



Antenna Datasheet

Product OC: YENT000W1AM

Version: 1.0

Date: 2024-11-07

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 62.3 %

RoHS and REACH Compliant

IP67

Overview

YENT000W1AM is an ISM external antenna measuring 135 mm × 15.6 mm × 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.

The YENT000W1AM 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. It is suitable for outdoor and indoor applications due to its robust resistant PC + ABS enclosure meets IP67 ingress protection rating.

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 × 70 mm EVB

1.1. Electrical

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

Electrical – Detail									
SPEC	Band	Band	B88	EU433	B31	LoRa	B12 /B13 /B28	B5 /B8 /B26	B1 /B2 /B3
	Freq. (MHz)		412– 427	433– 435	450– 470	470– 510	700– 810	820– 960	1700– 2170
Max VSWR	Straight		2.6	1.8	2.7	-	-	-	-
	Bent		5.0	3.0	1.8	-	-	-	-
Max Return Loss (dB)	Straight		-7.1	-11.1	-6.8	-	-	-	-
	Bent		-3.5	-6.0	-11.0	-	-	-	-
AVG Eff. (%)	Straight		46.1	55.1	57.9	-	-	-	-
	Bent		28.8	41.1	59.2	-	-	-	-
AVG Gain (dB)	Straight		-3.4	-2.6	-2.4	-	-	-	-
	Bent		-5.4	-3.9	-2.3	-	-	-	-
Max Peak Gain (dBi)	Straight		1.6 (427)	1.7 (435)	1.7 (450)	-	-	-	-
	Bent		-1.3 (427)	-0.6 (435)	1.3 (470)	-	-	-	-
VSWR	Straight		≤ 2.7						
	Bent		≤ 5.0						

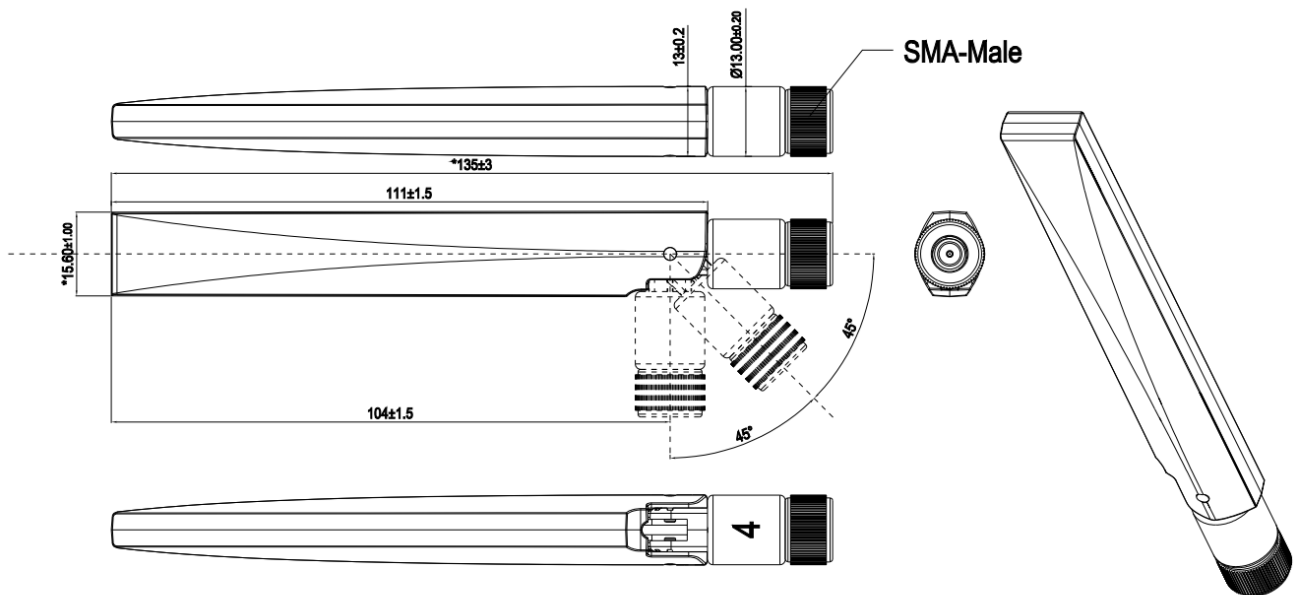
Return Loss	Straight	≤ -6.8 dB
	Bent	≤ -3.5 dB
Peak Gain	Straight	≤ 1.7 dBi
	Bent	≤ 1.3 dBi

