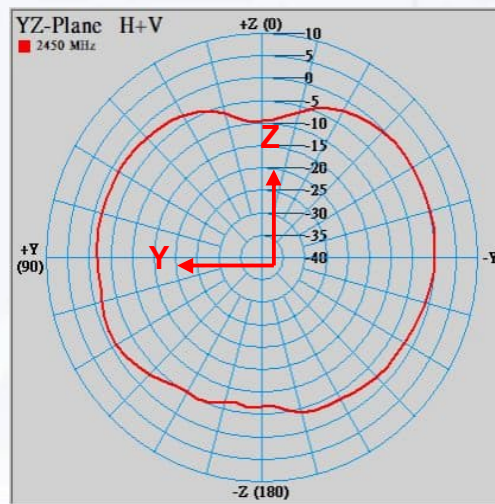
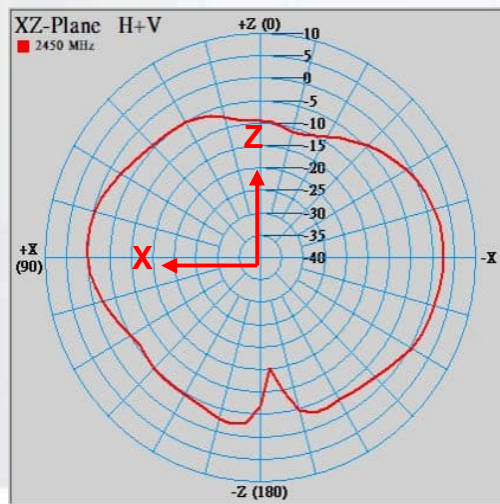
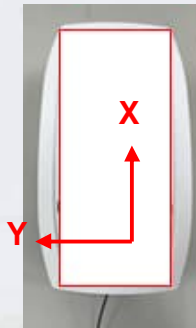
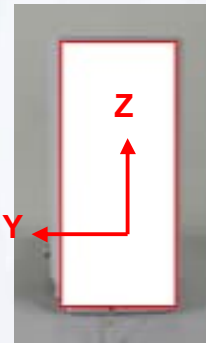
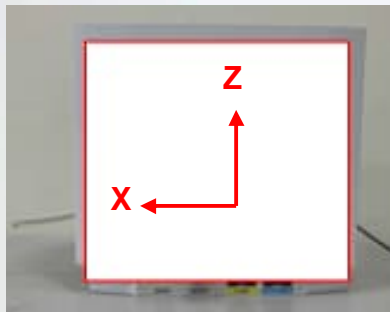


- SATIMO SG-24L Multi-Probe Antenna Measurement System
 - Angle between probes: 15°
 - Frequency range: 400 MHz – 9 GHz
 - Chamber Room Size: 5m L x 5m W x 5m H



