



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



DONGGUAN AEON TECH CO.,LTD.(CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER: NEXCOM

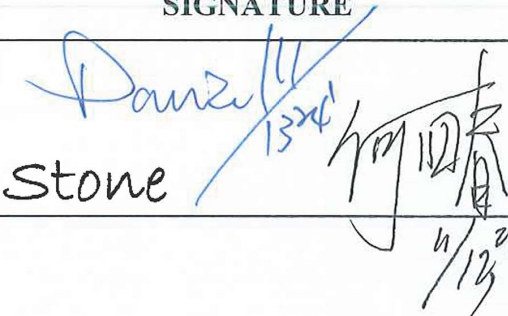
PART NAME: RF Antennna Assembly

PART NO.:

REVISION:

W. Y. P/NO.: C1779-510031-A(SRF20241980)

REV.: X1

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :	 Stone	
DATE :	11/13/20	

WHA YU GROUP

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RF Antenna Assembly

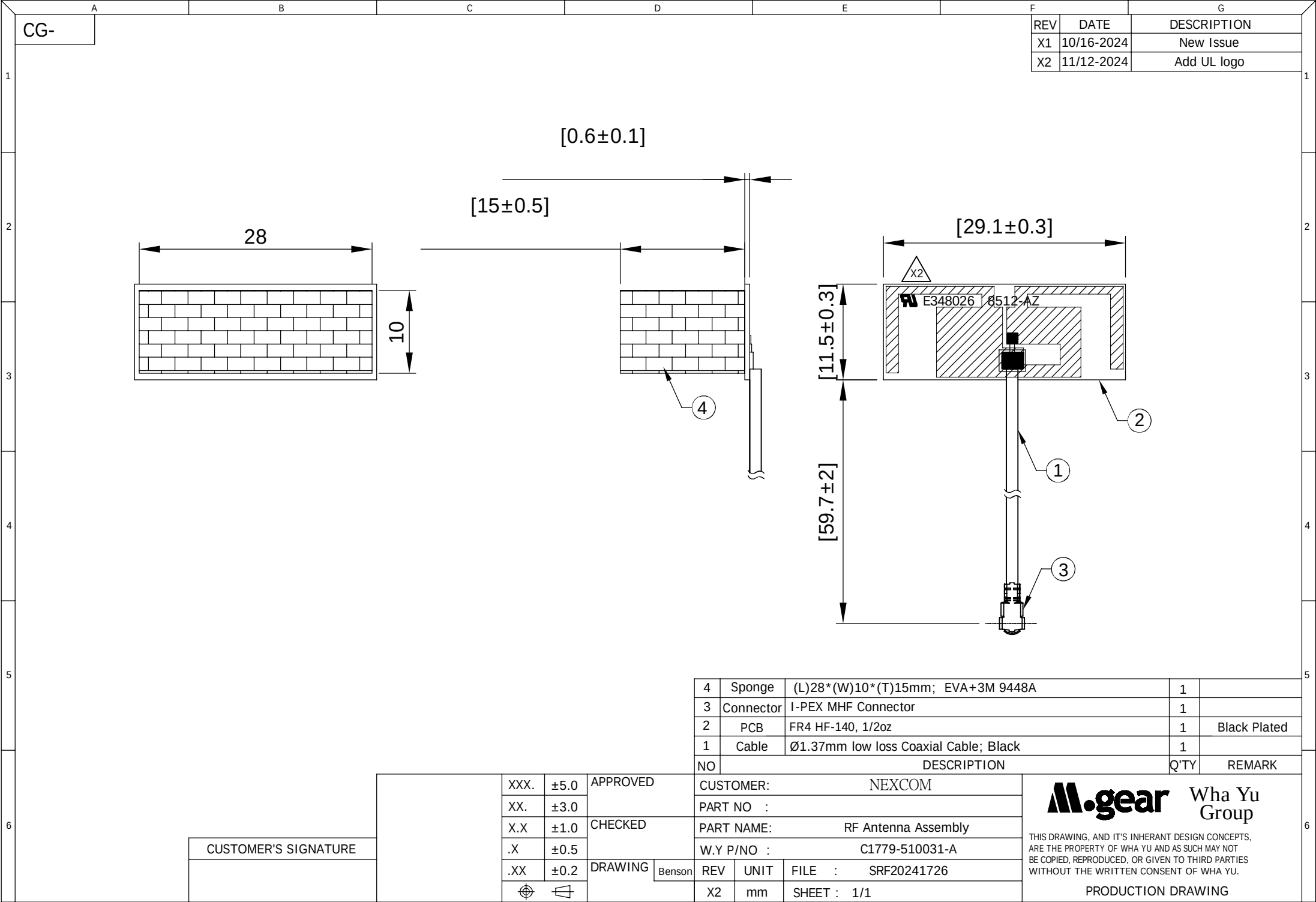
Specification Witht housing (with House With Cable Loss)

