



Antenna Datasheet

Product OC: YF0007KA

Version: 2.3

Date: 2026-04-02

Status: Released

Product Name: 4G Adhesive Mount PCB + Cable Monopole Embedded Antenna

Key Features:

Frequency Band: 600–960 MHz, 1427.9–1495.9 MHz, 1710–2690 MHz,
2300–2700 MHz

Dimensions: 50 mm × 25 mm × 0.85 mm

Efficiency: Up to 72.3 % (EVB)

RoHS and REACH Compliant

Overview

This document is a datasheet for the Quectel YF0007KA, a 4G adhesive-mount PCB antenna with integrated cable. The antenna is designed for embedded applications, covering a wide frequency range from 600–960 MHz, 1427.9–1495.9 MHz, 1710–2690 MHz and 2300–2700 MHz. This range supports primary 4G LTE bands, is backward compatible with 3G/2G networks, and also covers LPWA (Low Power Wide Area). A key feature is its ground-plane independent design, allowing it to be mounted directly onto the plastic or non-metallic underside of a device enclosure, simplifying integration. This product is extremely efficient, achieving a maximum efficiency of 72.3 % under specific conditions. The antenna is compact, with dimensions of 50 mm × 25 mm × 0.85 mm, and comes with a 74.5 mm black cable terminated with an IPEX MHF 1 connector, which can be customized. Performance data, including VSWR, Return Loss, radiation efficiency, and gain patterns, is provided for two test conditions: in free space and mounted on a 130 mm × 130 mm ABS evaluation board. The product is RoHS and REACH compliant and operates reliably across a temperature range of -40 °C to +85 °C. Its adhesive mounting and flexible cable make it suitable for various IoT and mobile devices requiring stable, high-efficiency wireless connectivity.

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 & stick to ABS Board on 130 mm × 130 mm EVB Board

1.1. Electrical

Electrical	
Frequency Range	700–960 MHz, 1427.9–1495.9 MHz, 1710–2690 MHz, 2300–2700 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

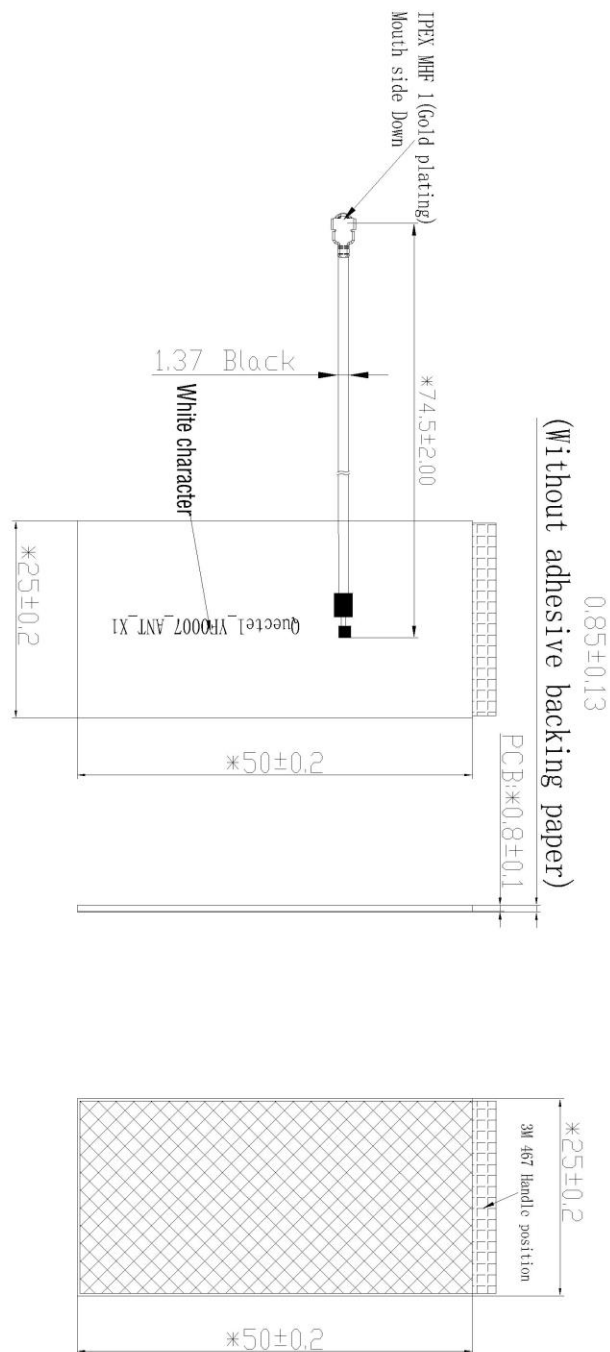
Electrical – Detail													
SPEC	Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850	
Max. VSWR	FS	4.0	4.4	3.6	1.9	3.3	1.5	2.4	3.9	-	-	-	
	EVB	3.5	3.0	7.4	1.6	3.0	4.0	4.7	6.8	-	-	-	
Max. Return Loss (dB)	FS	-4.4	-4.0	-5.0	-10.0	-5.4	-14.0	-7.7	-4.6	-	-	-	
	EVB	-5.0	-6.0	-2.3	-12.9	-6.0	-4.4	-3.7	-2.6	-	-	-	
AVG Eff. (%)	FS	15.4	24.1	37.0	38.5	61.4	56.0	58.0	46.2	-	-	-	
	EVB	18.7	35.2	30.5	53.8	61.2	50.5	29.6	29.1	-	-	-	
AVG AVG Gain (dB)	FS	-8.1	-6.2	-4.4	-4.2	-2.2	-2.5	-2.4	-3.4	-	-	-	
	EVB	-7.3	-4.6	-5.3	-2.7	-2.2	-3.0	-5.3	-5.5	-	-	-	
Max. Peak Gain (dBi)	FS	-4.4	-2.6	-0.6	2.7	3.1	2.4	1.9	1.2	-	-	-	
	EVB	-3.4	-1.1	-1.0	2.8	2.7	3.1	-0.1	1.1	-	-	-	
VSWR			FS				≤ 4.4						
			EVB				≤ 6.8						
Return Loss			FS				≤ -4.0 dB						
			EVB				≤ -2.3 dB						
Peak Gain			FS				≤ 3.1 dBi						
			EVB				≤ 3.1 dBi						

- FS: In Free Space
- EVB: Stick to ABS Board on 130 mm × 130 mm EVB Board

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	50 mm × 25 mm × 0.85 mm
Material & Color	PCB & Black
Cable Type & Color & Length	Φ 1.37 & Black & 74.5 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 3 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes

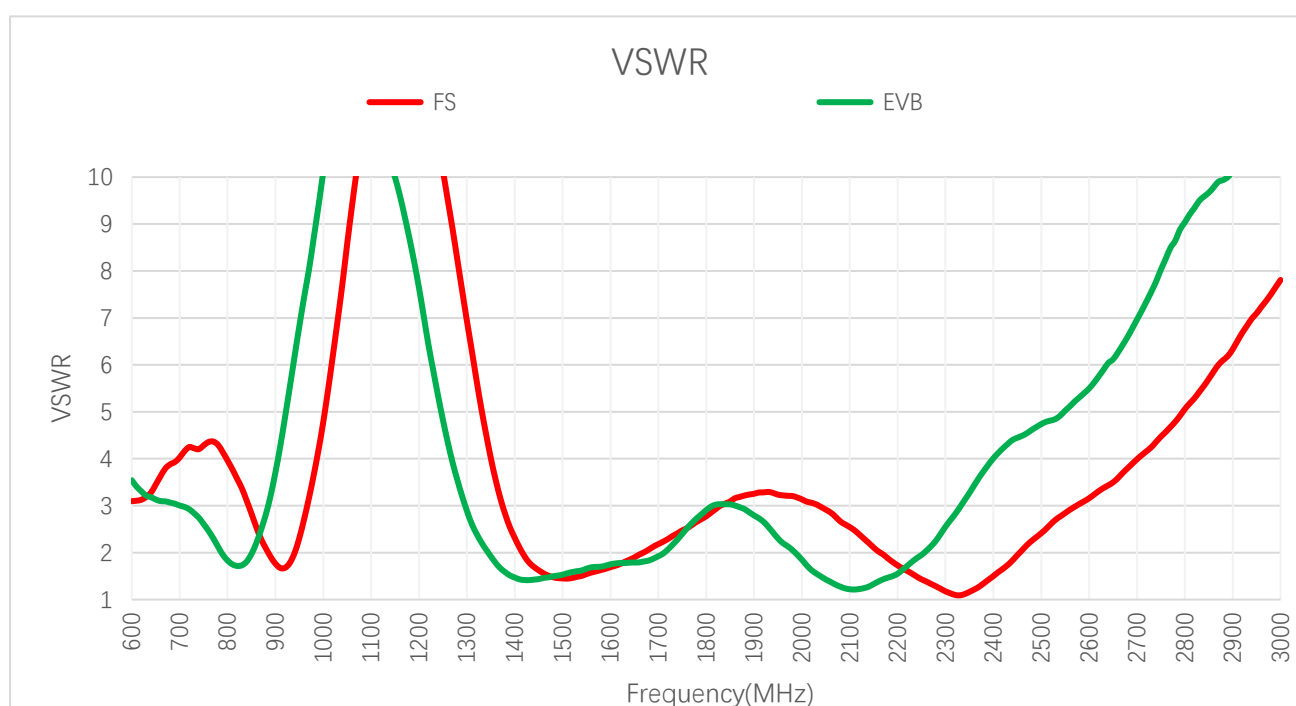
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

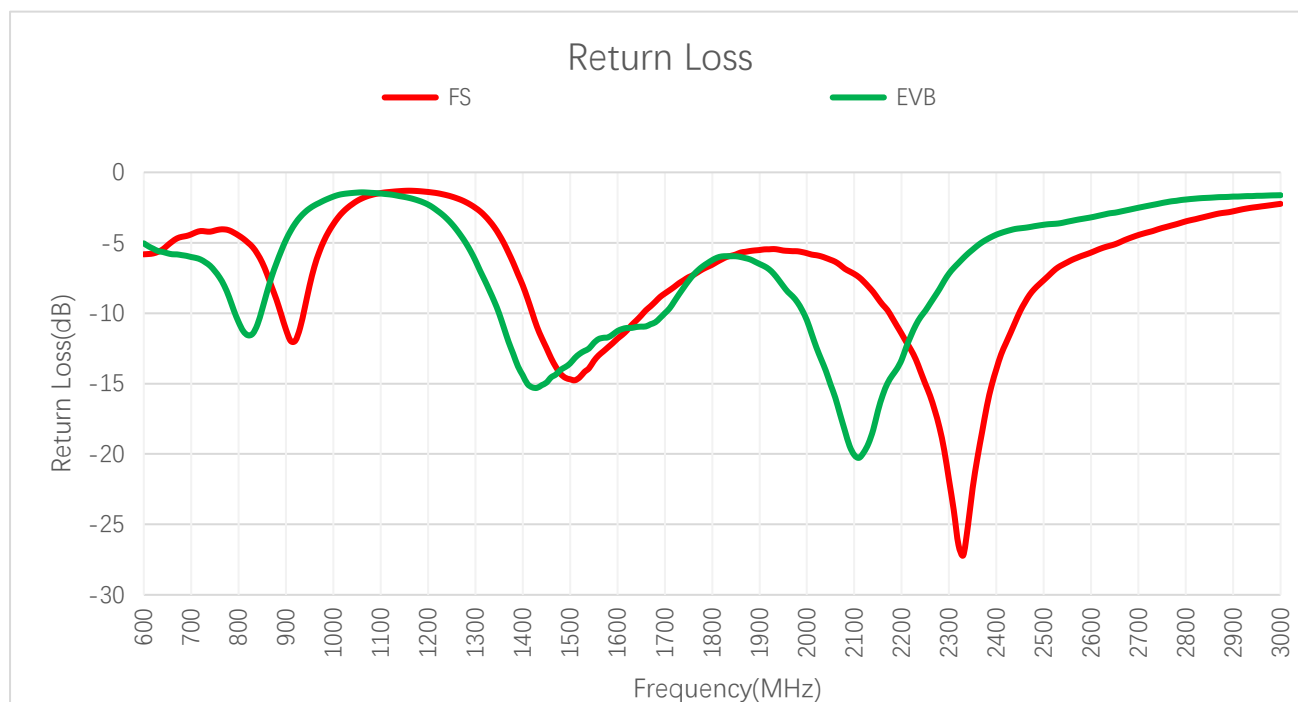
3.1.1. VSWR



VSWR

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
VSWR	FS	3.1	3.2	4.2	3.4	1.8	2.7	1.7	2.2	2.4	3.2
	EVB	3.5	3.2	3.0	1.7	3.7	7.4	1.4	2.0	2.3	2.9
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	FS	3.2	2.2	1.2	1.9	3.2	3.2	-	-	-	-
	EVB	2.3	1.3	3.3	4.4	5.5	6.8	-	-	-	-

3.1.2. Return Loss

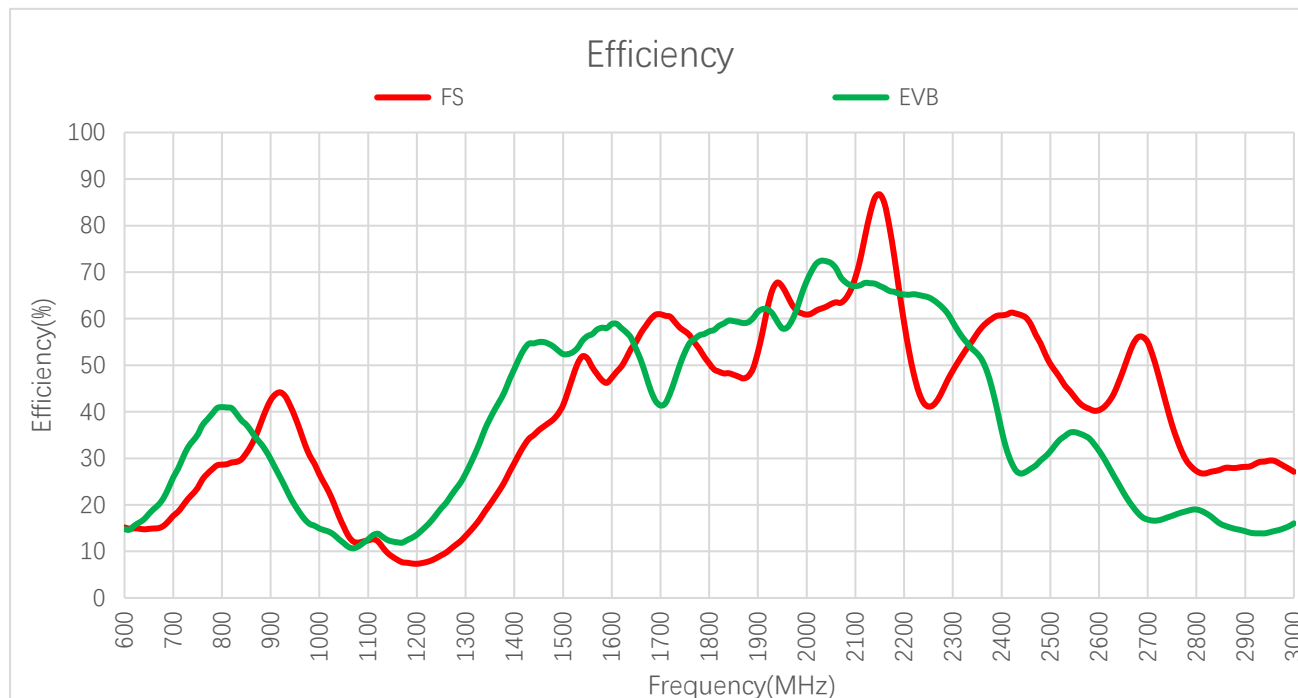


Return Loss (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	FS	-5.8	-5.6	-4.3	-5.3	-11.2	-6.7	-11.8	-8.4	-7.7	-5.6
	EVB	-5.0	-5.6	-6.1	-11.5	-4.8	-2.3	-15.1	-9.7	-8.2	-6.2
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	FS	-5.6	-8.5	-22.4	-9.9	-5.7	-5.6	-	-	-	-
	EVB	-8.1	-18.3	-5.5	-4.0	-3.2	-2.6	-	-	-	-

