Antenna Datasheet

Product OC: YECN001J1A
Version: 2.0
Date: 2026-01-05
Status: Released

Product Name: 5G Screw Mount Stubby Monopole External Antenna
Key Features:
Frequency Band: 600–960 MHz, 1400–2690 MHz, 3300–6000 MHz
Dimensions: Φ 40.6 mm × 104 mm
Efficiency: Up to 89.1 % (MP)
RoHS and REACH Compliant
IP67
IP69K
IK10
Compatible with ECE-R118 cables under demand

Overview

The Quectel YECN001J1A is an external Screw mounting antenna. This ultra-wide-band antenna provides coverage the 5G/4G/3G/2G networks as well at LPWA, Cat-M, NB IoT, ZigBee, ISM, Wi-Fi/BT. Its shape is cylinder, with dimensions of Φ 40.6 mm × 104 mm. YECN001J1A has a SMA Male connector.

YECN001J1A is an external antenna with high performance, which can be installed outside the device. It can adopt waterproof, dustproof, and anti-drop design, with IP67 and IP69K waterproof and dustproof ratings, and IK10 impact protection (IK) rating, this design can maximize the protection of the antenna from natural environmental damage such as water droplets, dust and falls. We also provide a housing UV resistant of UL 746c f1, which can allow the YECN001J1A to be used in outdoor environments for a long time and remain intact even in harsh environments, thereby extending its service life for providing a more flexible and reliable high-performance antenna solution for products in external application environments.

YECN001J1A allows high efficiency, stable signal transmission and reception for from 600 to 960 MHz, 1400 to 2690 MHz and 3300 to 6000 MHz.

Typical Applications Include:

- Smart Buildings: Climate control, access control, security, irrigation
- Transport (Busses, Utility & Public Safety)
- Agricultural machinery
- Mining Vehicles & Machinery communications, telemetry and automation
- Industrial factory automation
- Warehouses & Logistic systems

Quectel provides customized service for optimization of your devices, 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: In Free Space & On 300 mm × 300 mm Metal Plane

1.1. Electrical

Electrical	
Frequency Range	600–960 MHz, 1400–2690 MHz, 3300–6000 MHz
Impedance	50 Ω
Polarization	Vertical
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	B42 /B48 /n77	n79	Wi-Fi 5G
	Freq. (MHz)	600–700	700–810	820–960	1420–1520	1700–2170	2300–2400	2400–2500	2500–2690	3300–4200	4400–5000	5150–5850
Max. VSWR	FS	14.7	7.0	2.9	2.2	2.7	1.4	1.3	1.9	1.9	1.9	2.0
	MP	7.1	2.0	2.3	2.0	2.5	1.5	1.5	1.5	2.8	2.6	2.2
Max. Return Loss (dB)	FS	-1.2	-2.5	-6.2	-8.6	-6.6	-15.1	-18.3	-10.3	-10.3	-10.1	-9.3
	MP	-2.5	-9.6	-8.2	-9.7	-7.2	-14.1	-14.0	-14.6	-6.6	-6.9	-8.7
AVG Eff. (%)	FS	10.0	40.0	52.1	71.3	59.5	74.9	78.8	60.3	67.9	63.9	55.0
	MP	54.1	83.9	78.4	66.4	70.1	79.1	77.2	75.8	64.4	68.9	58.8
AVG AVG Gain (dB)	FS	-10.2	-4.1	-2.9	-1.5	-2.3	-1.3	-1.0	-2.2	-1.7	-2.0	-2.6
	MP	-2.9	-0.8	-1.1	-1.8	-1.5	-1.0	-1.1	-1.2	-1.9	-1.6	-2.3
Max. Peak Gain (dBi)	FS	-4.0	1.6	3.2	3.8	2.5	3.3	3.4	3.3	5.4	5.5	3.0
	MP	1.1	2.2	2.5	1.9	2.4	2.6	3.7	3.8	6.1	5.6	8.3

VSWR	FS	≤ 14.7
	MP	≤ 7.1
Return Loss	FS	≤ -1.2 dB
	MP	≤ -2.5 dB
Peak Gain	FS	≤ 5.5 dBi
	MP	≤ 8.3 dBi

Note:

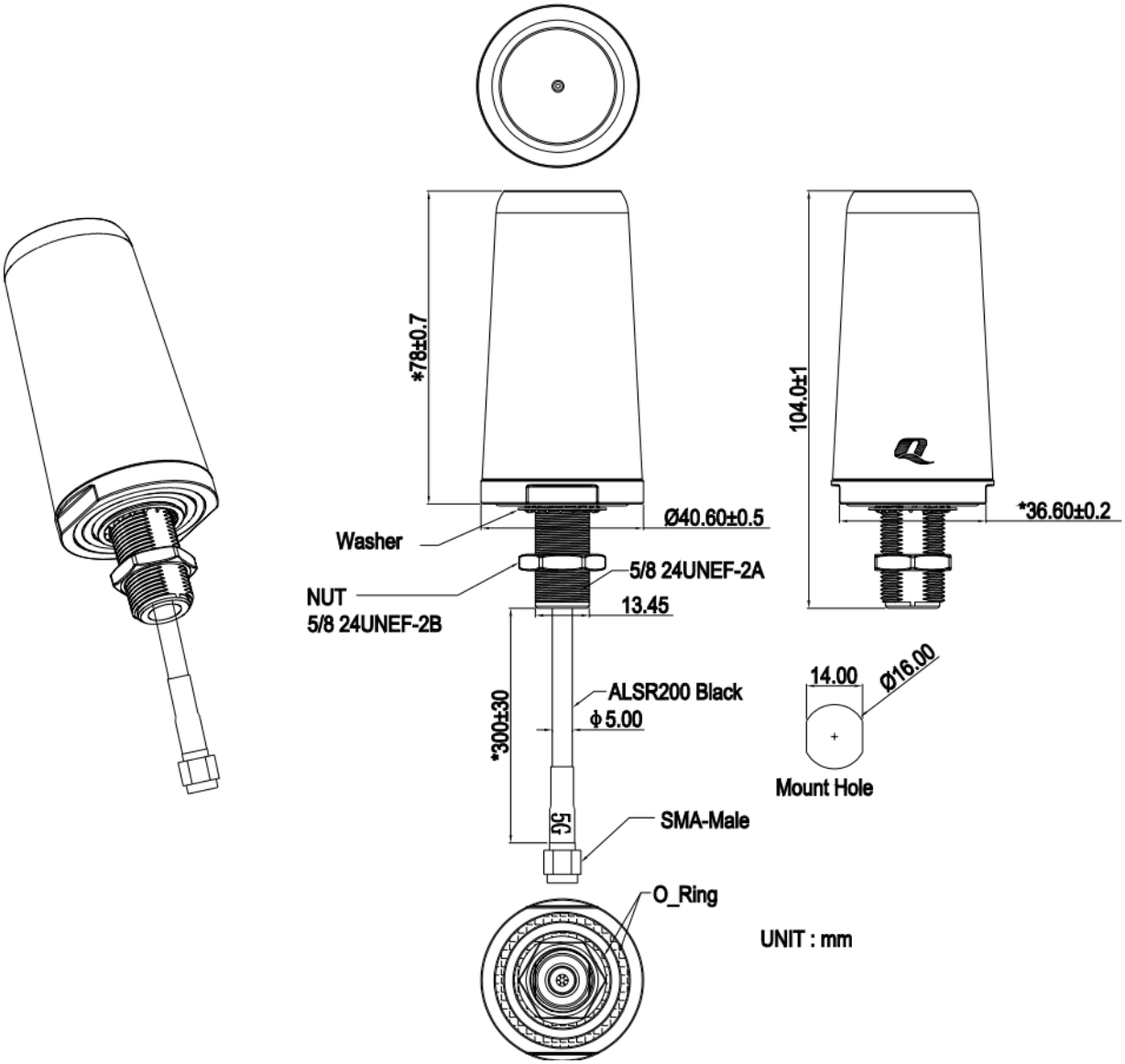
- FS: In Free Space
- MP: On 130 mm × 130 mm Metal Plane

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	40.6 mm × 104 mm
Material & Color	ASA & Black
Cable Type & Length	ALSR200 Black & 300 mm
Connector Type	SMA Male (The current state of the SMA connector is not waterproof. If a waterproof connector is required, 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
Housing UV Resistant	UL 746c f1

