



Antenna Datasheet

Product OC: YFCA010AA

Version: 4.1

Date: 2025-07-14

Status: Released

Product Name: 5G Adhesive Mount FPC Monopole Antenna

Key Features:

Frequency Band: 410–470 MHz; 698–960 MHz; 1400–6000 MHz

Dimensions: 138.8 mm × 16.2 mm × 0.1 mm

Efficiency: Up to 81.9 % (EVB)

RoHS and REACH Compliant

Overview

YFCA010AA is a 5G FPC antenna measuring 138.8 mm × 16.2 mm × 0.1 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 omnidirectional 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. YFCA010AA 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.

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1 Specification

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

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													
SPEC	Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /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	5.1	3.2	3.3	1.6	3.4	3	2.8	2.3	2.7	2.8	2	
	ABS	2.2	2.1	2.4	2	3.3	2.7	2.7	2.2	2.6	2.5	1.7	
Max. Return Loss (dB)	EVB	-3.5	-5.6	-5.5	-13.1	-5.3	-6.1	-6.5	-8.1	-6.8	-6.4	-9.5	
	ABS	-8.4	-9.2	-7.7	-9.7	-5.5	-6.9	-6.9	-8.5	-7	-7.5	-11.4	
AVG Eff. (%)	EVB	34.1	47.7	47	73.1	57.3	48.2	49.5	60.4	65.5	57.9	62.5	
	ABS	29.2	45.2	40.3	70.5	52.8	40.7	43.8	55.2	70.3	69.3	56.7	
AVG AVG Gain (dB)	EVB	-4.9	-3.2	-3.3	-1.4	-2.5	-3.2	-3.1	-2.2	-1.9	-2.4	-2	
	ABS	-5.5	-3.5	-4	-1.5	-2.8	-3.9	-3.6	-2.6	-1.5	-1.6	-2.5	
Max. Peak	EVB	0.8	1.3	1.7	3.5	4.4	1.4	1.5	3.5	5.2	7.1	6.9	

Gain (dBi)	ABS	-0.8	1.5	0.4	3	2.2	1.4	2.4	2.7	4.4	6.8	7.1
VSWR	EVB		≤ 5.1									
	ABS		≤ 3.3									
Return Loss	EVB		≤ -3.5 dB									
	ABS		≤ -5.5 dB									
Peak Gain	EVB		≤ 7.1 dBi									
	ABS		≤ 7.1 dBi									

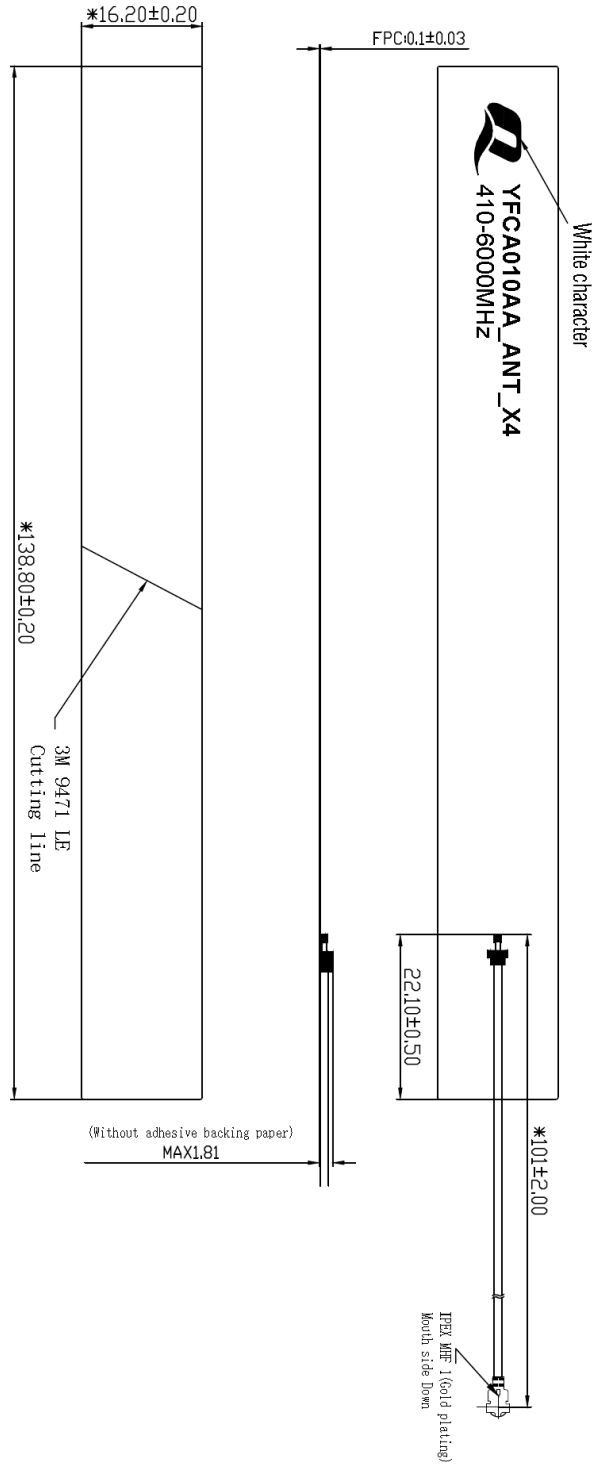
Electrical – Detail				
SPEC	Band	Band	B87/B88	B31/B72/B73
		Freq. (MHz)	410–430 MHz	450–470 MHz
Max. VSWR	EVB		3.1	6.3
	ABS		2.2	4.8
Max. Return Loss(dB)	EVB		-5.8	-2.8
	ABS		-8.7	-3.7
AVG Eff. (%)	EVB		59.3	28.7
	ABS		29.5	23.0
AVG AVG Gain (dB)	EVB		-2.3	-5.5
	ABS		-5.3	-6.4
Max. Peak Gain	EVB		2.0	-0.6
	ABS		-0.6	-1.4
VSWR	EVB		≤ 6.3	
	ABS		≤ 4.8	
Return Loss	EVB		≤ -2.8 dB	
	ABS		≤ -3.7 dB	
Peak Gain	EVB		≤ 2.0 dBi	
	ABS		≤ -0.6 dBi	

- EVB: Stick to ABS Board on 130 × 130 mm EVB Board
- ABS: Stick to ABS Board

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	138.8 mm × 16.2 mm × 0.1 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 101 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 1.1 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

