



Antenna Datasheet

Product OC: YEBA000J1AM

Version: 1.0

Date: 2024-06-19

Status: Released

Product Name: Wi-Fi & V2X Adhesive Mount Rubber Dipole Antenna

Key Features:

Frequency band: Wi-Fi: 2400–2500MHz, 5150–5850MHz, 5925–7125
MHz V2X: 5850–5925 MHz

Peak efficiency: 72 % (EVB)

Dimensions: 16 × 60 × 6.3 mm

RoHS and REACH Compliant

Overview

YEBA000J1AM is a Wi-Fi & V2X rubber antenna measuring 16 × 60 × 6.3 mm. This ultra-wide-band antenna provides broad coverage from 2400–2500MHz, 5150–7125 MHz. The antenna is available with connection via cable lengths from 209 mm, terminated with SMA Male connector. This low profile, terminal mount omni-directional antenna, ideal for applications where the antenna is required to be discrete, is easy to install with maximum durability assured thanks to its PC + ABS enclosure. It is compatible with Quectel's Wi-Fi Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. YEBA000J1AM is designed as an active antenna, which offers high efficiency in all working bands. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for smart metering, remote monitoring, vehicle tracking and telematics, and many other IoT devices. It is suitable for outdoor and indoor applications due to its PC enclosure.

Typical applications include:

- vehicle safety applications
- Smart City
- Routers and Gateways
- V2X mesh networks system

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

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1 Specification

Test Condition: Free Space & On 130 × 130 mm EVB

1.1. Electrical

Electrical		
Frequency Range	Wi-Fi	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
	V2X	5850–5925 MHz
Impedance		50 Ω
Polarization		Linear
Radiation Pattern		Omni-directional

1.1.1. Wi-Fi

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400–2500	5150–5850	5925–7125
Max. VSWR	FS		1.7	1.8	2.4
	EVB		2.7	2.8	3.0
Max. Return Loss (dB)	FS		-11.5	-11.3	-7.8
	EVB		-6.8	-6.5	-6.1
AVG Eff. (%)	FS		59.3	60.9	52.3
	EVB		66.9	53.1	47.3
AVG Gain (dB)	FS		-2.3	-2.2	-2.8
	EVB		-1.8	-2.8	-3.3
Max. Peak Gain (dBi)	FS		4.6 (2400)	4.3 (5155)	3.5 (7005)

	EVB	4.0 (2430)	5.4 (5155)	3.4 (7010)
VSWR	FS	≤ 2.4		
	EVB	≤ 3.0		
Return Loss	FS	≤ -7.8 dB		
	EVB	≤ -6.1 dB		
Peak Gain	FS	≤ 4.6 dBi		
	EVB	≤ 5.4 dBi		

Gain – Detail				
Band	Channel	Freq. (MHz)	Max peak Gain (dBi)	
W52	36/40/44/48	5150–5250	4.3 (FS) (5155)	5.4 (EVB) (5155)
W53	52/56/60/64	5250–5350	3.7 (FS) (5260)	4.4 (EVB) (5265)
W56	100/104/108/112/116/132/136/140	5470–5725	2.8 (FS) (5470)	3.1 (EVB) (5470)
W58	149/153/157/161/165	5725–5850	2.3 (FS) (5775)	1.4 (EVB) (5830)

- FS: Free Space
- EVB: On 130 × 130 mm EVB

1.1.2. V2X

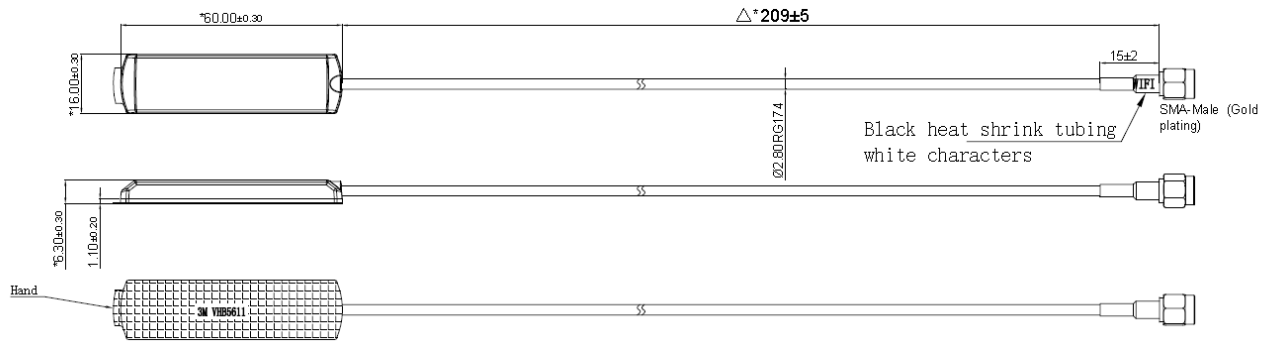
SPEC	Band	Band	V2X
		Freq. (MHz)	5850–5925
Max VSWR	FS		1.7
	EVB		1.9
Max Return Loss (dB)	FS		-11.3
	EVB		-10.3
AVG Eff. (%)	FS		56.2
	EVB		53.6
AVG Gain (dB)	FS		-2.5
	EVB		-2.7
Max Peak Gain (dBi)	FS		2.1 (5865)
	EVB		2.0 (5880)

- FS: Free Space
- EVB: On 130 × 130 mm EVB

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	16 × 60 × 6.3 mm
Material & Color	PC + ABS & Black
Cable Type & Color & Length	RG 174 & Black & 209 mm
Connector Type	SMA Male (Overgild)
Mounting Type	Adhesive
Weight	Typ. 10.3 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

