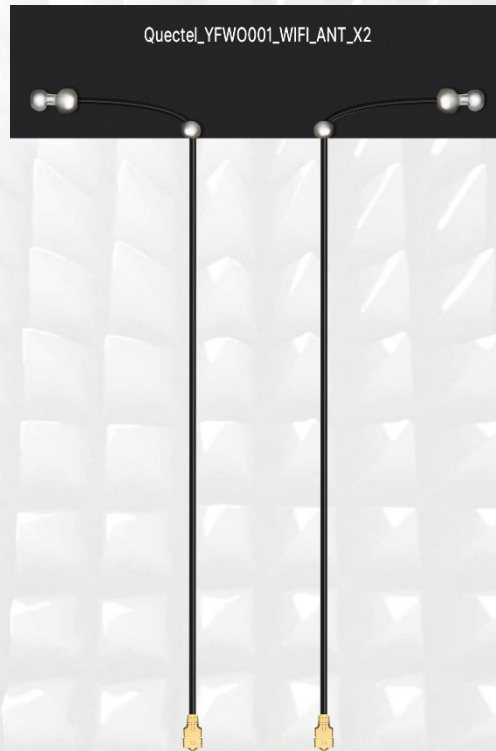




Antenna Datasheet

Product OC: YFWO001AA

Version: 2.1

Date: 2024-10-31

Status: Released

Product Name: Wi-Fi 2in1 Adhesive Mount FPC Antenna

Key Features:

Frequency Band: 2400–2500 MHz & 5150–7150 MHz

Dimensions: 78.6 mm × 21.4 mm

Efficiency: Up to 80 %

RoHS and REACH Compliant

Overview

To meet customers' requirements for the high performance, high integration, and integrated appearance of their products, Quectel provides a combined internal antenna series. The internal antenna series can integrate a variety of antennas, such as 5G, 4G, GNSS, Wi-Fi antennas, to achieve communication functions of 5G MIMO, 4G, GNSS, and Wi-Fi. These internal antenna series can be mounted inside the devices, supports multiple connector types and cable lengths. It is a more flexible and reliable high-performance antenna solution for the applications need internal antennas.

