



Antenna Datasheet

Product OC: YECT012G3AM

Version: 1.0

Date: 2025-07-21

Status: Released

Product Name: 4G Terminal Mount External Dipole Antenna

Key Features:

Frequency Band: 698–960 MHz, 1710–2690 MHz

Dimensions: 13 mm × 15.6 mm × 130 mm

Efficiency: Up to 67.0 % (EVB)

RoHS and REACH Compliant

Overview

YECT012G3AM is a 4G external antenna measuring 135 mm × 15.6 mm × 13 mm. This ultra-wide-band 4G antenna provides broad coverage from 698–960 MHz ,1710–2690 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.

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1 Specification

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

1.1. Electrical

Electrical	
Frequency Range	698–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional
Antenna Type	Dipole

Electrical – Detail												
Band	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 4G
	SPEC	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000
Max. VSWR	FS	-	2.1	2.4	-	1.5	1.5	1.6	1.7	-	-	-
	EVB	-	2.1	3.0	-	1.8	1.6	2.0	2.0	-	-	-
Max. Return Loss (dB)	FS	-	-9.0	-7.8	-	-14.7	-14.1	-13.2	-11.6	-	-	-
	EVB	-	-8.9	-6.0	-	-10.7	-12.6	-9.7	-9.6	-	-	-
AVG Eff. (%)	FS	-	33.3	29.7	-	44.1	52.8	50.4	53.7	-	-	-
	EVB	-	44.3	37.2	-	54.4	63.2	61.0	62.4	-	-	-
AVG AVG Gain (dB)	FS	-	-4.8	-5.3	-	-3.6	-2.8	-3.0	-2.7	-	-	-
	EVB	-	-3.6	-4.3	-	-2.7	-2.0	-2.2	-2.1	-	-	-

Max. Peak Gain (dBi)	FS	-	-0.2 (700)	1.1 (960)	-	3.6 (1920)	3.4 (2340)	2.9 (2400)	3.8 (2640)	-	-	-
	EVB	-	-0.3 (700)	0.8 (960)	-	4.1 (1920)	4.6 (2360)	4.5 (2400)	4.1 (2690)	-	-	-
VSWR		FS		≤ 2.4								
		EVB		≤ 3								
Return Loss		FS		≤ -7.8								
		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

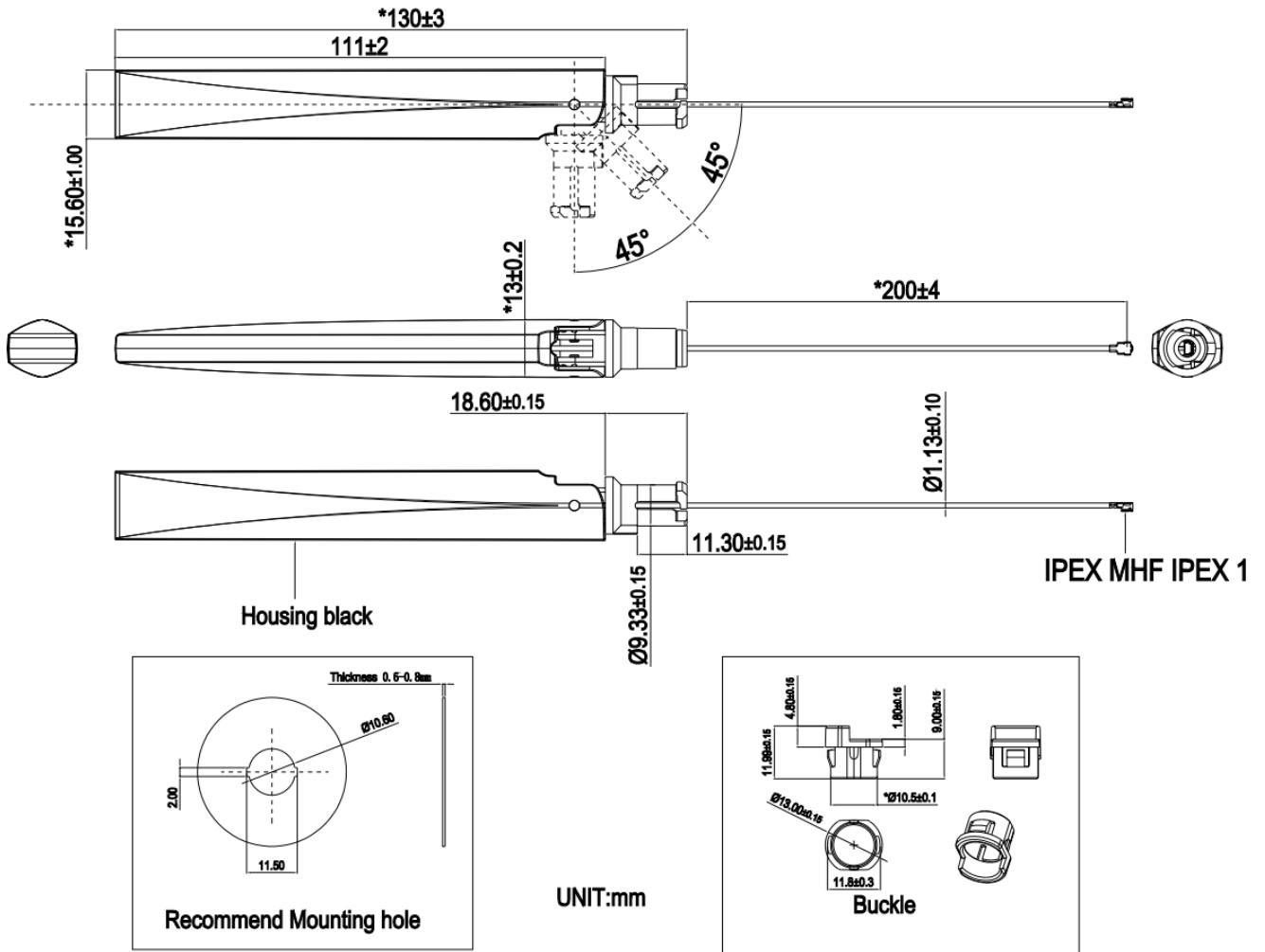
5G NR / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / GPRS / GSM / NB-IoT					
Band	Frequency (MHz)	Uplink (MHz)	Downlink (MHz)	FS	EVB
1	2100	1920–1980	2110–2170	√	√
2	1900	1850–1910	1930–1990	√	√
3	1800	1710–1785	1805–1880	√	√
4	1700	1710–1755	2110–2155	√	√
5	850	824–849	869–894	√	√
7	2600	2500–2570	2620–2690	√	√
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

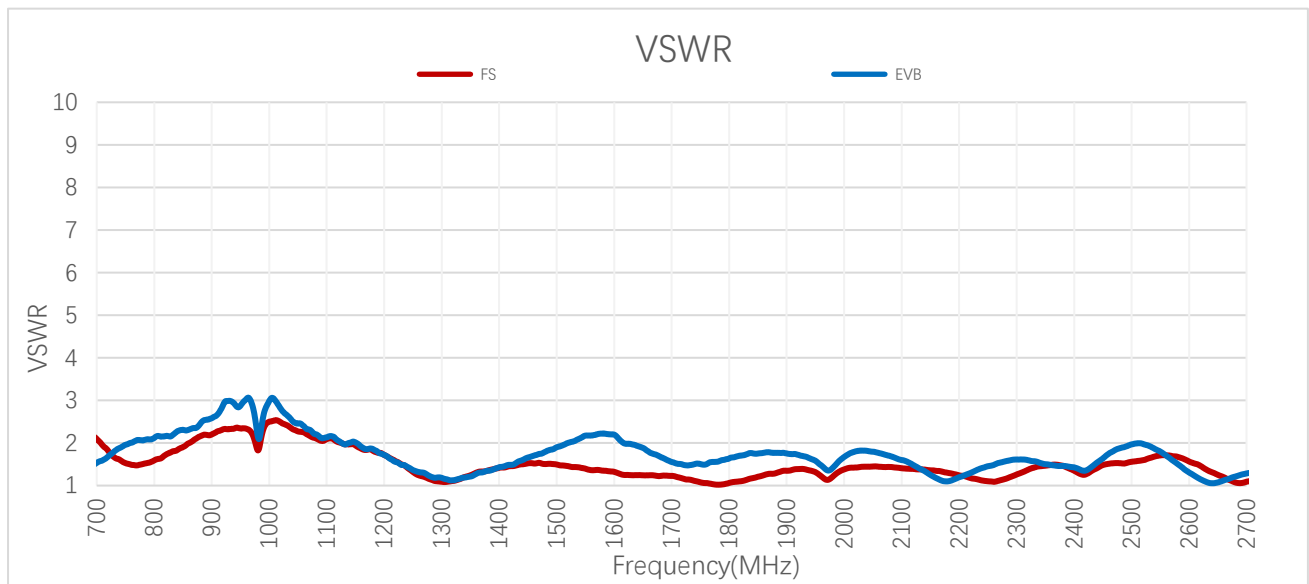
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

