



Antenna Datasheet

Product OC: YE BM001L1AH

Version: 1.0

Date: 2024-07-13

Status: Released

Product Name: Wi-Fi Magnetic Mount External Monopole Antenna

Key Features:

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

Dimensions: Φ 30 mm \times 82.2 mm

Efficiency: Up to 64.9 %

RoHS and REACH Compliant

IP67

Overview

The YEBM001L1AH is a Wi-Fi external antenna measuring $\Phi 30 \times 82.2$ mm. This ultra-wide-band Wi-Fi antenna provides broad coverage from 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz. The antenna is available with connection via cable lengths from 300–5,000 mm, terminated with SMA Male (Center pin) connector. This low profile, magnetic 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 IP67 rated ASA enclosure. It is compatible with Quectel's WIFI Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. The YEBM001L1AH is designed as a monopole 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 IoT sensors, public safety and security, fleet management, smart home automation. It is suitable for outdoor and indoor applications due to its robust UV resistant ASA enclosure, which meets UL 746C f1.

Typical applications include:

- IoT Sensors
- Public Safety and Security
- Fleet Management
- Smart Home Automation

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 300 × 300 mm Metal Plane

1.1. Electrical

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

Electrical – Detail					
Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 6G
		Freq. (MHz)	2400–2500	5150–5850	5925–7125
Max. VSWR	FS		1.3	2.2	2.3
	MP		1.3	2.0	2.1
Max. Return Loss (dB)	FS		-18.5	-8.6	-8.2
	MP		-18.8	-9.6	-8.9
AVG Eff. (%)	FS		61.0	36.3	32.2
	MP		59.1	49.1	36.6
AVG Gain (dB)	FS		-2.2	-4.4	-4.9
	MP		-2.3	-3.1	-4.4
Max. Peak Gain (dBi)	FS		4.7	3.0	1.4
	MP		2.5	4.3	4.7
VSWR	FS		≤ 2.3		

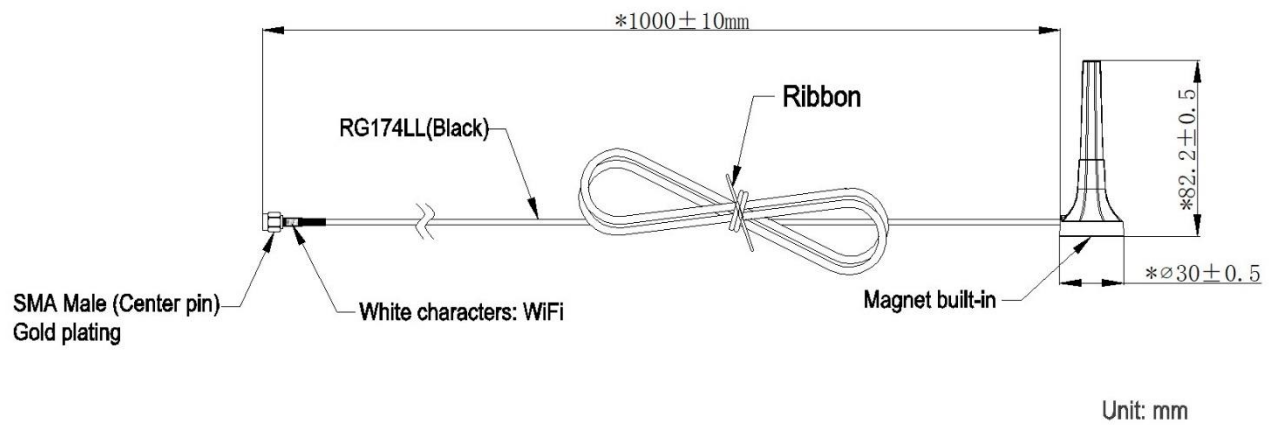
	MP	≤ 2.1
Return Loss	FS	≤ -8.2 dB
	MP	≤ -8.9 dB
Peak Gain	FS	≤ 4.7 dBi
	MP	≤ 4.7 dBi

- **FS: In Free Space**
- **MP: On 300 × 300 mm Metal Plane**

1.2. Mechanical & Environmental

Mechanical		
Antenna Dimensions		Φ 30 mm × 82.2 mm
Material & Color		ASA & Black
Cable Type & Color & Length		RG174LL & Black & 1000 mm
Connector Type		SMA Male (Center pin)
Weight		Typ. 26.6 g
Mounting Type	YEBM001L1AH	Magnetic
	YEBA001L1AH	Adhesive
Magnetic Pull Force		1.1 kgf
Environmental		
Operation Temperature		-40 °C to +85 °C
Storage Temperature		-40 °C to +85 °C
Ingress Protection (IP) Rating		IP67
Housing UV Resistant		UL 746C f1
RoHS and REACH Compliant		Yes

