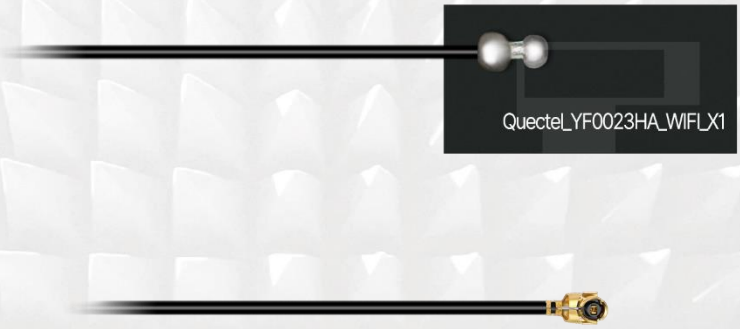


Antenna Datasheet

Product OC: YF0023HA
Version: 2.2
Date: 2025-08-11
Status: Released

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

Key Features:

Frequency band: 2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz
Peak efficiency: 83.2 % (ABS)
Dimensions: 22.9 mm × 11.7 mm
RoHS and REACH Compliant

Overview

The YF0023HA is a Wi-Fi FPC antenna measuring 22.9 mm × 11.7 mm. This Wi-Fi antenna provides coverage from 2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz. The antenna has a 100 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 YF0023HA is designed as a monopole antenna, which is ground dependent 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: Stick to 3 mm thick ABS board & Stick to 3 mm thick ABS board on 130 mm × 130 mm EVB

1.1. Electrical

Electrical	
Frequency Range	2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Band / Specification	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 6G
	Freq. (MHz)	**2400–2500**	**5150–5850**	**5925–7125**
Max. VSWR	**ABS**	2.3	1.8	1.5
	EVB	2.8	2.8	2.0
Max. Return Loss (dB)	**ABS**	-8.2	-10.6	-14.0
	EVB	-6.5	-6.5	-9.3
AVG Eff. (%)	**ABS**	52.9	73.3	64.2
	EVB	54.6	66.4	60.8
AVG. AVG Gain (dB)	**ABS**	-2.8	-1.4	-2.0
	EVB	-2.7	-1.8	-2.2
Max. Peak Gain (dBi)	**ABS**	3.3	6.2	6.5
	EVB	1.9	6.0	6.0

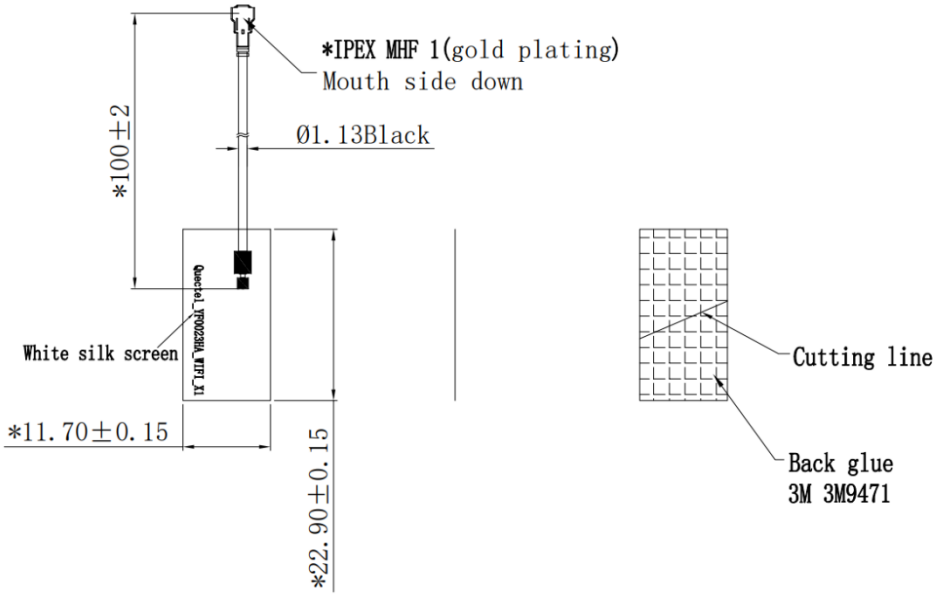
VSWR	**ABS**	≤ 2.3
	EVB	≤ 2.8
Return Loss	**ABS**	≤ -8.2 dB
	EVB	≤ -6.5 dB
Peak Gain	**ABS**	≤ 6.5 dBi
	EVB	≤ 6.0 dBi

- **ABS: Stick to 3 mm thick ABS board**
- **EVB: Stick to 3 mm thick ABS board on 130 mm × 130 mm EVB**

1.2. Mechanical & Environmental

Mechanical	
Antenna Size	22.7 mm × 11.9 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 100 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Antenna Weight	Typ. 0.44 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