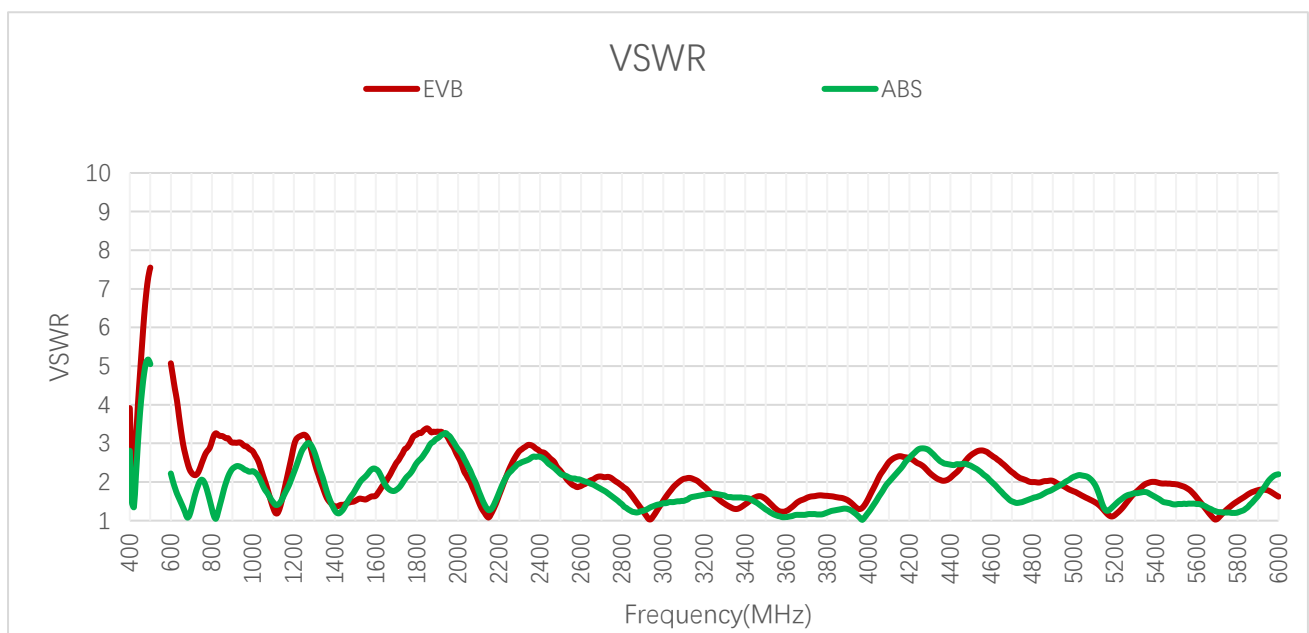
2 Drawing



3 Detailed Performance

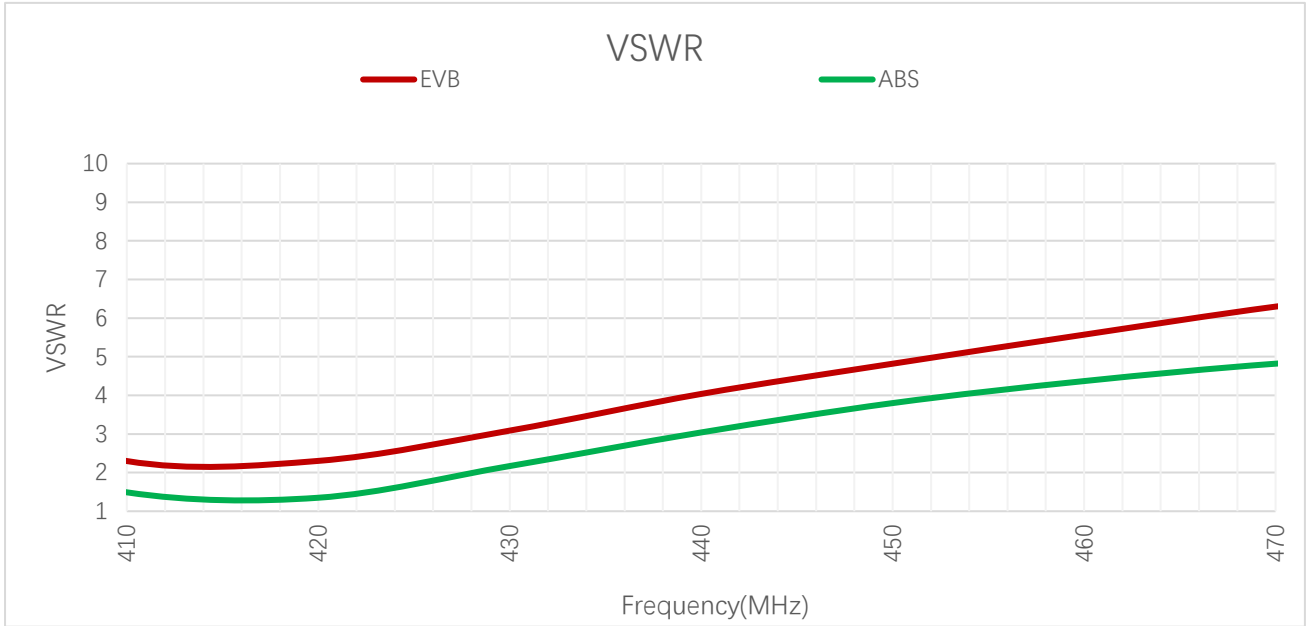
3.1. S-Parameter Test

3.1.1. VSWR



VSWR

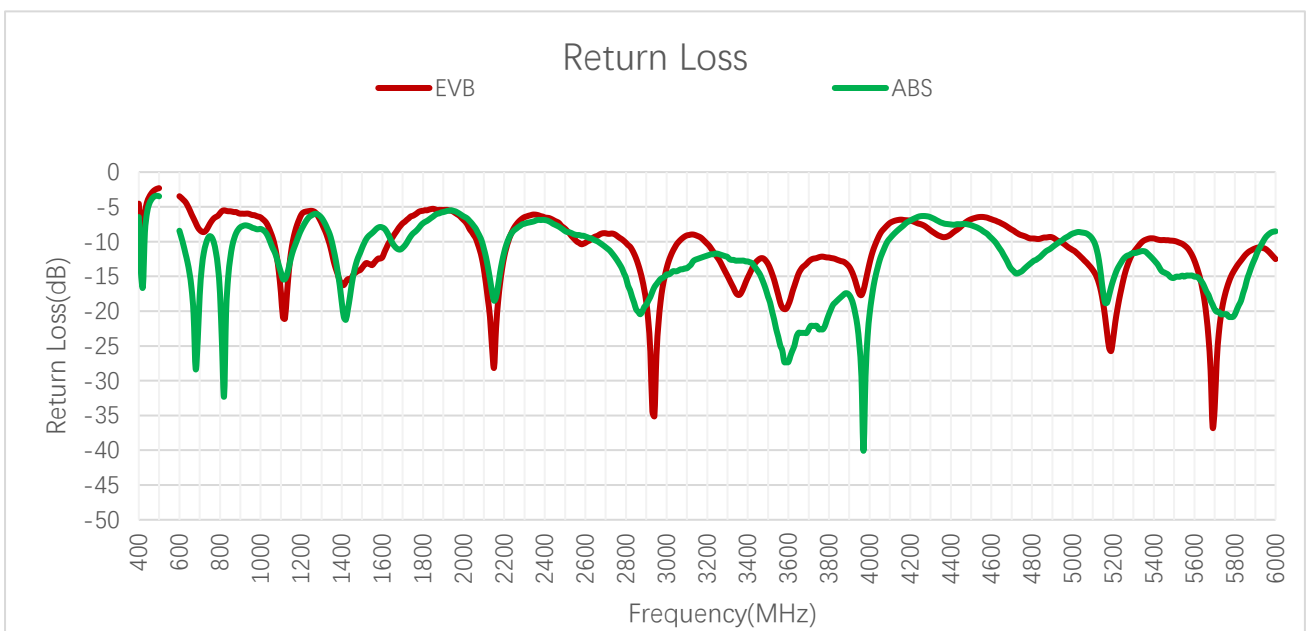
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	5.1	4.1	2.2	3.2	3.0	2.9	1.4	2.6	2.8	3.3
ABS	2.2	1.7	1.5	1.2	2.3	2.3	1.3	1.8	2.1	3.0
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
EVB	3.2	1.1	3.0	2.6	1.9	1.3	2.3	1.8	1.9	1.6
ABS	3.2	1.3	2.6	2.4	2.1	1.1	1.5	2.1	1.4	2.2



VSWR

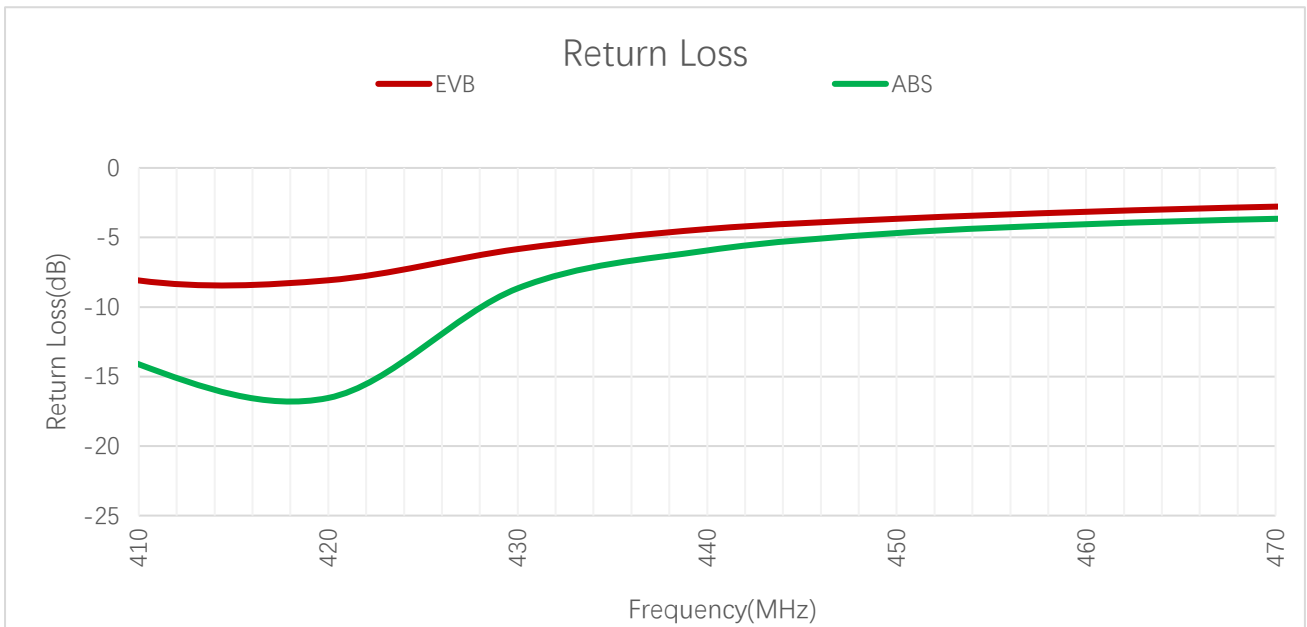
Frequency (MHz)	410	420	430	440	450	460	470
EVB	2.3	2.3	3.1	4.0	4.8	5.6	6.3
ABS	1.5	1.4	2.2	3.0	3.8	4.4	4.8

3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-3.5	-4.3	-8.6	-5.6	-6.0	-6.2	-15.4	-7.2	-6.4	-5.4
ABS	-8.4	-11.7	-13.8	-20.1	-7.9	-8.0	-17.9	-10.6	-9.2	-5.9
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
EVB	-5.7	-25.2	-6.1	-7.0	-10.2	-19.1	-8.3	-11.2	-9.9	-12.5
ABS	-5.6	-17.2	-7.0	-7.6	-9.3	-27.3	-14.0	-8.8	-15.2	-8.5

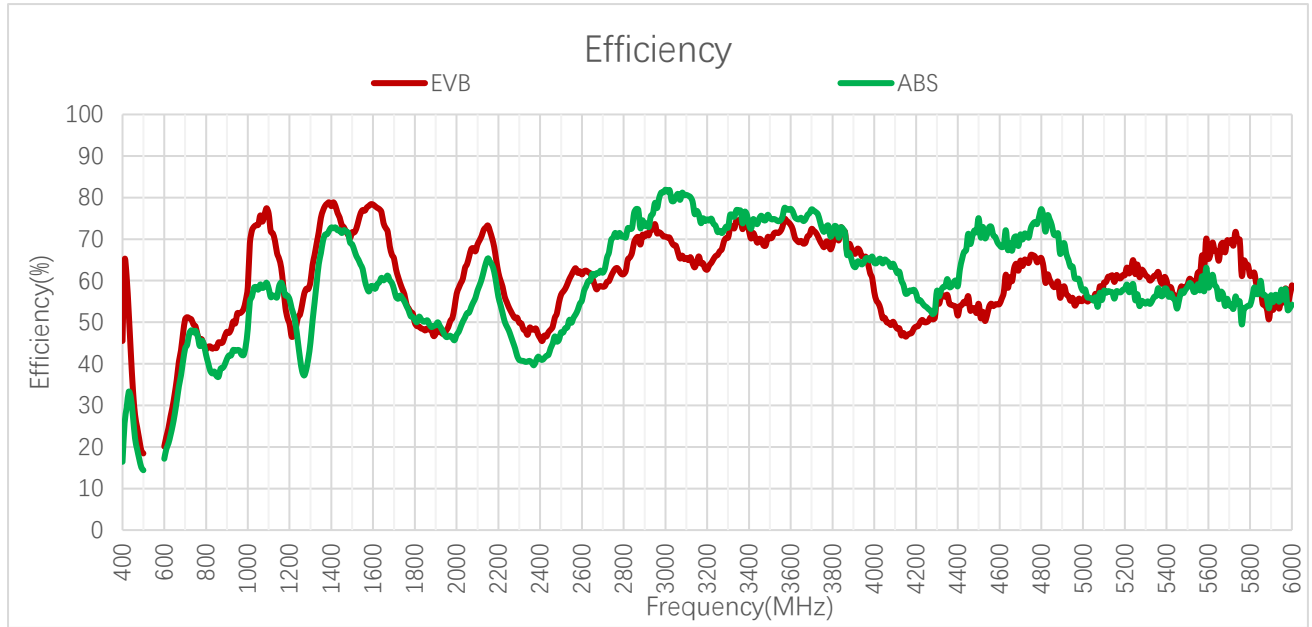


Return Loss (dB)

