

# Antenna Datasheet

**Product OC:** YENT001W1WM

**Version:** 1.0

**Date:** 2025-09-26

**Status:** Released

**Product Name:** ISM Terminal Mount Monopole External Antenna

**Key Features:**

Frequency Band: 410–470 MHz

Dimensions: 135 mm × 15.6 mm × 13 mm

Efficiency: Up to 70 %

RoHS Compliant

# Overview

YENT001W1WM is an ISM external antenna measuring 135 mm× 15.6mm × 13 mm. This antenna provides broad coverage from 410–470 MHz. 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 PC + ABS enclosure. It is compatible with Quectel's ISM Series modules.

YENT001W1WM 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 omni-directional antenna is ideally suited for security alerts, wireless data transmission, automated manufacturing, and many other IoT devices.

Typical applications include:

- Security Alerts
- Wireless Data-transmission
- Automated Manufacturing
- Industrial IoT

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	410–470 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

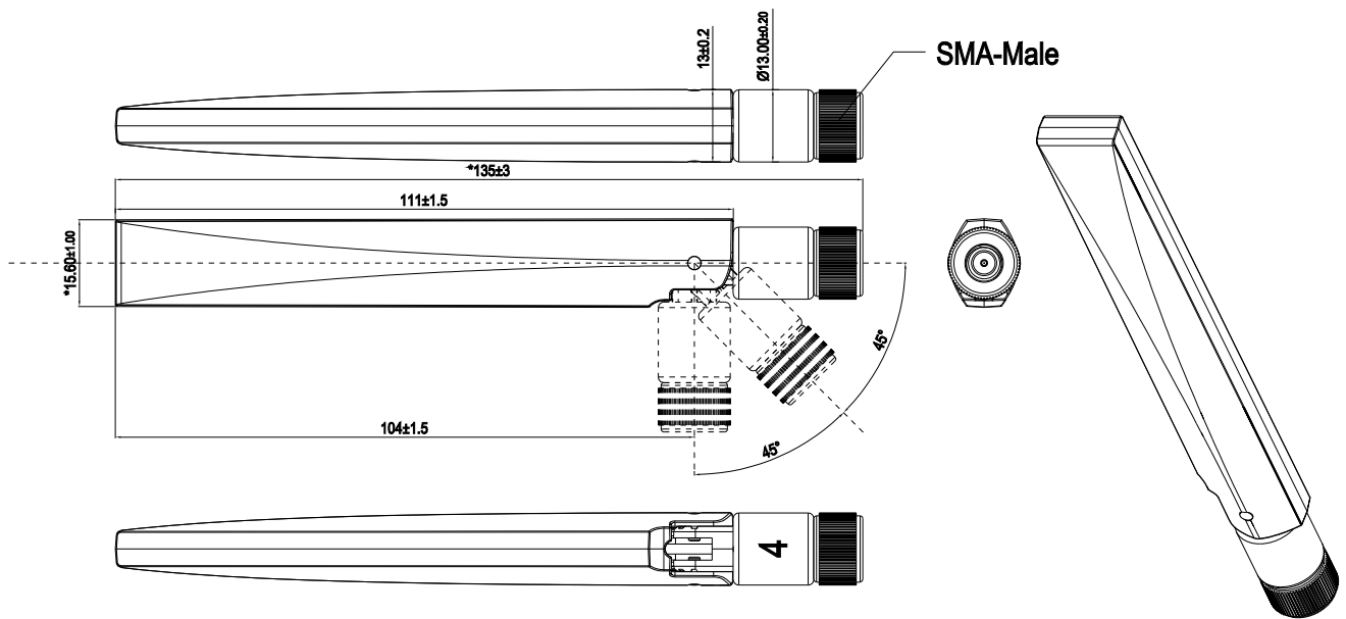
Electrical – Detail								
Band	Band	B88	EU433	B31	LoRa	B12 /B13 /B28	B5 /B8 /B26	B1 /B2 /B3
SPEC	Freq. (MHz)	412– 427	433– 435	450– 470	470– 510	700– 810	820– 960	1700– 2170
Max VSWR	Straight	2.0	2.0	2.6	-	-	-	-
	Bent	4.0	2.4	1.6	-	-	-	-
Max Return Loss (dB)	Straight	-9.5	-9.7	-7.0	-	-	-	-
	Bent	-4.4	-7.8	-12.9	-	-	-	-
AVG Eff. (%)	Straight	64.4	69.8	66.1	-	-	-	-
	Bent	34.2	47.6	68.9	-	-	-	-
AVG. AVG Gain (dB)	Straight	-1.9	-1.6	-1.8	-	-	-	-
	Bent	-4.7	-3.2	-1.6	-	-	-	-
Max Peak Gain (dBi)	Straight	1.4 (427)	1.8 (433)	1.9 (451)	-	-	-	-
	Bent	-1.4 (427)	-0.6 (435)	1.4 (470)	-	-	-	-
VSWR	Straight	≤ 2.6						
	Bent	≤ 4.0						
Return Loss	Straight	≤ -7.0 dB						
	Bent	≤ -4.4 dB						
Peak Gain	Straight	≤ 1.9 dBi						
	Bent	≤ 1.4 dBi						

- Straight: The connector is vertical.
- Bent: The connector is bend.

