Antenna Datasheet

Product OC: YECT005G3AM
Version: 1.0
Date: 2025-07-21
Status: Released

Product Name: 5G Terminal Mount External Dipole Antenna
Key Features:
Frequency Band: 600–6000 MHz
Dimensions: 13 mm × 15.6 mm ×130 mm
Efficiency: Up to 67.0 % (EVB)
RoHS and REACH Compliant

Overview

YECT005G3AM is a 5G external antenna measuring 135 mm × 15.6 mm × 13 mm. This ultra-wide-band 5G 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 terminated with IPEX MHF 1 connector via one cable. Ideal for applications where the antenna is required to be discrete, this low profile, terminal mount omni-directional antenna is easy to install with maximum durability assured thanks to its PC+ABS enclosure.

The antenna is designed as dipole type to work with various GND plane sizes or in free space for ease of integration with an IPEX MHF I connector via cable for optimal positioning. The cable structure allows flexible layout when installed on end devices to avoid interference with other antennas or objects. This omni-directional antenna is ideally suited for Gateways & Routers, Smart Metering, Vending Machines, Industrial IoT, Smart Home, Connected Enterprise, offering great performance with its high gain and efficiency.

Typical applications include:

- Gateways & Routers
- Smart Metering
- Vending Machines
- Industrial IoT
- Smart Home
- Connected Enterprise

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: In Free Space & On 130 mm × 130 mm EVB

1.1. Electrical

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

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	2.7	2.1	2.4	1.5	1.5	1.5	1.6	1.7	1.7	1.9	2.4
	EVB	2.1	2.1	3.0	2.0	1.8	1.6	2.0	2.0	2.0	2.5	2.8
Max. Return Loss (dB)	FS	-6.7	-9.0	-7.8	-13.5	-14.7	-14.1	-13.2	-11.6	-11.4	-10.5	-7.6
	EVB	-8.9	-8.9	-6.0	-9.5	-10.7	-12.6	-9.7	-9.6	-9.5	-7.4	-6.5
AVG Eff. (%)	FS	32.2	33.3	29.7	47.0	44.1	52.8	50.4	53.7	49.8	40.2	30.0
	EVB	53.8	44.3	37.2	60.6	54.4	63.2	61.0	62.4	45.2	32.8	25.9
AVG AVG Gain (dB)	FS	-4.9	-4.8	-5.3	-3.3	-3.6	-2.8	-3.0	-2.7	-3.1	-4.0	-5.4
	EVB	-2.7	-3.6	-4.3	-2.2	-2.7	-2.0	-2.2	-2.1	-3.5	-4.9	-6.0

Max. Peak Gain (dBi)	**FS**	0.3 (600)	-0.2 (700)	1.1 (960)	2 (1500)	3.6 (1920)	3.4 (2340)	2.9 (2400)	3.8 (2640)	0.9 (3700)	1.1 (5000)	2 (5460)
	EVB	1.1 (600)	-0.3 (700)	0.8 (960)	3.2 (1500)	4.1 (1920)	4.6 (2360)	4.5 (2400)	4.1 (2700)	3.5 (3940)	2 (5000)	2.1 (5080)

VSWR	**FS**	≤ 2.7
	EVB	≤ 3
Return Loss	**FS**	≤ -6.7 dB
	EVB	≤ -6 dB
Peak Gain	**FS**	≤ 3.8 dBi
	EVB	≤ 4.6 dBi

- **FS: In Free Space.**
- **EVB: On 130 mm × 130 mm EVB.**

1.2. Supported Bands

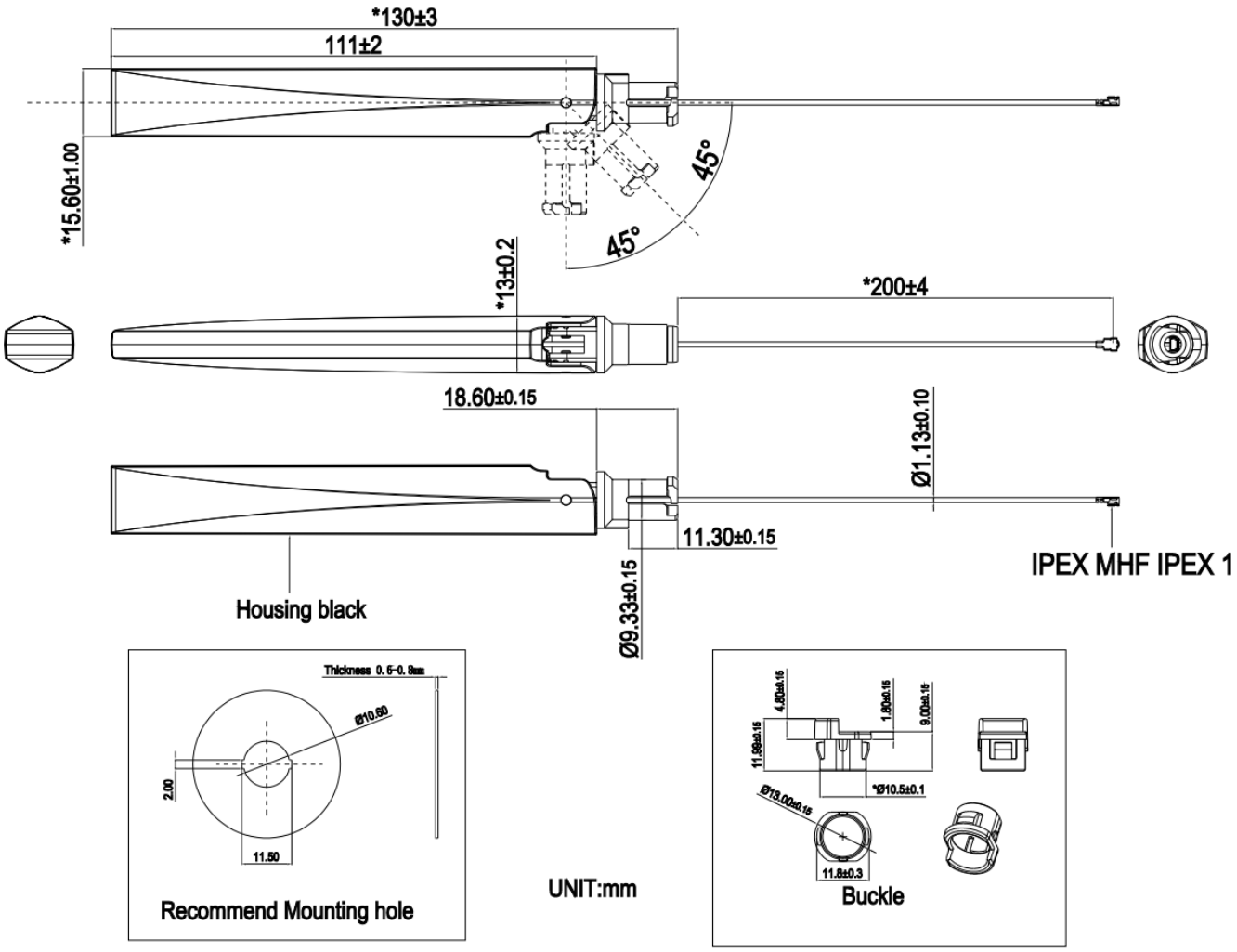
5G NR / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / GPRS / GSM / NB-IoT					
Band	**Frequency (MHz)**	**Uplink (MHz)**	**Downlink (MHz)**	**FS**	**EVB**
1	2100	1920–1980	2110–2170	√	√
2	1900	1850–1910	1930–1990	√	√
3	1800	1710–1785	1805–1880	√	√
4	1700	1710–1755	2110–2155	√	√
5	850	824–849	869–894	√	√
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	13 mm × 15.6 mm ×130 mm
Material & Color	PC + ABS & Black
Connector Type	IPEX MHF 1
Cable Type & Length	Φ 1.13 Black & 200 mm
Mounting Type	Terminal
Weight	Typ. 13.5 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

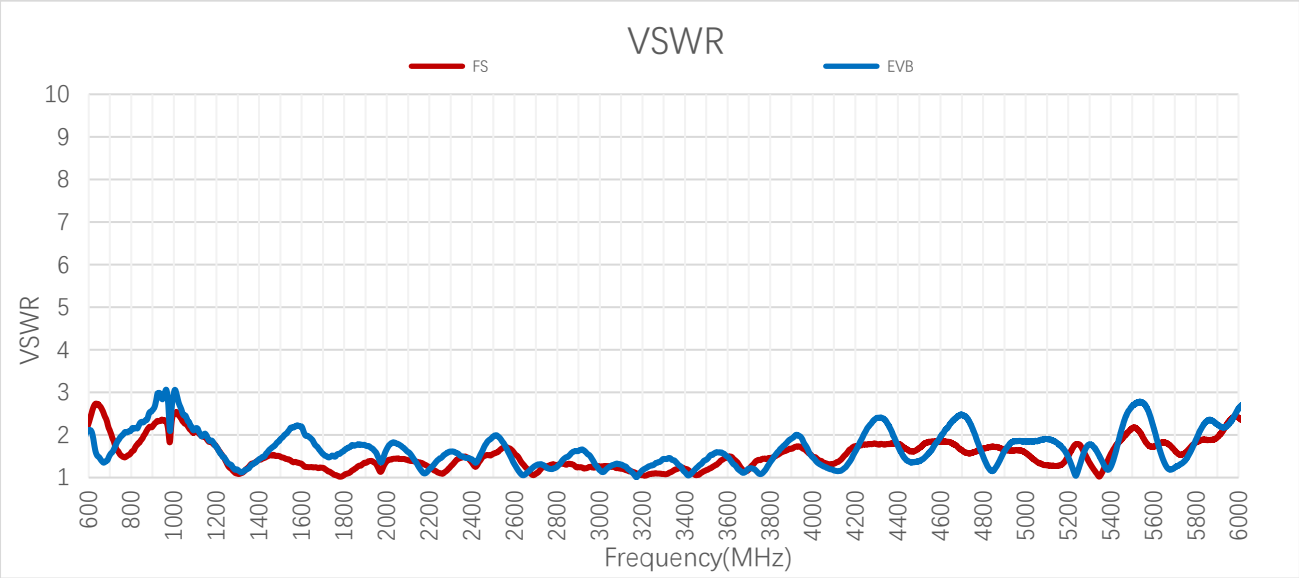
2 Drawing


*130±3
111±2
*15.60±1.00
45°
45°
*13±0.2
*200±4
18.60±0.15
Ø1.13±0.10
11.30±0.15
Ø9.33±0.15
IPEX MHF IPEX 1
Housing black
Thickness 0.6~0.8mm
Ø10.60
2.00
11.50
Recommend Mounting hole
UNIT:mm
4.00±0.15
1.80±0.15
9.00±0.15
11.38±0.15
*Ø10.5±0.1
Ø13.00±0.15
11.8±0.3
Buckle

3 Detailed Performance

3.1. S-Parameter Test

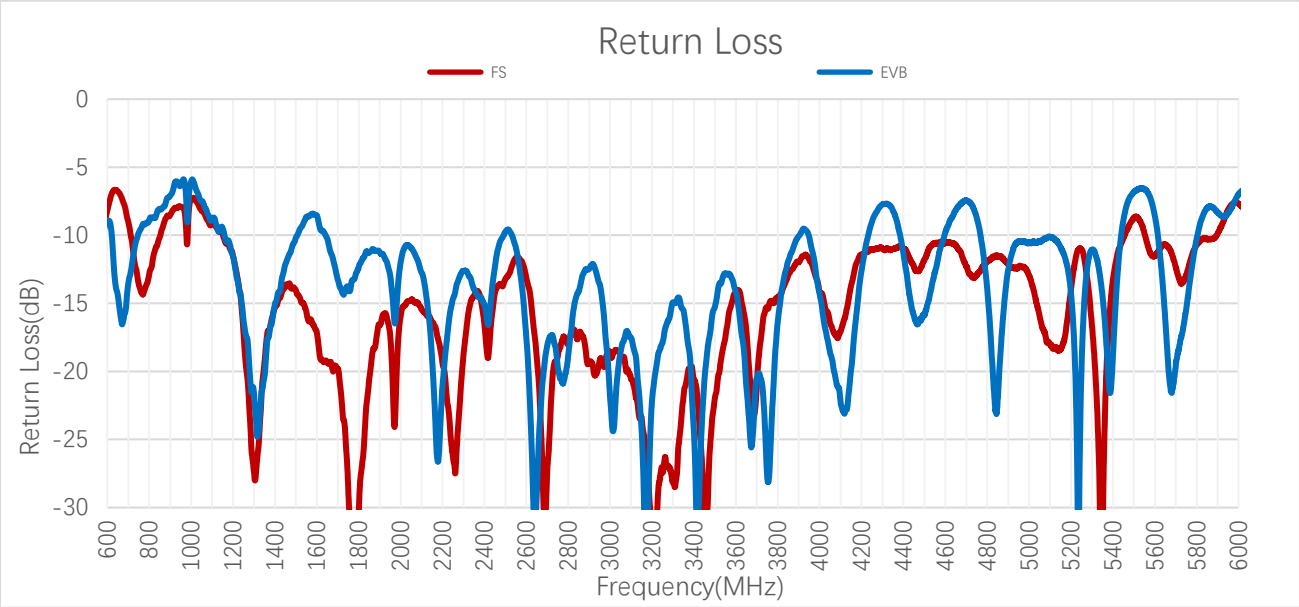
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	2.3	2.7	1.9	1.8	2.2	2.3	1.5	1.2	1.1	1.3
EVB	2.1	1.7	1.6	2.2	2.6	3.0	1.6	1.5	1.5	1.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	1.3	1.4	1.5	1.5	1.6	1.5	1.6	1.6	2.2	2.4
EVB	1.6	1.3	1.5	1.6	1.3	1.5	2.5	1.8	2.7	2.6

