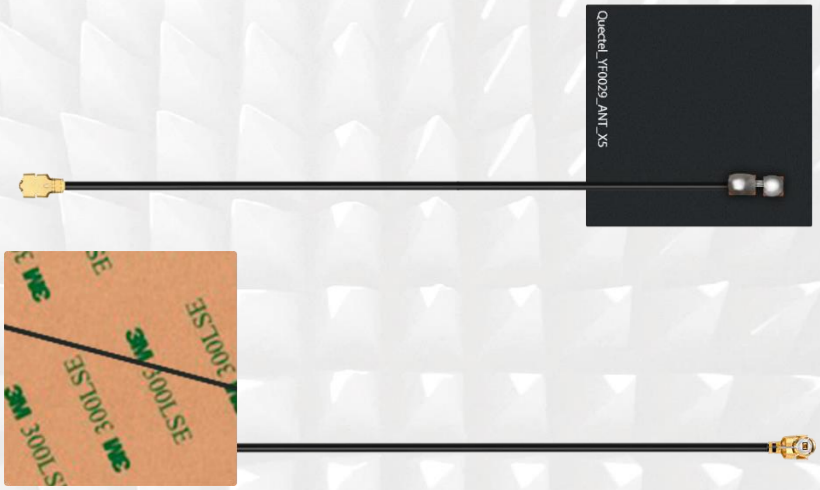


Antenna Datasheet

Product OC: YF0029AA
Version: 2.2
Date: 2023-11-29
Status: Released

Product Name: Wi-Fi FPC Antenna
Key Features:
Frequency band: 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Peak efficiency: 79.49 %
Dimensions: 29.98 × 30.85 mm
RoHS and REACH compliant

Overview

Quectel Wi-Fi antenna covers 2.4 GHz, 5 GHz, and up to 7 GHz bands, fully satisfying customers' requirements for Wi-Fi 5, Wi-Fi 6, and Wi-Fi 6E/Wi-Fi 7. There are various antenna types, including built-in FPC/PCB antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.

Contents

1 Specification

Test Condition: Stick on 2 mm Thick ABS Board

1.1. Electrical

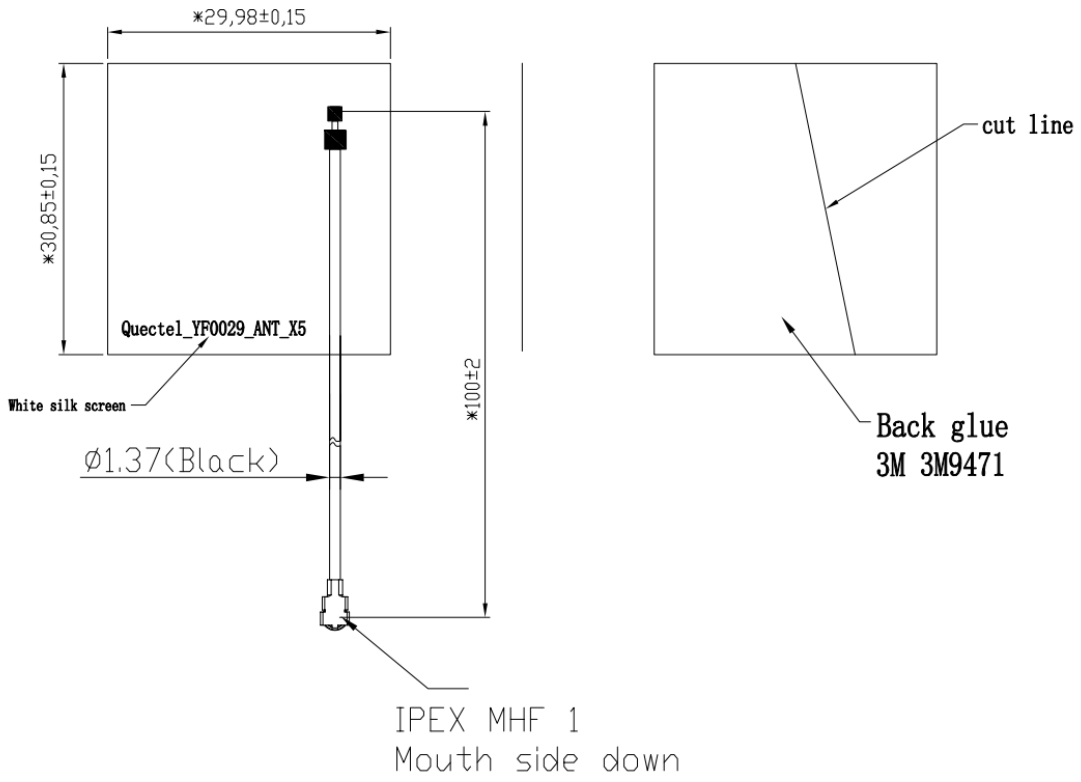
Electrical	
Frequency Range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Band / Specification	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
	Freq. (MHz)	**2400 - 2500**	**5150 - 5850**	**5925 - 7125**
Max. VSWR		1.8	2.5	1.7
Max. Return Loss (dB)		-10.8	-7.4	-11.4
AVG Eff. (%)		71.3	63.8	60.0
AVG Gain (dB)		-1.5	-2.0	-2.3
Max. Peak Gain (dBi)		2.5	6.9	7.7
VSWR		≤ 2.5		
Return Loss		≤ -7.4 dB		
Peak Gain		≤ 7.7 dBi		