## 1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	135 mm × 15.6 mm × 13 mm
Material & Color	PC + ABS & White
Connector Type	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



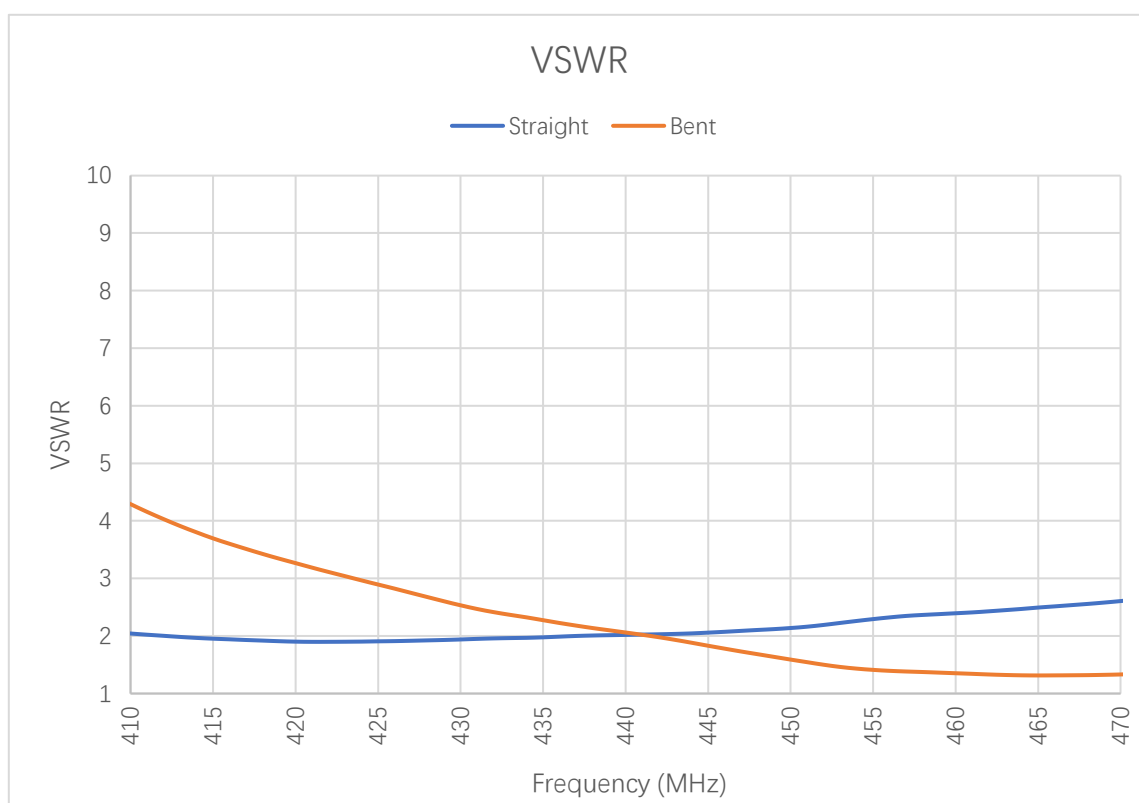
UNIT:mm

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

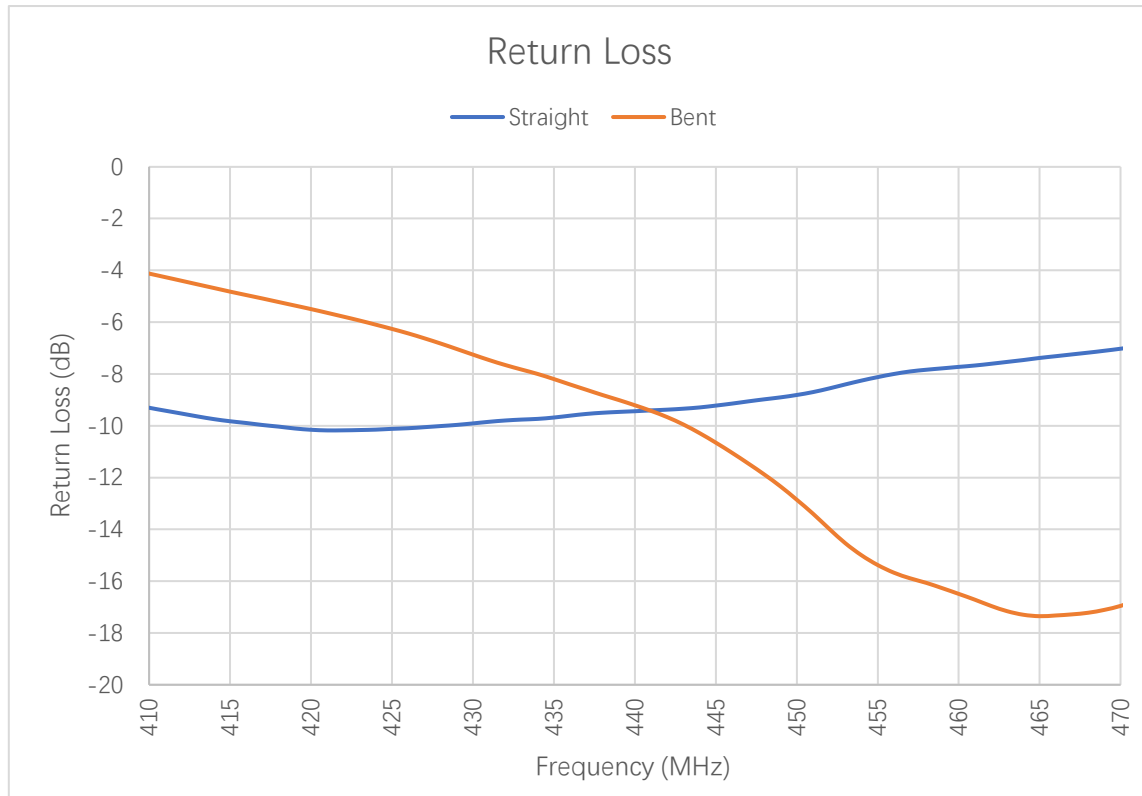


**VSWR**

Frequency (MHz)	410	420	430	433	440	450	460	470
<b>Straight</b>	2.0	1.9	1.9	2.0	2.0	2.1	2.4	2.6
<b>Bent</b>	4.3	3.3	2.5	2.4	2.1	1.6	1.4	1.3



### 3.1.2. Return Loss



**Return Loss (dB)**

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	-9.3	-10.2	-9.9	-9.8	-9.4	-8.8	-7.7	-7.0
Bent	-4.1	-5.5	-7.3	-7.8	-9.2	-12.9	-16.5	-17.0

