Antenna Datasheet

Product OC: YF0006PA
Version: 2.0
Date: 2024-07-10
Status: Released

Product Name: 4G Adhesive Mount FPC Monopole Antenna
Key Features:
Frequency Band: 700–960 MHz, 1710–2690 MHz
Dimensions: 50 × 25 mm
Efficiency: Up to 72 %
RoHS and REACH Compliant

Overview

The YF0006PA is a 4G FPC antenna measuring 50 × 25 mm. This 4G antenna provides coverage from 700–960 MHz; 1710–2690 MHz. The antenna has a 90 mm-long cable, terminated with IPEX MHF 1 connector, and is available with customized cable lengths and connectors. This adhesive mount omni-directional antenna, ideal for applications where the antenna is required to be mounted inside, is easy to install thanks to its flexible material. It is compatible with Quectel's 4G Series modules. It has been tested with ABS board.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. The YF0006PA is designed as a dipole antenna, which is ground independent to offer high efficiency in many different mounting scenarios. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for smart metering, remote monitoring, vehicle tracking and telematics, and many other IoT devices.

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

Contents

1 Specification

Test Condition: Stuck on 3mm-thick ABS board & tested with 130 × 130 mm EVB

1.1. Electrical

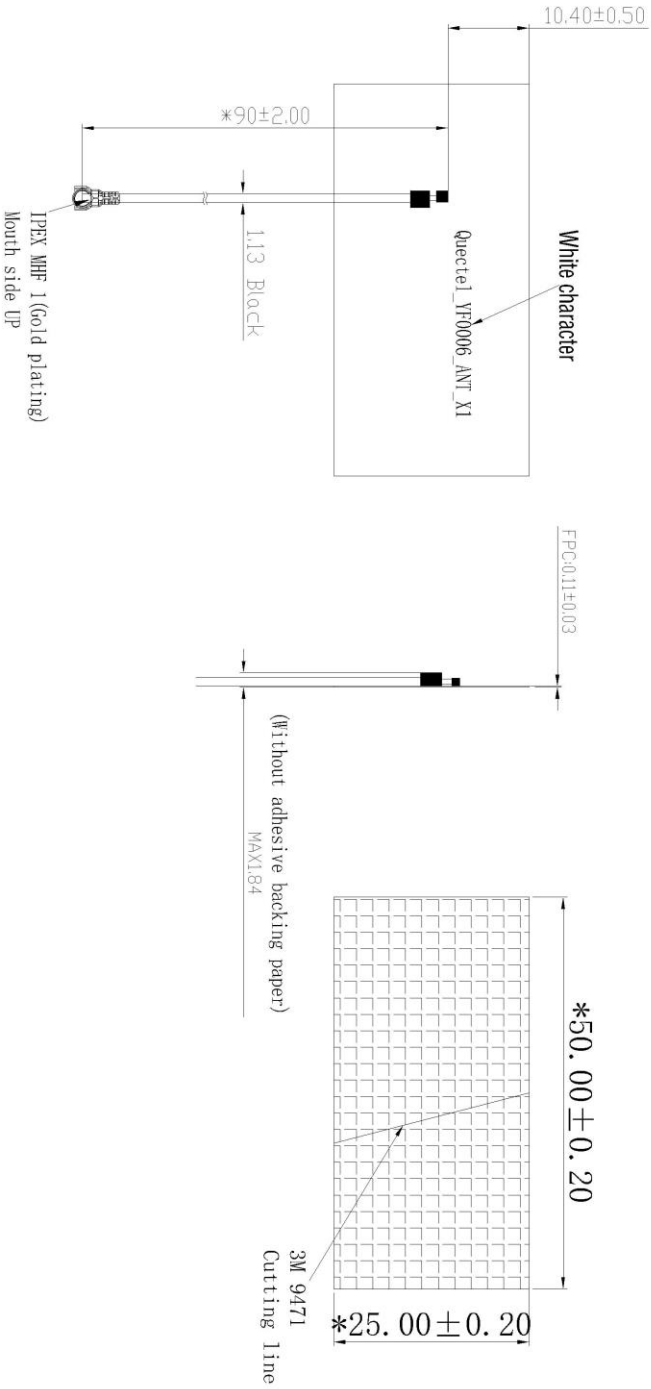
Electrical	
Frequency Range	700–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail							
Band / **SPEC**	**B71**	**B12 /B13 /B28**	**B5 /B8 /B26**	**B1 /B2 /B3**	**B40**	**B38 /B41**	**B42 /B48 /n77**
	600–700	**700–810**	**820–960**	**1700–2170**	**2300–2400**	**2500–2690**	**3300–3800**
Max. VSWR	-	6.9	10.4	2.9	1.5	3.3	-
Max. Return Loss (dB)	-	-2.5	-1.7	-6.2	-13.8	-5.5	-
AVG Eff. (%)	-	27.3	24.6	55.6	70.2	57.6	-
AVG AVG Gain (dB)	-	-5.7	-6.3	-2.6	-1.5	-2.4	-
Max. Peak Gain (dBi)	-	-0.6	-0.4	3.3	3.3	1.9	-
VSWR	≤ 10.4						
Return Loss	≤ -1.7 dB						
Peak Gain	≤ 3.3 dBi						