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1 Specification

Test Condition: Stick on 3mm ABS board

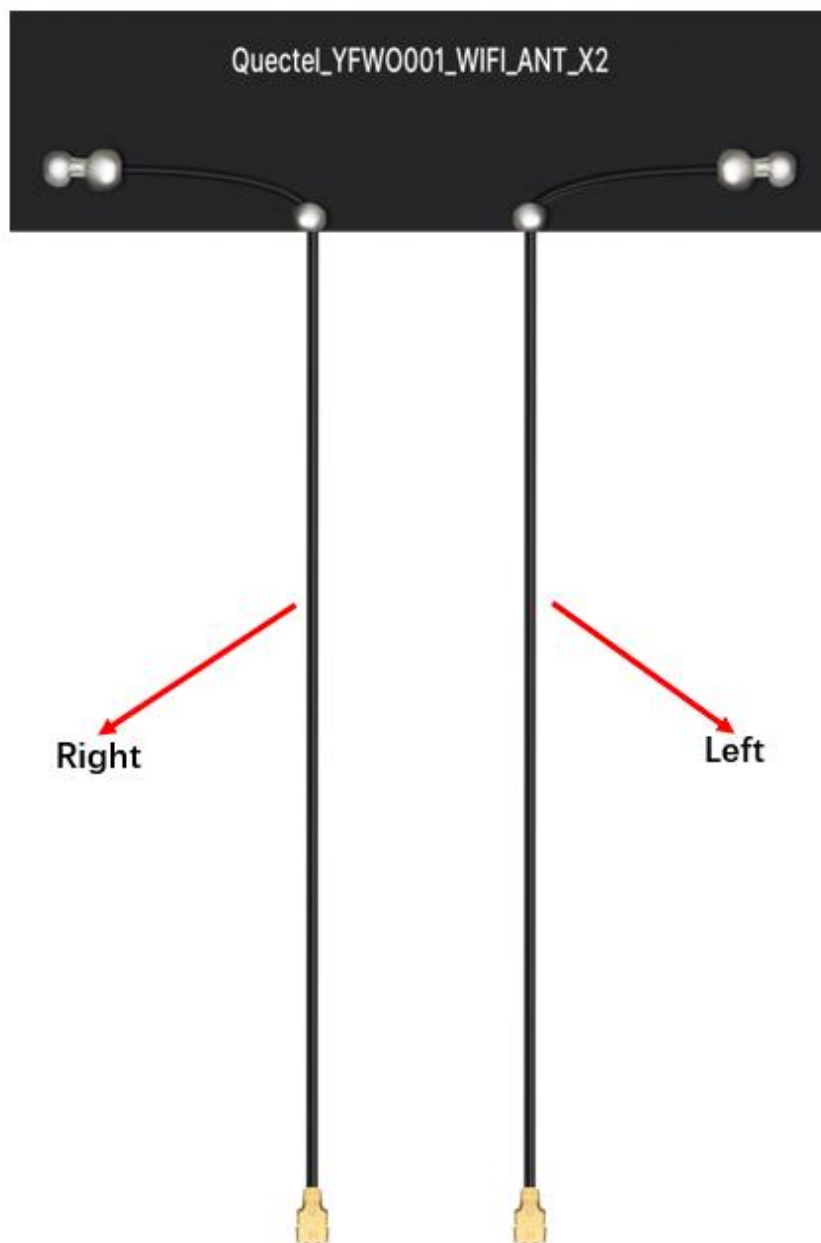
1.1. Electrical

Electrical Specifications	
Frequency Range	2400–2500 MHz, 5150–7150 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Specification	Band	Band	Wi-Fi 2G	Wi-Fi 5G	Wi-Fi 7G
		Freq. (MHz)	2400–2500	5150–5850	5925–7125
Max. VSWR	Right		1.3	2.0	2.3
	Left		1.3	2.3	2.6
Max. Return Loss (dB)	Right		-17.2	-9.5	-8.2
	Left		-17.6	-7.9	-7.0
AVG Eff. (%)	Right		76.5	64.0	61.9
	Left		76.1	75.4	60.9
AVG AVG Gain (dB)	Right		-1.2	-1.9	-2.1
	Left		-1.2	-1.2	-2.2
Max. Peak Gain (dBi)	Right		1.3	4.3	5.2
	Left		2.4	4.4	5.0
VSWR	Right		≤ 2.3		
	Left		≤ 2.6		
Return Loss	Right		≤ -8.2 dB		

	Left	≤ -7.0 dB
Peak Gain	Right	≤ 5.2 dBi
	Left	≤ 5.0 dBi

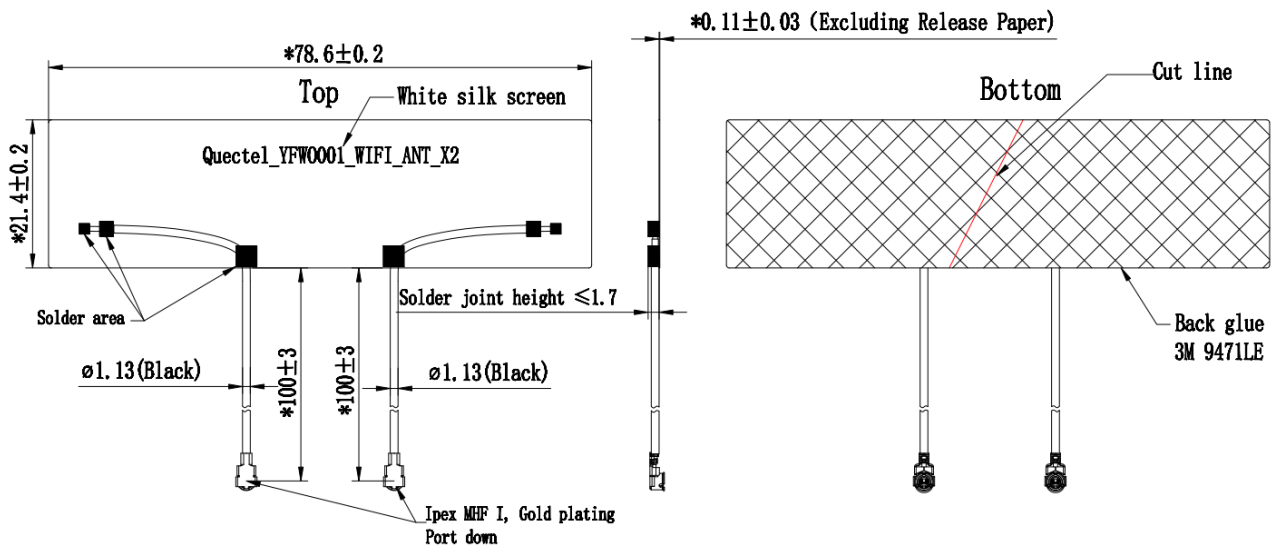
- Antenna placement



1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	78.6 × 21.4 mm
Antenna Material & Color	FPC & Black
Cable Type & Color & Length	Φ1.13 & Black & 100 mm
Connector Type	IPEX MHF 1
Weight	Typ. 1.6 g
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

