

A photograph of the antenna assembly against a white, pyramid-shaped acoustic foam background. A black rectangular label is attached to the top of the antenna, with the text "Qectel_YF0011_ANT_X1" printed on it. The antenna consists of a thin black cable with a gold-colored SMA connector at the bottom and a small dipole antenna structure at the top.

Qectel_YF0011_ANT_X1

Antenna Datasheet

Product OC: YF0011KA

Version: 2.4

Date: 2025-05-19

Status: Released

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

Key Features:

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

Peak efficiency: 85.93 % (ABS)

Dimensions: 38.9 mm × 9 mm

RoHS and REACH Compliant

Overview

The YF0011KA is a Wi-Fi FPC antenna measuring 38.9 mm × 9 mm. This Wi-Fi antenna provides coverage from 2400–2500 MHz, 5150–5850 MHz. The antenna has a 50.5 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 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 YF0011KA is designed as a dipole 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: Free Space & Stick on 2 mm Thick ABS Board

1.1. Electrical

Electrical	
Frequency Range	2400–2500 MHz, 5150–5850 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	FS		3.8	1.7	-
	ABS		1.6	1.7	-
Max. Return Loss (dB)	FS		-4.6	-11.5	-
	ABS		-12.3	-11.3	-
AVG Eff. (%)	FS		53.0	69.1	-
	ABS		78.9	63.8	-
AVG. AVG Gain (dB)	FS		-2.8	-1.6	-
	ABS		-1.0	-2.0	-
Max. Peak Gain (dBi)	FS		0.3	2.4	-
	ABS		3.3	3.3	-
VSWR	FS		≤ 3.8		

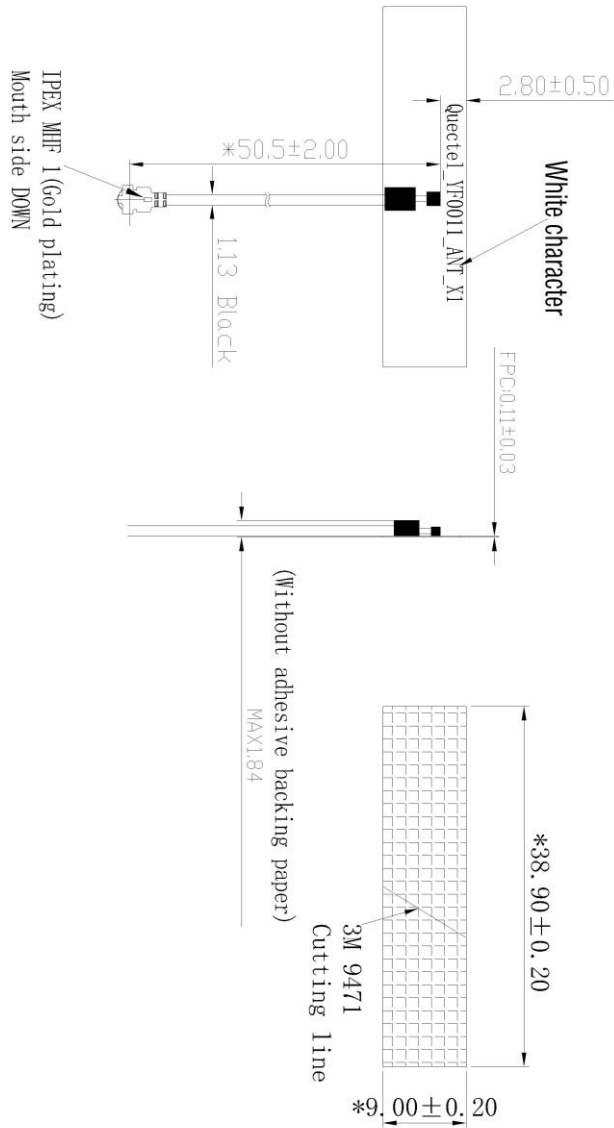
	ABS	≤ 1.7
Return Loss	FS	≤ -4.6 dB
	ABS	≤ -11.3 dB
Peak Gain	FS	≤ 2.4 dBi
	ABS	≤ 3.3 dBi

- FS: Free Space
- ABS: Stick on 2 mm Thick ABS Board

1.2. Mechanical & Environmental

Mechanical	
Antenna Size	38.9 mm × 9 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 50.5 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Antenna Weight	Typ. 0.36 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

