



# Antenna Datasheet

**Product OC:** YE0008BA

**Version:** 2.1

**Date:** 2024-01-02

**Status:** Released

**Product Name:** 4G External Antenna

**Key Features:**

Frequency Band: 700–960 MHz, 1710–2170 MHz

Dimensions:  $\Phi$  10.5 mm  $\times$  53.5 mm

Efficiency: Up to 75.42 %

RoHS and REACH Compliant

IP53

# Overview

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Quectel also offers flexible installation with custom cable length and connector options.

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# 1 Specification

Test Condition: On 130 mm × 130 mm EVB

## 1.1. Electrical

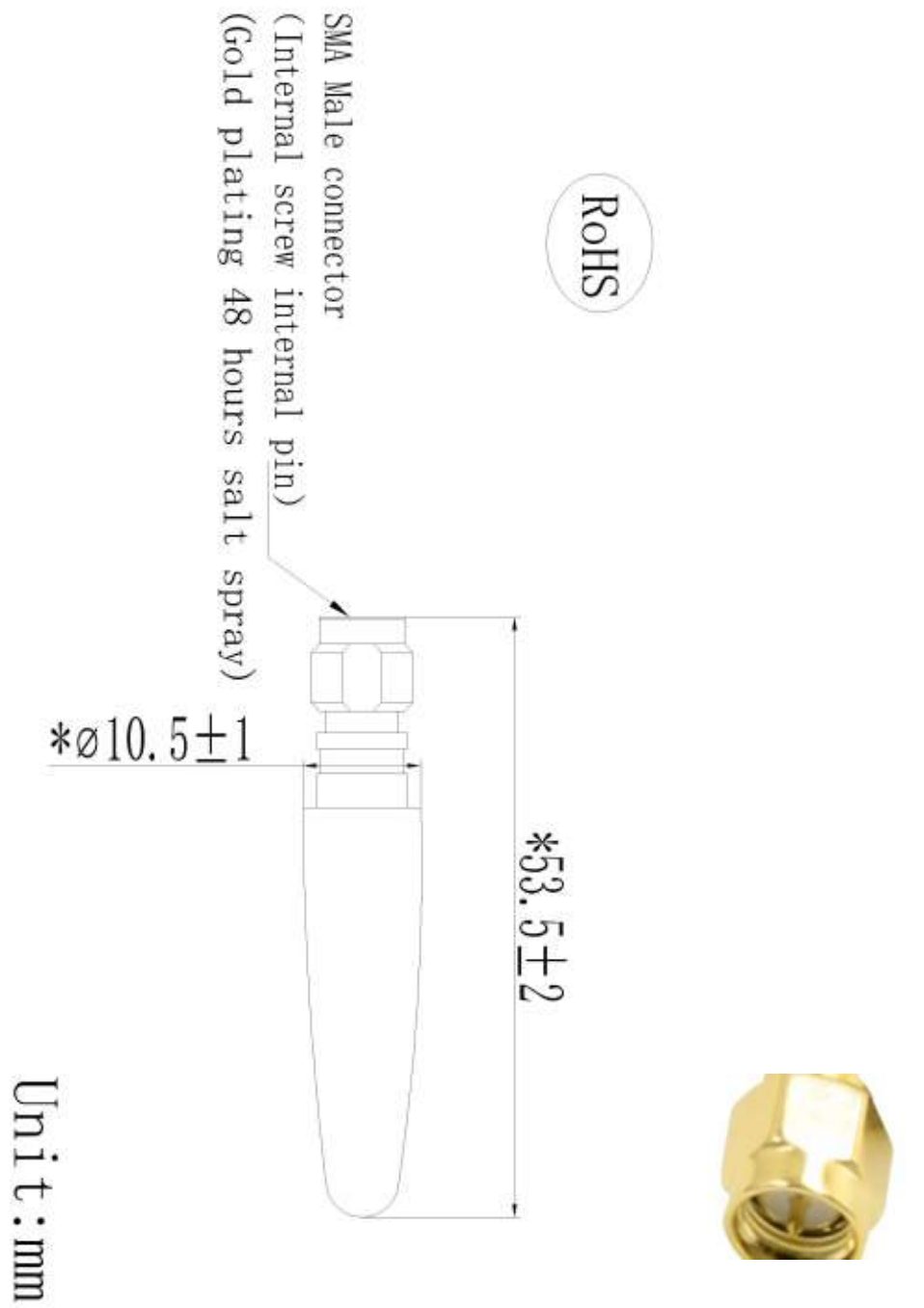
Electrical	
Frequency Range	700–960 MHz, 1710–2170 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	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	-	10.5	6.0	-	6.3	-	-	-	-	-	-	-
Max. Return Loss (dB)	-	-1.7	-2.9	-	-2.8	-	-	-	-	-	-	-
AVG Eff. (%)	-	36.2	62.3	-	43.2	-	-	-	-	-	-	-
AVG Gain (dB)	-	-4.8	-2.2	-	-3.7	-	-	-	-	-	-	-
Max. Peak Gain (dBi)	-	-0.1	1.5	-	0.5	-	-	-	-	-	-	-
VSWR	≤ 10.5											
Return Loss	≤ -1.7dB											
Peak Gain	≤ 1.5 dBi											

