

# Antenna Datasheet

**Product OC:** YEWT004AA

**Version:** 3.1

**Date:** 2023-08-17

**Status:** Released

**Product Name:** Wi-Fi Antenna

**Key Features:**

Frequency Band: 2400–2500 MHz; 5150–7150 MHz

Dimensions:  $\Phi$  10 mm  $\times$  109 mm

Efficiency: Up to 65.8 %

RoHS Compliant

# Overview

Quectel Wi-Fi antenna covers 2.4GHz, 5GHz, and up to 7GHz bands, fully satisfying customers' requirements for Wi-Fi 5, Wi-Fi 6, and Wi-Fi 6E/Wi-Fi 7. 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

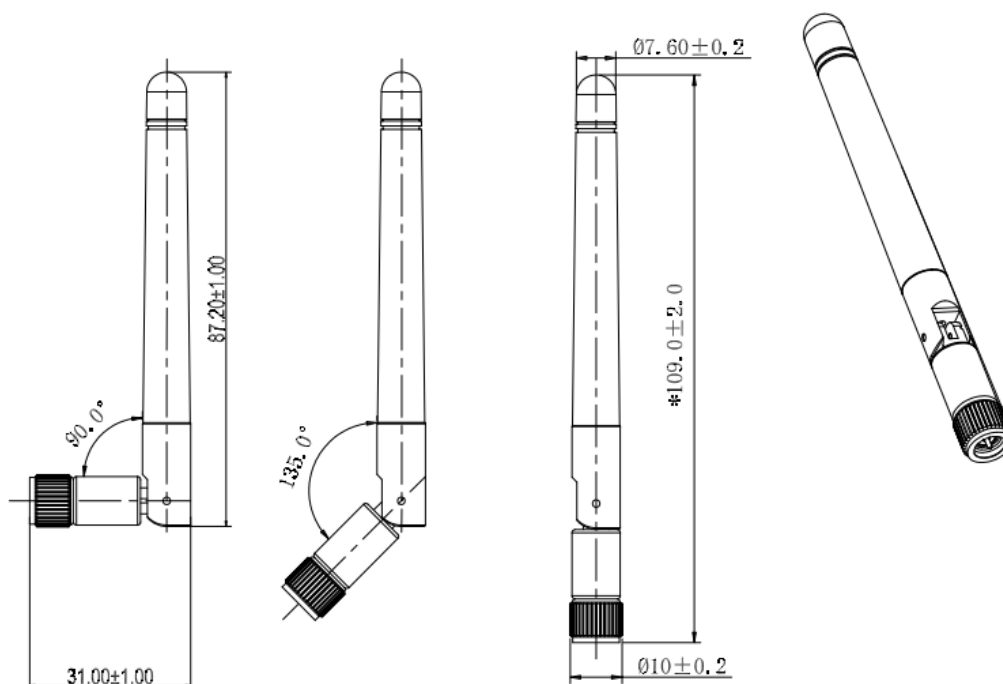
Electrical	
Frequency Range	2400–2500 MHz; 5150–7150 MHz
Impedance	50 $\Omega$
Polarization	Linear
Radiation Pattern	Omni-directional

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400–2500	5150–5850	5925–7125
Max. VSWR			2.8	2.2	2.9
Max. Return Loss(dB)			-6.5	-8.5	-6.1
AVG Eff. (%)			40.3	54.5	47.6
AVG AVG Gain (dB)			-3.9	-2.6	-3.3
Max. Peak Gain (dBi)			0.7	1.8	2.7
VSWR			$\leq 2.9$		
Return Loss			$\leq -6.1\text{dB}$		
Peak Gain			$\leq 2.7\text{ dBi}$		

## 1.2. Mechanical & Environmental

Mechanical	
Casing Antenna Dimensions	Φ 10 × 109 mm
Material & Color	ABS & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 8.6 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

