

# Antenna Datasheet

**Product OC:** Y0YRX00A1BA

**Version:** 1.0

**Date:** 2023-09-13

**Status:** Preliminary

**Product Name:** BT FPC Antenna

**Key Features:**

Frequency Band: 2400–2500 MHz

Dimensions: 35\*7 mm

Efficiency: Up to 25.4%

RoHS and REACH Compliant

# Overview

Quectel Wi-Fi 2.4G antenna covers 2.4 ~2.5GHz bands, fully satisfying customers' requirements for Wi-Fi/Zigbee/BT antennas. 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: Assembled in test device

## 1.1. Electrical

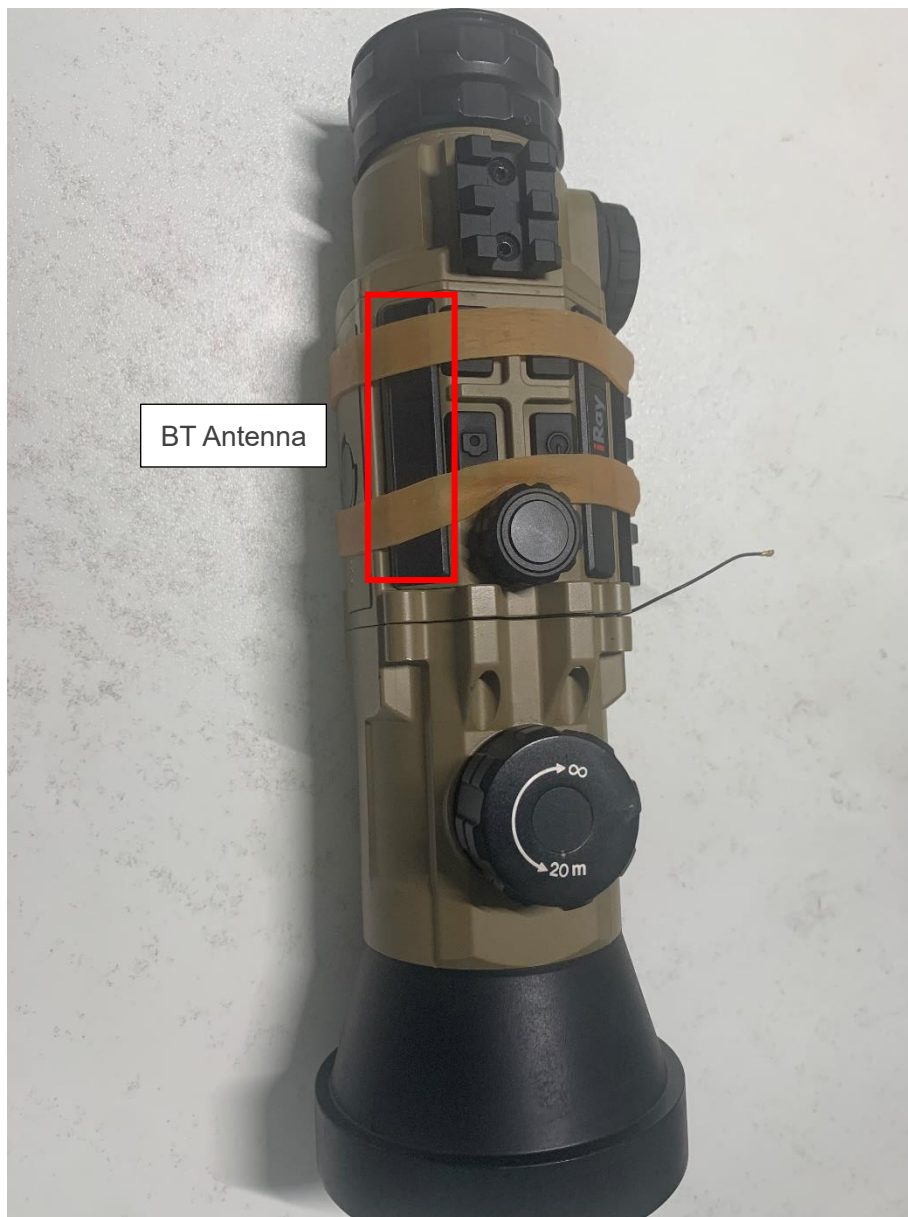
Electrical	
Frequency Range	2400-2500MHz
Impedance	50 $\Omega$
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
Band	Band	B71	B12 /B13 /B28	Lora	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /N77	N79	Wi-Fi 5G
SPEC	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		-	-	-	-	-	-	5.5	-	-	-	-
Max. Return Loss (dB)		-	-	-	-	-	-	-3.2	-	-	-	-
AVG Eff. (%)		-	-	-	-	-	-	16.3	-	-	-	-
AVG Gain (dB)		-	-	-	-	-	-	-8.1	-	-	-	-
Max. Peak Gain (dBi)		-	-	-	-	-	-	0.5	-	-	-	-
VSWR						≤5.5						
Return Loss						≤-3.2 dB						
Gain						≤0.5 dBi						