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

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	135 × 15.6 × 13 mm
Material & Color	PC + ABS & Black
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
Ingress Protection (IP) Rating	IP67 (After Installation)
RoHS and 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

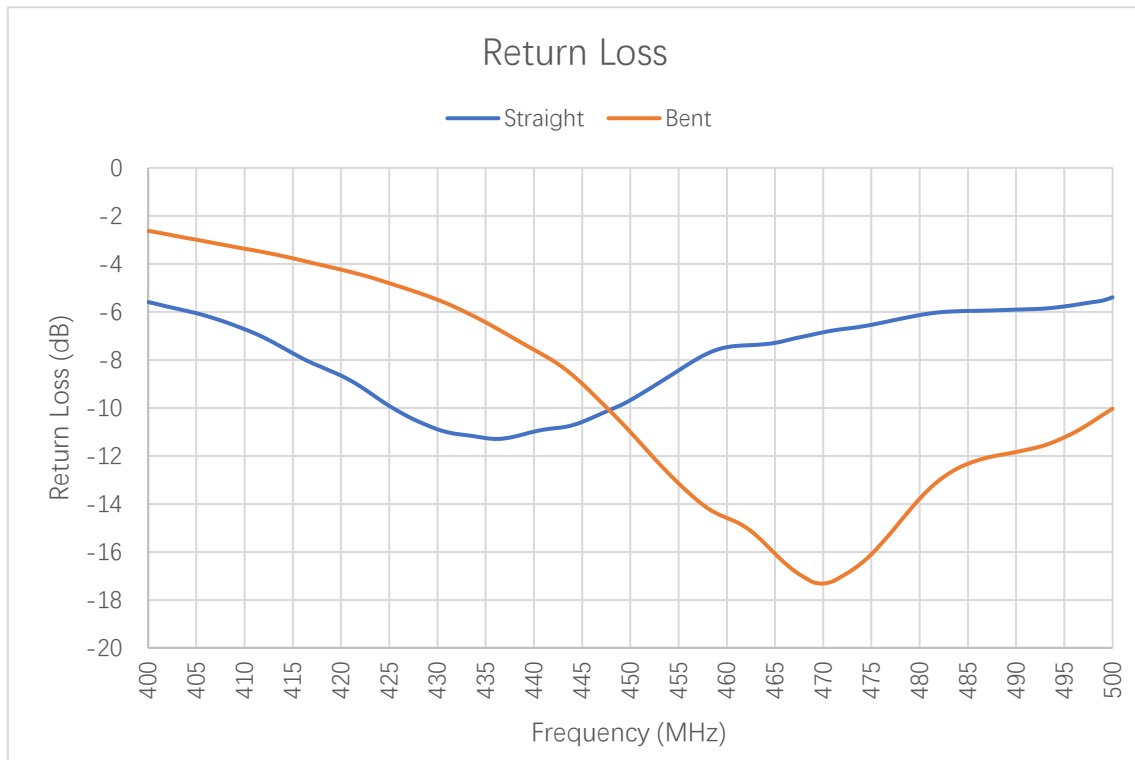
3.1.1. VSWR



VSWR

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	2.7	2.2	1.8	1.8	1.8	2.0	2.5	2.7
Bent	5.2	4.2	3.3	3.0	2.4	1.8	1.5	1.3

3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	-6.7	-8.7	-10.9	-11.1	-11.0	-9.7	-7.5	-6.8
Bent	-3.4	-4.2	-5.5	-6.0	-7.6	-11.0	-14.6	-17.3

