

Antenna Datasheet

Product OC: YAE00A0EA

Version: 1.0

Date: 2023-03-15

Status: Released

Product Name: Wi-Fi Antenna

Key Features:

Frequency Band: 2.4–2.5 GHz, 5.15–5.85 GHz

Dimensions: 28.9 × 11.0 mm

Efficiency: Up to 60.1 %

RoHS and REACH Compliant

Overview

Quectel Wi-Fi antenna covers 2.4 GHz and 5 GHz dual-bands, fully satisfying customers' requirements for Wi-Fi 5 and Wi-Fi 6. There are various antenna types, including built-in FPC/PCB antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.

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1 Specification

- Test Condition: Free space

1.1. Electrical

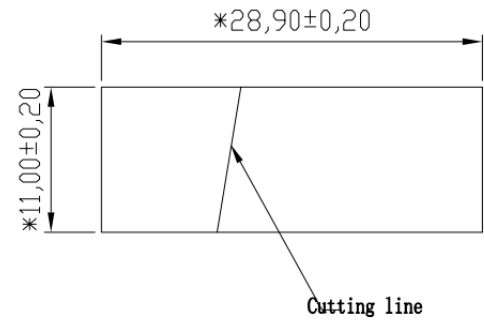
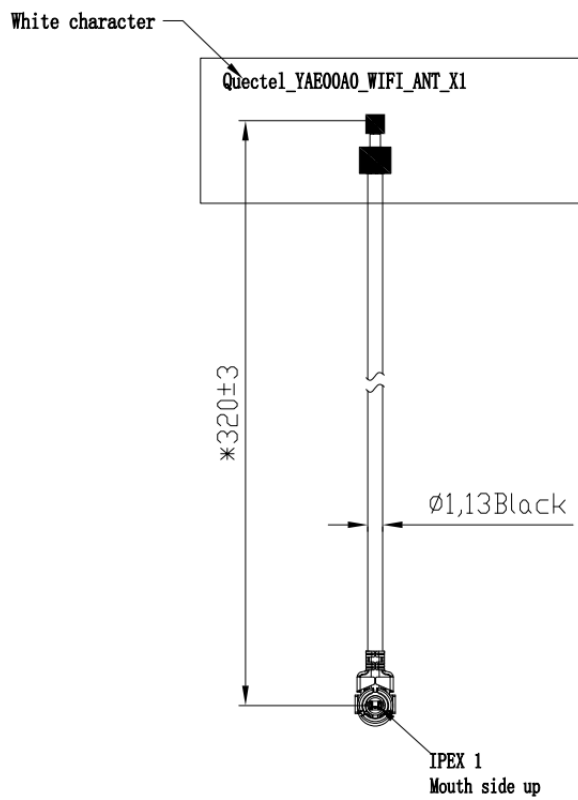
Electrical	
Frequency Range	2.4–2.5 GHz, 5.15–5.85 GHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /N77	N79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850
Max. VSWR		-	-	-	-	-	-	3.1	-	-	-	1.8
Max. Return Loss (dB)		-	-	-	-	-	-	-5.9	-	-	-	-10.8
AVG Eff. (%)		-	-	-	-	-	-	50.2	-	-	-	54.7
AVG. AVG. Gain (dB)		-	-	-	-	-	-	-4.2	-	-	-	-4.0
Max. Peak Gain (dBi)		-	-	-	-	-	-	1.0	-	-	-	2.6
VSWR							≤ 3.1					
Return Loss							≤ -5.9 dB					
Peak Gain							≤ 2.6 dBi					

1.2. Mechanical, Environmental and Storage

Mechanical	
Antenna Dimensions	28.90 × 11.00 mm
Material and Color	FPC & Black
Cable Type	Φ1.13 Black & 320 mm
Connector	IPEX MHF 1
Weight	Typ. 1.1 g
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

