

# 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.

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# 1 Specification

**Test Condition:** Assembled in test device

## 1.1. Electrical

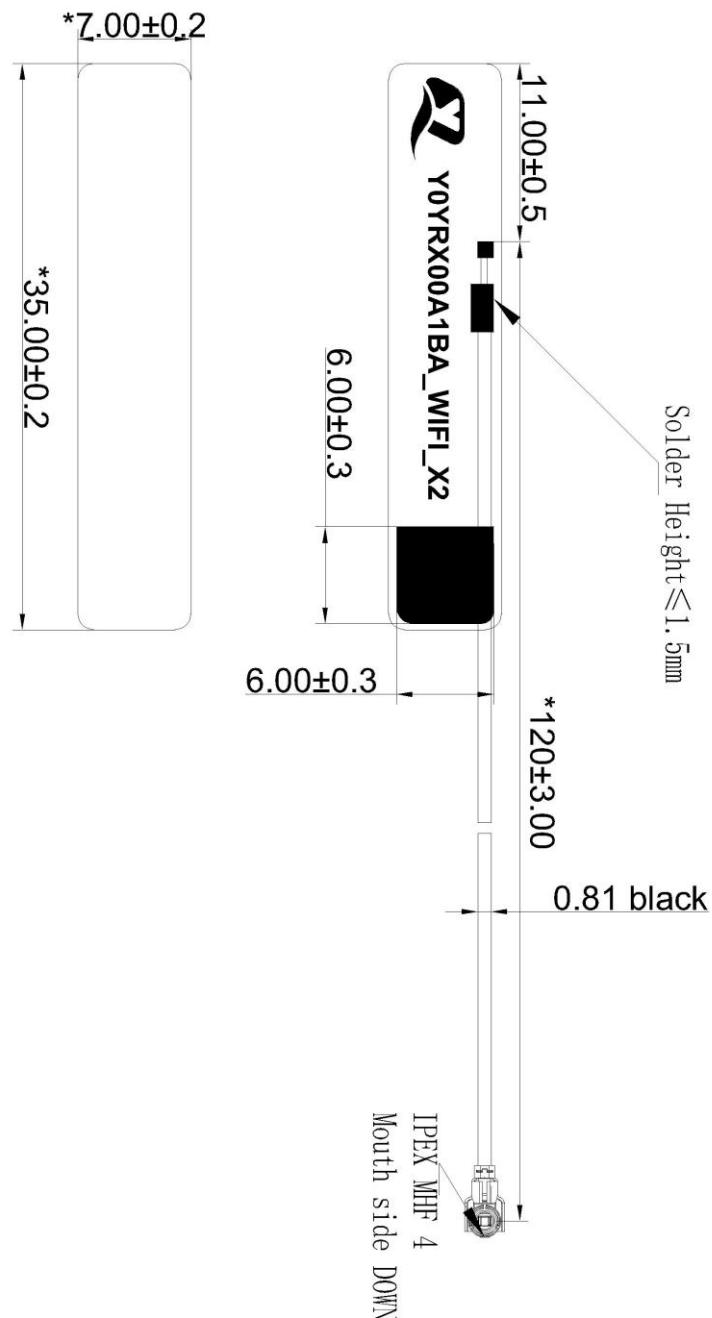
Electrical	
<b>Frequency Range</b>	2400-2500MHz
<b>Impedance</b>	50 Ω
<b>Polarization</b>	Linear
<b>Radiation Pattern</b>	Omni-directional

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		
	<b>Max. VSWR</b>	-	-	-	-	-	-	5.5	-	-	-	-		
	<b>Max. Return Loss (dB)</b>	-	-	-	-	-	-	-3.2	-	-	-	-		
	<b>AVG Eff. (%)</b>	-	-	-	-	-	-	16.3	-	-	-	-		
	<b>AVG Gain (dB)</b>	-	-	-	-	-	-	-8.1	-	-	-	-		
	<b>Max. Peak Gain (dBi)</b>	-	-	-	-	-	-	0.5	-	-	-	-		
	<b>VSWR</b>	$\leq 5.5$												
	<b>Return Loss</b>	$\leq -3.2$ dB												
	<b>Gain</b>	$\leq 0.5$ dBi												