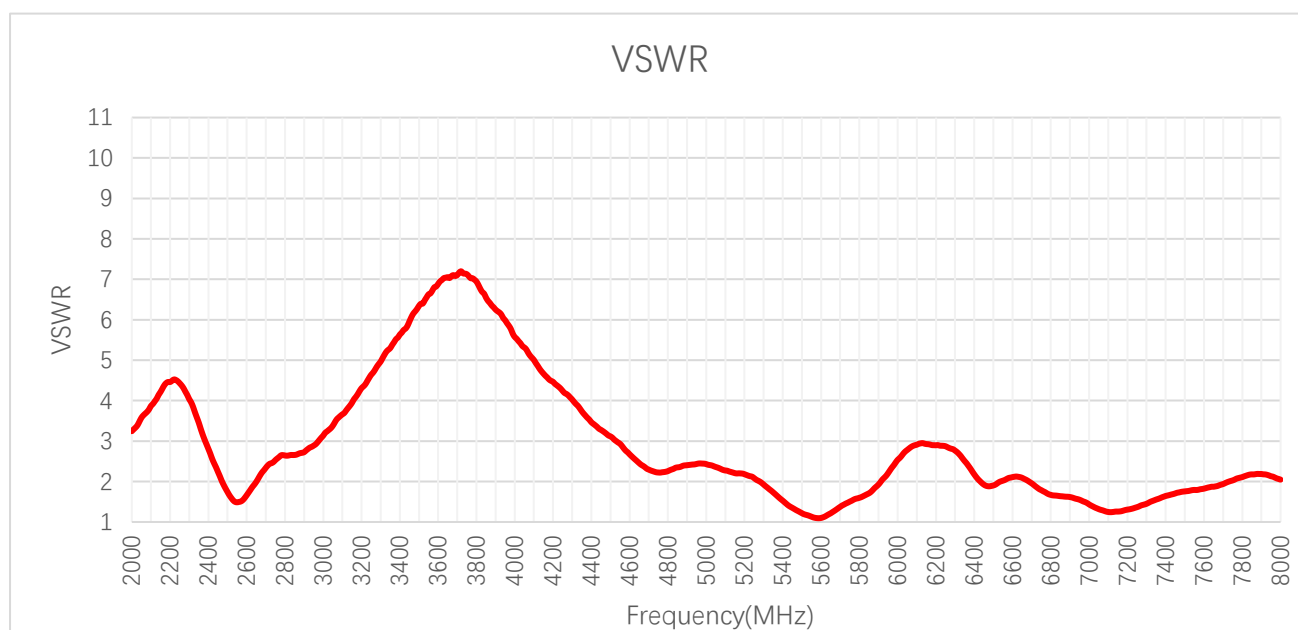
## 2 Drawing



# 3 Detailed Performance

## 3.1. S-Parameter Test

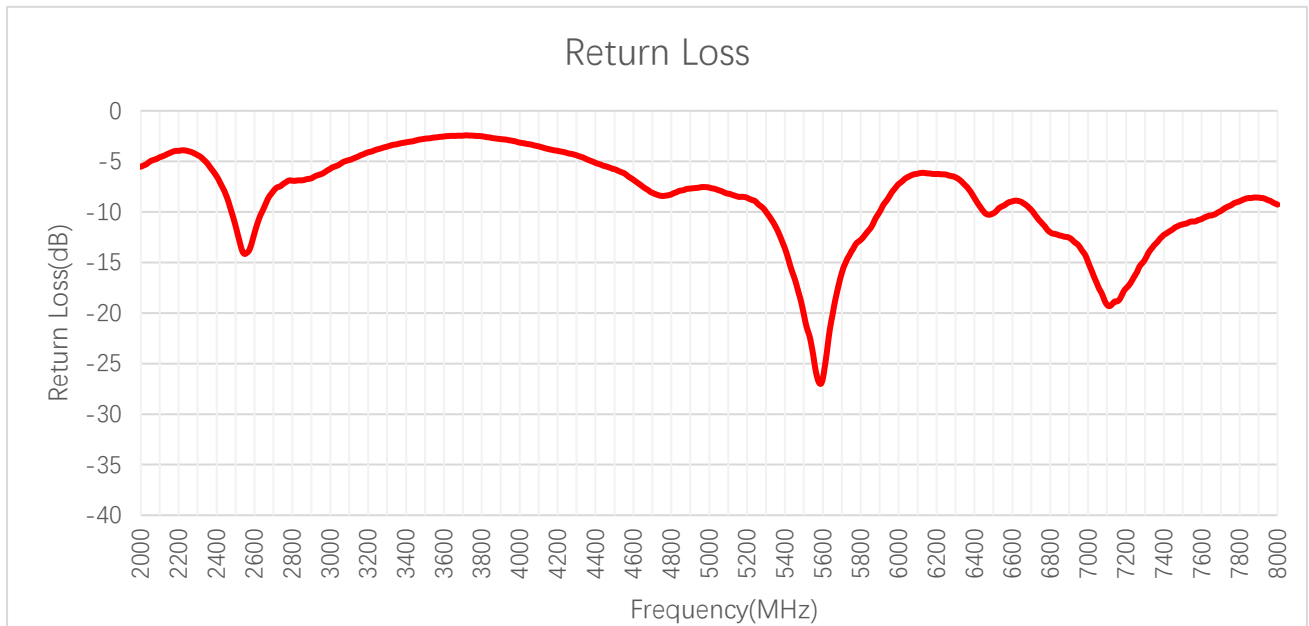
### 3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
VSWR	2.8	2.2	1.7	2.2	1.2	1.7	2.1	2.7	1.9	1.3

