



Antenna Datasheet

Product OC: YF0011RA

Version: 1.0

Date: 2023-01-16

Status: Preliminary

Product Name: WIFI FPC Antenna

Key Features:

Frequency Band: 2400–2500 MHz, 5150-5850MHz

Dimensions: 38.9 * 9.0 mm

Efficiency: Up to 77%

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: Stick on 3mm ABS board

1.1. Electrical

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

Electrical - Detail													
SPEC	Band	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		-	-		-			1.3		-	-	1.8	
Max. Return Loss (dB)		-	-		-			-17.7		-	-	-11.3	
AVG Eff. (%)		-	-		-			74.3		-	-	63.3	
AVG Gain (dB)		-	-		-			-1.3		-	-	-2.0	
Max. Peak Gain (dBi)		-	-		-			3.1		-	-	4.2	
VSWR							≤1.8						
Return Loss							≤-11.3dB						
Peak Gain							2400-2500MHz, 5150-5850MHz: ≤4.2dBi						

	5150MHz-5250MHz: ≤2.3 dBi
	5250MHz-5350MHz: ≤3.3 dBi
	5470MHz-5725MHz: ≤4.2 dBi
	5725MHz-5850MHz: ≤4.0 dBi

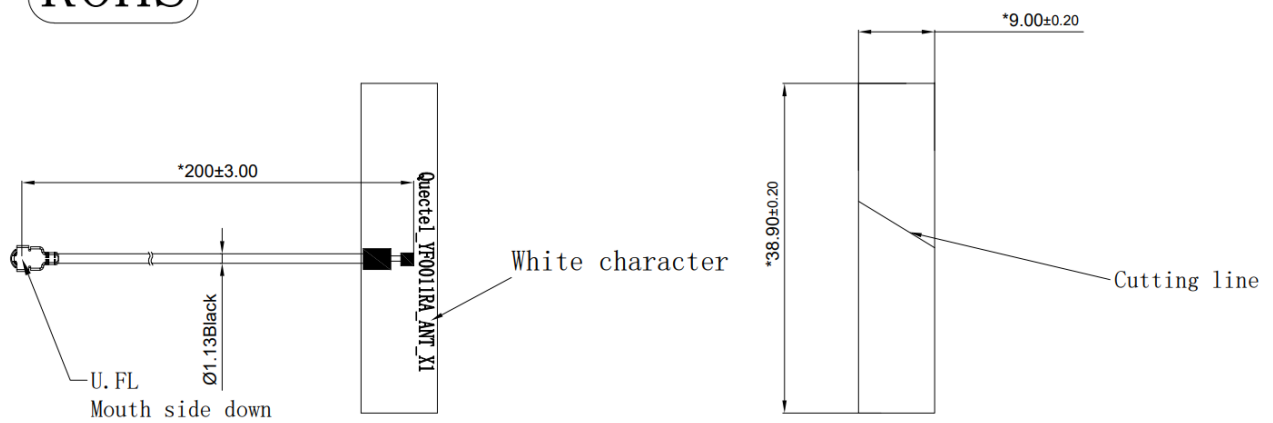
1.2. Mechanical, Environmental & Storage

Mechanical	
Antenna Dimensions	38.9 * 9.0mm
Material & Color	FPC & Black
Cable Type & Length	Cable Φ1.13 & 200mm
Connector Type	U.FL
Weight	Typ. 0.8 g
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

Storage	
Storage Temperature	18 °C -27°C
Humidity	30%-80%RH
Storage Place	Away from corrosive and direct sunlight.
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging.

