



# Antenna Datasheet

**Product OC:** YECT011W1A

**Version:** 1.1

**Date:** 2024-11-05

**Status:** Released

**Product Name:** External 4G Antenna

**Key Features:**

Frequency Band: 700–960 MHz, 1710–2690 MHz

Dimensions:  $\Phi 13 \times 199 \times 22$  mm

Efficiency: Up to 76.8 %

RoHS Compliant

# Overview

The Quectel YECT011W1A is an external 4G terminal-mount omni-directional antenna with dimensions of  $\Phi 13 \times 199 \times 22$  mm, it covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. can be mounted on the surface of devices via screw.

YECT011W1A is a high-performance antenna, which can be installed outside the device to barely influenced by the internal environment of devices. We provide more high-performance antennas with different sizes and network standards for providing a more flexible and reliable high-performance antenna solution for products in external application environments.

YECT011W1A allows high efficiency, stable signal transmission and reception for 4G dual bands from 700-960 MHz and 1710-2690 MHz.

Typical Applications Include:

- Oracle Database Unloader
- Router external antenna
- IoT gateway

Quectel provides customized service for optimization of your devices, we have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

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# 1 Specification

Test Condition: Free Space

## 1.1. Electrical

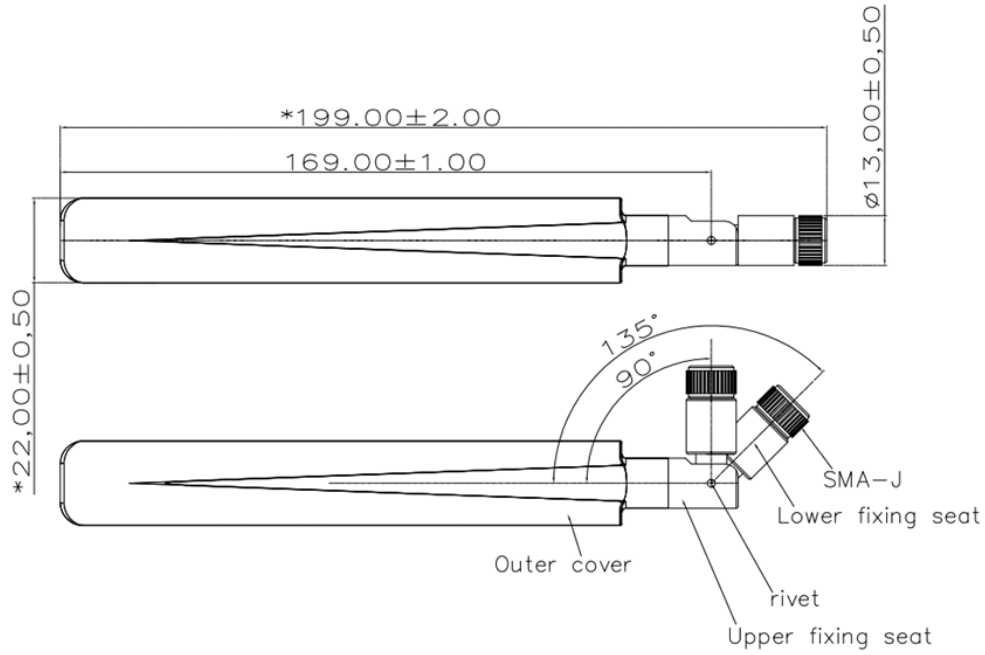
Electrical	
Frequency Range	700–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

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	-	1.8	2.6	-	1.7	1.6	2.0	2.1	-	-	-	-
Max. Return Loss (dB)	-	-10.8	-7.1	-	-11.7	-13.0	-9.3	-9.0	-	-	-	-
AVG Eff. (%)	-	47.2	40.3	-	51.1	67.6	68.7	55.0	-	-	-	-
AVG AVG Gain (dB)	-	-3.3	-4.0	-	-3.0	-1.7	-1.6	-2.6	-	-	-	-
Max. Peak Gain (dBi)	-	1.5	2.0	-	2.2	2.1	1.9	1.7	-	-	-	-
VSWR	≤ 2.6											
Return Loss	≤ -7.1 dB											
Peak Gain	≤ 2.2 dBi											

## 1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 13 × 199 × 22 mm
Material & Color	ABS & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 25.35 g
Environmental	
Operation Temperature	-30 °C to +70 °C
Storage Temperature	-30 °C to +70 °C
RoHS Compliant	Yes

