Antenna Datasheet

Product OC: YECA000G1AM
Version: 1.0
Date: 2024-08-15
Status: Released

Product Name: 5G Adhesive Mount Rubber Monopole External Antenna
Key Features:
Frequency Band: 600–6000 MHz
Dimensions: 116.5 × 21.7 × 5.6 mm
Efficiency: Up to 80 %
RoHS and REACH Compliant

Overview

YECA000G1AM is a 5G rubber external antenna measuring 116.5 × 21.7 × 5.6 mm. This ultra-wide-band antenna provides broad coverage from 600–6000 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 available with connection via cable lengths from 215 mm, terminated with 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 PC + ABS 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. YECA000G1AM is designed as a monopole antenna, which offers high efficiency in all working bands. It is a perfect antenna product for customers that desire highest performance. This omni-directional antenna is ideally suited for high-speed video, real-time streaming, public transportation, offering great performance with its high gain and efficiency.

Typical applications include:

- High-speed Video
- Real-time Streaming
- Public Transportation

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.

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1 Specification

Test Condition: On 130 × 130 mm EVB

1.1. Electrical

Electrical	
Frequency Range	600–6000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

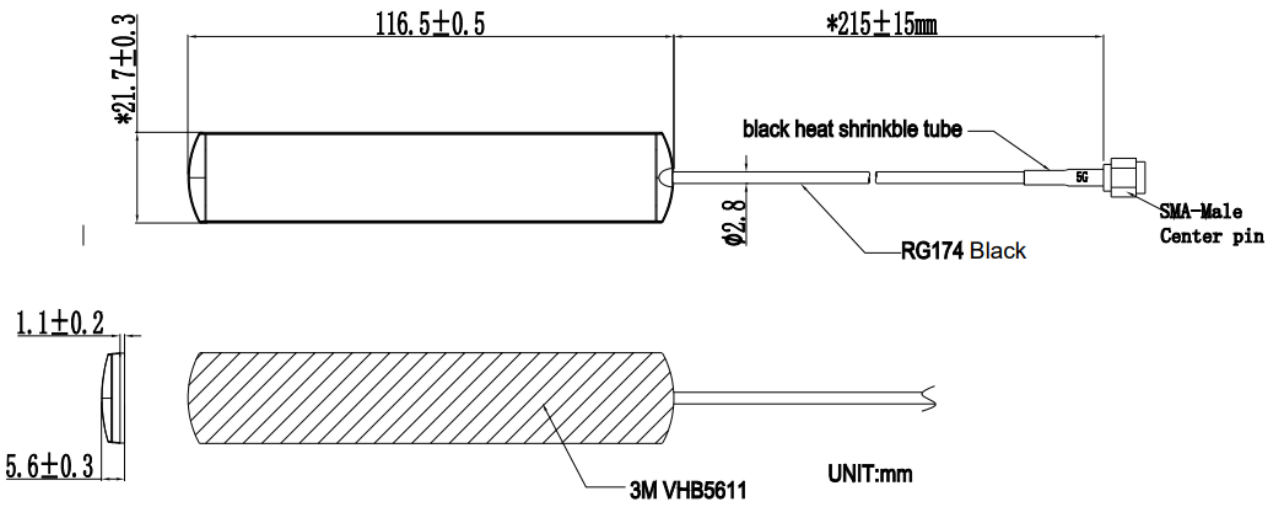
Electrical - Detail

Band / SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	n46
	Freq. (MHz)	600–700	700–810	820–960	1420–1520	1700–2170	2300–2400	2400–2500	2500–2690	3300–4200	4400–5000	5150–5925
Max. VSWR		4.2	2.1	4.3	-	3.7	2.2	3.9	3.8	2.5	3.7	3.1
Max. Return Loss (dB)		-4.2	-9.0	-4.1	-	-4.8	-8.6	-4.5	-4.7	-7.3	-4.9	-5.7
AVG Eff. (%)		58.0	72.8	55.0	-	59.1	53.9	40.1	46.7	47.0	43.9	43.7
AVG AVG Gain (dB)		-2.4	-1.4	-2.7	-	-2.3	-2.7	-4.0	-3.3	-3.3	-3.6	-3.6
Max. Peak Gain (dBi)		2.7 (700)	3.0 (710)	3.1 (850)	-	4.2 (2040)	3.7 (2310)	1.9 (2410)	1.7 (2560)	2.0 (4110)	1.5 (4430)	4.2 (5850)
VSWR		≤ 4.3										
Return Loss		≤ -4.1 dB										
Peak Gain		≤ 4.2 dBi										

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	116.5 × 21.7 × 5.6 mm
Material & Color	PC + ABS & Black
Cable Type & Color & Length	RG174 & Black & 215 mm
Connector Type	SMA-MALE
Mounting Type	Adhesive
Weight	Typ. 15 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

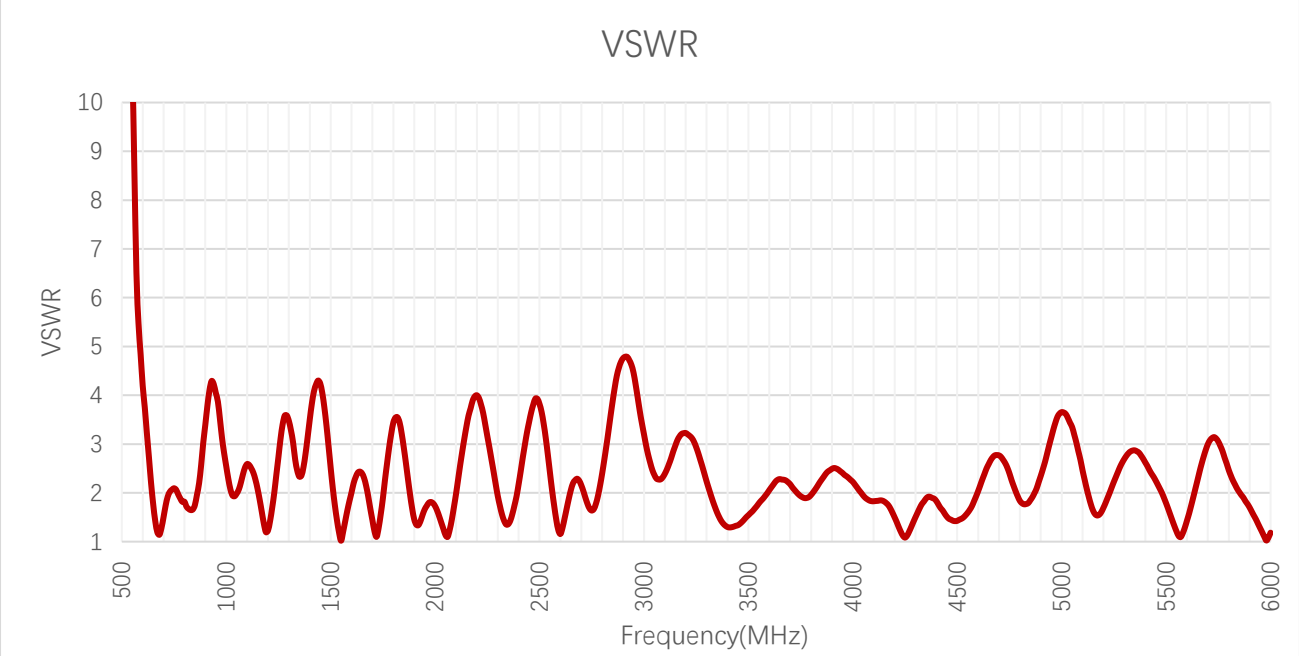
2 Drawing


116.5±0.5
*215±15mm
*21.7±0.3
black heat shrinkble tube
5G
SMA-Male
Center pin
Φ2.8
RG174 Black
1.1±0.2
5.6±0.3
3M VHB5611
UNIT:mm