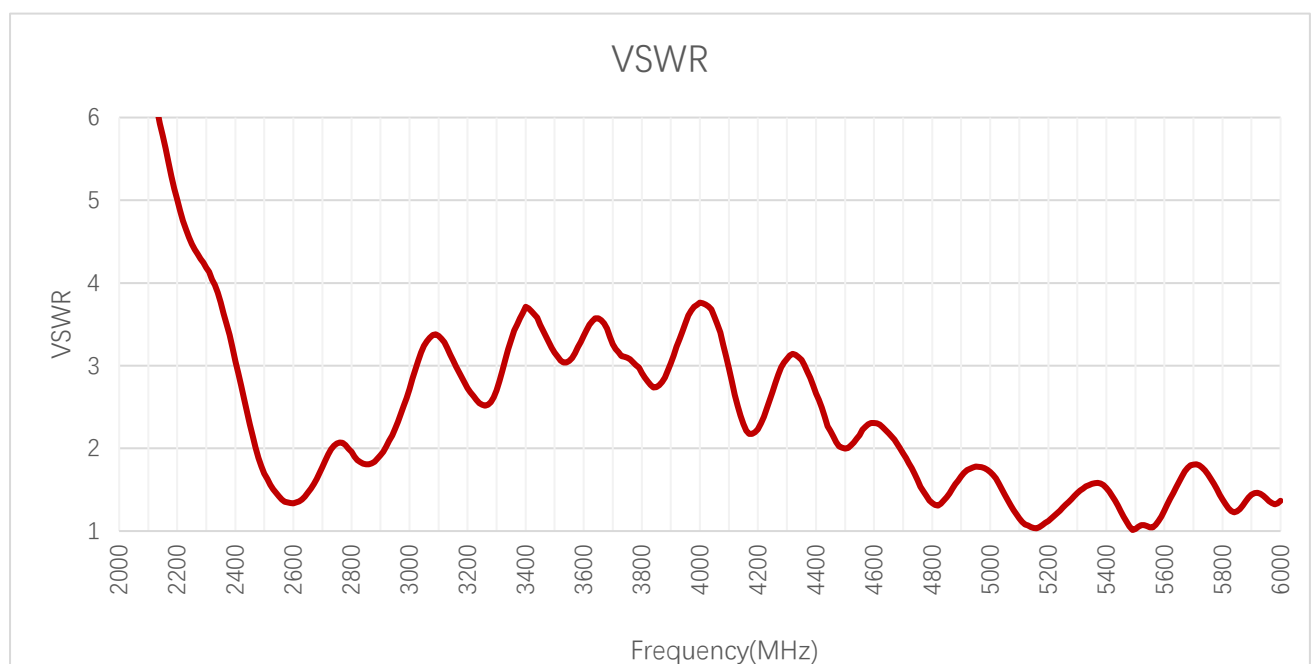
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

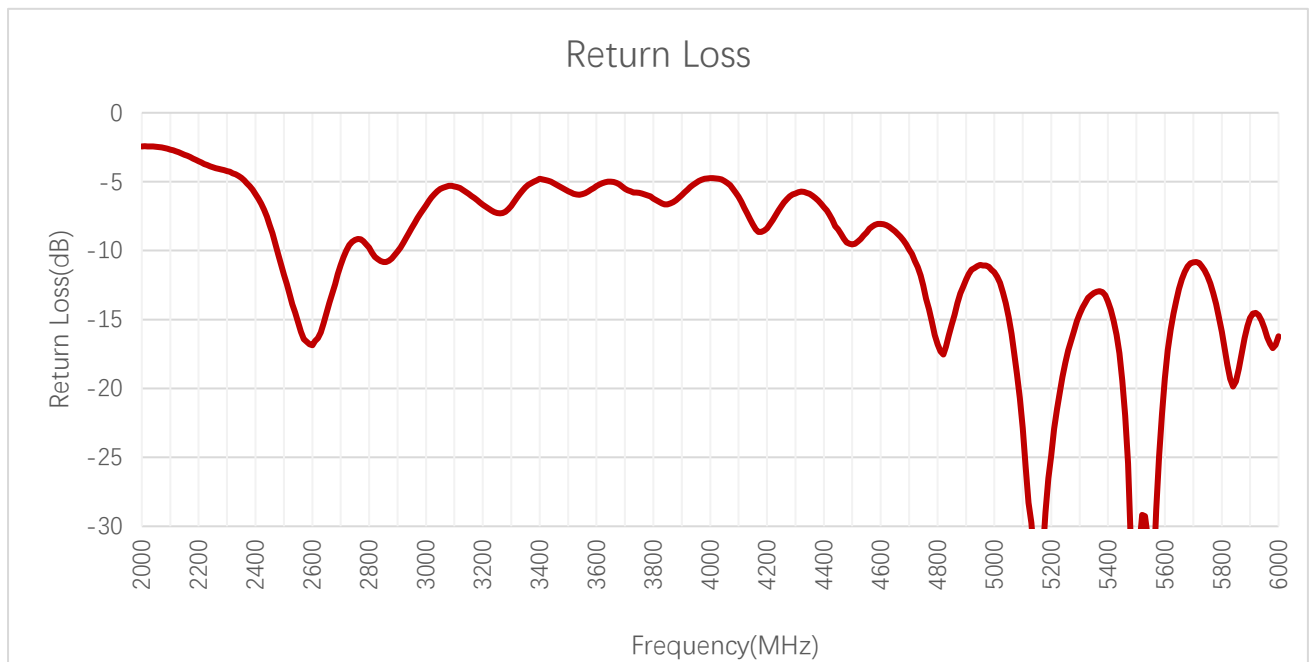
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5550	5850	5925	6350	6700	7125
VSWR	3.1	2.3	1.7	1.1	1.1	1.2	-	-	-	-

