Antenna Datasheet

Product OC: YECT001W1DM
Version: 1.1
Date: 2024-10-17
Status: Released

Product Name: 4G Terminal Mount Rubber Monopole Antenna
Key Features:
Frequency Band: 700–960 MHz, 1710–2690 MHz
Dimensions: Φ 9 mm × 54.9 mm
Efficiency: Up to 74.1 %
RoHS & REACH Compliant
IP53

Overview

YECT001W1DM is a 4G rubber antenna measuring Φ 9 × 54.9 mm. This ultra-wide-band 4G antenna provides broad coverage from 700–960 MHz, 1710–2690 MHz whilst offering backward-compatibility to support 3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is 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 TPE enclosure. It is compatible with Quectel's 4G Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. YECT001W1DM is designed as a monopole antenna, which needs to be mounted on a ground plane to offer 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 Zigbee, Bluetooth, IoT Sensors, public safety and security, point of sales terminals, smart home automation, robotics / autonomous.

Typical applications include:

- Zigbee
- Bluetooth
- IoT Sensors
- Public Safety and Security
- Point of Sales Terminals
- Smart Home Automation
- Robotics / Autonomous

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: On 130 mm × 70 mm EVB

1.1. Electrical

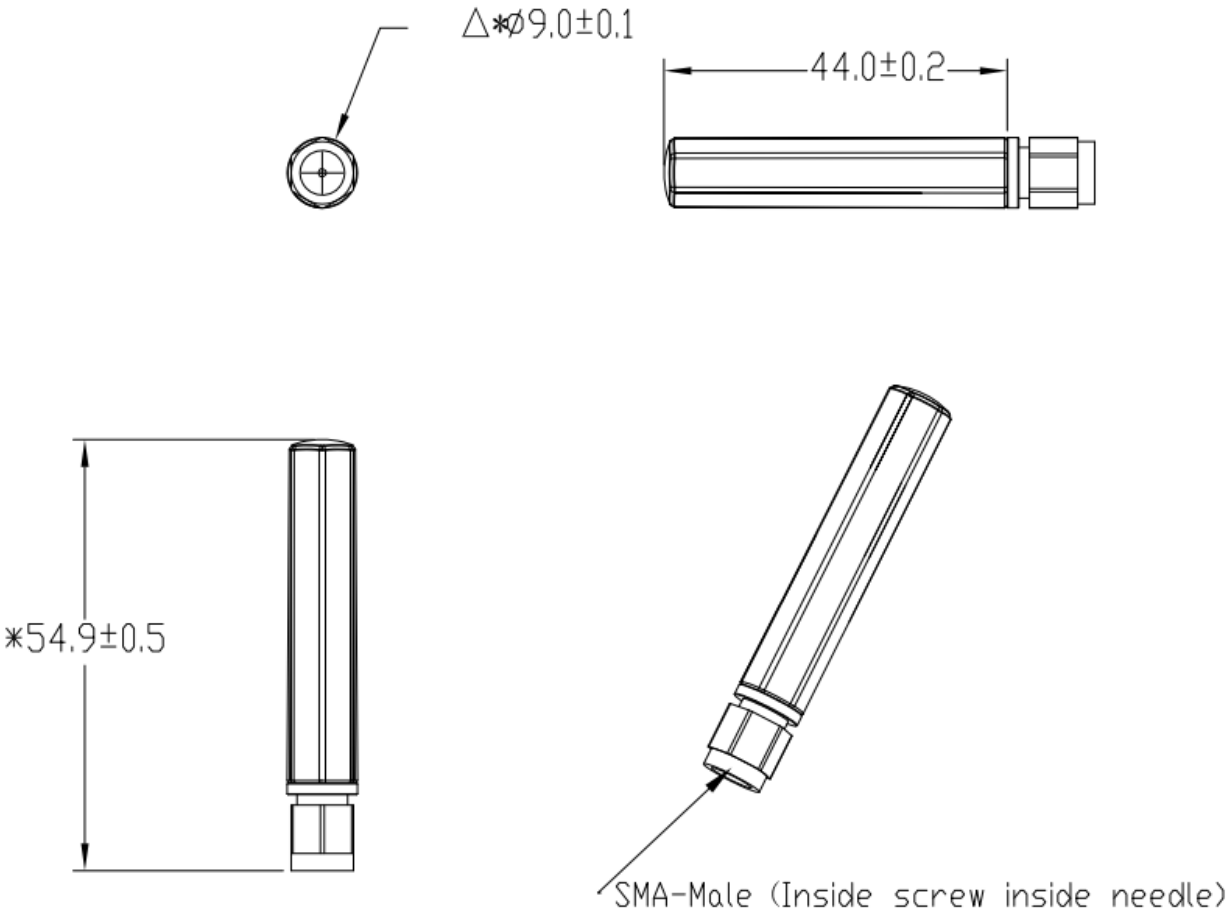
Electrical	
Frequency Range	700–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail							
Band / **SPEC**	**B71**	**B12 /B13 /B28**	**B5 /B8 /B26**	**B1 /B2 /B3**	**B40**	**B38 /B41**	**B42 /B48 /n77**
	600–700	**700–810**	**820–960**	**1700–2170**	**2300–2400**	**2500–2690**	**3300–3800**
Max. VSWR	-	6.2	5.9	3.3	1.7	3.9	-
Max. Return Loss (dB)	-	-2.8	-3.0	-5.5	-12.2	-4.6	-
AVG Eff. (%)	-	56.7	58.1	63.5	62.6	49.0	-
AVG AVG Gain (dB)	-	-2.6	-2.5	-2.0	-2.0	-3.1	-
Max. Peak Gain (dBi)	-	2.2	2.3	2.6	1.6	2.5	-
VSWR	≤ 6.2						
Return Loss	≤ -2.8 dB						
Peak Gain	≤ 2.6 dBi						

