



Antenna Datasheet

Product OC: YE0031BA

Version: 2.0

Date: 2023-05-05

Status: Released

Product Name: Wi-Fi Antenna

Key Features:

Frequency Band: 2400–2500 MHz; 5150–5850MHz

Dimensions: Φ 10.5 × 53.5 mm

Efficiency: Up to 61.9 %

RoHS and REACH Compliant

IP53

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	2400–2500 MHz; 5150–5850 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR			2.9	3.9	-
Max. Return Loss (dB)			-6.2	-4.6	-
AVG Eff. (%)			38.2	49.6	-
AVG Gain (dB)			-4.1	-3.1	-
Max. Peak Gain (dBi)			-0.6	2.2	-
VSWR			≤ 3.9		
Return Loss			≤ -4.6 dB		
Peak Gain			≤ 2.2 dBi		

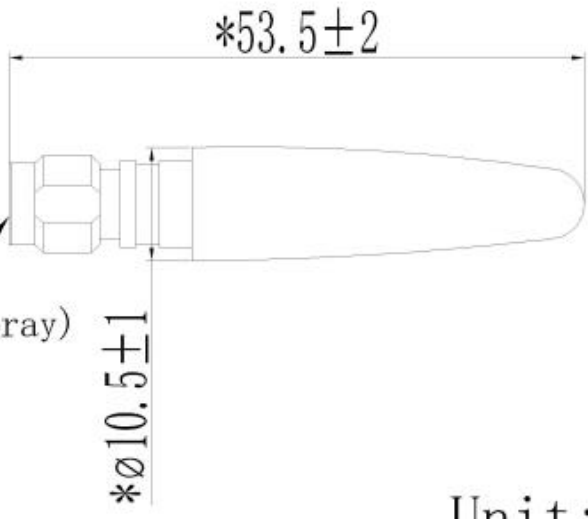
1.2. Mechanical, Environmental & Storage

Mechanical	
Antenna Dimensions	Φ 10.5 × 53.5 mm
Casing Material & Color	PC + ABS & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 4.8 g
Environmental	
Operation Temperature	-20 °C to +85 °C
Ingress Protection (IP) Rating	IP53
RoHS and REACH Compliant	Yes
Storage	
Storage Temperature	18 °C–27 °C
Humidity	30 %–80 % RH
Storage Place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging

2 Drawing

RoHS

SMA Male connector
(Internal screw internal pin)
(Gold plating 48 hours salt spray)



