

Quectel_YF0028AA_LTE_ANT_X4

Antenna Datasheet

Product OC: YF0028AA

Version: 2.4

Date: 2025-08-13

Status: Released

Product Name: 4G Adhesive Mount FPC + Cable Dipole Embedded
Antenna

Key Features:

Frequency Band: 698–2690 MHz

Dimensions: 94 mm × 21 mm

Efficiency: Up to 77.1 %

RoHS and REACH Compliant

Overview

This Quectel embedded 4G FPC antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal antenna for a smooth and stable connection with high-efficiency data transmission even under the influence of the device's internal structure. Ground plane independent, it's designed to be mounted directly to the underside of either a plastic or non-metallic enclosure. Ease of integration with a cable and connector which can be customized to meet your product design and RF module.

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1 Specification

Test Condition: Stick to ABS board on 130 mm × 130 mm EVB board

1.1. Electrical

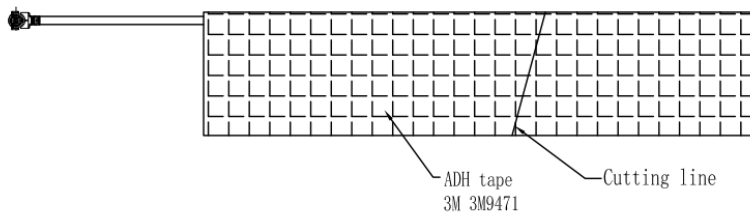
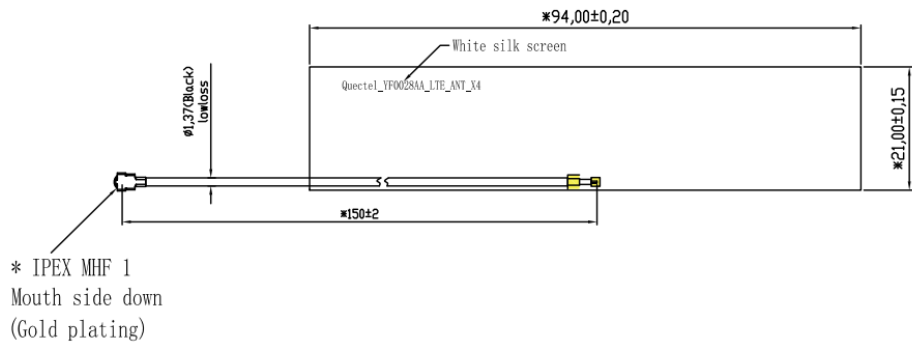
Electrical	
Frequency Range	698–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail												
Band	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
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
Max. VSWR	-	5.2	6.4	-	2.0	1.8	1.4	1.6	-	-	-	
Max. Return Loss (dB)	-	-3.4	-2.7	-	-9.6	-10.6	-16.4	-12.8	-	-	-	
AVG Eff. (%)	-	50.2	59.5	-	69.5	68.8	69.2	68.6	-	-	-	
AVG AVG Gain (dB)	-	-3.0	-2.4	-	-1.6	-1.6	-1.6	-1.6	-	-	-	
Max. Peak Gain (dBi)	-	0.9	1.9	-	3.6	2.7	3.5	3.9	-	-	-	
VSWR	≤ 6.4											
Return Loss	≤ -2.7 dB											
Peak Gain	≤ 3.9 dBi											

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	94 mm × 21 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.37 & Black & 150 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 1.5 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