3.1.2. Return Loss

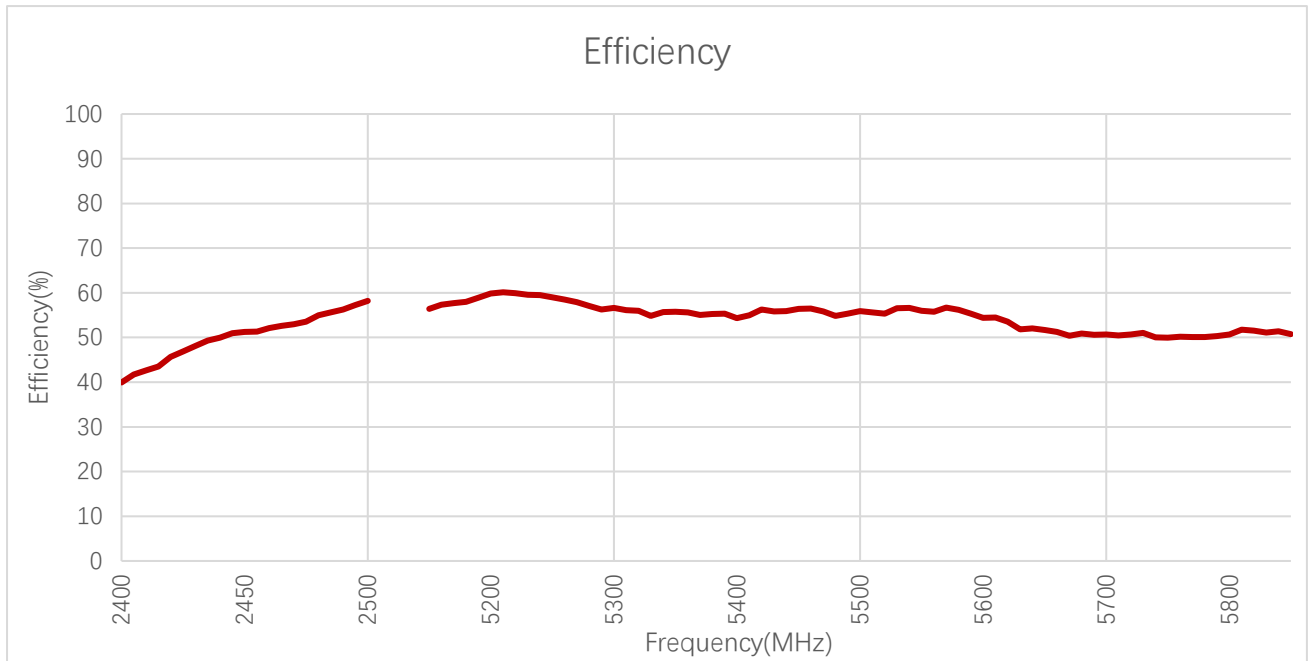


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5550	5850	5925	6350	6700	7125
Return Loss (dB)	-5.9	-8.1	-11.8	-34.4	-33.5	-19.5	-	-	-	-