3 Detailed Performance

3.1. S-Parameter Test

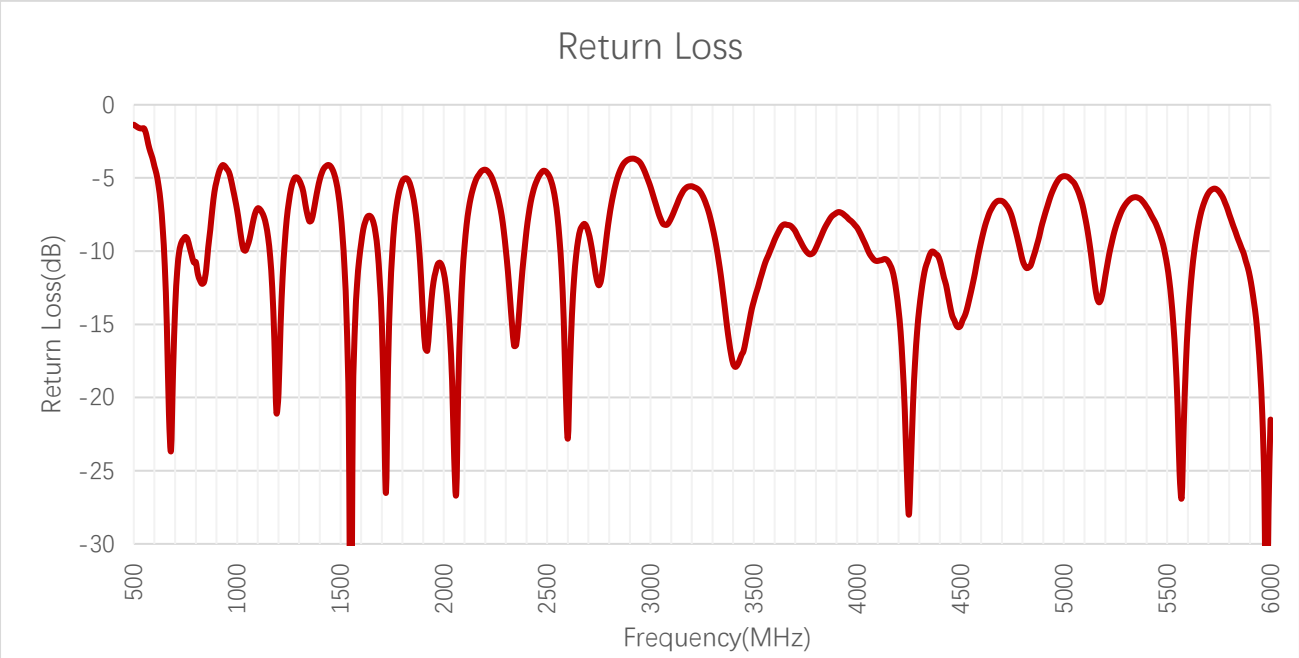
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	4.2	2.7	1.7	1.6	3.4	3.9	-	1.2	1.6	2.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
VSWR	1.7	3.1	1.4	3.5	1.2	2.1	2.8	3.7	1.8	1.2

3.1.2. Return Loss

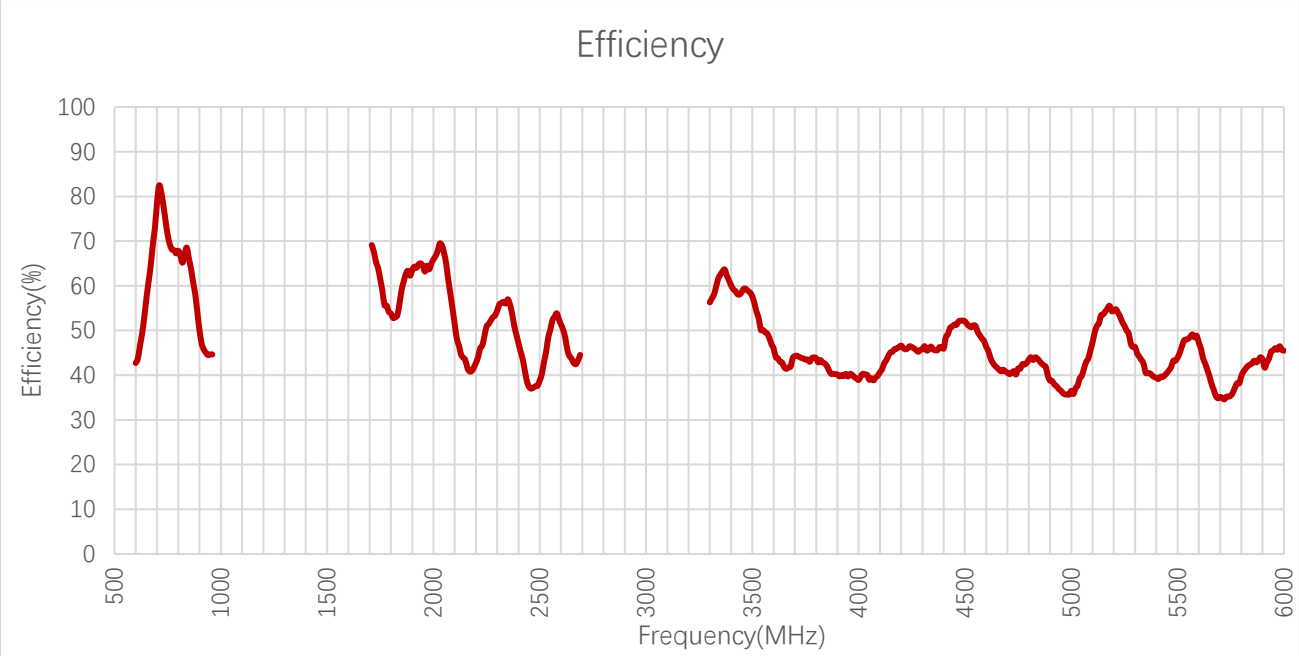


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-4.2	-6.7	-11.3	-12.2	-5.3	-4.6	-	-20.5	-13.1	-9.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-12.1	-5.8	-16.4	-5.2	-22.8	-9.2	-6.6	-4.9	-11.0	-21.5

