



Antenna Datasheet

Product OC: YEBT002W1AM

Version: 1.0

Date: 2024-06-03

Status: Preliminary

Product Name: WIFI Terminal Mount External Dipole Antenna

Key Features:

Frequency Band: 2400–2500 MHz & 5150–5850 MHz & 5925–7125 MHz

Dimensions: 135 × 15.6 × 13 mm

Efficiency: Up to 73.5%

RoHS Compliant

Overview

The YEBT002W1AM is a WIFI external antenna measuring 135 × 15.6 × 13 mm. This ultra-wide-band WIFI antenna provides broad coverage from 2400–2500 MHz & 5150–5850 MHz & 5925–7125 MHz. The antenna is terminated with RP SMA Male connectors, also supports N male, TNC male, Fakra male connectors. 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 WIFI modules.

The antenna is designed as dipole type to work with various GND plane sizes or in free space for ease of integration with a hinged RP SMA Male connector to achieve the optimum position. Hinged structure helps to avoid other antennas or objects by rotating to different directions when mounted on terminals. This omni-directional antenna is ideally suited for Wi-Fi, WLAN, Zigbee, Bluetooth, and 802.11a/b/g/n/ac applications, WiFi application points and routers, offering great performance with its high gain and efficiency.

Typical applications include:

- Wi-Fi, WLAN, Zigbee, Bluetooth, and 802.11a/b/g/n/ac applications
- WiFi application points and routers

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 & 130 × 70 mm EVB

1.1. Electrical

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

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR	FS		1.6	2.3	3.3
	EVB		1.6	2.4	3.8
Max. Return Loss (dB)	FS		-13.0	-8.3	-5.4
	EVB		-12.2	-7.8	-4.7
AVG Eff. (%)	FS		50.8	61.8	47.8
	EVB		54.7	64.1	51.7
AVG Gain (dB)	FS		-2.9	-2.1	-3.2
	EVB		-2.6	-1.9	-2.9
Max. Peak Gain (dBi)	FS		2.9	3.0	4.3
	EVB		2.1	4.1	3.6
VSWR	FS		≤ 3.3		

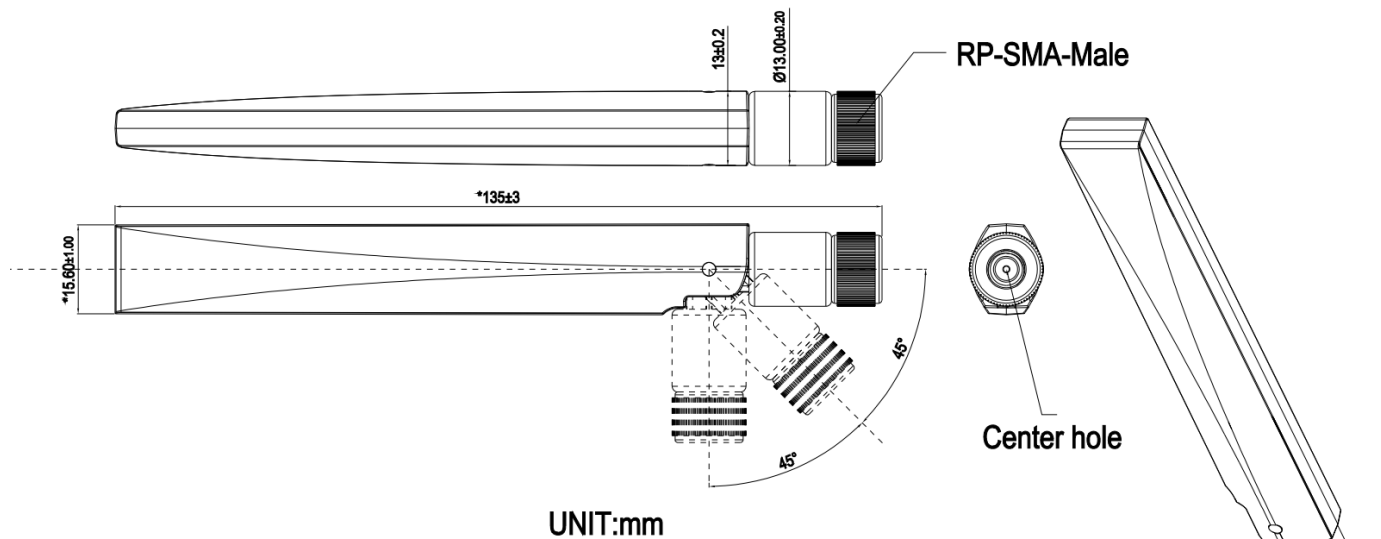
	EVB	≤ 3.8
Return Loss	FS	≤ -5.4 dB
	EVB	≤ -4.7 dB
Peak Gain	FS	≤ 4.3 dBi
	EVB	≤ 4.1 dBi

- **FS:** Free Space.
- **EVB:** On 130 × 70 mm EVB.