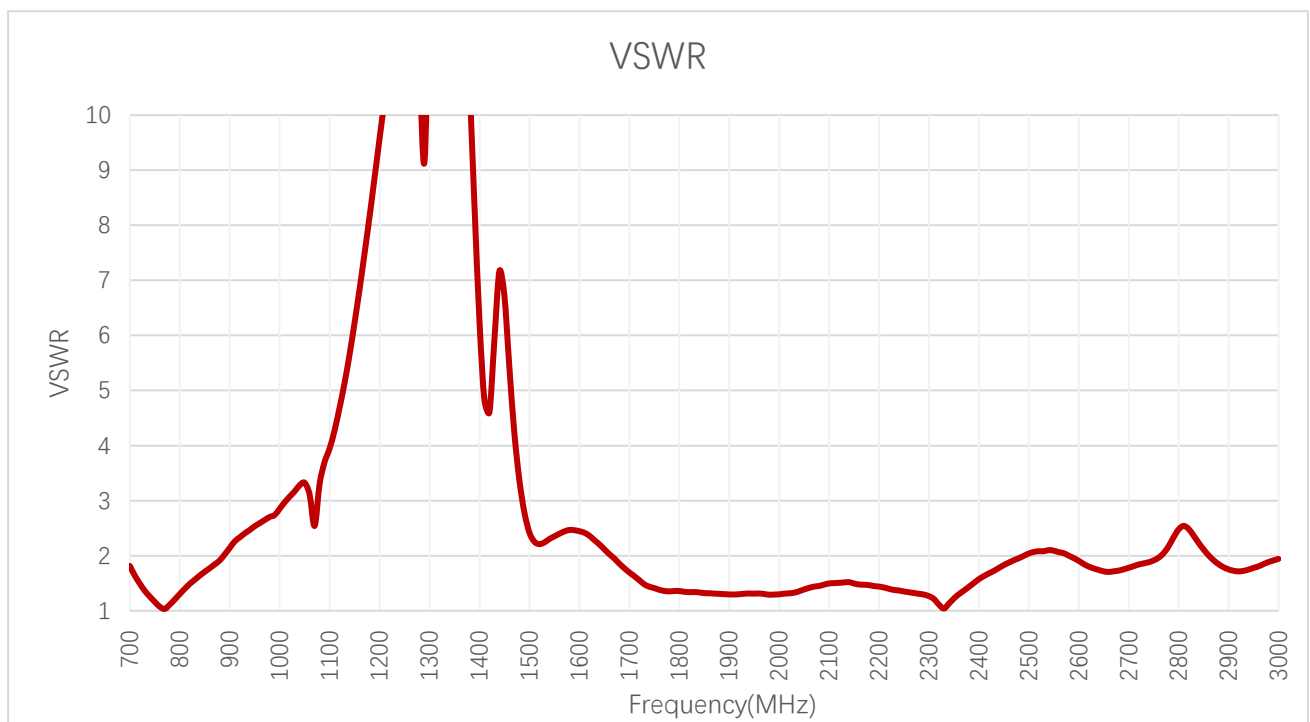
# 2 Drawing



# 3 Detailed Performance

## 3.1. S-Parameter Test

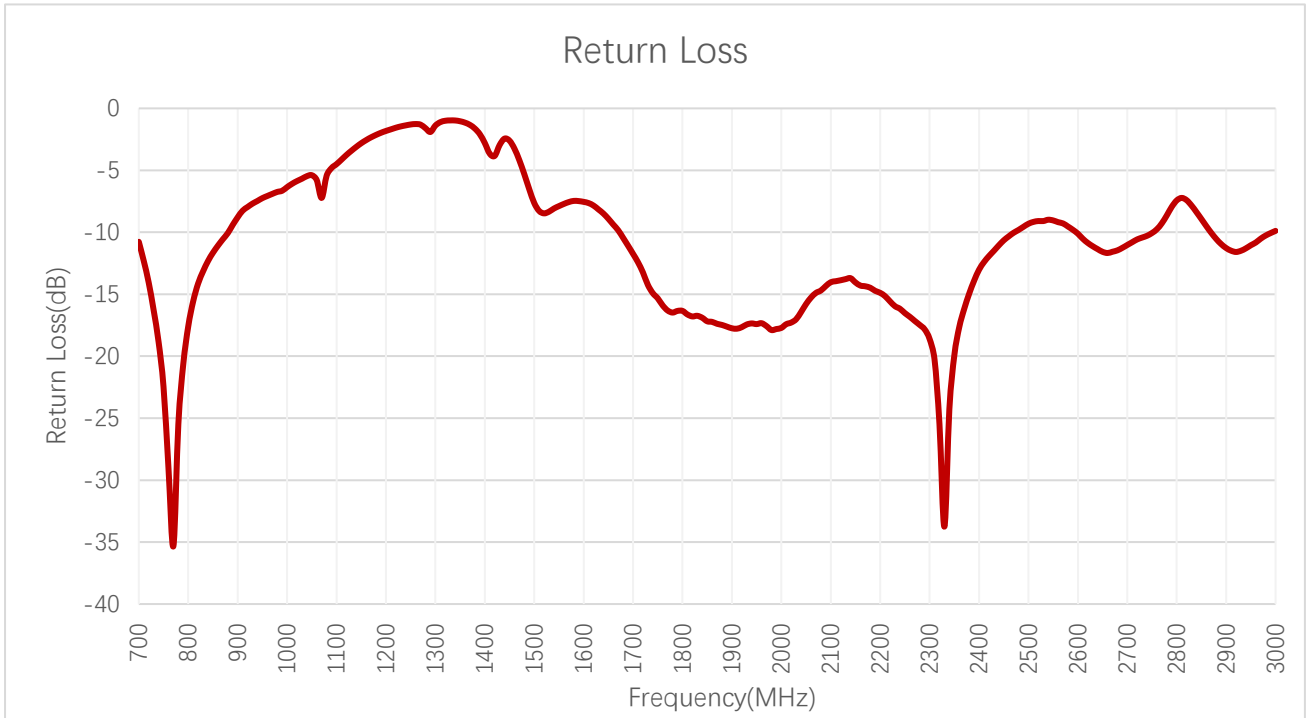
### 3.1.1. VSWR



**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>	-	-	1.6	1.6	2.1	2.6	-	1.6	1.4	1.3
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>2690</b>	<b>4700</b>	<b>5000</b>	<b>5500</b>	<b>6000</b>
<b>VSWR</b>	1.3	1.5	1.2	1.8	1.9	1.8	-	-	-	-