3.2. Radiation Performance Test

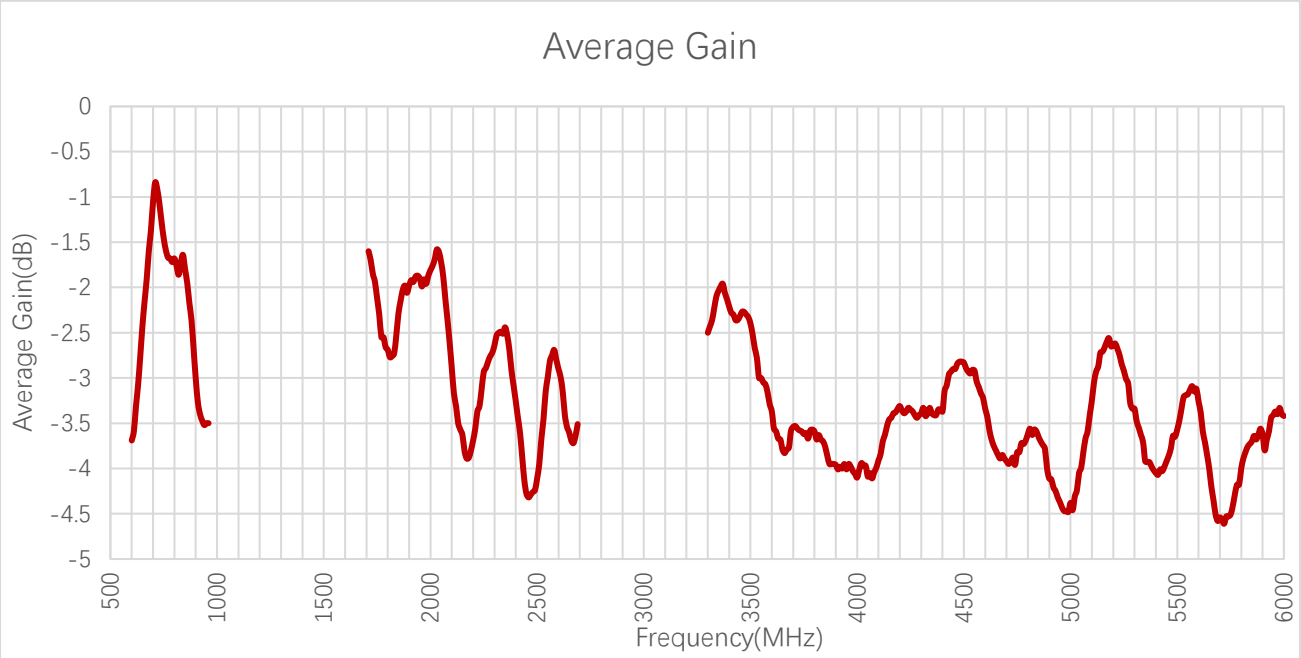
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	**600**	**630**	**710**	**830**	**900**	**960**	**1440**	**1710**	**1740**	**1880**
Efficiency (%)	42.7	49.4	82.5	67.2	50.0	44.6	-	69.1	63.9	63.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	64.5	44.0	57.0	37.4	51.3	46.0	40.6	36.5	44.0	45.5

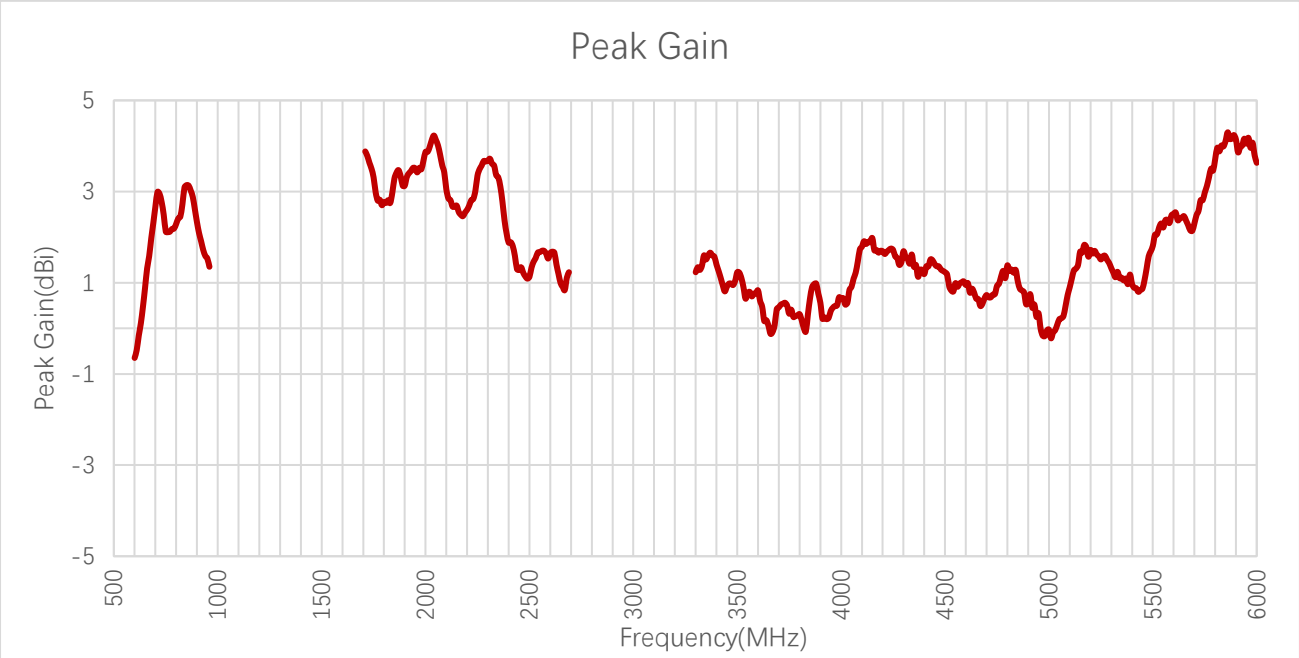
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-3.7	-3.1	-0.8	-1.7	-3.0	-3.5	-	-1.6	-1.9	-2.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-1.9	-3.6	-2.4	-4.3	-2.9	-3.4	-3.9	-4.4	-3.6	-3.4

3.2.3. Peak Gain



Peak Gain (dBi)

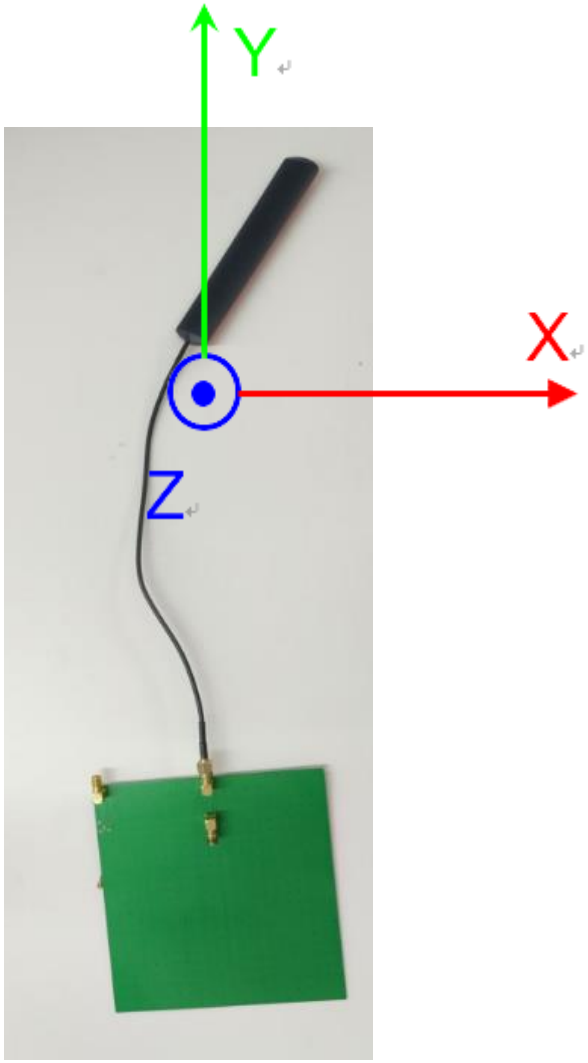
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-0.7	0.1	3.0	2.7	2.3	1.4	-	3.9	3.5	3.3
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	3.5	2.7	3.3	1.3	1.7	0.8	0.7	0.0	1.8	3.6

