

ARY196-3154-008-00 (Wi-Fi 1&Wi-Fi 2)



2.4GHz (Peak Gain: 0.52 dBi)@Wi-Fi 1
5GHz (Peak Gain: 2.72 dBi)@Wi-Fi 1
2.4GHz (Peak Gain: 0.48 dBi)@Wi-Fi 2
5GHz (Peak Gain: 2.73 dBi)@Wi-Fi 2

Engineer :Aiden

Report date : 2024/03/14



Antenna specification

Wi-Fi 1

Wi-Fi 1		
Item	Specification	Specification
Operating Frequency(MHz)	2400-2500	5150-5850
Bandwidth	100 MHz (Min.)	700 MHz (Min.)
Return Loss	10 dB (Min.)	10 dB (Min.)
Polarization	Linear	Linear
Azimuth Bandwidth	Omni-directional	Omni-directional
Peak Gain	0.52 dBi(Max.)	2.72 dBi(Max.)
Impedance	50Ω	50Ω
Material	FPC	FPC
Maximum Power	1W	1W
V.S.W.R	2 : 1	2 : 1
Radiation	Omni directional	Omni directional
Efficiency	38 %(Max.)	58 %(Max.)
Connector	MHF I	MHF I
Cable type	OD:1.13 Normal	OD:1.13 Normal
Operating Temperature	-10~60°C	-10~60°C
Storage temp	-10~70°C	-10~70°C

Antenna specification

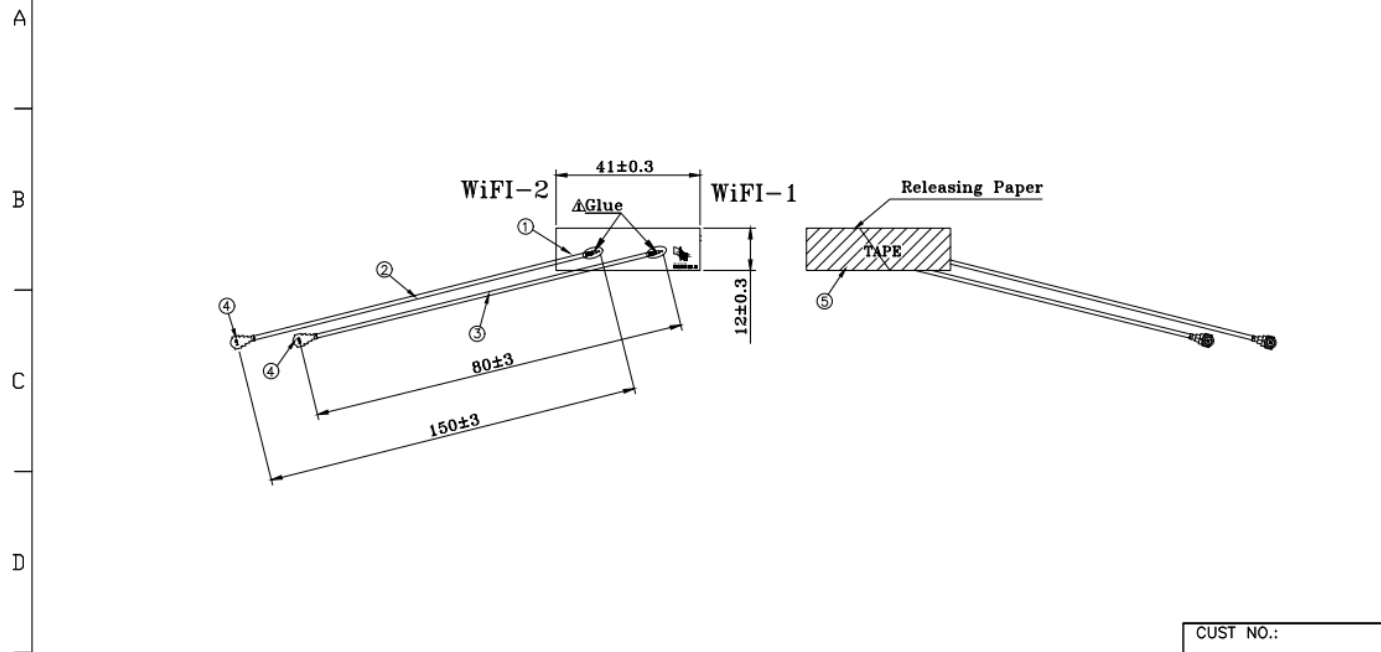
Wi-Fi 2

Wi-Fi 2		
Item	Specification	Specification
Operating Frequency(MHz)	2400-2500	5150-5850
Bandwidth	100 MHz (Min.)	700 MHz (Min.)
Return Loss	10 dB (Min.)	10 dB (Min.)
Polarization	Linear	Linear
Azimuth Bandwidth	Omni-directional	Omni-directional
Peak Gain	0.48 dBi(Max.)	2.73 dBi(Max.)
Impedance	50Ω	50Ω
Material	FPC	FPC
Maximum Power	1W	1W
V.S.W.R	2 : 1	2 : 1
Radiation	Omni directional	Omni directional
Efficiency	35 %(Max.)	55 %(Max.)
Connector	MHF I	MHF I
Cable type	OD:1.13 Normal	OD:1.13 Normal
Operating Temperature	-10~60°C	-10~60°C
Storage temp	-10~70°C	-10~70°C

RoHS Compliant

Customer Drawing

REV	DATE	DESCRIPTION	ECN NO.	NAME
A1	24.02.23	PROPOSAL		WEN
A2	24.02.27	ADD GLUE		DAVID



			CUST NO.:	
			PART NO.:	
			ARY196-3154-008-00	
			TITLE:	
			WiFi-1&2 Antenna	
			DRAWN BY	
			WEN(WST)	
			DRAWING NO.	
			ARY196-3154-008-00	
			CHECKED BY	
			DRAWING SIZE	
			A4	
			APPROVED BY	
			UNIT	
			mm	
			PAGE	
			1 OF 1	
NO.	ITEM	DESCRIPTION	QTY	SORTING NO.
5	Tape	3M9448HK, Size: 41 x 12mm	1	
4	Connector	MHF I Plug For 1.13mm Cable, Gold Plated	2	
3	Cable	1.13mm Normal Coaxial Cable, FEP White Jacket	1	
2	Cable	1.13mm Normal Coaxial Cable, FEP Gray Jacket	1	
1	FPC	Size: 41 x 12 mm	1	

[ARTICLE: SR-83-41 V1]