3.2. Radiation Performance Test

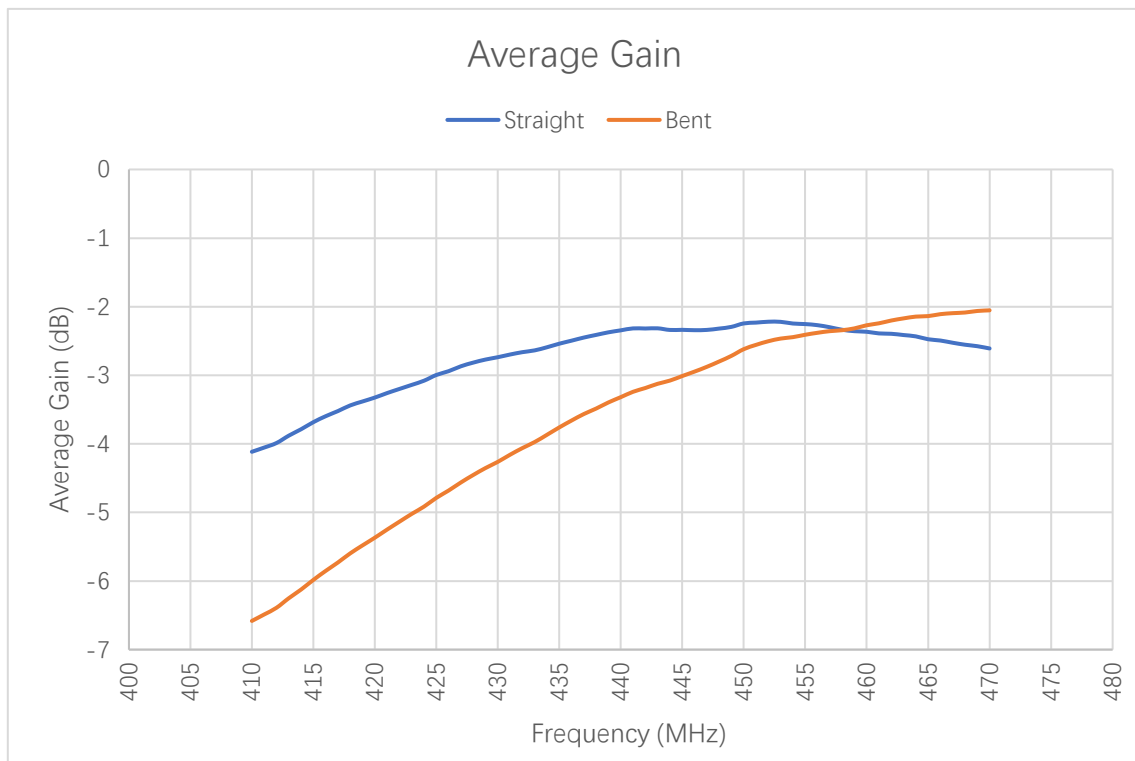
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	38.8	46.5	53.3	54.5	58.3	59.7	58.0	38.8
Bent	22.0	29.1	37.5	40.1	46.6	54.7	59.3	22.0

