



Antenna Datasheet

Product OC: YF0003FA

Version: 1.1

Date: 2025-04-16

Status: Released

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

Key Features:

Frequency Band: 824–960 MHz, 1710–2690 MHz

Dimensions: 62 mm × 19 mm

Efficiency: Up to 74.19 % (EVB)

RoHS 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 PLA board on 130 mm × 70 mm EVB board

1.1. Electrical

Electrical												
Frequency Range					824–960 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		-	-	6.8	-	2.1	1.9	1.9	2.6	-	-	-
Max. Return Loss (dB)		-	-	-2.6	-	-8.9	-10.5	-10.3	-7.0	-	-	-
AVG Eff. (%)		-	-	44.0	-	66.9	67.3	67.0	57.3	-	-	-
AVG AVG Gain (dB)		-	-	-3.8	-	-1.8	-1.7	-1.7	-2.4	-	-	-
Max. Peak Gain (dBi)		-	-	1.6	-	3.3	1.9	2.0	2.0	-	-	-
VSWR							≤ 6.8					
Return Loss							≤ -2.6 dB					
Peak Gain							≤ 3.3 dBi					

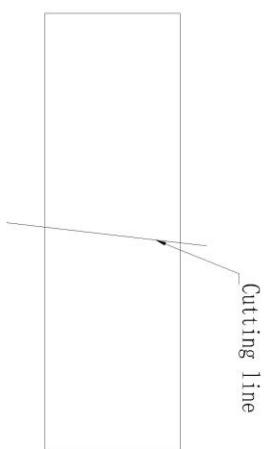
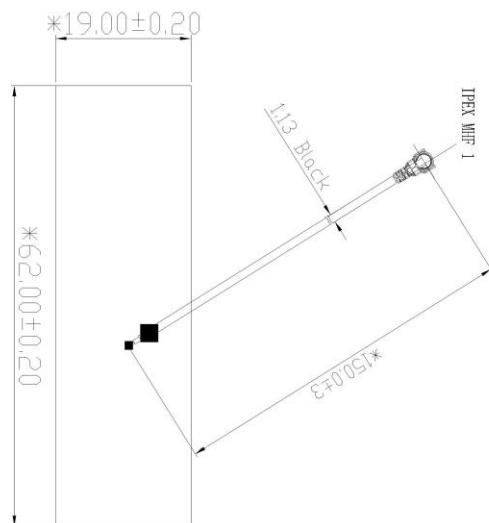
Note:

EVB: Stick to ABS Board on 130 mm × 70 mm EVB Board

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	62 mm × 19 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ1.13 & Black & 150 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 0.92 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