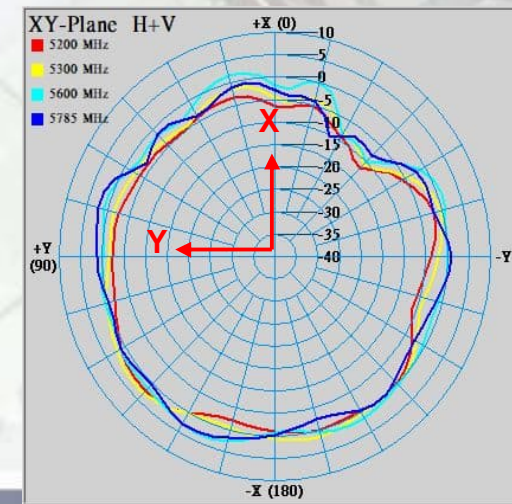
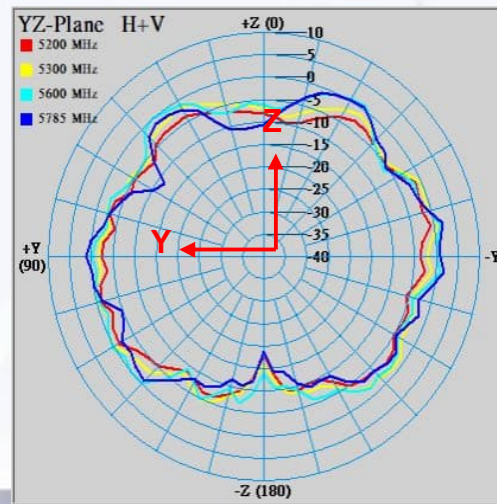
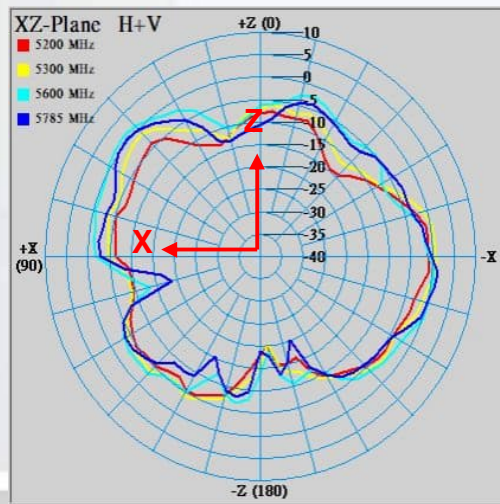
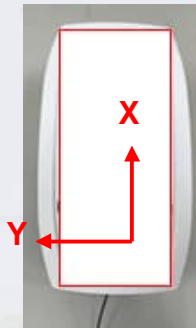
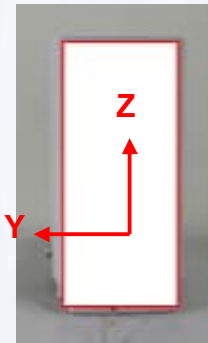
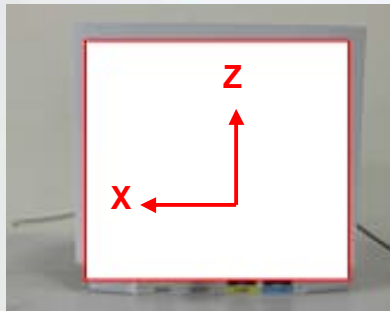
2D Radiation Pattern Results

(Dual Band)_ANT1 (2.4G)



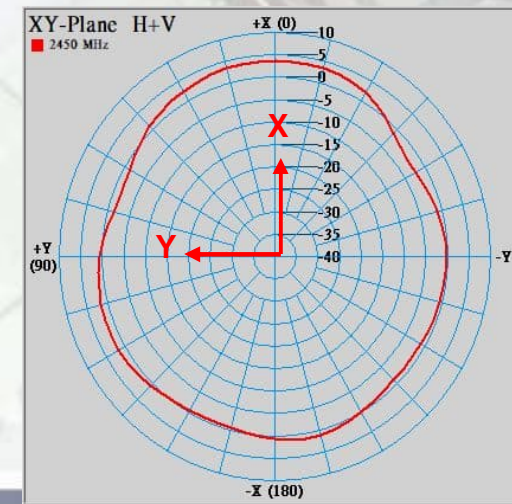
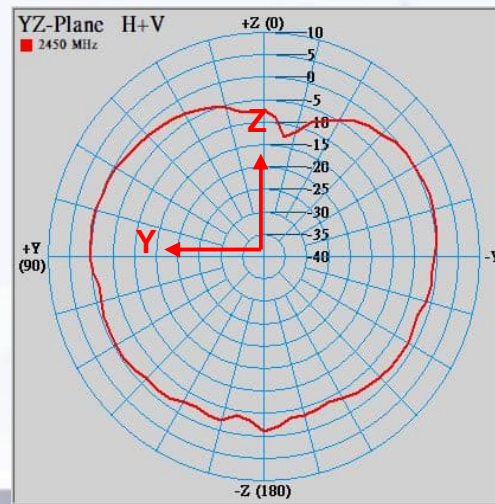
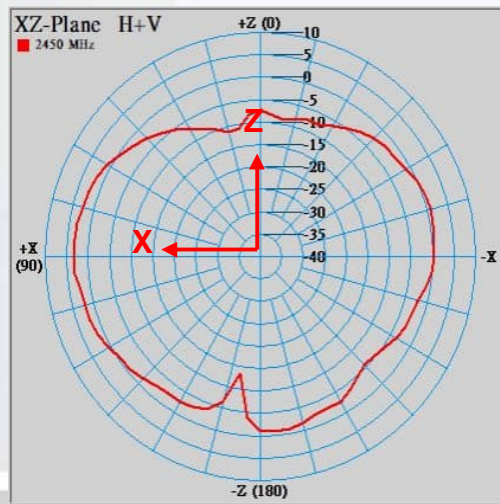
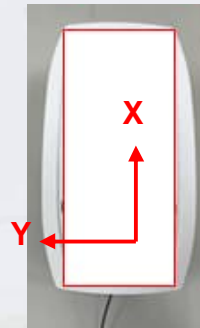
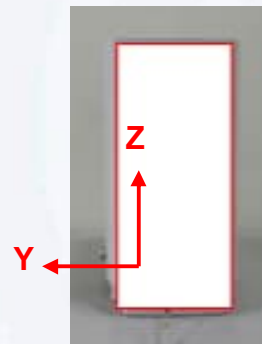
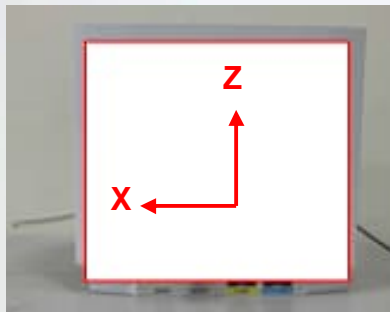
2D Radiation Pattern Results

