



Antenna Datasheet

Product OC: YNR01A0AA

Version: 2.0

Date: 2023-07-05

Status: Preliminary

Product Name: WIFI FPC Antenna

Key Features:

Frequency Band: 2400-2500MHz 5150-5850MHz

Dimensions: 24.5 * 7.78 mm

Efficiency: Up to 61 %

RoHS and REACH Compliant

Overview

Quectel Wi-Fi antenna covers 2.4 GHz and 5 GHz dual-bands, fully satisfying customers' requirements for Wi-Fi 5 and Wi-Fi 6. 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.

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1 Specification

Test Condition: Assembled in test device

1.1. Electrical

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

Specification	Band	WIFI 2G	WIFI 5G	WIFI 7G
	Band Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125
Max. VSWR		2.5	2.1	-
Max. Return Loss (dB)		-7.3	-8.9	-
AVG Eff. (%)		54.7	54.3	-
AVG AVG Gain (dB)		-2.6	-2.7	-
Max. Peak Gain (dBi)		2.1	2.7	-
VSWR		≤ 2.5		
Return Loss		≤ -7.3 dB		
Peak Gain		≤ 2.7 dBi		

1.2. Mechanical, Environmental & Storage

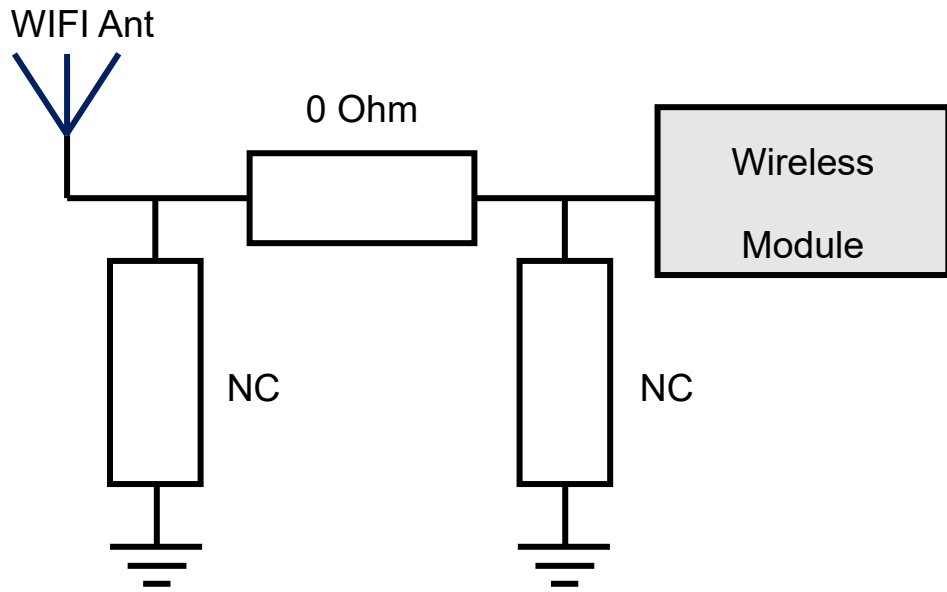
Mechanical	
Antenna Dimensions	24.5 * 7.78 mm
Material & Color	FPC & Black
Mounting Type	Adhesive
Weight	Typ. 0.035 g
Environmental	
Operation Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

Storage	
Storage Temperature	18 °C–27 °C
Humidity	30 %–80 % RH
Storage Place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging

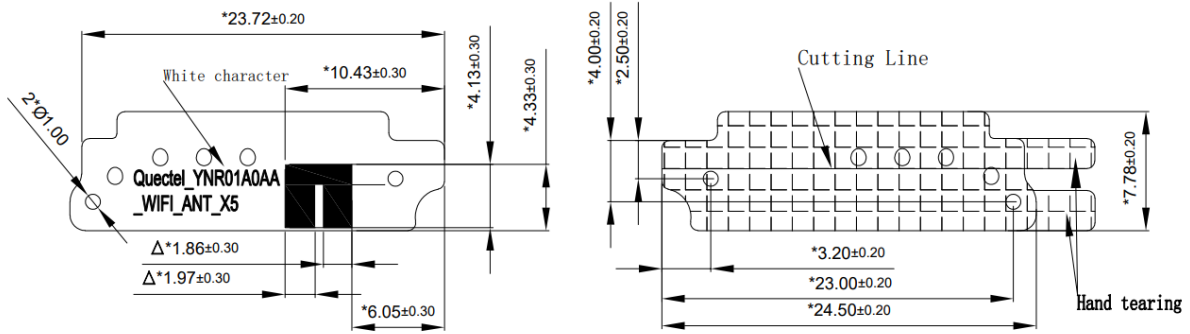
1.3. Antenna Assembly



1.4. Matching Circuit



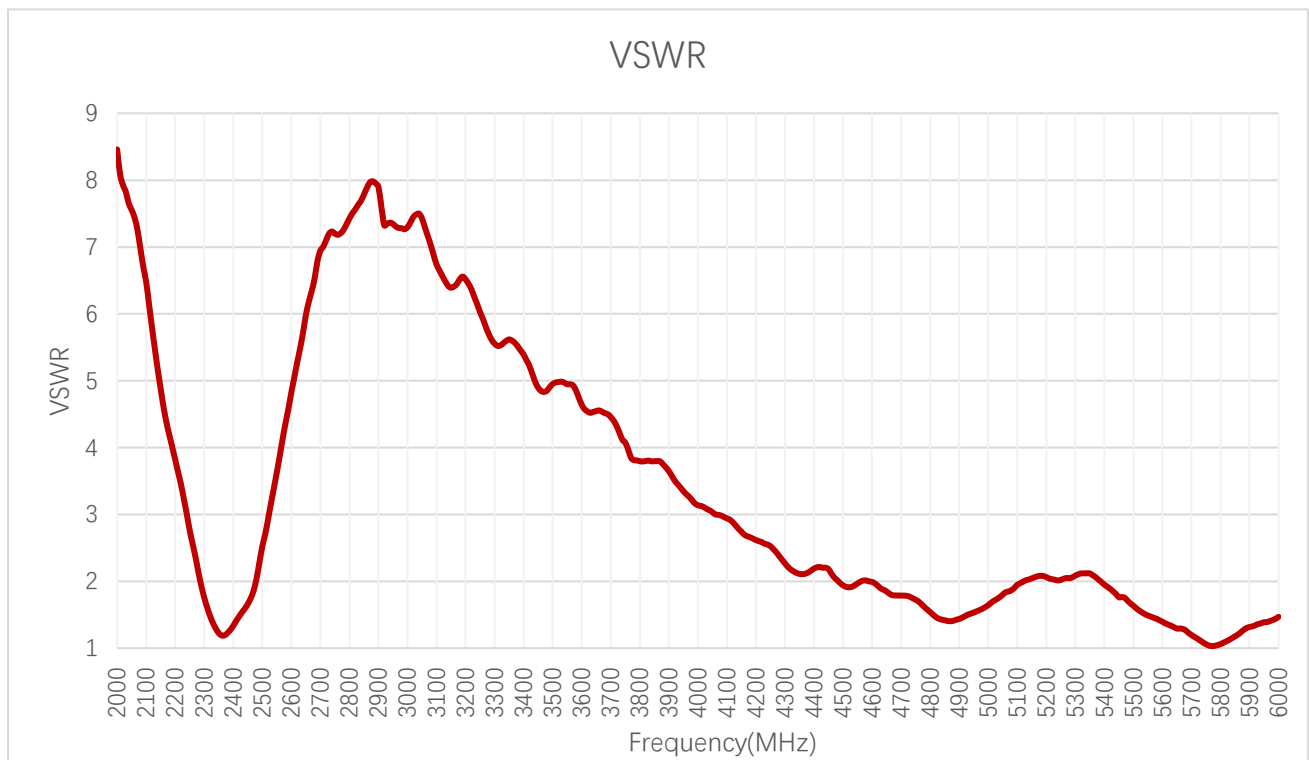
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