① Only top face meets IK10

2 Drawing

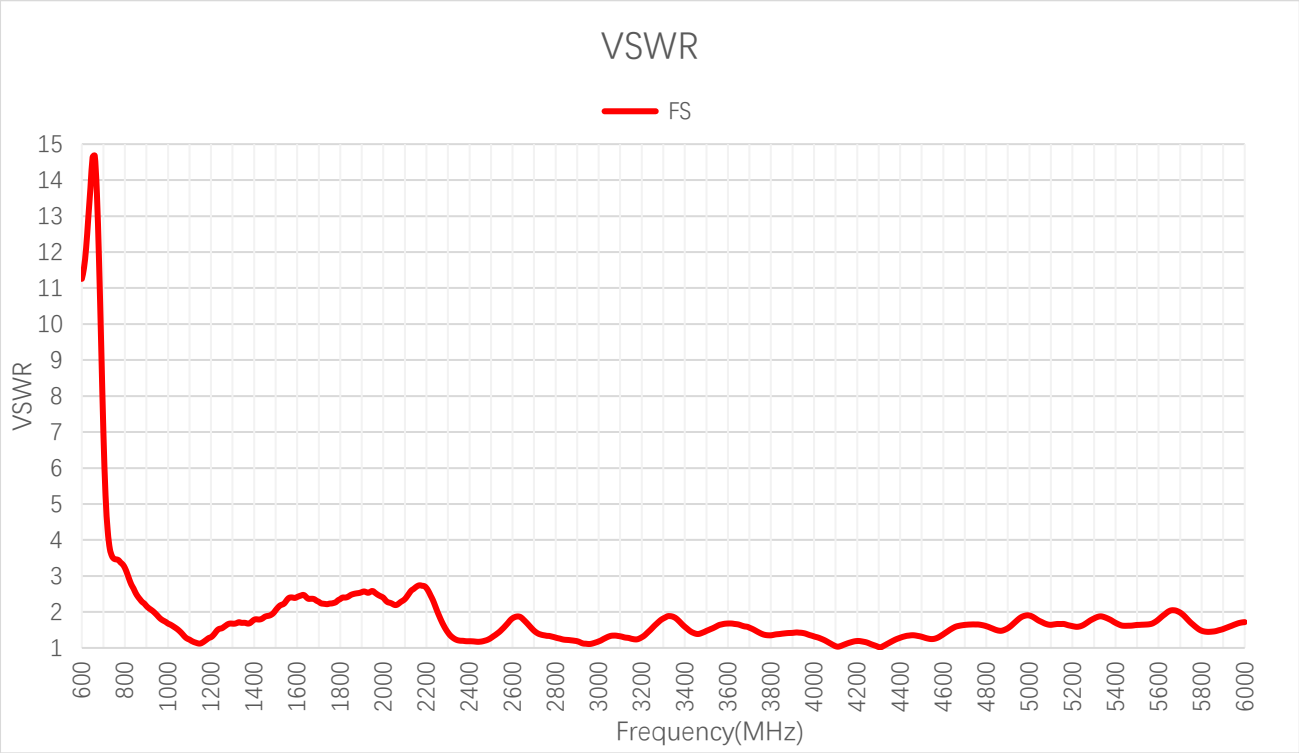


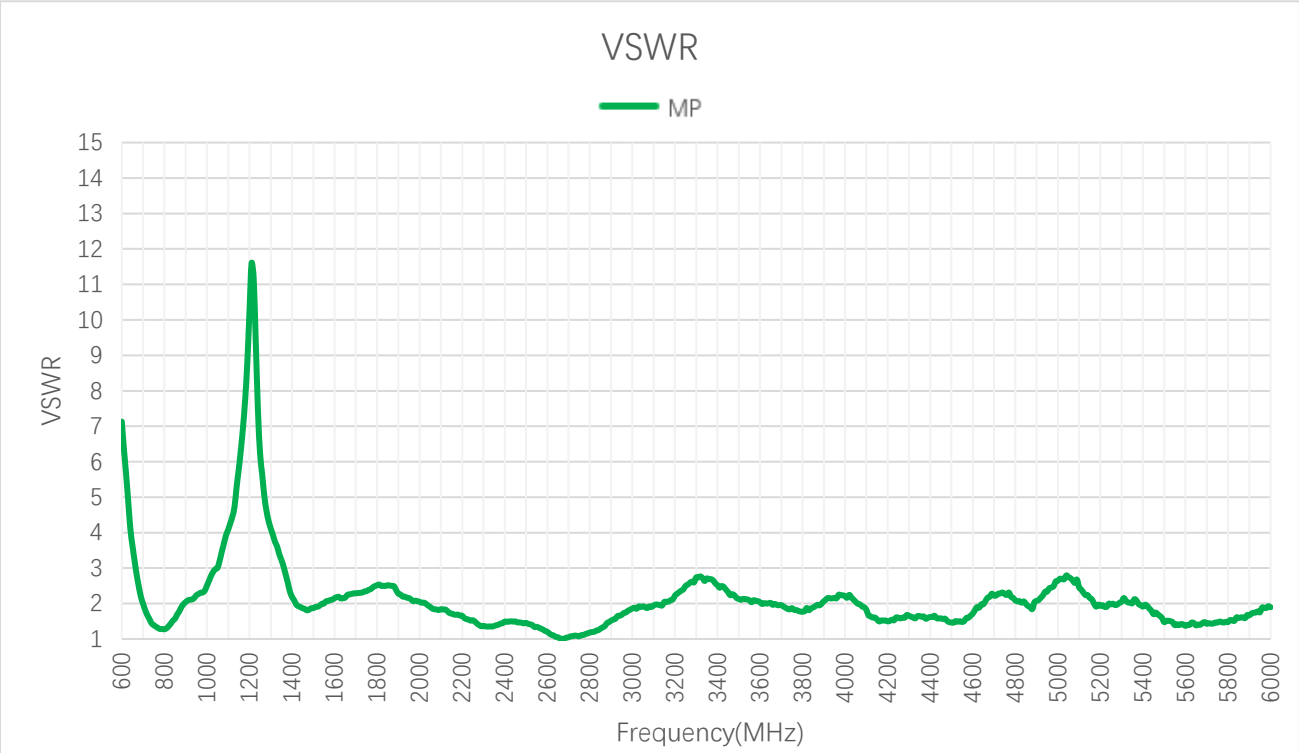
Caution: If you find the silicon seal ring dropping out of the groove when opening the package, it's a normal phenomenon due to its special structure design. Please assemble the silicon seal ring into groove before you assemble antenna on the device, thanks.

3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR

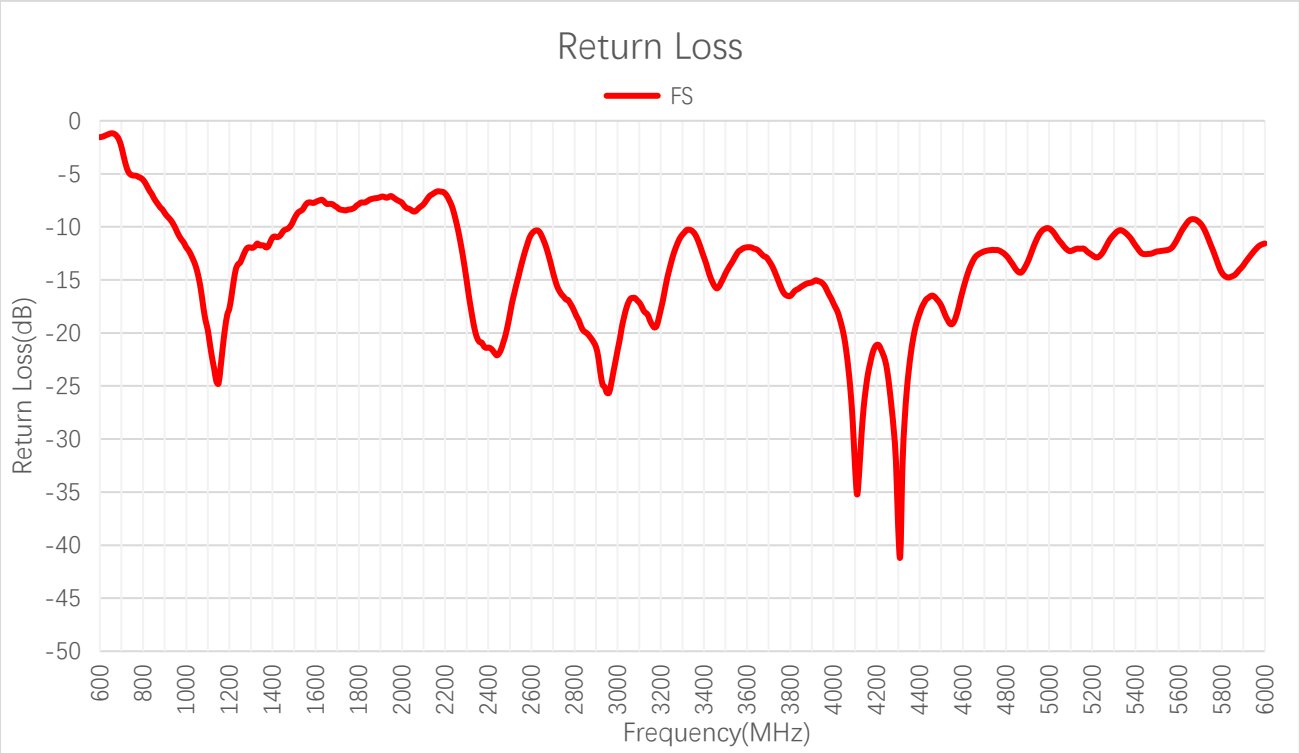


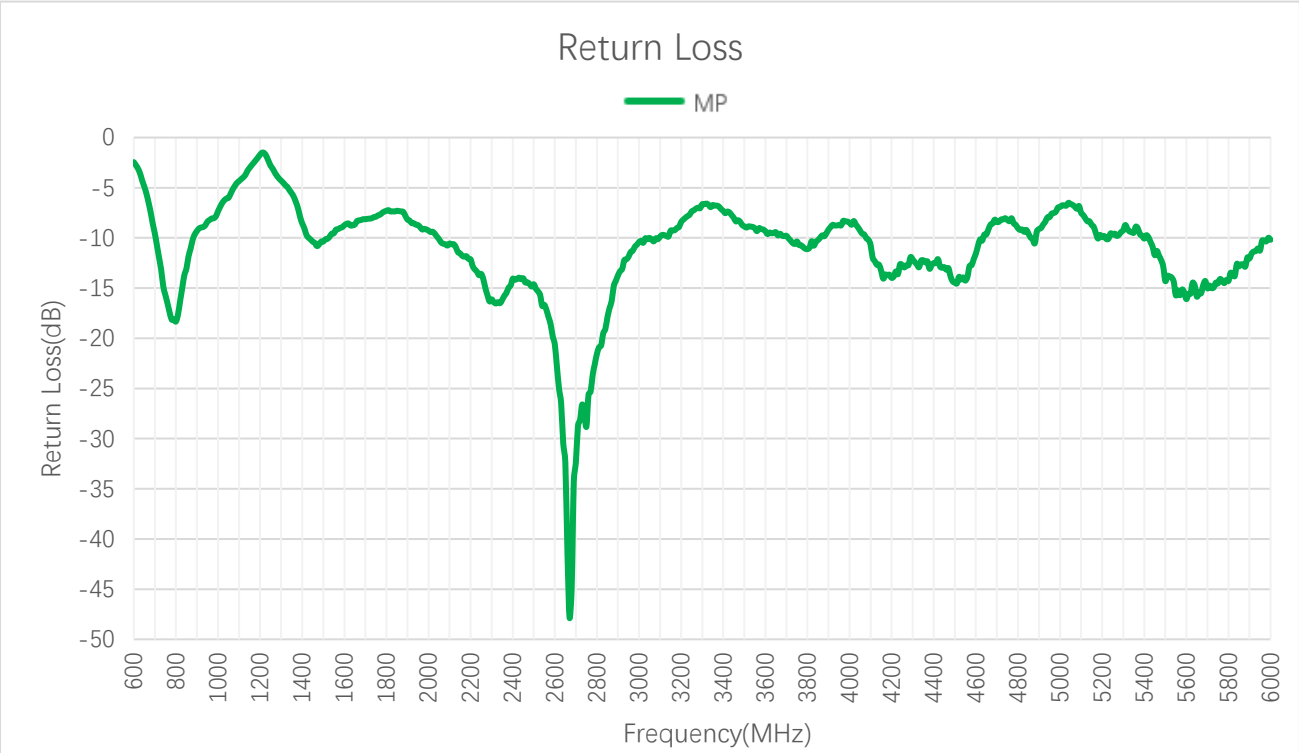


VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	11.3	12.9	5.3	2.8	2.2	1.8	1.8	2.2	2.2	2.5
MP	7.1	4.9	1.8	1.4	2.0	2.3	1.9	2.3	2.3	2.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	2.6	2.6	1.2	1.2	1.8	1.7	1.6	1.9	1.6	1.7
MP	2.2	1.7	1.4	1.5	1.2	2.0	2.2	2.6	1.5	1.9