## 1.2. Mechanical, Environmental & Storage

<b>Mechanical</b>	
<b>Antenna Dimensions</b>	35 *7 mm
<b>Material &amp; Color</b>	FPC & Black
<b>Cable Type &amp; Color &amp; Length</b>	Φ0.81 & Black & 120mm
<b>Connector Type</b>	IPEX MHF 4
<b>Weight</b>	Typ. /
<b>Mounting Type</b>	Adhesive
<b>Environmental</b>	
<b>Operation Temperature</b>	-40 °C to +85 °C
<b>RoHS &amp; REACH Compliant</b>	Yes
<b>Storage</b>	
<b>Storage Temperature</b>	-40 °C to +85 °C
<b>Humidity</b>	Less than 75% RH
<b>Storage Place</b>	Away from corrosive gas and direct sunlight
<b>Packaging</b>	Antennas should be stored in unopened sealed manufacturer's plastic packaging.

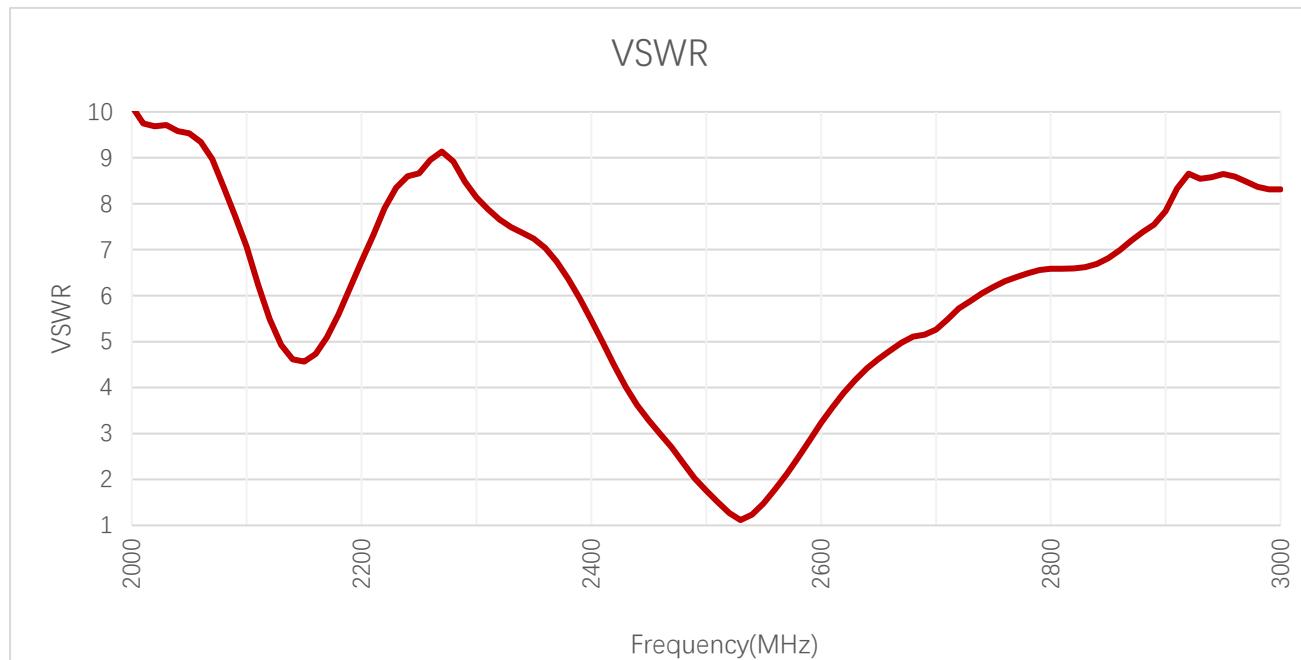