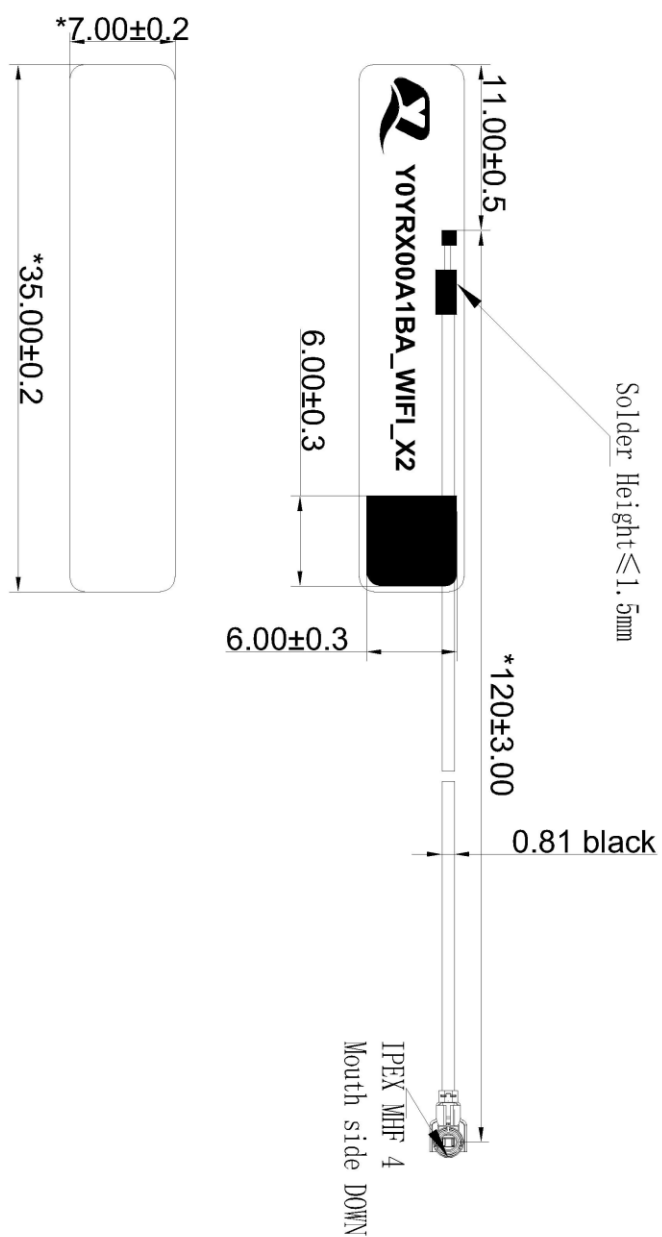
## 1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	35 *7 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ0.81 & Black & 120mm
Connector Type	IPEX MHF 4
Weight	Typ. /
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

