Antenna Datasheet

Product OC: YCN001AA
Version: 4.4
Date: 2026-02-02
Status: Released

Product Name: 4G Terminal Mount Rubber Monopole External Antenna
Key Features:
Frequency Band: 698–960 MHz, 1560–1610 MHz, 1710–2700 MHz
Dimensions: Φ 13 mm × 144 mm
Efficiency: Up to 63.52 % (On 130 mm × 30 mm EVB)
RoHS Compliant
IP66

Overview

YCN001AA is a 4G external antenna measuring Φ 13 mm × 144 mm. This ultra-wide-band 4G antenna provides broad coverage from 698–960 MHz, 1560–1610 MHz, 1710–2700 MHz whilst offering backward-compatibility to support 3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is terminated with SMA Male connector. 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 IP66 rated, TPEE enclosure.

The antenna is designed as a monopole type to work with various GND plane sizes and features a straight SMA Male connector for ease of integration. Its compact, fixed structure ensures stable installation while maintaining a low profile to avoid interference with nearby components. This omnidirectional antenna is ideally suited for Gateways & Routers, Smart Metering, Vending Machines, Industrial IoT, Smart Home, and Connected Enterprise applications, delivering reliable performance with optimized 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: On 130 mm × 130 mm EVB & Free Space

1.1. Electrical

Electrical	
Frequency Range	698–960 MHz, 1560–1610 MHz, 1710–2700 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – LTE												
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	EVB	-	2.7	6.0	-	6.3	2.2	3.1	3.5	-	-	-
	FS	-	2.2	3.1	-	3.2	2.1	2.3	2.6	-	-	-
Max. Return Loss (dB)	EVB	-	-6.7	-2.9	-	-2.8	-8.4	-5.8	-5.2	-	-	-
	FS	-	-8.7	-5.9	-	-5.7	-8.9	-8.2	-7.0	-	-	-
AVG Eff. (%)	EVB	-	44.3	25.0	-	28.8	54.3	60.3	36.9	-	-	-
	FS	-	37.6	33.9	-	37.1	36.2	40.4	45.2	-	-	-
AVG AVG Gain (dB)	EVB	-	-3.6	-6.3	-	-5.8	-2.7	-2.2	-4.4	-	-	-
	FS	-	-4.3	-4.8	-	-4.3	-4.4	-3.9	-3.5	-	-	-
Max. Peak Gain(dBi)	EVB	-	-1.3	-1.3	-	2.2	1.5	1.7	0.8	-	-	-
	FS	-	-1.9	-1.6	-	0.7	0.9	1.2	0.9	-	-	-

VSWR	EVB	≤ 6.3
	FS	≤ 3.2
Return Loss	EVB	≤ -2.8 dB
	FS	≤ -5.7 dB
Peak Gain	EVB	≤ 2.2 dBi
	FS	≤ 1.2 dBi

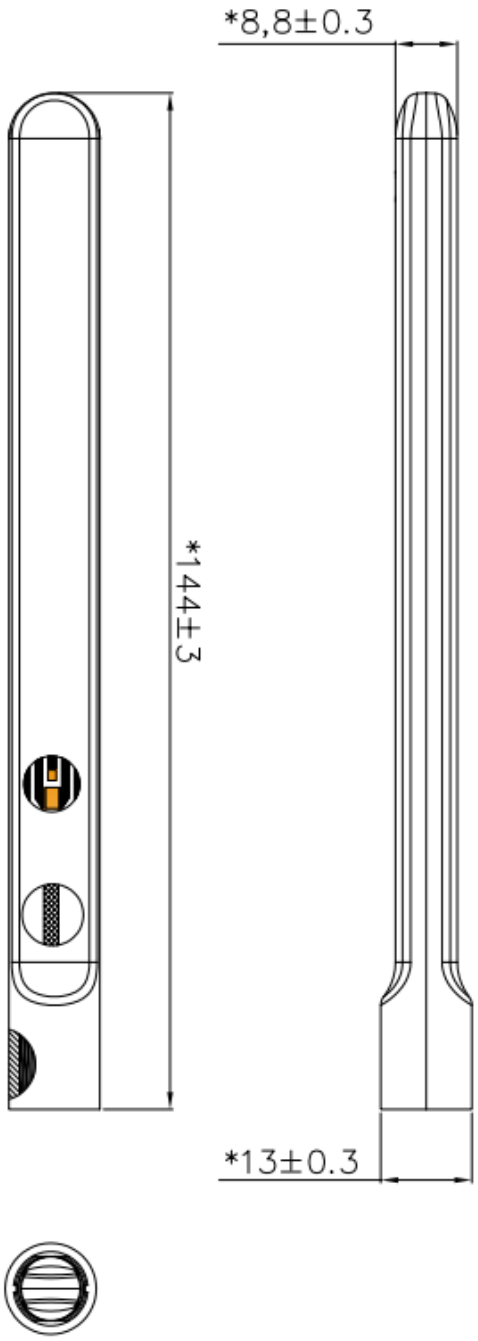
Electrical – GNSS			
Band / SPEC	Band	L	
	Freq. (MHz)	1560-1610	
Max. VSWR	EVB	5.1	
	FS	2.6	
Max. Return Loss (dB)	EVB	-3.4	
	FS	-7.1	
AVG Eff. (%)	EVB	48.0	
	FS	41.6	
AVG AVG Gain (dB)	EVB	-3.2	
	FS	-3.8	
Max. Peak Gain (dBi)	EVB	0.0	
	FS	-0.3	
VSWR	EVB		≤ 5.1
	FS		≤ 2.6
Return Loss	EVB		≤ -3.4 dB
	FS		≤ -7.1 dB
Peak Gain	EVB		≤ 0.0 dBi
	FS		≤ -0.3 dBi

- **FS: Free Space**
- **EVB: On 130 mm × 130 mm EV**

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 13 mm × 144 mm
Casing Material & Color	TPEE & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 15.7 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP66
RoHS Compliant	Yes

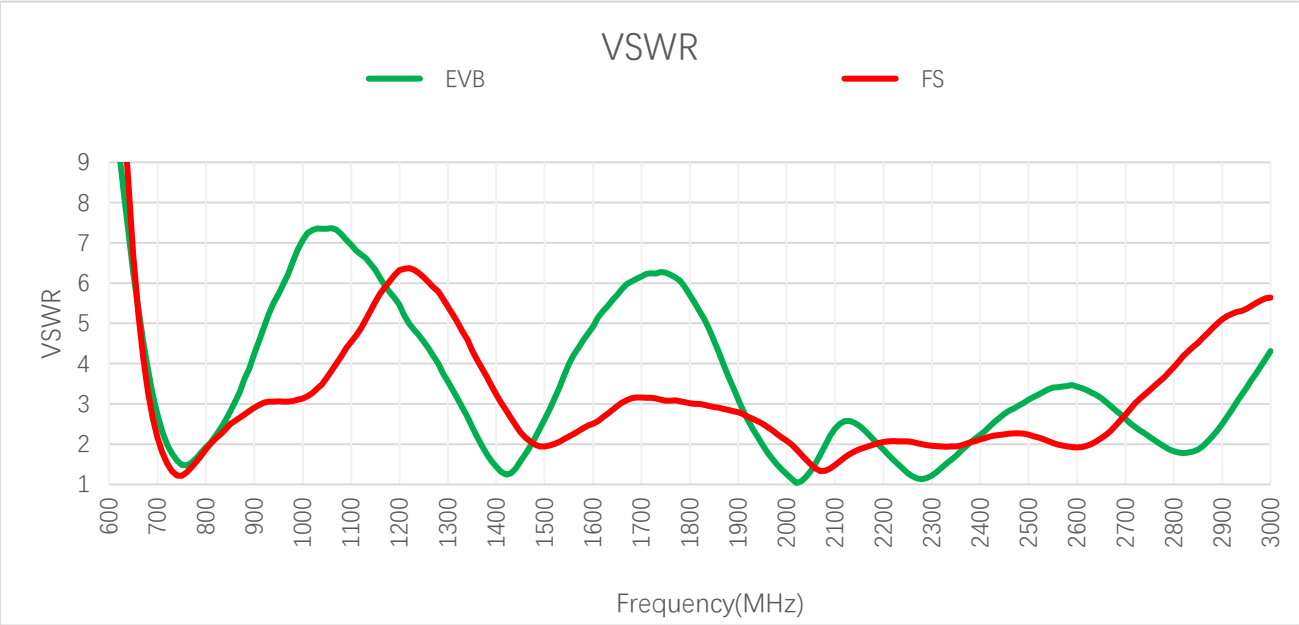
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR



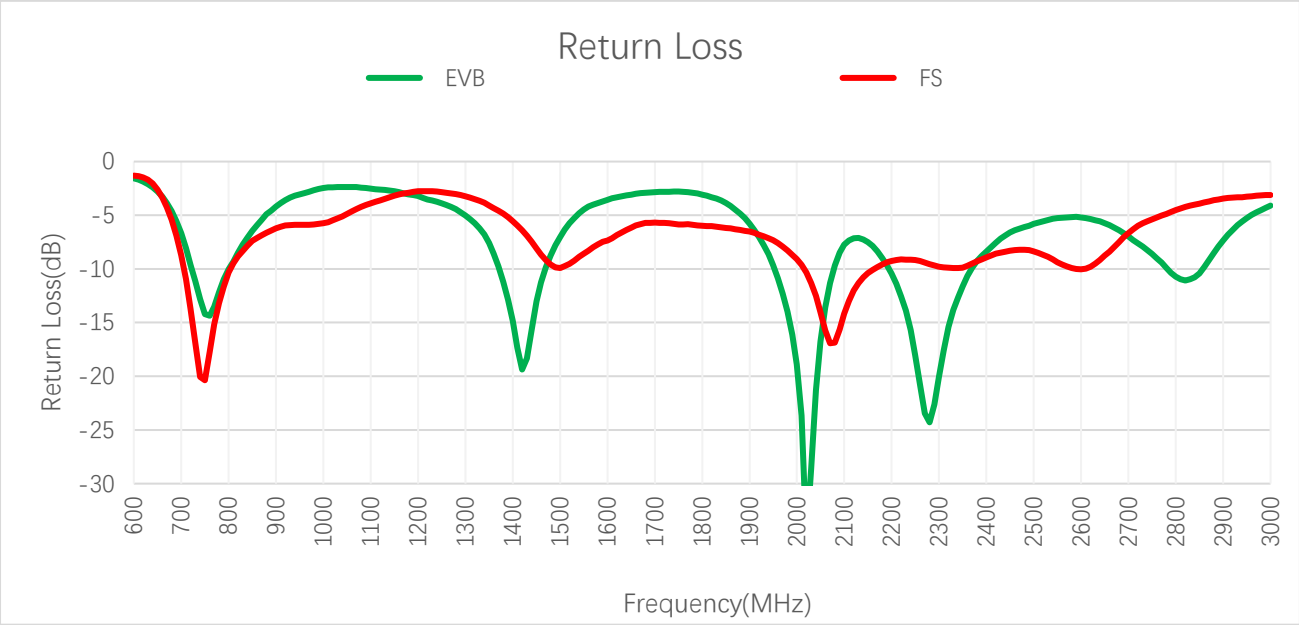
VSWR – LTE Bands

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
VSWR	EVB	-	-	2.3	2.4	4.2	6.0	-	6.2	6.3	3.7
	FS	-	-	1.8	2.2	2.9	3.1	-	3.2	3.1	2.8
Frequency (MHz)		**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
VSWR	EVB	2.0	2.5	1.7	2.8	3.4	2.7	-	-	-	-
	FS	2.5	1.8	1.9	2.2	1.9	2.6	-	-	-	-

VSWR – GNSS Bands

Frequency (MHz)		1561	1575	1602
VSWR	EVB	3.2	3.7	4.6
	FS	2.2	2.4	2.7

3.1.2. Return Loss



Return Loss (dB) – LTE Bands

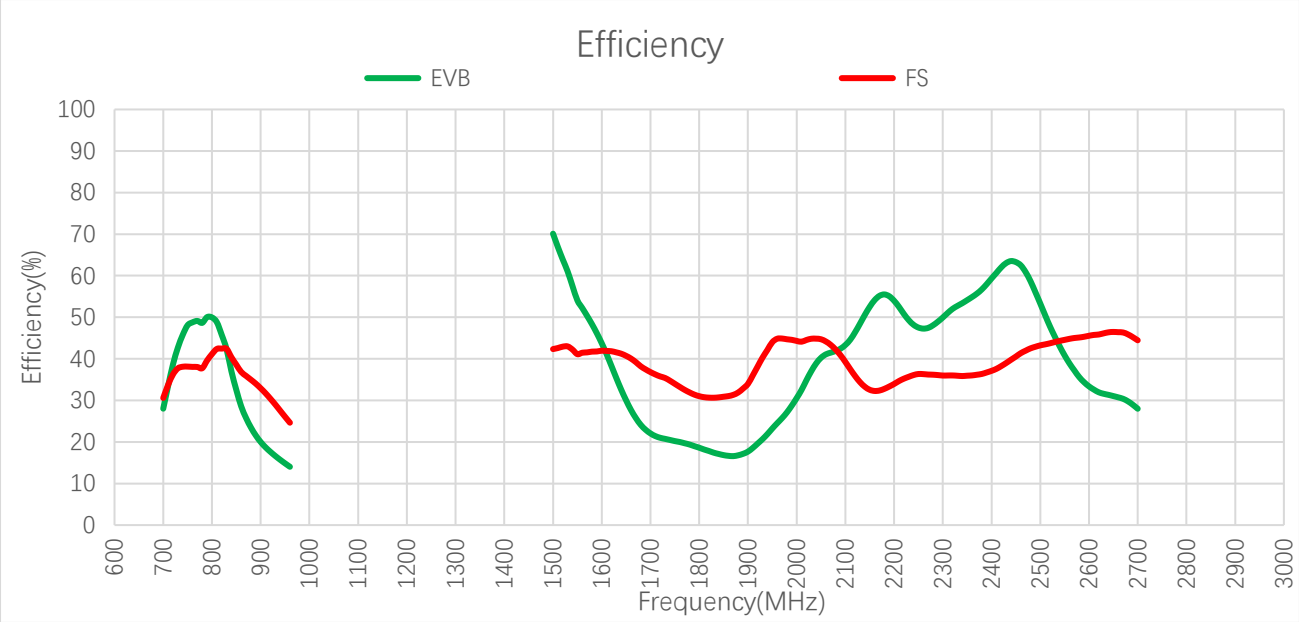
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	EVB	-	-	-8.1	-7.7	-4.2	-2.9	-	-2.8	-2.8	-4.9
	FS	-	-	-11.0	-8.3	-6.2	-5.9	-	-5.7	-5.8	-6.4
Frequency (MHz)		**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	EVB	-9.6	-7.3	-11.7	-6.6	-5.2	-6.7	-	-	-	-
	FS	-7.3	-10.8	-9.9	-8.3	-10.0	-7.0	-	-	-	-

Return Loss (dB) – GNSS Bands

Frequency (MHz)		1561	1575	1602
Return Loss (dB)	EVB	-5.5	-4.8	-3.9
	FS	-8.3	-7.6	-6.5