Frequency (MHz)	410	420	430	440	450	460	470
EVB	-8.1	-8.1	-5.8	-4.4	-3.7	-3.2	-2.8
ABS	-14.1	-16.5	-8.7	-5.9	-4.7	-4.0	-3.7

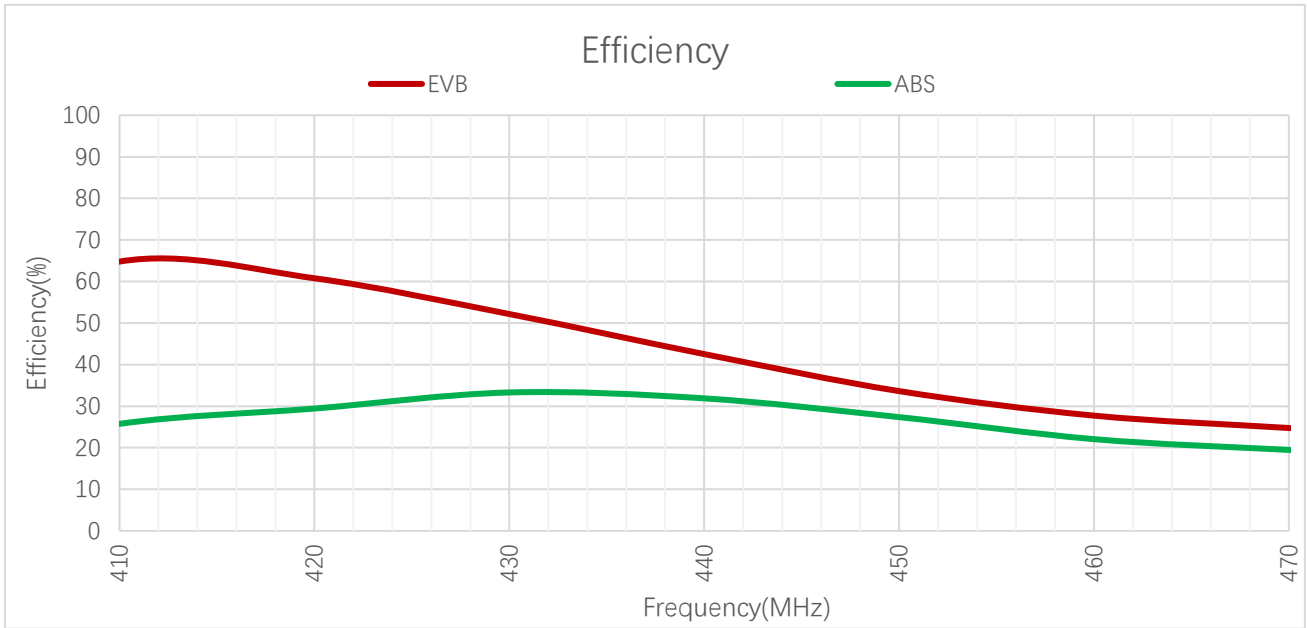
3.2. Radiation Performance Test

3.2.1. Efficiency



Efficiency (%)

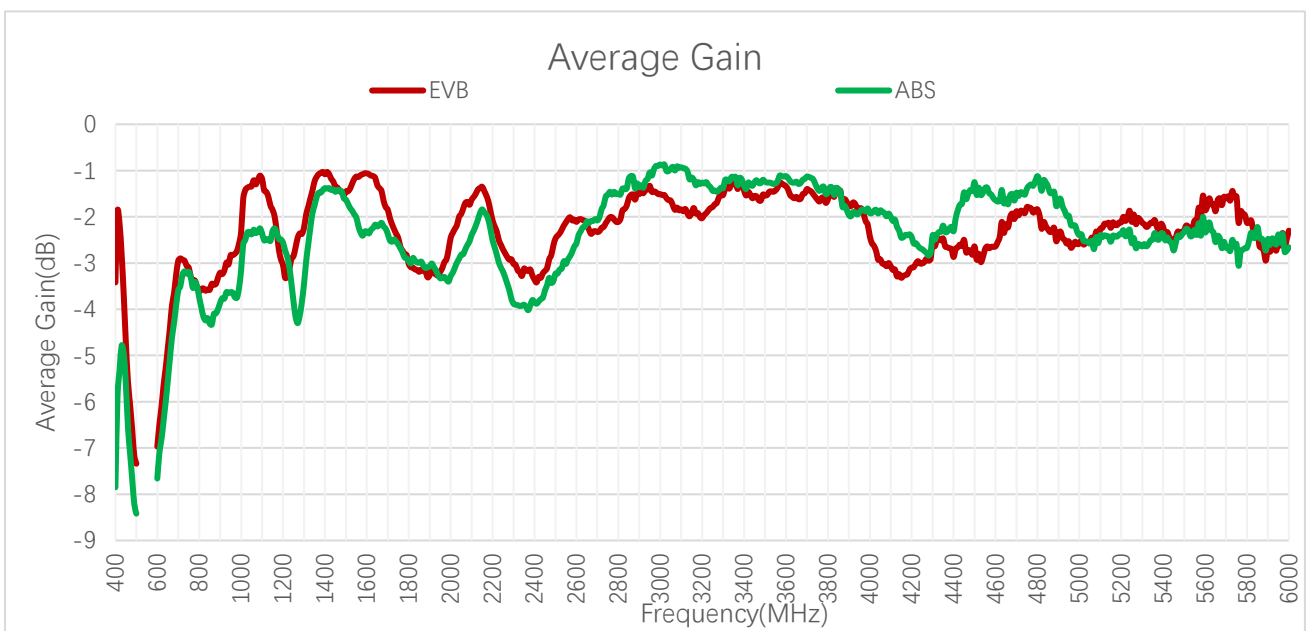
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	20.1	27.3	51.2	43.6	47.7	52.2	75.2	62.7	58.0	48.0
ABS	17.2	22.9	44.6	37.7	41.2	43.2	72.2	56.1	55.7	48.8
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
EVB	48.0	72.8	48.7	48.2	61.5	73.4	64.8	55.2	59.0	58.9
ABS	46.5	64.2	40.7	43.7	55.2	77.3	71.1	57.6	58.5	54.3



Efficiency (%)

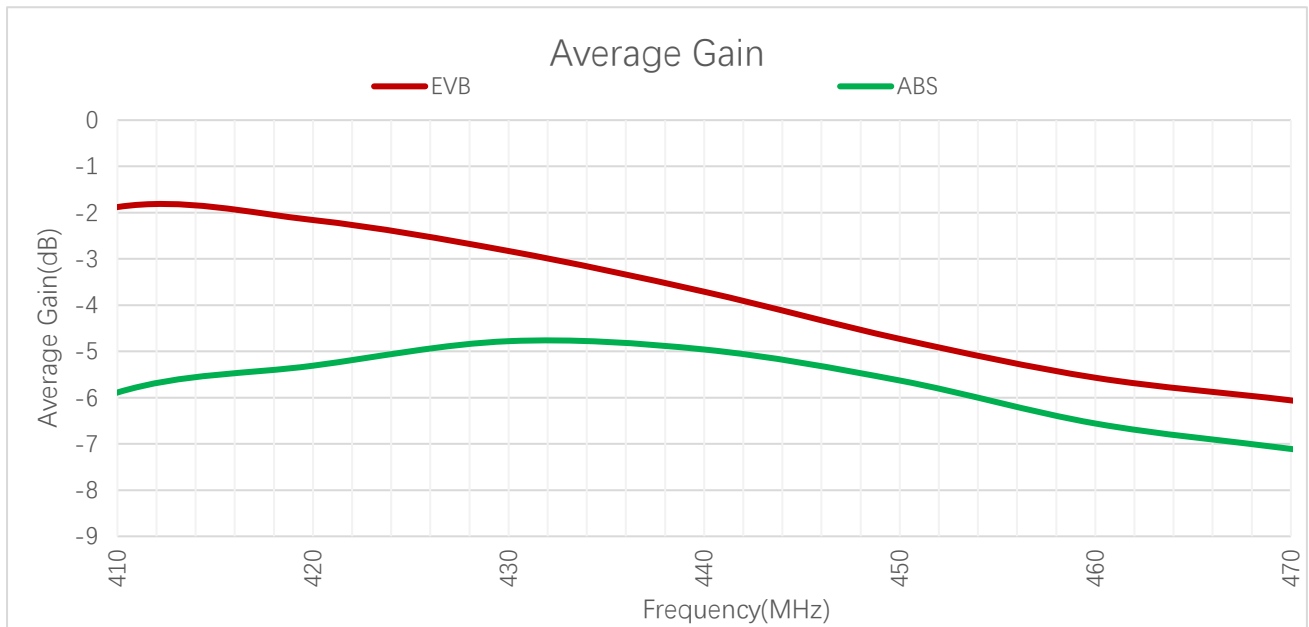
Frequency (MHz)	410	420	430	440	450	460	470
EVB	64.8	60.8	52.2	42.5	33.6	27.7	24.8
ABS	25.8	29.4	33.3	31.9	27.4	22.1	19.5

3.2.2. Average Gain



Average Gain (dB)