### 3.1.2. Return Loss



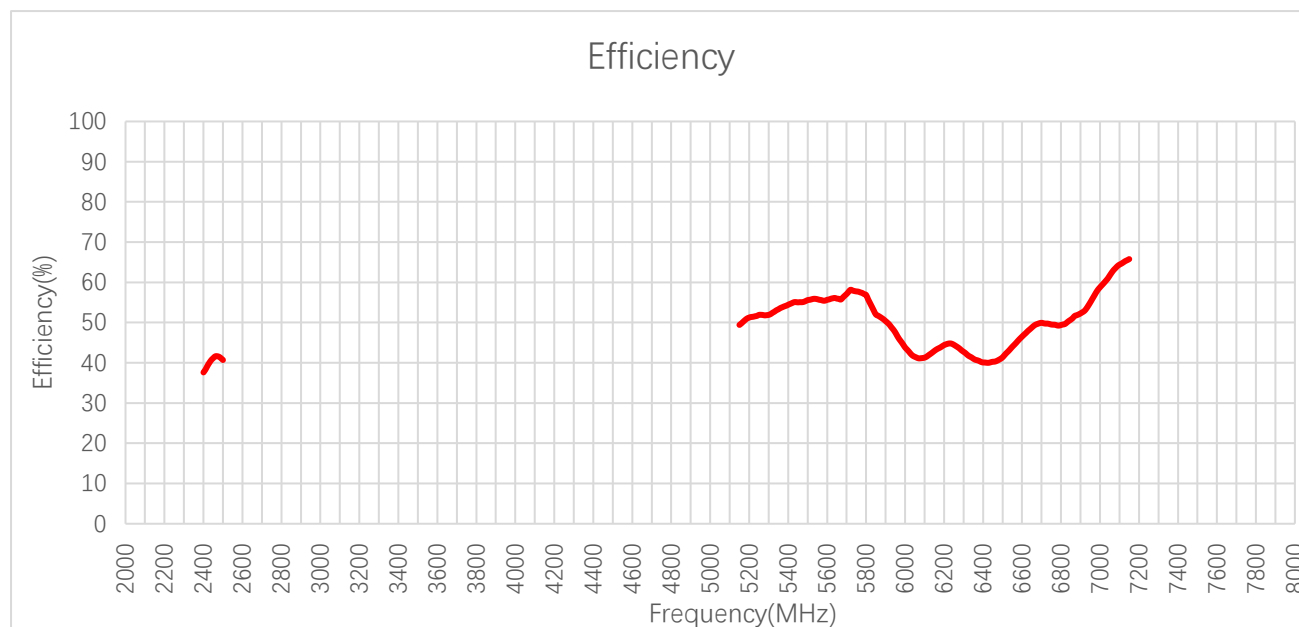
**Return Loss (dB)**

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	-6.5	-8.4	-11.4	-8.5	-20.2	-11.6	-9.0	-6.9	-10.4	-19.1