### 1.3. Antenna Assembly



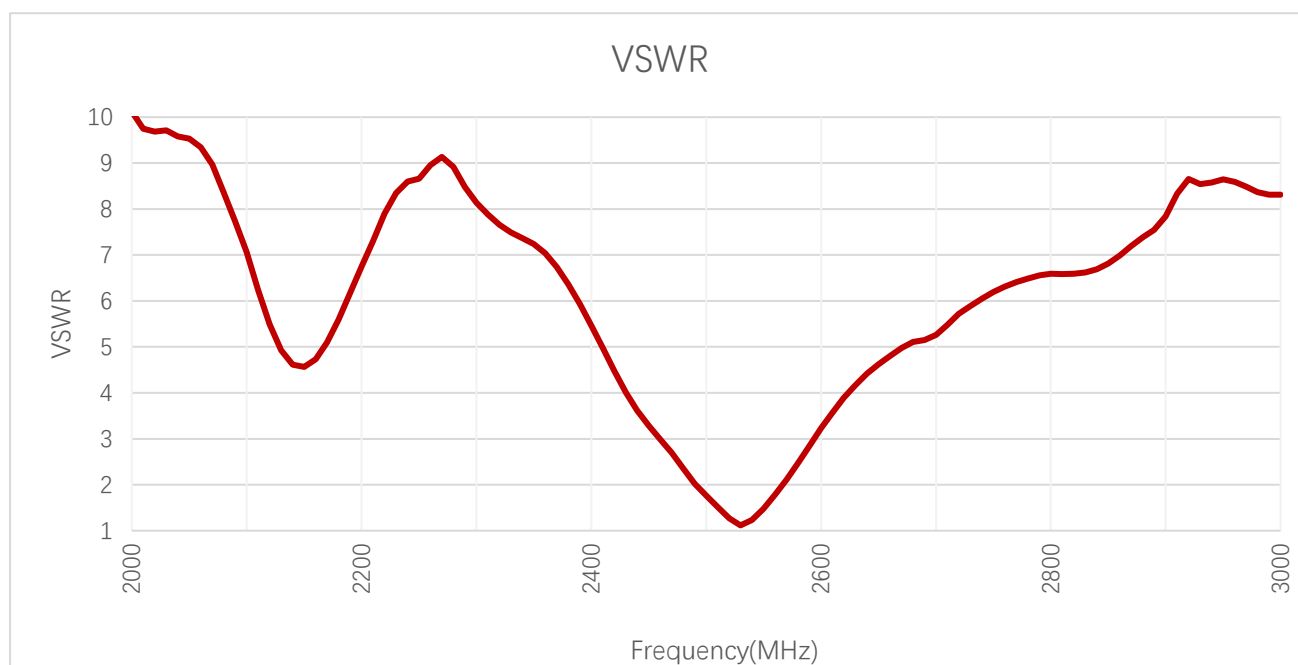
## 2 Drawing



## 3 Detailed Performance

### 3.1. S-Parameter Test

#### 3.1.1. VSWR

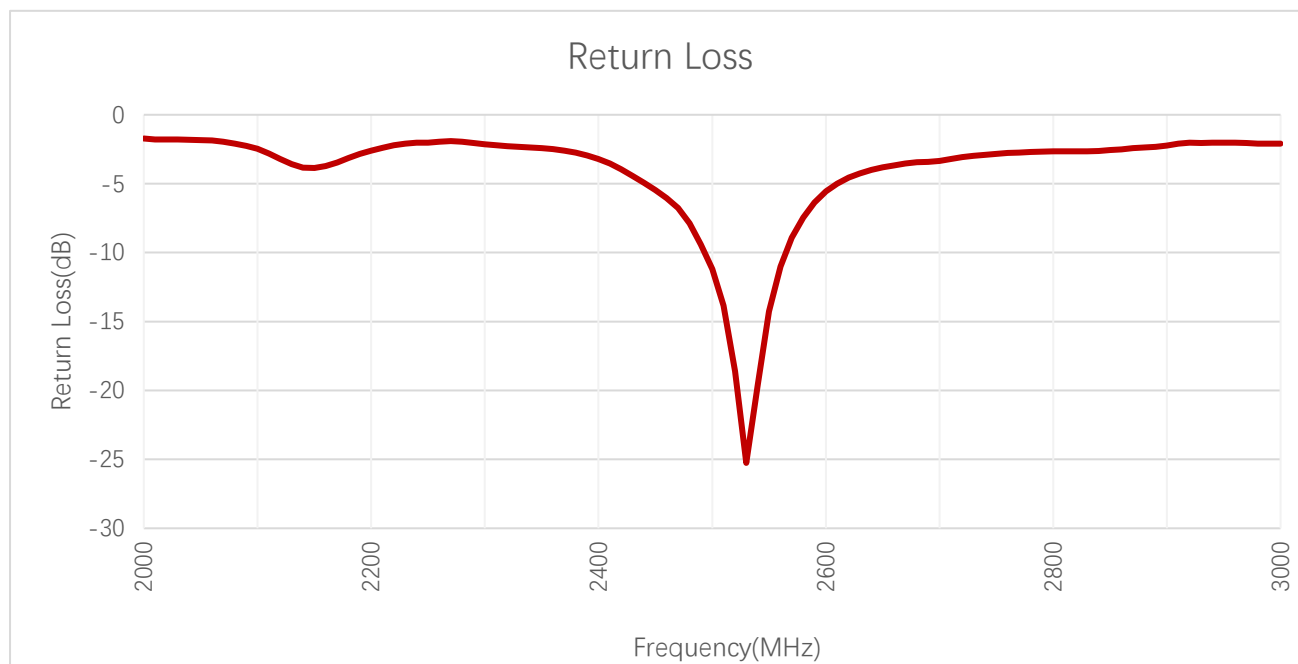


**VSWR**

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
