



Antenna Datasheet

Product OC: YF0029CA

Version: 2.2

Date: 2025-05-19

Status: Released

Product Name: Wi-Fi Adhesive Mount FPC + Cable PIFA Embedded Antenna

Key Features:

Frequency band: 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz

Peak efficiency: 76.48% (ABS)

Dimensions: 29.98 mm × 30.85 mm

RoHS compliant

Overview

The YF0029CA is a Wi-Fi FPC antenna measuring 29.98 × 30.85 mm. This Wi-Fi antenna provides coverage from 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz. The antenna has a 100 mm-long cable, terminated with IPEX MHF 4L 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 Wi-Fi 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 YF0029CA is designed as a PIFA antenna, which is 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.

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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

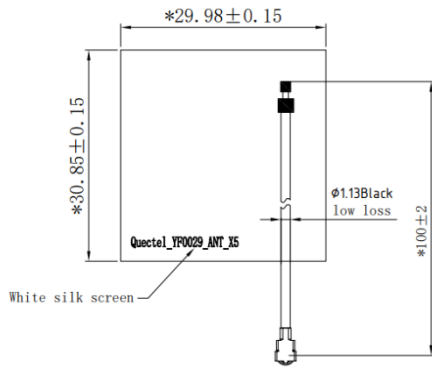
Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 6G
		Freq. (MHz)	2400–2500	5150–5850	5925–7125
Max. VSWR	ABS		2.1	3.6	3.0
Max. Return Loss (dB)	ABS		-9.0	-5.0	-6.1
AVG Eff. (%)	ABS		66.5	60.9	56.1
AVG. AVG Gain (dB)	ABS		-1.8	-2.2	-2.5
Max. Peak Gain (dBi)	ABS		1.9	5.7	6.7
VSWR	ABS		≤ 3.6		
Return Loss	ABS		≤ -5.0 dB		
Peak Gain	ABS		≤ 6.7 dBi		

- ABS: Stick on 2 mm thick ABS Board

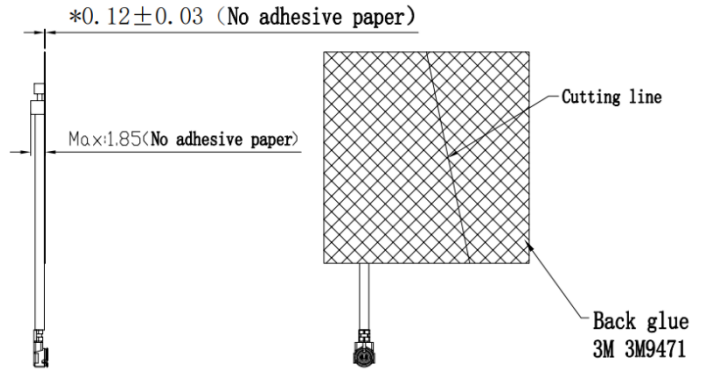
1.2. Mechanical & Environmental

Mechanical	
Antenna Size	29.98 mm × 30.85 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 100 mm
Connector Type	IPEX MHF 4L
Mounting Type	Adhesive
Antenna Weight	Typ. 0.45 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