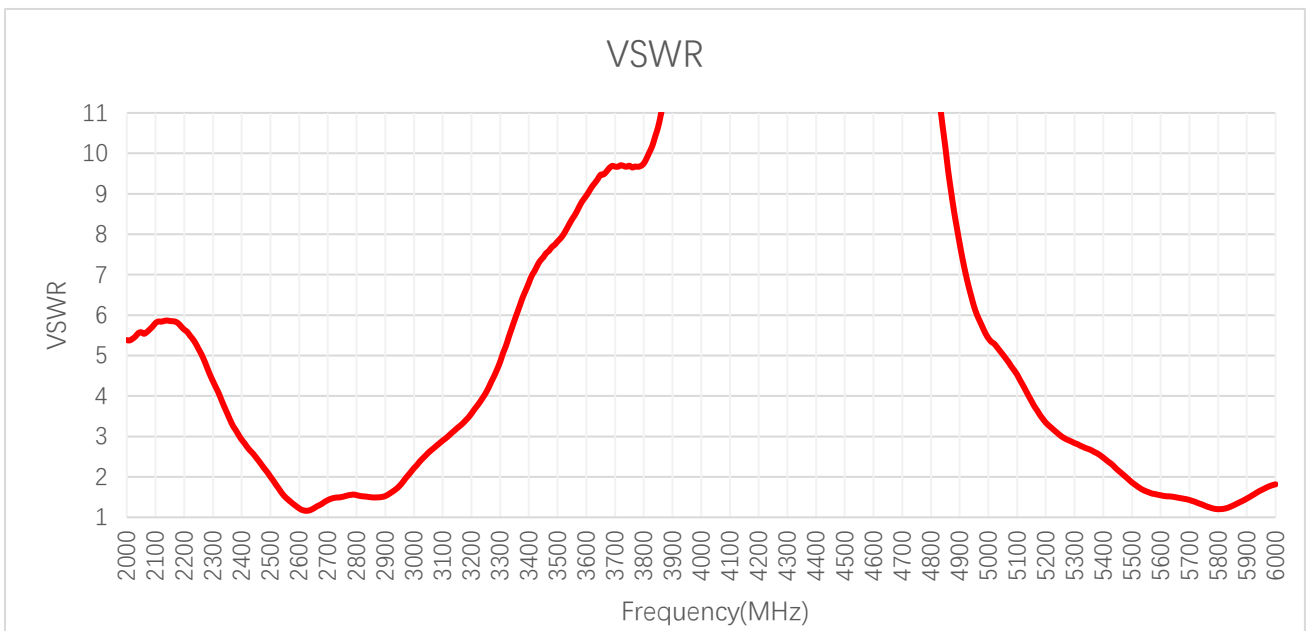
Unit:mm



3 Detailed Performance

3.1. S-Parameter Test

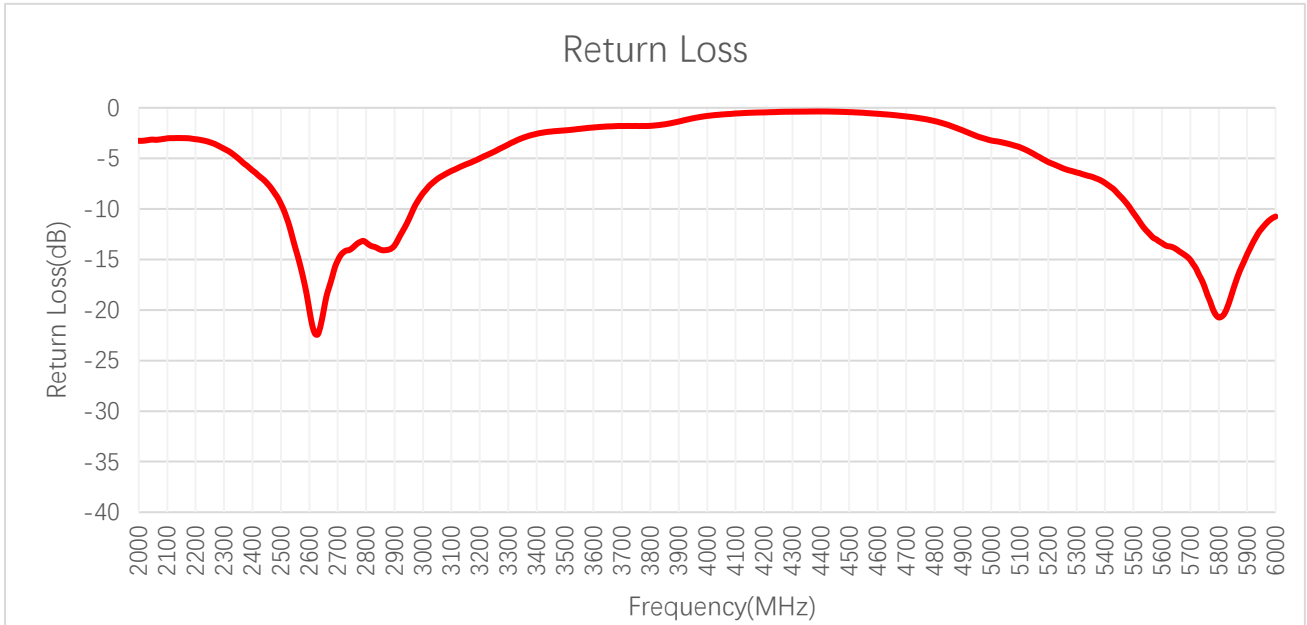
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
VSWR	2.9	2.5	2.0	3.9	1.9	1.3	-	-	-	-

