Antenna Datasheet

Product OC: YPCA006AA
Version: 2.2
Date: 2026-01-05
Status: Released

Product Name: 5G Adhesive Mount FPC Monopole Antenna
Antenna
Key Features:
Frequency Band: 410–470 MHz; 698–960 MHz; 1400–6000 MHz
Dimensions: 150 mm × 16.2 mm × 0.75 mm
Efficiency: Up to 78.1 % (EVB)
RoHS and REACH Compliant

Overview

YPCA006AA is a 5G FPC antenna measuring 150 mm × 16.2 mm × 0.75 mm. This 5G antenna provides coverage from 410–470 MHz, 698–960 MHz, 1400–6000 MHz. The antenna has a 101 mm-long cable, terminated with IPEX MHF 1 connector, and is available with customized cable lengths and connectors. Ideal for applications where the antenna is required to be mounted inside, this adhesive mount omni directional antenna is easy to install thanks to its flexible material. It is compatible with Quectel ’s 5G Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. YPCA006AA is designed as a monopole antenna, which is ground dependent to offer high efficiency in many different mounting scenarios. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for mobile terminal field, industrial, smart wearable devices, remote monitoring and telematics, and many other IoT devices.

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 Drawing

Condition: Stick to ABS Board on 130 mm × 130 mm EVB Board & Free Space

1.1. Electrical

Electrical	
Frequency Range	410–470 MHz; 698–960 MHz; 1400–6000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail

Band / SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B48	B42 /n77	n79	Wi-Fi 5G
	Freq. (MHz)	600–700	700–810	820–960	1700–2170	2300–2400	2400–2500	2500–2690	3550–3700	3300–4200	4400–5000	5150–5850
Max. VSWR	EVB	7.2	2.8	3.0	2.2	2.9	1.8	1.9	1.6	3.6	2.4	2.9
	FS	3.0	2.3	2.5	1.6	2.7	2.0	1.3	1.6	2.3	1.8	2.3
Max. Return Loss (dB)	EVB	-2.4	-6.4	-6.0	-8.4	-6.3	-10.7	-10.2	-12.5	-5.0	-7.6	-6.3
	FS	-6.1	-8.2	-7.3	-12.8	-6.8	-9.3	-17.4	-12.7	-8.0	-10.8	-8.0
AVG Eff. (%)	EVB	39.8	65.1	59.8	60.9	53.2	56.6	61.1	76.3	58.6	45.0	40.4
	FS	22.1	46.3	53.5	55.4	51.8	60.1	64.9	60.5	64.7	66.0	48.4
AVG AVG Gain (dB)	EVB	-4.2	-1.9	-2.2	-2.2	-2.8	-2.5	-2.2	-1.2	-2.4	-3.5	-4.0
	FS	-6.7	-3.4	-2.7	-2.6	-2.9	-2.2	-1.9	-2.2	-1.9	-1.8	-3.2
Max. Peak Gain (dBi)	EVB	2.5	2.8	3.3	3.7	4.5	2.3	3.7	3.7	4.2	5.6	5.8
	FS	-0.8	0.7	0.9	1.8	3.0	2.5	2.9	3.6	2.7	4.1	4.0

VSWR	EVB	≤ 7.2
	FS	≤ 3.0
Return Loss	EVB	≤ -2.4 dB
	FS	≤ -6.1 dB
Peak Gain	EVB	≤ 5.8 dBi
	FS	≤ 4.1 dBi

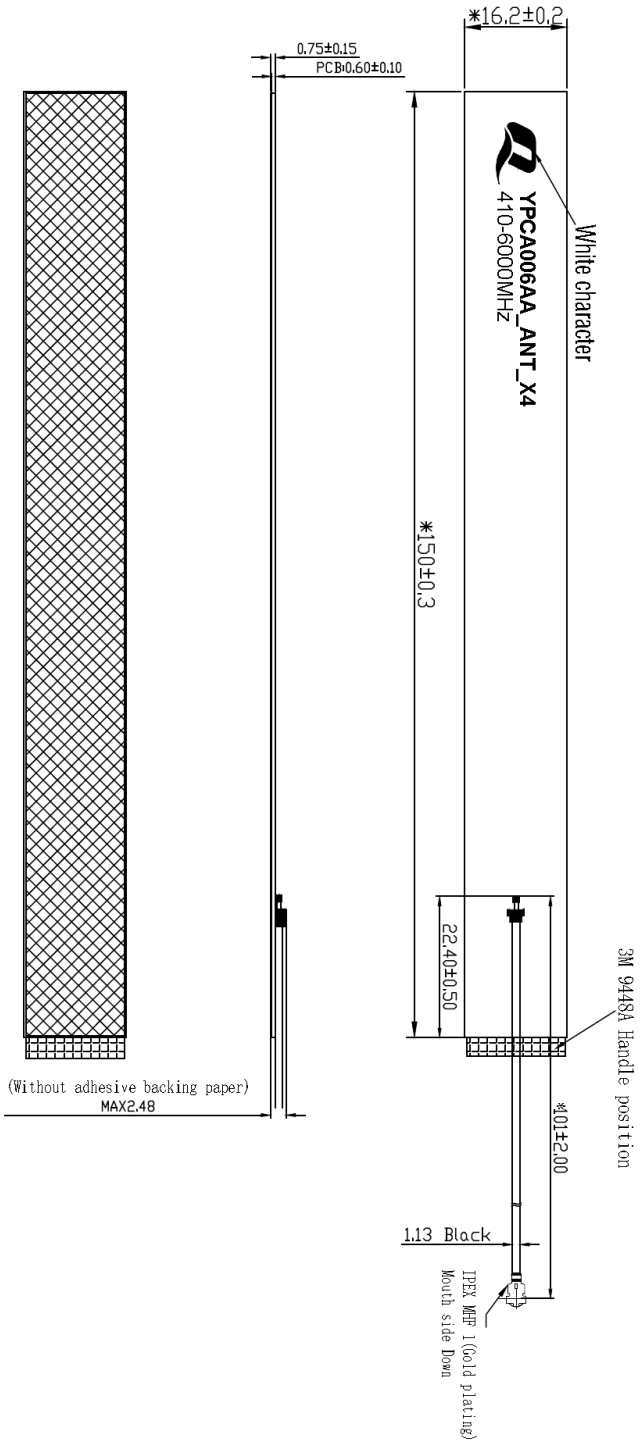
Electrical – Detail			
Band / SPEC	Band	B87/B88	B31/B72/B73
	Freq. (MHz)	410–430 MHz	450–470 MHz
Max. VSWR	EVB	3.4	6.1
	FS	11.8	2.3
Max. Return Loss (dB)	EVB	-5.3	-2.9
	FS	-1.5	-8.3
AVG Eff. (%)	EVB	43.3	36.0
	FS	8.3	36.1
AVG AVG Gain (dB)	EVB	-3.7	-4.4
	FS	-11.4	-4.4
Max. Peak Gain	EVB	0.6	-0.2
	FS	-5.0	-1.7

VSWR	EVB	≤ 6.1
	FS	≤ 11.8
Return Loss	EVB	≤ -2.9 dB
	FS	≤ -1.5 dB
Peak Gain	EVB	≤ 0.6 dBi
	FS	≤ -1.7 dBi

1.2. Mechanical and Environmental

Mechanical	
Antenna Dimensions	150 mm × 16.2 mm × 0.75 mm
Antenna Material & Color	PCB & Black
Cable Type & Color & Length	Φ 1.13 & Black & 101 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 3.9 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

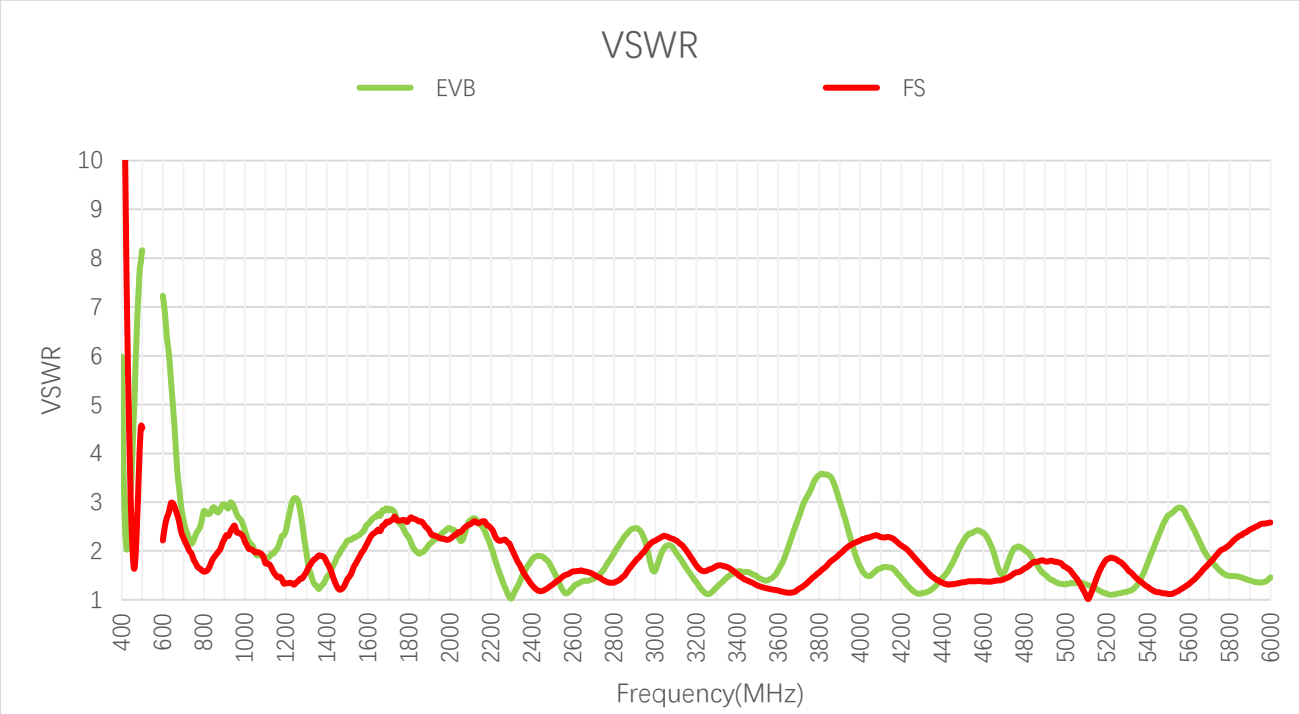
2 Drawing


*16.2±0.2
0.75±0.15
PCB:0.60±0.10
YPCA006AA_ANT_X4
410-6000MHz
White character
*150±0.3
22.40±0.50
3M 9448A Handle position
*101±2.00
1.13 Black
IPEX MHF I(Gold plating)
Mouth side Down
(Without adhesive backing paper)
MAX2.48

