



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



DONGGUAN AEON TECH CO.,LTD.(CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER: NEXCOM

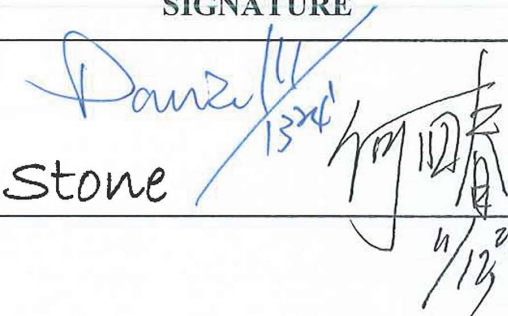
PART NAME: RF Antennna Assembly

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

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

譚裕實業股份有限公司

Address: No. 326, Sec. 2, Kung Tao 5 Road, Hsin Chu City, Taiwan, R.O.C.

Tel:+886-3-5714225(REP.) Fax:+ 886-3-5713853 · + 886-3-5723600

DONGGUAN AEON TECH CO.,LTD.(CHINA)

東莞台霖電子通訊有限公司

Address:Hupan Industrial District,Tai Ling Shan Town,Dong Guan City,Guangdong,China

Tel:+86-769-85655858 Fax:+86-769-85655258

Contents

<i>Item</i>	<i>Description</i>	<i>Page</i>
1.	Specification	1
2.	Drawing	2
3.	test report	3~15

RF Antenna Assembly

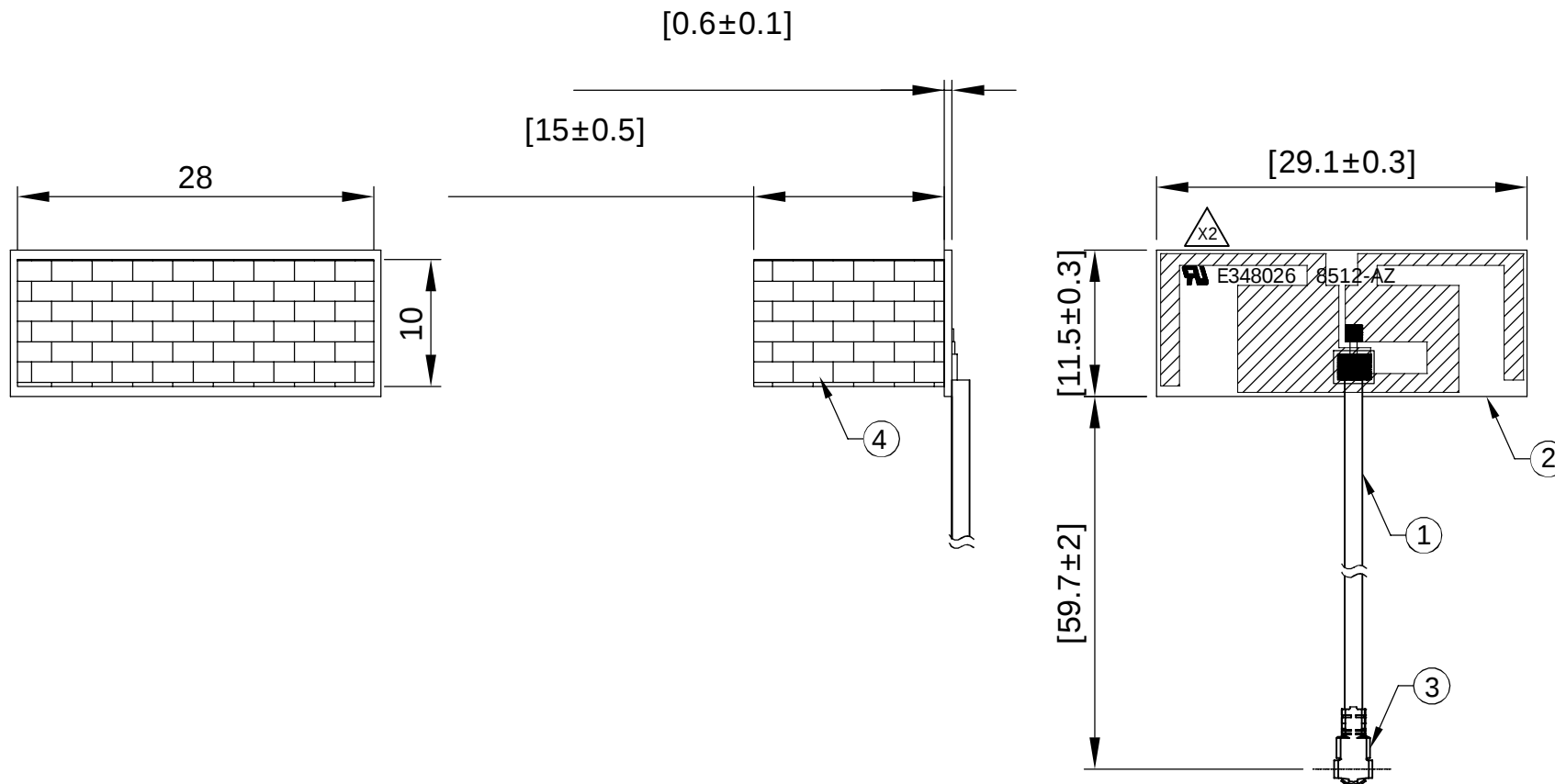
Specification Witht housing (with House With Cable Loss)