3.1.2. Return Loss



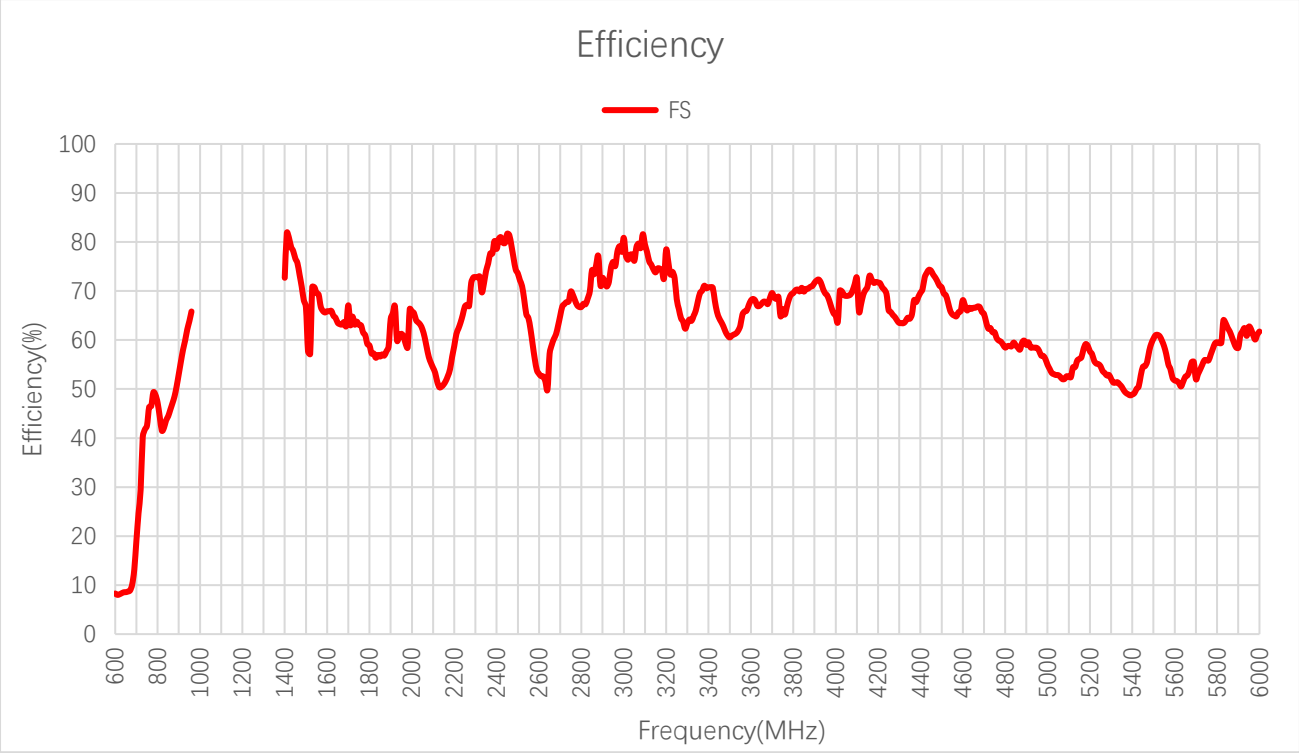


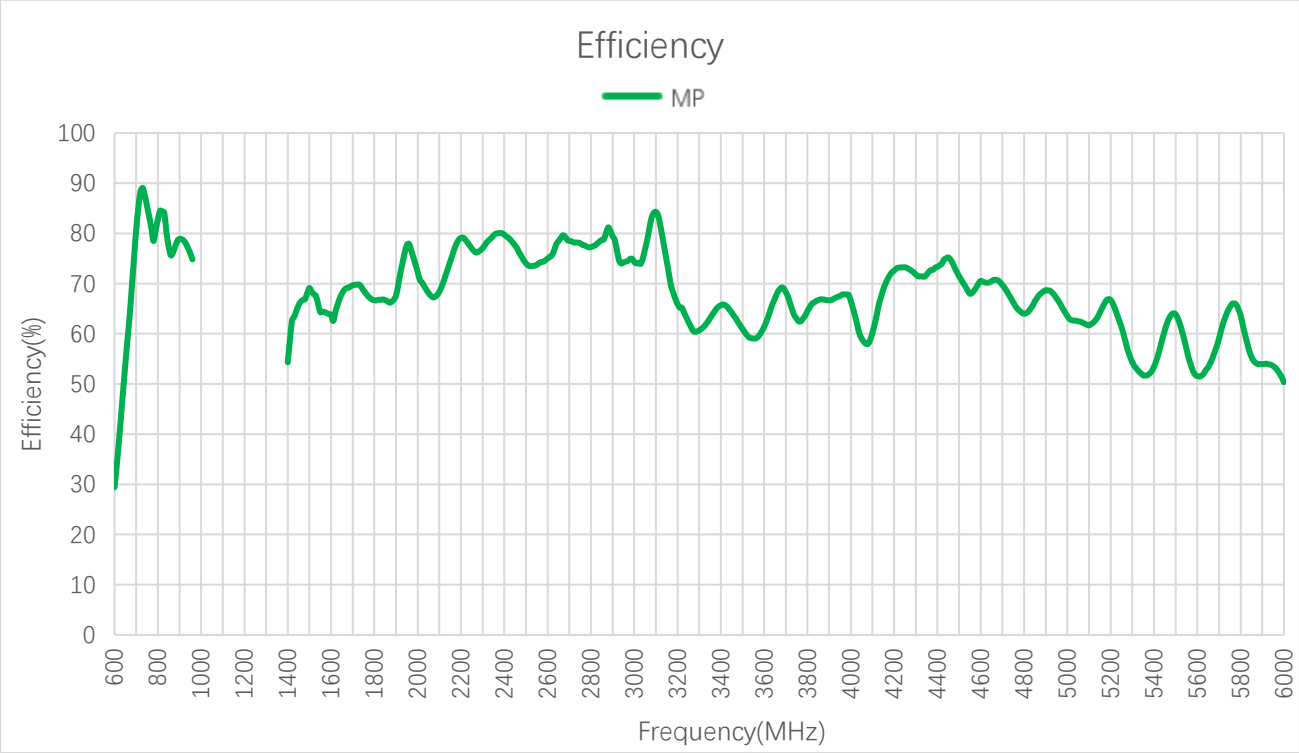
Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-1.5	-1.3	-3.3	-6.6	-8.7	-10.6	-10.7	-8.3	-8.4	-7.3
MP	-2.5	-3.6	-10.8	-15.0	-9.3	-8.2	-10.2	-8.1	-7.9	-7.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	-7.1	-6.9	-20.5	-21.9	-10.7	-11.9	-12.3	-10.2	-12.3	-11.6
MP	-8.7	-11.4	-16.2	-14.0	-20.6	-9.3	-8.4	-6.9	-14.3	-10.2