1.2. Mechanical & Environmental

Mechanical	
Antenna Size	29.98 mm × 30.85 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.37 & Black & 100 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Antenna Weight	Typ. 0.8 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH compliant	Yes

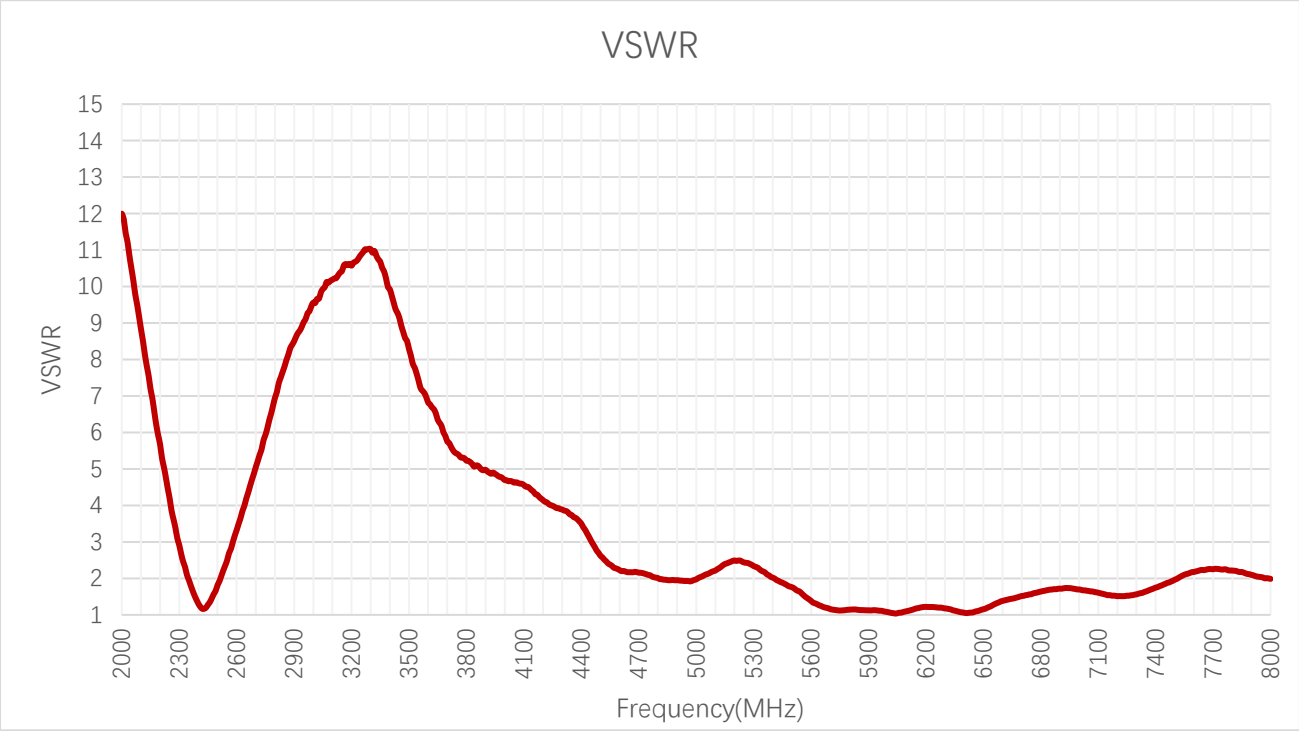
2 Drawing


*29,98±0,15
*30,85±0,15
Quectel_YF0029_ANT_X5
White silk screen
Ø1.37(Black)
*100±2
IPEX MHF 1
Mouth side down
cut line
Back glue
3M 3M9471