2 Drawing

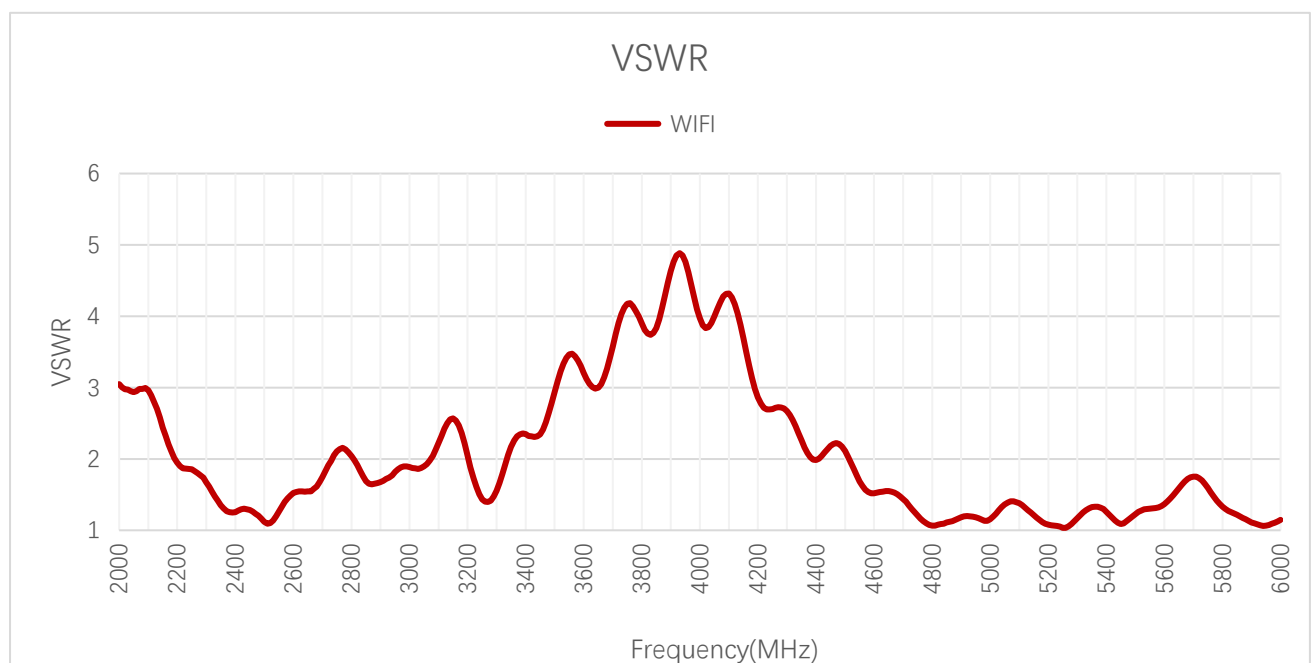
ROHS



3 Detailed Performance

3.1. S-Parameter Test

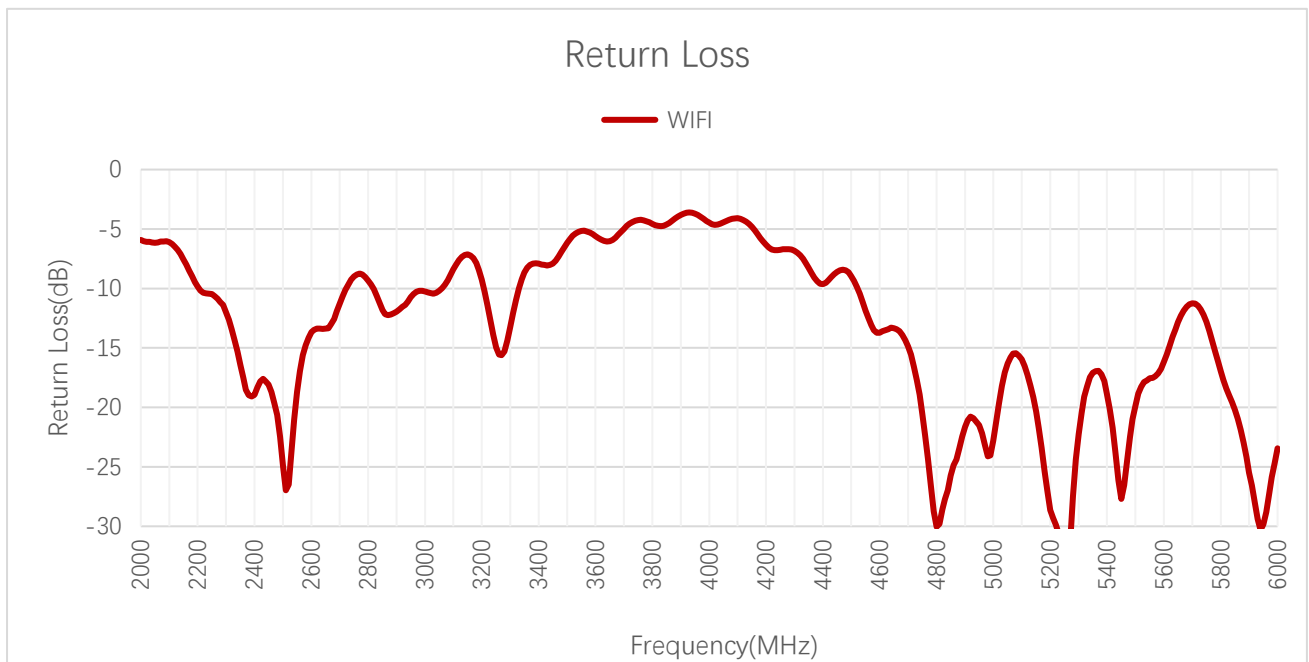
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850
VSWR	1.3	1.3	1.1	1.2	1.2	1.2