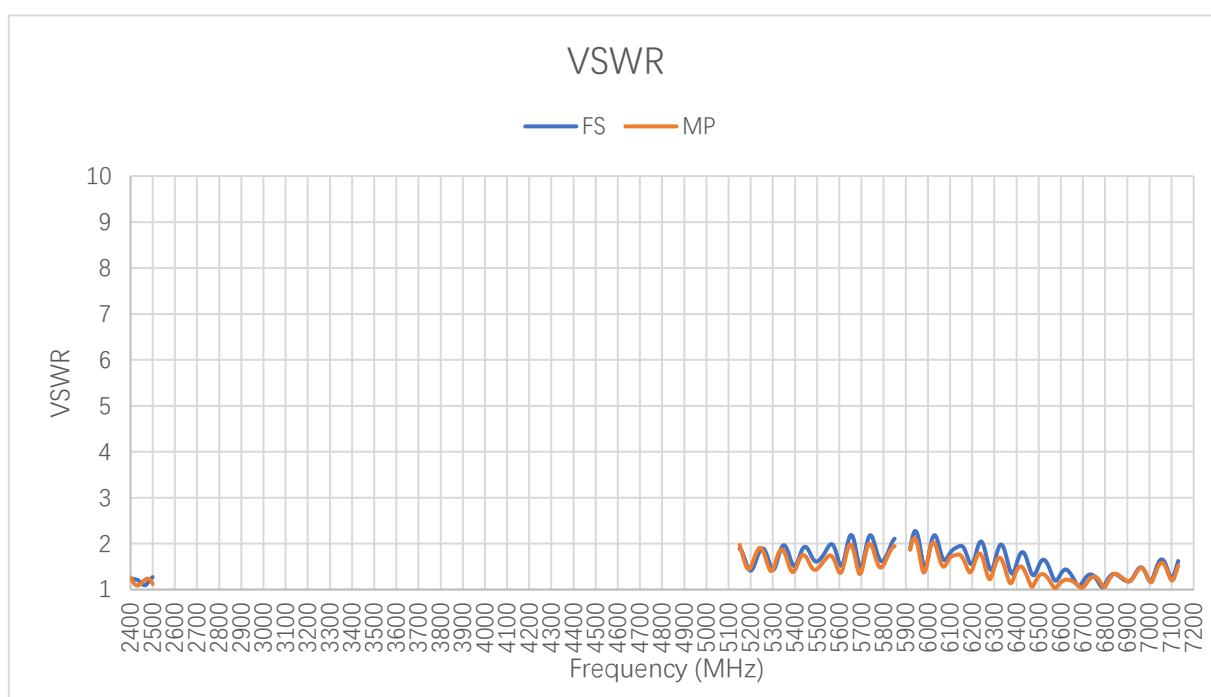
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