## 1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 10.5 mm × 53.5 mm
Casing Material & Color	TPE & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 5.3 g
Environmental	
Operation Temperature	-20°C to +80 °C
Storage Temperature	-20°C to +80 °C
RoHS and REACH Compliant	Yes
Ingress Protection (IP) Rating	IP53

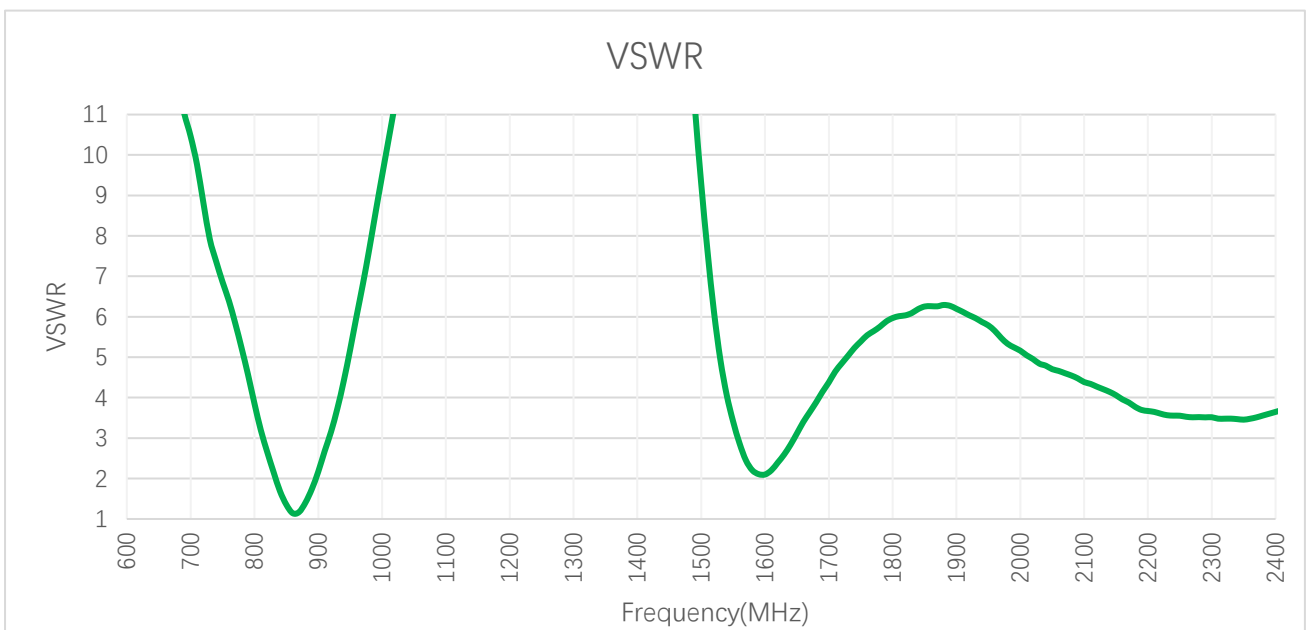
# 2 Drawing



# 3 Detailed Performance

## 3.1. S-Parameter Test

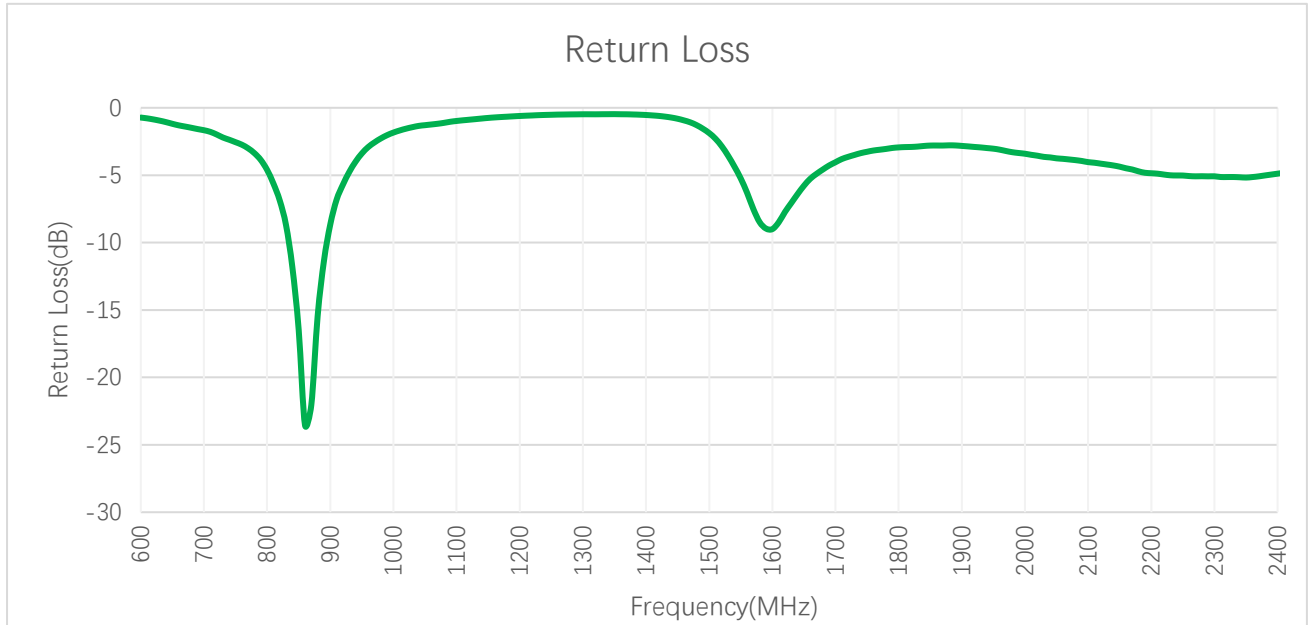
### 3.1.1. VSWR



**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>	-	-	9.8	2.2	2.2	6.0	-	4.6	5.2	6.3
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>3600</b>	<b>4000</b>	<b>4700</b>	<b>5500</b>	<b>6000</b>
<b>VSWR</b>	5.8	4.1	-	-	-	-	-	-	-	-