3.1.2. Return Loss

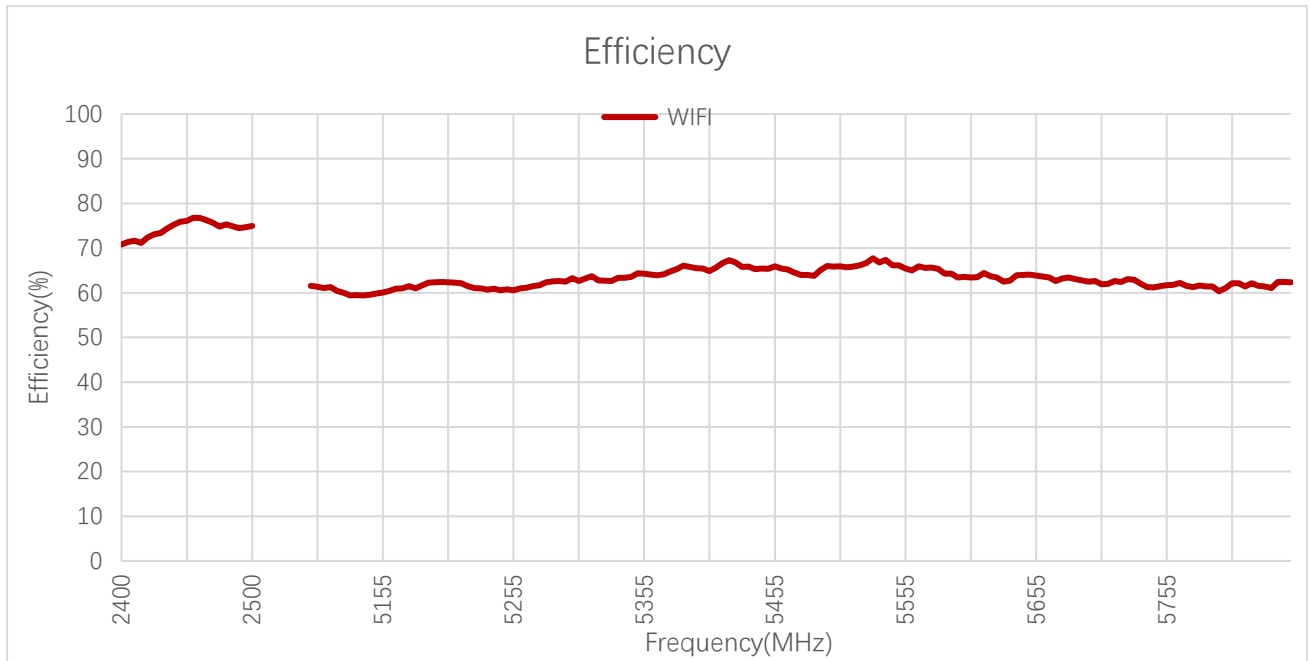


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850
Return Loss (dB)	-18.9	-18.1	-24.9	-20.3	-19.9	-20.2