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 9 mm × 54.9 mm
Casing Material & Color	TPE & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 5.1 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP53
RoHS & REACH Compliant	Yes

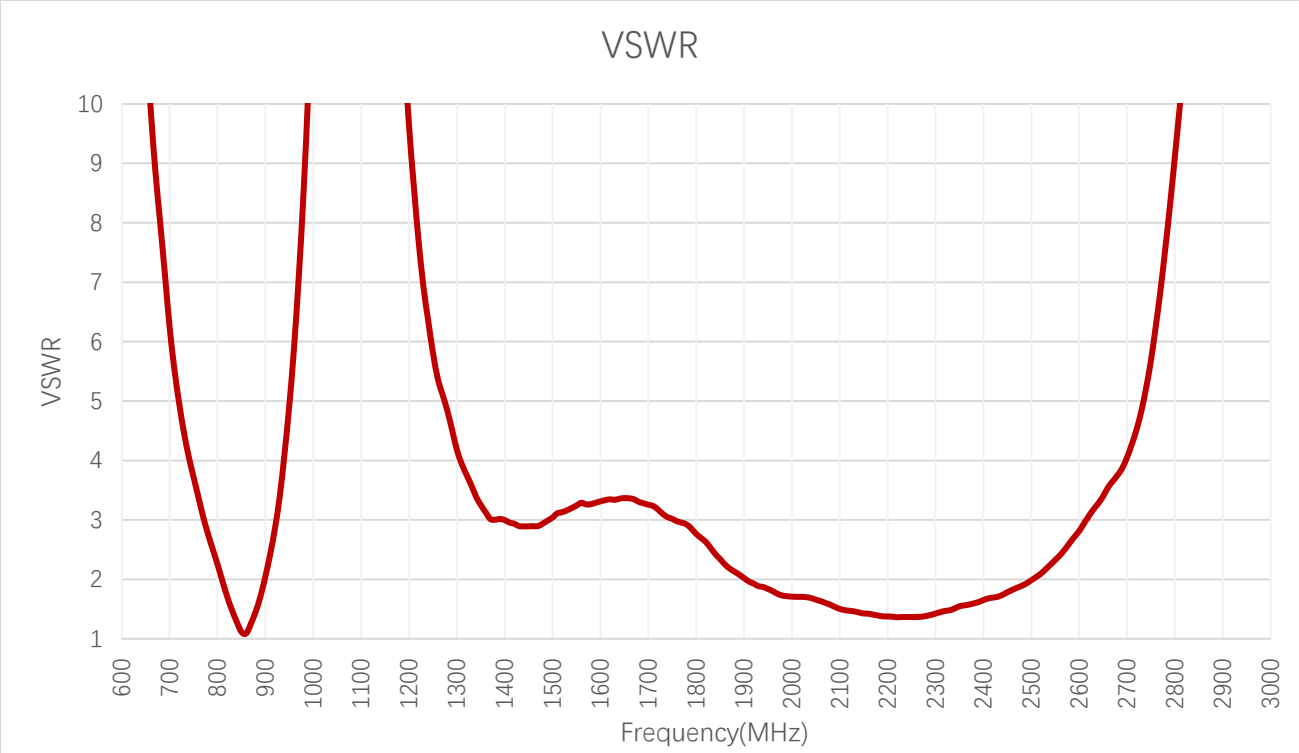
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