## 3.2. Radiation Performance Test

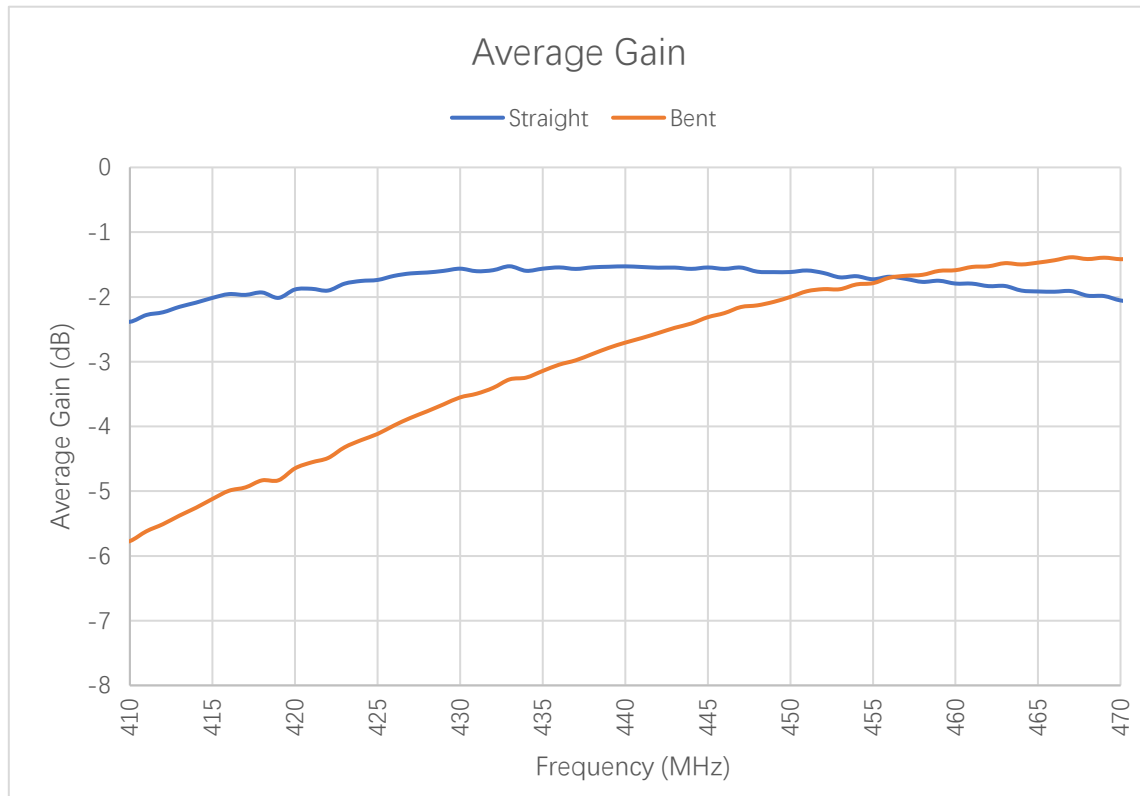
### 3.2.1. Efficiency



**Efficiency (%)**

Frequency (MHz)	410	420	430	433	440	450	460	470
<b>Straight</b>	57.8	64.8	69.8	70.4	70.3	68.9	66.2	62.3
<b>Bent</b>	26.5	34.3	44.1	47.1	53.6	63.1	69.4	72.2

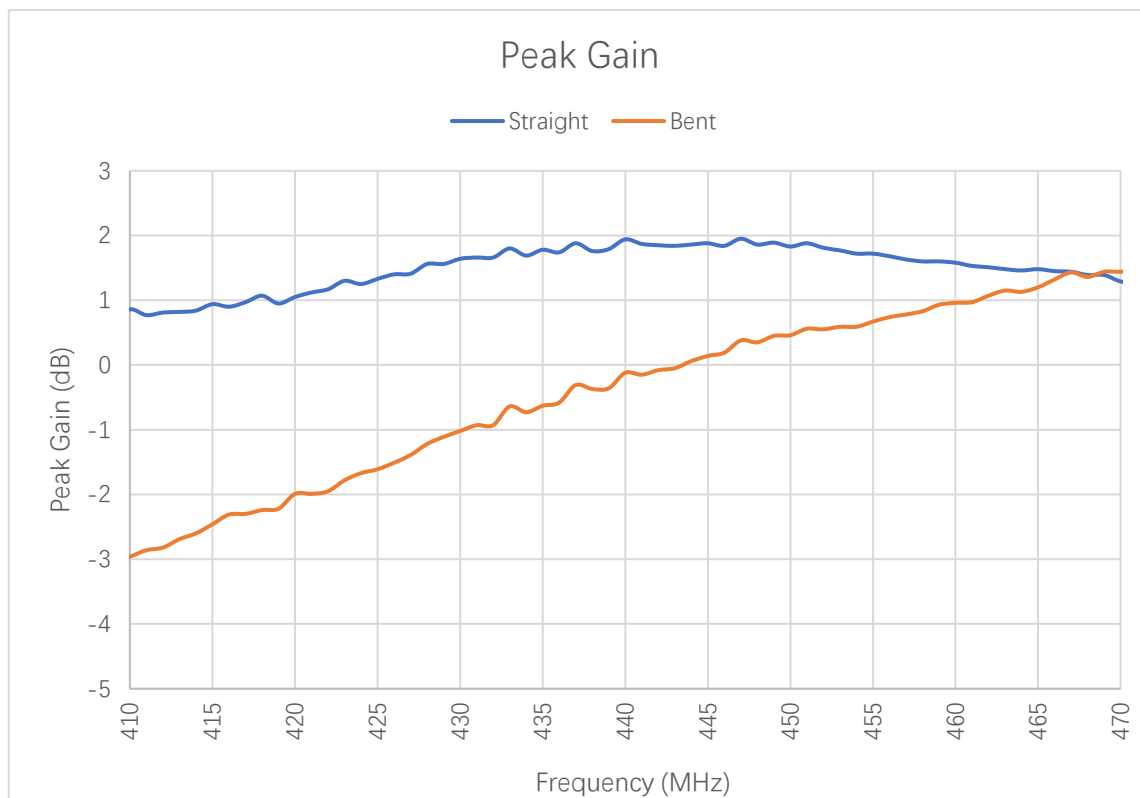
### 3.2.2. Average Gain



**Average Gain (dB)**

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	-2.4	-1.9	-1.6	-1.5	-1.5	-1.6	-1.8	-2.1
Bent	-5.8	-4.6	-3.6	-3.3	-2.7	-2.0	-1.6	-1.4

