

# Antenna Datasheet

**Product OC:** Y0YRX00A1CA

**Version:** 1.0

**Date:** 2023-09-14

**Status:** Preliminary

**Product Name:** BT FPC Antenna

**Key Features:**

Frequency Band: 2400–2400 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													
SPEC	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
	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 AVG Gain (dB)			-	-	-	-	-	-	-8.1	-	-	-	-
Max. Peak Gain (dBi)			-	-	-	-	-	-	0.5	-	-	-	-
VSWR								$\leq 5.5$					
Return Loss								$\leq -3.2$ dB					
Gain								$\leq 0.5$ dBi					

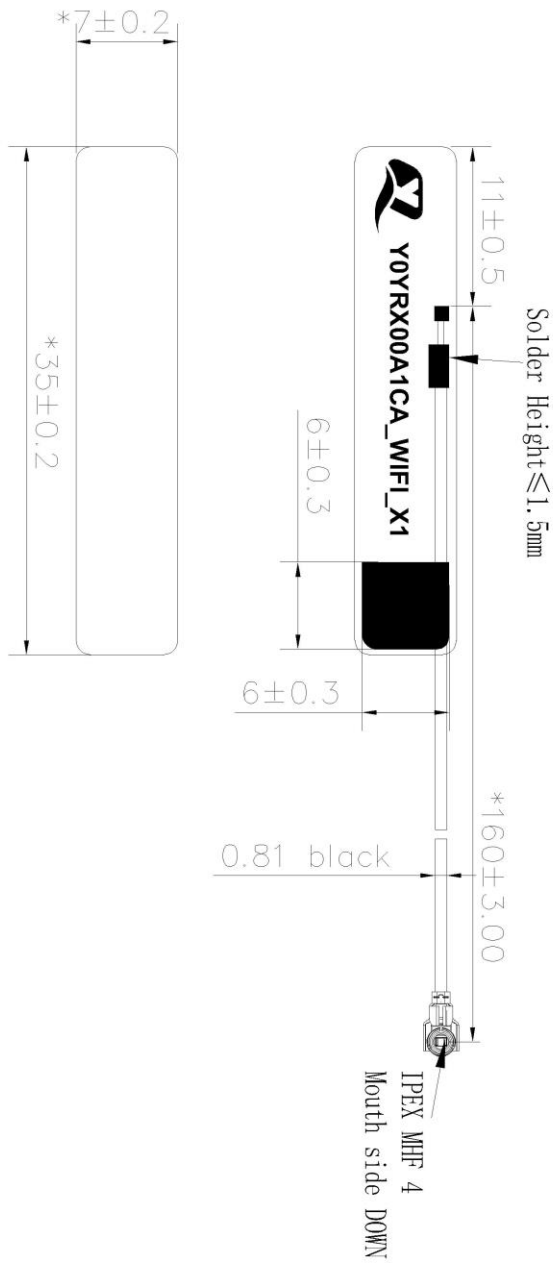
## 1.2. Mechanical, Environmental & Storage

Mechanical	
Antenna Dimensions	35 *7 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ0.81 & Black & 160mm
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