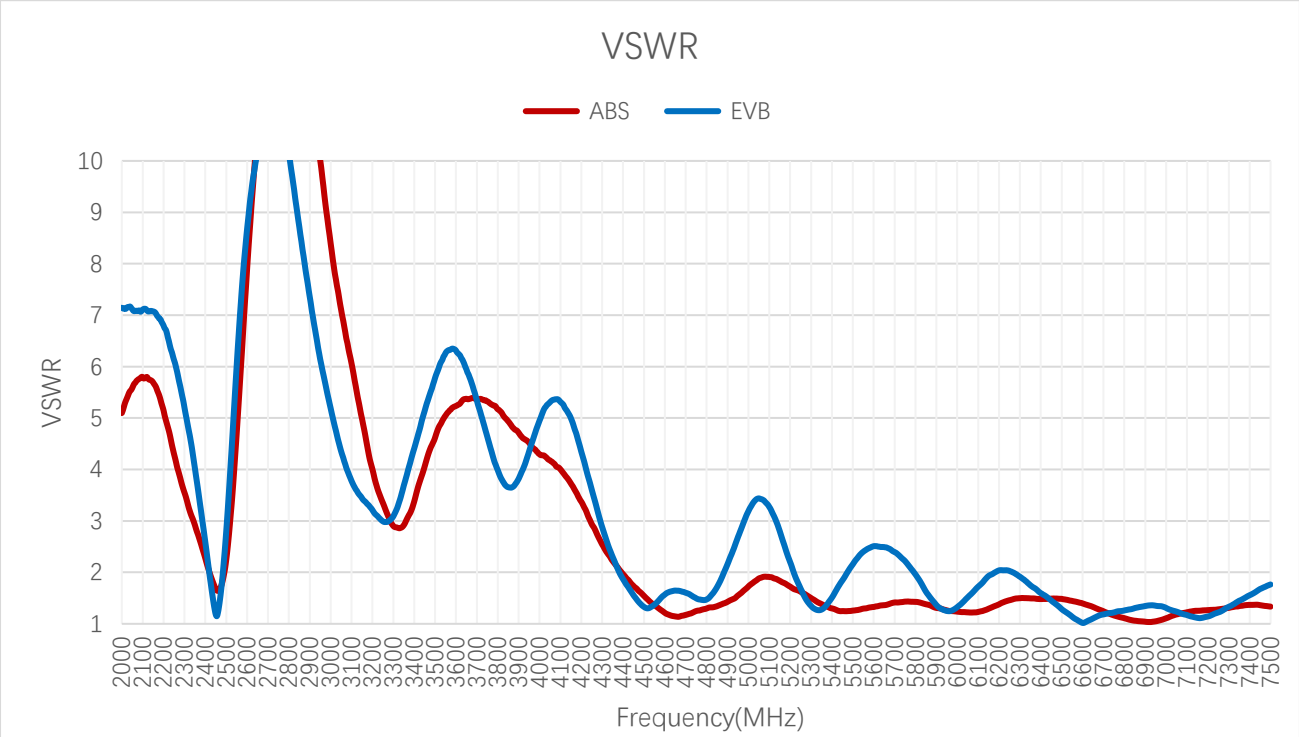
2 Drawing


*IPEX MHF 1(gold plating)
Mouth side down
Ø1.13Black
*100±2
White silk screen
*11.70±0.15
*22.90±0.15
Cutting line
Back glue
3M 3M9471

