Antenna Datasheet

Product OC: YECT001W1AM
Version: 1.5
Date: 2025-01-19
Status: Released

Product Name: 5G Terminal Mount Rubber Monopole External Antenna
Key Features:
Frequency band: 698–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency: Up to 73.6 %
Dimensions: 52.6 mm × 18.6 mm × 9 mm
RoHS & REACH Compliant
IP54

Overview

YECT001W1AM is a 5G rubber antenna measuring 52.6 mm × 18.6 mm × 9 mm. This ultra-wide-band 5G antenna provides broad coverage from 698–960 MHz, 1710–2690 MHz, 3300–6000 MHz whilst offering backward-compatibility to support 4G/3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is terminated with 90° SMA Male connector. This low profile, terminal 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 TPE enclosure. It is compatible with Quectel 's 5G Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. The YECT001W1AM is designed as a monopole antenna, which needs to be mounted on a ground plane to offer 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 IoT sensors, public safety and security, fleet management, smart home automation.

- **Typical applications include:**

✓ IoT Sensors
✓ Public Safety and Security
✓ Fleet Management
✓ Smart Home Automation

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 130 mm × 70 mm EVB

1.1. Electrical

Electrical	
Frequency Range	689–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

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		-	6.9	3.7	-	2.7	2.2	2.3	2.5	4.5	4.1	3.4
Max. Return Loss (dB)		-	-2.5	-4.8	-	-6.6	-8.3	-8.1	-7.4	-4.0	-4.4	-5.3
AVG Eff. (%)		-	46.0	54.4	-	61.4	71.4	65.9	63.4	57.4	52.6	46.4
AVG AVG Gain (dB)		-	-3.4	-2.7	-	-2.1	-1.5	-1.8	-2.0	-2.5	-2.9	-3.4
Max. Peak Gain (dBi) Frequency (MHz)		-	0.2 (810)	1.6 (900)	-	2.2 (2170)	2.0 (2330)	2.0 (2500)	2.4 (2540)	2.1 (3740)	2.7 (4930)	2.9 (5240)
VSWR		≤ 6.9										
Return Loss		≤ -2.5 dB										
Peak Gain		≤ 2.9 dBi										

Gain – Detail			
	Band	**Freq. (MHz)**	**Max peak Gain (dBi)**
FDD < 3 dBi	**B1**	**1920–1980**	1.8
	B3/n3	**1710–1785**	1.2
	B8	**880–915**	1.6
	B18	**815–830**	0.2
	B19	**830–845**	0.4
	B26	**814–849**	0.4
	B28/n28	**703–748**	-0.6
	n77/n78	**3400–4100**	2.1
	n79	**4500–4900**	2.6
TDD < 4 dBi	**B39**	**1888–1920**	1.9
	B41/n41 (Disable HPUE)	**2496–2690**	2.4
	B42	**3400–3600**	2.0

1.2. Supported Bands

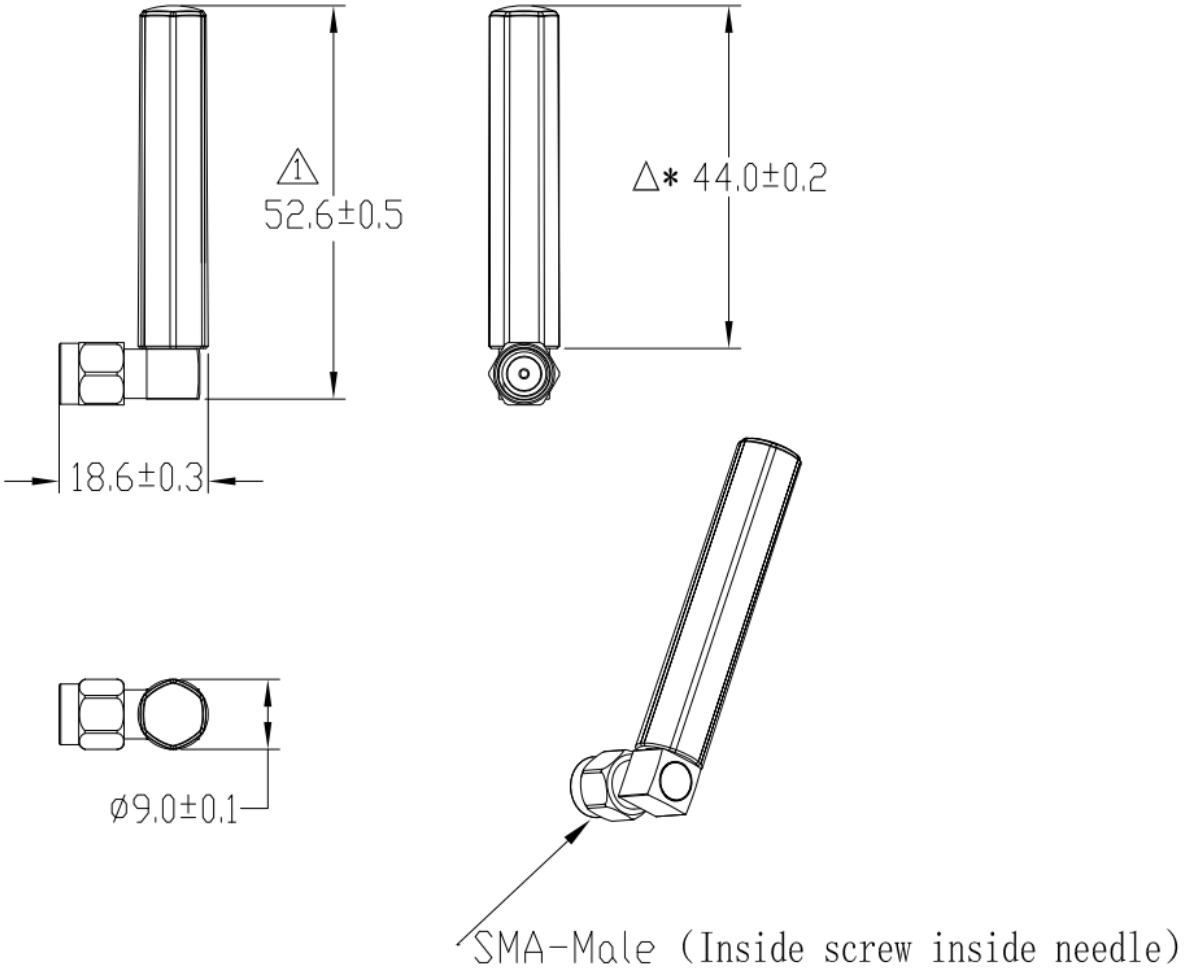
5G NR / LTE / LTE-Advanced / WCDMA /HSPA / HSPA+ / GPRS / GSM / NB-IoT				
Band	**Frequency (MHz)**	**Uplink (MHz)**	**Downlink (MHz)**	**Covered**
1	2100	1920–1980	2110–2170	√
2	1900	1850–1910	1930–1990	√
3	1800	1710–1785	1805–1880	√
4	1700	1710–1755	2110–2155	√
5	850	824–849	869–894	√
7	2600	2500–2570	2620–2690	√
8	900	880–915	925–960	√
9	1800	1749.9–1784.9	1844.9–1879.9	√
11	1500	1427.9–1447.9	1475.9–1495.9	-
12	700	699–716	729–746	√
13	700	777–787	746–756	√
14	700	788–798	758–768	√
17	700	704–716	734–746	√
18	850	815–830	860–875	√
19	850	830–845	875–890	√
20	800	832–862	791–821	√
21	1500	1447.9–1462.9	1495.9–1510.9	-
22	3500	3410–3490	3510–3590	√
23	2100	2000–2020	2180–2200	√
24	1600	1626.5–1660.5	1525–1559	-
25	1900	1850–1915	1930–1995	√
26	850	814–849	859–894	√