3 Detailed Performance

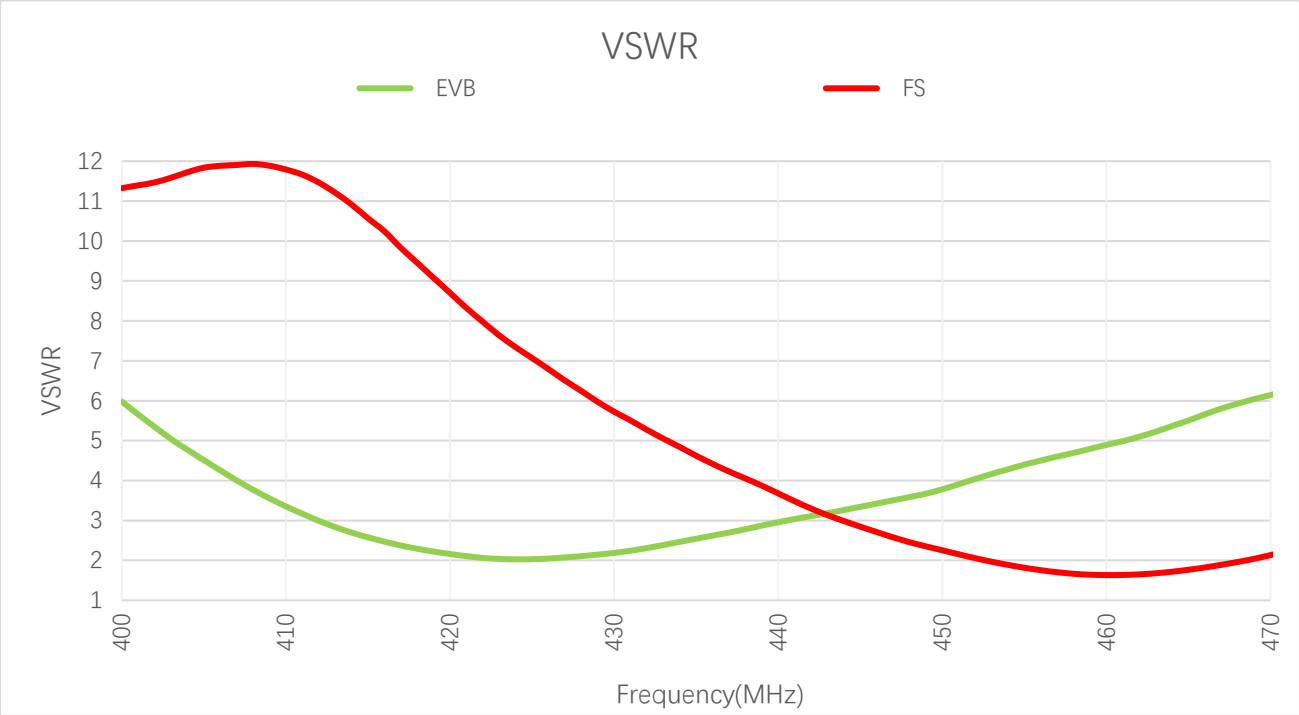
3.1. S-Parameter Test

3.1.1. VSWR



VSWR

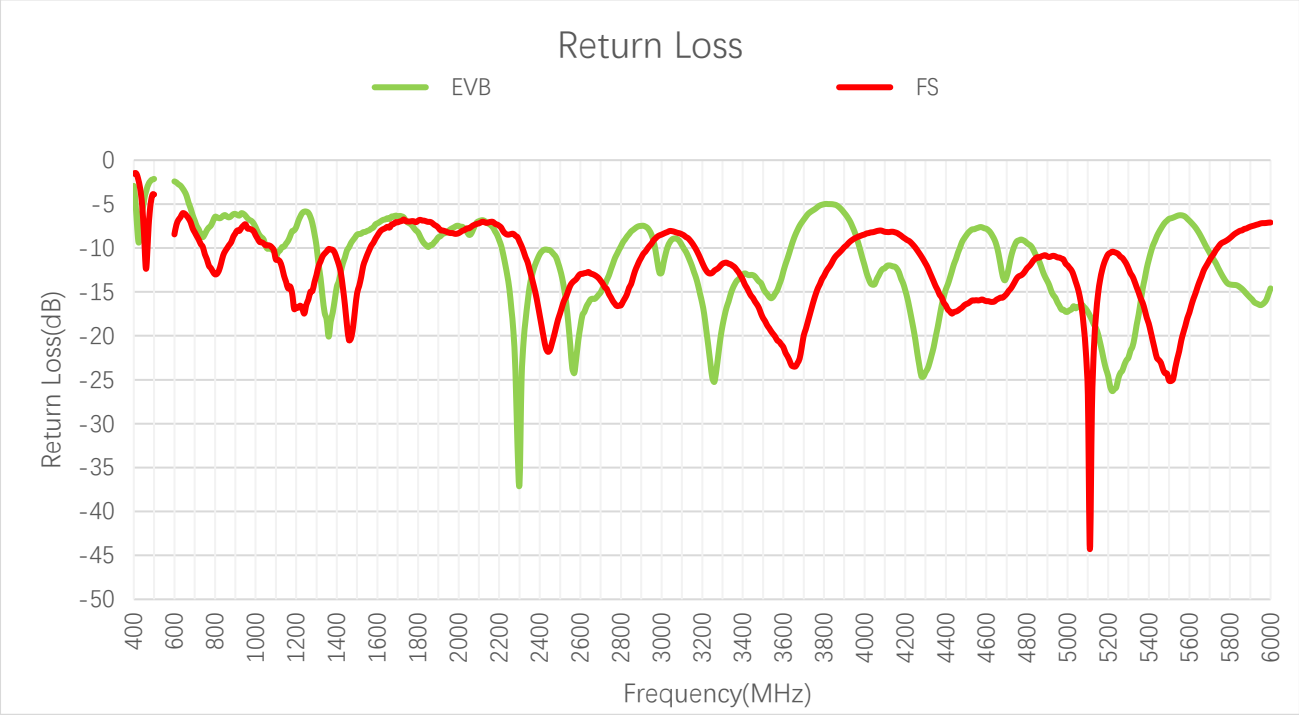
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	7.2	6.0	2.5	2.8	3.0	2.8	1.8	2.9	2.6	2.0
FS	2.2	2.8	2.2	1.7	2.2	2.4	1.4	2.6	2.6	2.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
EVB	2.3	2.6	1.5	1.9	1.3	1.6	1.6	1.3	2.7	1.5
FS	2.3	2.6	1.6	1.2	1.6	1.2	1.4	1.7	1.1	2.6



VSWR

Frequency (MHz)	410	420	430	440	450	460	470
EVB	3.4	2.2	2.2	3.0	3.8	4.9	6.1
FS	11.8	8.7	5.7	3.7	2.3	1.6	2.1

3.1.2. Return Loss



Return Loss (dB)

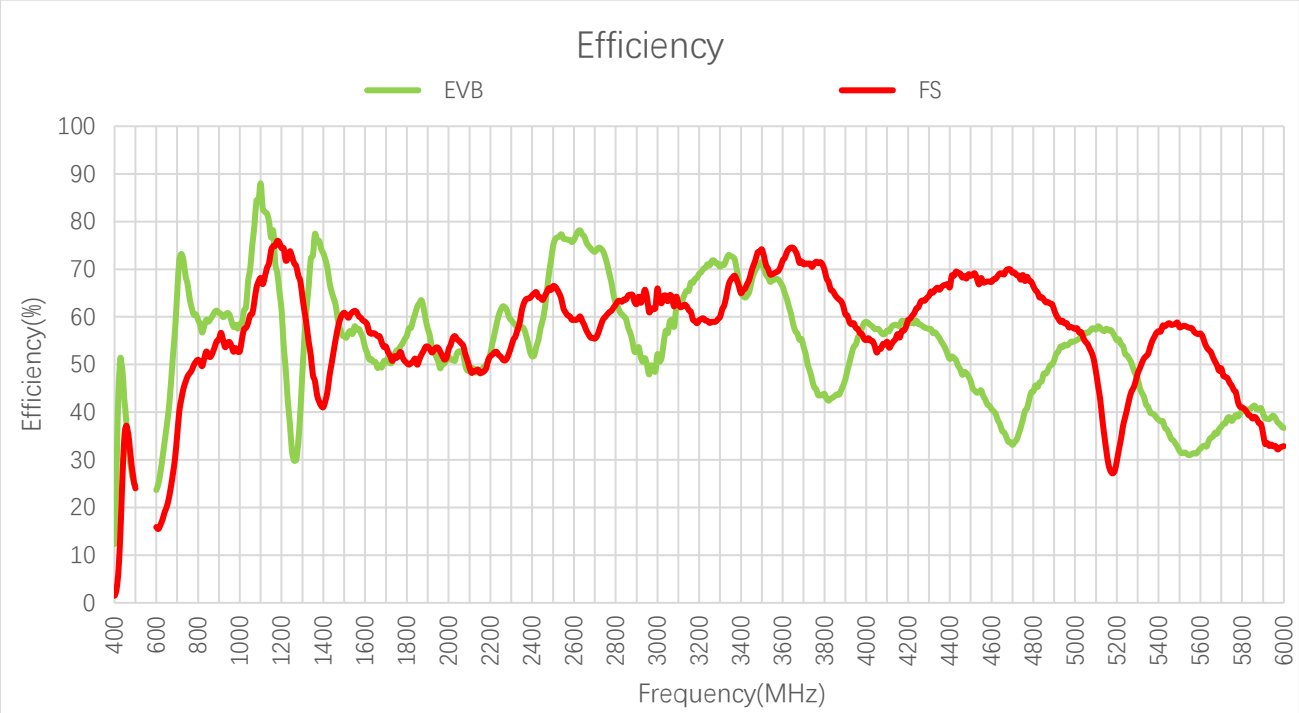
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-2.4	-2.9	-7.5	-6.6	-6.1	-6.6	-11.1	-6.3	-6.9	-9.4
FS	-8.5	-6.5	-8.6	-11.7	-8.4	-7.8	-16.5	-7.0	-6.9	-7.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
EVB	-8.1	-7.2	-14.4	-10.3	-19.0	-12.7	-13.2	-17.3	-6.7	-14.6
FS	-8.2	-7.1	-12.5	-21.6	-13.0	-21.3	-15.2	-12.0	-25.1	-7.1

Return Loss (dB)

Frequency (MHz)	410	420	430	440	450	460	470
EVB	-5.3	-8.7	-8.6	-6.1	-4.7	-3.6	-2.9
FS	-1.5	-2.0	-3.1	-4.8	-8.3	-12.4	-8.8