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



4	Sponge	(L)28*(W)10*(T)15mm; EVA+3M 9448A	1	
3	Connector	I-PEX MHF Connector	1	
2	PCB	FR4 HF-140, 1/2oz	1	Black Plated
1	Cable	Ø1.37mm low loss Coaxial Cable; Black	1	
NO	DESCRIPTION		Q'TY	REMARK

CUSTOMER'S SIGNATURE	XXX.	±5.0	APPROVED		CUSTOMER: NEXCOM			 Wha Yu Group THIS DRAWING, AND IT'S INHERANT DESIGN CONCEPTS, ARE THE PROPERTY OF WHA YU AND AS SUCH MAY NOT BE COPIED, REPRODUCED, OR GIVEN TO THIRD PARTIES WITHOUT THE WRITTEN CONSENT OF WHA YU. PRODUCTION DRAWING
	XX.	±3.0			PART NO :			
	X.X	±1.0	CHECKED		PART NAME: RF Antenna Assembly			
	.X	±0.5			W.Y P/NO : C1779-510031-A			
	.XX	±0.2	DRAWING	Benson	REV	UNIT	FILE : SRF20241726	
					X2	mm	SHEET : 1/1	

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
- Test Setup for Radiation Pattern Measurement
- 2D Radiation Pattern Results
- 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

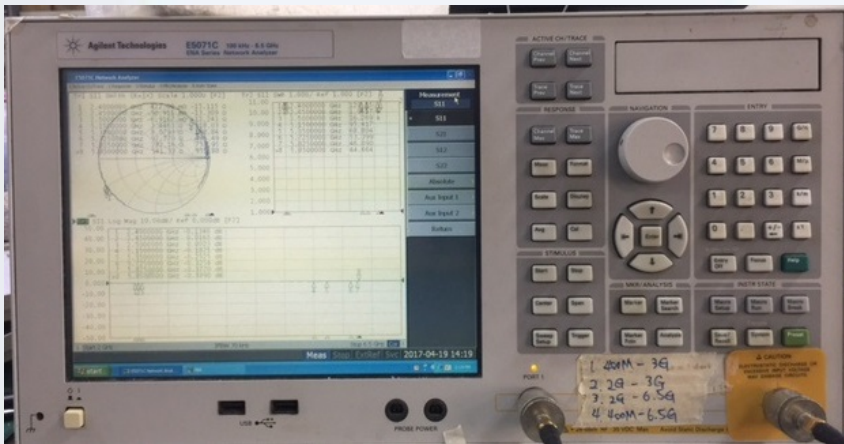
Test Item	Specification	Remark
Return Loss	> 10dB	
Isolation	N/A	
Peak gain		
Efficiency		
Radiation pattern	Scale: +10 ~ -40dBi, Angle step size: 2 degree	

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)