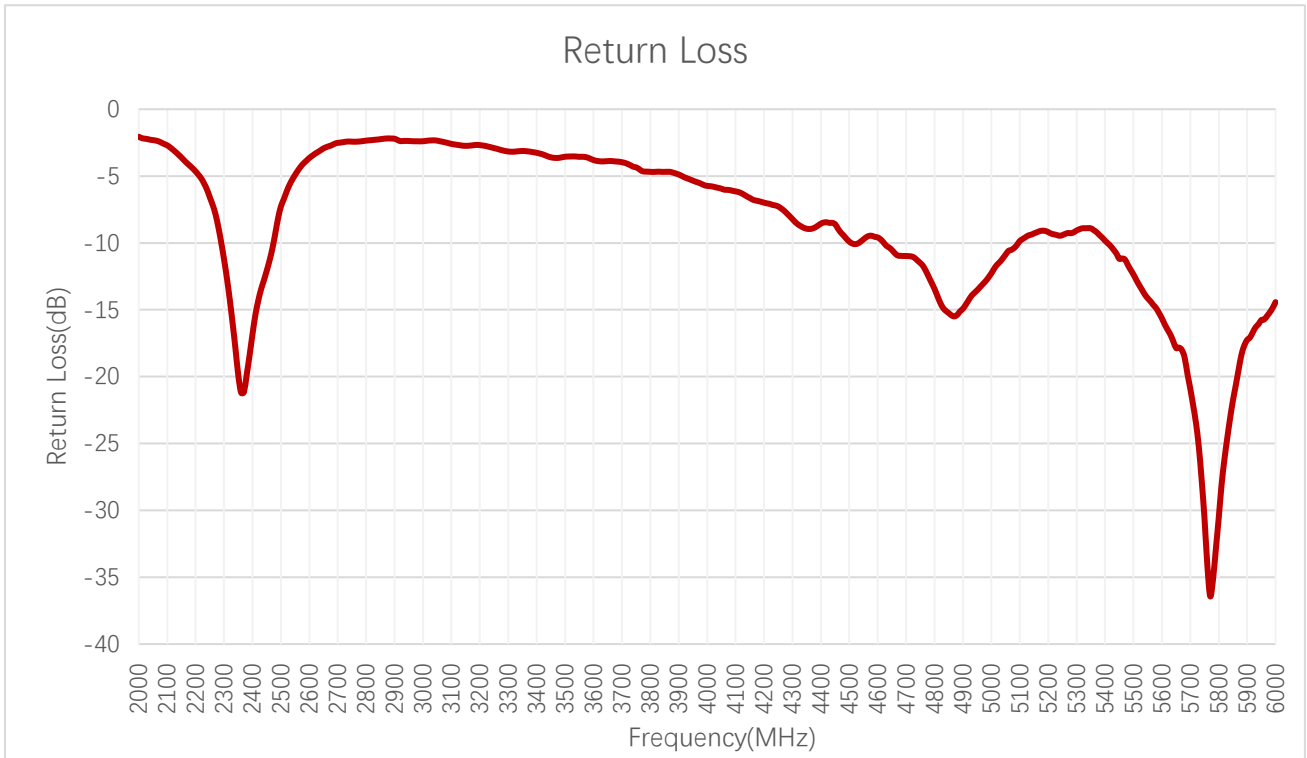
3.1.1. VSWR



VSWR

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
VSWR	1.3	1.7	2.5	2.0	1.6	1.2	-	-	-	-