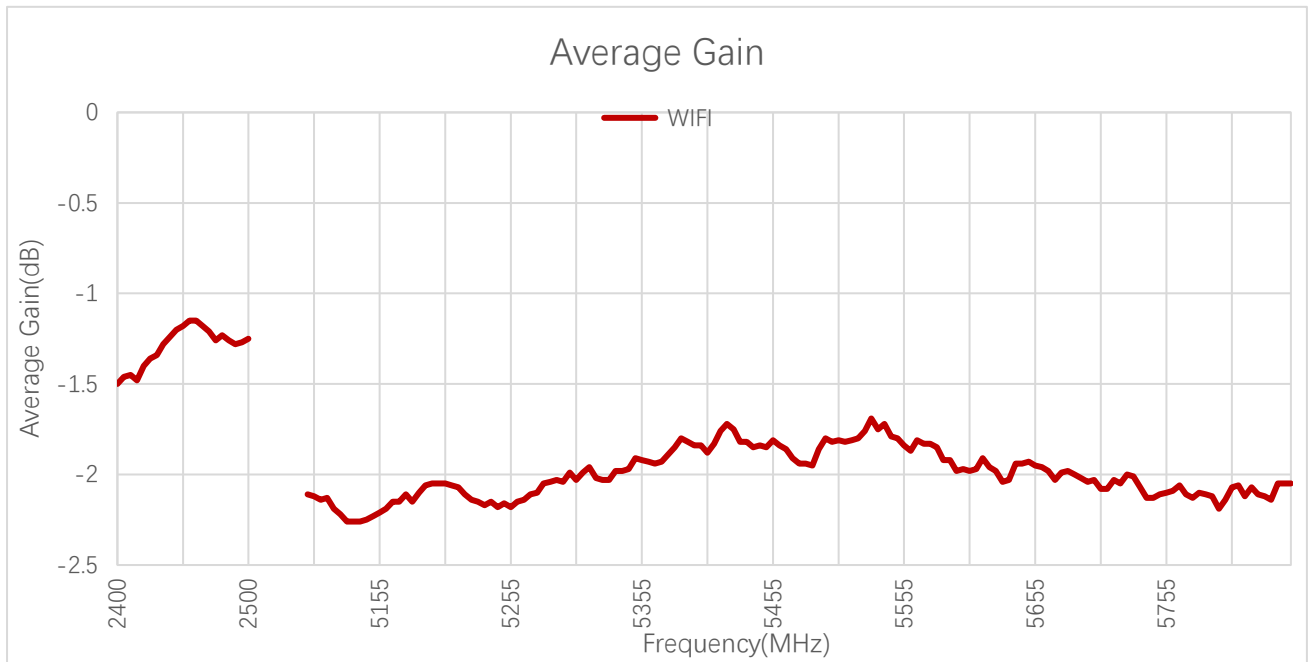
3.2. Radiation Performance Test

3.2.1. Efficiency



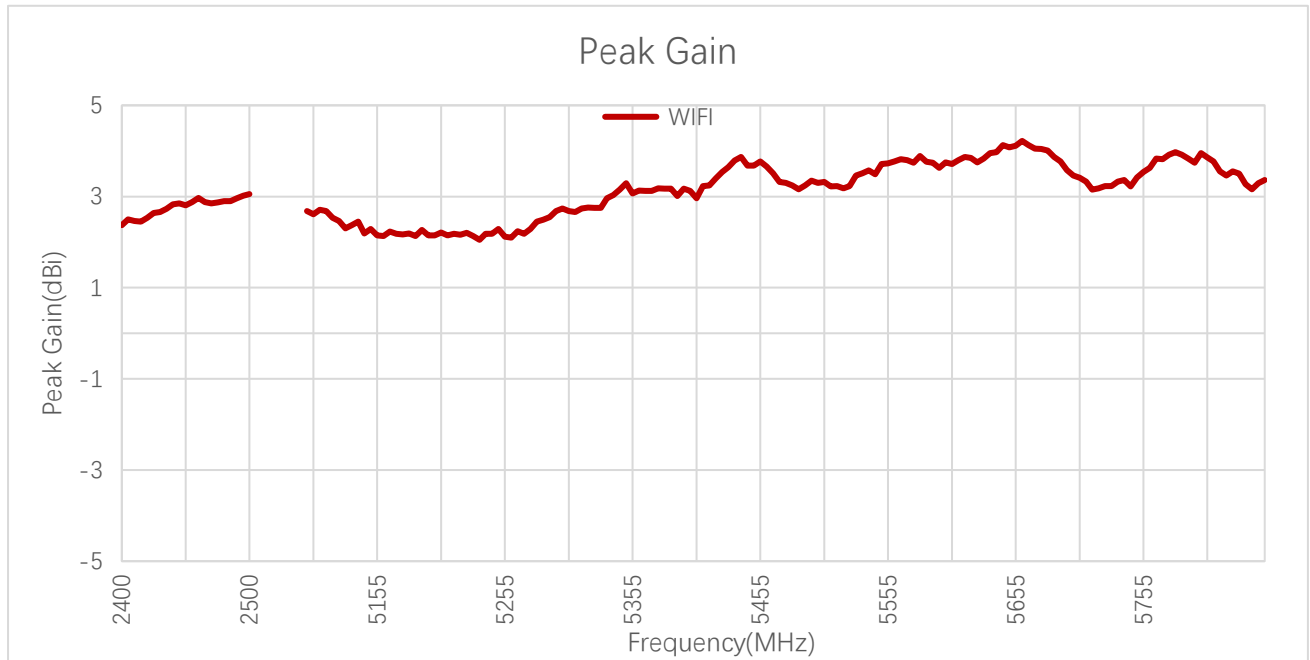
Efficiency (%)						
Frequency (MHz)	2400	2450	2500	5150	5500	5850
Efficiency (%)	70.8	76.1	74.9	59.9	65.8	62.3