3.2. Radiation Performance Test

3.2.1. Efficiency

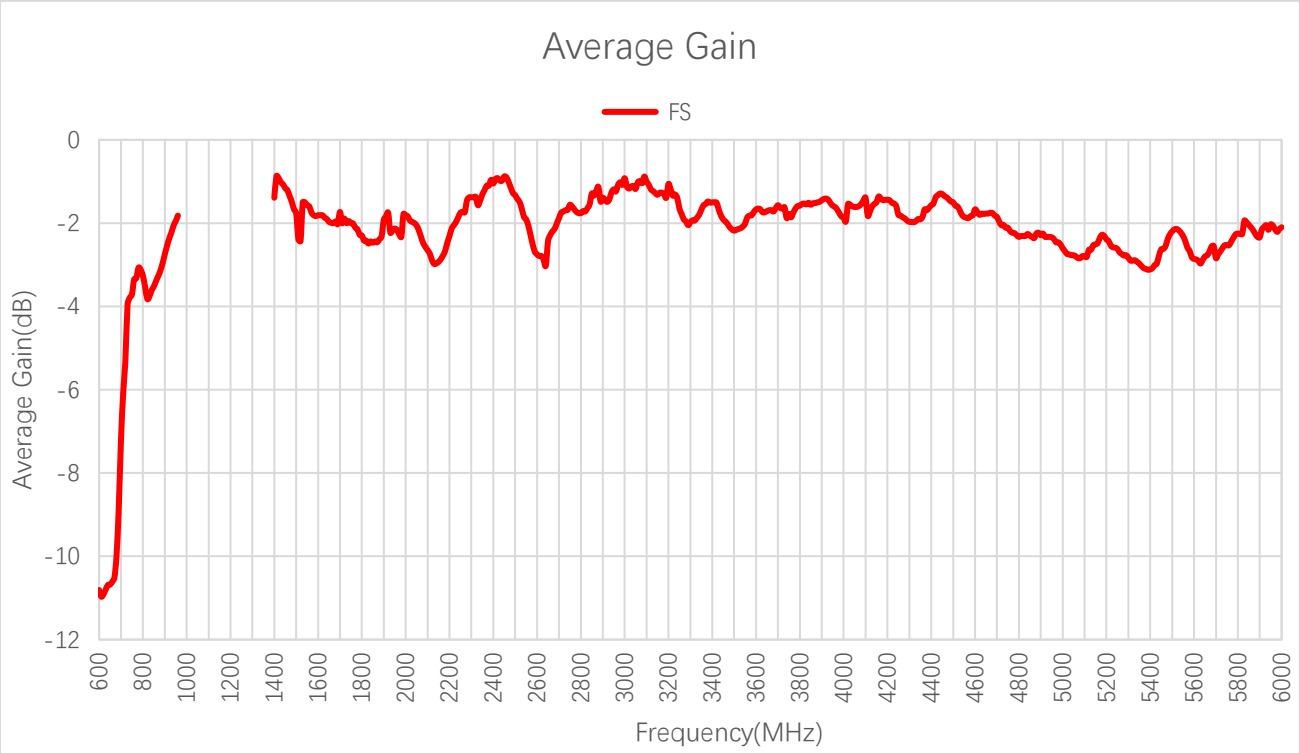


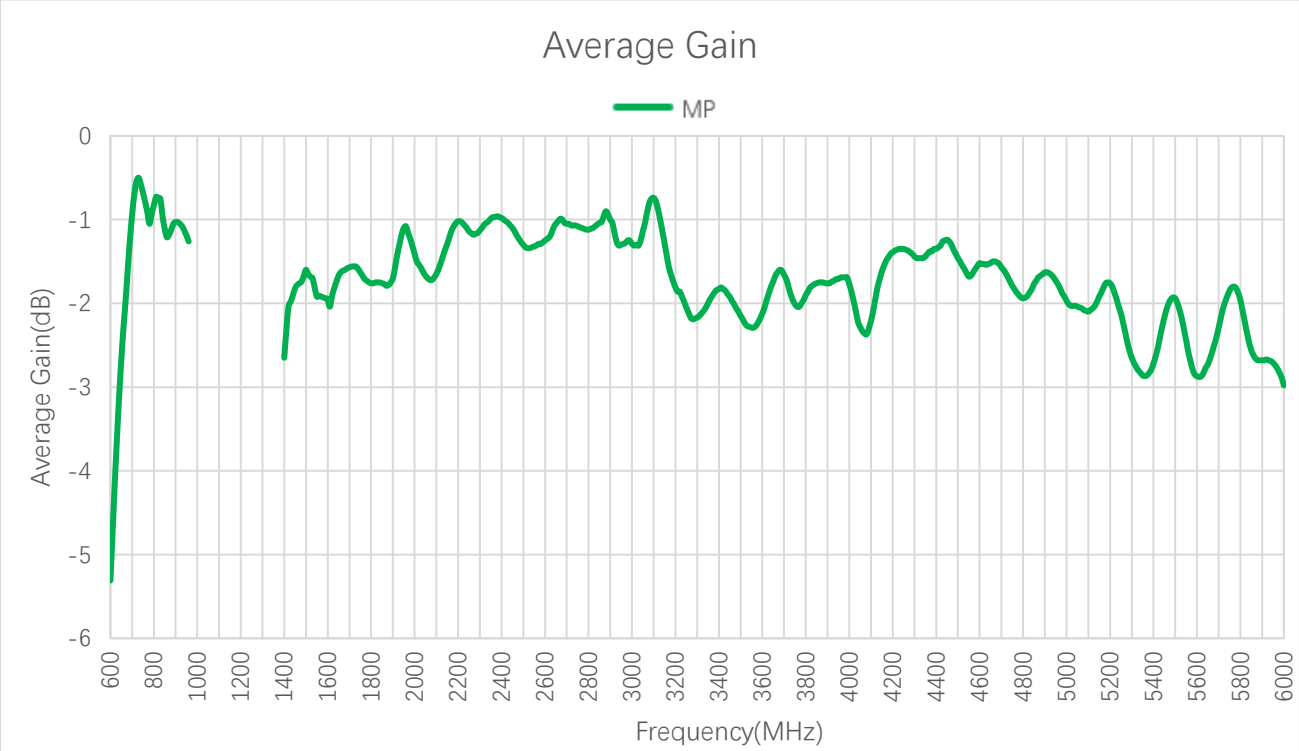


Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	8.3	8.3	24.7	42.1	53.1	65.8	78.2	63.0	63.8	57.7
MP	29.4	43.5	85.1	84.1	78.9	74.8	64.6	69.8	69.3	66.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	61.3	50.5	74.1	81.7	53.1	68.1	65.3	54.9	60.3	61.7
MP	77.7	73.0	79.6	77.6	75.0	61.4	69.7	63.5	63.9	50.4

3.2.2. Average Gain

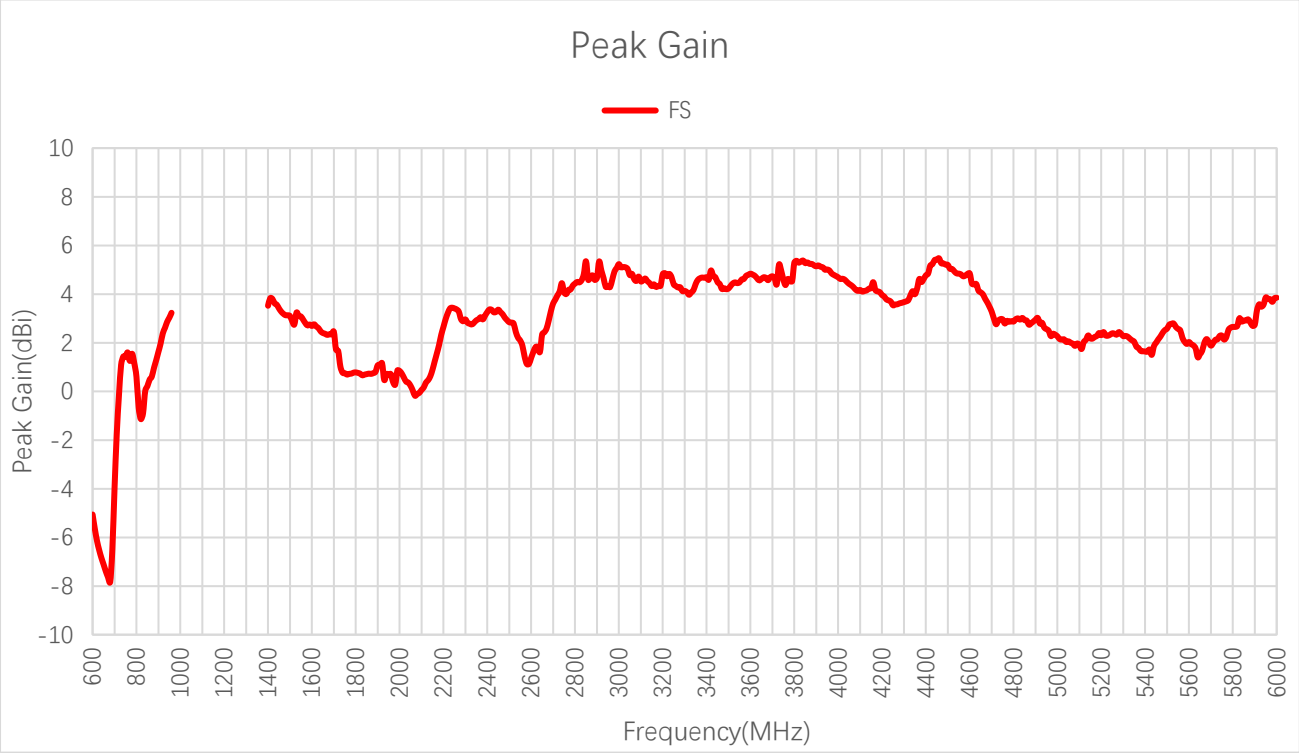


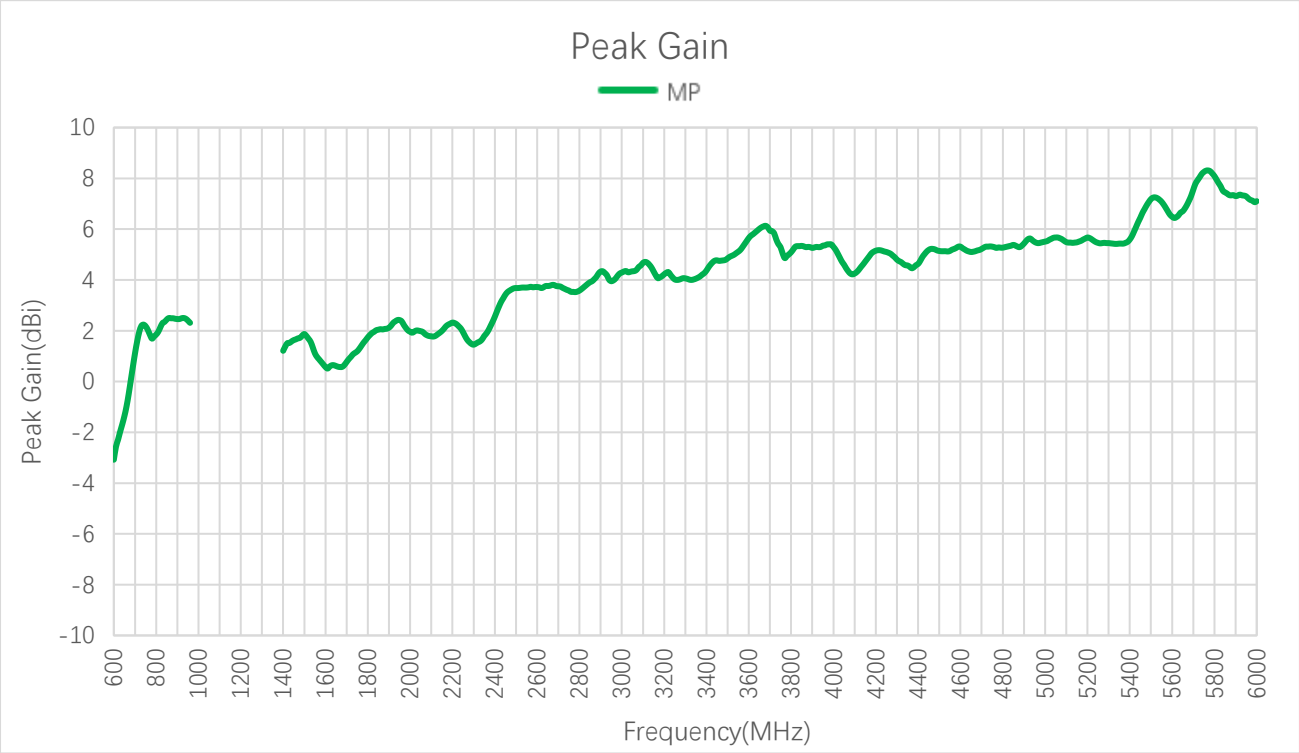


Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-10.8	-10.8	-6.1	-3.8	-2.8	-1.8	-1.1	-2.0	-2.0	-2.4
MP	-5.3	-3.6	-0.7	-0.8	-1.0	-1.3	-1.9	-1.6	-1.6	-1.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	-2.1	-3.0	-1.3	-0.9	-2.8	-1.7	-1.9	-2.6	-2.2	-2.1
MP	-1.1	-1.4	-1.0	-1.1	-1.3	-2.1	-1.6	-2.0	-1.9	-3.0

3.2.3. Peak Gain





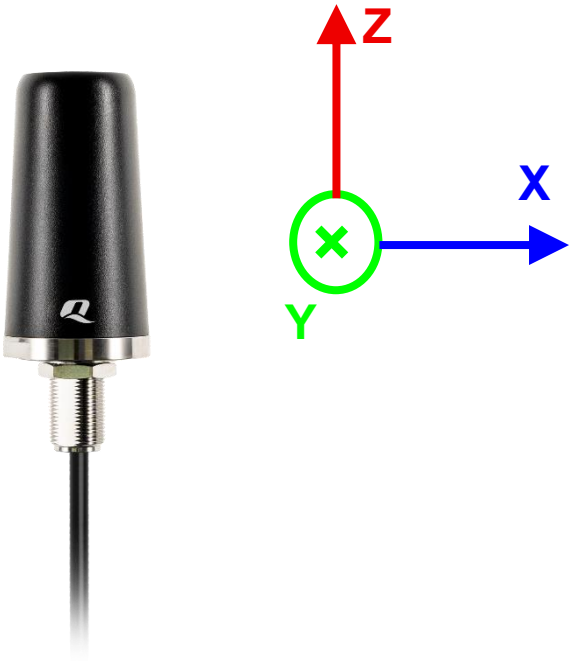
Peak Gain (dBi)