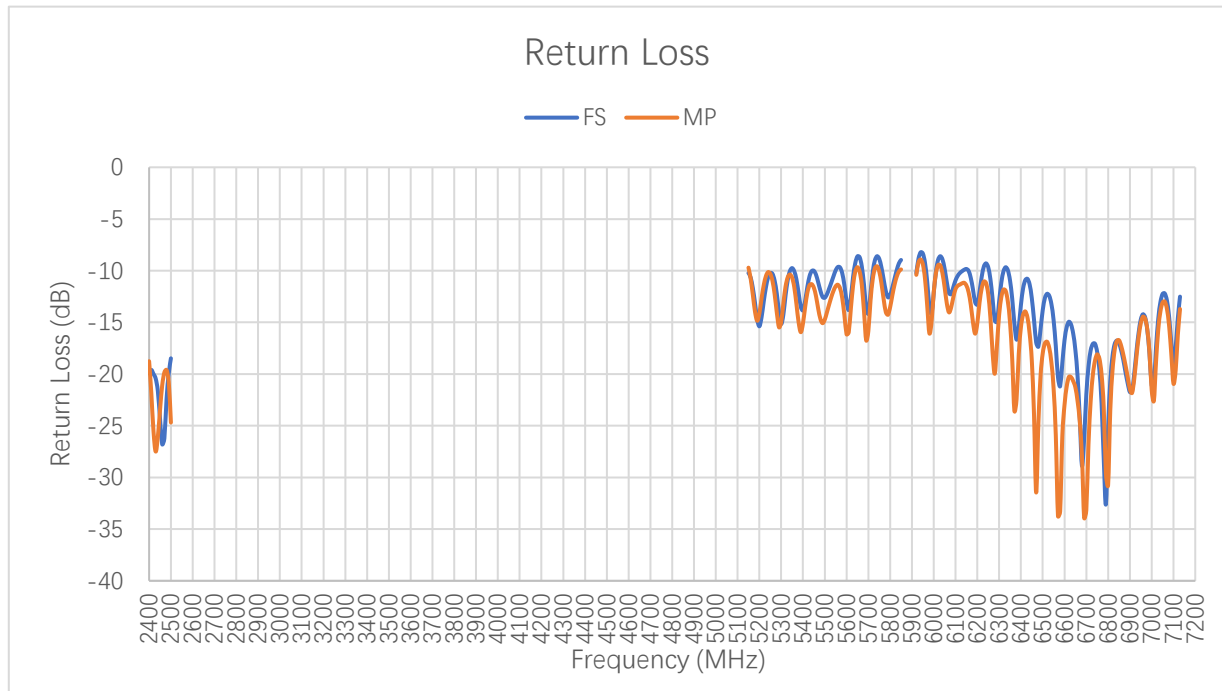
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	1.2	1.1	1.3	1.9	1.6	2.1	2.1	2.0	1.3	1.5
MP	1.3	1.1	1.1	2.0	1.4	1.9	2.1	1.7	1.2	1.4

3.1.2. Return Loss

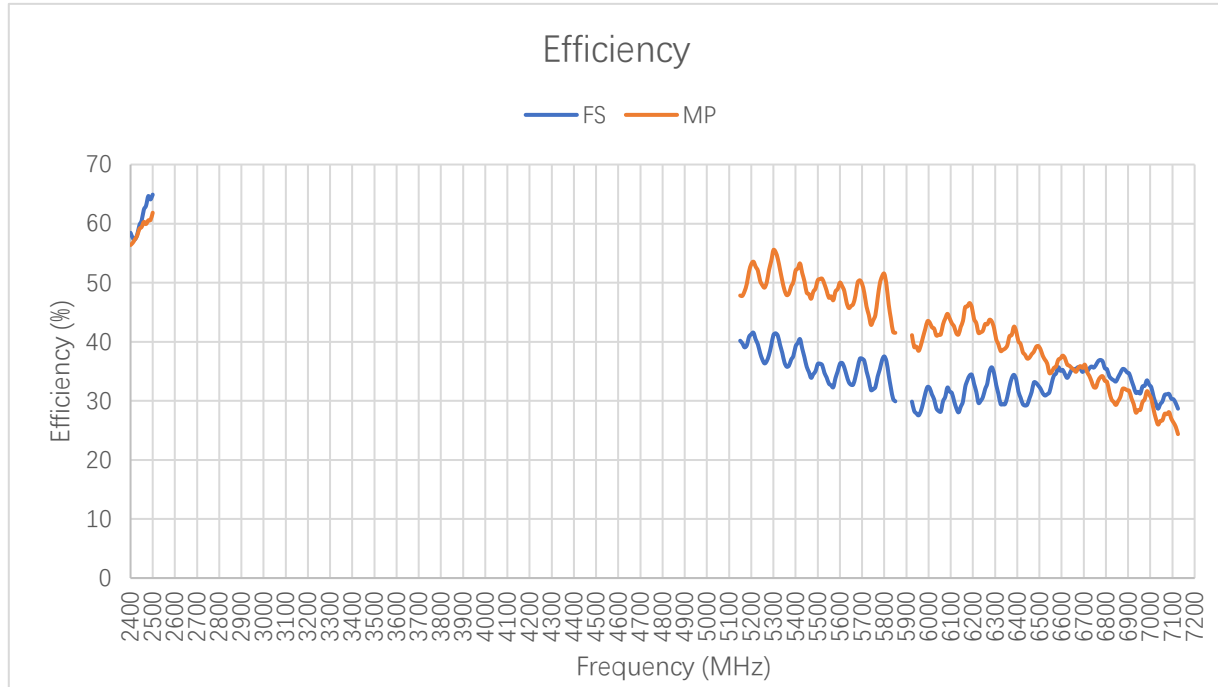


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-19.9	-24.3	-18.5	-10.2	-12.6	-9.0	-8.8	-9.7	-17.1	-14.6
MP	-18.8	-23.5	-24.7	-9.7	-14.7	-9.9	-9.2	-12.0	-20.1	-16.2

