Antenna Datasheet

Product OC: YEBT001W1AM
Version: 1.2
Date: 2024-11-07
Status: Released

Product Name: Wi-Fi Terminal Mount External Dipole Antenna
Key Features:
Frequency Band: 2400–2500 MHz & 5150–5850 MHz & 5925–7125 MHz
Dimensions: 135 mm × 15.6 mm × 13 mm
Efficiency: Up to 73.5 %
RoHS & REACH Compliant
IP67
Compatible with FAKRA, TNC and N-Type connectors

Overview

YEBT001W1AM is a Wi-Fi external antenna measuring 135 mm × 15.6 mm × 13 mm. This ultra-wide-band Wi-Fi antenna provides broad coverage from 2400–2500 MHz & 5150–5850 MHz & 5925–7125 MHz. The antenna is terminated with RP SMA Male connector, also supports N male, TNC male, Fakra male connectors. Ideal for applications where the antenna is required to be discrete, this low profile, terminal mount omni-directional antenna is easy to install with maximum durability assured thanks to its IP67 rated and PC+ABS enclosure. It is compatible with Quectel's Wi-Fi 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, Wi-Fi 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
- Wi-Fi 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.

Contents

1 Specification

Test Condition: Free Space & 130 mm × 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		

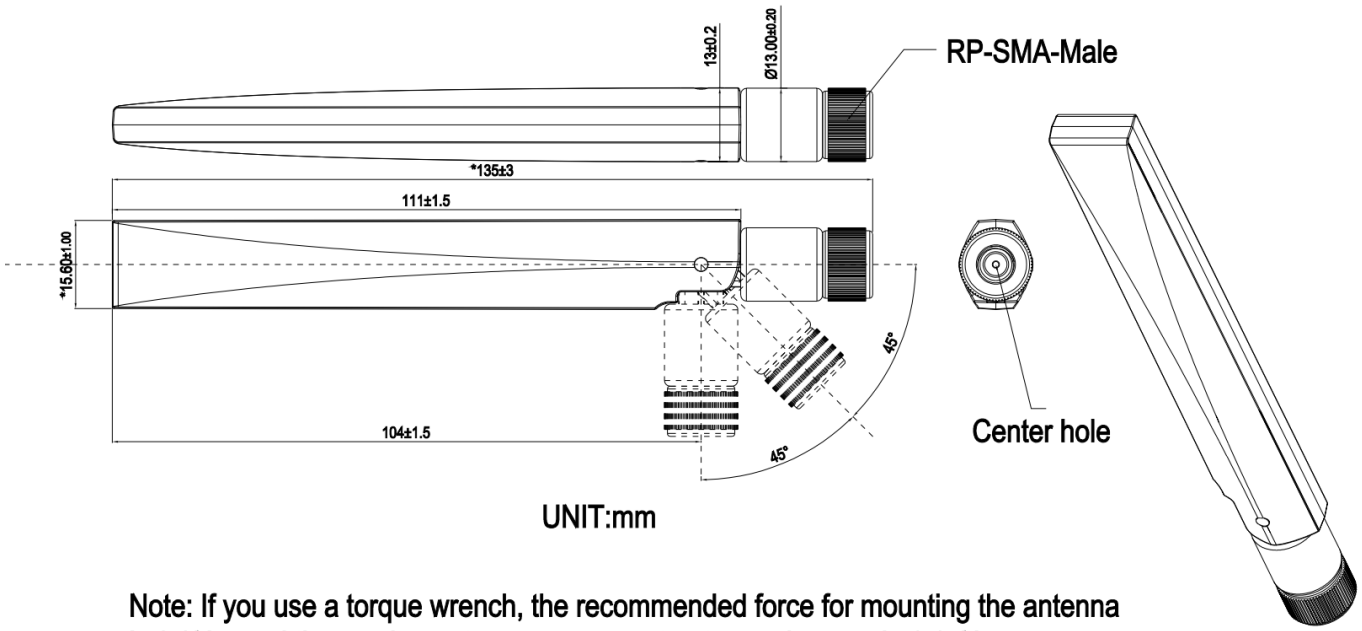
	EVB	≤ 3.8
Return Loss	**FS**	≤ -5.4 dB
	EVB	≤ -4.7 dB
Peak Gain	**FS**	≤ 4.3 dBi
	EVB	≤ 4.1 dBi