3.2. Radiation Performance Test

3.2.1. Efficiency



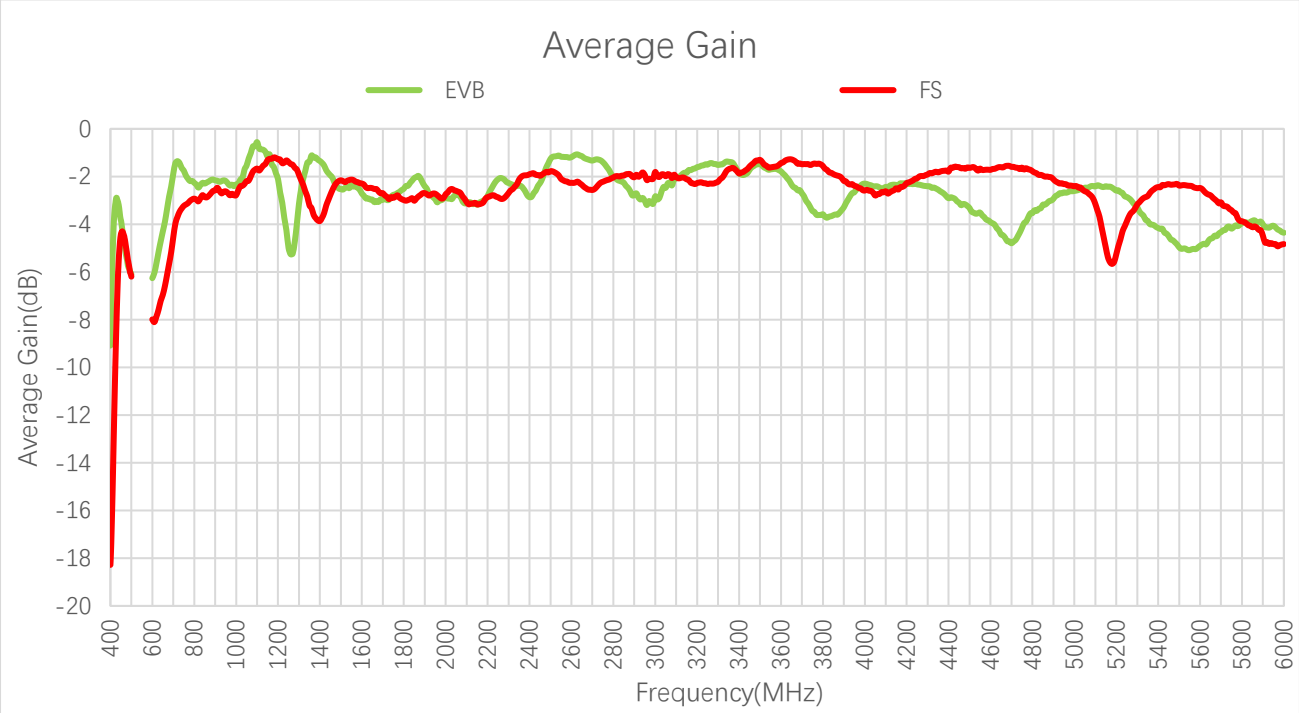
Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	23.7	30.5	71.8	58.2	60.8	59.2	65.2	51.4	52.0	61.9
FS	15.9	17.5	40.1	51.3	55.3	53.9	50.3	52.6	51.7	52.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
EVB	50.7	49.0	57.9	59.2	76.1	66.3	33.1	54.9	31.9	36.7
FS	53.5	49.0	61.2	63.5	59.4	71.9	69.3	57.5	57.8	32.9

Efficiency (%)

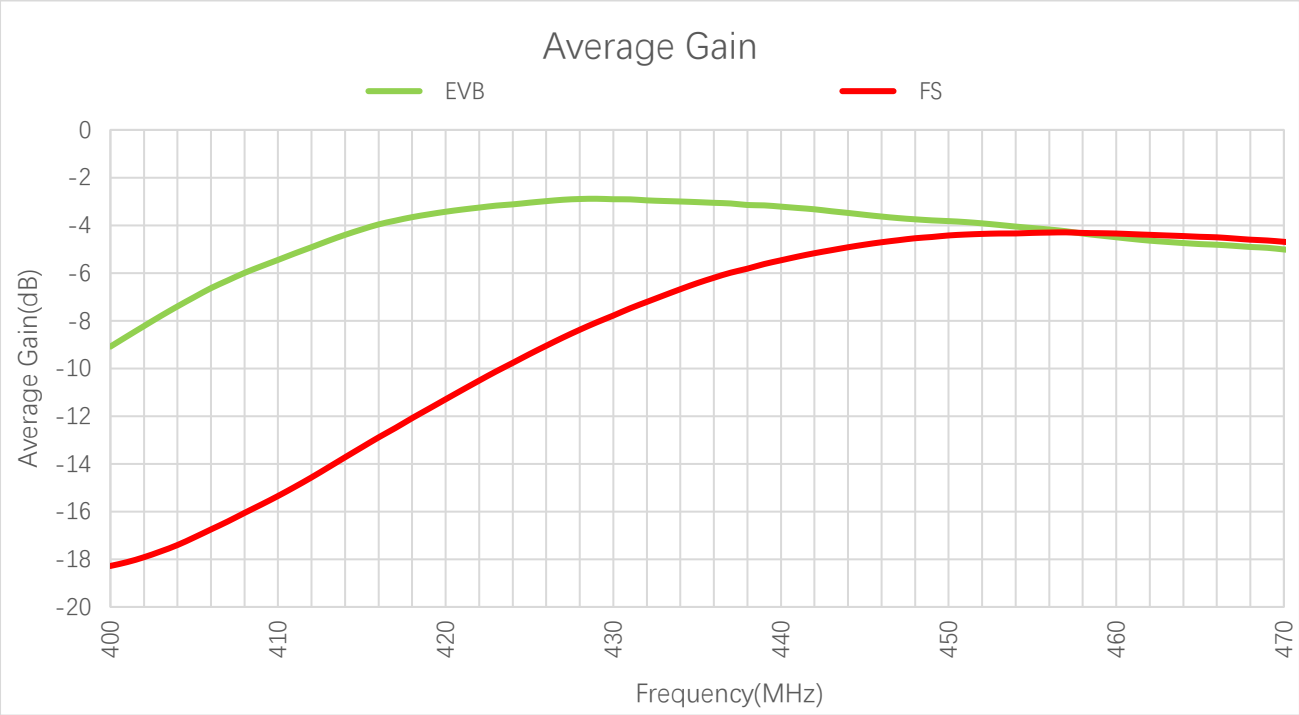
Frequency (MHz)	410	420	430	440	450	460	470
EVB	28.5	45.4	51.2	47.7	41.5	35.5	31.5
FS	2.9	7.4	16.7	28.4	36.1	36.8	33.9

3.2.2. Average Gain



Average Gain (dB)

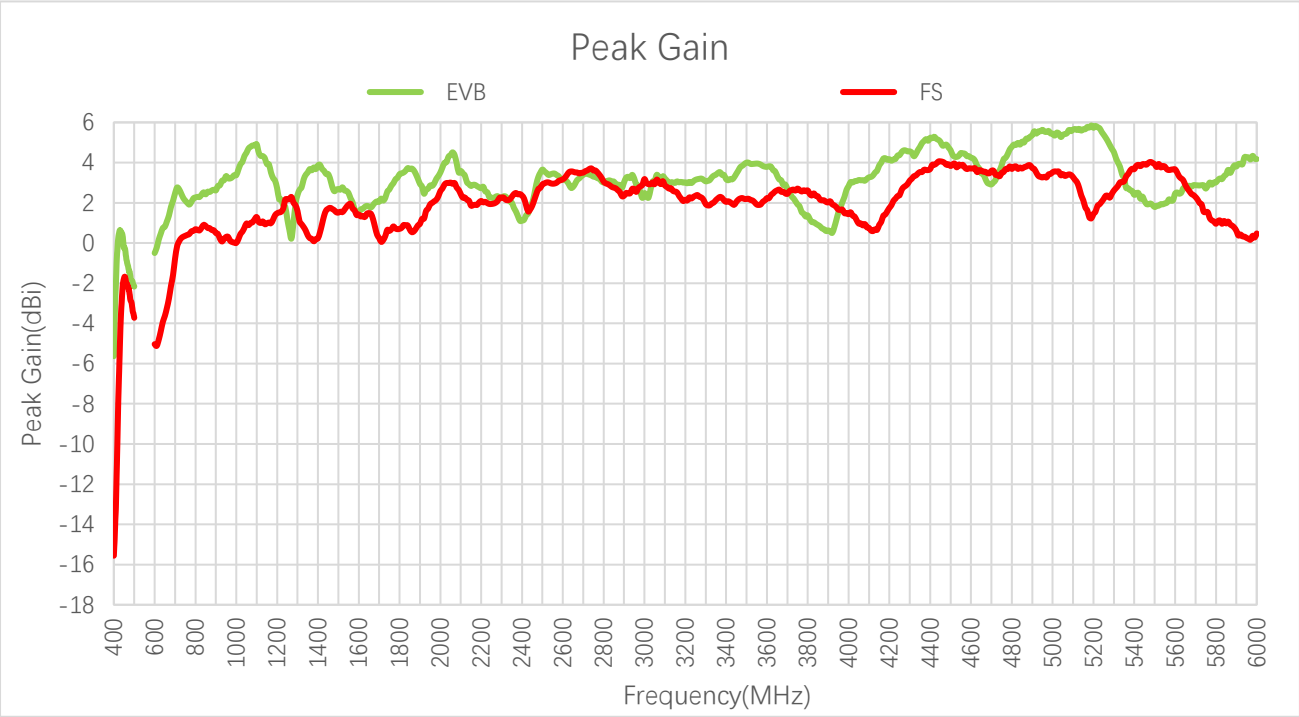
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-6.3	-5.2	-1.4	-2.4	-2.2	-2.3	-1.9	-2.9	-2.8	-2.1
FS	-8.0	-7.6	-4.0	-2.9	-2.6	-2.7	-3.0	-2.8	-2.9	-2.8
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
EVB	-3.0	-3.1	-2.4	-2.3	-1.2	-1.8	-4.8	-2.6	-5.0	-4.4
FS	-2.7	-3.1	-2.1	-2.0	-2.3	-1.4	-1.6	-2.4	-2.4	-4.8



Average Gain (dB)

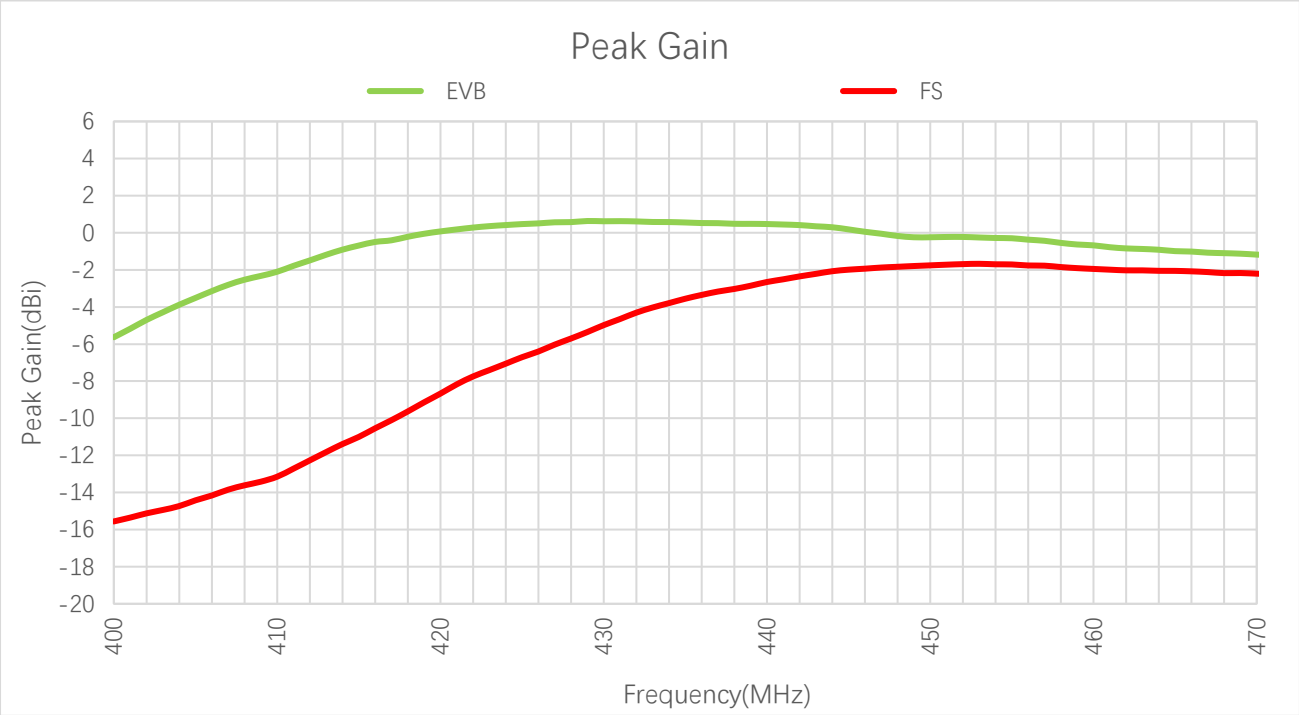
Frequency (MHz)	410	420	430	440	450	460	470
EVB	-5.5	-3.4	-2.9	-3.2	-3.8	-4.5	-5.0
FS	-15.3	-11.3	-7.8	-5.5	-4.4	-4.3	-4.7