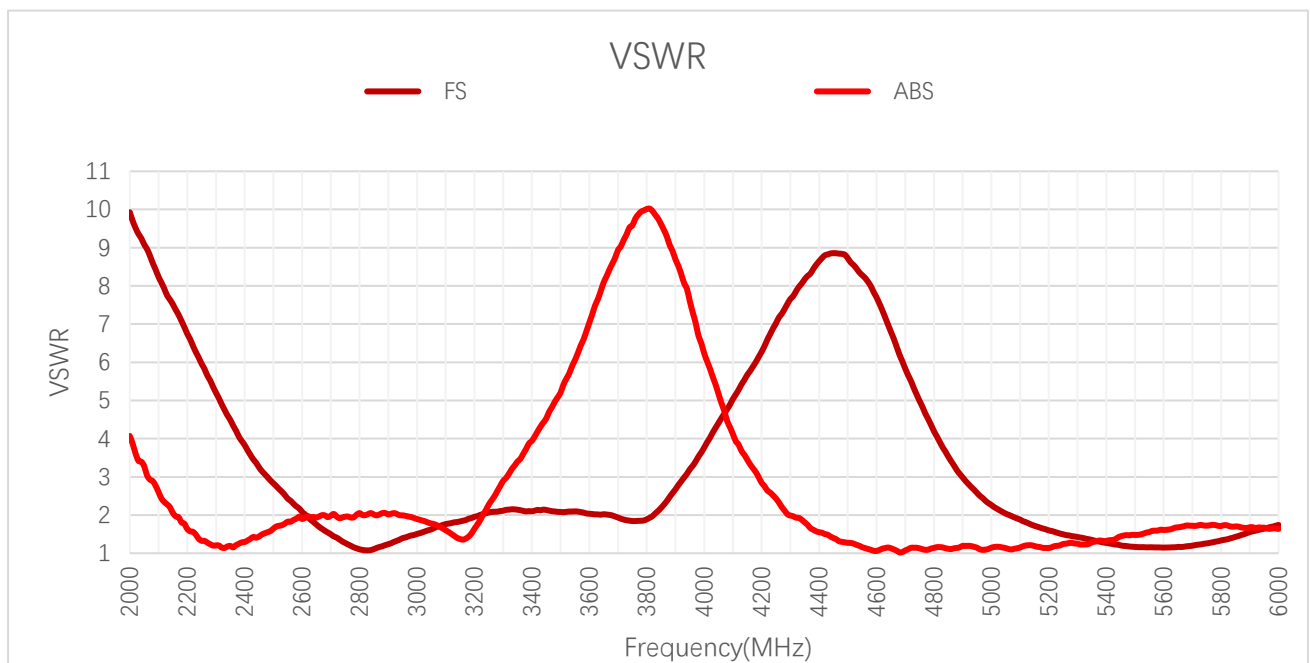
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