3 Detailed Performance

3.1. S-Parameter Test

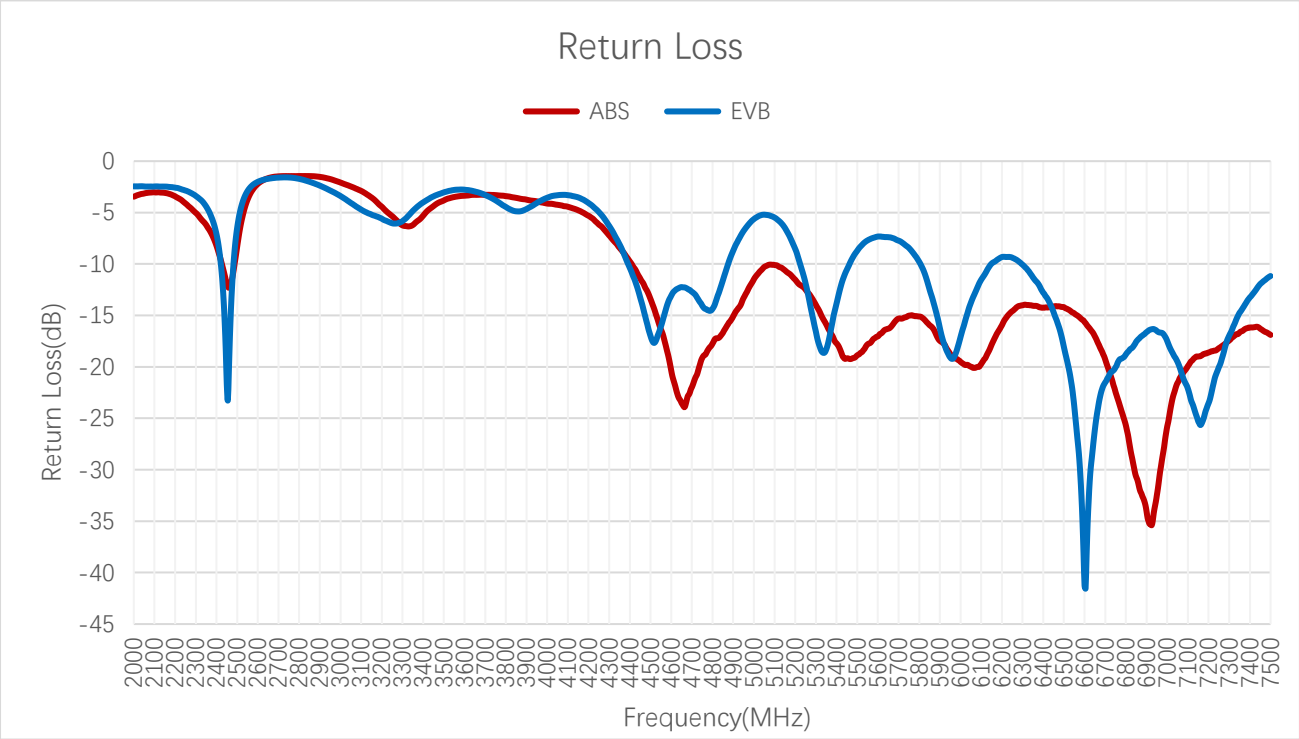
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	2.3	1.7	2.2	1.8	1.3	1.4	1.3	1.5	1.2
EVB	2.6	1.2	2.8	2.8	2.2	1.6	1.3	1.2	1.1

3.1.2. Return Loss

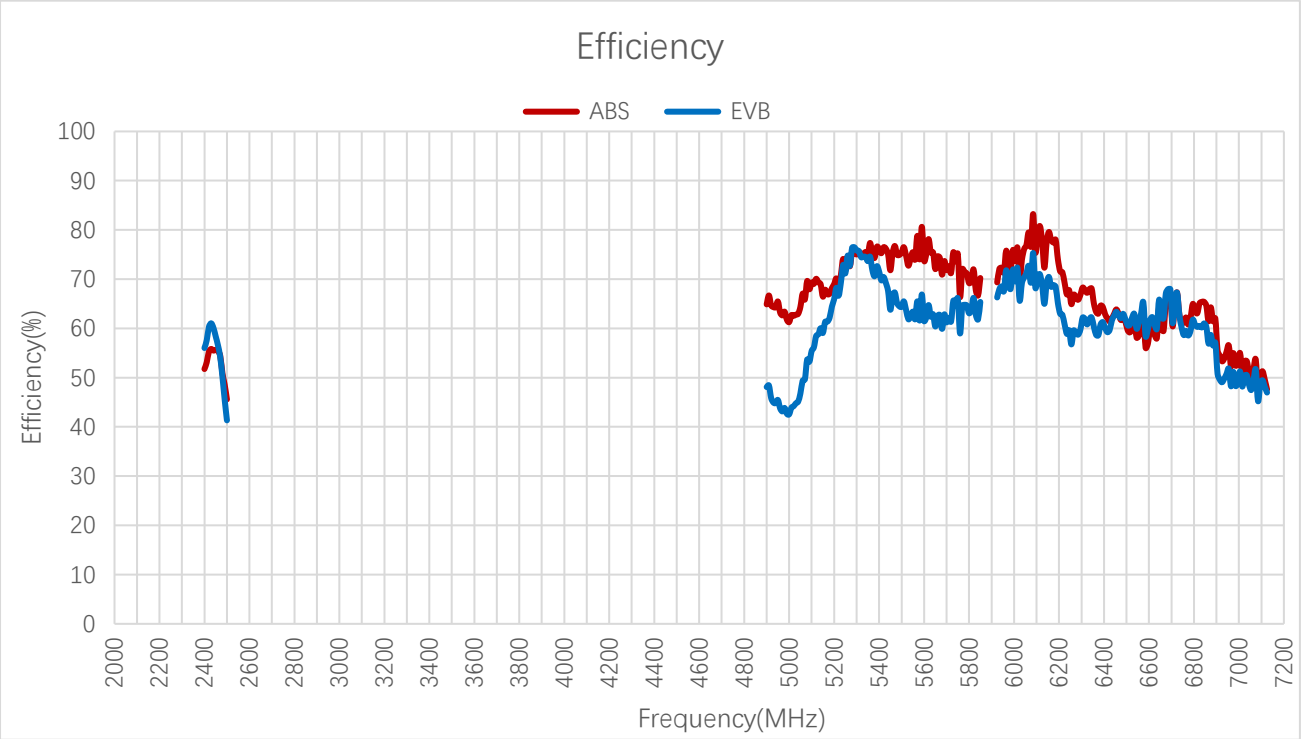


Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	-8.2	-12.0	-8.3	-10.6	-18.9	-15.9	-17.9	-14.5	-19.3
EVB	-7.1	-21.7	-6.5	-6.5	-8.7	-12.5	-18.0	-20.3	-23.7