VSWR	-	-	5.5	3.3	1.8	-	-	-	-	-



### 3.1.2. Return Loss

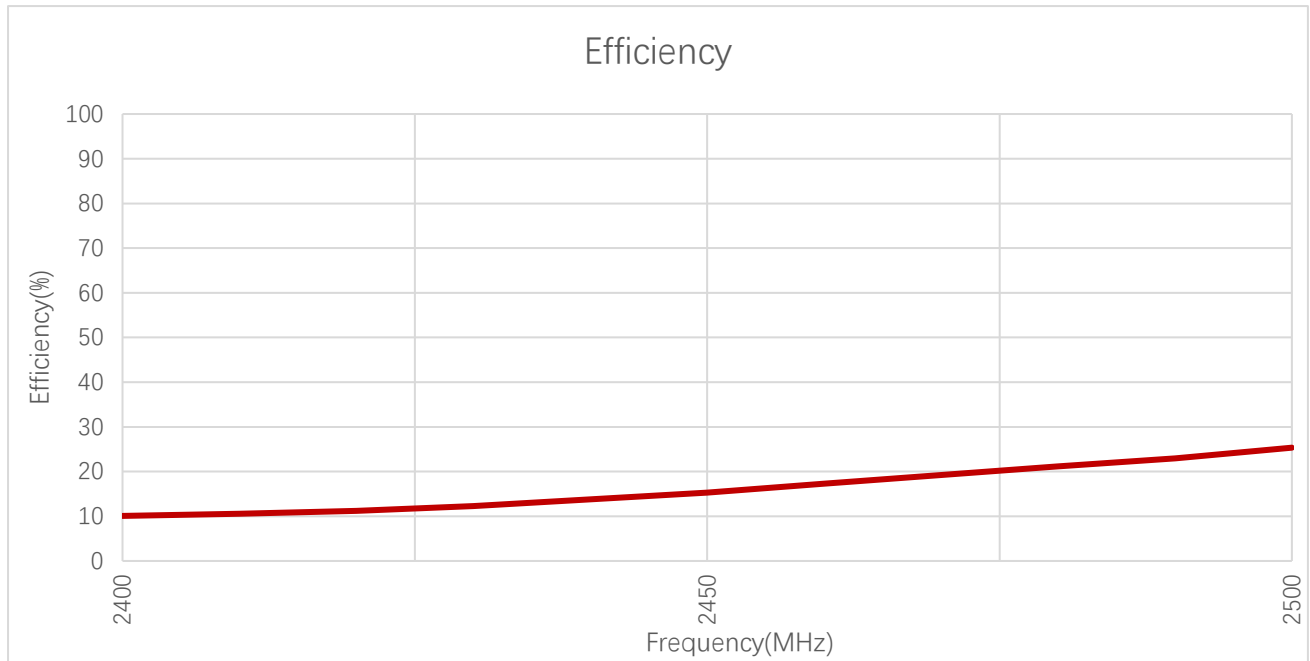


**Return Loss (dB)**

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
Return Loss (dB)	-	-	-3.2	-5.5	-11.2	-	-	-	-	-