3.2. Radiation Performance Test

3.2.1. Efficiency



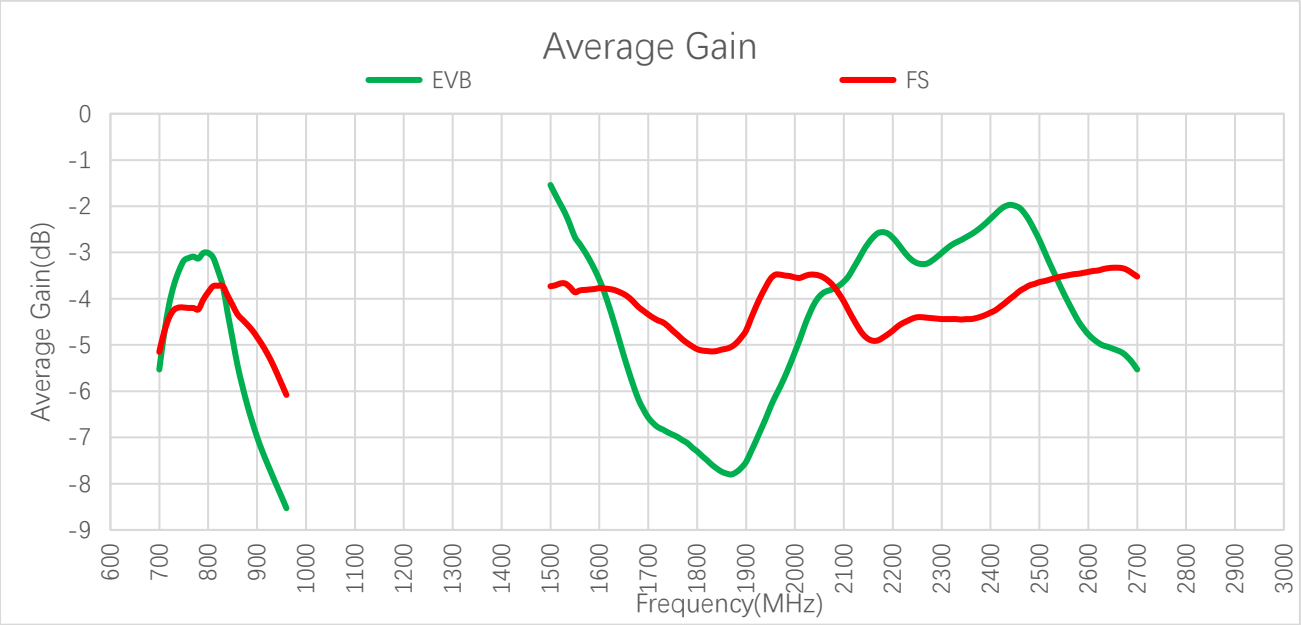
Efficiency (%) – LTE Bands

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	EVB	-	-	33.5	42.3	20.0	14.0	-	21.4	20.5	16.8
	FS	-	-	33.7	42.4	32.9	24.6	-	36.2	34.7	31.9
Frequency (MHz)		**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	EVB	23.2	50.6	54.1	63.3	33.4	29.0	-	-	-	-
	FS	44.0	33.3	35.9	40.6	45.6	45.2	-	-	-	-

Efficiency (%) – GNSS Bands

Frequency (MHz)		1561	1575	1602
Efficiency (%)	EVB	51.9	46.9	38.9
	FS	41.5	41.6	42.3

3.2.2. Average Gain



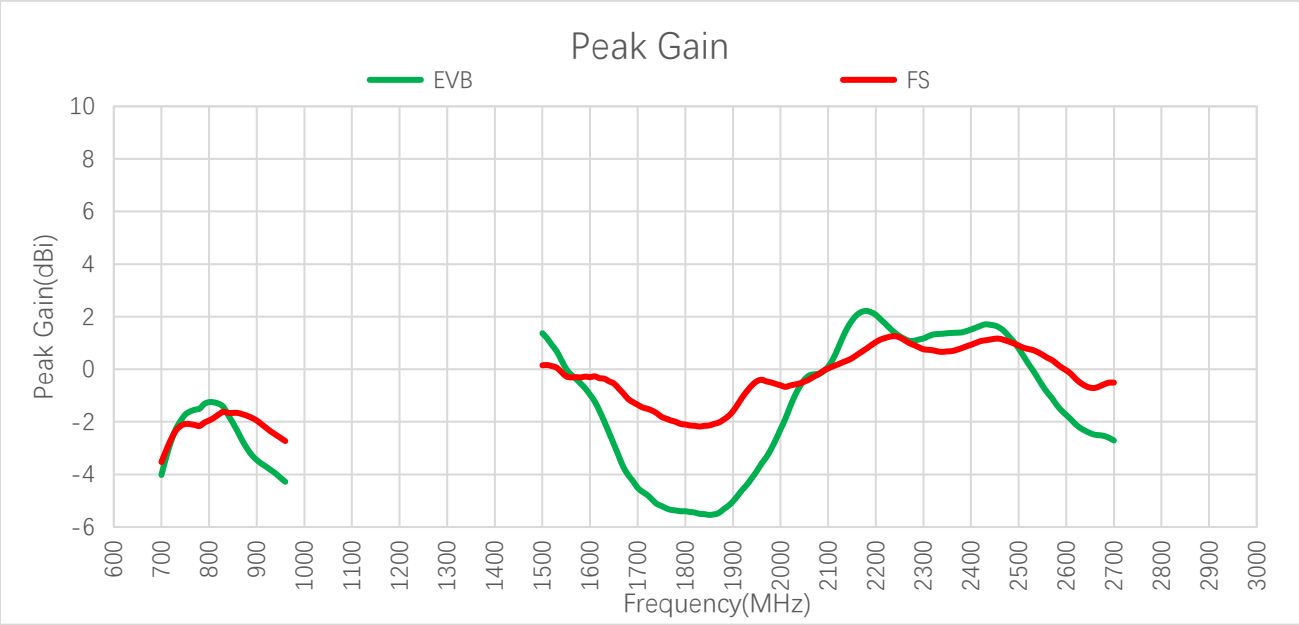
Average Gain (dB) – LTE Bands

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	EVB	-	-	-4.8	-3.7	-7.0	-8.5	-	-6.7	-6.9	-7.8
	FS	-	-	-4.7	-3.7	-4.8	-6.1	-	-4.4	-4.6	-5.0
Frequency (MHz)		**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	EVB	-6.3	-3.0	-2.7	-2.0	-4.8	-5.4	-	-	-	-
	FS	-3.6	-4.8	-4.4	-3.9	-3.4	-3.5	-	-	-	-

Average Gain (dB) – GNSS Bands

Frequency (MHz)		1561	1575	1602
Average Gain (dB)	EVB	-2.8	-3.3	-4.1
	FS	-3.8	-3.8	-3.7

3.2.3. Peak Gain



Peak Gain (dBi) – LTE Bands

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	MP	-	-	-3.3	-1.4	-3.5	-4.3	-	-4.7	-5.1	-5.3
	FS	-	-	-3.1	-1.6	-2.0	-2.7	-	-1.5	-1.7	-1.9
Frequency (MHz)		**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	MP	-3.9	1.6	1.4	1.7	-1.7	-2.6	-	-	-	-
	FS	-0.5	0.3	0.7	1.2	0.0	-0.5	-	-	-	-

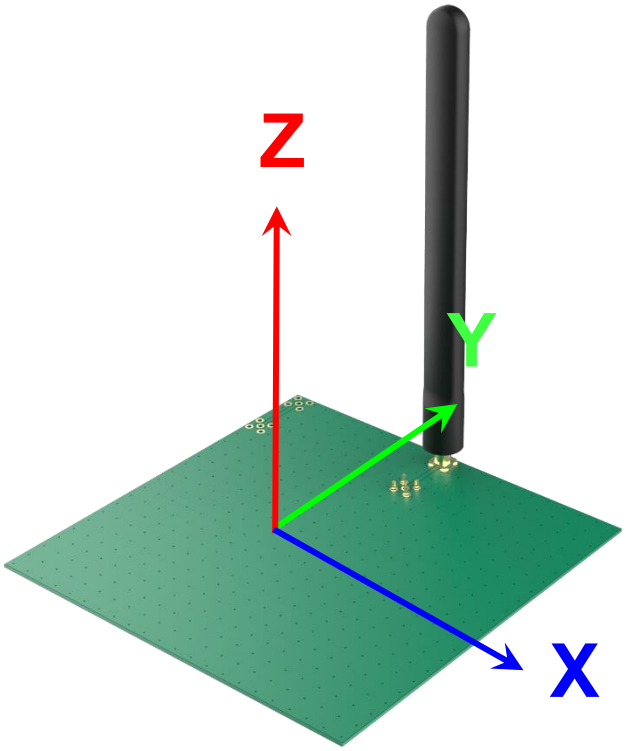
Peak Gain (dBi) – GNSS Bands

Frequency (MHz)		1561	1575	1602
Peak Gain (dBi)	MP	0	-0.6	-1.2
	FS	-0.6	-0.5	-0.5