3.1.2. Return Loss

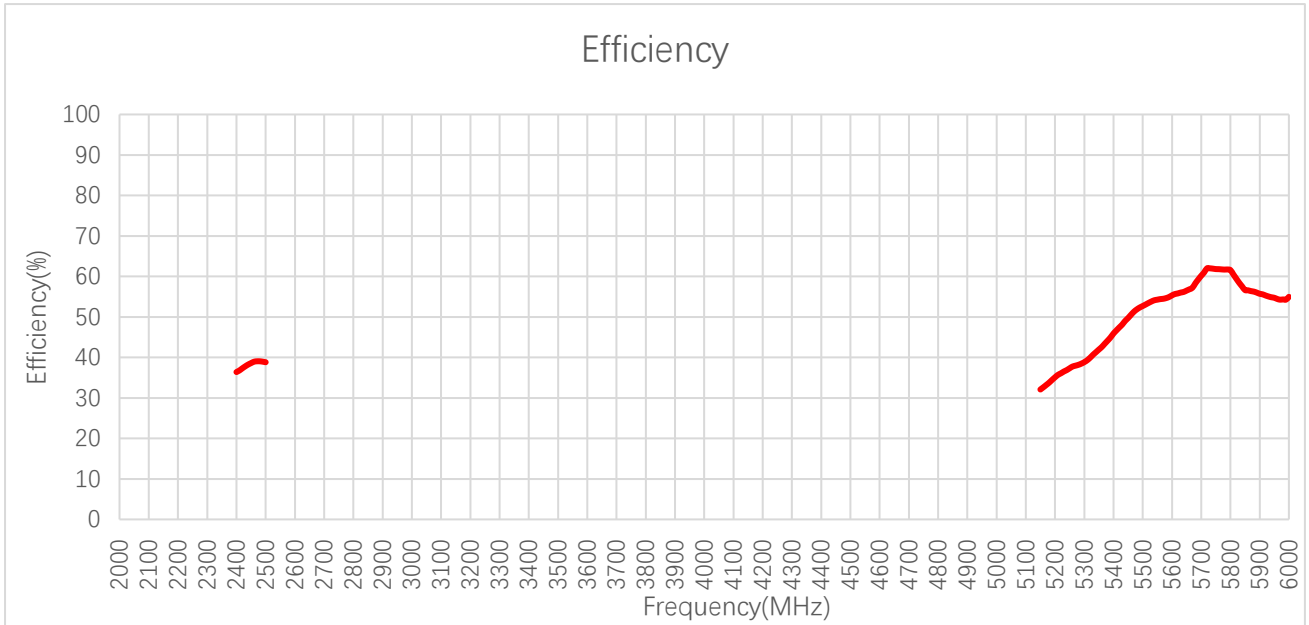


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	-6.2	-7.4	-9.5	-4.6	-10.4	-18.1	-	-	-	-