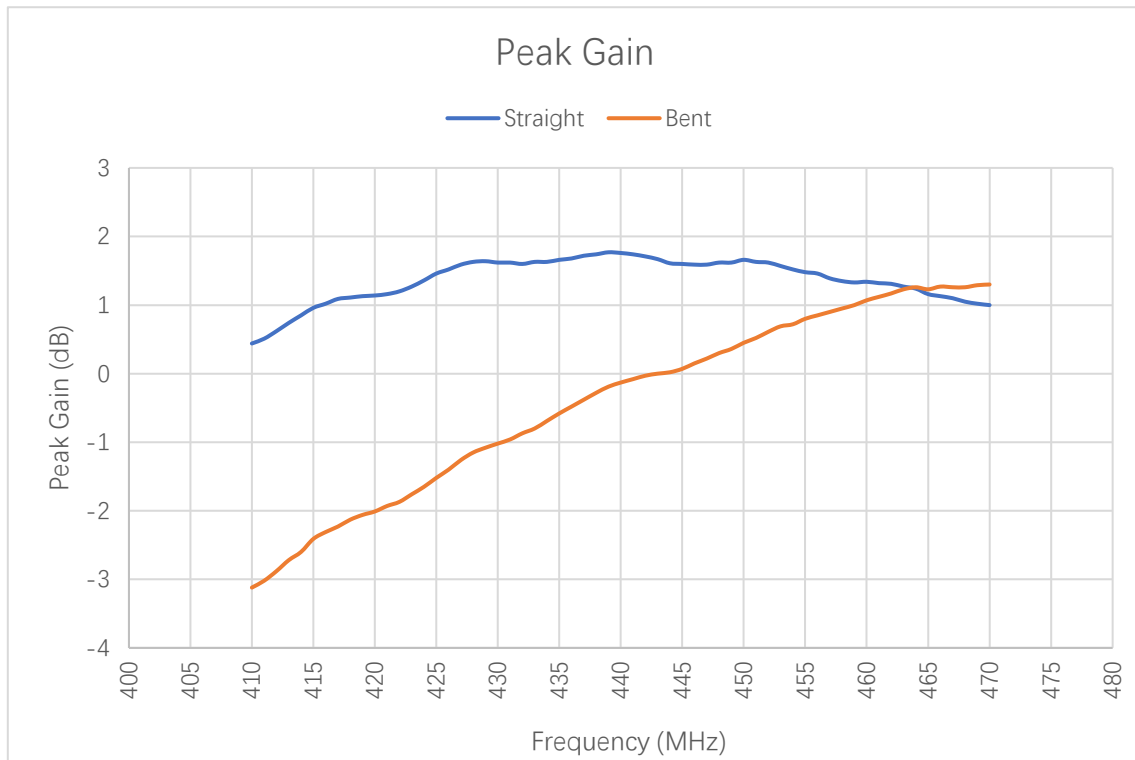
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	-4.1	-3.3	-2.7	-2.6	-2.3	-2.2	-2.4	-2.6
Bent	-6.6	-5.4	-4.3	-4.0	-3.3	-2.6	-2.3	-2.1

3.2.3. Peak Gain



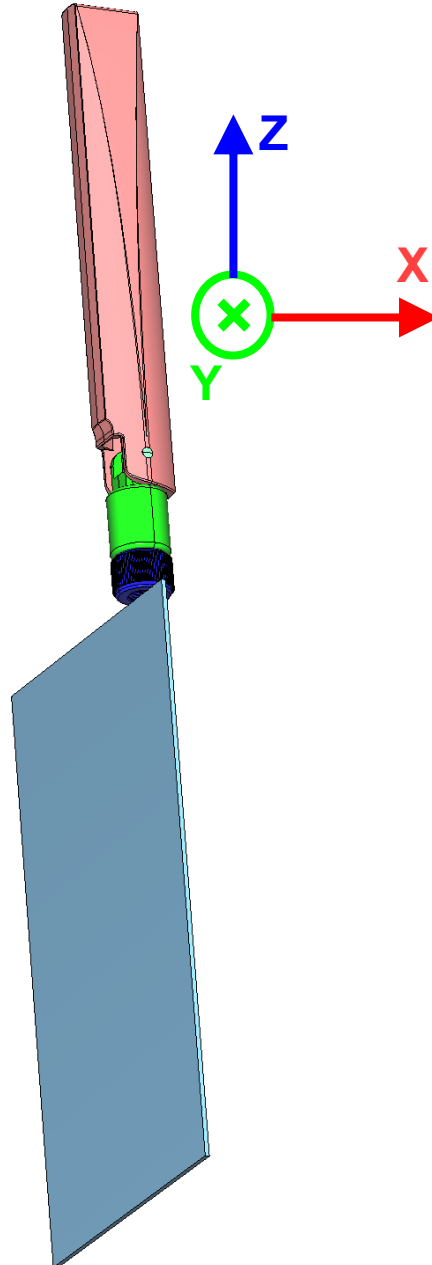
Peak Gain (dBi)