3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-0.5	0.5	2.8	2.4	2.6	3.2	3.4	2.2	2.6	3.4
FS	-5.0	-4.4	-0.2	0.8	0.5	0.3	1.6	0.1	0.7	0.7
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**
EVB	2.9	2.9	2.0	2.0	3.2	3.8	2.9	5.4	1.8	4.2
FS	1.9	2.1	2.3	1.9	3.2	2.2	3.6	3.5	3.9	0.5



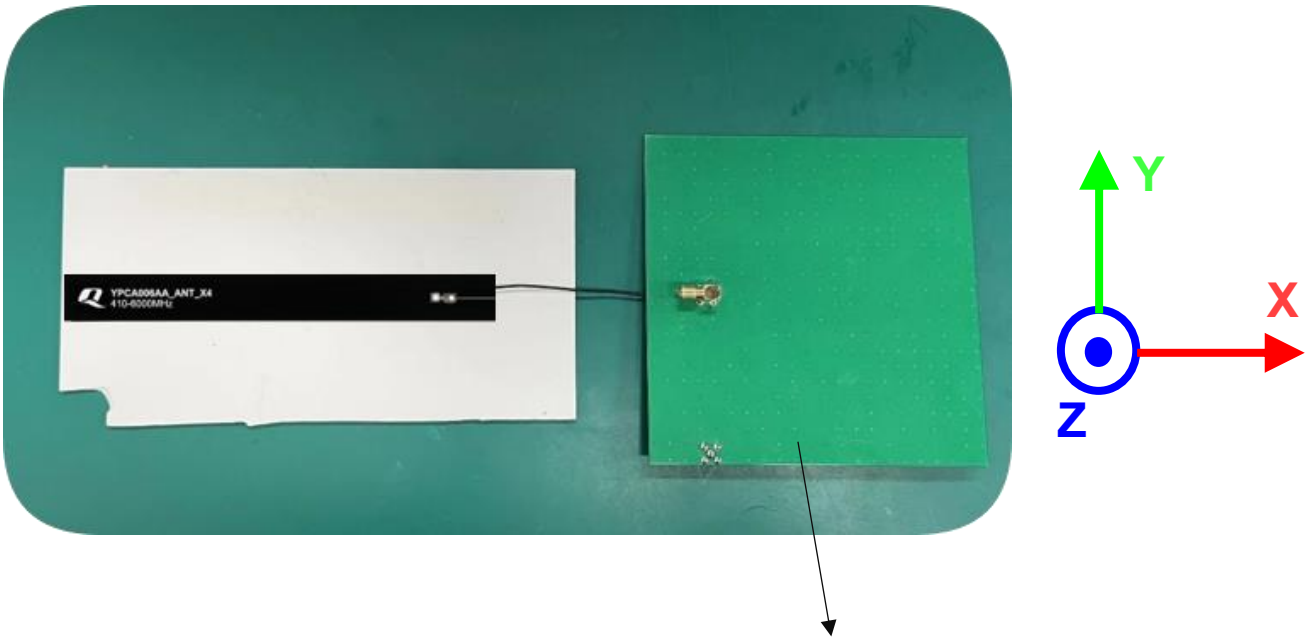
Peak Gain (dBi)

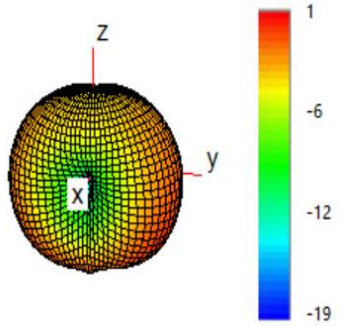
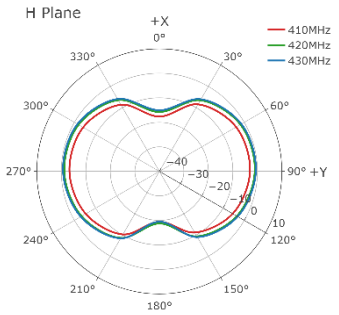
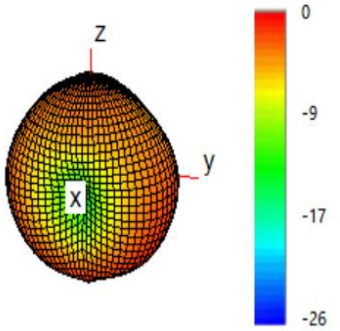
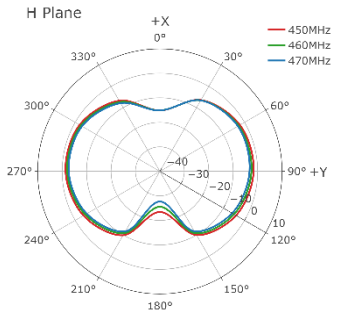
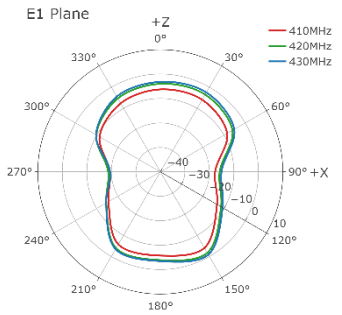
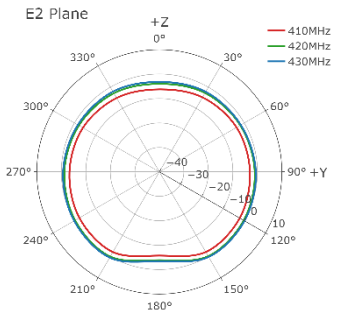
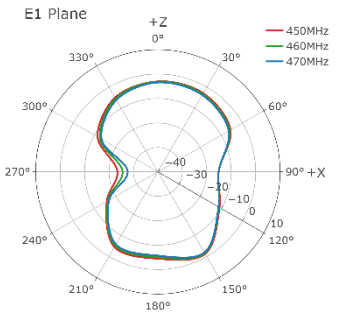
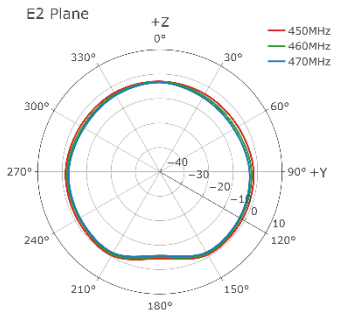
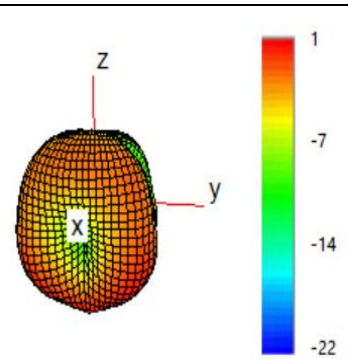
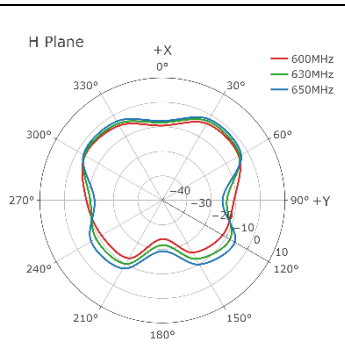
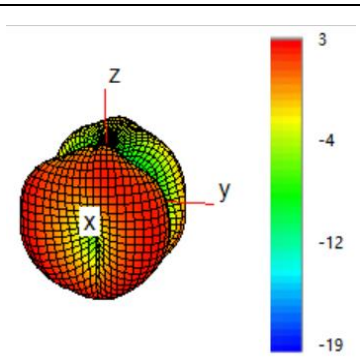
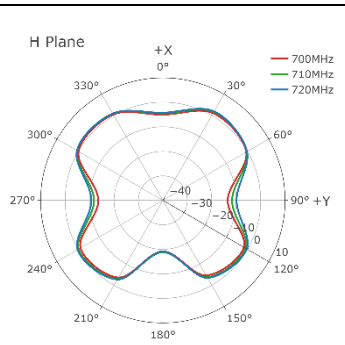
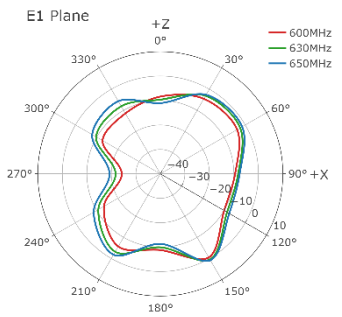
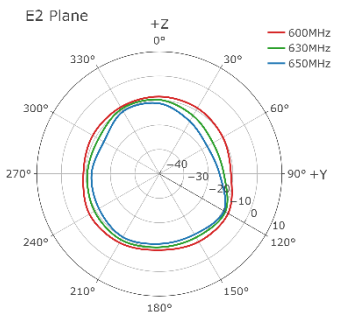
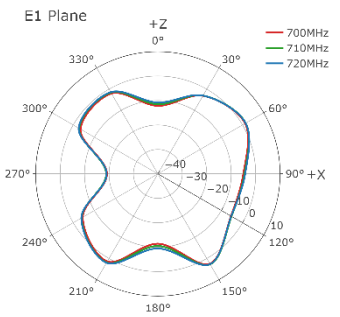
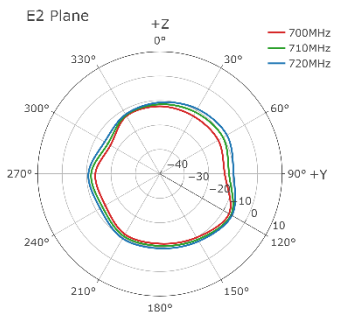
Frequency (MHz)	410	420	430	440	450	460	470
EVB	-2.1	0.1	0.6	0.5	-0.2	-0.7	-1.2
FS	-13.1	-8.7	-5.0	-2.7	-1.8	-1.9	-2.2