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	135 × 15.6 × 13 mm
Material & Color	PC+ABS & Black
Connector Type	RP SMA Male
Mounting Type	Terminal
Weight	Typ. 16 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

2 Drawing

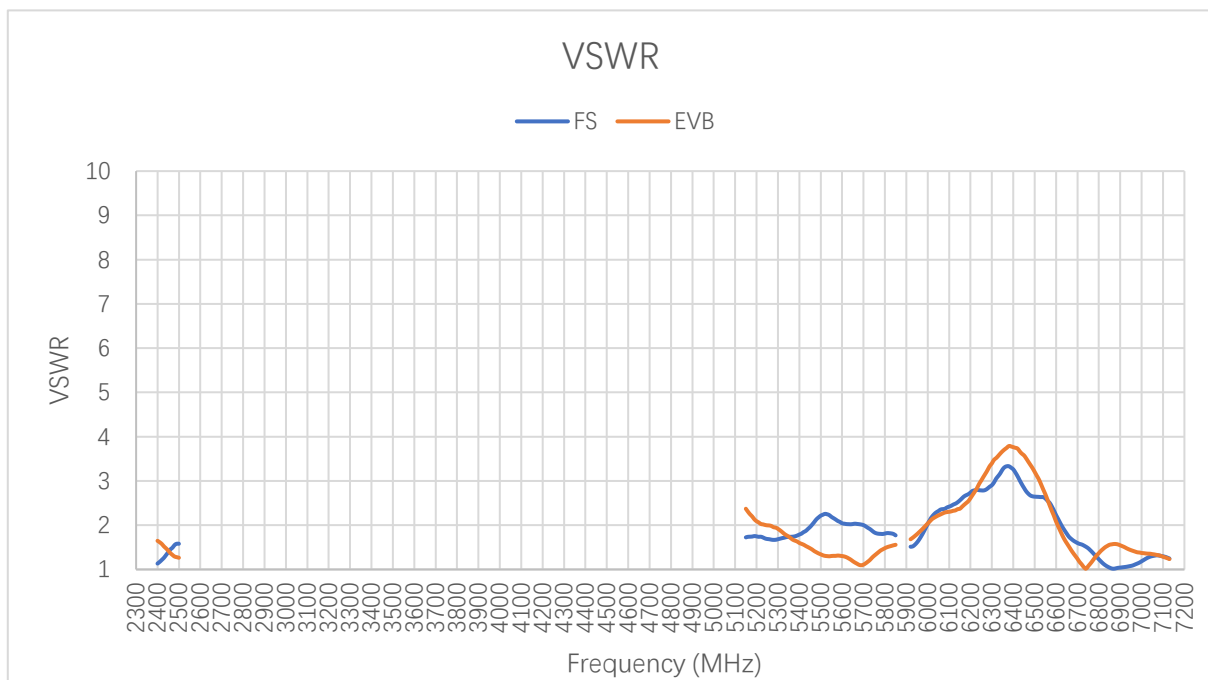


Note: If you use a torque wrench, the recommended force for mounting the antenna is 0.9Nm and the maximum torque to prevent antenna damage is 1.17Nm.