3 Detailed Performance

3.1. S-Parameter Test

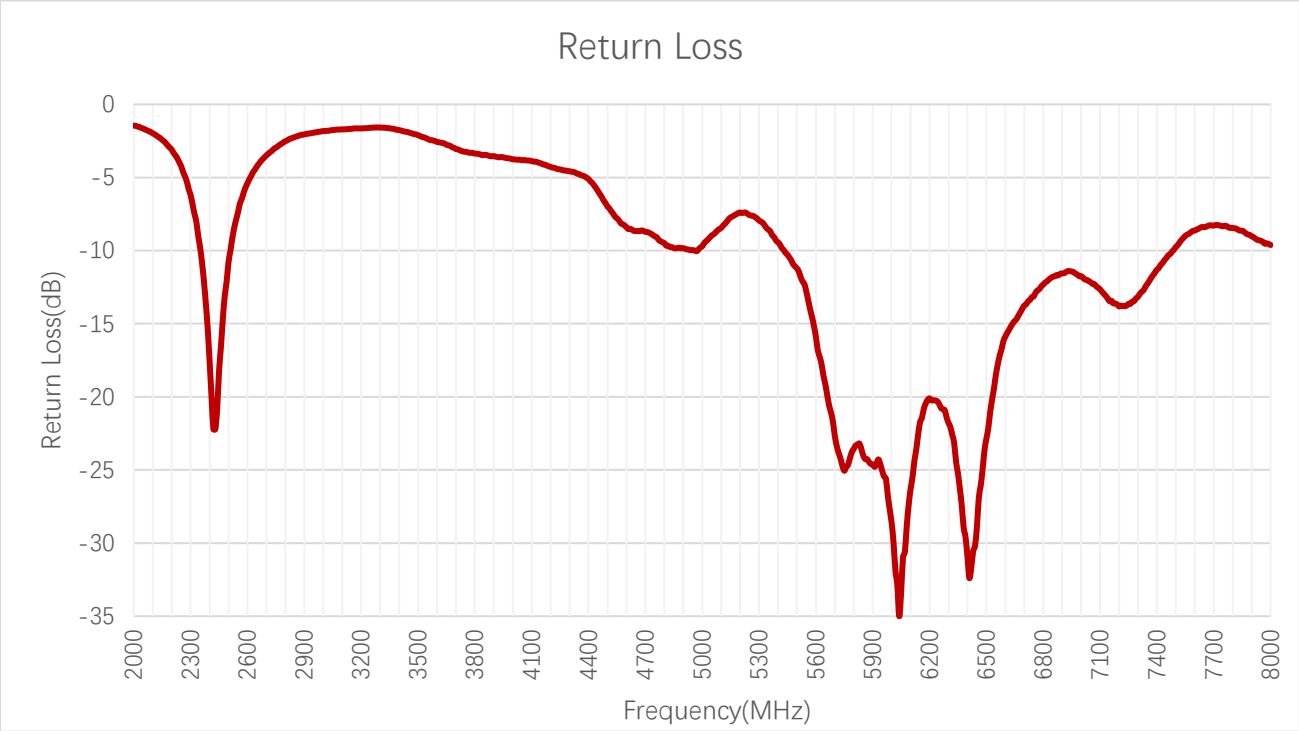
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
VSWR	1.3	1.3	1.8	2.4	1.8	1.1	1.1	1.2	1.6