3.1.2. Return Loss

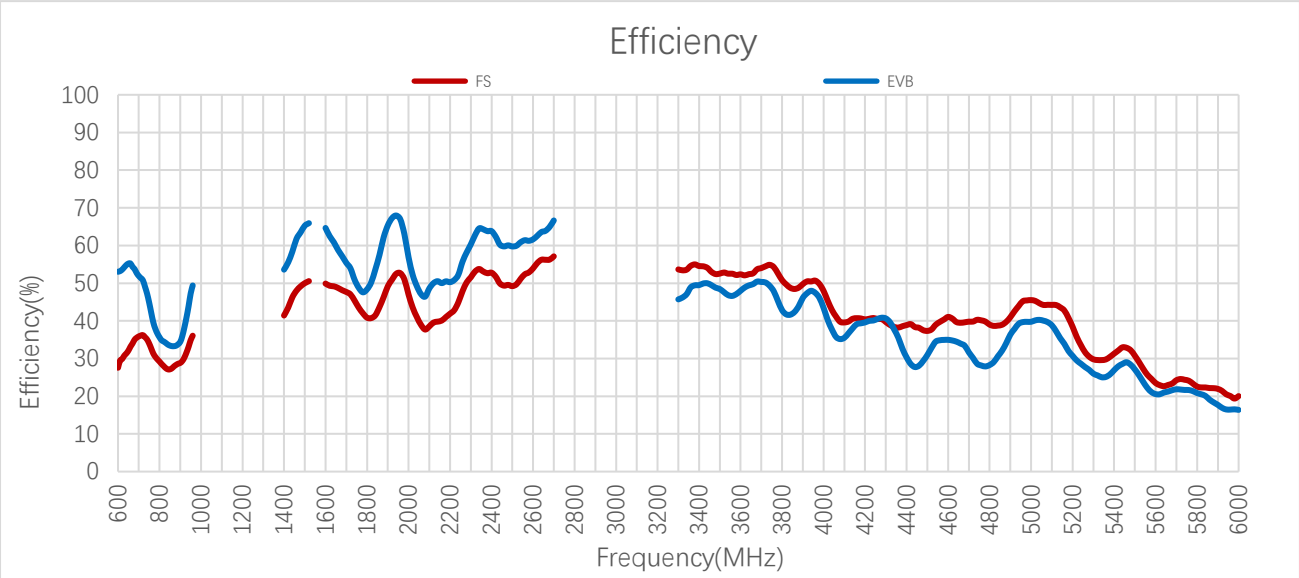


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-8.2	-6.7	-9.8	-11.0	-8.5	-7.9	-14.0	-20.9	-25.8	-18.1
EVB	-9.0	-12.1	-12.8	-8.7	-7.1	-6.0	-12.8	-13.8	-13.9	-11.1
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	-17.3	-16.0	-14.5	-14.2	-13.1	-14.2	-12.3	-13.0	-8.7	-7.7
EVB	-12.9	-16.8	-14.0	-12.3	-17.5	-14.1	-7.4	-10.5	-6.8	-7.0

3.2. Radiation Performance Test

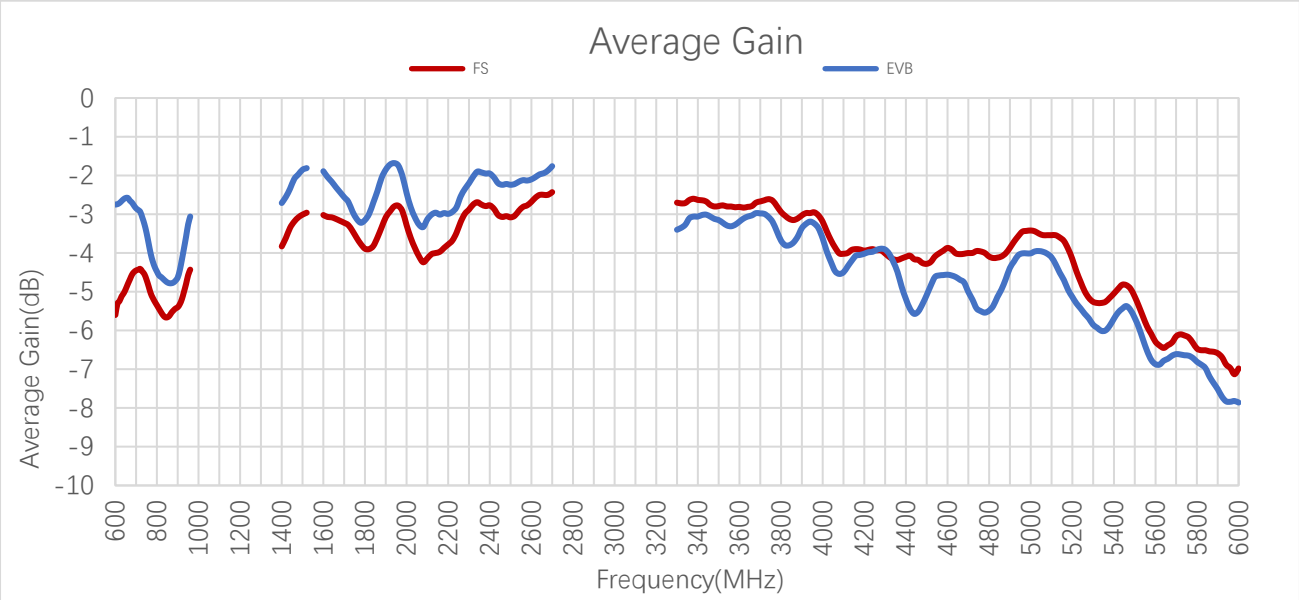
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	27.6	30.8	36.1	27.5	28.8	36.1	46.3	47.7	45.4	46.3
EVB	53.0	54.2	51.4	34.2	34.4	49.4	58.4	55.4	50.9	62.2
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	52.5	39.8	53.8	49.4	53.9	52.4	39.8	45.5	30.8	20.0
EVB	68.0	50.5	64.5	59.8	61.6	48.0	31.7	39.8	27.1	16.4

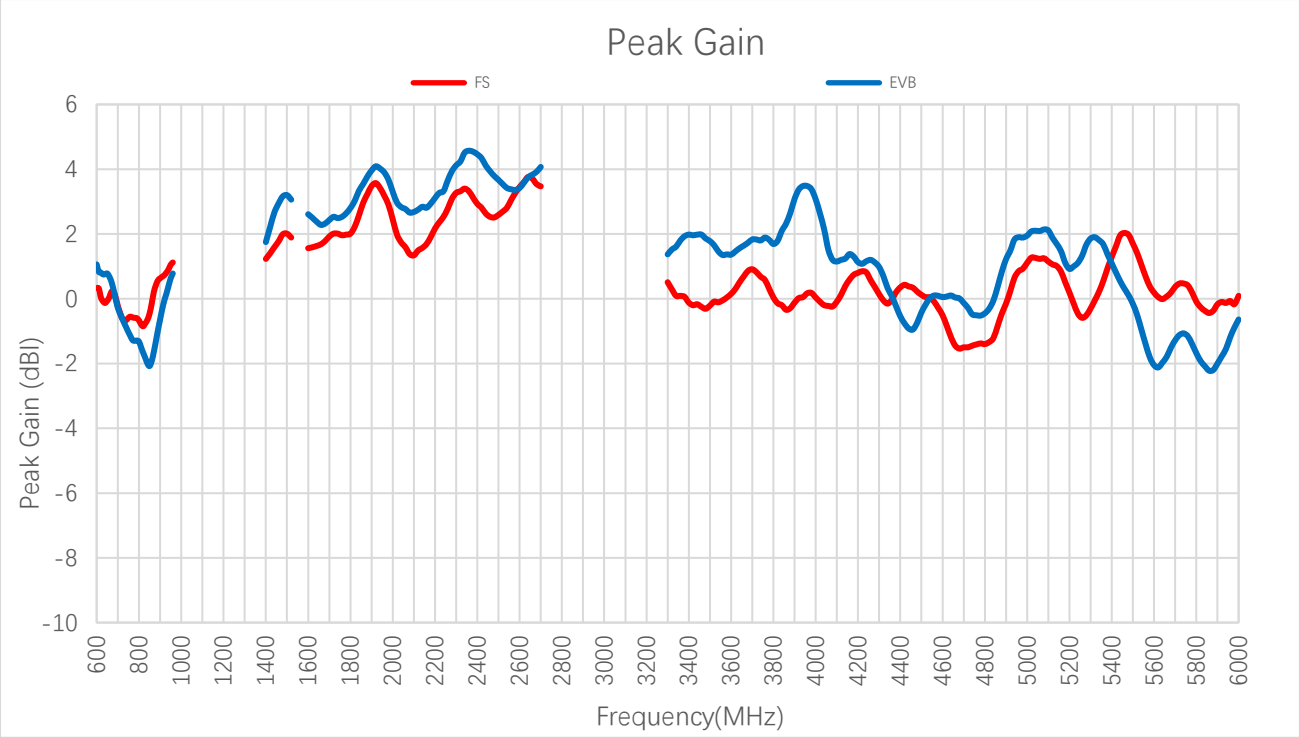
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-5.6	-5.1	-4.4	-5.6	-5.4	-4.4	-3.4	-3.2	-3.4	-3.3
EVB	-2.8	-2.7	-2.9	-4.7	-4.6	-3.1	-2.3	-2.6	-2.9	-2.1
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	-2.8	-4.0	-2.7	-3.1	-2.7	-2.8	-4.0	-3.4	-5.1	-7.0
EVB	-1.7	-3.0	-1.9	-2.2	-2.1	-3.2	-5.0	-4.0	-5.7	-7.9

3.2.3. Peak Gain



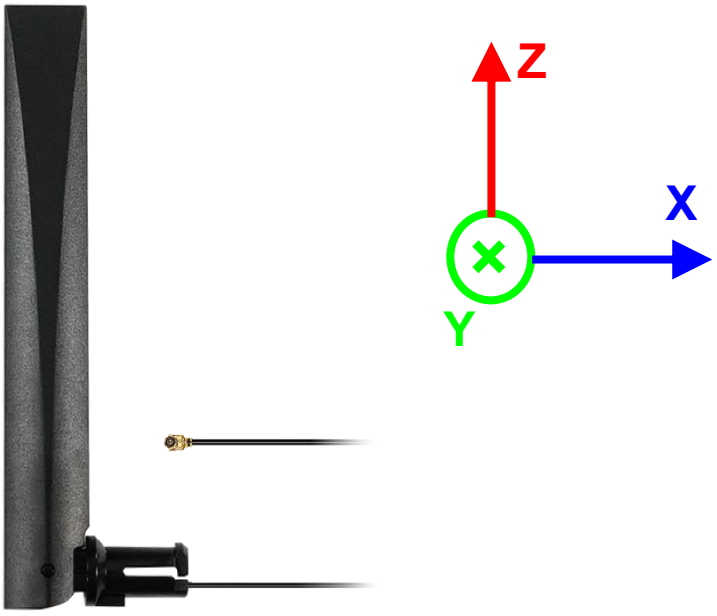
Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	0.3	-0.1	-0.4	-0.8	0.6	1.1	1.6	1.9	2.0	3.2
EVB	1.1	0.8	-0.5	-1.8	-0.6	0.8	2.7	2.4	2.5	3.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
FS	3.4	1.6	3.4	2.5	3.5	0.2	-1.5	1.1	1.7	0.1
EVB	4.0	2.8	4.5	3.9	3.4	1.4	-0.1	2.0	-0.2	-0.6