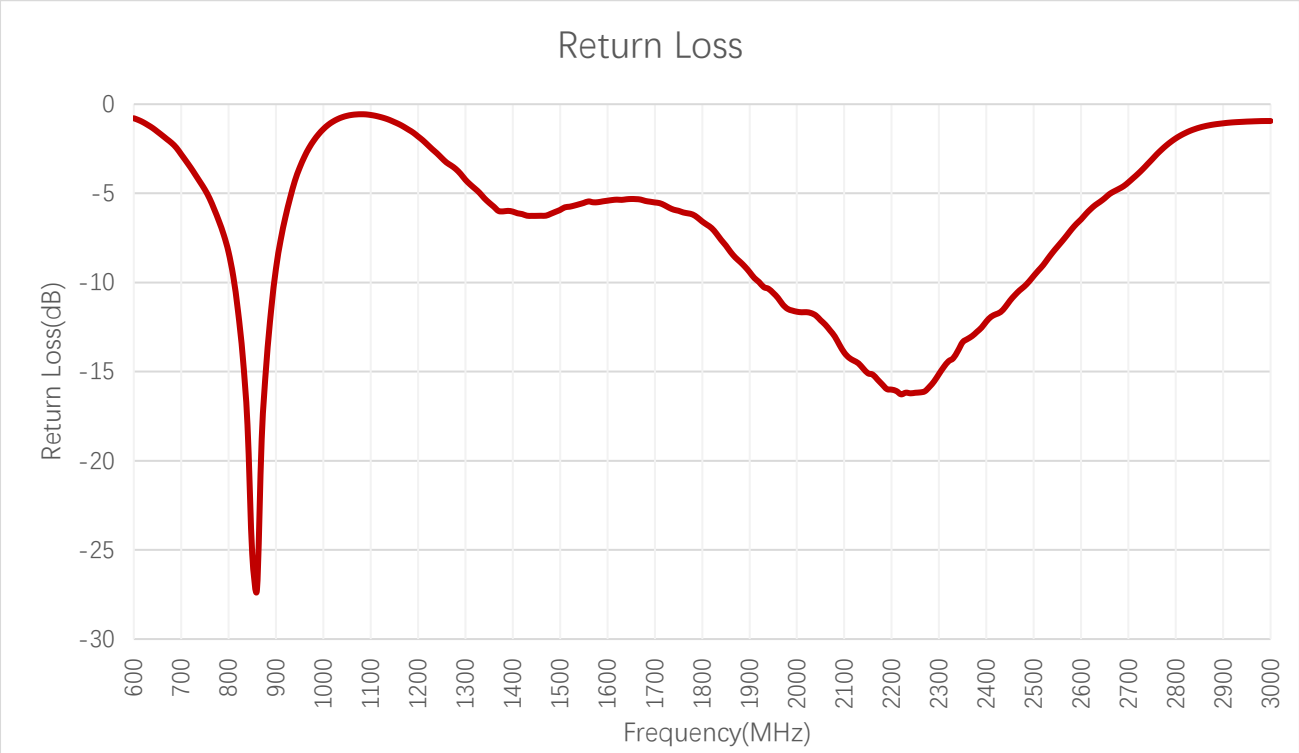
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	5.5	1.5	2.1	5.9	-	3.2	3.0	2.1
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
VSWR	1.8	1.4	1.5	1.8	2.8	3.9	-	-	-	-

3.1.2. Return Loss

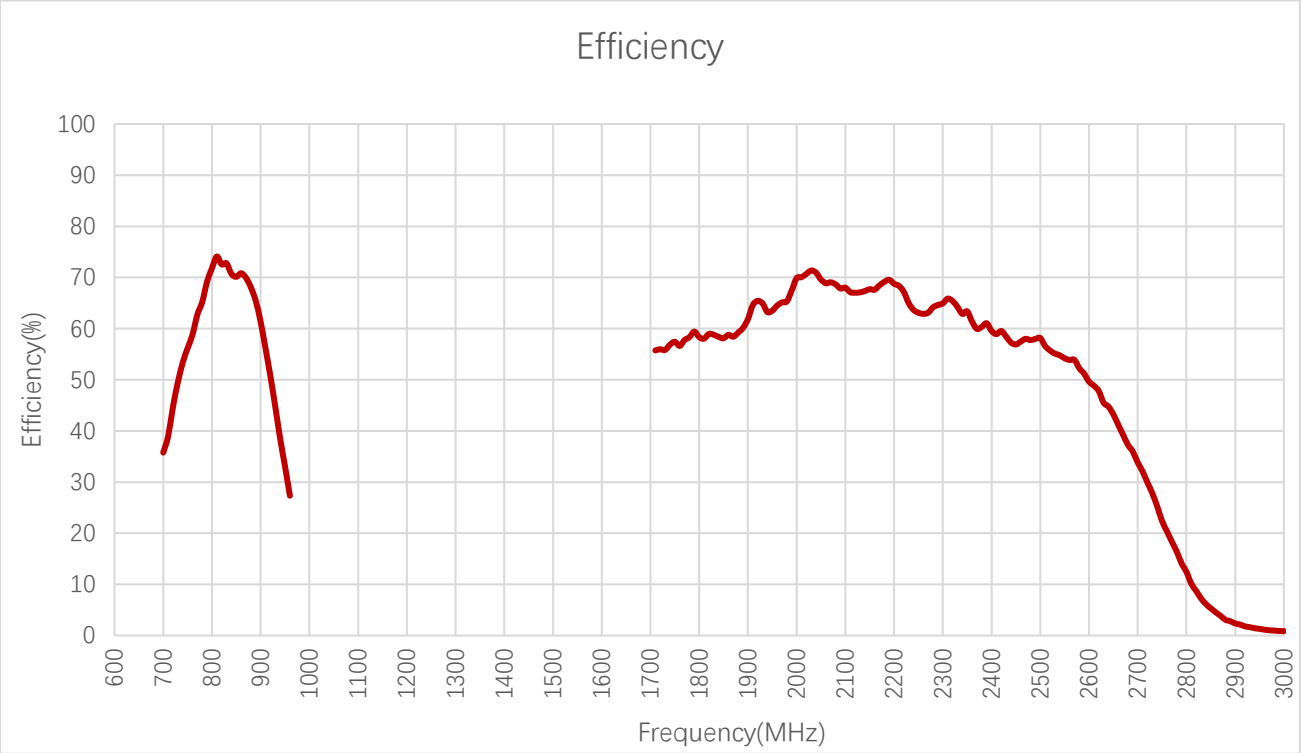


Return Loss (dB)

Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Return Loss (dB)	-	-	-3.2	-14.2	-9.2	-3.0	-	-5.6	-5.9	-8.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-10.6	-14.8	-13.3	-11.0	-6.5	-4.6	-	-	-	-

3.2. Radiation Performance Test

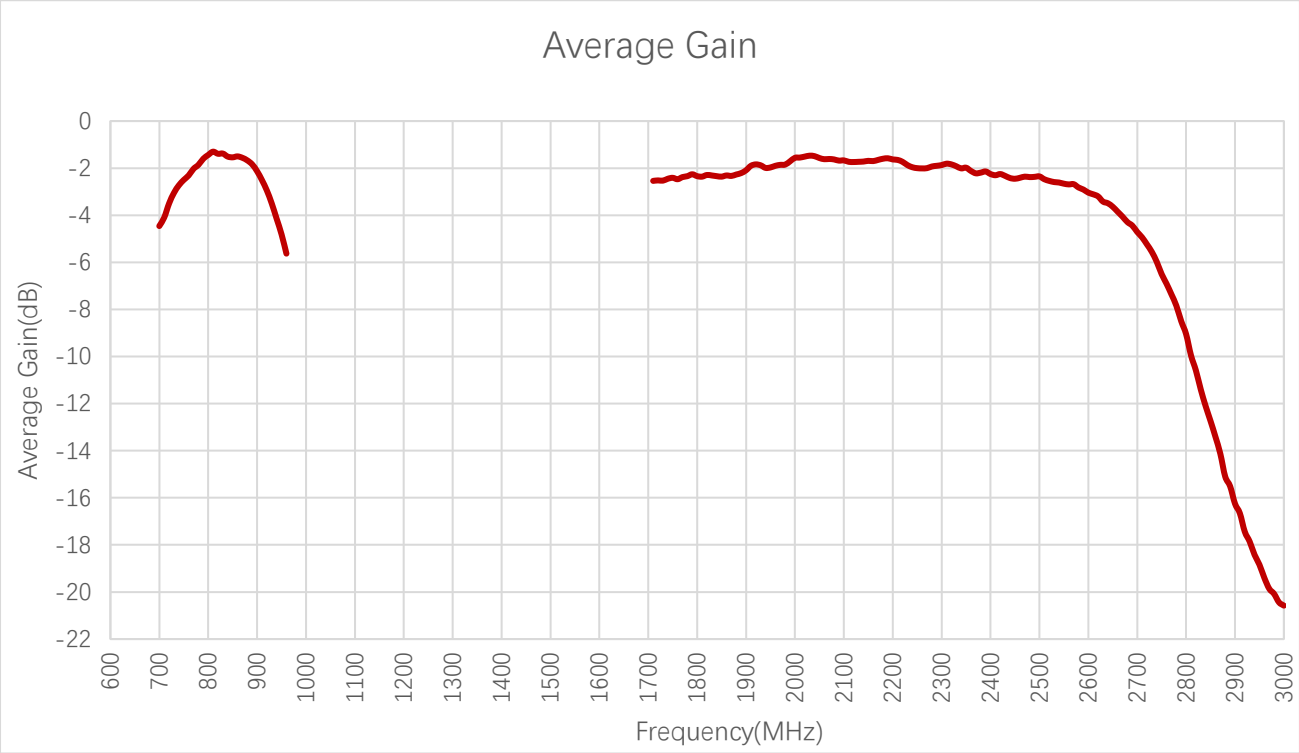
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	38.9	72.8	61.3	27.3	-	55.7	56.9	59.2
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	63.5	67.4	63.4	56.9	49.6	36.0	-	-	-	-