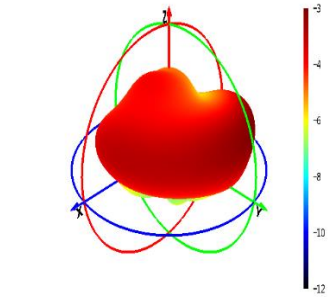
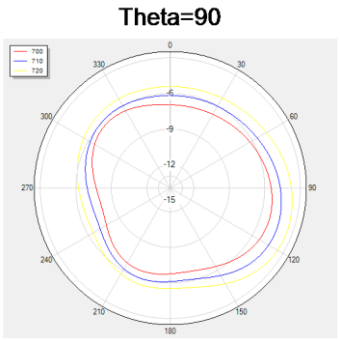
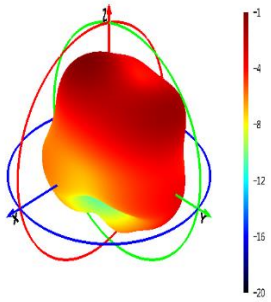
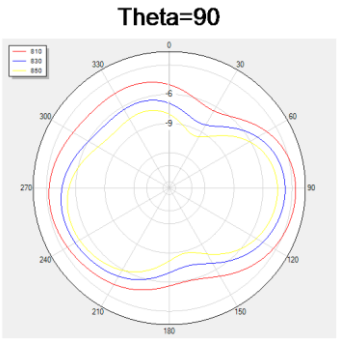
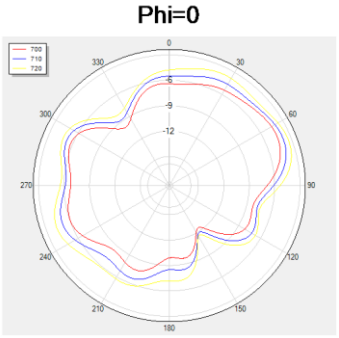
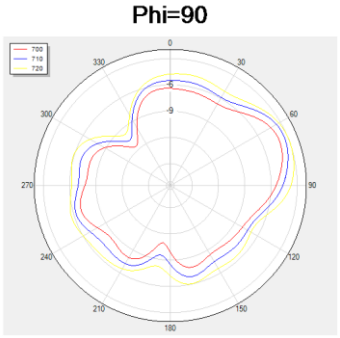
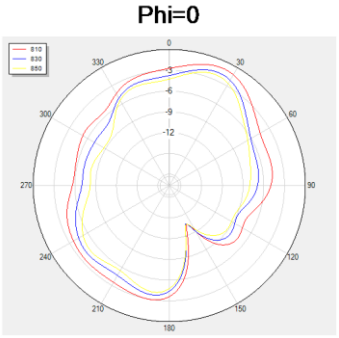
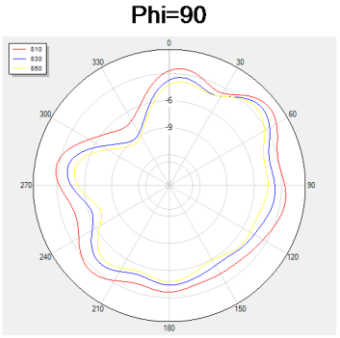
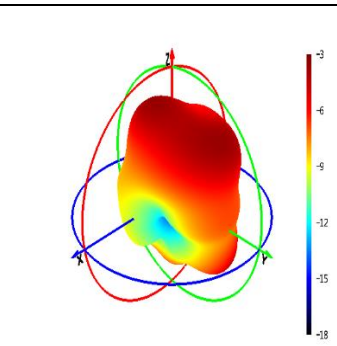
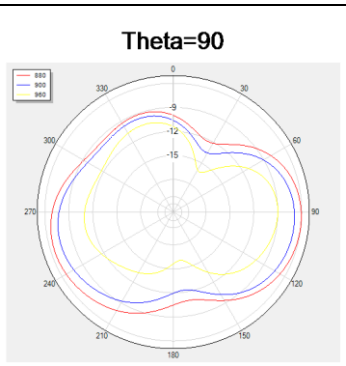
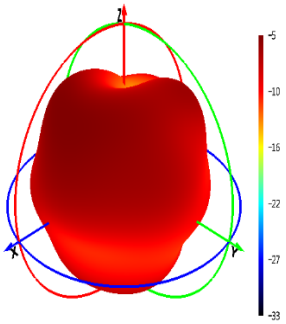
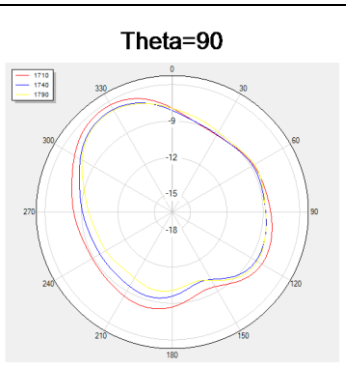
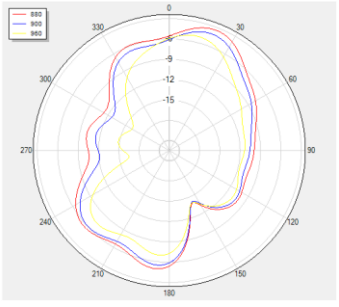
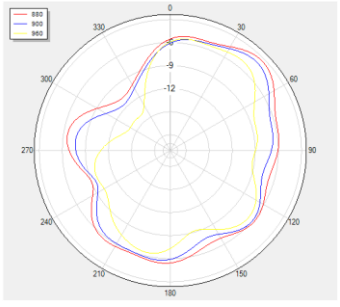
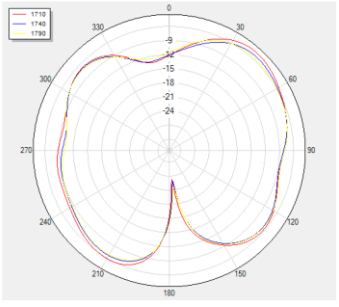
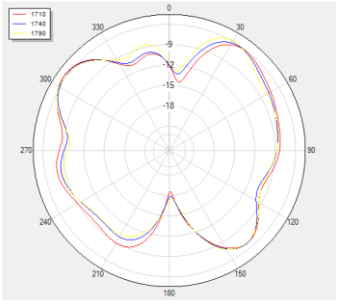
3.2.4. 3D & 2D Radiation Pattern

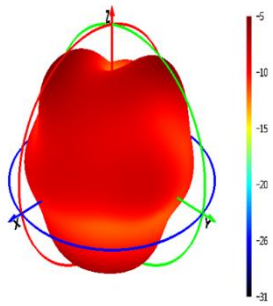
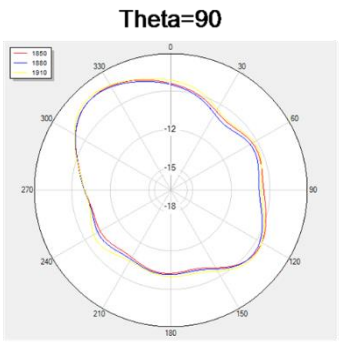
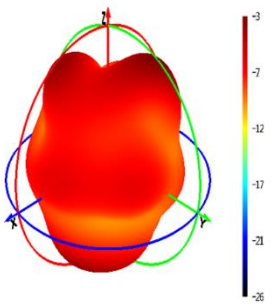
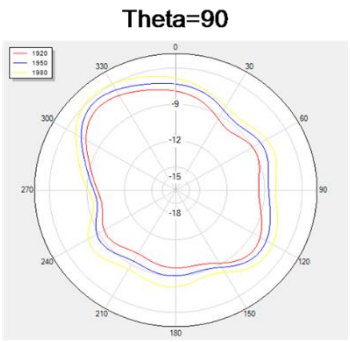
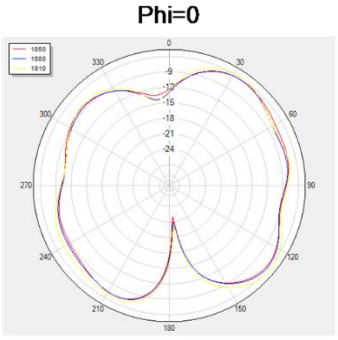
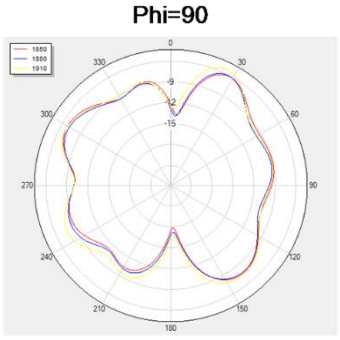
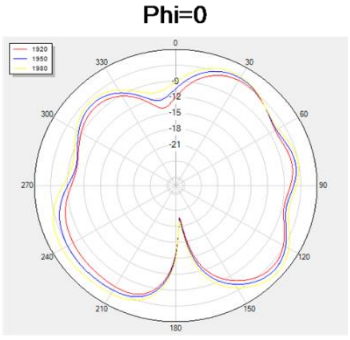
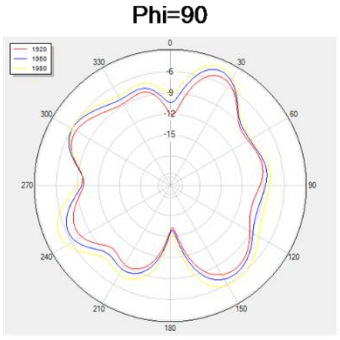
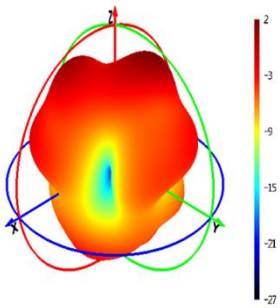
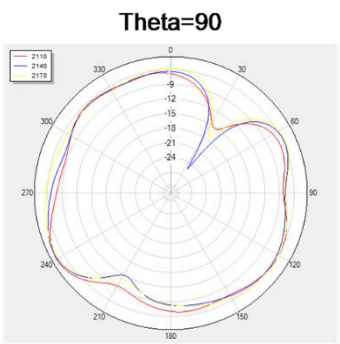
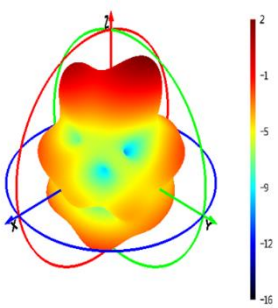
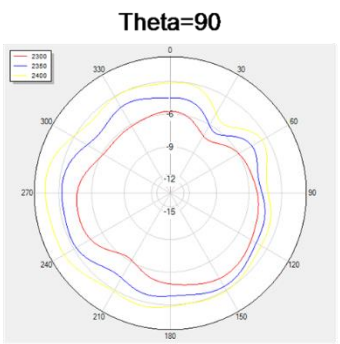
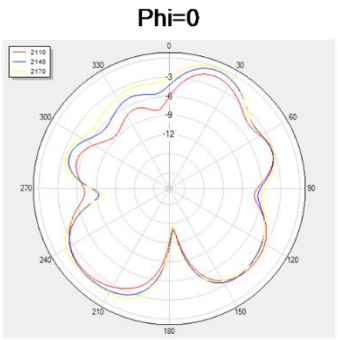
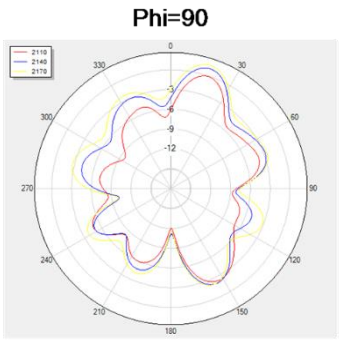
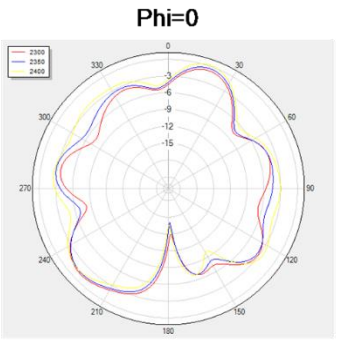
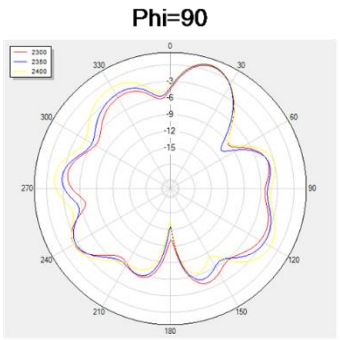
3.2.4.1. Test Condition: On 130 mm × 130 mm EVB