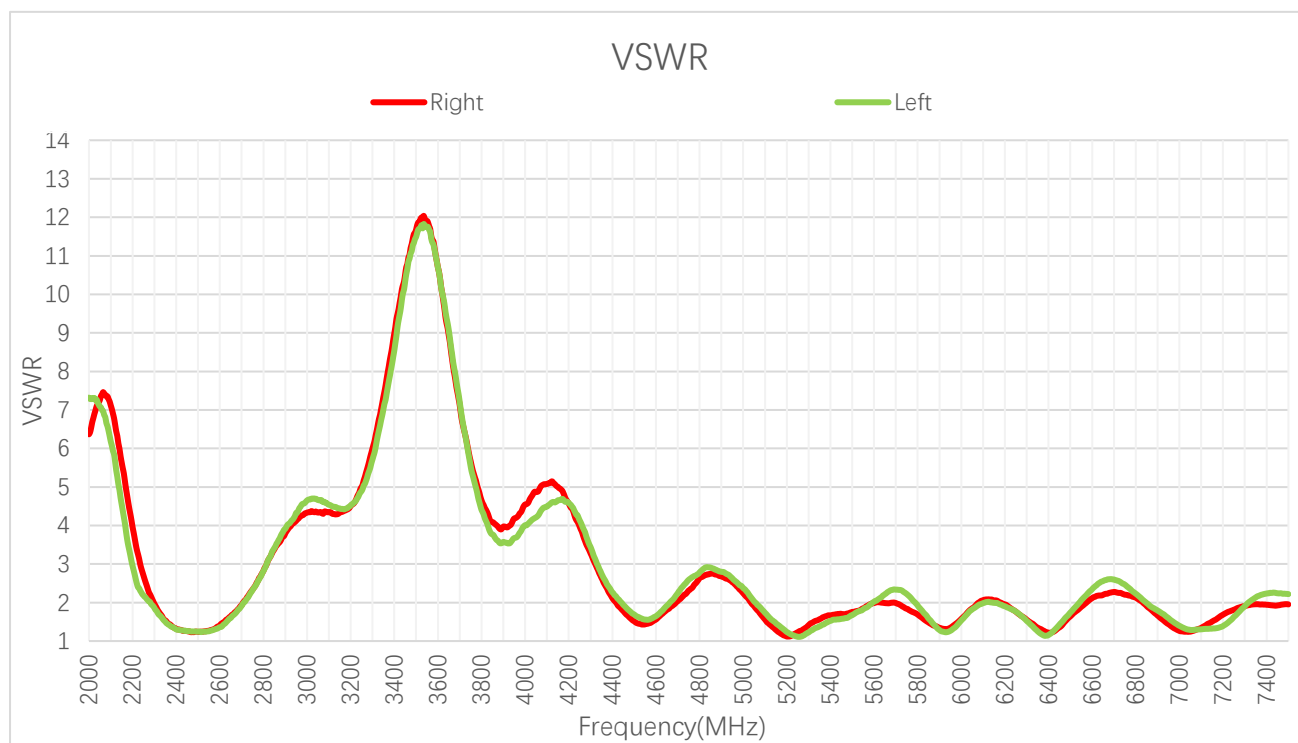
2 Drawing



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
VSWR	Right	1.3	1.3	1.2	1.3	1.8	1.5	1.3	1.5	2.2	1.4
	Left	1.3	1.3	1.2	1.5	1.7	1.6	1.2	1.4	2.5	1.3

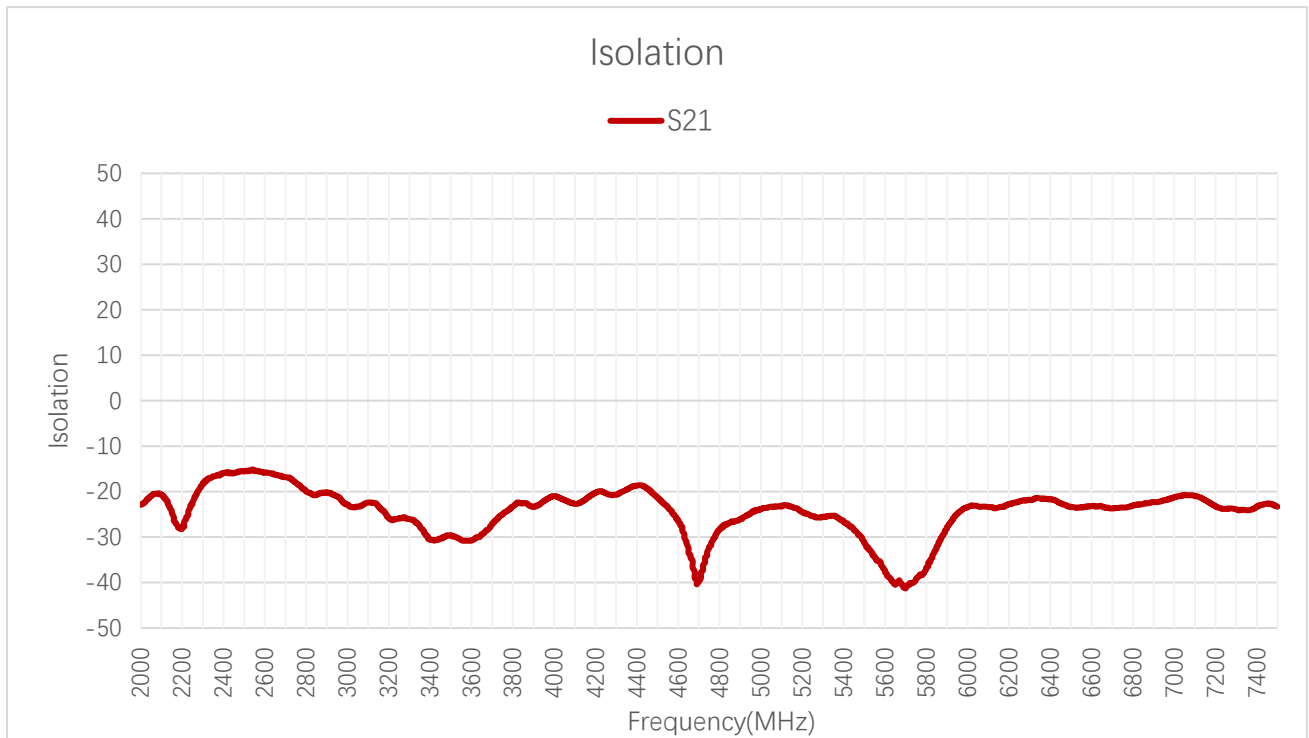
3.1.2. Return Loss



Return Loss

Frequency (MHz)		2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	Right	-17.2	-18.8	-19.5	-18.0	-11.2	-14.2	-17.4	-14.6	-8.3	-15.1
	Left	-17.6	-18.7	-19.3	-14.5	-12.0	-12.9	-19.7	-15.7	-7.2	-17.3