3.1.2. Return Loss

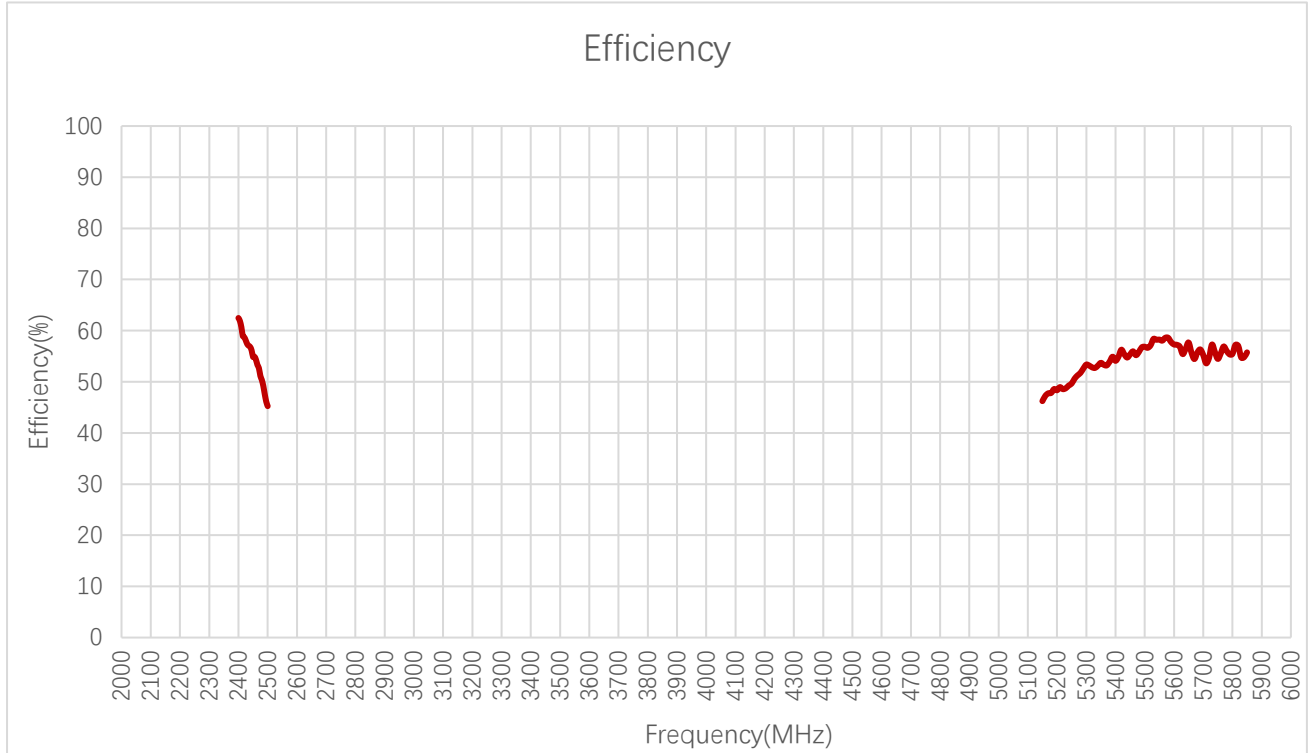


Return Loss

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	-16.8	-12.1	-7.3	-9.3	-12.4	-21.8	-	-	-	-