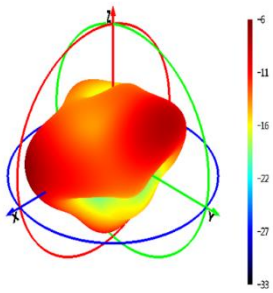
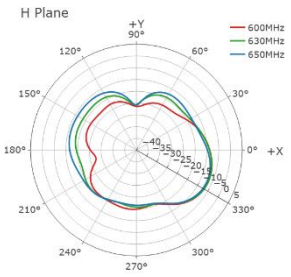
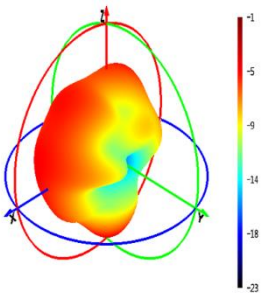
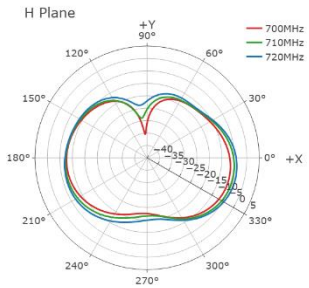
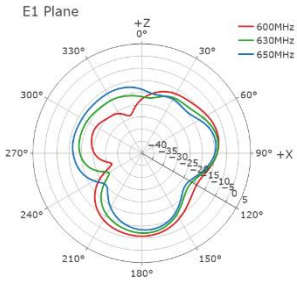
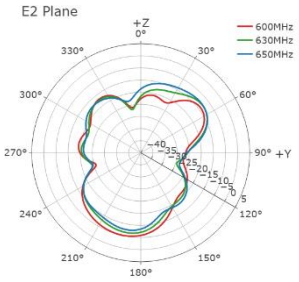
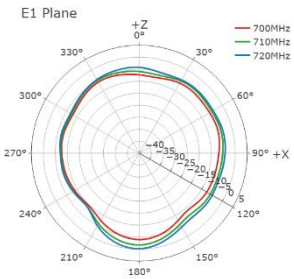
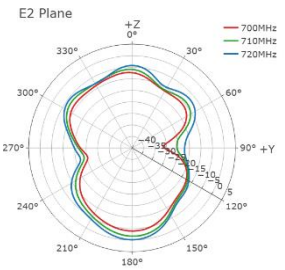
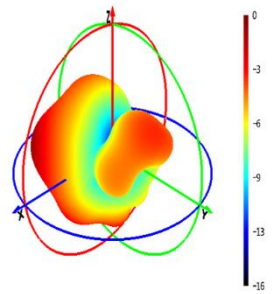
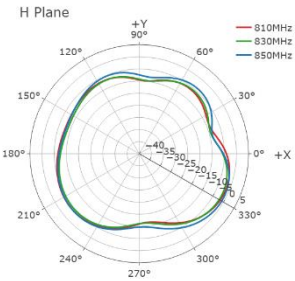
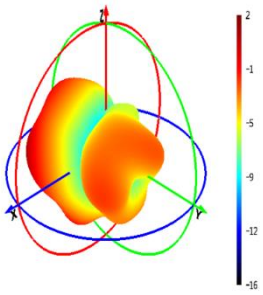
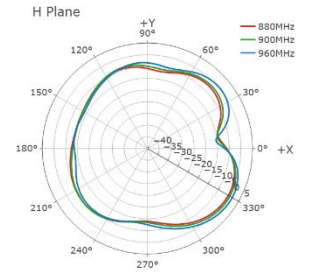
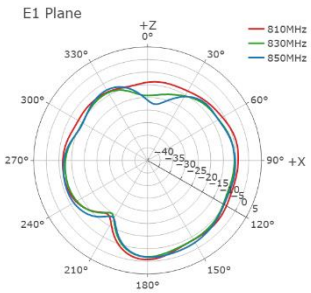
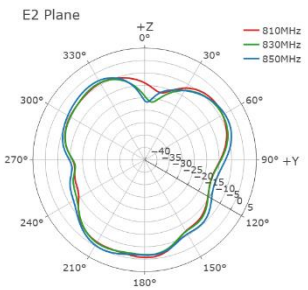
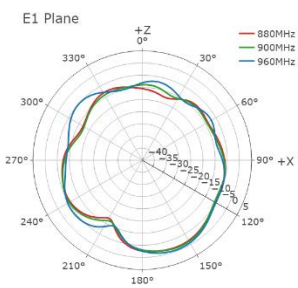
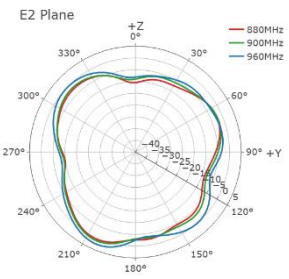
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-5.1	-6.5	-1.8	-0.9	1.6	3.2	3.6	1.7	0.8	0.8
MP	-3.1	-2.0	1.6	2.3	2.5	2.3	1.6	0.9	1.1	2.1
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	0.7	0.6	2.9	3.4	1.4	4.8	3.3	2.3	2.6	3.9
MP	2.4	1.9	1.8	3.4	3.7	5.7	5.2	5.5	7.2	7.1

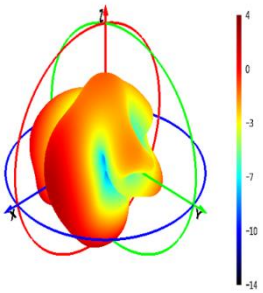
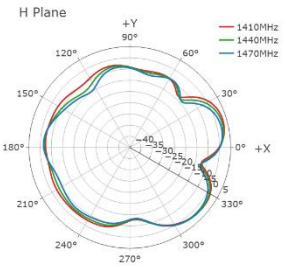
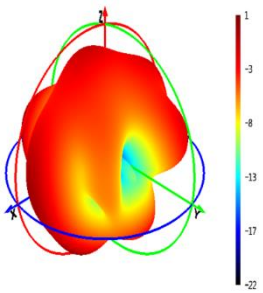
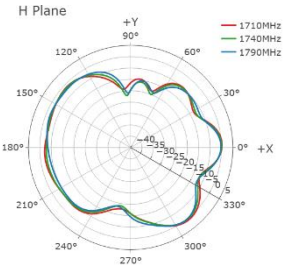
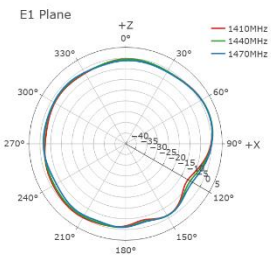
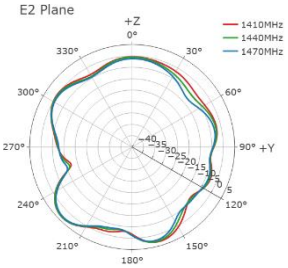
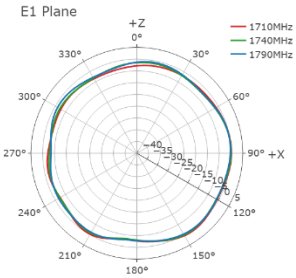
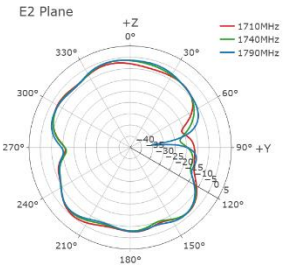
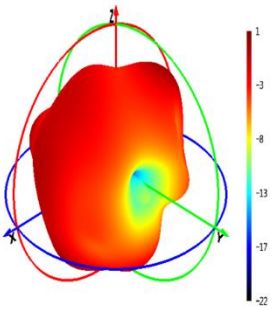
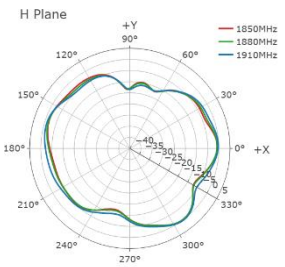
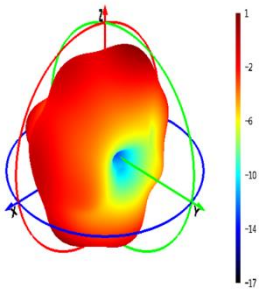
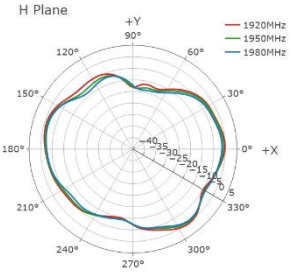
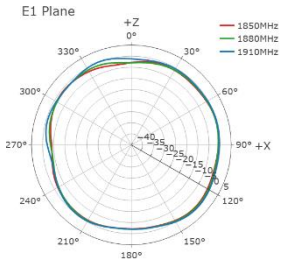
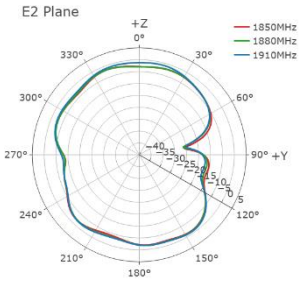
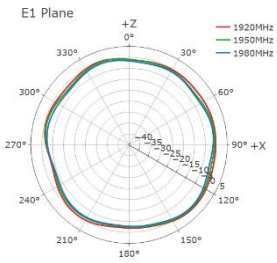
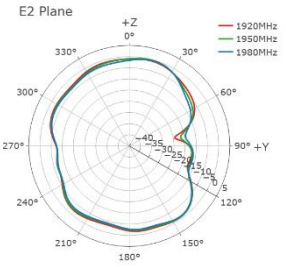
3.2.4. 3D & 2D Radiation Pattern