### 3.2.3. Peak Gain



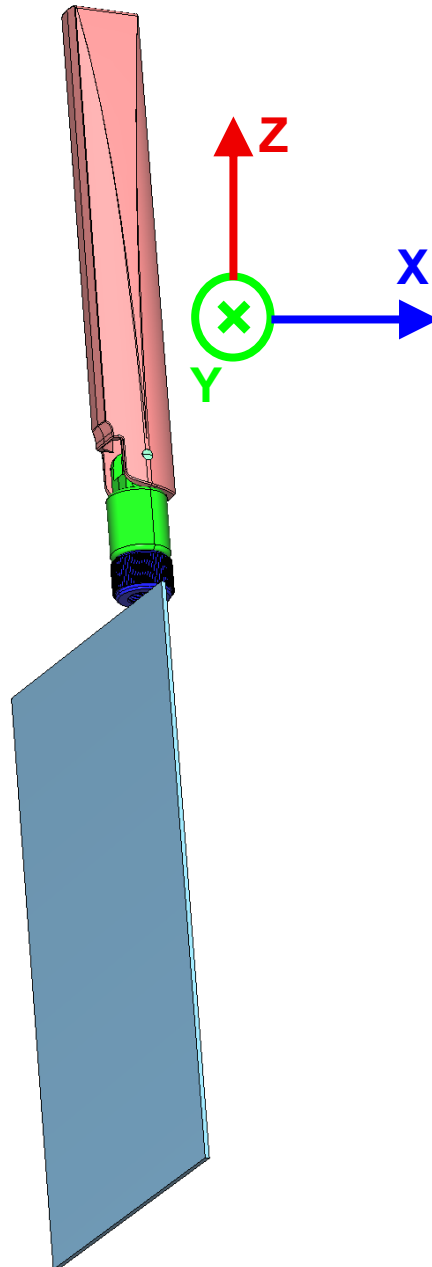
**Peak Gain (dBi)**

Frequency (MHz)	410	420	430	433	440	450	460	470
<b>Straight</b>	0.9	1.1	1.6	1.8	1.9	1.8	1.6	1.3
<b>Bent</b>	-3.0	-2.0	-1.0	-0.6	-0.1	0.5	1.0	1.4

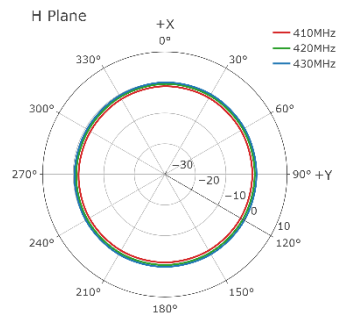
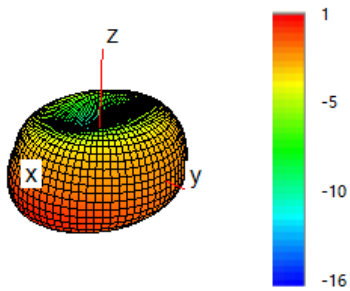
### 3.2.4. 3D & 2D Radiation Pattern

#### 3.2.4.1. Test Condition: Straight

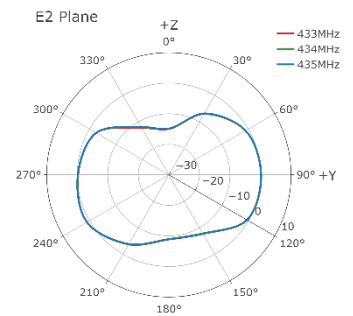
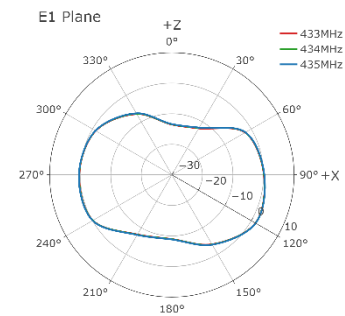
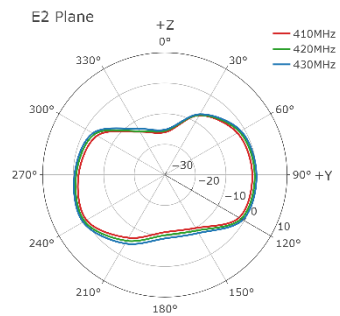
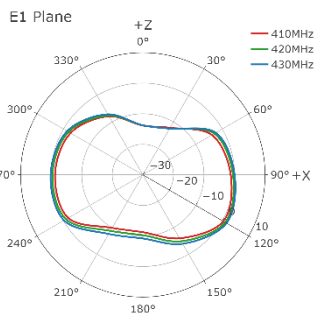
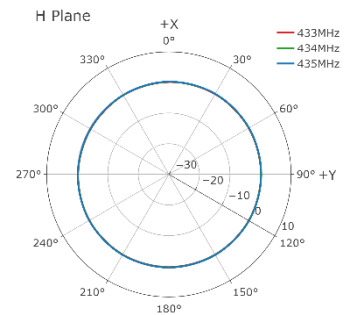
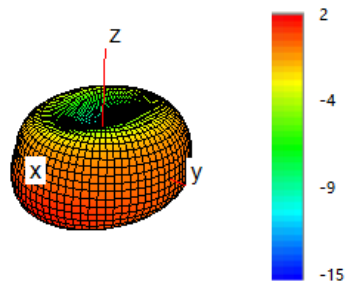
- Test Chamber: FS-G-1