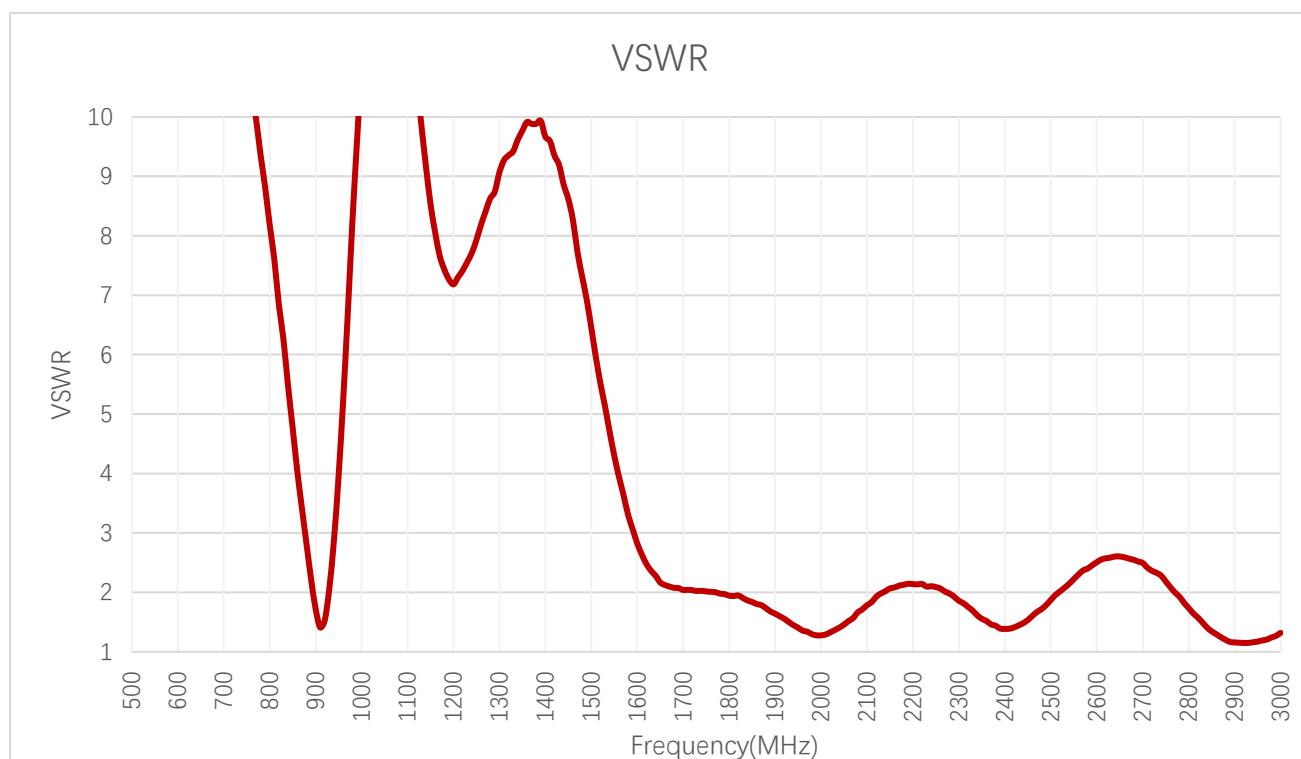
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

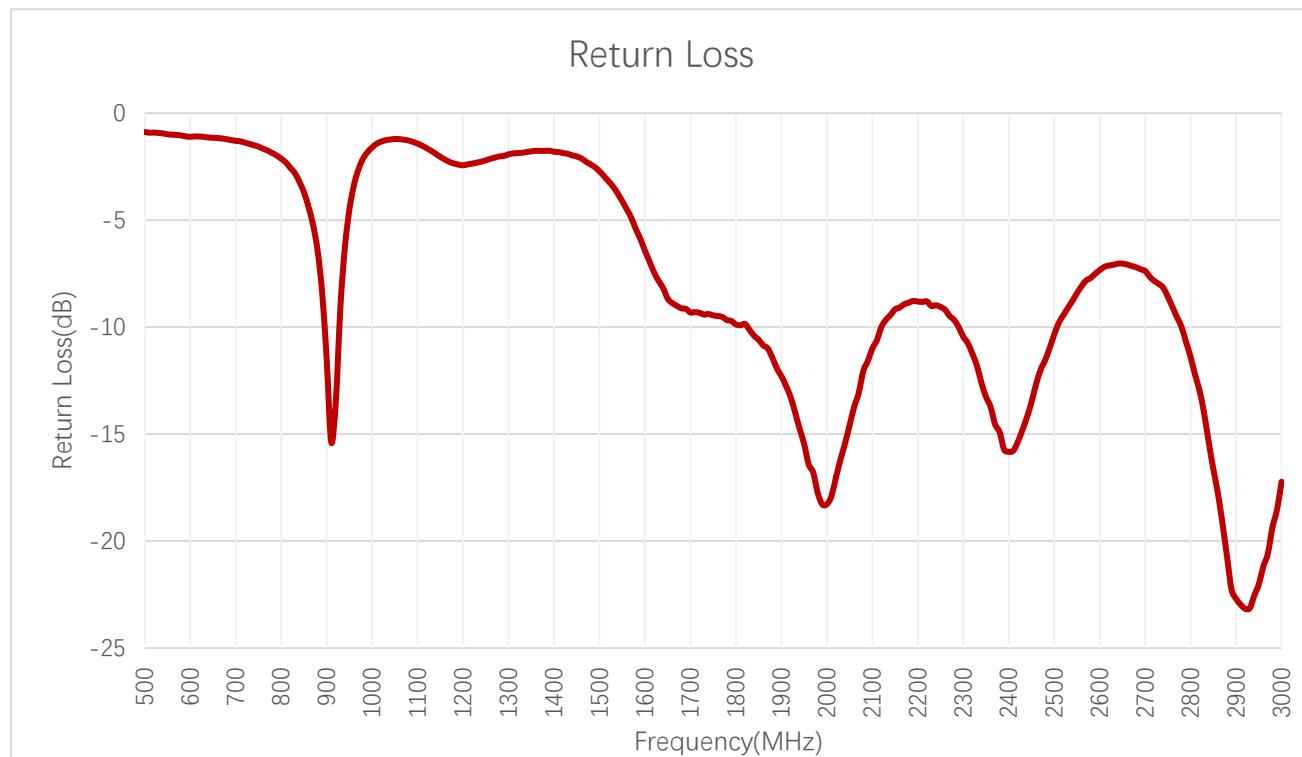
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	-	6.3	1.7	5.2	-	2.0	2.0	1.7
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	1.4	2.0	1.6	1.5	2.5	2.5	-	-	-	-