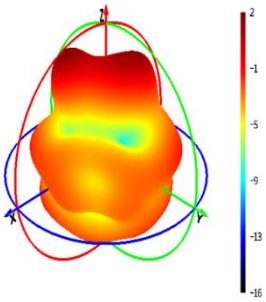
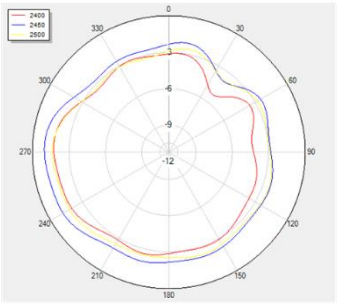
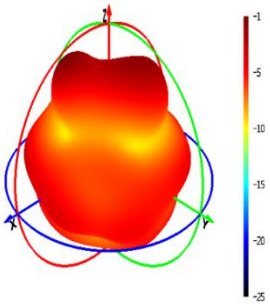
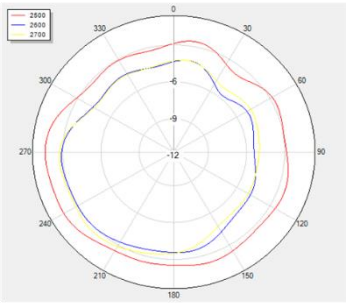
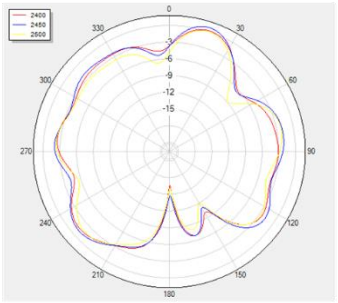
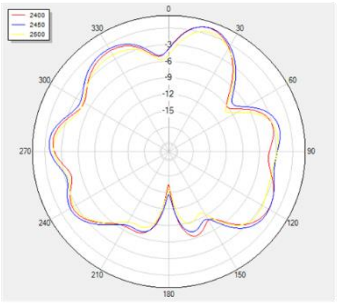
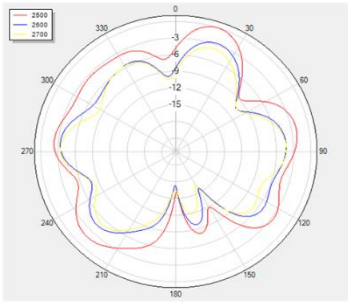
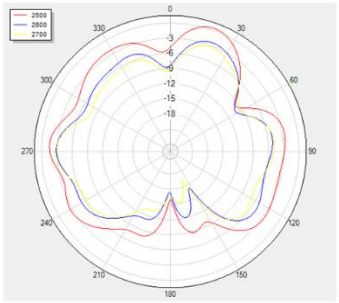
- Test Chamber: GL-S-1



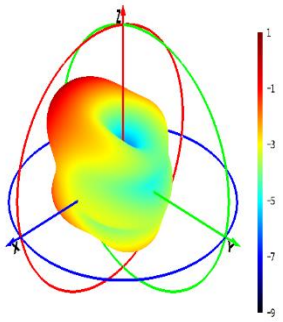
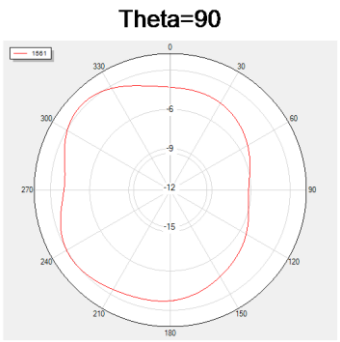
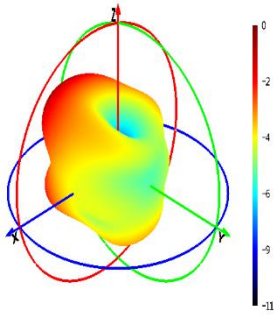
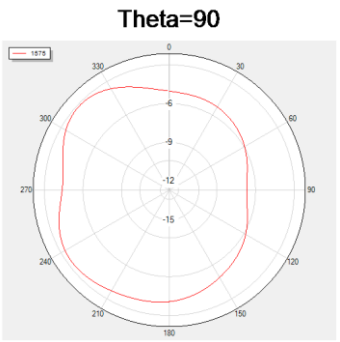
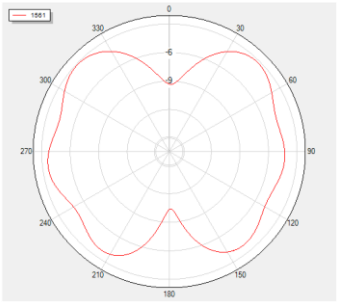
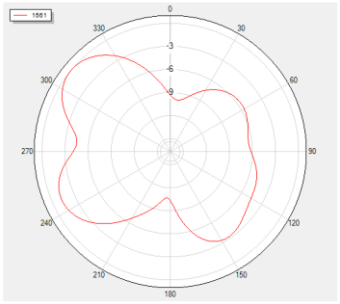
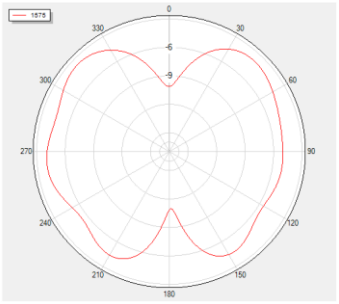
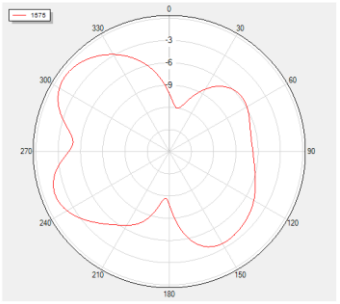
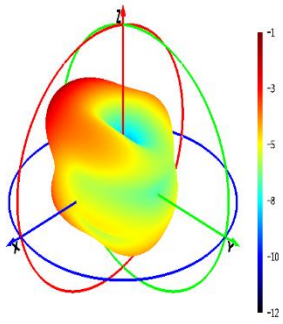
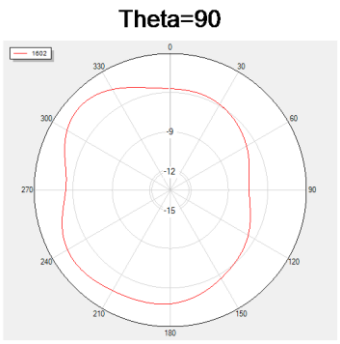
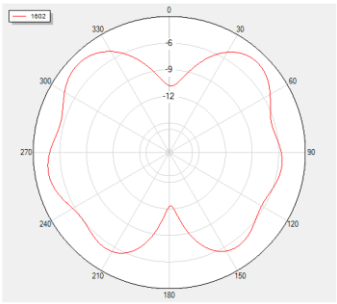
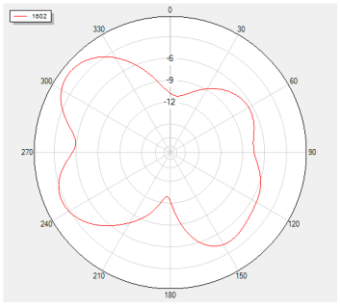
- **LTE Bands**