2 Drawing



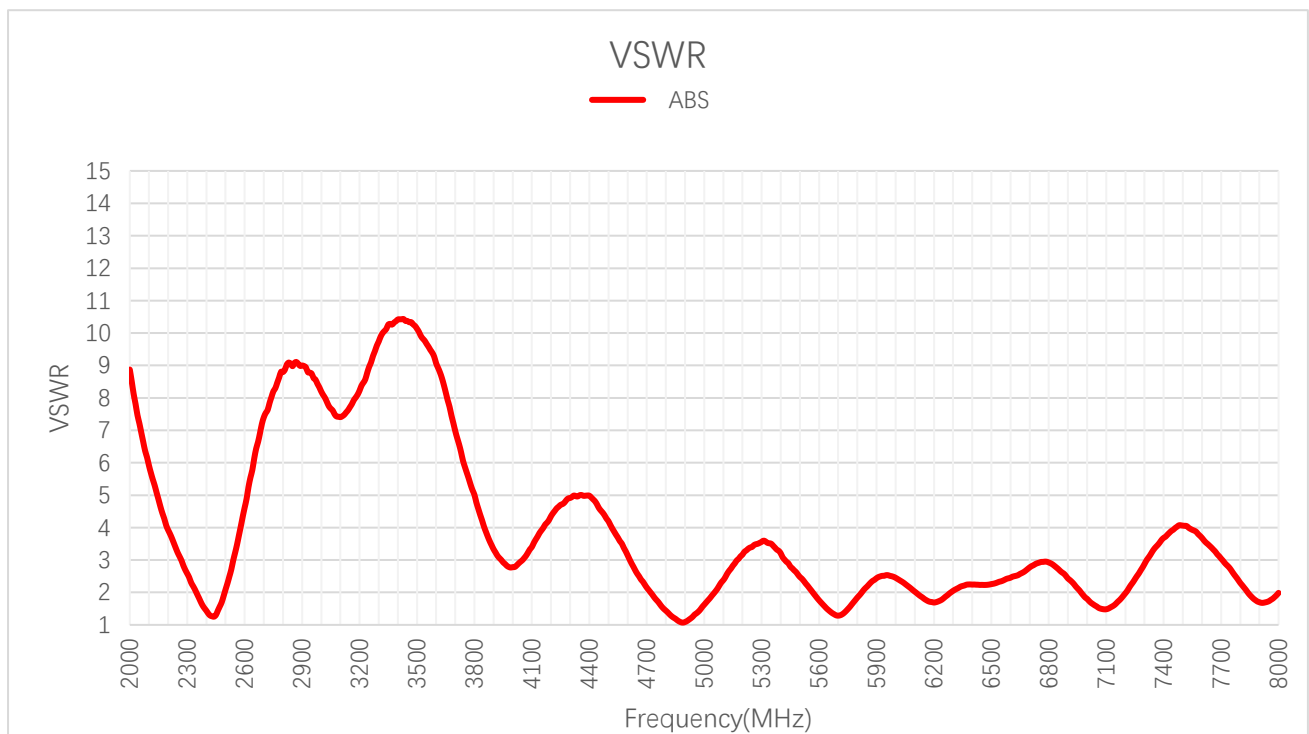
*IPEX MHF 4L (Partial nickel plating, Partial gold plating) Mouth side down



3 Detailed Performance

3.1. S-Parameter Test

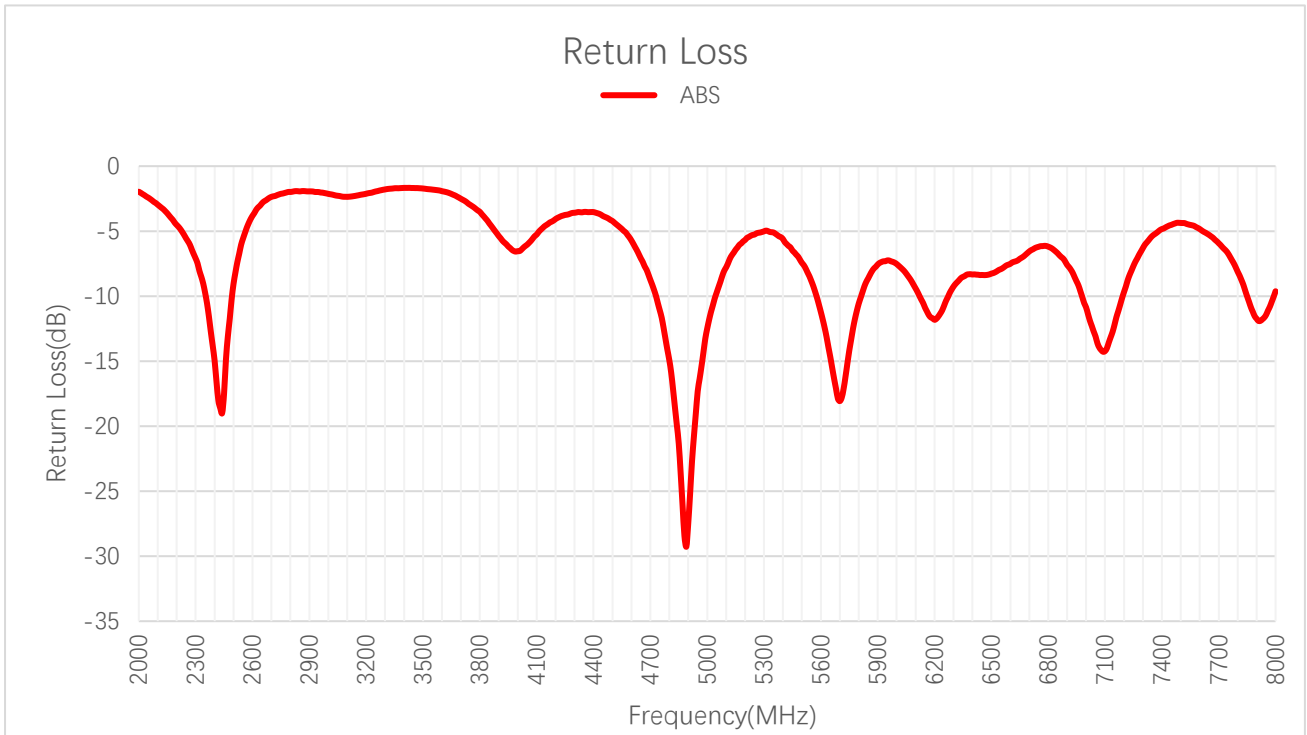
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
ABS	1.4	1.3	2.1	2.8	2.5	2.2	2.5	2.3	1.5