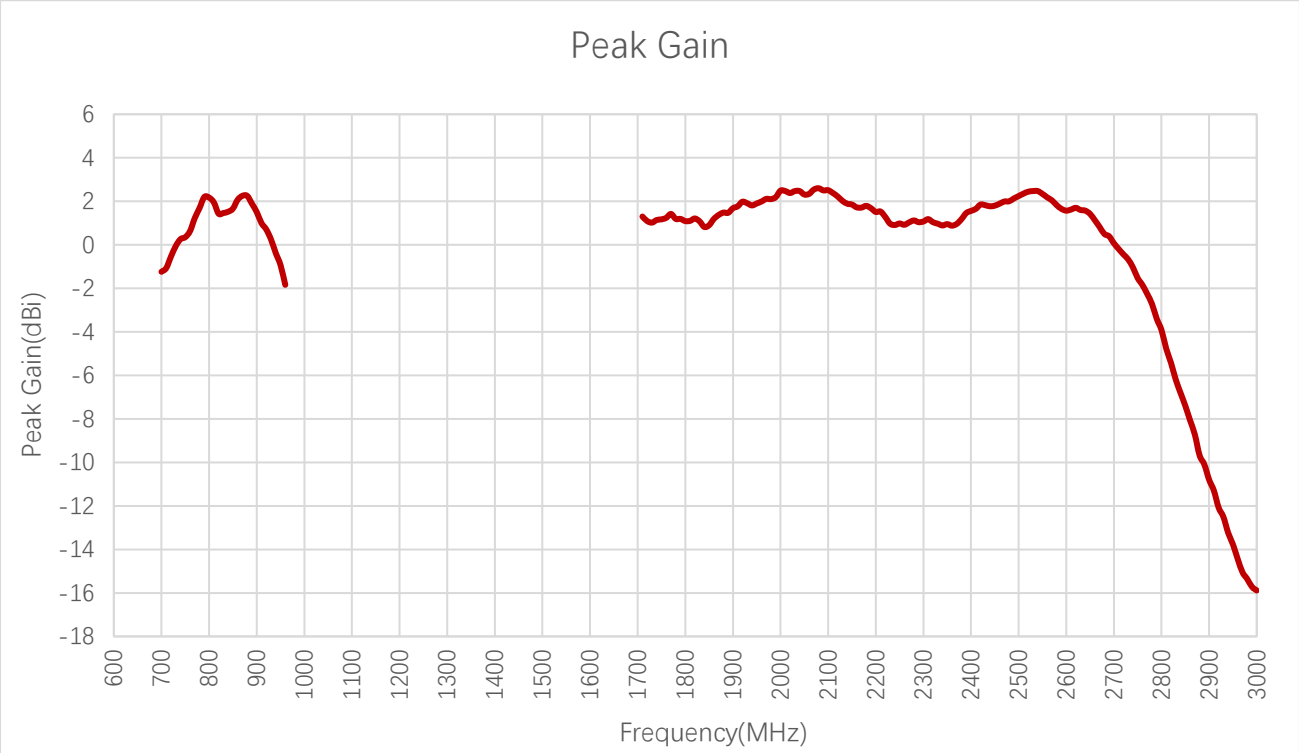
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-4.1	-1.4	-2.1	-5.6	-	-2.5	-2.5	-2.3
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-2.0	-1.7	-2.0	-2.5	-3.0	-4.4	-	-	-	-