3.2. Radiation Performance Test

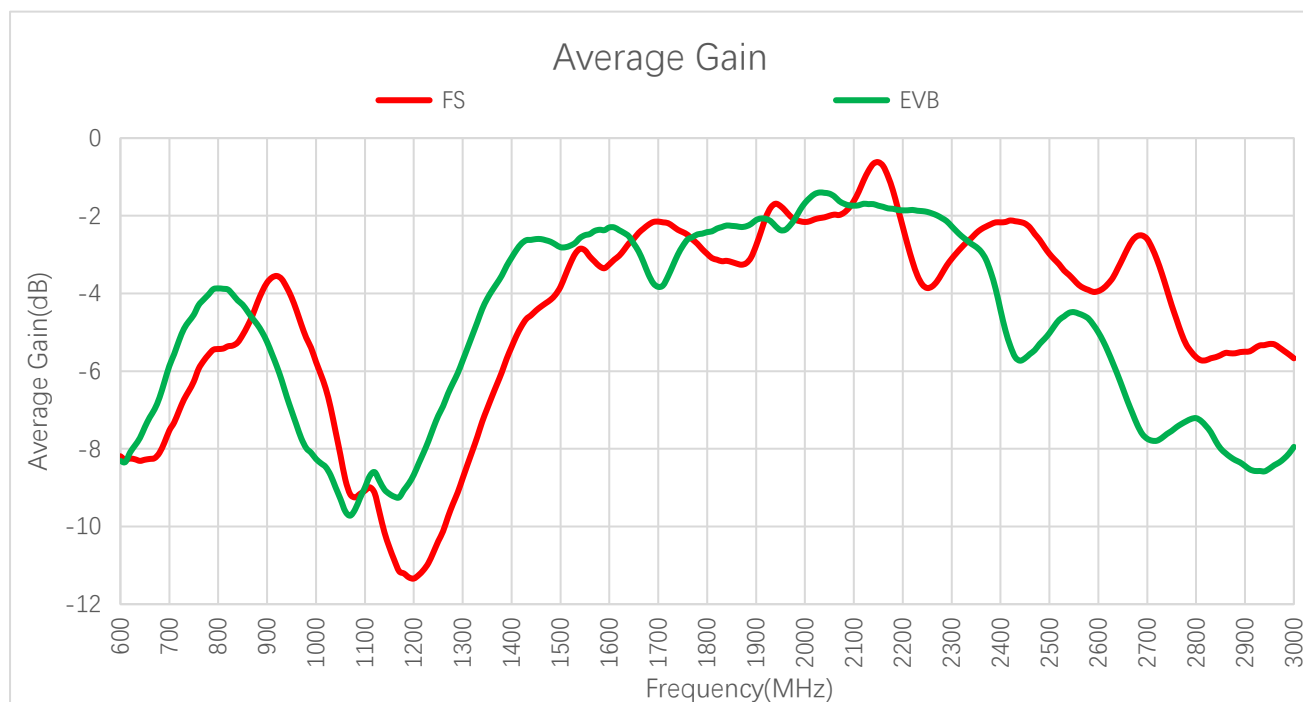
3.2.1. Efficiency



Frequency (%)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	FS	15.2	14.9	18.5	29.2	42.5	36.1	35.0	60.6	58.1	47.6
	EVB	14.8	16.2	27.8	39.5	29.8	18.3	54.7	41.8	50.1	59.2
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	FS	66.9	85.9	56.8	60.2	40.4	66.9	-	-	-	-
	EVB	57.9	67.5	52.5	27.1	31.6	17.3	-	-	-	-

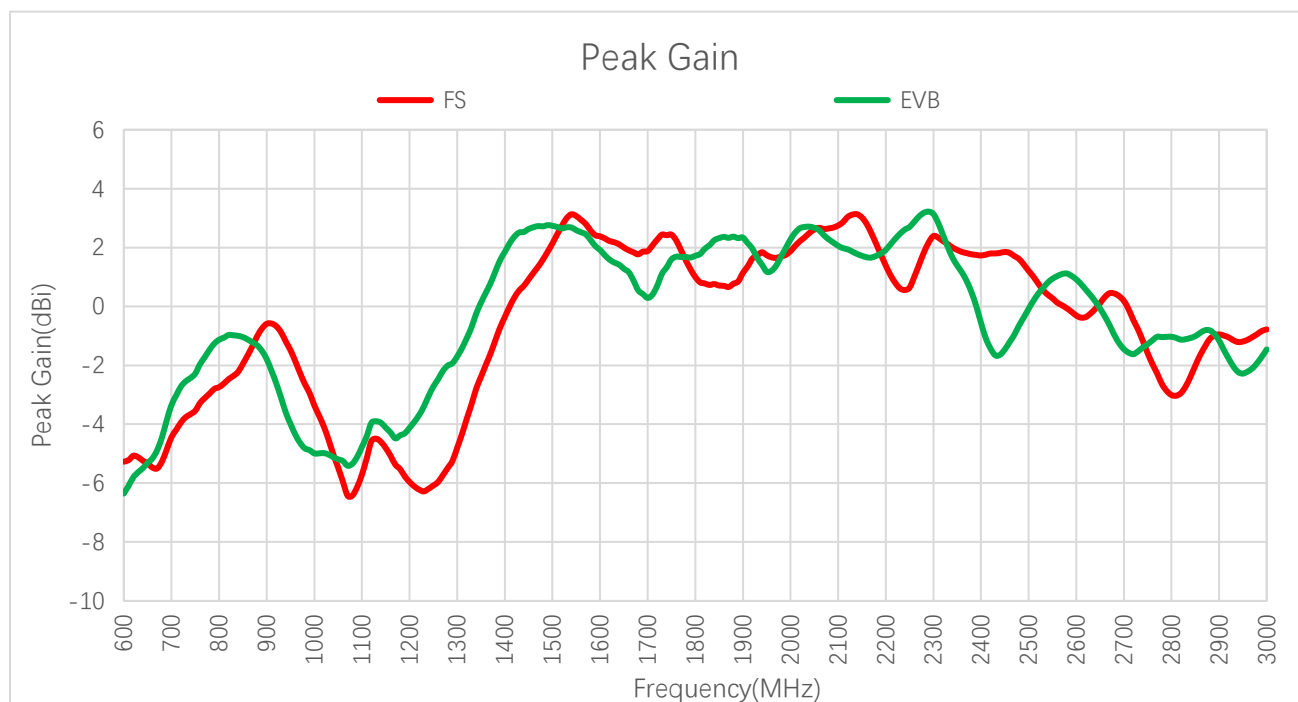
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	FS	-8.2	-8.3	-7.3	-5.3	-3.7	-4.4	-4.6	-2.2	-2.4	-3.2
	EVB	-8.3	-7.9	-5.6	-4.0	-5.3	-7.4	-2.6	-3.8	-3.0	-2.3
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	FS	-1.8	-0.7	-2.5	-2.2	-3.9	-1.8	-	-	-	-
	EVB	-2.8	-4.9	-2.6	-3.7	-7.8	-7.7	-	-	-	-