3.2. Radiation Performance Test

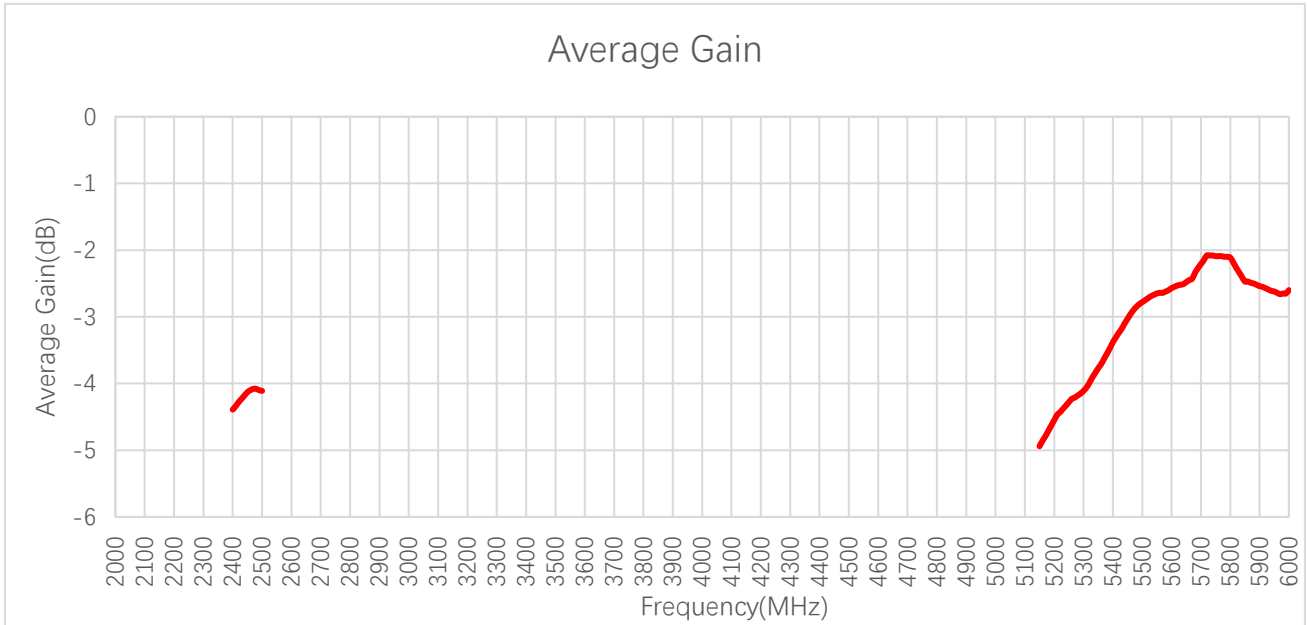
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	36.4	38.6	38.8	32.1	52.7	56.6	-	-	-	-

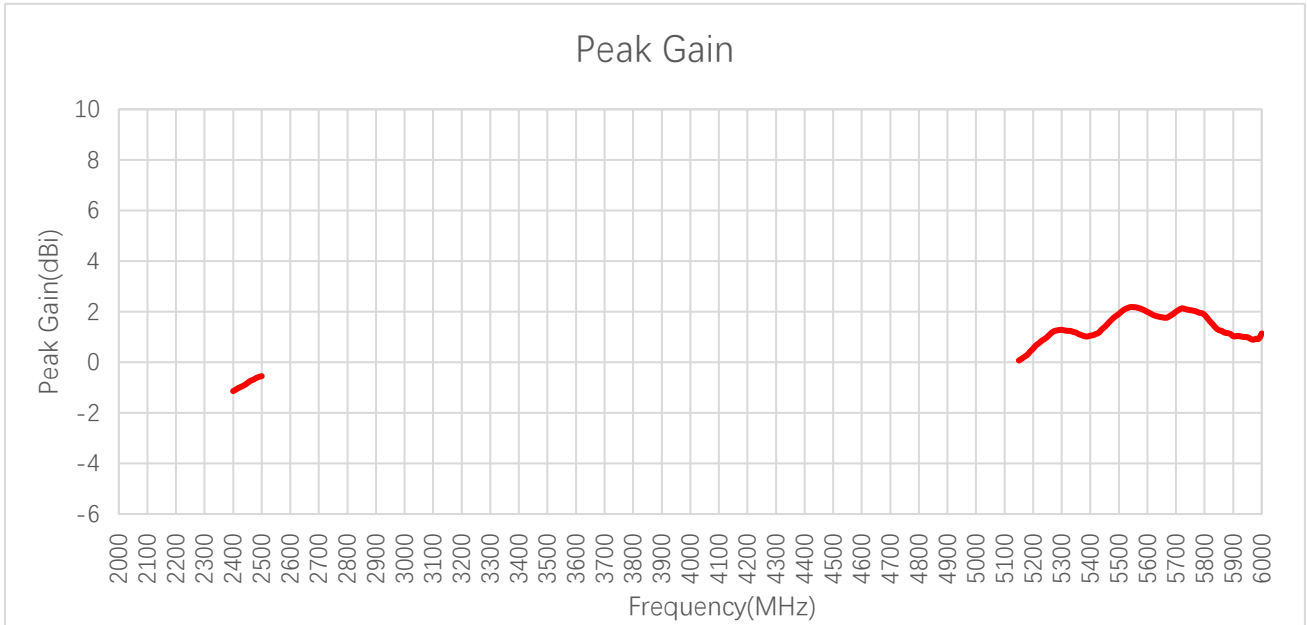
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	-4.4	-4.1	-4.1	-4.9	-2.8	-2.5	-	-	-	-