3.1.2. Return Loss

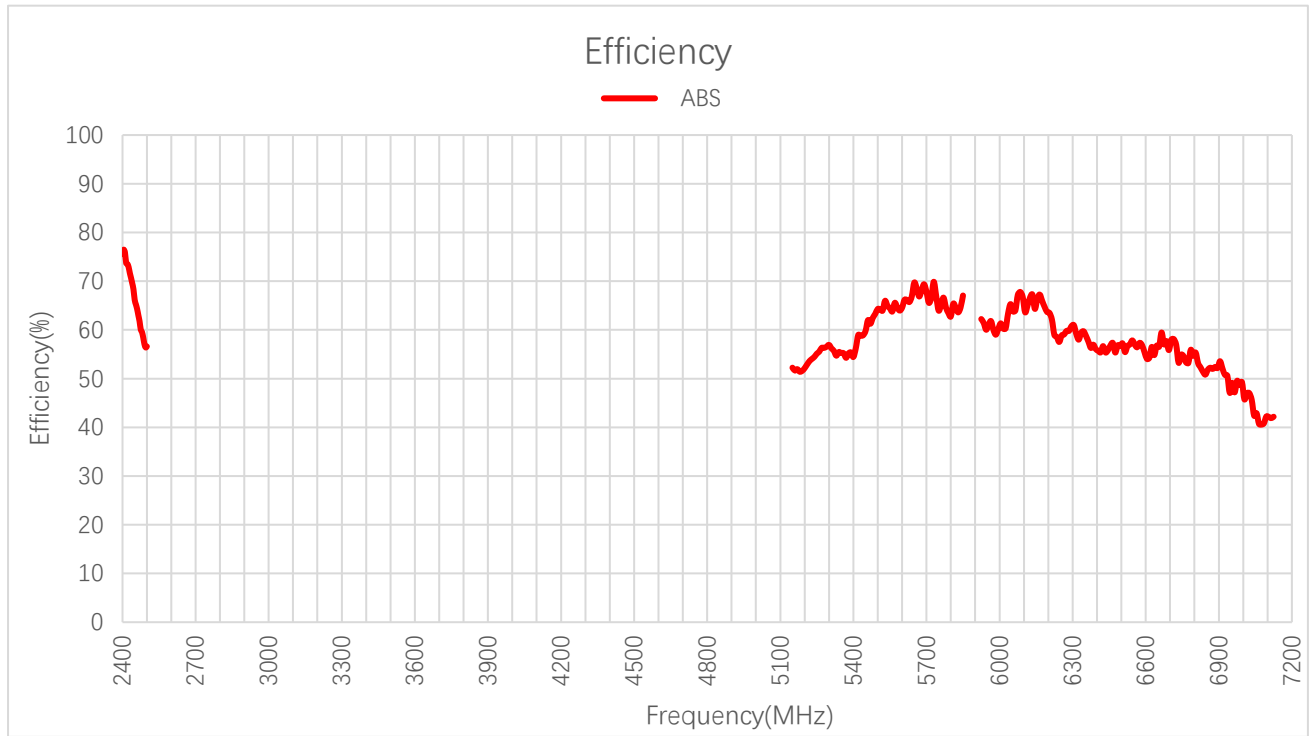


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6520	7120
ABS	-14.9	-17.5	-9.0	-6.4	-7.4	-8.6	-7.4	-8.2	-13.6

3.2. Radiation Performance Test

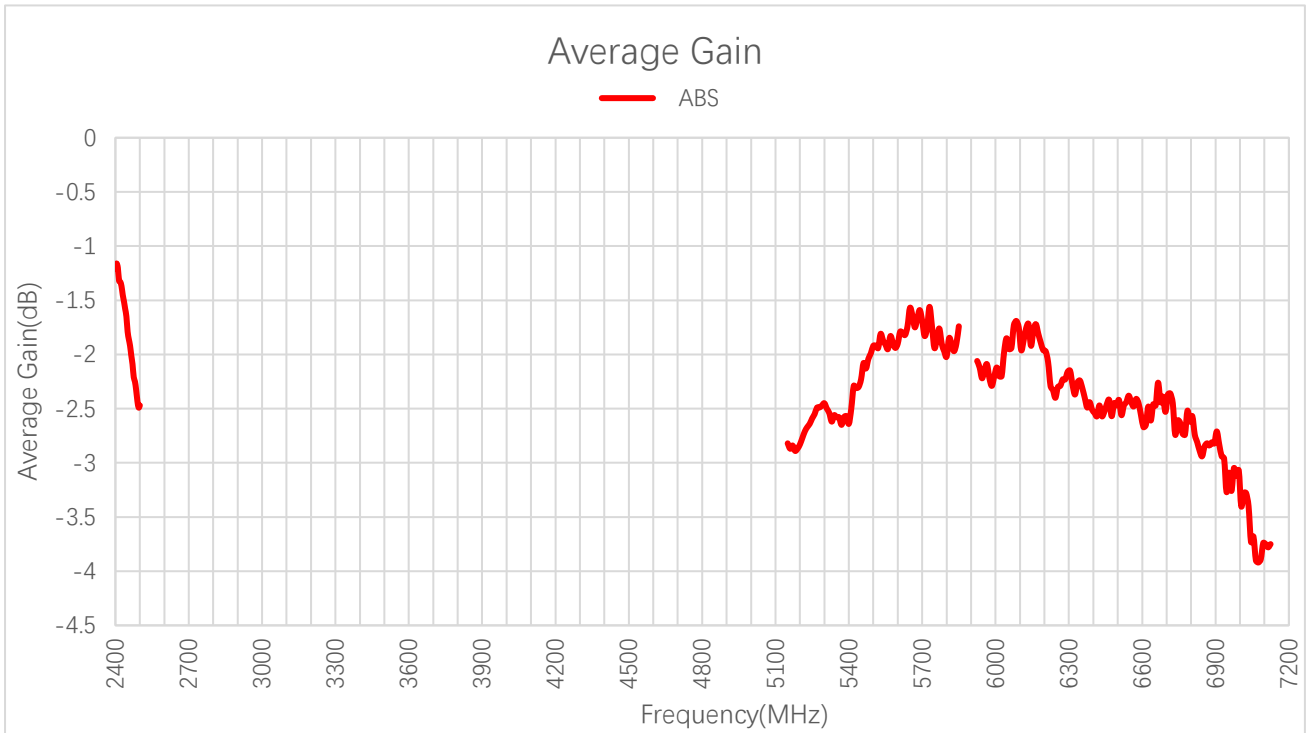
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	75.7	66.2	56.6	52.3	64.3	67.1	62.2	56.7	42.2