3 Detailed Performance

3.1. S-Parameter Test

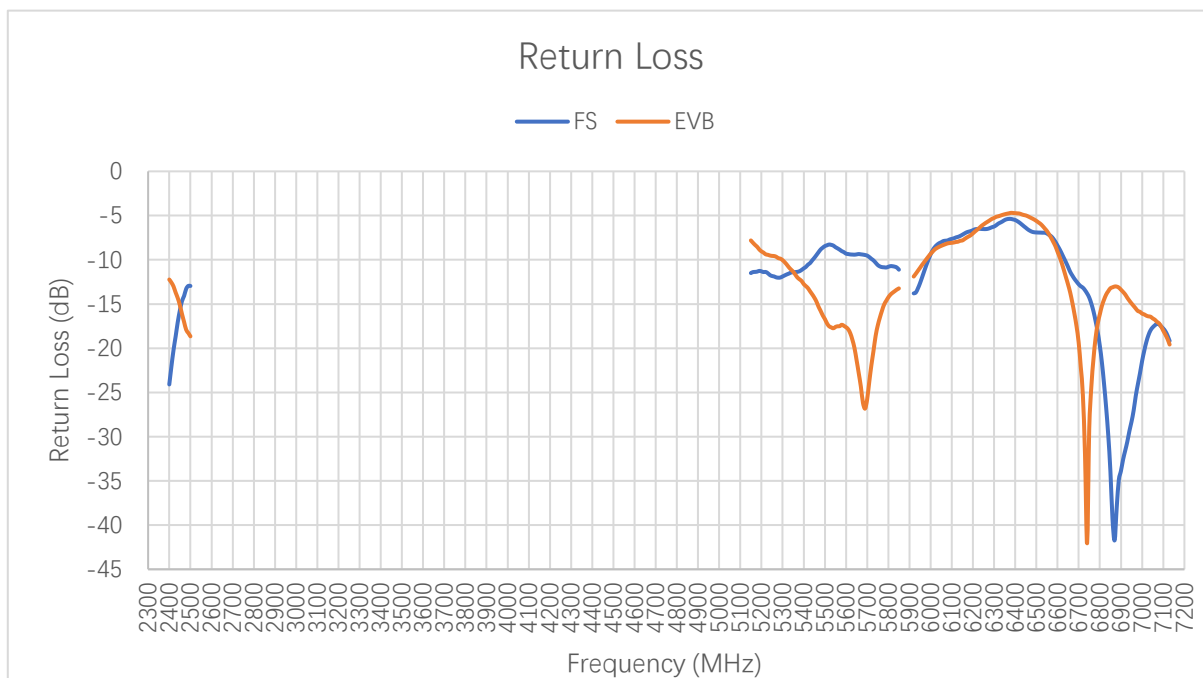
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	1.1	1.4	1.6	1.7	2.2	1.8	1.5	2.6	1.5	1.2
EVB	1.6	1.4	1.3	2.4	1.3	1.6	1.7	2.9	1.1	1.2