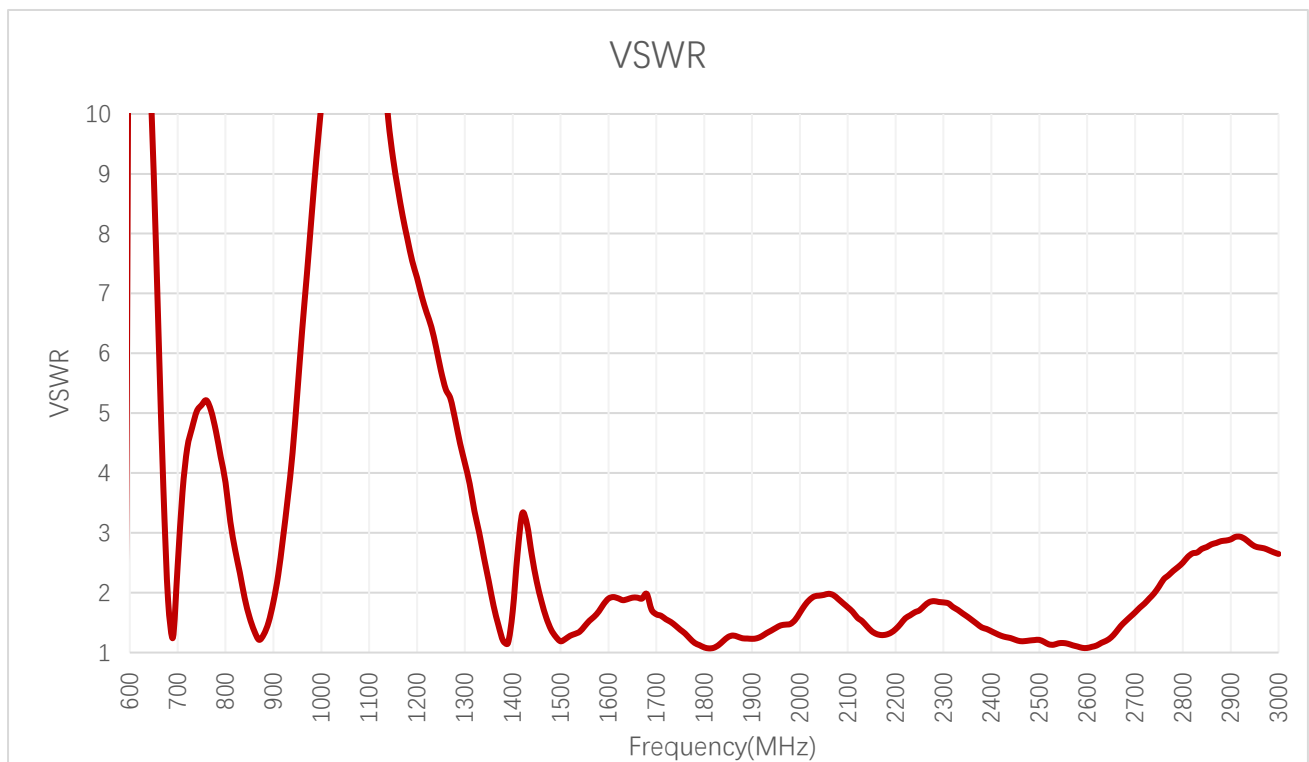
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

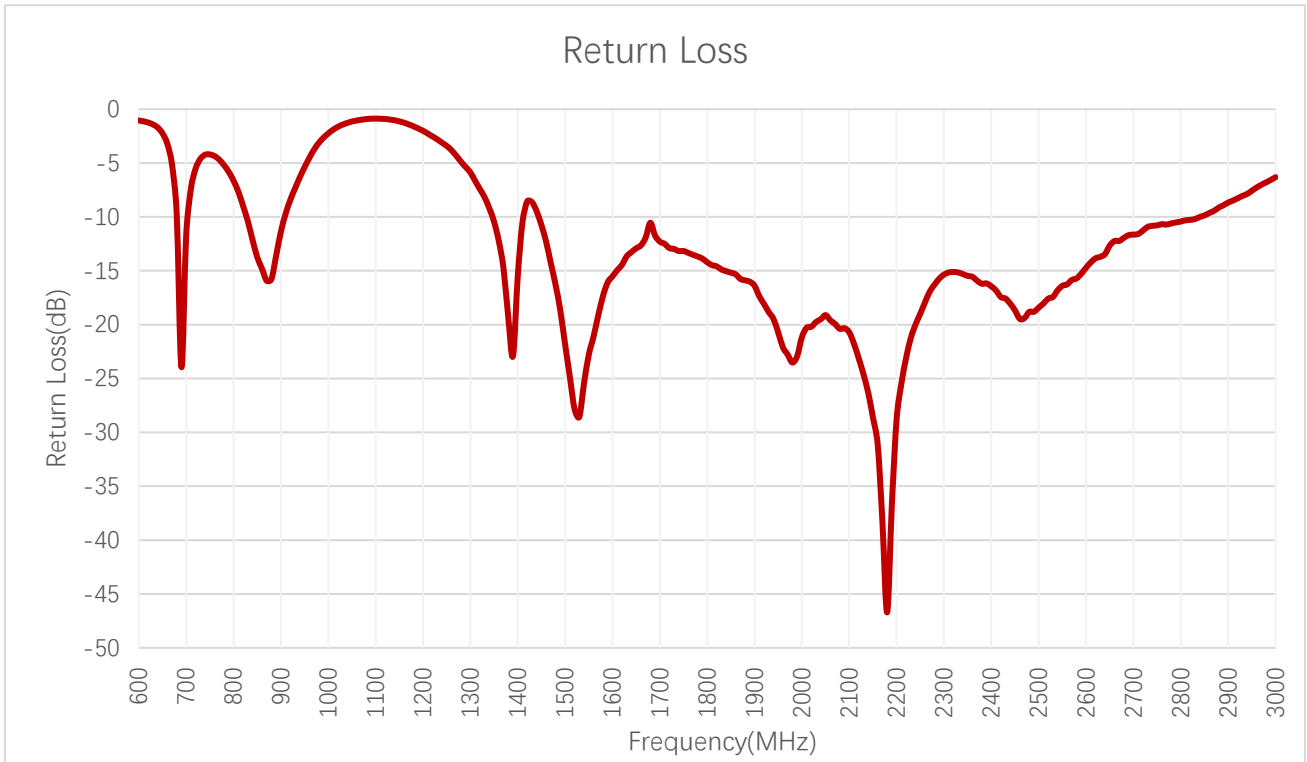
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	3.7	2.3	1.8	6.4	-	1.6	1.5	1.2
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	1.4	1.4	1.6	1.2	1.1	1.6	-	-	-	-