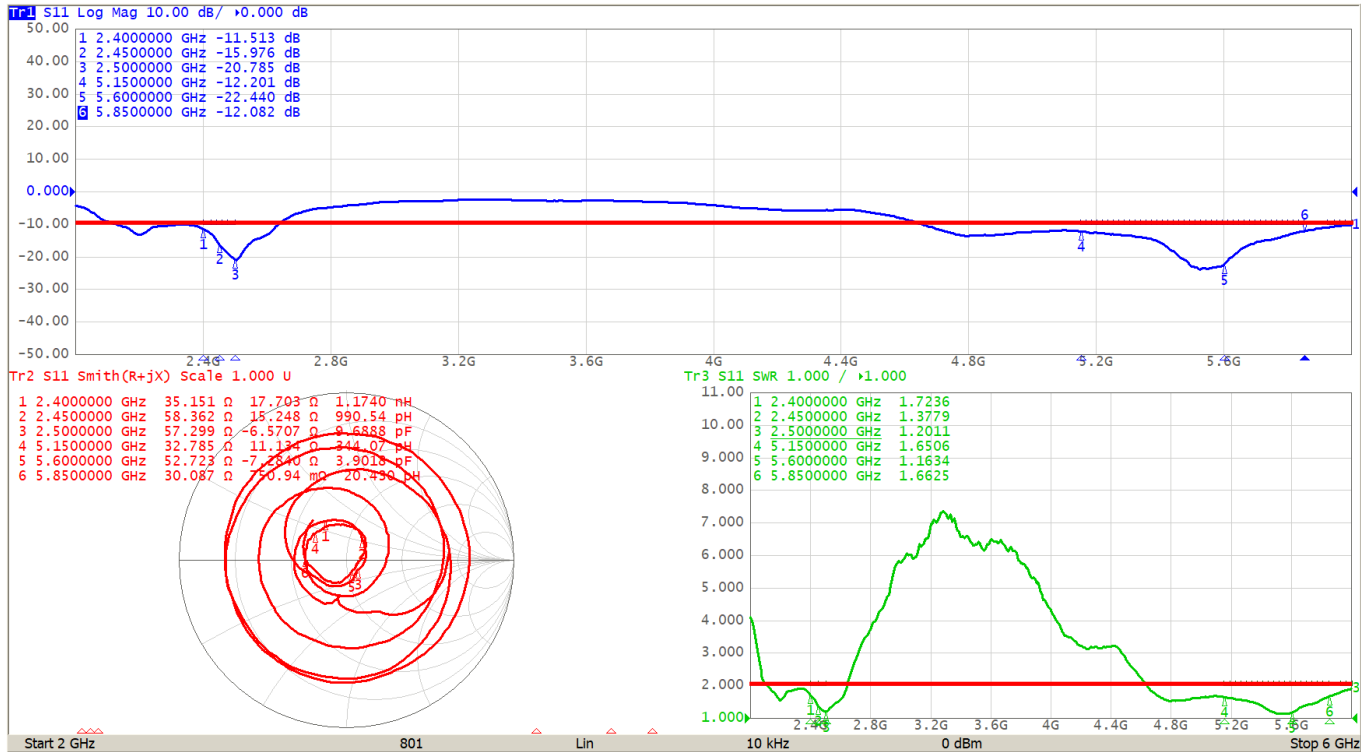
Antenna Photo



Cable Length: 80 mm @Wi-Fi 1
150 mm @Wi-Fi 2

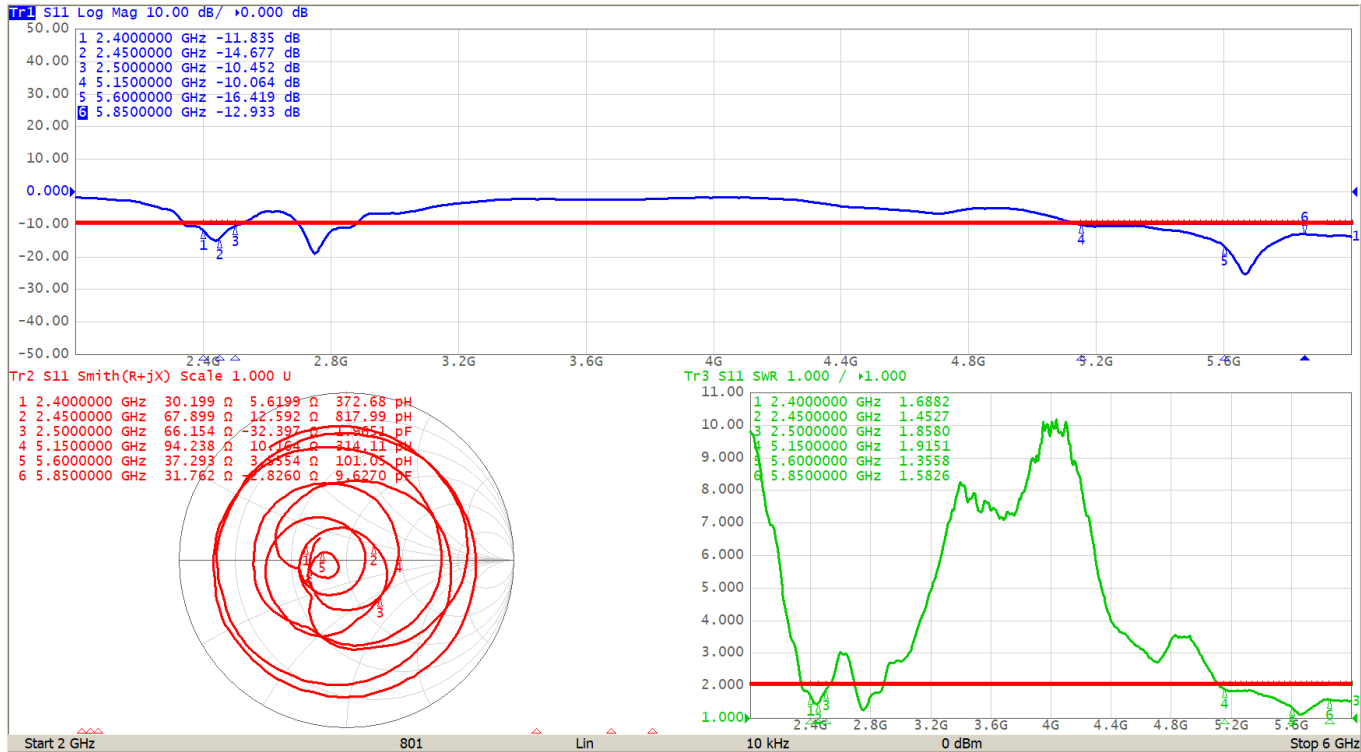
S-Parameter Measurement Result

Wi-Fi 1



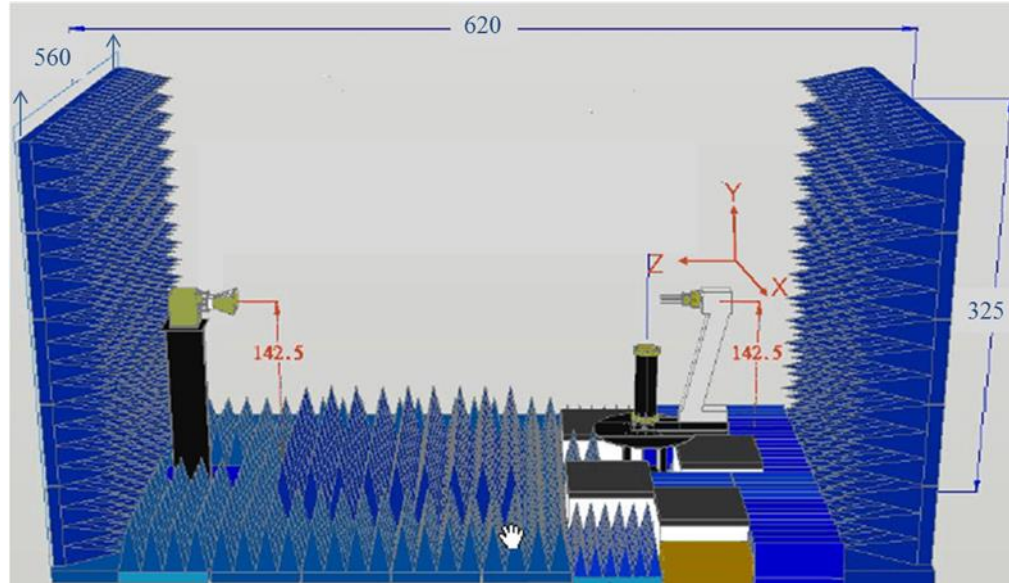
S-Parameter Measurement Result

Wi-Fi 2



Test & System Description

a. Test setup

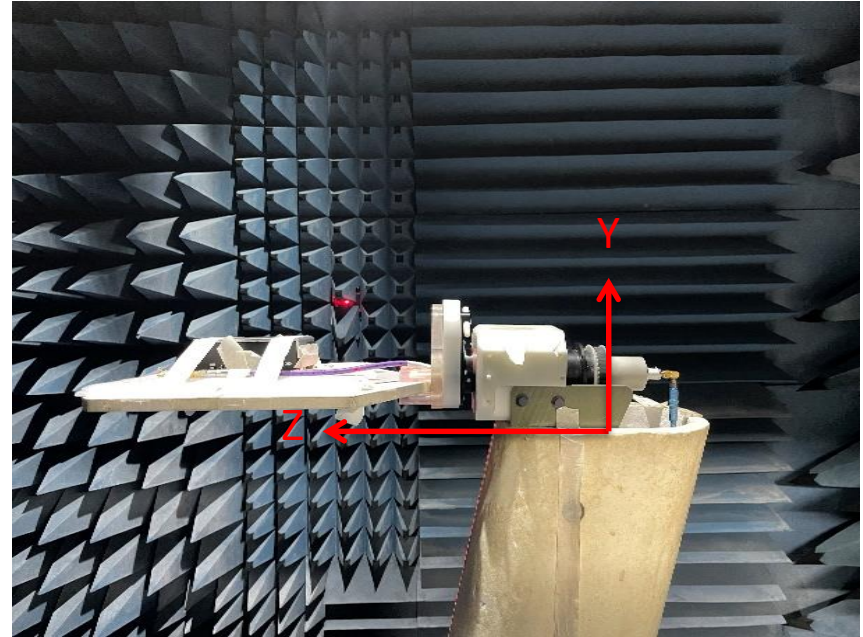


Test & System Description

b. Equipment list

Device	Ttype/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	FFC-600L	FFC-600L-285	wavepro	30-Apr-22	30-Apr-23
Network Anylyzer	N5230A	MY45000163	Agilent Technologies	11-May-21	11-May-23
Turntable	NSI-SC-5606-3DZ	011	NSI-MI	N/A	N/A
Measurement SW	NSI 2000	SOM-SM-2000-V4	NSI-MI	N/A	N/A
Dual Polarization Vivaldi Antenna 0.6~8GHz	-	-	WavePro Inc.	30-Oct-20	30-Oct-23
Computer Monitor	HS-CM145	0410006420	CCTVINDIA	30-Aug-20	30-Aug-23
Industrial PC	IPC-610BP		Advantech Co., Ltd	30-Aug-20	30-Aug-23
Standard Beam Controller (SBC)	NSI-RF-5918	070	NSI-MI	30-Oct-20	30-Oct-23
Antenna Range Controller (ARC)	NSI-SC-5911-4	0335	NSI-MI	30-Oct-20	30-Oct-23