3.1.2. Return Loss

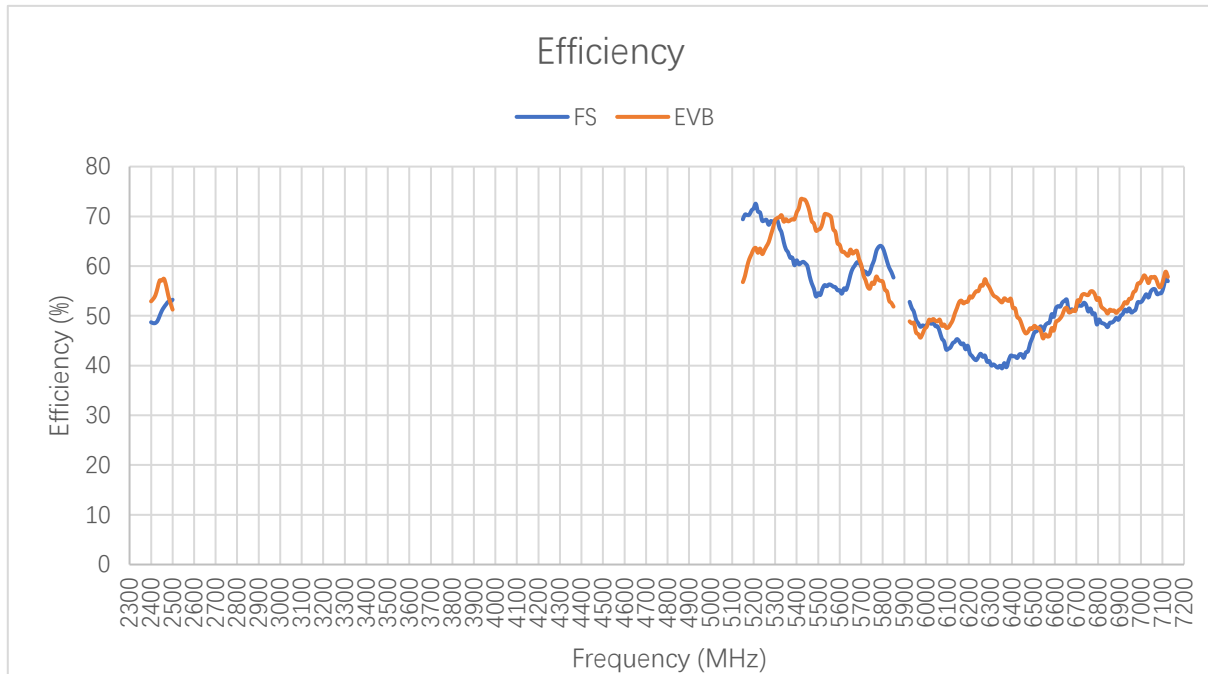


Return Loss(dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-24.1	-15.7	-13.0	-11.5	-8.5	-11.1	-13.8	-6.9	-13.4	-19.2
EVB	-12.2	-15.1	-18.7	-7.8	-16.7	-13.2	-11.9	-6.2	-32.1	-19.6

3.2. Radiation Performance Test

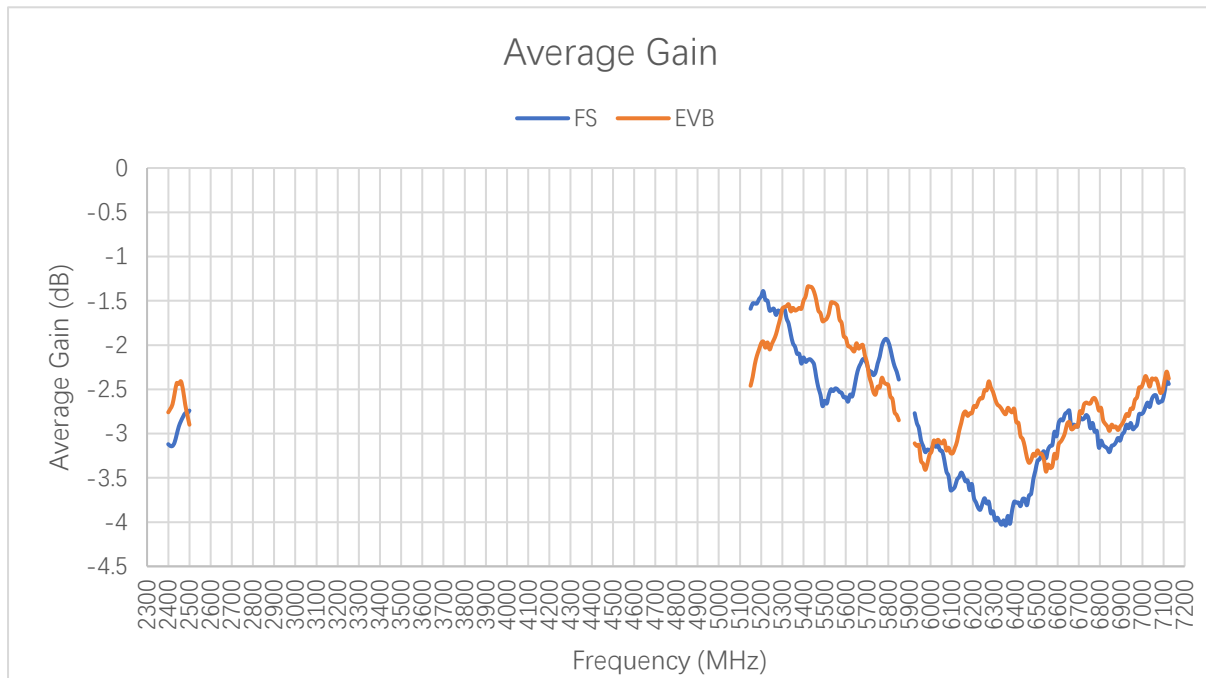
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	48.7	51.0	53.2	69.4	54.6	57.7	52.8	47.4	52.1	57.0
EVB	52.9	57.1	51.3	56.8	67.3	51.9	48.9	47.6	54.1	57.8