Frequency (MHz)	410	420	430	433	440	450	460	470
Straight	0.4	1.1	1.6	1.6	1.8	1.7	1.3	1.0
Bent	-3.1	-2.0	-1.0	-0.8	-0.1	0.5	1.1	1.3

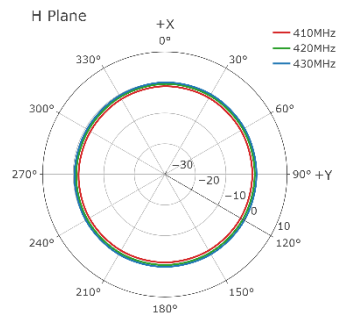
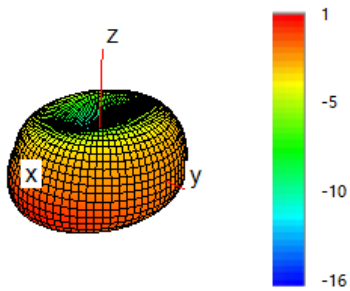
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Straight

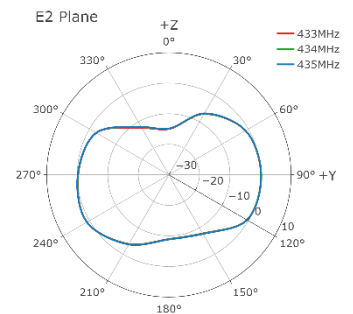
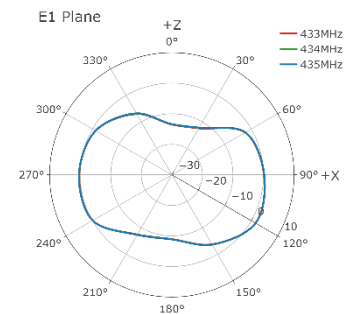
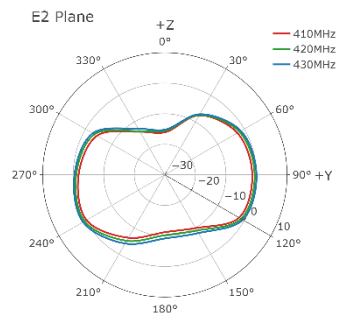
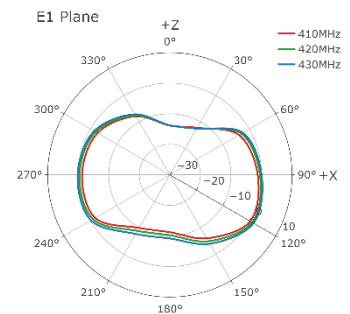
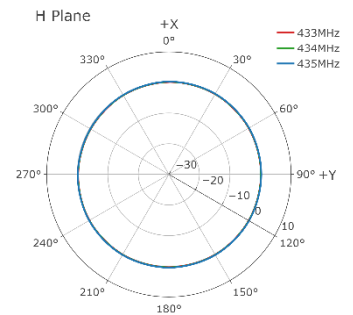
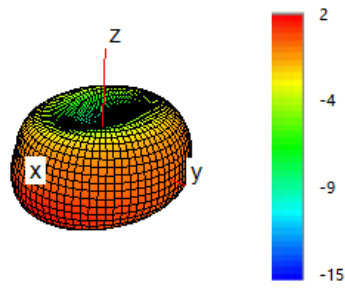
- Test Chamber: HF-G-1