3.1.3. Isolation

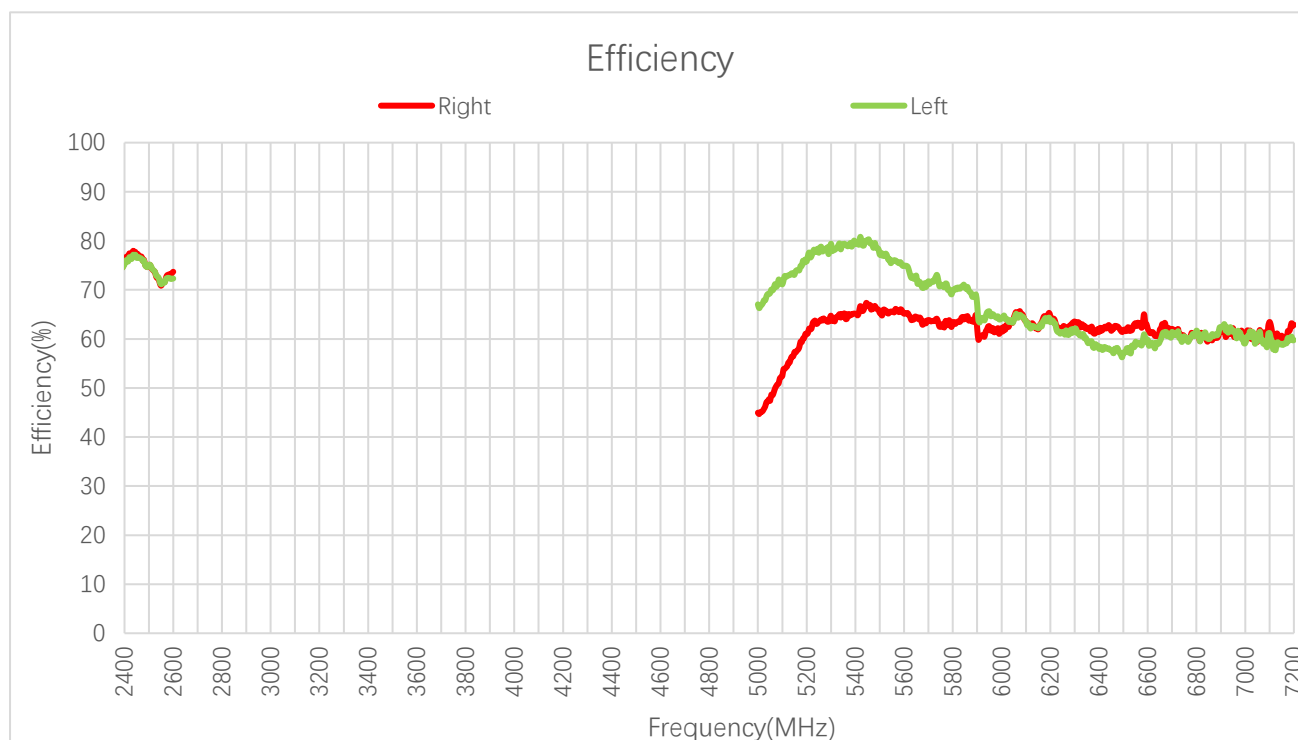


Isolation

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5920	6330	6720	7130
Isolation (dB)	-16.0	-16.0	-15.6	-23.3	-31.2	-32.4	-26.0	-21.7	-23.6	-21.2