**3.1.2. Return Loss**



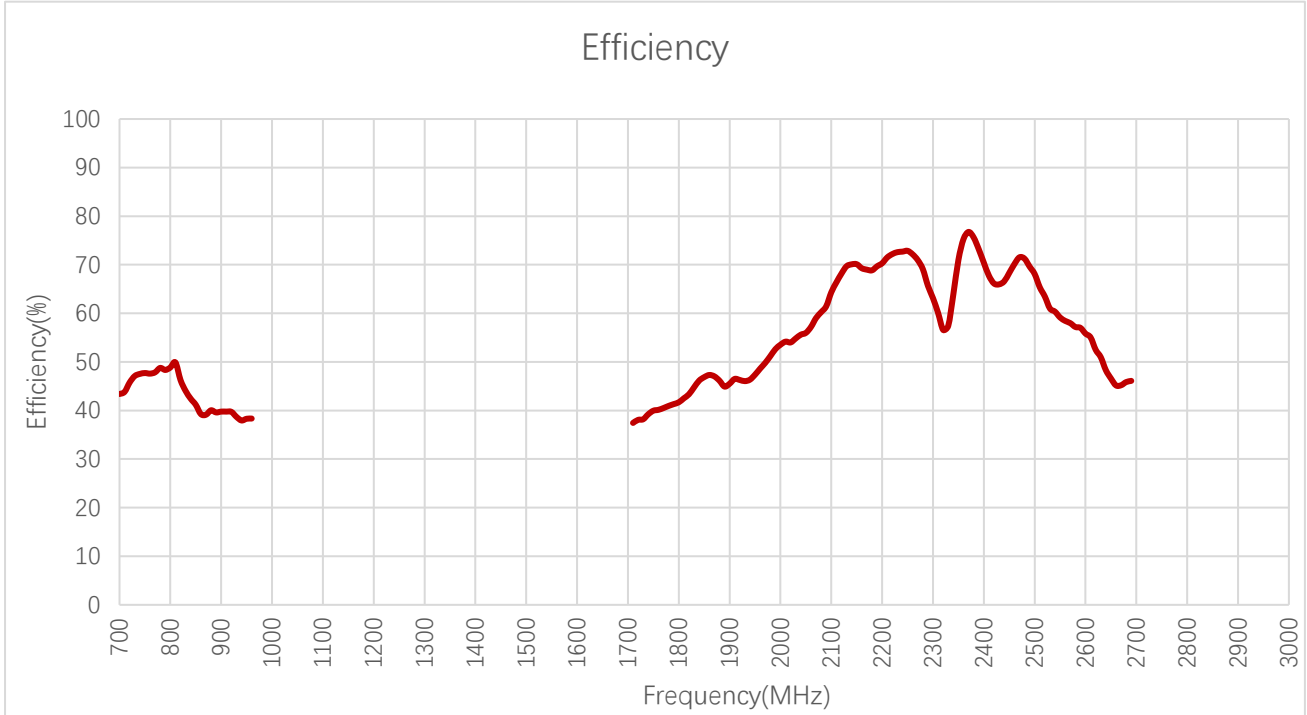
**Return Loss (dB)**

<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>	-	-	-12.3	-13.2	-8.8	-7.1	-	-12.4	-14.9	-17.5
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>2690</b>	<b>4700</b>	<b>5000</b>	<b>5500</b>	<b>6000</b>
<b>Return Loss (dB)</b>	-17.4	-13.7	-19.9	-10.7	-10.1	-11.3	-	-	-	-