28	700	703–748	758–803	√
31	450	452.5–457.5	462.5–467.5	-
34	2100	2010–2025		√
38	2600	2570–2620		√
39	1900	1880–1920		√
40	2300	2300–2400		√
41	2500	2496–2690		√
42	3500	3400–3600		√
48	3500	3550–3700		√
66	1700	1710–1780	2110–2200	√
71	600	663–698	617–652	-
74	1500	1427–1470	1475–1518	-
77	3500	3300–4200		√
78	3500	3300–3800		√
79	4500	4400–5000		√

1.3. Mechanical & Environmental

Mechanical	
Antenna Dimensions	52.6 mm × 18.6 mm × 9 mm
Material & Color	TPE & Black
Connector Type	90° SMA Male
Mounting Type	Terminal
Weight	Typ. 7.4 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP54
RoHS and REACH Compliant	Yes

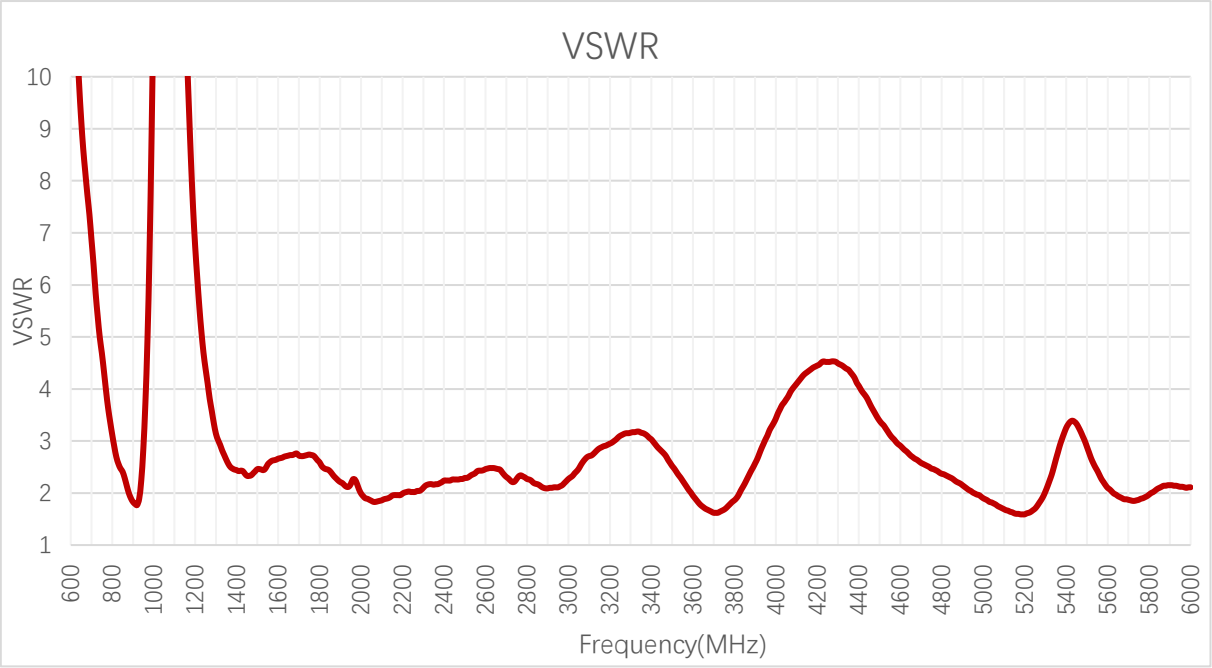
2 Drawing


①
52.6±0.5
△* 44.0±0.2
18.6±0.3
ø9.0±0.1
SMA-Male (Inside screw inside needle)

3 Detailed Performance

3.1. Radiation Performance Test

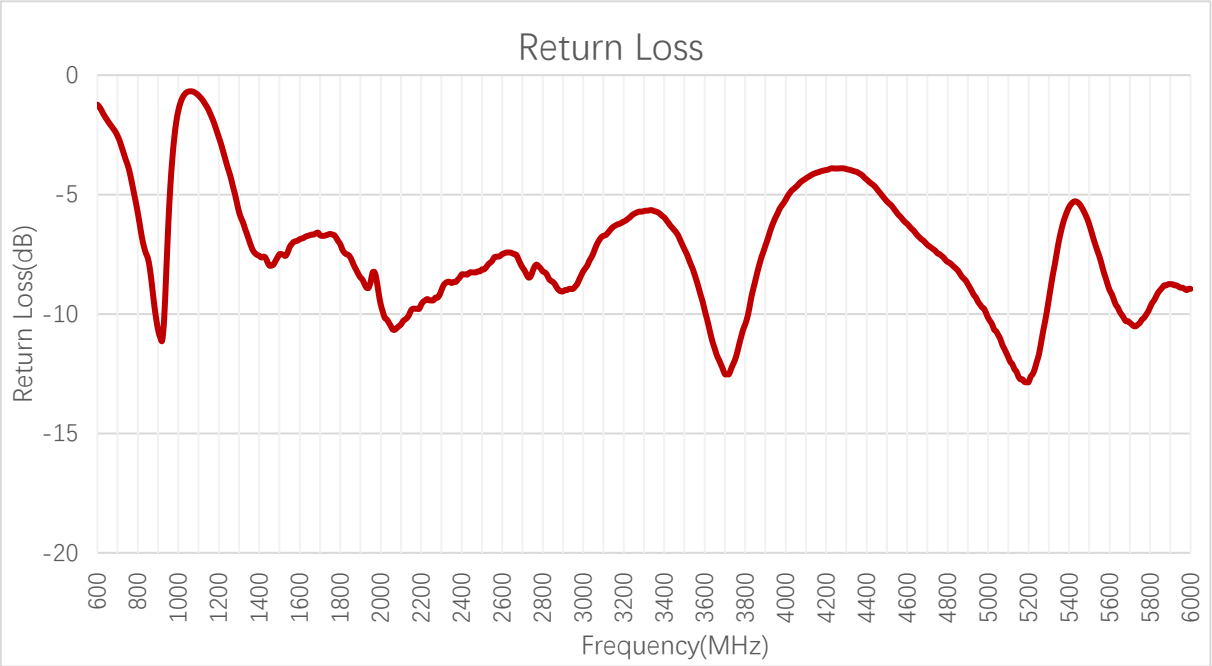
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	6.4	2.6	1.8	3.7	-	2.7	2.7	2.3
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
VSWR	2.2	1.9	2.2	2.3	2.5	2.0	2.6	1.9	2.9	2.1

