Antenna Datasheet

Product OC: YECN001L1A
Version: 1.1
Date: 2026-01-05
Status: Released

Product Name: 4G Screw Mount Stubby PIFA External Antenna
Key Features:
Frequency Band: 450–470 MHz, 698–960 MHz, 1710–2690 MHz
Dimensions: Φ 40.6 mm × 104 mm
Efficiency: Up to 64 %
RoHS and REACH Compliant
IP67
IP69K
IK10

Overview

The YECN001L1A is a 4G external antenna measuring Φ 40.6 mm × 104 mm. This ultra-wide-band 4G antenna provides broad coverage from 450–470 MHz, 698–960 MHz, 1710–2690 MHz whilst offering backward-compatibility to support 3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is available with connection via customized cable lengths, terminated with SMA Male connector, which can also be customized. This low profile, screw mount omni-directional antenna, ideal for applications where the antenna is required to be discrete, is easy to install with maximum durability assured thanks to its IP67 & IP69K and IK10 rated, ASA enclosure.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. The YECN001L1A is designed as a pifa antenna, which offers high efficiency in all working bands. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for public safety, HD video streaming, utilities and smart Cities, fleet management, agricultural, industrial.

Typical applications include:

- Public safety
- HD Video Streaming
- Utilities and Smart Cities
- Fleet Management
- Agricultural
- Industrial

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: On 300 mm × 300 mm Metal Plane

1.1. Electrical

Electrical	
Frequency Range	450–470 MHz, 698–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail

Band / SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41
	Freq. (MHz)	600–700	700–810	820–960	1420–1520	1700–2170	2300–2400	2400–2500	2500–2690
Max. VSWR		-	3.3	2.7	-	2.1	1.7	1.9	1.8
Max. Return Loss (dB)		-	-5.5	-6.8	-	-8.9	-11.8	-10.3	-10.8
AVG Eff. (%)		-	56.6	48.3	-	42.7	45.4	41.3	47.7
AVG AVG Gain (dB)		-	-2.5	-3.2	-	-3.7	-3.4	-3.8	-3.2
Max. Peak Gain (dBi)		-	1.3	1.2	-	2.7	1.3	1.4	1.8
VSWR		≤ 3.3							
Return Loss		≤ -5.5 dB							
Peak Gain		≤ 2.7 dBi							

Electrical – Detail

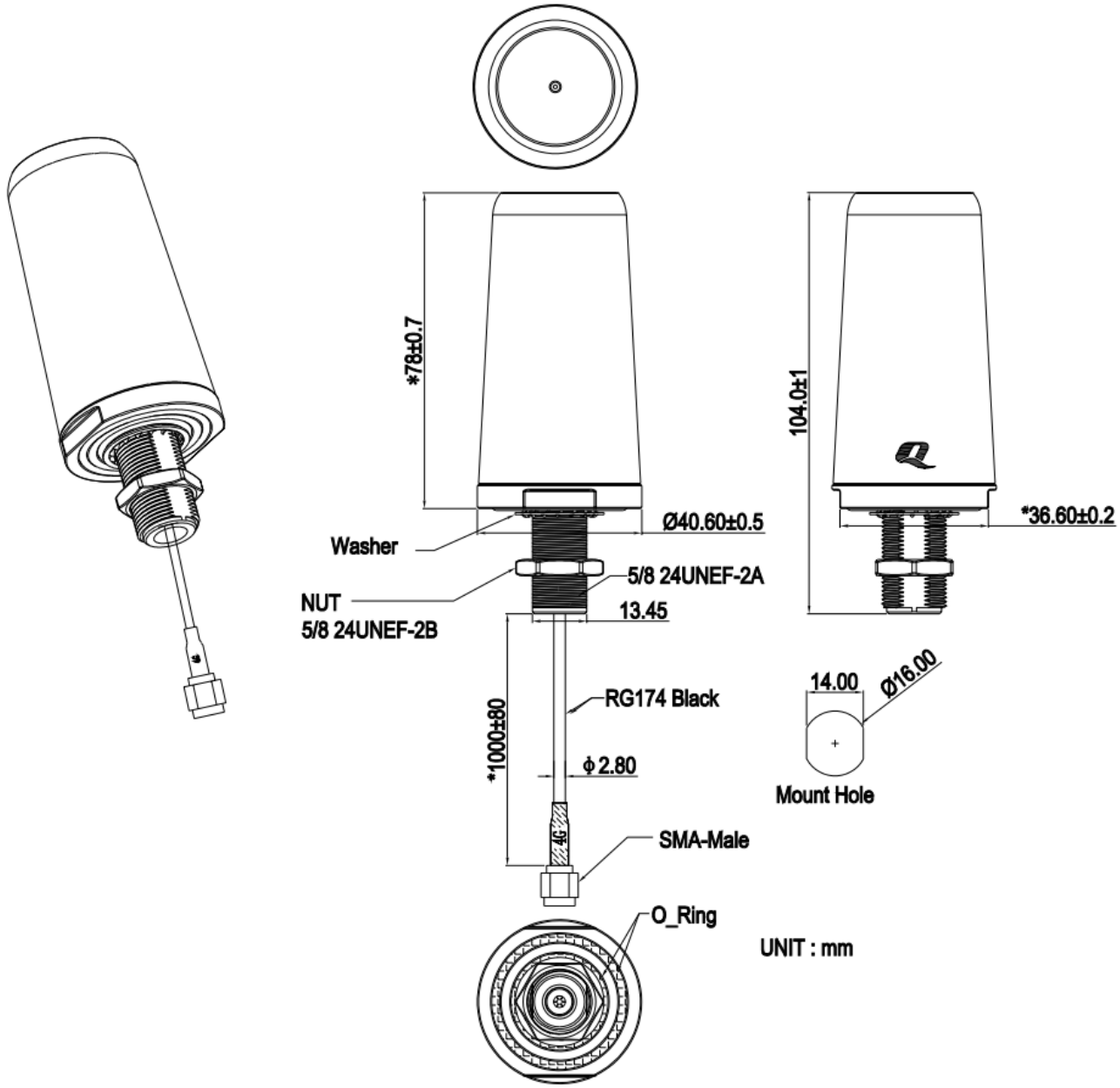
Band / SPEC	Band	B87/B88	B31/B72/B73
	Freq. (MHz)	410–430 MHz	450–470 MHz
Max. VSWR		-	3.5
Max. Return Loss (dB)		-	-5.2
AVG Eff. (%)		-	30.8
AVG AVG Gain (dB)		-	-5.2
Max. Peak Gain (dBi)		-	-1.3
VSWR		≤ 3.5	
Return Loss		≤ -5.2 dB	
Peak Gain		≤ -1.3 dBi	

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 40.6 mm × 104 mm
Material & Color	ASA & Black
Cable Type & Length	RG174 Black & 1000 mm
Connector Type	SMA Male (The current state of the SMA connector is not waterproof. If a waterproof connector is needed, it can be customized.)
Weight	Typ. 200 g
Mounting Type	Screw
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP67 (After Installation) IP69K (After Installation)
Impact Protection (IK) Rating	IK10 ①
RoHS & REACH Compliant	Yes