3.2. Radiation Performance Test

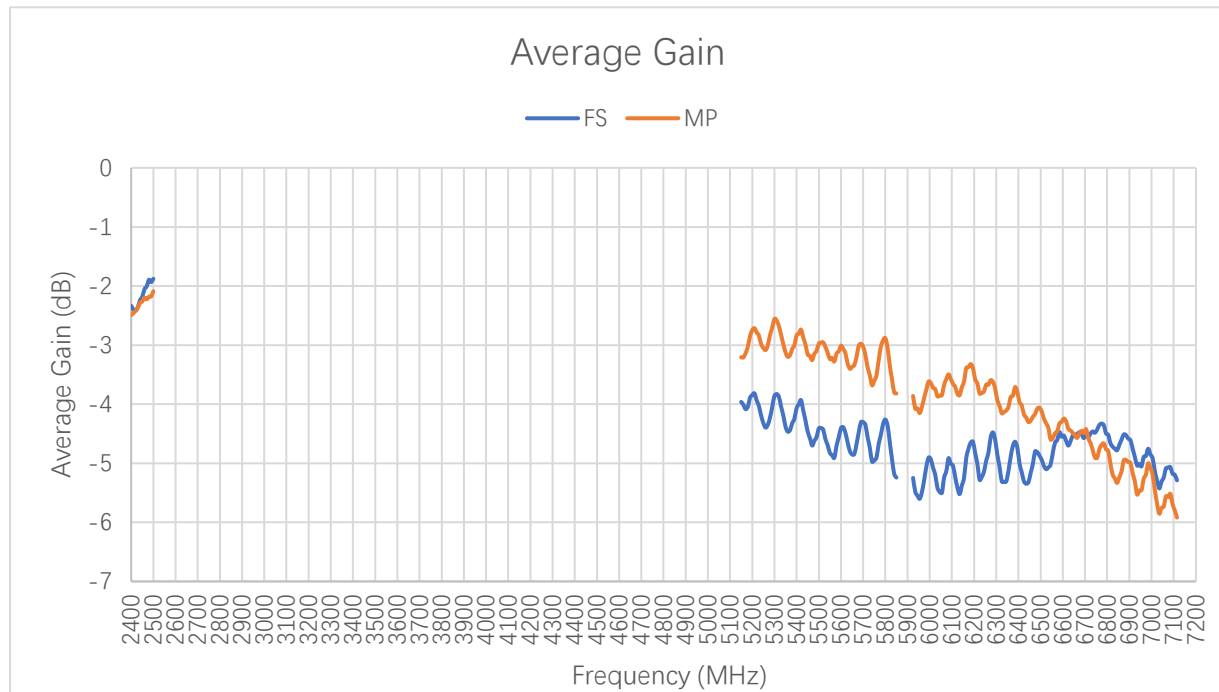
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	58.5	60.5	64.9	40.2	36.2	29.9	29.9	29.5	35.5	28.7
MP	56.4	59.4	61.9	47.8	50.4	41.5	41.1	38.4	34.2	24.4