3.1.2. Return Loss

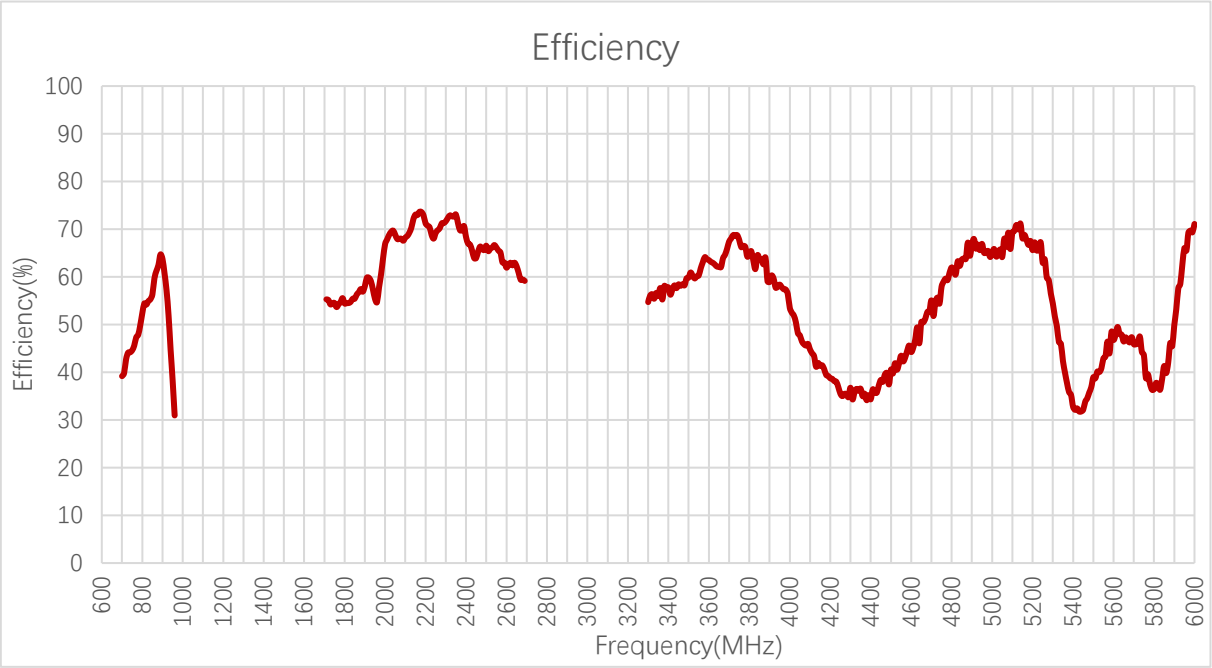


Return Loss (dB)

Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Return Loss (dB)	-	-	-2.7	-7.2	-10.7	-4.8	-	-6.7	-6.7	-8.2
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-8.7	-10.0	-8.7	-8.3	-7.5	-9.8	-7.1	-10.2	-6.3	-8.9

3.2. Radiation Performance Test

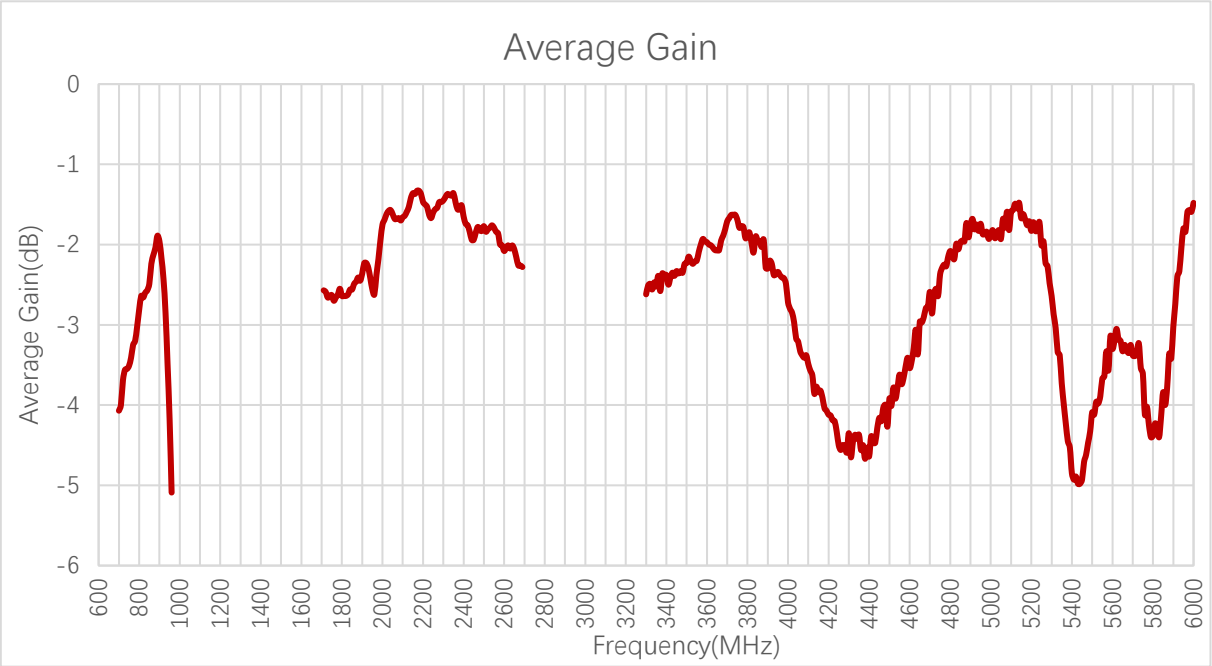
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	39.8	54.9	63.7	31.0	-	55.3	54.5	57.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	55.4	72.1	73.1	64.0	61.9	63.5	55.1	65.0	39.0	71.1