3.1.2. Return Loss

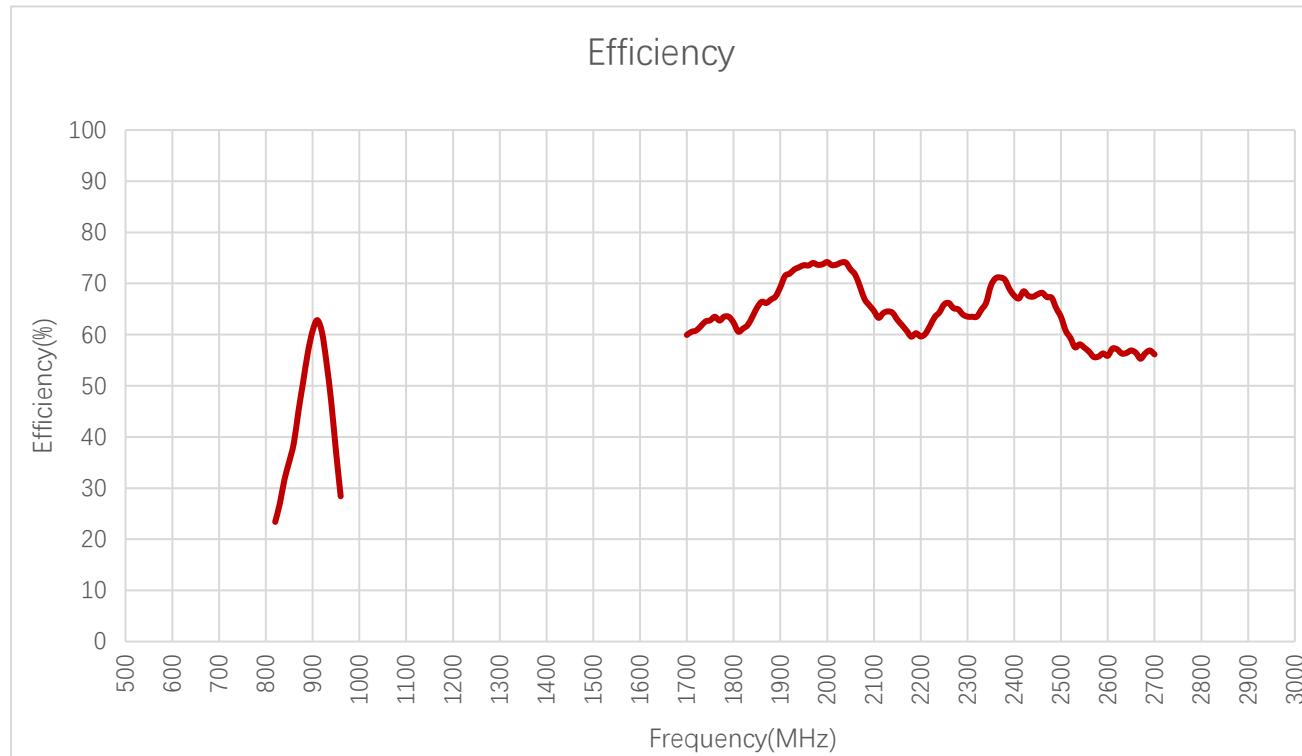


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-	-2.8	-11.5	-3.4	-	-9.3	-9.4	-11.4
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	-15.5	-9.4	-13.3	-13.5	-7.3	-7.3	-	-	-	-