3.1.2. Return Loss

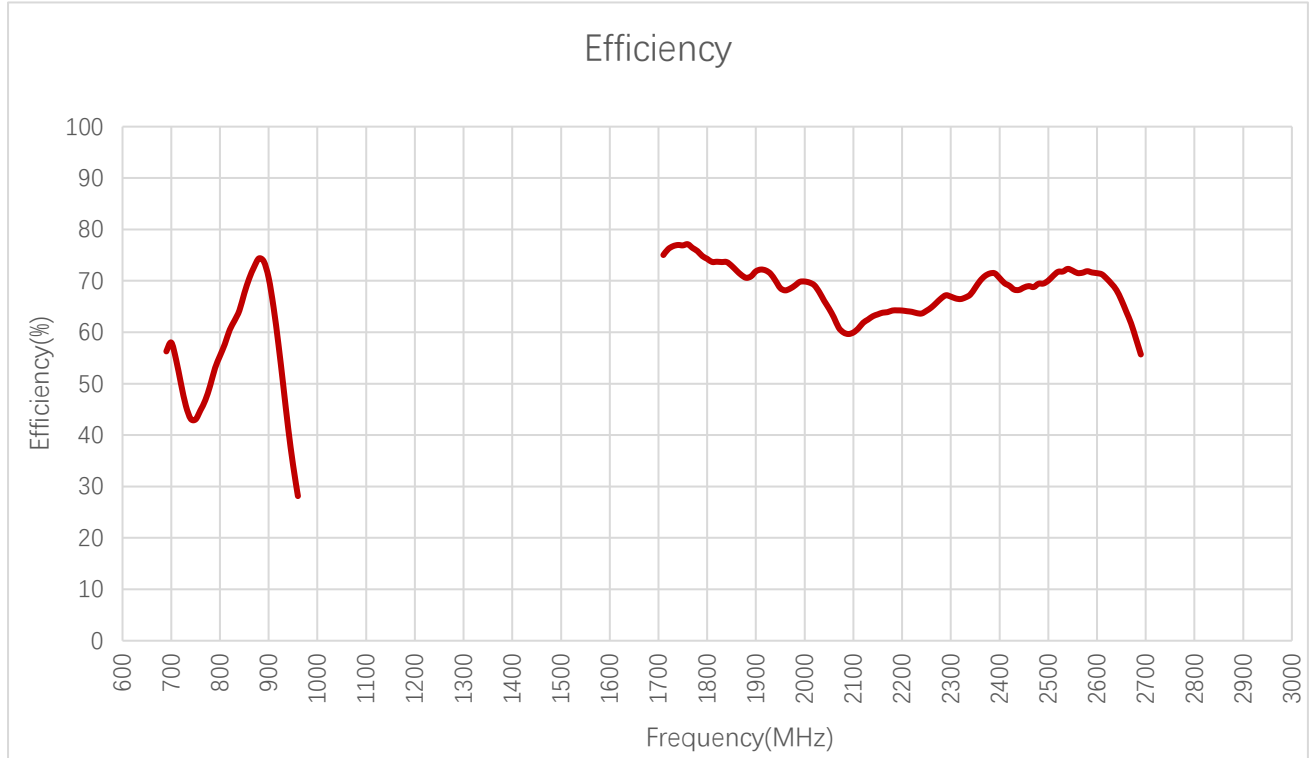


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-4.8	-8.0	-10.5	-2.7	-	-12.6	-14.7	-19.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	-15.3	-14.9	-12.7	-20.3	-28.6	-12.8	-	-	-	-