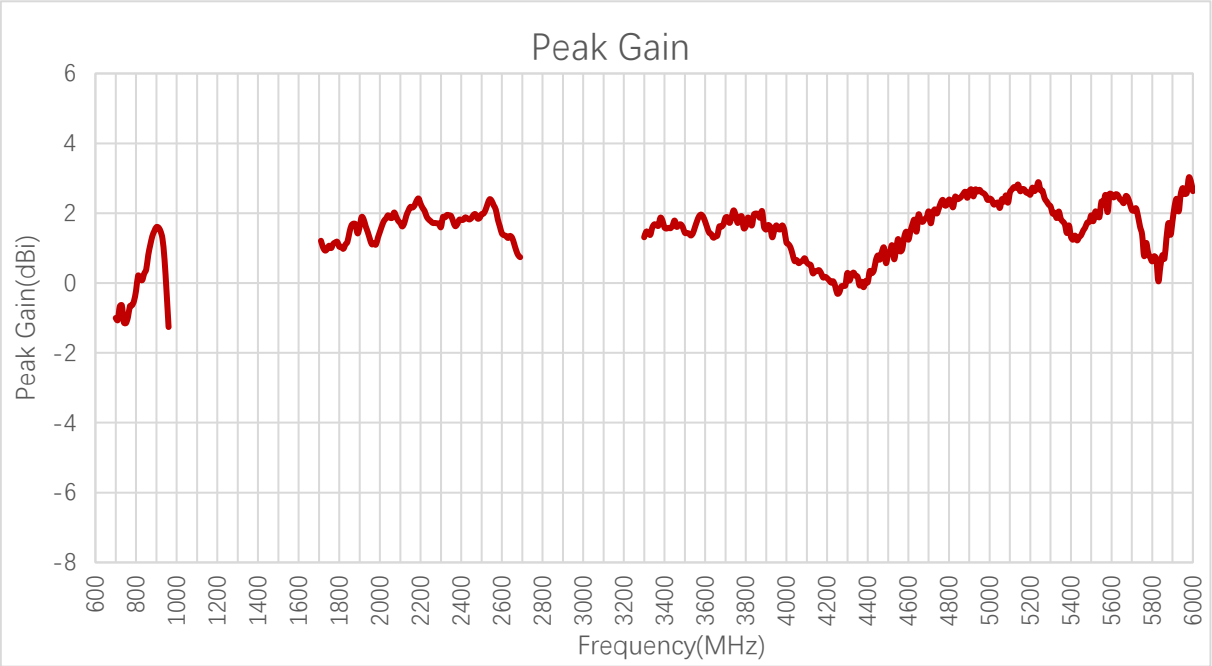
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-4.0	-2.6	-2.0	-5.1	-	-2.6	-2.6	-2.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-2.6	-1.4	-1.4	-1.9	-2.1	-2.0	-2.6	-1.9	-4.1	-1.5

3.2.3. Peak Gain



Peak Gain (dBi)

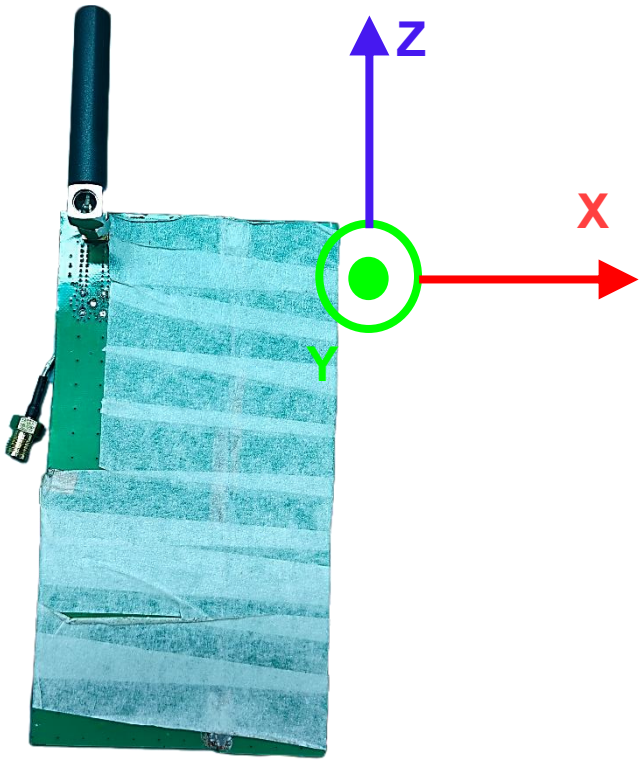
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-1.1	0.1	1.6	-1.3	-	1.2	1.0	1.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	1.3	2.1	1.9	1.9	1.4	1.8	2.1	2.4	1.9	2.6

Max Peak Gain (dBi)