### 3.2. Radiation Performance Test

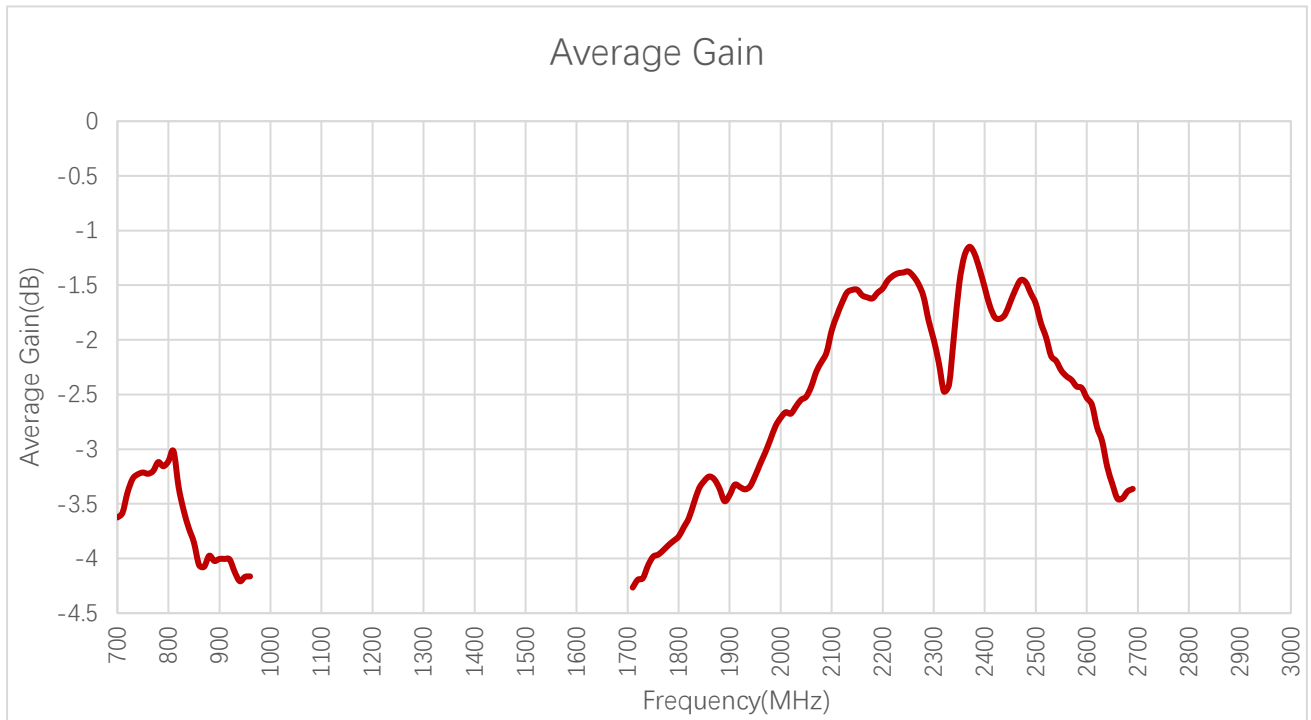
#### 3.2.1. Efficiency



**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>	-	-	43.8	44.0	39.8	38.3	-	37.4	39.2	46.2
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>2690</b>	<b>4700</b>	<b>5000</b>	<b>5500</b>	<b>6000</b>
<b>Efficiency (%)</b>	47.4	70.1	71.0	68.3	55.8	46.1	-	-	-	-