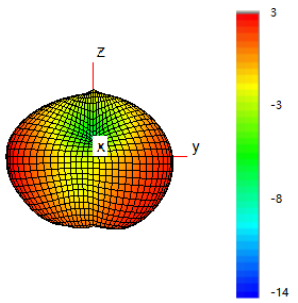
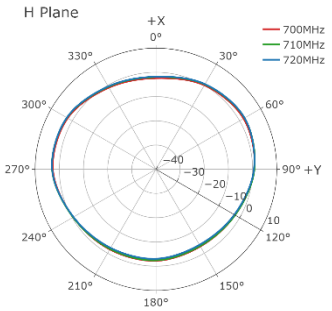
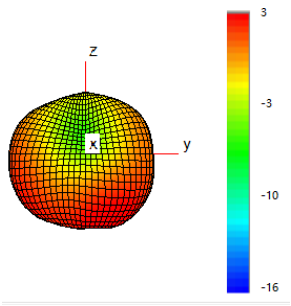
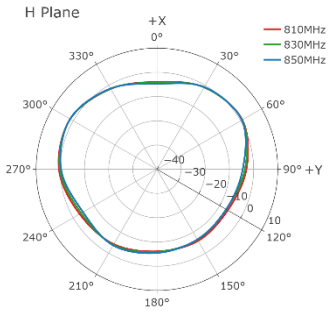
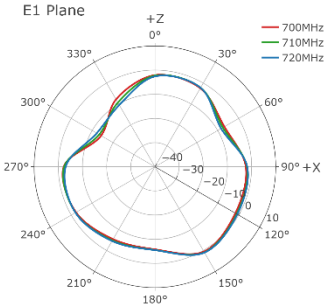
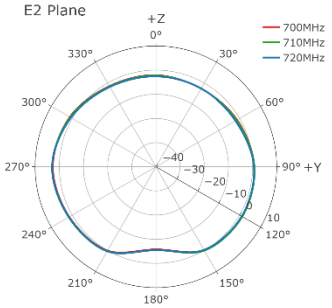
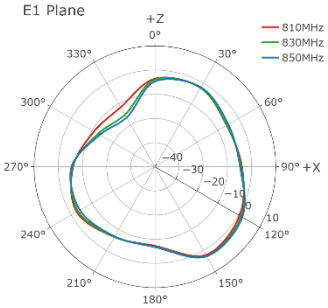
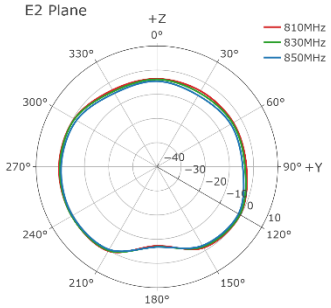
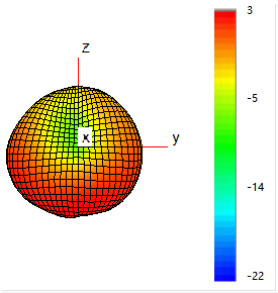
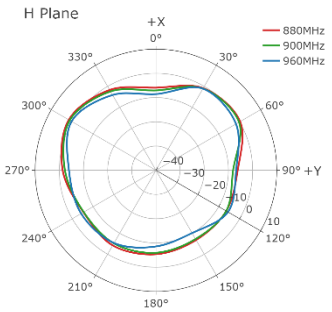
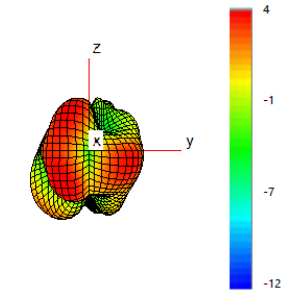
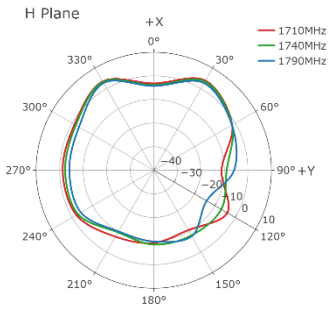
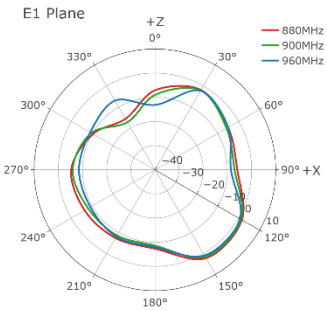
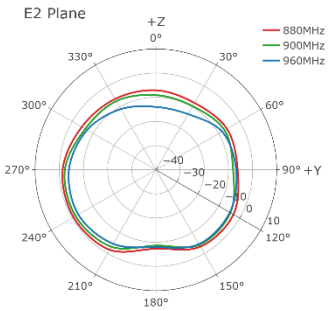
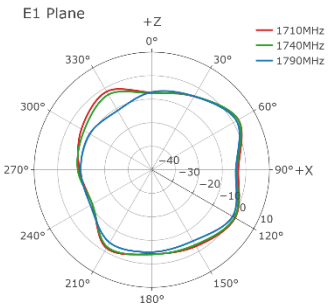
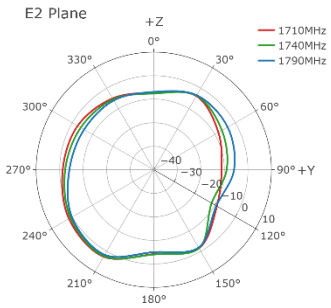
Max Peak Gain (dBi)