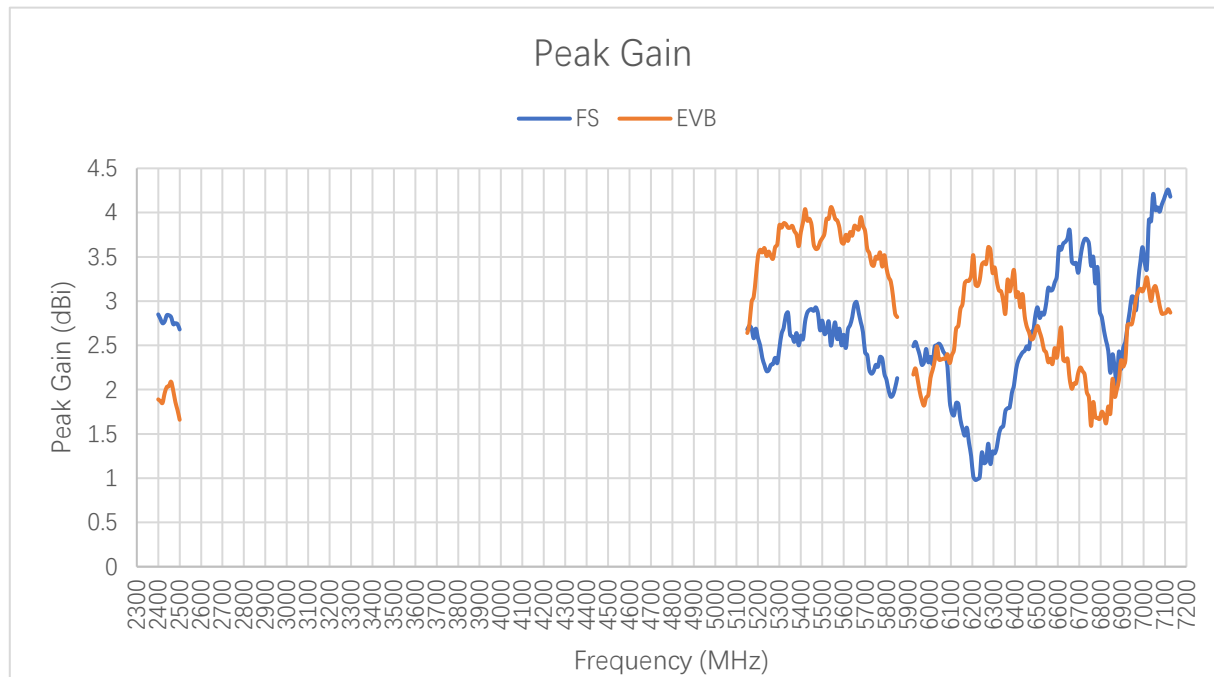
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-3.1	-2.9	-2.7	-1.6	-2.6	-2.4	-2.8	-3.2	-2.8	-2.4
EVB	-2.8	-2.4	-2.9	-2.5	-1.7	-2.9	-3.1	-3.2	-2.7	-2.4