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

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	135 mm × 15.6 mm × 13 mm
Material & Color	PC + ABS & Black
Connector Type	RP SMA Male
Mounting Type	Terminal
Weight	Typ. 17 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP67 (After Installation)
RoHS & REACH Compliant	Yes

2 Drawing



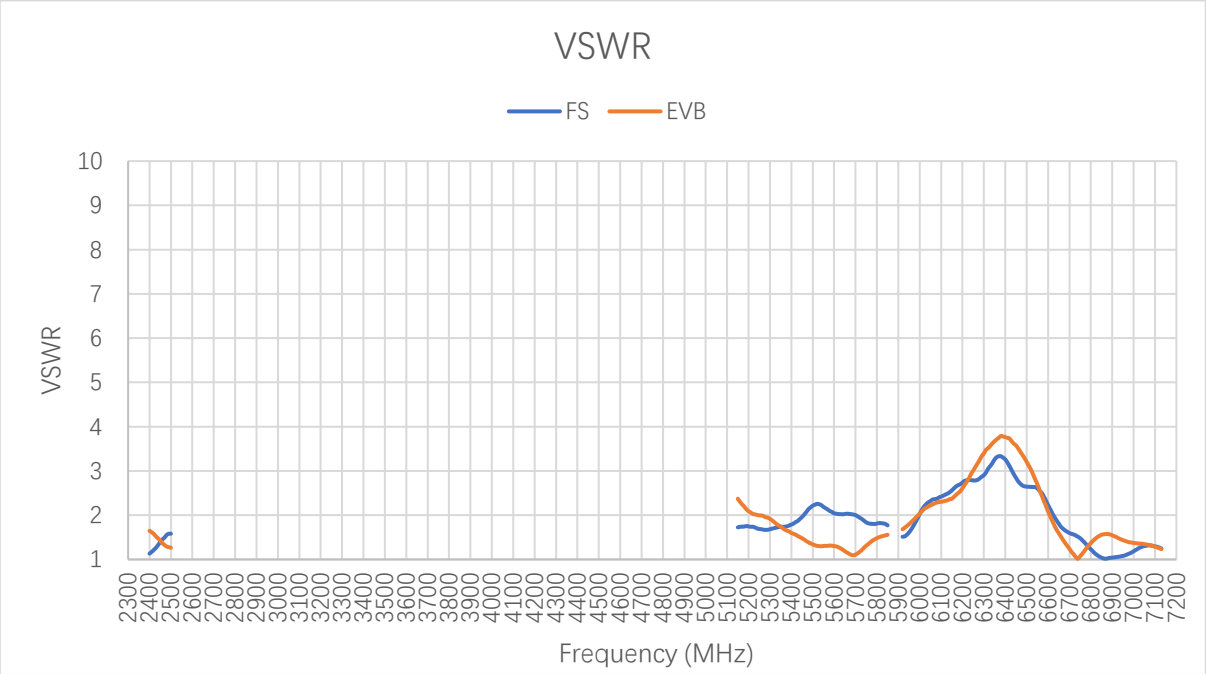
UNIT:mm

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

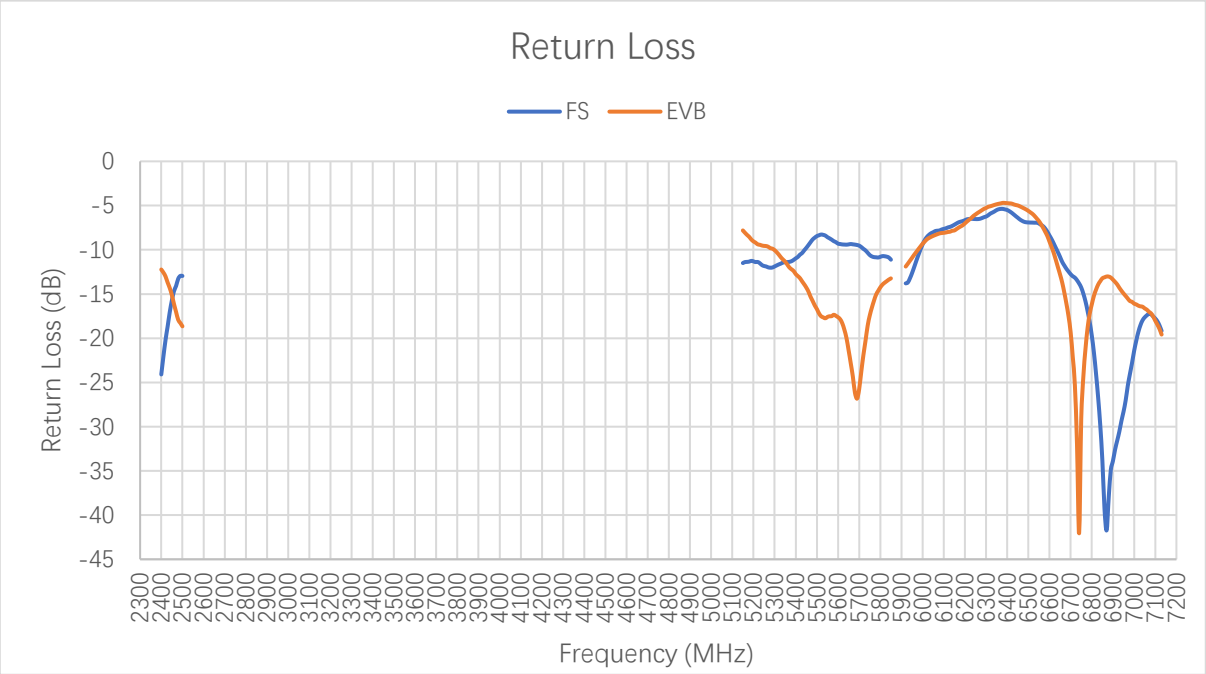
3.1.1. VSWR



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

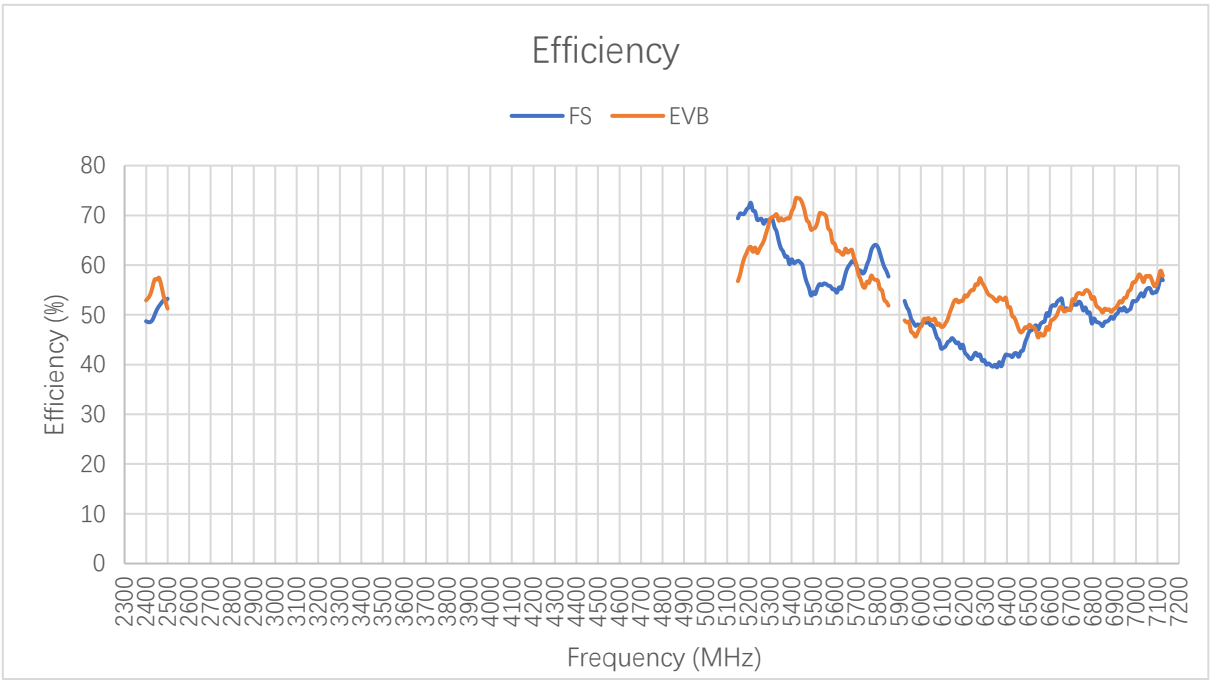


Return Loss (dB)