710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

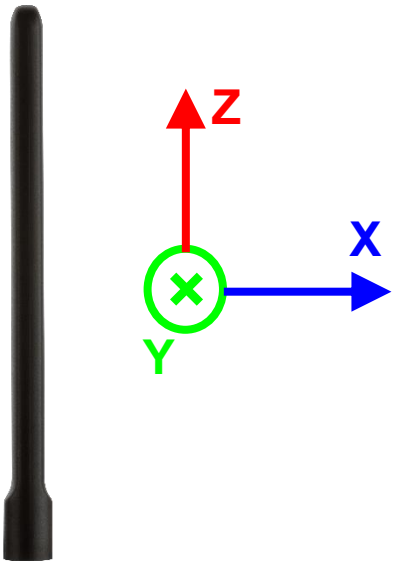
2450 MHz		2600 MHz	
			
			

- **GNSS Bands**

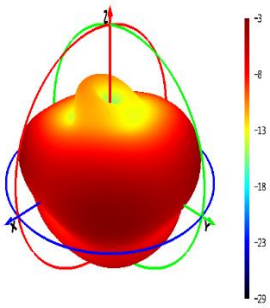
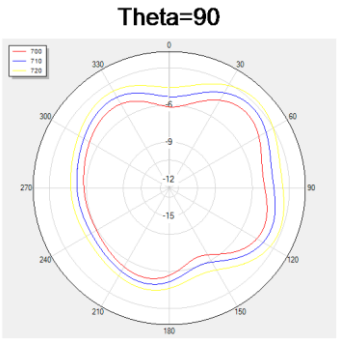
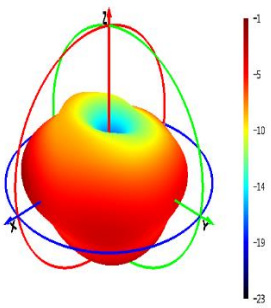
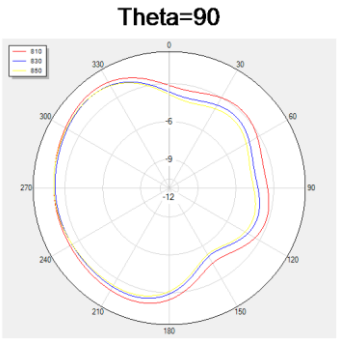
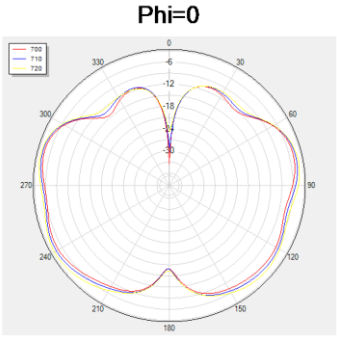
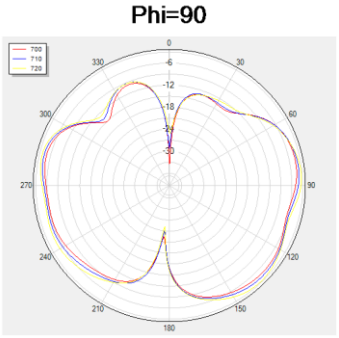
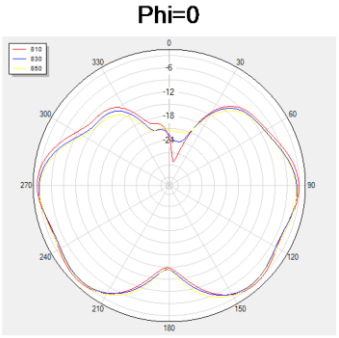
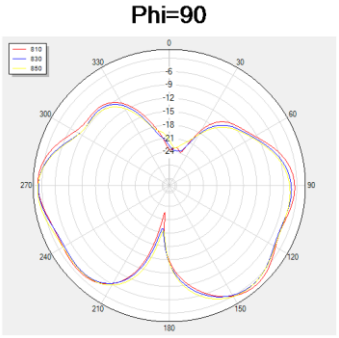
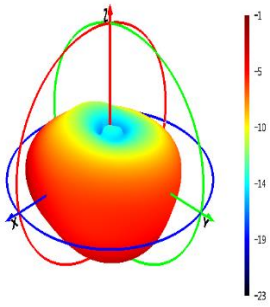
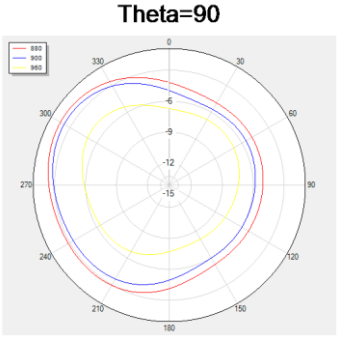
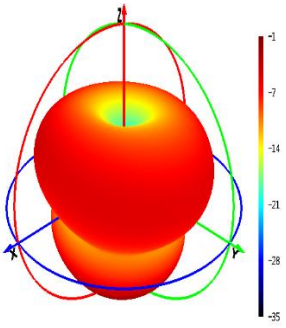
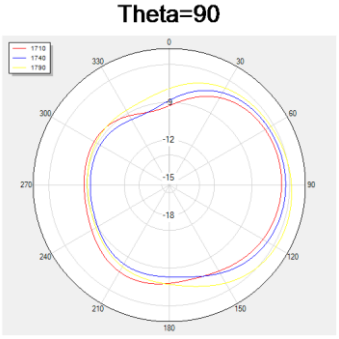
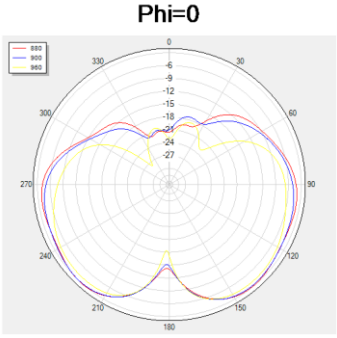
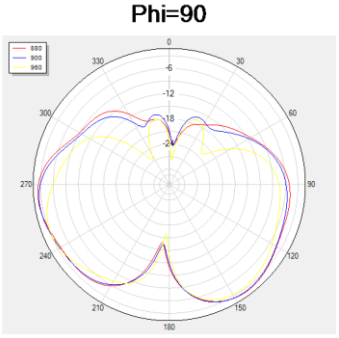
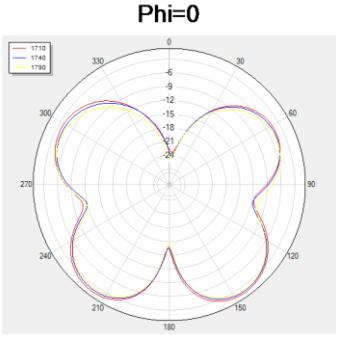
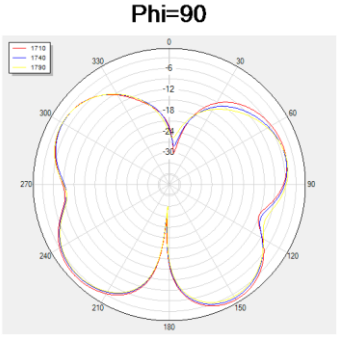
1561 MHz		1575 MHz	
			