3.2.3. Peak Gain

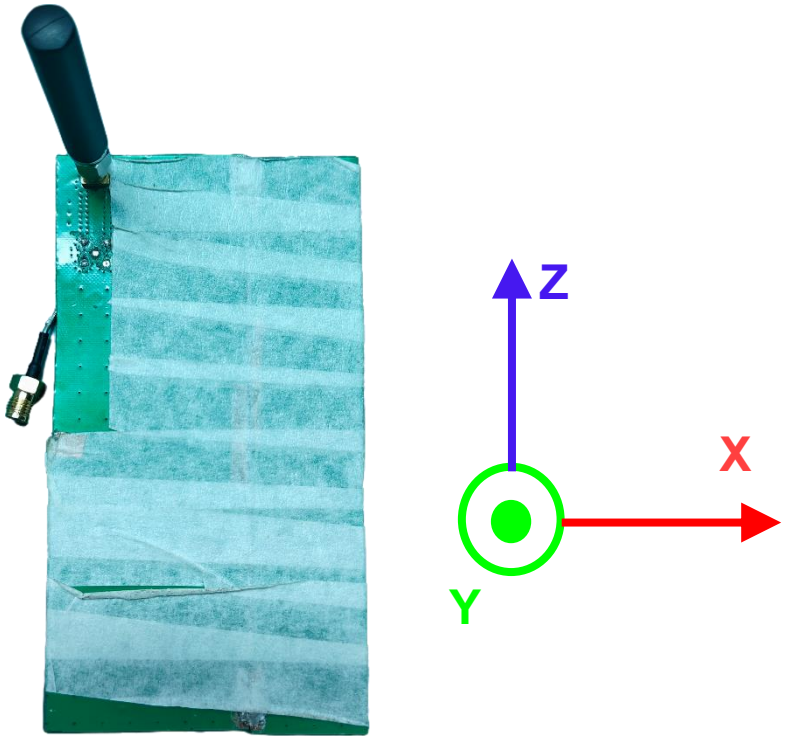


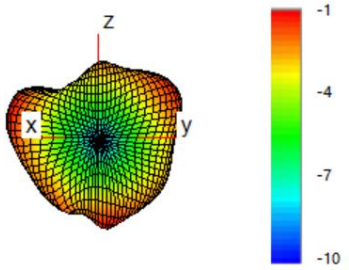
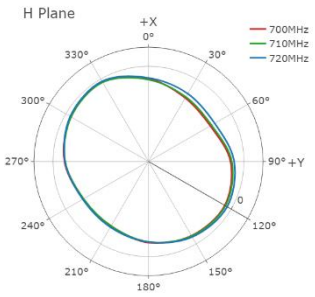
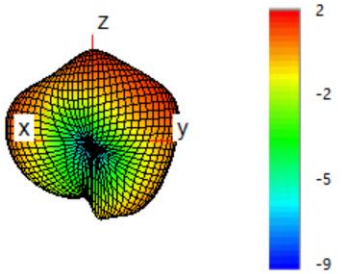
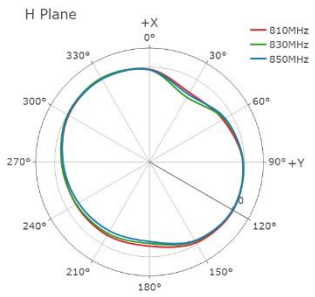
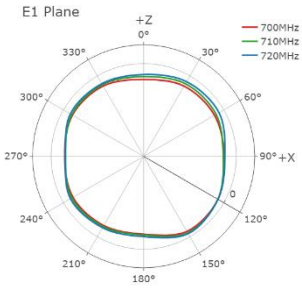
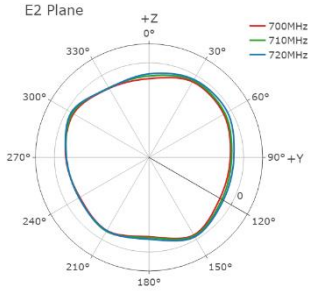
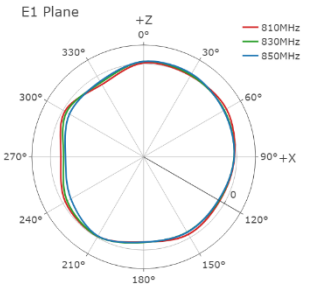
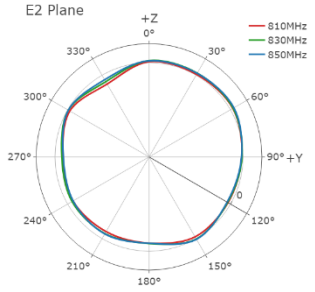
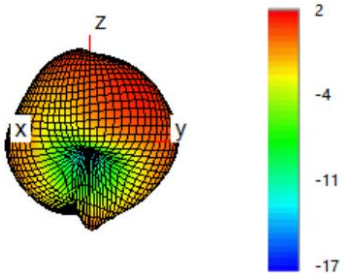
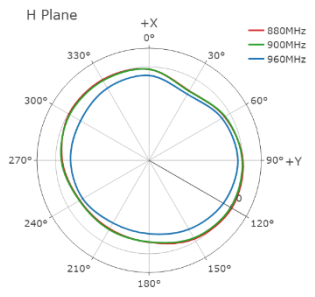
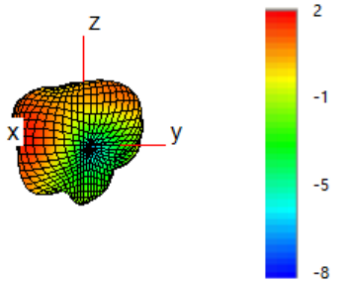
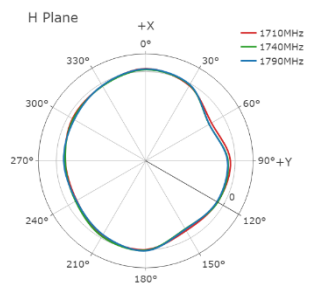
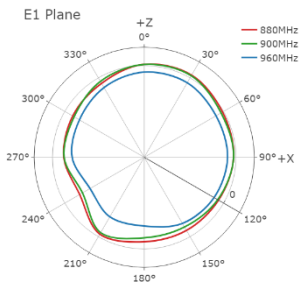
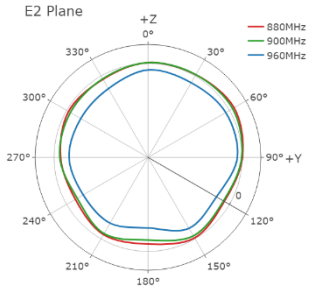
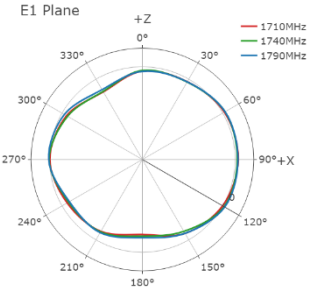
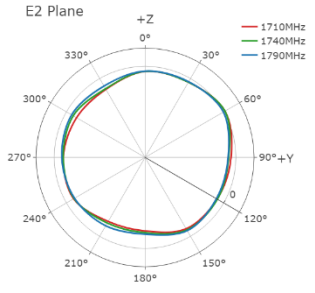
Peak Gain (dBi)