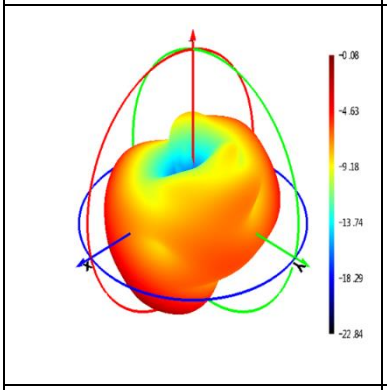
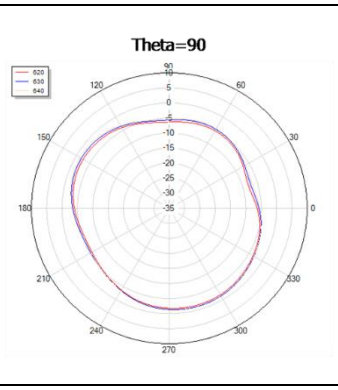
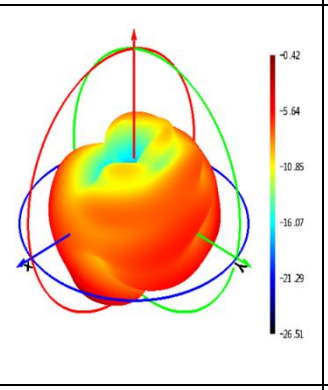
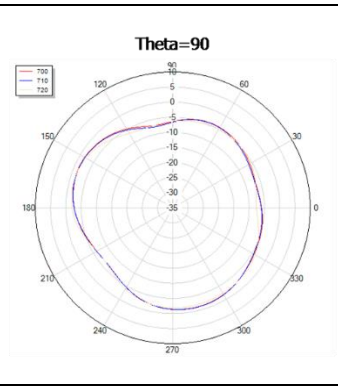
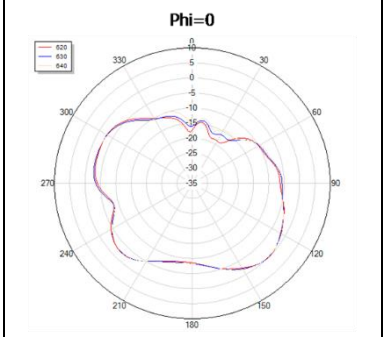
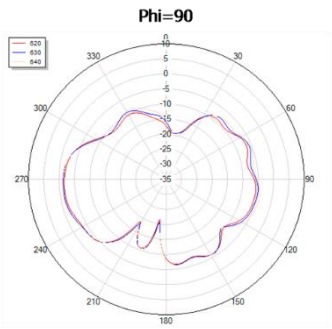
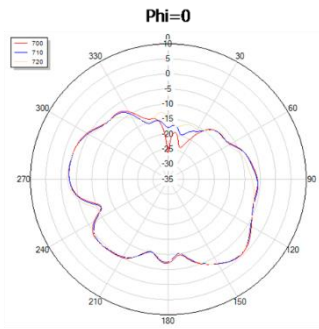
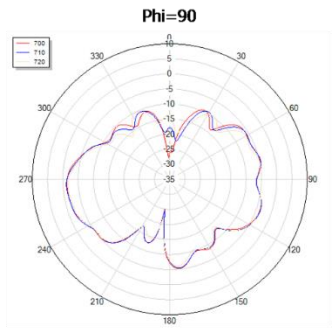
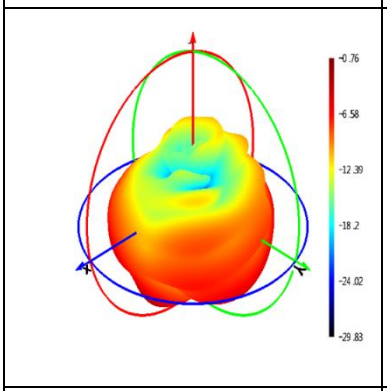
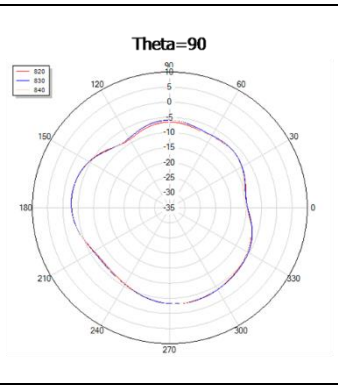
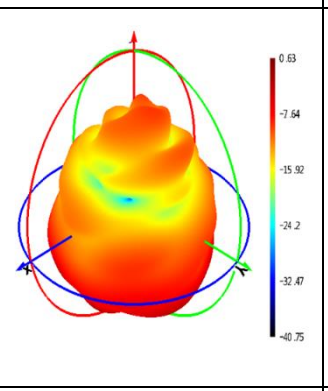
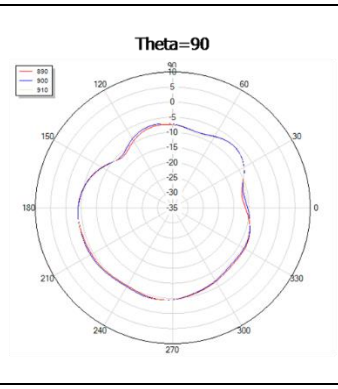
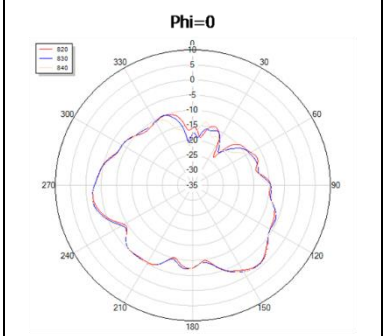
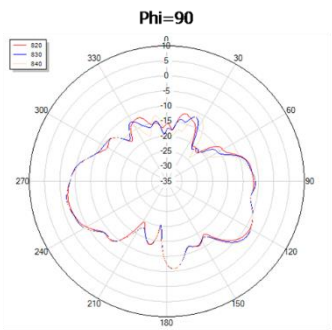
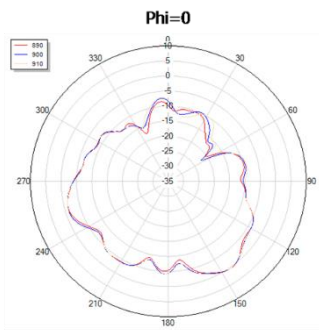
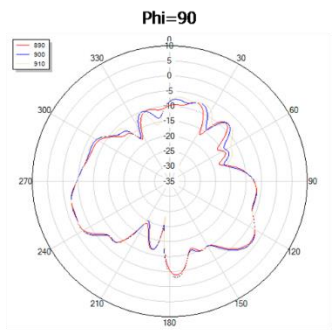
3.2.4. 3D & 2D Radiation Pattern

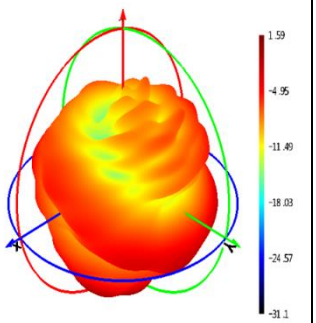
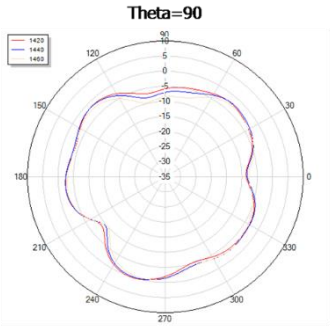
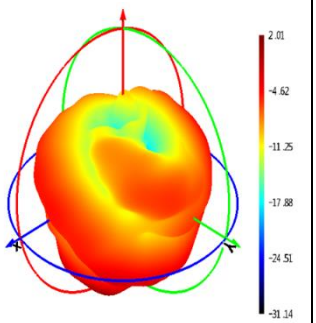
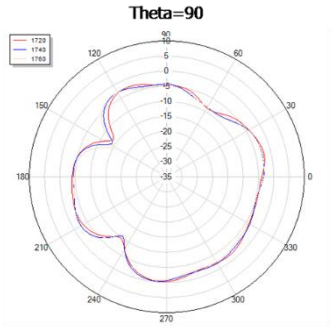
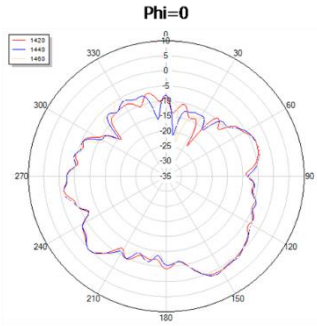
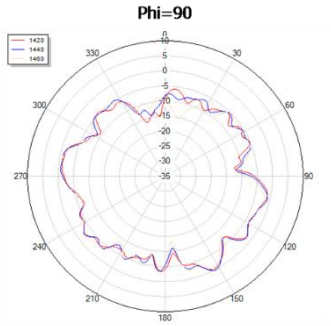
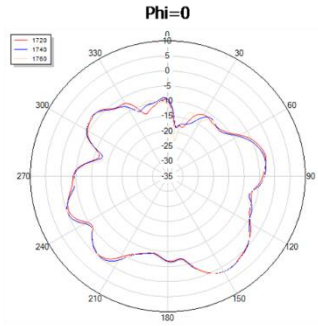
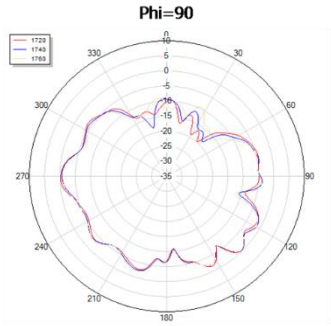
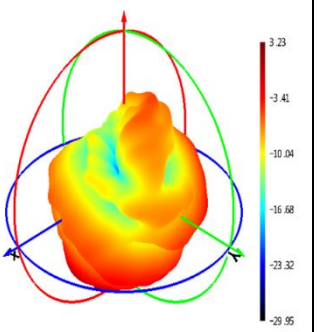
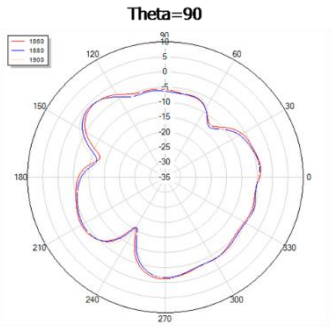
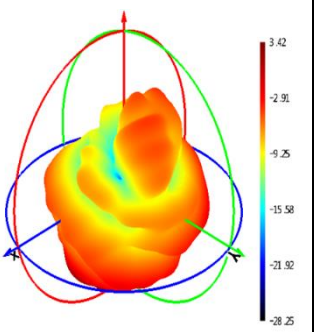
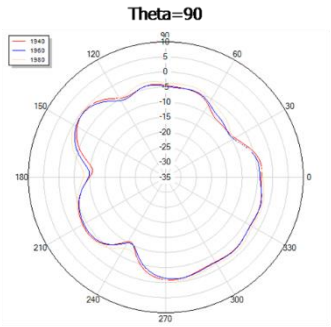
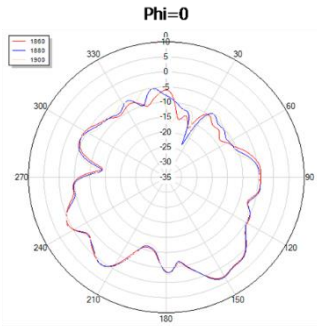
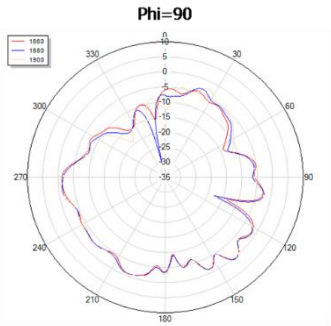
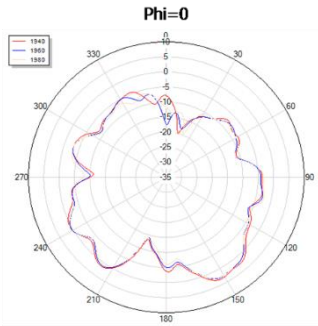
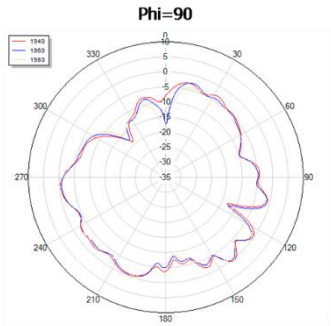
3.2.4.1. Test Condition: In Free Space

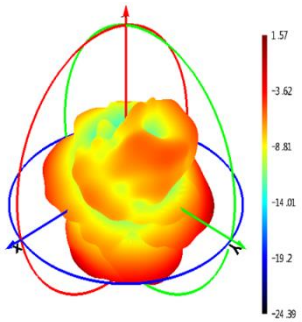
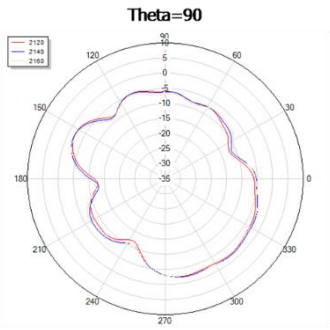
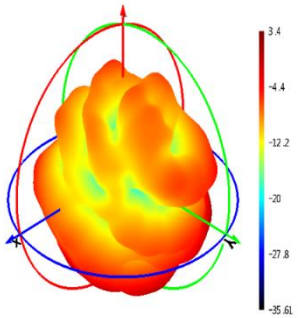
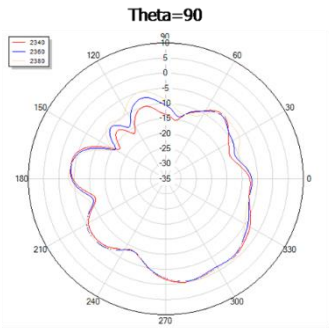
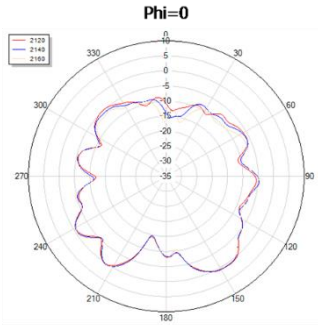
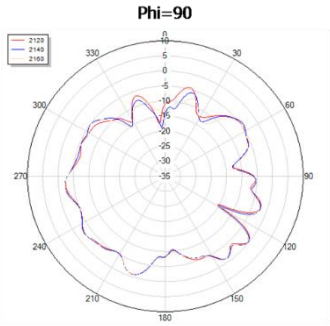
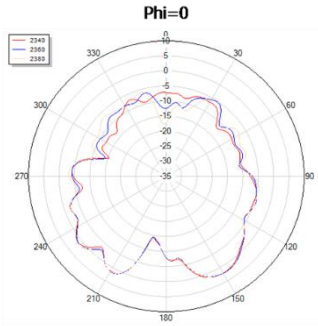
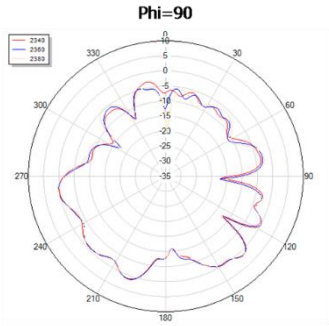
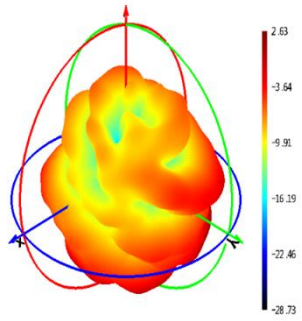
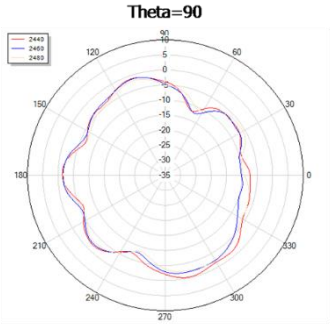
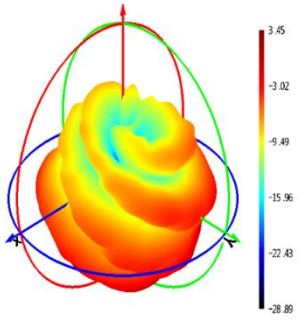
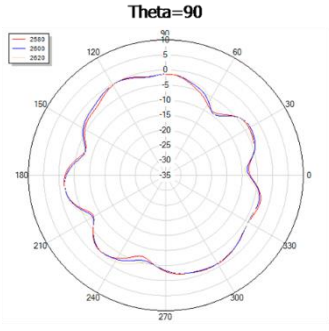
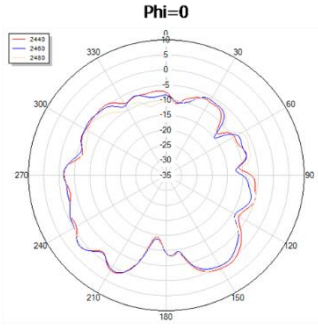
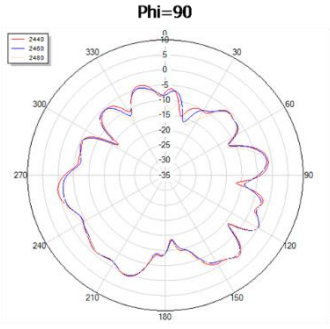
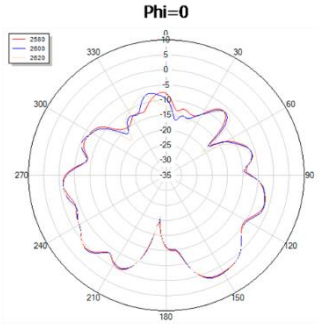
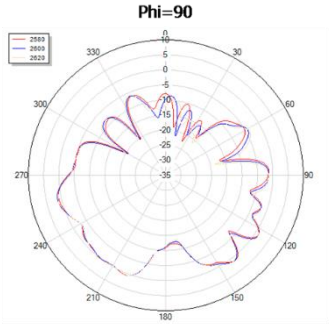
- Test Chamber: HF-S-1