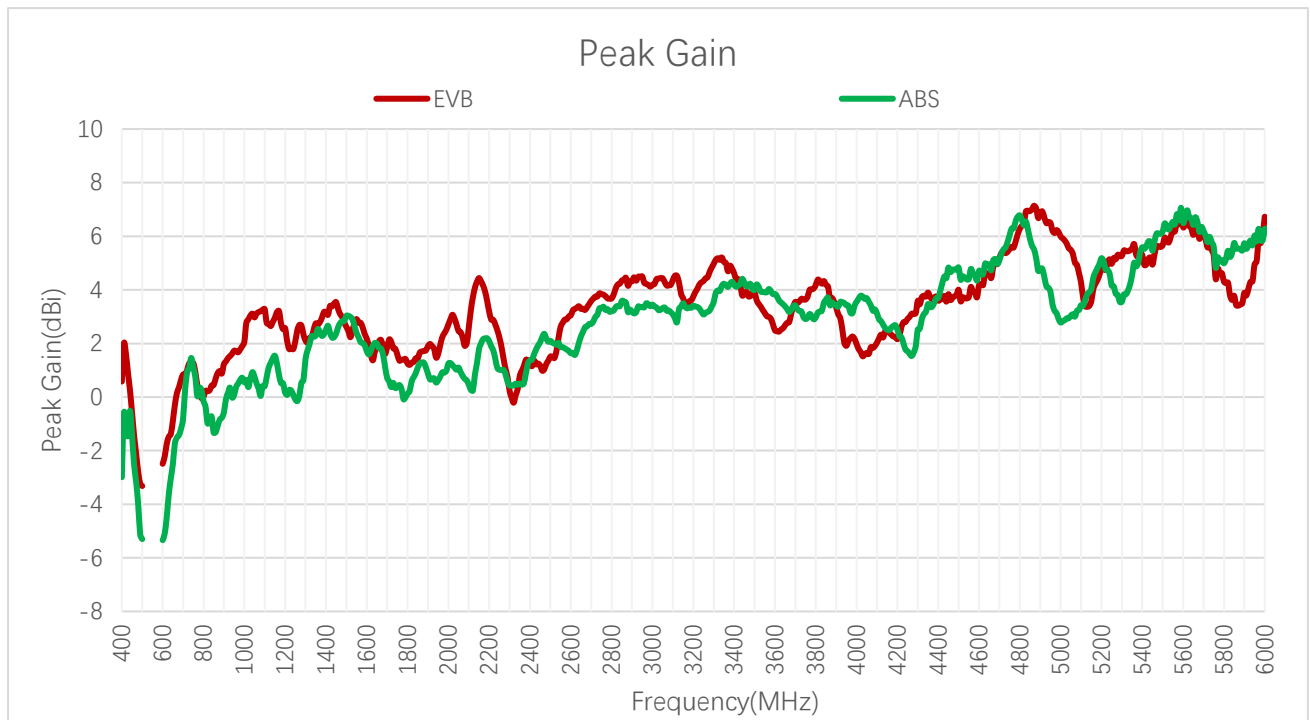
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-7.0	-5.6	-2.9	-3.6	-3.2	-2.8	-1.2	-2.0	-2.4	-3.2
ABS	-7.7	-6.4	-3.5	-4.2	-3.9	-3.6	-1.4	-2.5	-2.5	-3.1
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
EVB	-3.2	-1.4	-3.1	-3.2	-2.1	-1.3	-1.9	-2.6	-2.3	-2.3
ABS	-3.3	-1.9	-3.9	-3.6	-2.6	-1.1	-1.5	-2.4	-2.3	-2.7



Average Gain (dB)

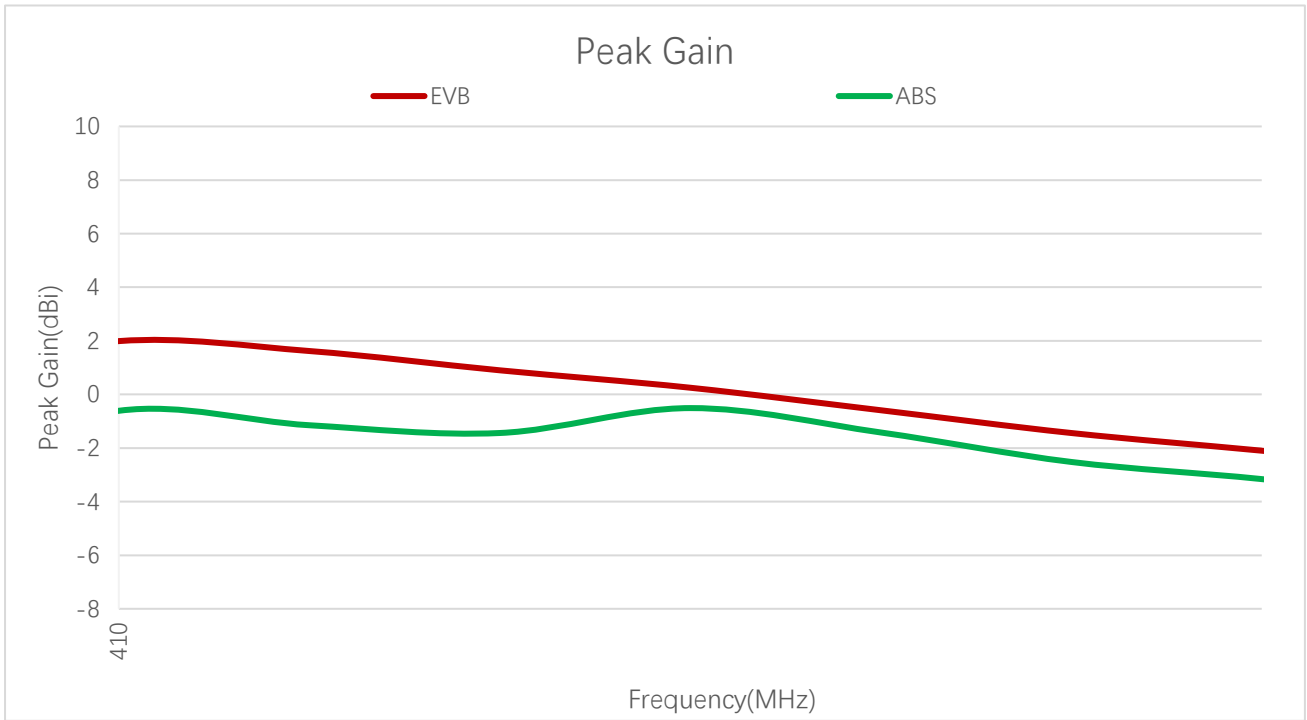
Frequency (MHz)	410	420	430	440	450	460	470
EVB	-1.9	-2.2	-2.8	-3.7	-4.7	-5.6	-6.1
ABS	-5.9	-5.3	-4.8	-5.0	-5.6	-6.6	-7.1

3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
EVB	-2.5	-1.5	0.8	0.3	1.2	1.7	3.5	2.2	1.8	1.7
ABS	-5.3	-3.6	0.3	-0.9	-0.6	0.4	2.2	0.6	0.3	1.3
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
EVB	1.6	4.3	0.8	1.2	3.1	2.5	5.2	6.0	5.7	6.7
ABS	0.6	1.3	0.5	2.1	1.6	3.9	5.1	2.8	6.2	6.3



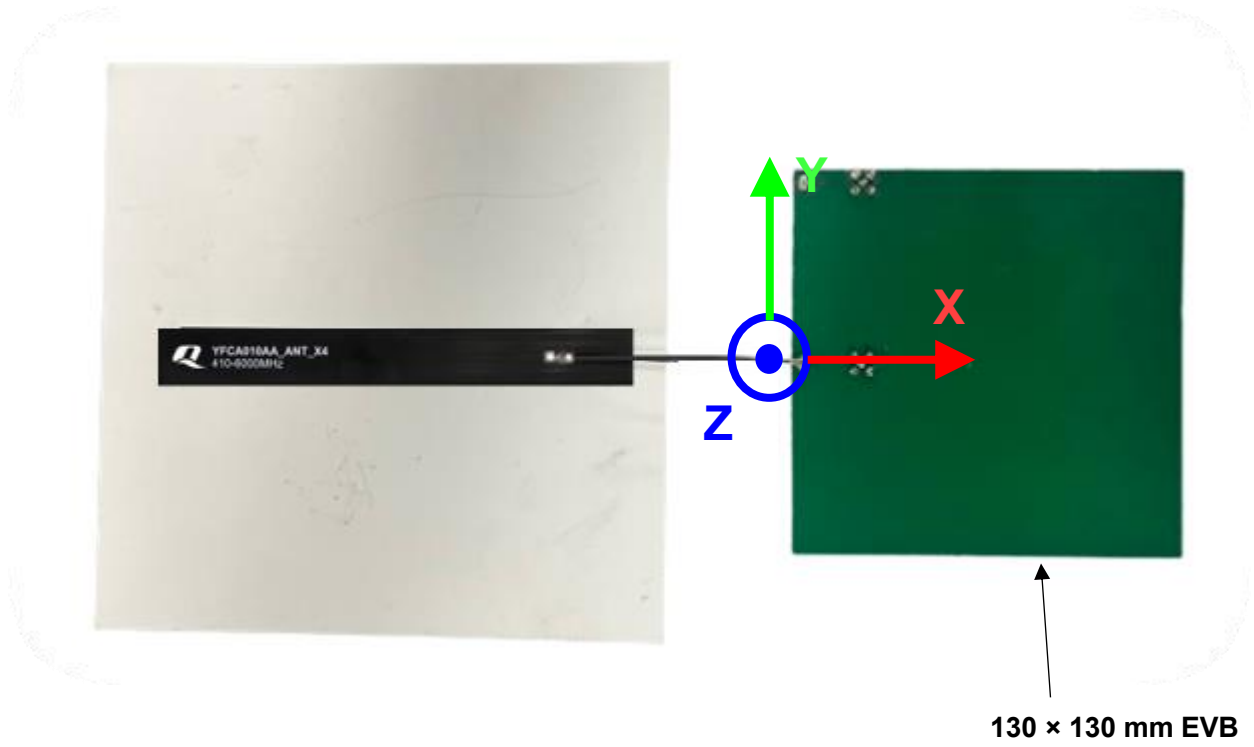
Peak Gain (dBi)