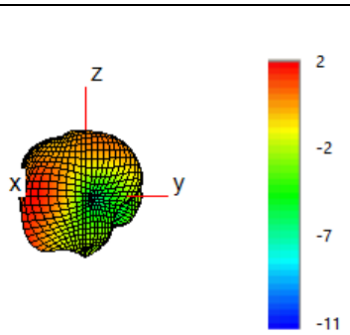
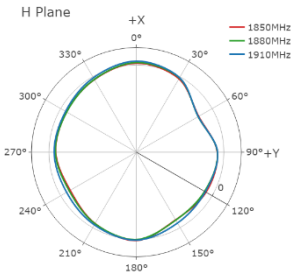
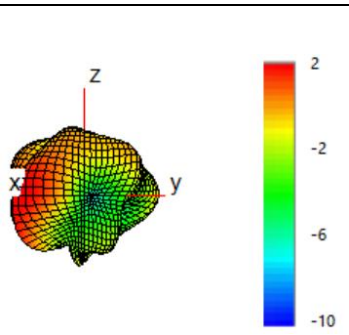
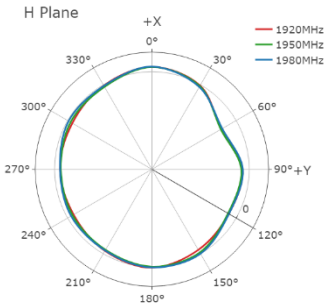
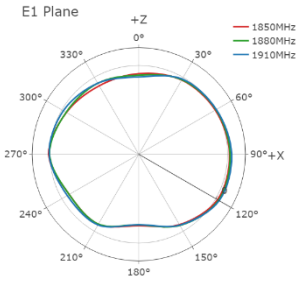
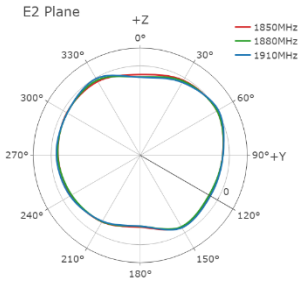
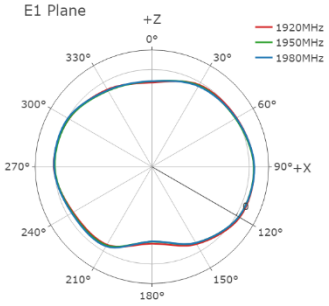
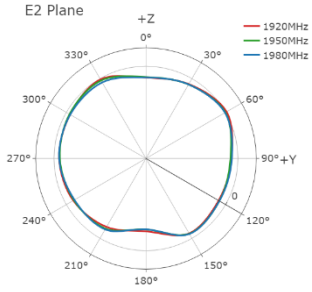
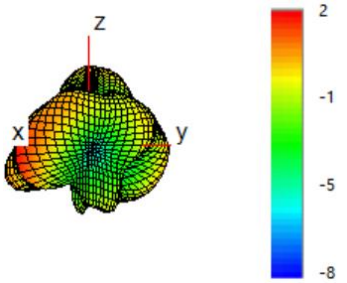
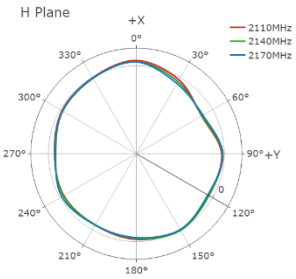
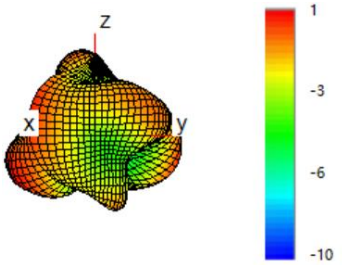
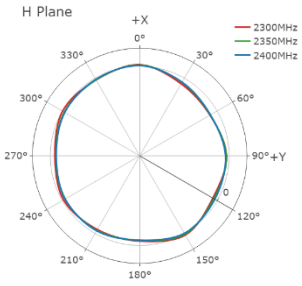
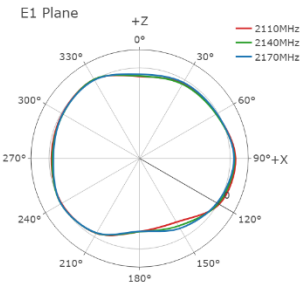
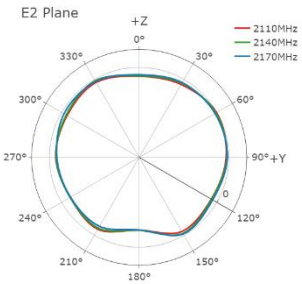
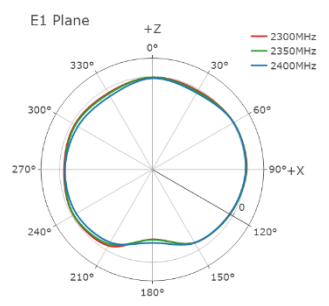
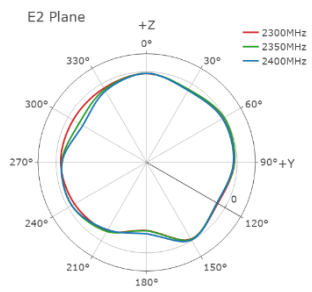
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-1.1	1.5	1.5	-1.8	-	1.3	1.1	1.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	1.9	1.9	1.0	1.8	1.6	0.4	-	-	-	-