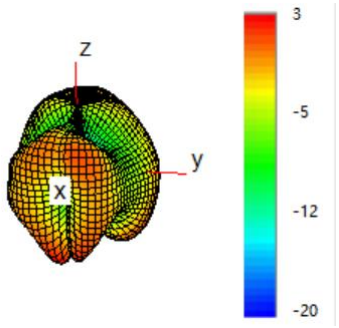
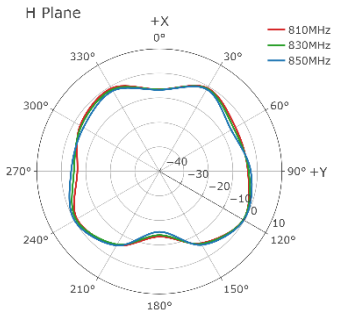
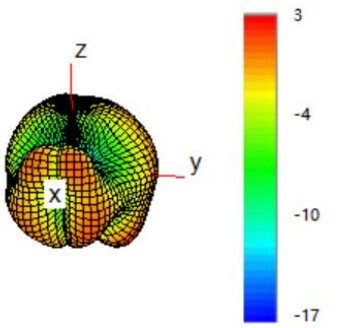
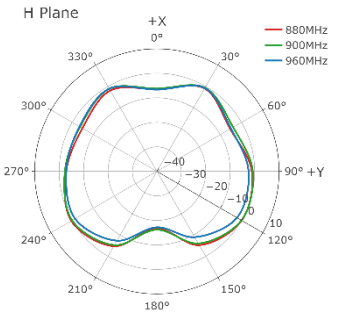
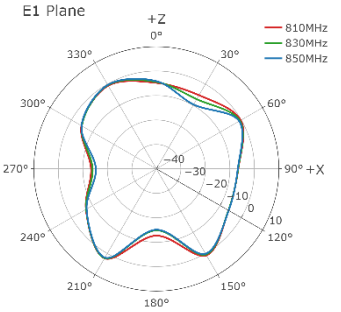
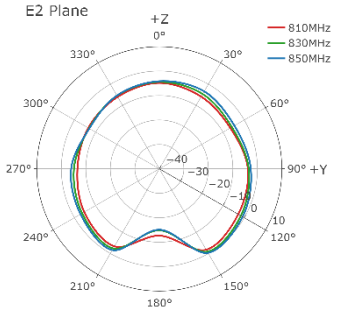
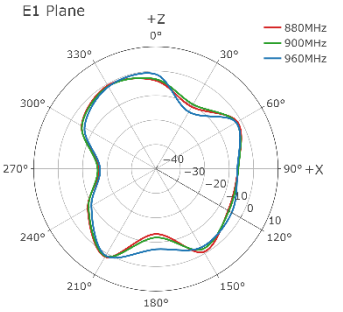
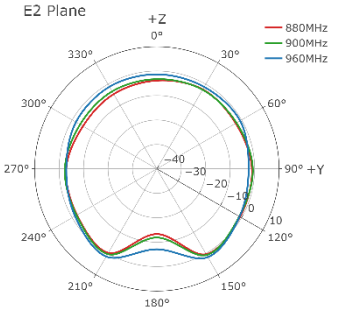
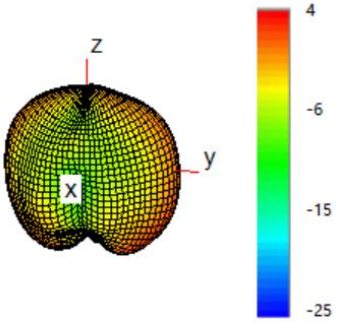
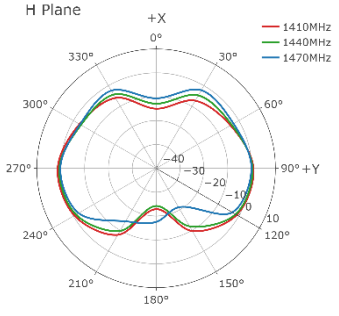
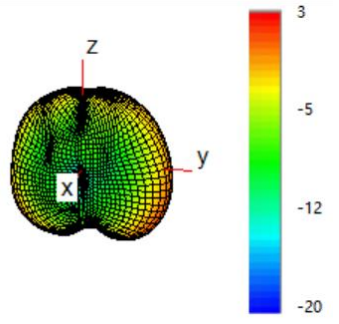
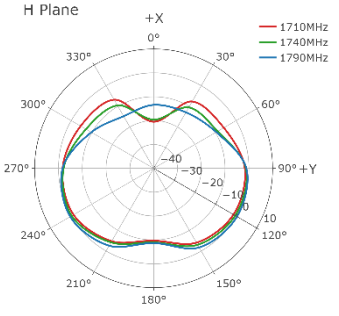
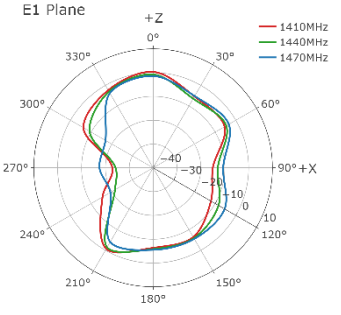
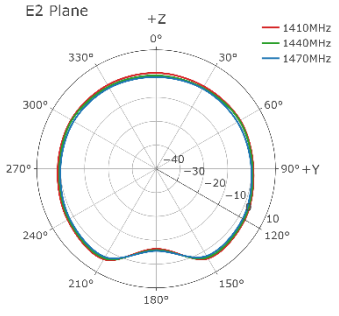
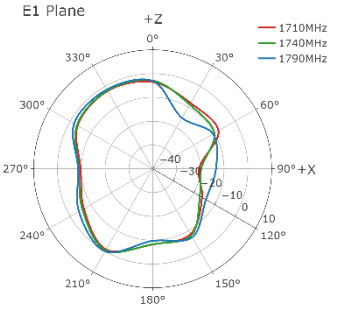
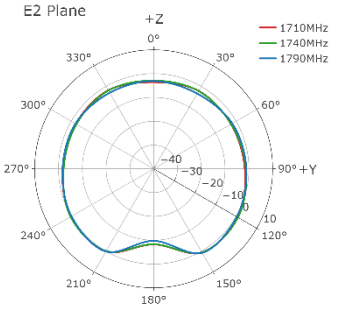
3.2.4. 3D & 2D Radiation Pattern

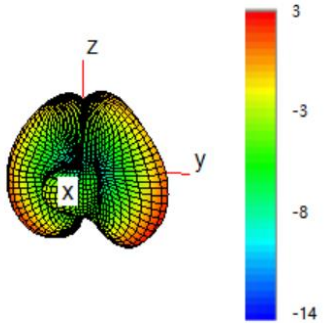
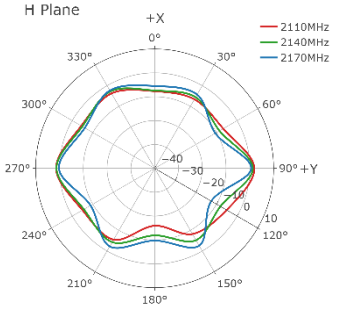
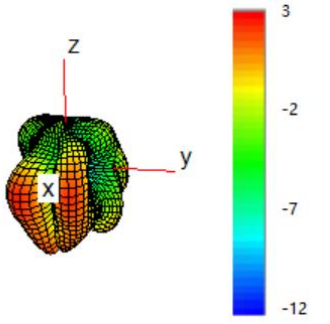
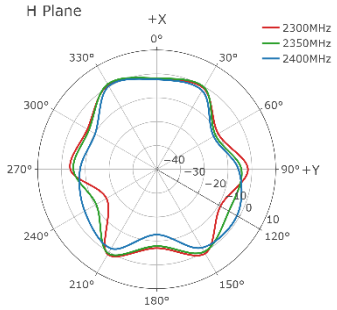
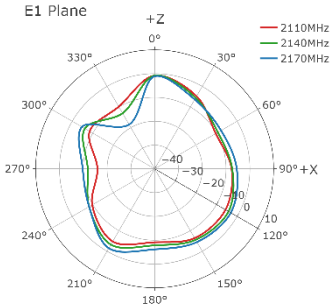
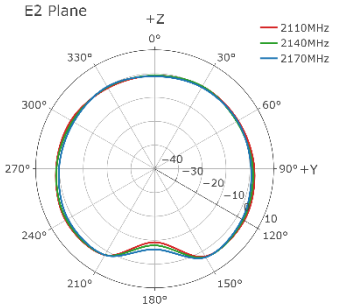
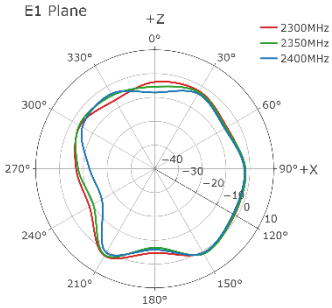
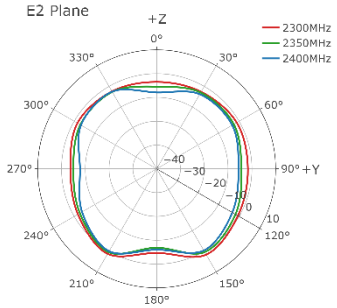
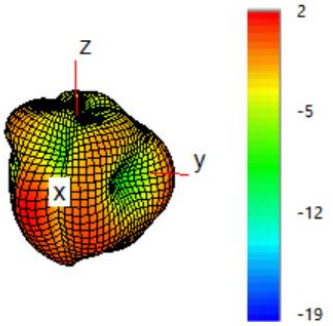
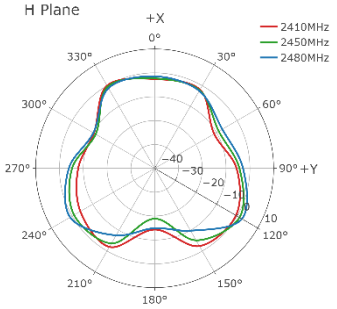
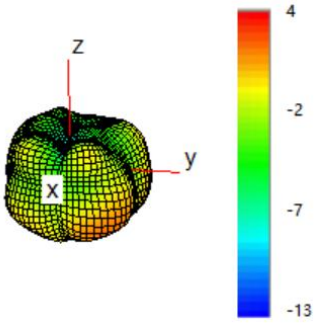
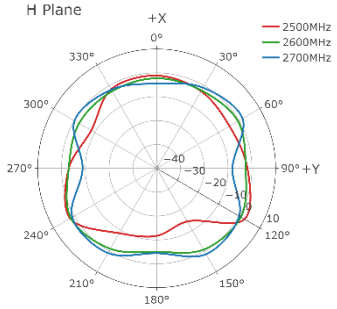
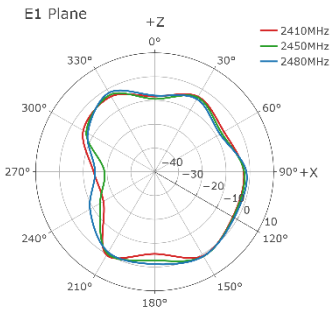
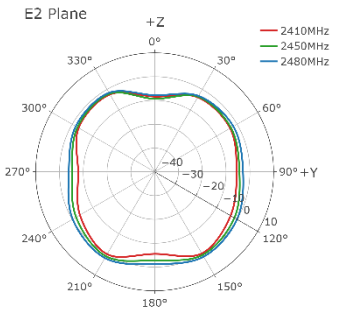
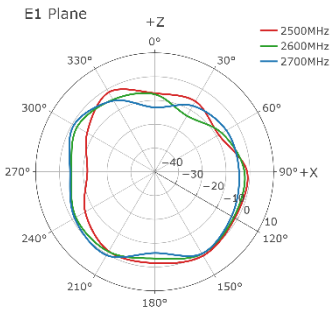
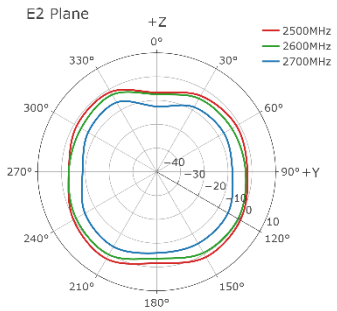
3.2.4.1. Test Condition: Stick to ABS board on 130 mm × 130 mm EVB board