3.2.3. Peak Gain

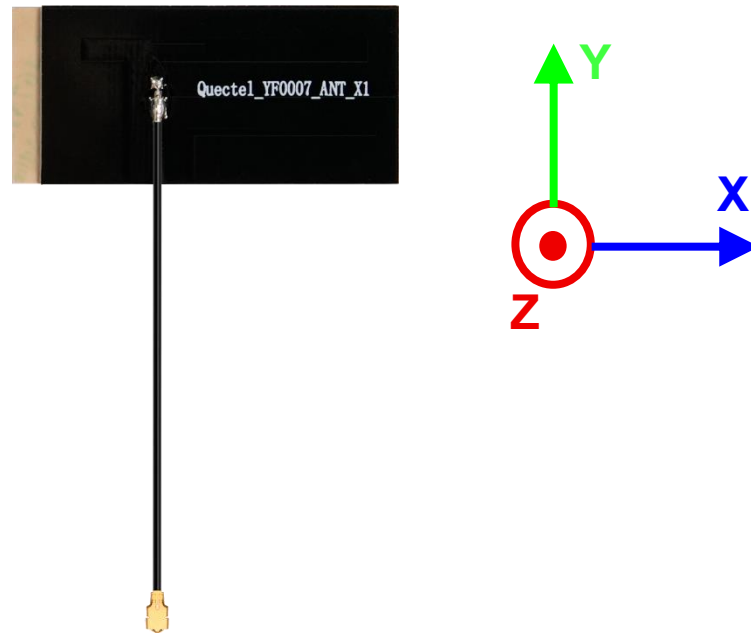


Peak Gain (dBi)											
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	FS	-5.3	-5.1	-4.2	-2.4	-0.6	-1.9	0.7	2.1	2.4	0.8
	EVB	-6.4	-5.6	-3.0	-1.0	-1.8	-4.4	2.5	0.4	1.3	2.4
Frequency (MHz)		1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	FS	1.7	3.1	1.9	1.9	-0.3	1.7	-	-	-	-
	EVB	1.2	1.8	1.4	-1.5	0.9	-1.3	-	-	-	-

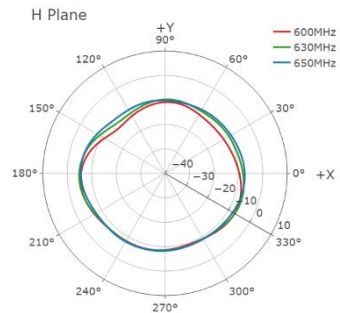
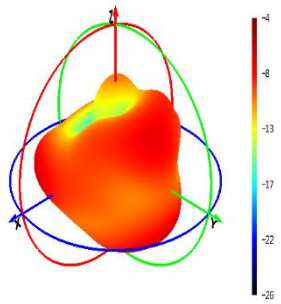
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: In Free Space

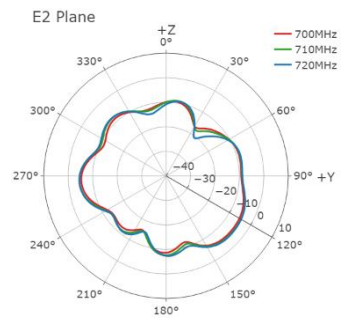
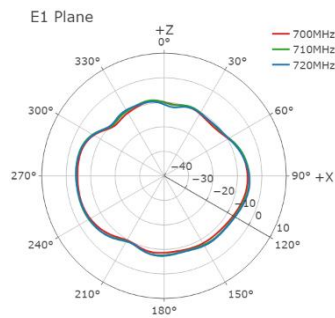
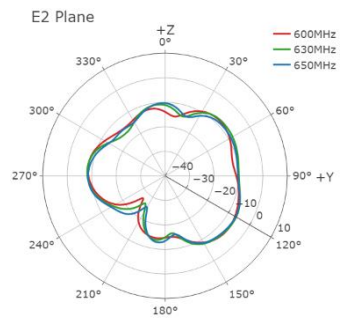
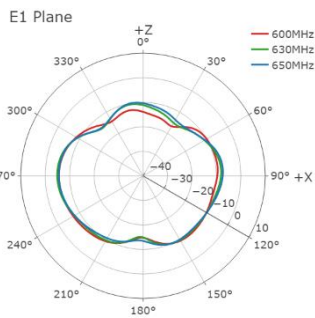
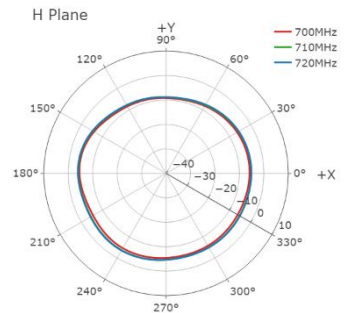
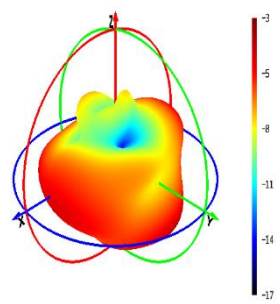
- Test Chamber: GL-S-1



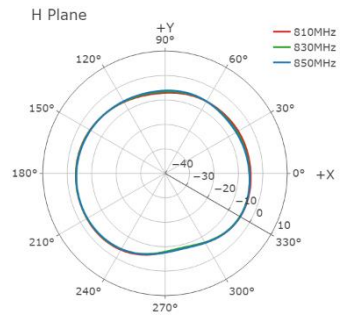
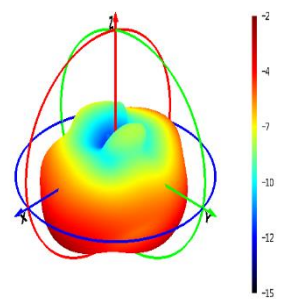
630 MHz



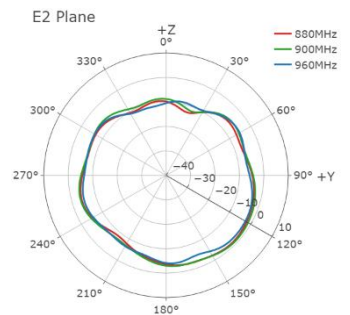
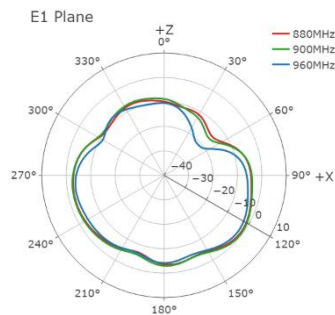
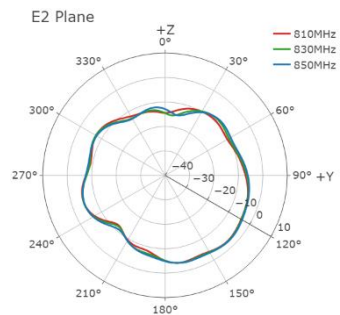
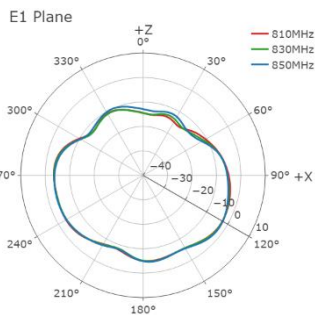
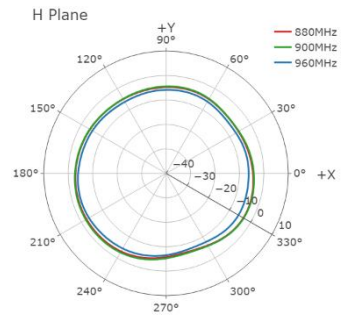
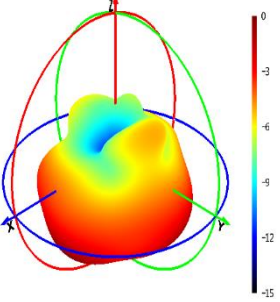
710 MHz