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

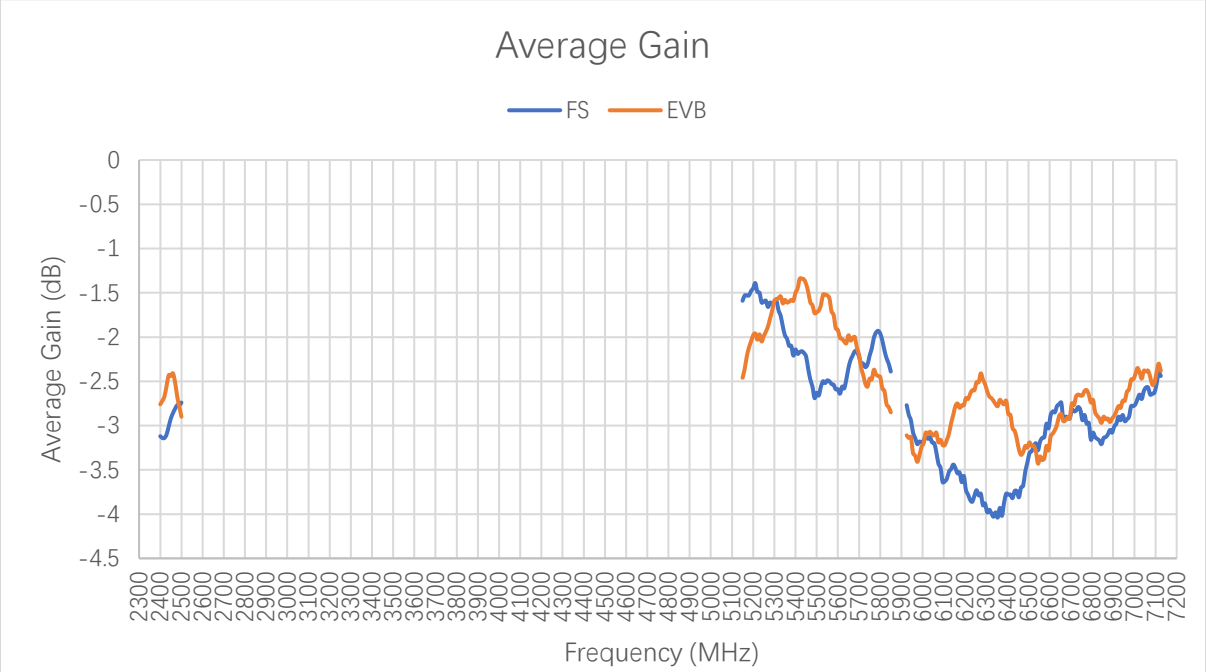
3.2.1. Efficiency



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

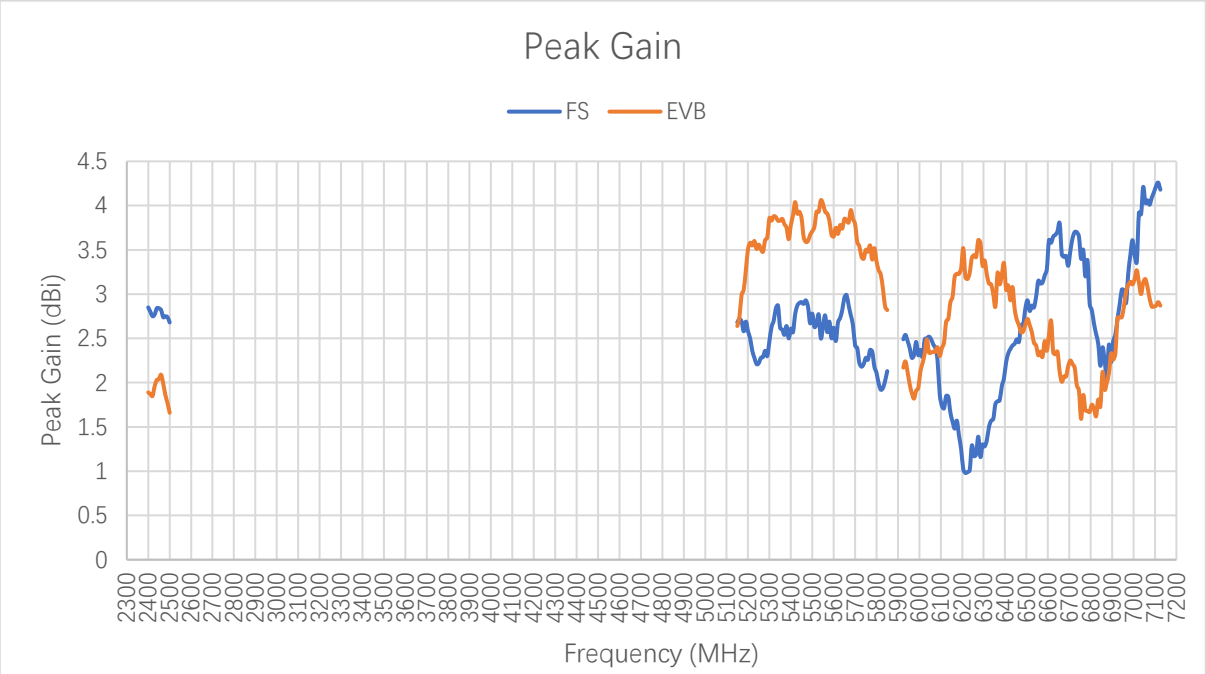
3.2.2. Average Gain



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



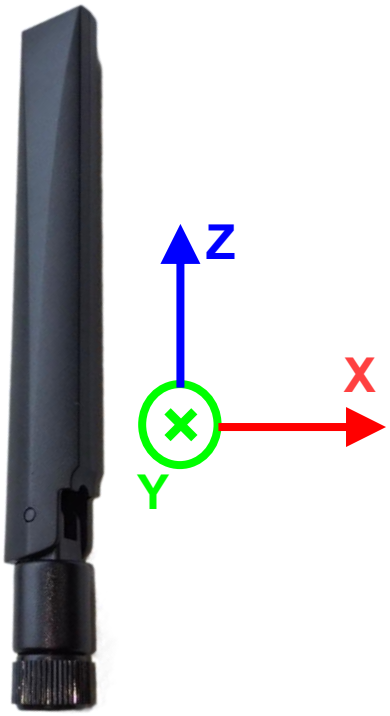
Peak Gain (dBi)