			
1602 MHz			
			
			

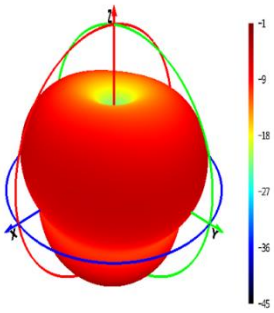
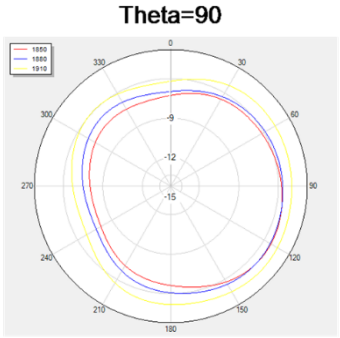
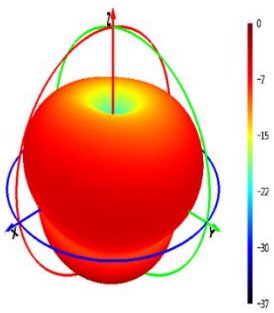
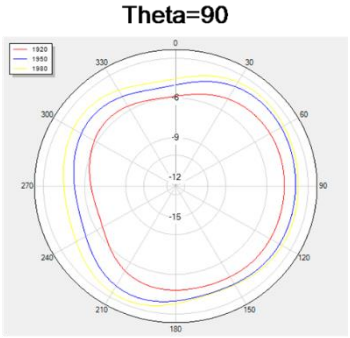
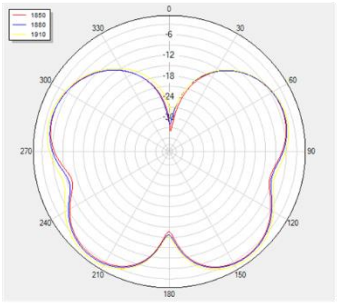
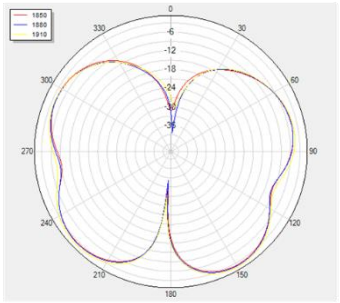
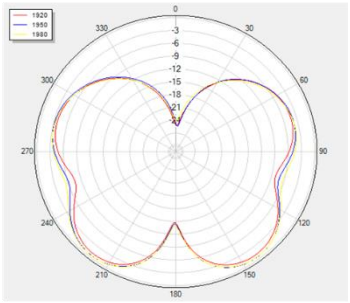
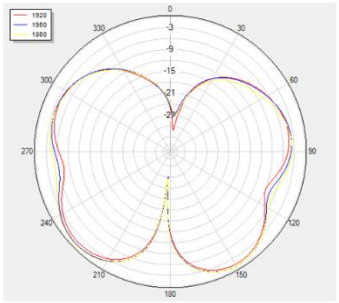
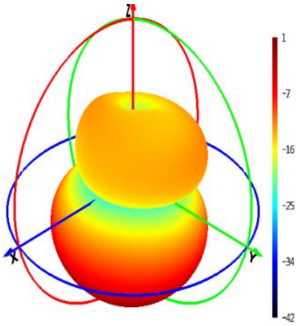
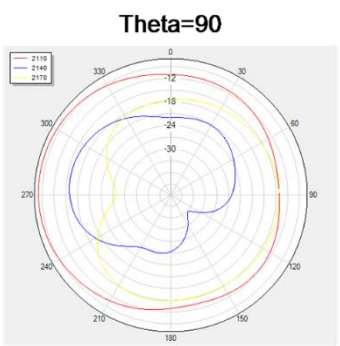
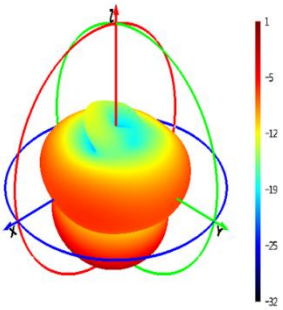
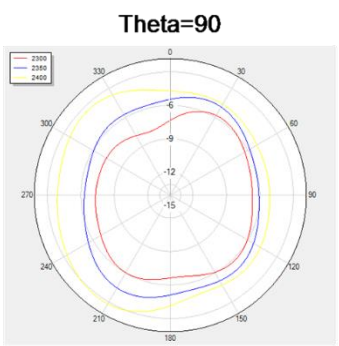
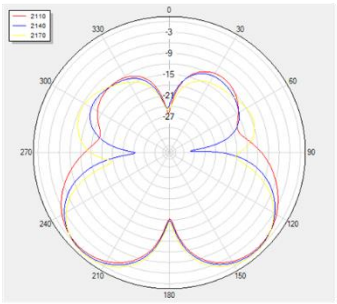
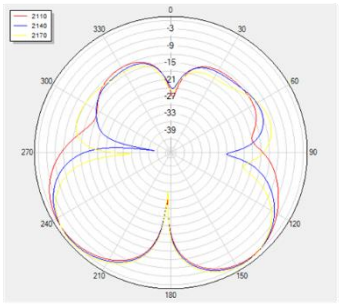
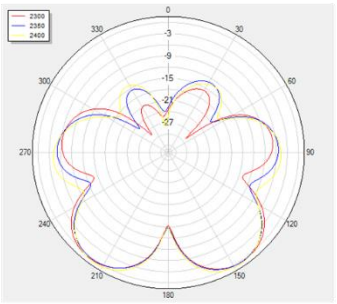
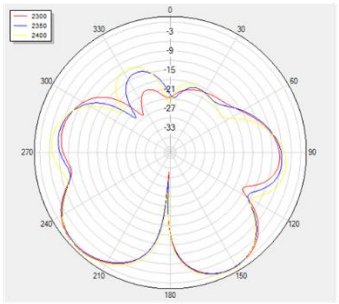
3.2.4.2. Test Condition: Free Space

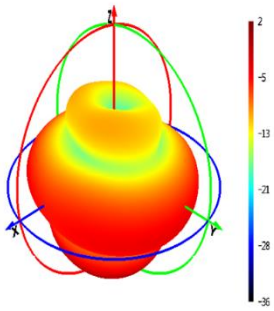
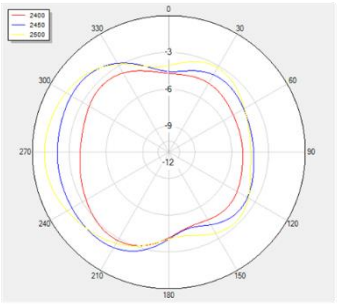
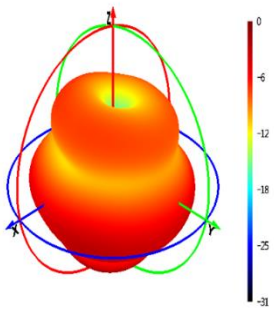
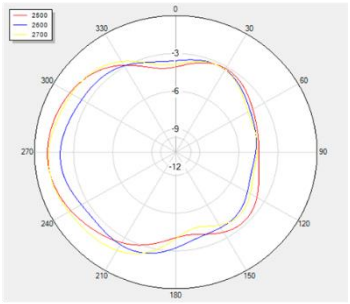
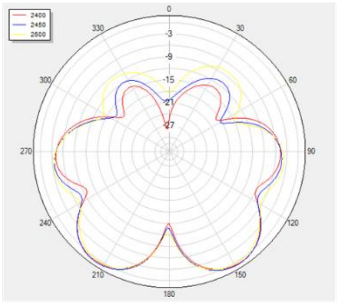
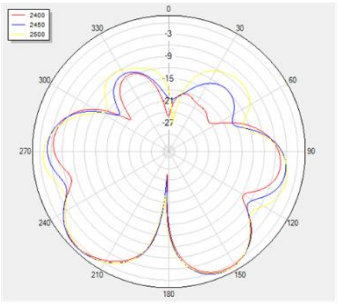
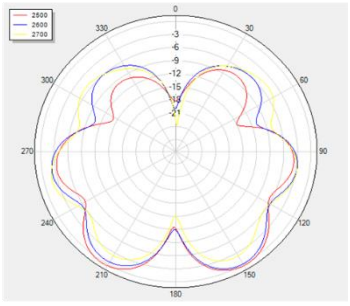
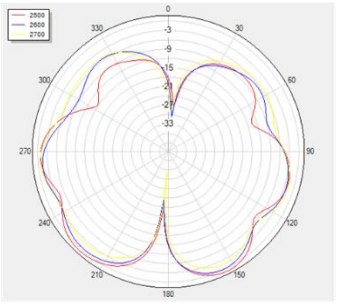
- Test Chamber: GL-S-1