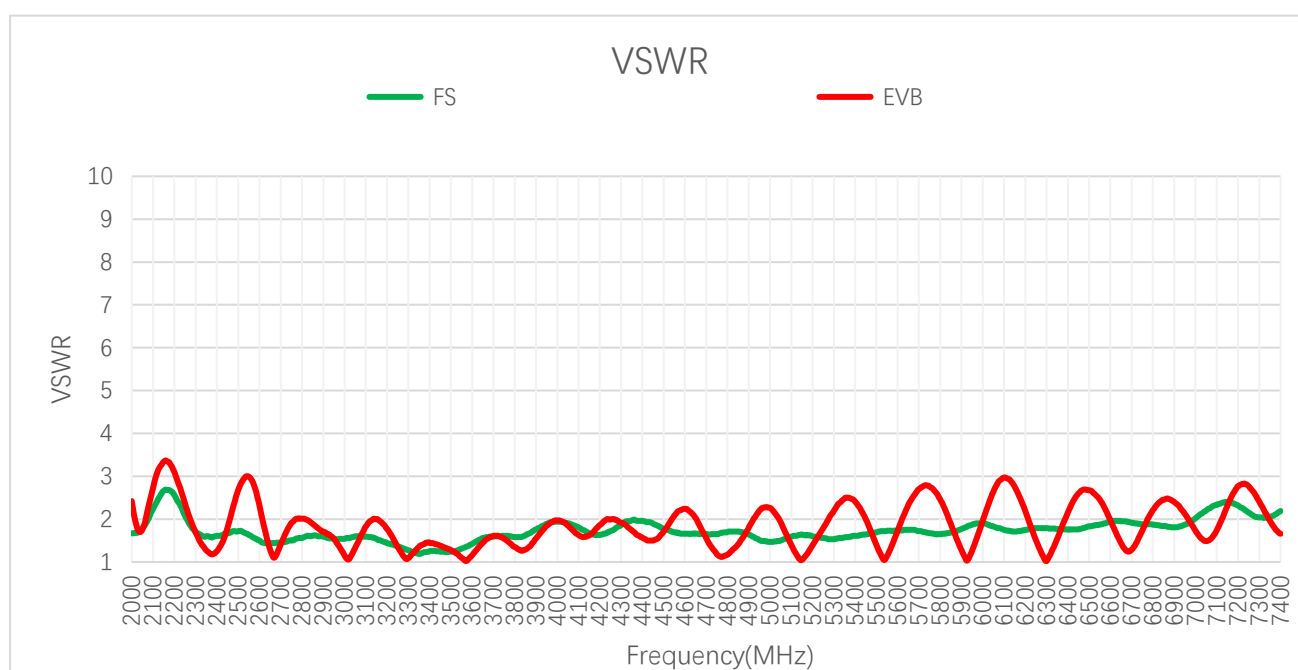
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR



VSWR – Wi-Fi

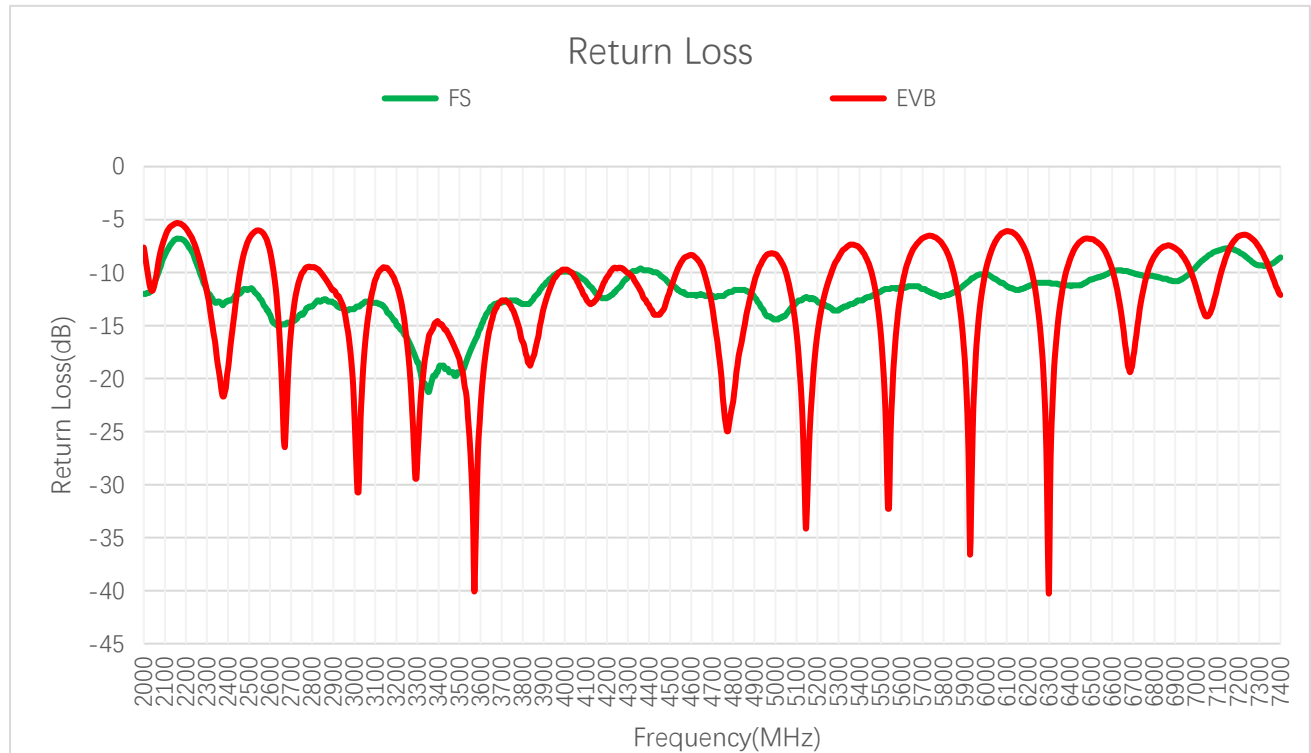
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	1.6	1.7	1.7	1.6	1.7	1.7	1.8	1.9	2.4
EVB	1.3	1.8	2.7	1.1	1.4	1.9	1.0	2.6	2.0

VSWR – V2X

Frequency (MHz)	5850	5885	5925
FS	1.7	1.7	1.8

EVB	1.9	1.5	1.0
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3.1.2. Return Loss



Return Loss (dB) – Wi-Fi

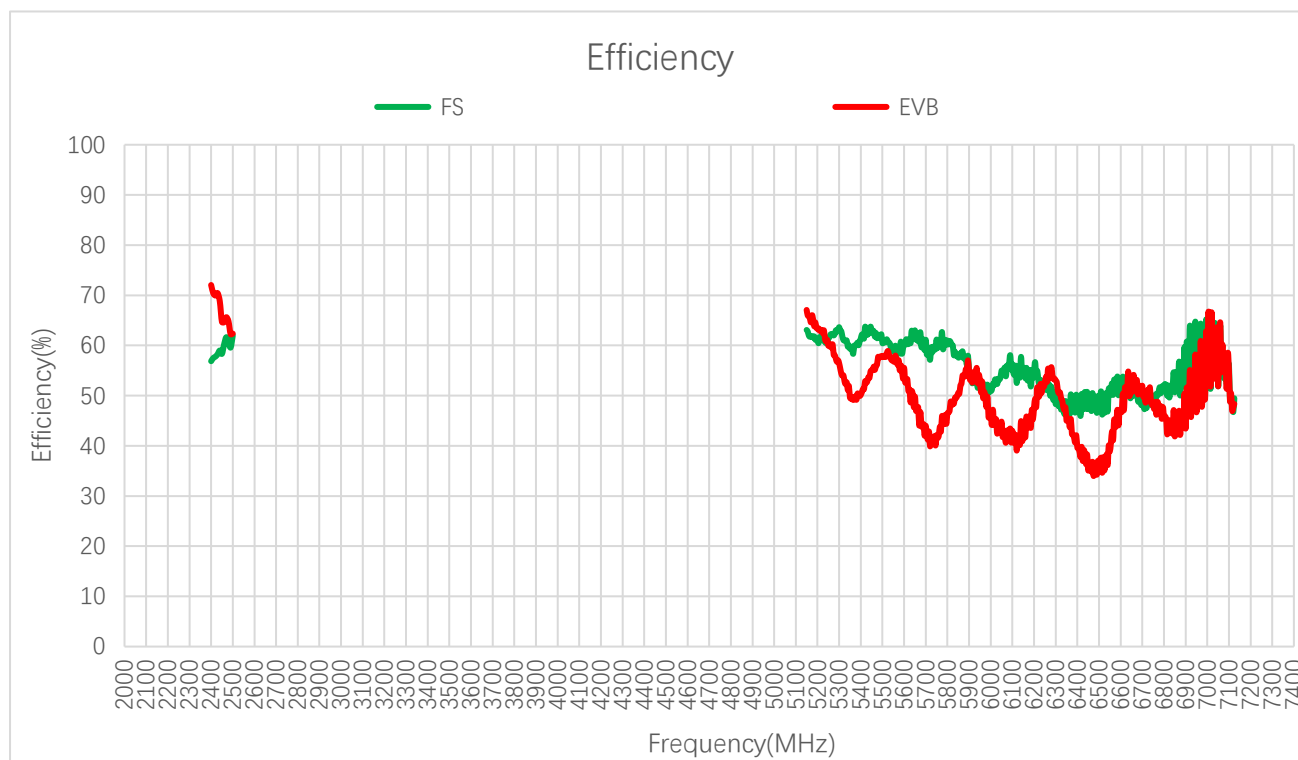
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	-12.6	-12.0	-11.5	-12.3	-11.8	-11.8	-10.7	-10.5	-7.8
EVB	-19.1	-10.9	-6.8	-32.3	-15.6	-10.2	-36.6	-7.1	-9.5