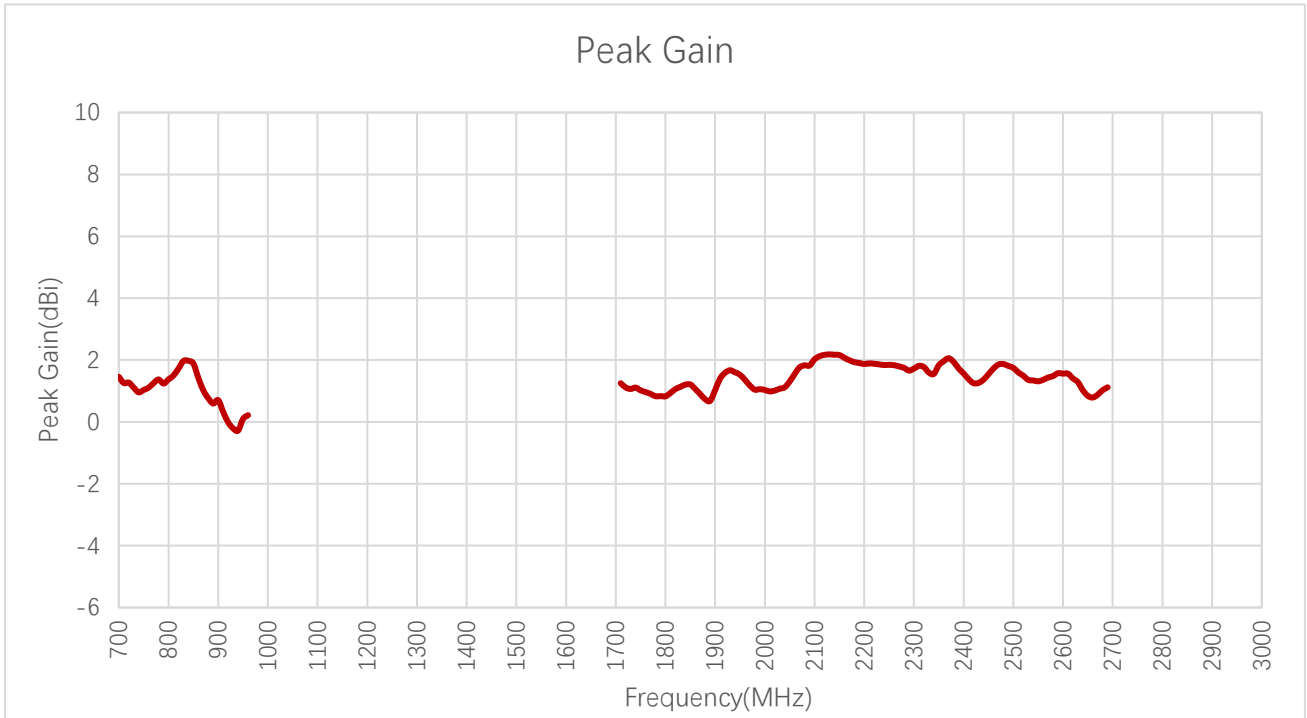
**3.2.2. Average Gain**



**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>	-	-	-3.6	-3.6	-4.0	-4.2	-	-4.3	-4.1	-3.4
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>2690</b>	<b>4700</b>	<b>5000</b>	<b>5500</b>	<b>6000</b>
<b>Average Gain (dB)</b>	-3.2	-1.5	-1.5	-1.7	-2.5	-3.4	-	-	-	-