## 3.2. Radiation Performance Test

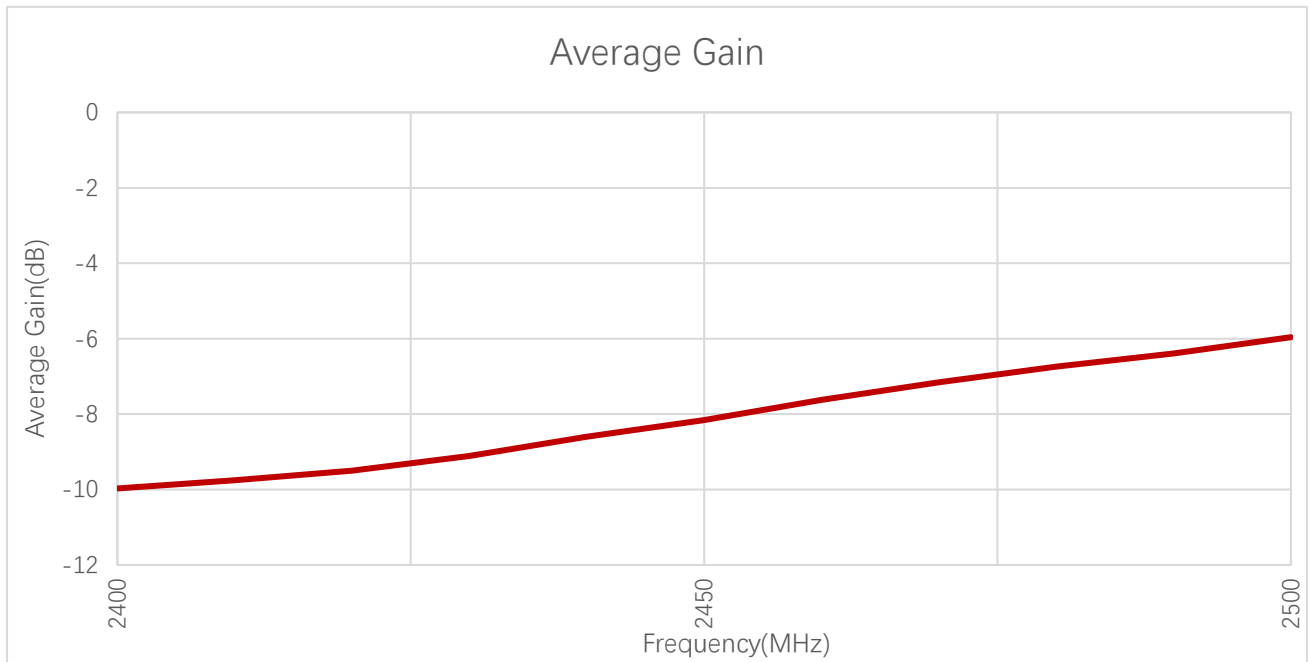
### 3.2.1. Efficiency



**Efficiency (%)**

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
Efficiency (%)	-	-	10.1	15.3	25.4	-	-	-	-	-