3.2. Radiation Performance Test

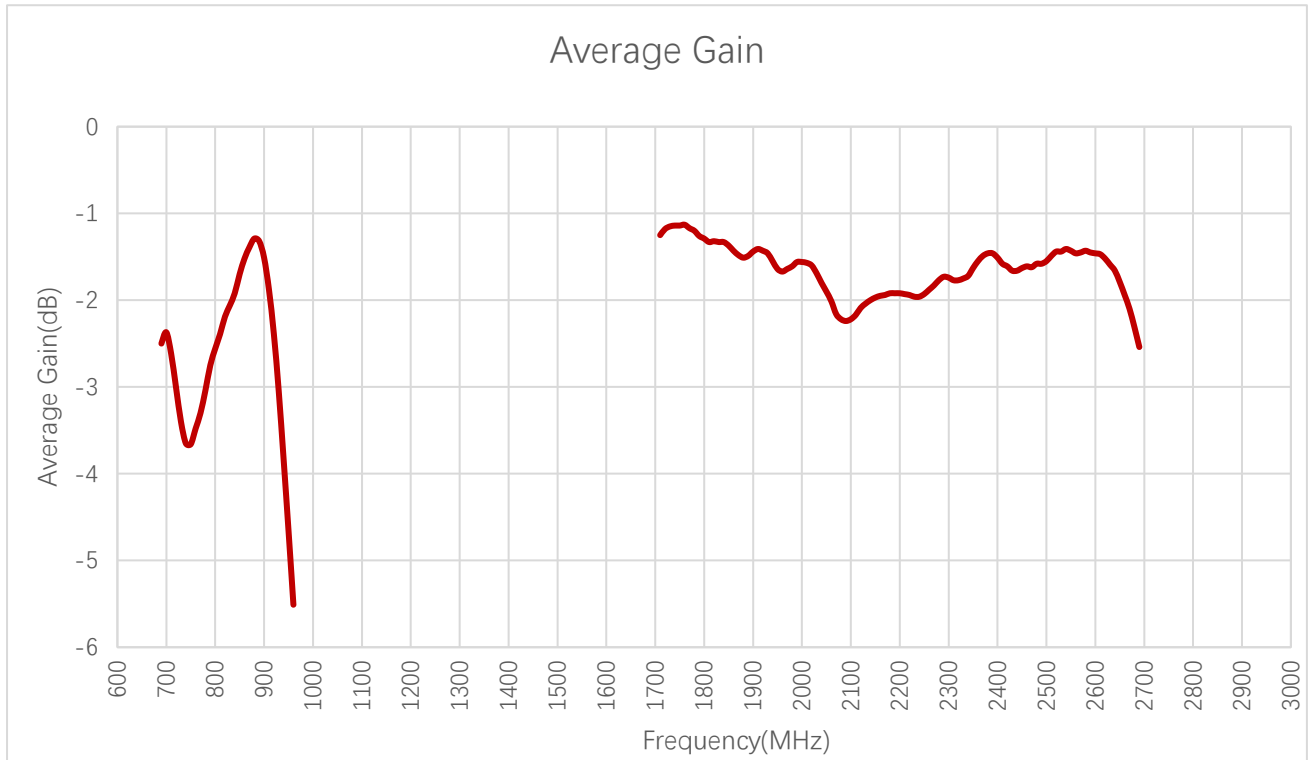
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	54.7	62.3	70.6	28.1	-	75.0	77.0	70.6
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	68.6	63.1	68.7	68.7	71.5	55.7	-	-	-	-