**3.2.3. Peak Gain**

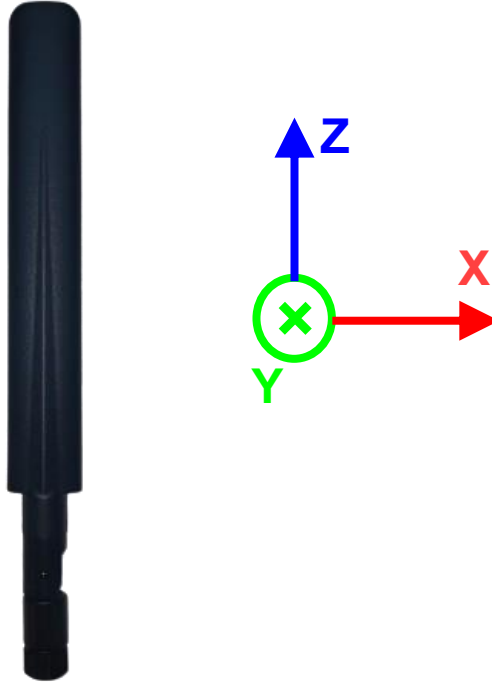


**Peak Gain (dBi)**

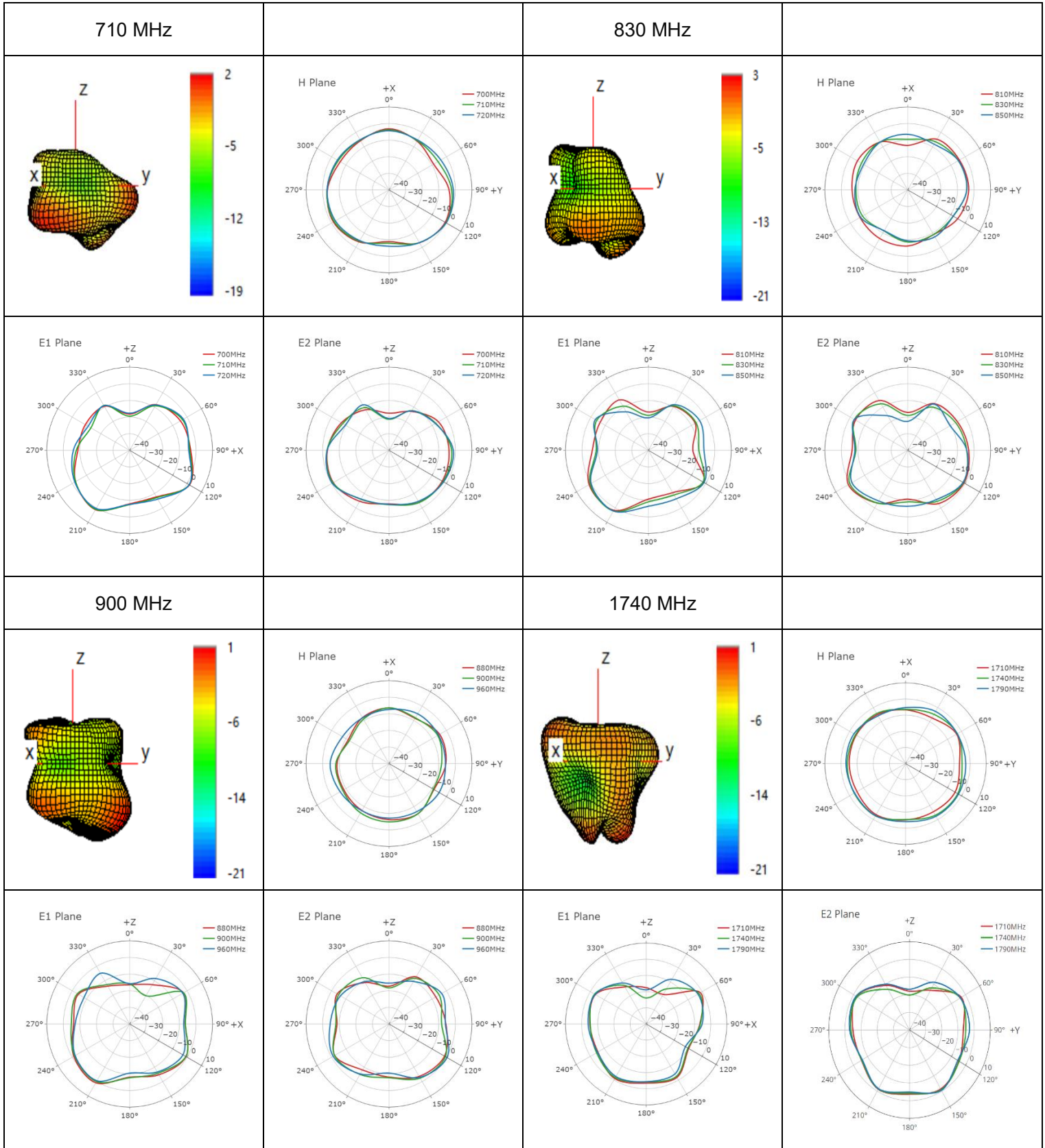
<b>Frequency (MHz)</b>	<b>600</b>	<b>630</b>	<b>710</b>	<b>830</b>	<b>900</b>	<b>960</b>	<b>1440</b>	<b>1710</b>	<b>1740</b>	<b>1880</b>
<b>Peak Gain (dBi)</b>	-	-	1.3	2.0	0.7	0.2	-	1.3	1.1	0.7
<b>Frequency (MHz)</b>	<b>1950</b>	<b>2140</b>	<b>2350</b>	<b>2450</b>	<b>2600</b>	<b>2690</b>	<b>4700</b>	<b>5000</b>	<b>5500</b>	<b>6000</b>
<b>Peak Gain (dBi)</b>	1.5	2.2	1.8	1.5	1.6	1.1	-	-	-	-