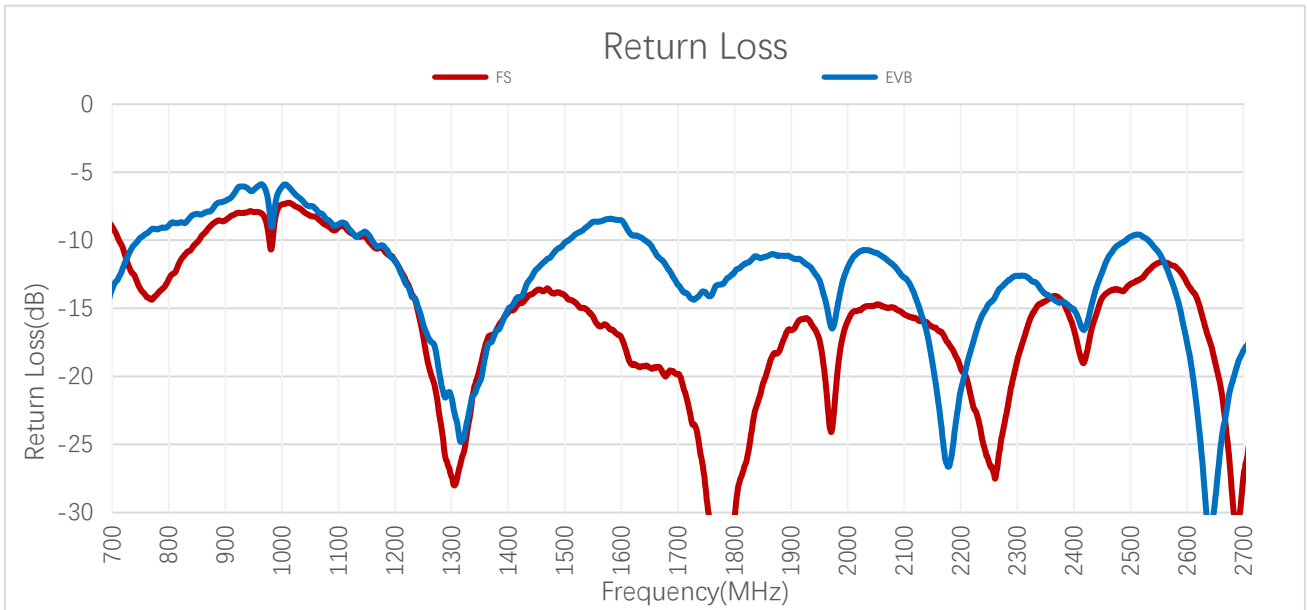
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-	-	1.9	1.8	2.2	2.3	-	1.2	1.1	1.3
EVB	-	-	1.6	2.2	2.6	3.0	-	1.6	1.5	1.8
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
FS	1.4	1.4	1.5	1.5	1.6	1.1	-	-	-	-
EVB	1.6	1.3	1.5	1.7	1.3	1.3	-	-	-	-

3.1.2. Return Loss

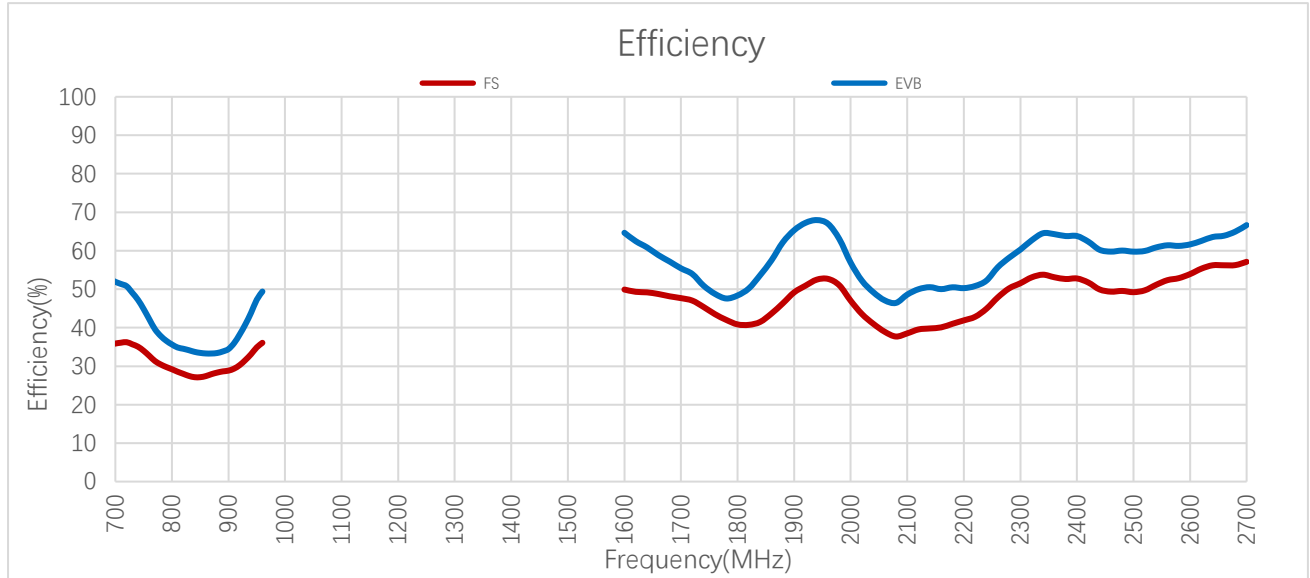


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-	-	-9.8	-11.0	-8.5	-7.9	-	-20.9	-25.8	-18.1
EVB	-	-	-12.8	-8.7	-7.1	-6.0	-	-13.8	-13.9	-11.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
FS	-17.3	-16.0	-14.5	-14.2	-13.1	-30.9	-	-	-	-
EVB	-12.9	-16.8	-14.0	-12.3	-17.5	-19.0	-	-	-	-

3.2. Radiation Performance Test

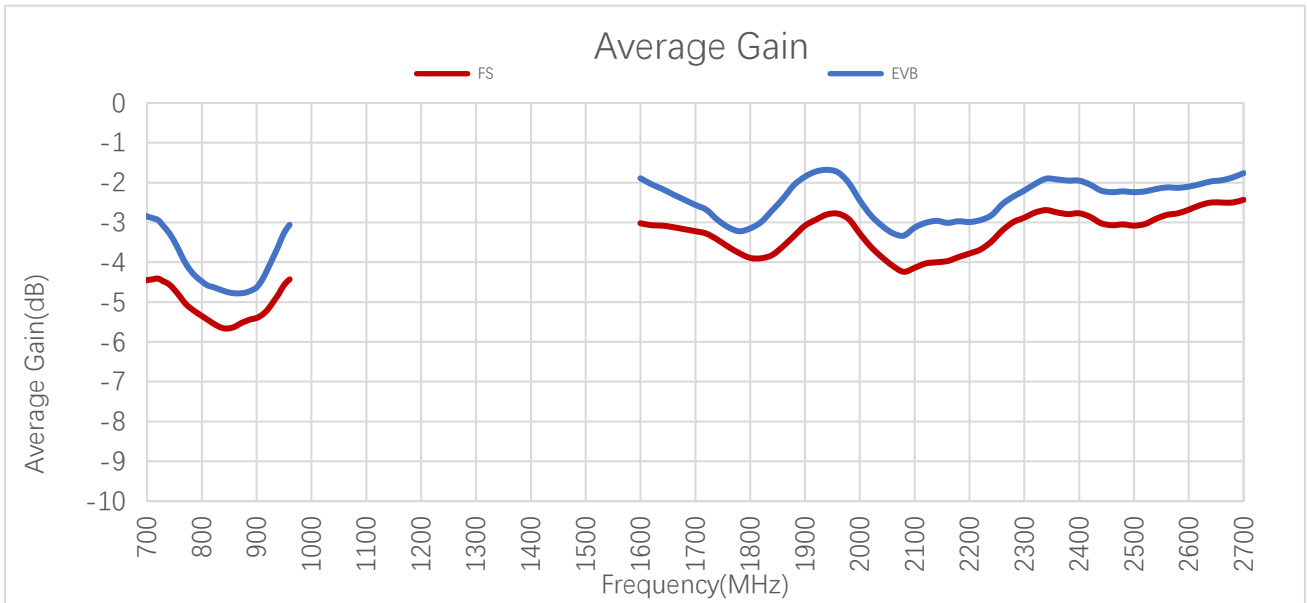
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-	-	36.1	27.5	28.8	36.1	-	47.7	45.4	46.3
EVB	-	-	51.4	34.2	34.4	49.4	-	55.4	50.9	62.2
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
FS	52.5	39.8	53.8	49.4	53.9	56.3	-	-	-	-
EVB	68.0	50.5	64.5	59.8	61.6	65.0	-	-	-	-