① Only top face meets IK10

2 Drawing

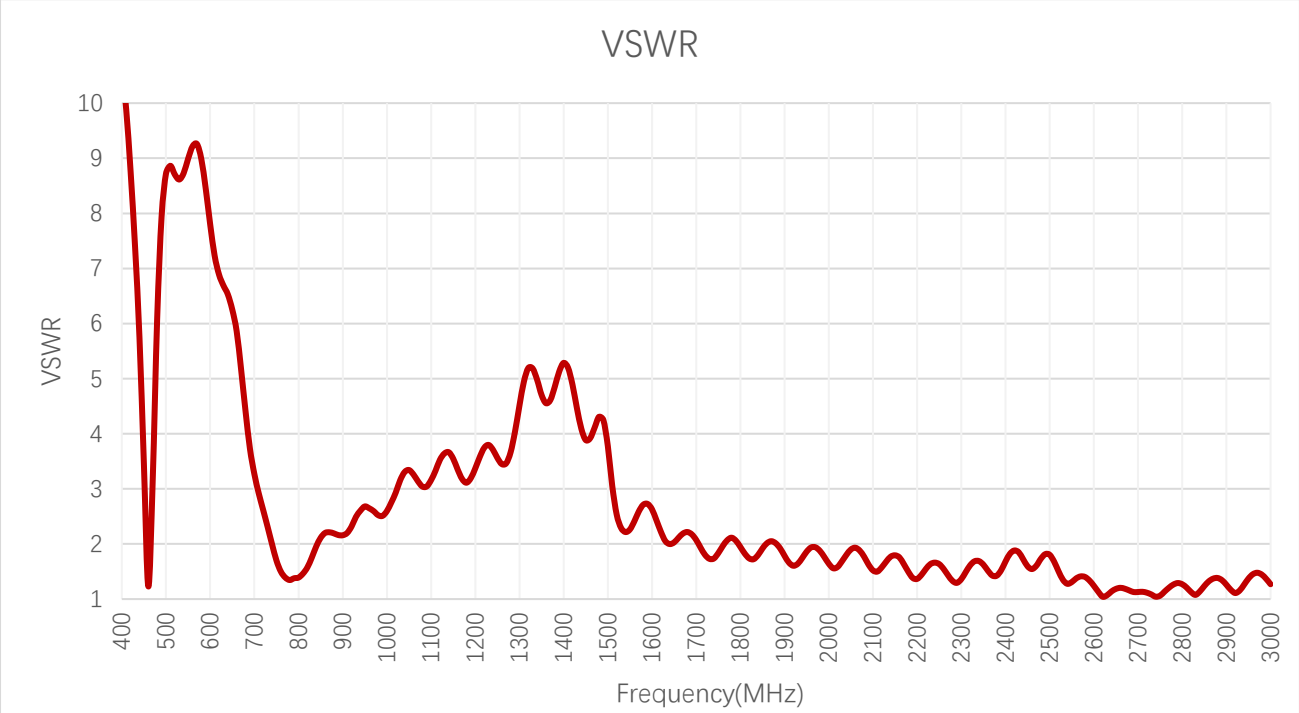


Caution: If you find the silicon seal ring dropping out of the groove when opening the package, it's a normal phenomenon due to its special structure design. Please assemble the silicon seal ring into groove before you assemble antenna on the device, thanks!

3 Detailed Performance

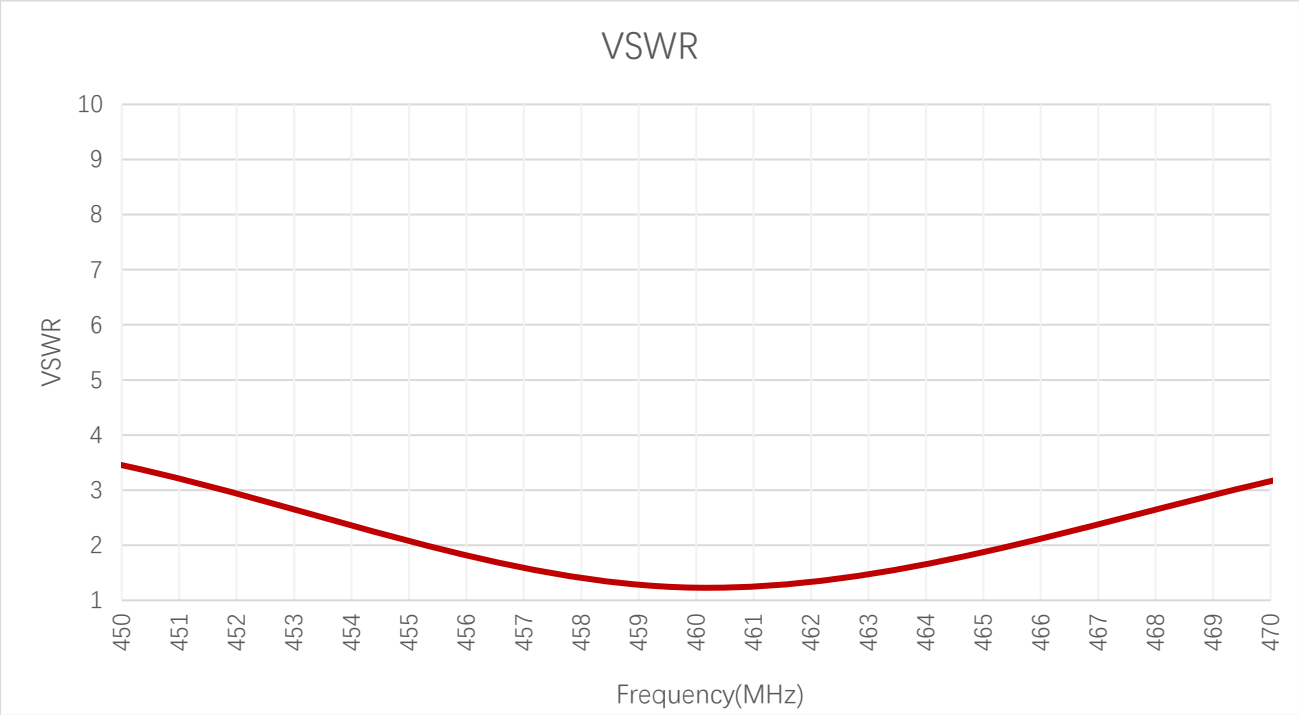
3.1. S-Parameter Test

3.1.1. VSWR



VSWR

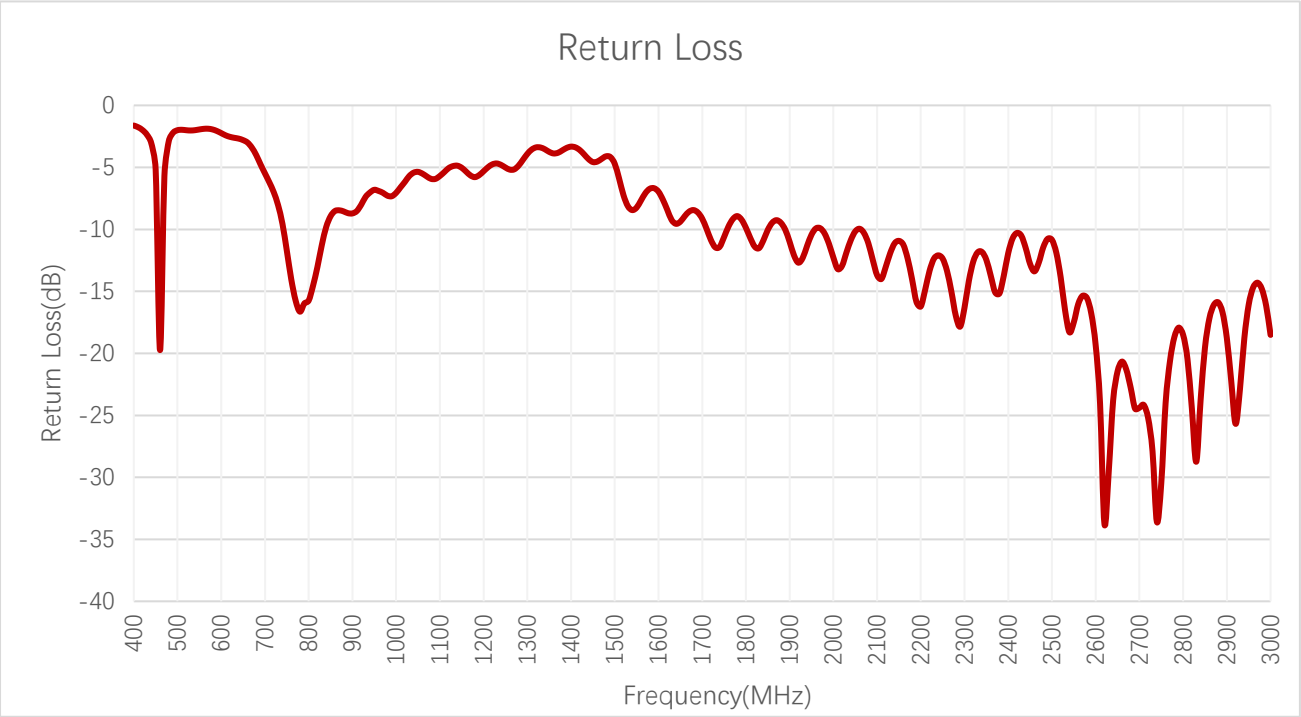
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	2.9	1.8	2.2	2.6	-	1.9	1.7	2.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
VSWR	1.9	1.8	1.6	1.6	1.2	1.1	-	-	-	-