1. Electrical Properties :

- 1.1 Frequency Range.....2.4 ~ 2.5 , 5.15~5.85 GHz
- 1.2 Impedance50Ω Nominal
- 1.3 VSWR 1.92 :1Max.
- 1.4 Return Loss..... 10 dB Min.
- 1.5 Radiation Omni-directional
- 1.6 Peak Gain..... 2.4 ~ 2.5GHz < 5.7dBi
5.15 ~ 5.85 GHz < 6.8dBi
- 1.7 Cable Loss..... 0.22 dB Max
- 1.8 Polarization..... Linear
- 1.9 Cable.....1.37mm Low Loss Cable
- 1.10 Connector..... IPEX MHF Connector
- 1.11 Core.....N/A

2. Physical Properties :

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



NEXCOM

NE1-24124

KABE07

Version: v 1.00

Released Date: 2024/09/23

Prepared By: Leo

Reviewed By: Stone

Contents

- Revised History
- Specification
- Antenna Placement & Solution
- Test Setup for S-parameter Measurement
- Return Loss Results
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- Results Summary (return loss, isolation, peak gain, efficiency)

Revision History

Released Date	Version	Record
2024/09/20	V1.00	Antenna Testing Report

Specification

Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
Wi-Fi DB	1	2400 – 2500 & 5150– 5850 MHz	

Requirements of Measurement

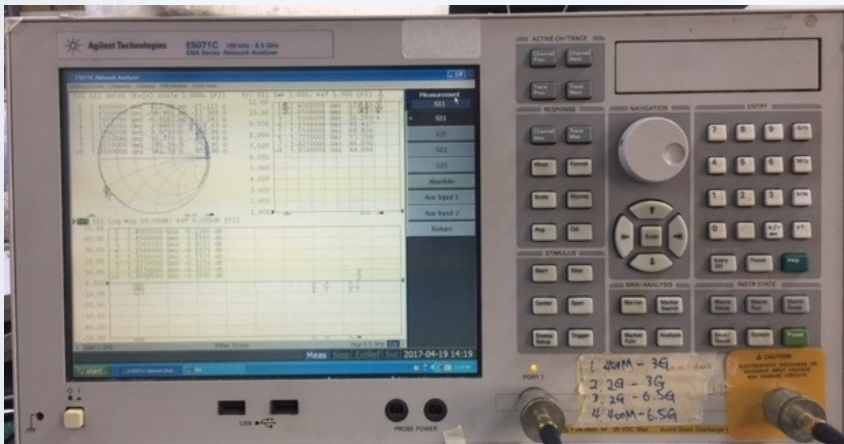
Test Item	Specification	Remark
Return Loss	> 10dB	
Isolation	N/A	
Peak gain		
Efficiency		
Radiation pattern	Scale: +10 ~ -40dBi, Angle step size: 2 degree	

Antenna Placement & Solution



Antenna	ANT Type	Size (L * W * H)	Cable Type
Wi-Fi DB	PCB	29.1mm*11.5mm*0.6mm	1.37 LowLoss (Total: 90 mm)