3.2.3. Peak Gain

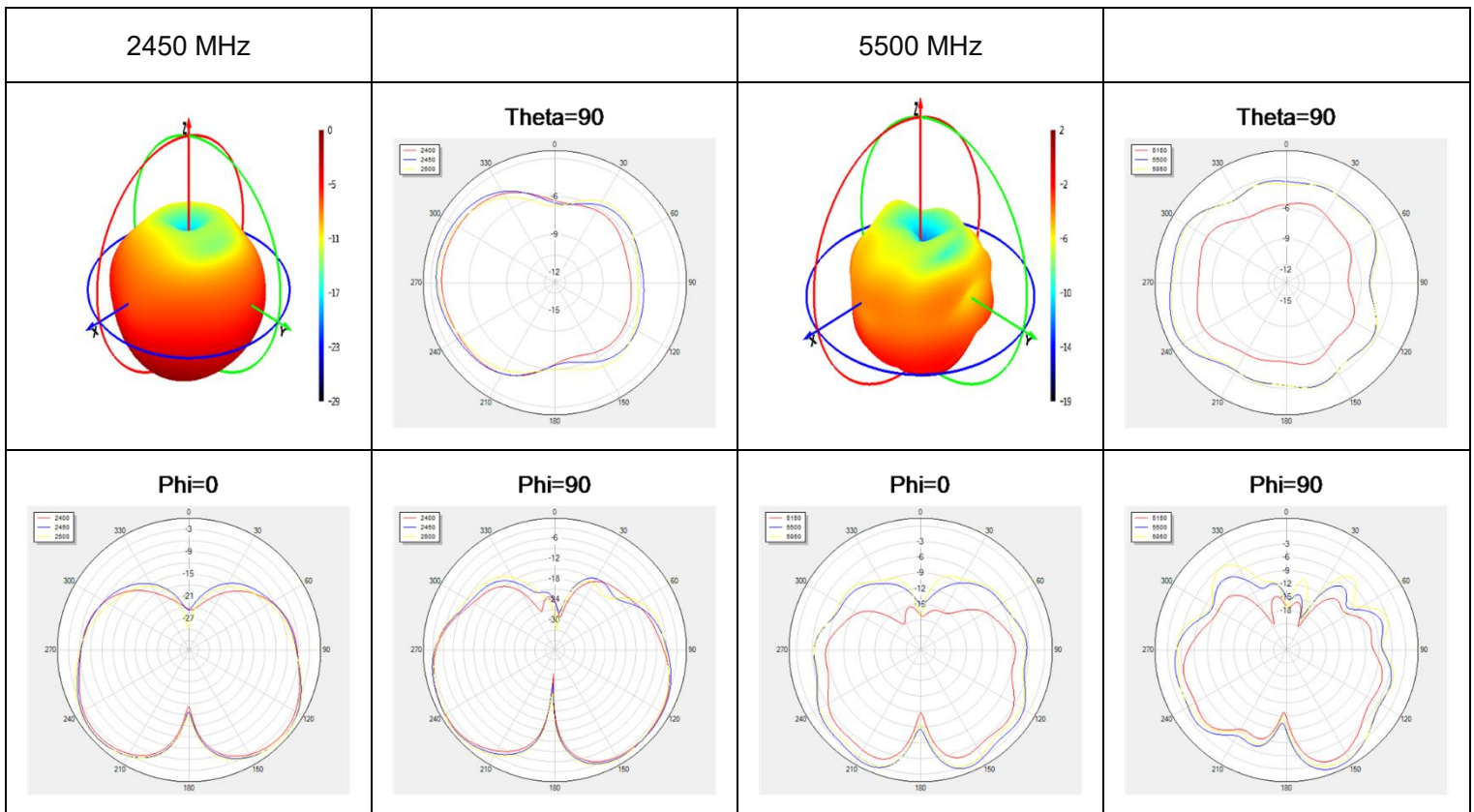
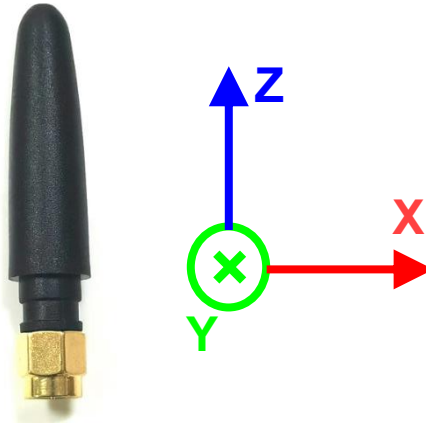