### 3.2.4. 2D Radiation Pattern

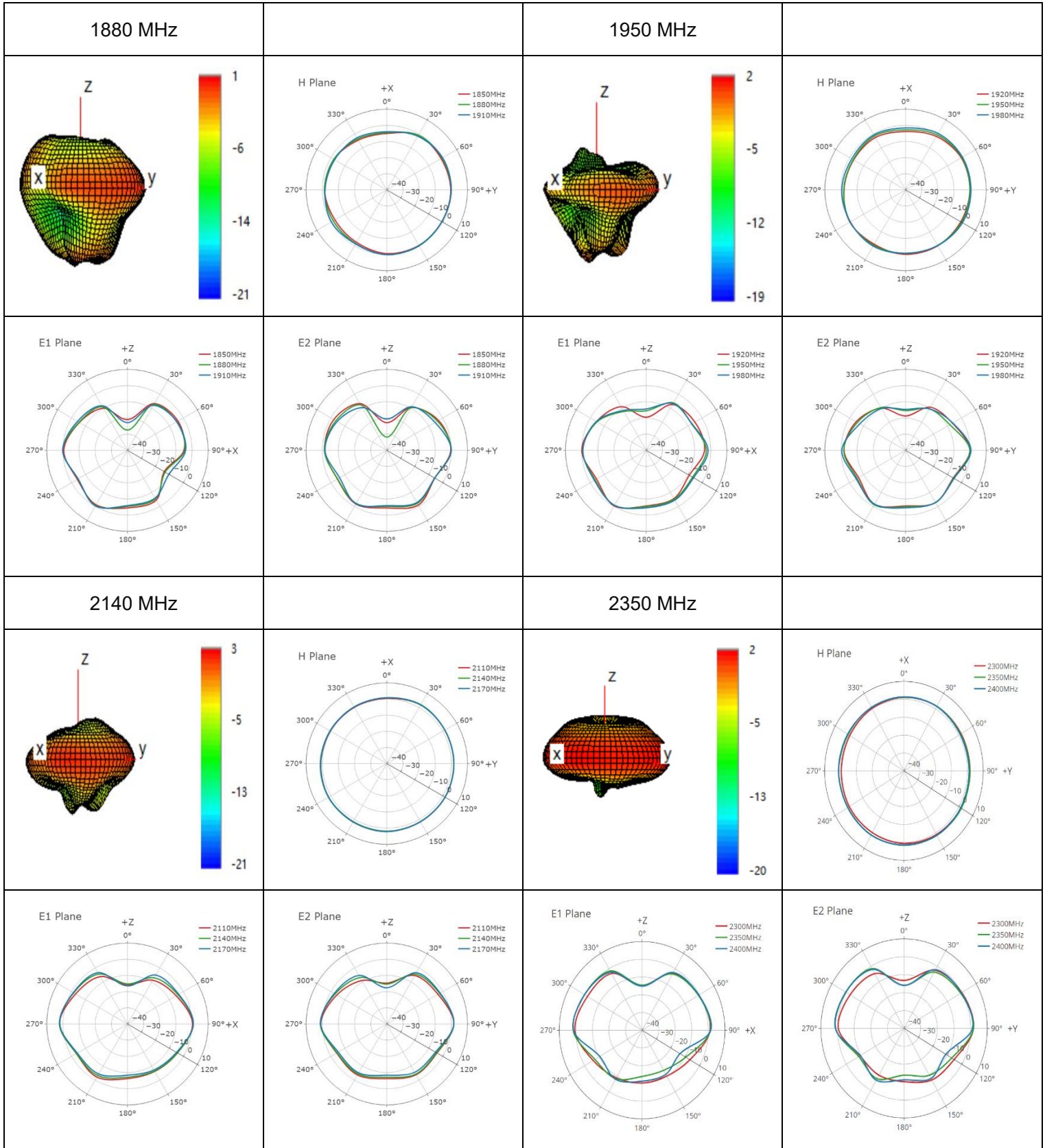
- Test Condition: Free Space
- Test Chamber: GL-G-1