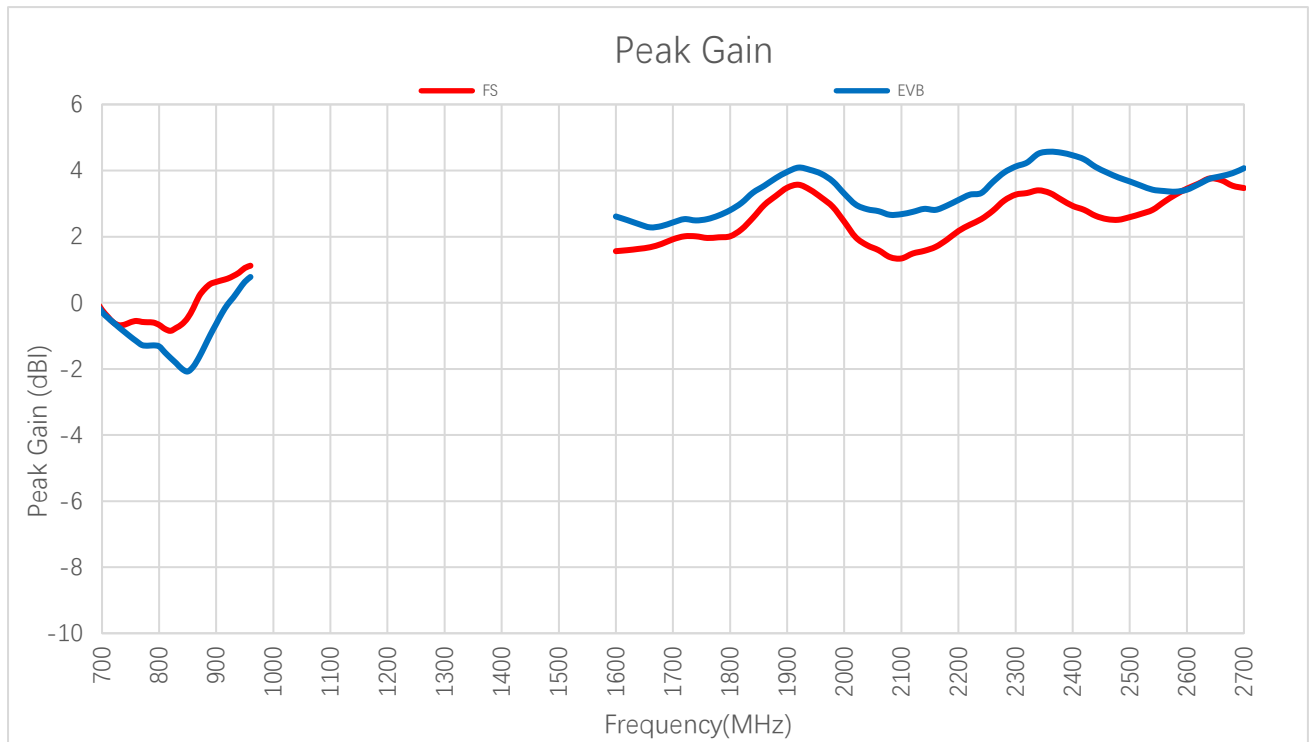
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-	-	-4.4	-5.6	-5.4	-4.4	-	-3.2	-3.4	-3.3
EVB	-	-	-2.9	-4.7	-4.6	-3.1	-	-2.6	-2.9	-2.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
FS	-2.8	-4.0	-2.7	-3.1	-2.7	-2.5	-	-	-	-
EVB	-1.7	-3.0	-1.9	-2.2	-2.1	-1.9	-	-	-	-

3.2.3. Peak Gain



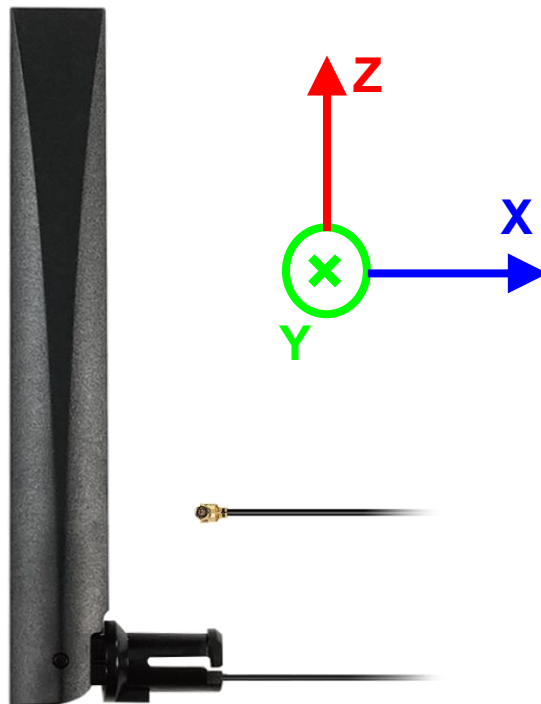
Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
FS	-	-	-0.4	-0.8	0.6	1.1	-	1.9	2.0	3.2
EVB	-	-	-0.5	-1.8	-0.6	0.8	-	2.4	2.5	3.8
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
FS	3.4	1.6	3.4	2.5	3.5	3.5	-	-	-	-
EVB	4.0	2.8	4.5	3.9	3.4	3.9	-	-	-	-