Return Loss (dB) – V2X

Frequency (MHz)	5850	5885	5925
FS	-11.8	-11.4	-10.7
EVB	-10.2	-14.7	-36.6

3.2. Radiation Performance Test

3.2.1. Efficiency



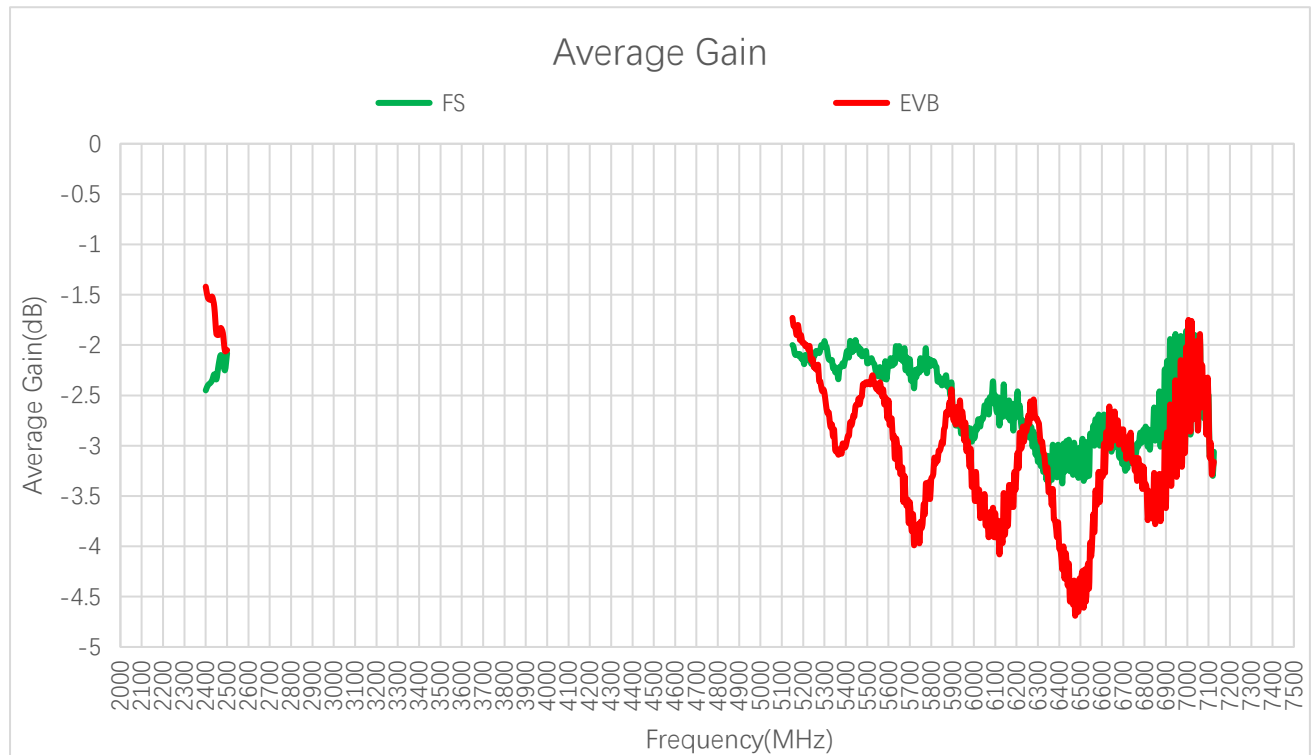
Efficiency (%) – Wi-Fi

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	56.9	58.3	62.0	63.1	60.5	57.6	52.5	46.6	49.5
EVB	72.1	64.7	62.4	67.1	57.7	50.6	54.0	35.1	48.3