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	50 × 25 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 90 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 0.91 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

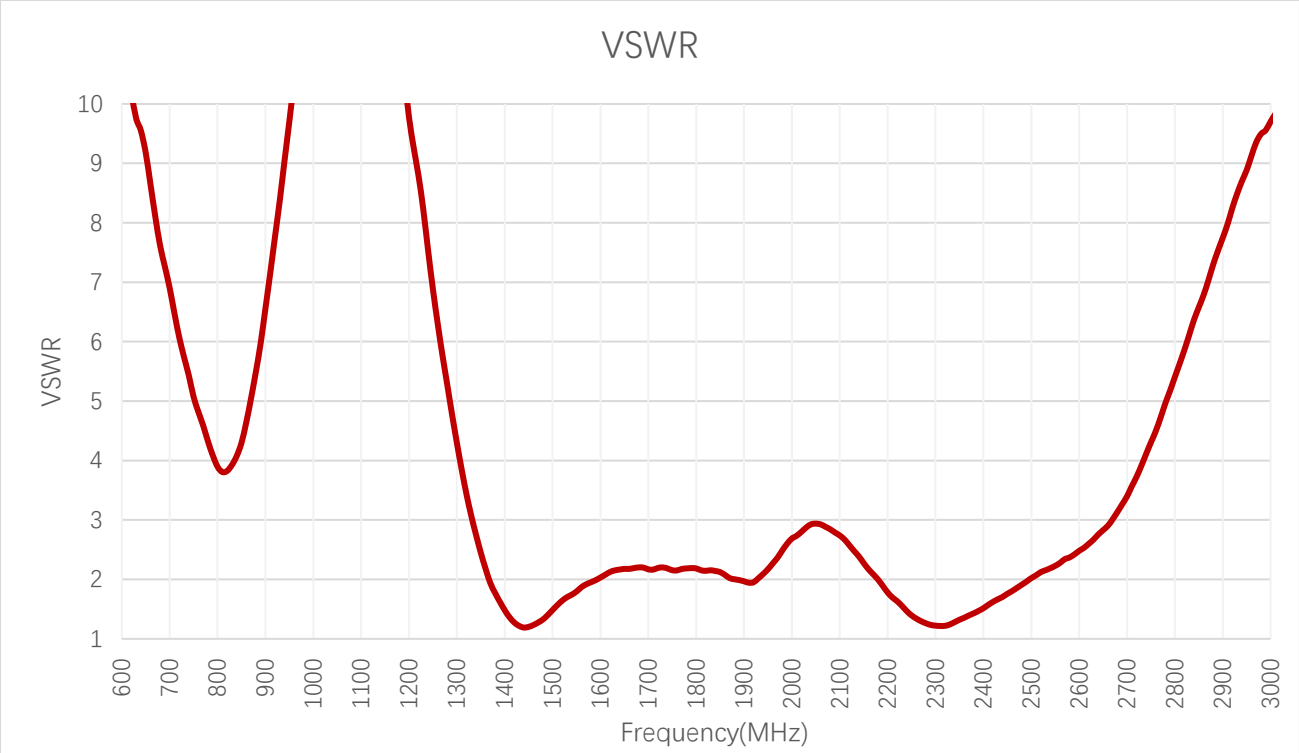
2 Drawing


10.40±0.50
*90±2.00
IPEX MHF I(Gold plating)
Mouth side UP
1.13 Black
Quectel_YF0006_ANT_X1
White character
FPC:0.11±0.03
(Without adhesive backing paper)
MAX1.84
*50.00±0.20
3M 9471
Cutting line
*25.00±0.20