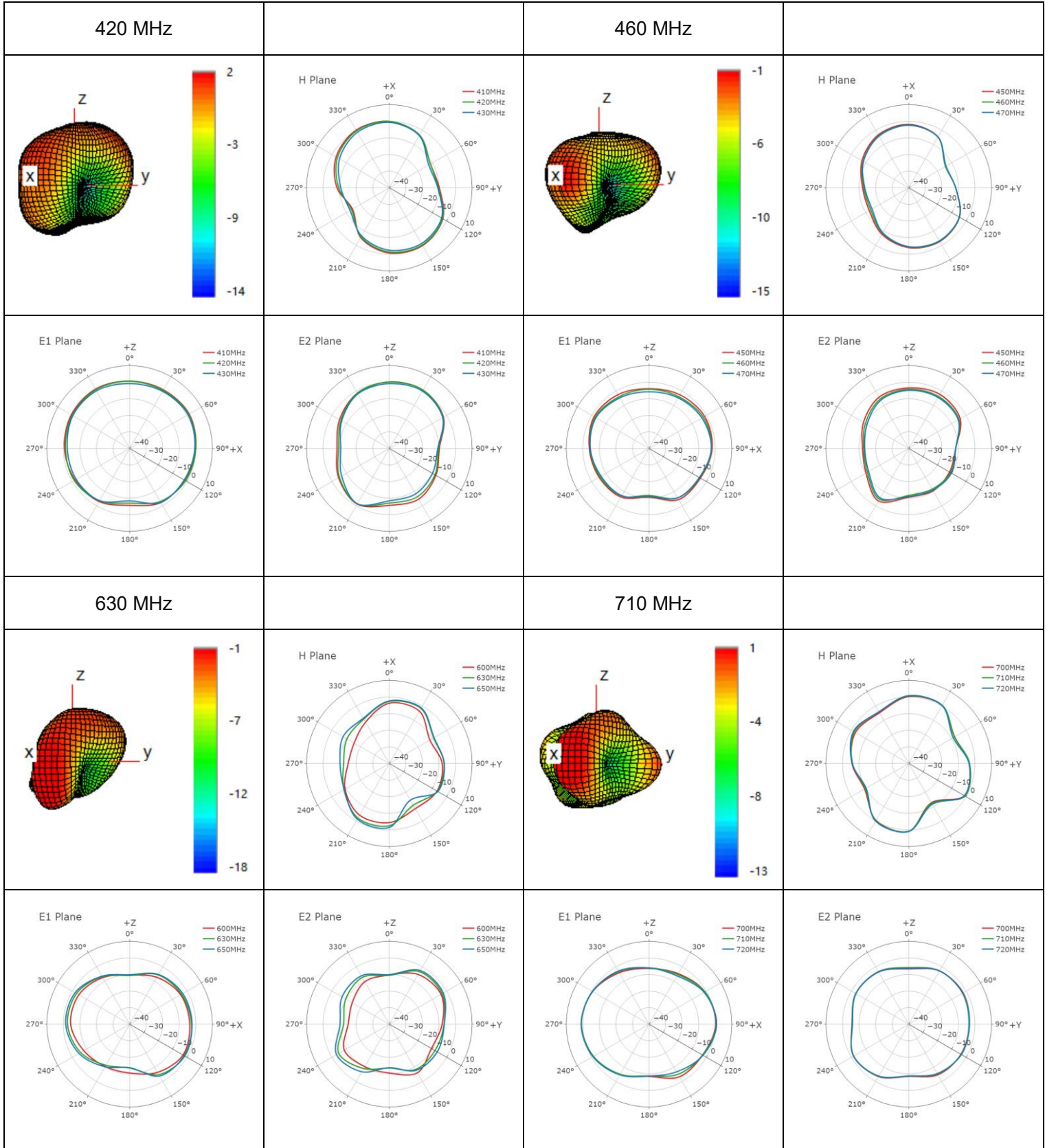
Frequency (MHz)	410	420	430	440	450	460	470
EVB	2.0	1.6	0.9	0.3	-0.6	-1.4	-2.1
ABS	-0.6	-1.2	-1.4	-0.5	-1.4	-2.5	-3.2

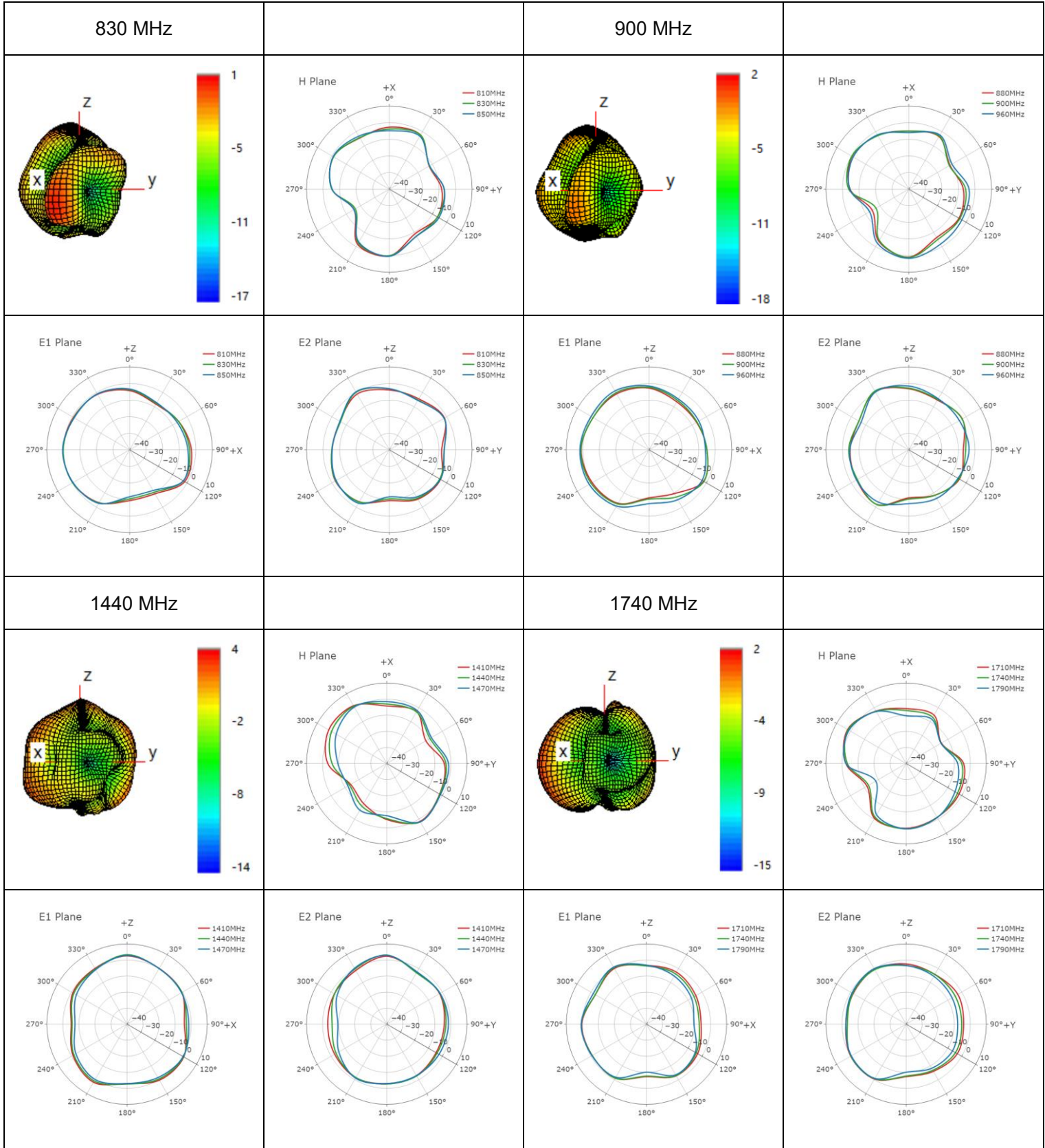
3.2.4. 3D & 2D Radiation Pattern

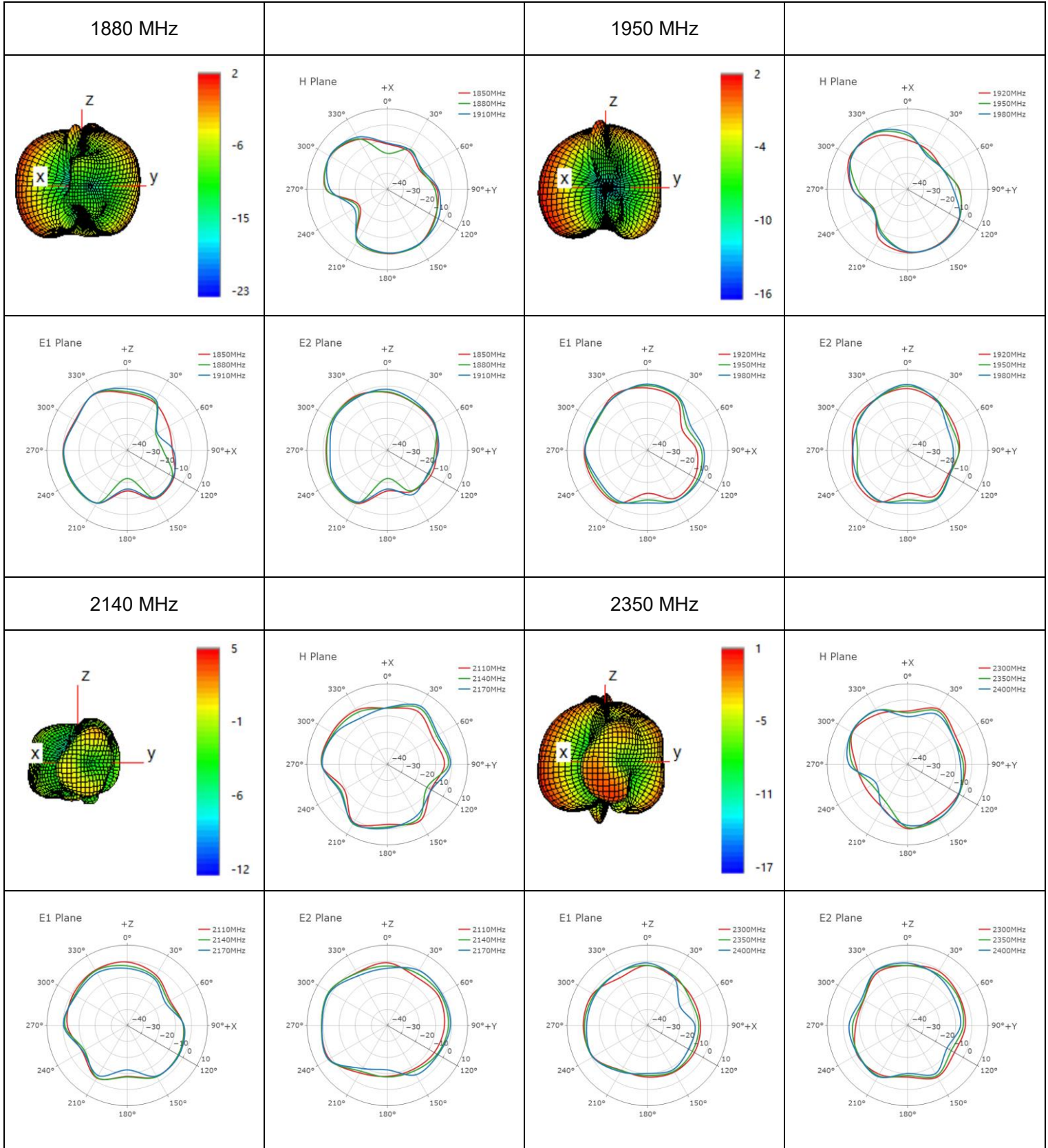
3.2.4.1. Test Condition: Stick to ABS Board on 130 mm × 130 mm EVB Board