Efficiency (%) – V2X

Frequency (MHz)	5850	5885	5925
FS	57.6	57.5	52.5
EVB	50.6	55.3	54.0

3.2.2. Average Gain



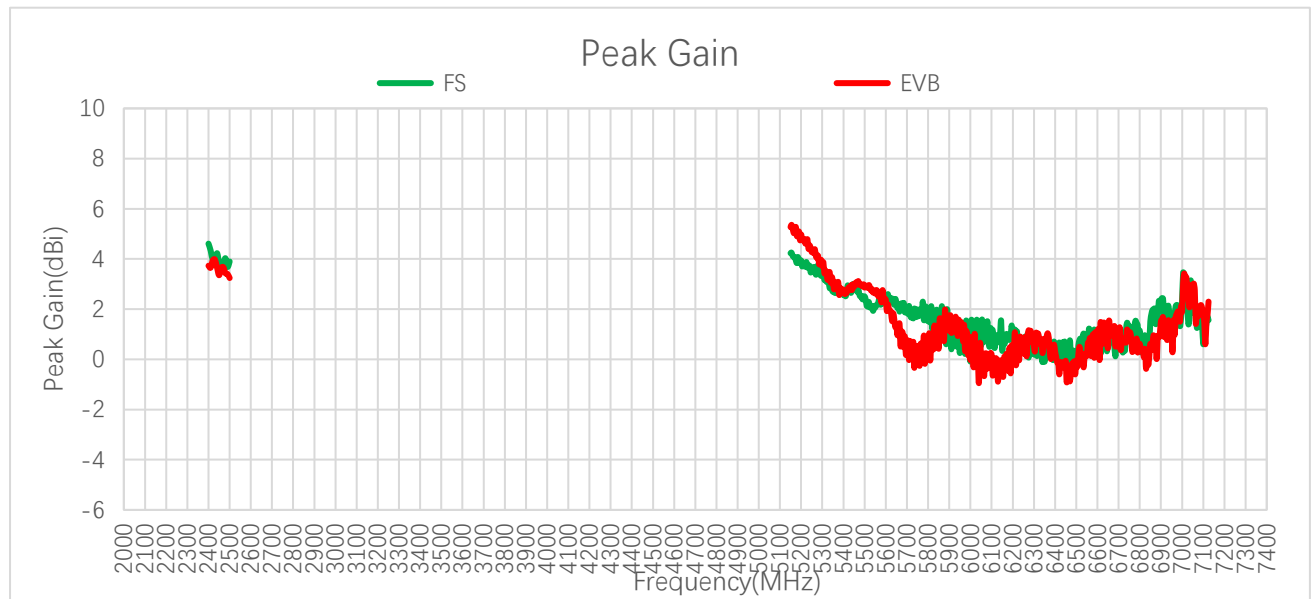
Average Gain (dB) – Wi-Fi

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	-2.5	-2.3	-2.1	-2.0	-2.2	-2.4	-2.8	-3.3	-3.1
EVB	-1.4	-1.9	-2.1	-1.7	-2.4	-3.0	-2.7	-4.6	-3.2

Average Gain (dB) – V2X

Frequency (MHz)	5850	5885	5925
FS	-2.4	-2.4	-2.8
EVB	-3.0	-2.6	-2.7

3.2.3. Peak Gain



Peak Gain (dBi) – Wi-Fi

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
FS	4.6	3.9	3.9	4.2	2.5	1.4	0.5	0.7	1.6
EVB	3.7	3.4	3.2	5.3	2.9	0.4	1.2	0.2	2.3

Peak Gain (dBi) – V2X

Frequency (MHz)	5850	5885	5925
FS	1.4	0.6	0.5
EVB	0.4	1.2	1.2

Max Peak Gain (dBi)

Band		Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G	V2X
FS	Frequency (MHz)	2400	5155	7005	5865
	Peak Gain (dBi)	4.6	4.3	3.5	2.1
EVB	Frequency (MHz)	2430	5155	7010	5880
	Peak Gain (dBi)	4.0	5.4	3.4	2.0

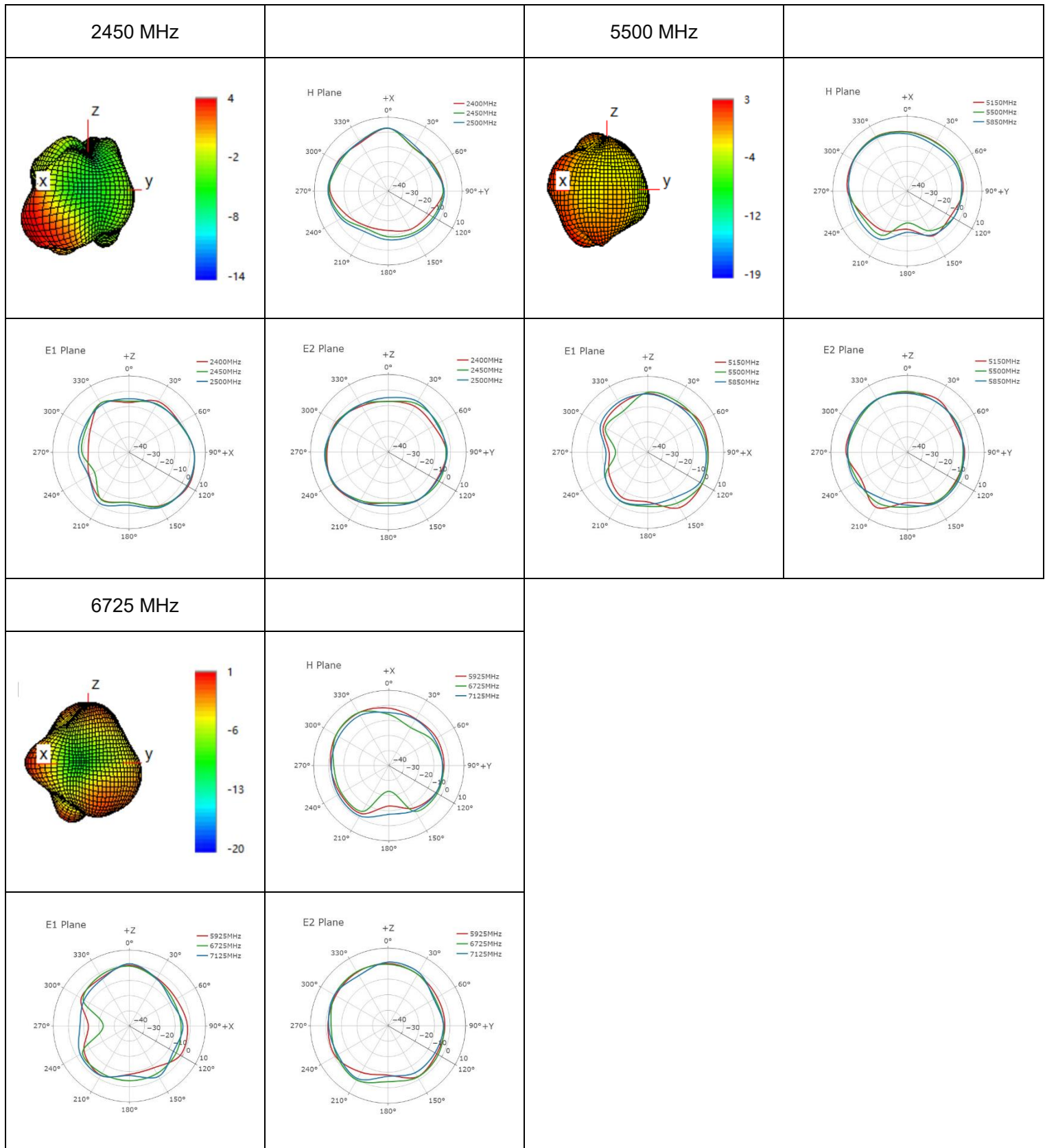
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Free Space