3 Detailed Performance

3.1. S-Parameter Test

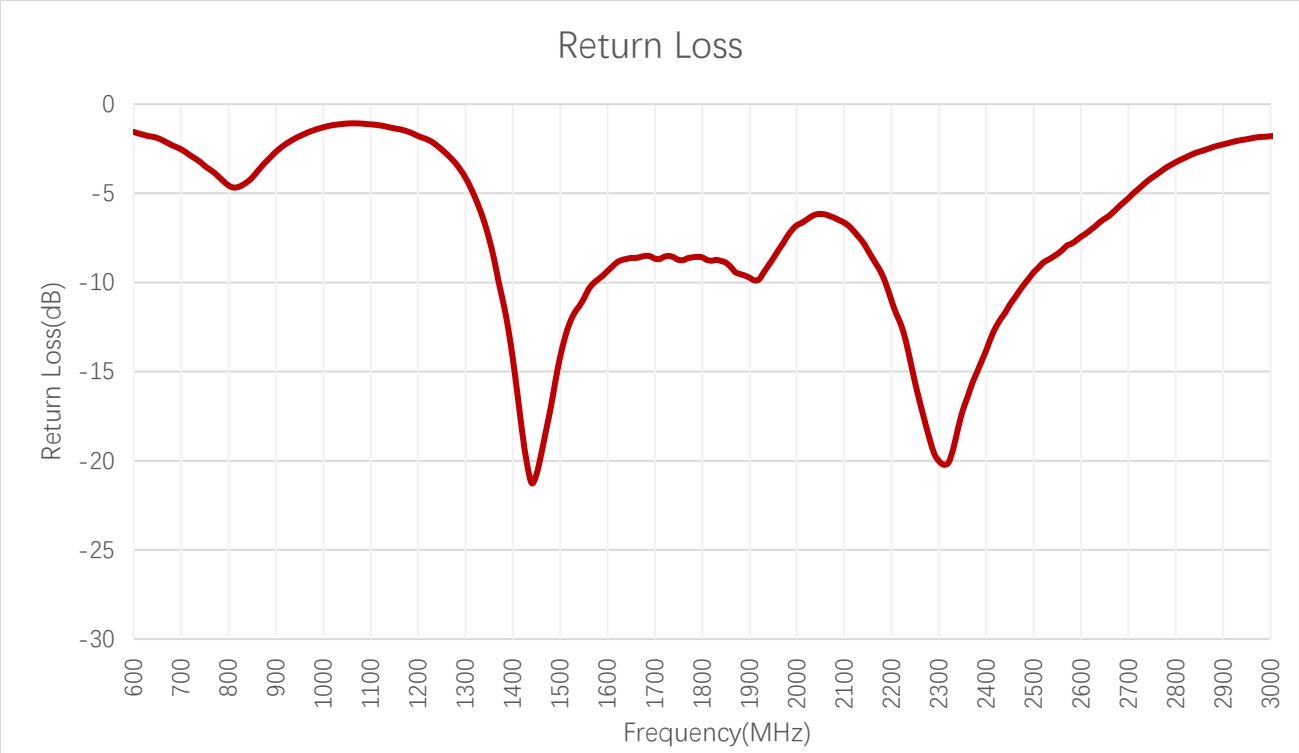
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	6.5	3.9	6.6	10.4	1.2	2.2	2.2	2.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
VSWR	2.2	2.4	1.3	1.8	2.5	3.3	-	-	-	-

3.1.2. Return Loss

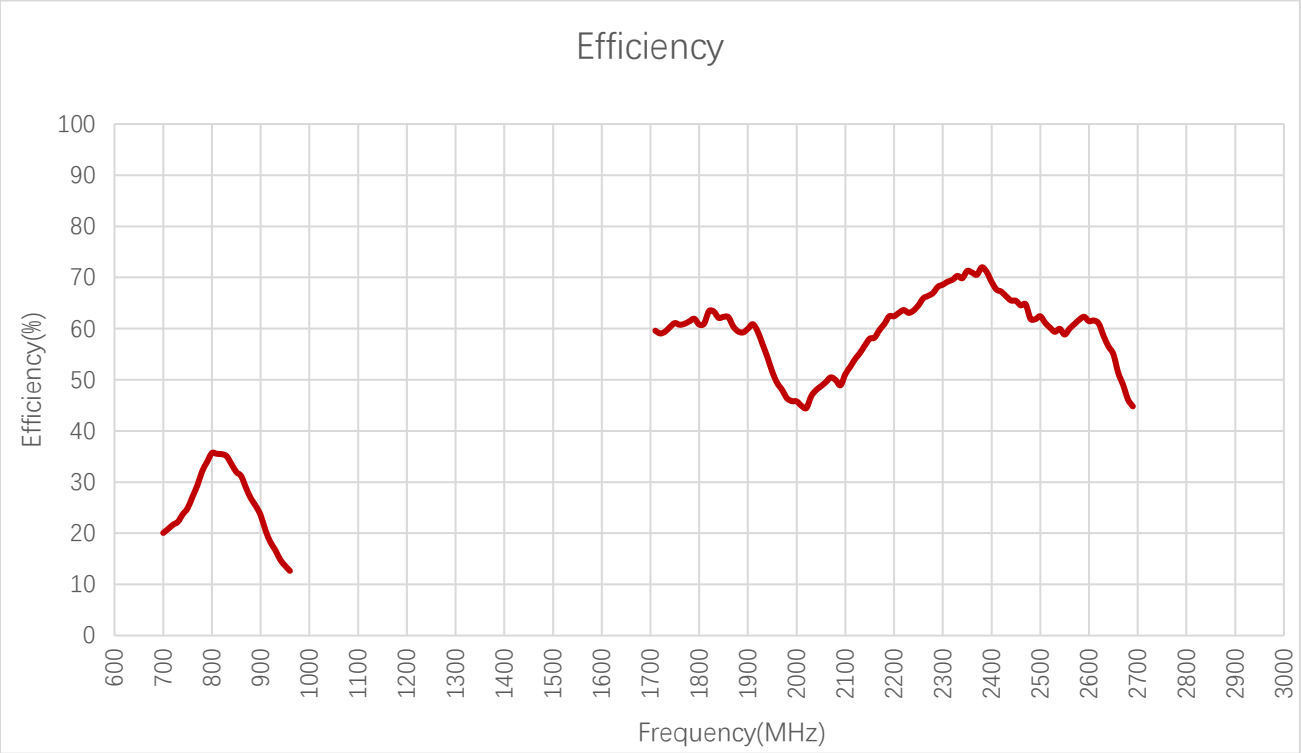


Return Loss (dB)

Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Return Loss (dB)	-	-	-2.7	-4.5	-2.7	-1.7	-21.3	-8.7	-8.6	-9.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-8.6	-7.8	-17.2	-11.2	-7.4	-5.5	-	-	-	-

3.2. Radiation Performance Test

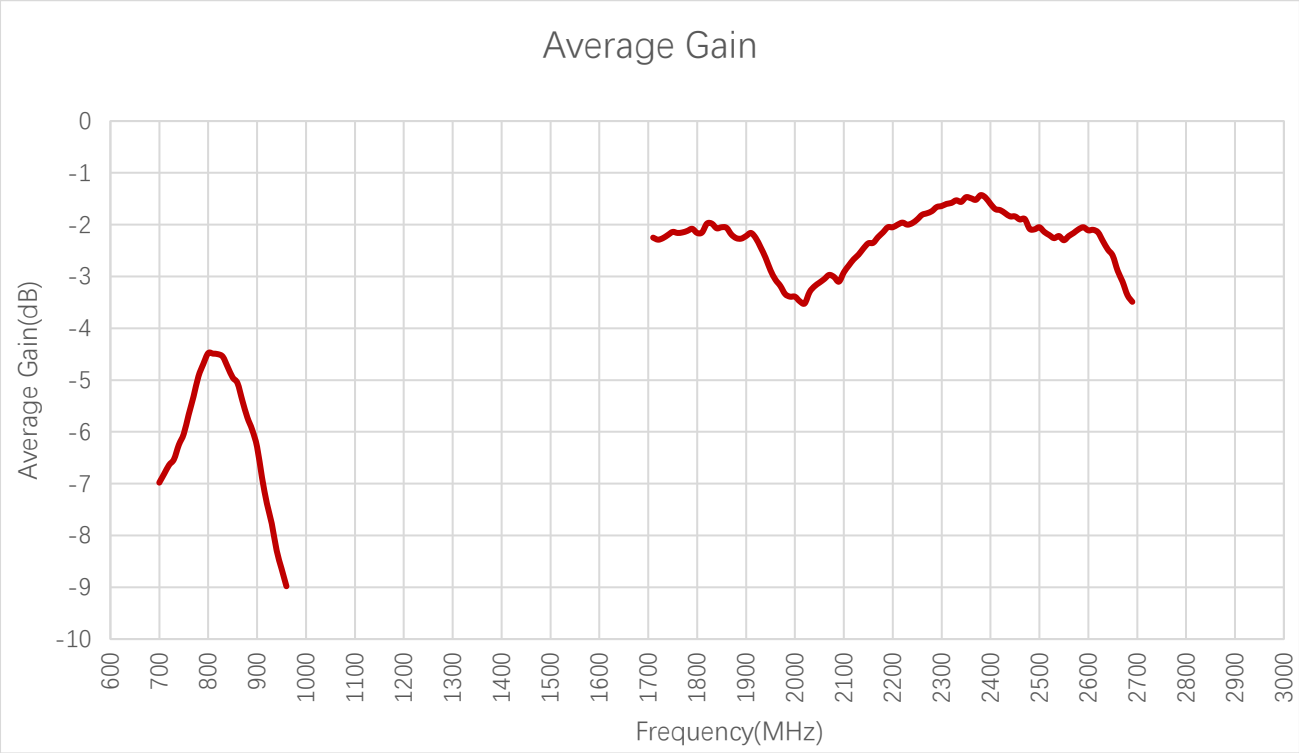
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	20.8	35.1	23.5	12.6	-	59.6	60.3	59.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	51.6	56.7	71.3	65.4	61.5	44.8	-	-	-	-