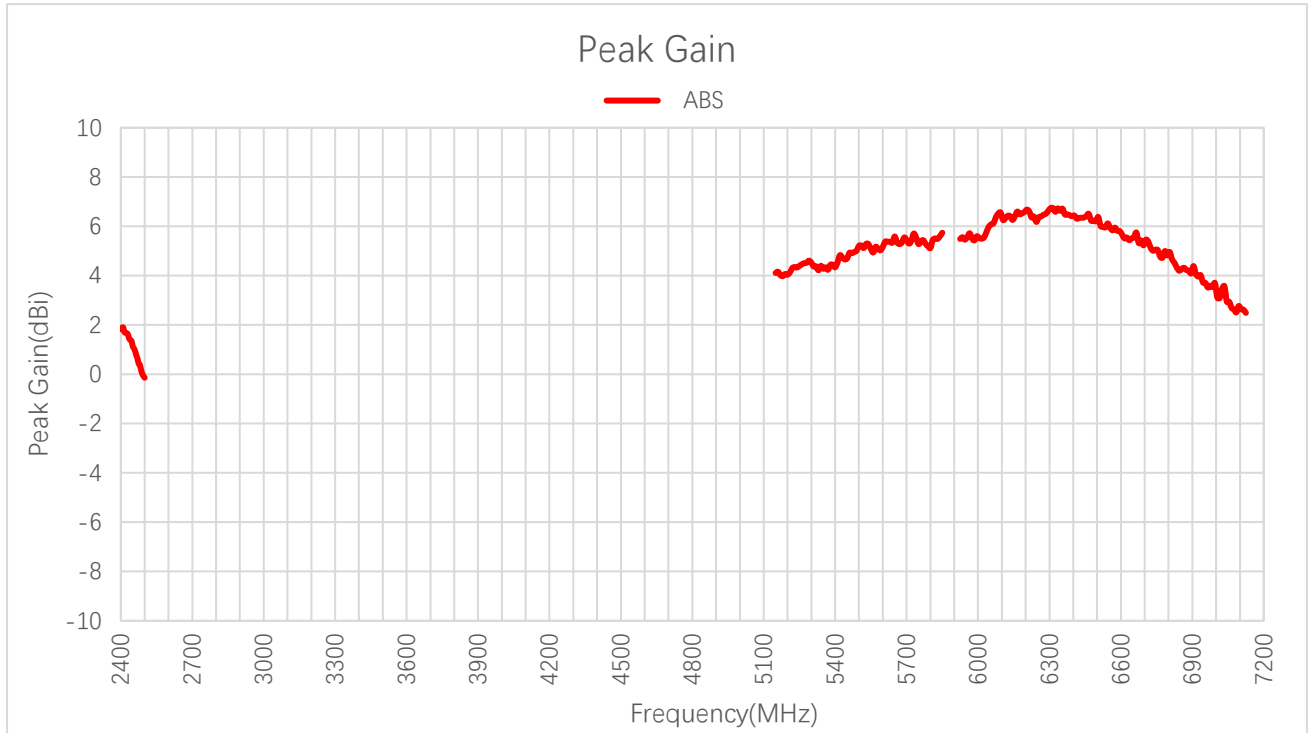
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	-1.2	-1.8	-2.5	-2.8	-1.9	-1.7	-2.1	-2.5	-3.8