3.2. Radiation Performance Test

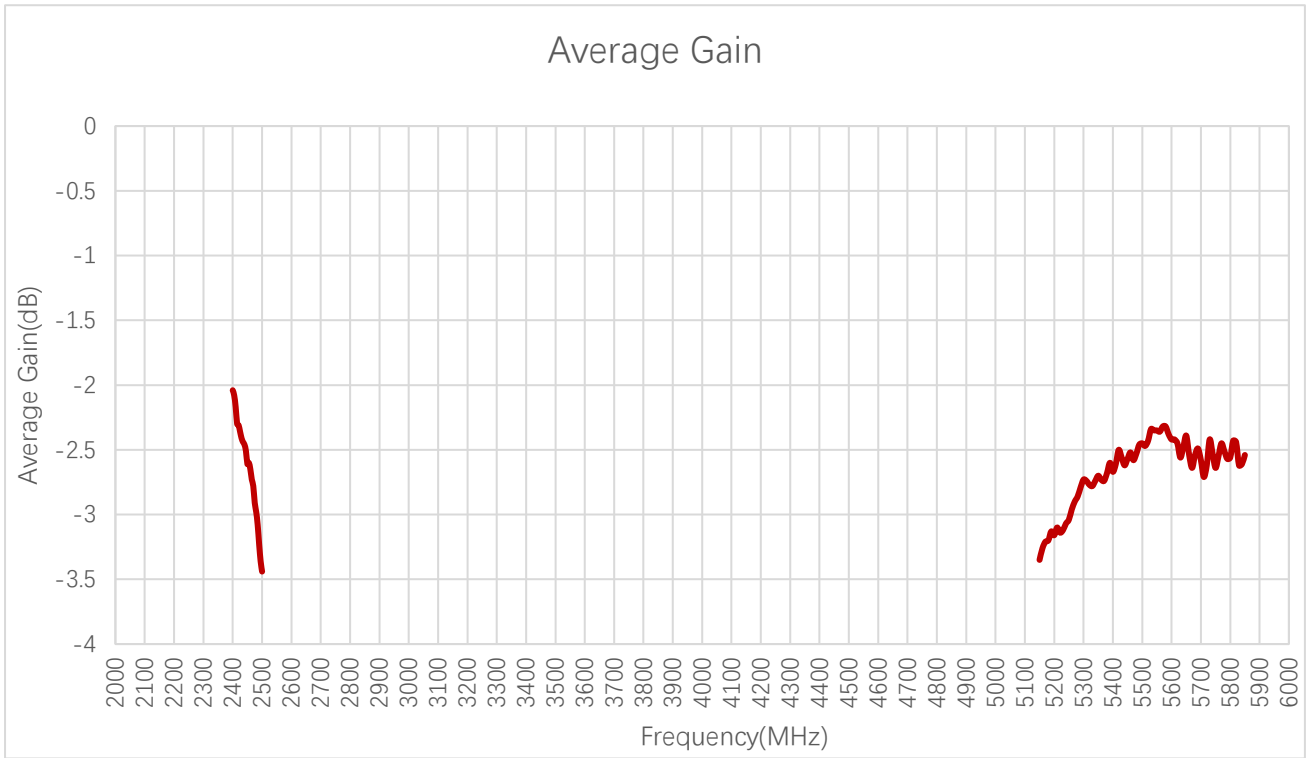
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	62.5	54.9	45.2	46.2	56.9	55.8	-	-	-	-

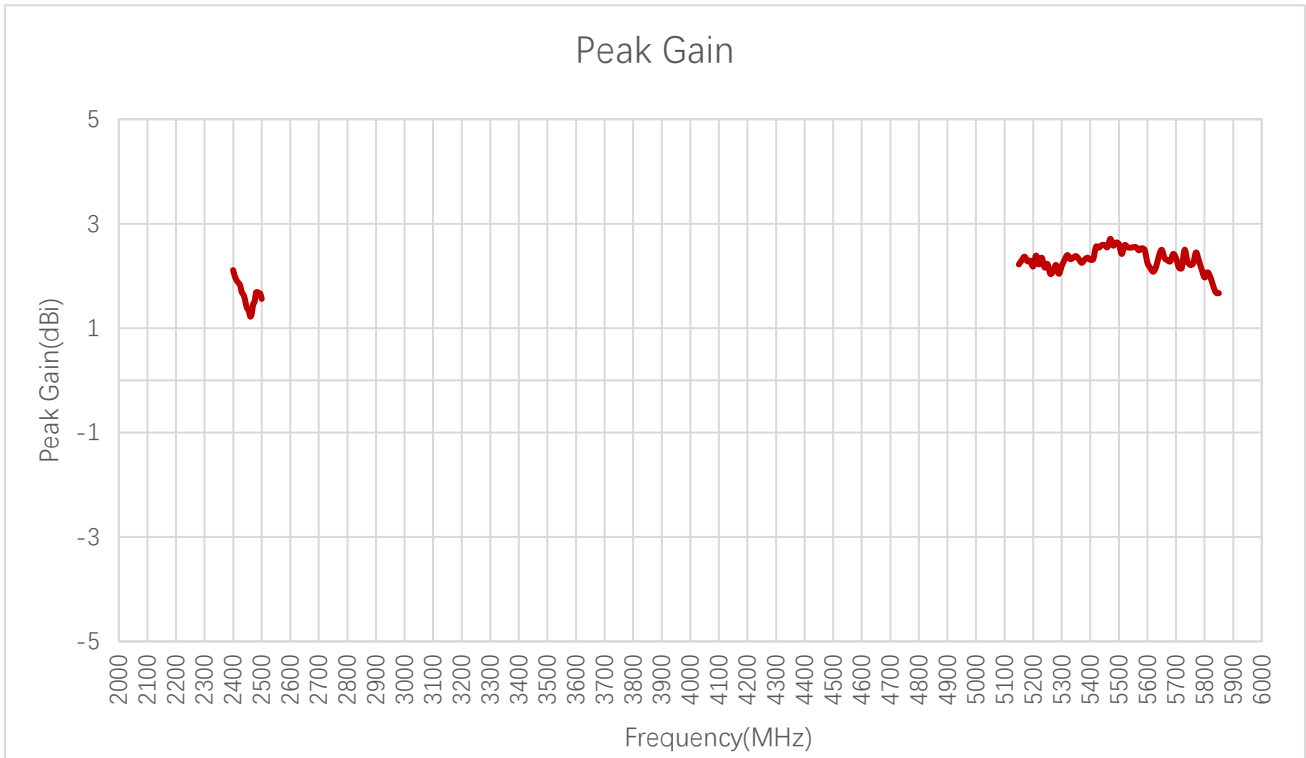
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	-2.0	-2.6	-3.4	-3.4	-2.5	-2.5	-	-	-	-