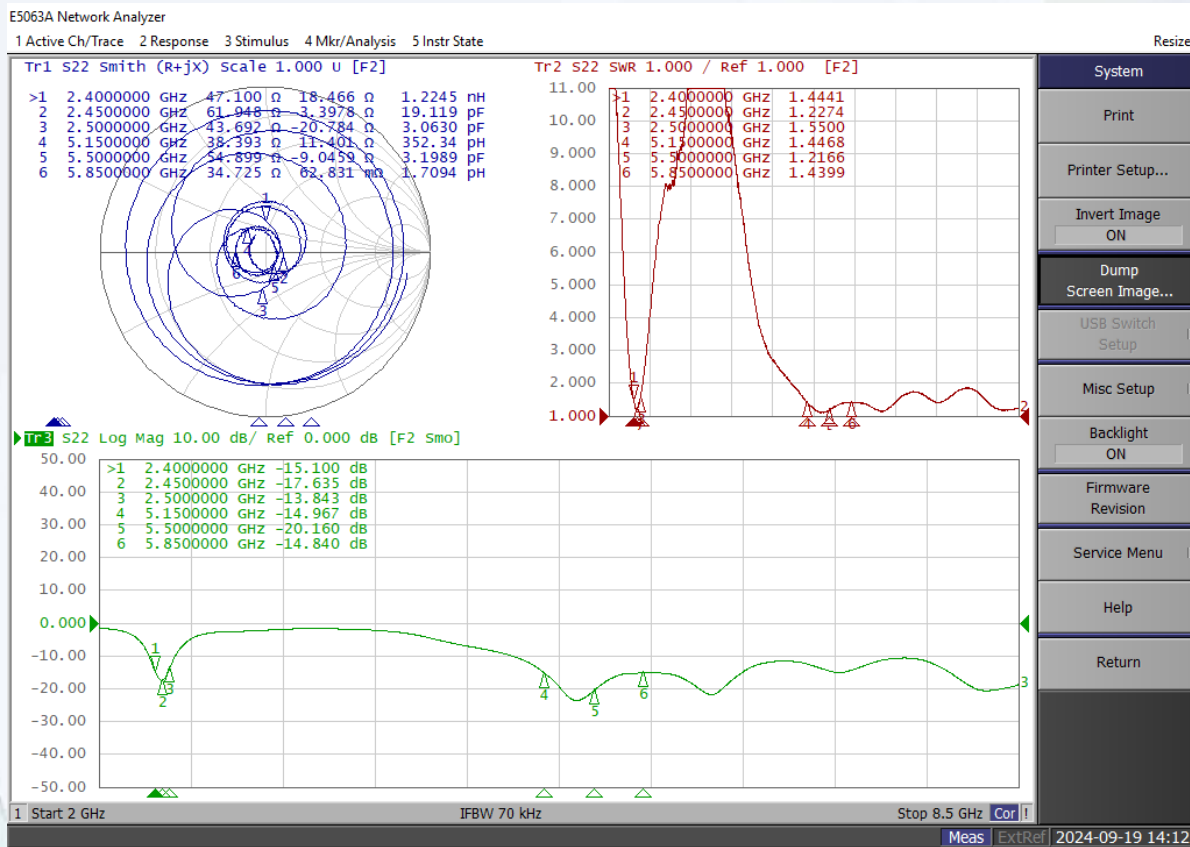
Test Setup for S-parameter Measurement



Equipment	Brand	Model	S/N
Network Analyzer	Keysight	E5071C	MY46107744