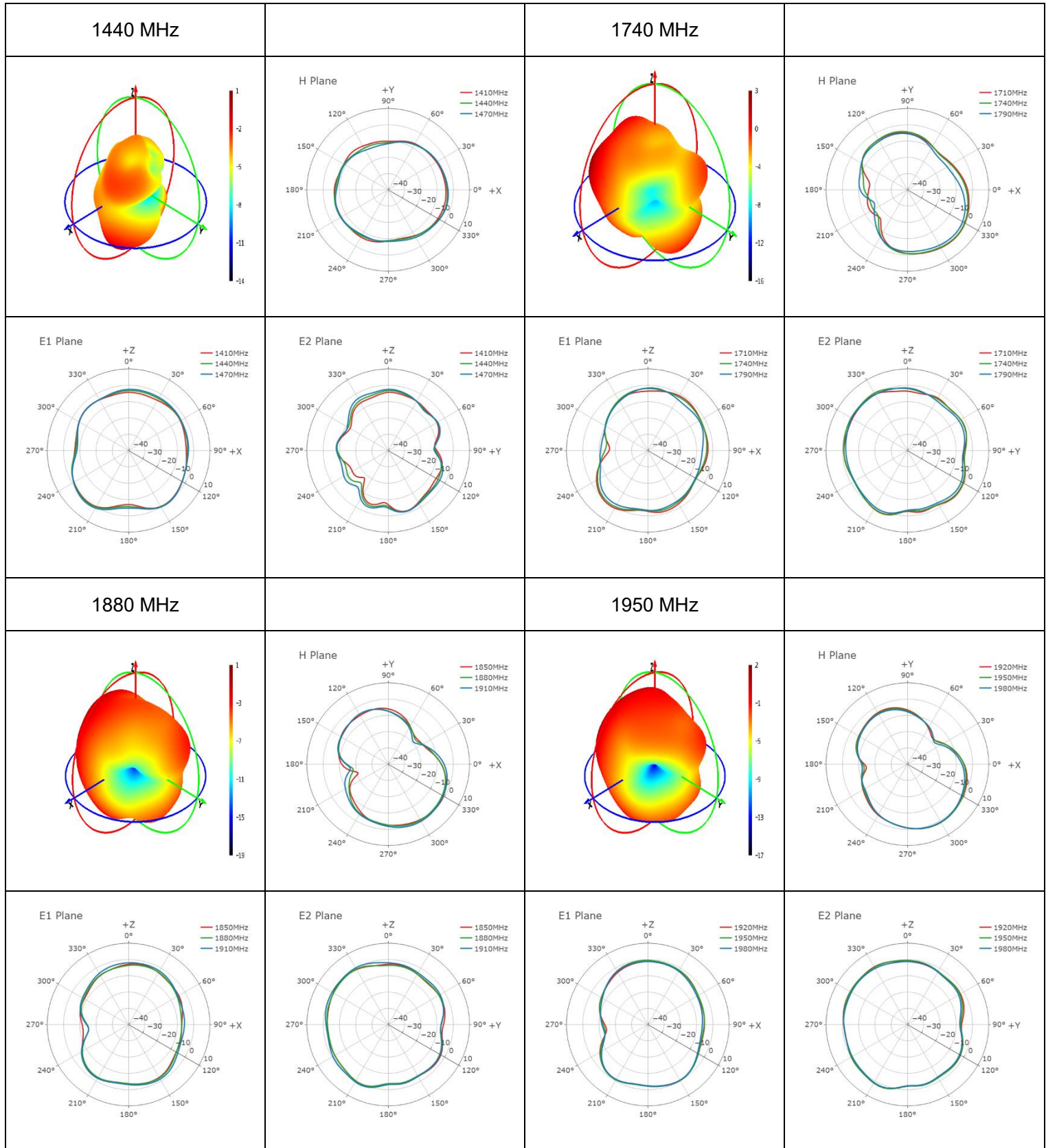


830 MHz

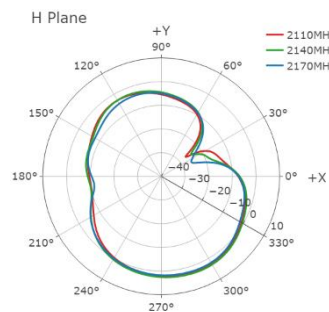
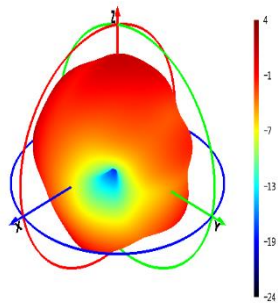


900 MHz

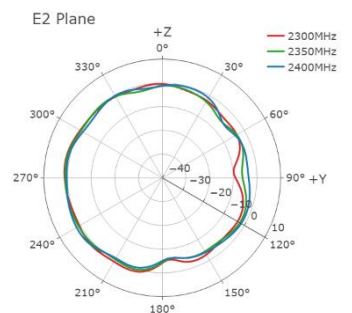
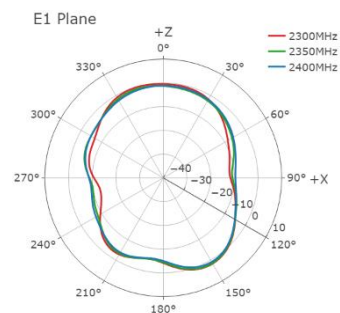
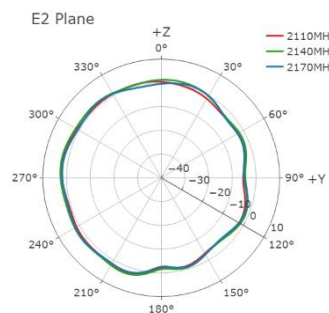
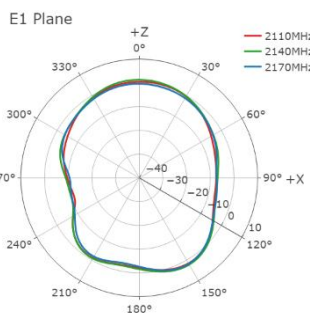
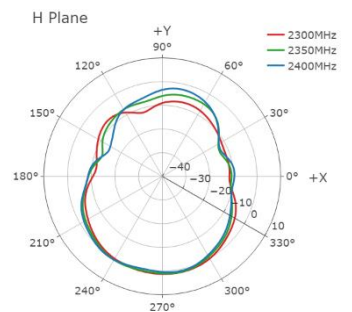
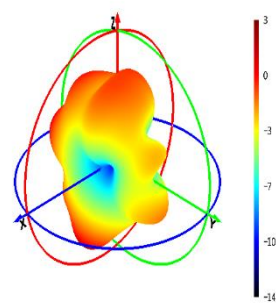




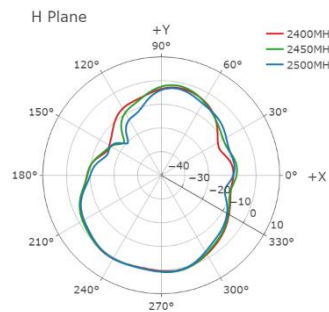
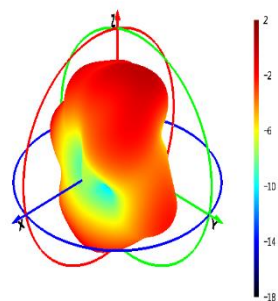
2140 MHz