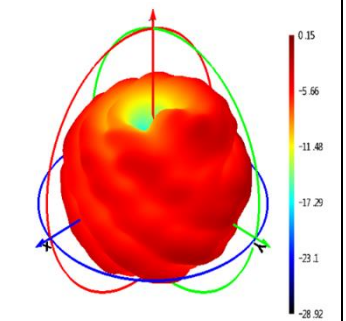
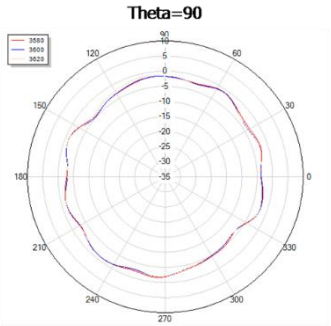
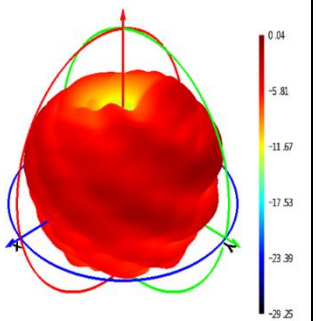
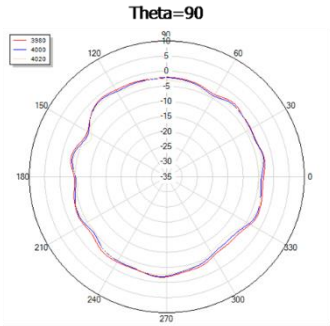
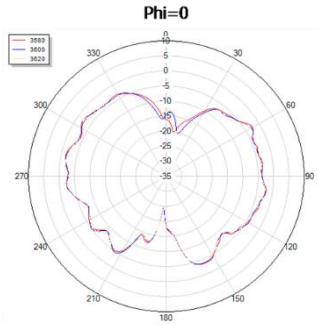
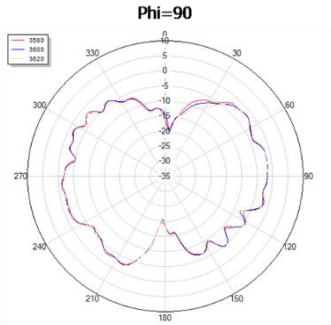
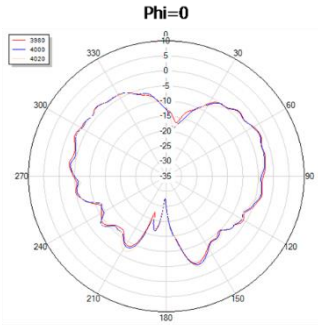
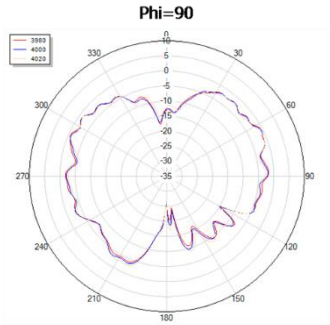
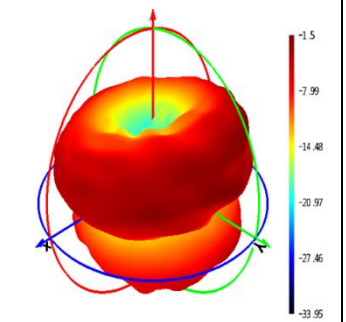
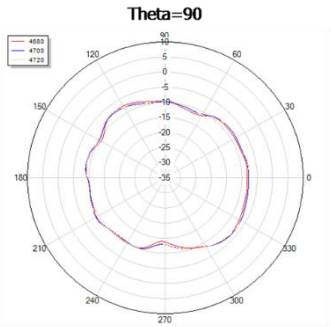
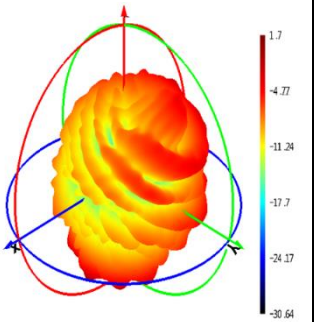
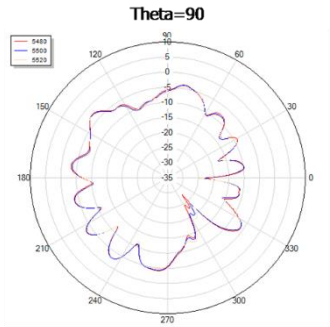
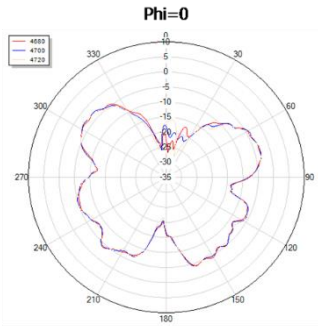
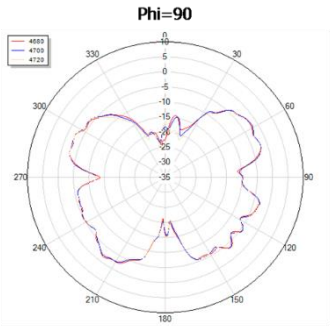
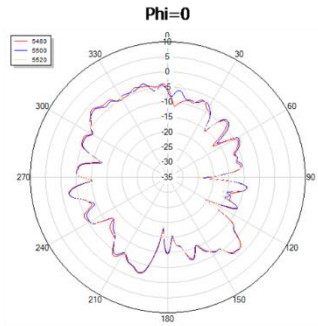
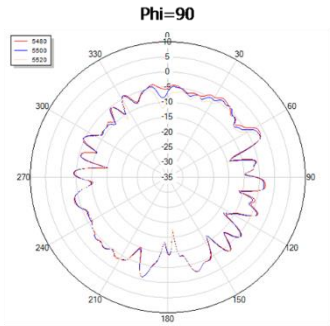


- **5G**

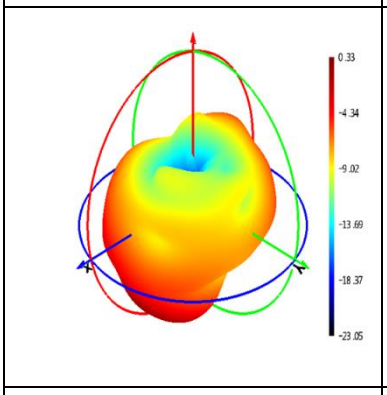
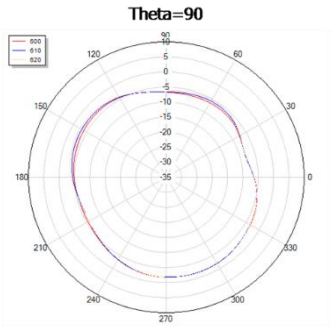
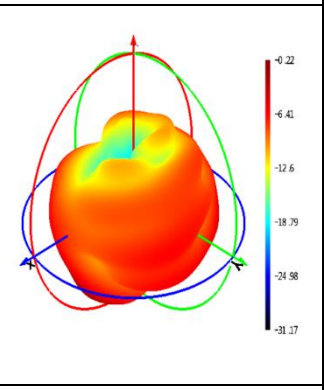
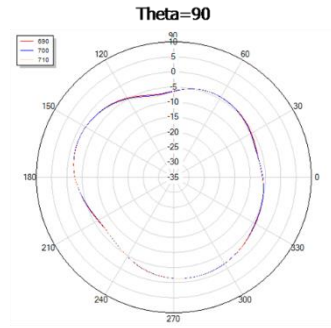
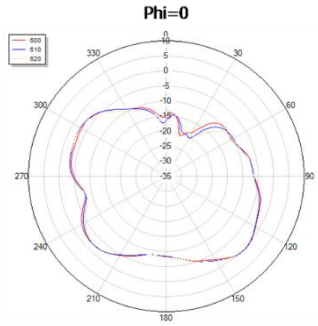
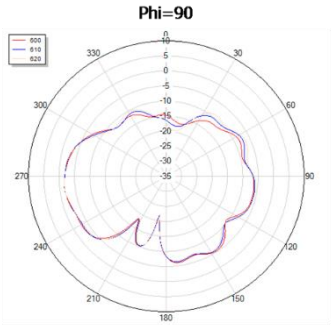
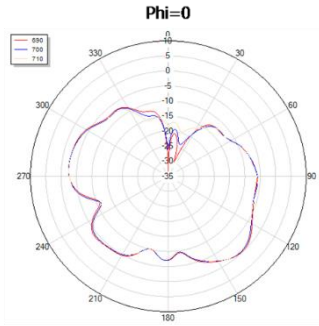
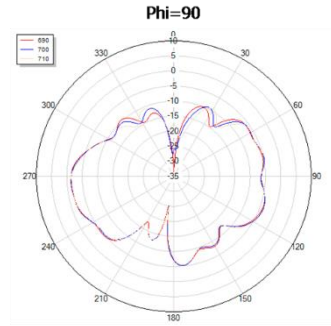
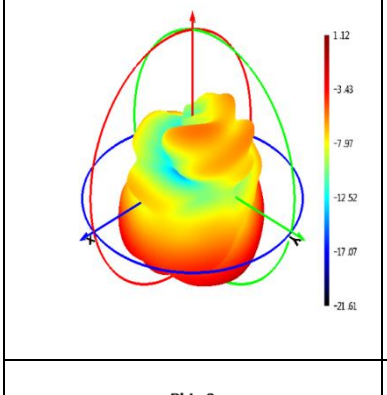
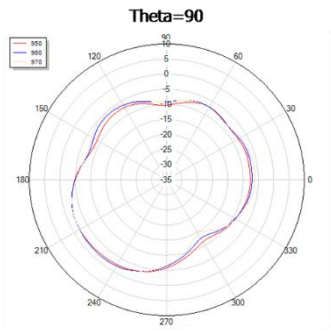
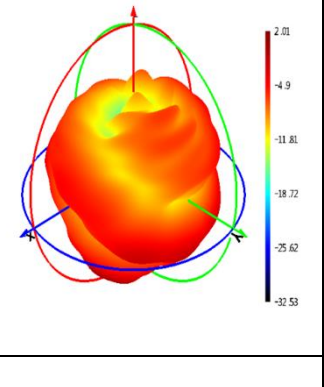
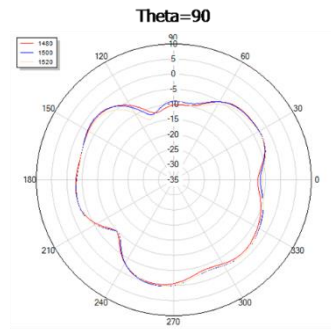
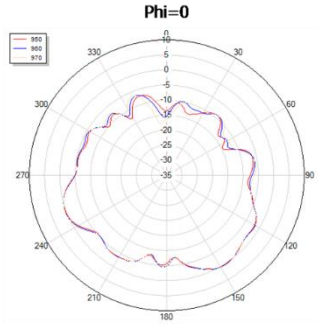
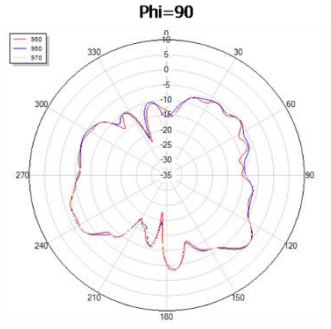
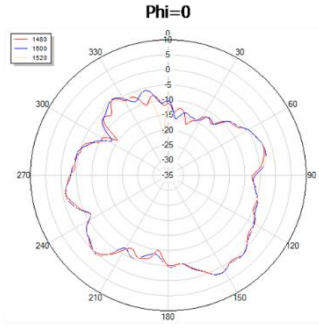
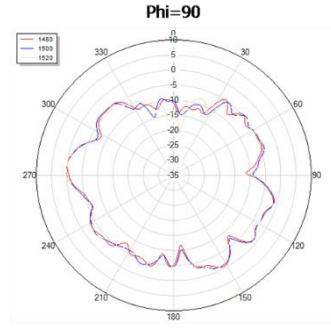
630 MHz		710 MHz	
			
			
830 MHz		**900 MHz**	
			
			