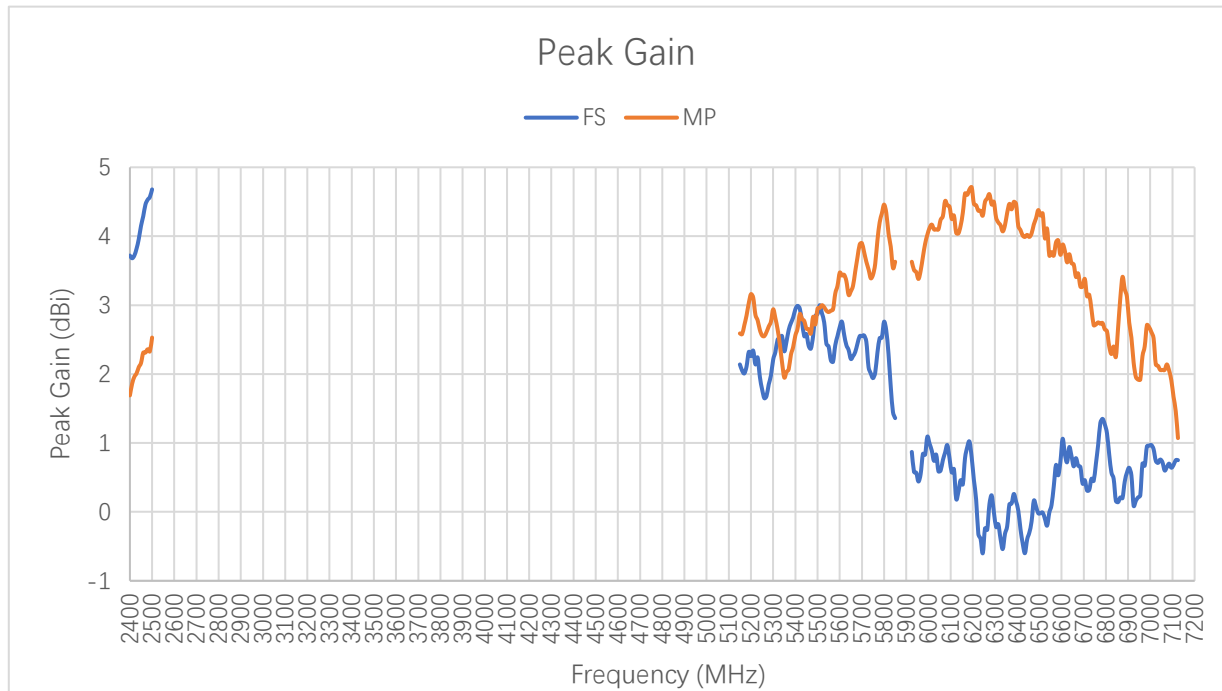
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-2.3	-2.2	-1.9	-4.0	-4.4	-5.2	-5.2	-5.3	-4.5	-5.4
MP	-2.5	-2.3	-2.1	-3.2	-3.0	-3.8	-3.9	-4.2	-4.7	-6.1

3.2.3. Peak Gain

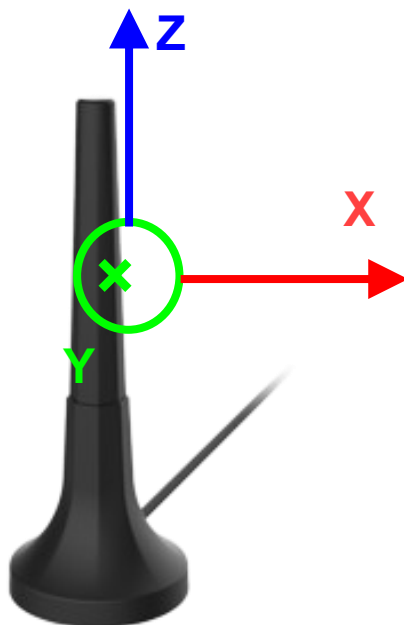


Peak Gain (dBi)

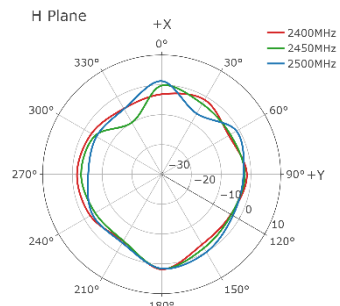
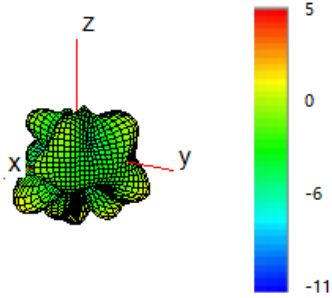
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	3.7	4.2	4.7	2.1	2.9	1.4	0.9	-0.4	0.3	0.8
MP	1.7	2.2	2.5	2.6	3.0	3.6	3.6	4.2	3.2	1.1