3.1.2. Return Loss

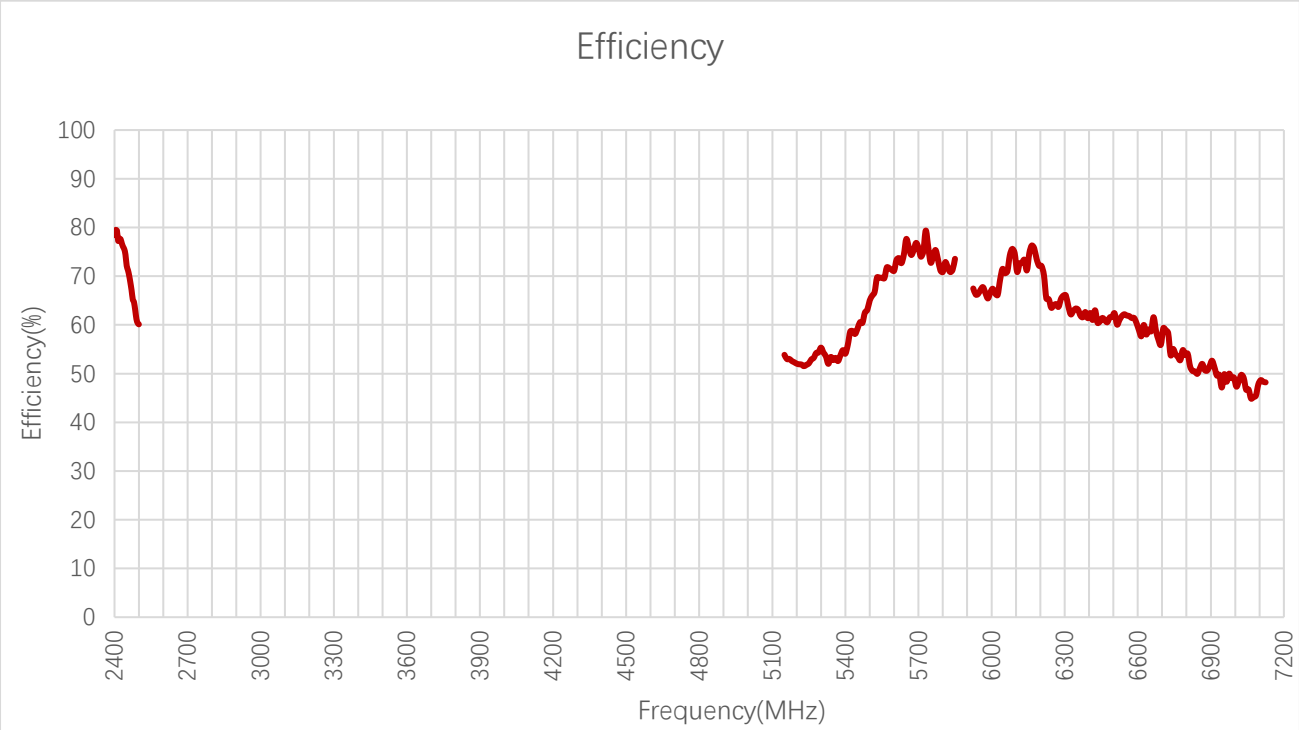


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
Return Loss (dB)	-17.5	-18.2	-10.8	-7.7	-11.2	-24.0	-24.6	-21.1	-13.0

3.2. Radiation Performance Test

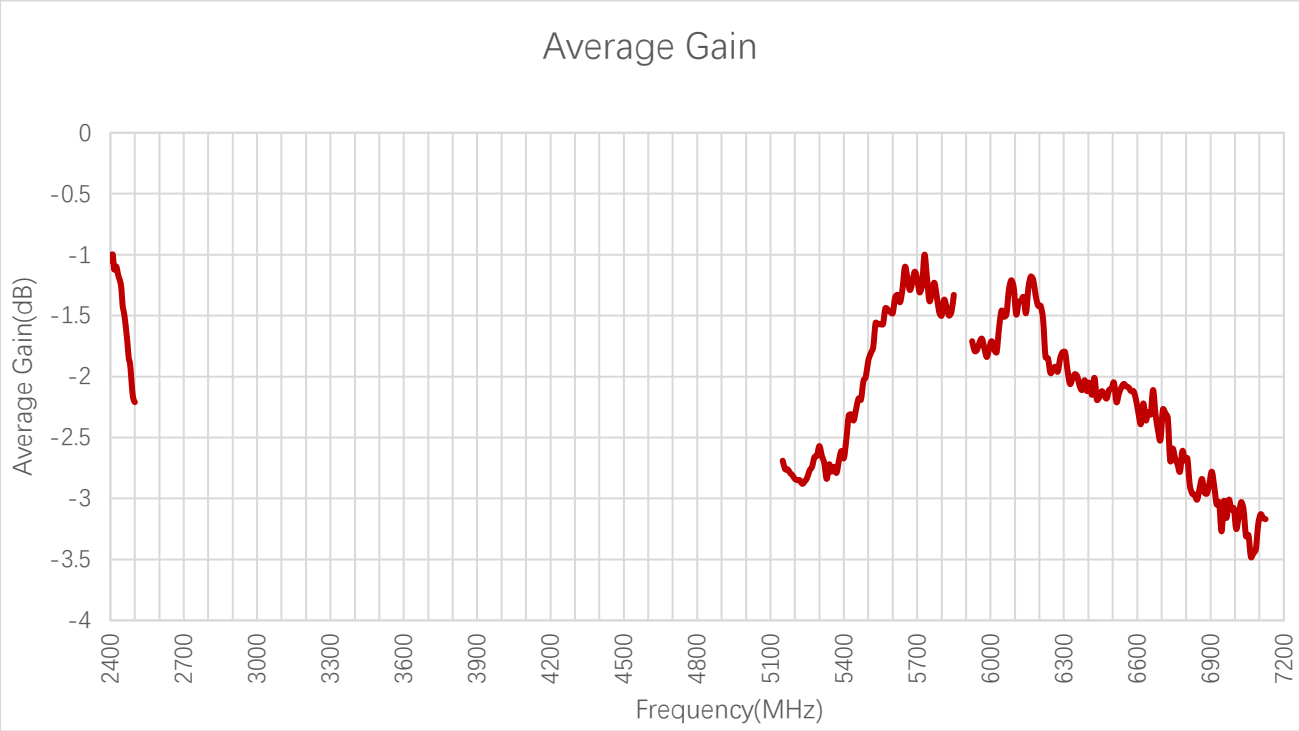
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Efficiency (%)	78.4	72.1	60.1	53.9	65.0	73.6	67.5	61.0	48.2