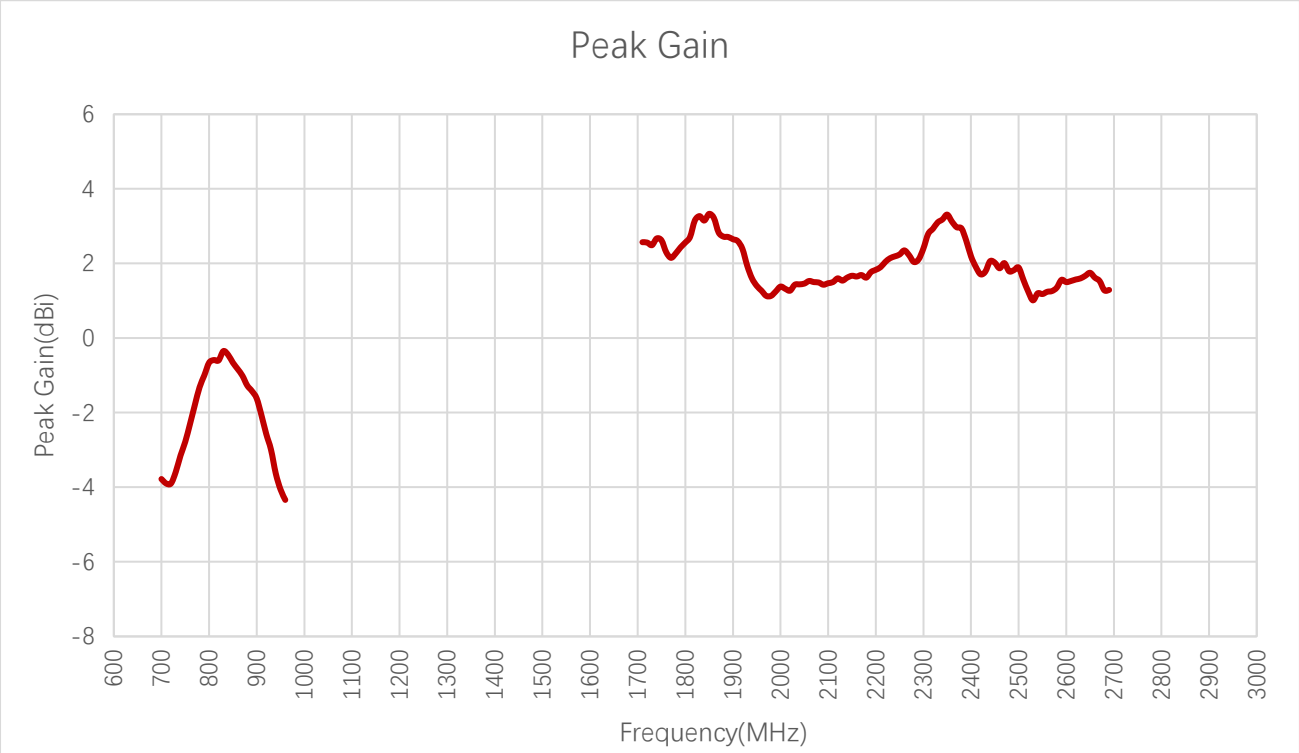
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-6.8	-4.6	-6.3	-9.0	-	-2.3	-2.2	-2.3
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-2.9	-2.5	-1.5	-1.8	-2.1	-3.5	-	-	-	-