3.2.4. 3D & 2D Radiation Pattern

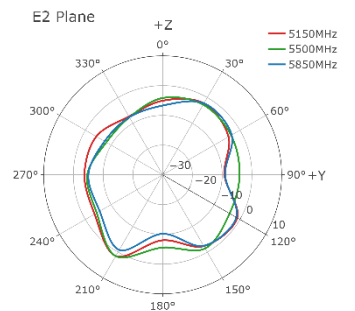
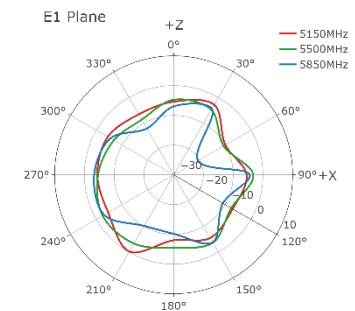
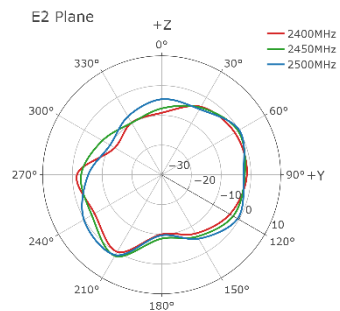
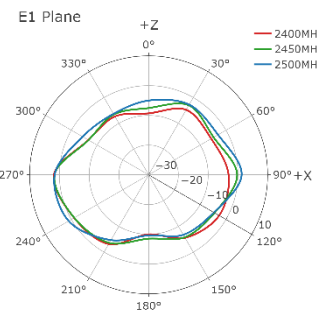
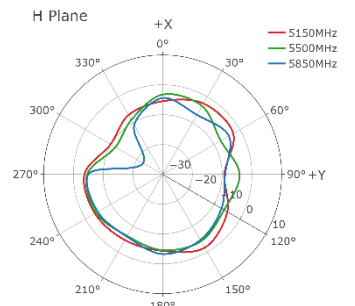
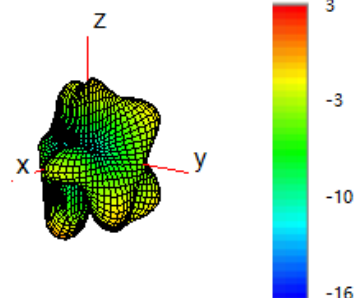
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- Test Chamber: FS-G-1



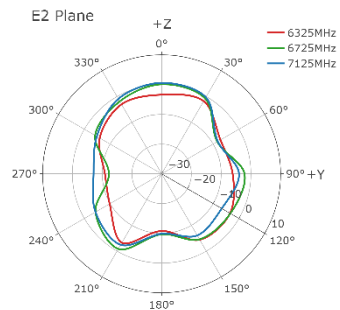
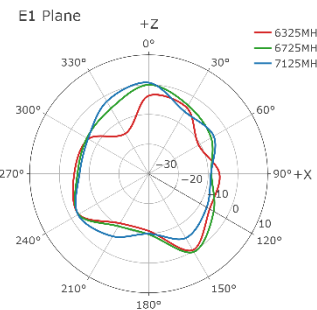
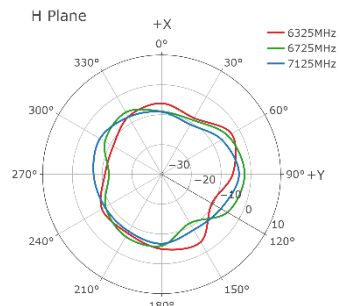
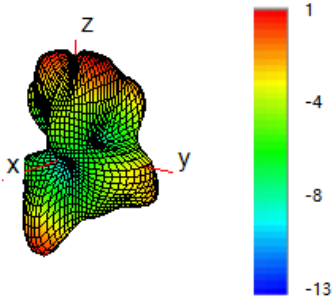
2450 MHz