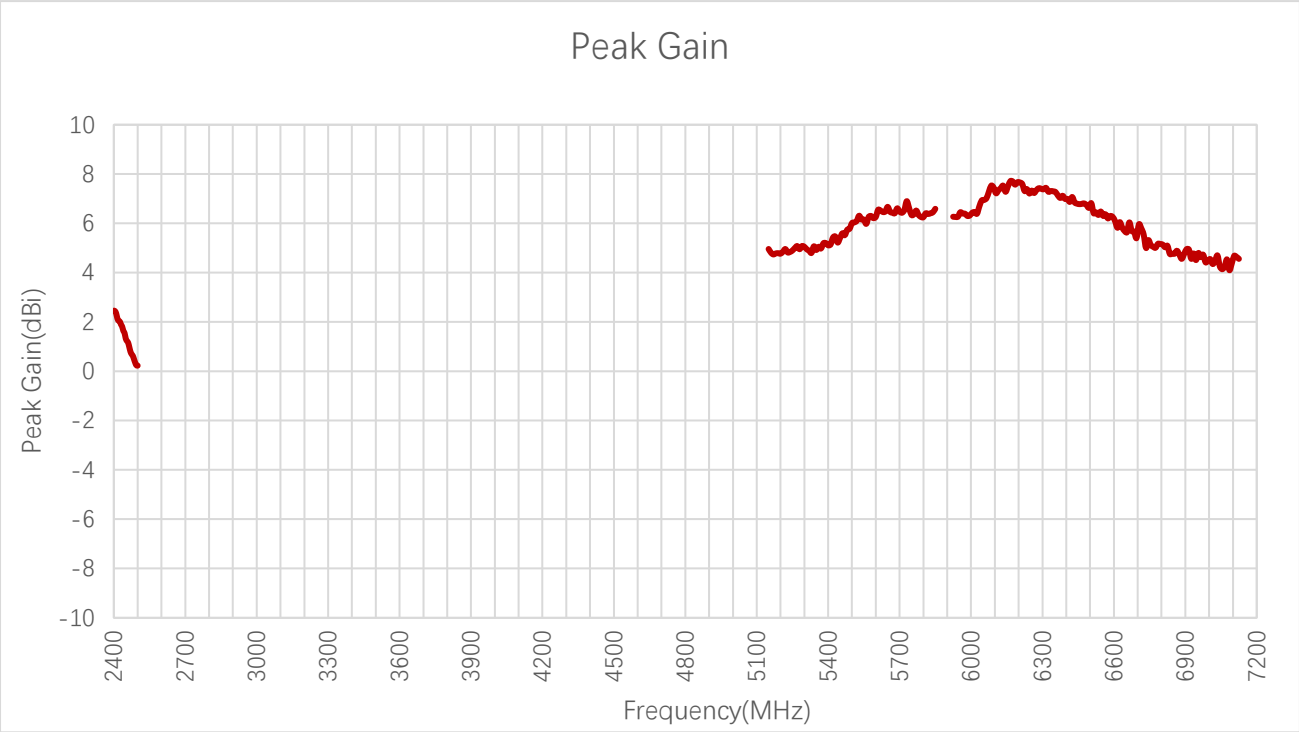
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Average Gain (dB)	-1.1	-1.4	-2.2	-2.7	-1.9	-1.3	-1.7	-2.1	-3.2