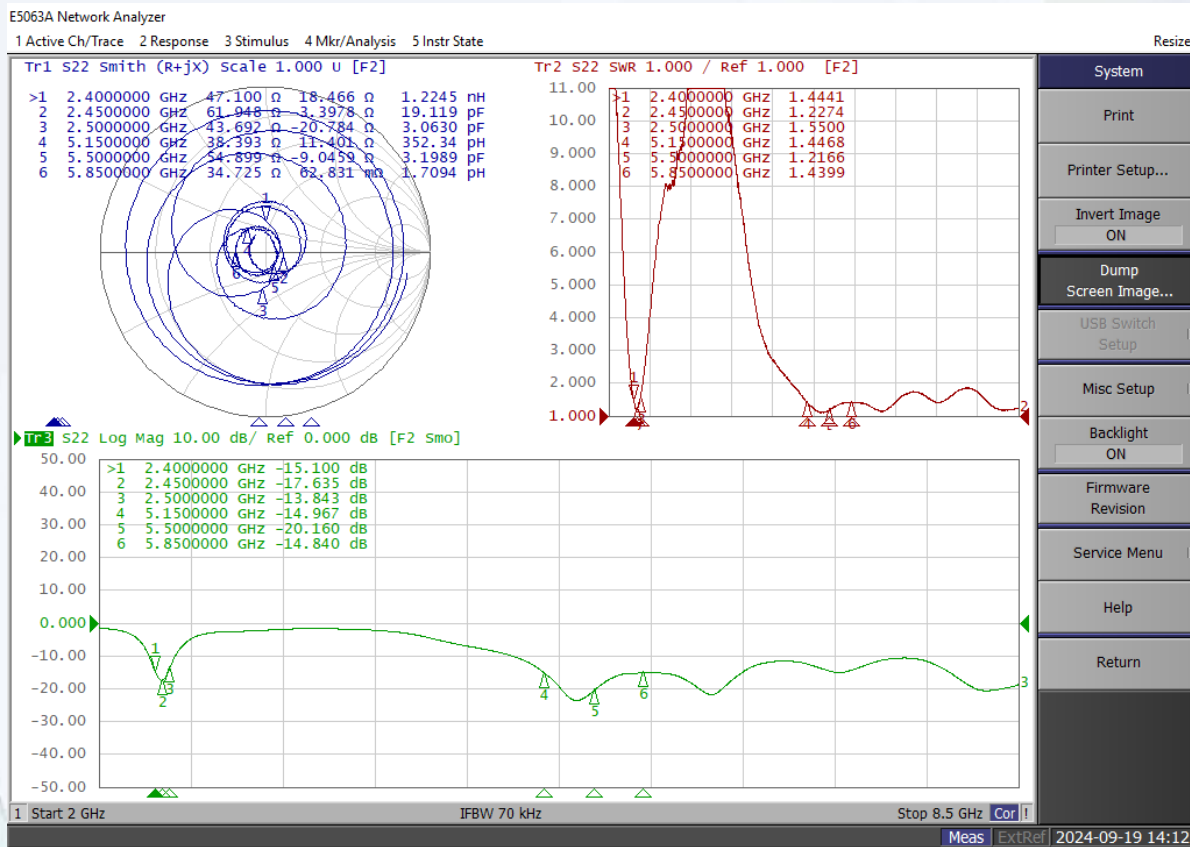
Test Setup for S-parameter Measurement



Equipment	Brand	Model	S/N
Network Analyzer	Keysight	E5071C	MY46107744