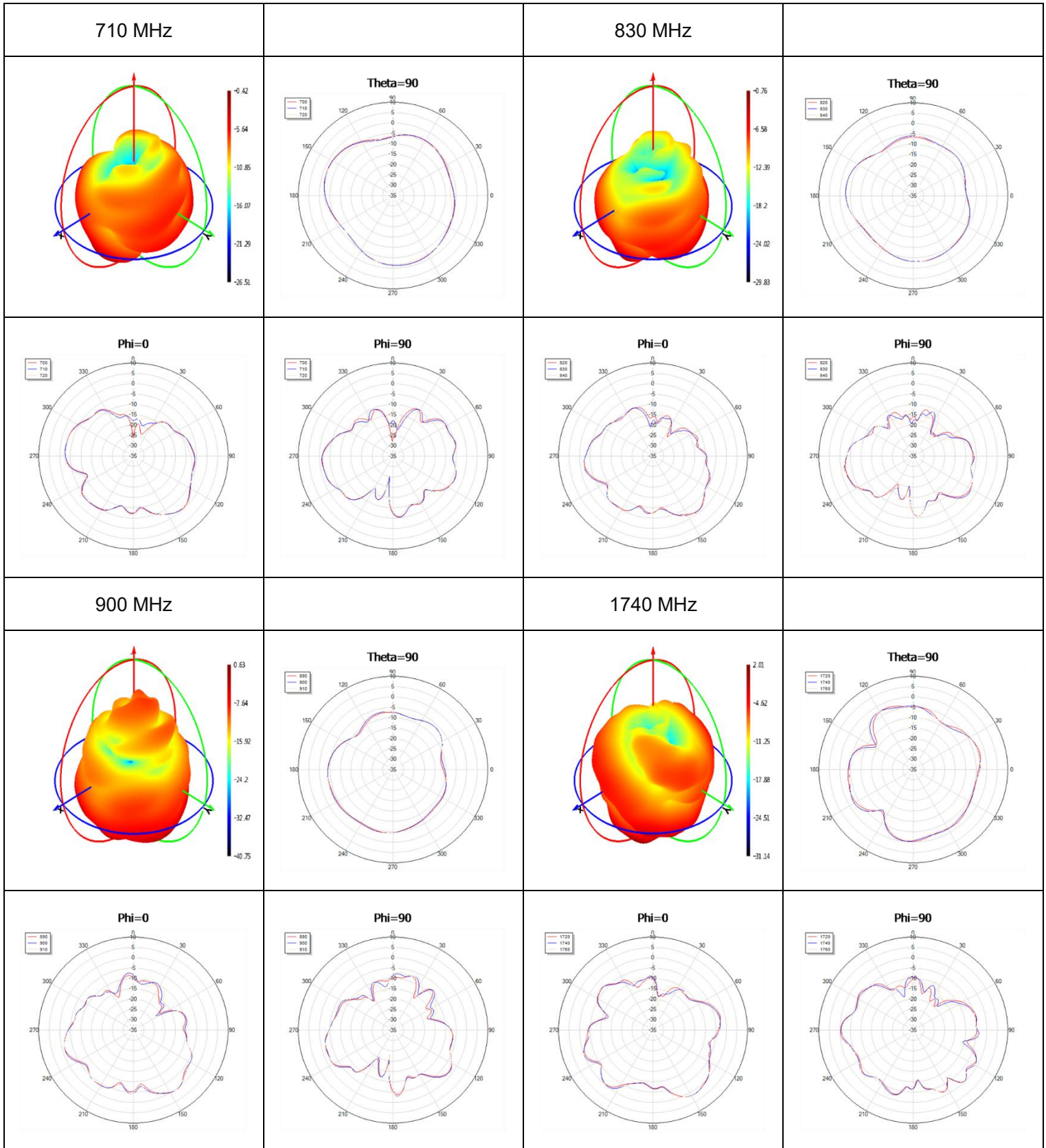
3.2.4. 3D & 2D Radiation Pattern

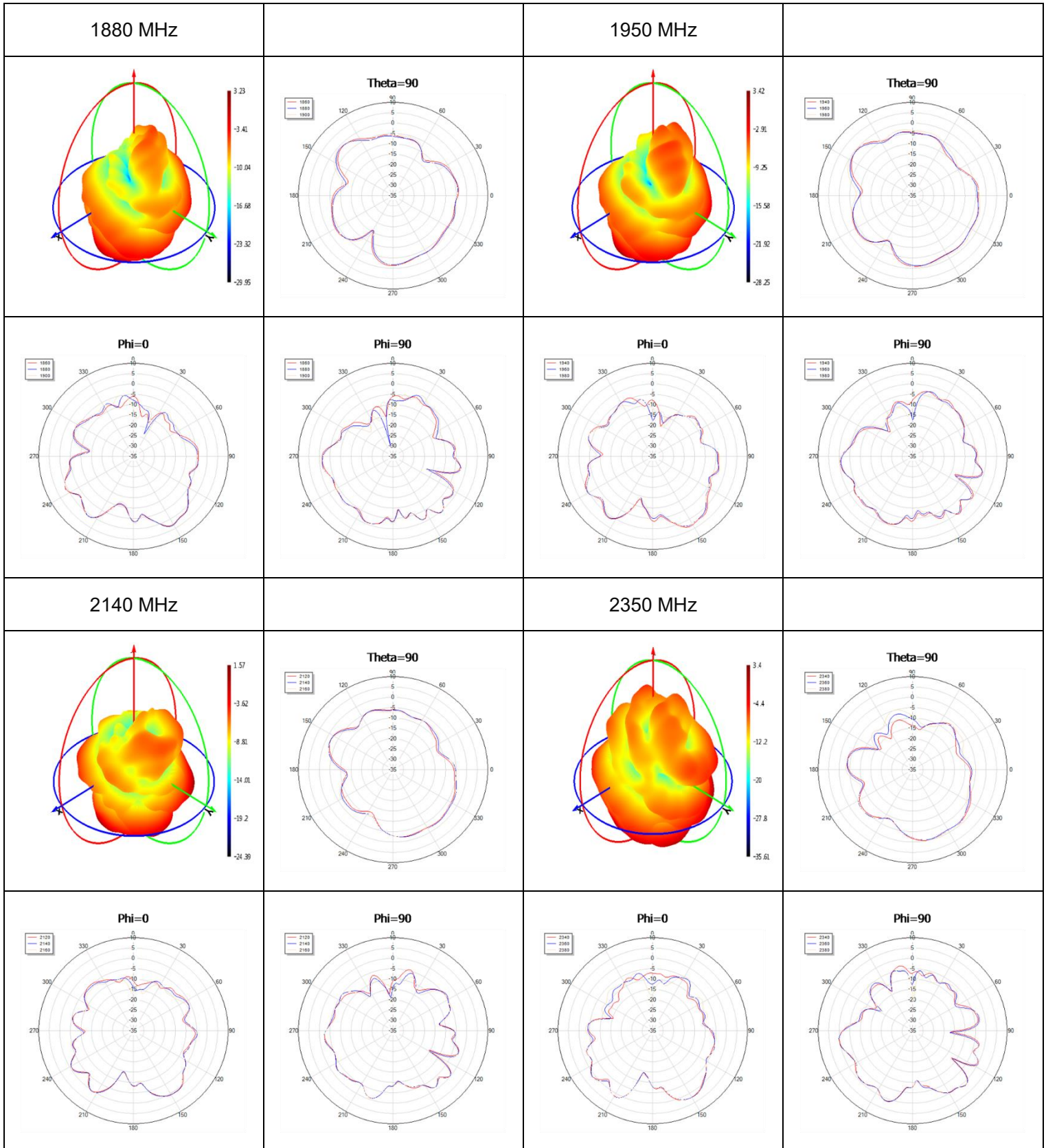