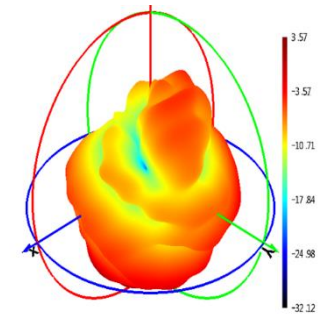
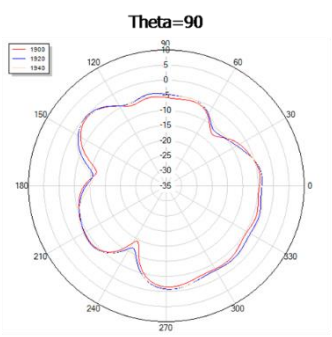
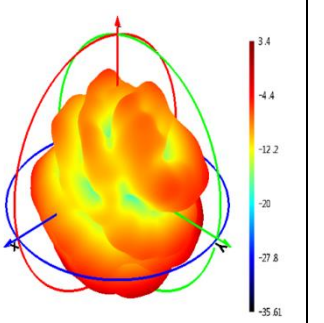
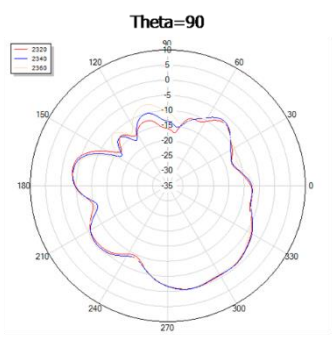
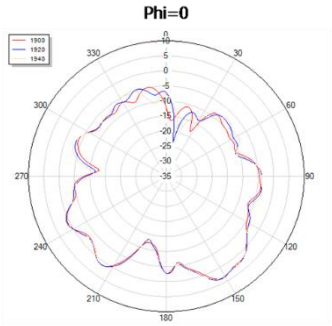
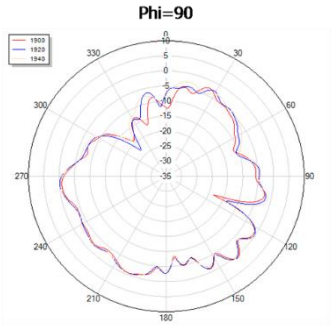
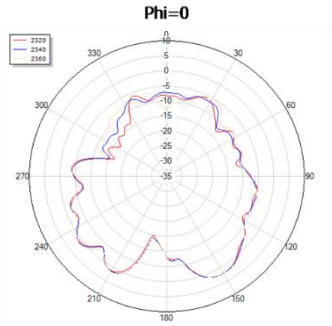
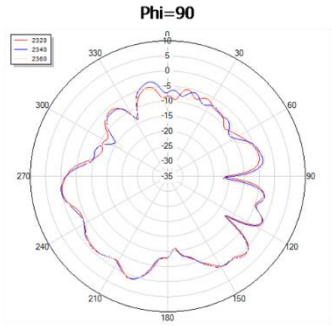
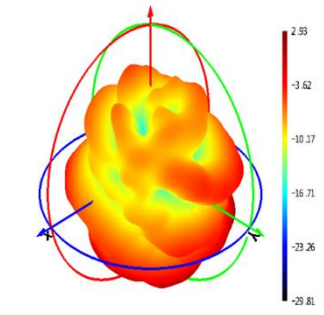
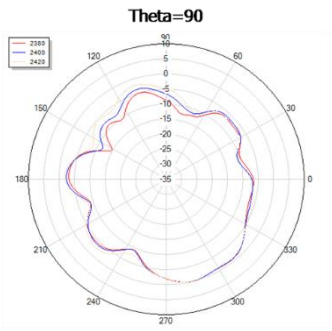
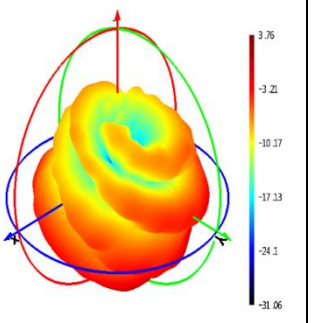
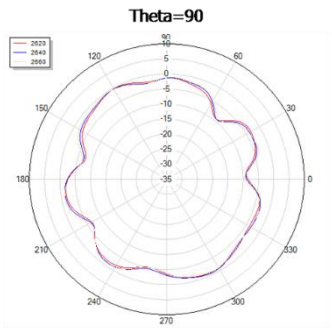
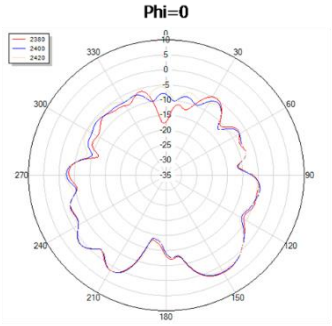
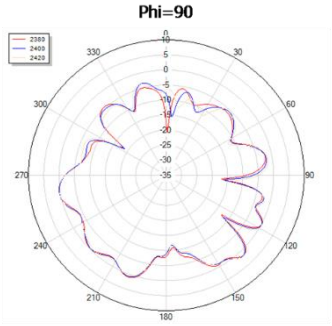
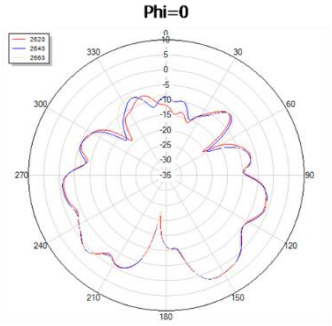
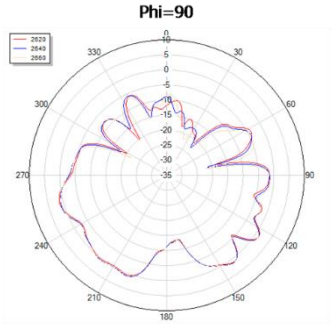
1440 MHz		1740 MHz	
			
			
1880 MHz		**1950 MHz**	
			
			

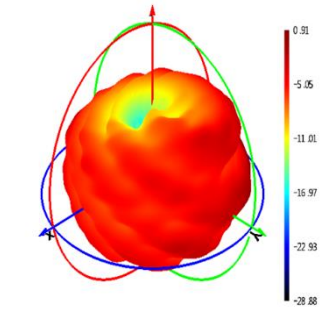
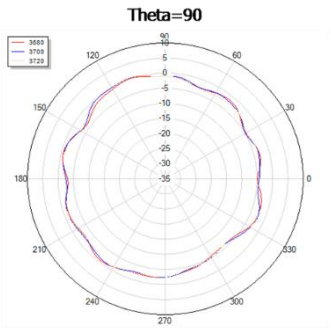
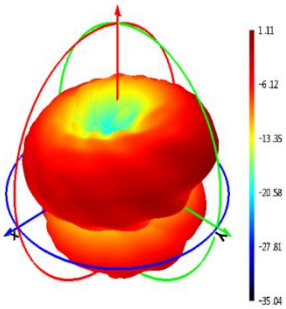
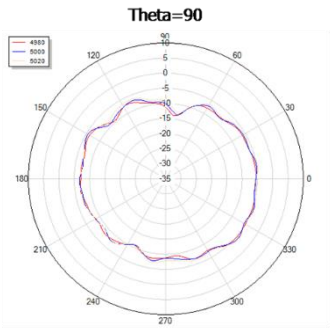
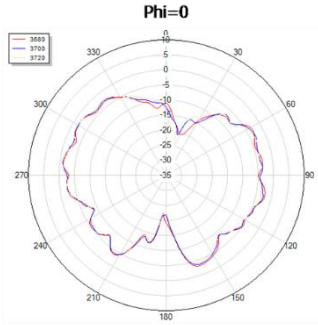
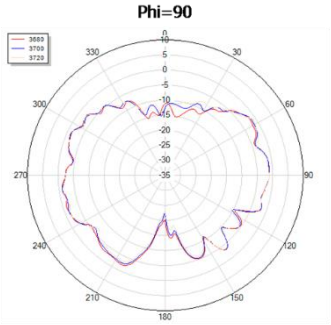
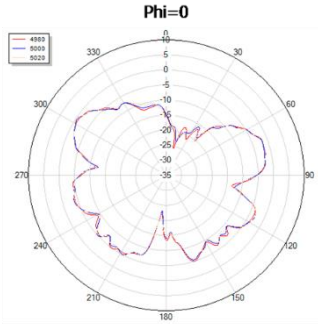
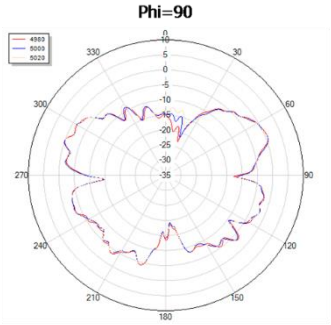
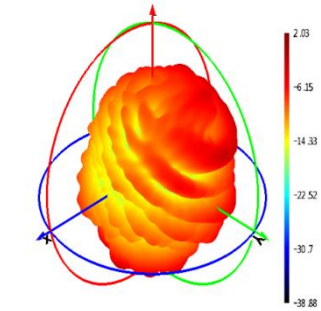
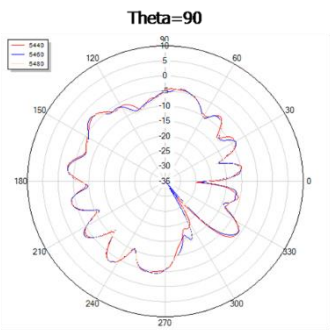
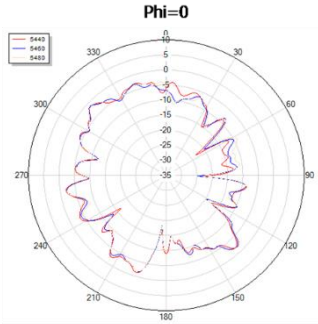
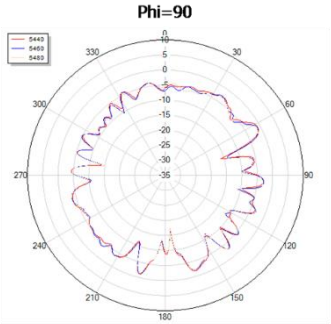
2140 MHz		2350 MHz	
			
			
2450 MHz		**2600 MHz**	
			
			

3600 MHz		4000 MHz	
			
			
4700 MHz		**5500 MHz**	
			
			

- **Max Peak Gain**

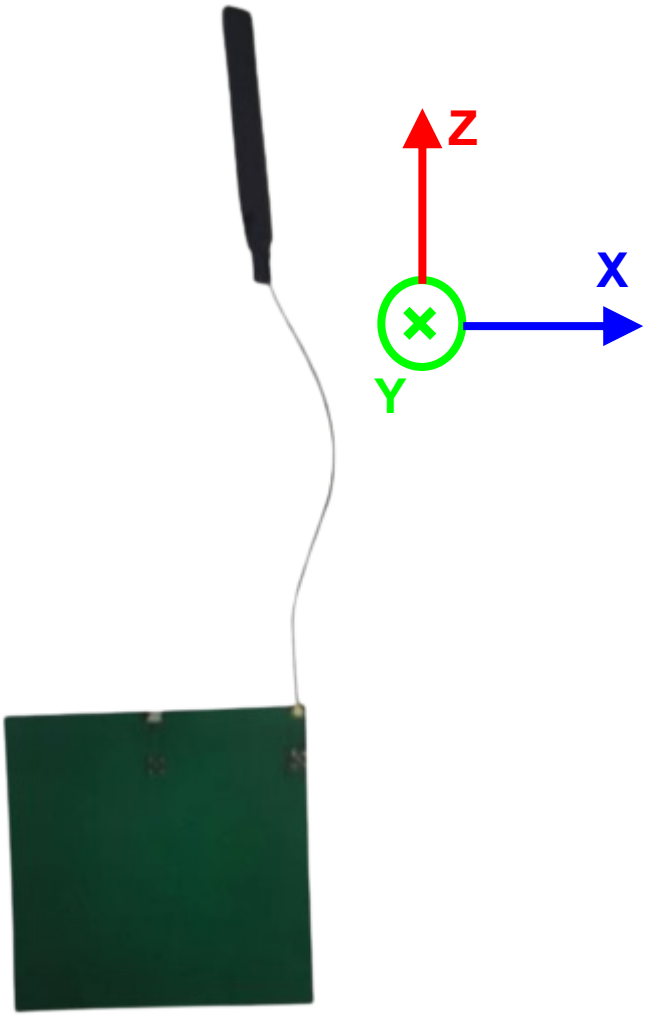
600 MHz		700 MHz	
			
			
960 MHz		**1500 MHz**	
			
			

1920 MHz		2340 MHz	
			
			
2400 MHz		2640 MHz	
			
			