VSWR

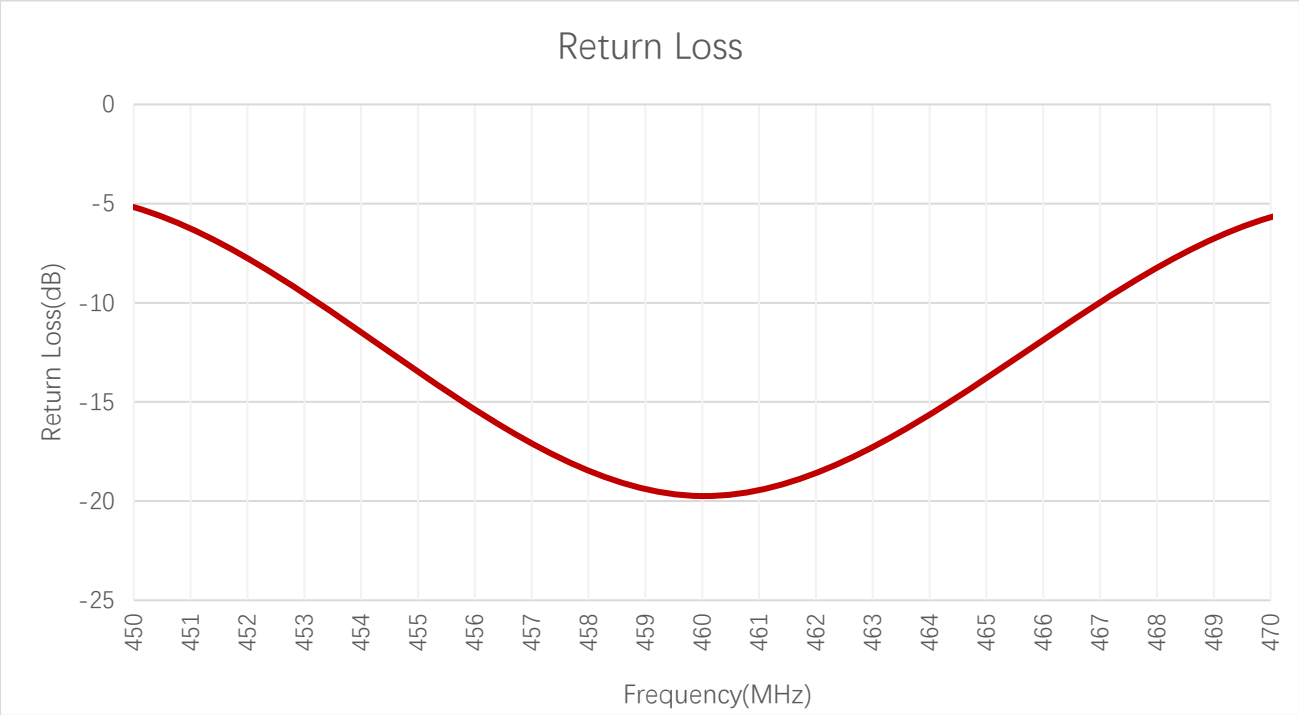
Frequency (MHz)	410	420	430	440	450	460	470
VSWR	-	-	-	-	3.5	1.2	3.2

3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-6.2	-11.3	-8.7	-6.9	-	-10.0	-11.4	-9.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-10.4	-11.1	-12.5	-12.8	-19.3	-24.5	-	-	-	-

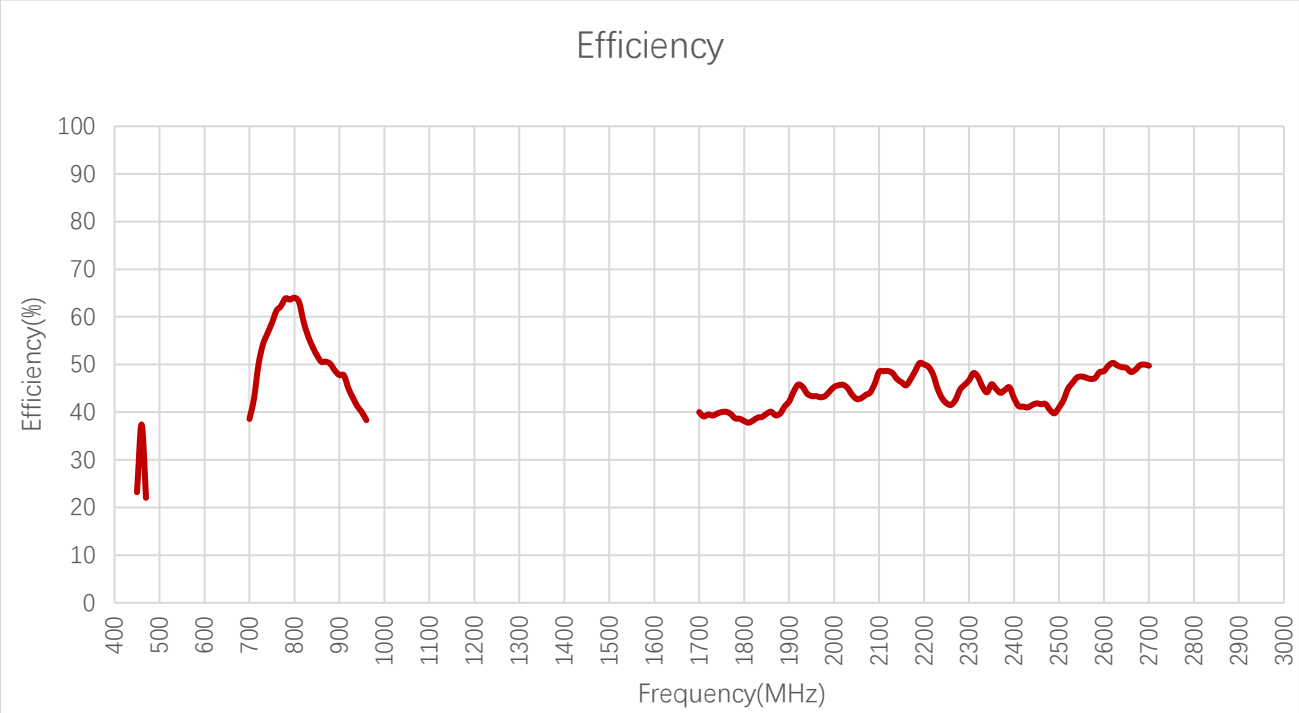


Return Loss (dB)