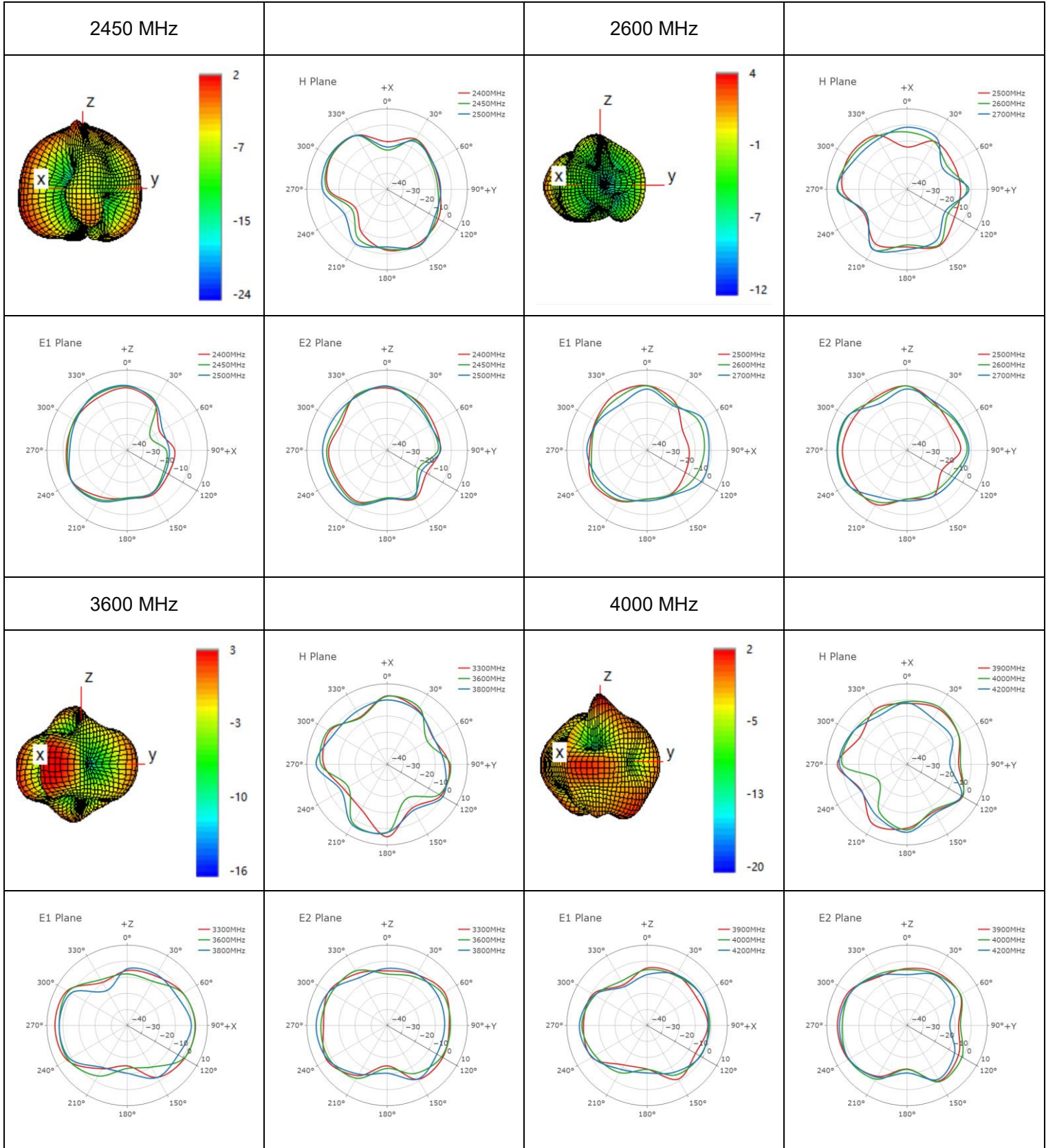
- Test Chamber: GL-G-1

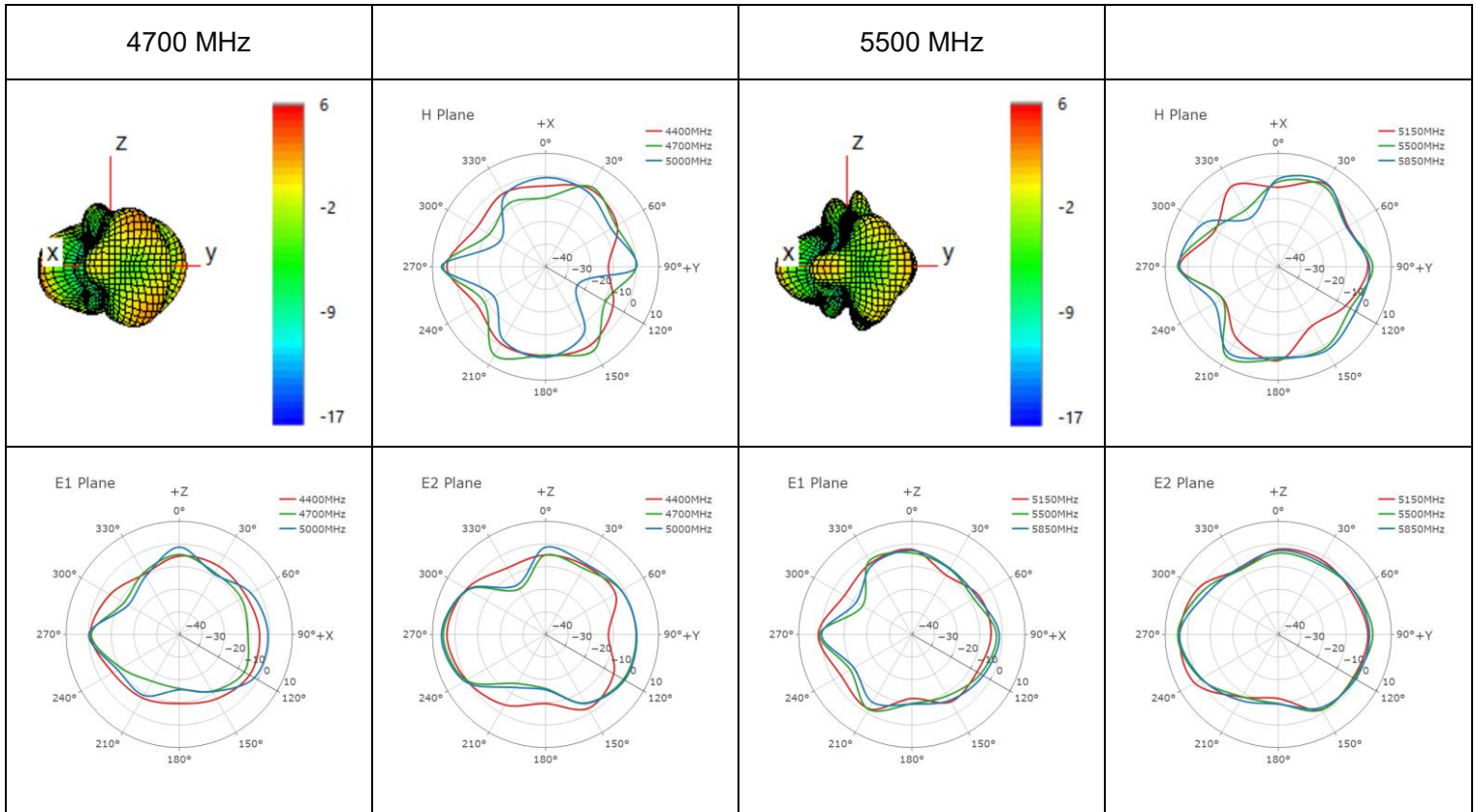






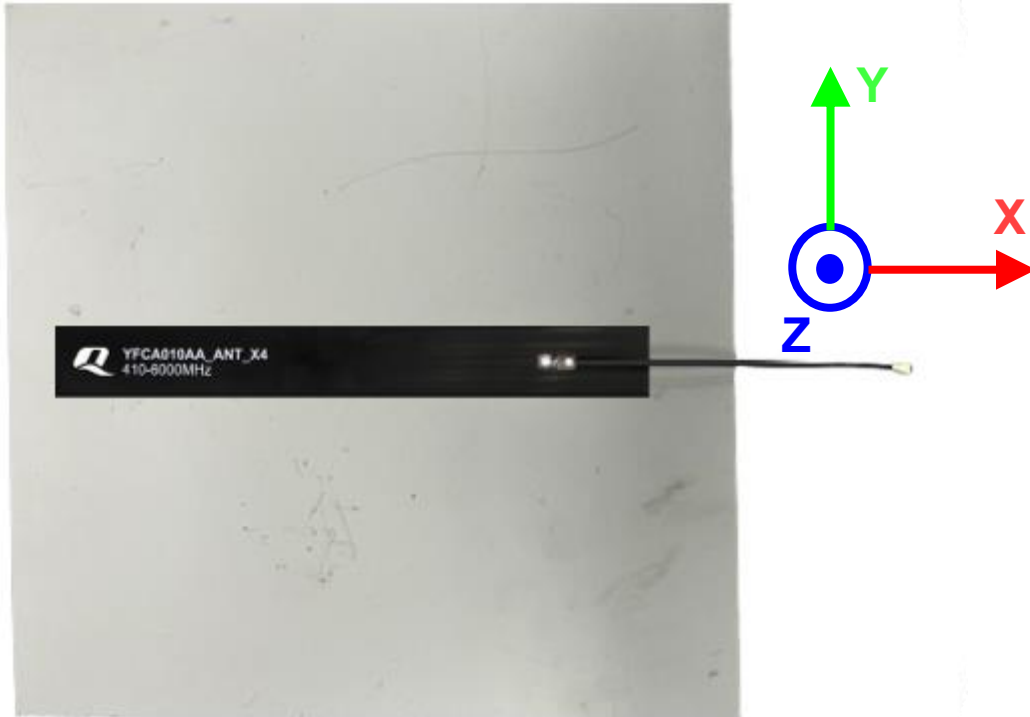