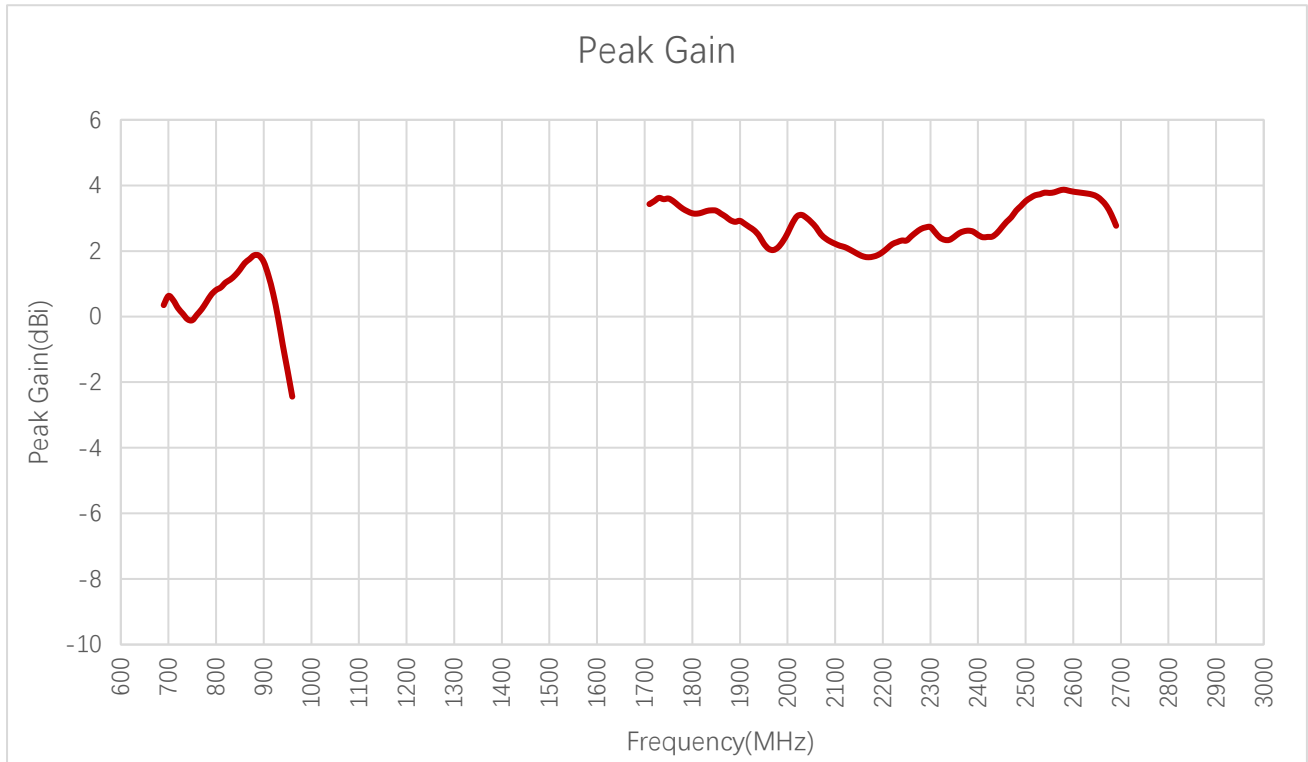
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-2.6	-2.1	-1.5	-5.5	-	-1.3	-1.1	-1.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	-1.6	-2.0	-1.6	-1.6	-1.5	-2.5	-	-	-	-

3.2.3. Peak Gain

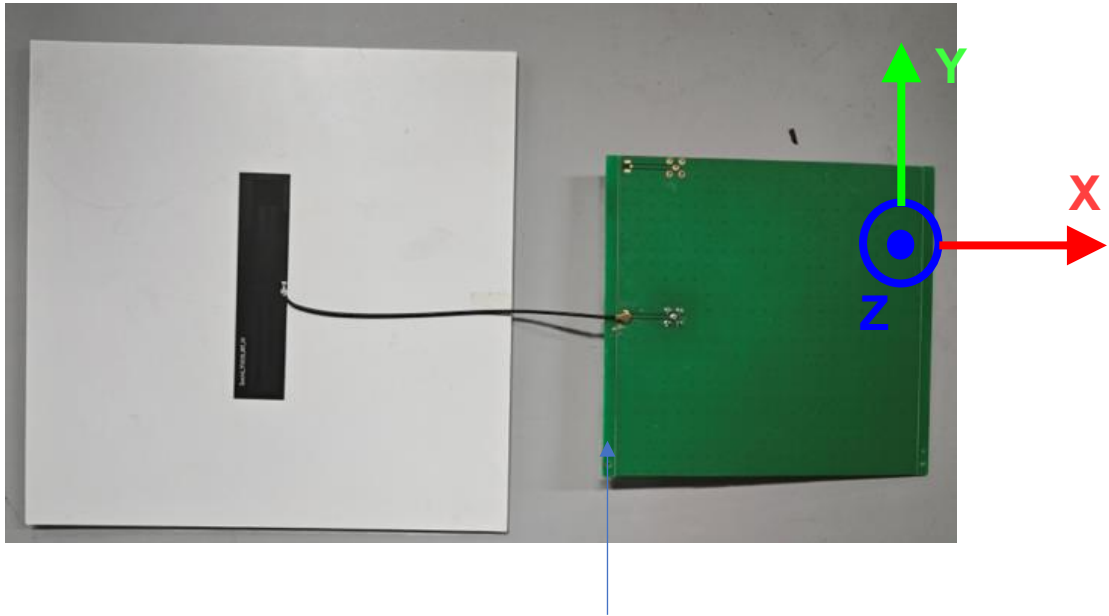


Peak Gain (dBi)