3.2. Radiation Performance Test

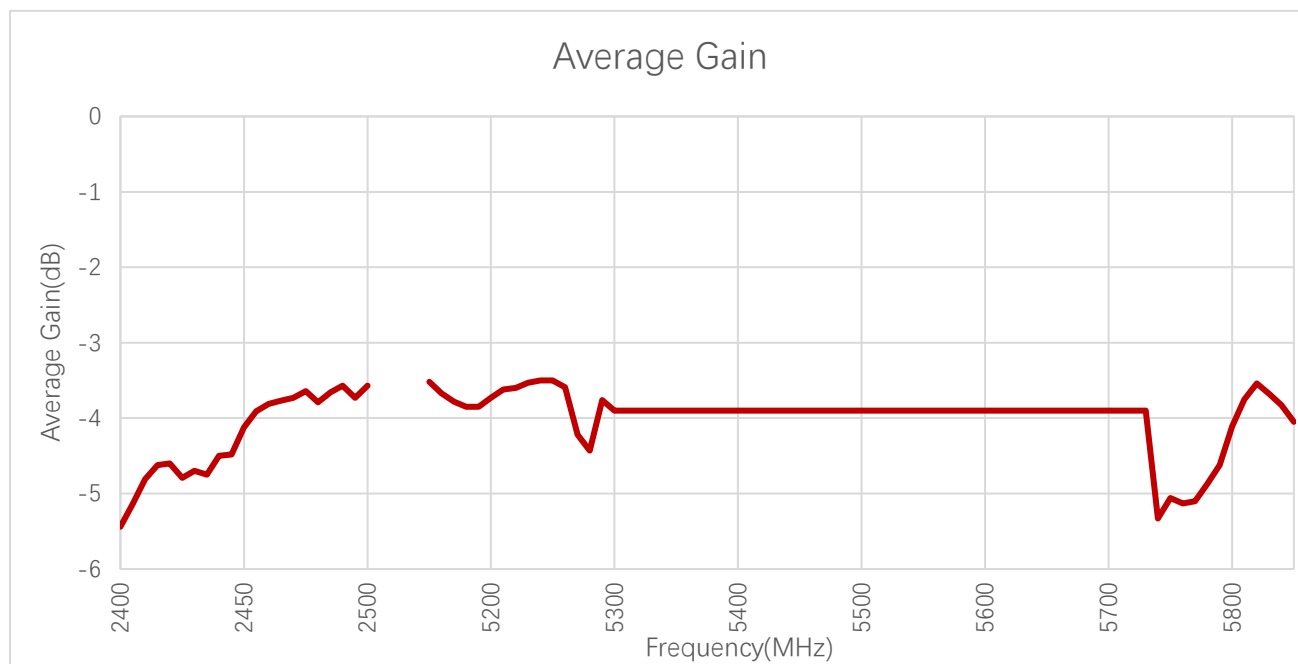
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5550	5850	5925	6350	6700	7125
Efficiency (%)	39.9	51.2	58.2	56.4	55.9	50.7	-	-	-	-