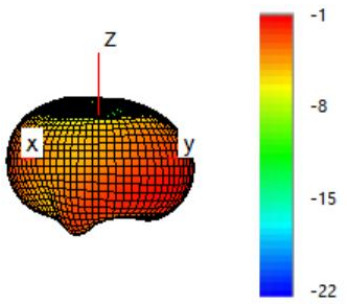
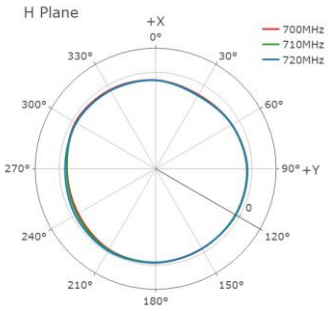
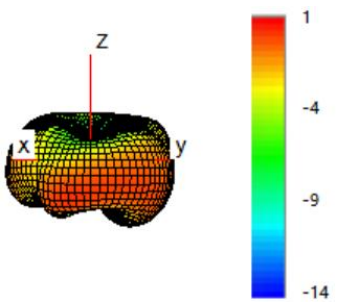
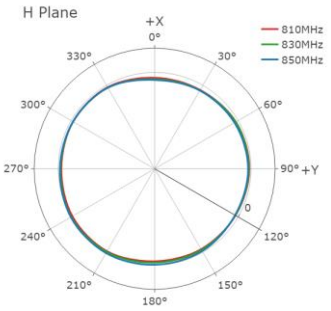
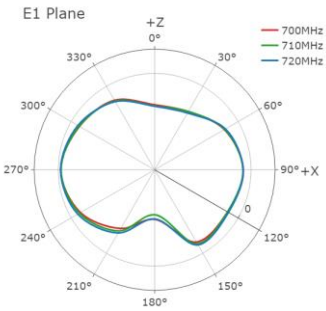
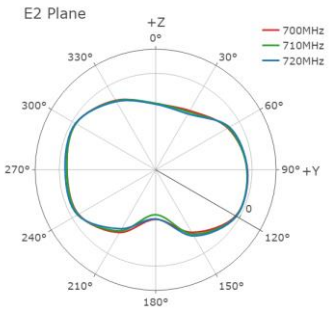
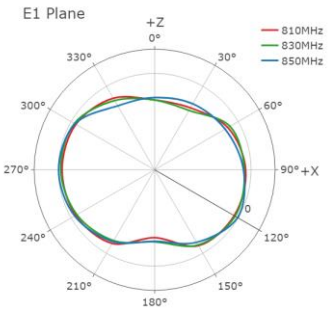
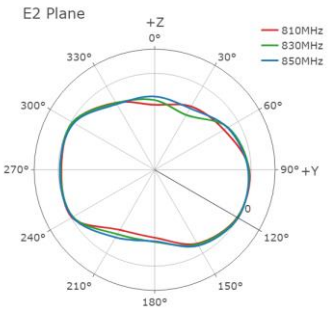
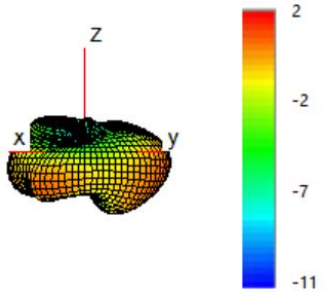
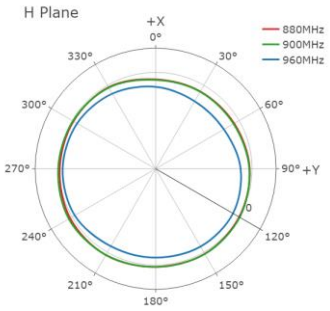
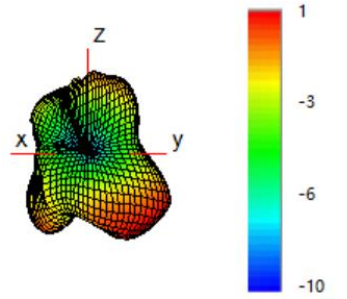
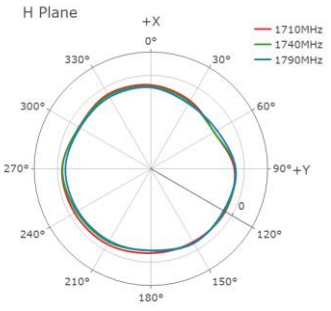
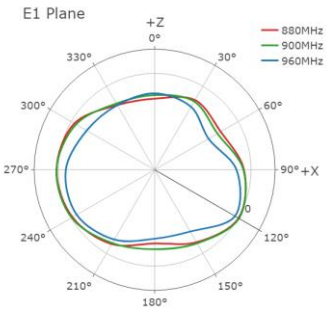
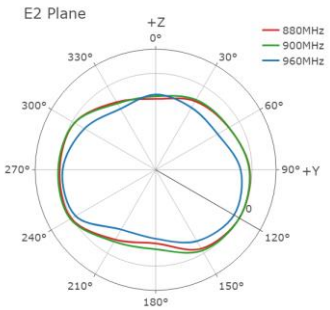
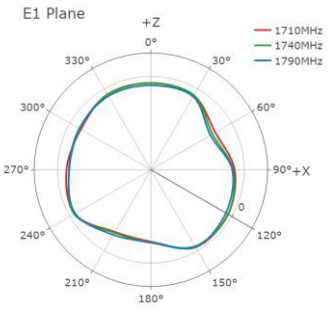
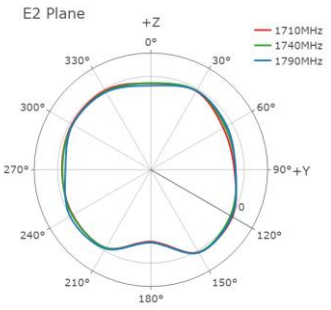
Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
Frequency (MHz)	-	810	900	-	2170	2330	2500	2540	3740	4930	5420
Peak Gain (dBi)	-	0.2	1.6	-	2.2	2.0	2.0	2.4	2.1	2.7	1.4

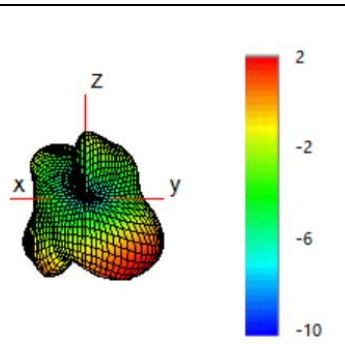
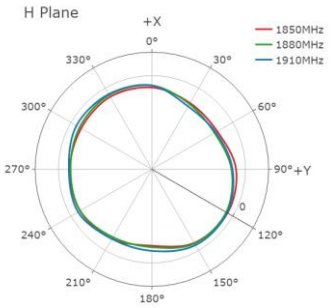
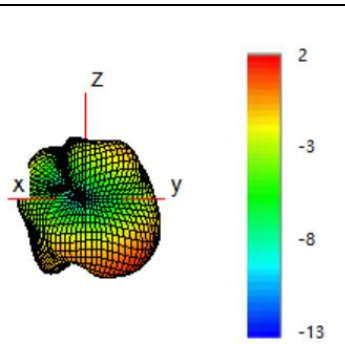
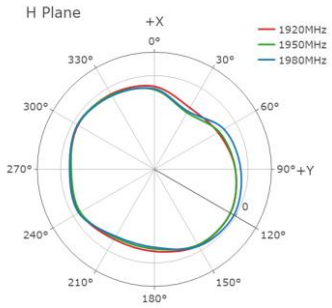
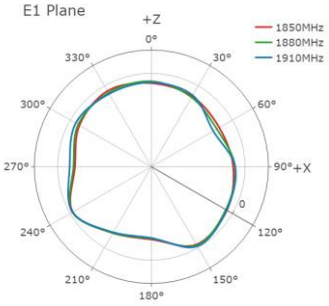
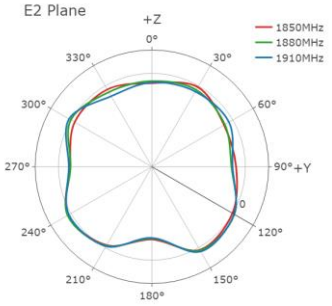
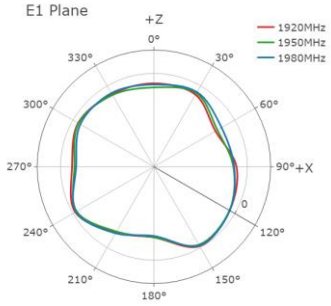
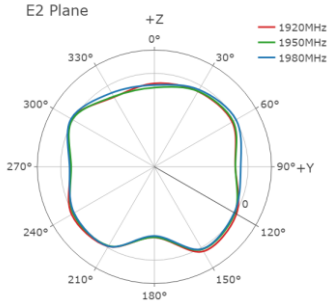
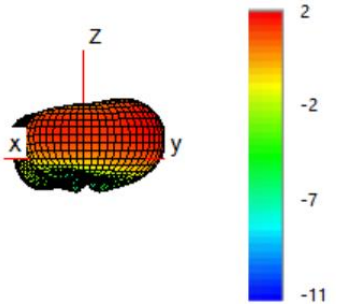
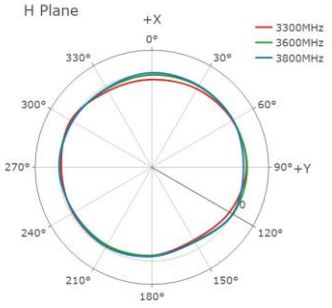
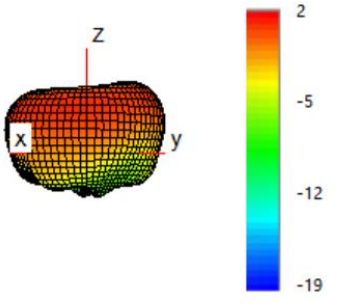
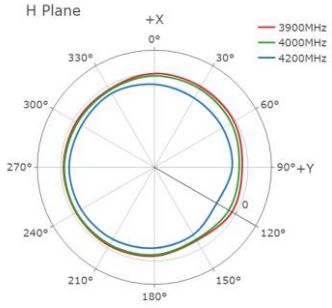
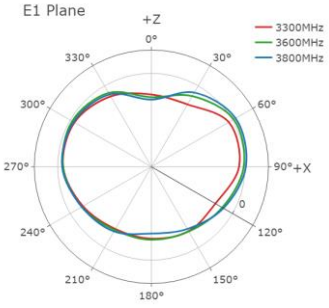
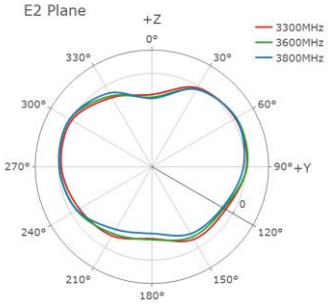
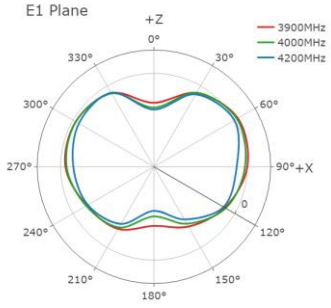
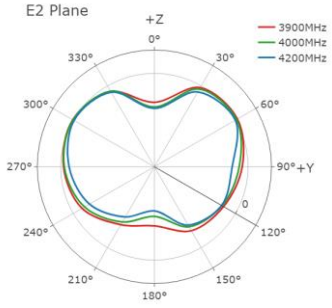
3.2.4. 3D & 2D Radiation Pattern