## 2 Drawing



# Detailed Performance

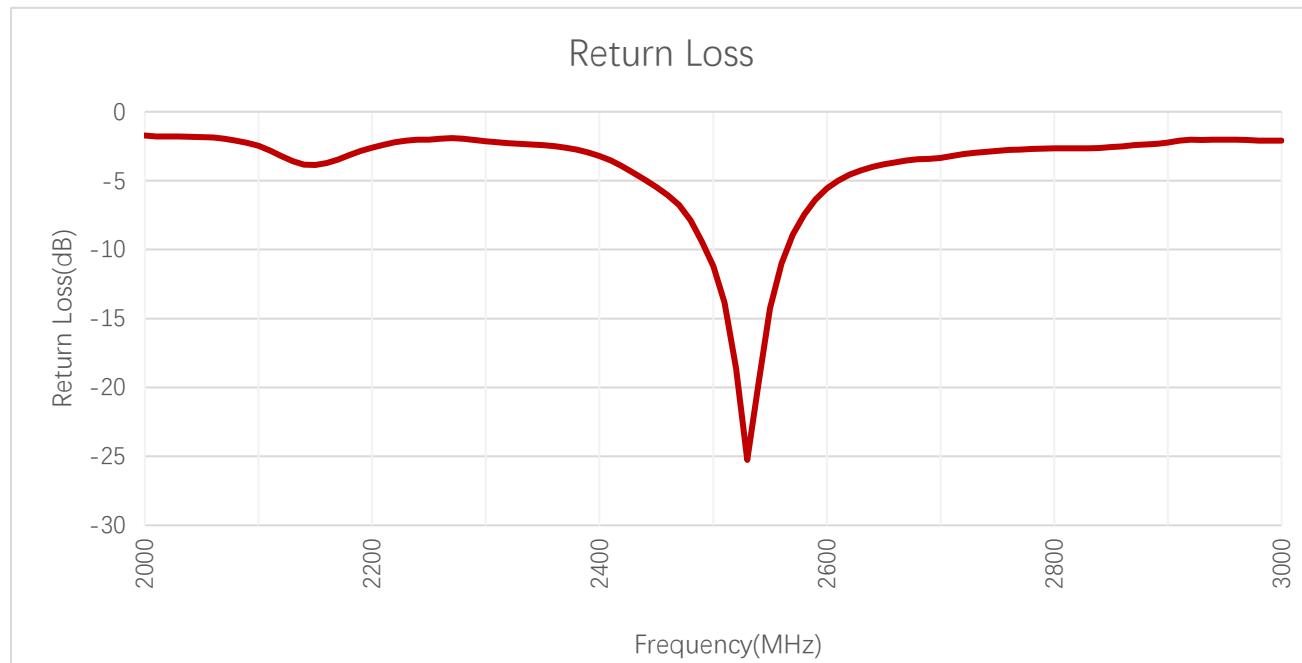
## 2.1. S-Parameter Test

### 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	-	-	-	-	-

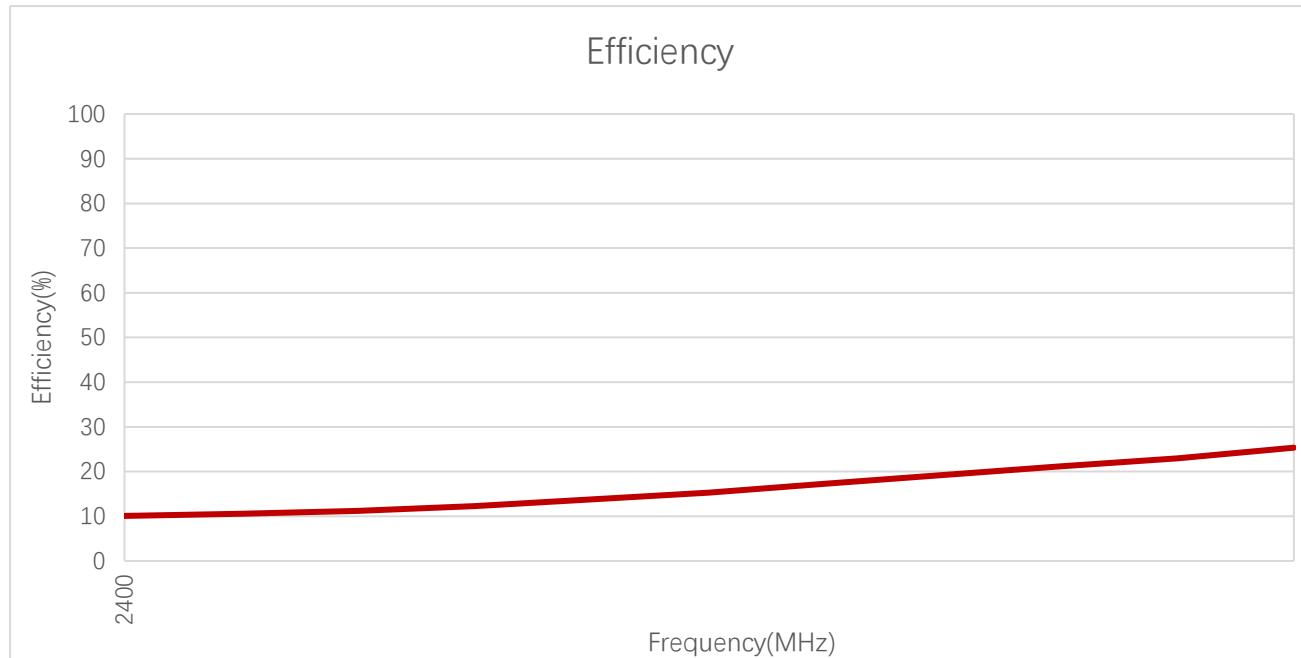
### 2.1.2. Return Loss



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	-	-	-	-	-

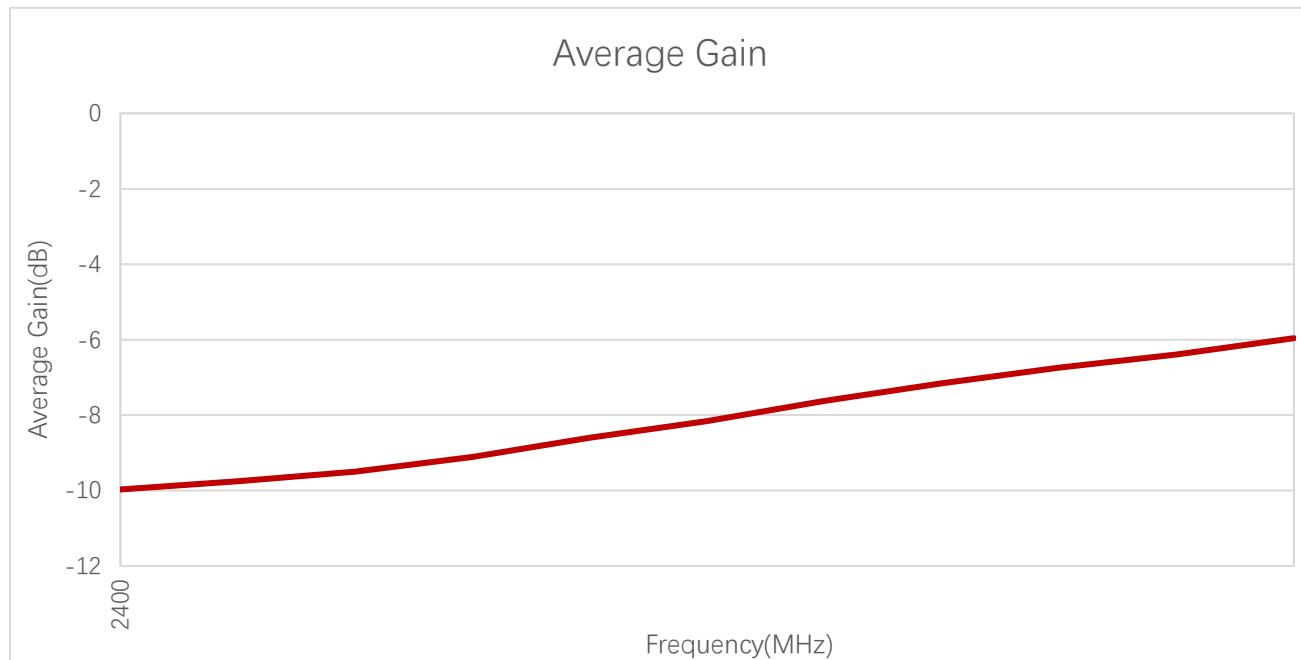