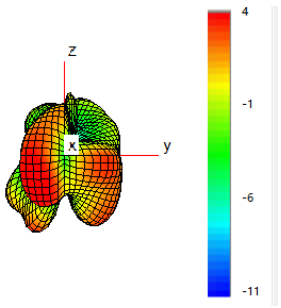
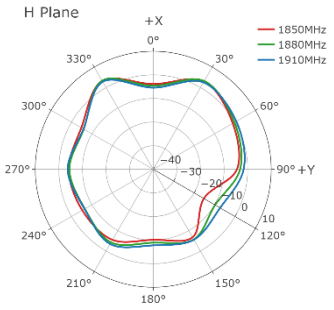
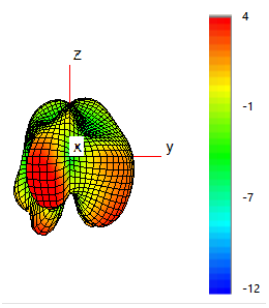
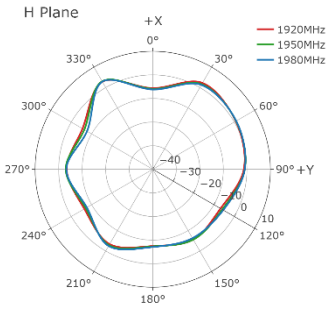
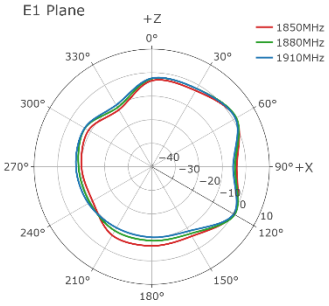
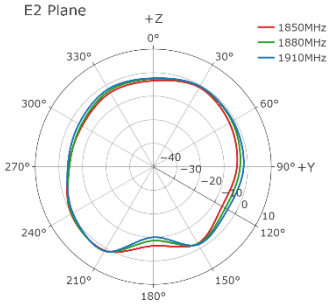
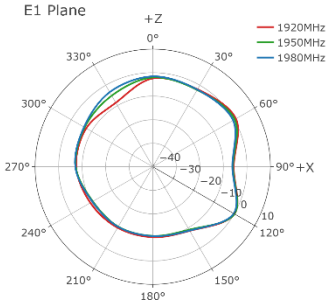
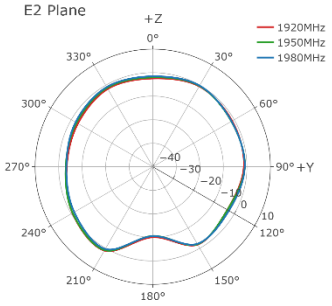
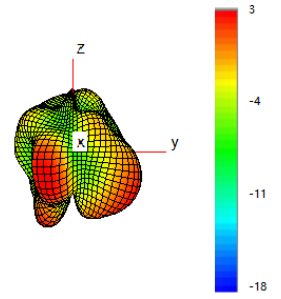
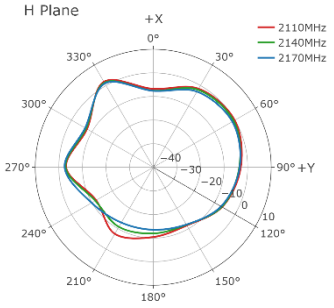
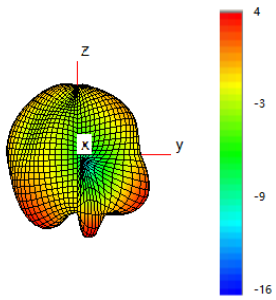
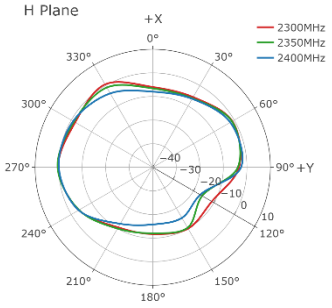
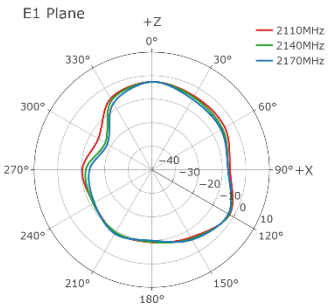
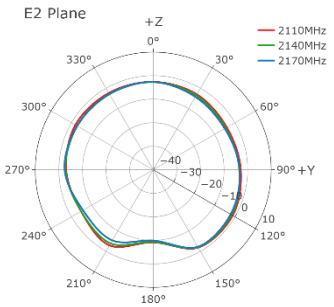
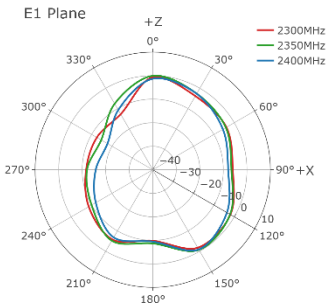
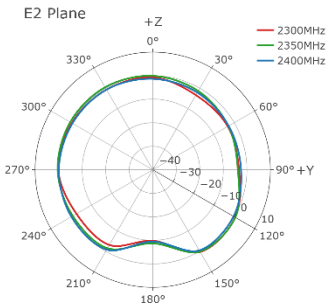
Band	B71	B12 /B13 /B28	B5 /B8 /B26	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	n46
Frequency (MHz)	700	710	850	2040	2310	2410	2560	4110	4430	5850
Peak Gain (dBi)	2.7	3	3.1	4.2	3.7	1.9	1.7	2.0	1.5	4.2

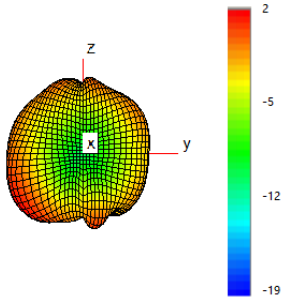
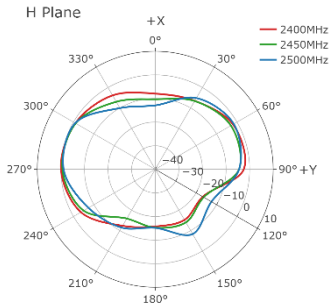
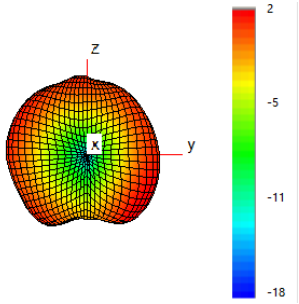
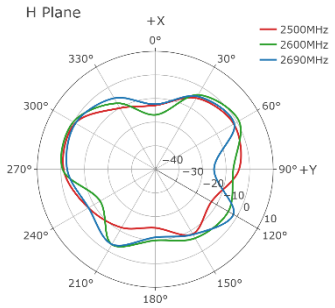
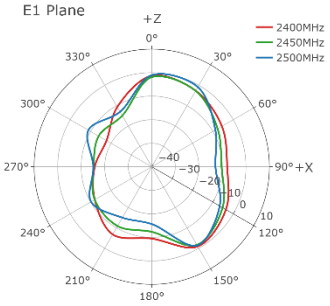
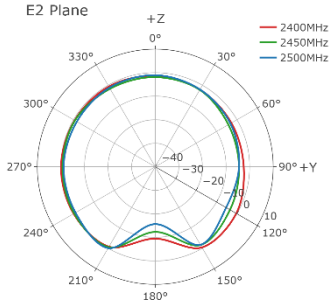
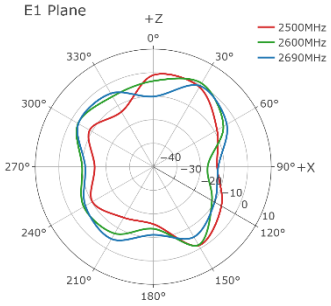
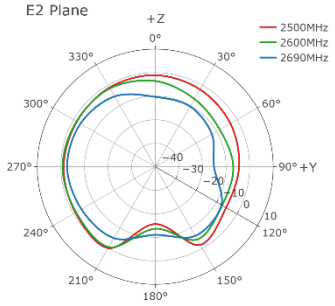
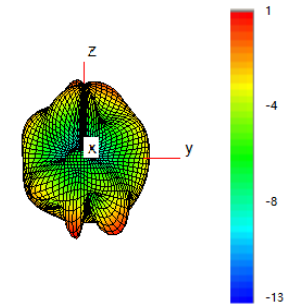
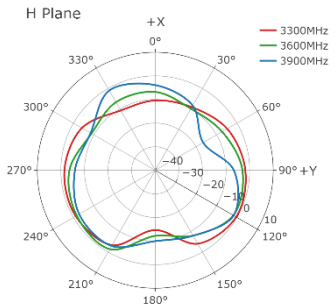
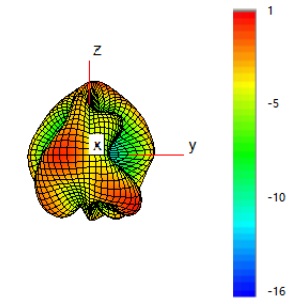
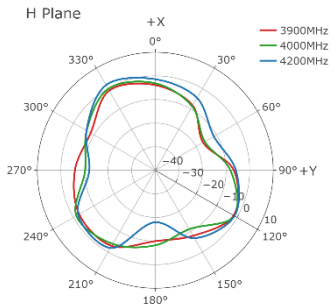
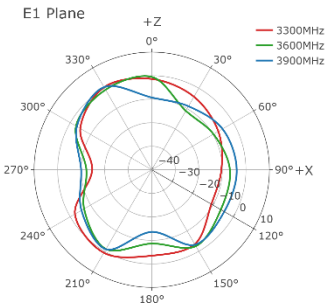
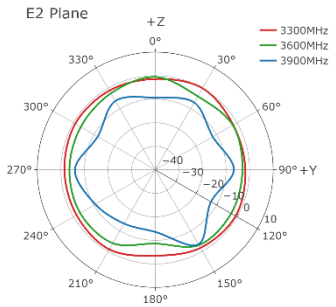
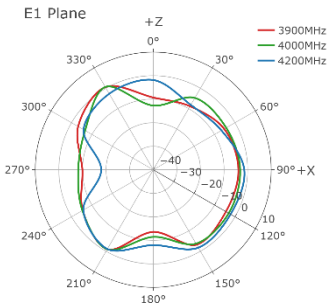
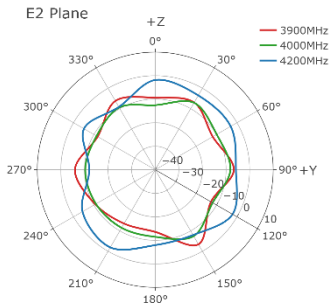
3.2.4. 3D & 2D Radiation Pattern