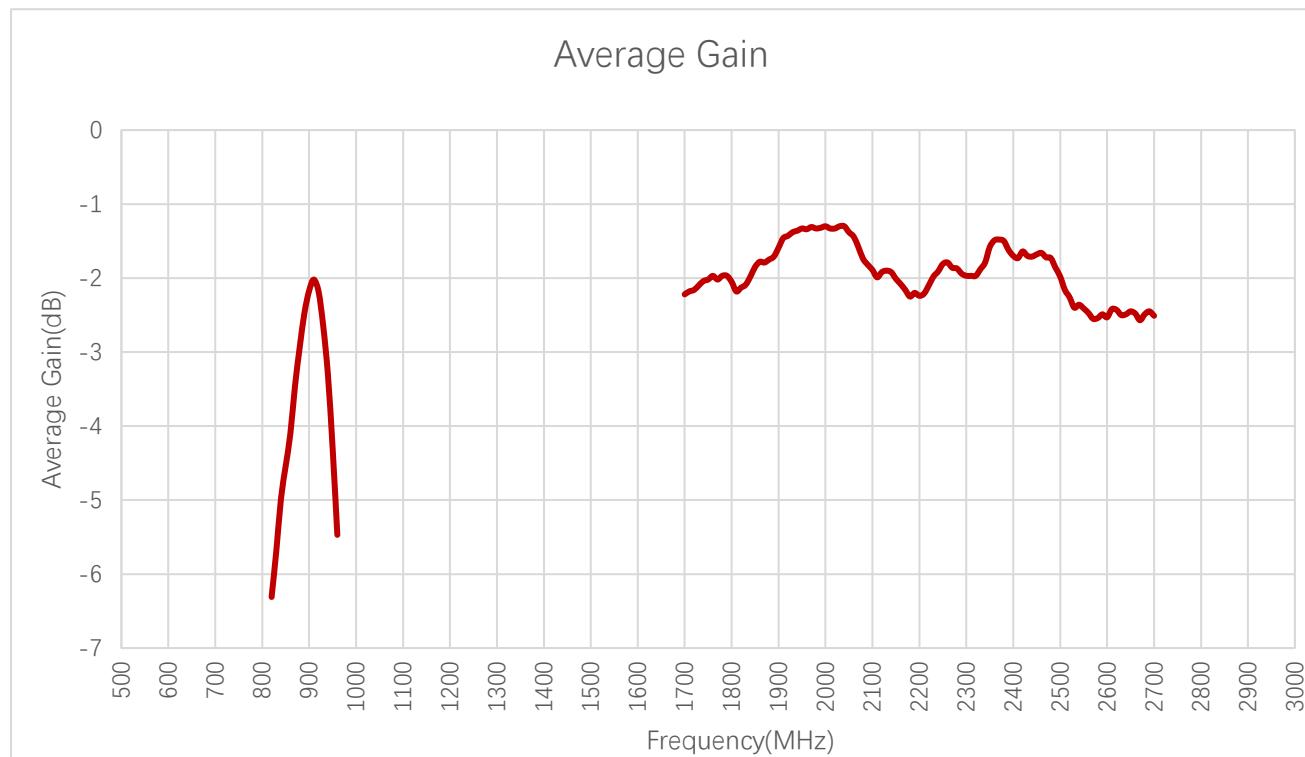
3.2. Radiation Performance Test

3.2.1. Efficiency



Efficiency (%)										
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	-	27.0	60.7	28.4	-	60.6	62.6	66.9
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	73.6	64.3	69.6	67.9	55.9	56.9	-	-	-	-