3.2.3. Peak Gain

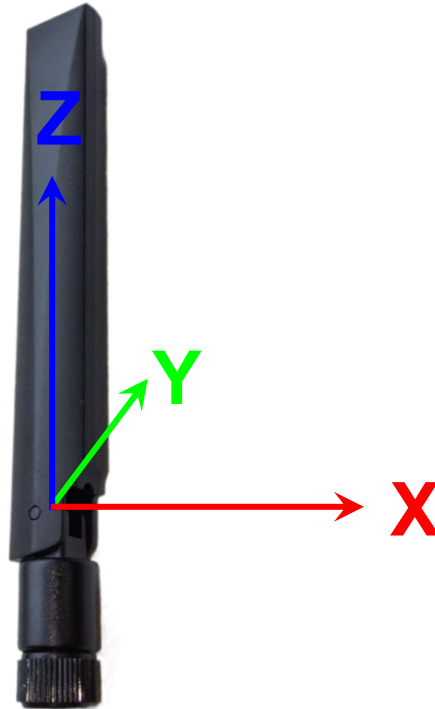


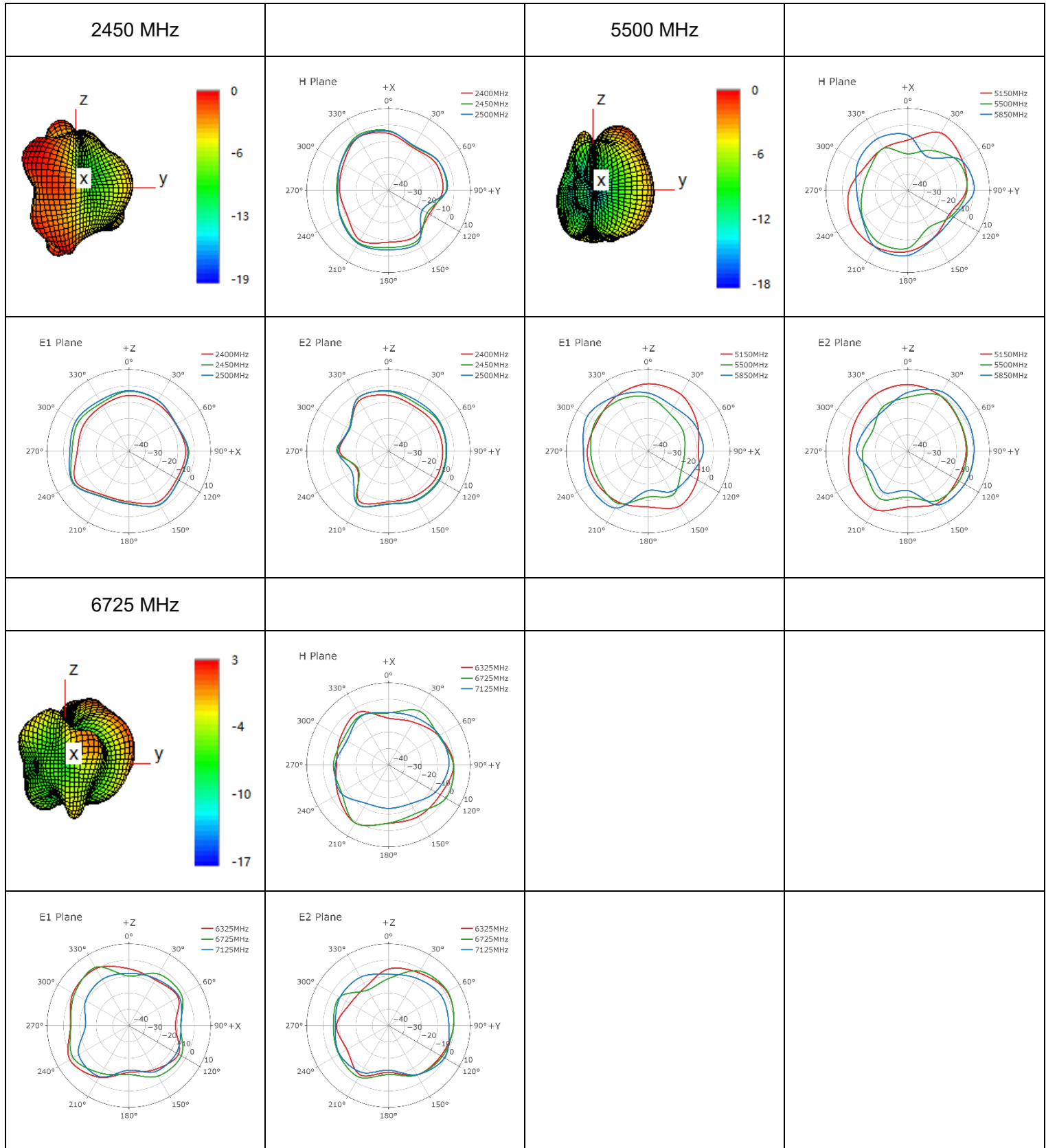
Peak Gain (dBi)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	2.9	2.8	2.7	2.7	2.8	2.1	2.5	2.9	3.7	4.2
EVB	1.9	2.0	1.7	2.6	3.7	2.8	2.2	2.6	2.2	2.9