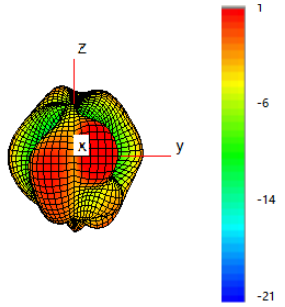
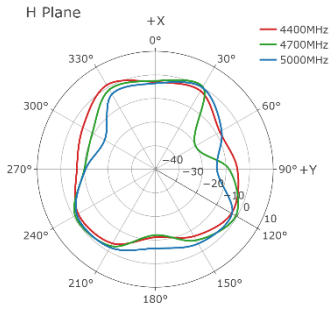
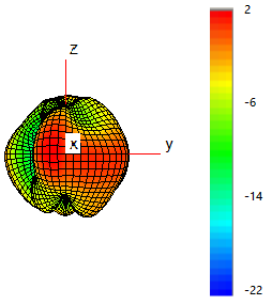
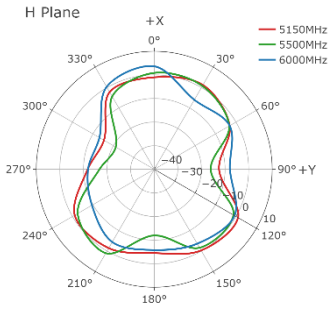
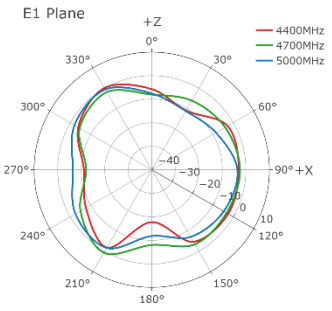
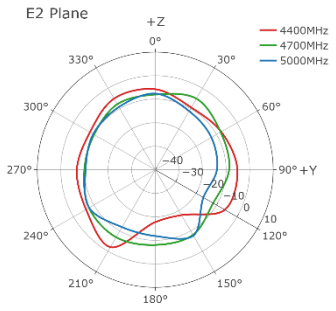
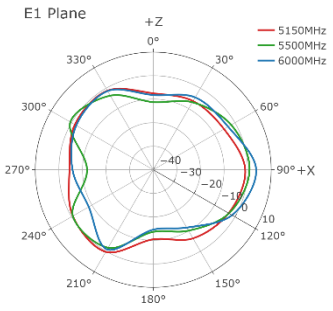
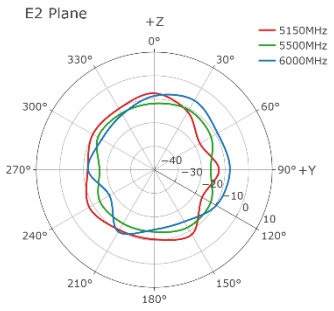
- Test Condition: On 130 × 130 mm EVB
- Test Chamber: HF-G-1



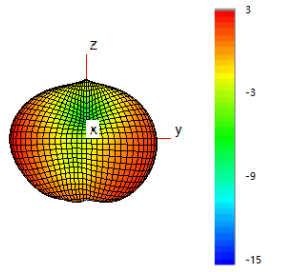
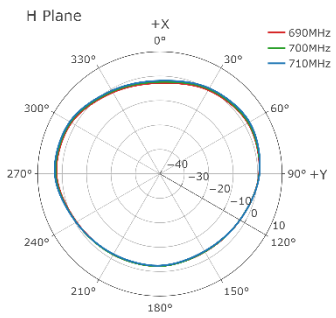
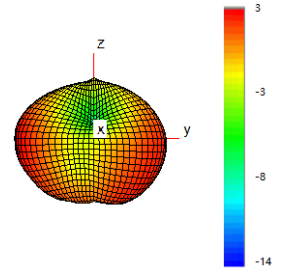
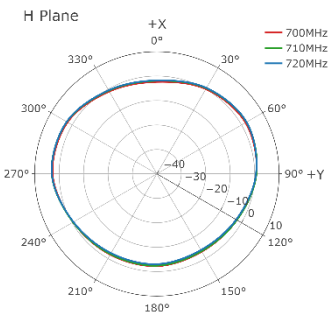
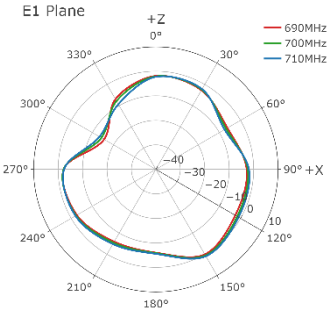
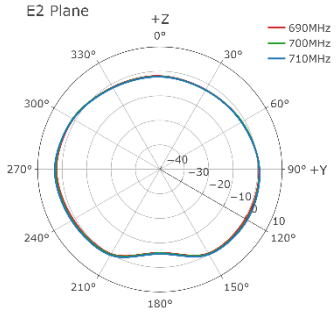
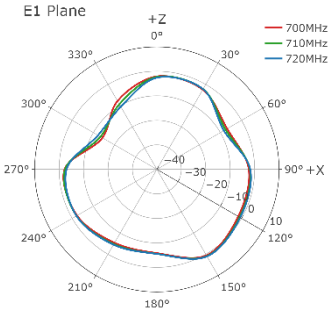
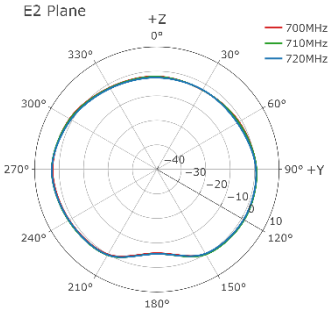
710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