3.2.4.1. Test Condition: In Free Space

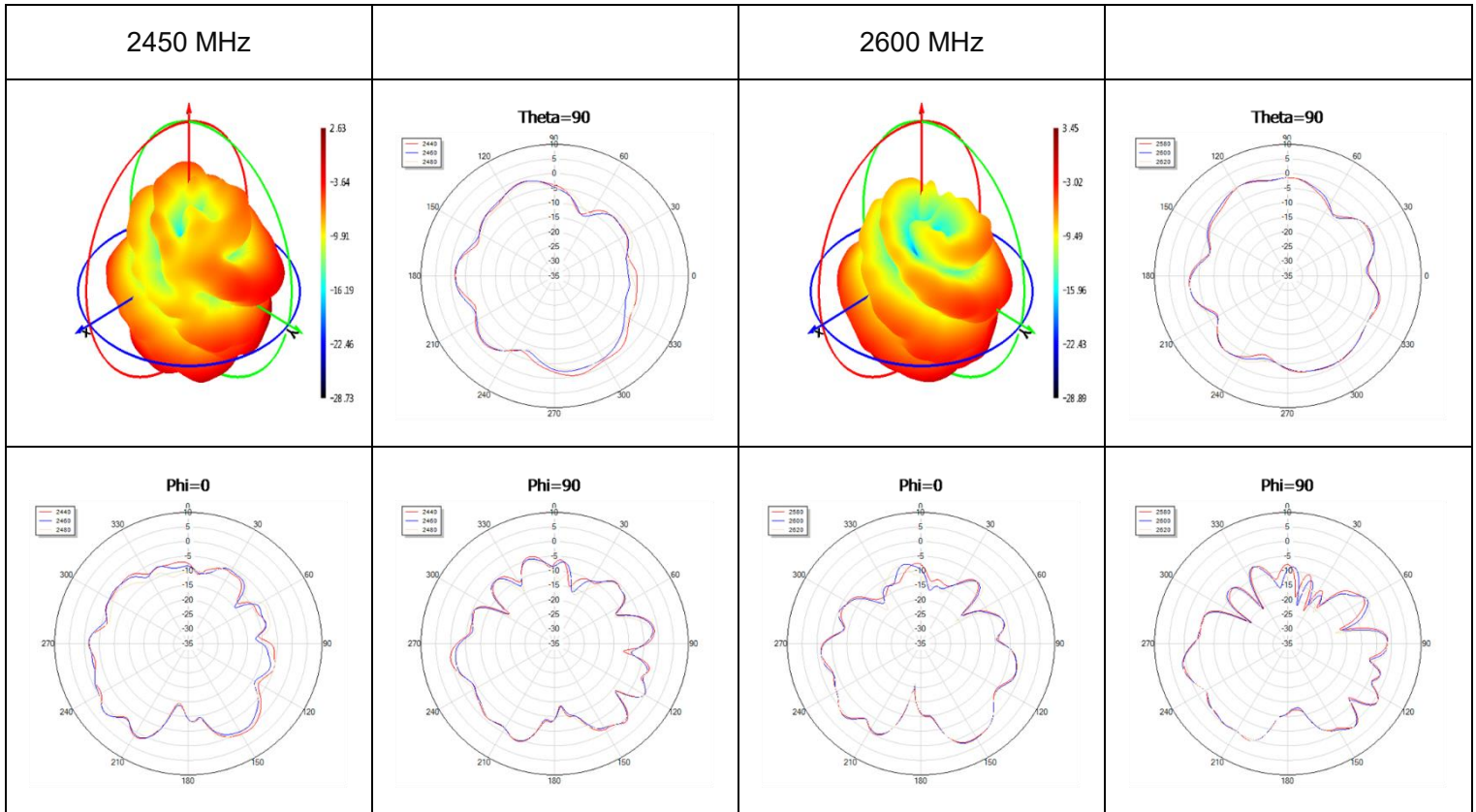
- Test Chamber: HF-S-1