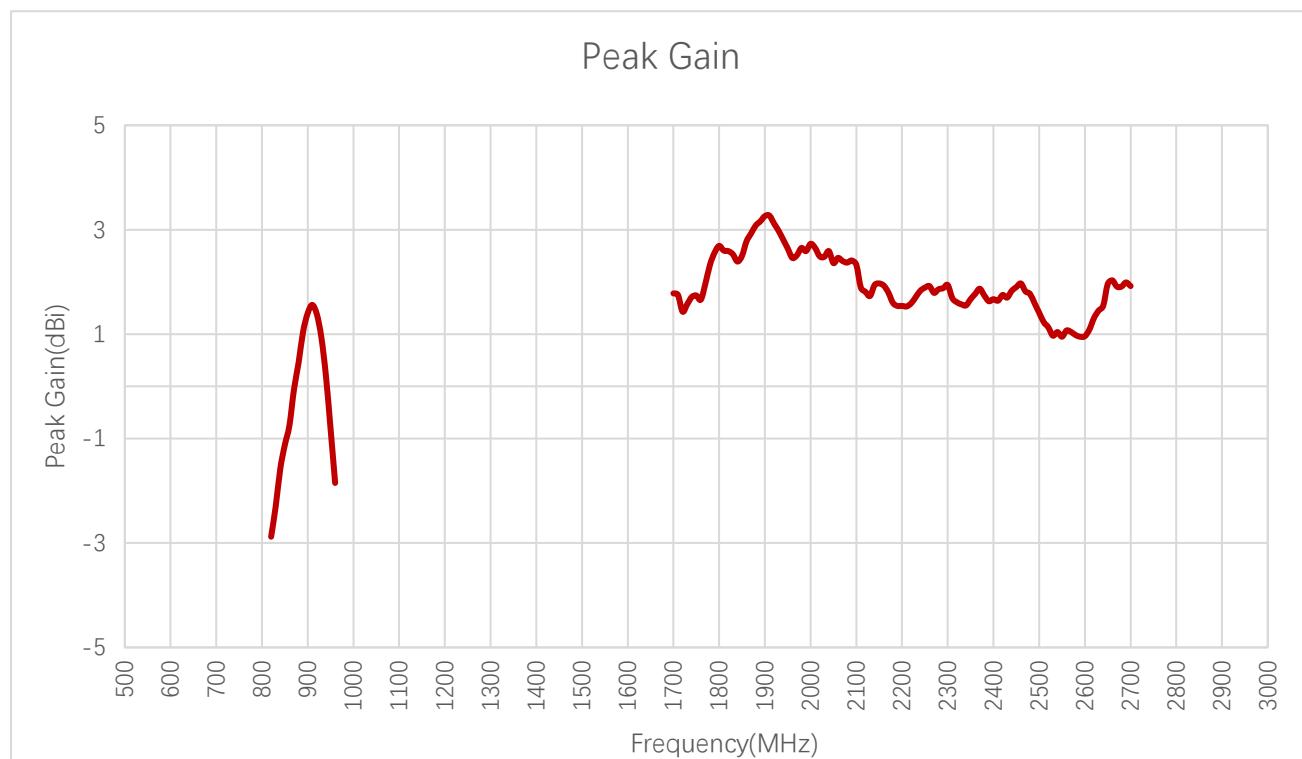
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-	-5.7	-2.2	-5.5	-	-2.2	-2.0	-1.8
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	-1.3	-1.9	-1.6	-1.7	-2.5	-2.5	-	-	-	-