RF Cable 240in 22GHz	UFA210C-1-2400-300300	MFR 64639 207908-005	Carlisle Interconnect Tech.	30-Aug-20	30-Aug-23
RF Cable 240in 22GHz	UFA210C-1-2400-300300	MFR 64639 209026-013	Carlisle Interconnect Tech.	30-Aug-20	30-Aug-23
RF Cable 60cm 26.5GHz	EC-A5-60-1678	Z0066	E-INSTUMENT TECH LTD.	30-Aug-20	30-Aug-23

chamber measurement photo



3D Gain Total

Wi-Fi 1

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.4	-0.04	-4.99	32
2.45	0.52	-4.22	38
2.5	0.41	-4.48	36
5.15	1.93	-3.32	47
5.25	2.05	-3.15	48
5.35	1.56	-3.72	42
5.47	1.95	-3.26	47
5.6	2.72	-2.39	58
5.725	2.55	-2.65	54
5.785	2.07	-2.89	51
5.85	1.74	-3.43	45

3D Gain Total

Wi-Fi 2

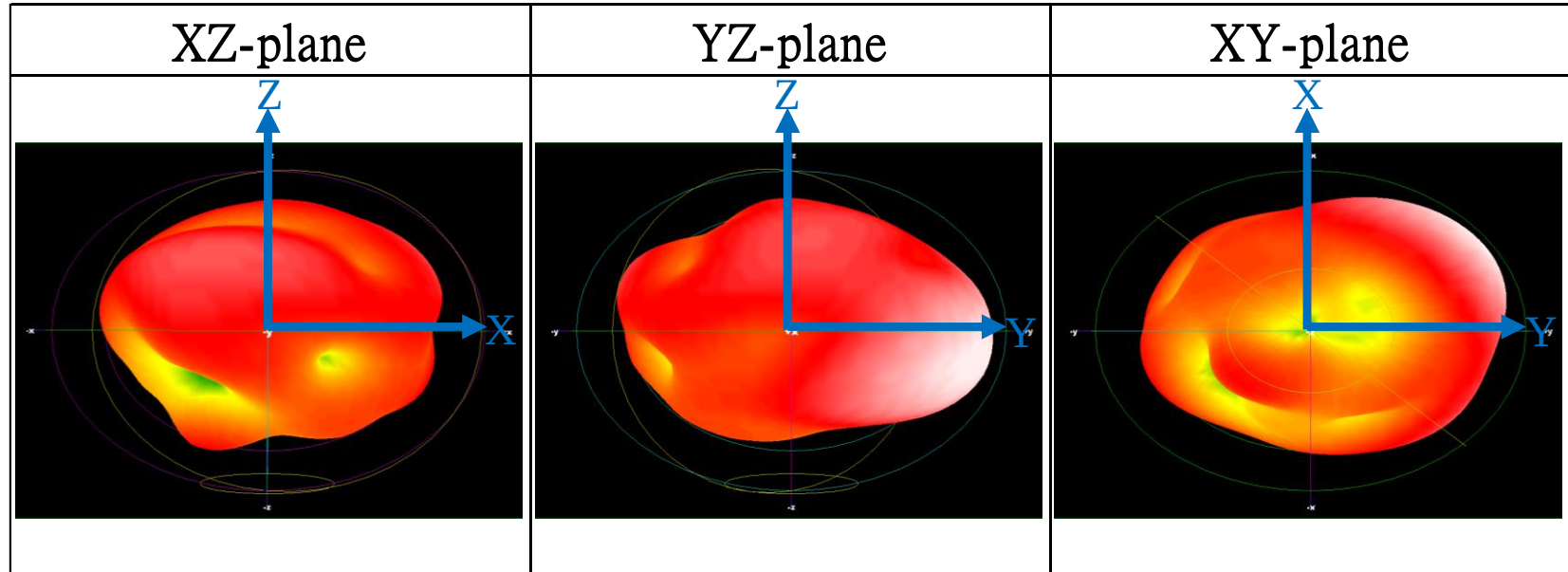
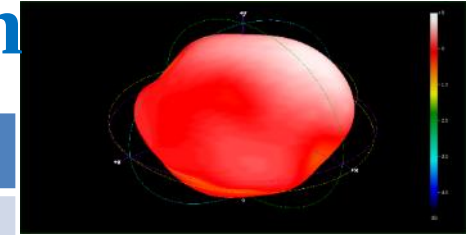
Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.4	0.48	-4.67	34
2.45	0.4	-4.62	35
2.5	0.17	-5.08	31
5.15	2.34	-3.51	45
5.25	2.73	-3.25	47
5.35	2.19	-3.21	48
5.47	2.47	-2.93	51
5.6	2.66	-2.61	55
5.725	2.5	-2.83	52
5.785	2.61	-2.8	52
5.85	2.3	-3.15	48

3D Antenna Pattern

Wi-Fi 1

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	0.52	-4.22	38



Far-field amplitude limits:

Max: 5dB

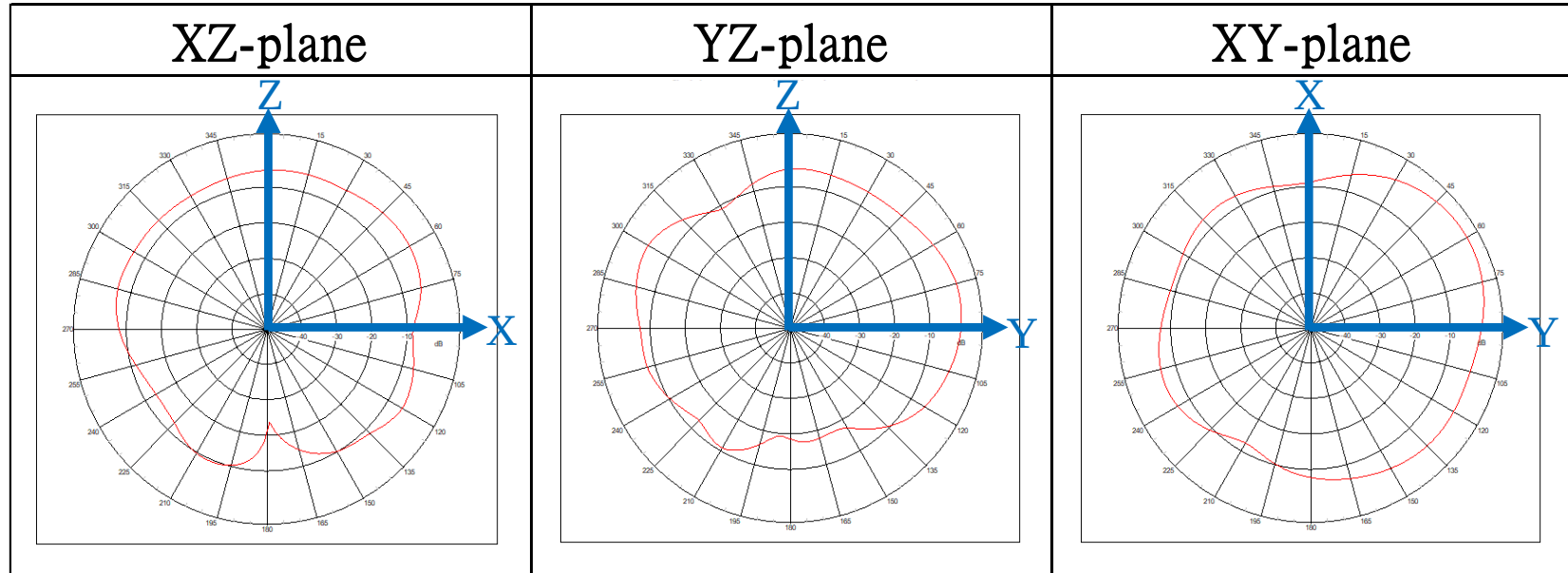
min: -50dB

2D Antenna Pattern

Wi-Fi 1

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	0.52	-4.22	38



Far-field amplitude limits:

Max: 5dB

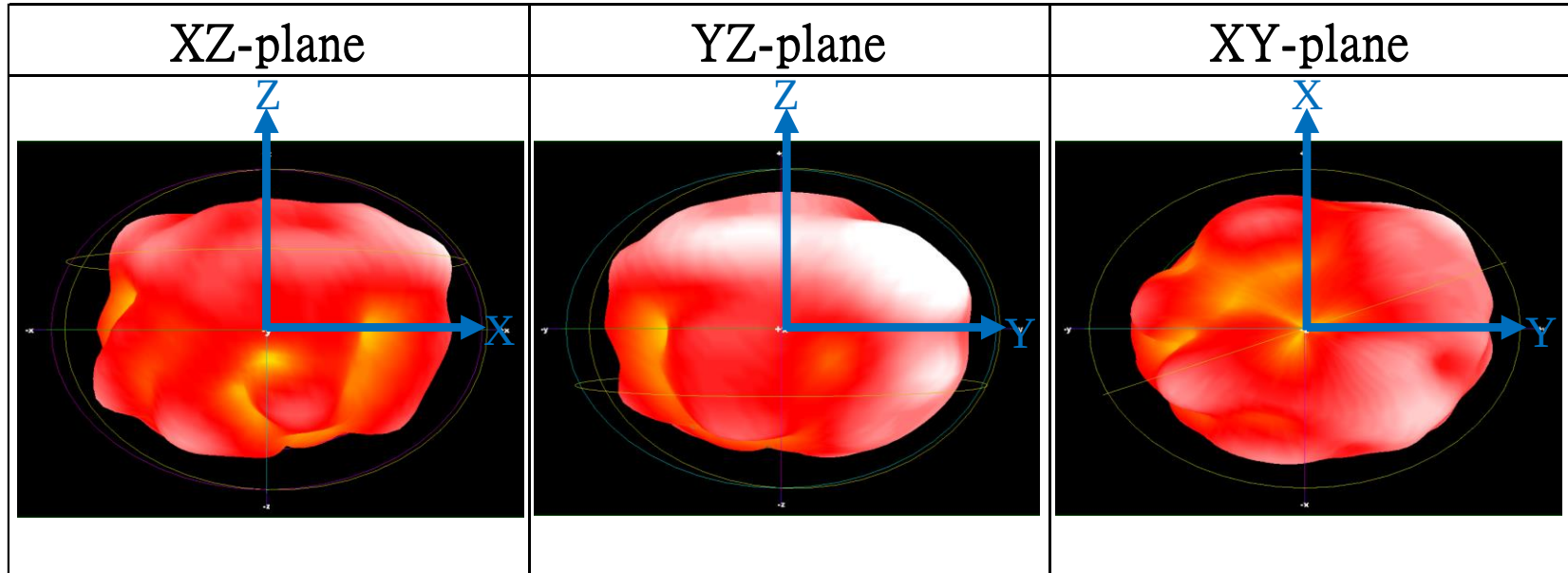
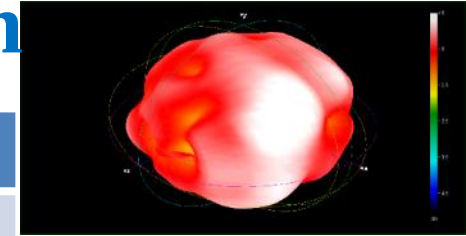
min: -50dB

3D Antenna Pattern

Wi-Fi 1

Frequency : 5600 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
5.6	2.72	-2.39	58



Far-field amplitude limits:

Max: 5dB

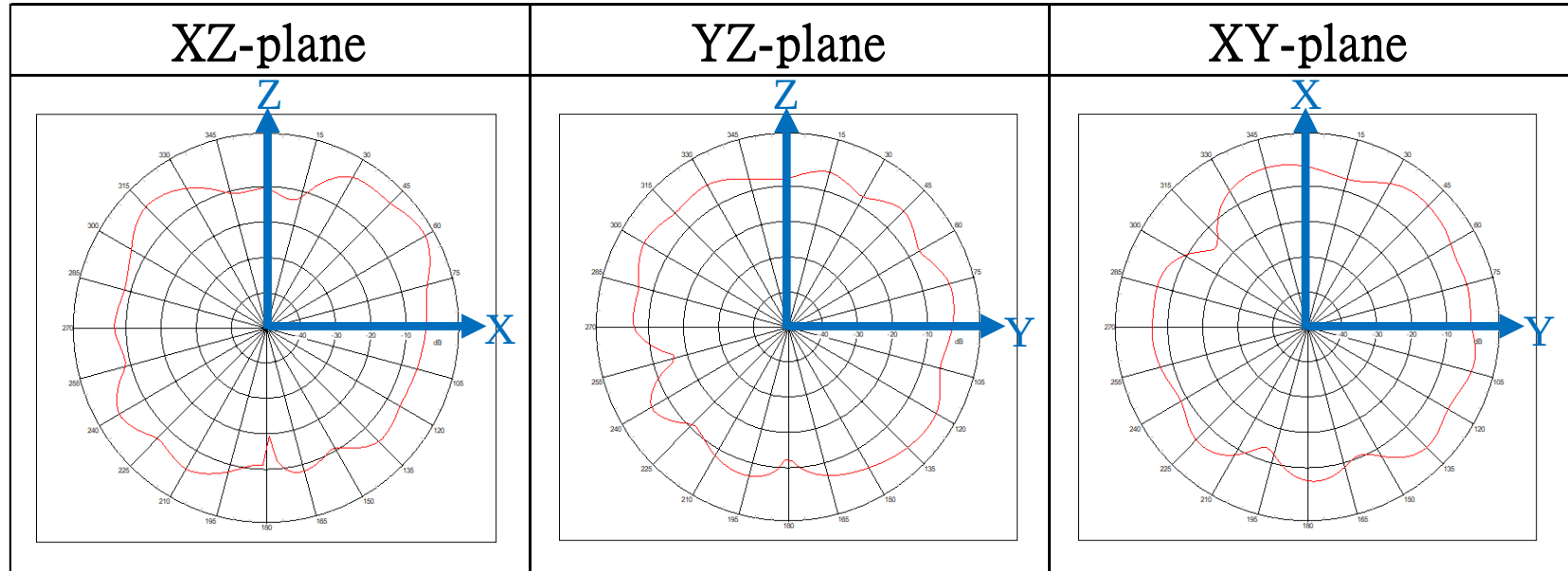
min: -50dB

2D Antenna Pattern

Wi-Fi 1

Frequency : 5600 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
5.6	2.72	-2.39	58