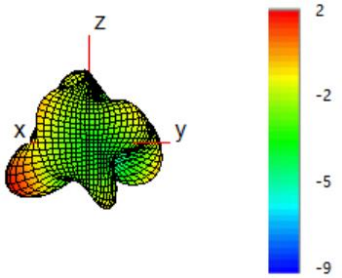
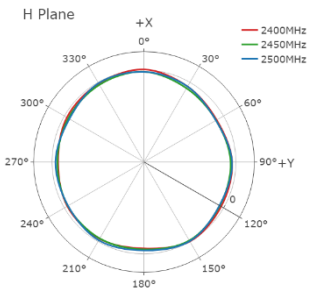
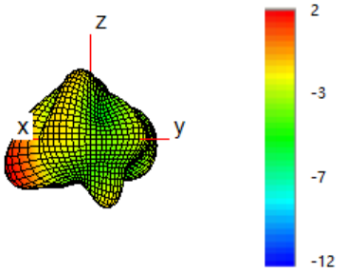
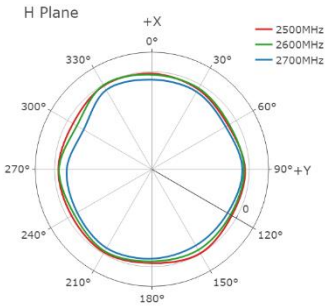
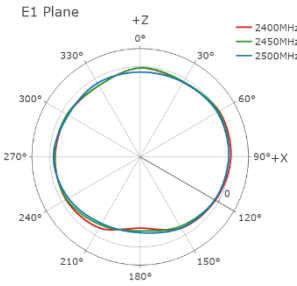
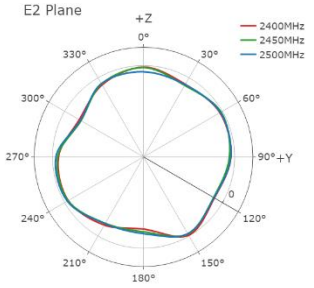
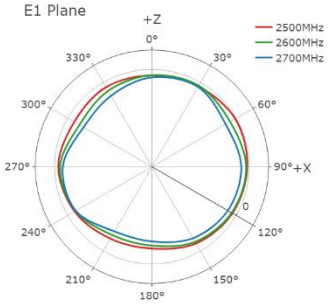
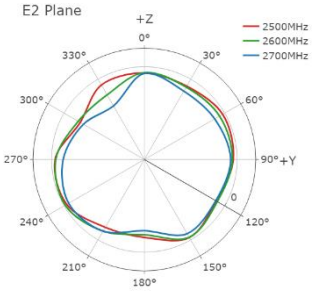
3.2.4. 3D & 2D Radiation Pattern

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

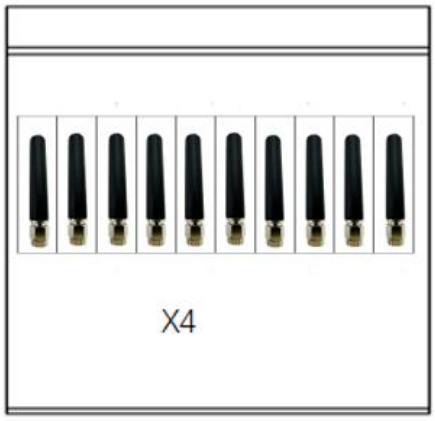
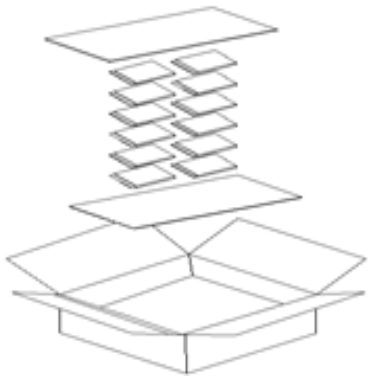


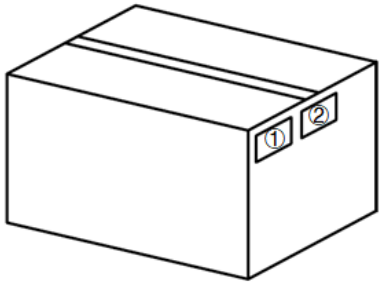
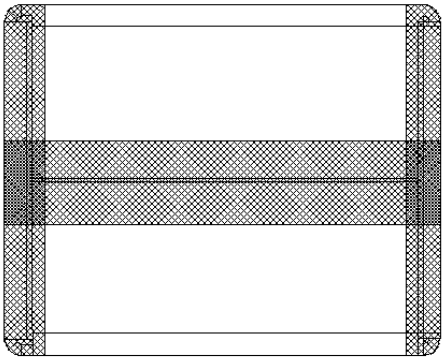
710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

2450 MHz		2600 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		10 pcs antenna products in a one-piece bag. (10 PCS Antennas / One-piece Bag)
2		40 pcs antenna products in a PE bag. (40 PCS Antennas / PE Bag)
3		(20 PE Bags / Carton Box) (800 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 = 300 × 250 × 200 mm

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

Version	Date	Author	Note
-	2024-07-11	Black LI/ Steven MO/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-07-11	Black LI/ Steven MO/ David LIU/ Rainey LIAO	First official release
1.1	2024-10-17	Steven MO	Added Ingress Protection (IP) Rating (Chapter 1.2).

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