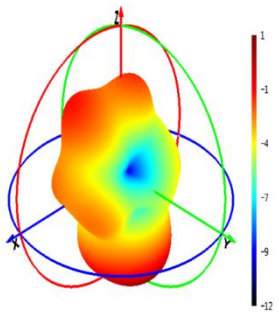
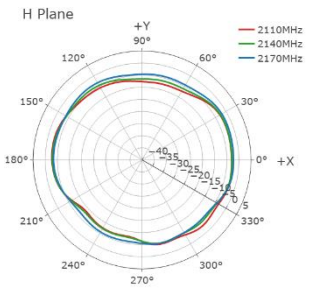
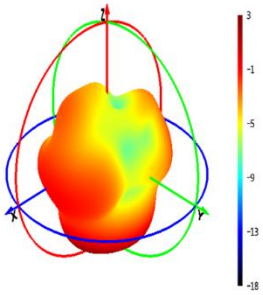
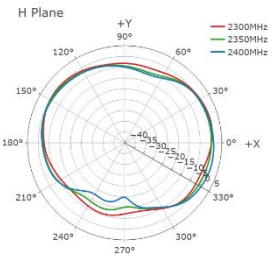
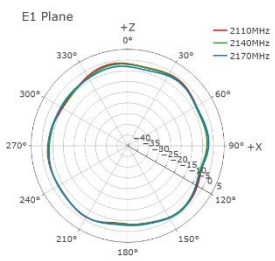
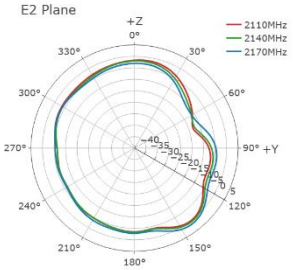
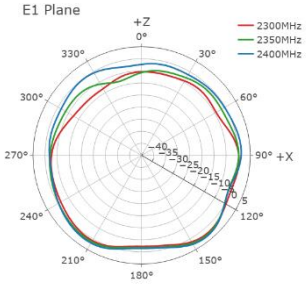
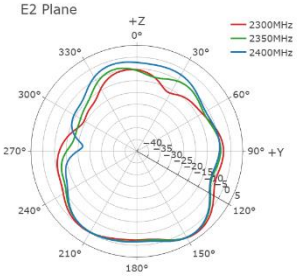
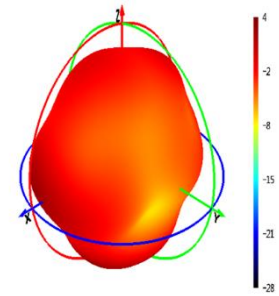
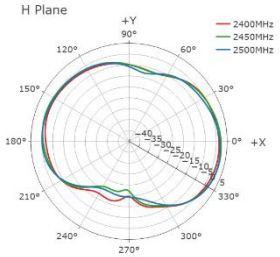
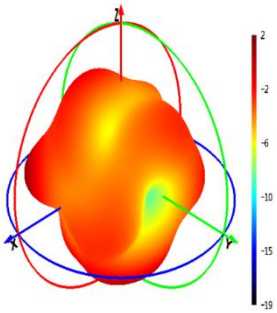
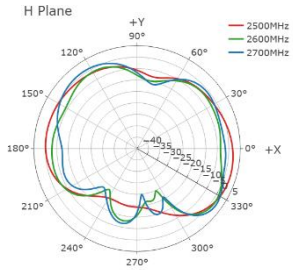
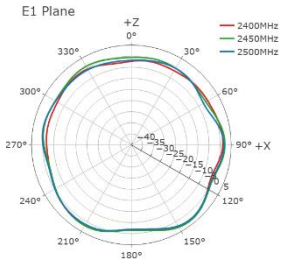
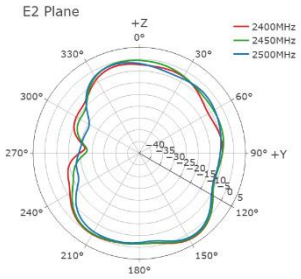
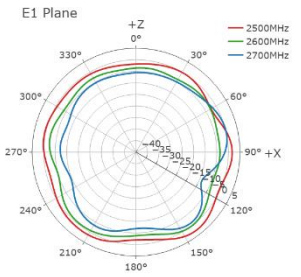
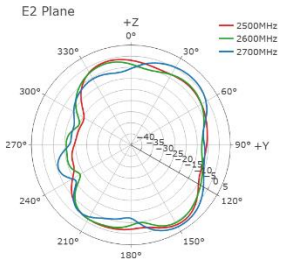
3.2.4.1. Test Condition: In Free Space

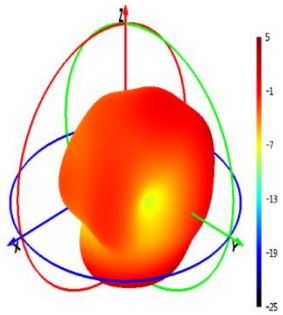
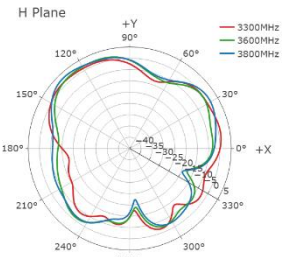
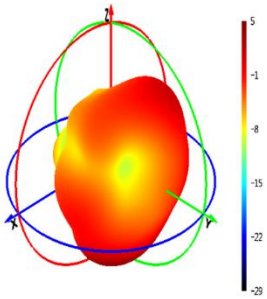
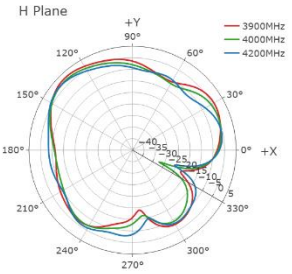
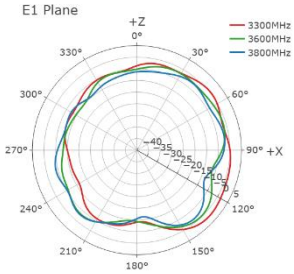
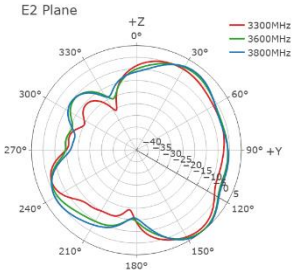
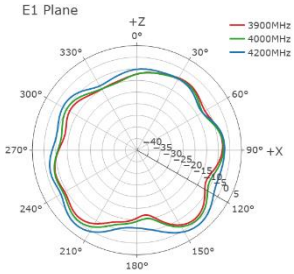
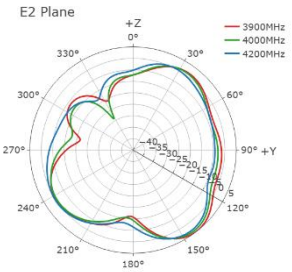
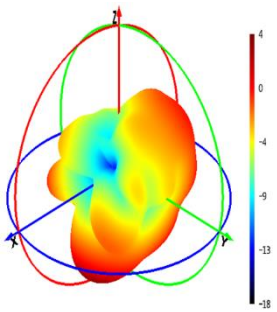
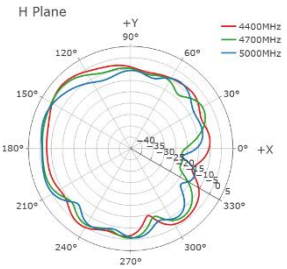
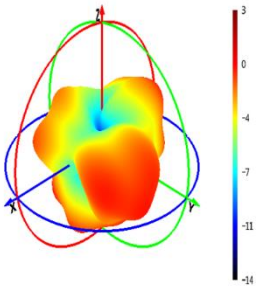
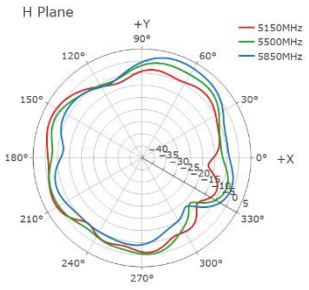
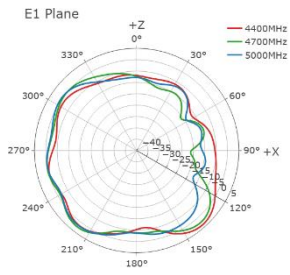
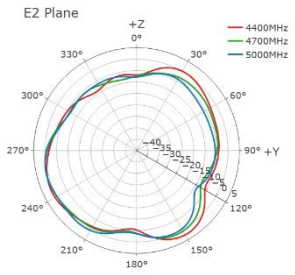
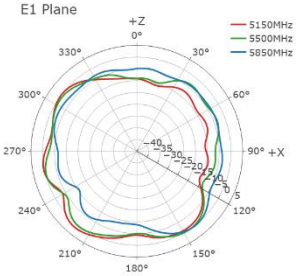
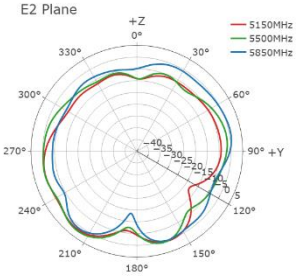
- Test Chamber: GL-S-1



630 MHz		710 MHz	
			
			
830 MHz		900 MHz	
			
			

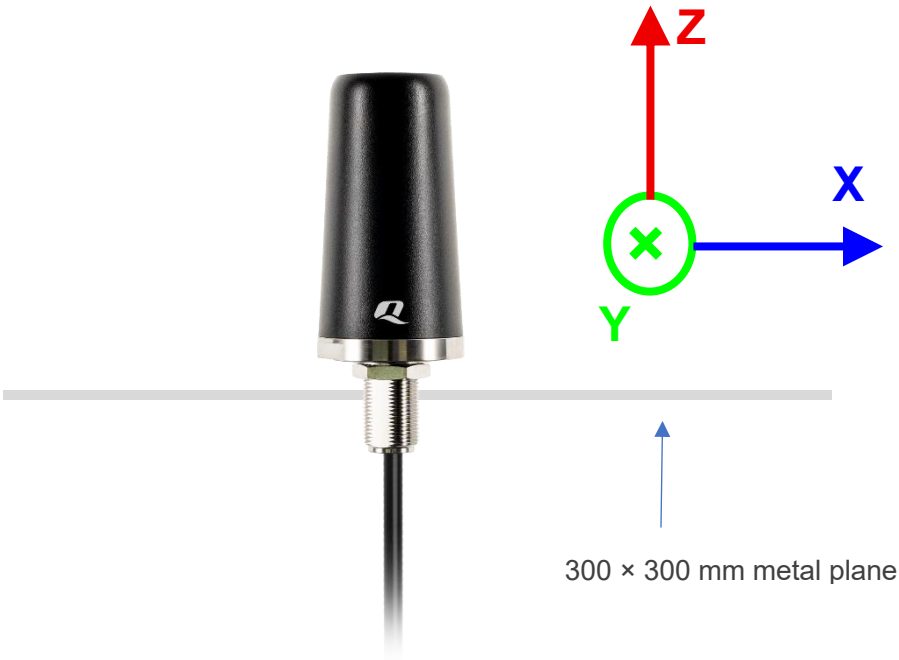
1440 MHz		1740 MHz	
			
			
1880 MHz		1950 MHz	
			
			