3.2. Radiation Performance Test

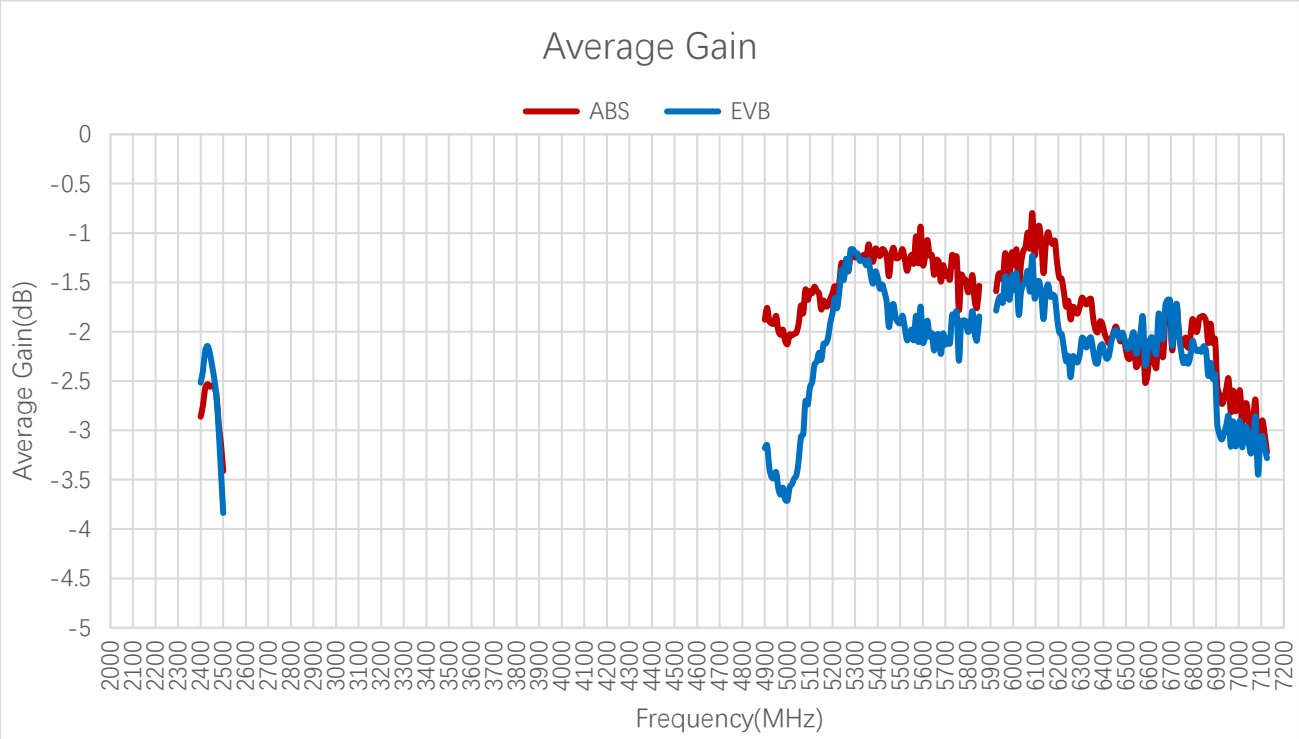
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	51.7	55.7	45.6	66.4	75.4	70.2	69.3	60.0	47.6
EVB	56.0	58.4	41.3	59.1	64.4	65.4	66.3	62.2	47.0