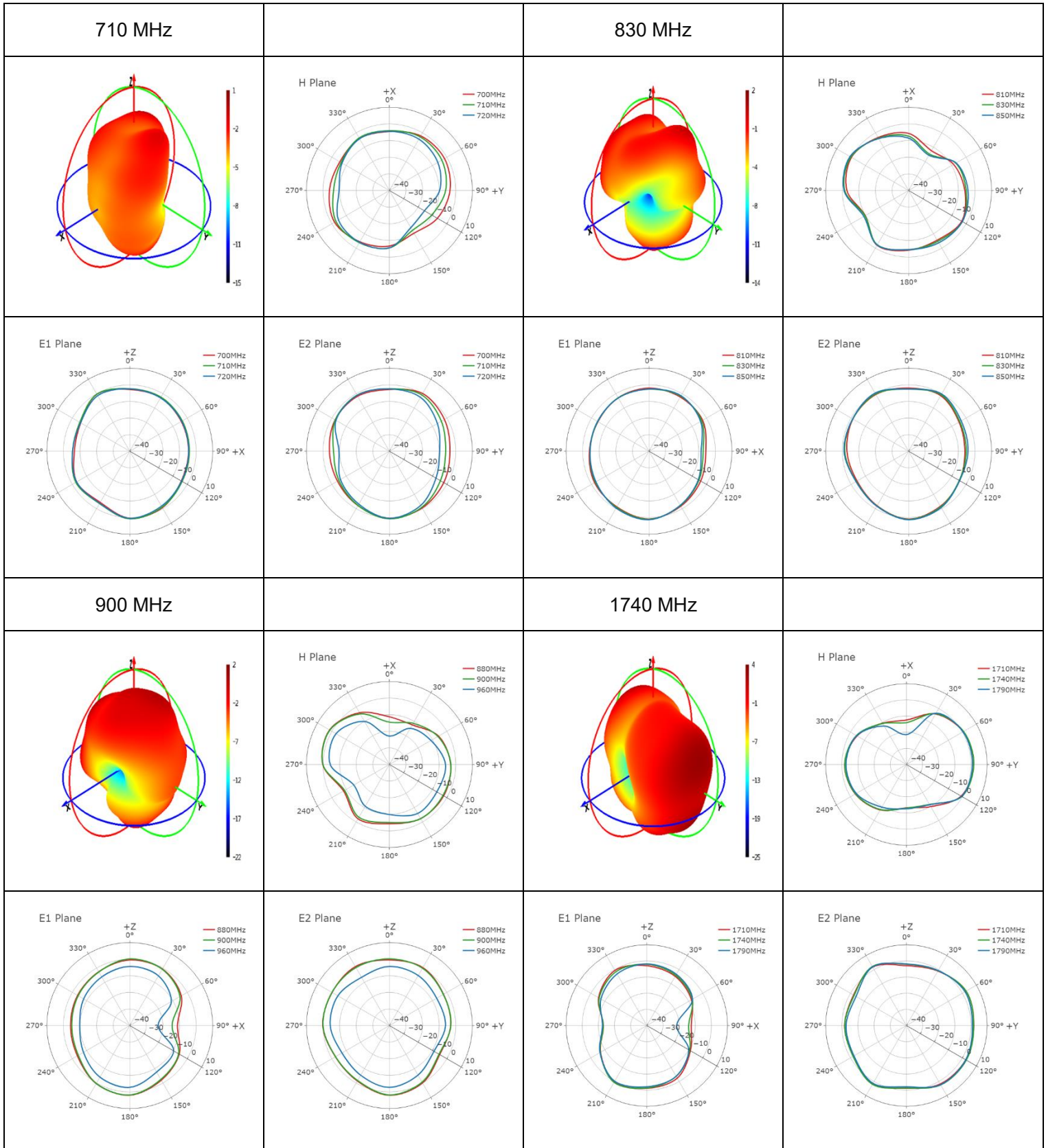
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	0.5	1.1	1.7	-2.4	-	3.4	3.6	2.9
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	2.2	2.0	2.4	2.7	3.8	2.8	-	-	-	-