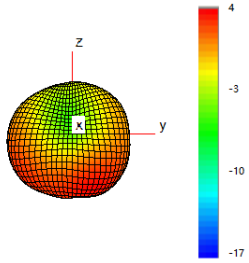
1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

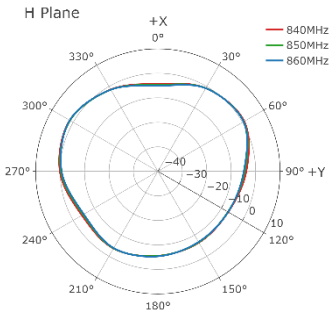
2450 MHz		2600 MHz	
			
			
3600 MHz		4000 MHz	
			
			

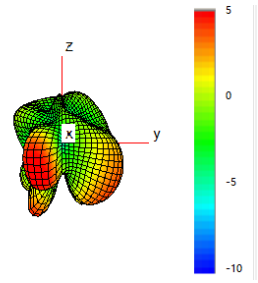
4700 MHz		5500 MHz	
			
			

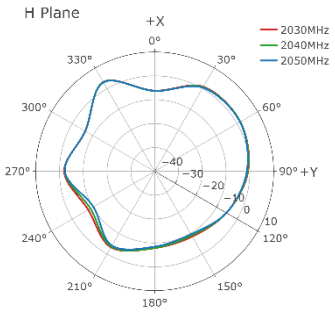
- **Max Peak Gain**

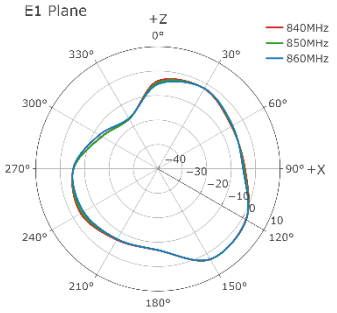
700 MHz		710 MHz	
			
			
850 MHz		2040 MHz	

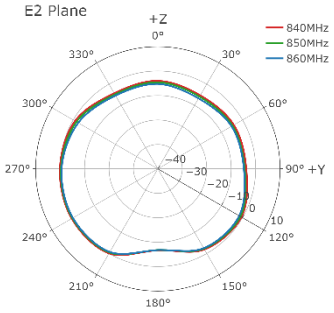


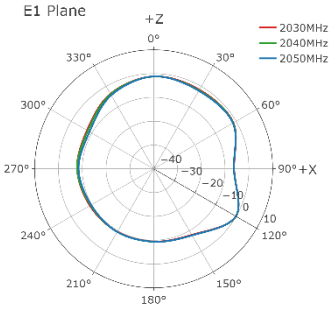


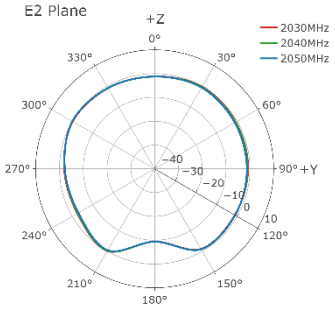






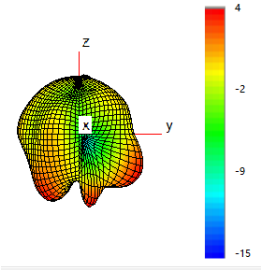


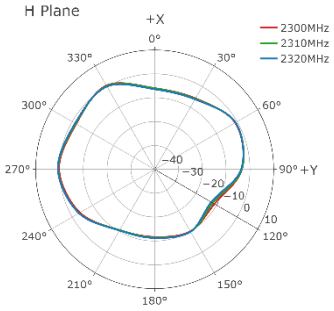


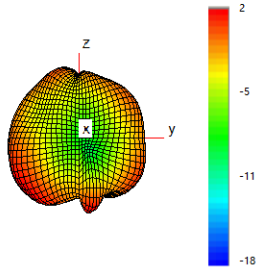


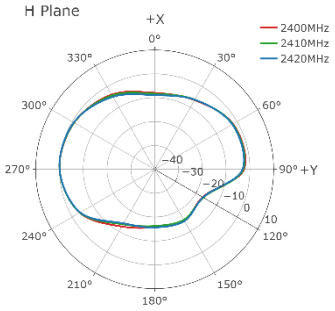
2310 MHz

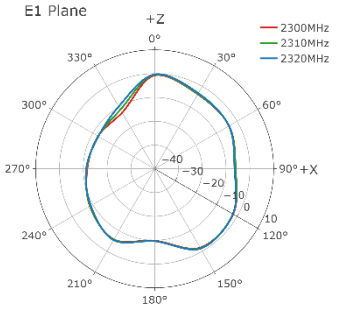
2410 MHz

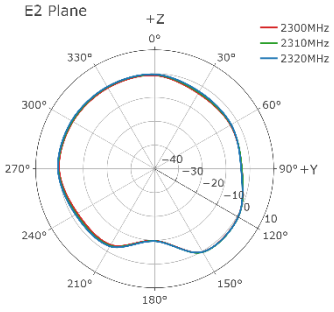


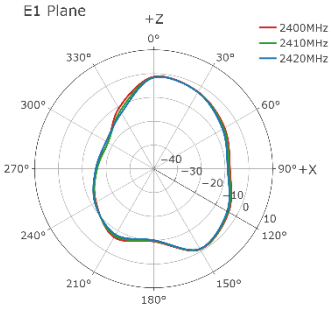


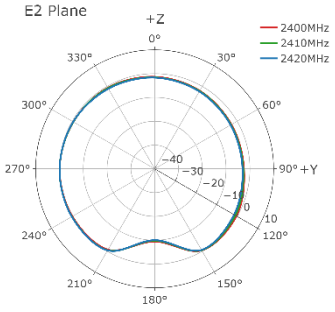


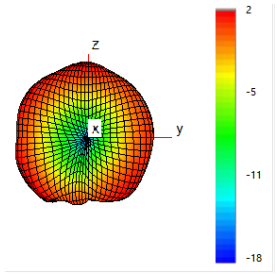
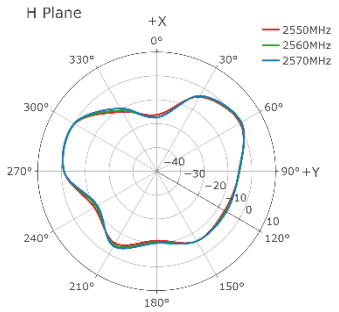
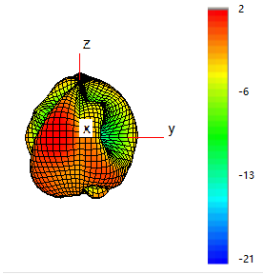
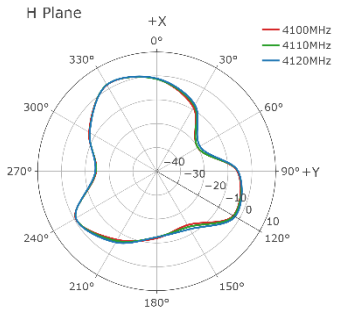
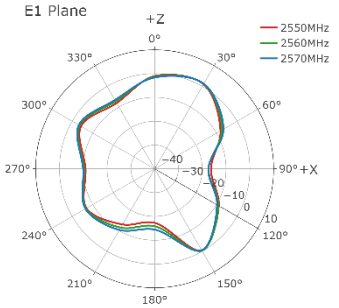
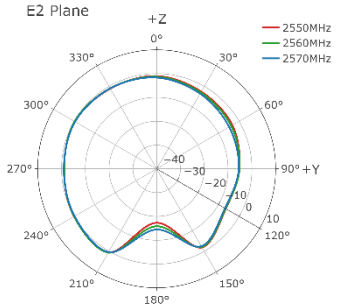
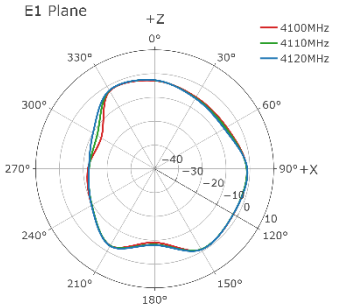
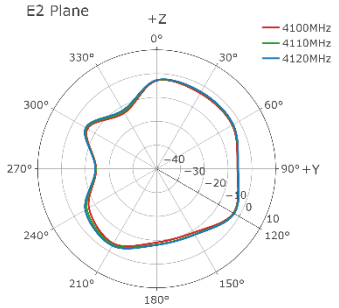