## 2.2. Radiation Performance Test

### 2.2.1. Efficiency



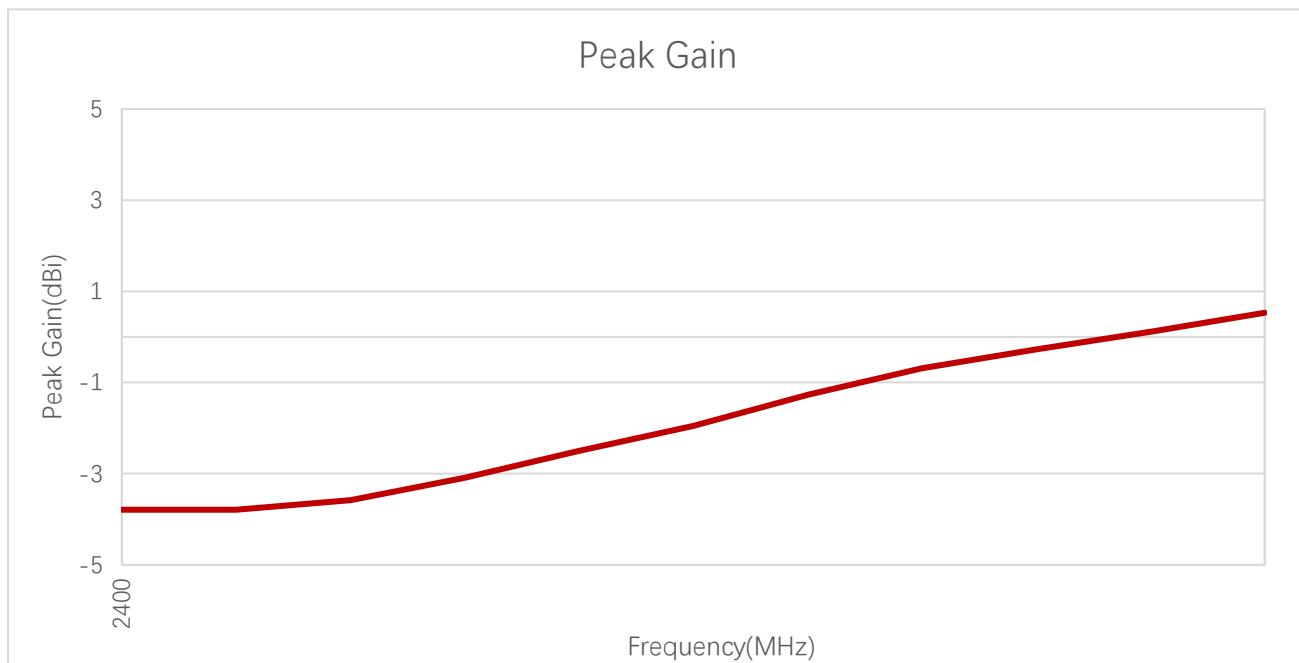
Efficiency (%)											
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880	
Efficiency (%)	-	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	1950	2140	2400	2450	2500	3600	4700	5000	5500	6000	
Efficiency (%)	-	-	10.1	15.3	25.4	-	-	-	-	-	-