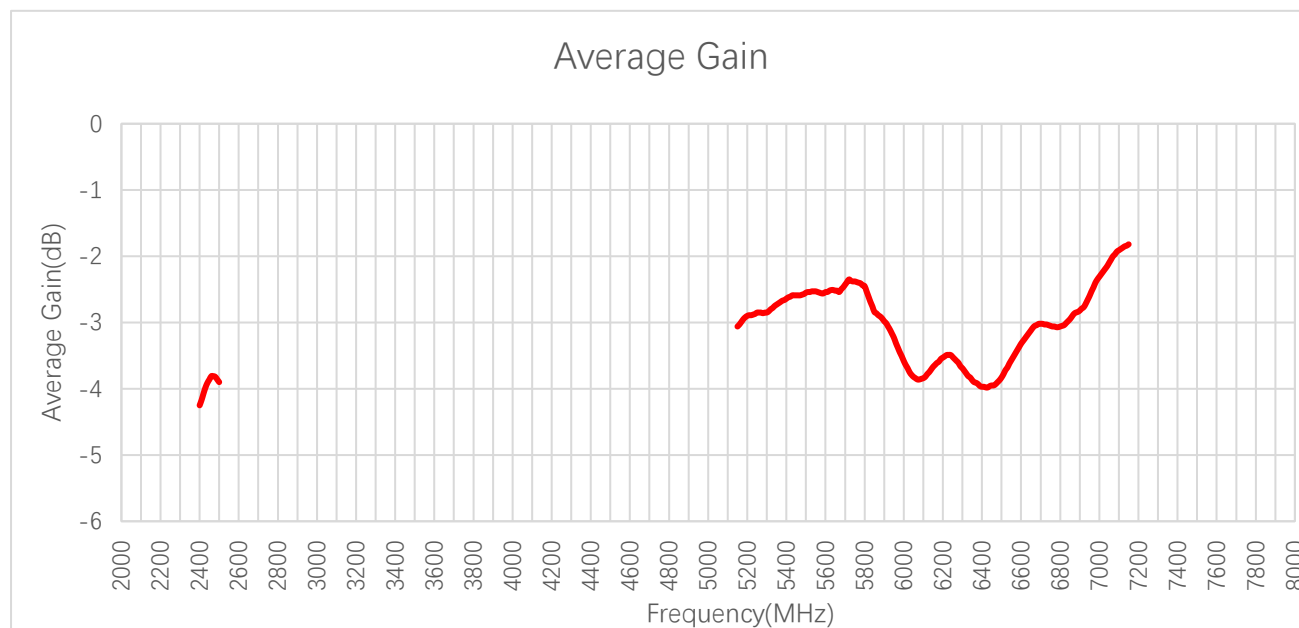
## 3.2. Radiation Performance Test

### 3.2.1. Efficiency



Efficiency (%)										
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	37.6	41.2	40.7	49.4	55.6	52.0	48.8	41.8	49.8	65.3

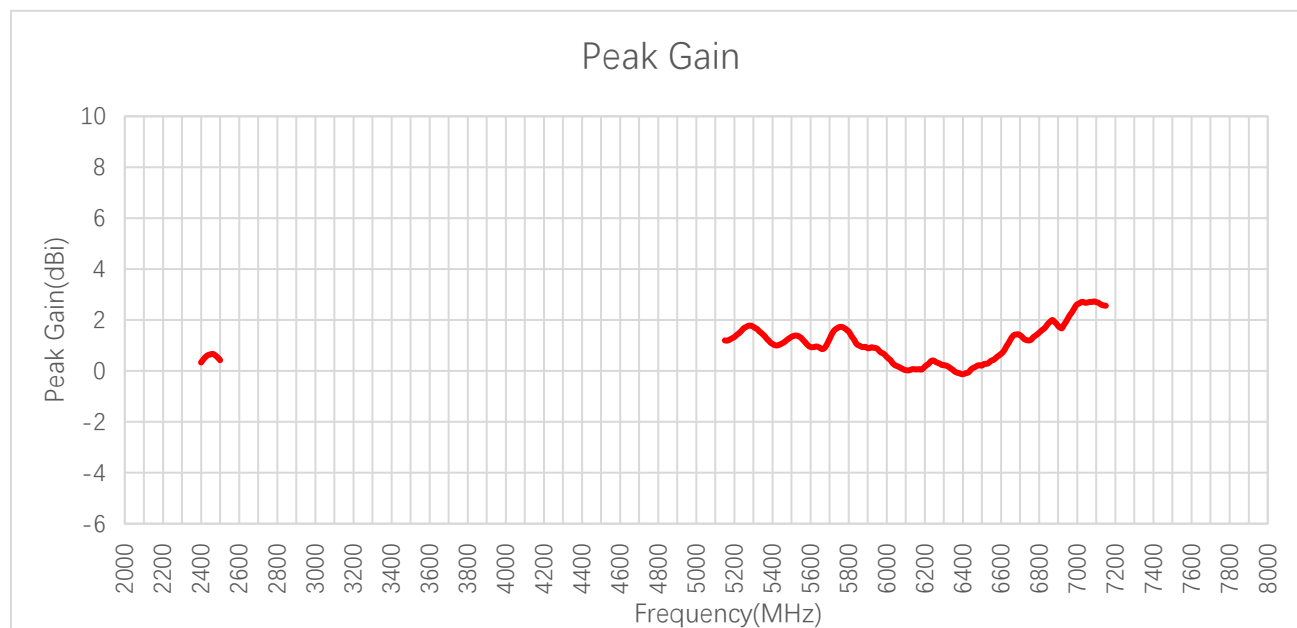
### 3.2.2. Average Gain



**Average Gain (dB)**

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	-4.3	-3.9	-3.9	-3.1	-2.6	-2.8	-3.1	-3.8	-3.0	-1.9