3.2. Radiation Performance Test

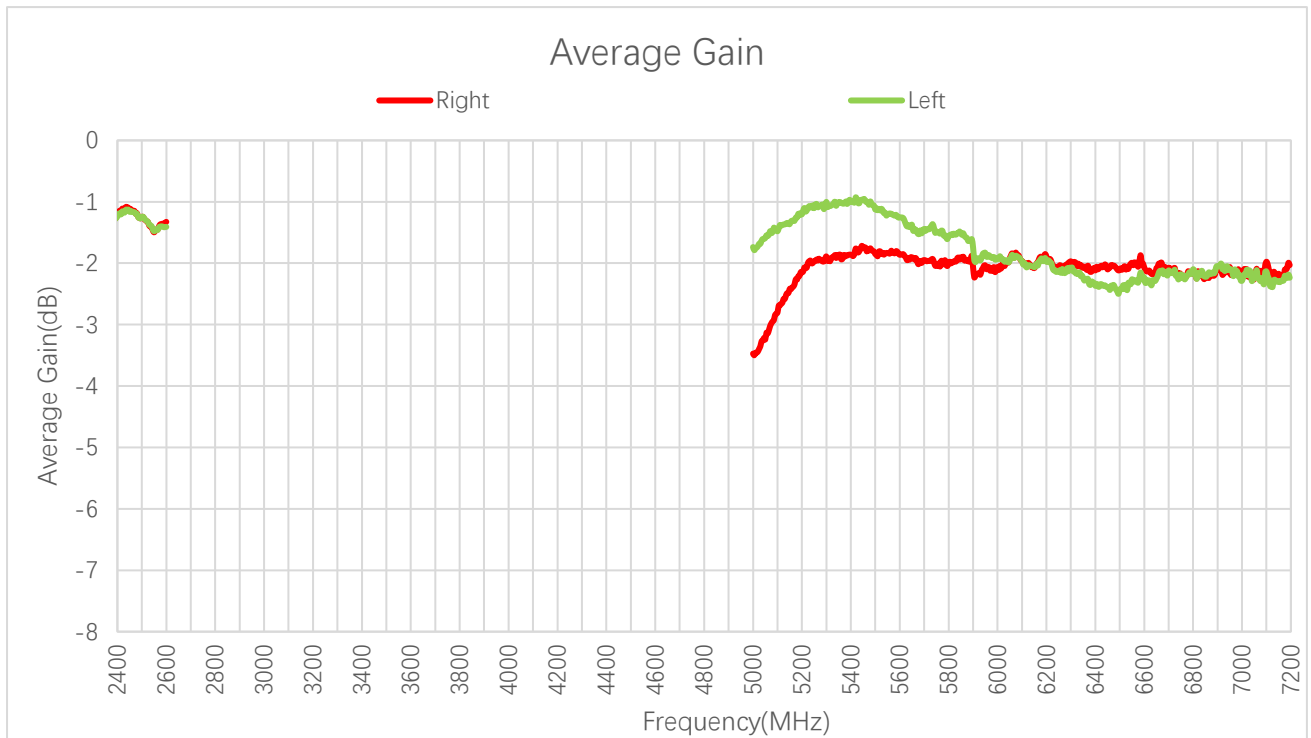
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)		2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	Right	75.8	77.0	75.1	57.3	65.3	64.5	60.8	62.3	62.0	59.9
	Left	75.2	76.5	75.1	73.1	77.1	70.5	64.2	60.8	61.6	57.7

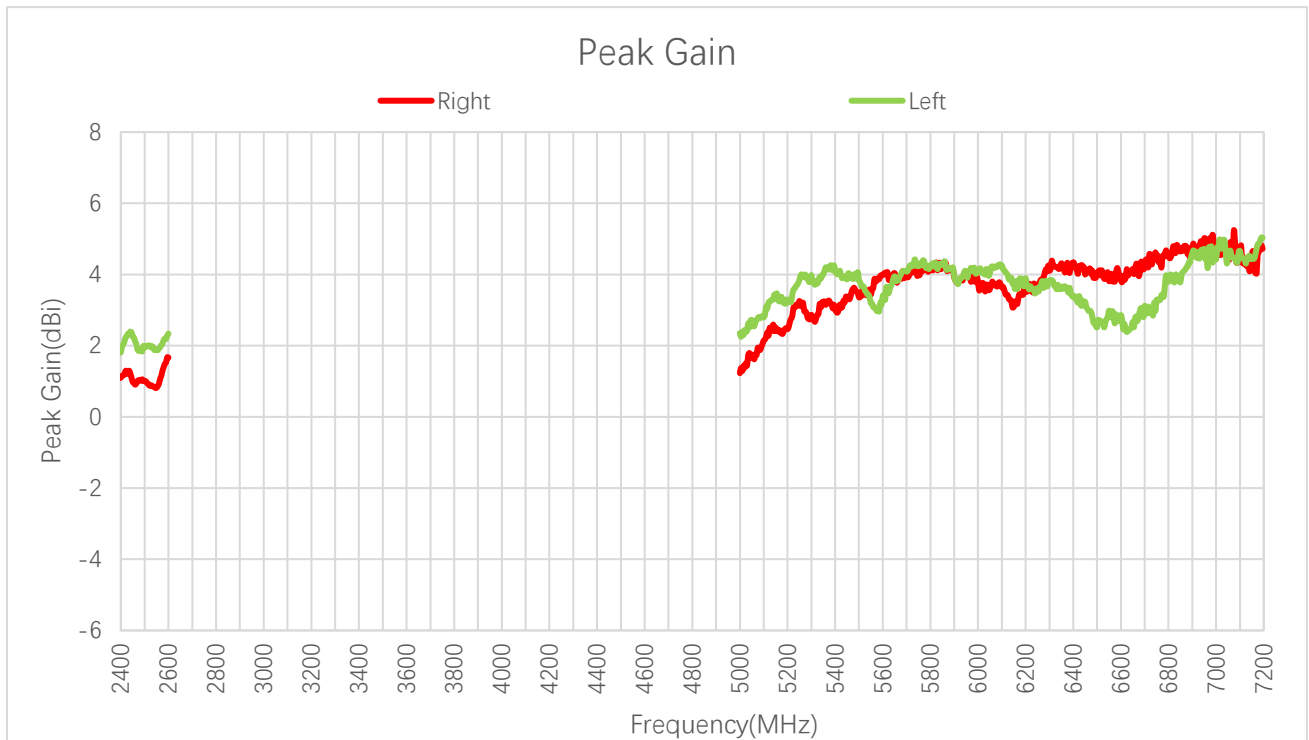
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)		2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	Right	-1.2	-1.1	-1.2	-2.4	-1.9	-1.9	-2.2	-2.1	-2.1	-2.2
	Left	-1.2	-1.2	-1.2	-1.4	-1.1	-1.5	-1.9	-2.2	-2.1	-2.4