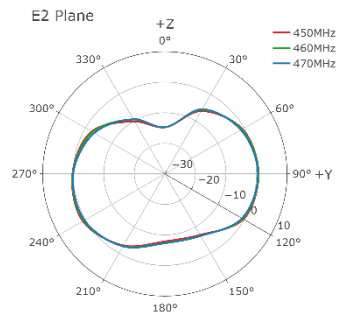
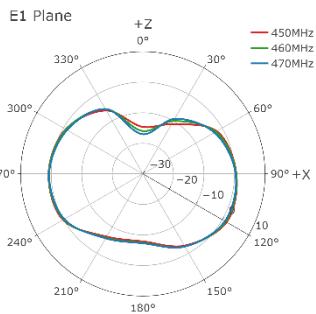
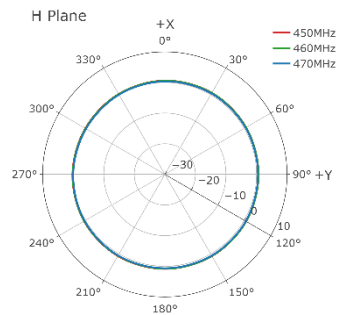
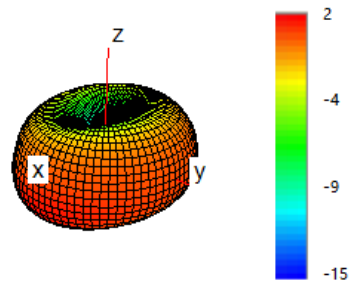
**410 MHz**