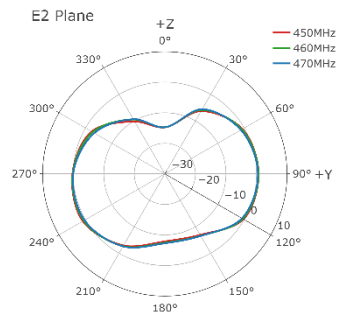
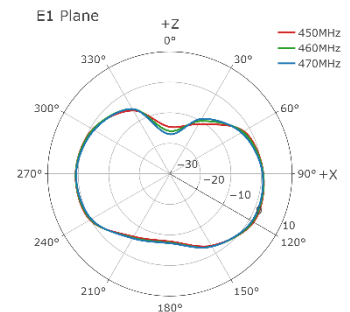
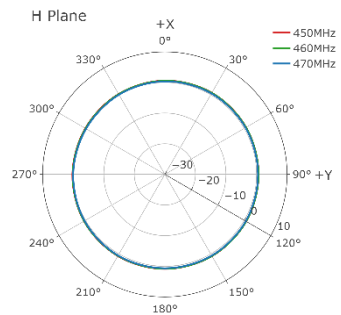
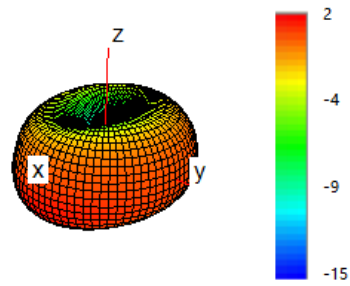
410 MHz