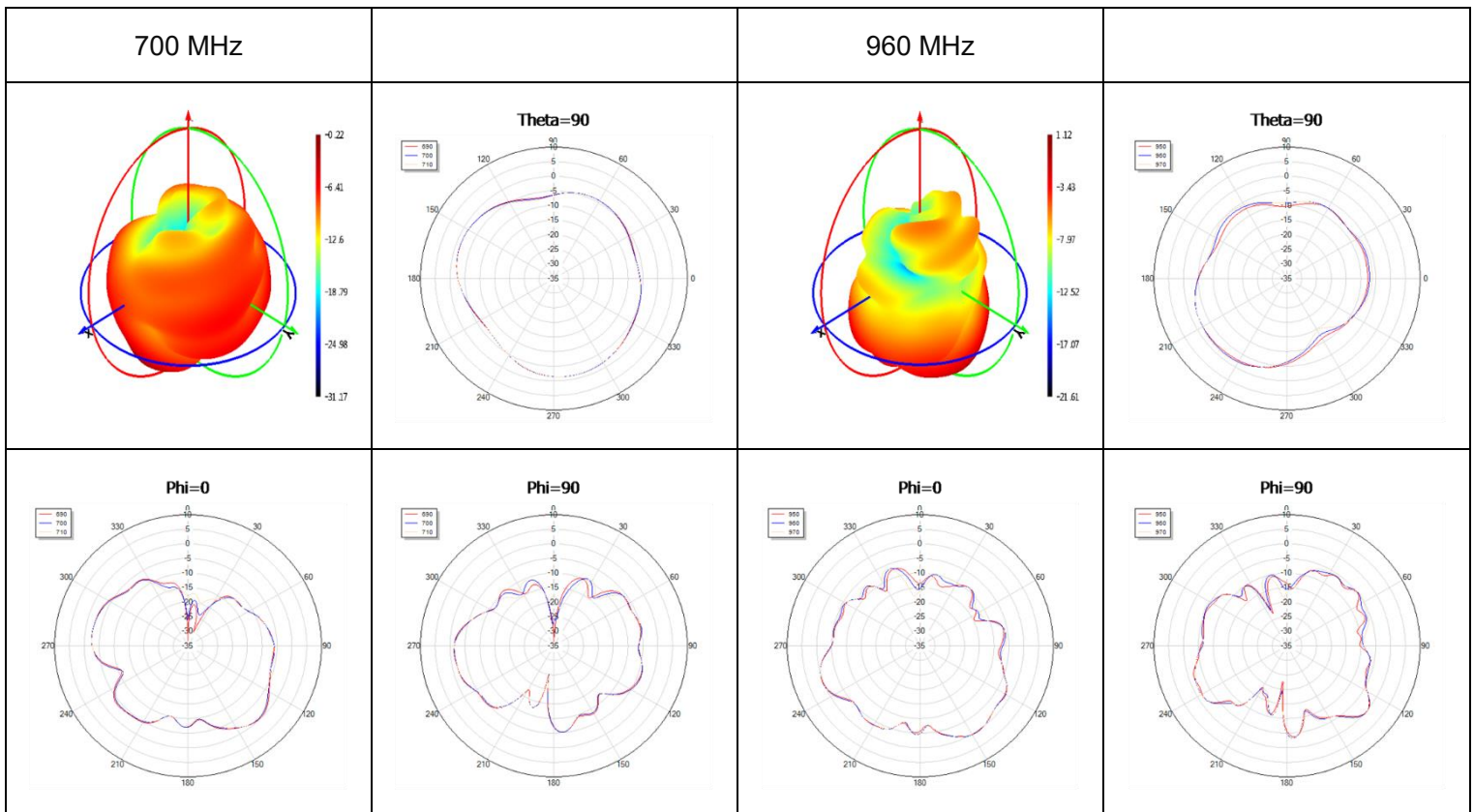
● 4G

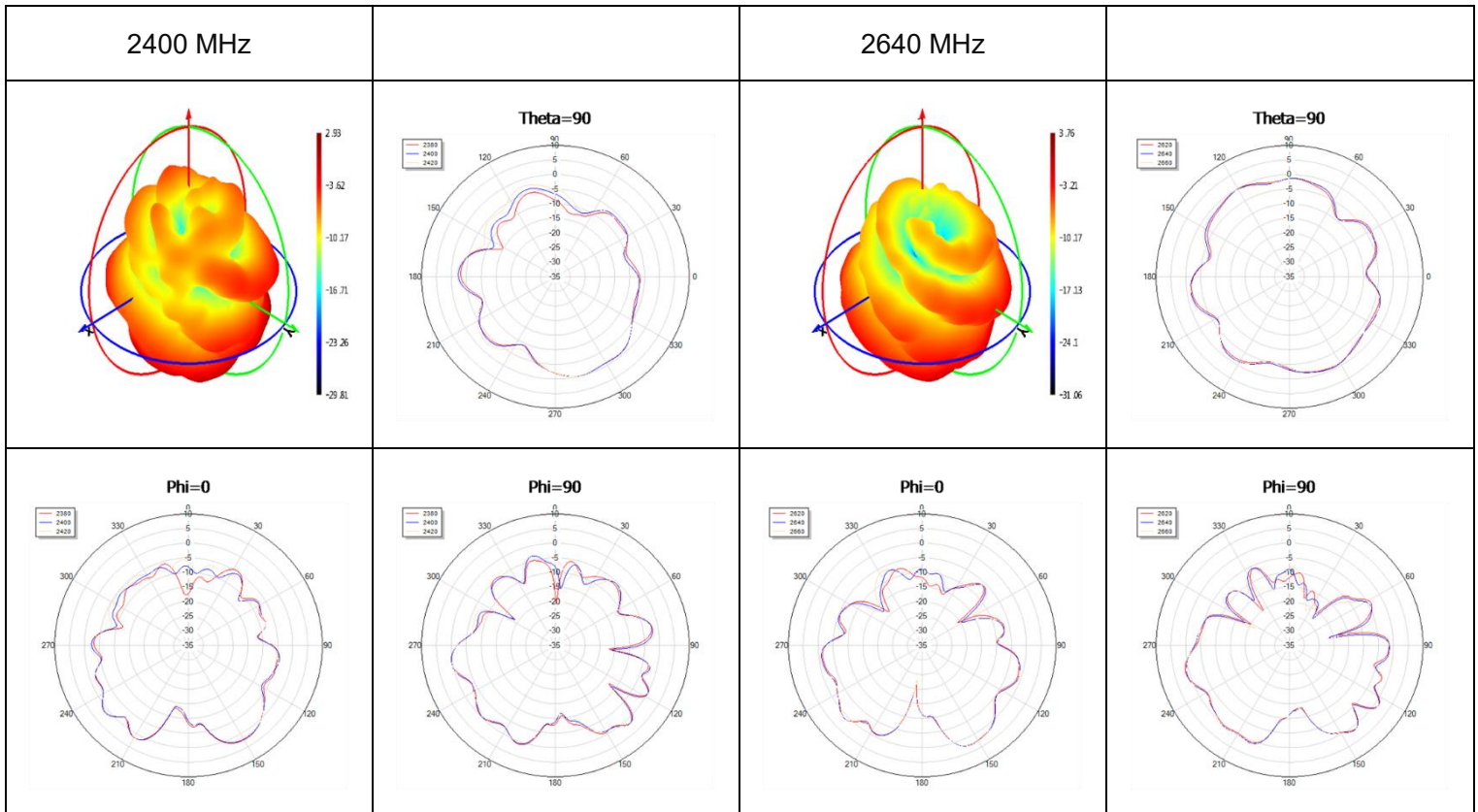
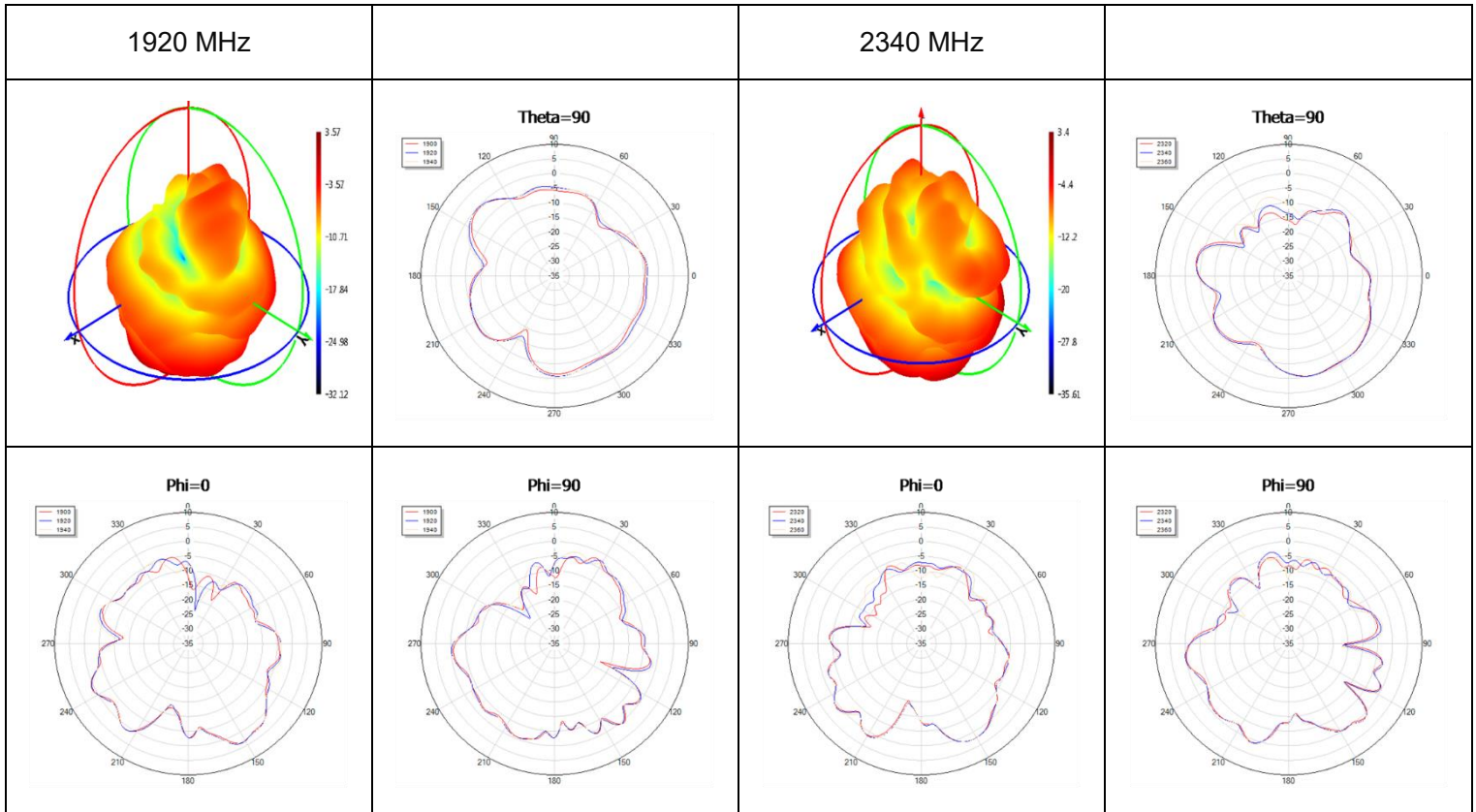