3.2.3. Peak Gain

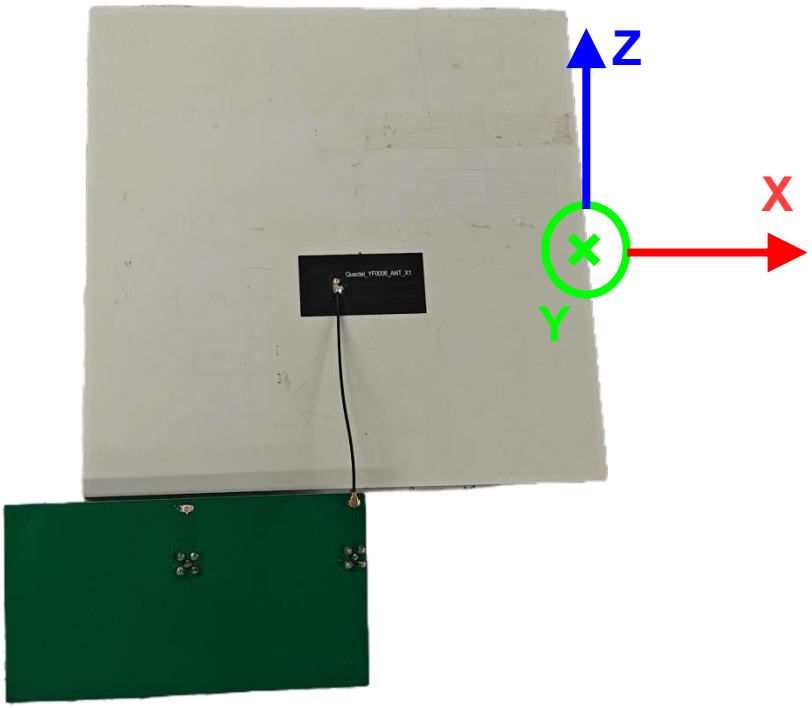


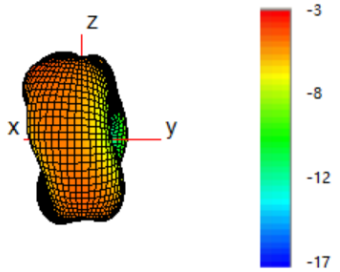
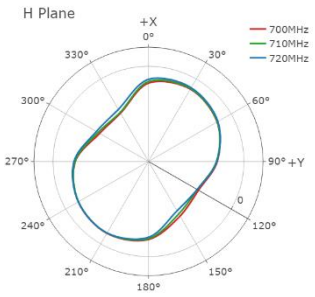
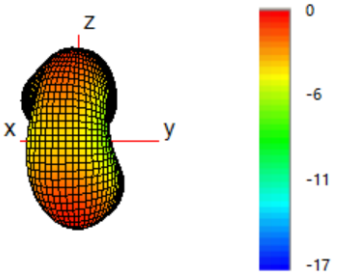
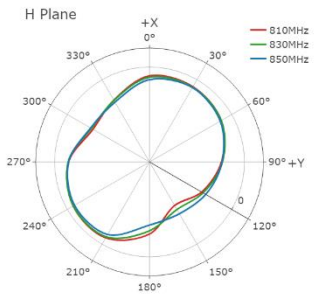
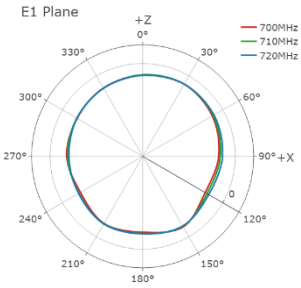
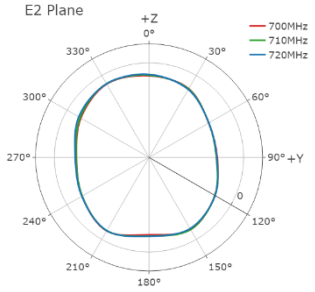
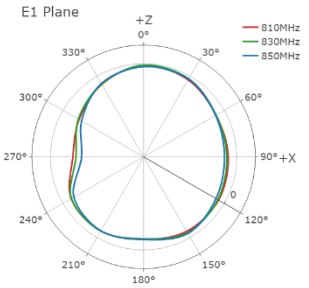
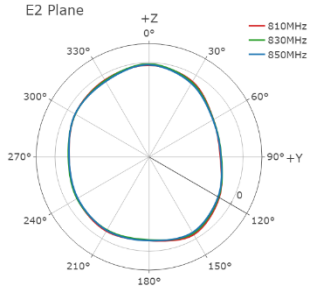
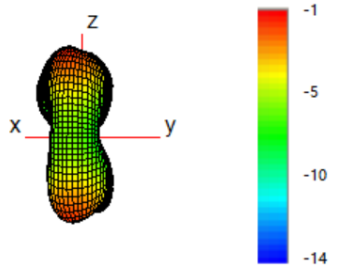
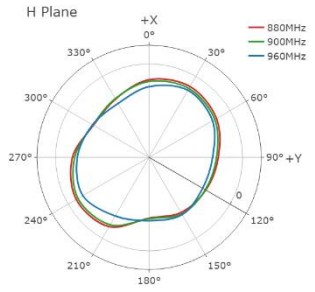
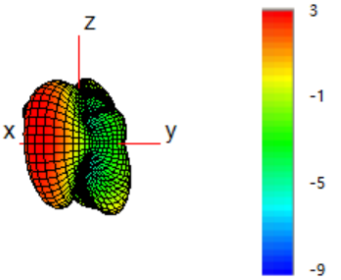
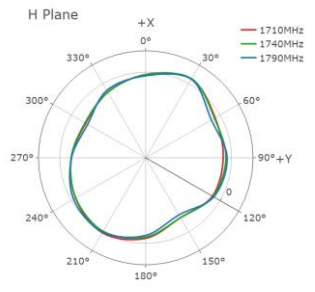
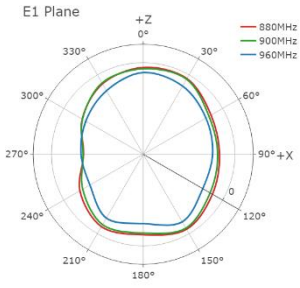
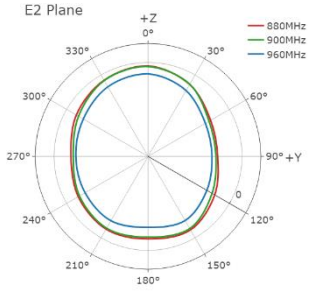
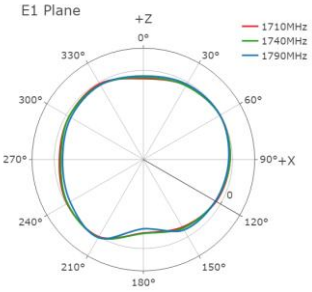
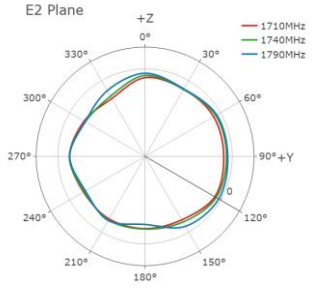
Peak Gain (dBi)