### 3.2.3. Peak Gain

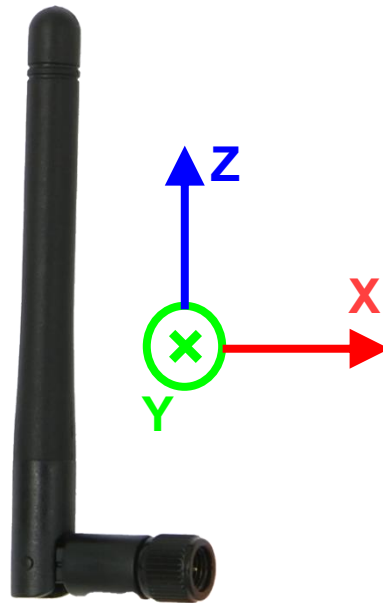


**Peak Gain (dBi)**

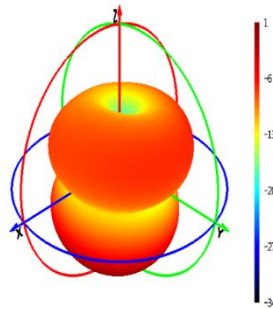
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dBi)	0.3	0.7	0.4	1.2	1.3	1.0	0.9	0.16	1.2	2.6

**3.2.4.1. Test Condition: Free Space**

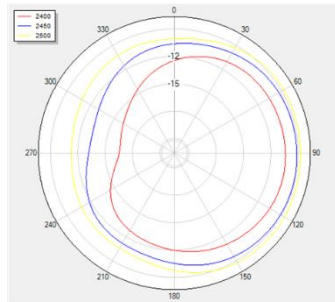
- Test Chamber: GL-S-1



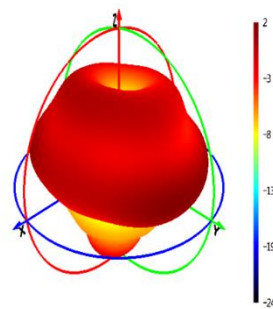
2450 MHz



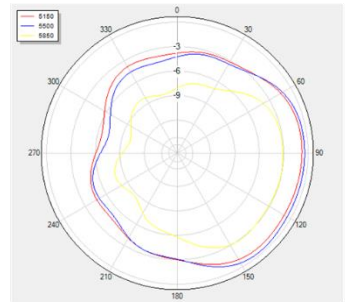
Theta=90



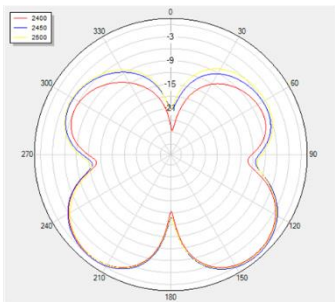
5500 MHz



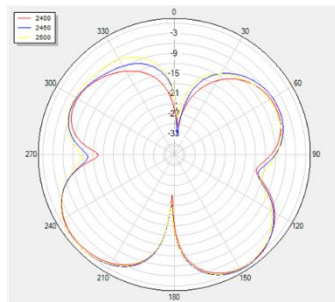
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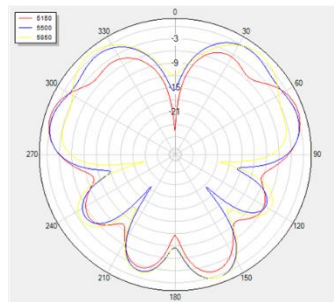
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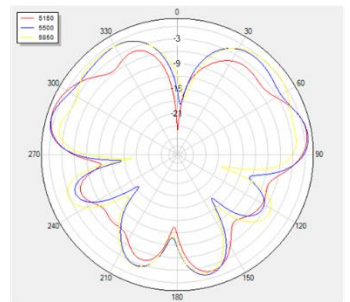
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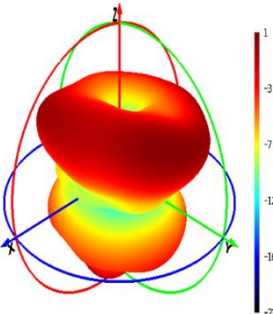
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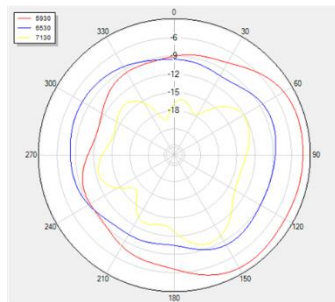
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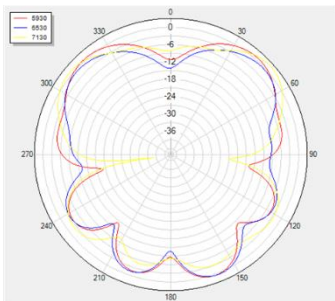
6530 MHz