3.2.3. Peak Gain

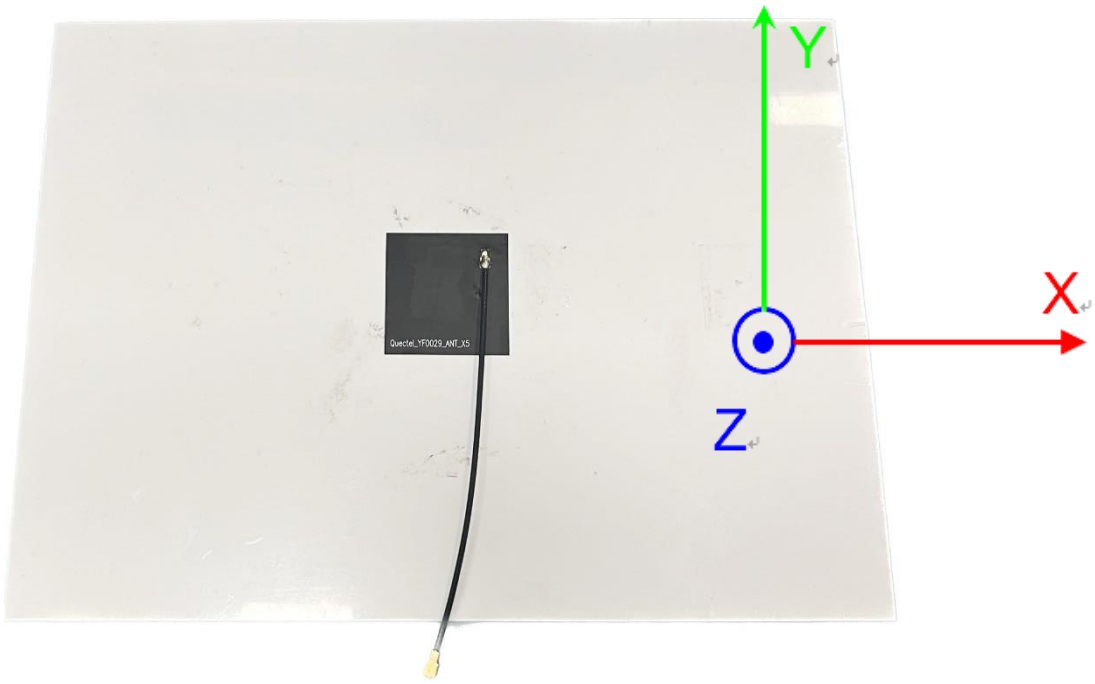


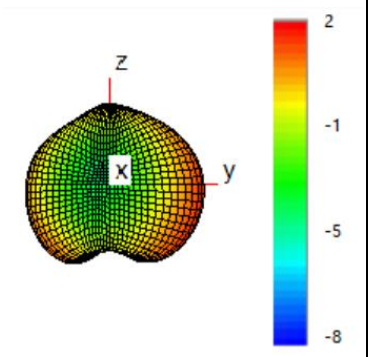
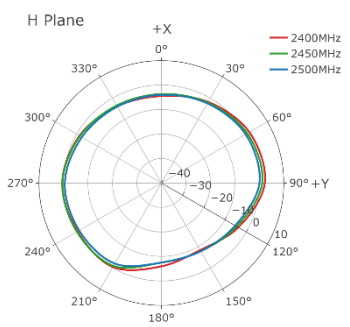
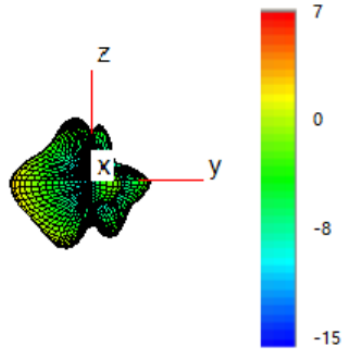
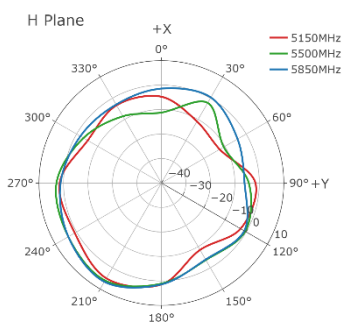
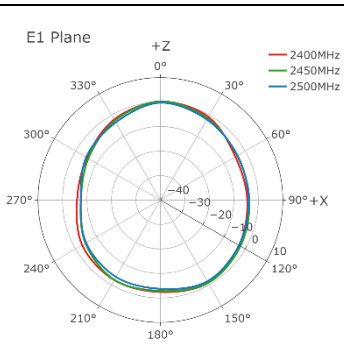
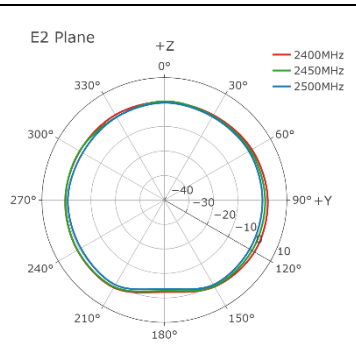
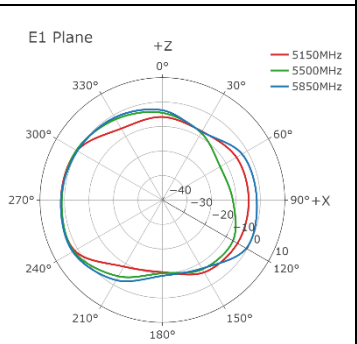
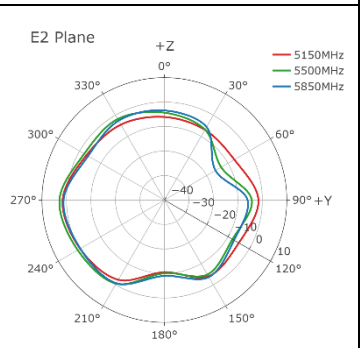
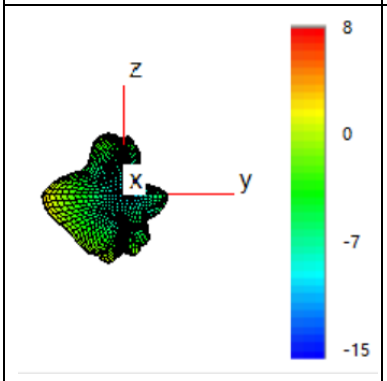