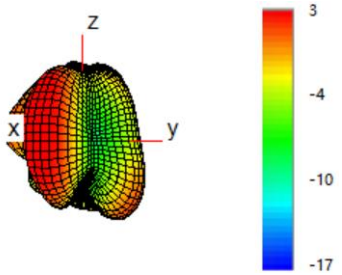
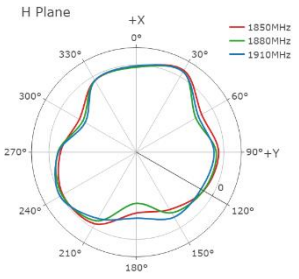
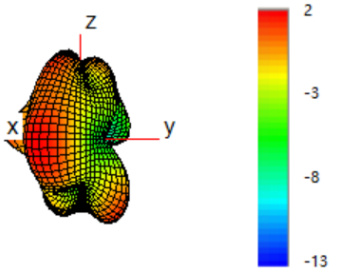
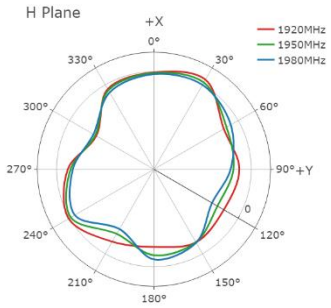
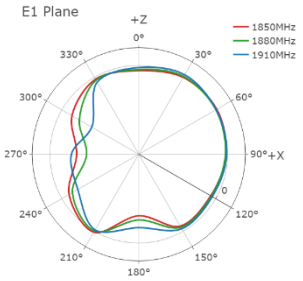
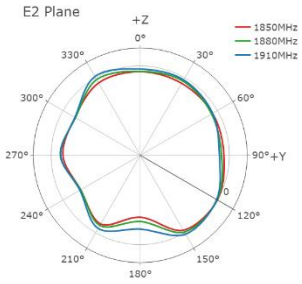
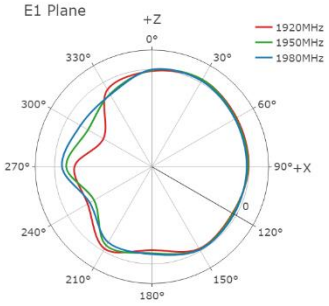
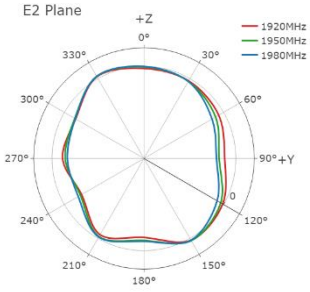
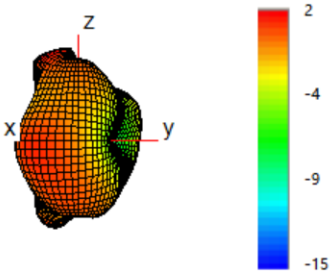
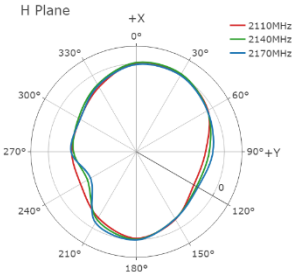
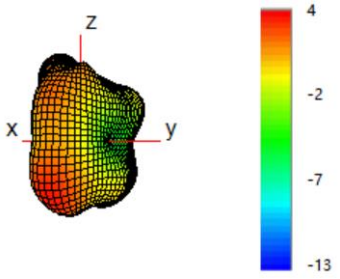
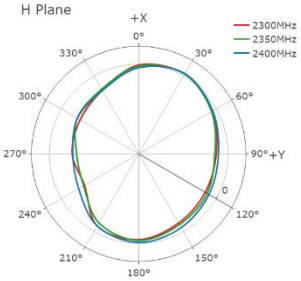
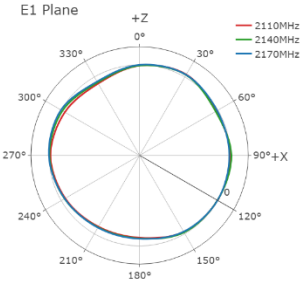
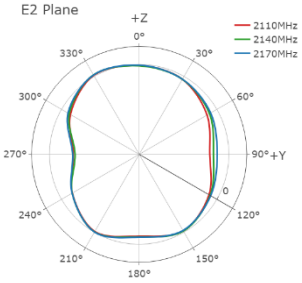
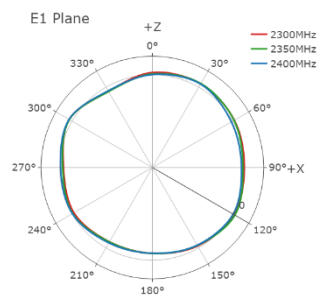
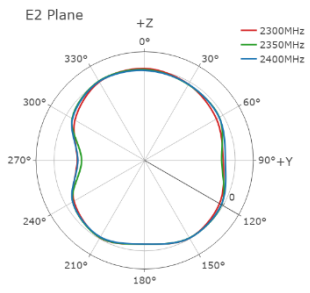
Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Peak Gain (dBi)	-	-	-3.9	-0.4	-1.6	-4.3	-	2.6	2.7	2.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	1.4	1.6	3.3	2.0	1.5	1.3	-	-	-	-