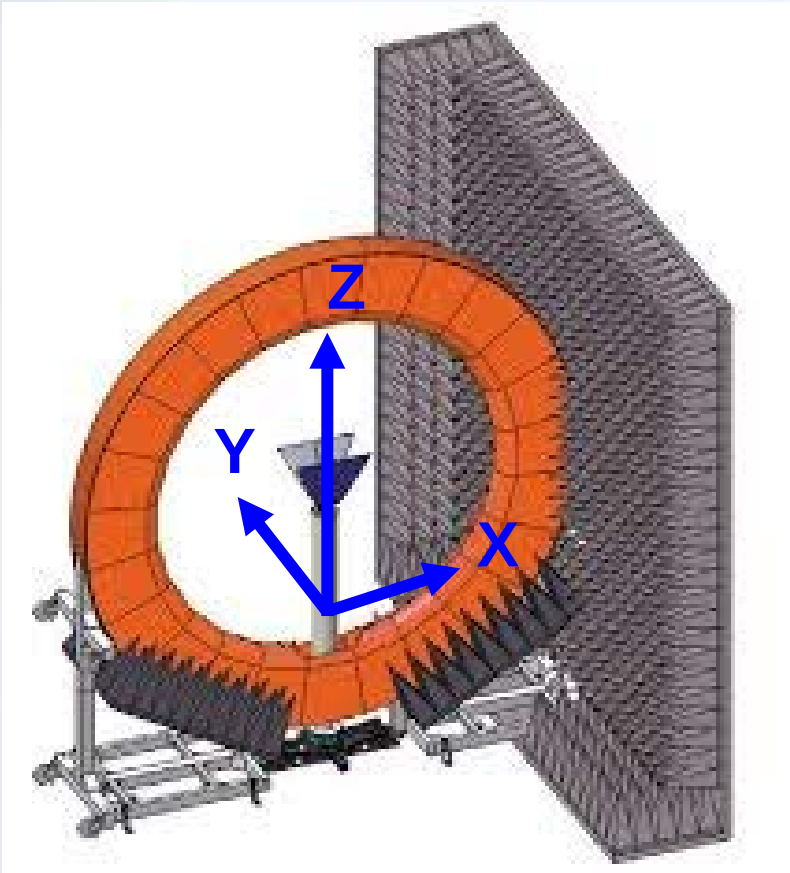
Return Loss Results

Wi-Fi DB



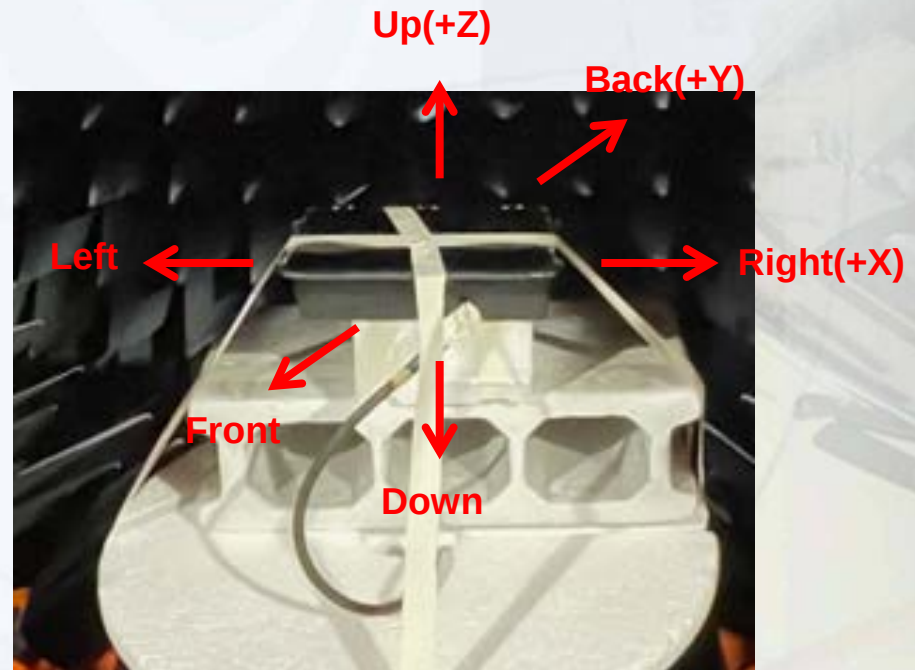
Test Setup for Radiation Pattern Measurement