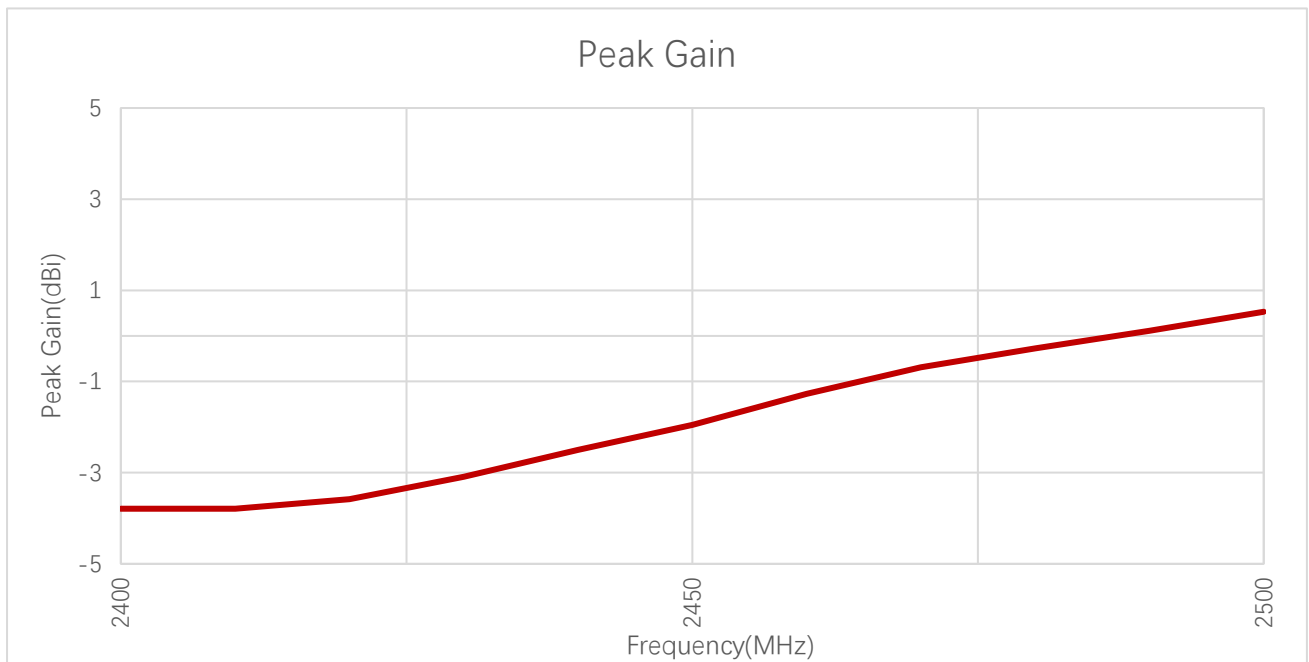
### 3.2.2. Average Gain



**Average Gain (dB)**

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
Average Gain (dB)	-	-	-10.0	-8.2	-6.0	-	-	-	-	-