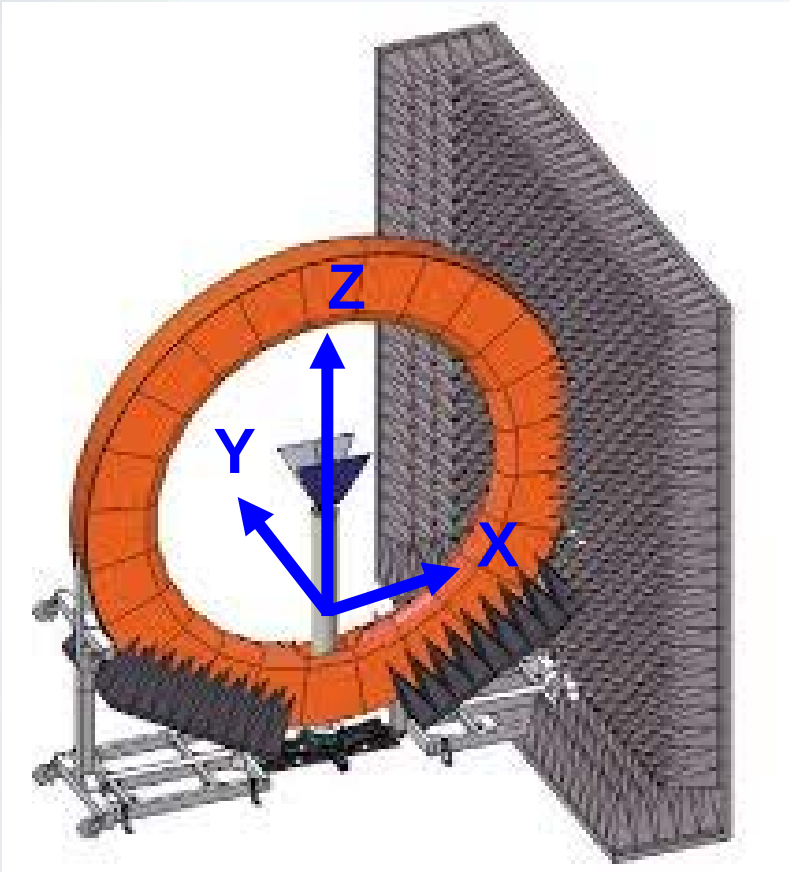
Return Loss Results

Wi-Fi DB



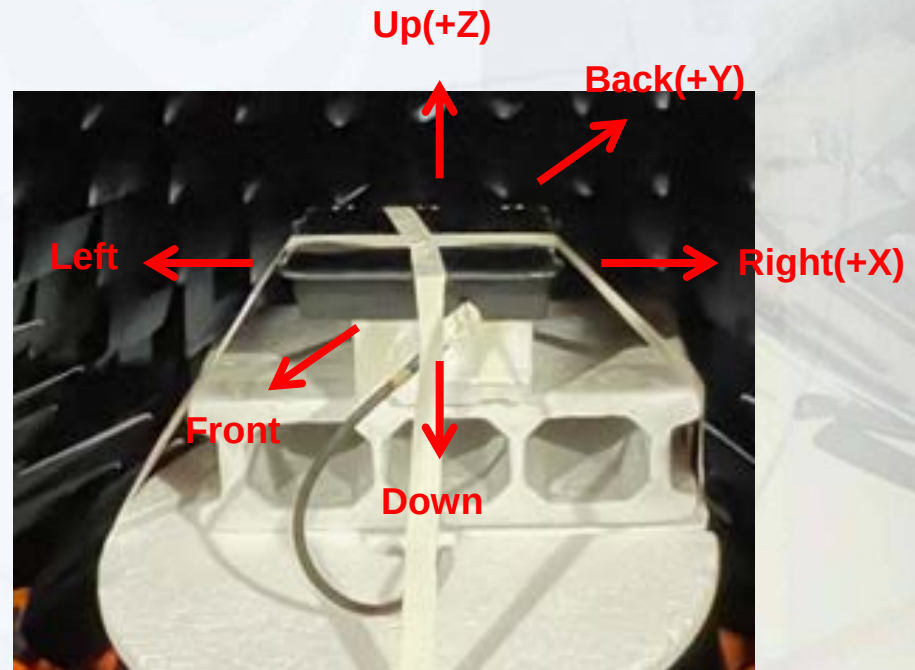
Test Setup for Radiation Pattern Measurement

