

# Antenna Datasheet

**Product OC:** Y0YRX00A1BA

**Version:** 1.0

**Date:** 2023-08-14

**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

## **Wi-Fi 2.4G/Zigbee2.4G/Bluetooth Antenna**

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.

# Contents

Overview.....	2
Contents .....	3
<b>1 Specification.....</b>	<b>4</b>
1.1. Electrical.....	4
1.2. Mechanical, Environmental & Storage.....	5
1.3. Antenna Assembly .....	6
1.4. Matching Circuit .....	错误!未定义书签。
<b>2 Drawing .....</b>	<b>7</b>
<b>3 Detailed Performance .....</b>	<b>8</b>
3.1. S-Parameter Test .....	8
3.1.1. VSWR.....	8
3.1.2. Return Loss .....	9
3.2. OTA Test Data .....	错误!未定义书签。
3.3. Radiation Performance Test.....	10
3.3.1. Efficiency .....	10
3.3.2. Average Gain .....	11
3.3.3. Peak Gain.....	12
3.3.4. 3D & 2D Radiation Pattern.....	13
<b>4 Packaging .....</b>	<b>15</b>
<b>Contact US .....</b>	<b>16</b>
<b>Legal Notices .....</b>	<b>17</b>
<b>Revision History .....</b>	<b>19</b>

# 1 Specification

Test Condition: Assembled in test device

## 1.1. Electrical

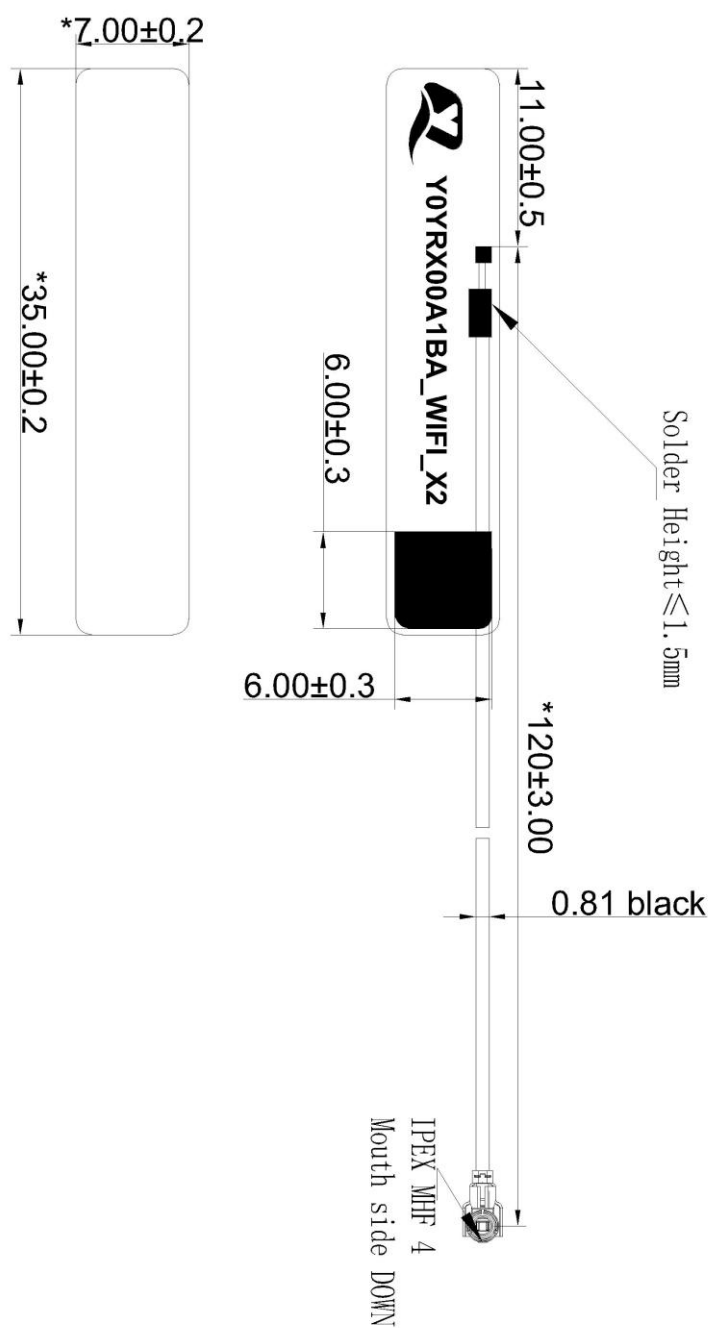
Electrical	
Frequency Range	2400-2500MHz
Impedance	50 $\Omega$
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
SPEC	Band	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 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 & 120mm
Connector Type	IPEX MHF 4
Weight	Typ. /
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes
Storage	
Storage Temperature	-40 °C to +85 °C
Humidity	Less than 75% RH
Storage Place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging.