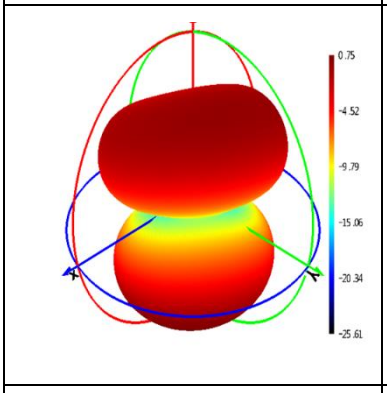
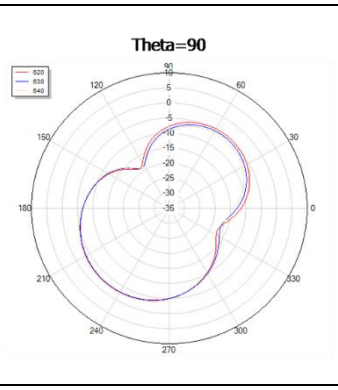
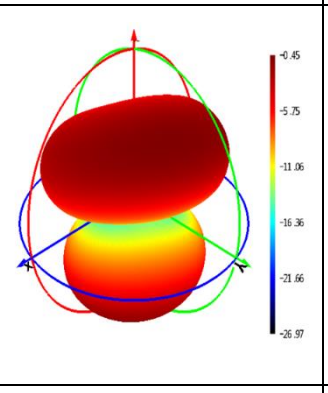
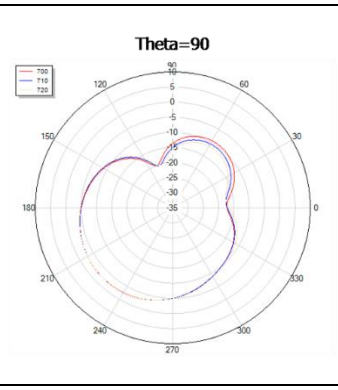
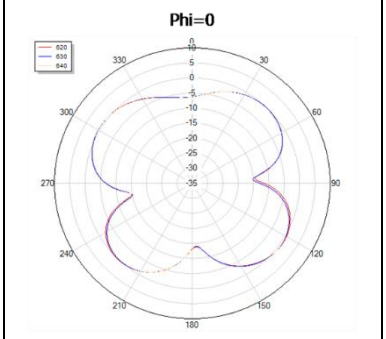
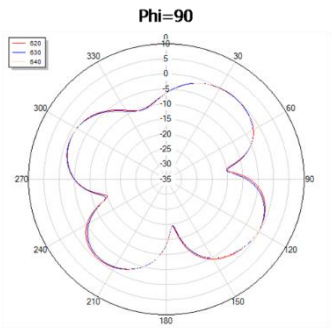
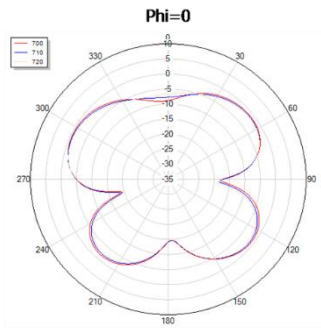
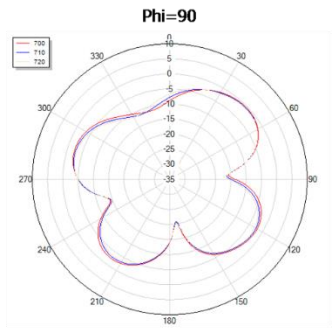
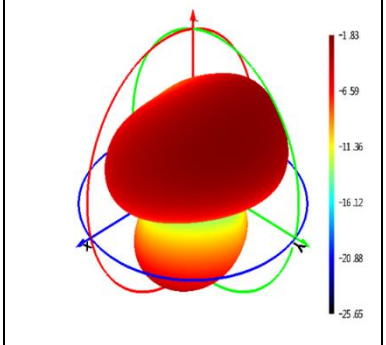
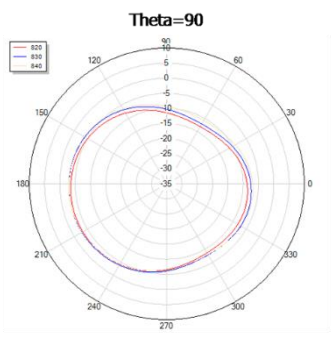
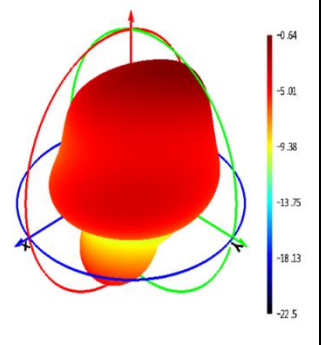
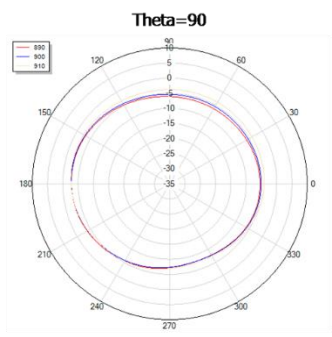
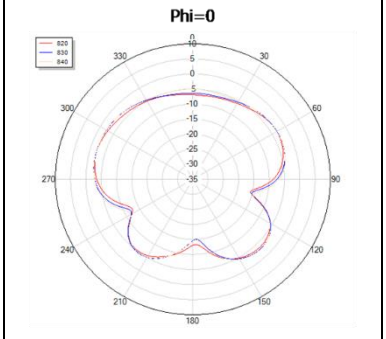
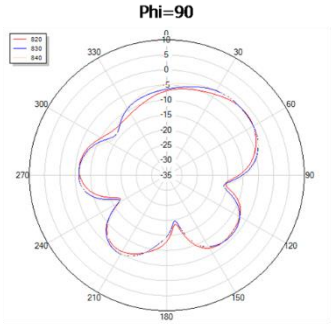
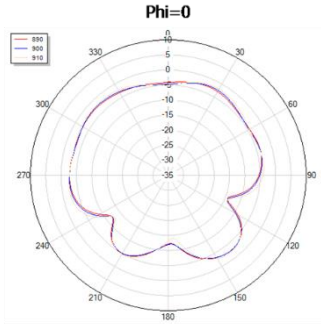
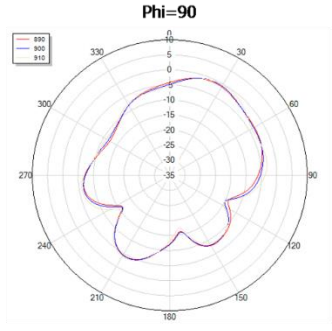
3700 MHz		5000 MHz	
			
			
5460 MHz			
			
			

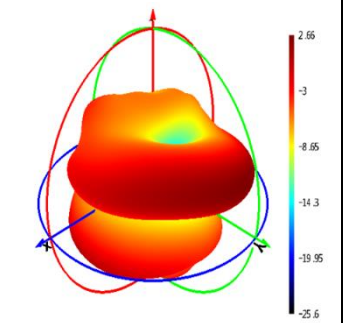
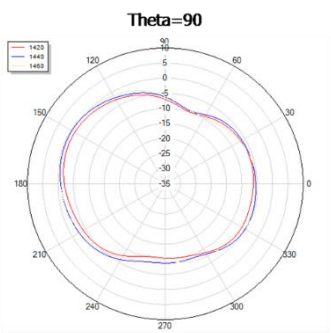
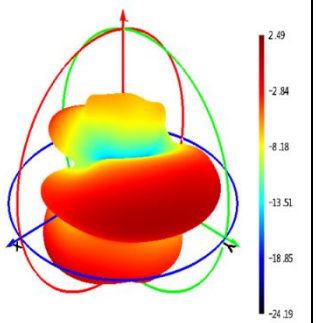
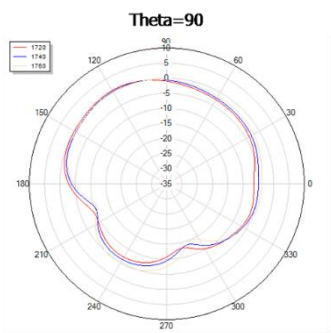
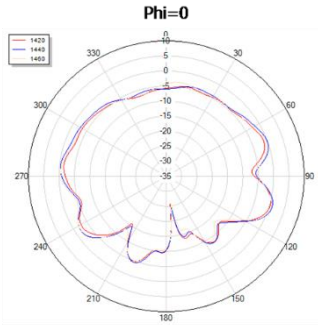
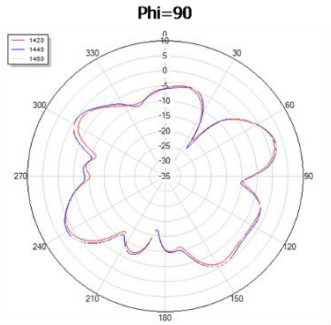
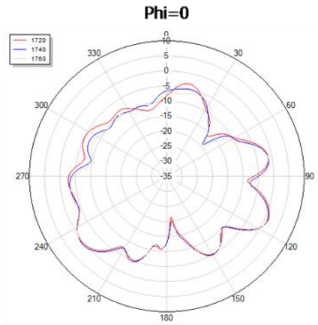
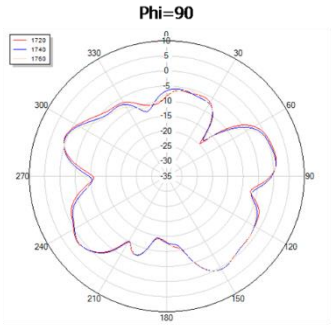
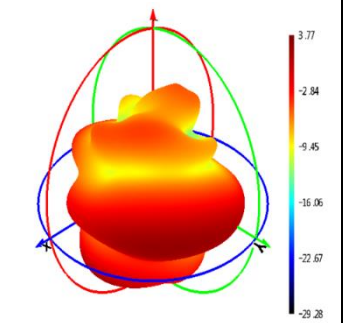
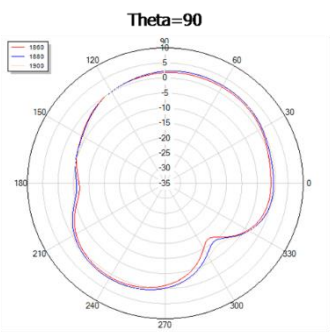
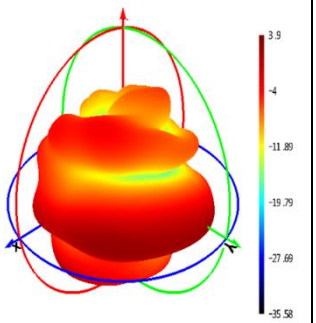
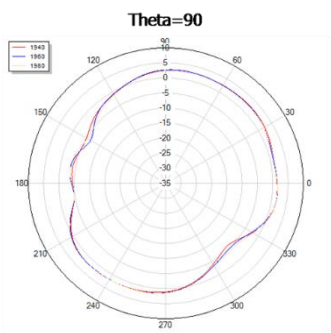
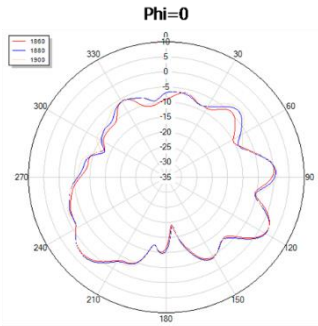
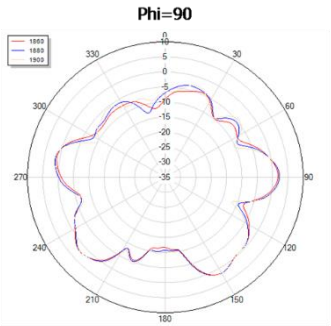
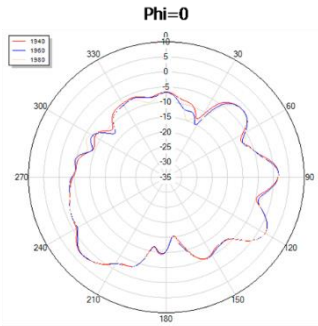
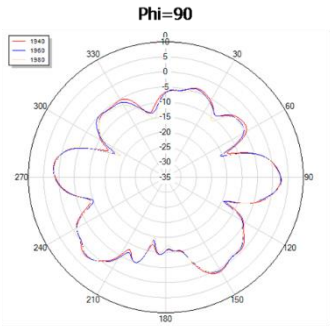
3.2.4.2. Test Condition: On 130 mm × 130 mm EVB

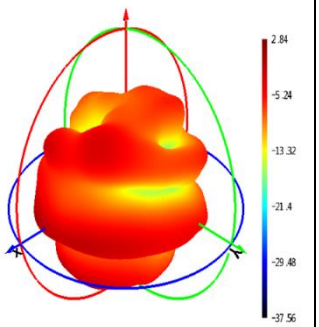
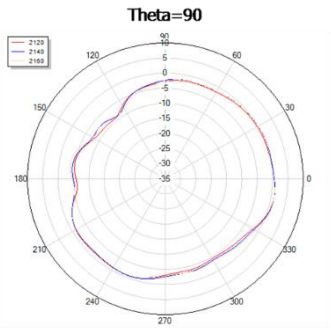
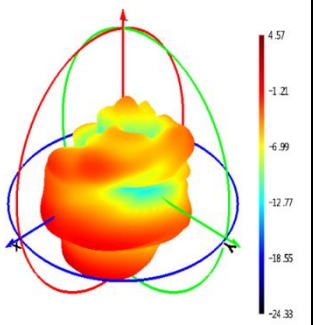
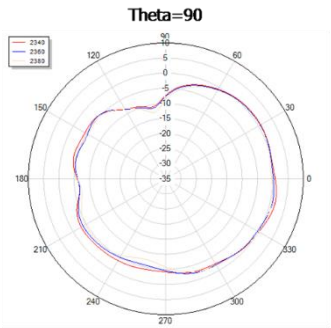
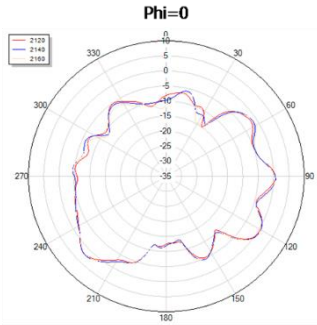
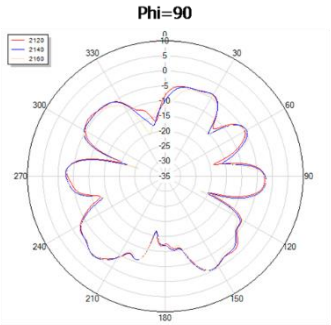
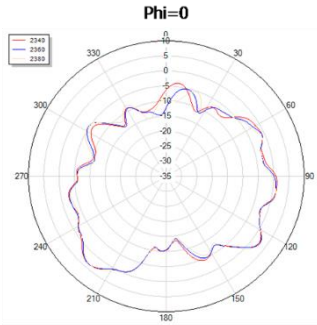
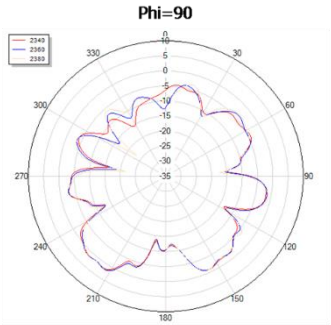
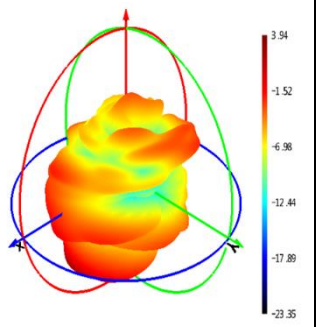
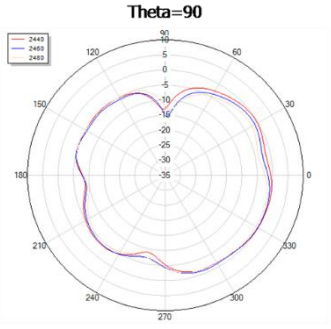
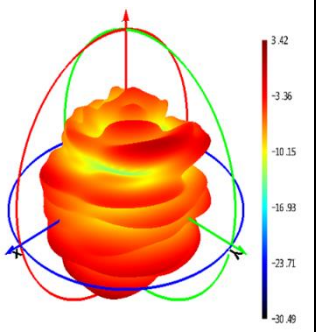
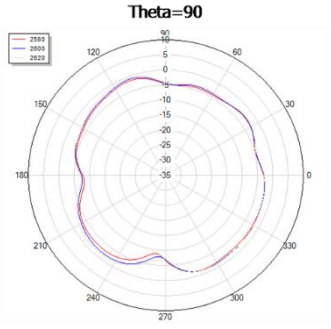
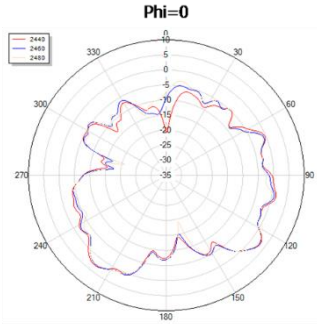
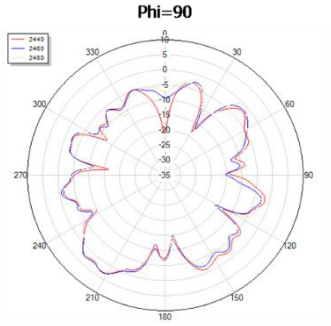
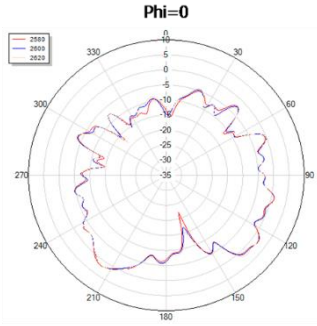
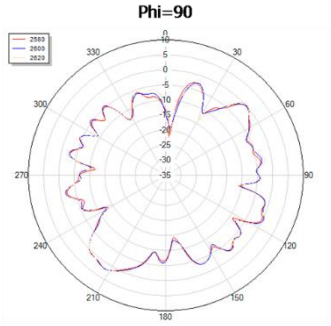
- Test Chamber: HF-S-1