Frequency (MHz)	410	420	430	440	450	460	470
Return Loss (dB)	-	-	-	-	-5.2	-19.7	-5.7

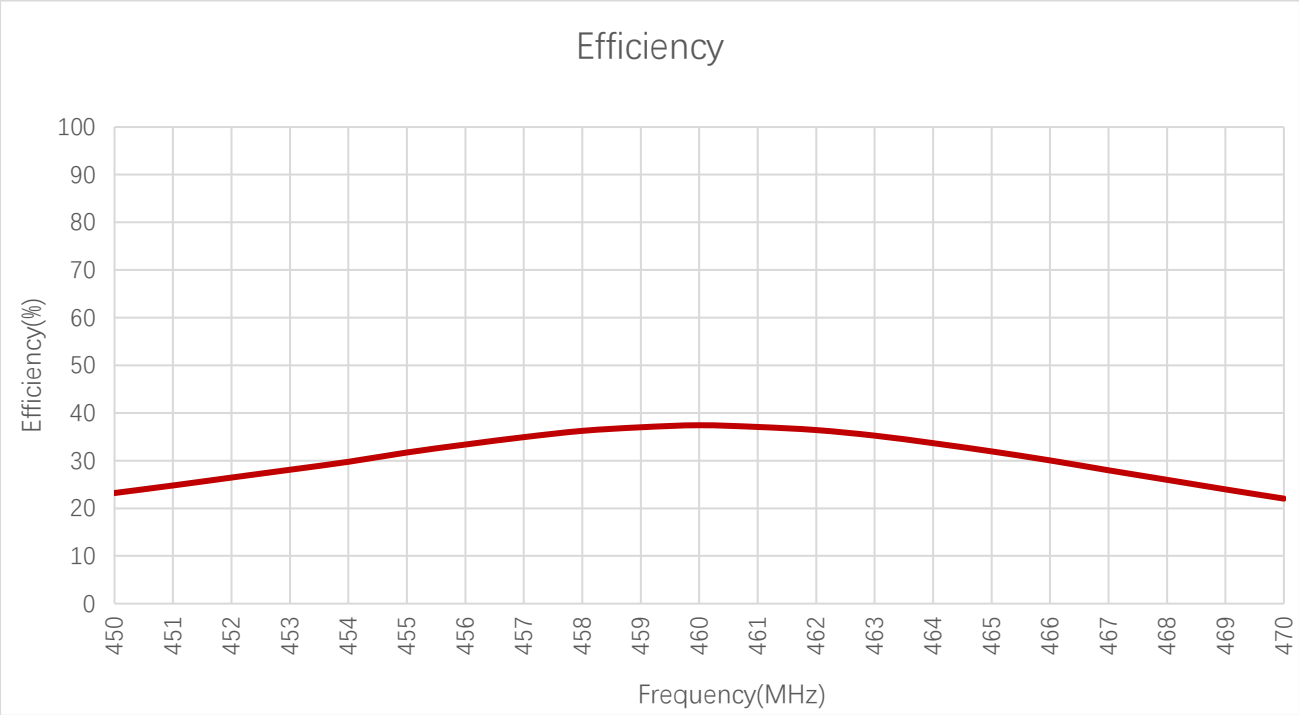
3.2. Radiation Performance Test

3.2.1. Efficiency



Efficiency (%)

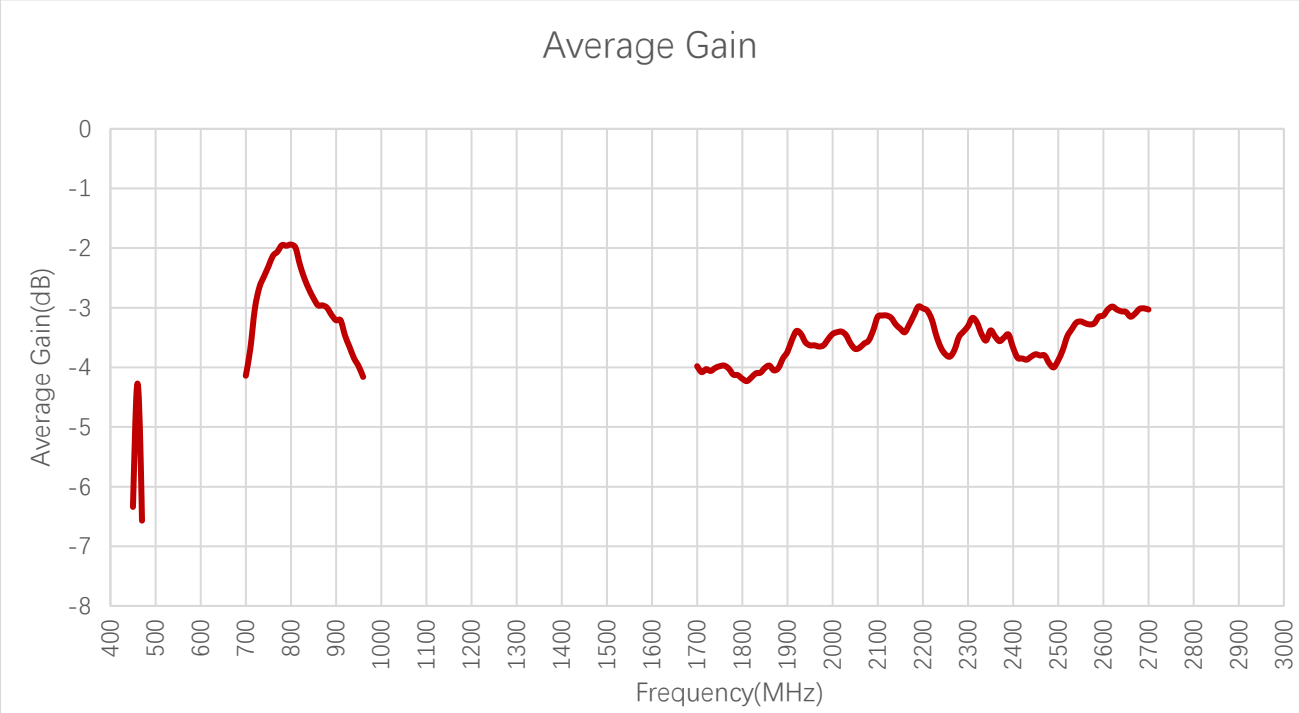
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	42.8	56.1	47.8	38.3	-	39.1	39.7	39.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	43.4	47.0	45.9	41.9	48.6	50.0	-	-	-	-



Efficiency (%)