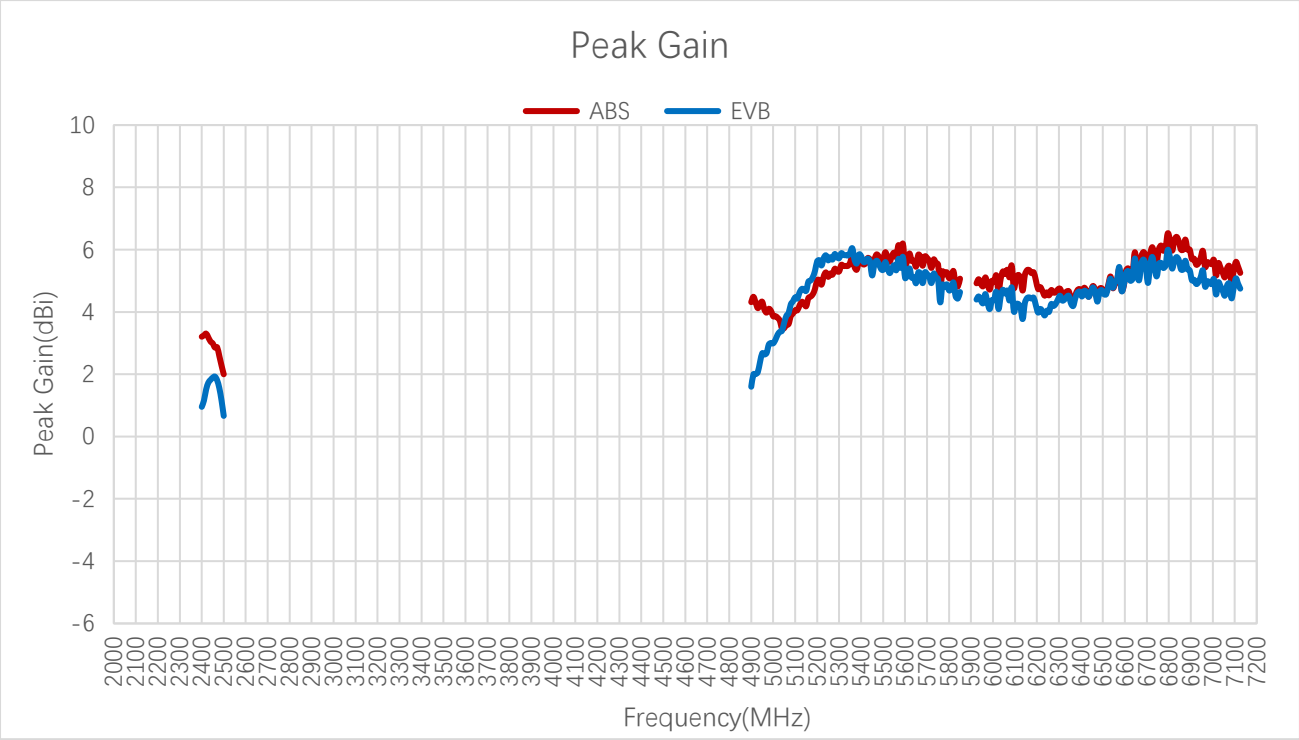
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	-2.9	-2.5	-3.4	-1.8	-1.2	-1.5	-1.6	-2.2	-3.2
EVB	-2.5	-2.3	-3.8	-2.3	-1.9	-1.8	-1.8	-2.1	-3.3

3.2.3. Peak Gain



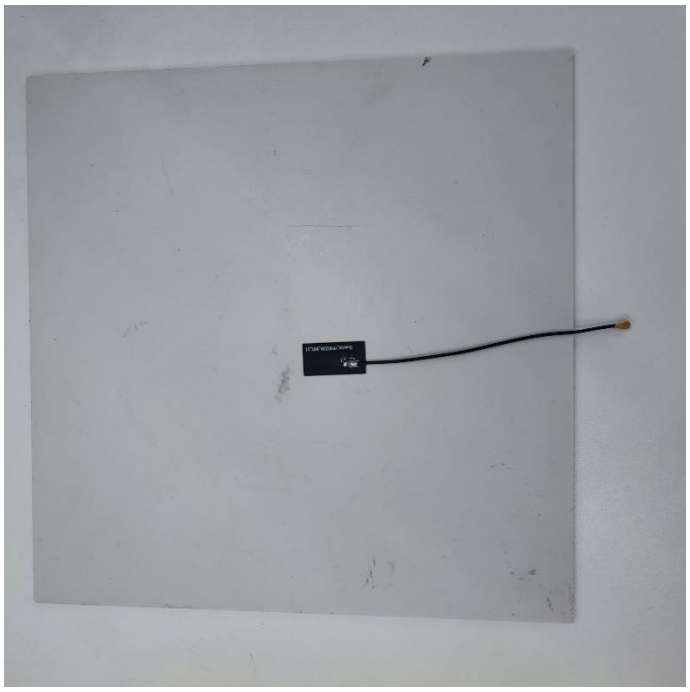
Peak Gain (dBi)

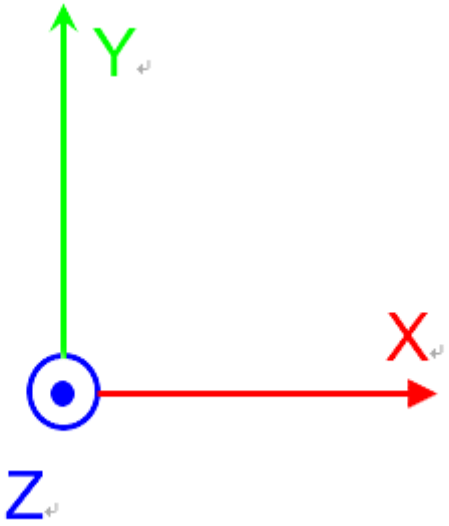
Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6525	7125
ABS	3.2	3.0	2.0	4.2	5.7	5.1	4.9	4.9	5.3
EVB	1.0	1.9	0.7	4.7	5.4	4.6	4.4	4.8	4.7