3.2.3. Peak Gain



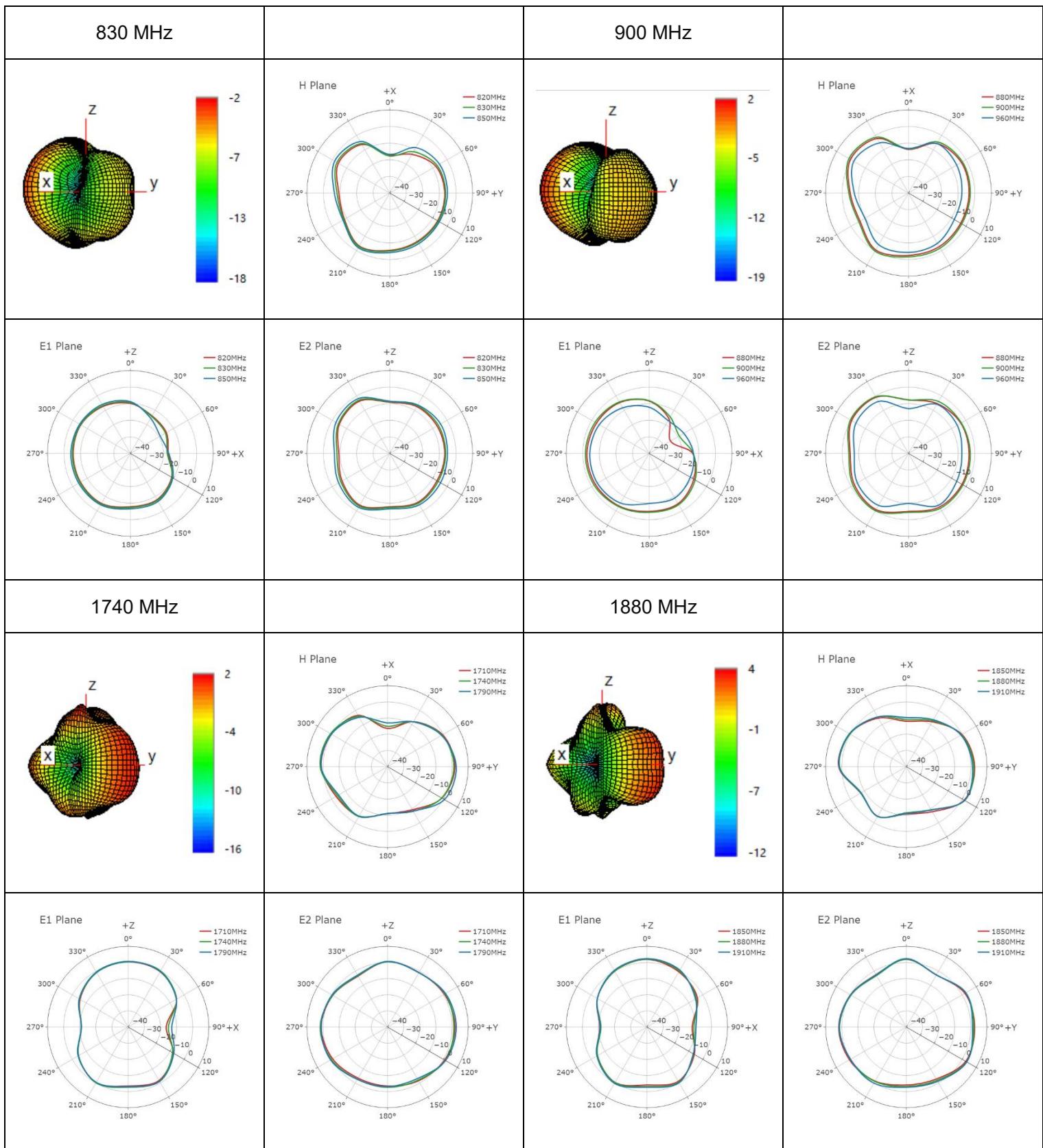
Peak Gain (dBi)