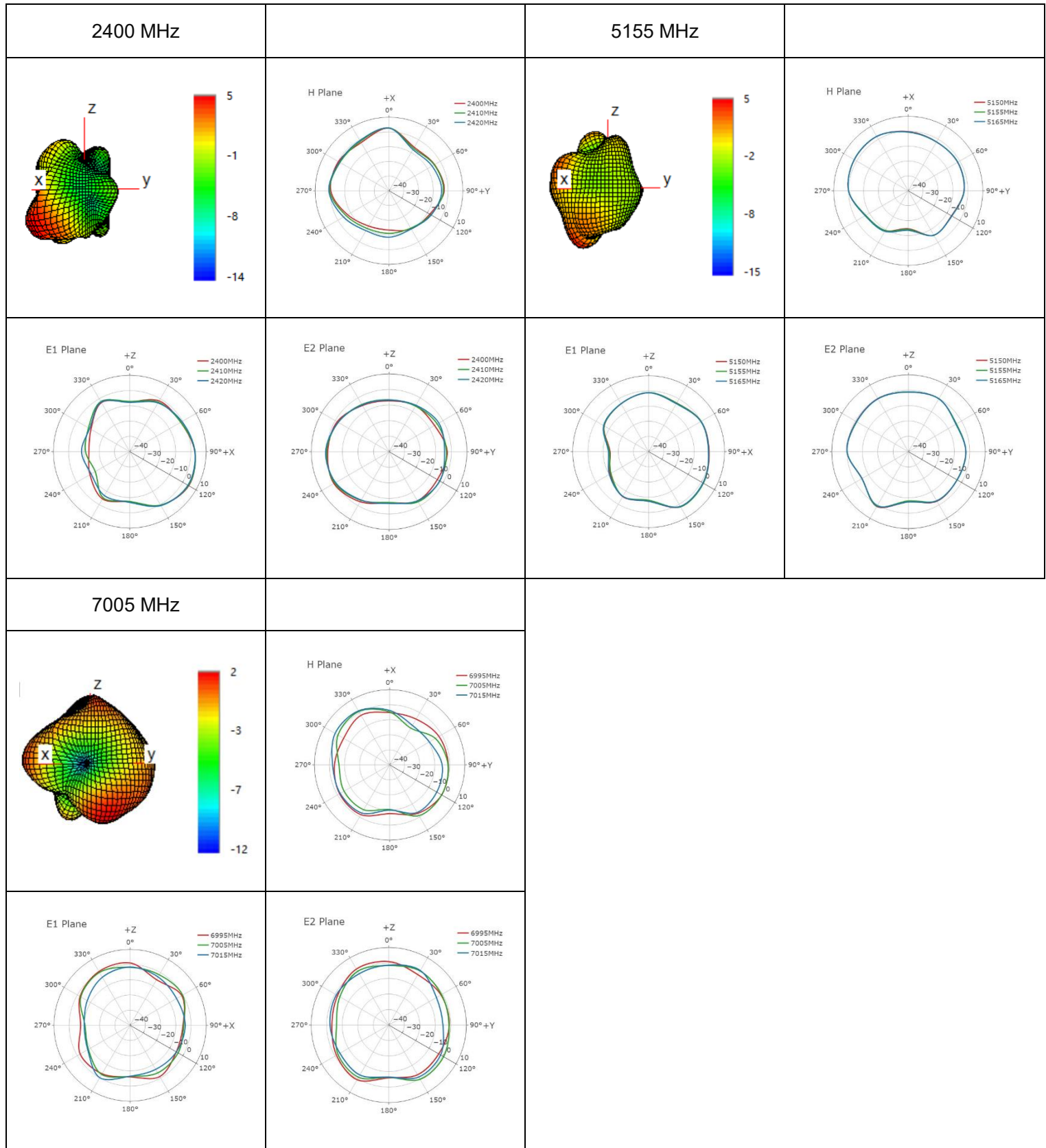
- Test Chamber: HF-G-1



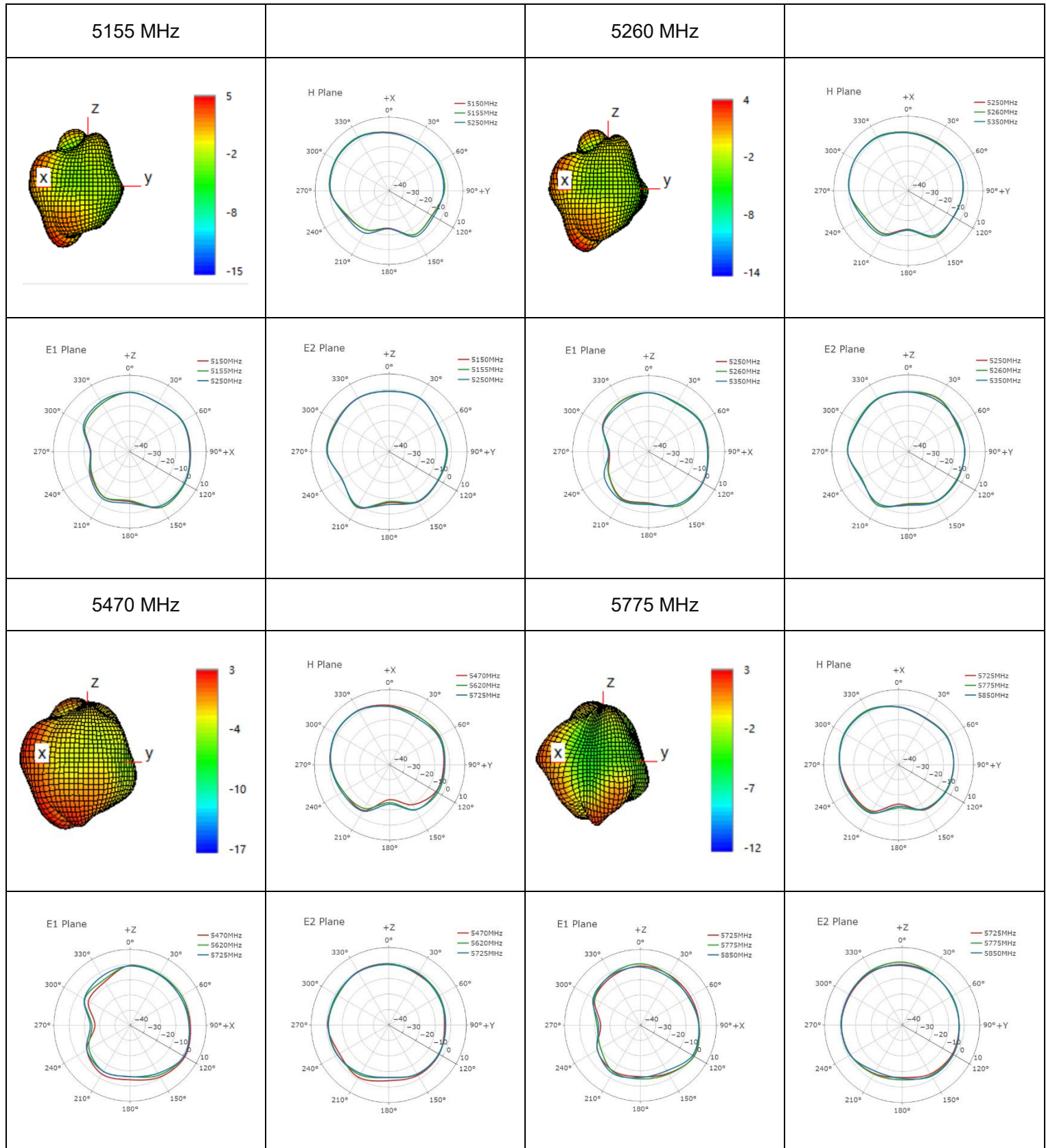
● **Wi-Fi**



● **Max Peak Gain**

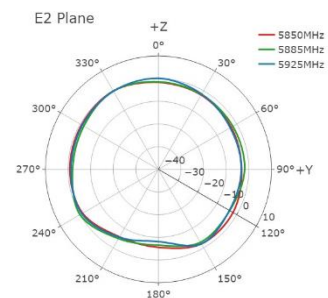
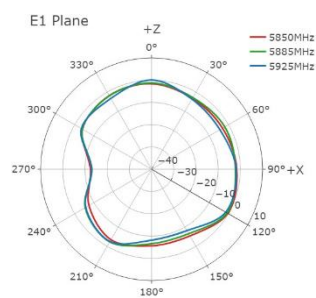
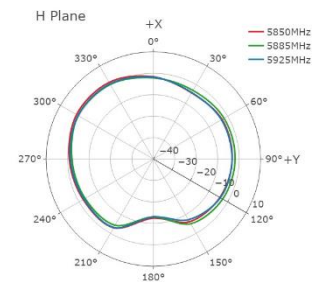
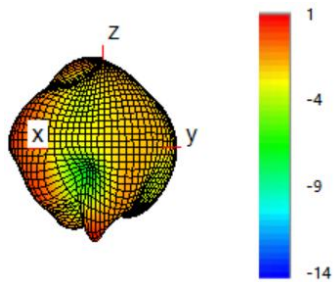


● **Max Peak Gain – 5G**



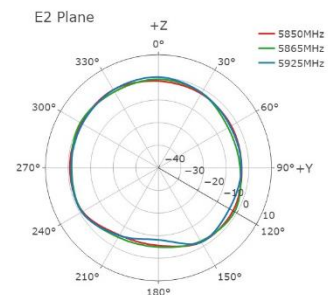
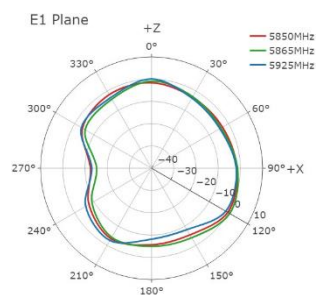
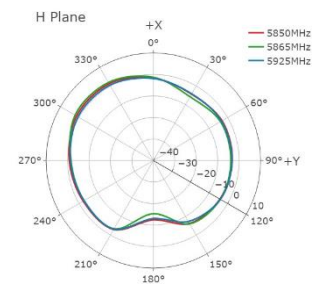
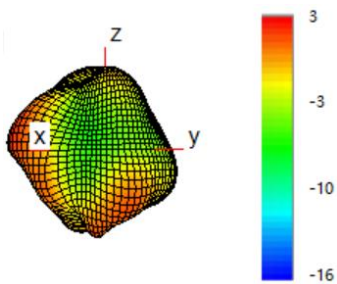
● **V2X**