Far-field amplitude limits:

Max: 5dB

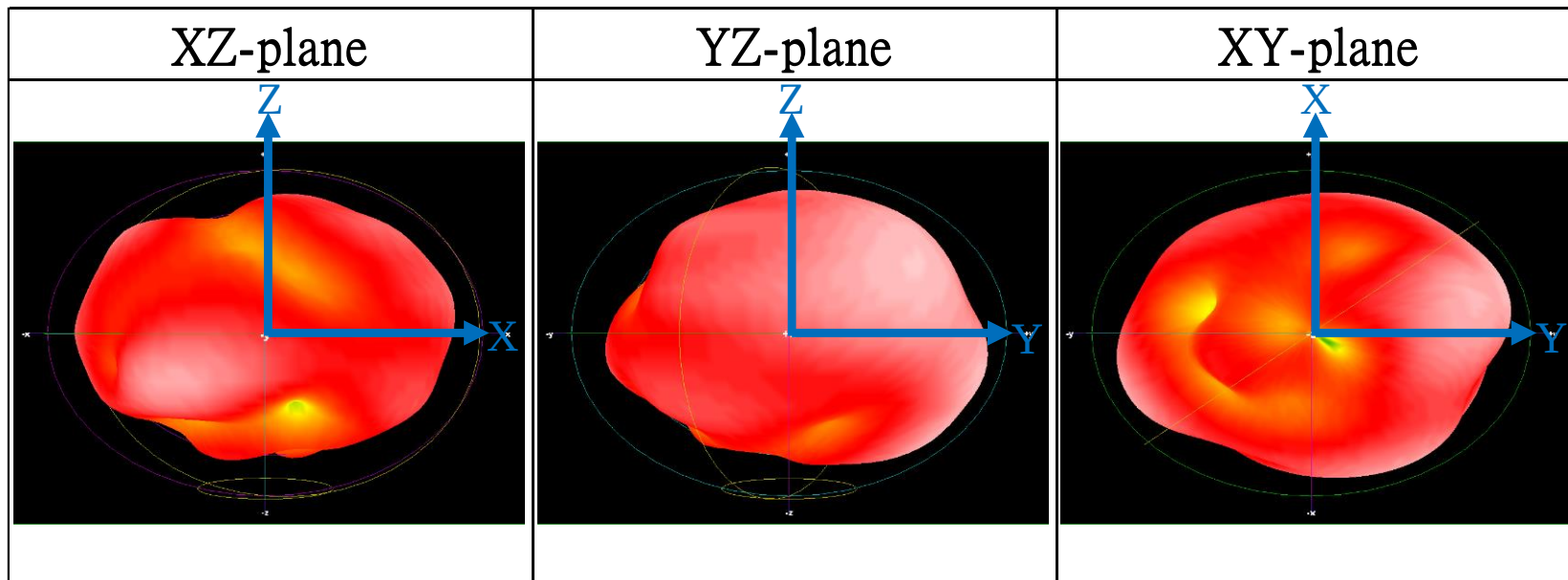
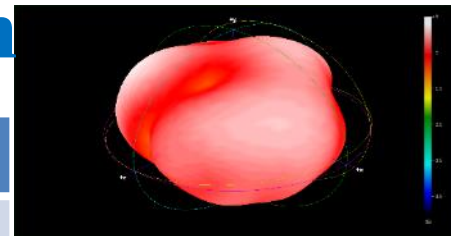
min: -50dB

3D Antenna Pattern

Wi-Fi 2

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	0.4	-4.62	35



Far-field amplitude limits:

Max: 5dB

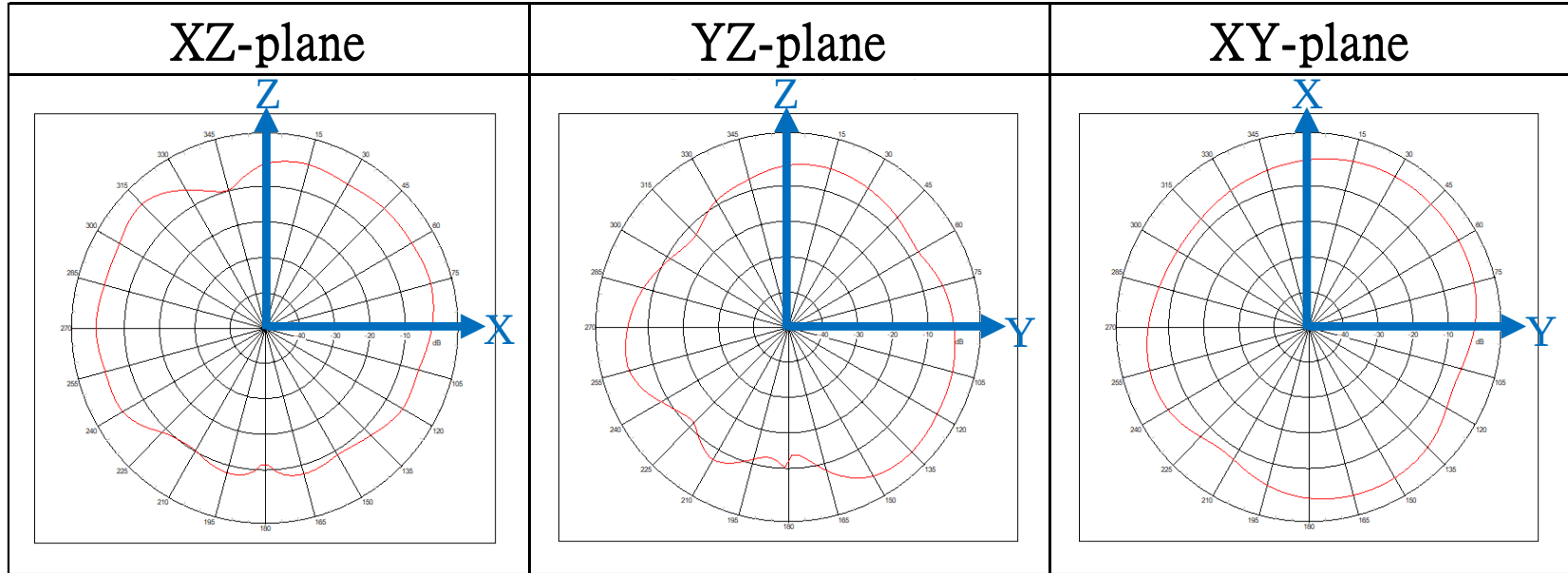
min: -50dB

2D Antenna Pattern

Wi-Fi 2

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	0.4	-4.62	35



Far-field amplitude limits:

Max: 5dB

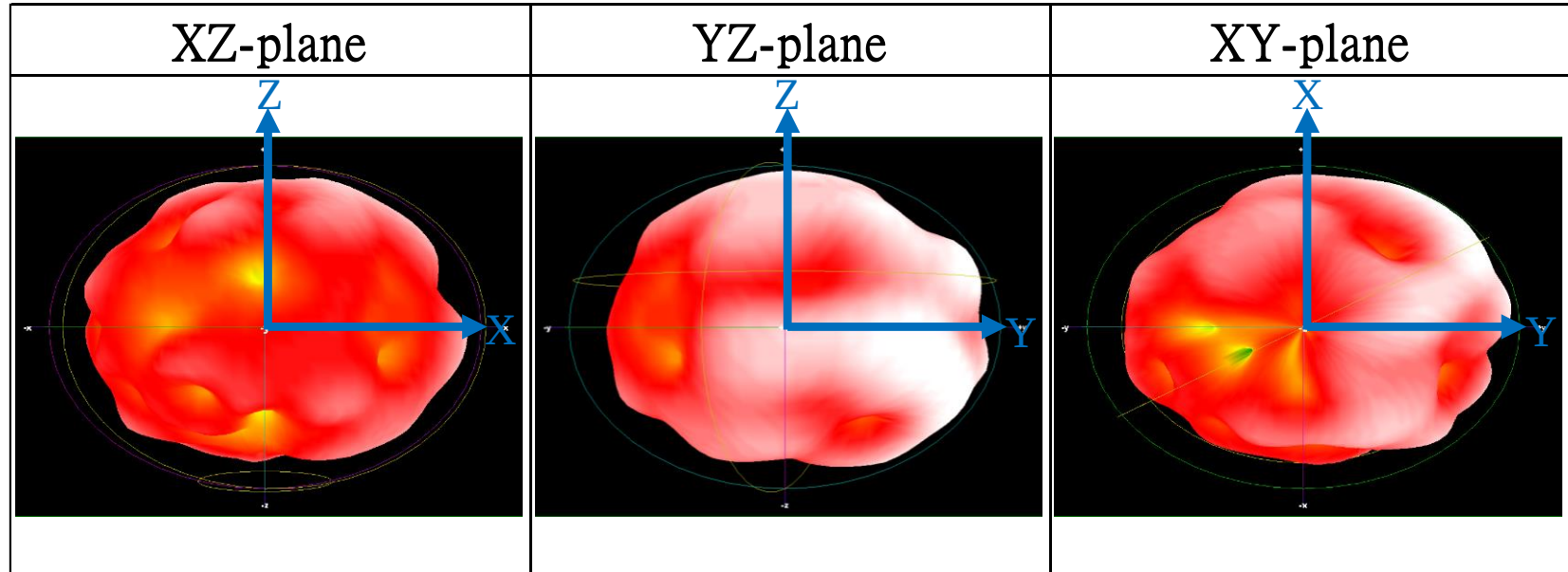
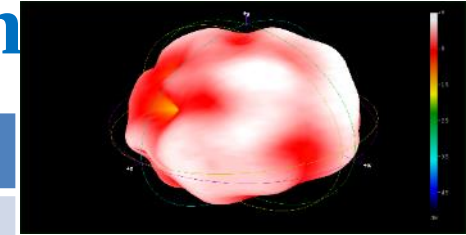
min: -50dB

3D Antenna Pattern

Wi-Fi 2

Frequency : 5600 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
5.6	2.66	-2.61	55



Far-field amplitude limits:

Max: 5dB

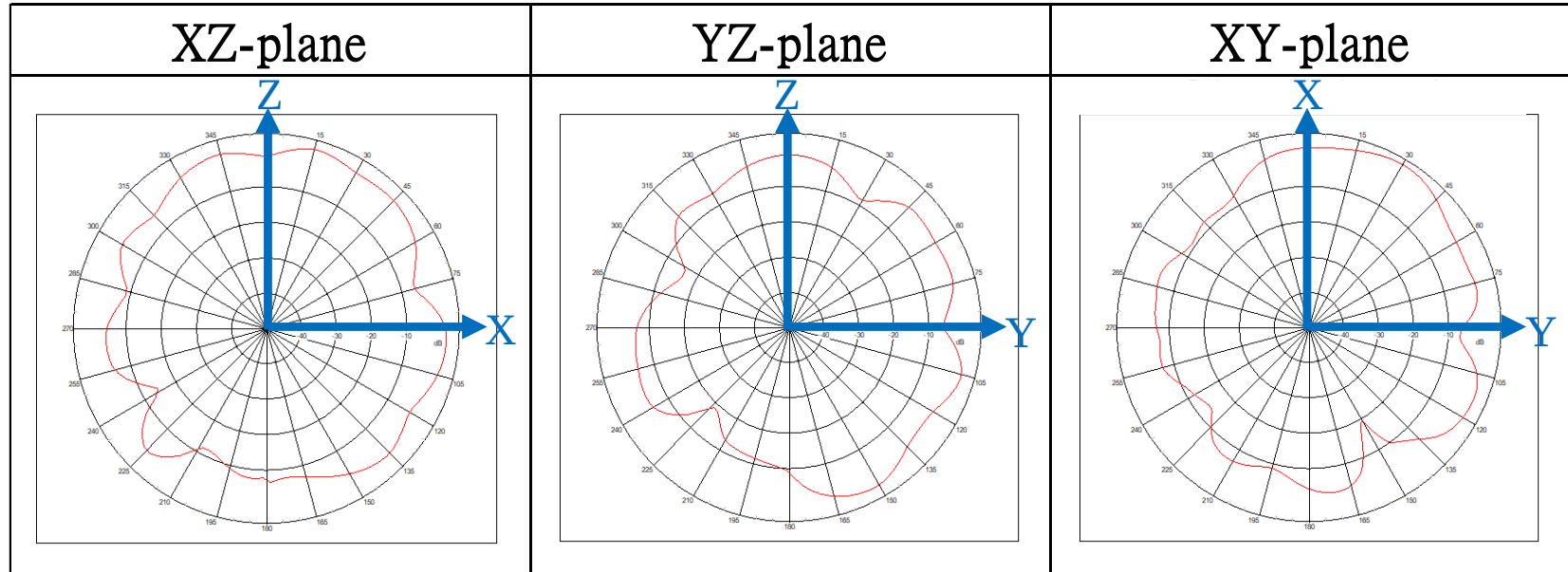
min: -50dB

2D Antenna Pattern

Wi-Fi 2

Frequency : 5600 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
5.6	2.66	-2.61	55



Far-field amplitude limits:

Max: 5dB

min: -50dB



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ARY196-3154-007-00 (BT)

2.4GHz (Peak Gain: 1.19 dBi)

Engineer :Aiden

Report date : 2024/03/14



Antenna specification

BT

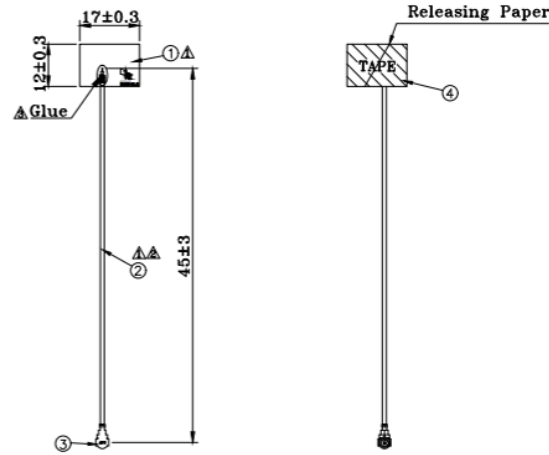
BT	
Item	Specification
Operating Frequency(MHz)	2400-2500
Bandwidth	100 MHz (Min.)
Return Loss	10 dB (Min.)
Polarization	Linear
Azimuth Bandwidth	Omni-directional
Peak Gain	1.19 dBi(Max.)
Impedance	50Ω
Material	FPC
Maximum Power	1W
V.S.W.R	2 : 1
Radiation	Omni directional
Efficiency	44 %(Max.)
Connector	MHF I
Cable type	OD:1.13 Normal
Operating Temperature	-10~60°C
Storage temp	-10~70°C

RoHS Compliant

Customer Drawing

REV	DATE	DESCRIPTION	ECN NO.	NAME
A1	24.01.18	PROPOSAL		LIEP
A2	24.02.23	△MODIFY LAYOUT		DAVID
A3	24.02.26	△MODIFY CABLE COLOR		DAVID
A4	24.02.27	△ADD GLUE		DAVID

A
B
C
D



CUST NO.:

WIESON TECHNOLOGIES CO., LTD

PART NO.:
ARY196-3154-007-00

TITLE: BT Antenna

④	Tape	3M9448HK, Size: 17 x 12mm	1
③	Connector	MHF I Plug For 1.13mm Cable, Gold Plated	1
②	Cable	1.13mm Normal Coaxial Cable, FEP Black Jacket△△	1
①	FPC	Size: 17 x 12 mm	1
NO.	ITEM	DESCRIPTION	QTY