3.2.3. Peak Gain

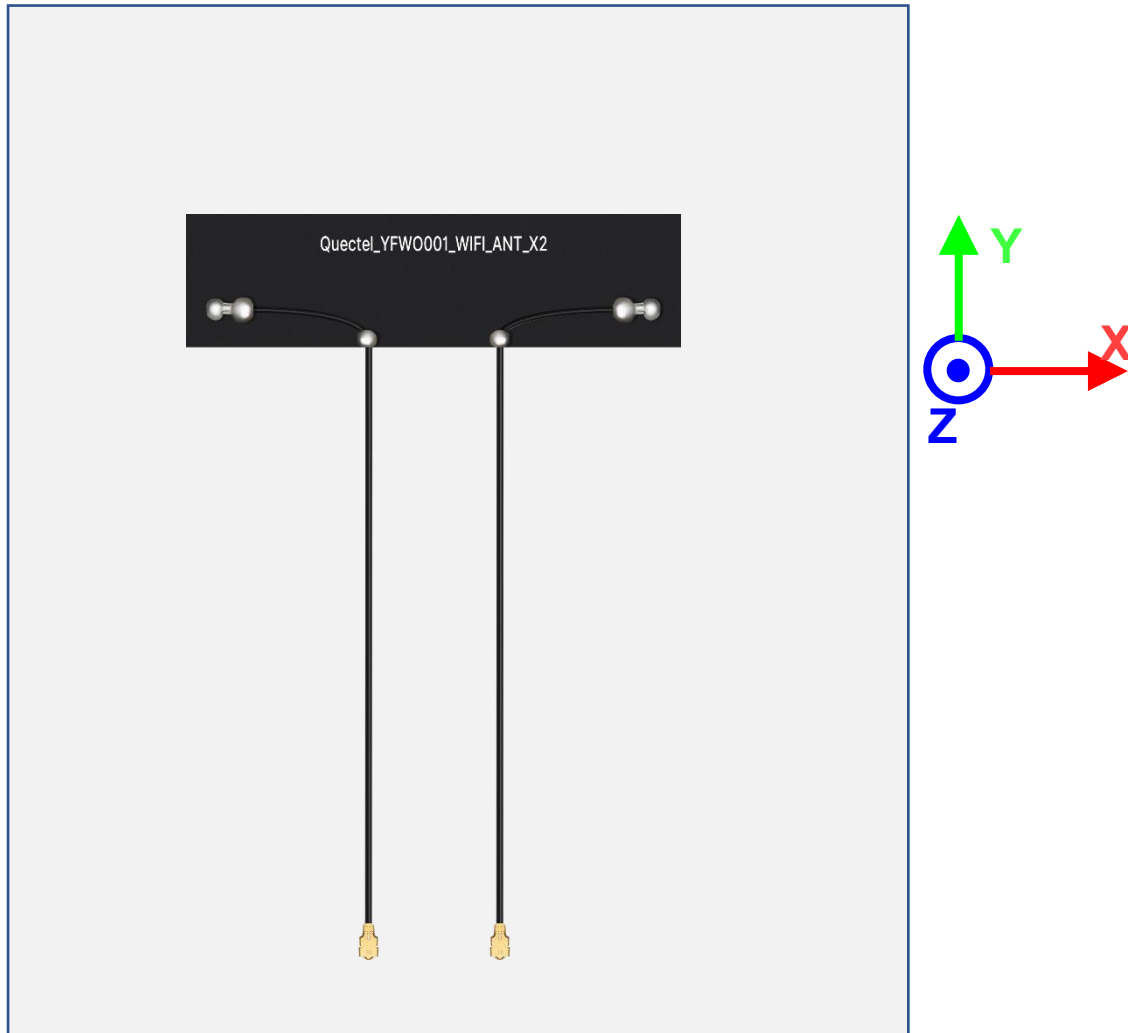


Peak Gain (dBi)