Peak Gain (dBi)

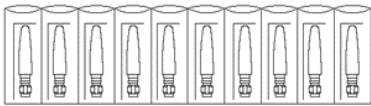
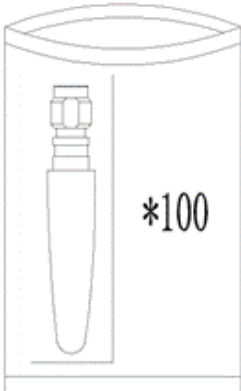
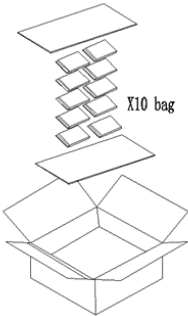
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dBi)	-1.1	-0.8	-0.6	0.1	1.9	1.3	-	-	-	-

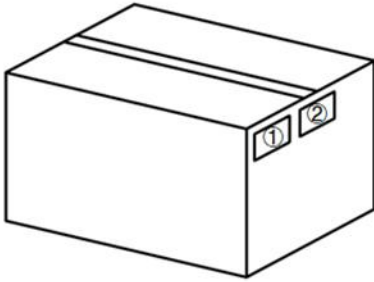
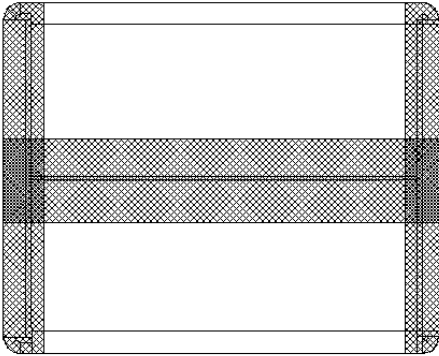
3.2.3.1. Test Condition: Free Space

- Test Chamber: GL-S-1



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 <p>10PCS/bag</p>	<p>Put the product in a one-piece bag; (10 pcs per one-piece bag)</p>
	 <p>*100</p> <p>100PCS/bag</p>	<p>100 pcs antenna products in a big PE bag; (100 pcs antennas per big PE bag)</p>
3	 <p>x10 bag</p>	<p>(10 big PE bags per carton box) (1000 pcs antennas per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 380 × 290 × 210 mm</u></p>

4		<p>Position for Attaching Labels</p> <ul style="list-style-type: none">① Carton Label② Quality Label
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:

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

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Revision History

Version	Date	Author	Note
-	2022-06-22	Ezail TAN/ Jason LONG	Creation of the document
1.0	2022-06-22	Ezail TAN/ Jason LONG	First official release
1.1	2022-11-17	Ezail TAN/ Jason LONG	Updated the product size (Chapter 5)
1.2	2022-12-28	Aria CHU	Updated the IP rating (Chapter 3).
1.3	2023-01-28	Ezail TAN/ Black LI	Updated the frequency range (Chapter 3) and the corresponding data (Chapters 4.2 and 4.3).
2.0	2023-05-05	Mikael ZHONG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.

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