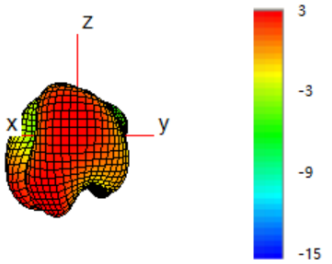
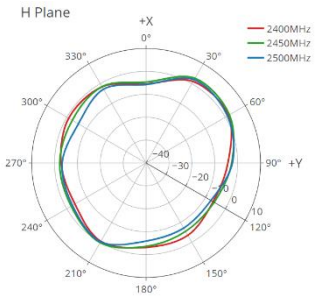
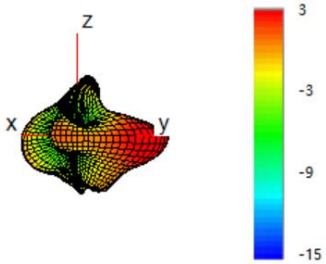
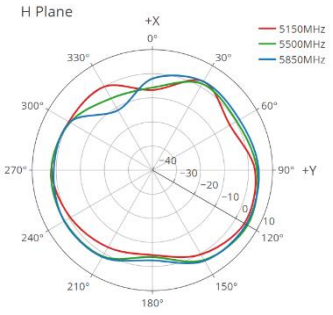
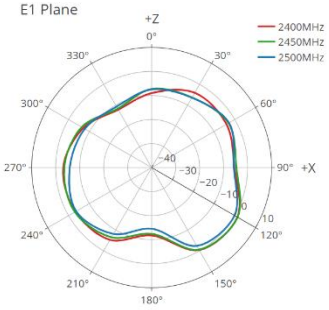
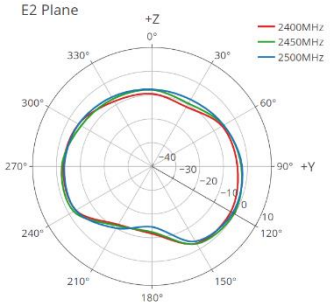
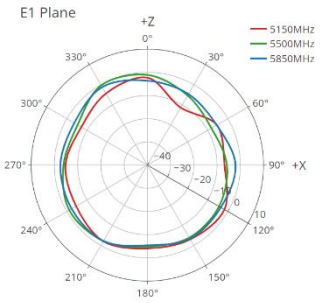
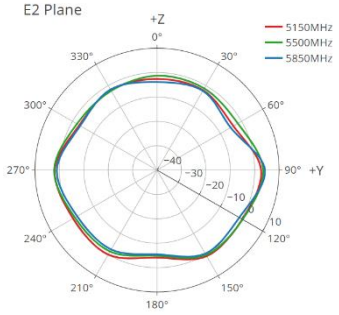
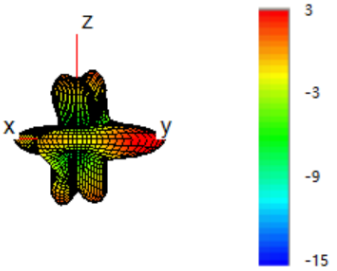
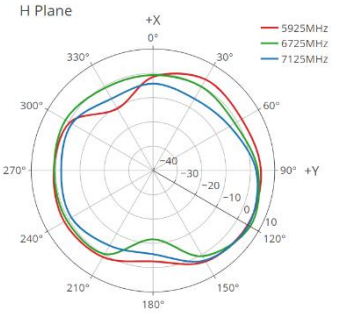
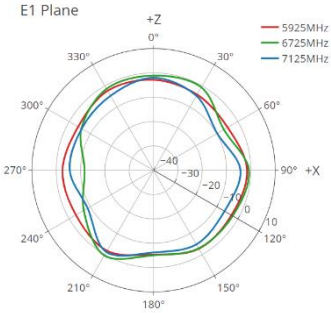
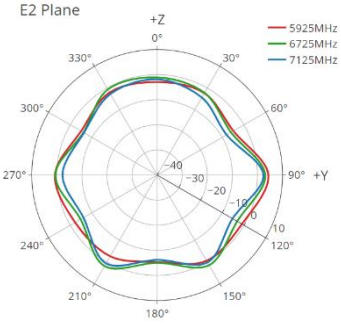
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Stick to 3 mm Thick ABS Board