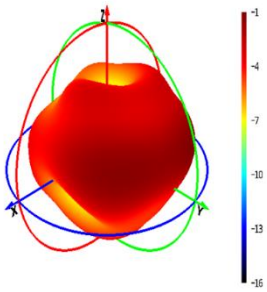
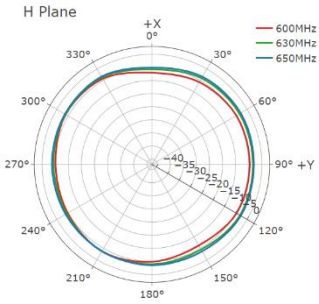
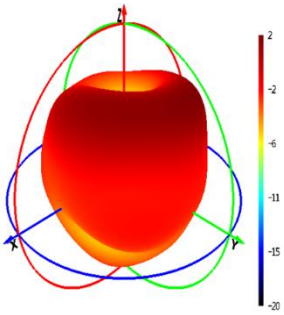
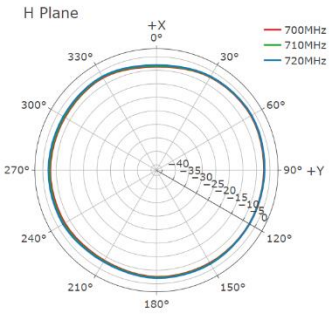
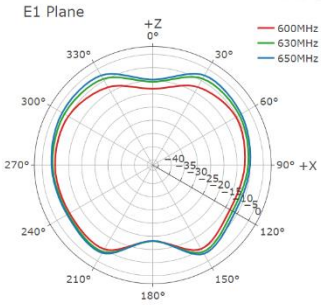
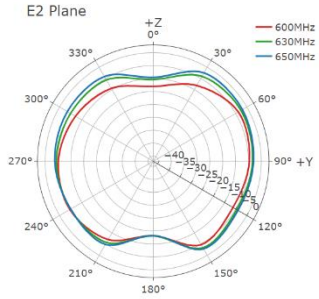
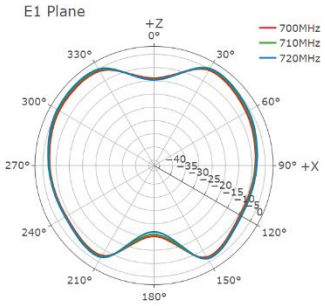
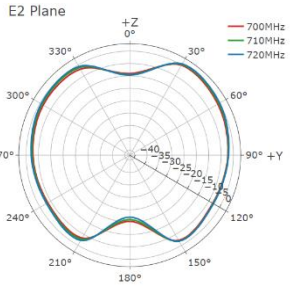
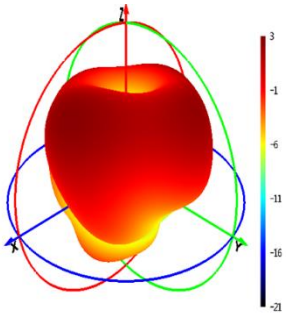
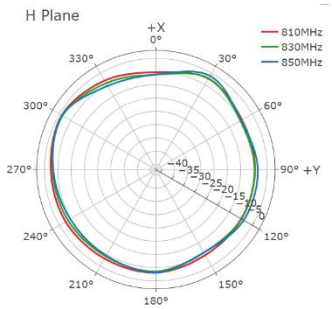
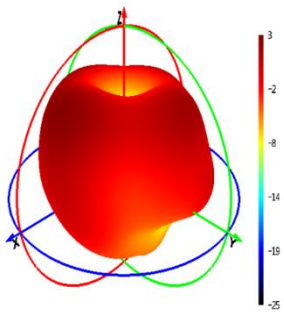
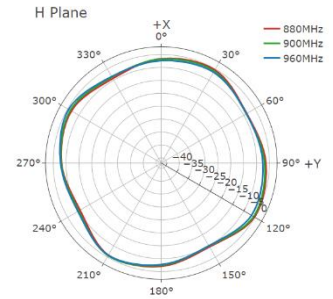
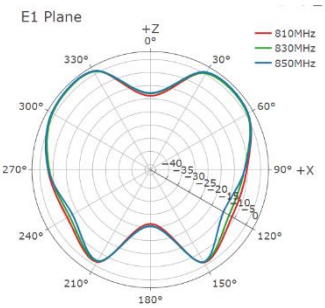
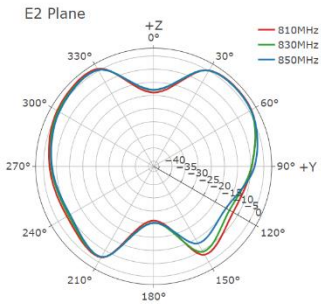
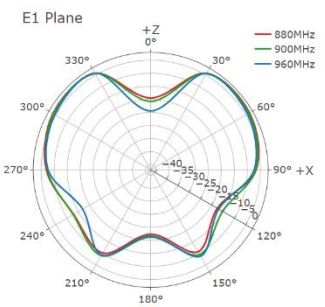
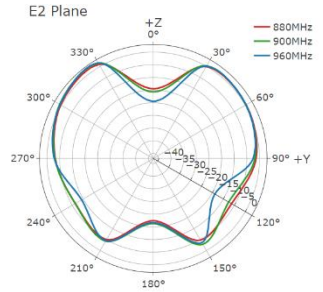
2140 MHz		2350 MHz	
			
			
2450 MHz		2600 MHz	
			
			

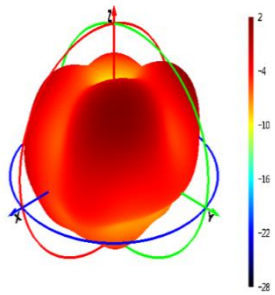
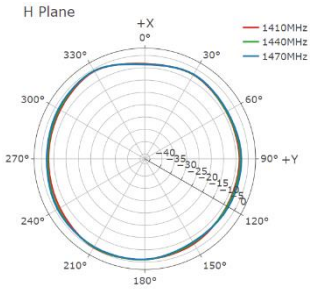
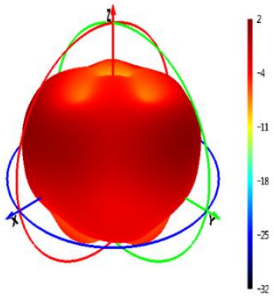
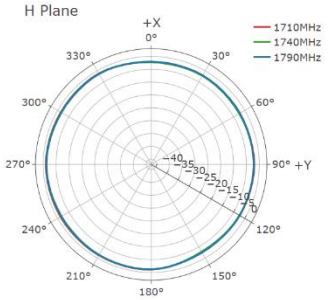
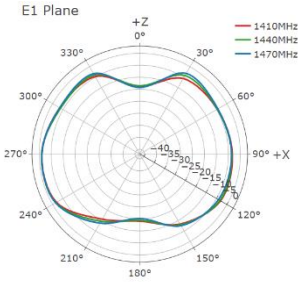
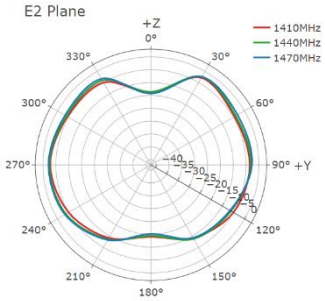
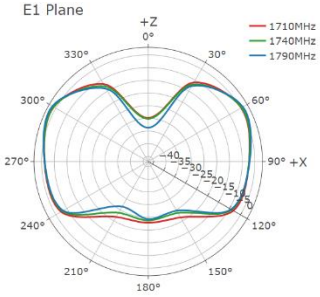
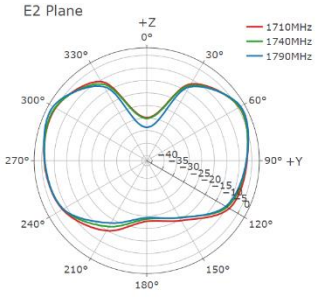
3600 MHz		4000 MHz	
			
			
4700 MHz		5500 MHz	
			
			

3.2.4.2. Test Condition: On 300 mm × 300 mm Metal Plane

- Test Chamber: GL-S-1



630 MHz		710 MHz	
			
			
830 MHz		900 MHz	
			
			

1440 MHz		1740 MHz	
			
			
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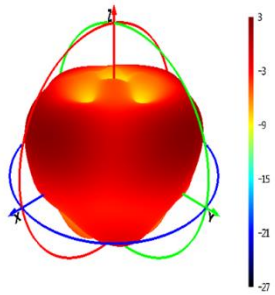	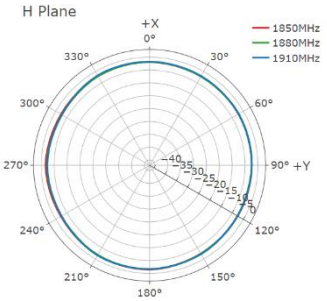	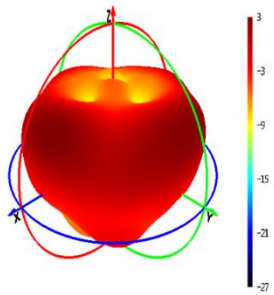	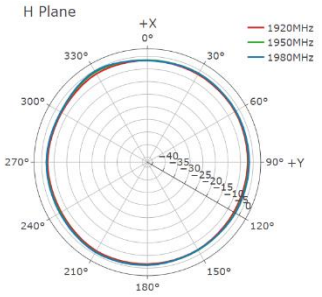
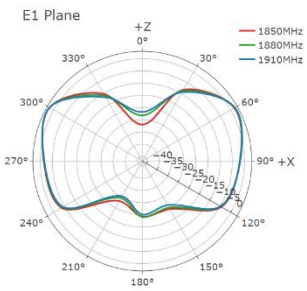	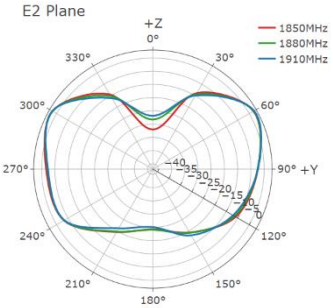	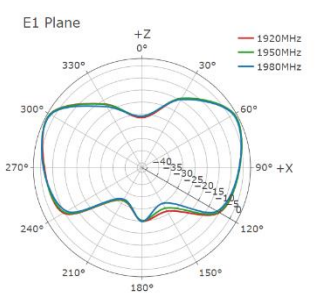	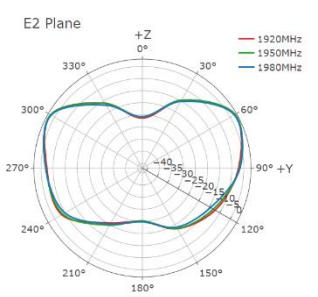