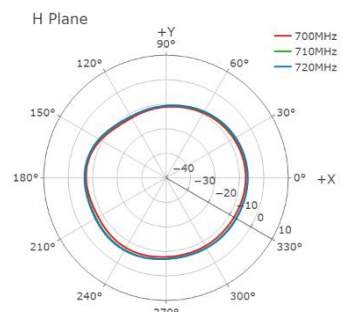
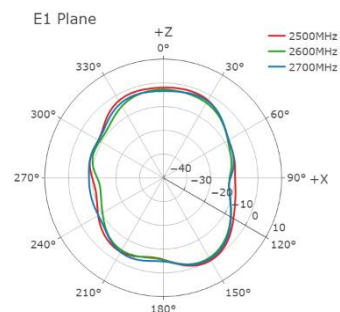
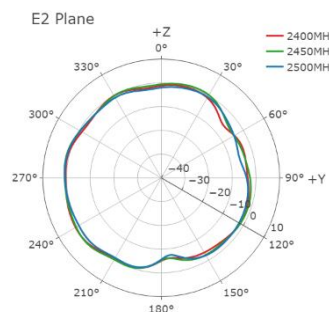
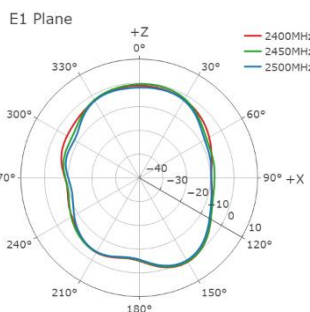
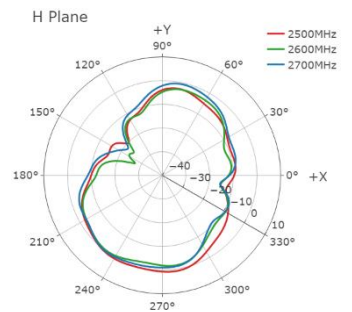
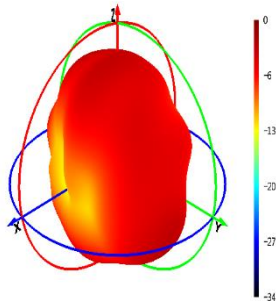
2350 MHz