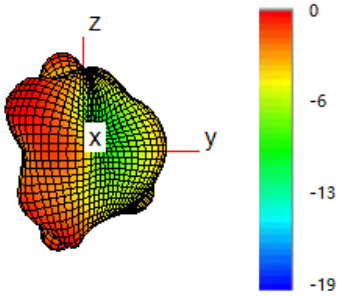
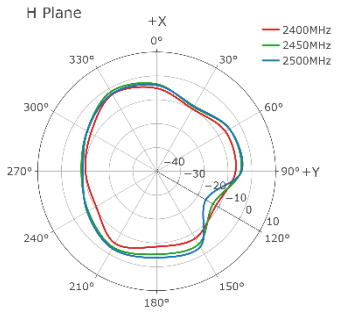
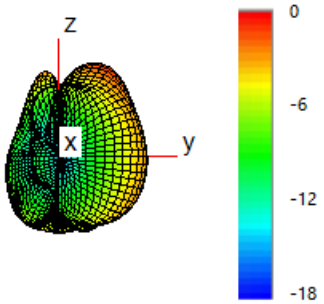
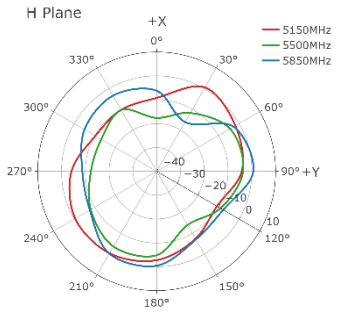
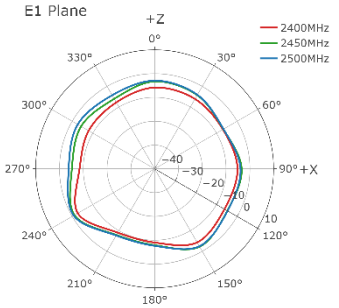
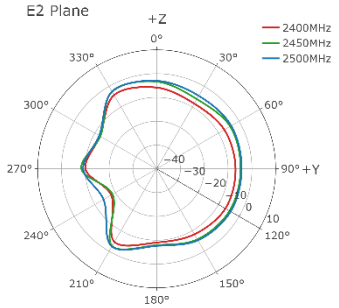
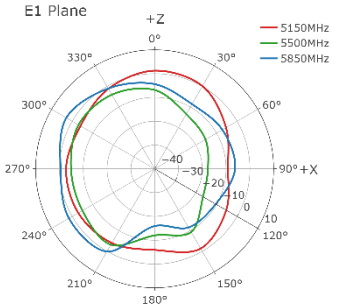
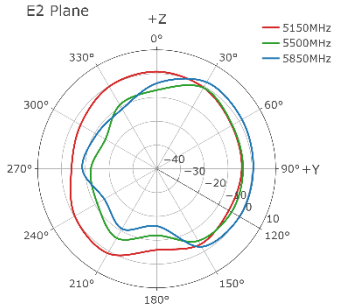
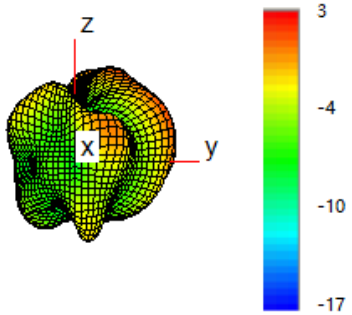
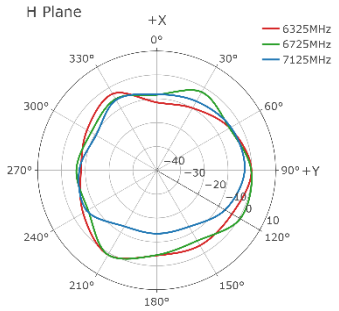
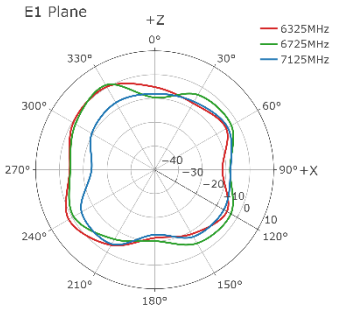
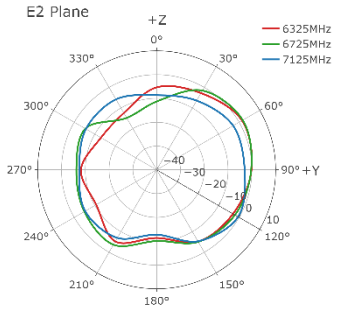
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	2.9	2.8	2.7	2.7	2.8	2.1	2.5	2.9	3.7	4.2
EVB	1.9	2.0	1.7	2.6	3.7	2.8	2.2	2.6	2.2	2.9