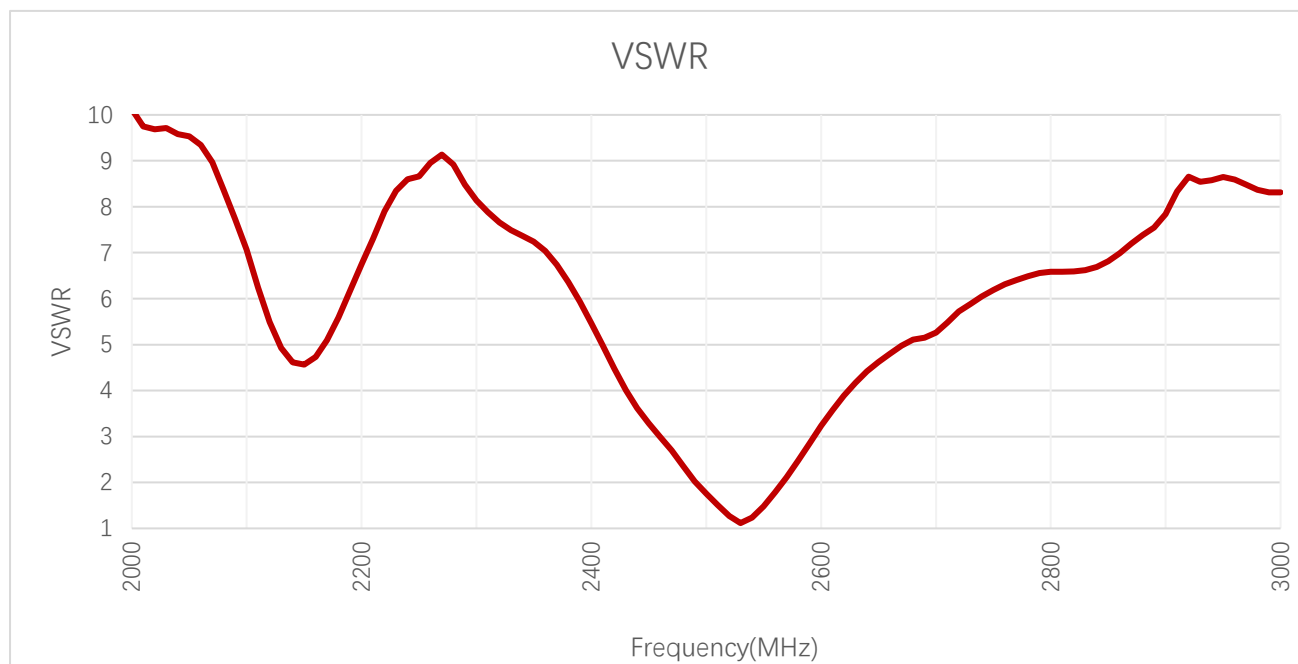
## 2 Drawing



# Detailed Performance

## 2.1. S-Parameter Test

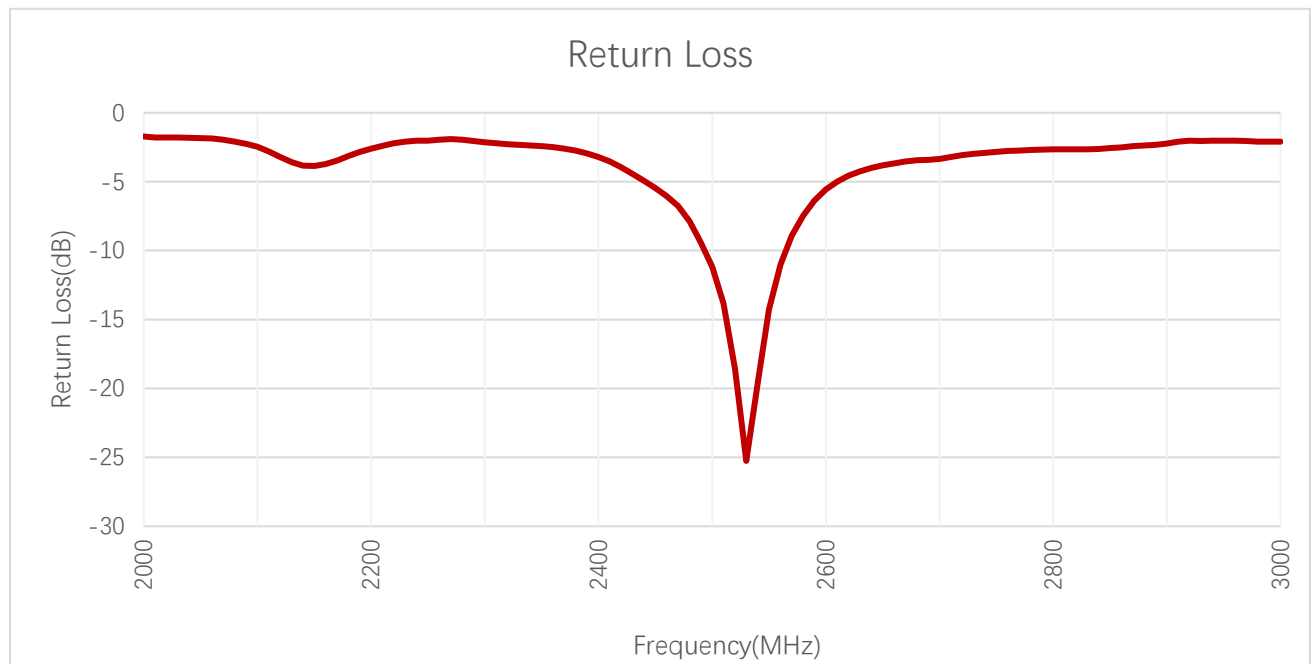
### 2.1.1. VSWR



**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	-	-	-	-	-

### 2.1.2. Return Loss



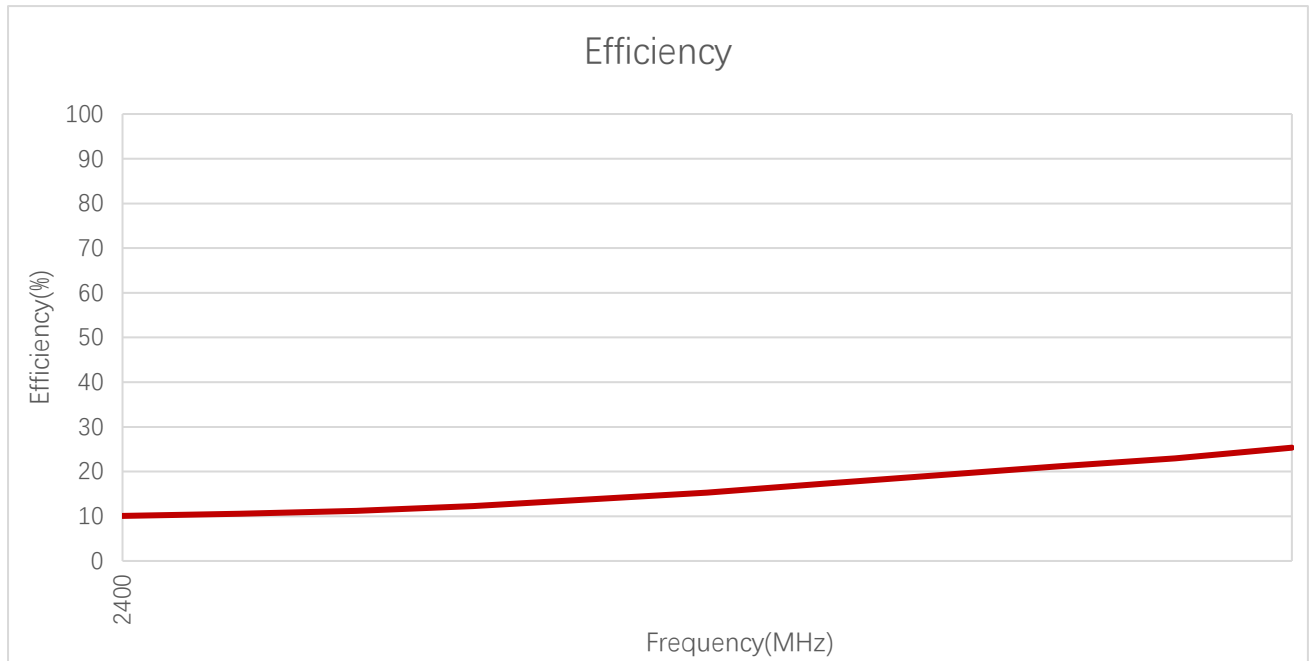