**433 MHz**

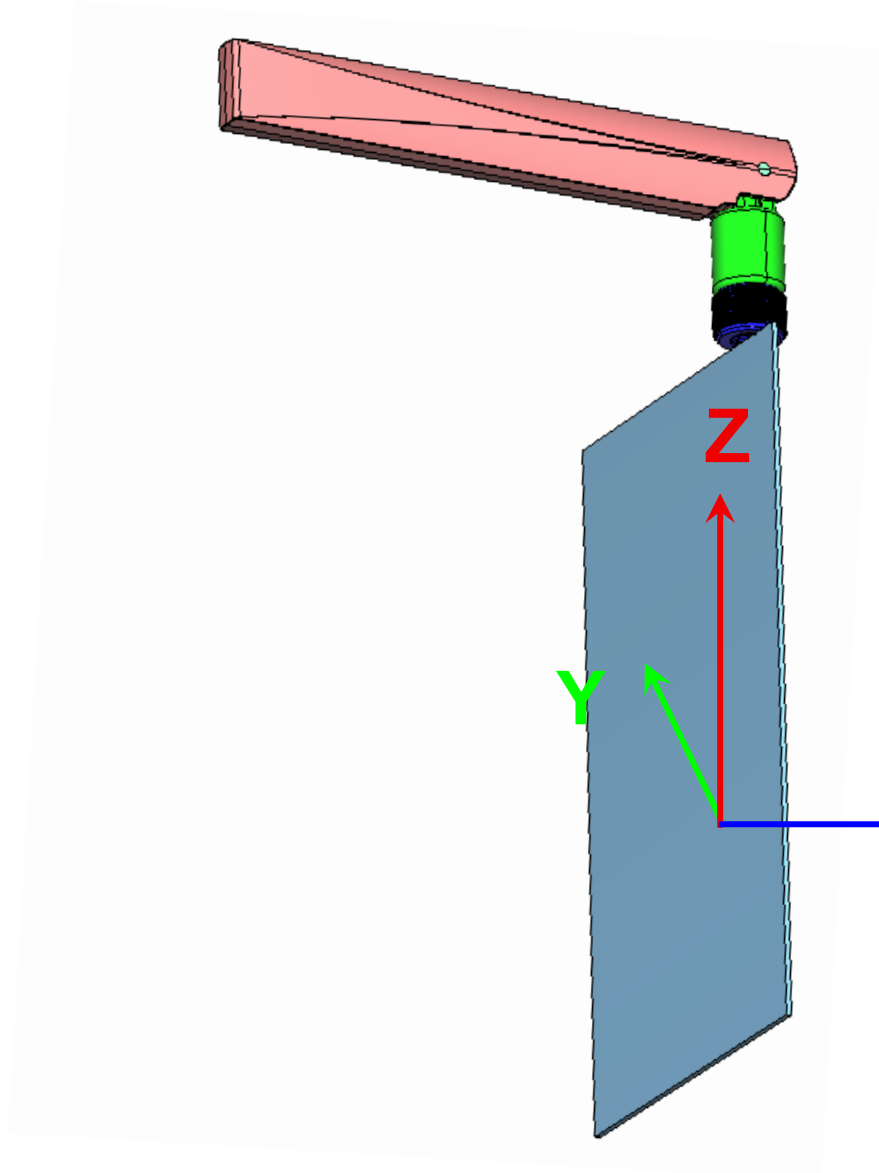


**450 MHz**

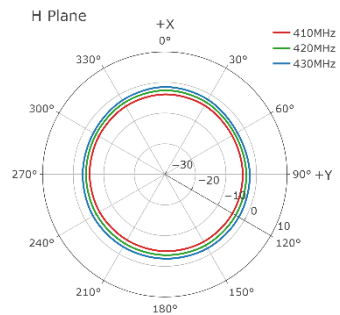
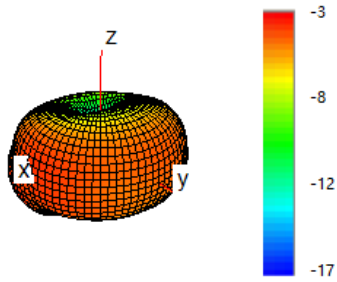


**3.2.4.2. Test Condition: Bent**

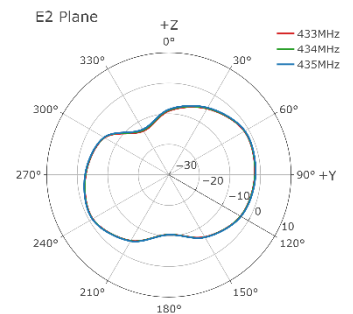
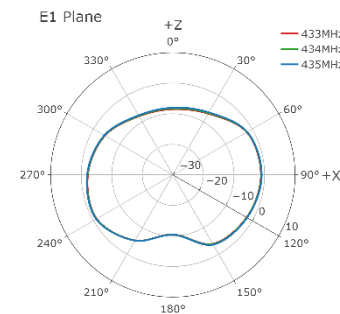
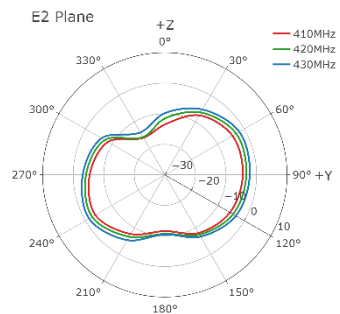
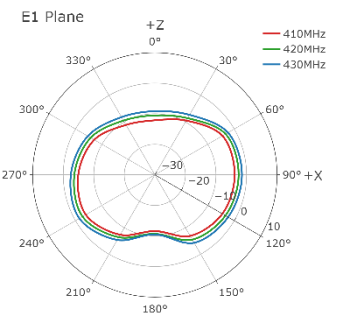
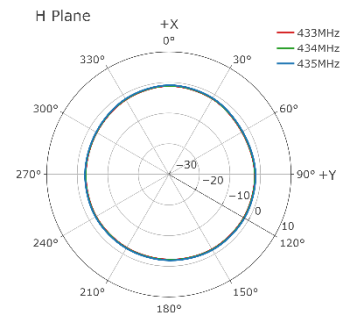
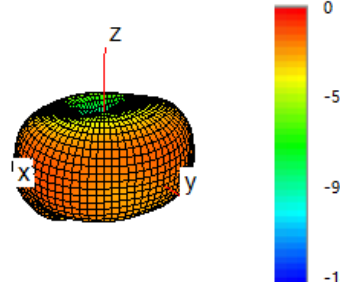
- Test Chamber: HF-G-1