2450 MHz

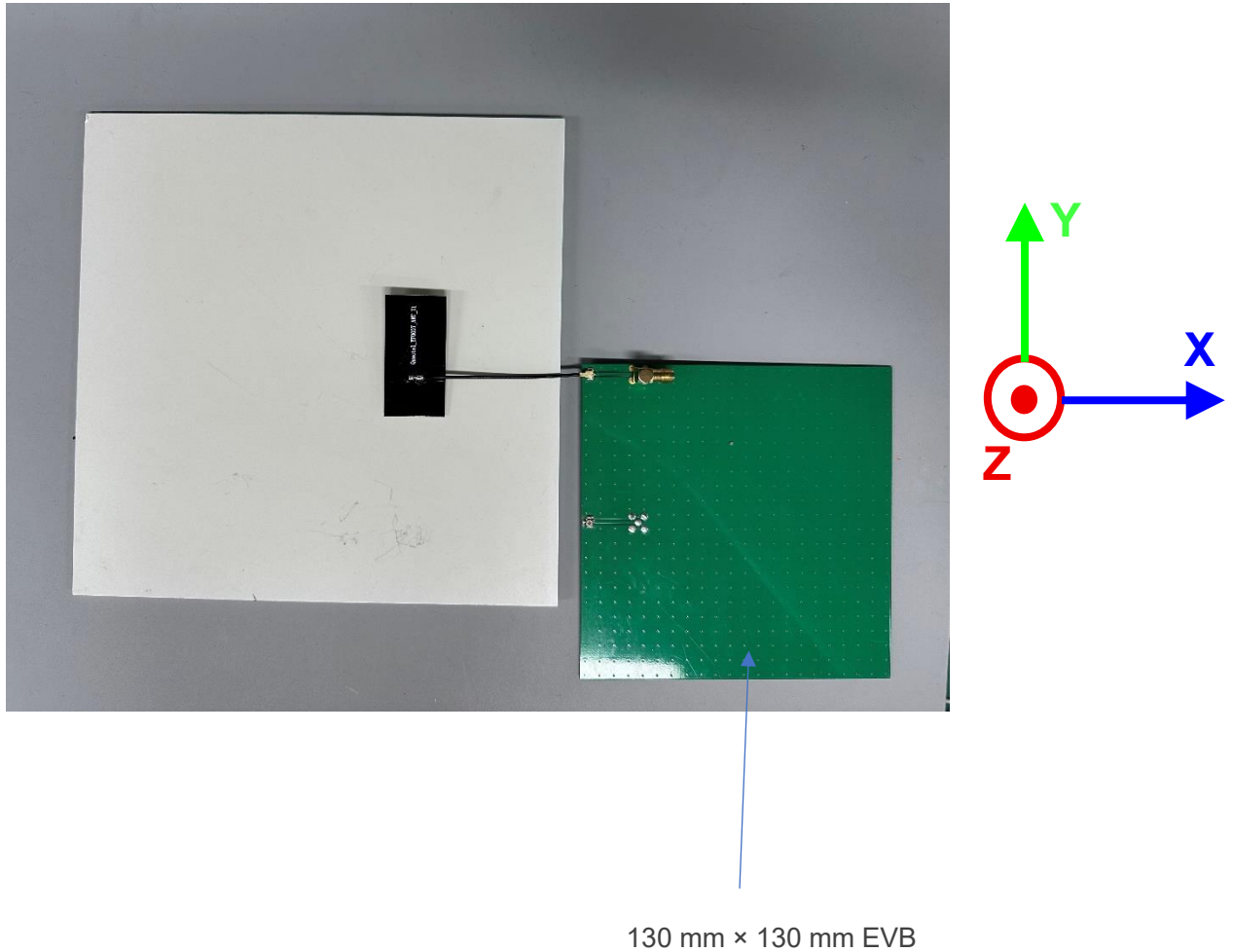


2600 MHz

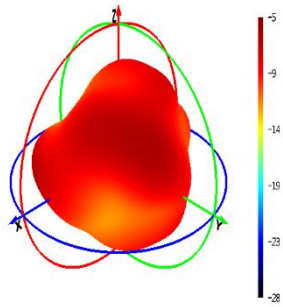


3.2.4.2. Test Condition: Stick to ABS Board on 130 mm × 130 mm EVB Board

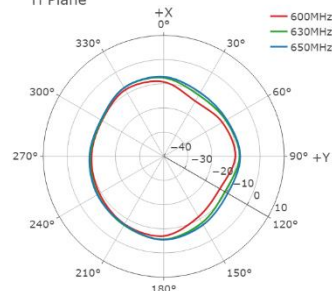
- Test Chamber: GL-S-1



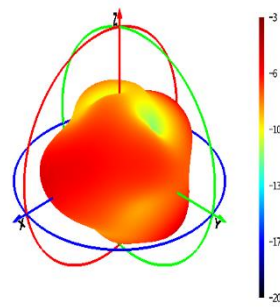
630 MHz



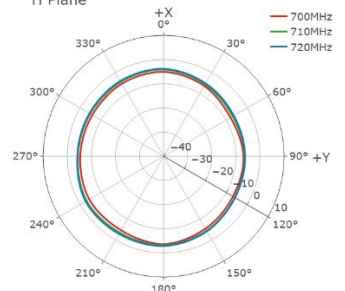
H Plane



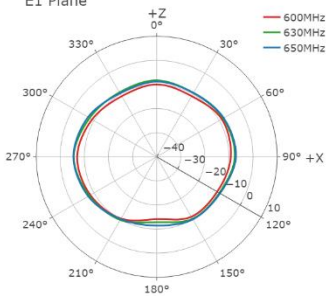
710 MHz



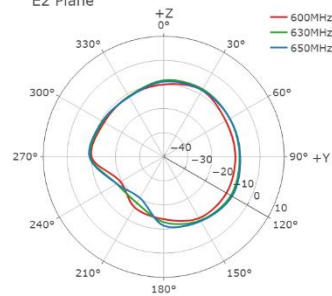
H Plane



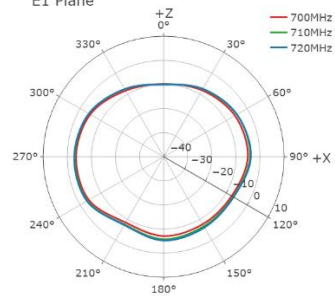
E1 Plane



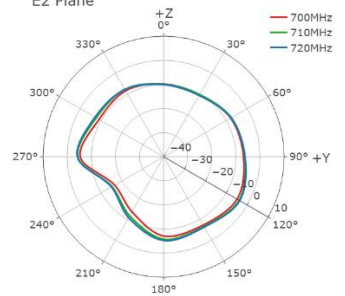
E2 Plane



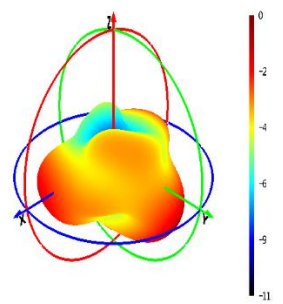
E1 Plane



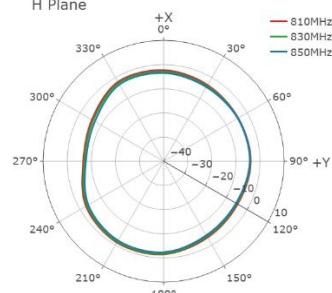
E2 Plane



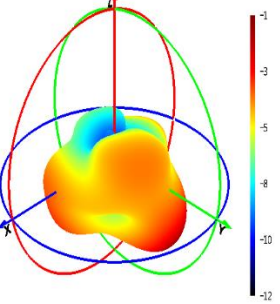
830 MHz



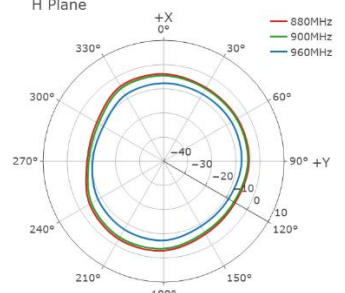
H Plane



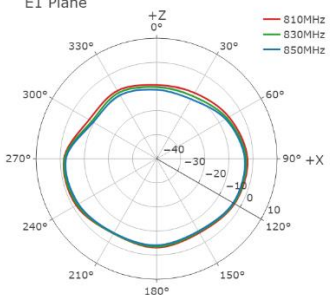
900 MHz



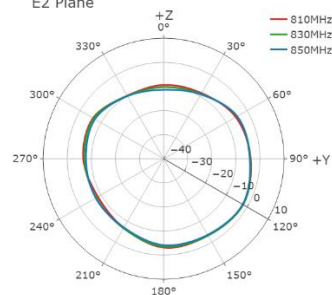
H Plane



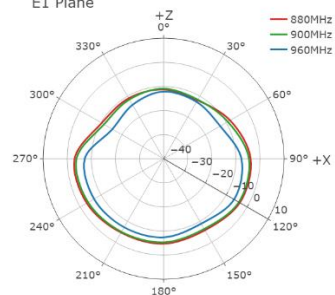
E1 Plane



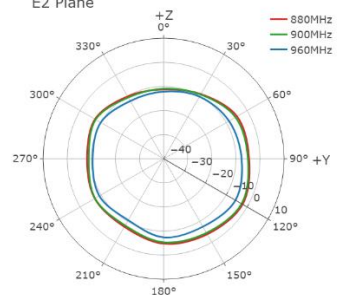
E2 Plane



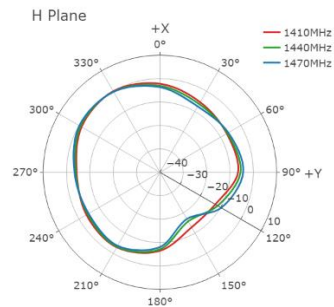
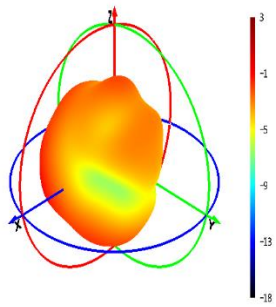
E1 Plane



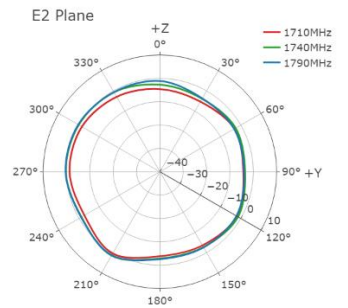
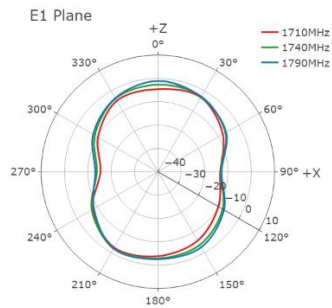
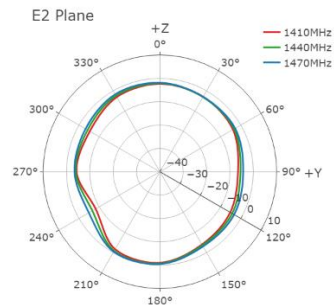
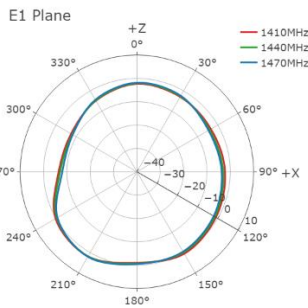
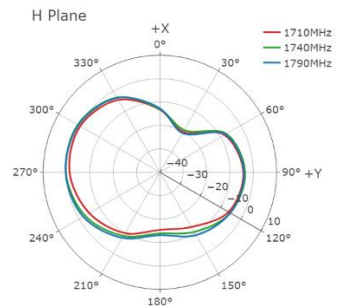
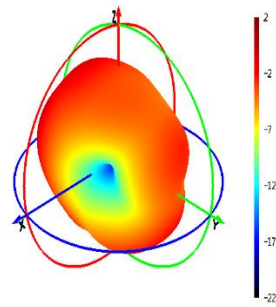
E2 Plane



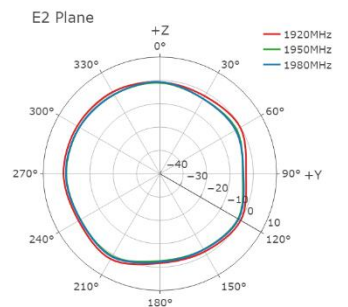
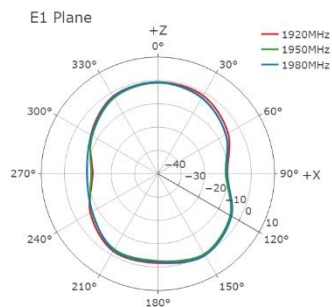
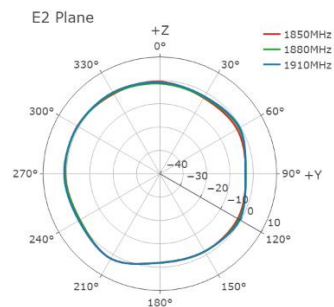
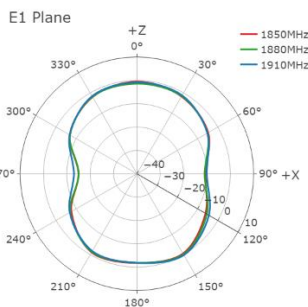
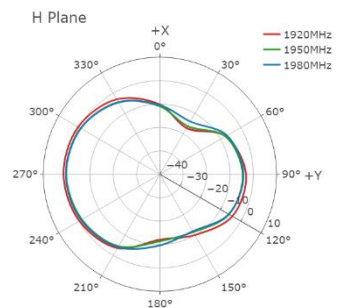
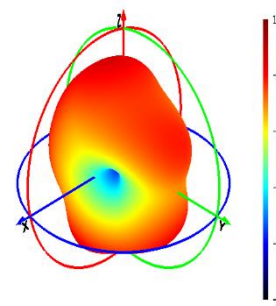
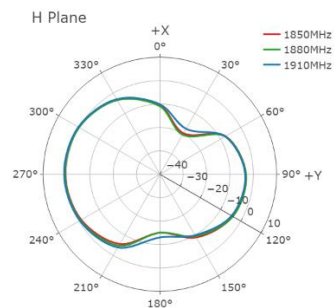
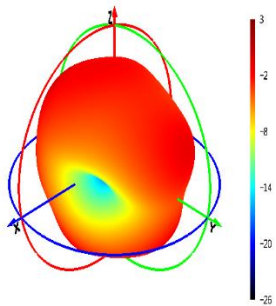
1440 MHz