Chamber Information



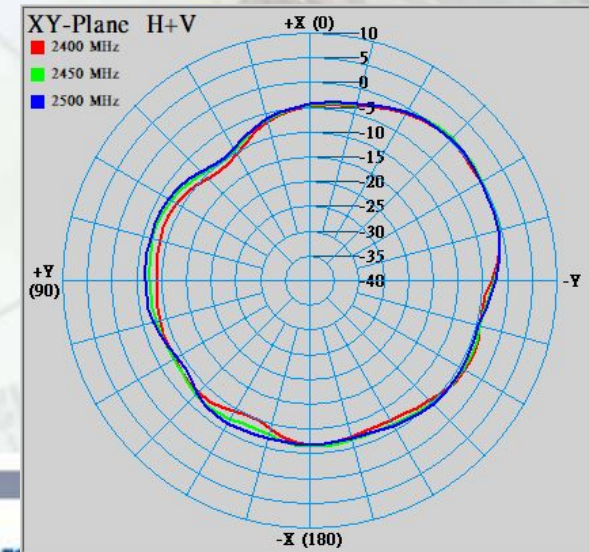
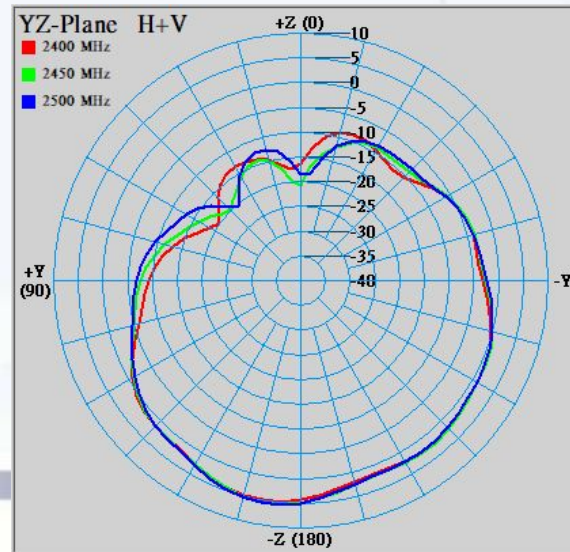
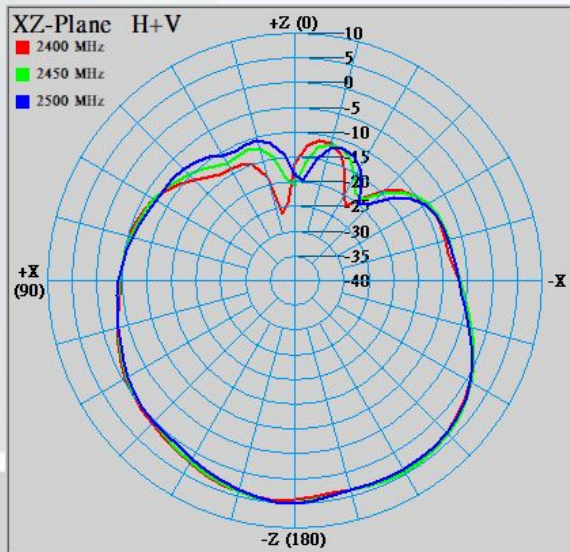
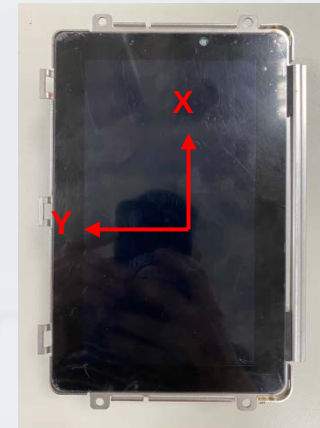
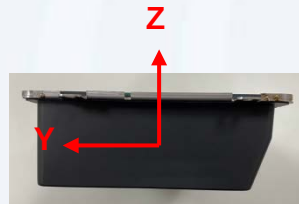
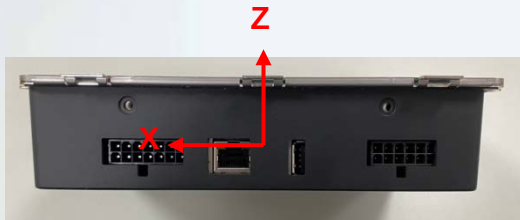
- SATIMO SG-24L Multi-Probe Antenna Measurement System