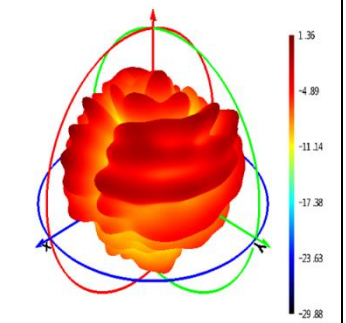
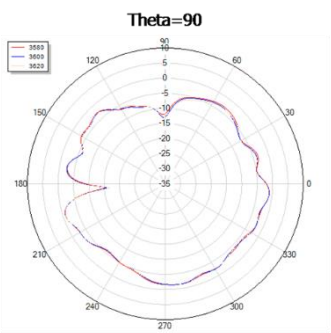
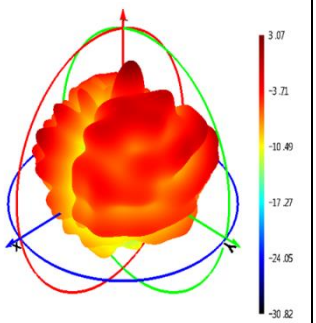
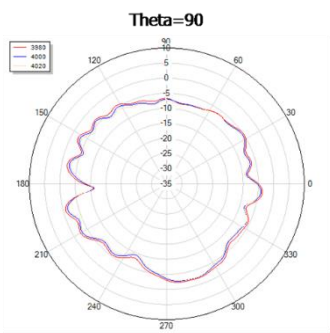
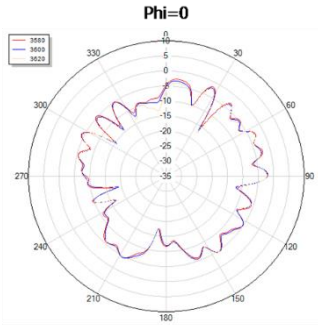
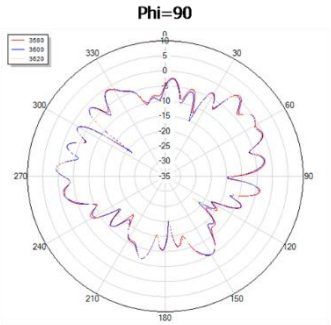
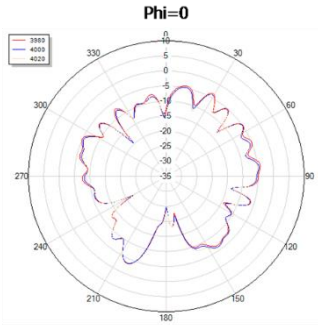
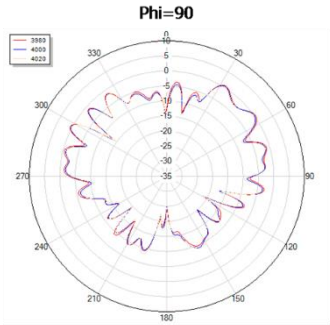
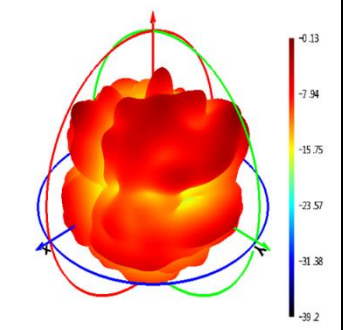
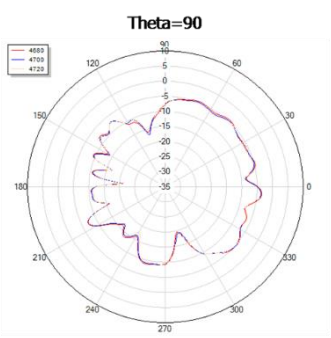
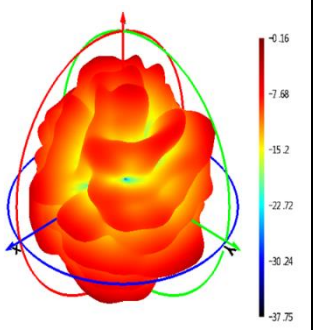
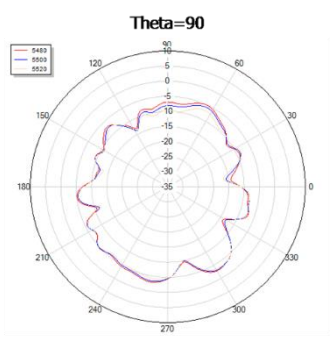
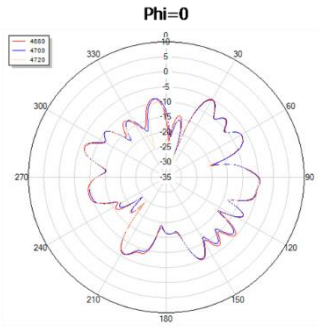
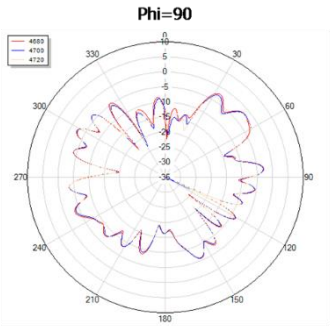
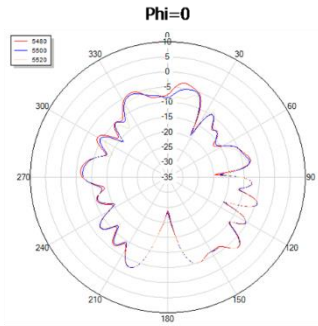
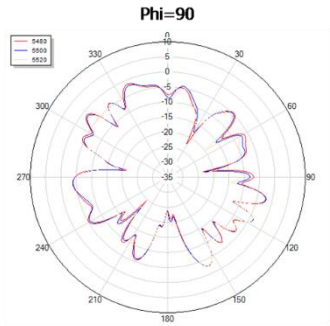


- **5G**

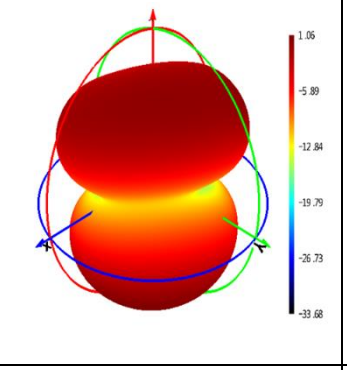
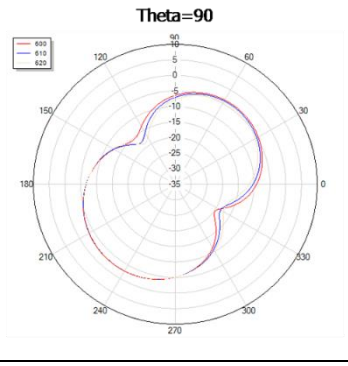
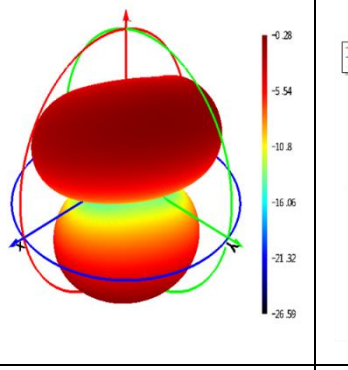
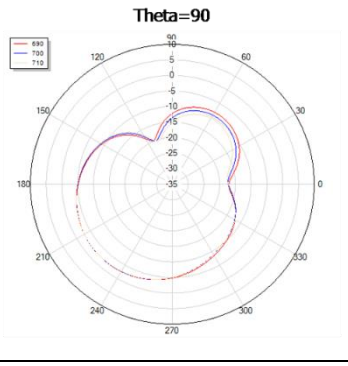
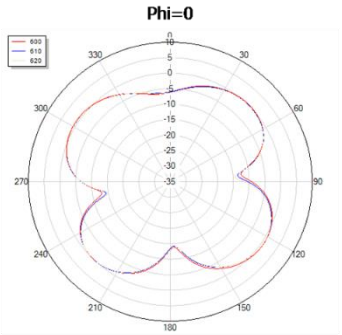
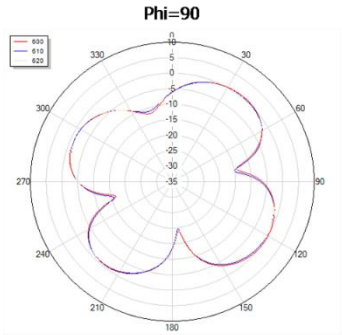
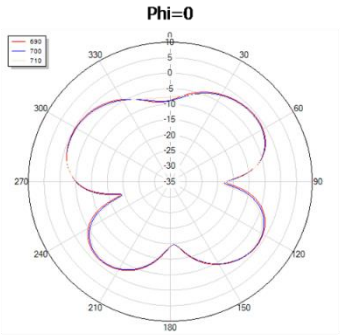
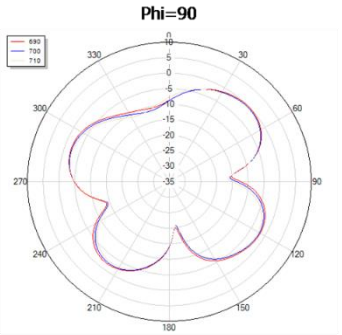
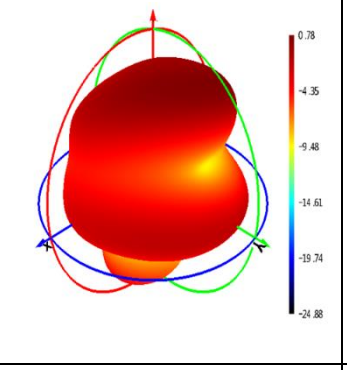
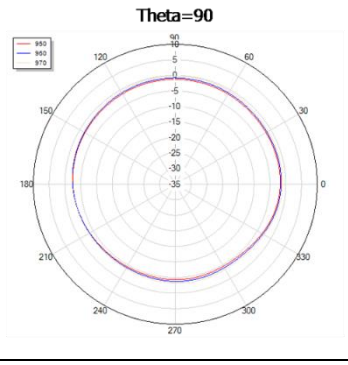
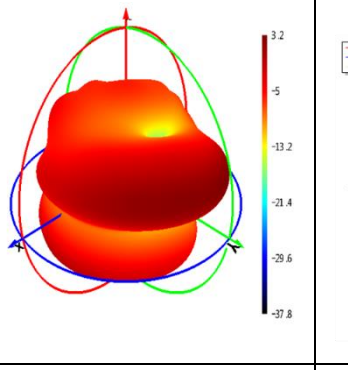
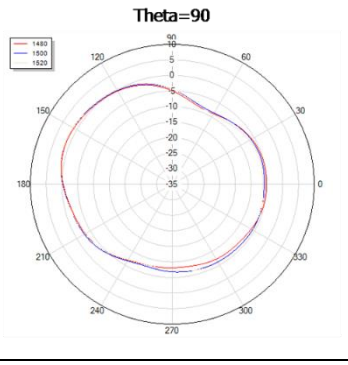
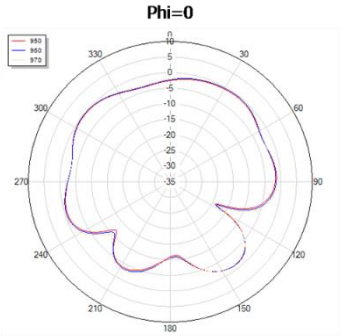
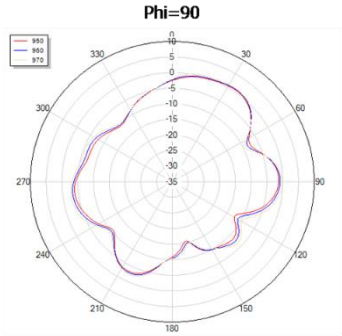
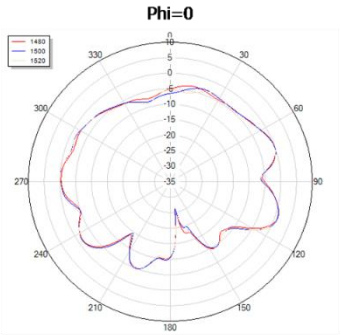
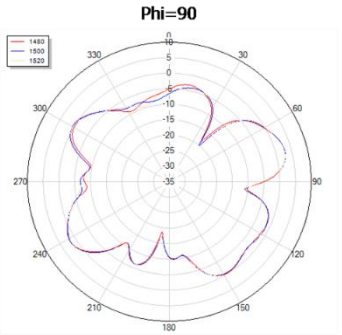
630 MHz		710 MHz	
			