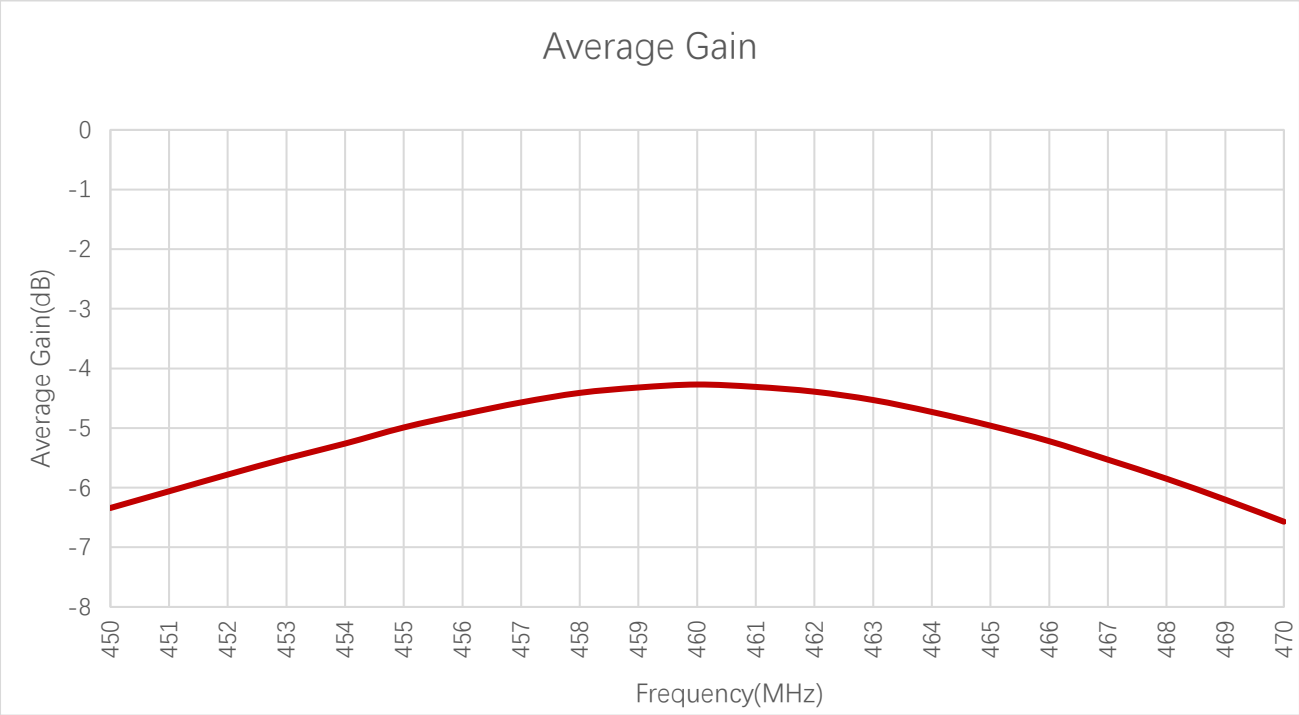
Frequency (MHz)	410	420	430	440	450	460	470
Efficiency (%)	-	-	-	-	23.2	37.4	22.0

3.2.2. Average Gain



Average Gain (dB)

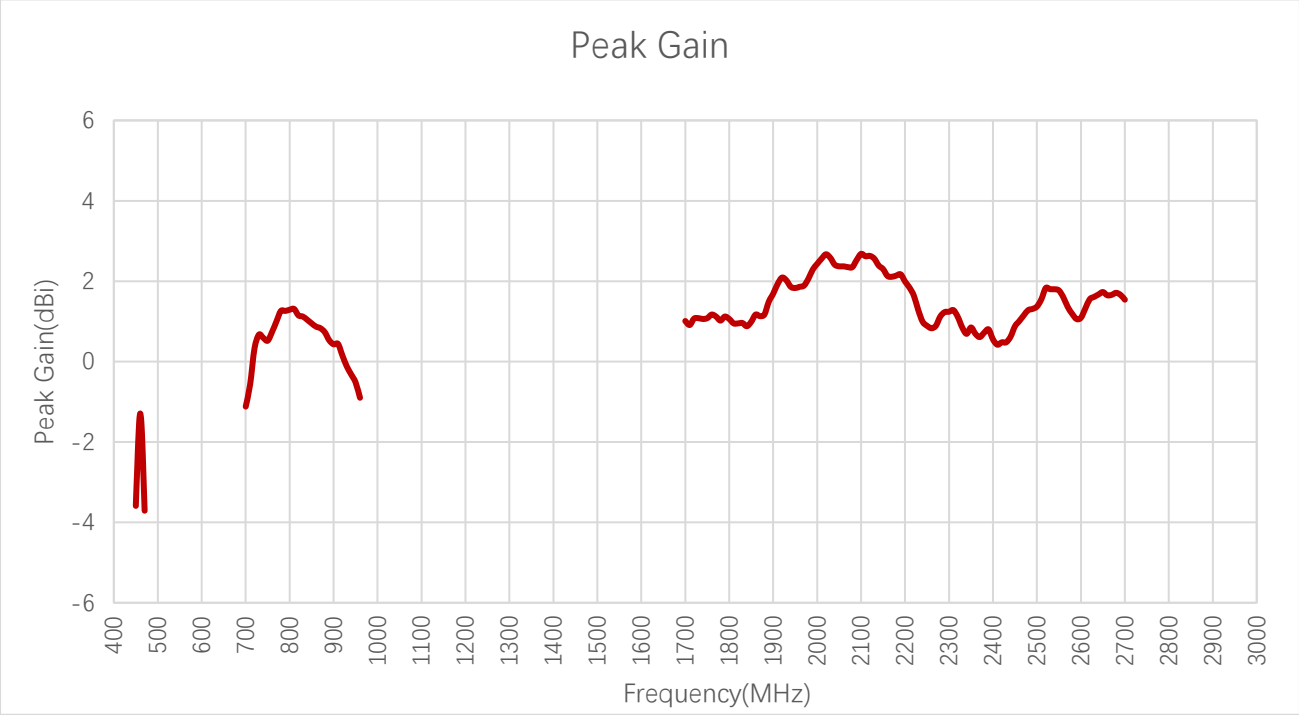
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-3.7	-2.5	-3.2	-4.2	-	-4.1	-4.0	-4.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-3.6	-3.3	-3.4	-3.8	-3.1	-3.0	-	-	-	-



Average Gain (dB)

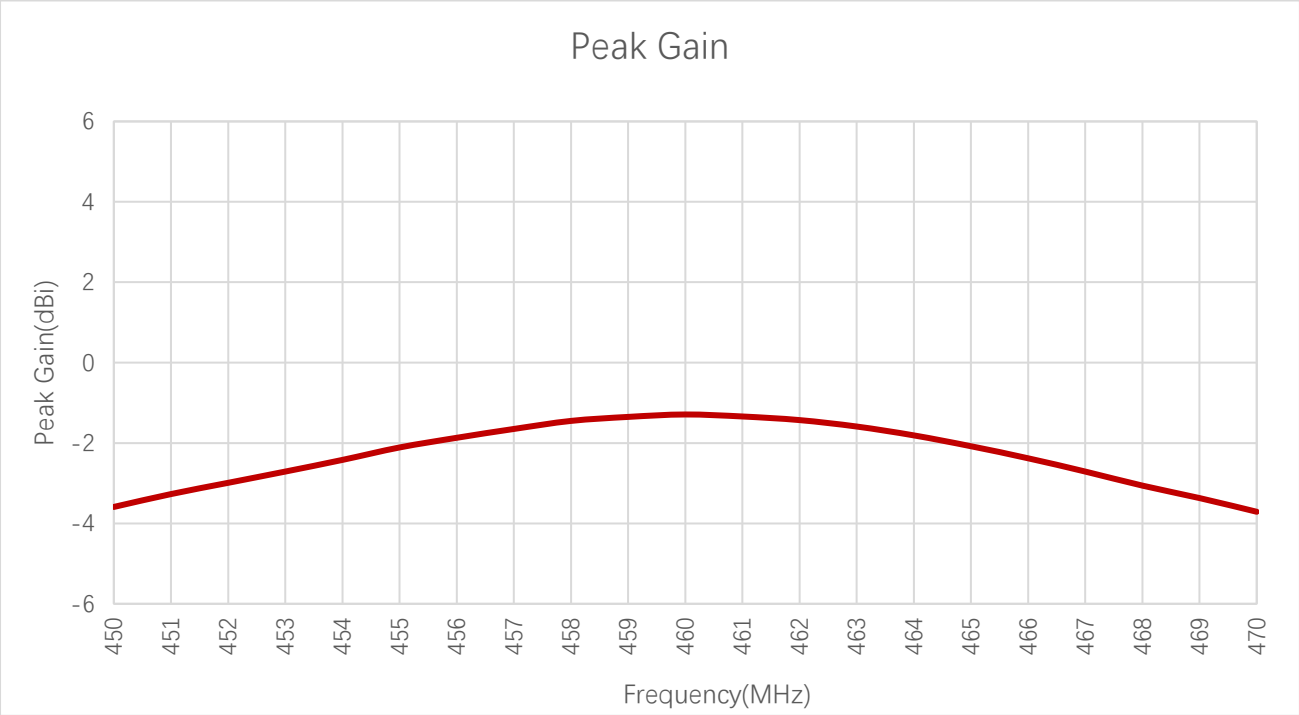
Frequency (MHz)	410	420	430	440	450	460	470
Average Gain (dB)	-	-	-	-	-6.3	-4.3	-6.6