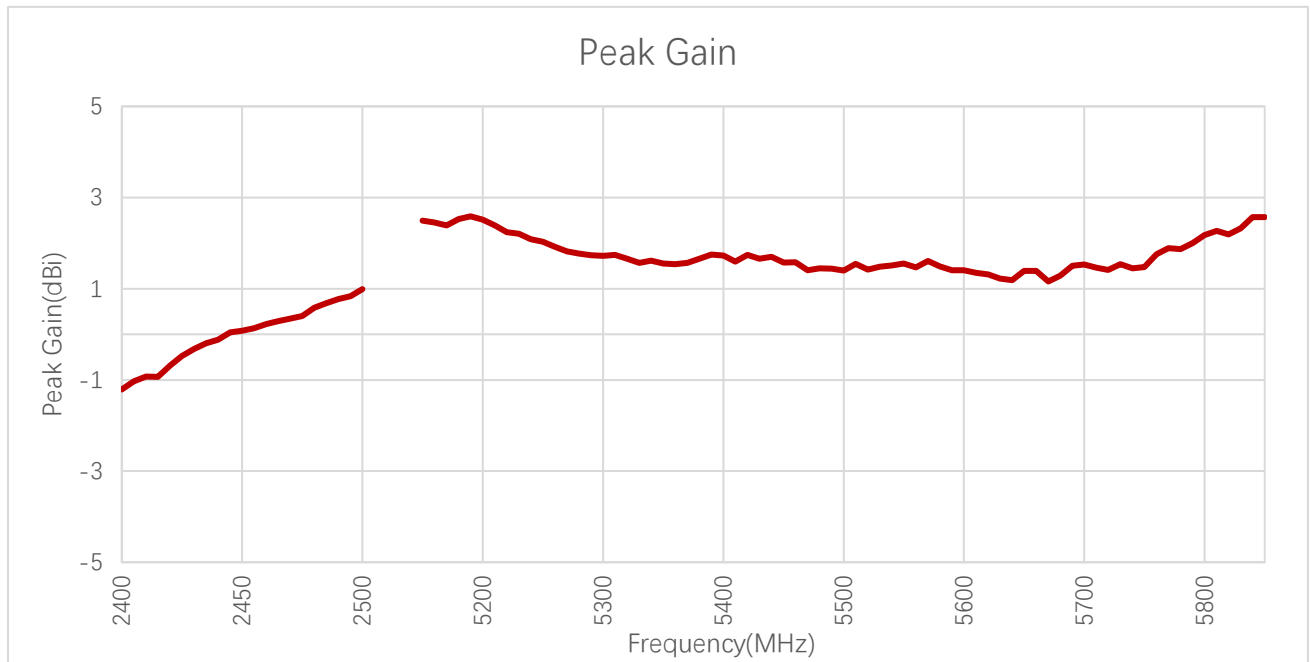
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5550	5850	5925	6350	6700	7125
Average Gain (dB)	39.9	51.2	58.2	56.4	55.9	50.7	-	-	-	-

3.2.3. Peak Gain

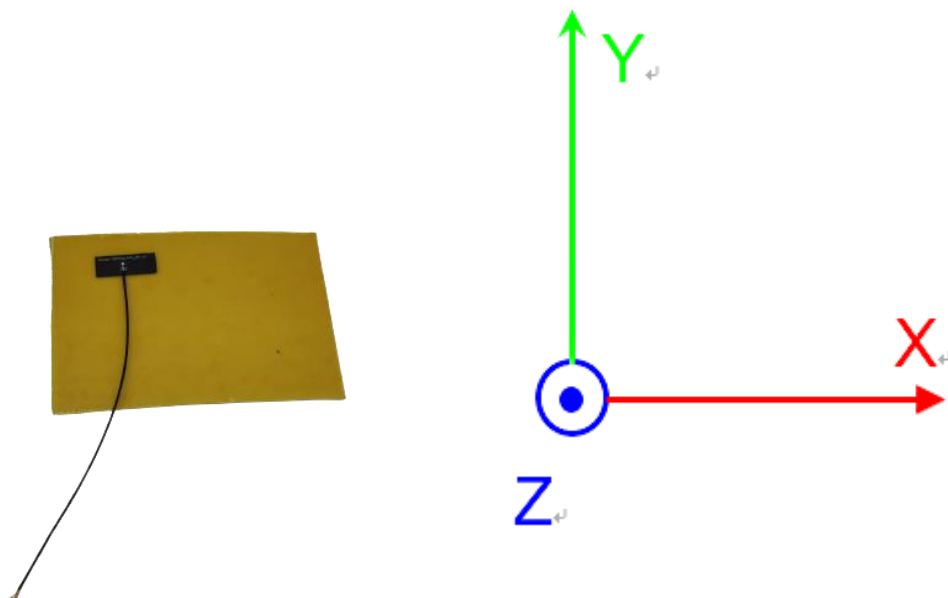


Peak Gain (dBi)