3.2.2. Average Gain



Average Gain (dB)						
Frequency (MHz)	2400	2450	2500	5150	5500	5850
Average Gain (dB)	-1.5	-1.2	-1.3	-2.2	-1.8	-2.1

3.2.3. Peak Gain

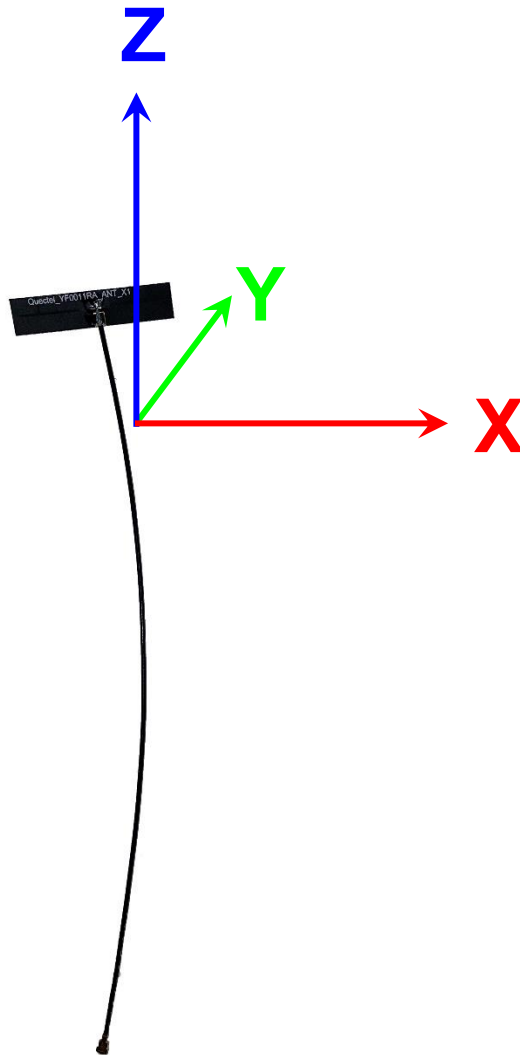


Peak Gain (dBi)

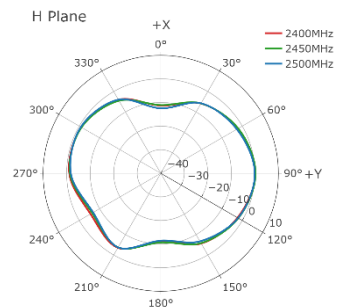
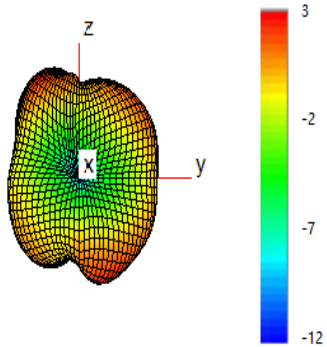
Frequency (MHz)	2400	2450	2500	5150	5350	5500	5660	5780	5850
Peak Gain (dBi)	2.4	2.8	3.1	2.3	3.3	3.3	4.2	4.0	3.4