### 3.2.3. Peak Gain

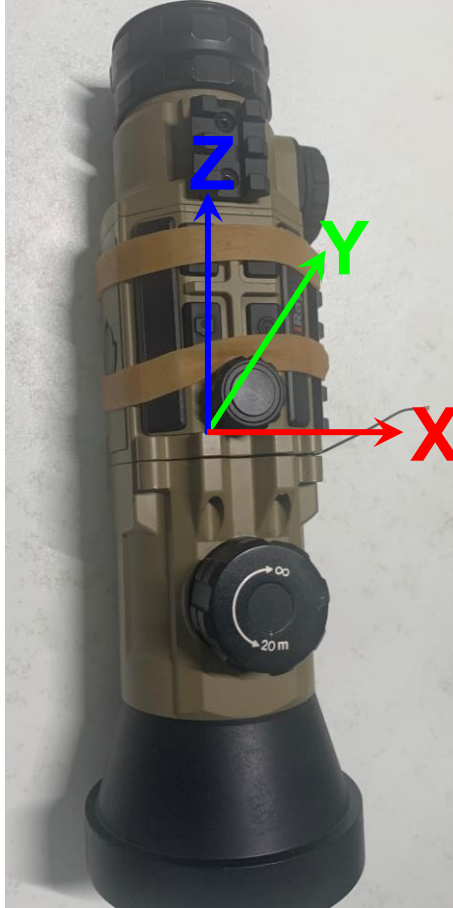


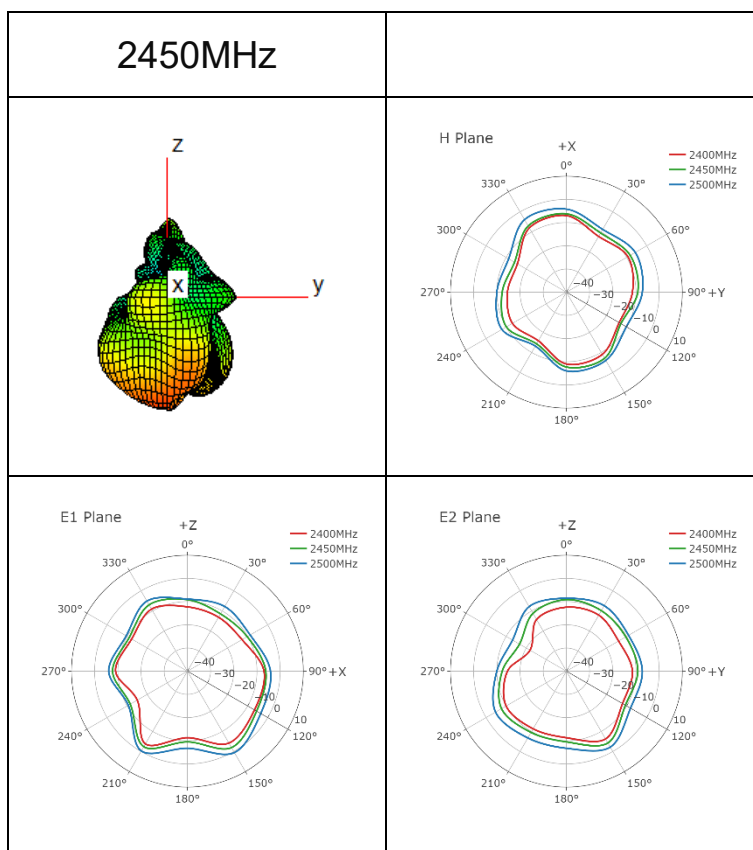
**Peak Gain (dBi)**

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
Peak Gain (dBi)	-	-	-3.8	-2.0	0.5	-	-	-	-	-

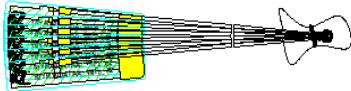
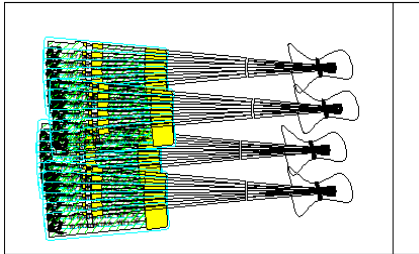
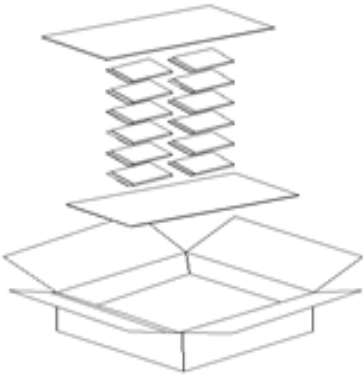
### 3.2.4. 3D & 2D Radiation Pattern

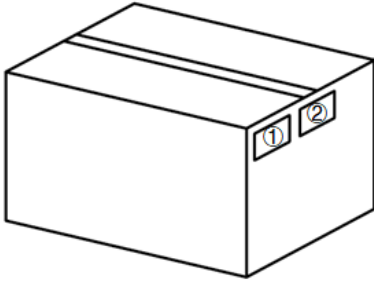
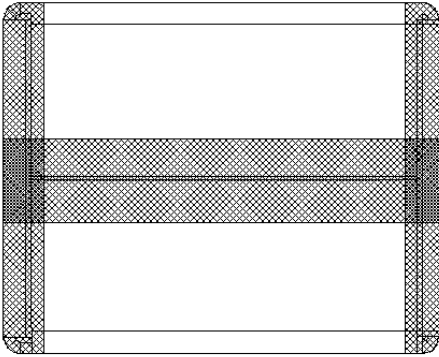
- Test Condition: Assembled in test device
- Test Chamber: HF-G-1





## 4 Packaging

Step	Packaging picture / 2D picture	Description
1		25 products in a bundle
2		100 pcs Antenna products in a PE bags; 100 pcs Antenna / Per PE Bag ;
3		20 PE Bag / Per Carton Box (2000 pcs Antenna / Per Carton Box) Estimated quantity Products that are not full will be packaged in suitable cardboard boxes <u>Carton Size:L*W*H=275*275*185mm</u>

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>“<b>I</b>” type sealing cartons</p>
6	<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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**Or our local offices. For more information, please visit:**

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## Revision History

Version	Date	Author	Note
-	2023-09-13	Aslan Chen Joye Wang David Liu Vinnie Liu	Creation of the document
1.0	2023-09-13	Aslan Chen Joye Wang David Liu Vinnie Liu	First official release



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