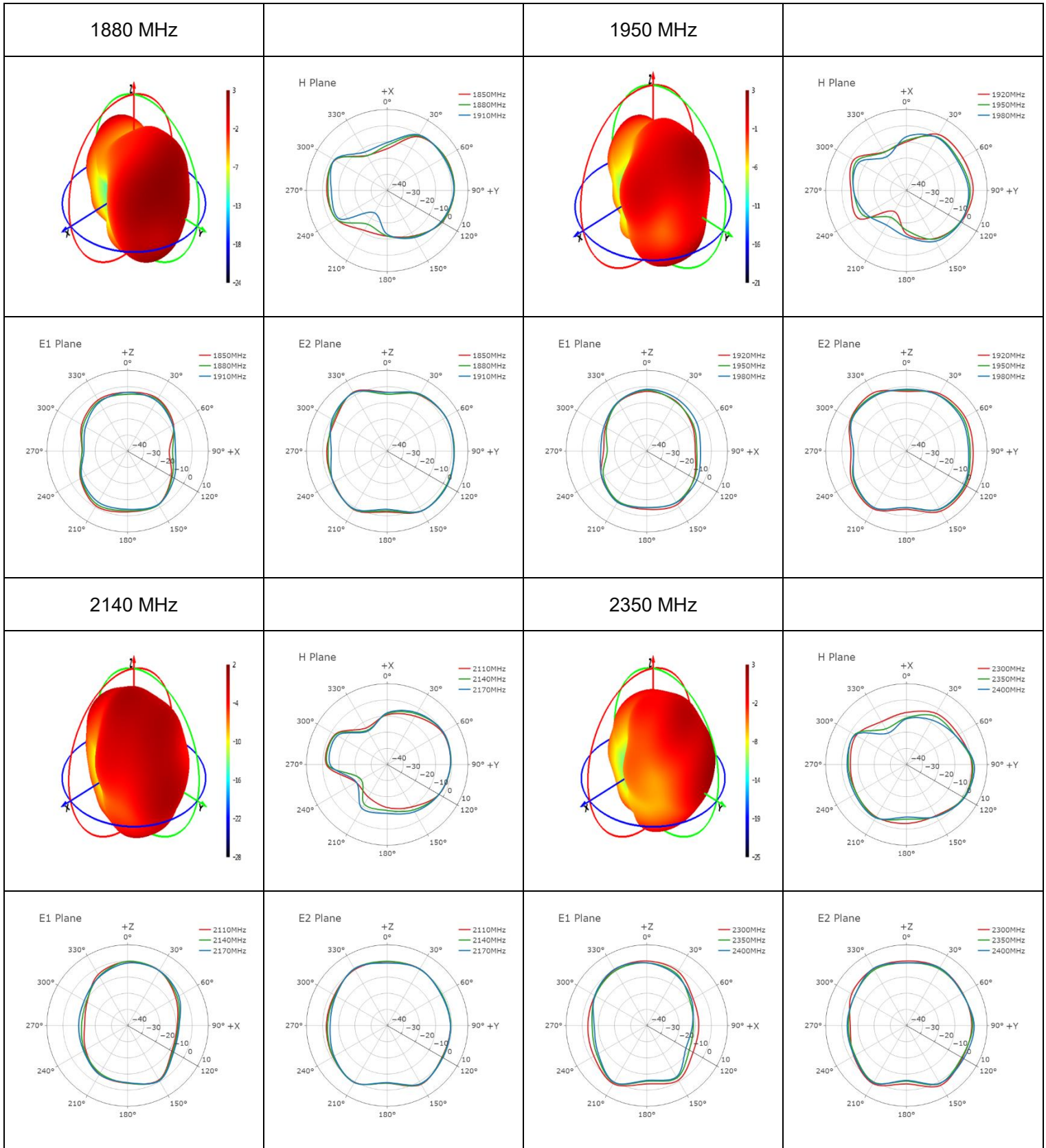
3.2.4. 3D & 2D Radiation Pattern

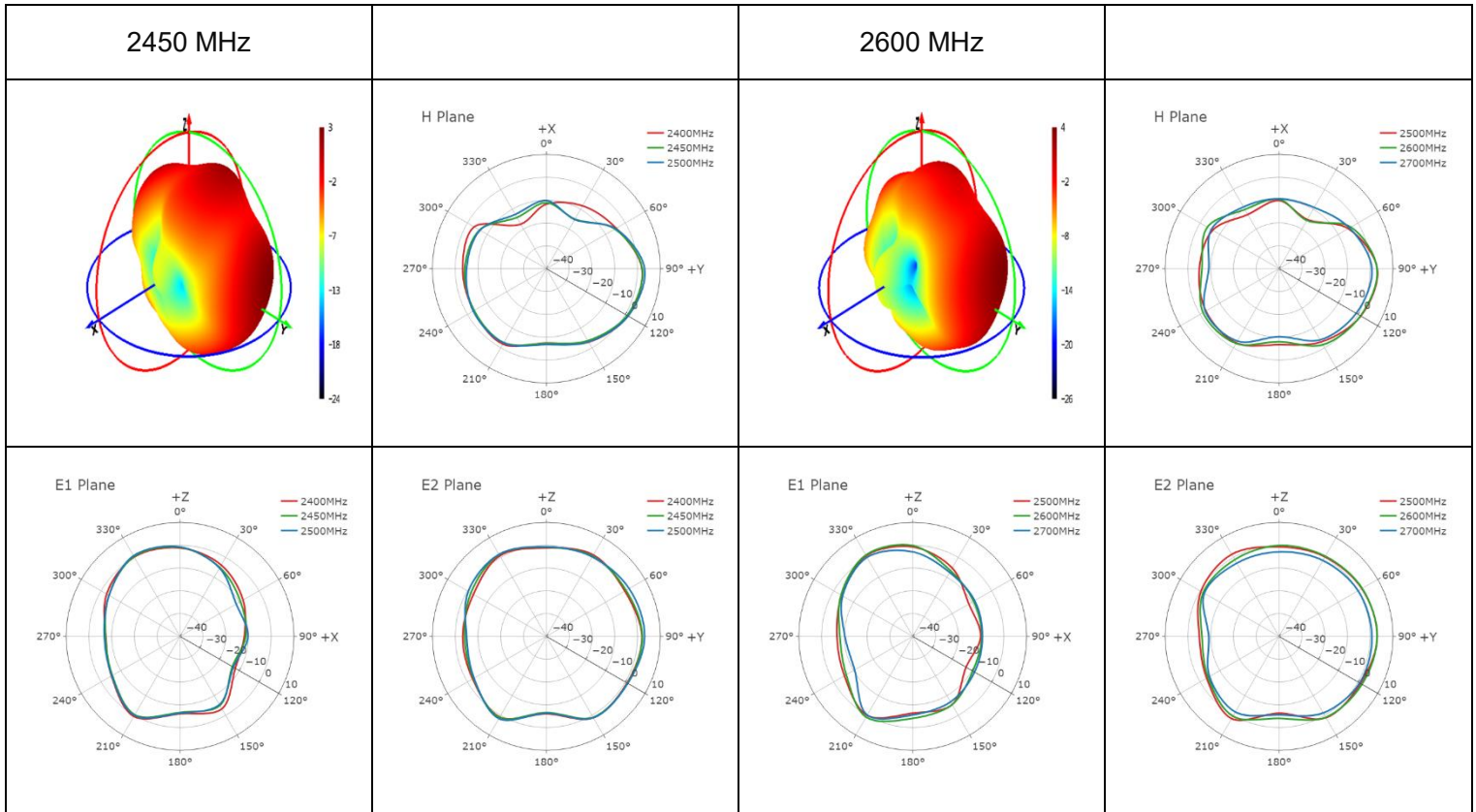
- Test Condition: Stick to ABS board on 130 mm × 130 mm EVB board
- Test Chamber: GL-S-1






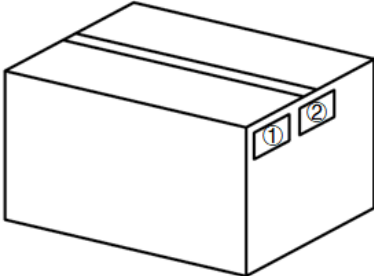
130 mm × 130 mm EVB

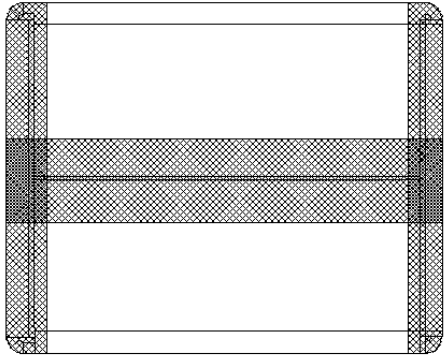






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>50 product terminals are wrapped in foam.</p>
2		<p>100 antenna products in a PE bag. (100 Antennas / PE bag)</p>
3		<p>(40 Big PE bags / Carton box) (4000 Antennas / Carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 300 × 250 × 200 mm</u></p>
4		<p>Position for Attaching Labels</p> <ul style="list-style-type: none"> ① Carton Label ② Quality Label

5	 A technical drawing of an H-shaped sealing carton. It consists of a central horizontal band with a cross-hatched texture, flanked by two vertical bands of the same texture. The entire structure is enclosed within a thin rectangular frame.	<p>Sealing Cartons H-shaped sealing cartons</p>
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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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Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2021-04-01	Kenny Yin	Creation of the document
1.0	2021-04-01	Kenny Yin	Updated the product description (Chapter 1).
1.1	2021-11-27	Kenny Yin	Updated the product description (Chapter 1).
2.0	2023-09-07	Weston Zhang/ Lucky Feng/ David Liu/ Aria Chu	Updated all test data in this datasheet.
2.1	2023-11-29	Lucky Feng	Added REACH Compliant (Chapter 1.2).
2.2	2024-06-26	Bailey Zhang	Updated the drawing (Chapter 2).
2.3	2025-04-16	Aria Chu	Updated the antenna image (Cover page).
2.4	2025-08-13	Lucky Feng	Updated the drawing (Chapter 2).

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