**Return Loss (dB)**

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	-	-	-	-	-



## 2.2. Radiation Performance Test

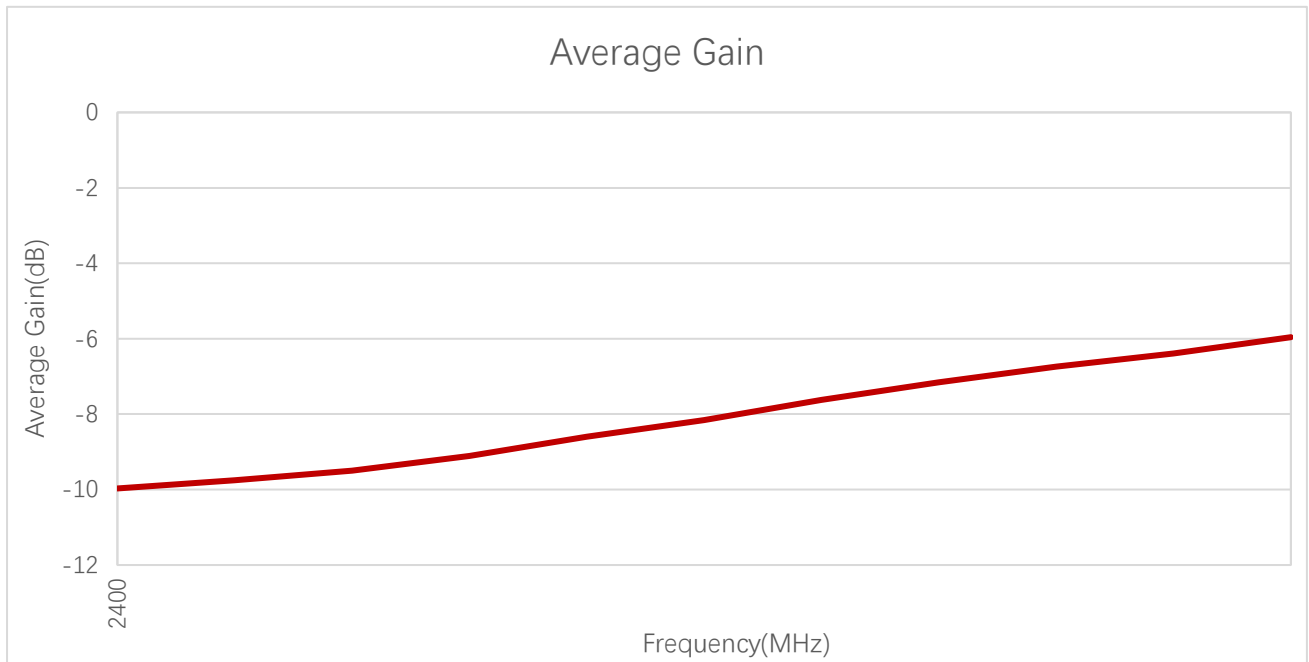
### 2.2.1. Efficiency



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	-	-	-	-	-