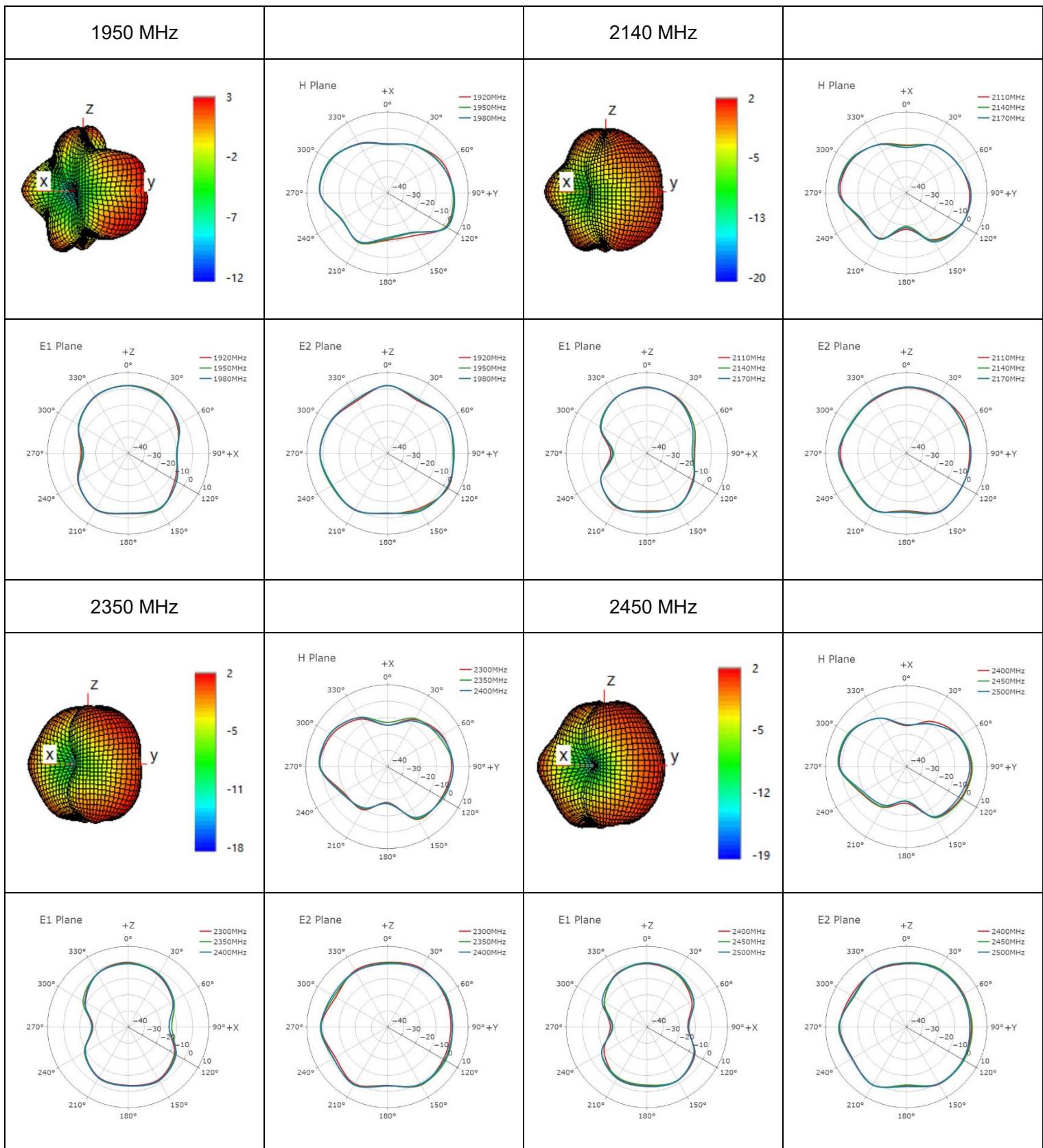
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-	-2.3	1.4	-1.9	-	1.8	1.7	3.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	2.6	1.9	1.7	1.9	1.0	2.0	-	-	-	-