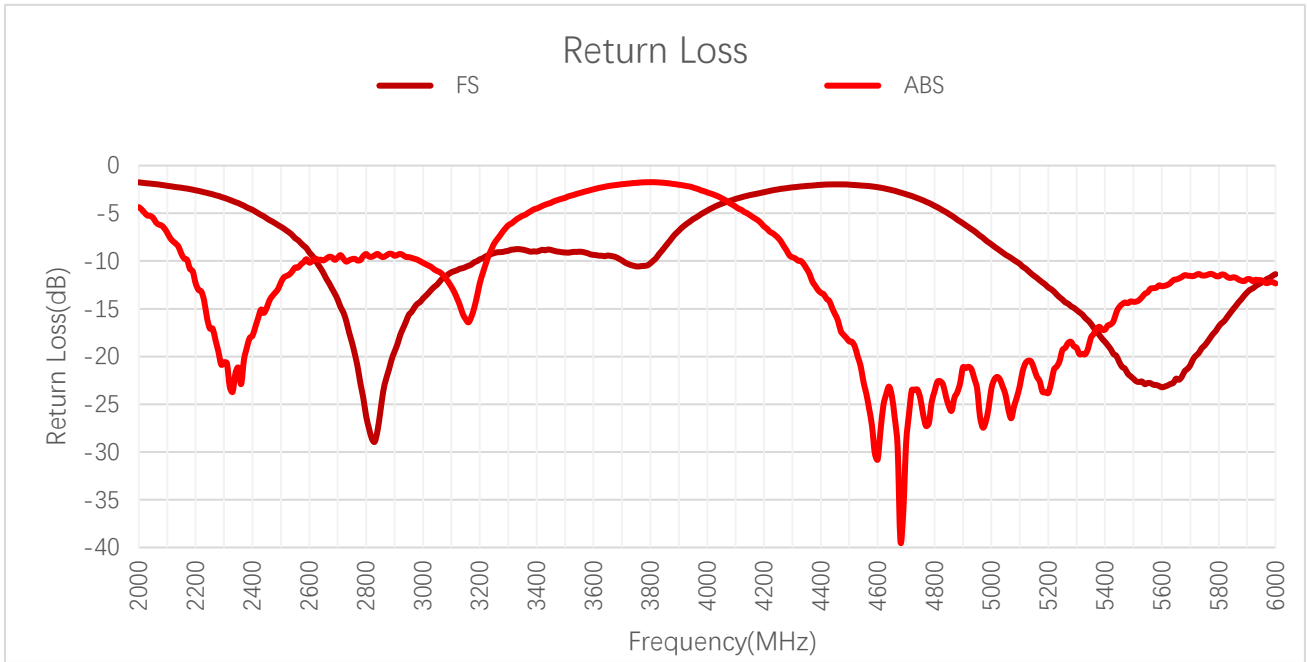
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	3.8	3.2	2.8	1.7	1.2	1.4	-	-	-	-
ABS	1.3	1.4	1.6	1.2	1.5	1.7				

3.1.2. Return Loss

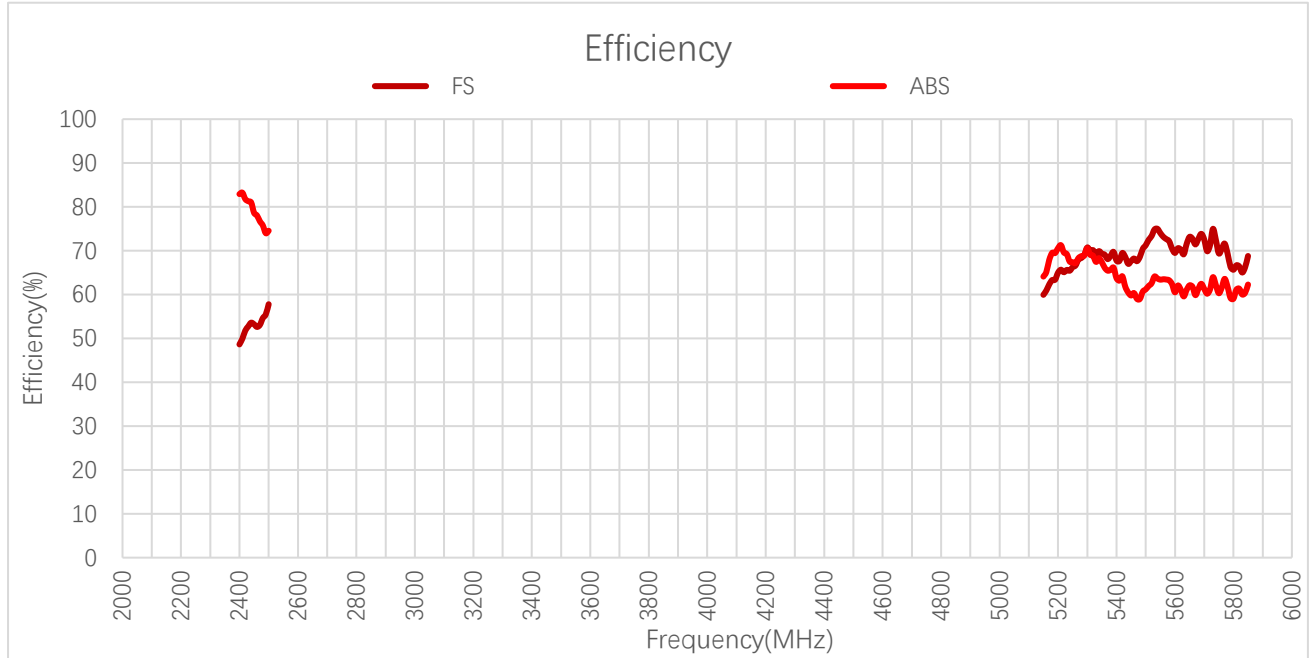


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-4.6	-5.5	-6.4	-11.5	-22.3	-15.1	-	-	-	-
ABS	-17.8	-14.9	-12.3	-21.3	-14.3	-11.7				