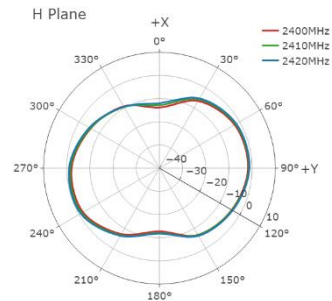
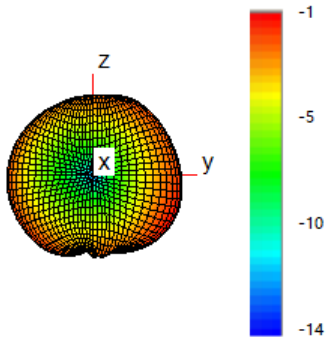
Frequency (MHz)	2400	2450	2500	5150	5550	5850	5925	6350	6700	7125
Peak Gain (dBi)	-1.2	0.1	1.0	2.5	1.6	2.6	-	-	-	-

3.2.4. 3D & 2D Radiation Pattern

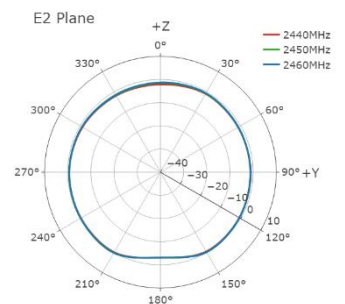
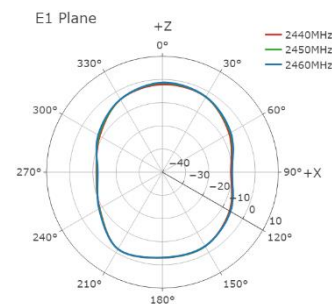
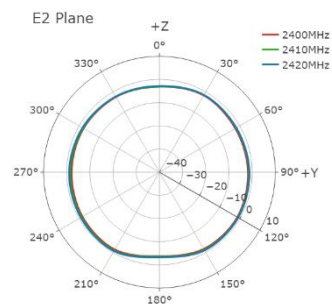
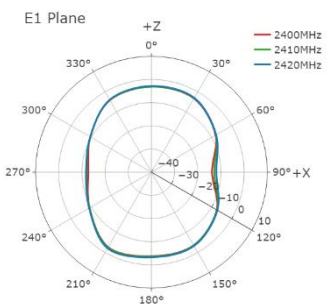
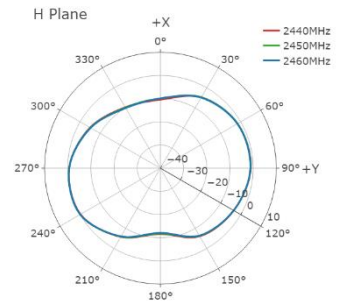
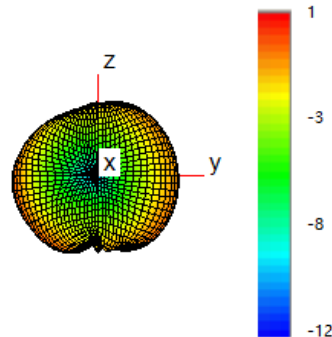
- Test Condition: Stick on 0.5 mm FR4 board
- Test Chamber: HF-G-1



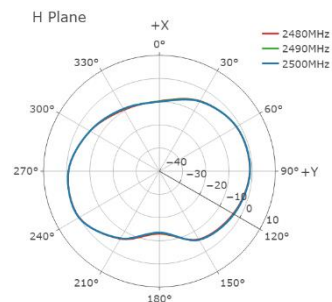
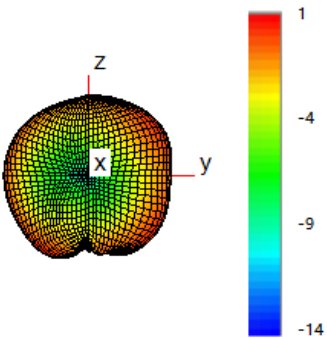
2400 MHz