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



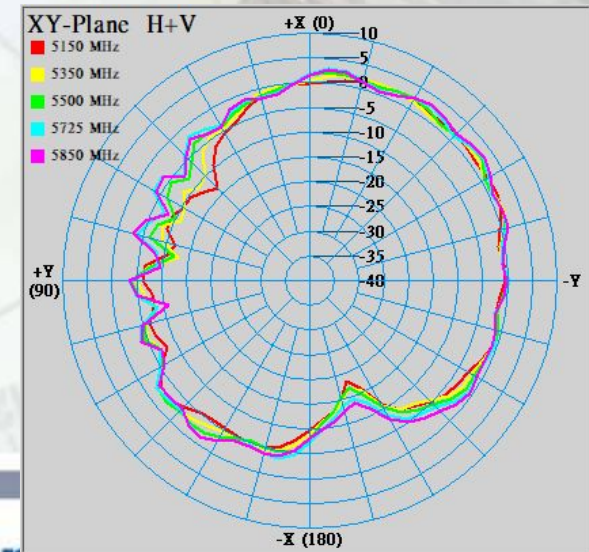
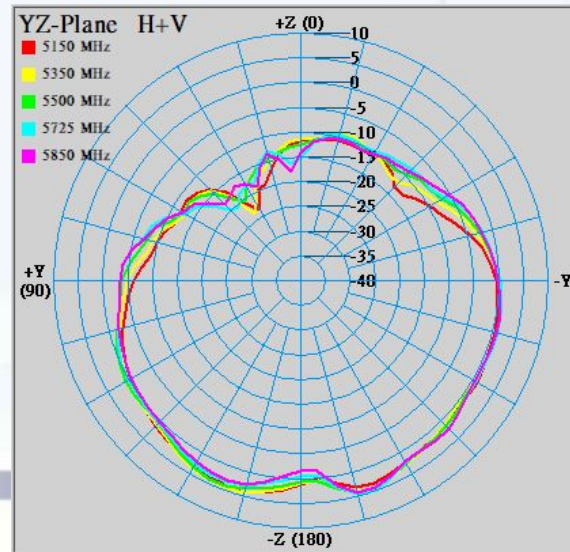
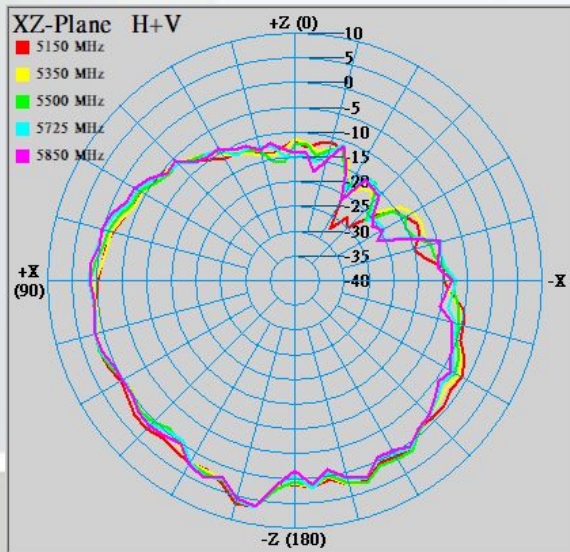
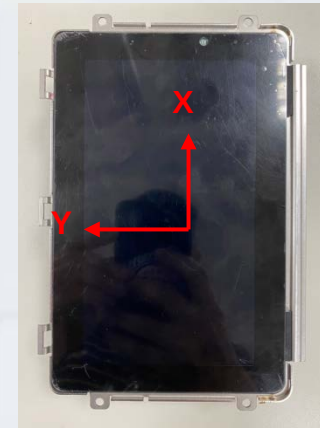
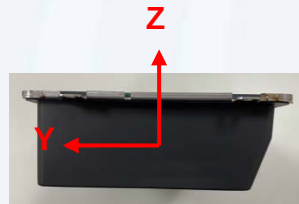
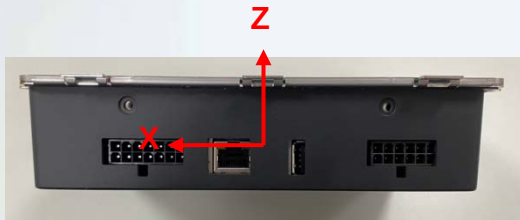
2D Radiation Pattern Results

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