3.2. Radiation Performance Test

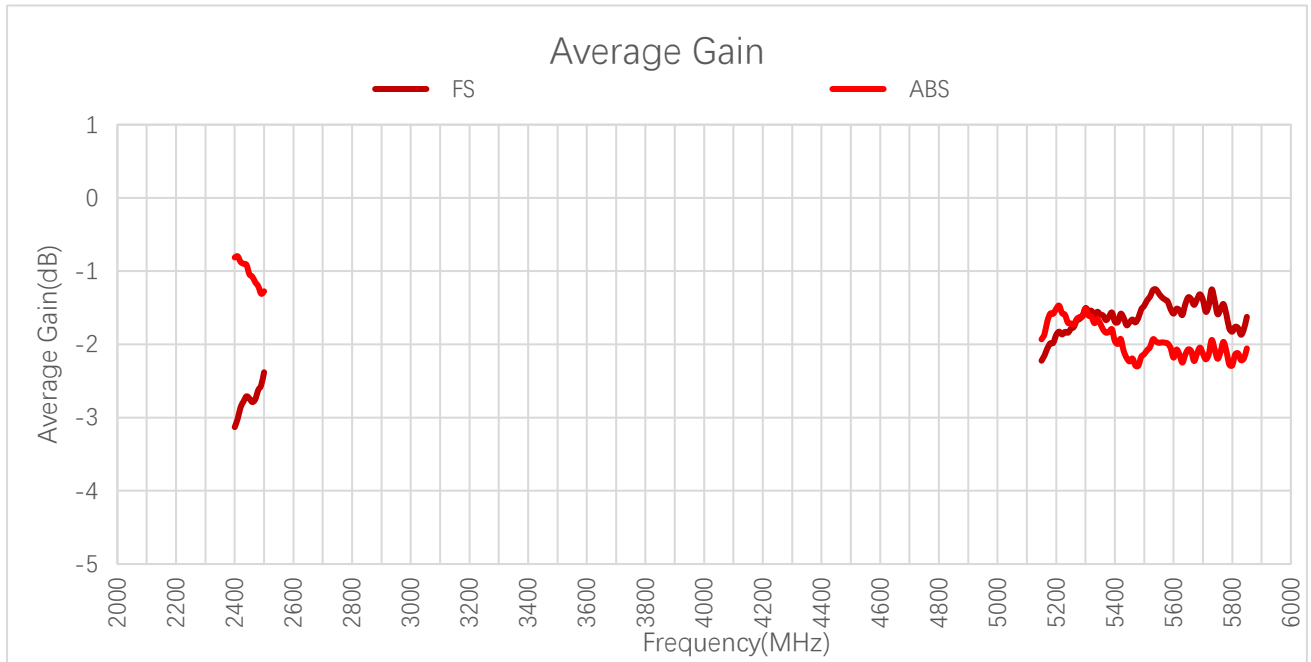
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	48.6	53.2	57.8	59.9	71.2	68.8	-	-	-	-
ABS	82.9	78.6	74.6	64.1	61.2	62.3				