			
830 MHz		**900 MHz**	
			
			

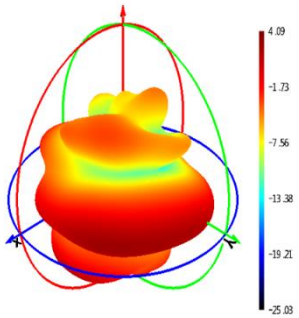
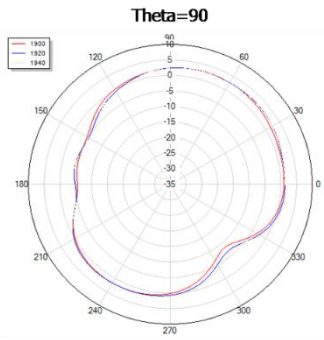
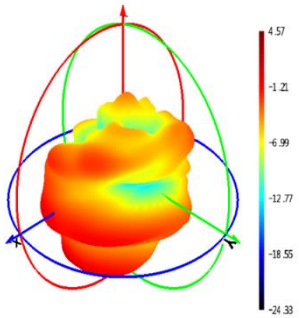
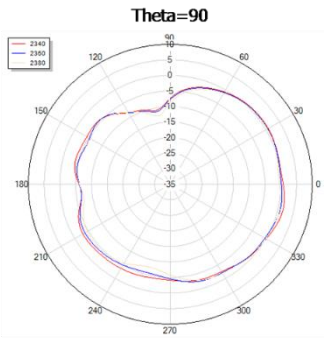
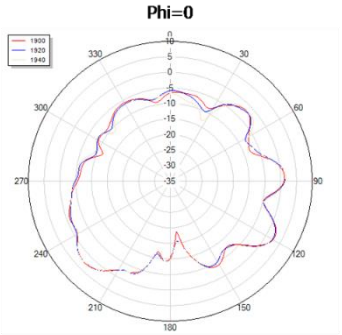
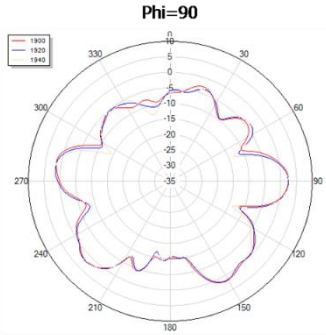
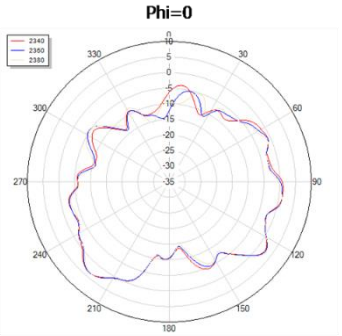
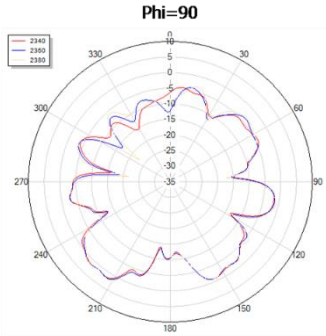
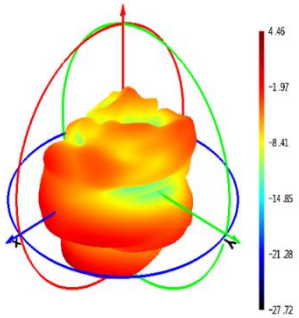
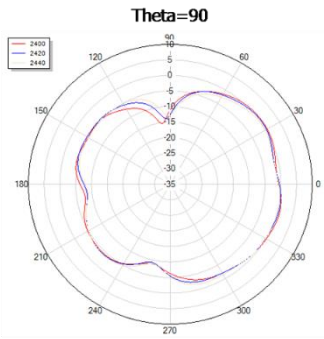
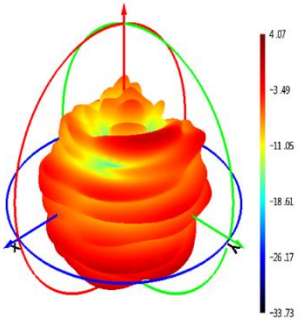
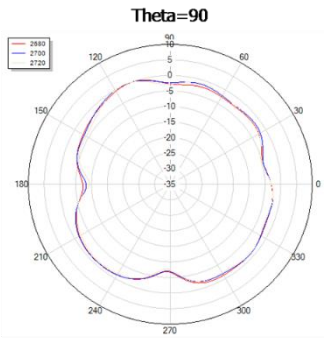
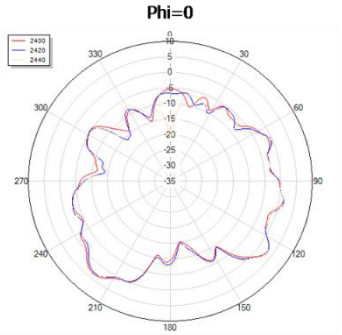
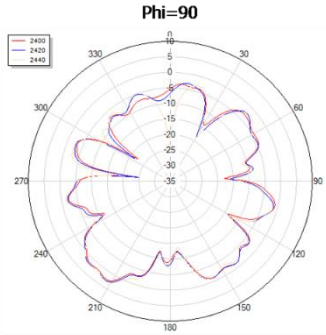
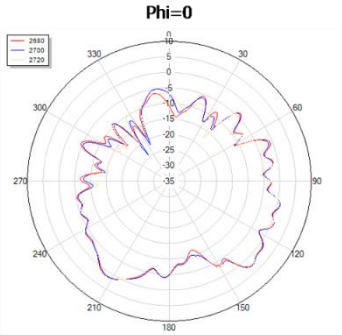
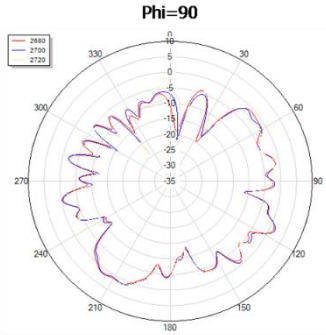
1440 MHz		1740 MHz	
			
			
1880 MHz		**1960 MHz**	
			
			

2140 MHz		2360 MHz	
			
			
2460 MHz		**2600 MHz**	
			
			

3600 MHz		4000 MHz	
			
			
4700 MHz		**5500 MHz**	
			
			

- **Max Peak Gain**

600 MHz		700 MHz	
			
			
960 MHz		**1500 MHz**	
			
			

1920 MHz		2360 MHz	
			
			
2400 MHz		**2700 MHz**	
			
			

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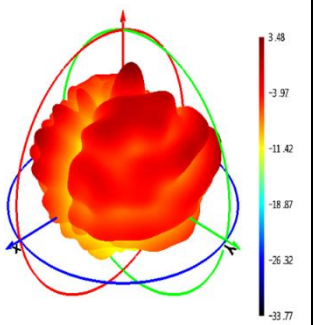
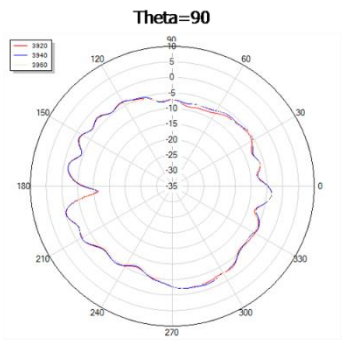
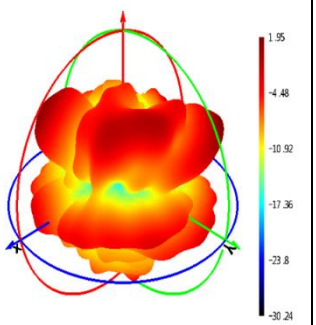
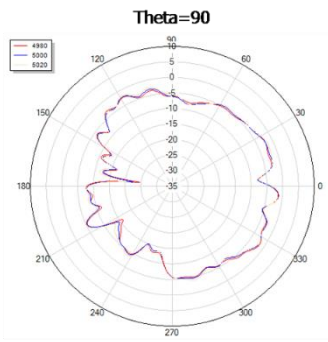
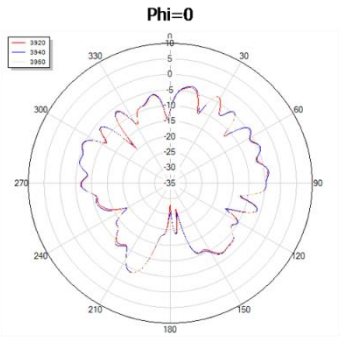
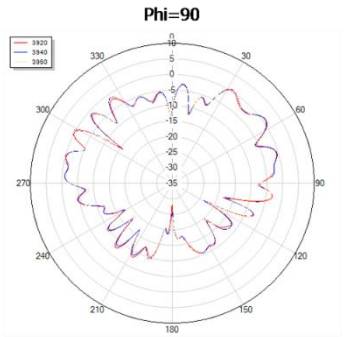
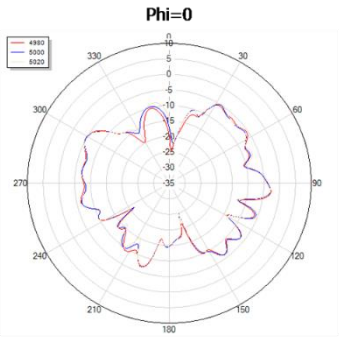
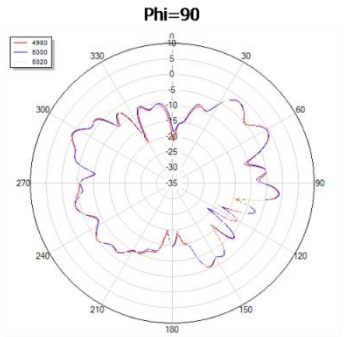
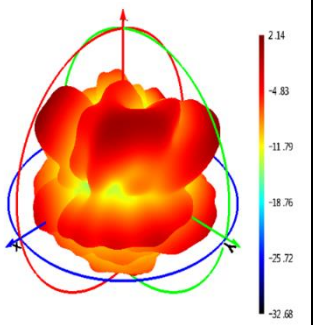
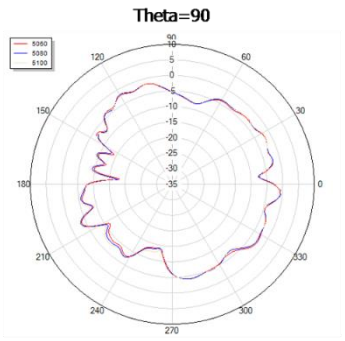
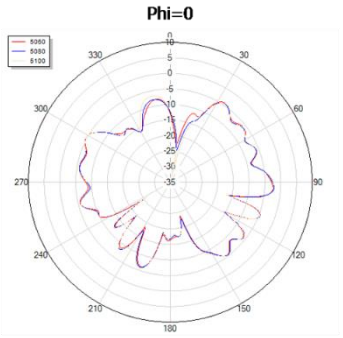
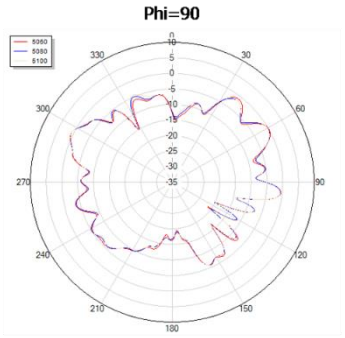
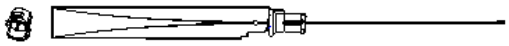
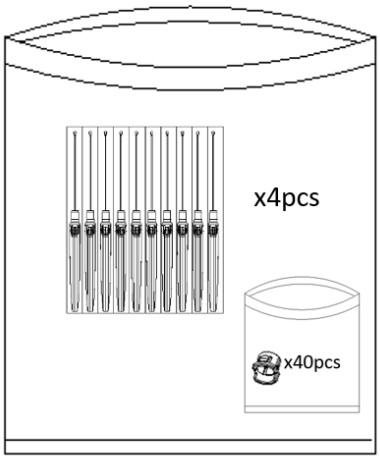
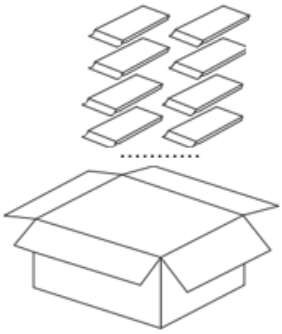
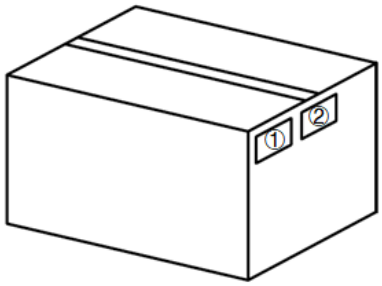
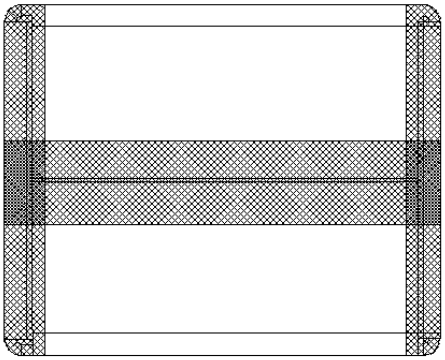
			
			
5080 MHz			
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Product drawing
2		40 antenna products in a PE bag. (40 Antennas / PE Bag)
3		(5 PE Bags / Carton Box) (200 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 = 325 × 325 × 200 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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Email: info@quectel.com

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

Version	Date	Author	Note
-	2025-07-21	Nero ZHANG/ Lance SUN/ Riva REN/ Rainey LIAO	Creation of the document
1.0	2025-07-21	Nero ZHANG/ Lance SUN/ Riva REN/ Rainey LIAO	First official release

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