3.2.4. 3D & 2D Radiation Pattern

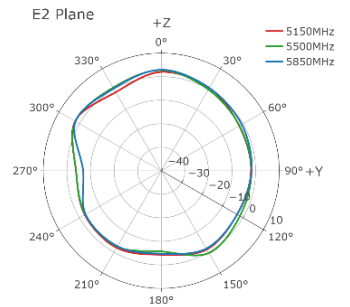
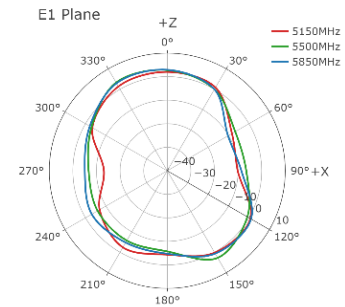
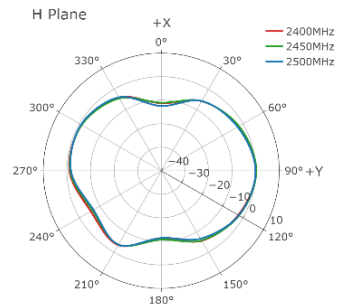
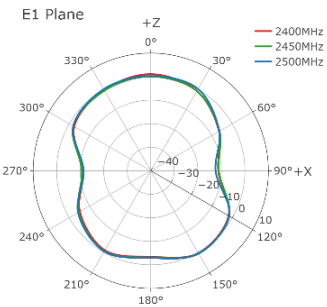
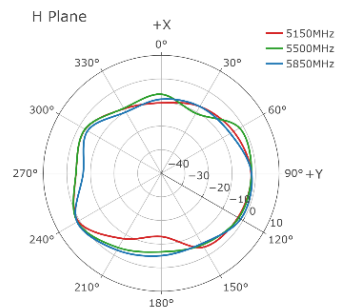
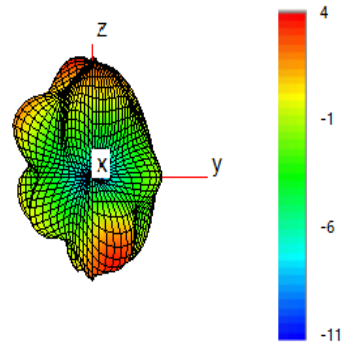
- Test Condition: Stick on 3mm ABS board
- Test Chamber: HF-G-1



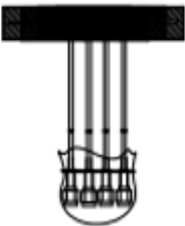
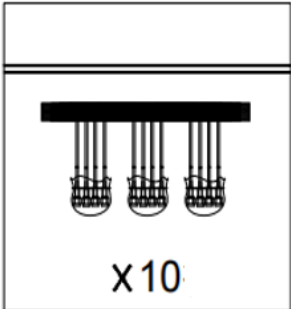
2450MHz

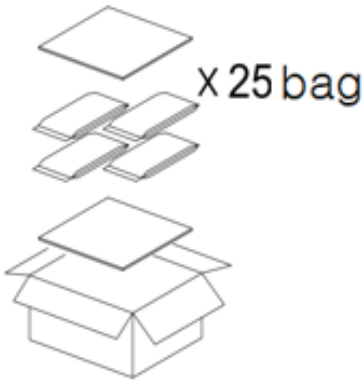
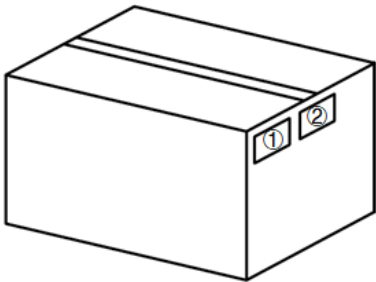
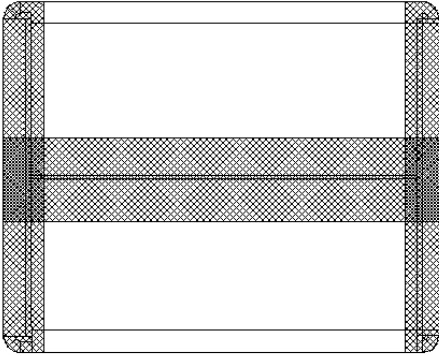


5500MHz



4 Packing

Step	Packaging picture / 2D picture	Description
1	 <p>20pcs</p>	The Product terminal are wrapped with EPE foam, 20 PCS/ Cable Tie
2	 <p>x10</p> <p>200pcs/ bag</p>	<p>200 pcs Antenna products in a PE bags; (200 pcs Antenna / Per PE Bag)</p> <p><u>Pe bag Size: L*W=345X240mm</u></p>

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

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

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Revision History

Version	Date	Author	Note
-	2023-01-16	Winfred Wu Blake Xiang David Liu Vinnie Liu	Creation of the document
1.0	2023-01-16	Winfred Wu Blake Xiang David Liu Vinnie Liu	First official release



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