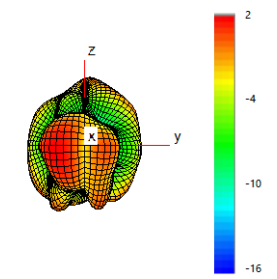
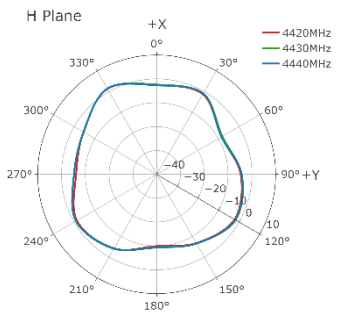
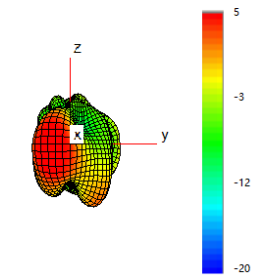
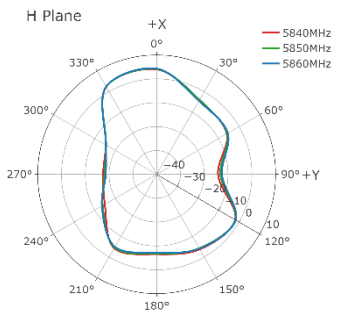
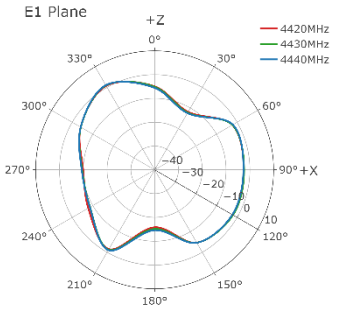
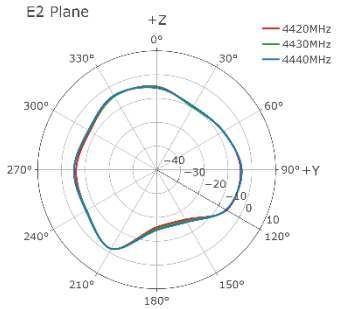
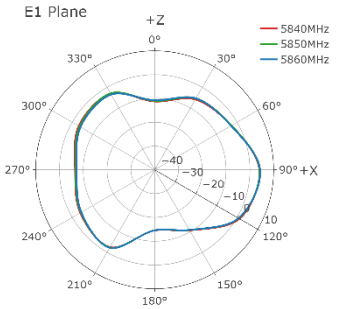
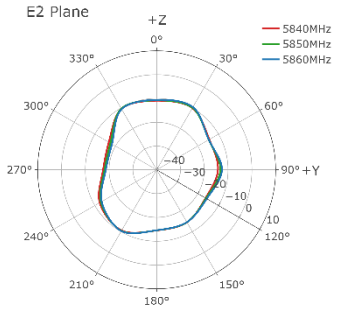




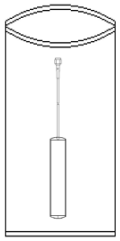
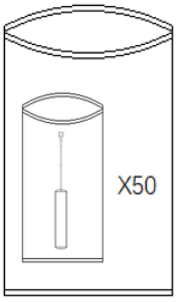
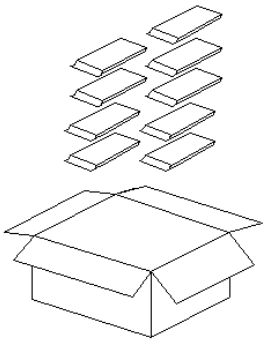


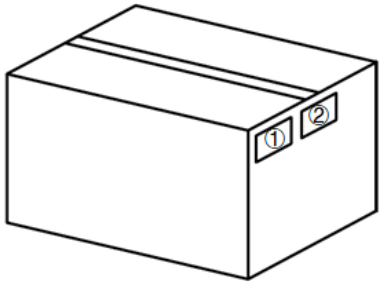
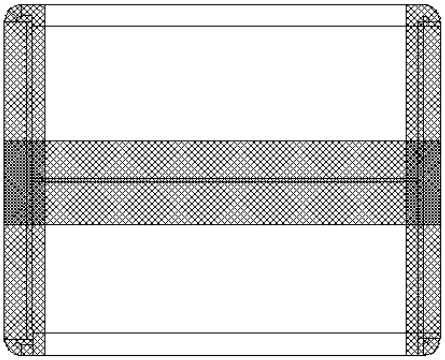




2560 MHz		4110 MHz	
			
			
4430 MHz		5850 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 pc antenna product in a small PE bag. (1 PC / Small PE Bag)
2		50 pcs antenna products in a big PE bag. (50 PCS / Big PE Bag)
3		(9 PE Bags / Carton Box) (450 PCS 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 = 400 × 290 × 210 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** "工" type sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Revision History

Version	Date	Author	Note
-	2024-08-15	Nero ZHANG/ Lance SUN/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-08-15	Nero ZHANG/ Lance SUN/ David LIU/ Rainey LIAO	First official release

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