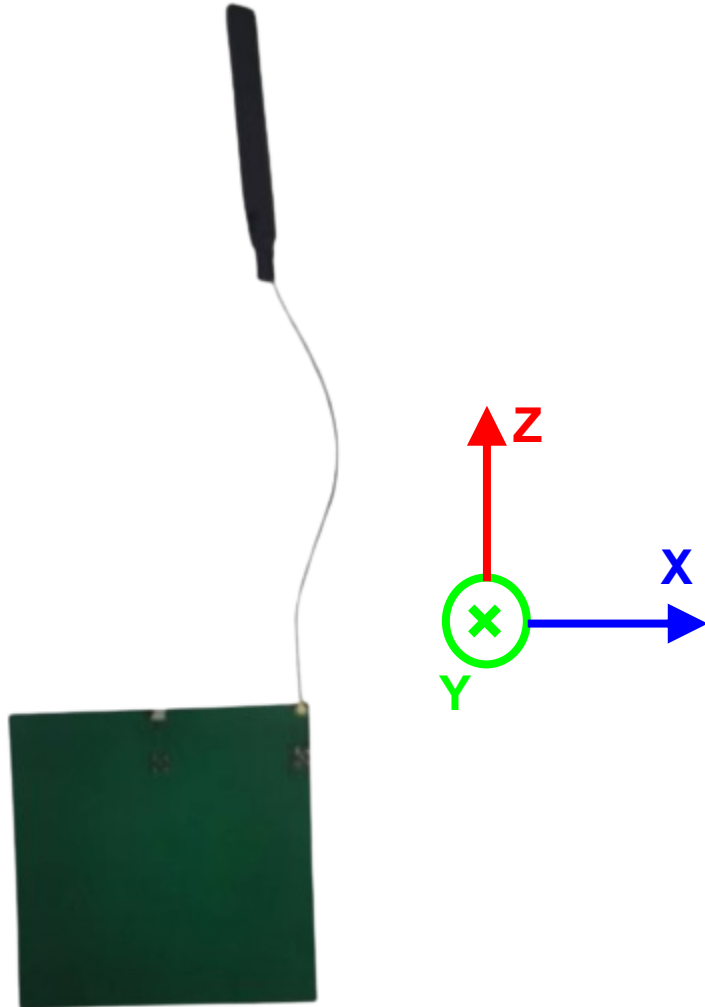
● **Max Peak Gain**



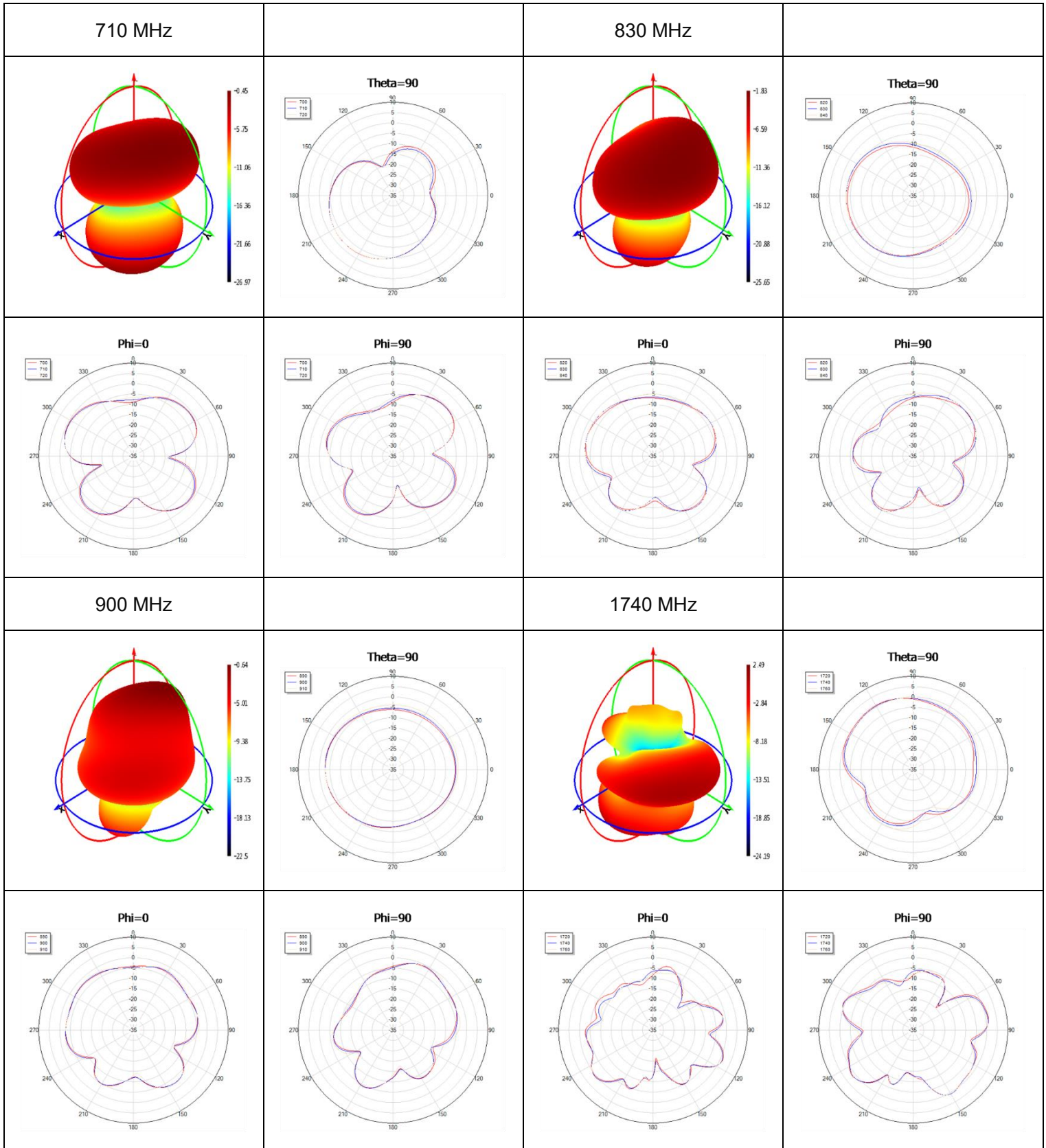


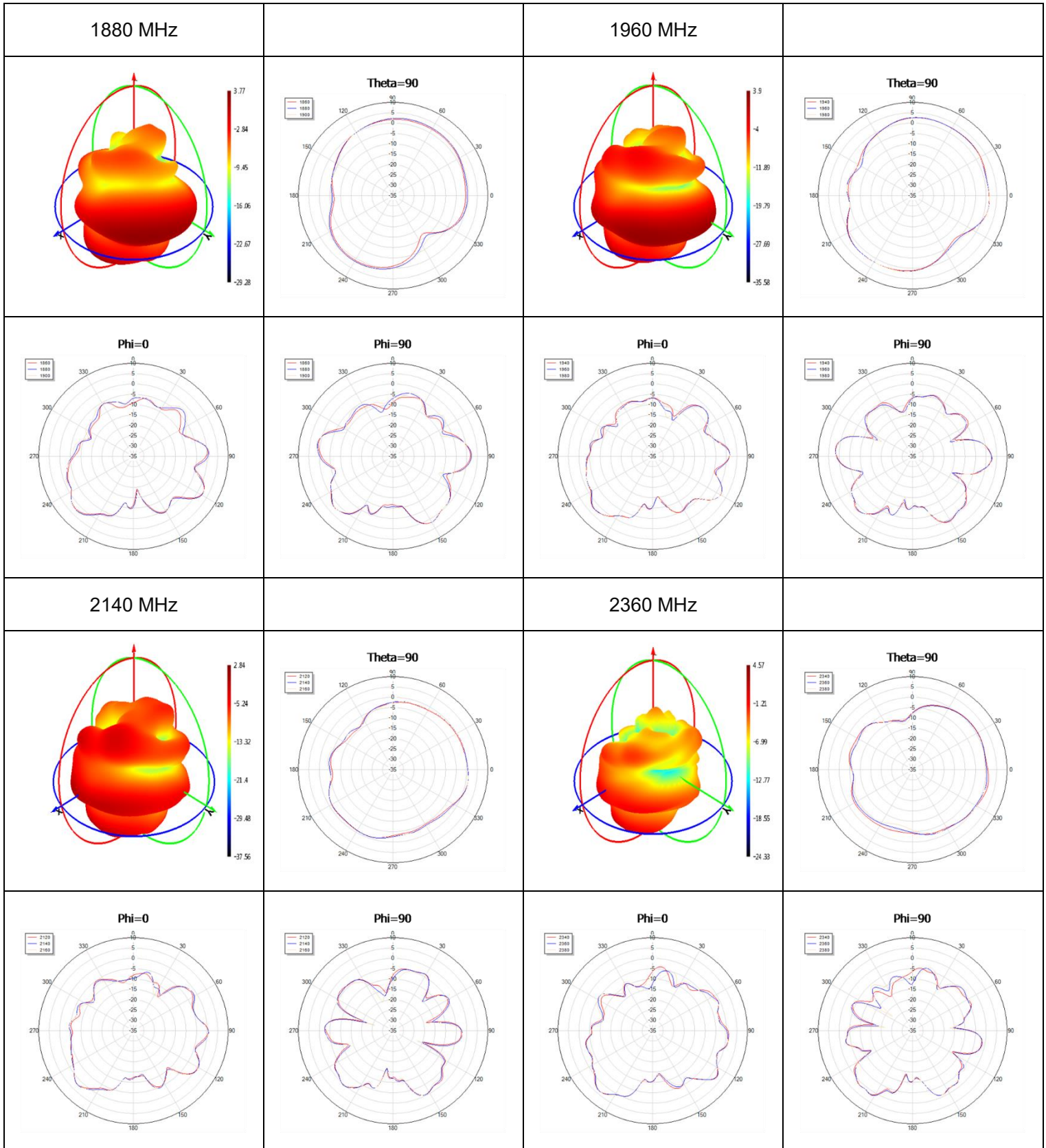
3.2.4.2. Test Condition: On 130 mm × 130 mm EVB