**3.1.2. Return Loss**



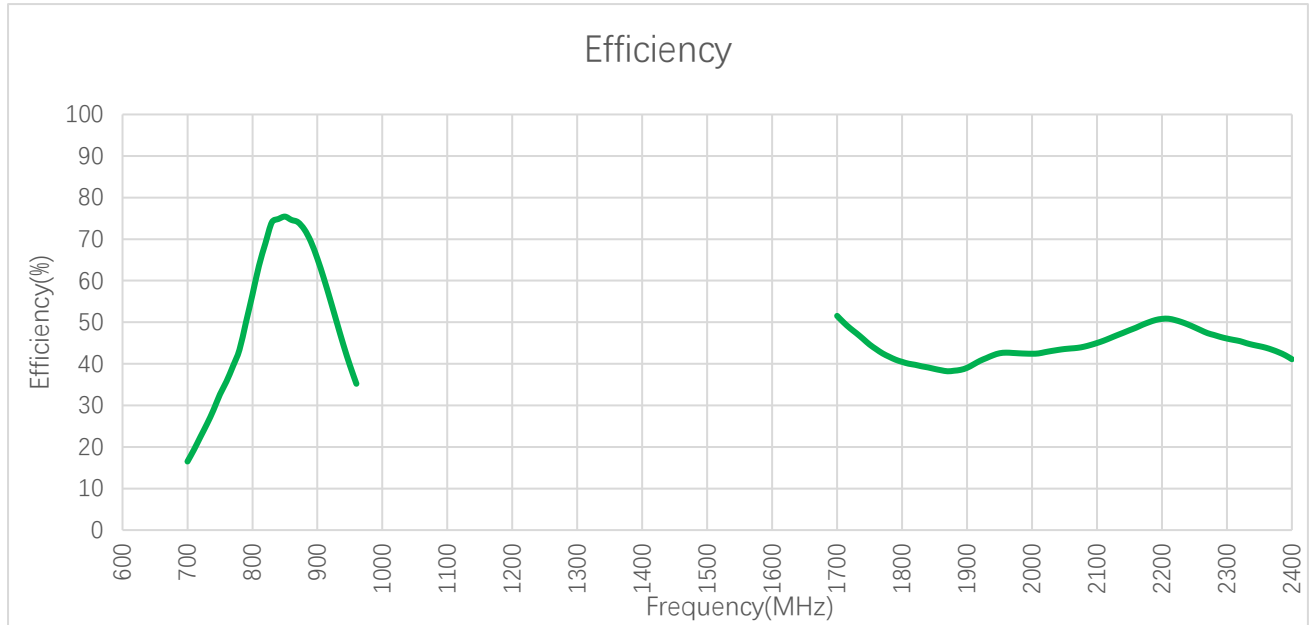
**Return Loss (dB)**

<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>	-	-	-1.8	-8.7	-8.7	-2.9	-	-3.8	-3.4	-2.8
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>3600</b>	<b>4000</b>	<b>4700</b>	<b>5500</b>	<b>6000</b>
<b>Return Loss (dB)</b>	-3.0	-4.3	-	-	-	-	-	-	-	-