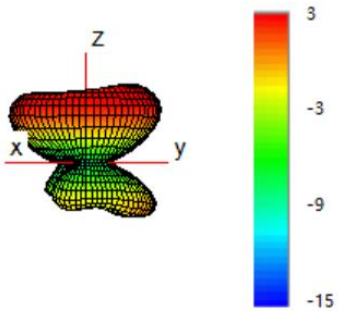
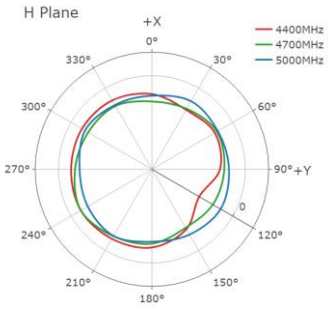
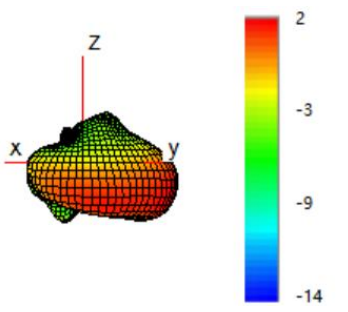
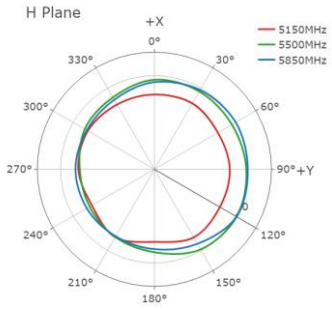
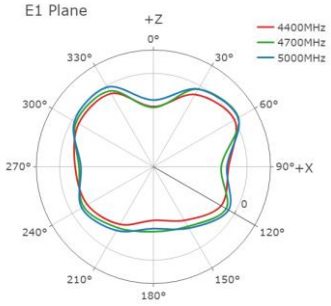
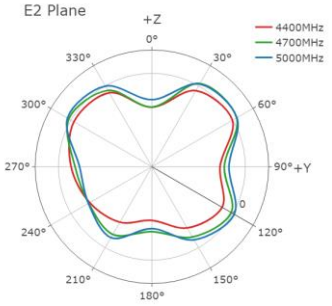
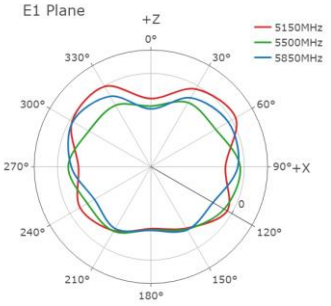
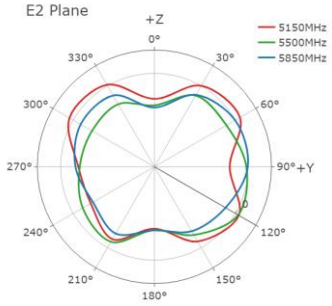
- Test Condition: On 130 mm × 70 mm EVB
- Test Chamber: GL-G-1