5500 MHz

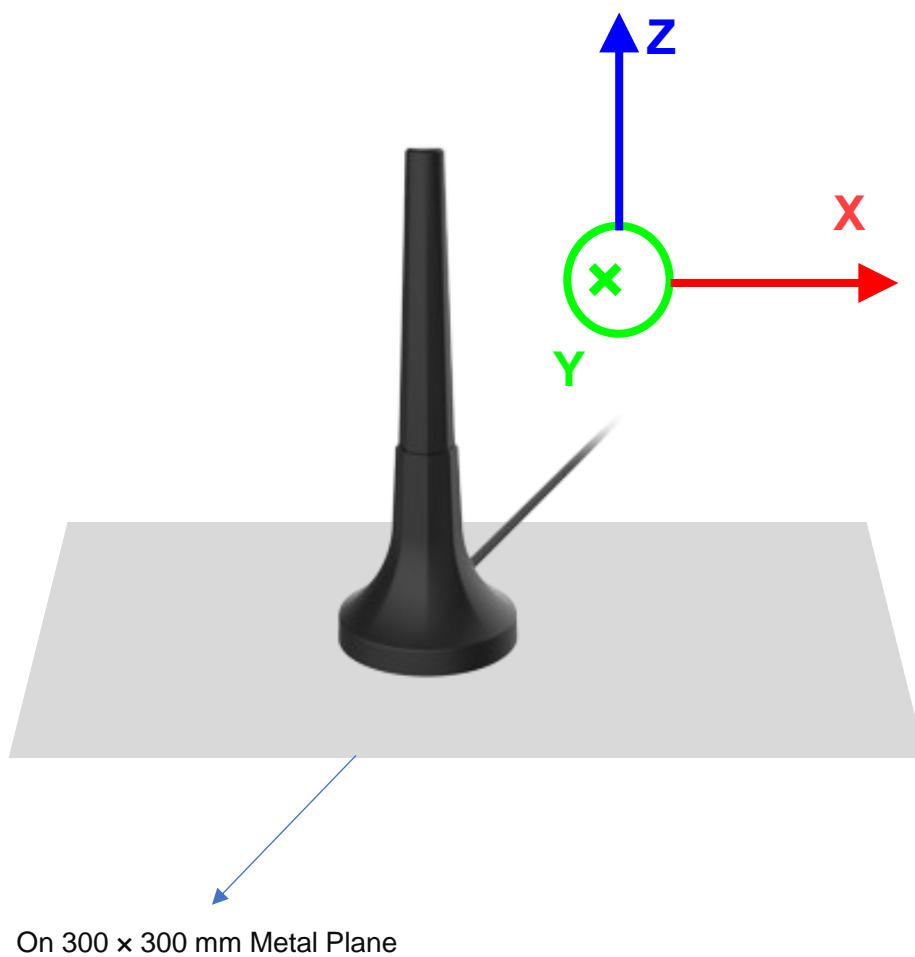


6725 MHz

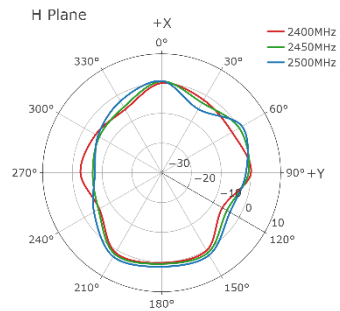
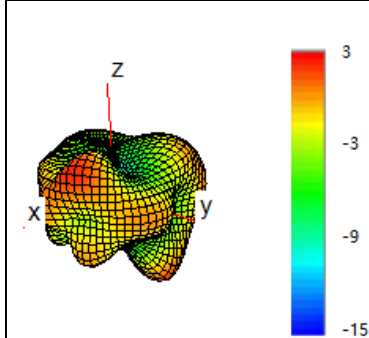


3.2.5. 3D & 2D Radiation Pattern

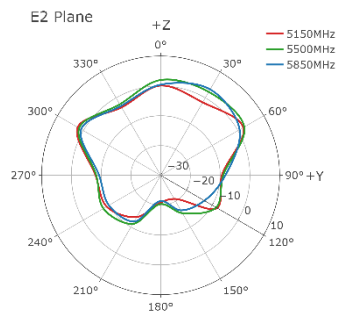
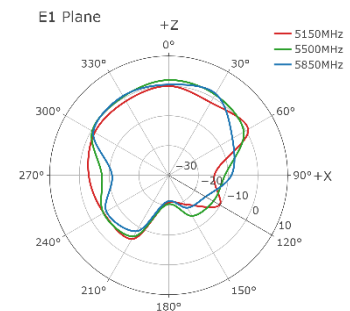
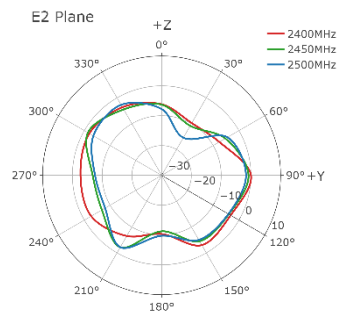
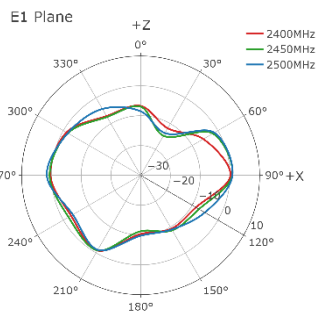
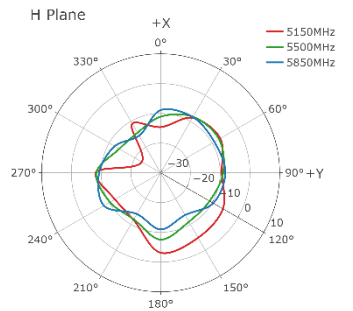
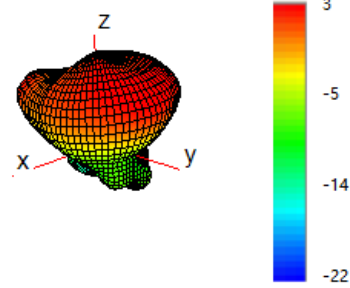
- Test Condition: On 300 × 300 mm Metal Plane
- Test Chamber: FS-G-1