3.2.3. Peak Gain



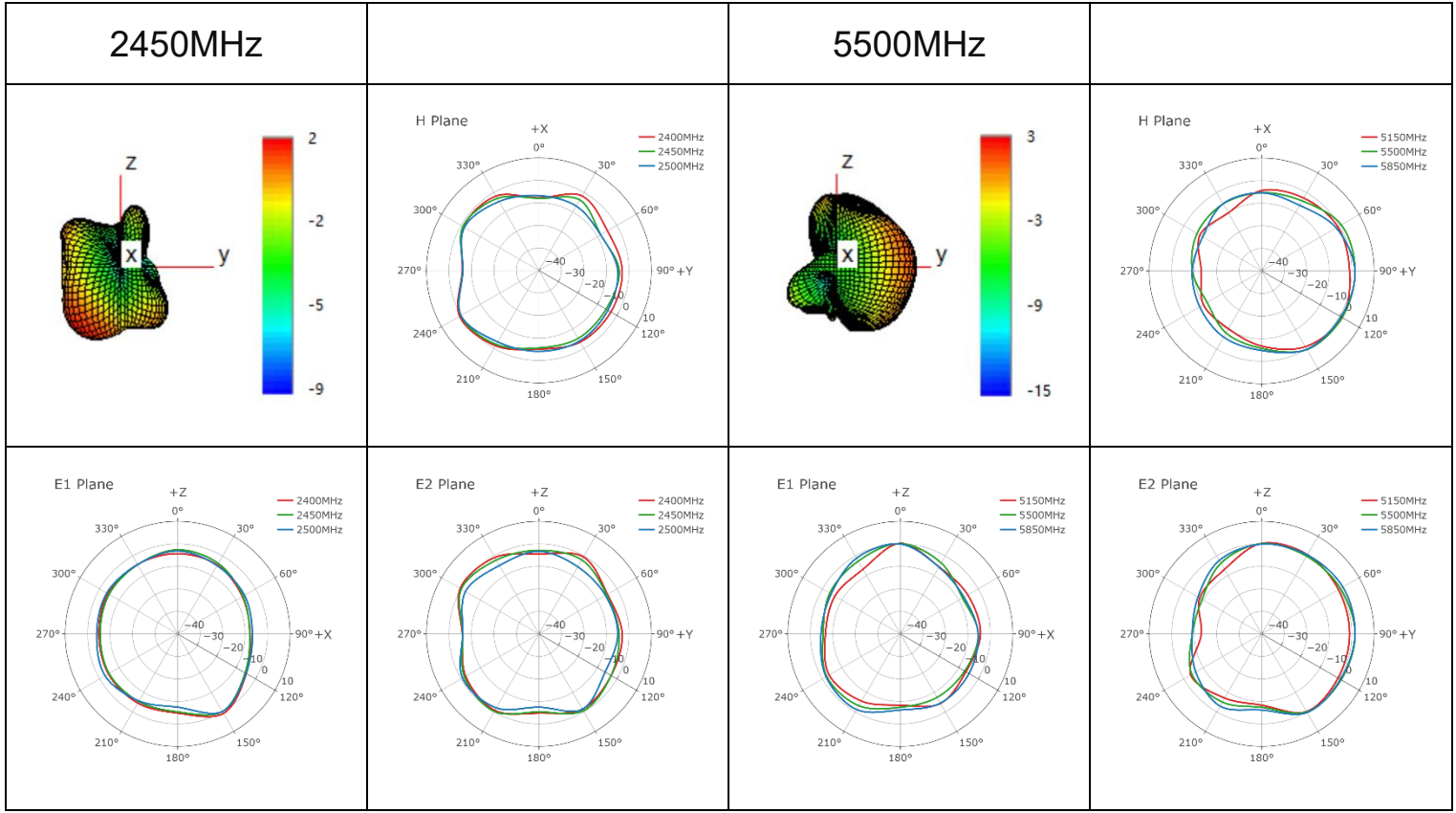
Peak Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dB)	2.1	1.4	1.6	2.2	2.6	1.7	-	-	-	-