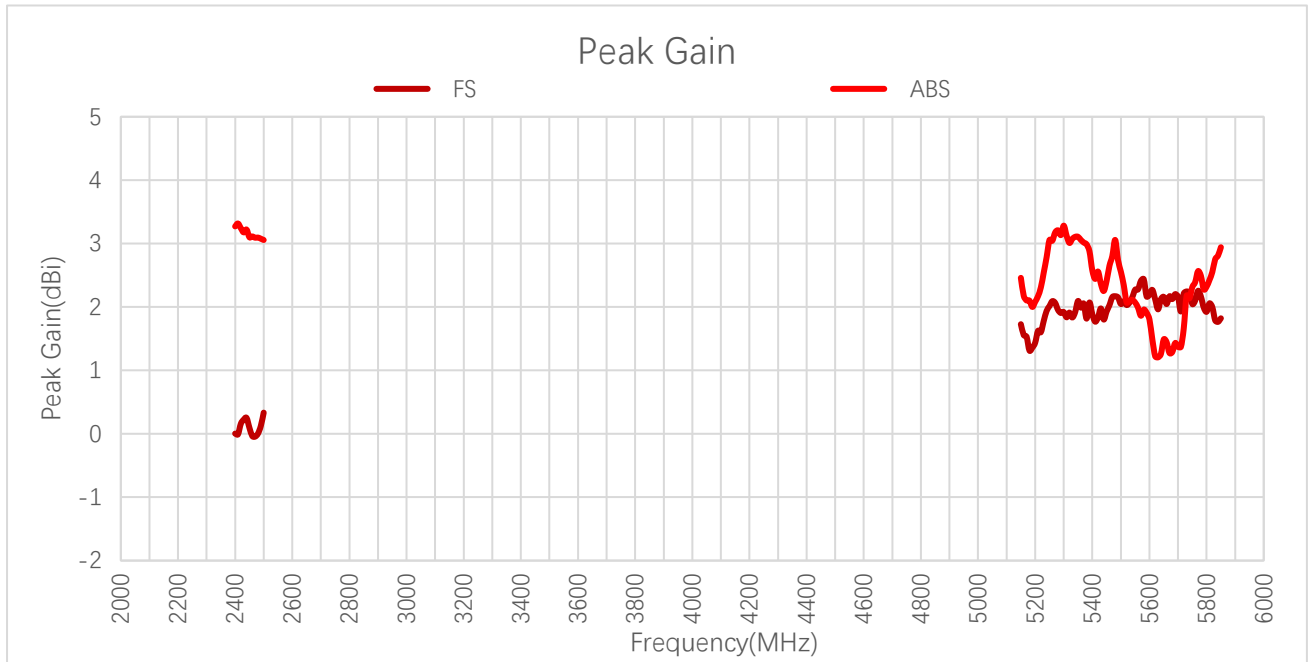
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	-3.1	-2.7	-2.4	-2.2	-1.5	-1.6	-	-	-	-
ABS	-0.8	-1.0	-1.3	-1.9	-2.1	-2.1				

3.2.3. Peak Gain



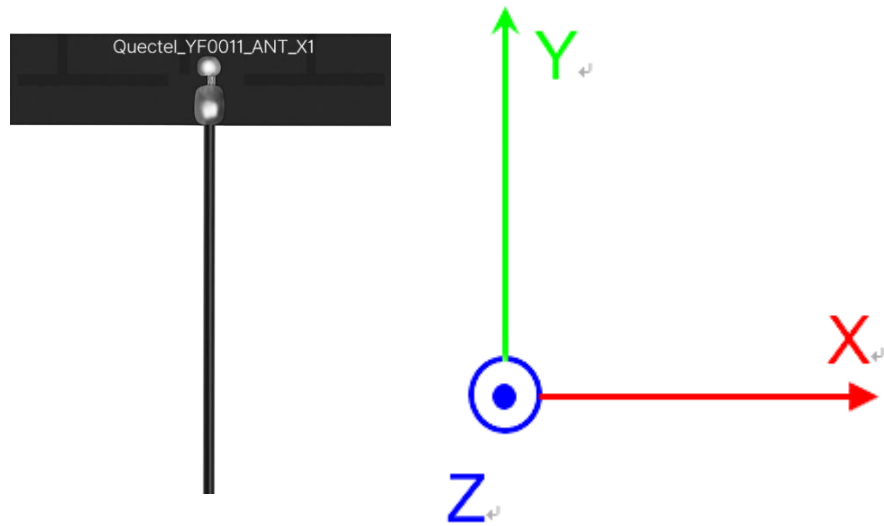
Peak Gain (dBi)