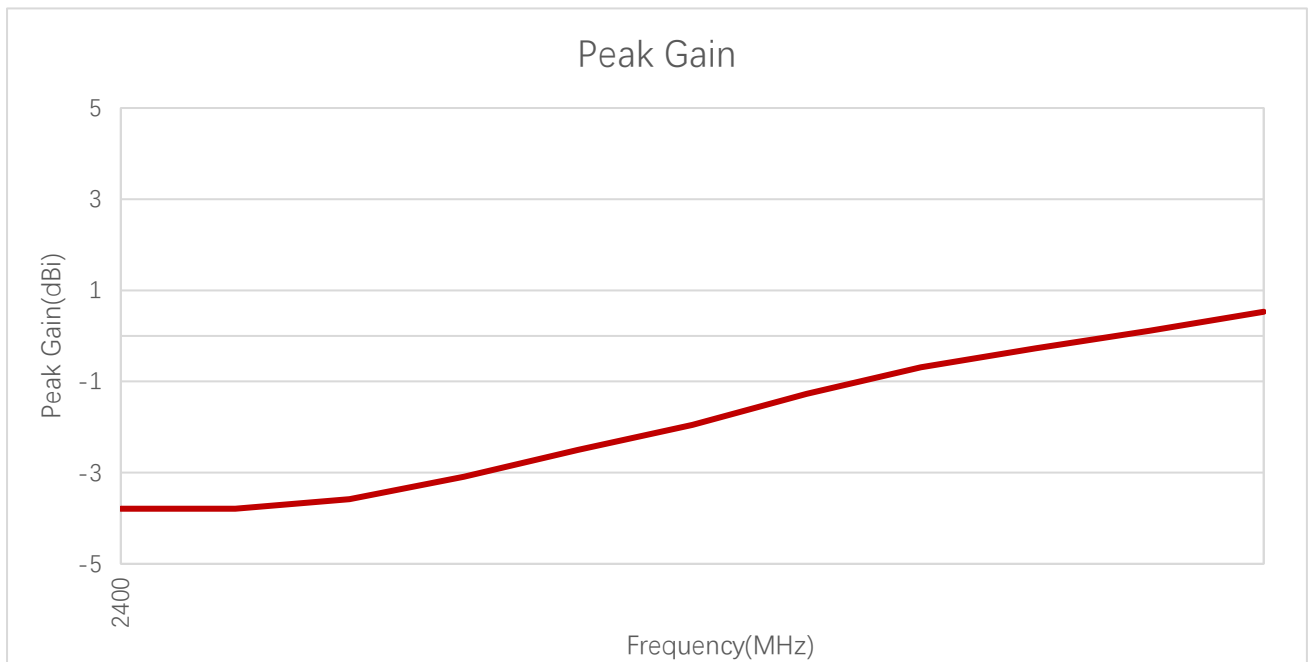
### 2.2.2. Average Gain



**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	-	-	-	-	-

### 2.2.3. Peak Gain

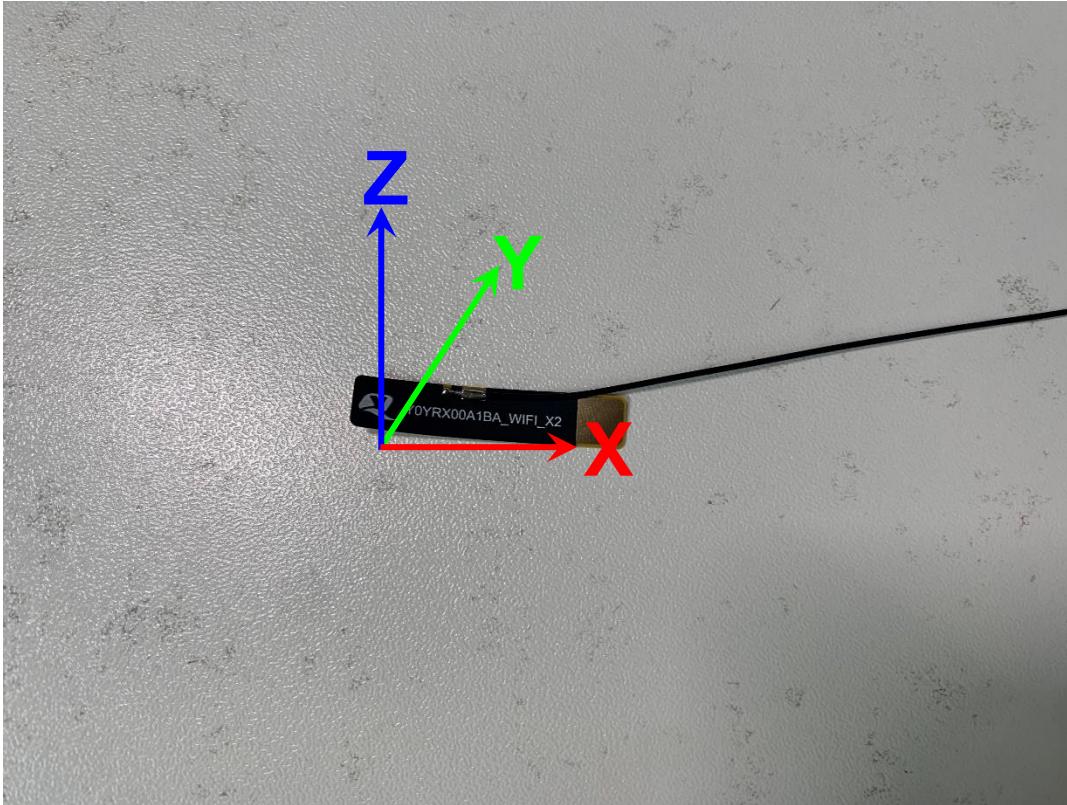


Peak Gain (dBi)

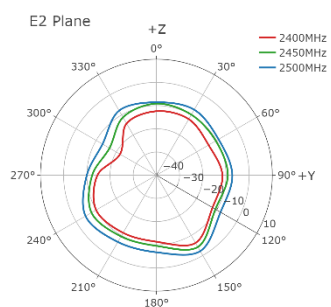