### 3.2. Radiation Performance Test

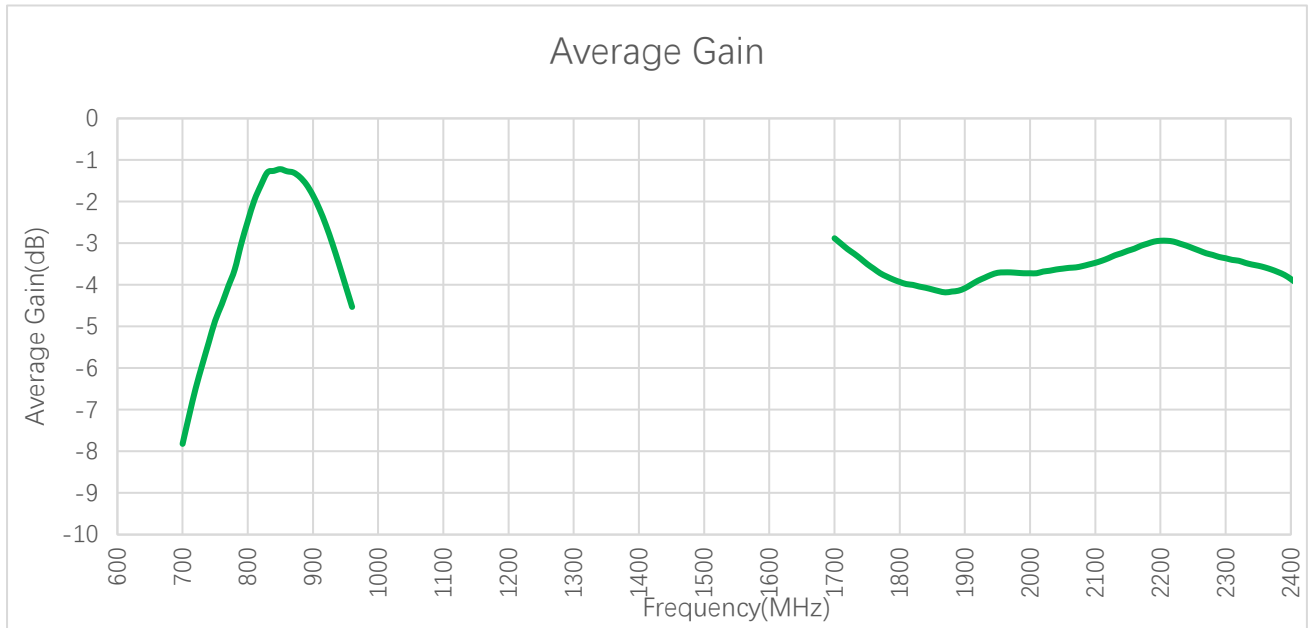
#### 3.2.1. Efficiency



**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>	-	-	19.3	74.1	65.3	35.2	-	50.0	46.0	38.3
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>3600</b>	<b>4000</b>	<b>4700</b>	<b>5500</b>	<b>6000</b>
<b>Efficiency (%)</b>	42.5	47.4	-	-	-	-	-	-	-	-