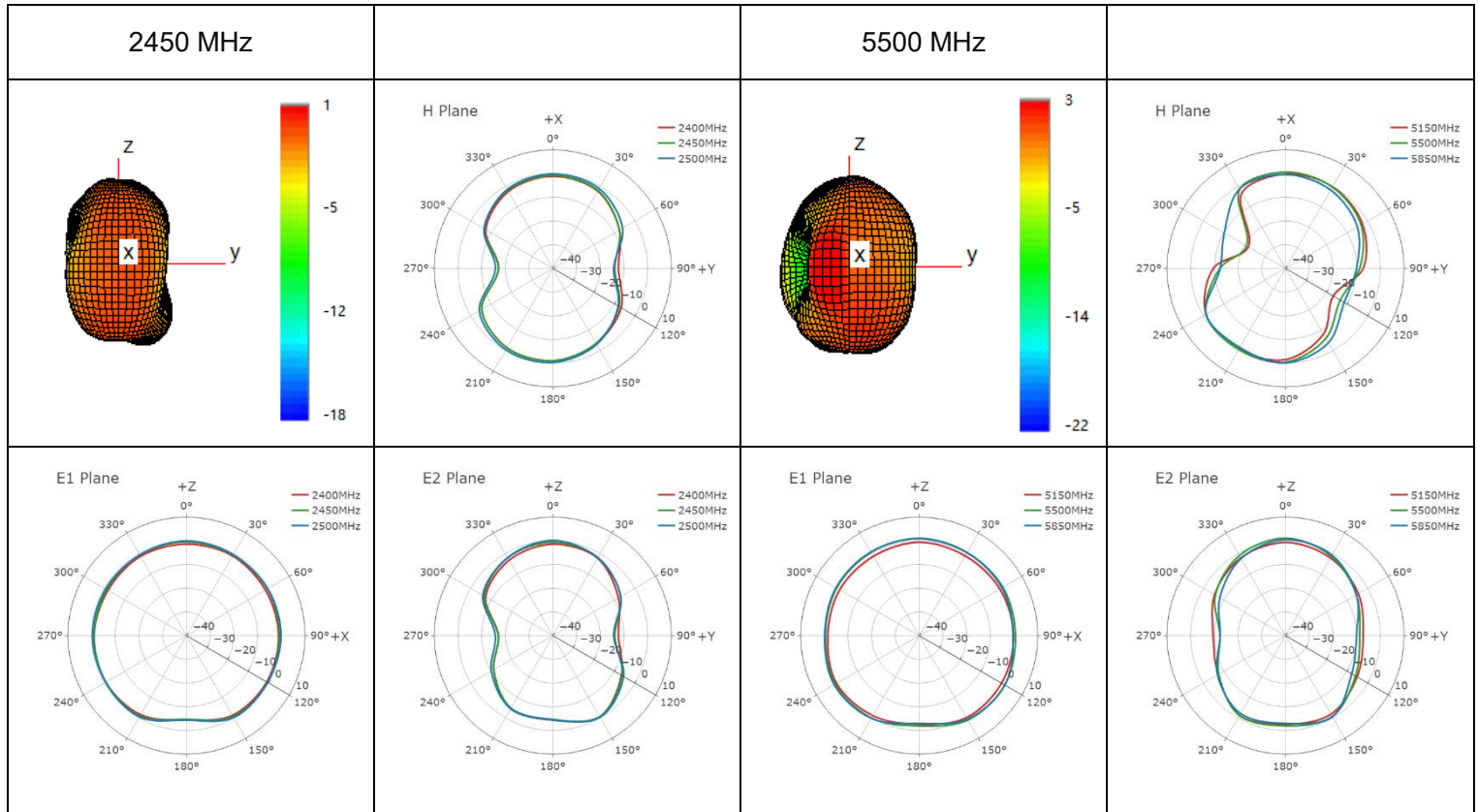
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
FS	0.0	0.1	0.3	1.7	2.0	1.8	-	-	-	-
ABS	3.3	3.1	3.1	2.5	2.6	2.9				