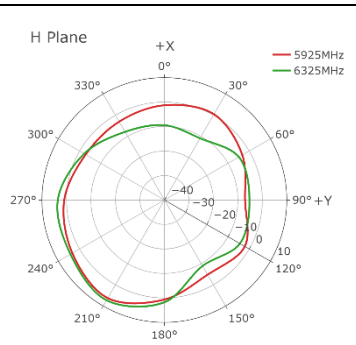
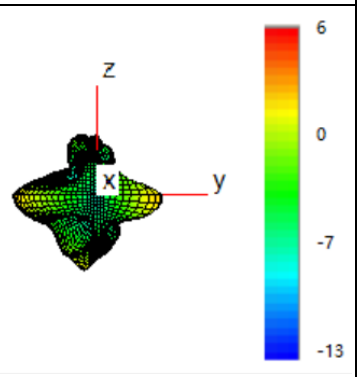
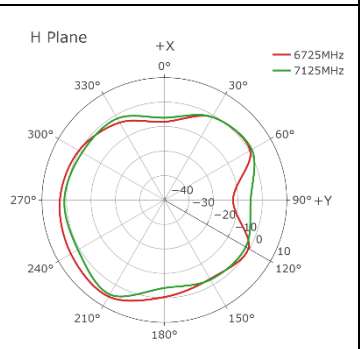
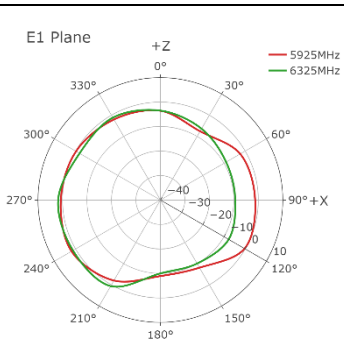
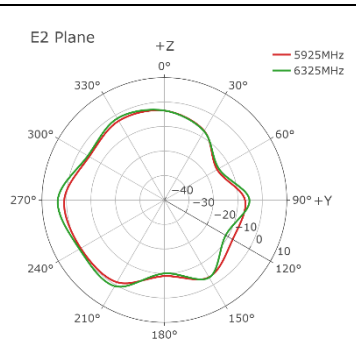
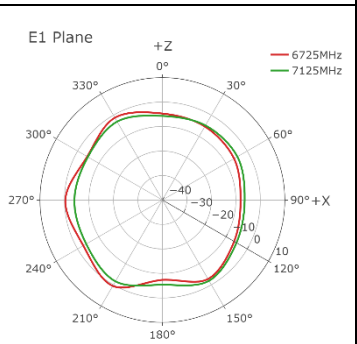
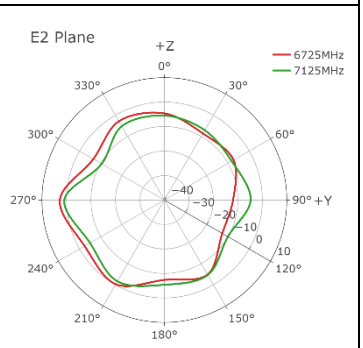
Peak Gain (dBi)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
Peak Gain (dBi)	2.5	1.3	0.2	5.0	6.0	6.6	6.3	6.5	4.6