3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Free Space

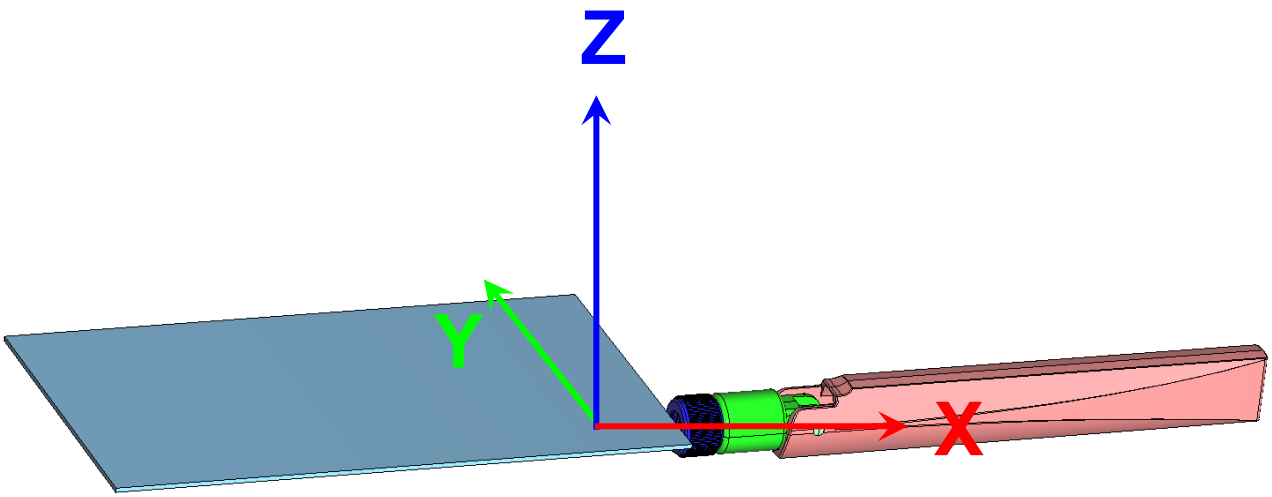
- Test Chamber: FS-G-1

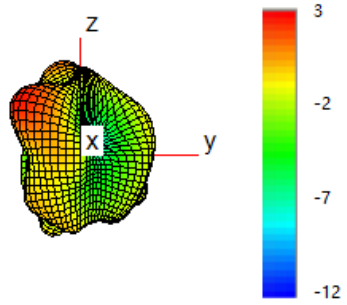
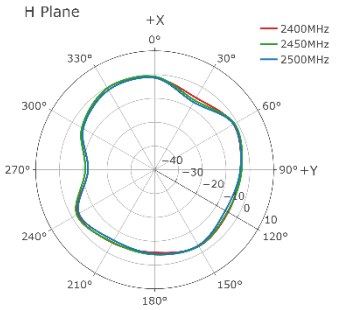
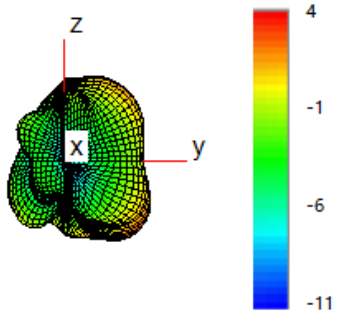
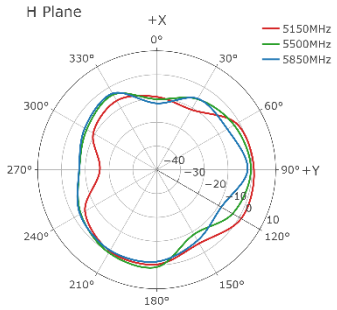