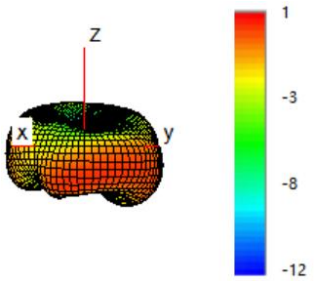
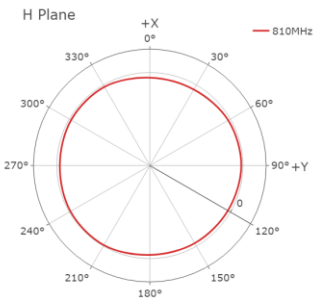
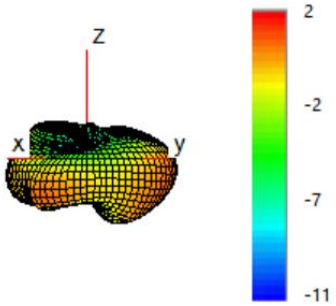
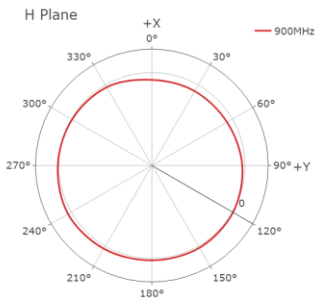
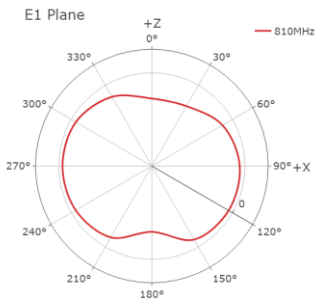
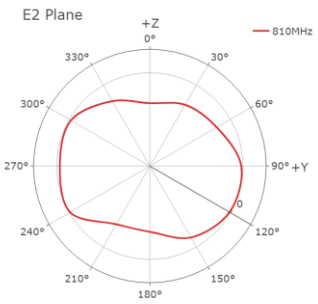
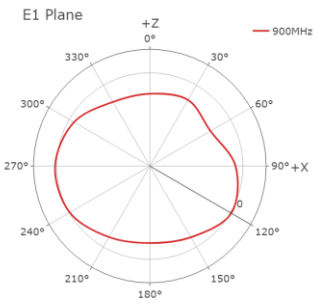
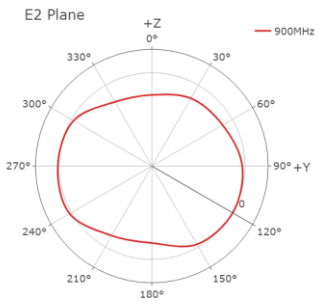
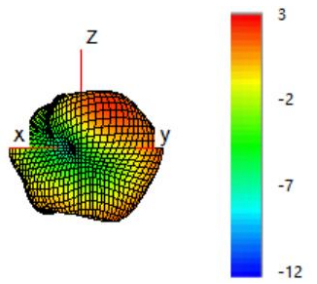
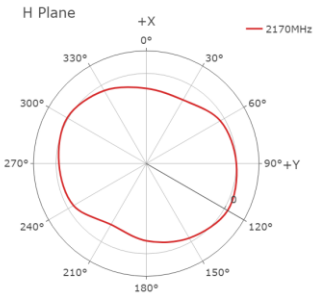
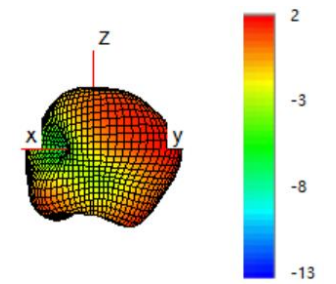
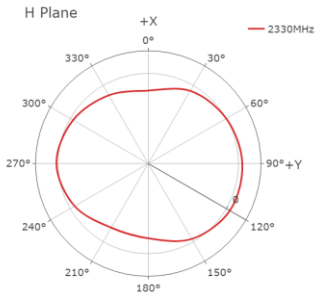
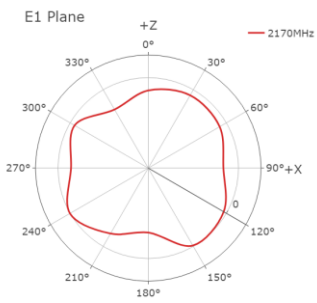
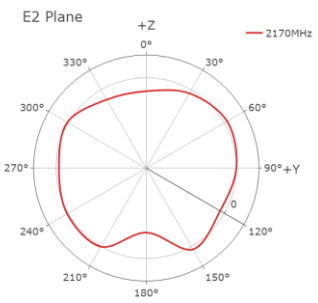
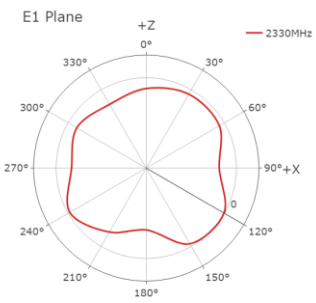
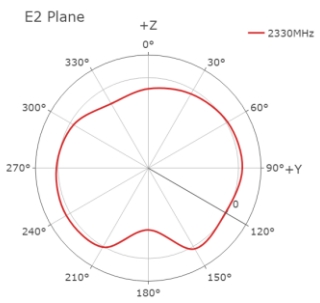
- **On 130 mm × 70 mm EVB**

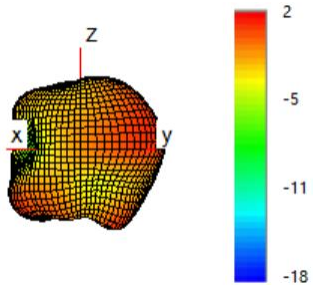
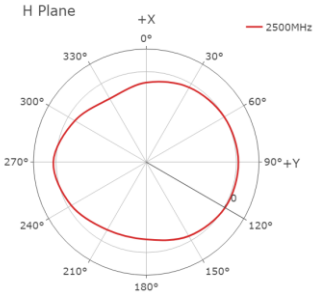
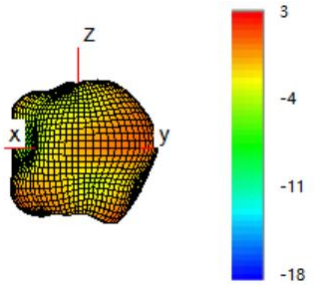
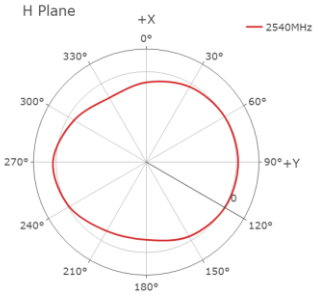
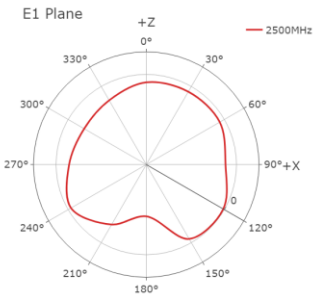
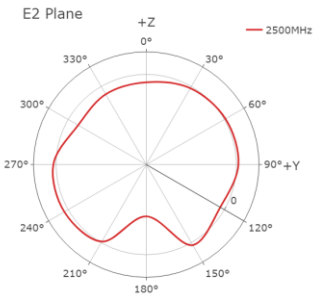
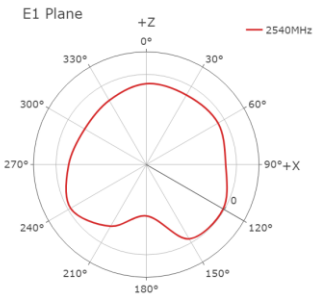
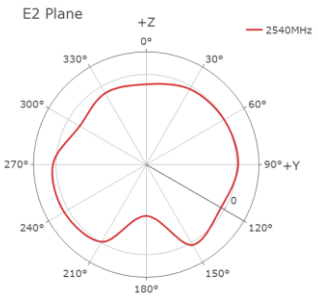
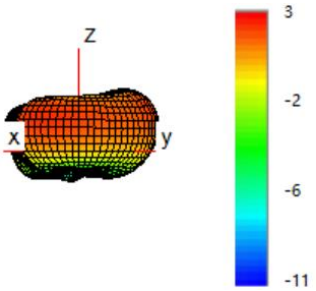
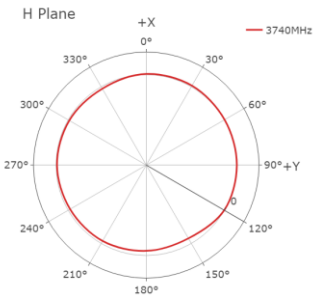
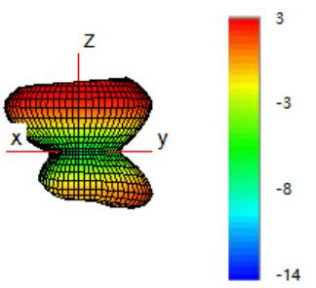
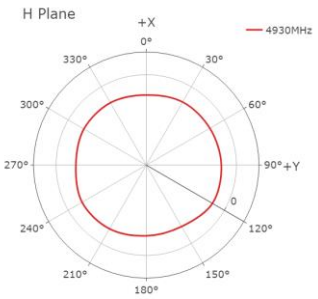
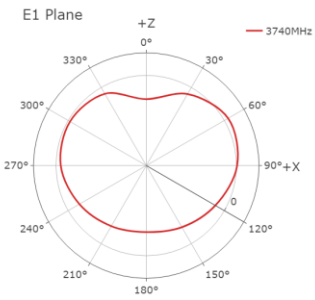
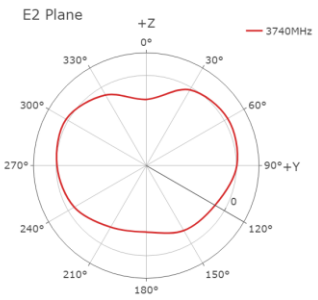
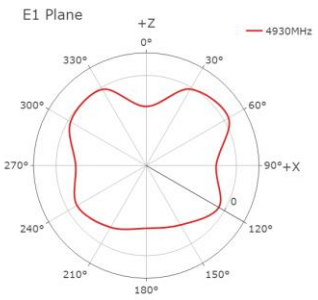
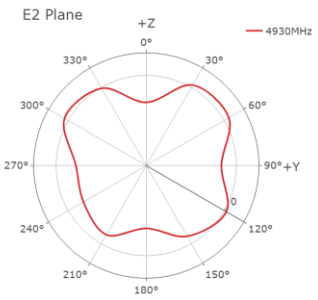
710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