Chamber Information



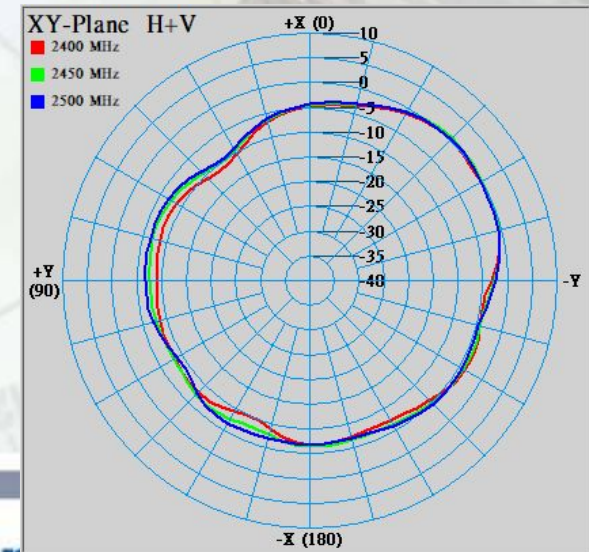
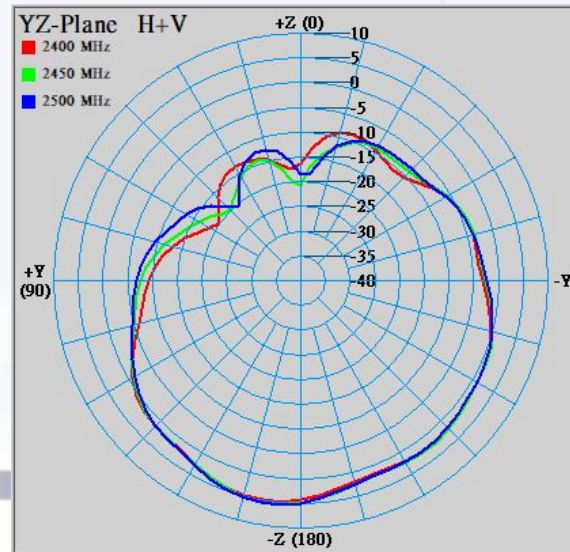
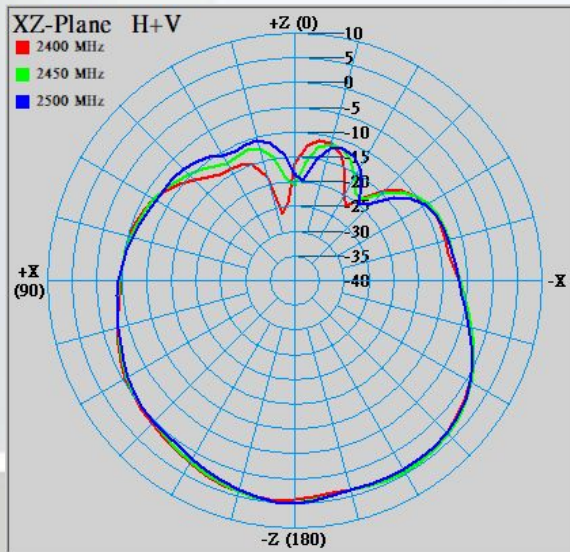
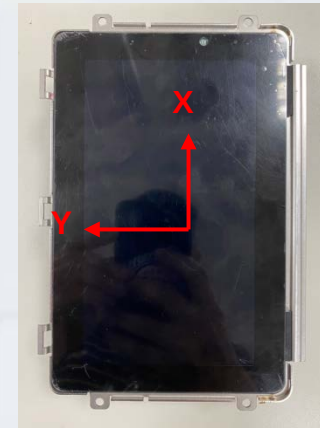
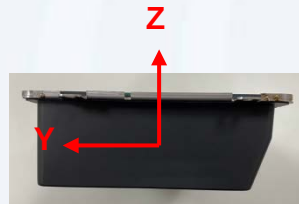
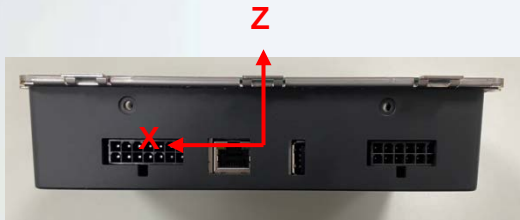
- SATIMO SG-24L Multi-Probe Antenna Measurement System