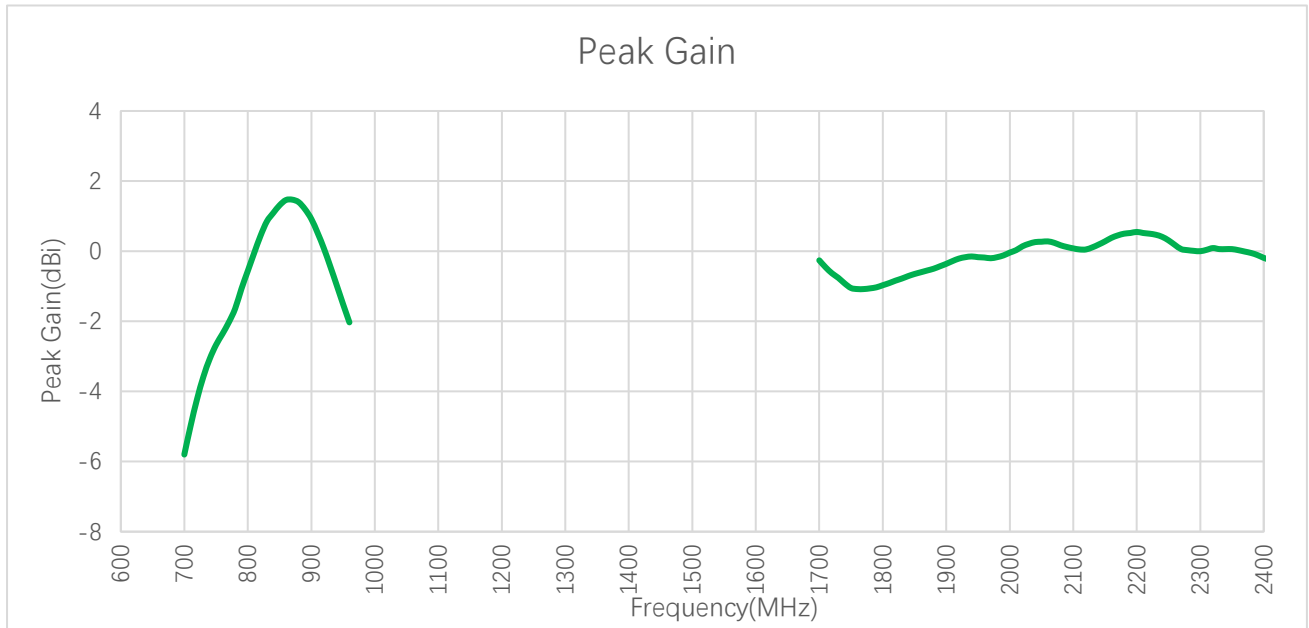
**3.2.2. Average Gain**



**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>	-	-	-7.1	-1.3	-1.9	-4.5	-	-3.0	-3.4	-4.2
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>3600</b>	<b>4000</b>	<b>4700</b>	<b>5500</b>	<b>6000</b>
<b>Average Gain (dB)</b>	-3.7	-3.2	-	-	-	-	-	-	-	-