### 2.2.2. Average Gain



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

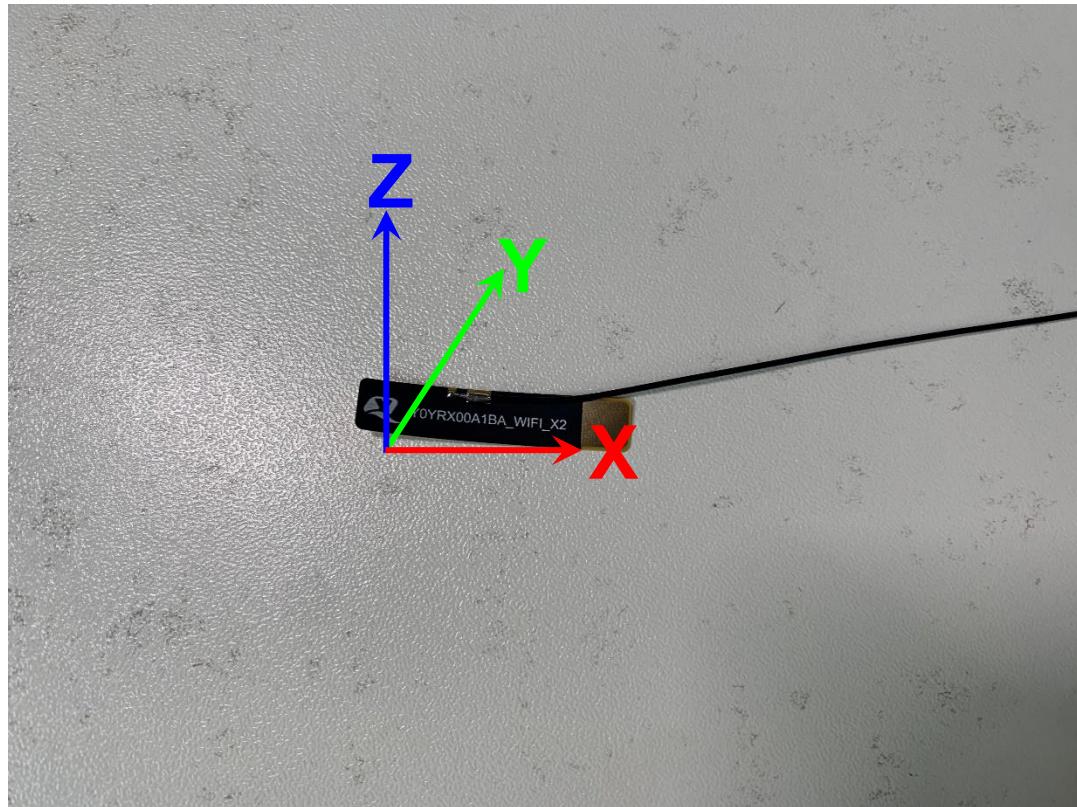


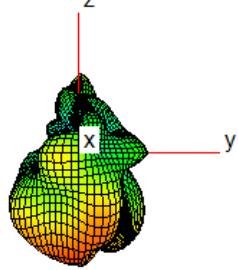
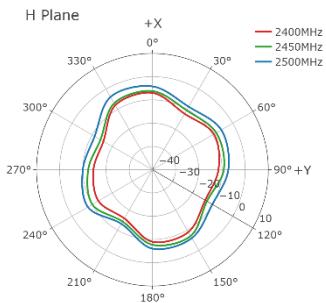
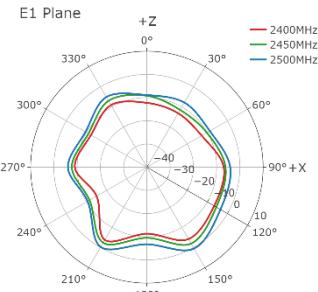
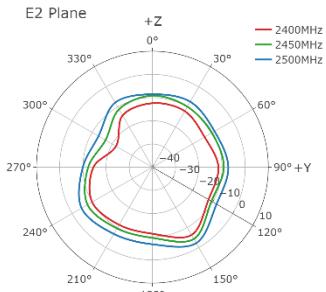
Peak Gain (dBi)

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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