(Dual Band)_ANT1 (5G)



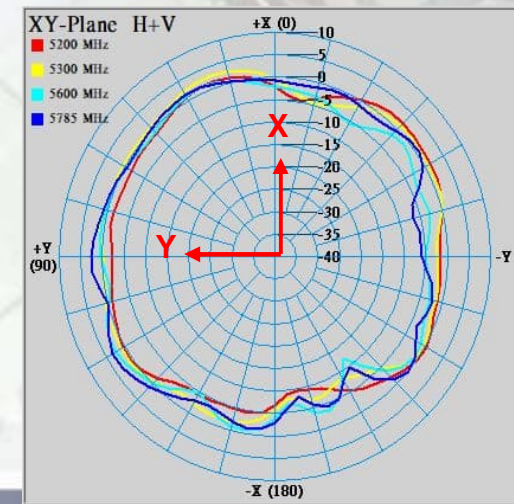
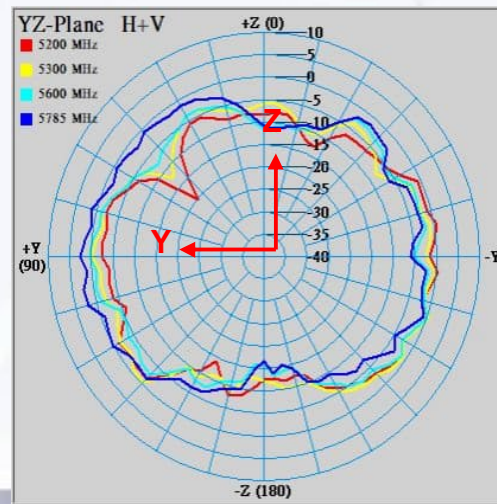
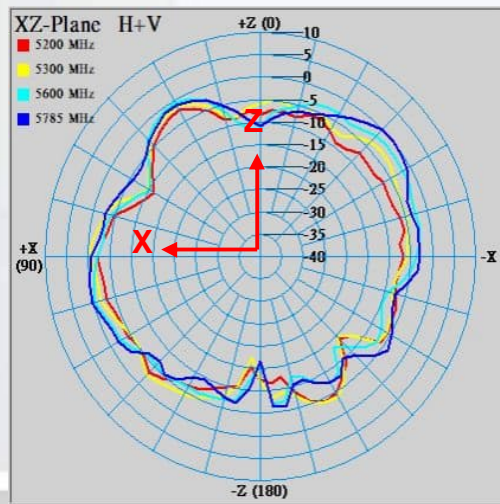
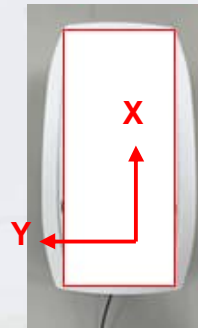
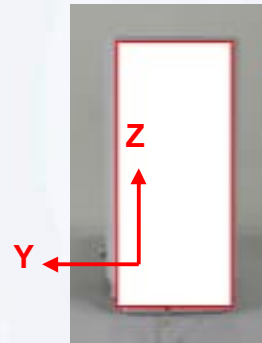
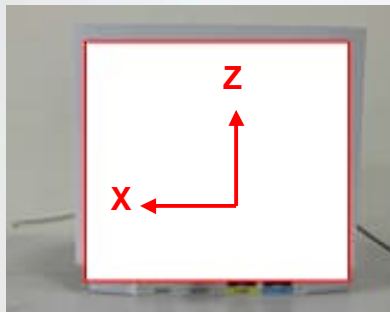
2D Radiation Pattern Results

(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