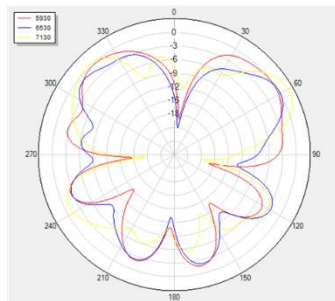
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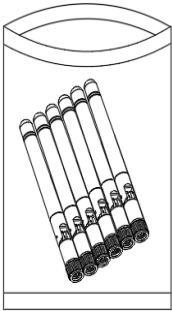
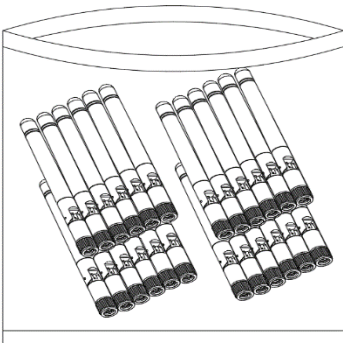
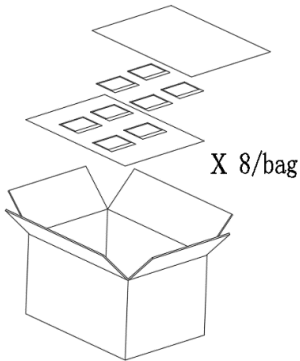
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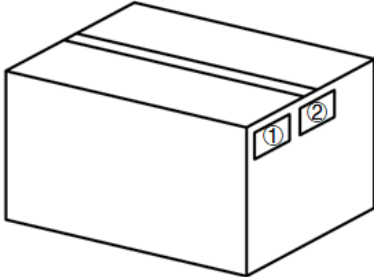
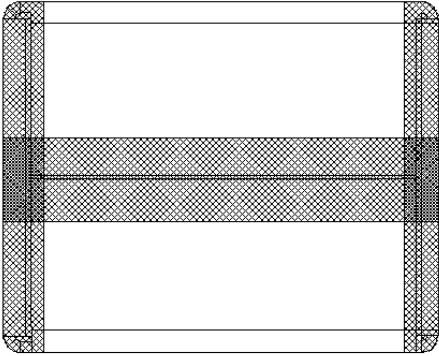


Phi=90



## 4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 <p>50PCS/bag</p>	50 antenna products in a small PE bag; (50 pcs per small PE bag)
2	 <p>200PCS/bag</p>	200 antenna products in a big PE bag; (200 pcs per big PE bag)
3	 <p>X 8/bag</p>	<p>(8 PE bags per carton box) (1600 pcs per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 380 × 330 × 150 mm</u></p>

4		<p><b>Position for Attaching Labels</b></p> <p>① Carton Label</p> <p>② Quality Label</p>
5		<p><b>Sealing Cartons</b></p> <p>“I” 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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# Revision History

Version	Date	Author	Note
-	2021-05-18	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-05-18	Kenny YIN/ Aria CHU	First official release
1.1	2021-07-25	Kenny YIN/ Aria CHU	Updated working temperature (Chapter 3).
1.2	2021-11-30	Kenny YIN/ Aria CHU	Updated the product description in Chapter 1.
2.0	2022-09-03	Aria CHU	Updated all test datasheet in this datasheet.
2.1	2022-10-17	Aria CHU	Deleted the IP rating.
3.0	2023-05-05	Mikael ZHONG/ Lucky FENG/ David LIU/ Aria CHU	Updated the template and all test data.
3.1	2023-08-17	Lucky FENG	Updated the drawing (Chapter 2).



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