3.2.4. 3D & 2D Radiation Pattern

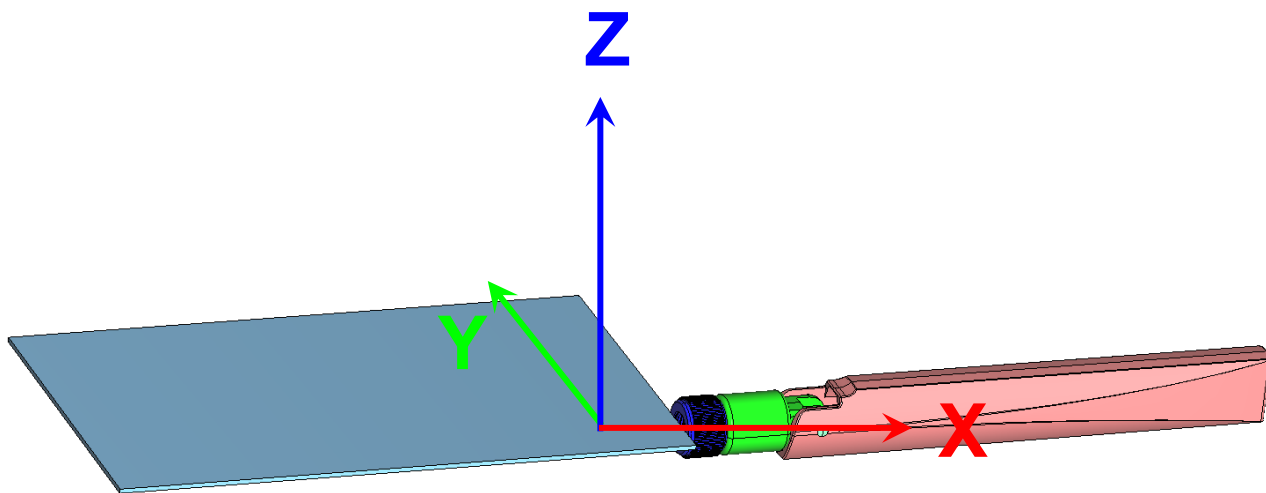
- Test Condition: Free Space
- Test Chamber: FS-G-1



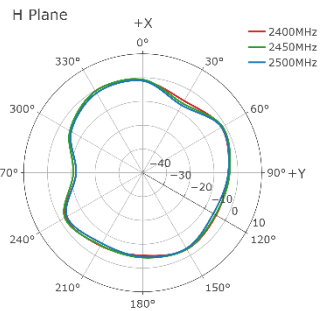
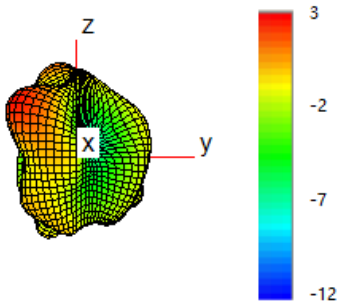


3.2.5. 3D & 2D Radiation Pattern

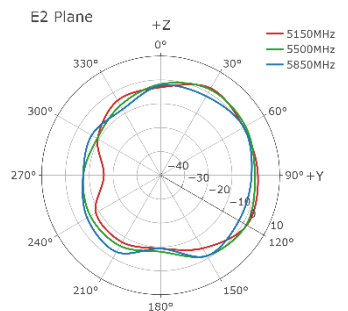
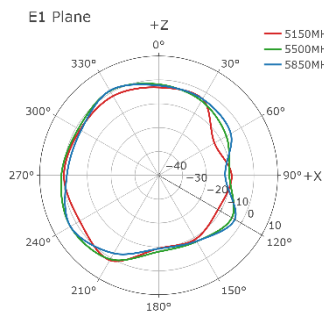
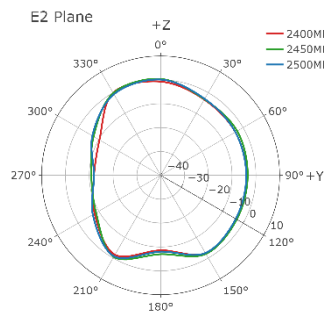
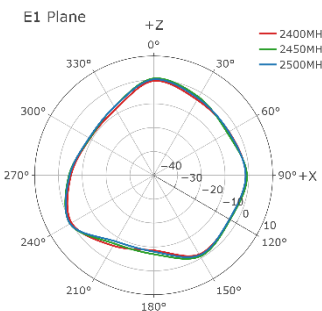
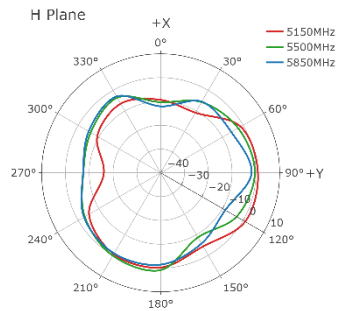
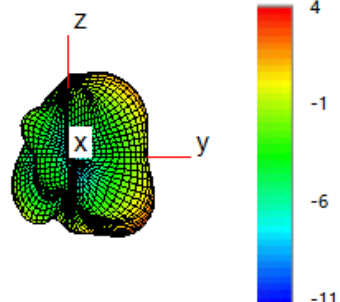
- Test Condition: On 130 × 70 mm EVB
- Test Chamber: FS-G-1