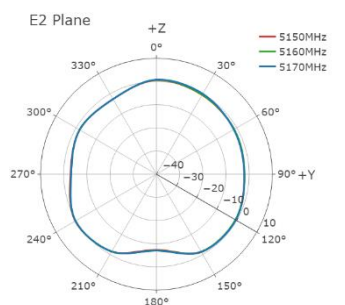
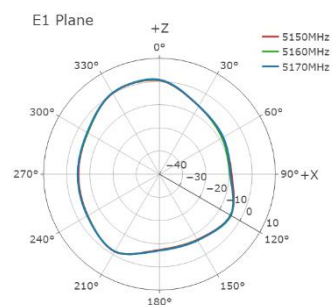
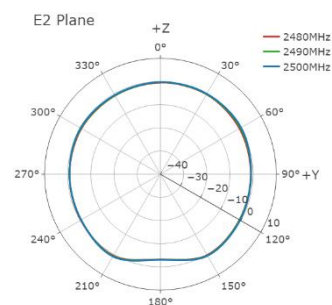
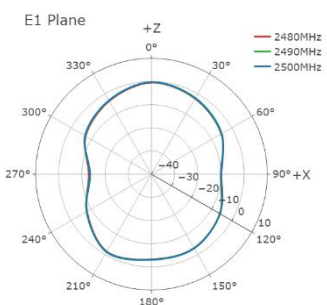
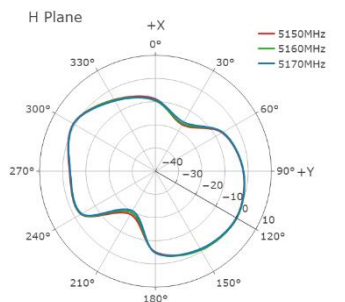
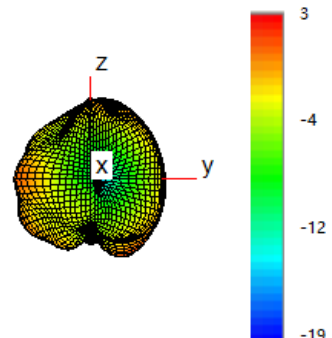
2450 MHz