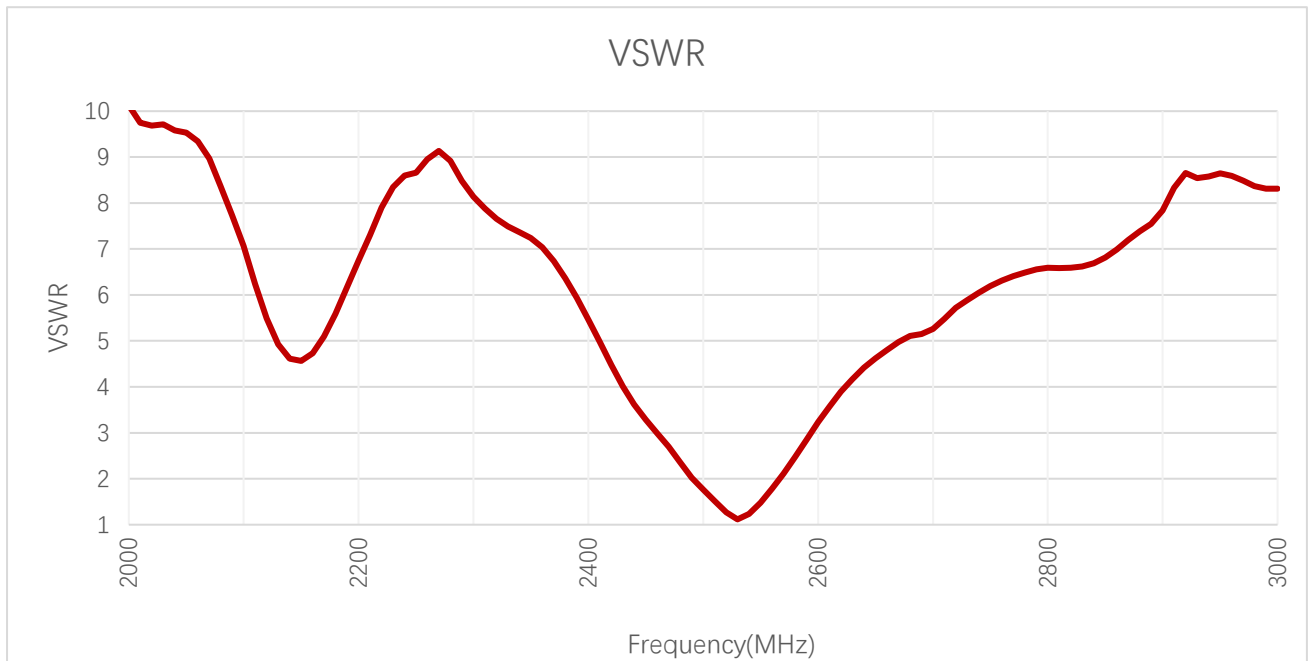
# 2 Drawing



# 3 Detailed Performance

## 3.1. S-Parameter Test

### 3.1.1. VSWR

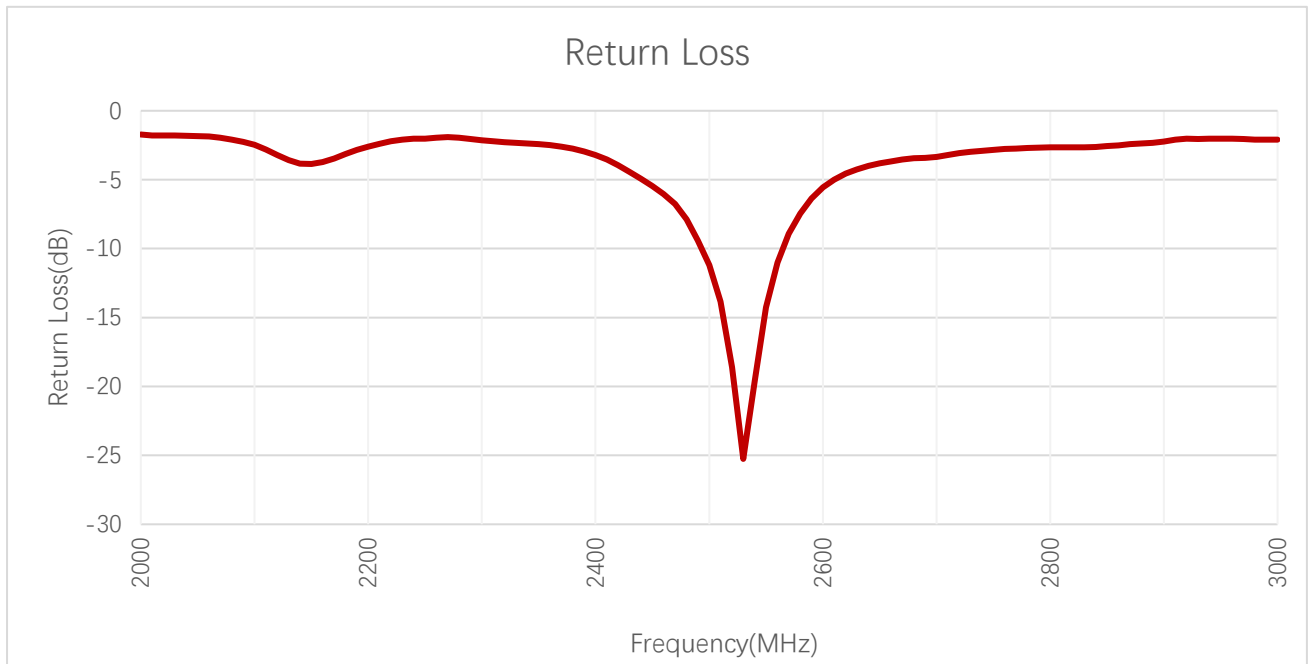


**VSWR**

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



**3.1.2. Return Loss**

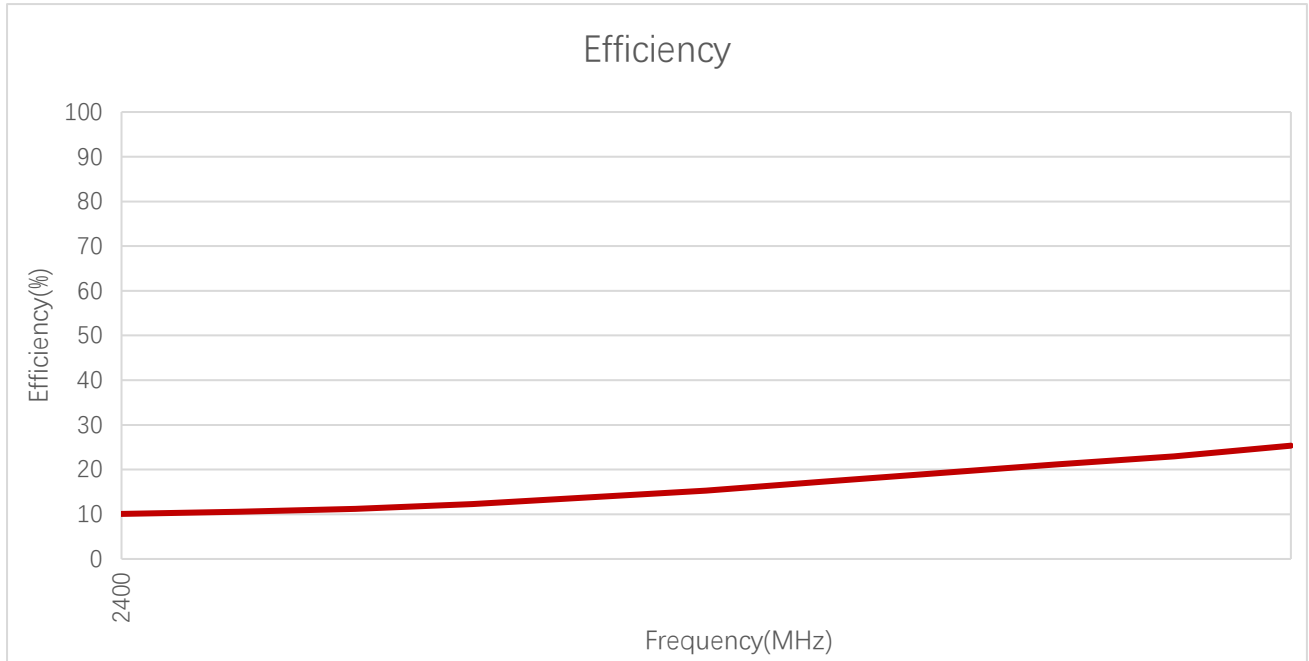