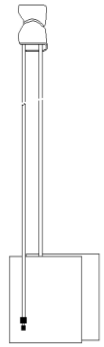
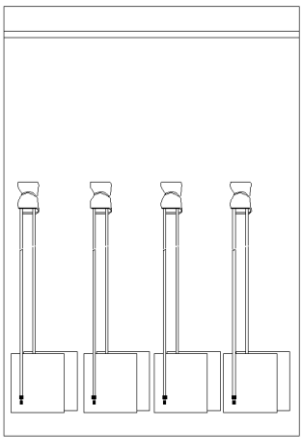
3.2.4. 3D & 2D Radiation Pattern

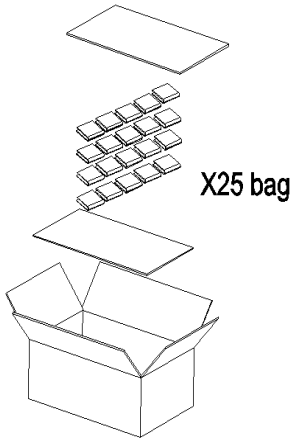
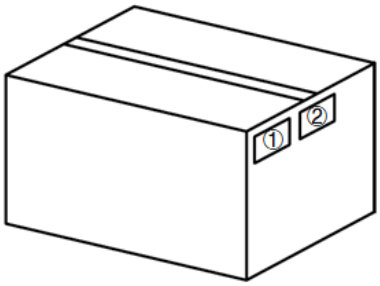
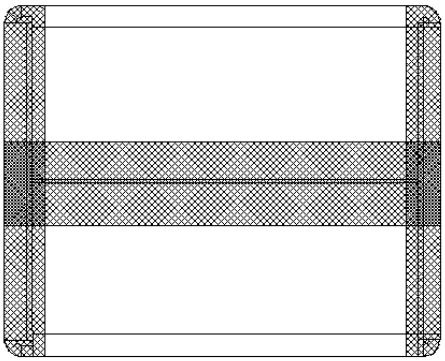
- Test Condition: Stick on 2 mm Thick ABS Board
- Test Chamber: HF-G-1



2450 MHz		5500 MHz	
			
			
6325 MHz		6725 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 50PCS/bale	A bundle of 50 products
2	 200PCS/bag	200 pcs antenna products in a PE bag; PE Bag Size: L × W = 300 × 200 mm

3		Place a clapboard at the bottom and top; (25 PE bags per carton box) (5000 pcs antennas per carton box) Carton Size: L × W × H = 370 × 295 × 150 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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Tel: +86 21 5108 6236
Email: info@quectel.com

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	First official release
1.1	2021-11-30	Kenny YIN	Updated the product description (Chapter 1).
2.0	2023-06-19	Bunny ZHANG/ Lucky FENG/ David LIU	Updated the template and all test data.
2.1	2023-07-16	Bunny ZHANG	1. Added storage temperature of the antenna and deleted the excel about storage (Chapter 1.2). 2. Updated some details.
2.2	2023-11-29	Lucky FENG	Added REACH Compliant (Chapter 1.2).

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