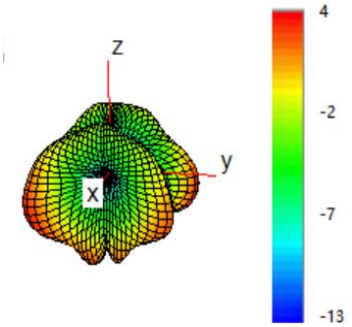
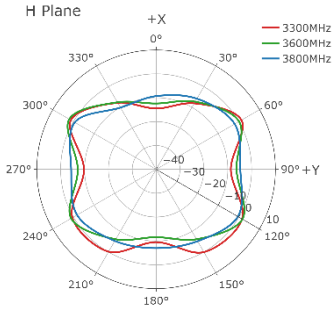
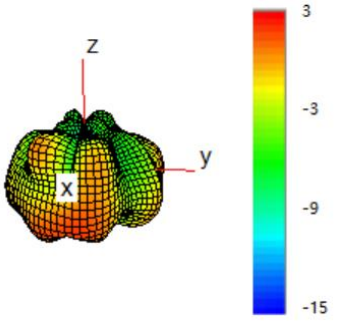
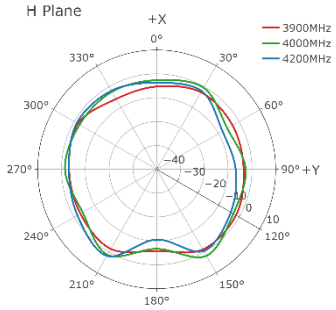
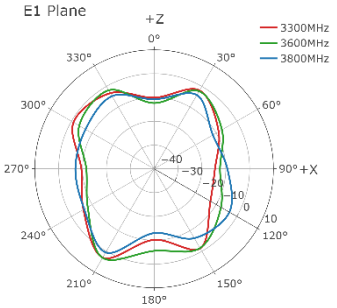
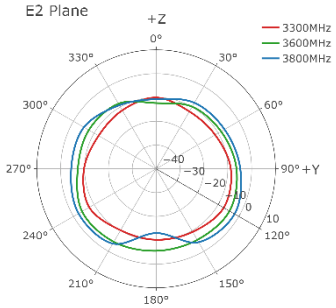
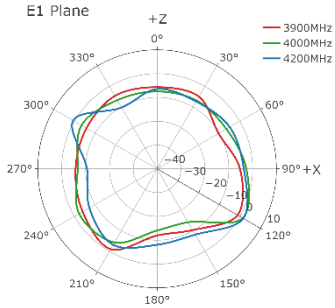
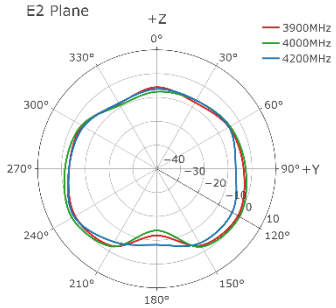
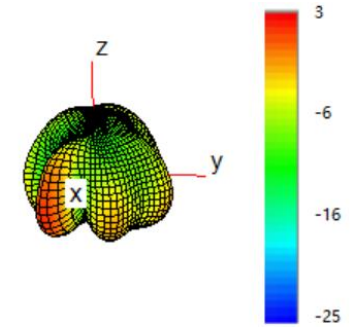
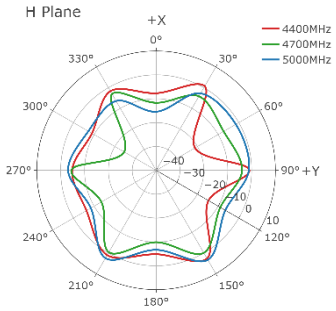
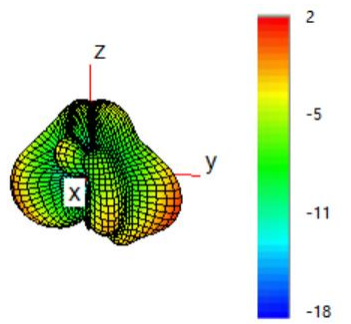
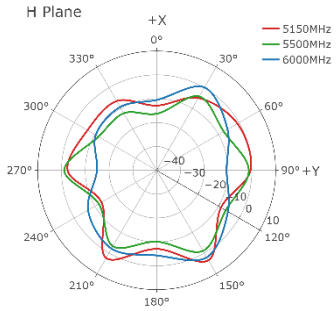
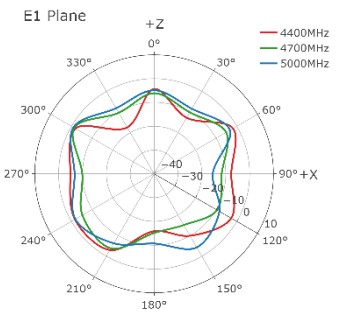
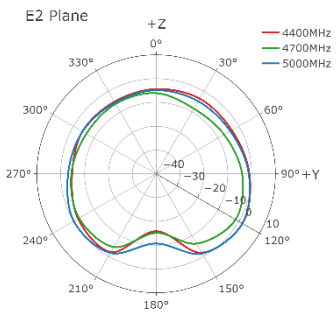
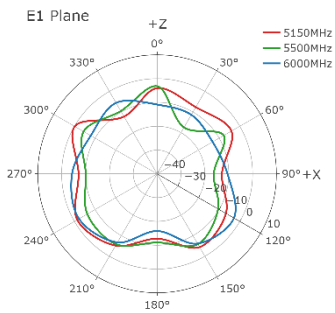
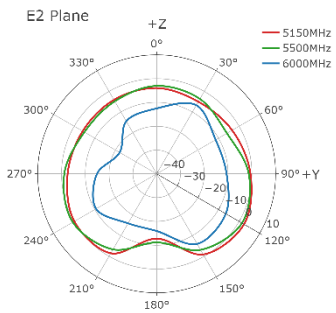
- **Test Chamber: HF-G-1**



420 MHz		460 MHz	
			
			
630 MHz		710 MHz	
			
			

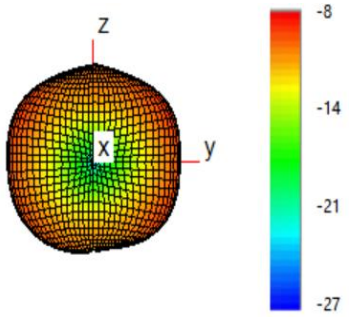
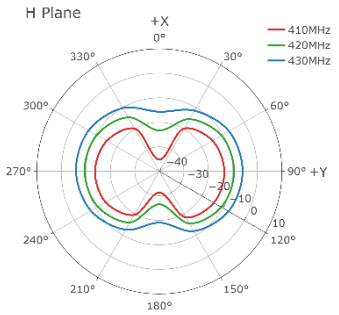
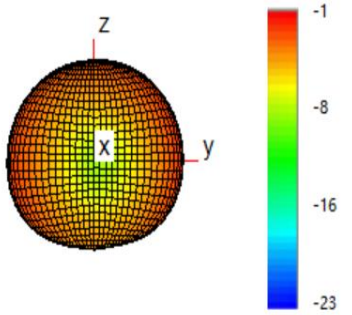
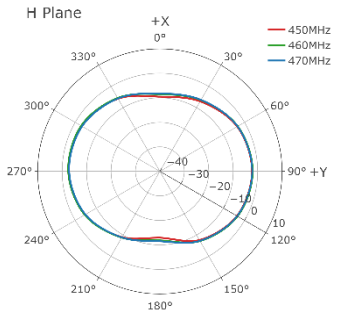
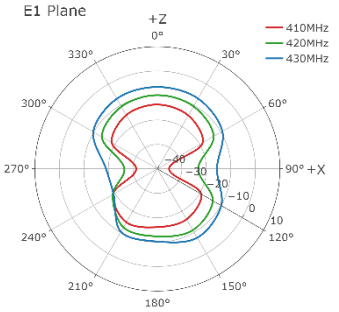
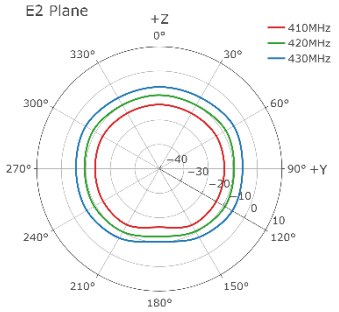
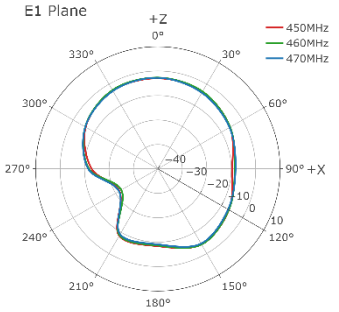
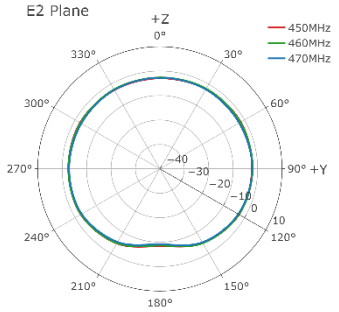
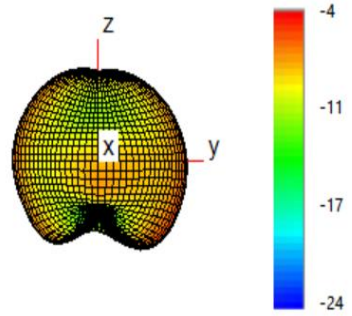
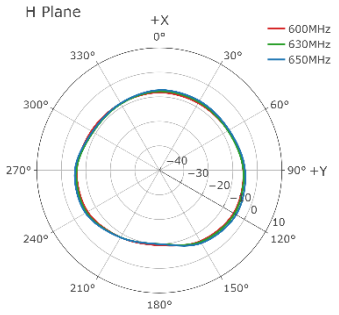
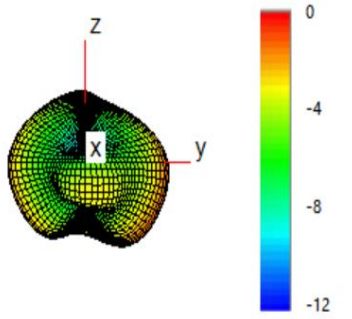
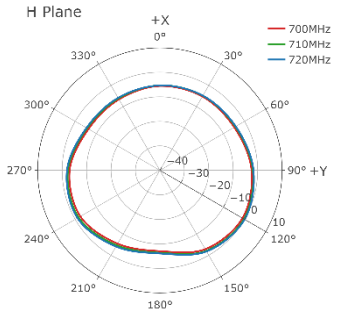
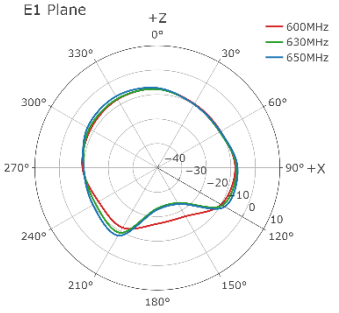
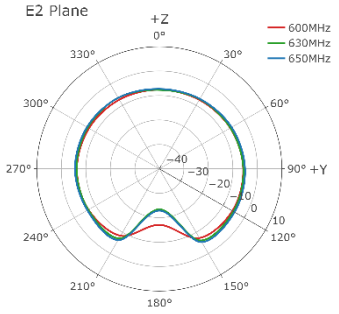
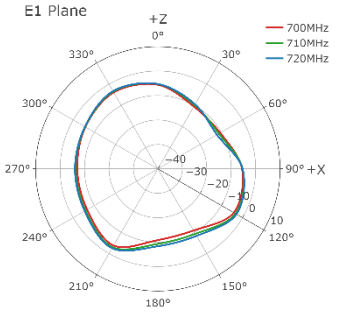
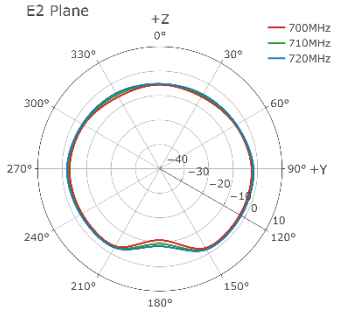
830 MHz		900 MHz	
			