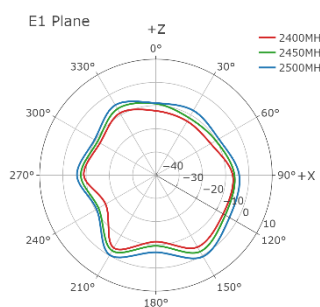
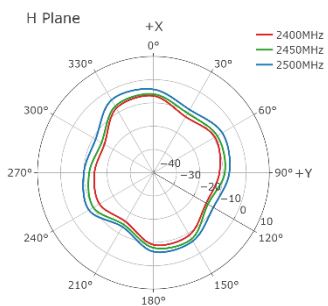
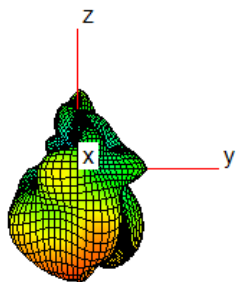
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000
Peak Gain (dBi)	-	-	-3.8	-2.0	0.5	-	-	-	-	-

#### 2.2.4. 3D & 2D Radiation Pattern

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



2450MHz



## **3** 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
-	2023-08-04	Aria CHU	Creation of the document
1.0	2023-08-04	Wilson BAO Lance Sun Aria CHU	First official release



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