3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-0.6	1.1	0.4	-0.9	-	0.9	1.1	1.2
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	1.8	2.4	0.9	0.9	1.1	1.7	-	-	-	-

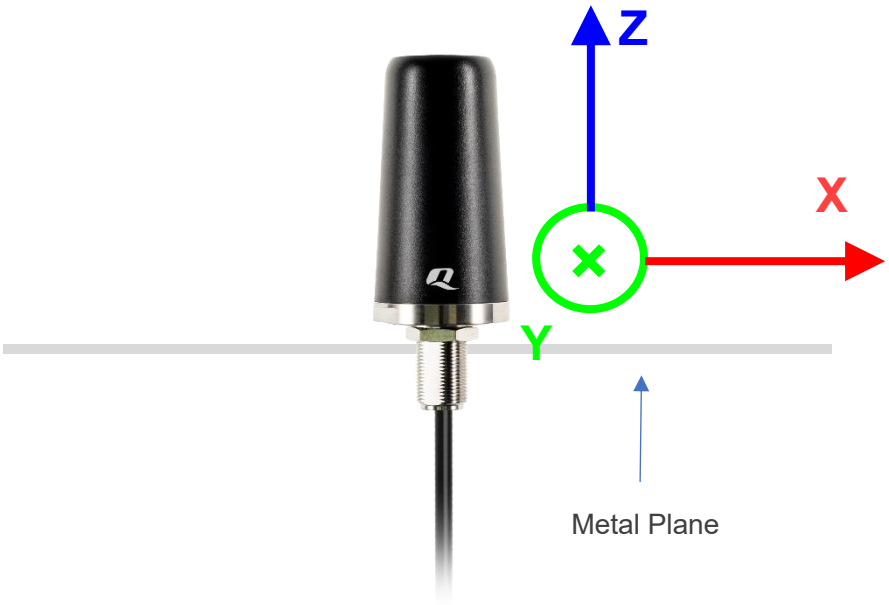


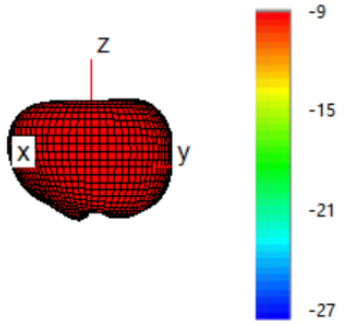
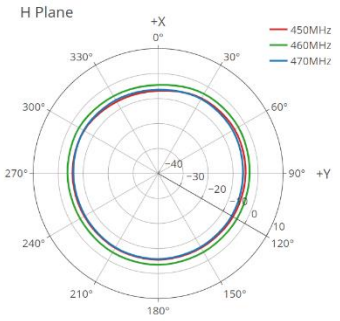
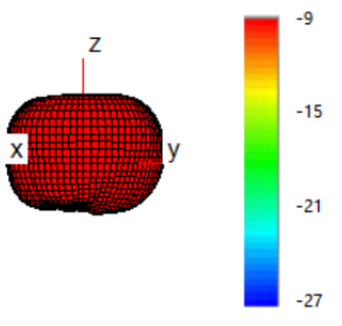
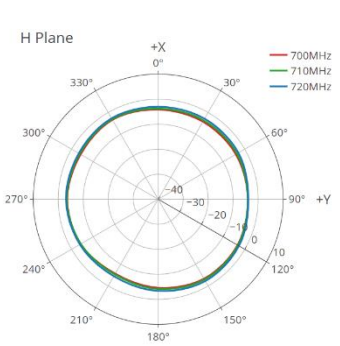
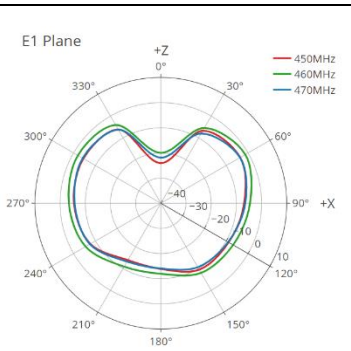
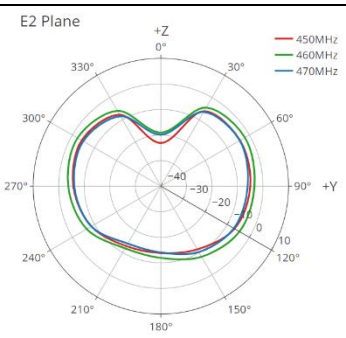
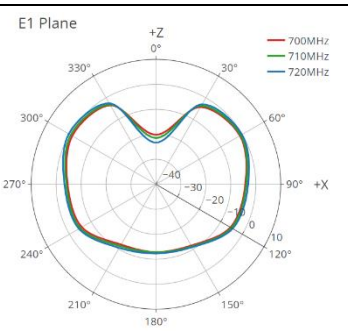
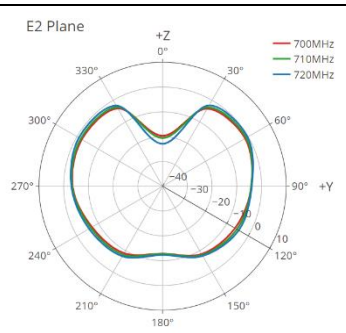
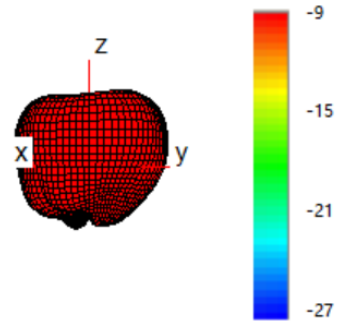
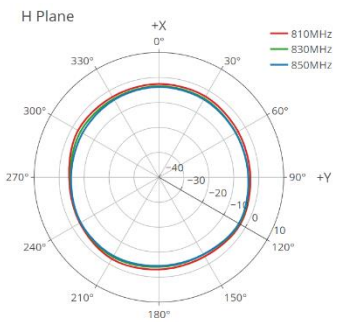
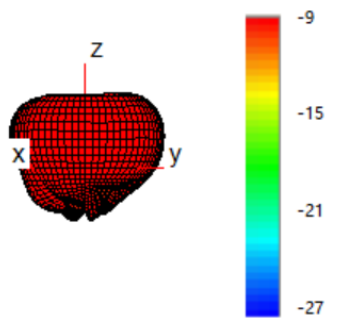
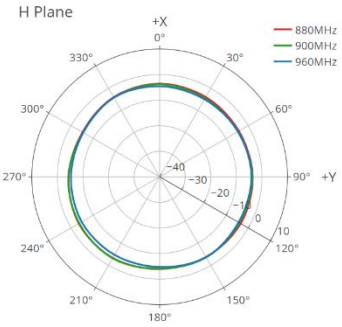
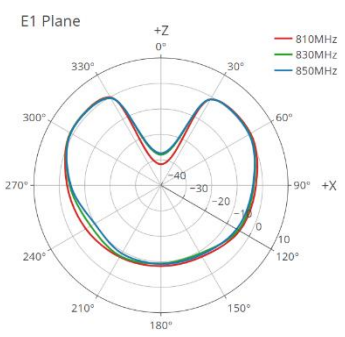
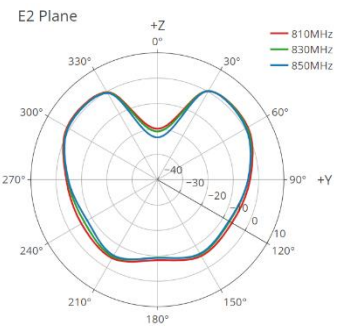
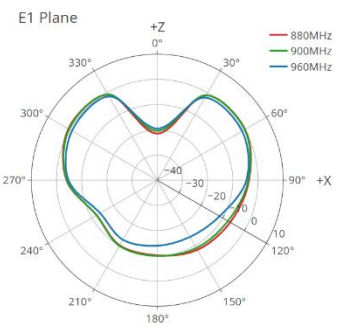
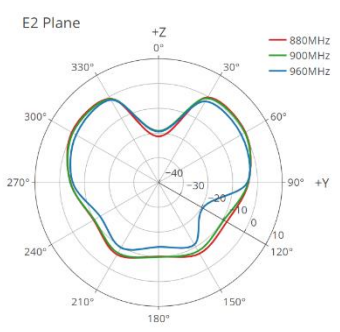
Peak Gain (dBi)