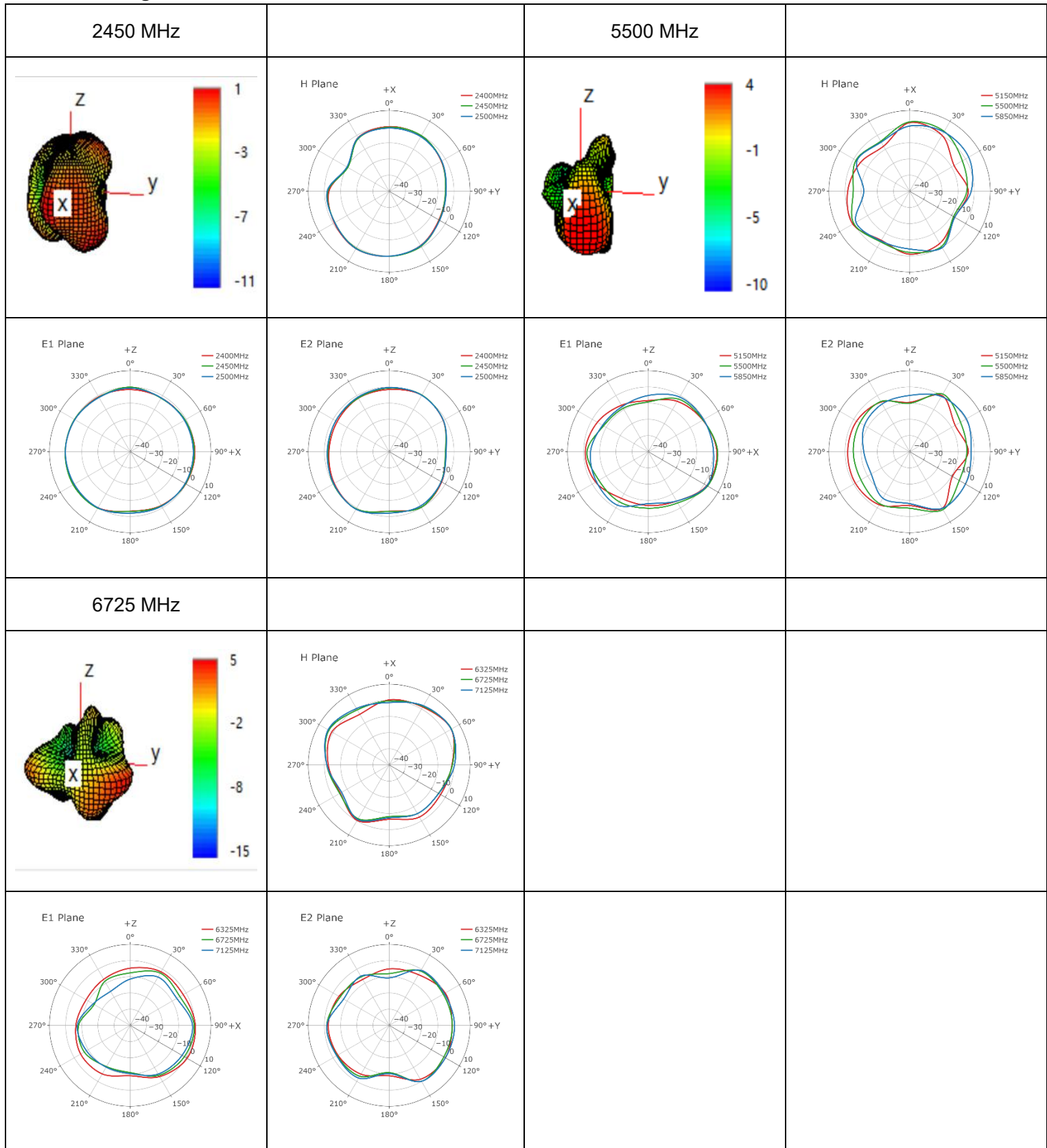
Frequency (MHz)		2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dBi)	Right	1.1	1.0	1.0	2.5	3.4	4.3	3.8	4.2	4.4	4.3
	Left	1.8	2.3	1.9	3.3	3.8	4.3	3.9	3.7	3.0	4.3