**Return Loss (dB)**

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

### 3.2. Radiation Performance Test

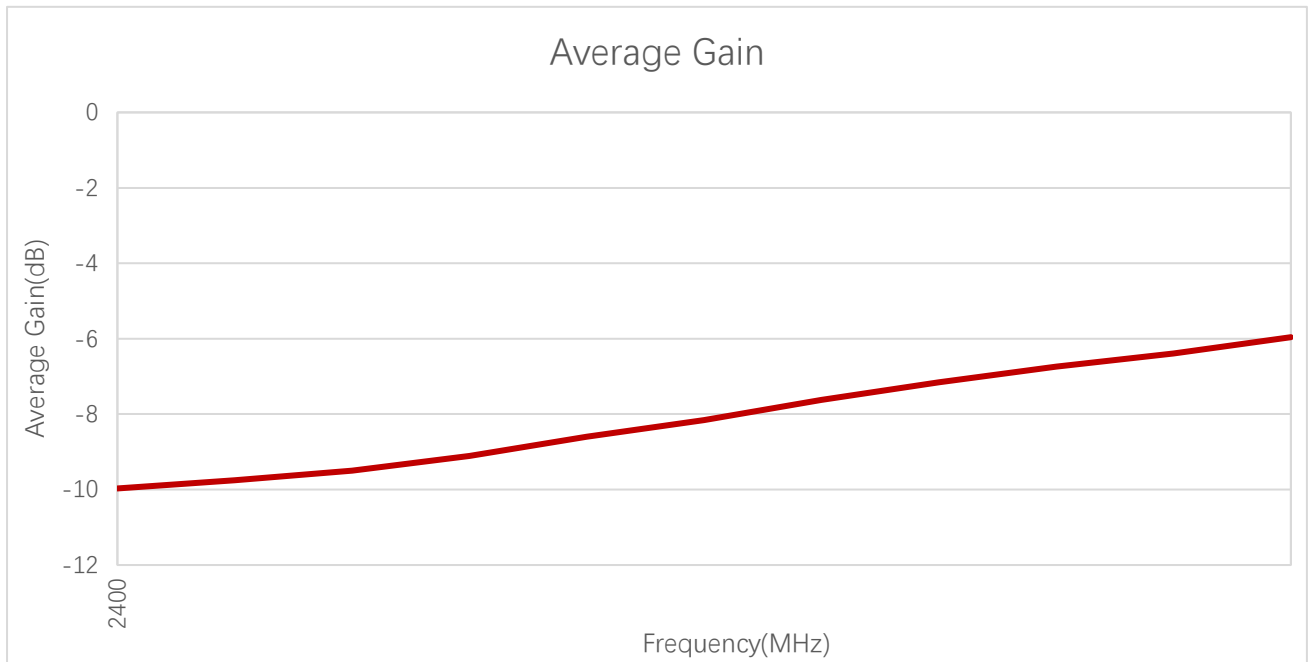
#### 3.2.1. Efficiency



**Efficiency (%)**

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