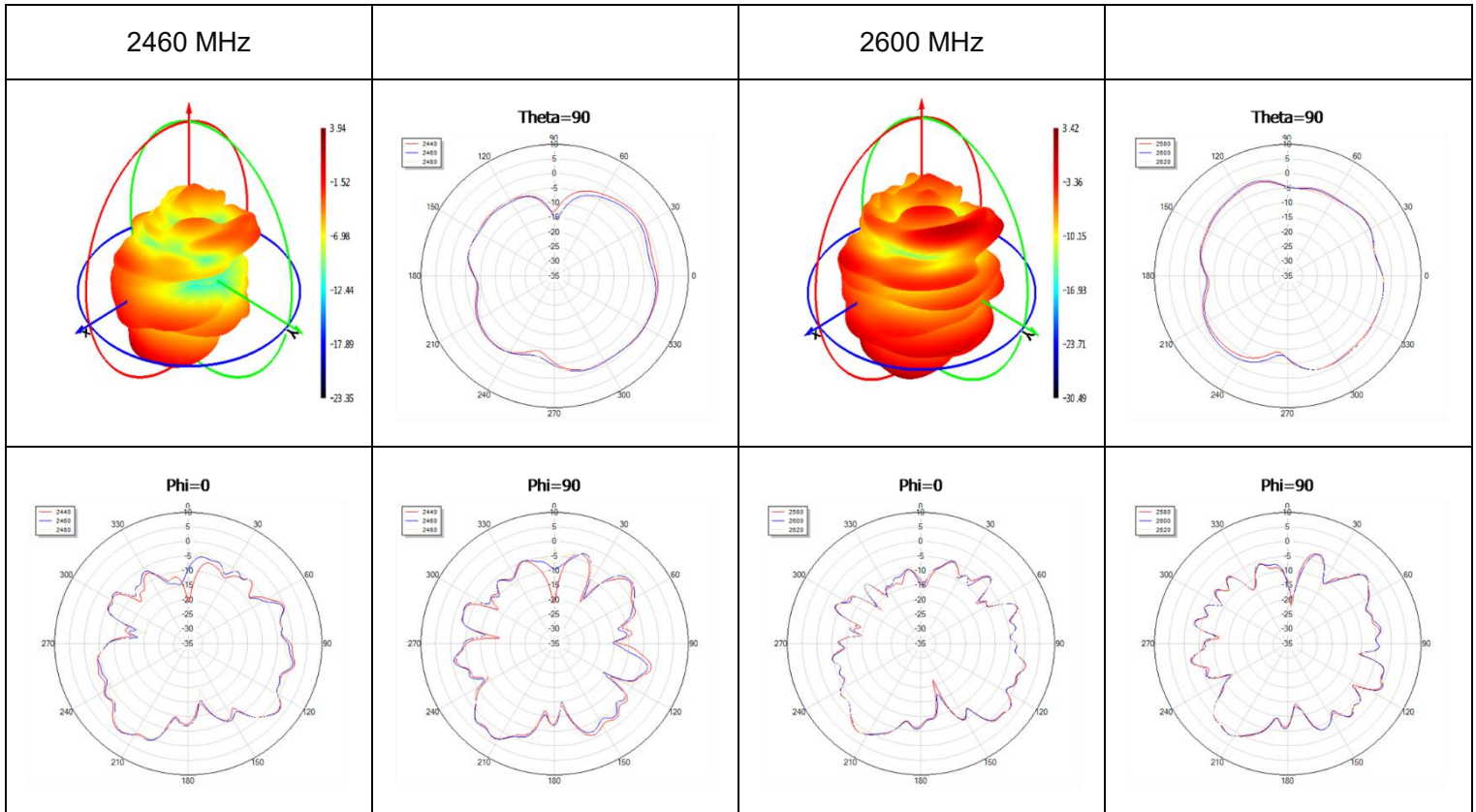
- Test Chamber: HF-S-1



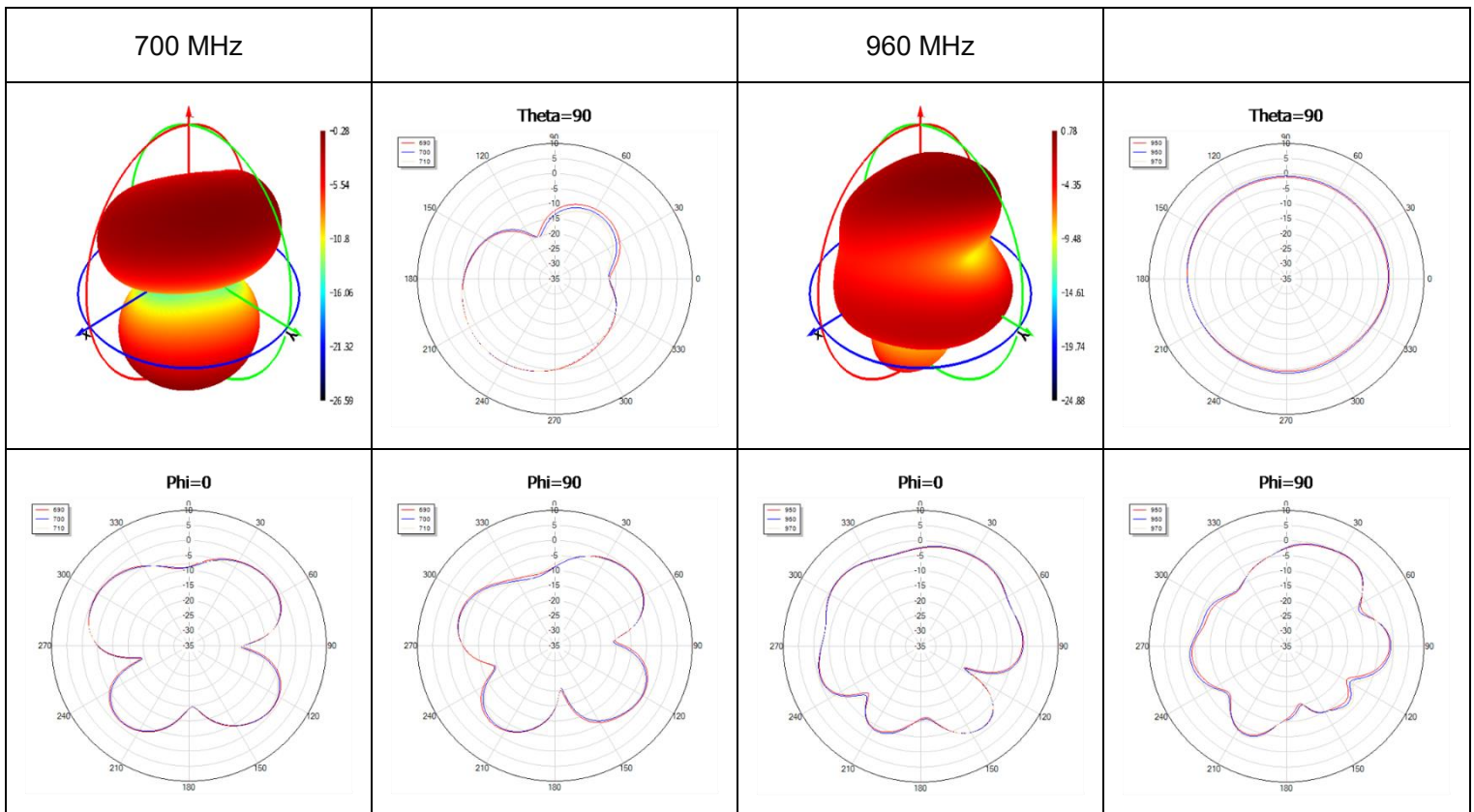
● 4G

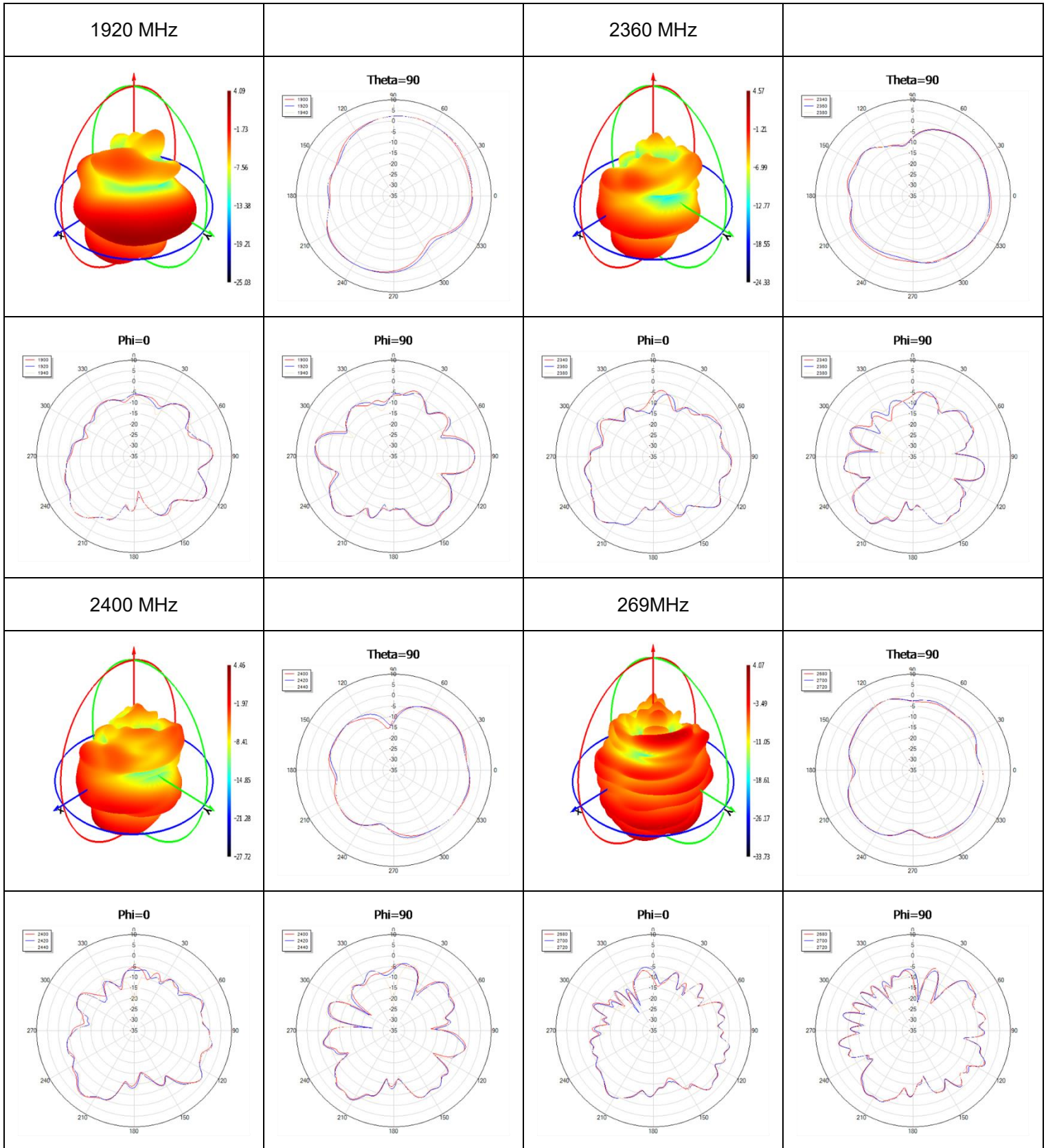




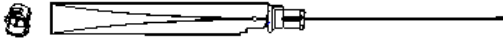
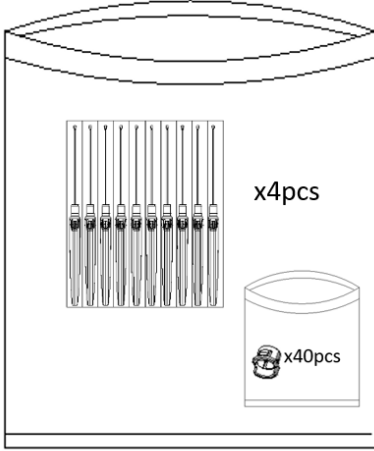
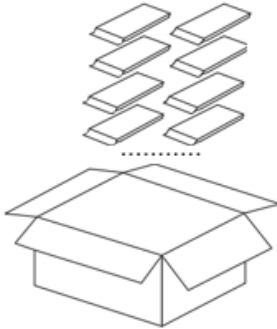
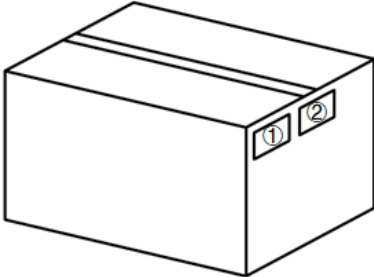


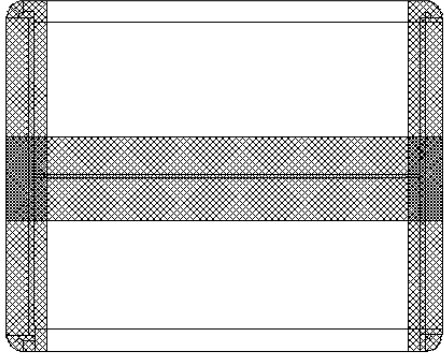
● **Max Peak Gain**





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. <u>Carton Size:</u> $L \times W \times H = 325 \times 325 \times 200 \text{ mm}$
4		Position for Attaching Labels ① Carton Label ② Quality Label

5	 A technical drawing of an H-shaped sealing carton. It consists of a central horizontal rectangular section with a cross-hatched texture, flanked by two vertical rectangular sections, also with a cross-hatched texture. The corners of the vertical sections are rounded. The entire structure is shown in a perspective view.	<p>Sealing Cartons H-shaped sealing cartons</p>
Note	<p>The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.</p>	

Contact Us

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

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Revision History

Version	Date	Author	Note
-	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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