5885 MHz



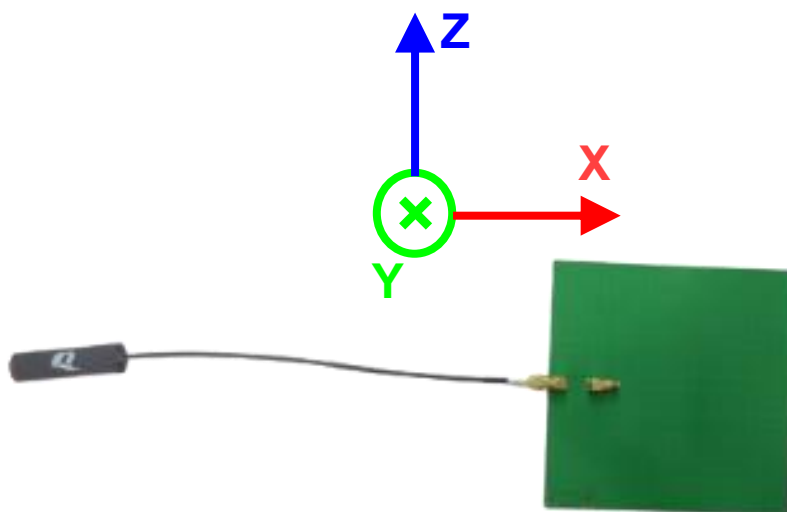
● **Max Peak Gain**

5865 MHz

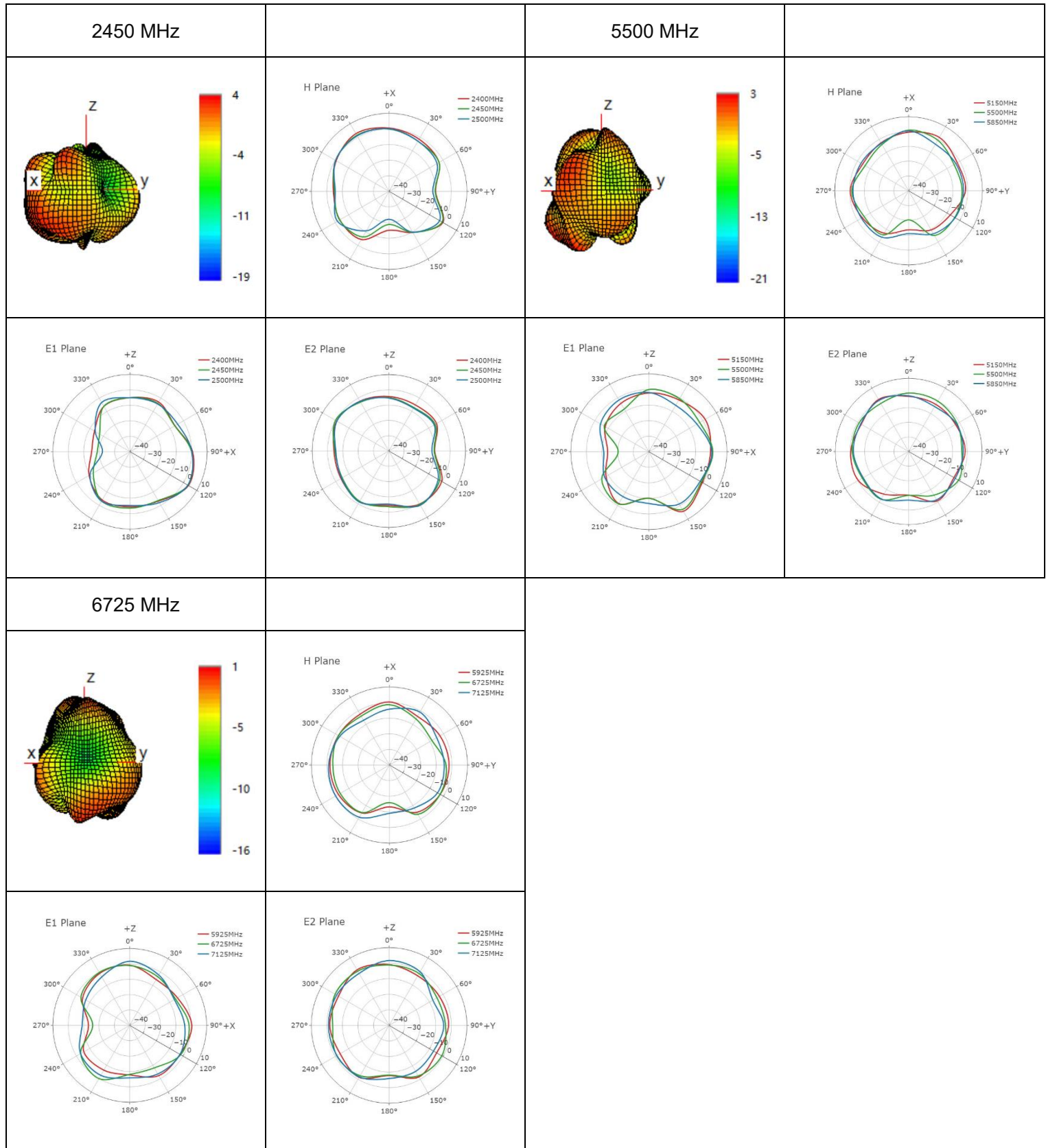


3.2.4.2. Test Condition: On 130 × 130 mm EVB

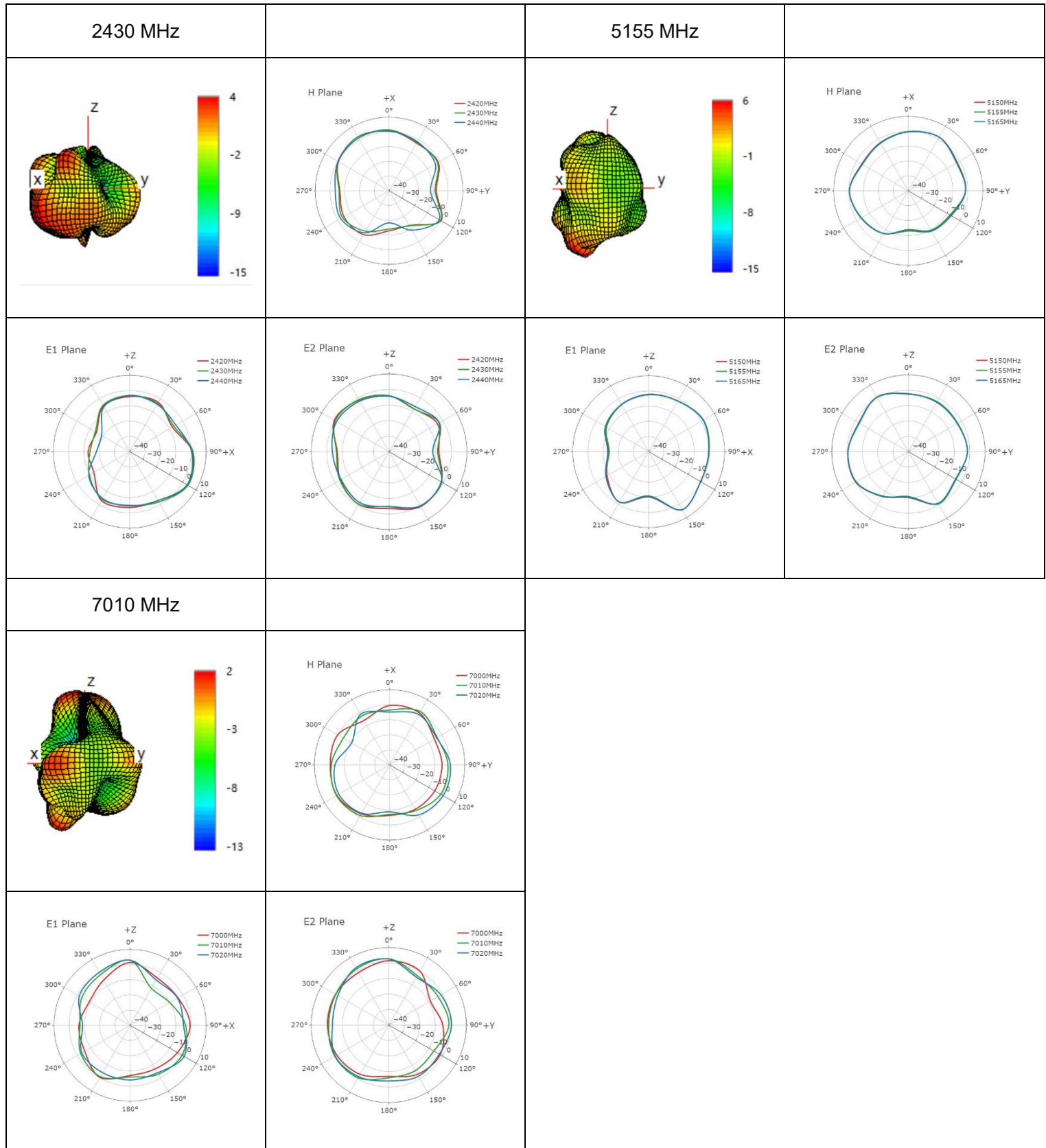
- Test Chamber: HF-G-1



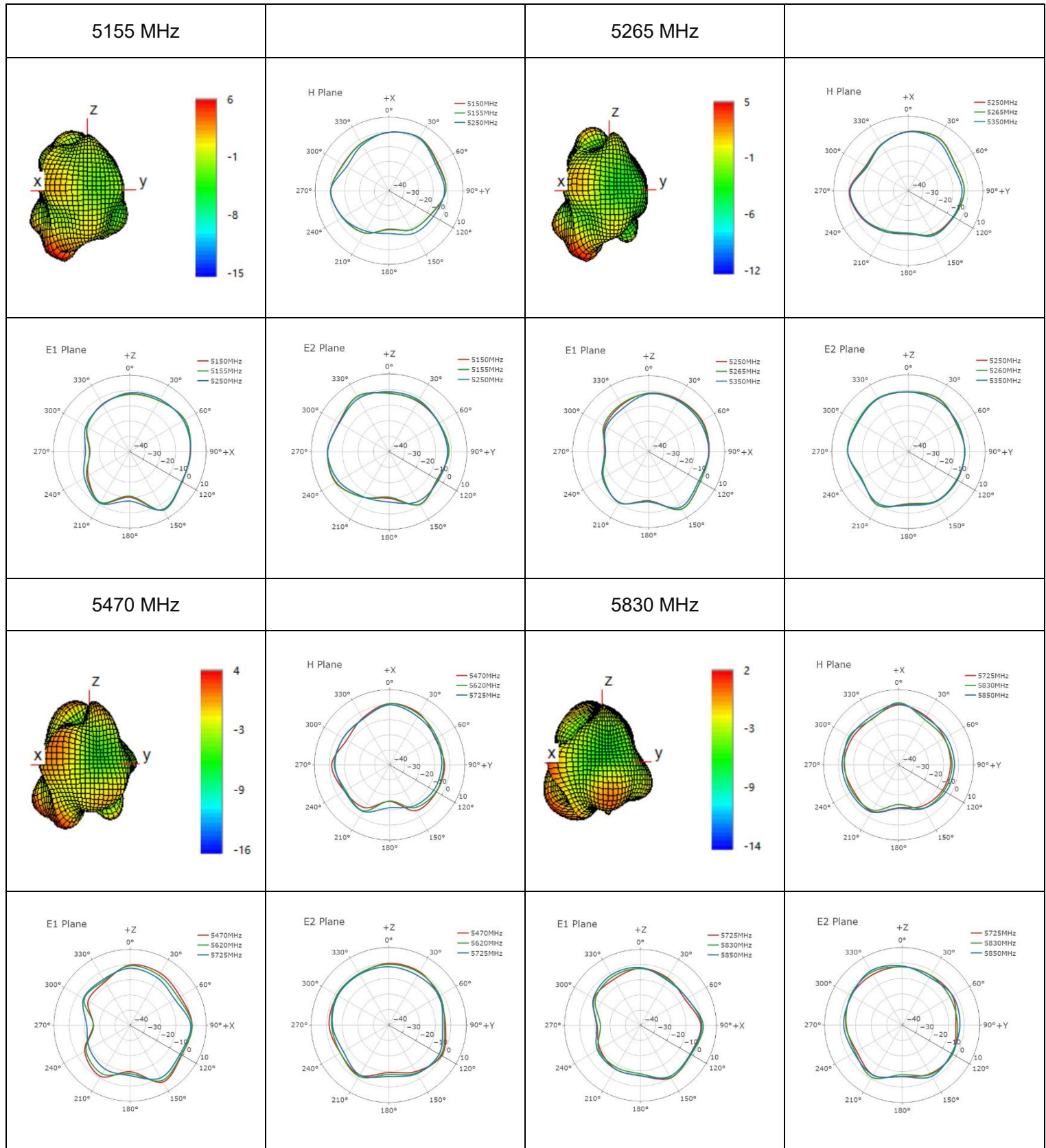
● **Wi-Fi**



● **Max Peak Gain**

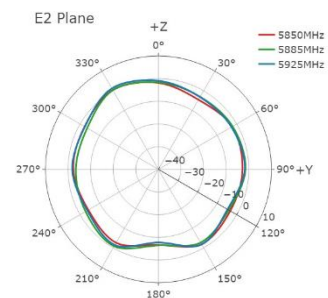
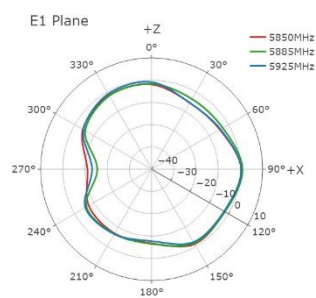
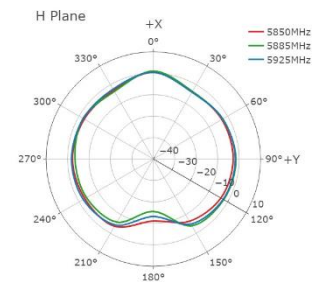
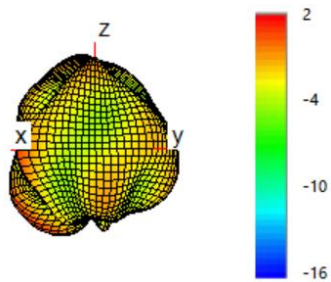


● **Max Peak Gain – 5G**



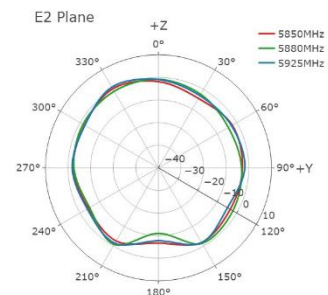