**3.2.3. Peak Gain**



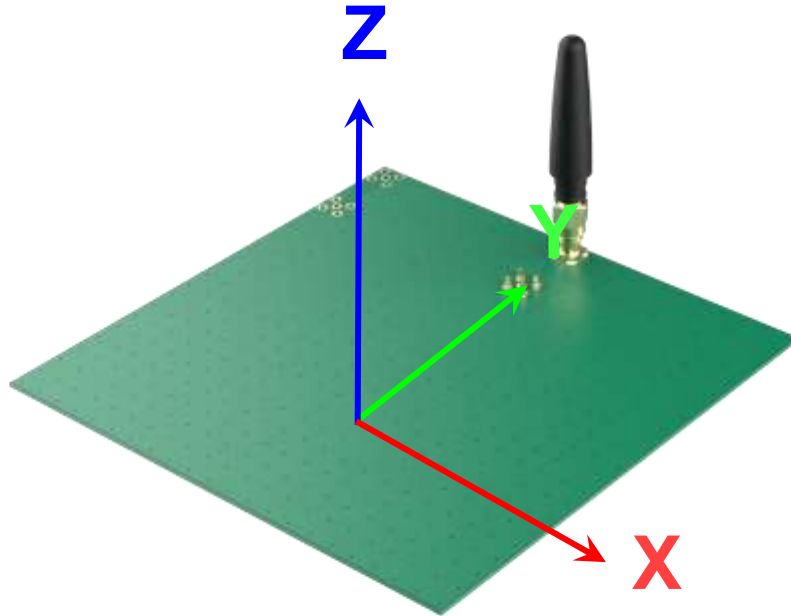
**Peak Gain (dBi)**

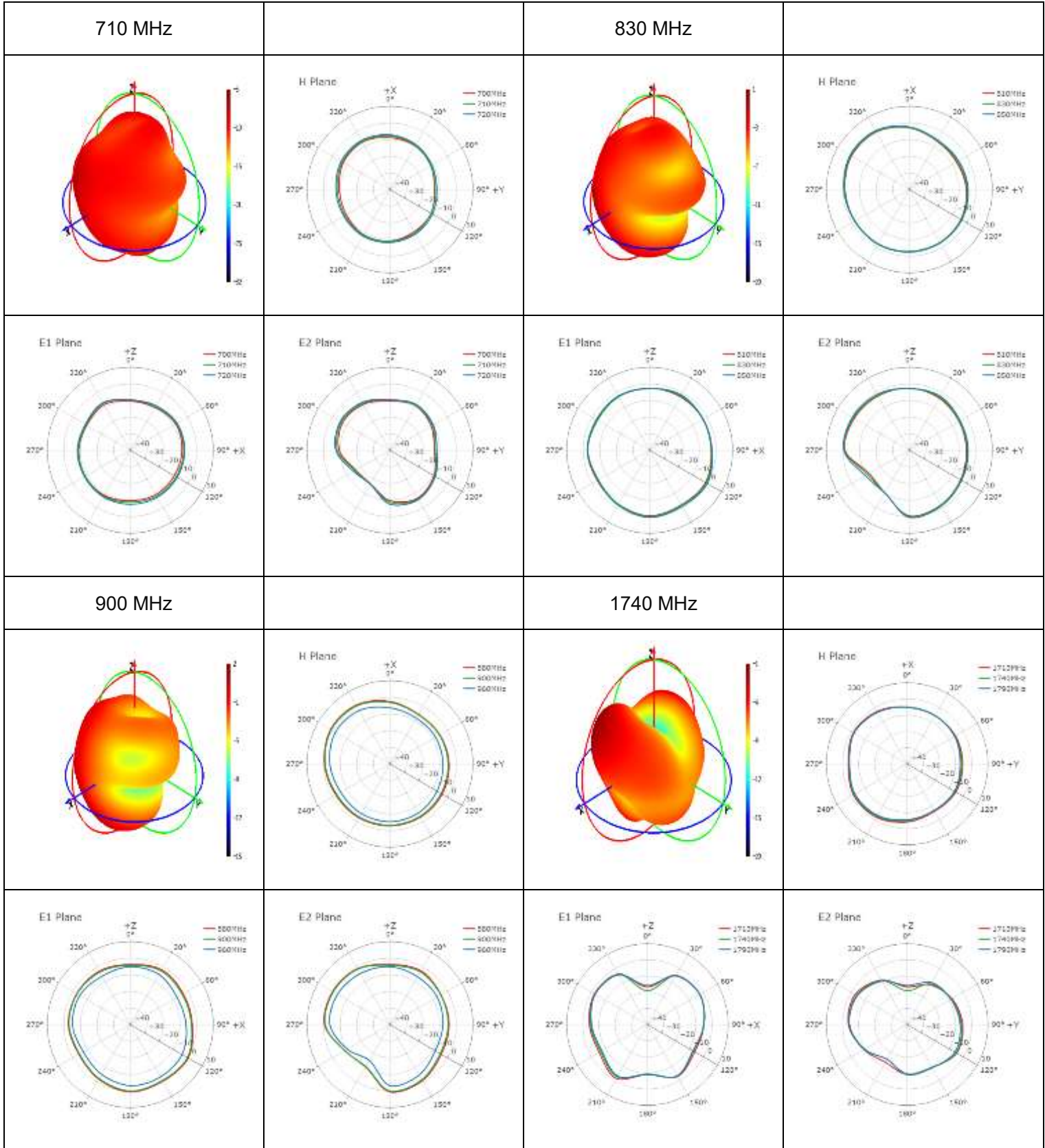
<b>Frequency (MHz)</b>	<b>600</b>	<b>630</b>	<b>710</b>	<b>830</b>	<b>900</b>	<b>960</b>	<b>1440</b>	<b>1710</b>	<b>1740</b>	<b>1880</b>
<b>Peak Gain (dBi)</b>	-	-	-5.0	0.9	0.9	-2.0	-	-0.5	-0.9	-0.5
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>3600</b>	<b>4000</b>	<b>4700</b>	<b>5500</b>	<b>6000</b>
<b>Peak Gain (dBi)</b>	-0.2	0.2	-	-	-	-	-	-	-	-