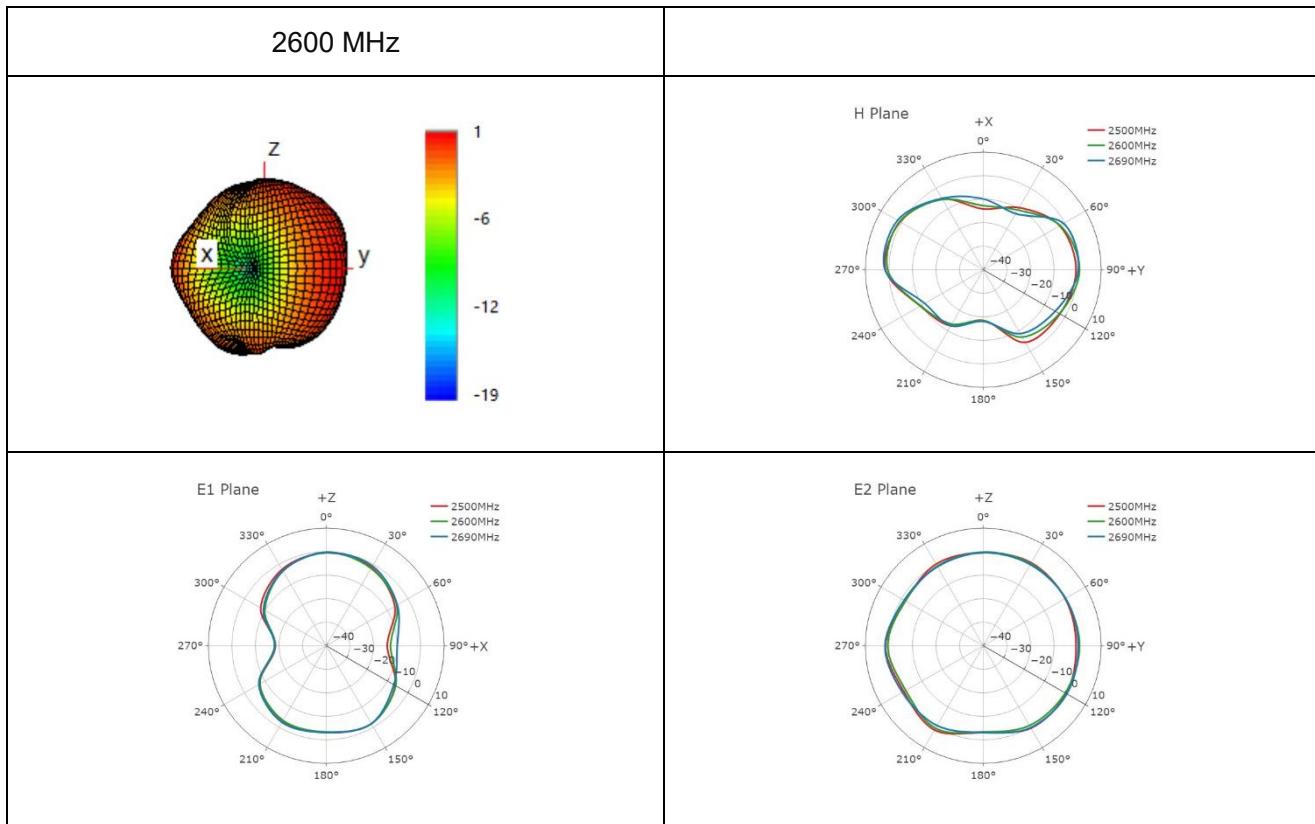
3.2.4. 3D & 2D Radiation Pattern

- Test Chamber: HF-G-1
- Test Condition: Stick to PLA board on 130 mm × 70 mm EVB board

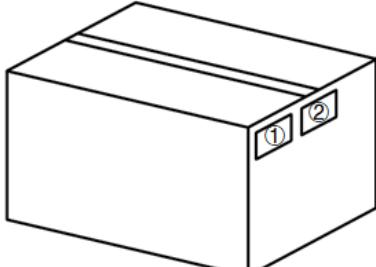


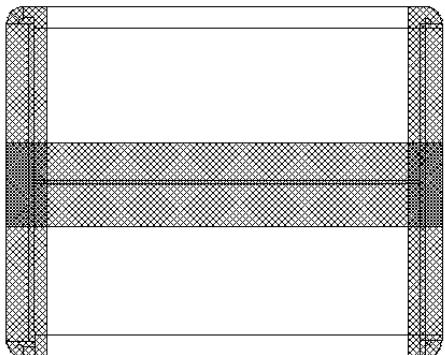






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		50 products in a bundle
2		500 pcs antenna products in a PE bag. (500 PCS / PE Bag)
3		(20 PE Bags / Carton Box) (10000 PCS Antennas / Carton Box) <u>Carton Size:</u> <u>$L \times W \times H = 450 \times 240 \times 290 \text{ mm}$</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label

5		Sealing Cartons H-shaped sealing cartons
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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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Revision History

Version	Date	Author	Note
-	2024-01-04	Jim LUO/ Joye WNAG/ David LIU/ Aria CHU	Creation of the document
1.0	2024-01-04	Jim LUO/ Joye WNAG/ David LIU/ Aria CHU	First official release
1.1	2025-04-16	Aria CHU	Updated the antenna image (Cover page).



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