3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Free Space

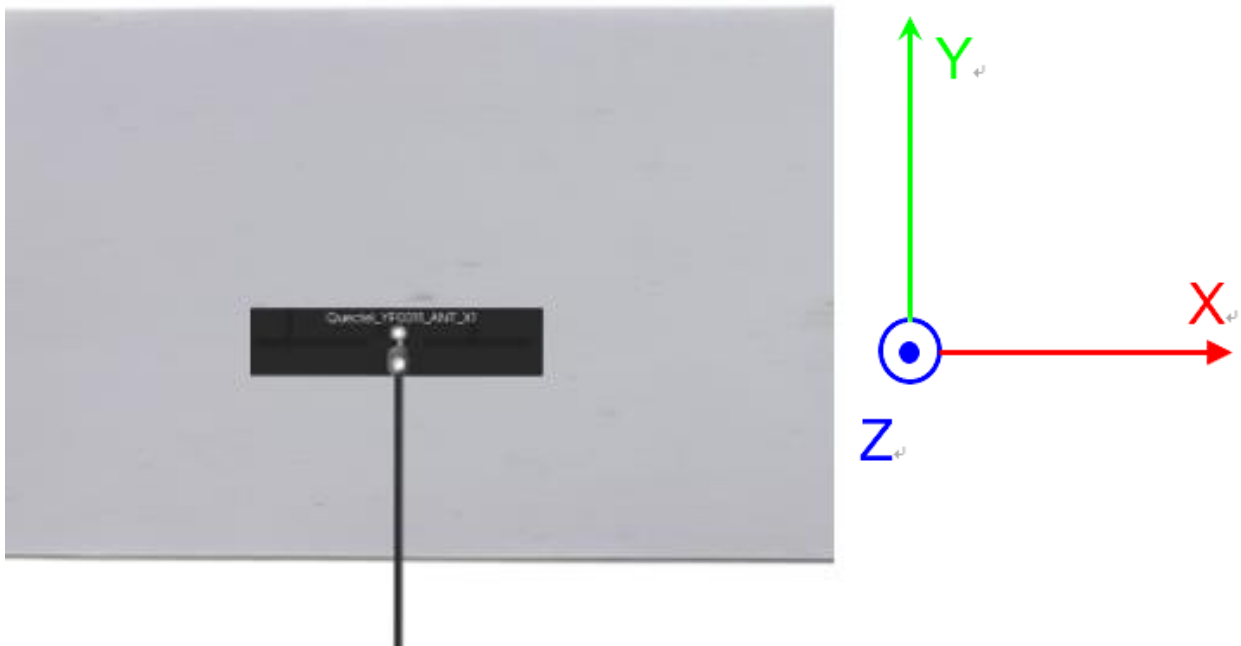
- Test Chamber: HF-G-1

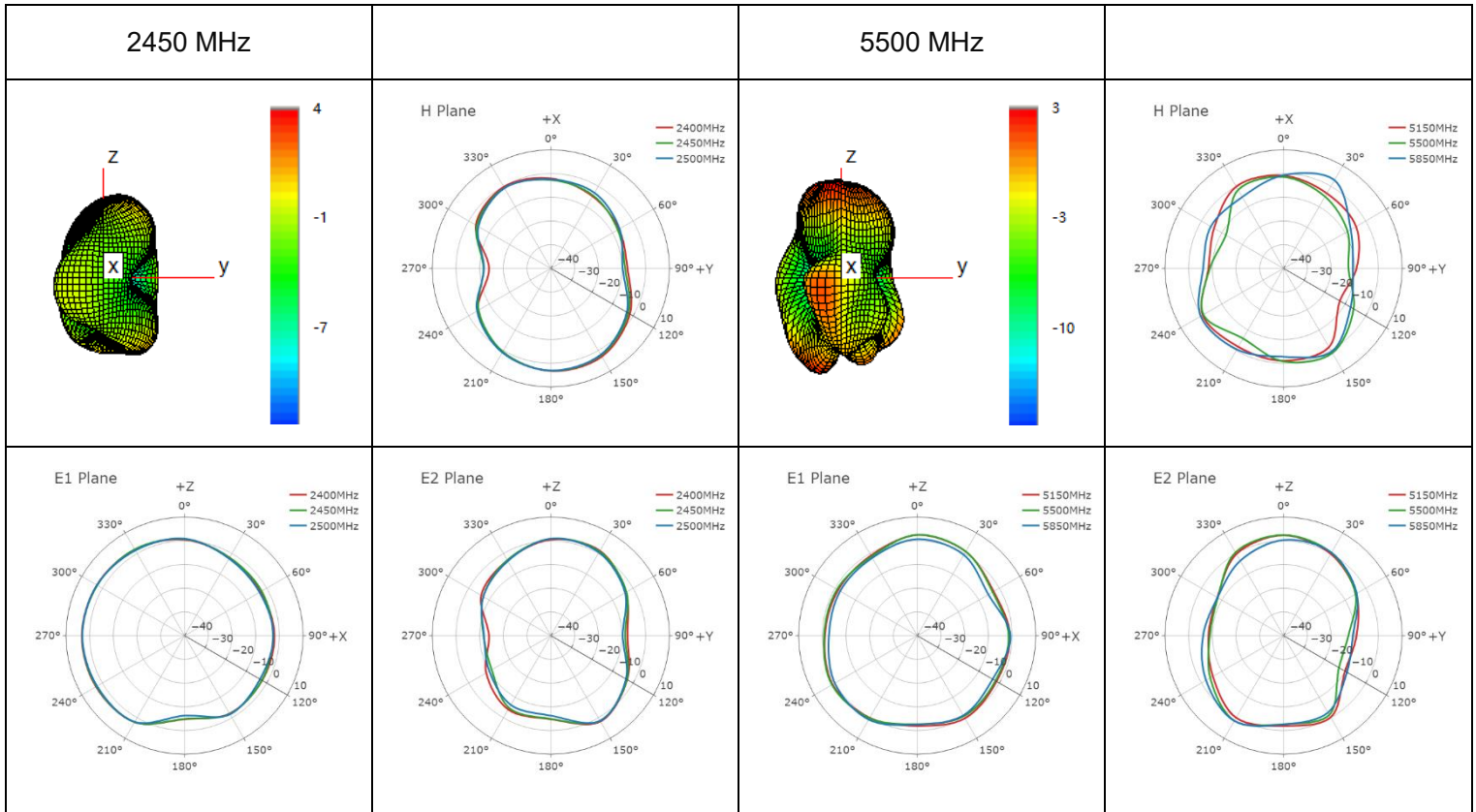







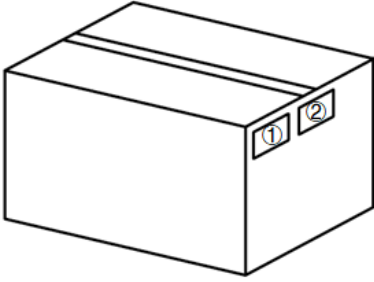
3.2.4.2. Test Condition: Stick on 2 mm Thick ABS Board

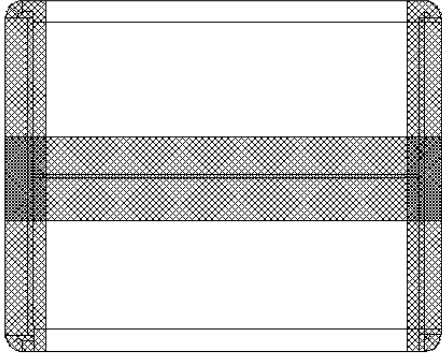
- Test Chamber: HF-G-1





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>20 antenna products are bundled together, with their terminals wrapped in EPE foam.</p>
2		<p>The antenna products are put into a PE bag. (200 PCS Antennas / PE Bag)</p>
3		<p>(25 PE Bags / Carton Box) (5000 PCS Antennas / 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	 A technical drawing of an H-shaped sealing carton. It consists of a central horizontal rectangular section with a cross-hatched texture, representing the sealing material. This central section is flanked by two vertical rectangular sections, also with a cross-hatched texture, representing the side panels of the carton. The overall shape is an 'H'.	<p>Sealing Cartons H-shaped sealing cartons</p>
Note	<p>The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.</p>	

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:

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local offices. For more information, please visit:

<http://www.quectel.com/support/sales.htm>.

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Revision History

Version	Date	Author	Note
-	2022-07-25	Richard LIU/ Joye WANG	Creation of the document
1.0	2022-07-25	Richard LIU/ Joye WANG	First official release
2.0	2023-06-12	Aria CHU/ Lucky FENG/ David LIU	<ol style="list-style-type: none">1. Updated all data and datasheet template.2. Updated the antenna image.
2.1	2023-12-05	Lucky FENG/ Aria CHU	Added REACH compliant (Chapter 1.2).
2.2	2024-06-07	Joye WANG	Updated the drawing (Chapter 2).
2.3	2025-03-06	Allow XU	Updated the packaging (Chapter 4).
2.4	2025-05-19	Aria CHU	<ol style="list-style-type: none">1. Updated the antenna image (Cover page).2. Updated the overview.

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