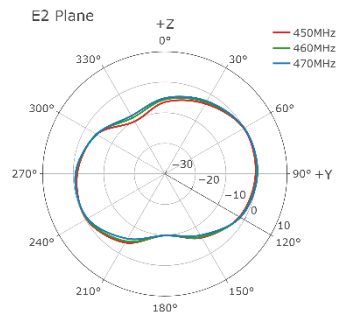
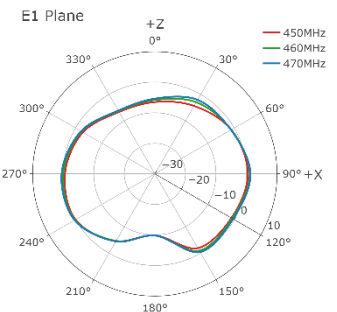
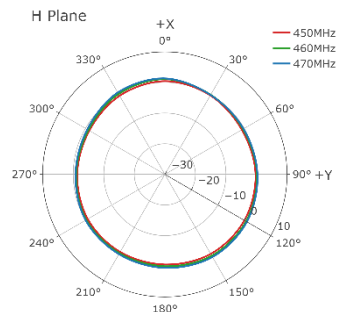
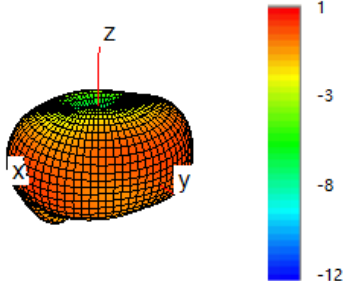
**410 MHz**



**433 MHz**

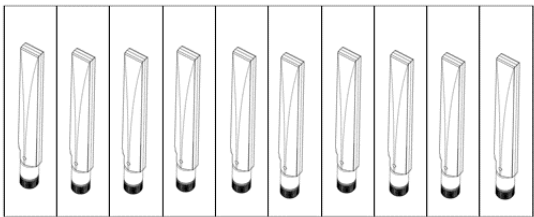
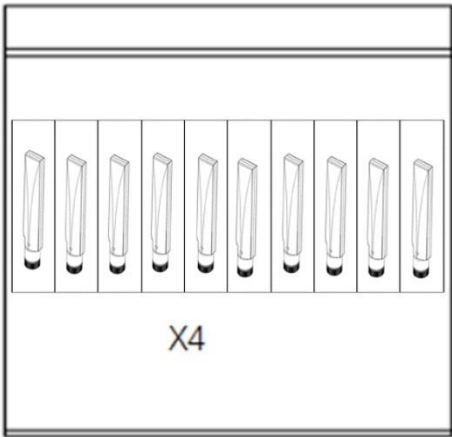
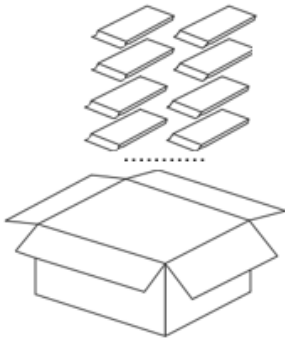
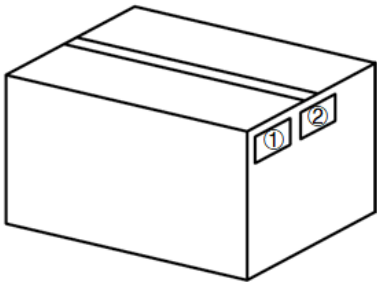


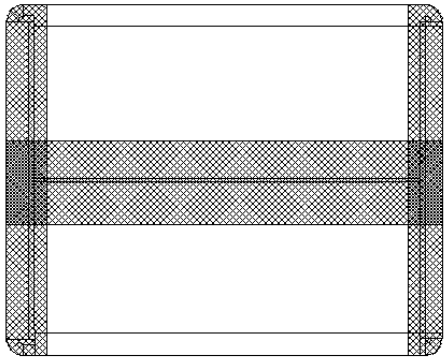
**450 MHz**





## 4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		10 antenna products in a one-piece bag. (10 Antennas / One-piece Bag)
2		40 antenna products in a PE bag. (40 Antennas / PE Bag)
3		(8 PE Bags / Carton Box) (320 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 = 325 × 325 × 200 mm</u>
4		<b>Position for Attaching Labels</b> ① Carton Label ② Quality Label

5		<p><b>Sealing Cartons</b> H-shaped sealing cartons</p>
Note	<p>The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.</p>	

## 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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## Revision History

Version	Date	Author	Note
-	2025-09-26	Mordecai Liu/ Lance Sun/ Strong Qiang/ Rainey Liao	Creation of the document
1.0	2025-09-26	Mordecai Liu/ Lance Sun/ Strong Qiang/ Rainey Liao	First official release



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