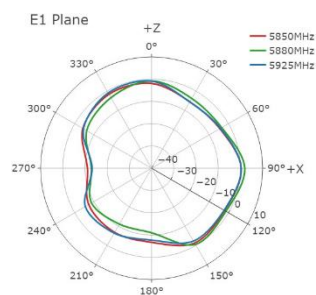
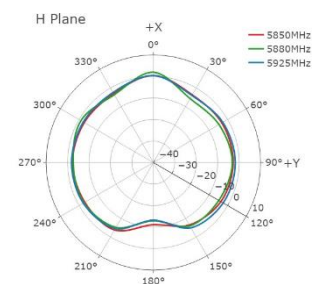
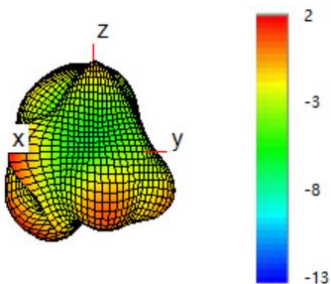
● **V2X**

5885 MHz



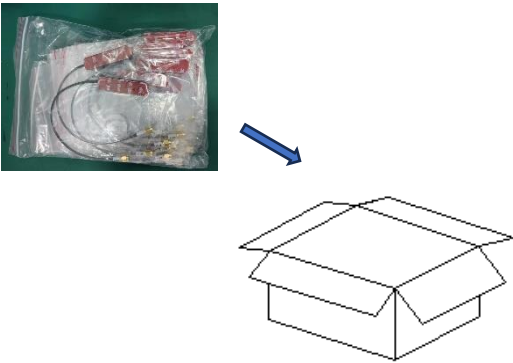
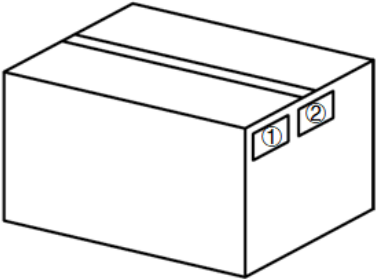
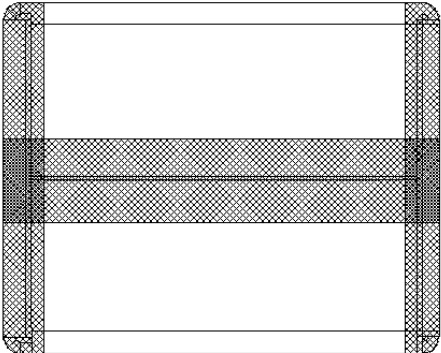
● **Max Peak Gain**

5880 MHz



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 pc antenna product in a small PE Bag. (1 PC / Small PE Bag)
2		30 pcs antenna products in a big PE bag. (30 PCS / Big PE Bag)

3		(12 PE Bags / Carton Box) (360 PCS Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. <u>Carton Size:</u> <u>L × W × H = 405 × 293 × 185 mm</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons “工” type sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Email: info@quectel.com

Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2024-06-19	Kane LIU/ Blake XIANG/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-06-19	Kane LIU/ Blake XIANG/ David LIU/ Rainey LIAO	First official release



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