			
1440 MHz		1740 MHz	
			
			

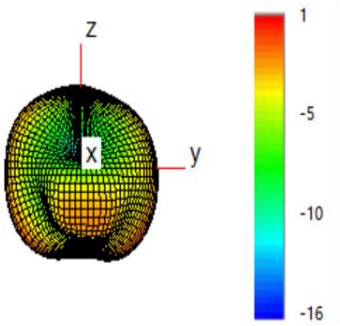
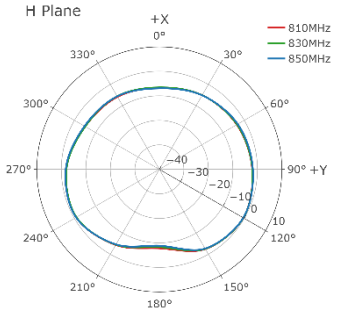
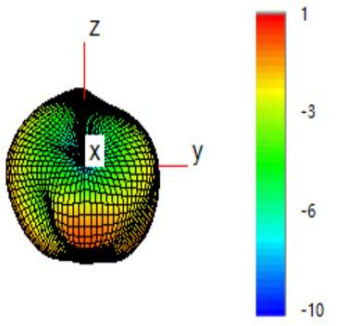
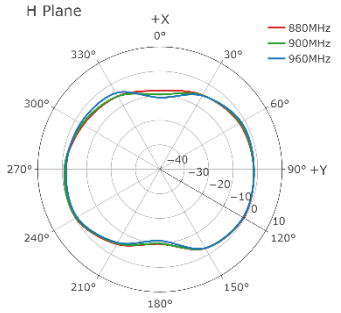
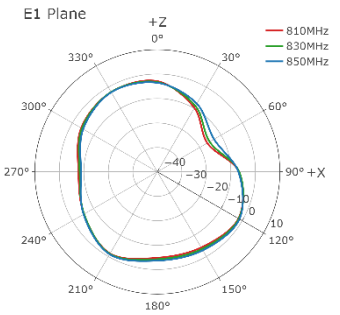
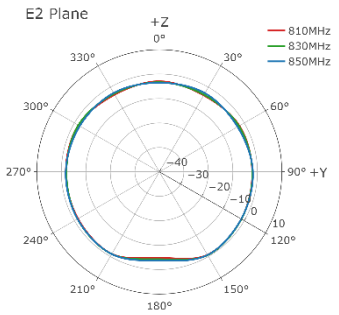
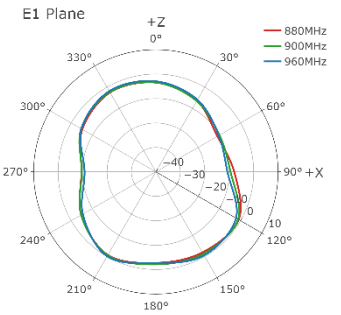
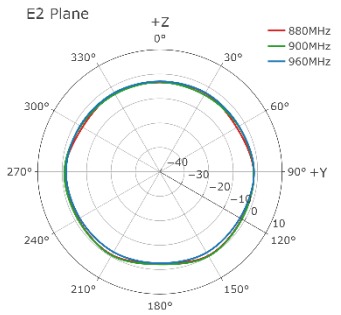
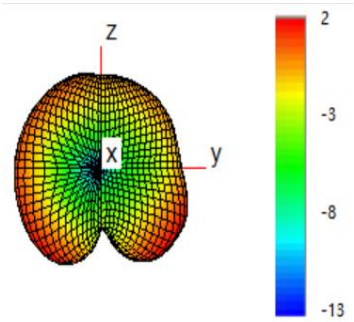
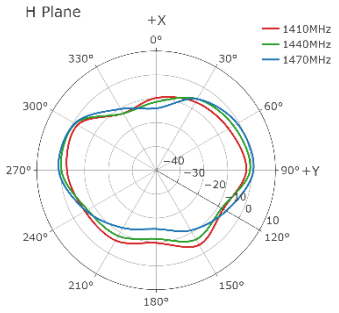
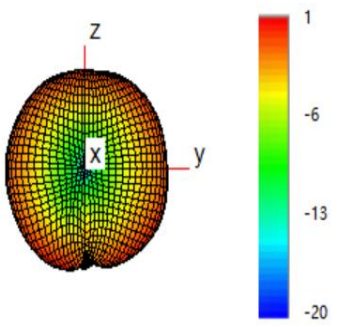
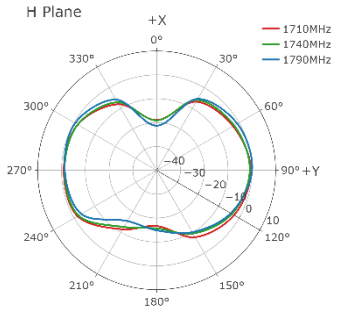
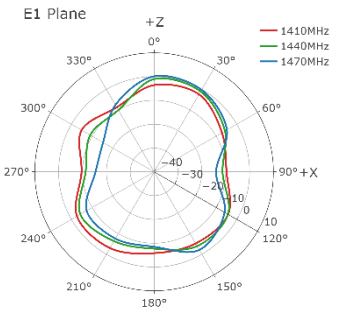
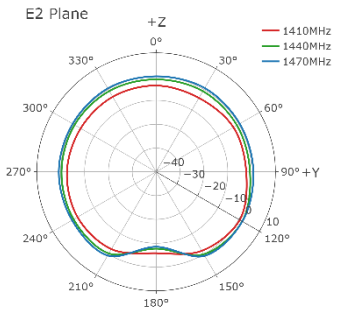
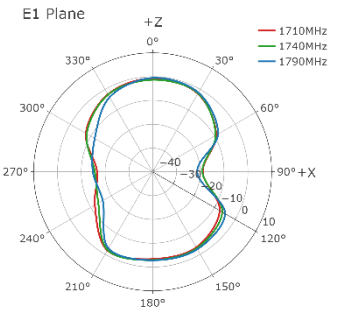
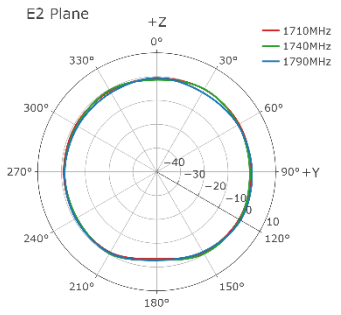
2140 MHz		2350 MHz	
			
			
2450 MHz		2600 MHz	
			
			

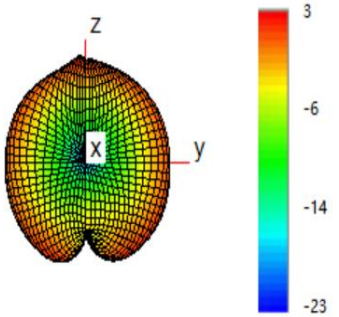
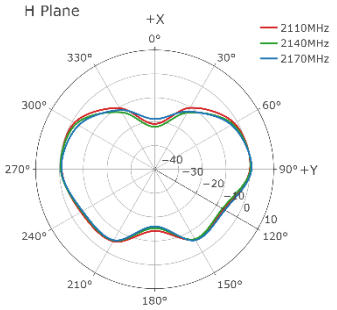
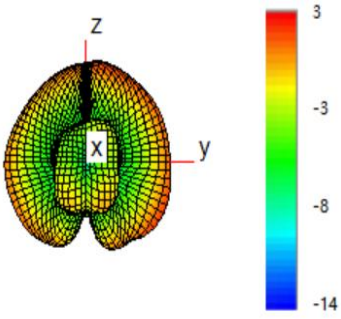
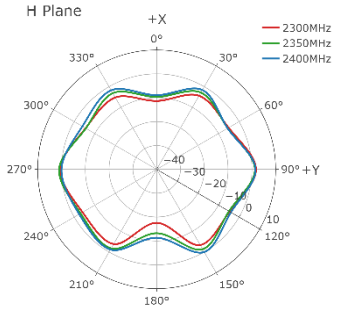
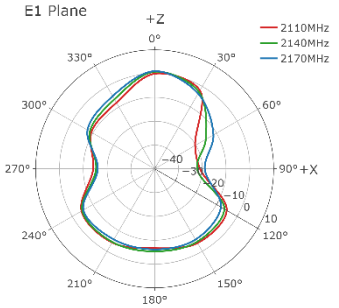
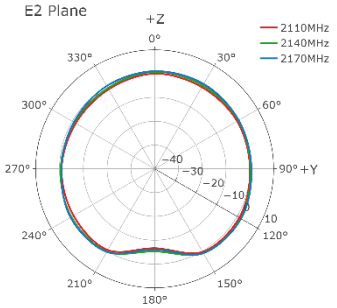
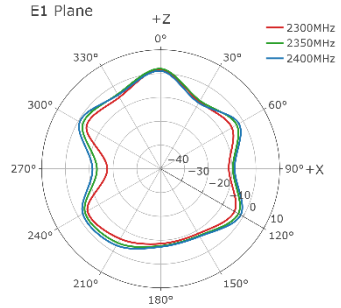
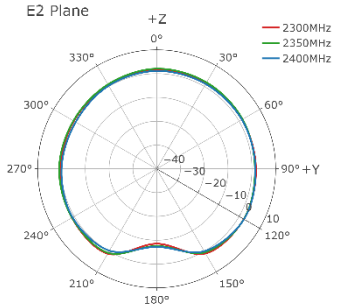
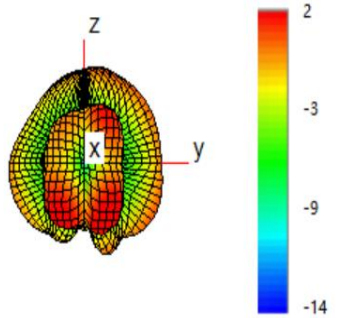
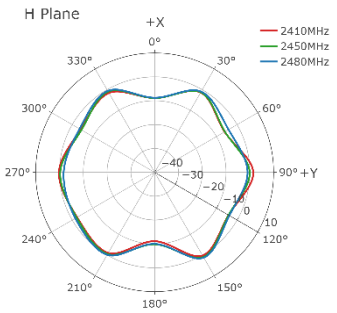
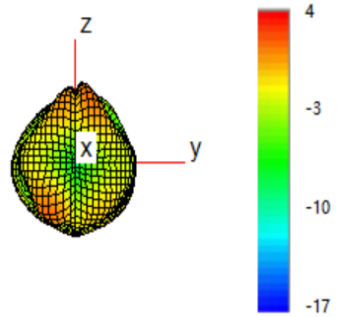
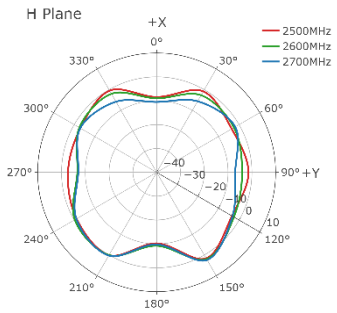
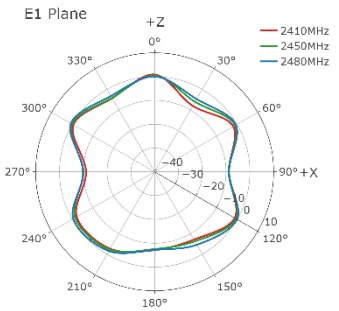
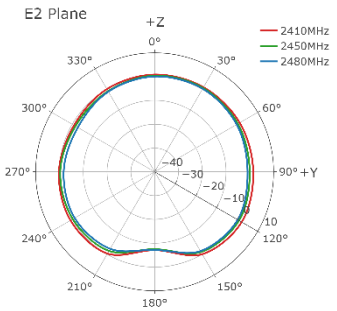
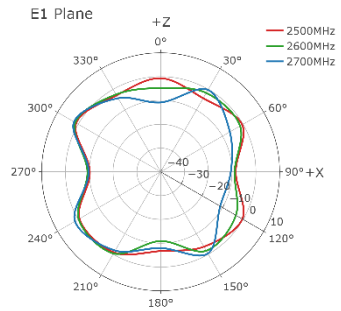
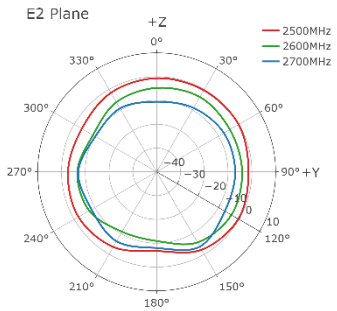
3600 MHz		4000 MHz	
			