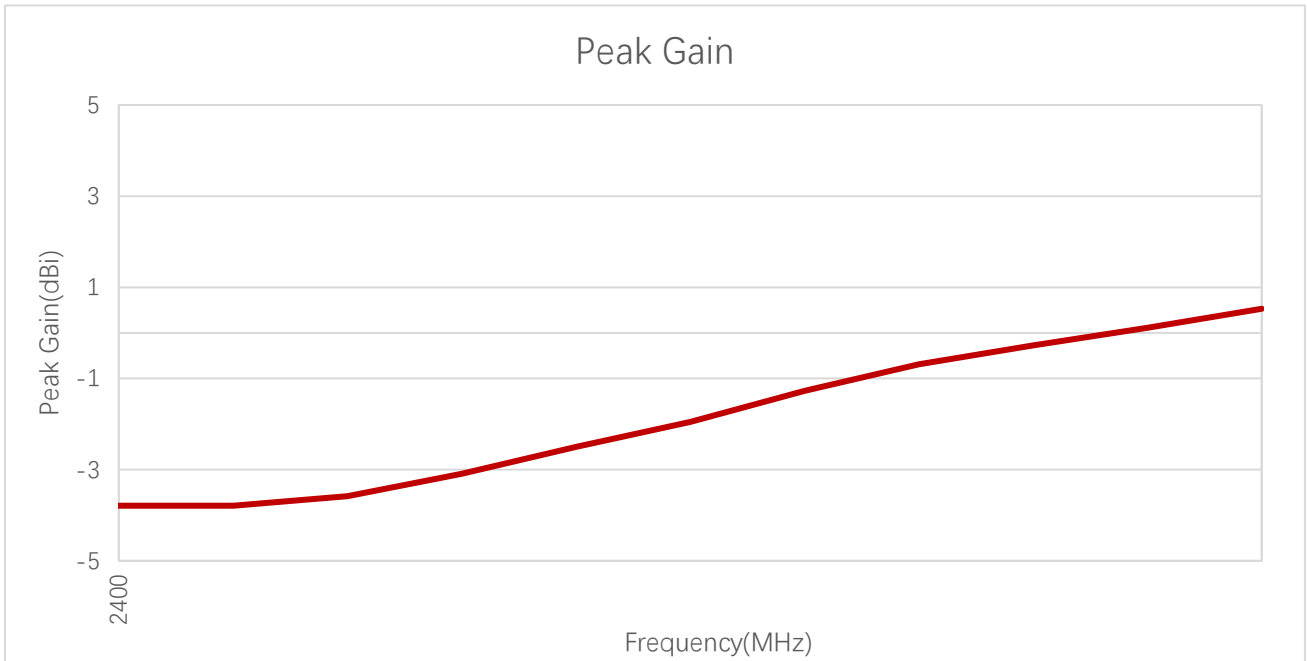
**3.2.2. Average Gain**



**Average Gain (dB)**

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

**3.2.3. Peak Gain**

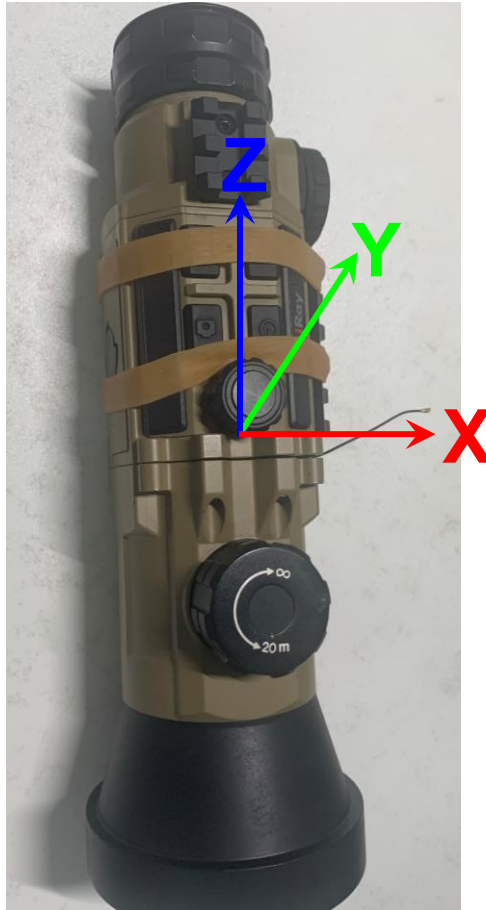


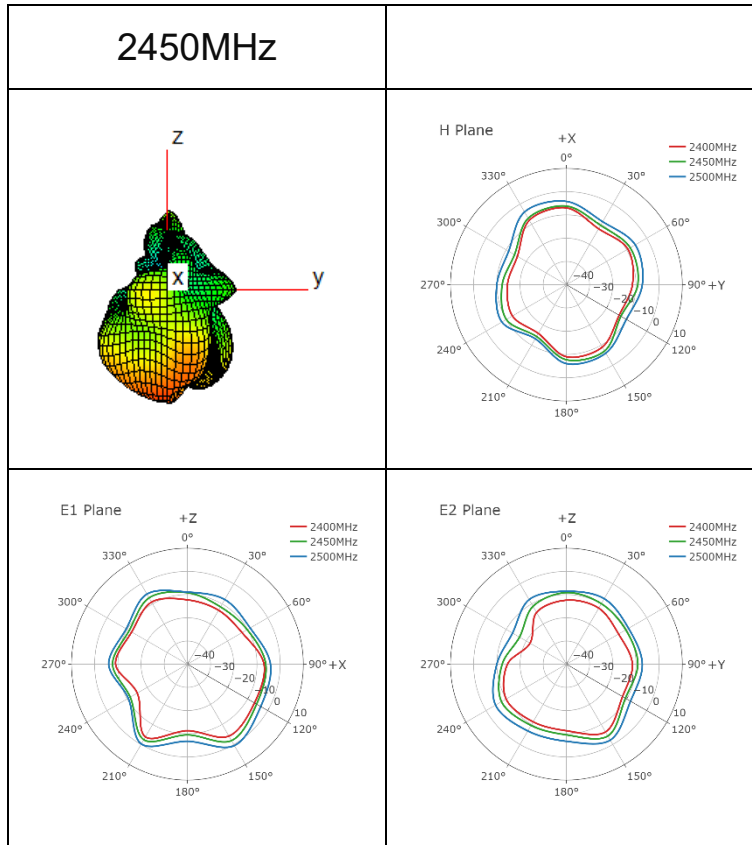
**Peak Gain (dBi)**

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

## 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
-	2023-09-14	Aslan Chen Joye Wang David Liu Vinnie Liu	Creation of the document
1.0	2023-09-14	Aslan Chen Joye Wang David Liu Vinnie Liu	First official release

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