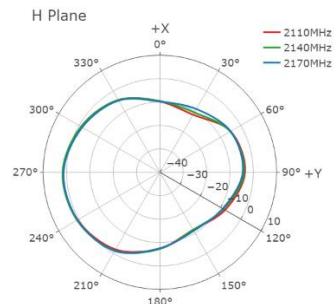
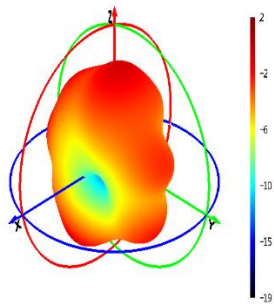
1740 MHz



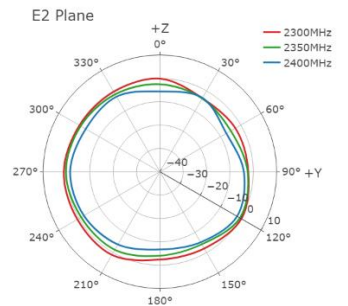
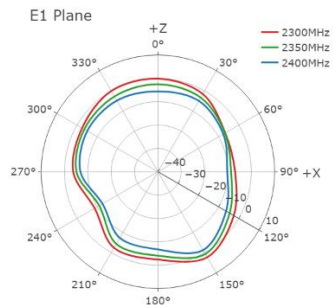
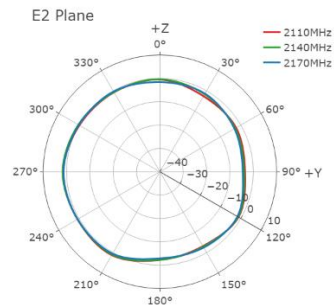
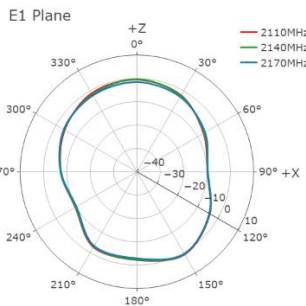
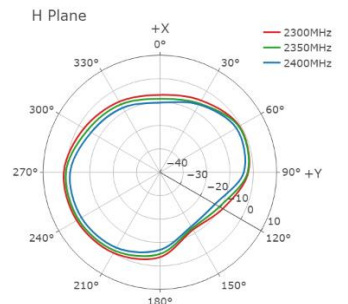
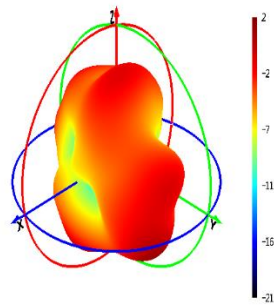
1880 MHz



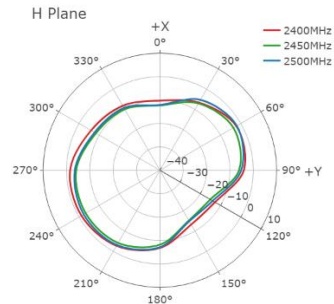
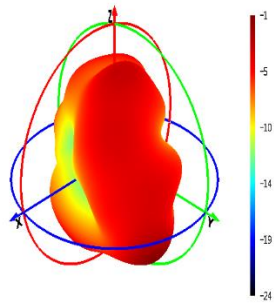
2140 MHz



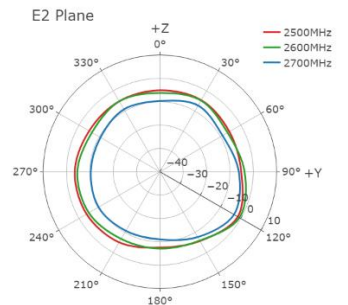
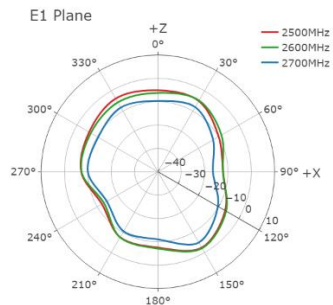
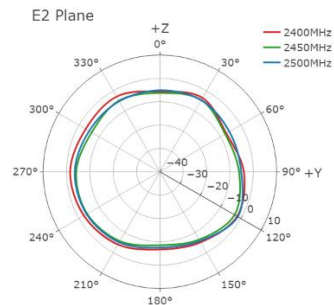
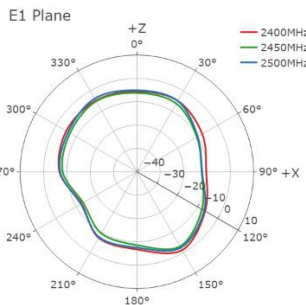
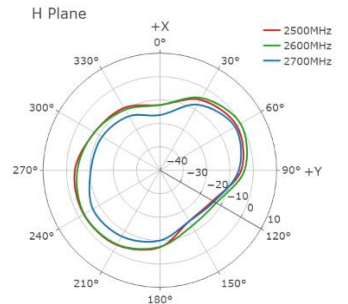
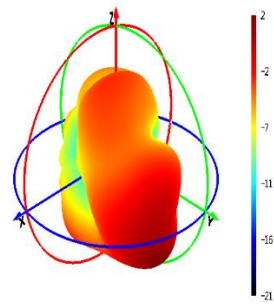
2350 MHz



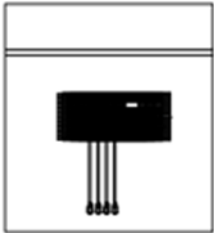
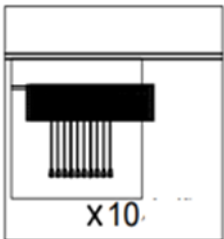
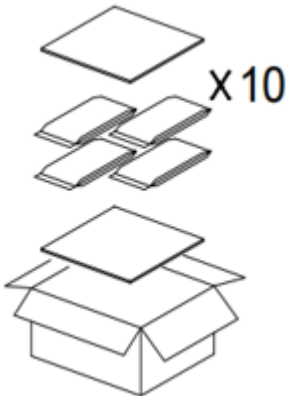
2450 MHz

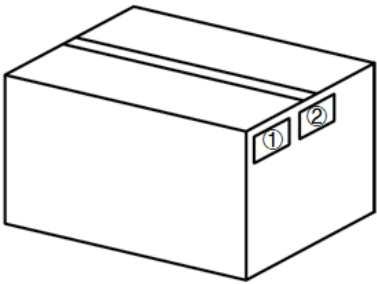
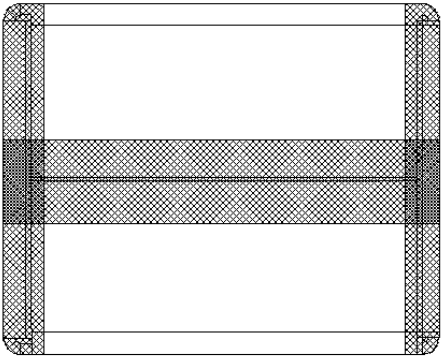


2600 MHz



4 Packaging

Step	Packaging Picture/2D Picture	Description
1	 20pcs/tie	The terminals of the product are wrapped with EPE sheets. (20 Antennas / Tie)
2	 200pcs/bag	200 antenna products in a PE bag. (200 Antennas / PE Bag)
3		(10 PE Bags / Carton Box) (2000 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 = 325 × 325 × 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

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Revision History

Version	Date	Author	Note
-	2021-07-25	Richard Liu/ Joye Wang	Creation of the document
1.0	2021-07-25	Richard Liu/ Joye Wang	First official release
1.1	2023-06-12	David Liu/ Vinnie Liu	Added the packaging information (Chapter 6).
2.0	2023-09-07	Rainey Liao/ Lucky Feng/ David Liu/ Aria Chu	Updated all test data in this datasheet.
2.1	2023-12-05	Lucky Feng/ Aria Chu	Added REACH compliant (Chapter 1.2).
2.2	2025-04-24	Joye Wang/ Aria Chu	- Updated the antenna dimensions. - Updated the antenna image (Cover page). - Updated the drawing (Chapter 2).
2.3	2026-04-02	Allow Xu	- Updated the overview. - Updated the packaging (Chapter 4).



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