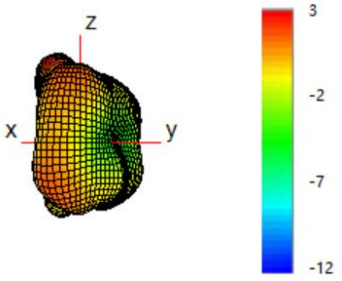
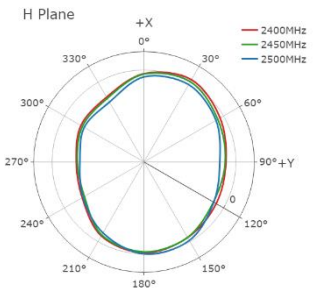
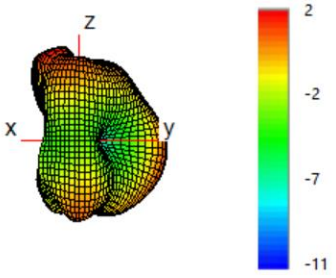
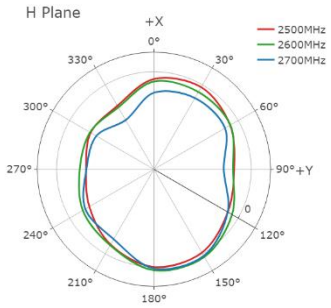
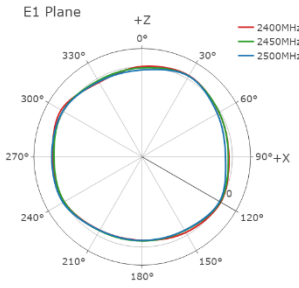
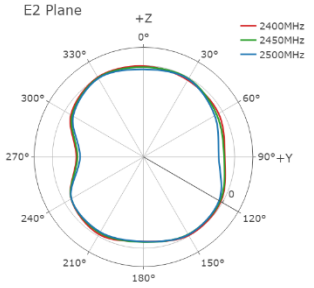
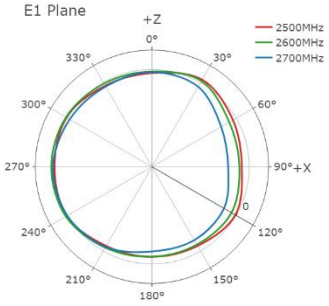
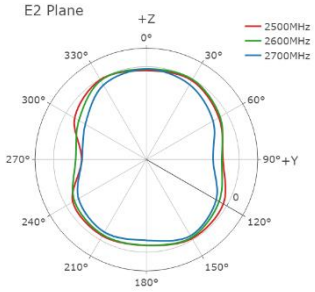
3.2.4. 3D & 2D Radiation Pattern

- Test Condition: Stuck on 3mm-thick ABS board & tested with 130 × 130 mm EVB
- Test Chamber: GL-G-1



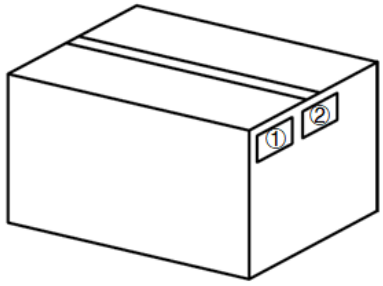
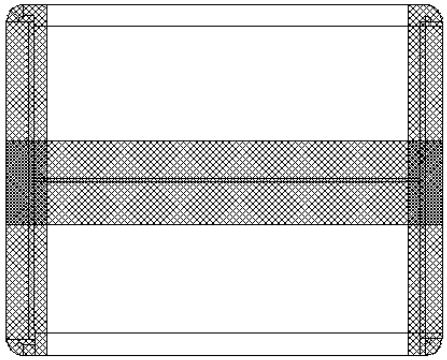
710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

2450 MHz		2600 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		The product terminal is wrapped with EPE foam. (20 PCS / Tie)
2		200 pcs antenna products in a PE bag. (200 PCS / PE Bag)
3		(32 PE Bags / Carton Box) (6400 PCS Antennas / Carton Box) Carton Size: L × W × H = 405 × 293 × 185 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** "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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Or our local offices. For more information, please visit:
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Revision History

Version	Date	Author	Note
-	2022-07-25	Andy MIAO/ Joye WANG	Creation of the document
1.0	2022-09-08	Andy MIAO/ Joye WANG	First official release
1.1	2023-06-12	David LIU/ Vinnie LIU	Added the packaging information (Chapter 6).
1.2	2024-05-06	David LIU	1. Added the storage temperature (Chapter 3). 2. Updated the packaging (Chapter 6).
1.3	2024-06-07	Joye WANG	Updated the drawing (Chapter 5)
2.0	2024-07-10	Black LI/ Joye WANG/ David LIU/ Rainey LIAO	1. Updated the template. 2. Numerous changes were made to this document. It should be read in its entirety.

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