3.2.4. 3D & 2D Radiation Pattern

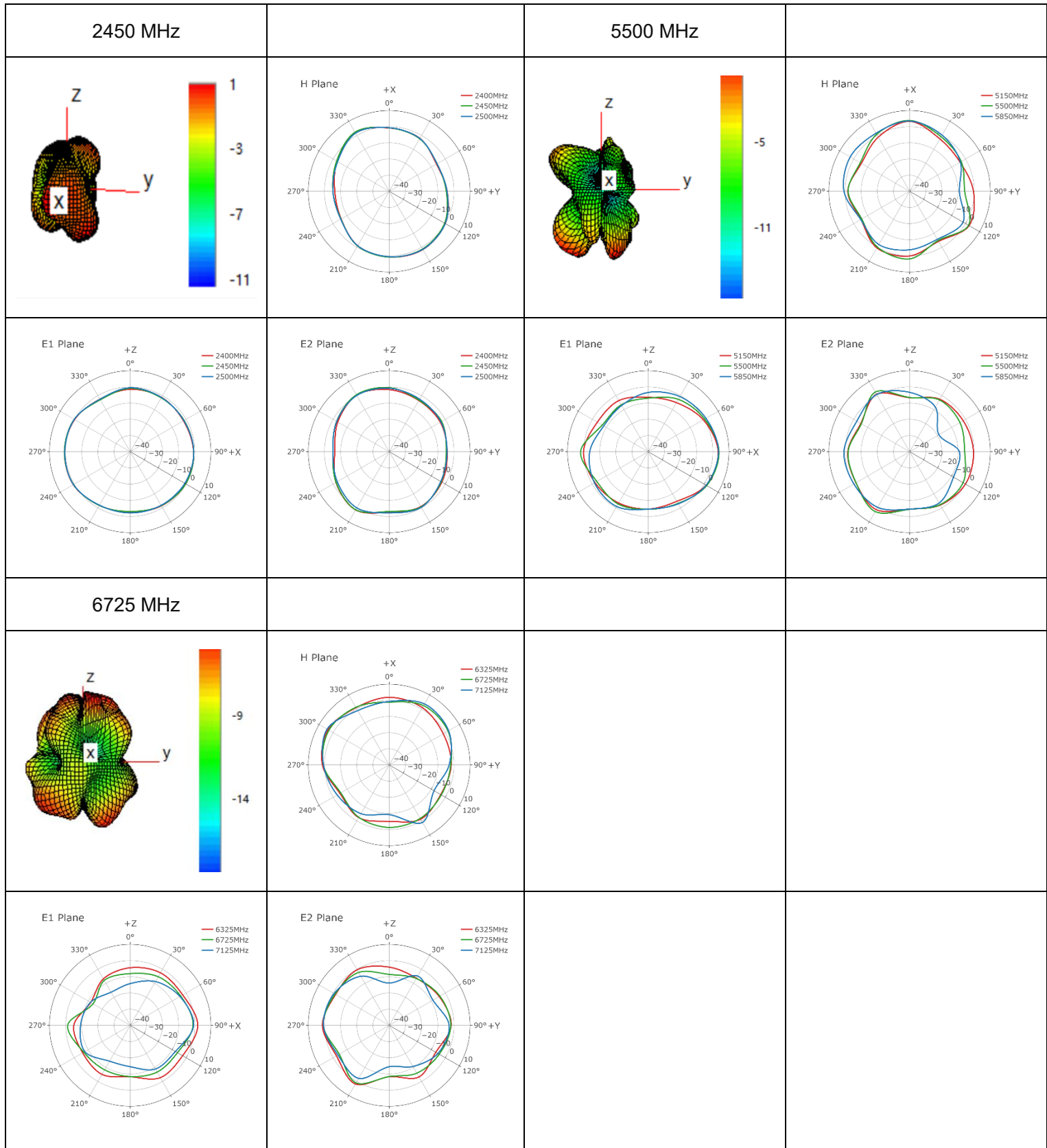
- Test Status: Stick on 3mm ABS board
- Test Chamber: HF-G-1



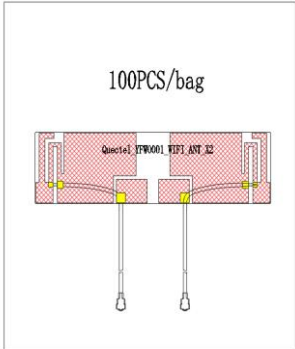
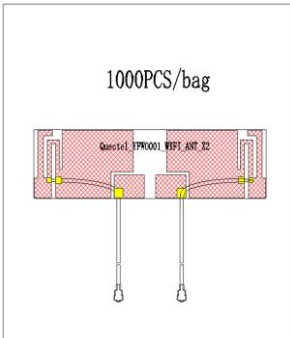
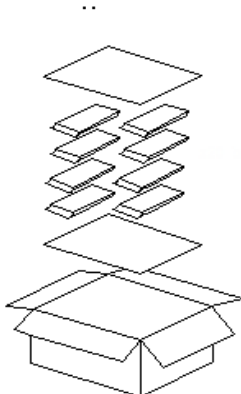
● **Right**

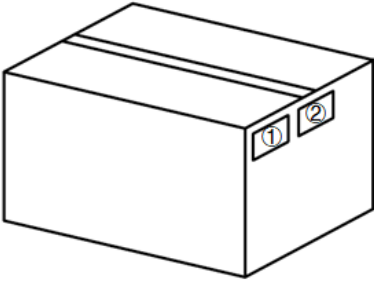
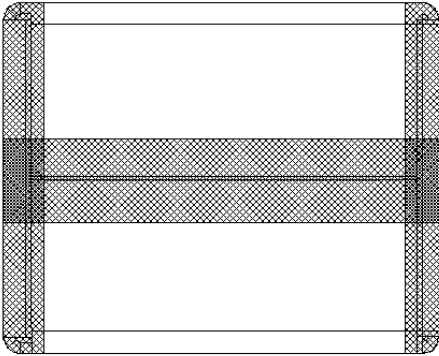


● **Left**



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		100 antenna products in a small PE bag. (100 PCS / Small PE Bag)
2		1000 antenna products in a big PE bag. (1000 PCS / Big PE bag)
3		(10 PE Bags / Carton Box) (10000 PCS / 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>

4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons “I” type 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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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>.

For technical support, or to report documentation errors, please visit:

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

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Revision History

Version	Date	Author	Note
-	2021-12-17	Eleven Rong Jason Long	Creation of the document
1.0	2021-12-17	Eleven Rong Jason Long	First official release
1.1	2022-01-12	Jason Long	Updated to IPEX MHF original terminal and add antenna weight parameter (Chapter 3).
2.0	2024-06-27	Jaden FENG/ Hart HU/ David LIU/ Aria CHU	Updated all data in this datasheet.
2.1	2024-10-31	Jason LONG	Updated the cable length (Chapter 1.2).



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