433 MHz

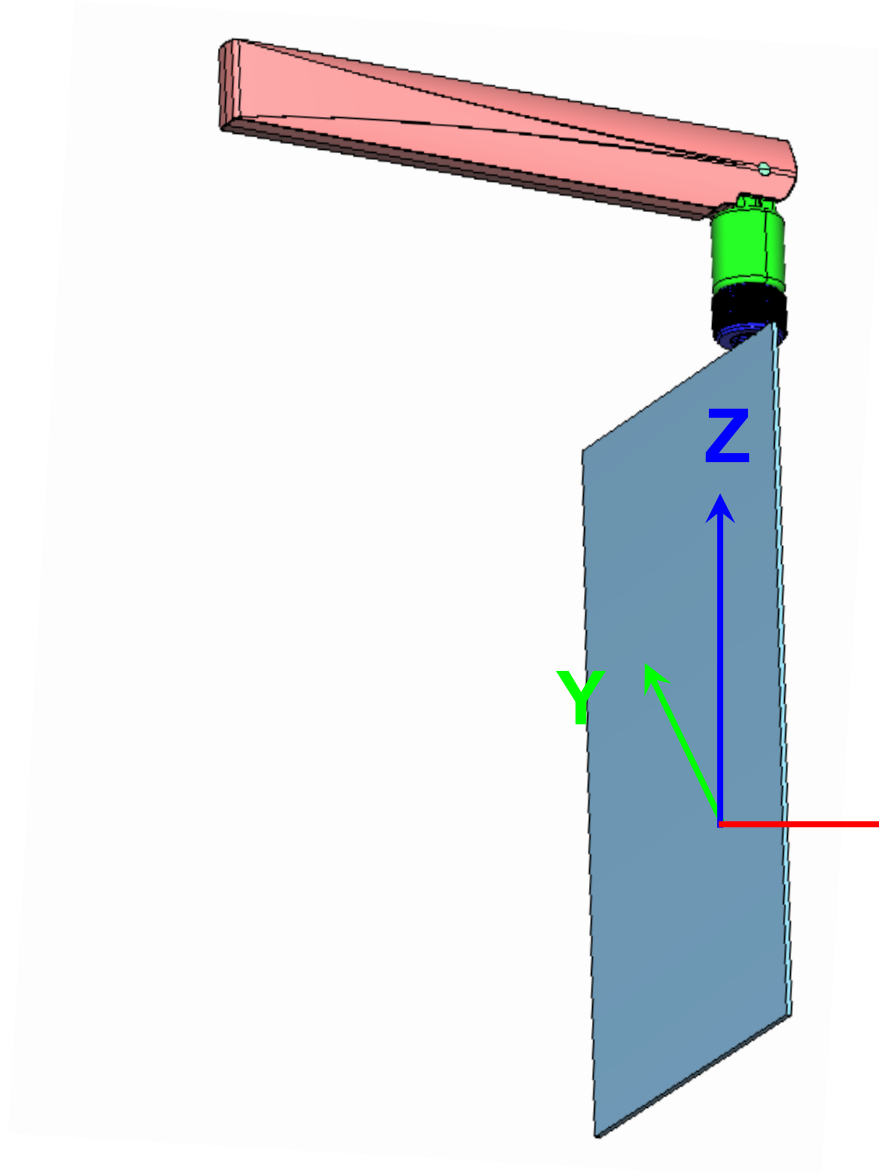


450 MHz

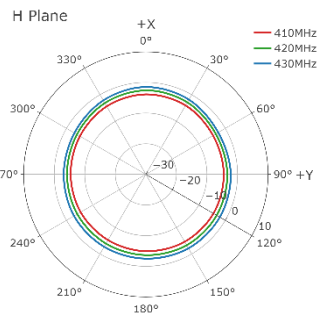
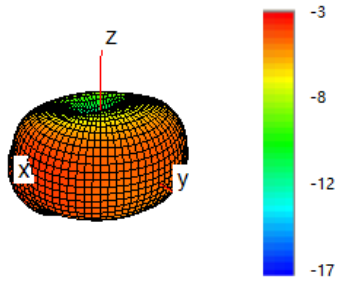


3.2.4.2. Test Condition: Bent

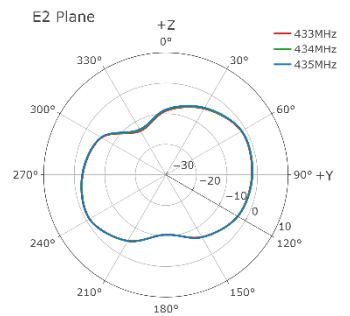
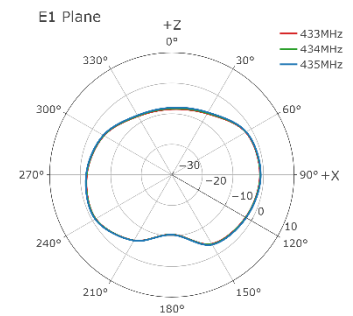
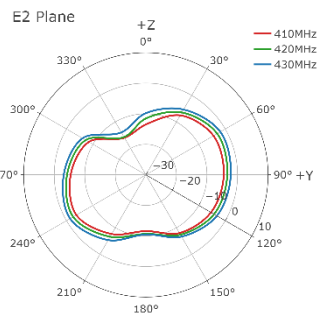
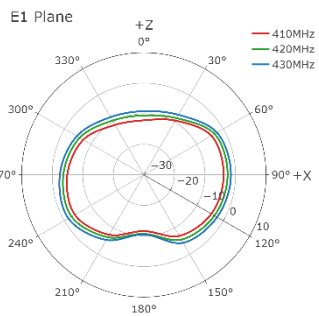
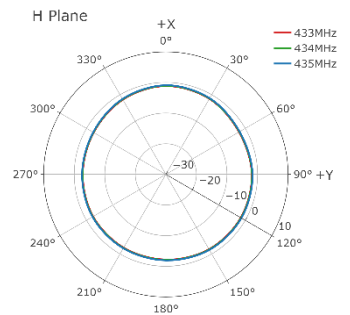
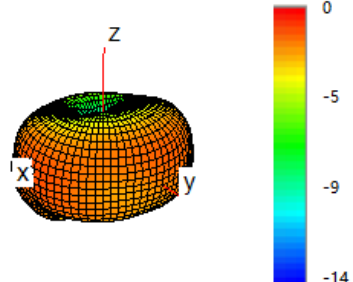
- Test Chamber: HF-G-1