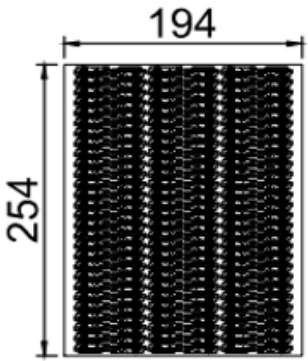
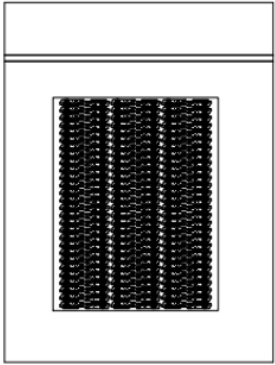
3.2.4. 3D & 2D Radiation Pattern

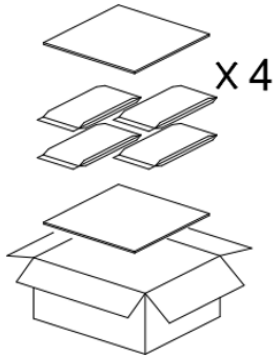
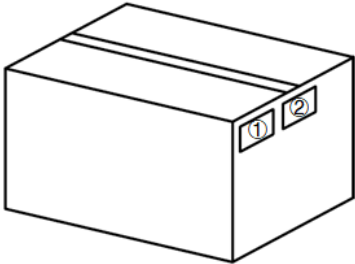
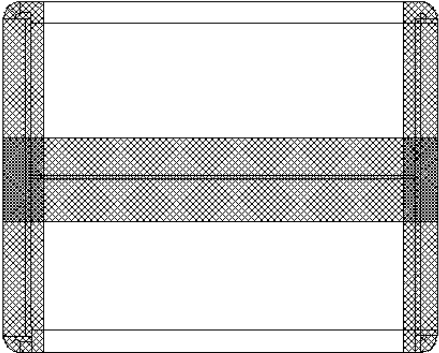
- Test Condition: Assembled in test device
- Test Chamber: HF-G-1





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 <p>168 pcs/Membrane</p>	<p>168 pcs antenna products in micromucosa (168 pcs antennas per Micromucosa)</p> <p><u>Micromucosa Size: L × W = 254 × 194 mm</u></p>
2	 <p>8400pcs/bag</p>	<p>8400 pcs antenna products in a big PE bag; (8400 pcs antennas per PE bag)</p>

<p>3</p>		<p>Place a clapboard at the bottom and top; (4 big PE bags per carton box) (33600 pcs antennas per carton box)</p> <p><u>Carton Size:</u> <u>L × W × H = 340 × 260 × 140 mm</u></p>
<p>4</p>		<p>Position for Attaching Labels</p> <ul style="list-style-type: none"> ① Carton Label ② Quality Label
<p>5</p>		<p>Sealing Cartons “工” type sealing cartons</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:

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

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Revision History

Version	Date	Author	Note
-	2023-04-11	Jim LUO/ Blake XIANG/ David LIU/ Aria CHU	Creation of the document
1.0	2023-04-11	Jim LUO/ Blake XIANG/ David LIU/ Aria CHU	First official release
2.0	2023-07-05	Jim LUO/ Blake XIANG/ Aria CHU	Updated all test data

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