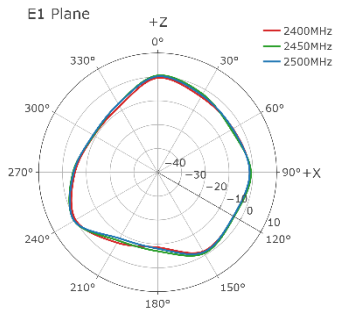
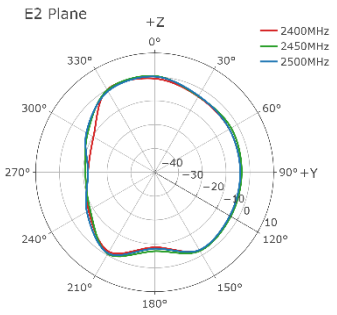
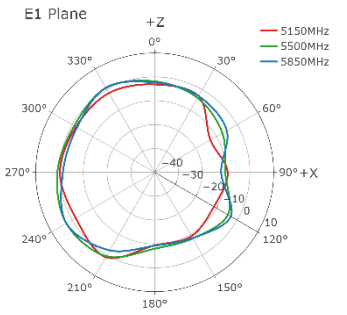
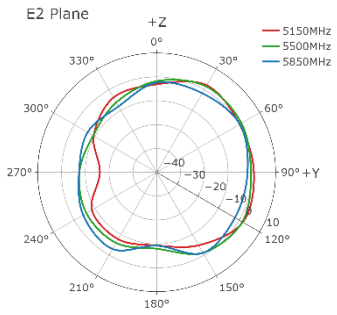
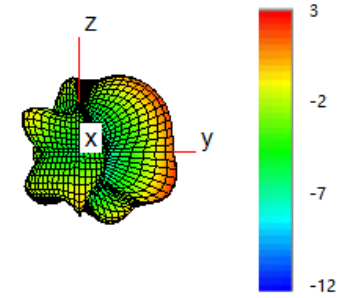
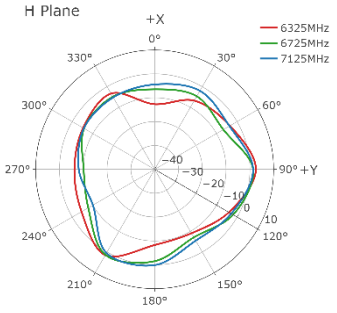
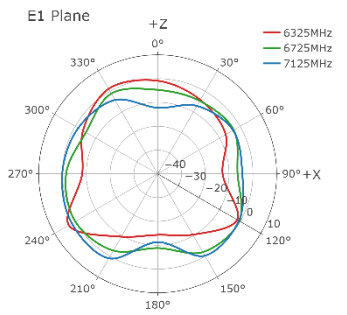
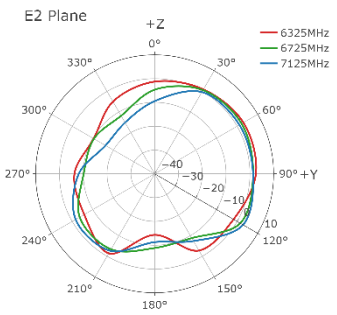