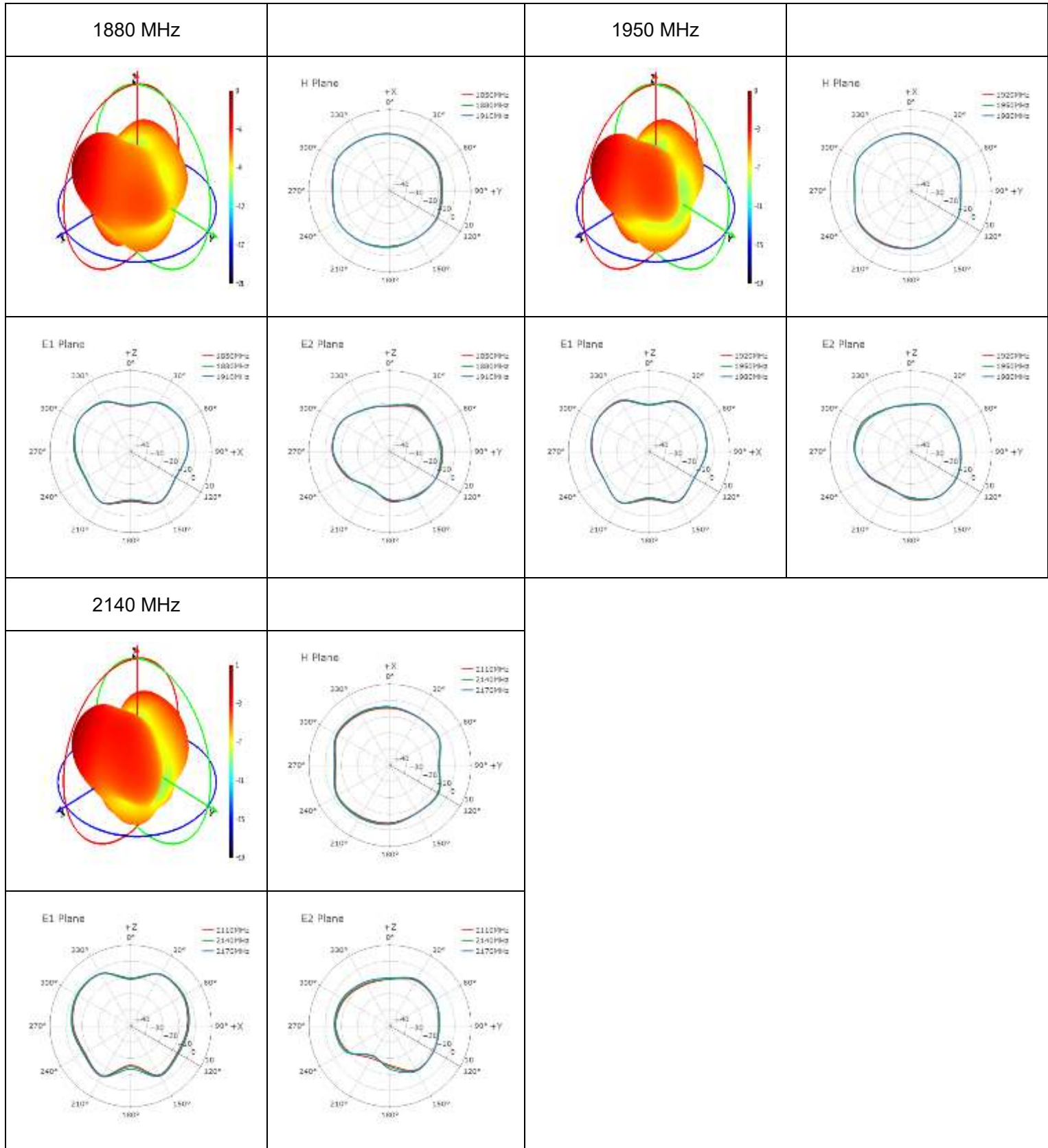
### 3.2.4. 3D & 2D Radiation Pattern

#### 3.2.4.1. Test Condition: On 130 mm × 130 mm EVB

- Test Chamber: GL-S-1


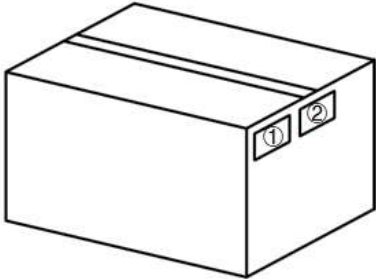
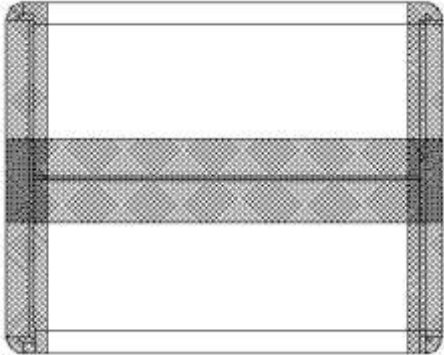






# 4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>Put the product in a one-piece bag; Each one-piece bag contains 10 products.</p>
2		<p>400 pcs antenna products in a PE bag. (400 PCS / PE Bag)</p>
3		<p>(6 PE Bags / Carton Box) (2400 PCS Antennas / Carton Box)</p> <p><u>Carton Size:</u> <u>L × W × H = 405 × 293 × 185 mm</u></p>

4		Put a bubble bag on the top of product.
5		<b>Position for Attaching Labels</b> ① Carton Label ② Quality Label
6		<b>Sealing Cartons</b> “工” type sealing cartons



# 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
-	2022-07-08	Jason LONG	Creation of the document
1.0	2022-07-08	Jason LONG	First official release
1.1	2022-10-17	Aria CHU	Updated the IP rating.
1.2	2023-01-15	Bunny ZHANG	Updated the antenna weight (Chapter 3).
2.0	2023-04-27	Joyful HUANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
2.1	2024-01-02	Lucky FENG	Updated casing material and operating temperature (Chapter 1.2)

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