DRAWN BY	LIEP(WST)	DRAWING NO.	ARY196-3154-007-00
CHECKED BY		DRAWING SIZE	A4
APPROVED BY		UNIT	mm
SORTING NO.	WSC	PAGE	1 OF 1

[ARTICLE: SR-83-41 V1]

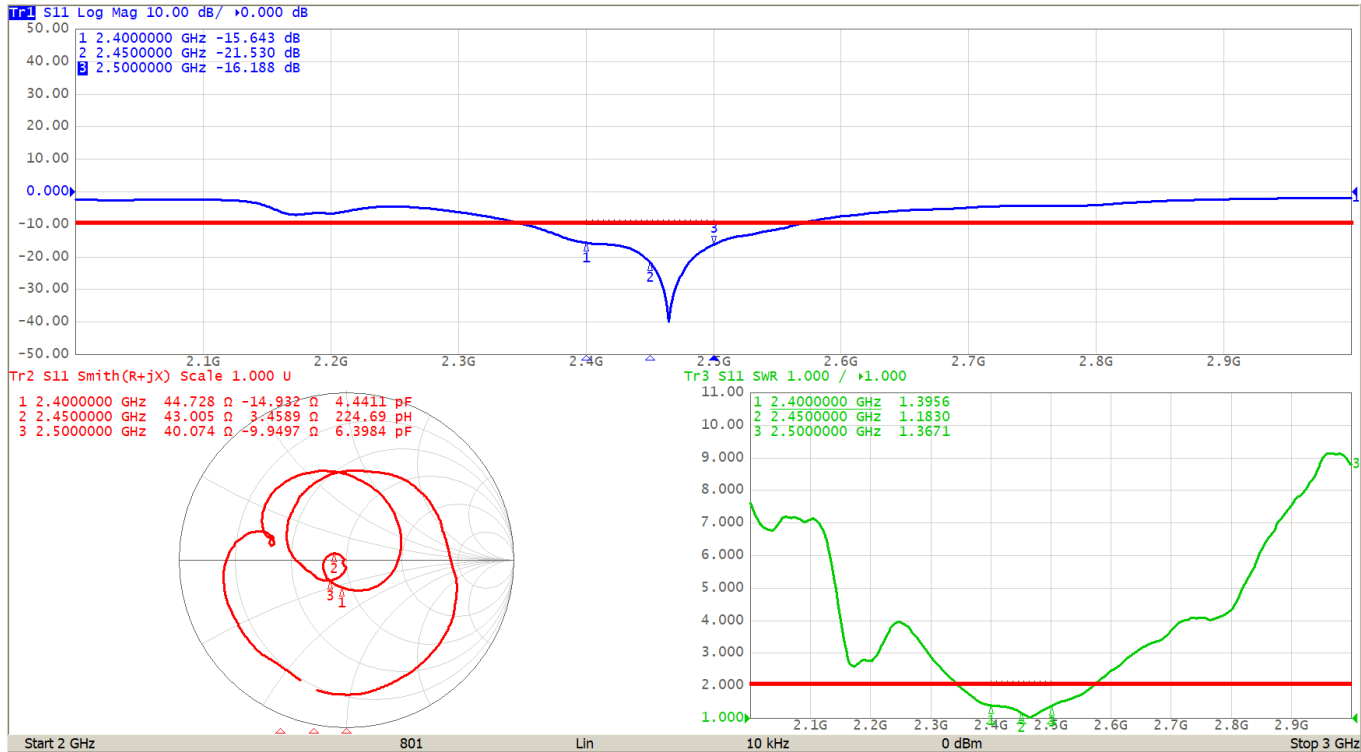
Antenna Photo



Cable Length: 45 mm

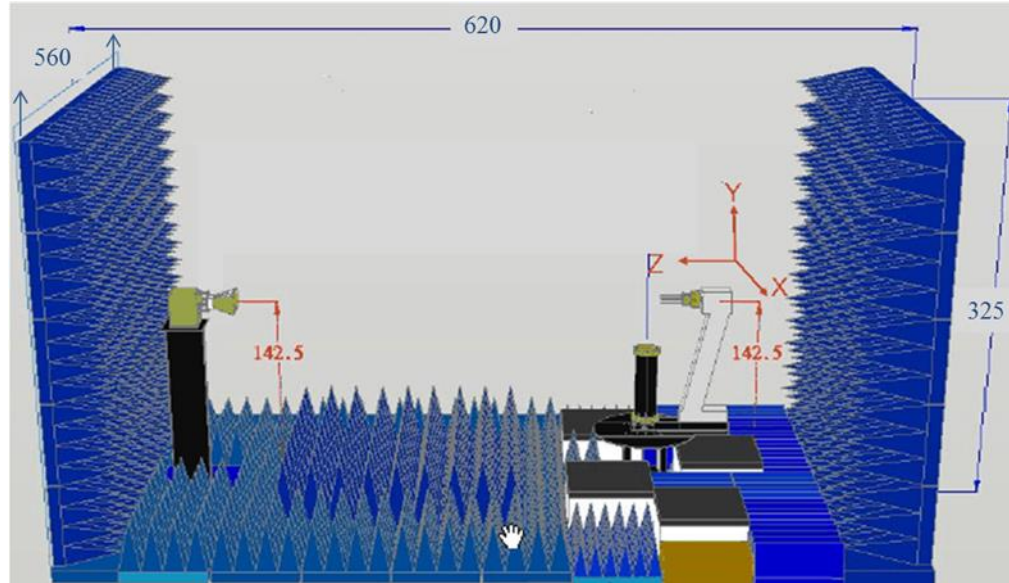
S-Parameter Measurement Result

BT



Test & System Description

a. Test setup

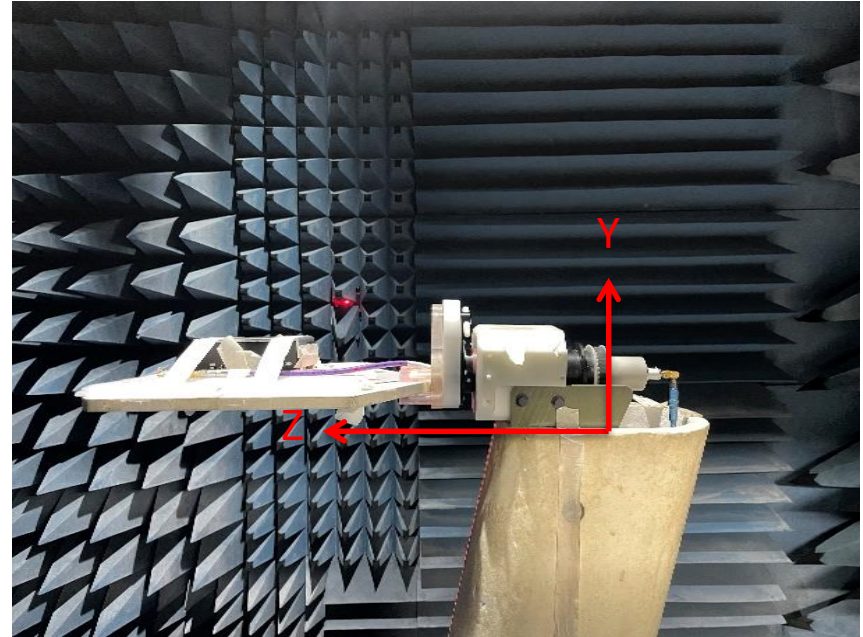


Test & System Description

b. Equipment list

Device	Ttype/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	FFC-600L	FFC-600L-285	wavepro	30-Apr-22	30-Apr-23
Network Anylyzer	N5230A	MY45000163	Agilent Technologies	11-May-21	11-May-23
Turntable	NSI-SC-5606-3DZ	011	NSI-MI	N/A	N/A
Measurement SW	NSI 2000	SOM-SM-2000-V4	NSI-MI	N/A	N/A
Dual Polarization Vivaldi Antenna 0.6~8GHz	-	-	WavePro Inc.	30-Oct-20	30-Oct-23
Computer Monitor	HS-CM145	0410006420	CCTVINDIA	30-Aug-20	30-Aug-23
Industrial PC	IPC-610BP		Advantech Co., Ltd	30-Aug-20	30-Aug-23
Standard Beam Controller (SBC)	NSI-RF-5918	070	NSI-MI	30-Oct-20	30-Oct-23
Antenna Range Controller (ARC)	NSI-SC-5911-4	0335	NSI-MI	30-Oct-20	30-Oct-23
RF Cable 240in 22GHz	UFA210C-1-2400-300300	MFR 64639 207908-005	Carlisle Interconnect Tech.	30-Aug-20	30-Aug-23
RF Cable 240in 22GHz	UFA210C-1-2400-300300	MFR 64639 209026-013	Carlisle Interconnect Tech.	30-Aug-20	30-Aug-23
RF Cable 60cm 26.5GHz	EC-A5-60-1678	Z0066	E-INSTUMENT TECH LTD.	30-Aug-20	30-Aug-23