- Test Chamber: GL-G-1

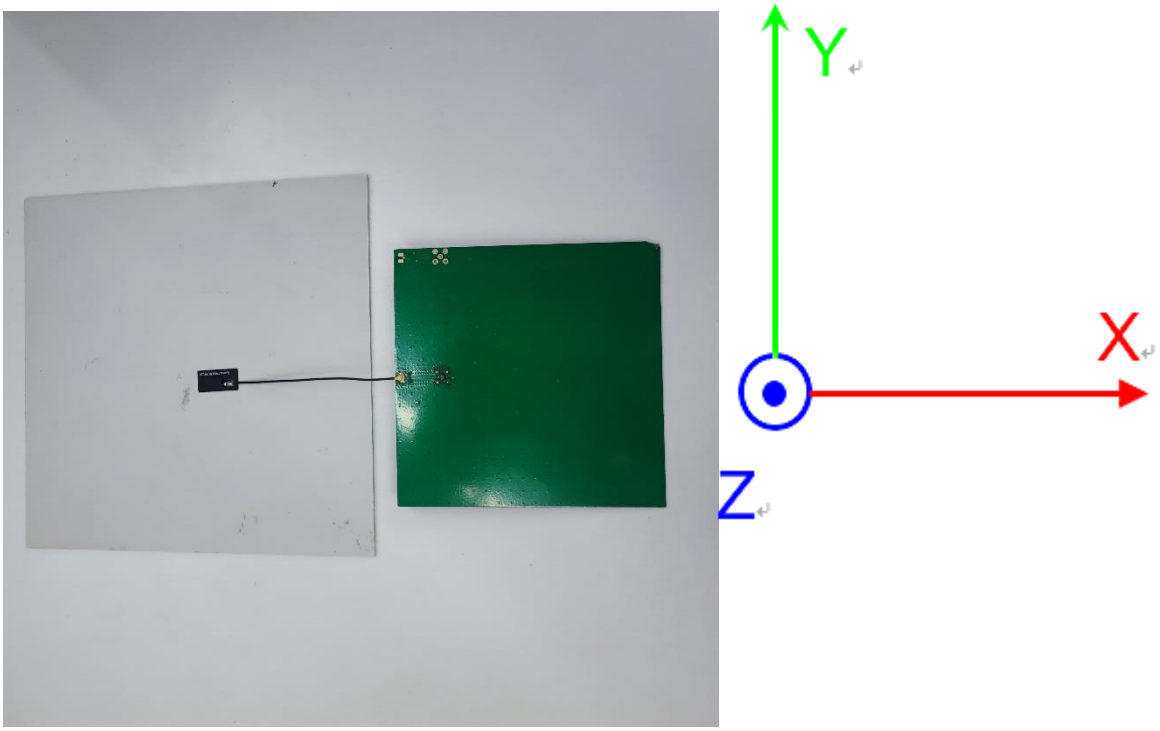


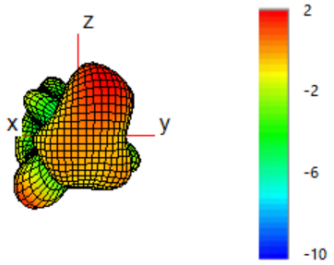
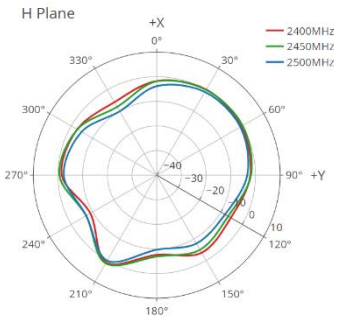
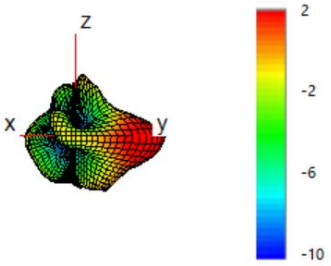
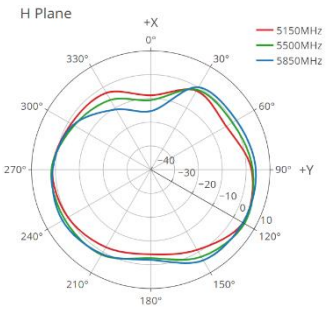
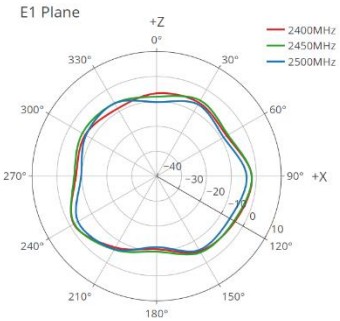
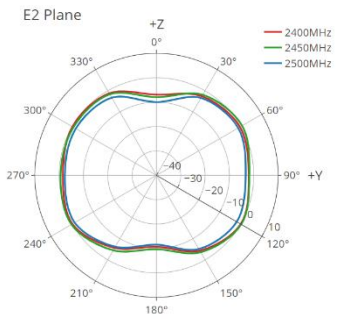
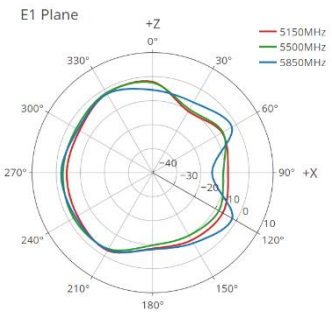
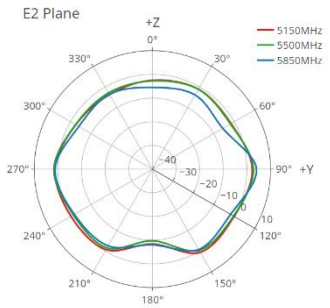