			
4700 MHz		5500 MHz	
			
			

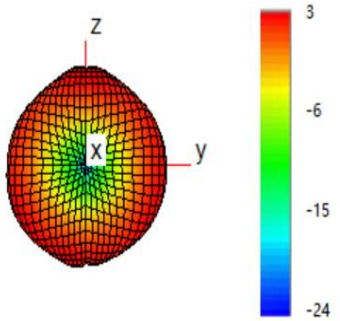
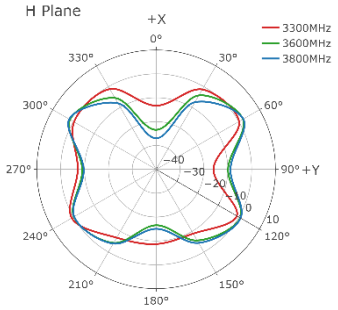
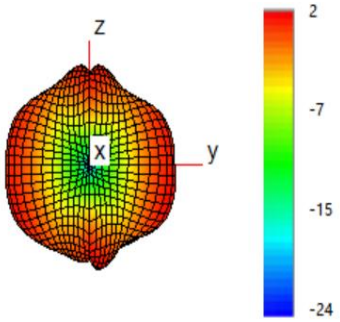
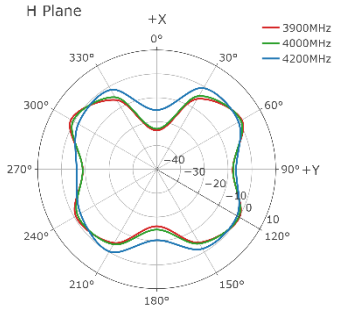
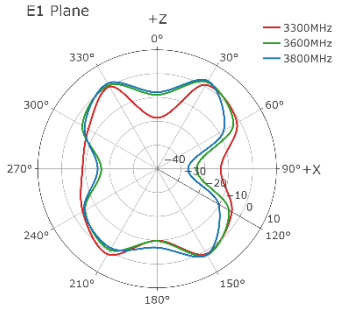
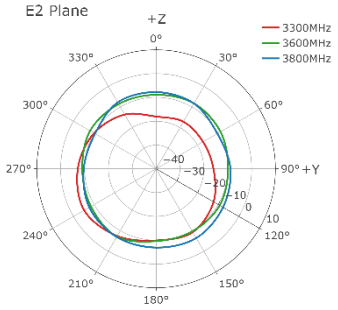
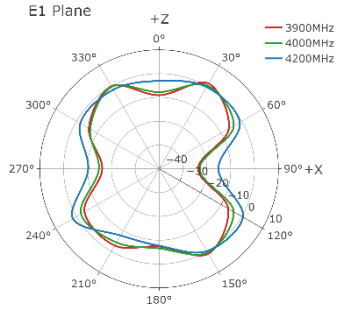
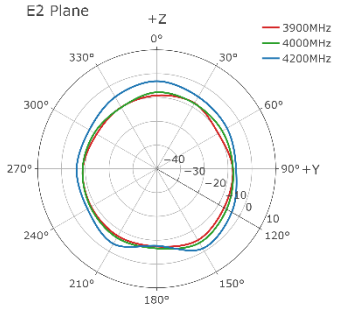
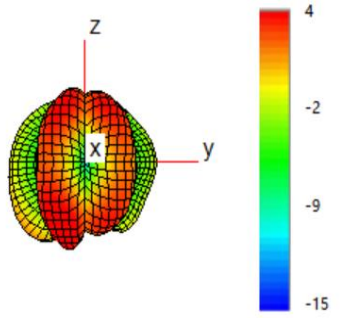
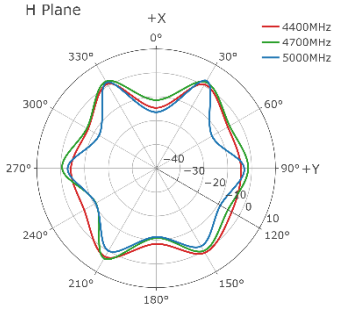
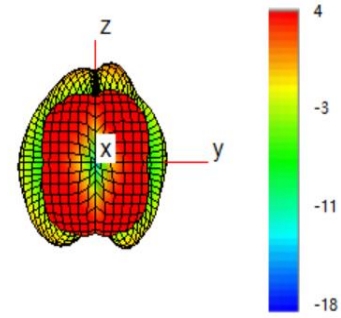
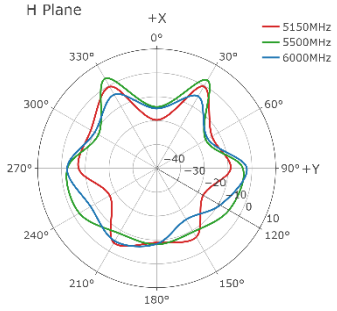
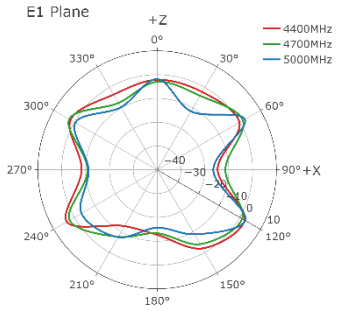
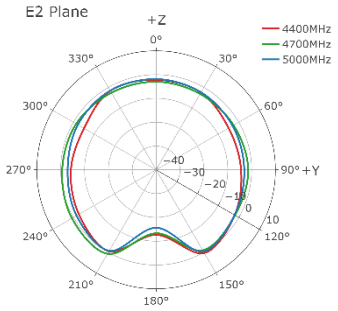
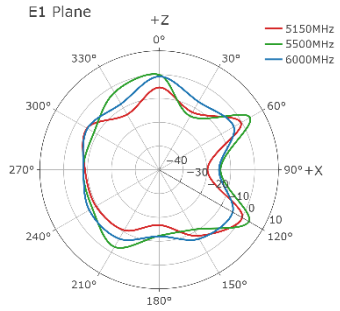
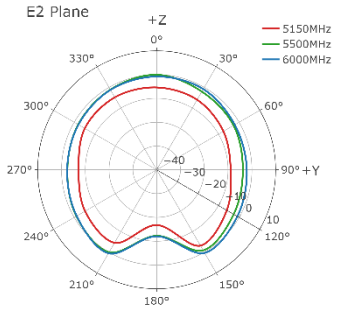
3.2.4.2. Test Condition: Free Space

- Test Chamber: HF-G-1

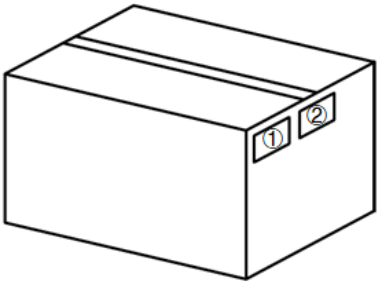
420 MHz		460 MHz	
			
			
630 MHz		710 MHz	
			
			

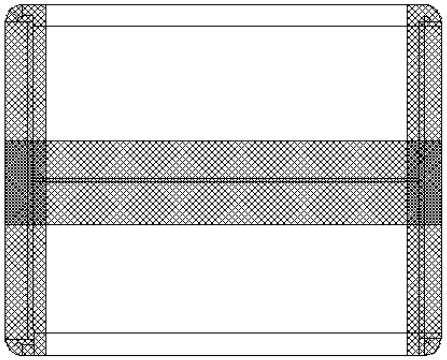
830 MHz		900 MHz	
			
			
1440 MHz		1740 MHz	
			
			

2140 MHz		2350 MHz	
			
			
2450 MHz		2600 MHz	
			
			

3600 MHz		4000 MHz	
			
			
4700 MHz		5500 MHz	
			
			

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		50 products in a bundle. 100 antenna products in a PE bag. (100 Antennas / PE Bag)
2		The quantity of the full container depends on the actual packing. Carton Size: L × W × H = 405 × 293 × 185 mm
3		**Position for Attaching Labels** ① Carton Label Quality Label

4		**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:

Quectel Wireless Solutions Co., Ltd.
No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China
Tel: +86 21 5108 6236
Email: info@quectel.com

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Revision History

Version	Date	Author	Note
-	2022-10-19	Wilson Bao/ Joye Wang	Creation of the document
1.0	2022-10-19	Wilson Bao/ Joye Wang	First official release
1.1	2023-01-28	Wilson Bao/ Joye Wang	Updated all data in this datasheet.
1.2	2023-06-13	Bunny Zhang	Updated the packaging information (Chapter 6).
1.3	2023-06-25	Joye Wang	Updated the product drawing (Chapter 5).
2.0	2023-10-19	Jaden Feng/ Lucky Feng/ David Liu/ Aria Chu	Updated all test data in this datasheet.
2.1	2024-06-07	Joye Wang	Updated the drawing (Chapter 2).
2.2	2026-01-05	Mayes Li/ Joye Wang/ Aria Chu	1. Updated the starting frequency to 698 MHz (Cover and Chapter 1.1). 2. Updated the overview. 3. Updated the antenna image (Cover). 4. Update structure (Cover, Chapter 1.2 and 2). 5. Listed the relevant data from 410 MHz to 470 MHz separately.

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