chamber measurement photo



3D Gain Total

BT

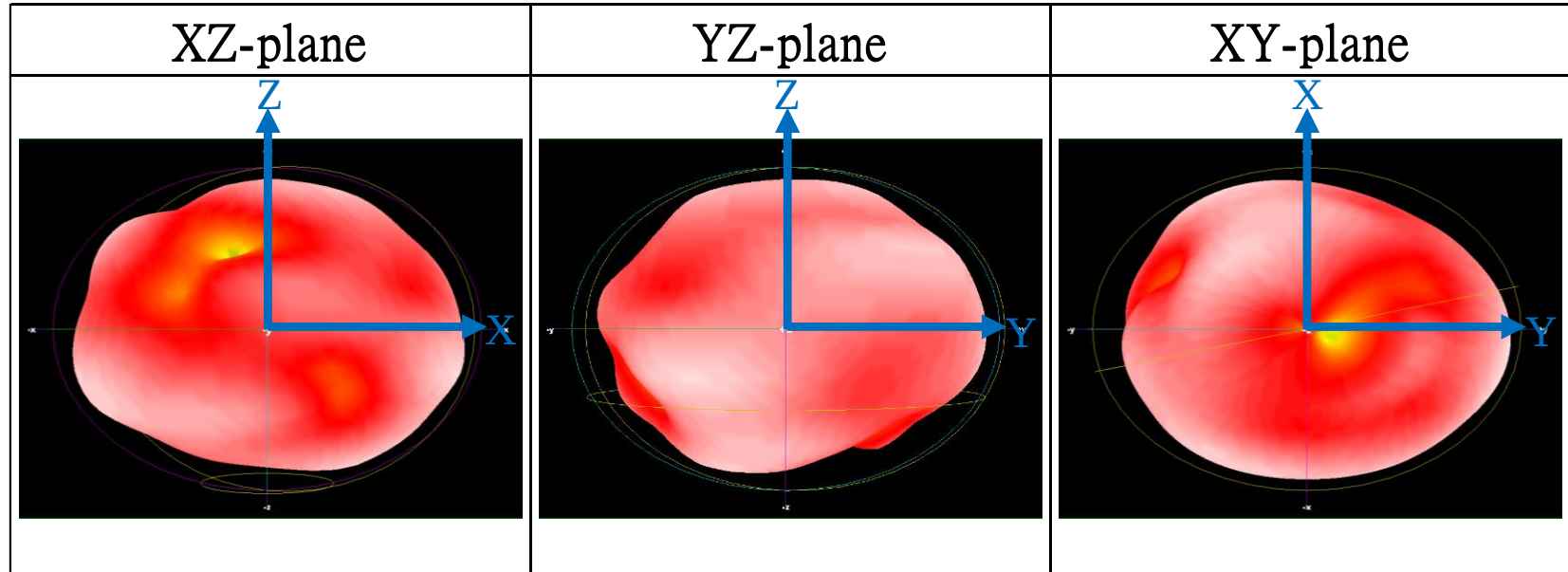
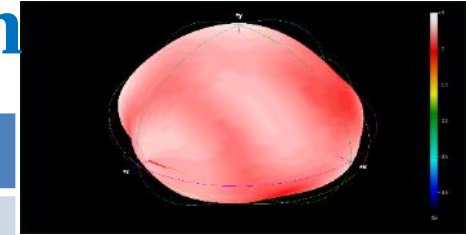
Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.4	-0.06	-4.6	35
2.41	0.51	-4.29	37
2.42	0.26	-4.16	38
2.43	0.2	-3.85	41
2.44	0.9	-3.74	42
2.45	1.19	-3.58	44
2.46	0.95	-3.74	42
2.47	0.86	-3.86	41
2.48	0.79	-4.02	40
2.49	0.47	-4.16	38
2.5	0.23	-4.29	37

3D Antenna Pattern

BT

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	1.19	-3.58	44



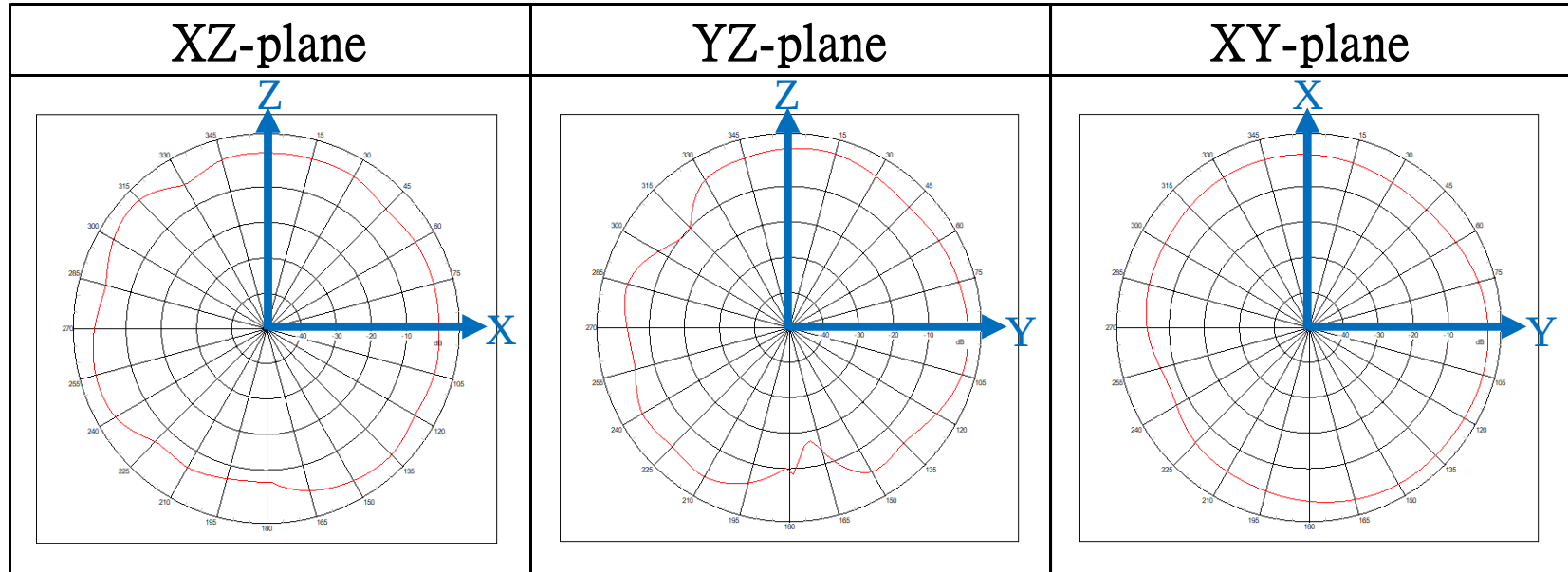
Far-field amplitude limits:
Max: 5dB
min: -50dB

2D Antenna Pattern

BT

Frequency : 2450 MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.45	1.19	-3.58	44



Far-field amplitude limits:

Max: 5dB

min: -50dB



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