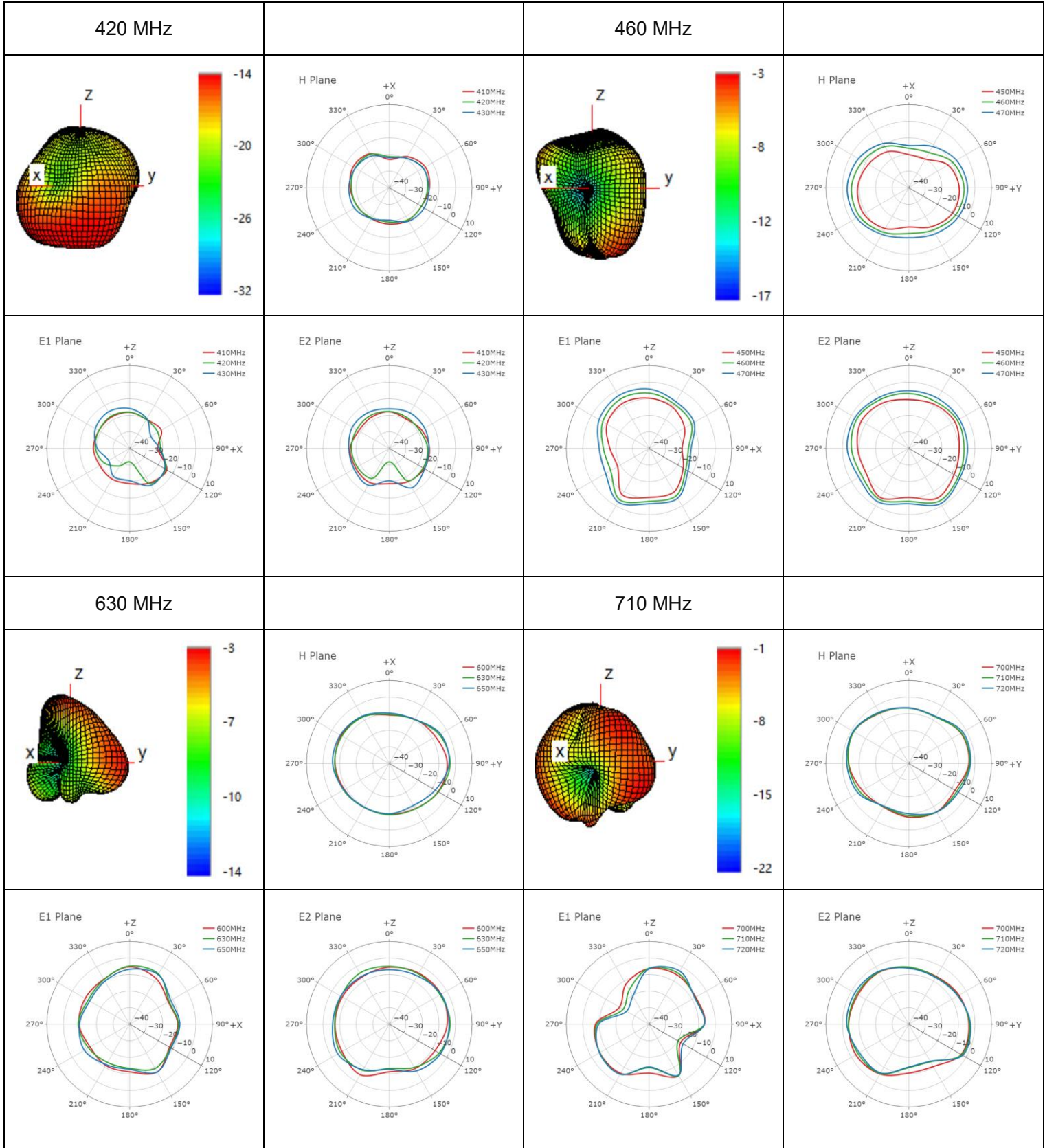


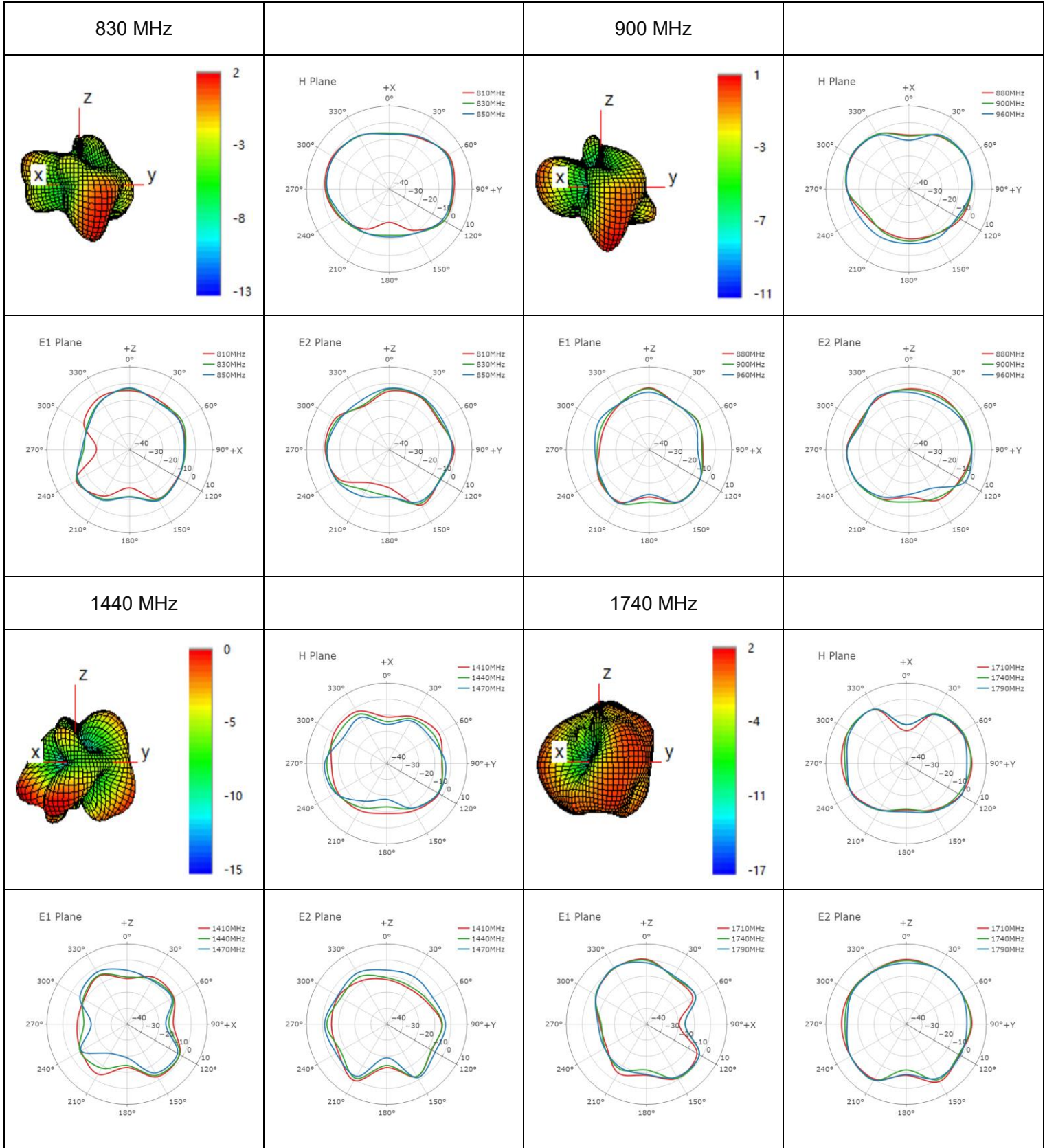


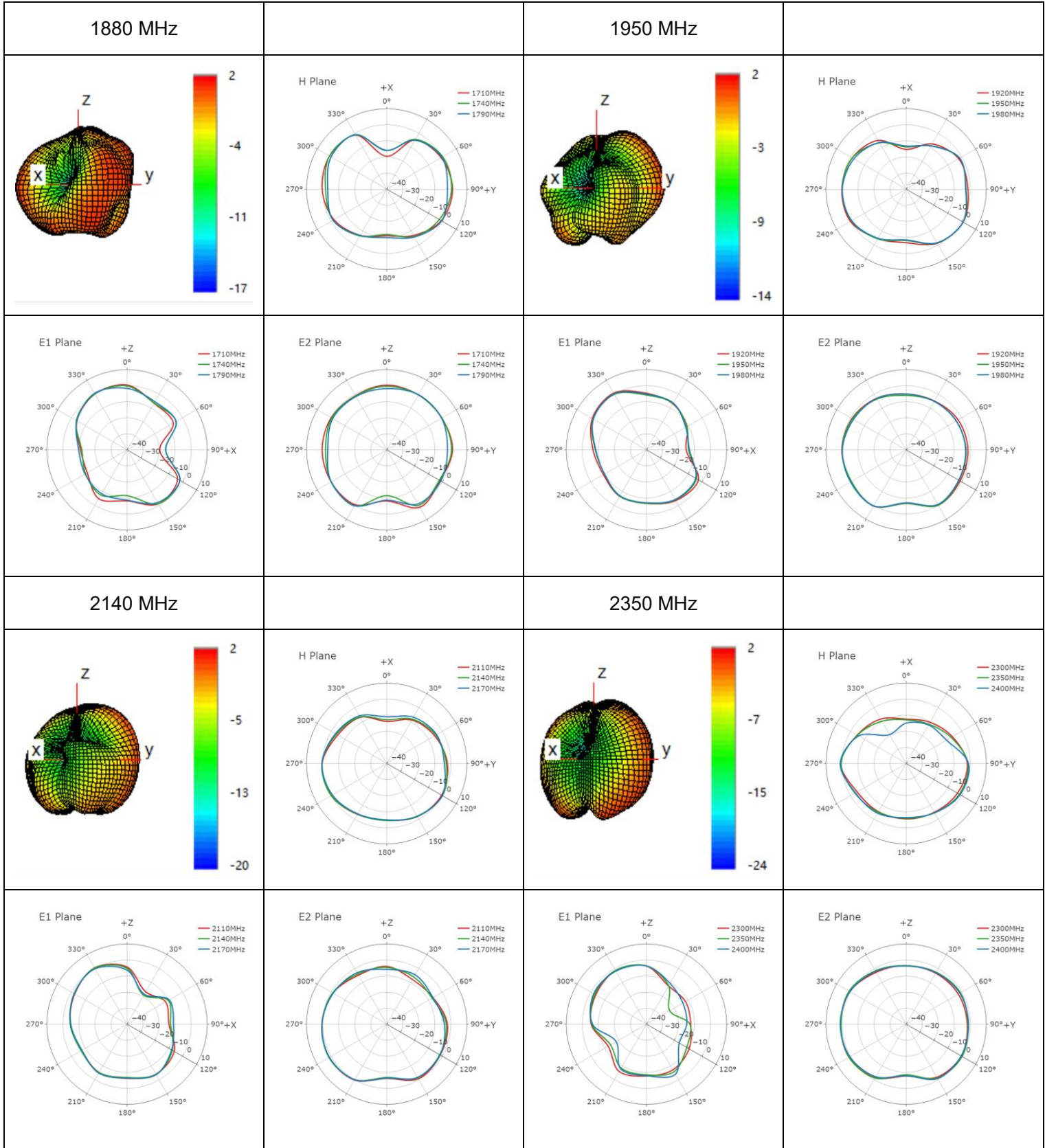
3.2.4.2. Test Condition: Stick to ABS Board