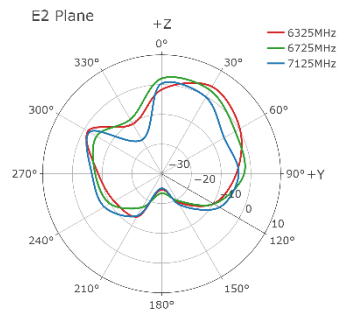
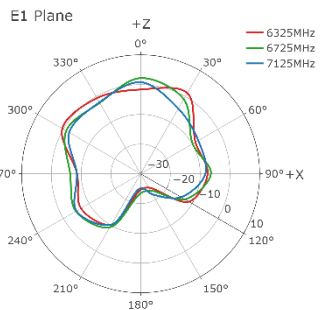
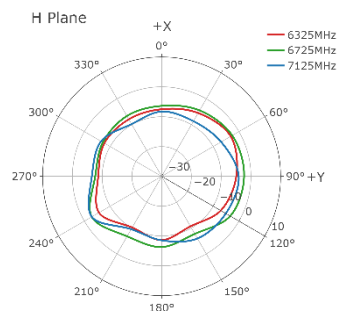
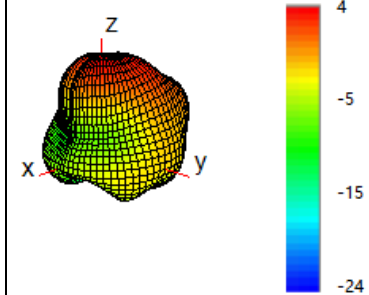
2450 MHz



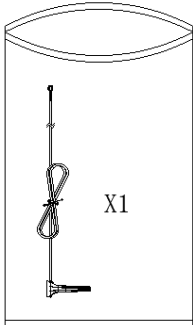
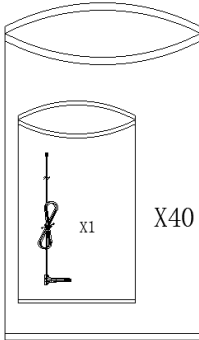
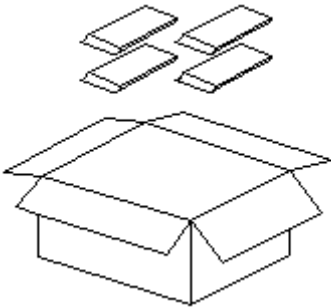
5500 MHz

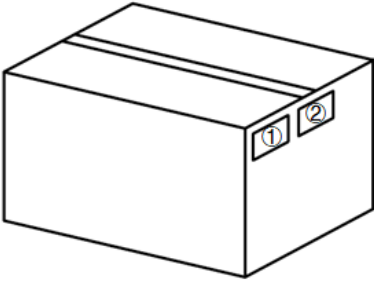
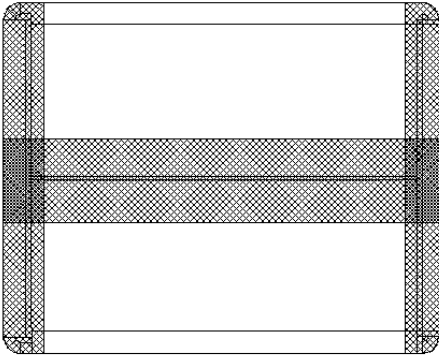


6725 MHz



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 pc antenna product in a small PE bag. (1 PC Antenna / Small PE Bag)
2		40 pcs antenna products in a big PE bag. (40 PCS Antennas / Big PE Bag)
3		(4 PE Bags / Carton Box) (160 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 = 370 × 370 × 295 mm</u>

4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons “I” 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
-	2024-07-13	Mordecai LIU/ Jason LONG/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-07-13	Mordecai LIU/ Jason LONG/ David LIU/ Rainey LIAO	First official release



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