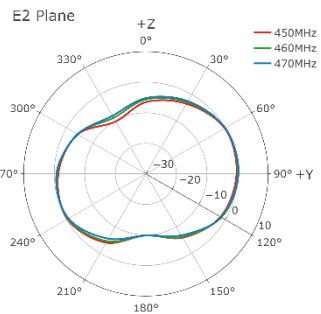
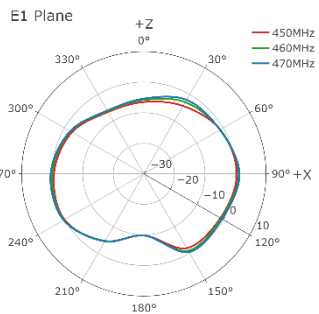
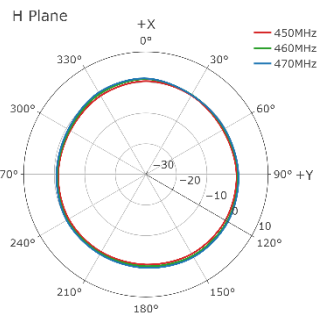
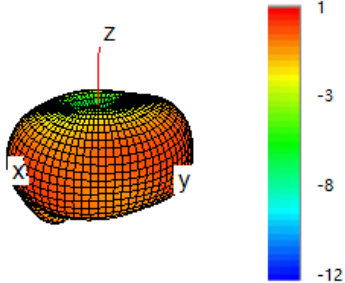
410 MHz



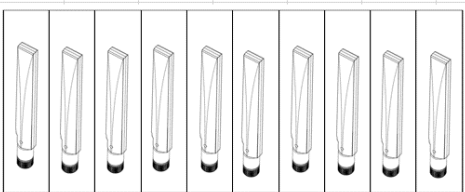
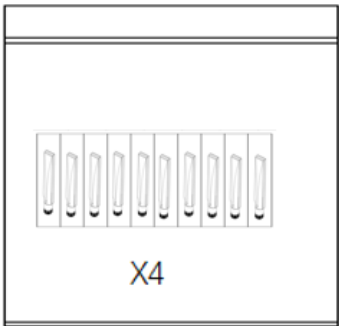
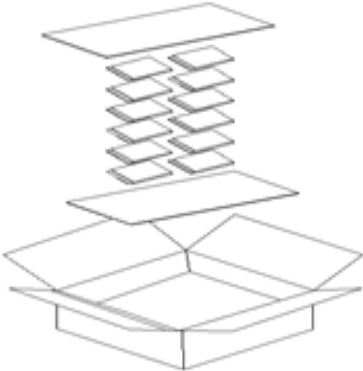
433 MHz

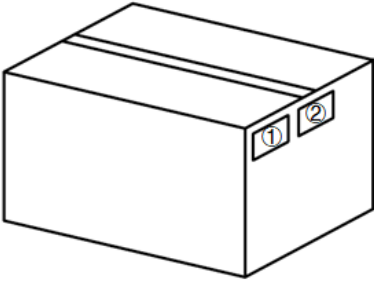
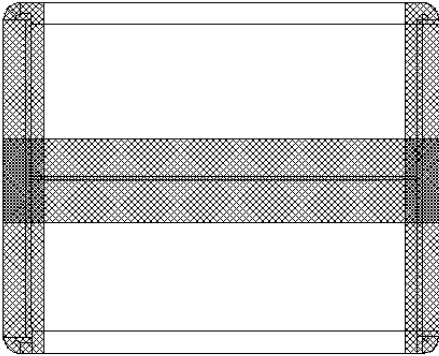


450 MHz



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		10 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 / PE Bag)
3		(8 PE Bags / Carton Box) (320 PCS Antenna / 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		<p>Position for Attaching Labels</p> <p>① Carton Label</p> <p>② Quality Label</p>
5		<p>Sealing Cartons</p> <p>“Ⅰ” type 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
-	2024-09-14	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-11-07	Mordecai LIU/ Lance SUN/ David LIU/ Rainey LIAO	First official release



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