2450 MHz		5500 MHz	
			
			
6725 MHz			
			
			

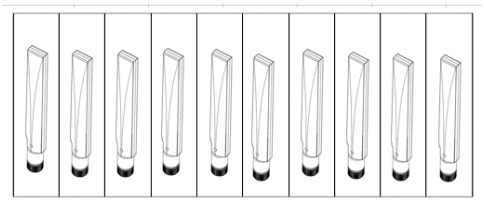
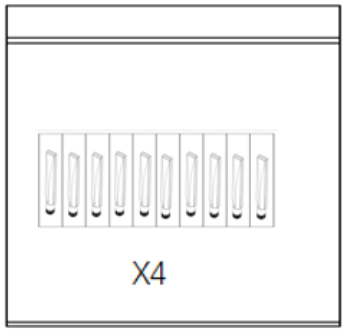
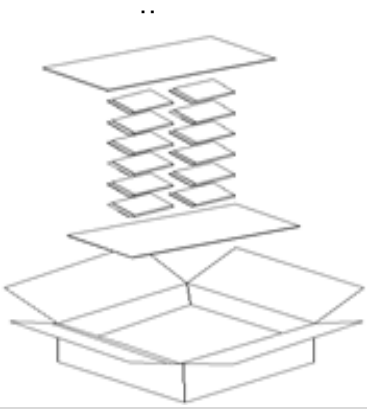
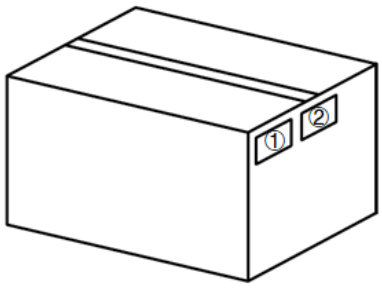
3.2.4.2. Test Condition: On 130 mm × 70 mm EVB

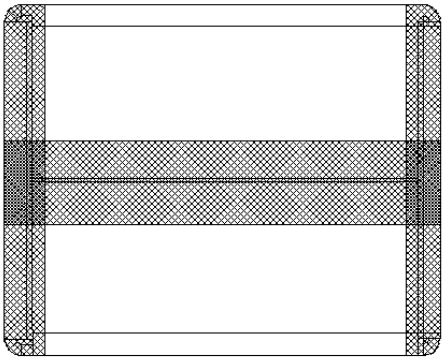
- Test Chamber: FS-G-1



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 / One-piece Bag)
2		40 pcs antenna products in a PE bags. (40 PCS / PE Bag)
3		(8 PE Bags / Carton Box) (320 PCS Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. Carton Size: L × W × H = 325 × 325 × 200 mm
4		**Position for Attaching Labels** ① Carton Label ② Quality Label

5		**Sealing Cartons** H-shaped 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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Tel: +86 21 5108 6236
Email: info@quectel.com

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Revision History

Version	Date	Author	Note
-	2024-06-05	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-06-05	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	First official release
1.1	2024-10-11	David LIU	Updated the packaging (Chapter 4).
1.2	2024-11-07	Lance SUN	Updated the drawing (Chapter 2).

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