2450 MHz		5500 MHz	
			
			
6725 MHz			
			
			

3.2.4.2. Test Condition: Stick to 3 mm Thick ABS Board on 130 mm × 130 mm EVB

- Test Chamber: GL-G-1



2450 MHz		5500 MHz	
			
			
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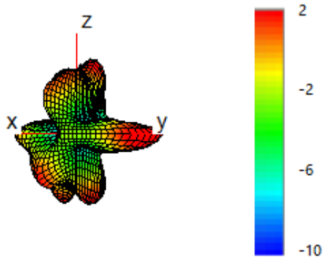
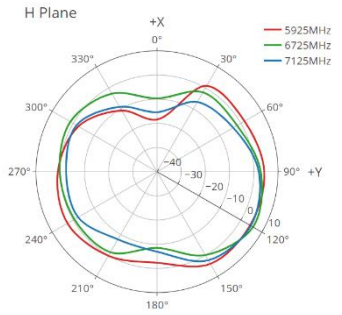
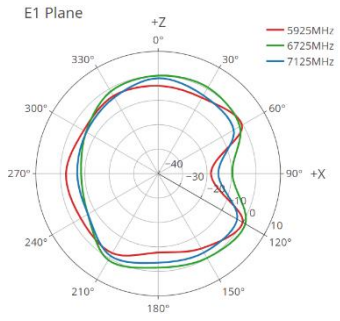
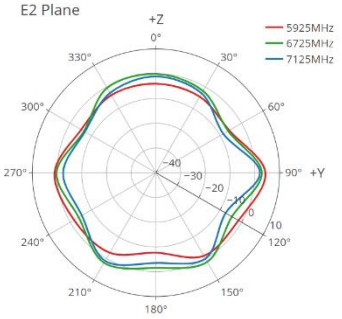
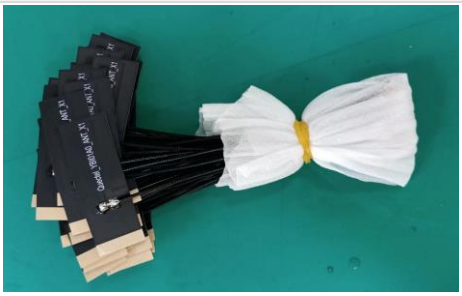
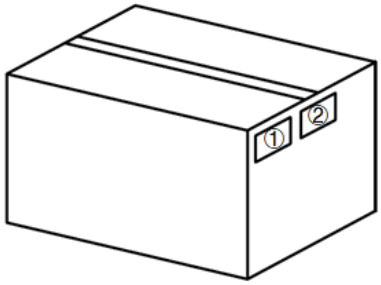
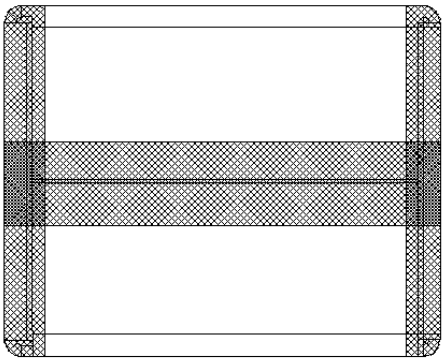
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		50 antenna products are wrapped with EPE foam. (50 Antennas / Tie)
2		100 antenna products in a PE bag. (100 Antennas / PE Bag)
3		(50 PE Bags / Carton Box) (5000 Antennas / Carton Box) Carton Size: L × W × H = 300 × 250 × 200 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** H-shaped 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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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:
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Revision History

Version	Date	Author	Note
-	2022-08-16	Sly Liu/ Lucky Feng	Creation of the document
1.0	2023-01-15	Sly Liu/ Lucky Feng	First official release
2.0	2024-05-23	Sly Liu/ Lucky Feng/ David Liu/ Rainey Liao	Updated all test data.
2.1	2025-03-18	Lucky Feng/ Rainey Liao	Updated operating and storage temperatures (Chapter 1.2).
2.2	2025-08-11	Rainey Liao	1. Updated the antenna image (Cover page). 2. Updated the package (Chapter 4).

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