3.2.3. Peak Gain



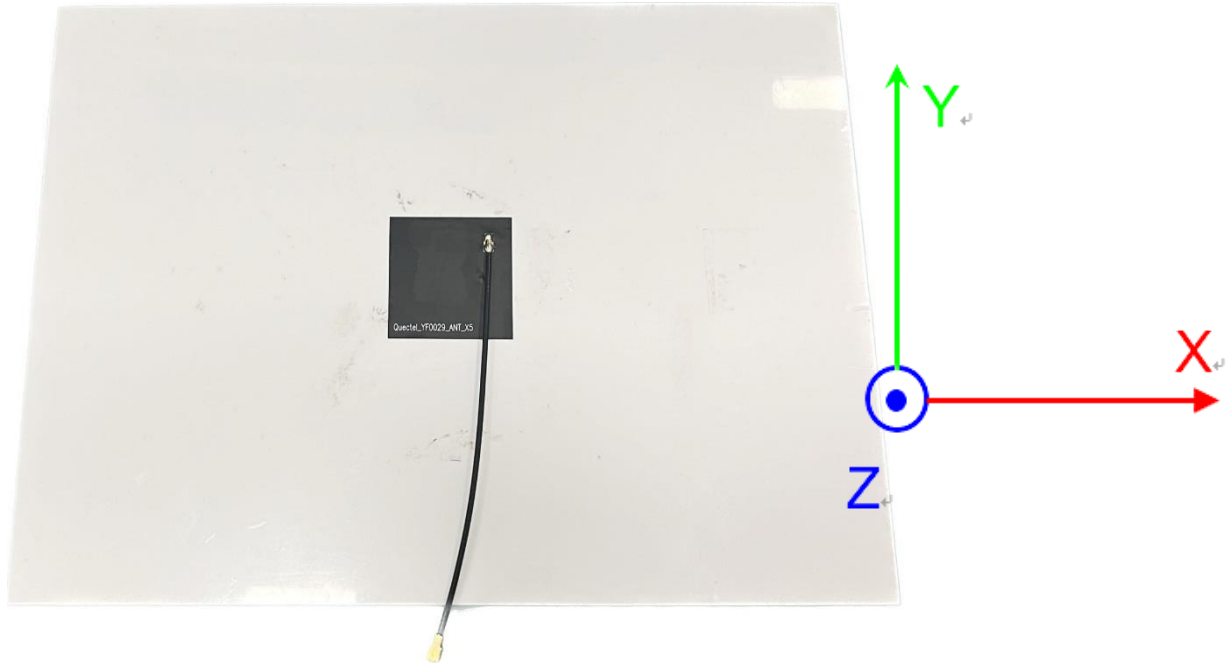
Peak Gain (dBi)

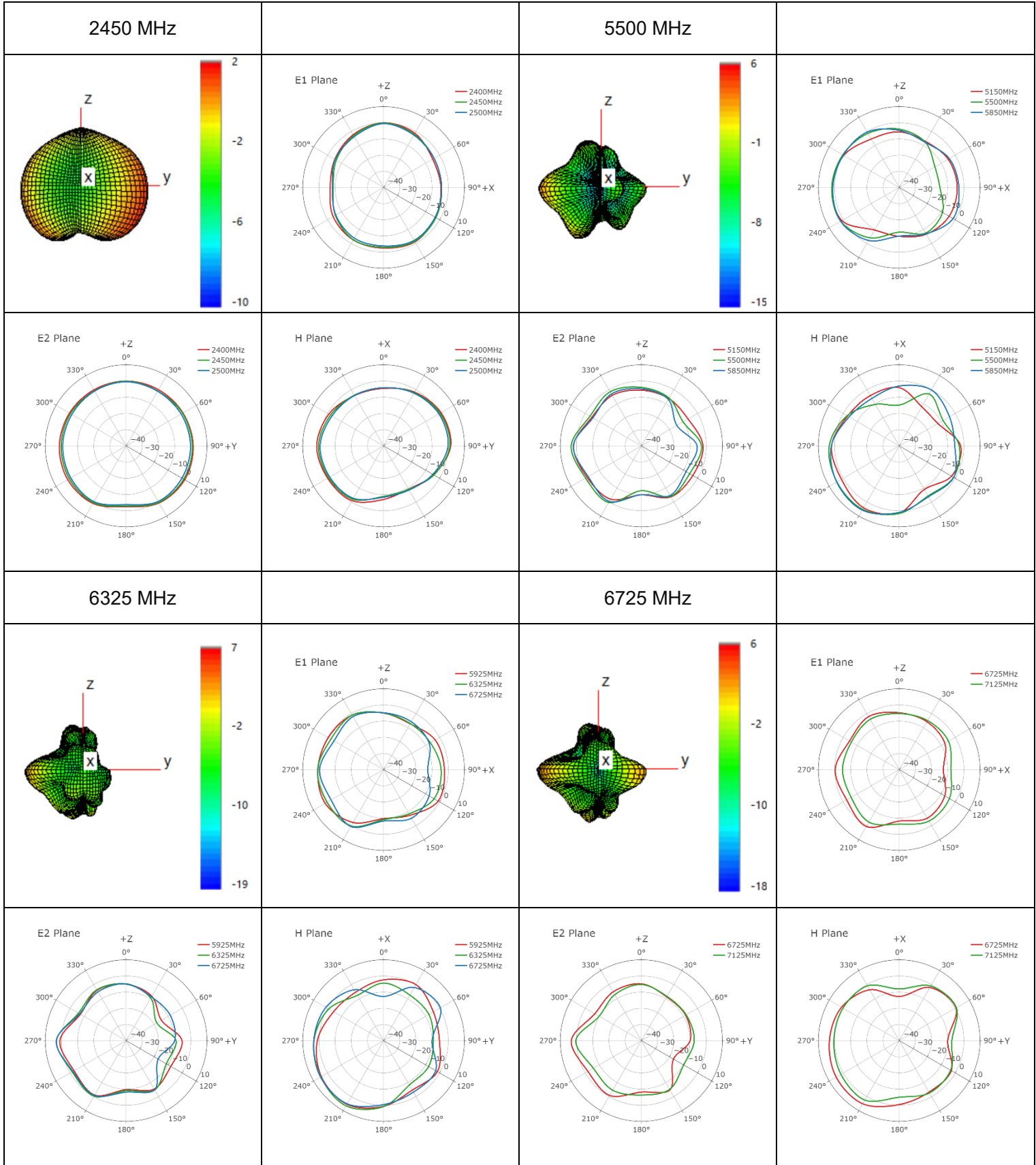
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	1.8	1.1	-0.1	4.1	5.2	5.7	5.5	6.0	2.5