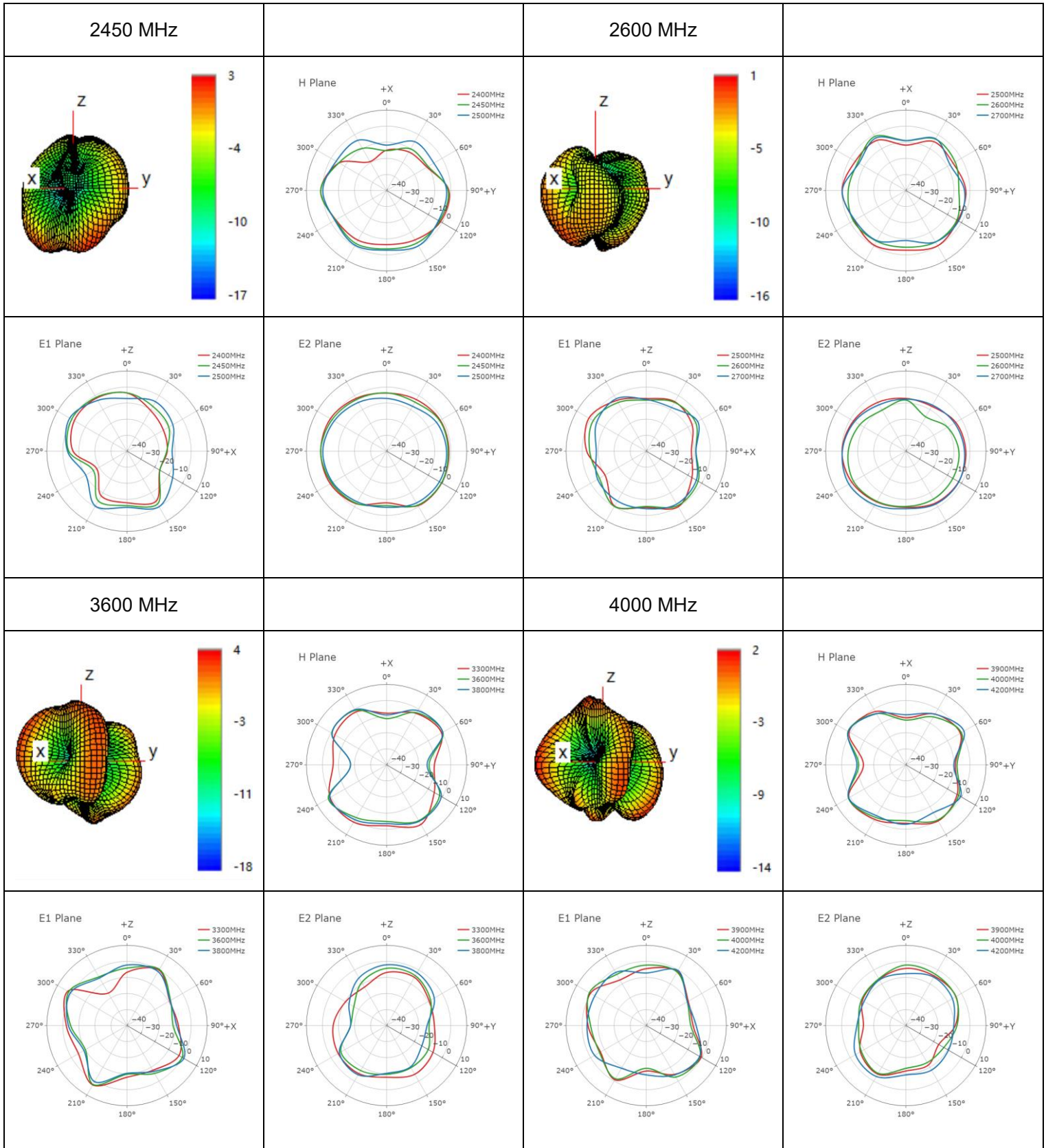
- Test Chamber: GL-G-1

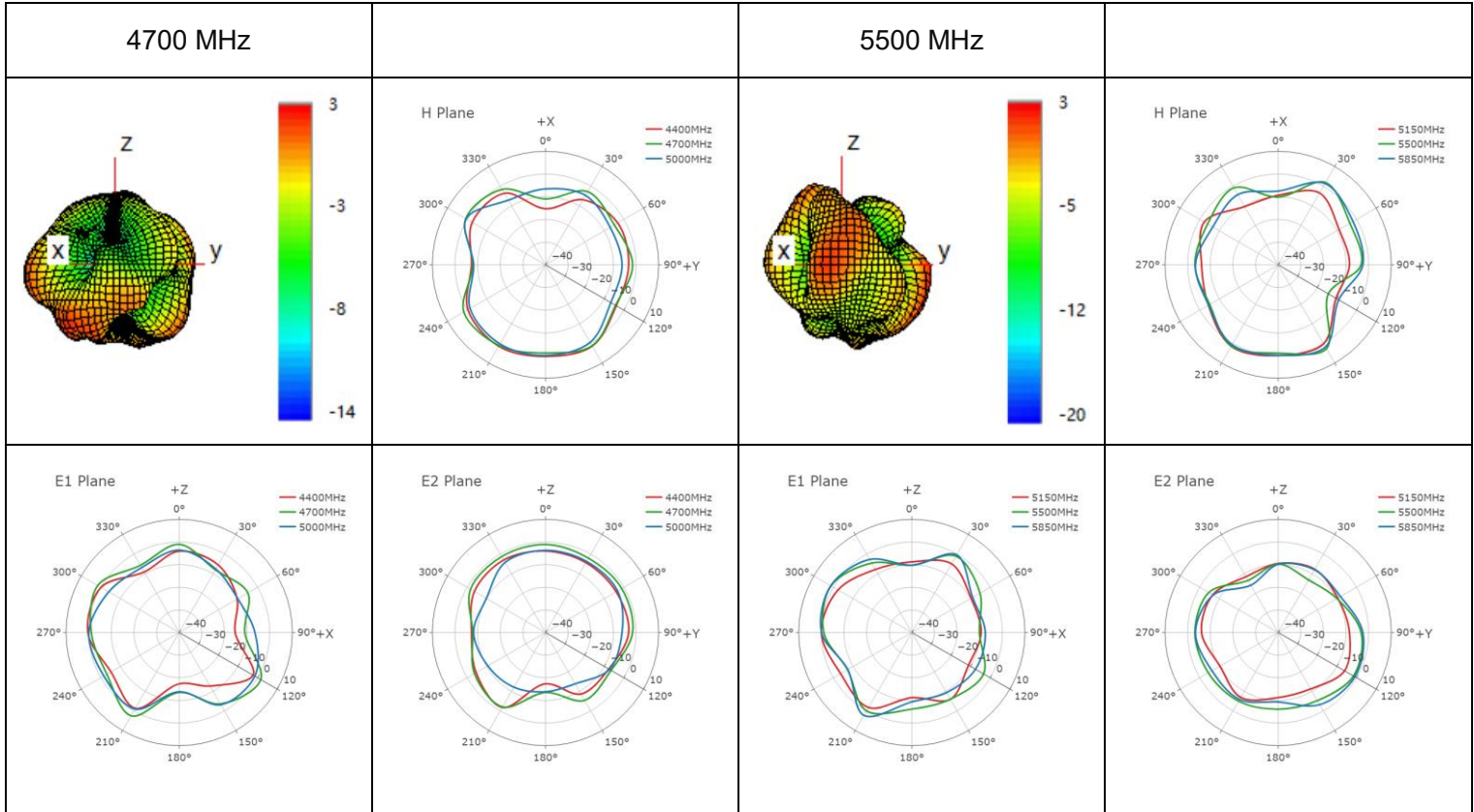




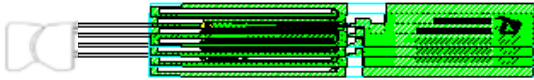
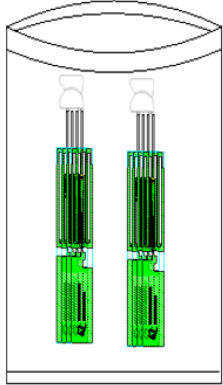
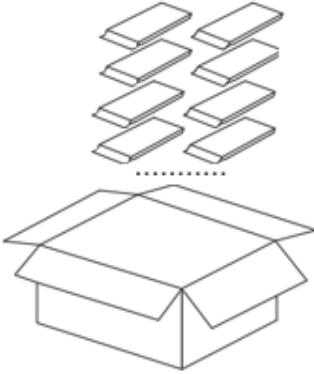
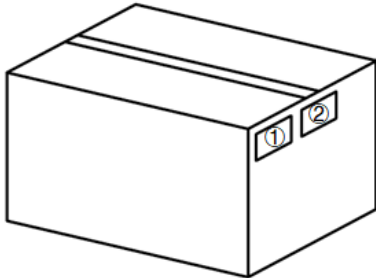


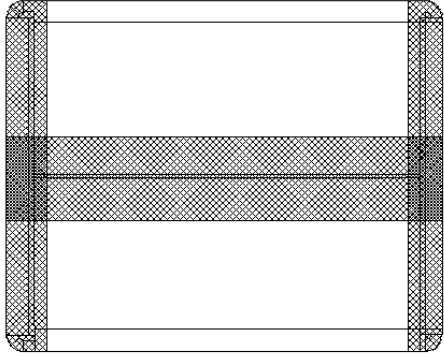






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		50 antenna products in a bundle.
2		100 antenna products in a PE bag. (100 Antennas / PE Bag)
3		(40 PE Bags / Carton Box) (4000 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> <u>L × W × H = 300 × 250 × 200 mm</u>
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:

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, 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	Nico PAN/ Lucky FENG/ David LIU/ Aria CHU	Updated all test data in this datasheet.
3.0	2024-06-07	Joye WANG	<ol style="list-style-type: none"> Updated the band information (Chapter 1.1). Updated the drawing (Chapter 2). Updated all test data in this datasheet.
4.0	2025-01-20	Nico PAN	Updated all test data in this datasheet.
4.1	2025-07-14	Mayes LI/ Joye WANG/ Riva REN/ Aria CHU	<ol style="list-style-type: none"> Updated the starting frequency to 698 MHz (Cover and Chapter 1.1). Updated the antenna image (Cover page). Updated the drawing (Chapter 2). Presented 410-470 MHz test data independently (Chapter 3). Updated the package (Chapter 4).



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