- **LTN Bands**

710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

2450 MHz		2600 MHz	
	Theta=90 		Theta=90 
Phi=0 	Phi=90 	Phi=0 	Phi=90 

- **GNSS Bands**

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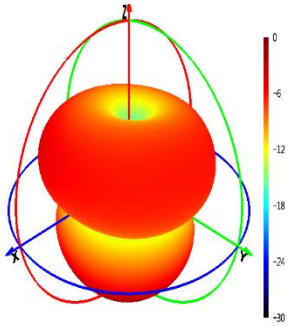
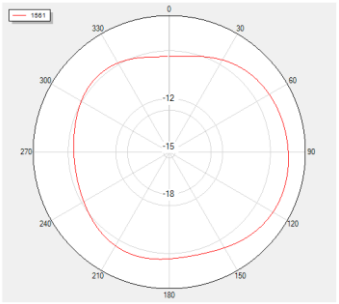
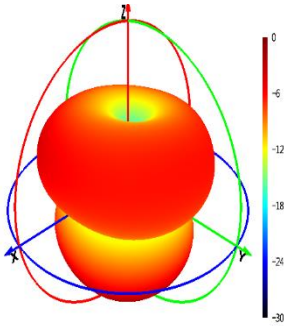
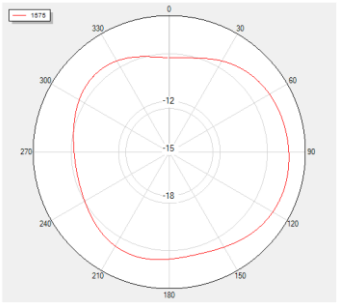
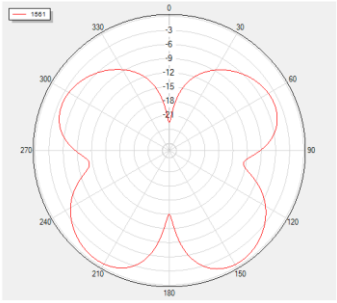
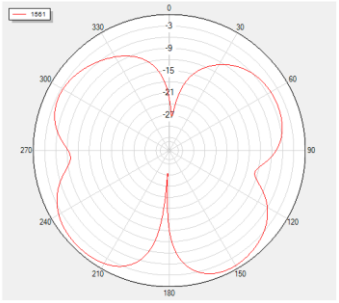
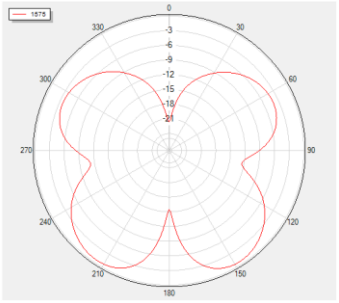
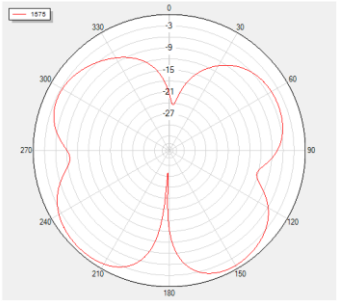
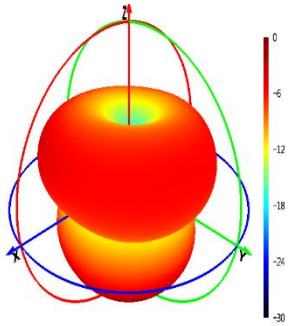
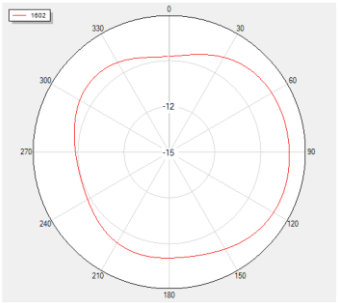
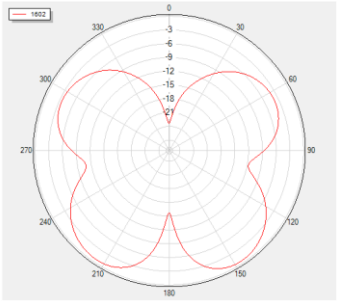
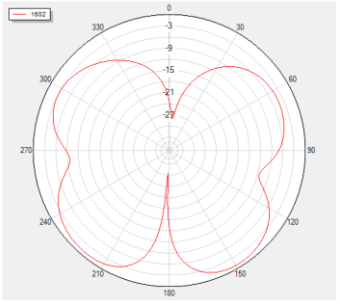
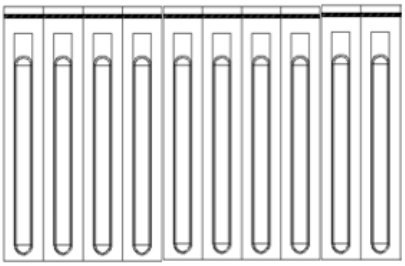
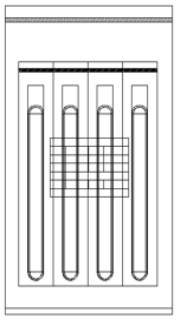
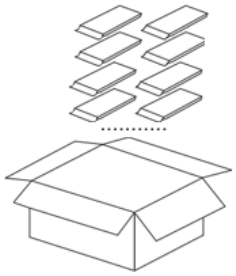
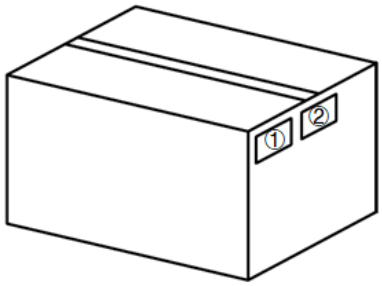
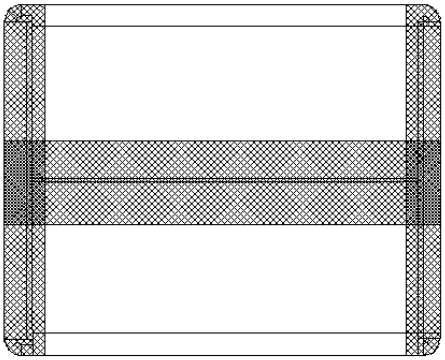
			
			
1602 MHz			
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Put the product in a one-piece bag. (10 Antennas / One-piece Bag)
2		40 antenna products in a big PE bag. (40 Antennas / Big PE Bag)
3		Place a clapboard at the bottom and top. (10 Big PE Bags / Carton Box) (400 Antennas / 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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Or our local offices. For more information, please visit:
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Revision History

Version	Date	Author	Note
-	2020-05-26	Kenny Yin	Initial
1.0	2020-05-26	Kenny Yin	First official release
1.1	2020-12-15	Kenny Yin	Updated the antenna image in Chapter 2.
1.2	2021-07-25	Kenny Yin	1. Updated working temperature. (Chapter 3) Added detailed passive electrical specifications. (Chapter 3)
1.3	2021-12-01	Kenny Yin	Updated the product description in Chapter 1.
2.0	2022-05-11	Bunny Zhang	1. Updated the product description (Chapter 1). 2. Added GNSS L1 Band supported (Chapter 2). 3. Added GNSS L1 Band parameters to Passive Electrical Specifications and Detailed Passive Electrical Specifications (Chapter 3). Added the passive data (VSWR, Efficiency, Gain, Radiation Pattern) of GNSS L1 Band (Chapter 4).
2.1	2022-09-08	Kenny Yin	Updated the IP rating to IP66.
3.0	2022-12-28	Kenny Yin	Updated test data in Chapter 4.
4.0	2023-06-08	Joyful Huang/ Lucky Feng/ David Liu/ Aria Chu	Update all data and datasheet templates
4.1	2024-05-08	Lucky Feng	1. Updated the storage temperature (Chapter 1.2). 2. Updated the drawing (Chapter 2).
4.2	2025-03-06	Allow Xu	1. Updated the starting frequency band to 698 MHz (Homepage and Chapter 1.1). 2. Updated the packaging (Chapter 4).

4.3	2025-04-24	Rainey Liao	Updated the antenna image (Cover page).
4.4	2026-02-02	Riva Ren	Updated the packaging (Chapter 4).

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