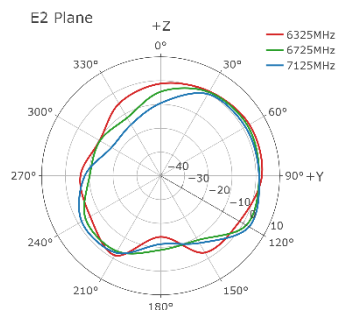
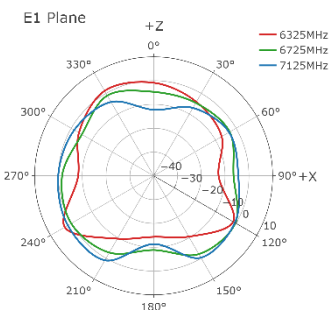
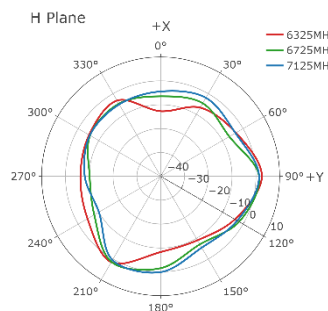
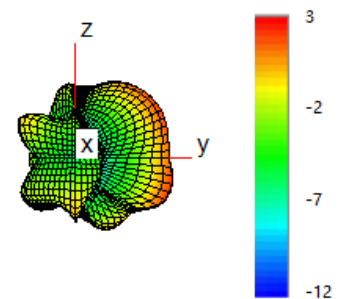
2450 MHz



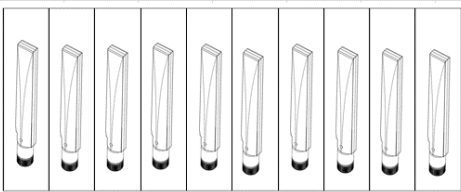
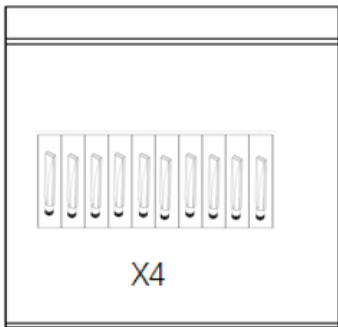
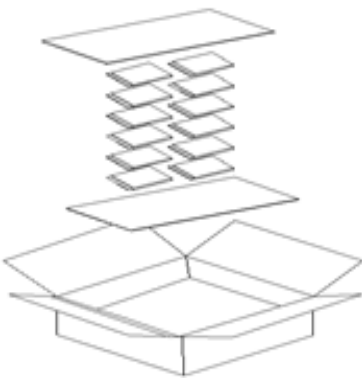
5500 MHz

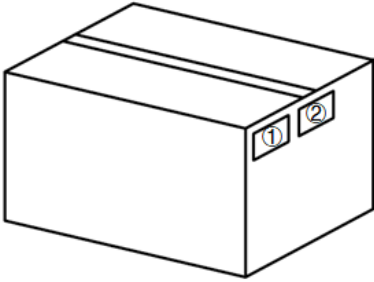
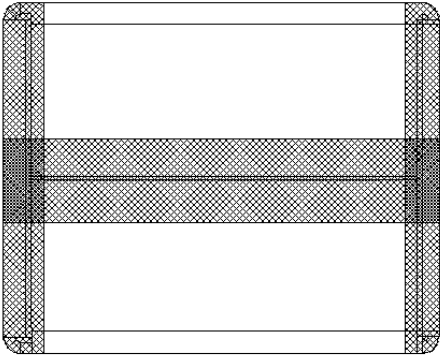


6725 MHz



4 Packaging

Step	Packaging picture / 2D picture	Description
1		10 pcs Antenna products in a One-piece bag 10 pcs Antenna / Per One-piece bag
2		40 pcs Antenna products in a PE bags; (40 pcs Antenna / Per PE Bag)
3		16 PE Bags / Per Carton Box) (640 pcs Antenna / Per Carton Box) Estimated quantity Products that are not full will be packaged in suitable cardboard boxes <u>Carton Size:L*W*H=325*325*200mm</u>

4		Position for Attaching Labels--- ① Carton Label ② Quality Label
5		Sealing Cartons--- “I” type sealing cartons
6	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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Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2024-06-03	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-06-03	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	First official release



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