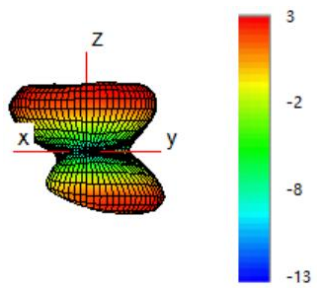
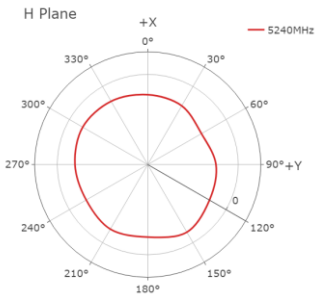
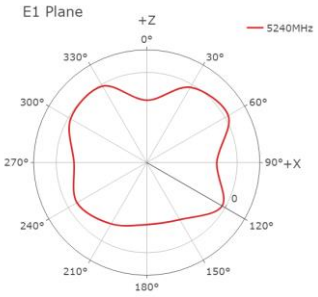
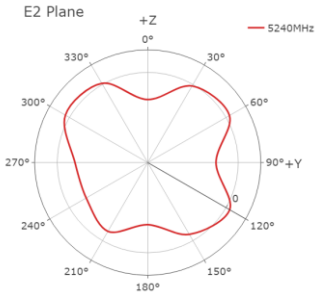
1880 MHz		1950 MHz	
			
			
3600 MHz		4000 MHz	
			
			

4700 MHz		5500 MHz	
			
			

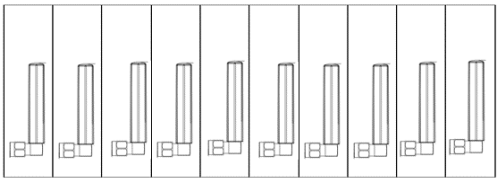
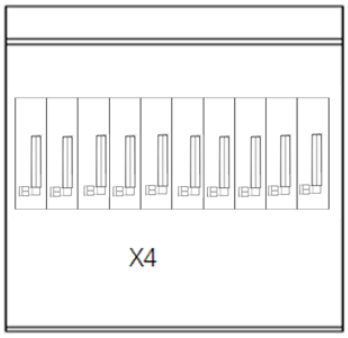
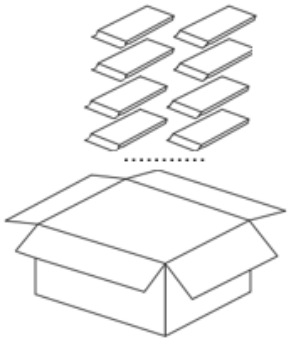
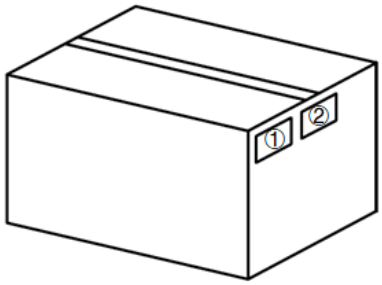
- **Max Peak Gain**

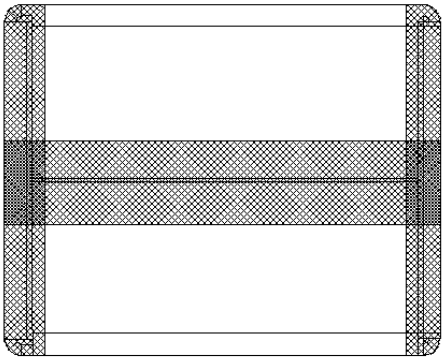
810 MHz		900 MHz	
			
			
2170 MHz		2330 MHz	
			
			

2500 MHz		2540 MHz	
			
			
3740 MHz		4930 MHz	
			
			

5240 MHz	
 Z X y 3 -2 -8 -13	 H Plane +X 5240MHz 0° 30° 60° 90°+Y 120° 150° 180° 210° 240° 270° 300° 330° 0
 E1 Plane +Z 5240MHz 0° 30° 60° 90°+X 120° 150° 180° 210° 240° 270° 300° 330° 0	 E2 Plane +Z 5240MHz 0° 30° 60° 90°+Y 120° 150° 180° 210° 240° 270° 300° 330° 0

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		10 antennas products in a one-piece bag. (10 Antennas / One-piece Bag)
2		40 antennas products in a PE bag. (40 Antennas / PE Bag)
3		(40 PE Bags / Carton Box) (1600 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 = 470 × 310 × 310 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:

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Revision History

Version	Date	Author	Note
-	2024-07-31	Black Li/ Steven Mo/ David Liu/ Rainey Liao	Creation of the document
1.0	2024-07-31	Black Li/ Steven Mo/ David Liu/ Rainey Liao	First official release
1.1	2024-10-17	Steven Mo	Added Ingress Protection (IP) Rating (Chapter 1.2).
1.2	2025-03-11	Rainey Liao	Updated the starting frequency to 698 MHz (Homepage, Overview and Chapter 1.1).
1.3	2025-04-24	Rainey Liao	Updated the antenna image (Cover page).
1.4	2025-08-18	Steven Mo	Updated the Ingress Protection (IP) rating to IP54.
1.5	2026-01-19	Strong Qiang	Updated the packaging (Chapter 4).

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