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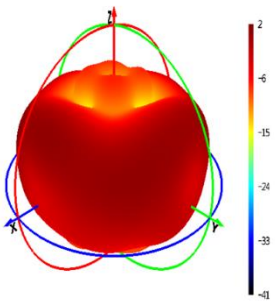	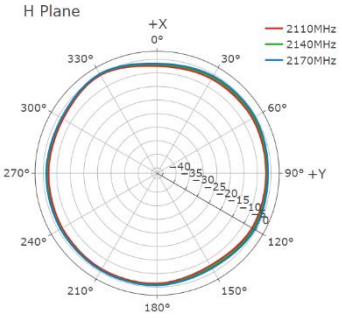	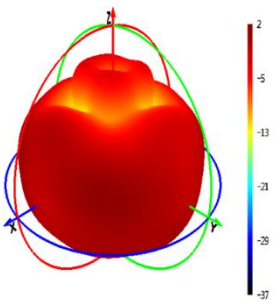	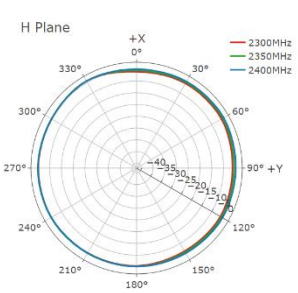
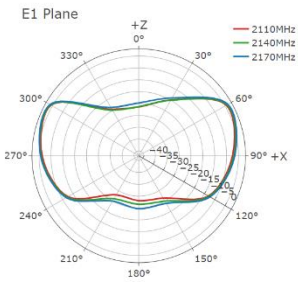	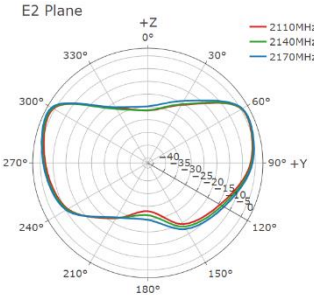	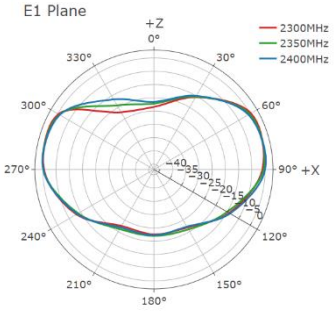	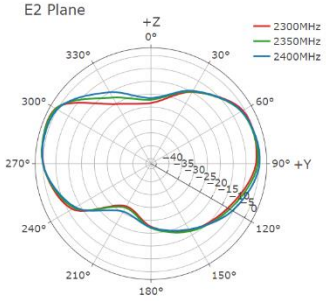
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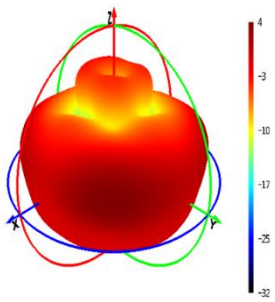	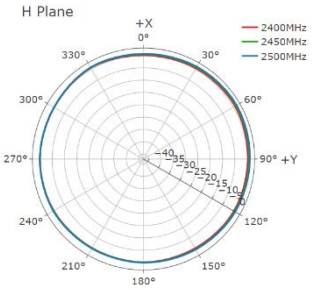	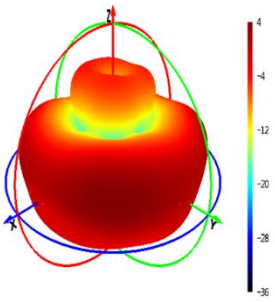	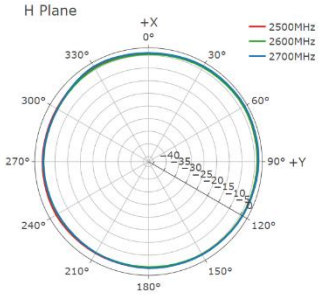
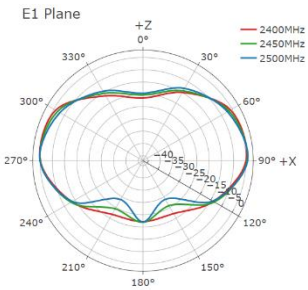	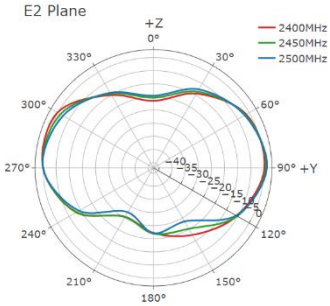	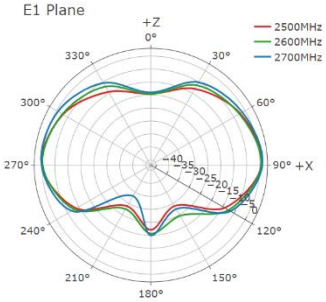	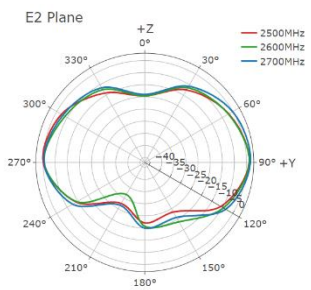

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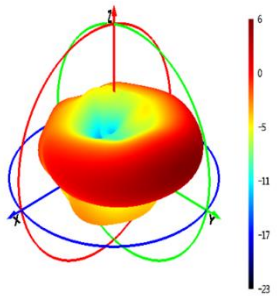
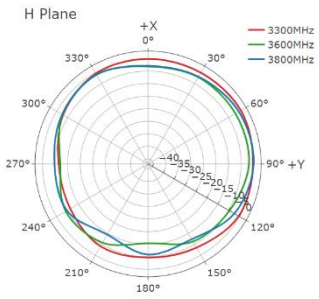
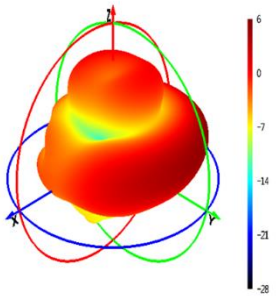
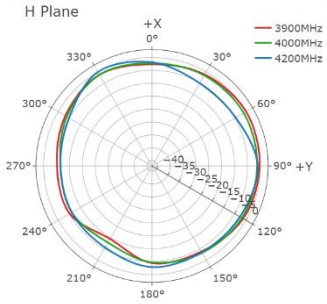
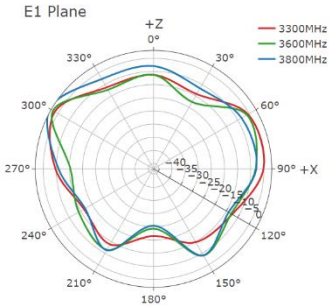
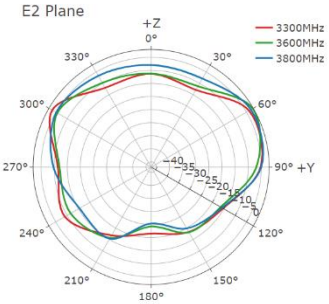
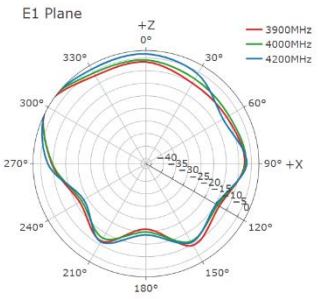
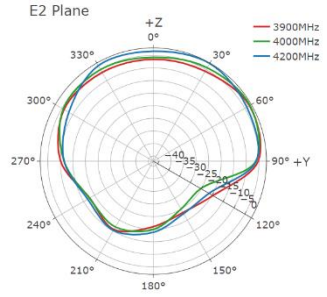
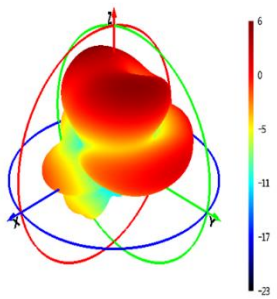
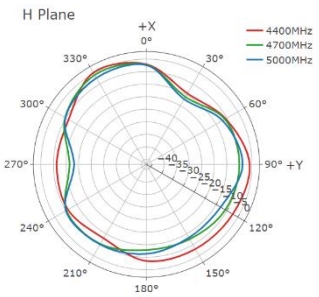
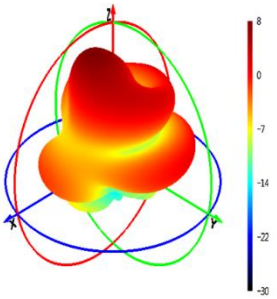
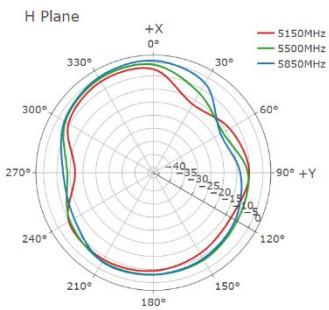
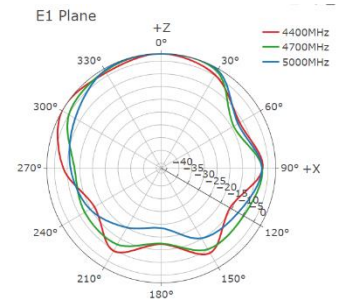
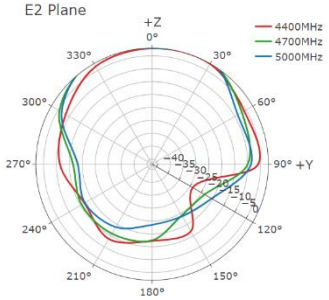
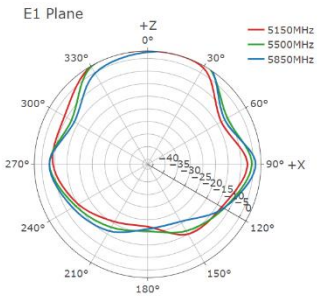
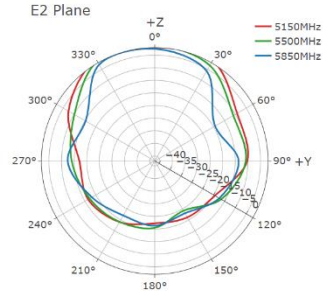
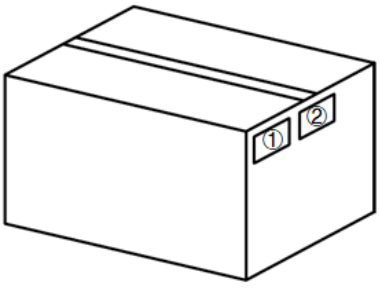
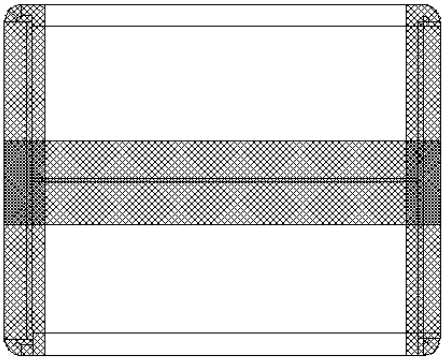
			
			
4700 MHz		5500 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		The product is fully enclosed in pearl cotton liners at both the top and bottom. The wiring harness is secured 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
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:

Quectel Wireless Solutions Co., Ltd.
No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China
Tel: +86 21 5108 6236
Email: info@quectel.com

Or our local offices. For more information, please visit:
https://www.quectel.com/contact/.

For technical support, or to report documentation errors, please visit:
https://www.quectel.com/tech-support/.
Or email us at: support@quectel.com.

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Revision History

Version	Date	Author	Note
-	2023-12-18	Sly Liu/ Lance Sun/ David Liu/ Vinnie Liu	Creation of the document
1.0	2023-12-18	Sly Liu/ Lance Sun/ David Liu/ Vinnie Liu	First official release
1.1	2024-01-24	Lance Sun	Added Housing UV Resistant (Chapter 1.2).
1.2	2025-03-06	Riva Ren	Updated the packaging (Chapter 4).
1.3	2025-04-24	Aria Chu	Updated the antenna image (Cover page and Chapter 3.2.4).
2.0	2026-01-05	Mayes Li/ Rainey Liao	Numerous changes were made to this document. It should be read in its entirety.

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