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



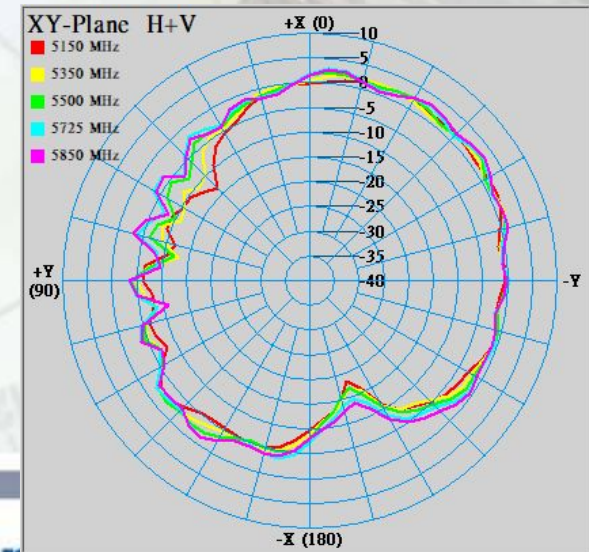
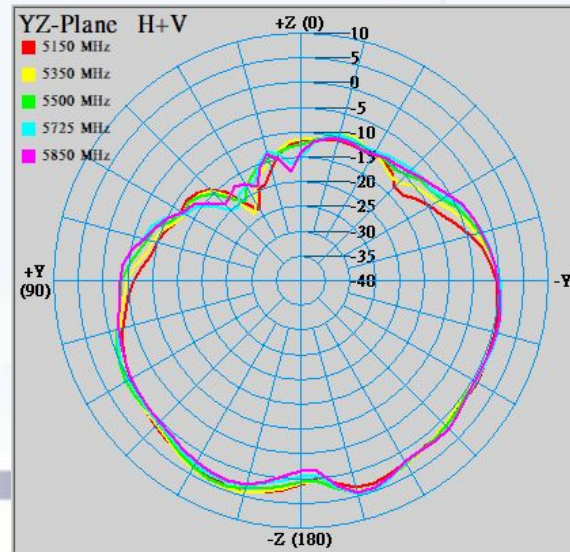
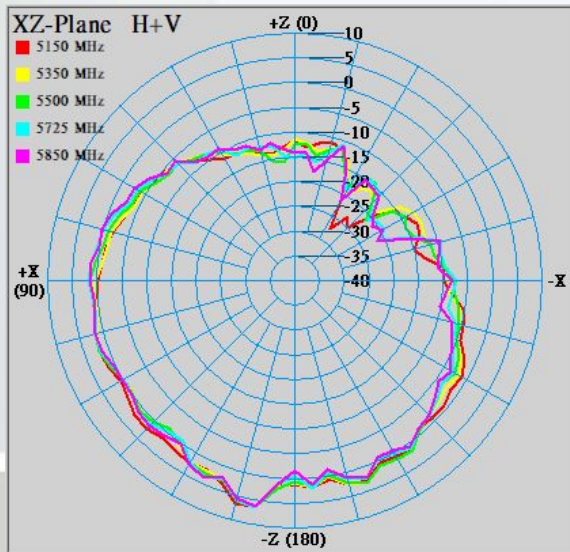
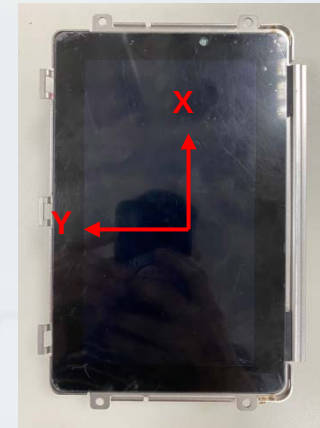
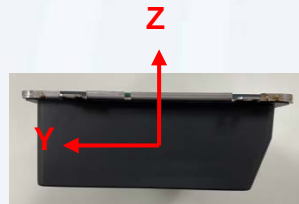
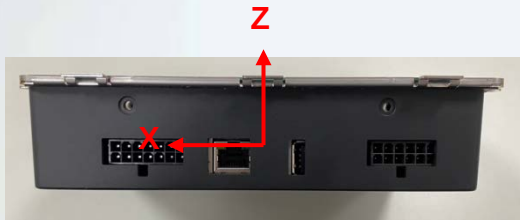
2D Radiation Pattern Results

Wi-Fi DB 2400-2500 (MHz)



2D Radiation Pattern Results

Wi-Fi DB 5150-5850 (MHz)



Results Summary

Return Loss – Wi-Fi DB

Frequency (MHz)	Wi-Fi DB(dB)
2400	15.1
2450	17.6
2500	13.8
5150	14.9
5500	20.1
5850	14.8

Results Summary

Peak gain & Efficiency – Wi-Fi DB

Frequency (MHz)	Efficiency (%)	Peak Gain (dBi)
2400	69	5.1
2450	70	5.4
2500	67	5.7
5150	75	6.8
5350	76	6.3
5500	78	6.4
5725	78	6.7
5850	75	6.3

Summary & Comments

Antenna Performance Summary

Comments for Further Improvement

- To be confirmed by the customer