3.2.4. 3D & 2D Radiation Pattern


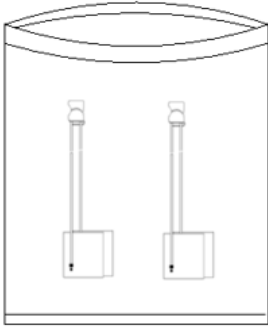
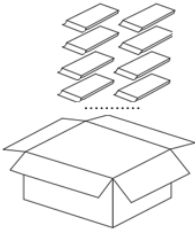
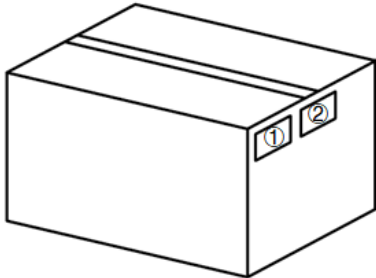
Test Condition: Stick on 2mm thick ABS Board

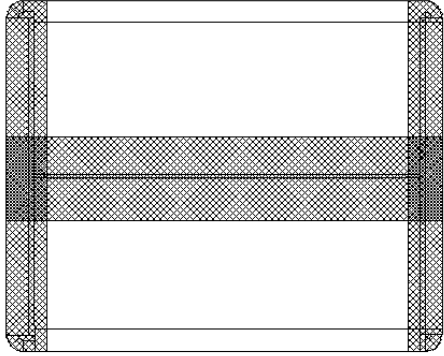
- Test Chamber: HF-G-1





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>50 pcs antenna products are wrapped with EPE foam (50 PCS Antennas / Tie)</p>
2		<p>100 pcs antenna products in a PE bag. (100 PCS Antennas / PE Bag)</p>
3		<p>(50 PE Bags / Carton Box) (5000 PCS Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. <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		Sealing Cartons H-shaped sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

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
-	2022-08-18	Sly LIU/ Lucky FENG	Creation of the document
1.0	2023-01-15	Sly LIU/ Lucky FENG	First official release
2.0	2023-05-29	Vinnie LIU/ Lucky FENG/ David LIU	Updated all test data.
2.1	2024-06-07	Lucky FENG	<ol style="list-style-type: none">1. Updated the storage temperature (Chapter 1.2).2. Updated the drawing (Chapter 2).
2.2	2025-05-19	Riva REN/ Aria CHU	<ol style="list-style-type: none">1. Updated the antenna image (Cover page).2. Updated the overview.3. Updated the packaging (Chapter 4).

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