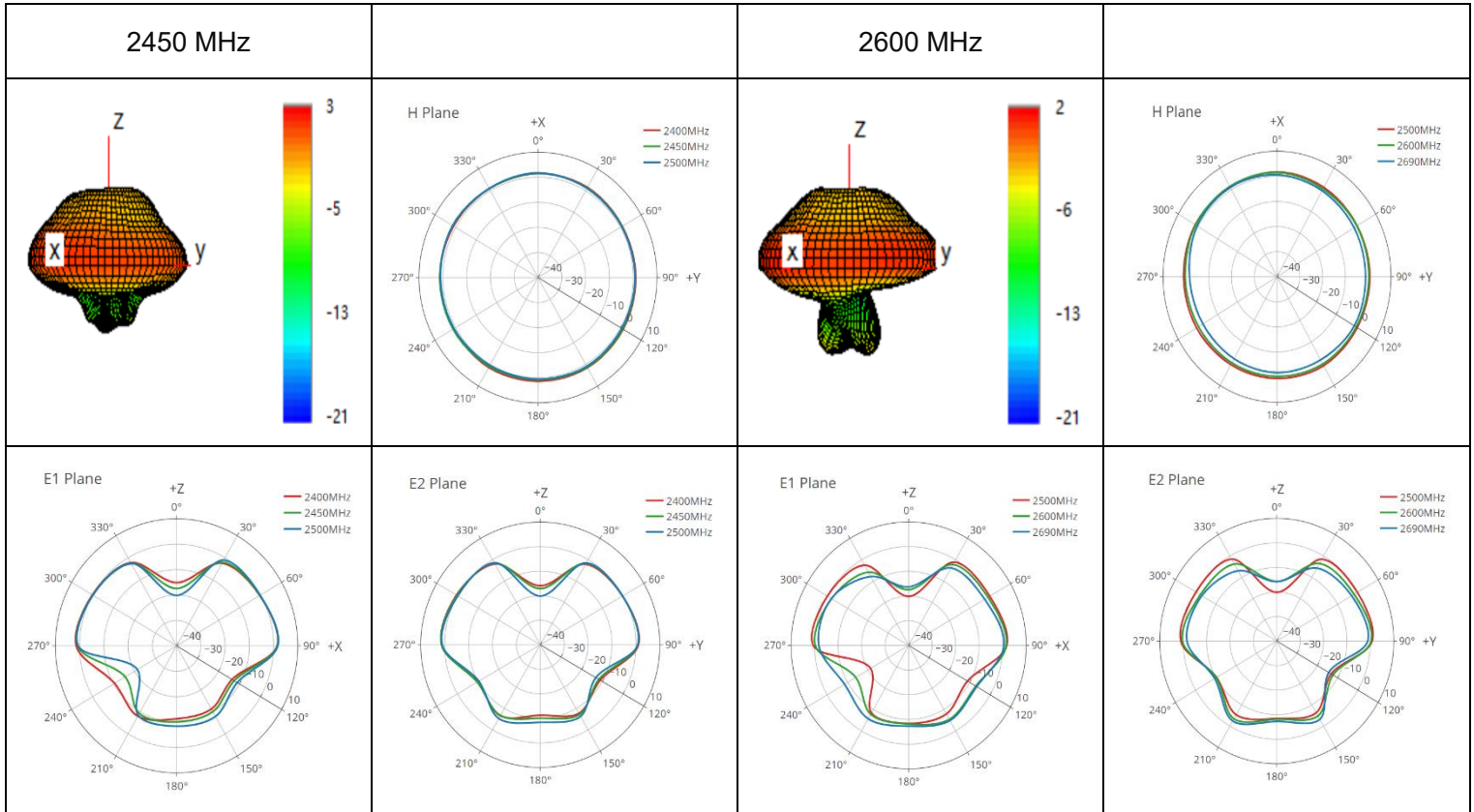
● 4G




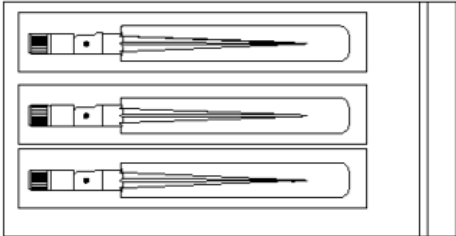
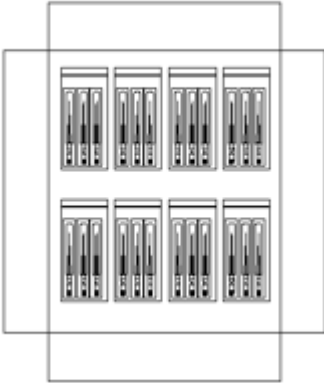
● 4G



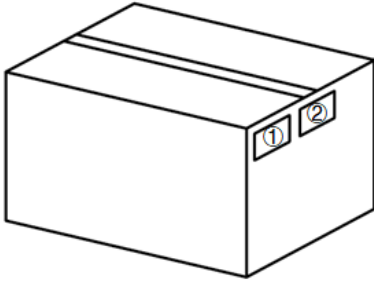
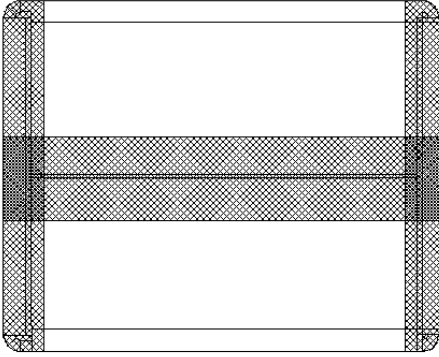
● 4G



# 4 Packaging

Step	Packaging picture / 2D picture	Description
1		<p>1 antenna product in a small PE bag. 1 PCS / Small PE Bag</p>
2		<p>40 antenna products in a big PE bag. 40 PCS / Big PE Bag</p>
3		<p>10 PE Bags / Carton Box (400 PCS / Carton Box) Estimated Quantity</p> <p>Products that cannot fill the entire carton box are packed in a suitable size carton box.</p> <p><u>Carton Size:</u> <u>L × W × H = 325 × 325 × 200 mm</u></p>



<p>4</p>		<p><b>Position for Attaching Labels</b></p> <ul style="list-style-type: none"> <li>① Carton Label</li> <li>② Quality Label</li> </ul>
<p>5</p>		<p><b>Sealing Cartons</b> “I” type sealing cartons</p>
<p>6</p>	<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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# Revision History

Version	Date	Author	Note
-	2024-03-25	Sly LIU/ Lucky FENG/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-03-25	Sly LIU/ Lucky FENG/ David LIU/ Rainey LIAO	First official release
1.1	2024-11-05	Rainey LIAO	Updated the overview.

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