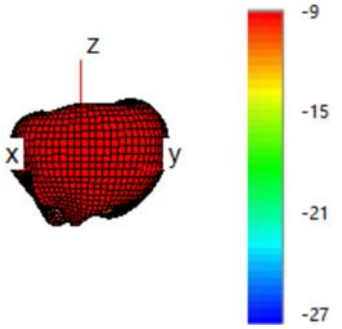
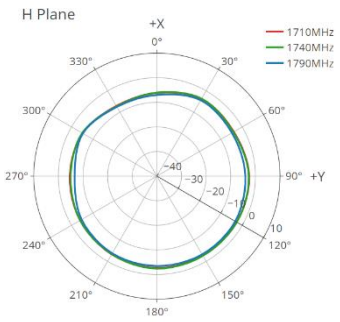
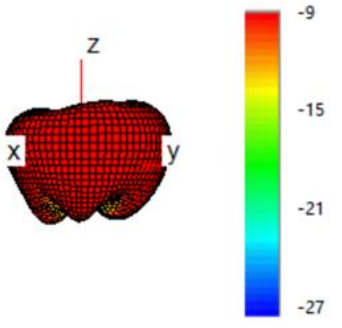
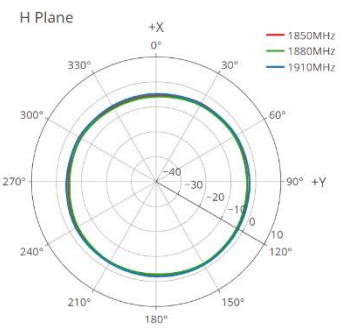
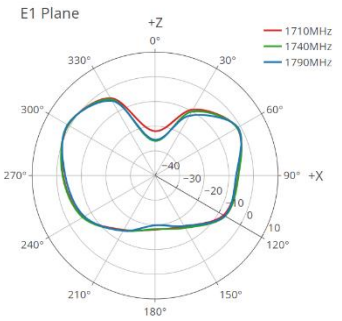
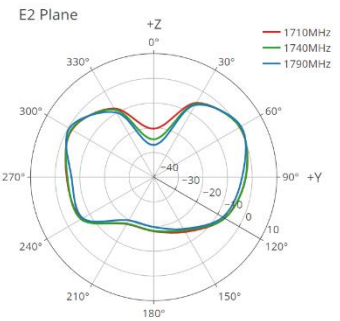
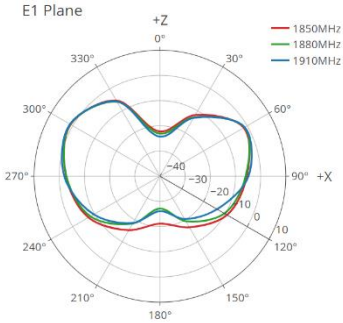
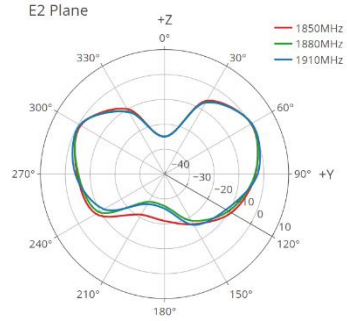
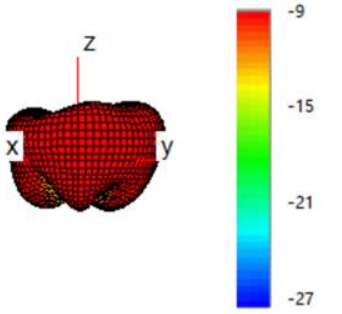
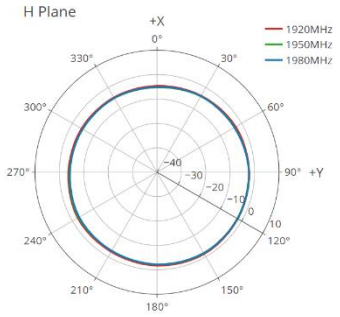
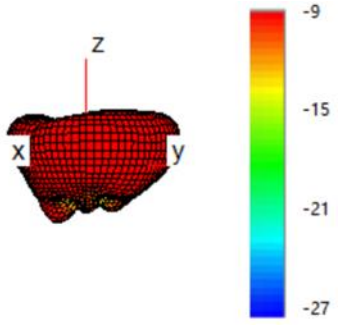
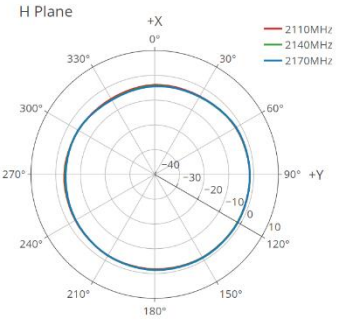
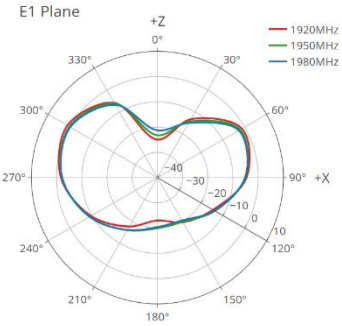
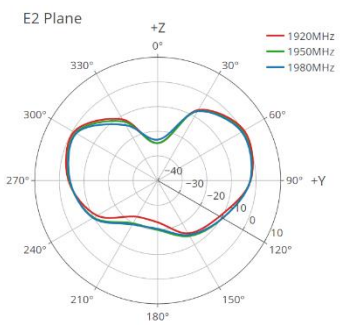
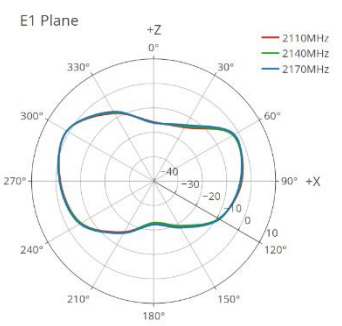
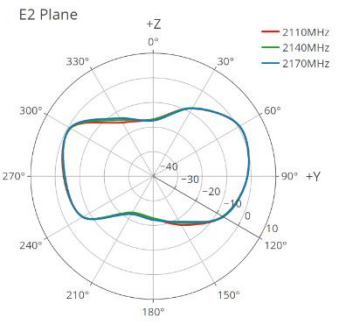
Frequency (MHz)	410	420	430	440	450	460	470
Peak Gain (dBi)	-	-	-	-	-3.6	-1.3	-3.7