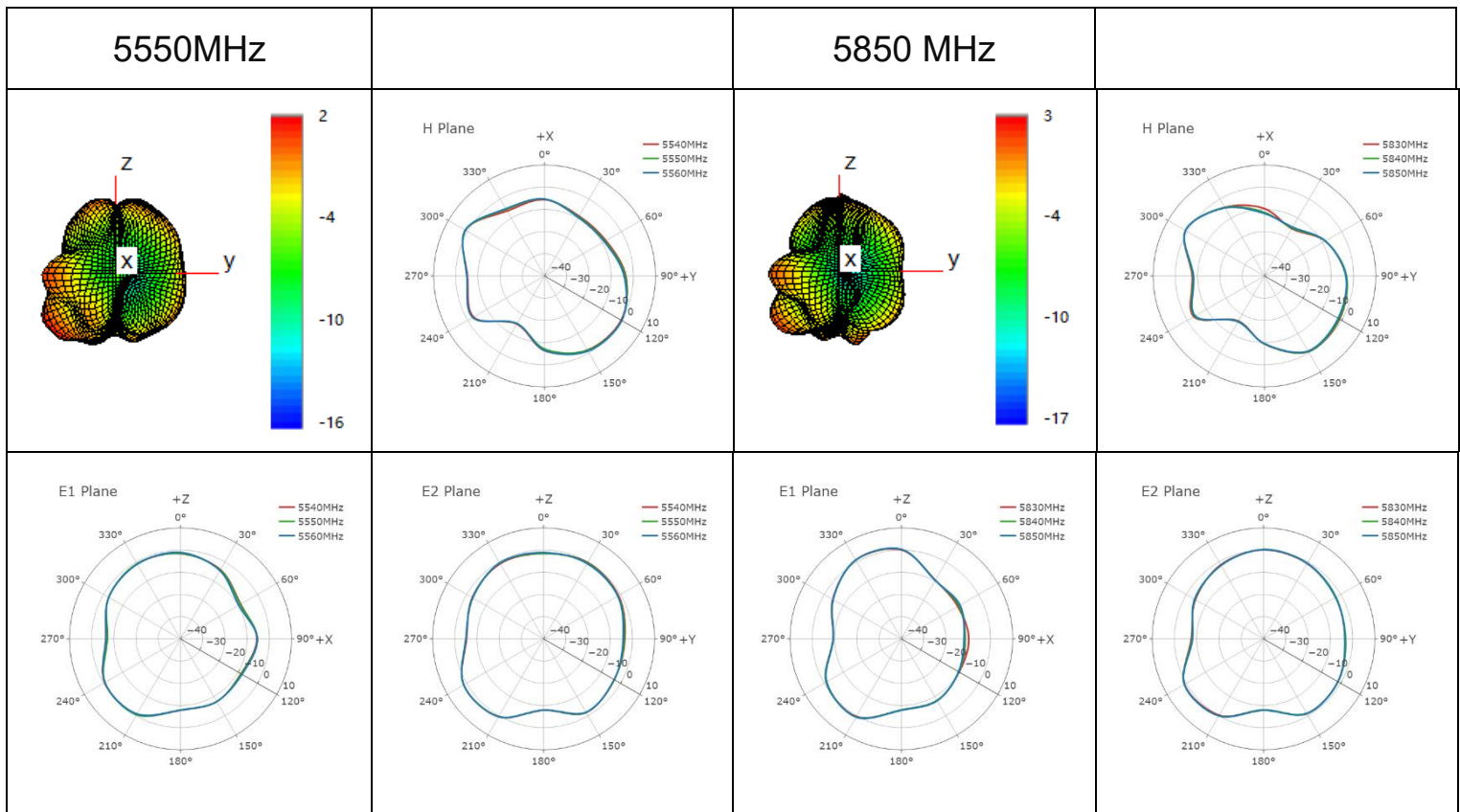


2500 MHz

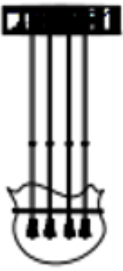
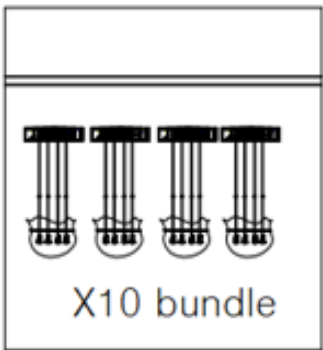


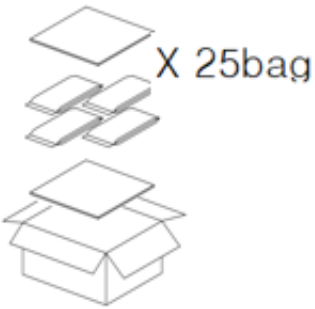
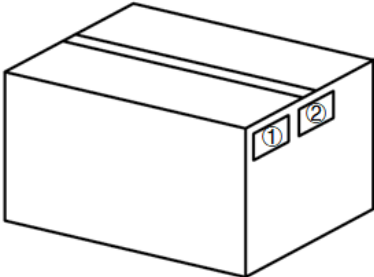
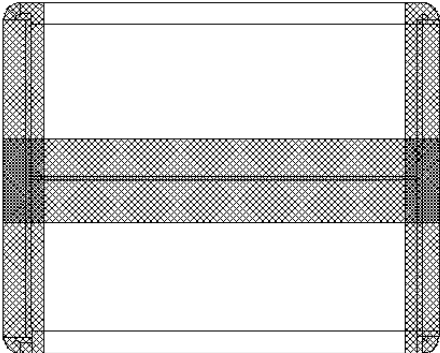
5150 MHz





4 Packaging

Step	Packaging picture/2D picture	Description
1	 20 pcs/bundle	The Product terminal are wrapped with EPE foam, 20 pcs/bundle
2	 X10 bundle 200 pcs/bag	200 Antenna products in a PE bag (200 pcs/bag) <u>PE Bag Size: L × W = 345 × 240 mm</u>

3		Place a clapboard at the bottom and top, 25 PE Bags/Per Carton Box) (5000 Antenne/Per Carton Box) <u>Carton Size: L × W × H = 340 × 260 × 140 mm</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons “⊥” type sealing cartons

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
-	2023-02-07	Simon Sheng/ Blake Xiang/ David Liu/ Vinnie Liu	Creation of the document
1.0	2023-03-15	Simon Sheng/ Blake Xiang/ David Liu/ Vinnie Liu	First official release



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