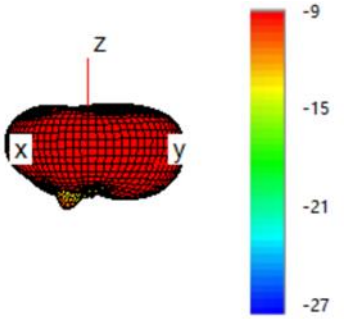
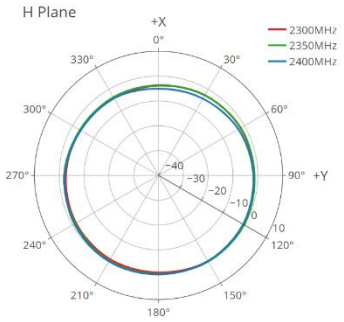
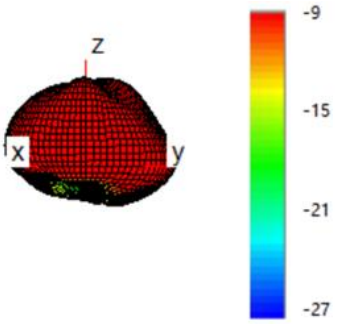
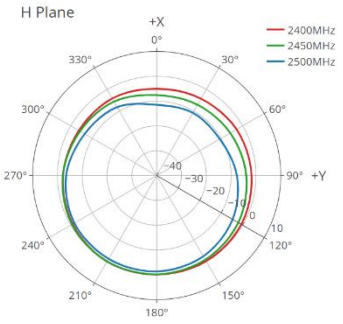
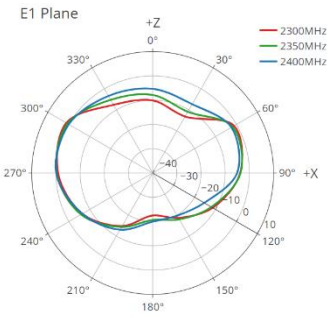
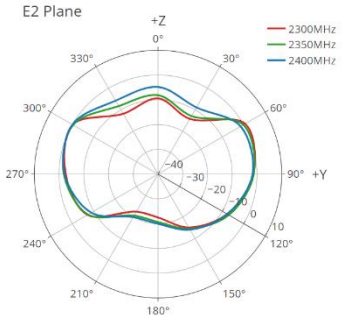
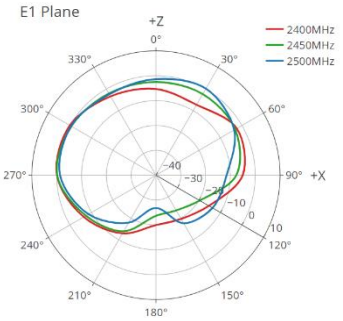
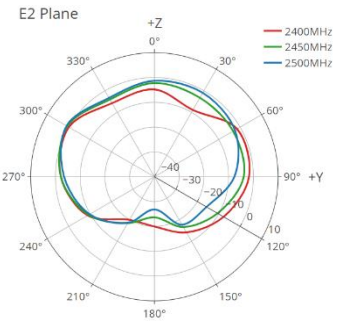
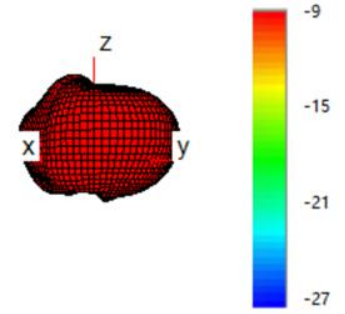
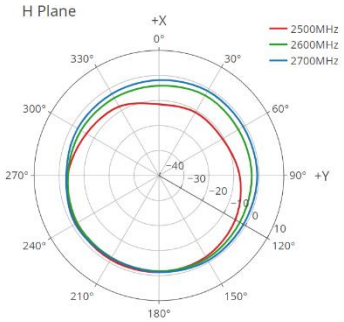
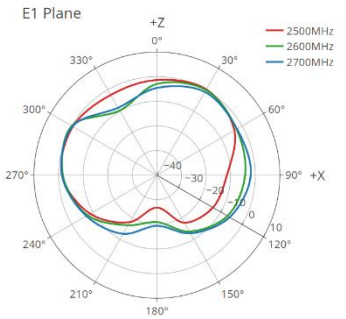
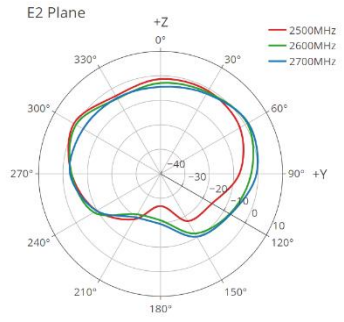
3.2.4. 3D & 2D Radiation Pattern

- Test Condition: On 300 mm × 300 mm Metal Plane
- Test Chamber: GL-G-1



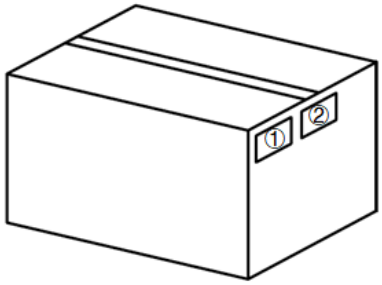
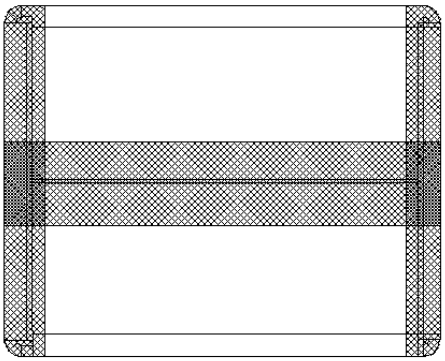
460 MHz		710 MHz	
			
			
830 MHz		900 MHz	
			
			

1740 MHz		1880 MHz	
			
			
1950 MHz		2140 MHz	
			
			

2350 MHz		2450 MHz	
			
			
2600 MHz			
			
			

4 Packaging

Step	Packaging picture / 2D picture	Description
1	 	The bottom of the product is placed inside the pearl cotton liner, and the top of the product is also placed inside the pearl cotton liner. The wiring harness is stuck in the pearl cotton slot above.
2	 	1 antenna product in an inner box. (1 Antenna / Inner Box)
3		(56 Inner Boxes / Carton Box) (56 Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. Carton Size: L × W × H = 550 × 350 × 405 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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Revision History

Version	Date	Author	Note
-	2024-05-15	Sly Liu/ Lance Sun/ David Liu/ Rainey Liao	Creation of the document
1.0	2024-05-15	Sly Liu/ Lance Sun/ David Liu/ Rainey Liao	First official release
1.1	2026-01-05	Mayes Li/ Rainey Liao	1. Updated the starting frequency to 698 MHz (Cover, Overview and Chapter 1.1). 2. Updated the antenna image (Cover and Chapter 3.2.4). 3. Updated the package (Chapter 4). 4. Updated product name. 5. Listed the relevant data from 450 MHz to 470 MHz separately.

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