



Antenna Datasheet

Product OC: YECT003W1A

Version: 2.0

Date: 2024-06-27

Status: Released

Product Name: 4G Terminal Mount Rubber Monopole Antenna

Key Features:

Frequency Band: 700–960 MHz; 1450–2690 MHz; 3300–3800 MHz

Dimensions: $\Phi 12.4$ mm $\times$ 50.8 mm

Efficiency: Up to 81.3 %

RoHS and REACH Compliant

IP Rating: IP65(After installation IP67)

Overview

YECT003W1A is a 4G rubber antenna measuring Φ 12.4 mm × 50.8 mm. This ultra-wide-band 4G antenna provides broad coverage from 700–960 MHz; 1450–2690 MHz; 3300–3800 MHz whilst offering backward-compatibility to support 3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is terminated with SMA Male connector. Ideal for applications where the antenna is required to be discrete, this low profile, terminal mount omni-directional antenna is easy to install with maximum durability assured thanks to its IP65 rated enclosure. It is compatible with Quectel's RM520x Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. YECT003W1A is designed as a monopole antenna, which needs to be mounted on a ground plane to offer high efficiency in all working bands. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for Gateways and Routers, IoT Sensors, Public Safety and Security, Smart Home Automation, Robotics / Autonomous.

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: 130 mm × 130 mm EVB

1.1. Electrical

Electrical	
Frequency Range	700–960 MHz; 1450–2690 MHz; 3300–3800 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

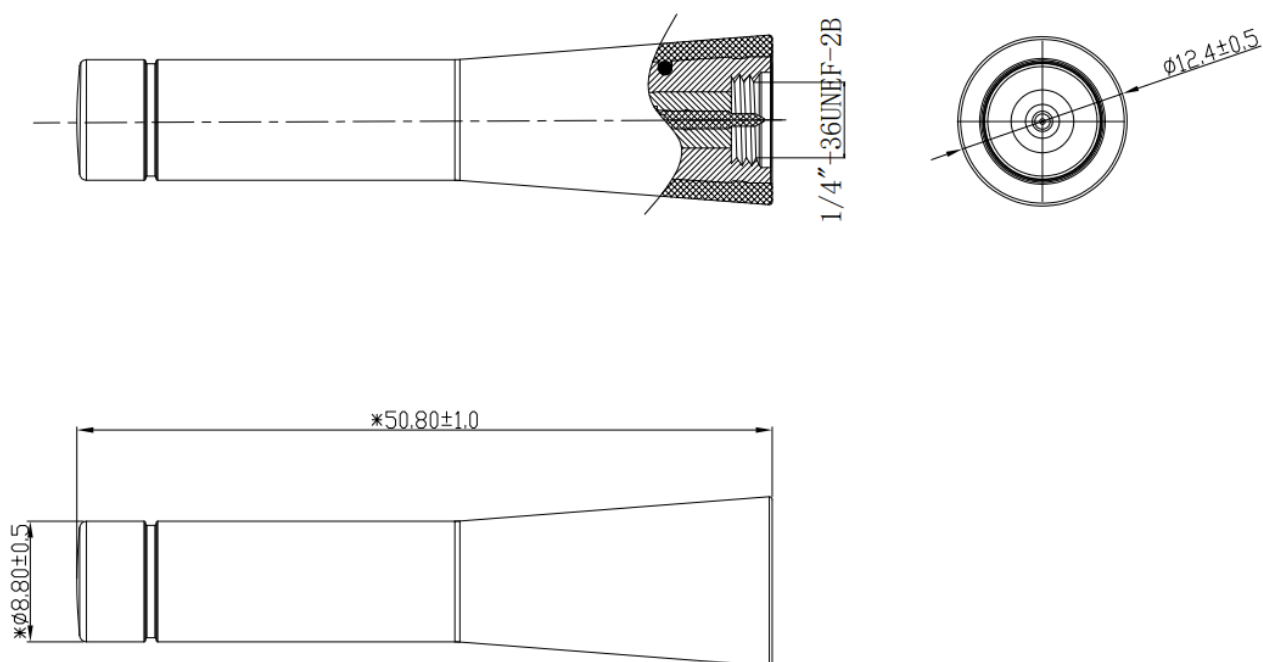
Electrical - Detail												
SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 3800	4400– 5000	5150– 5850
Max. VSWR		-	7.7	3.8	2.5	3.7	3.2	2.9	2.5	2.4	-	-
Max. Return Loss (dB)		-	-2.3	-4.7	-7.4	-4.8	-5.5	-6.3	-7.3	-7.6	-	-
AVG Eff. (%)		-	33.4	59.0	68.0	60.3	65.3	70.1	75.9	72.0	-	-
AVG Gain (dB)		-	-4.8	-2.3	-1.7	-2.2	-1.9	-1.5	-1.2	-1.4	-	-
Max. Peak Gain (dBi)		-	-1.0 (810)	2.0 (940)	1.8 (1510)	1.3 (1710)	2.3 (2400)	3.2 (2490)	3.7 (2620)	3.7 (3350)	-	-
VSWR						≤ 7.7						
Return Loss						≤ -2.3 dB						
Peak Gain						≤ 3.7 dBi						

Gain - Detail			
	Band	Freq. (MHz)	Max peak Gain (dBi)
FDD < 3 dBi	B1	1920-1980	-0.2
	B3	1710-1785	1.3
	B8	880-915	1.5
	B18	815-830	-0.6
	B19	830-845	0.0
	B26	814-849	0.0
	B28	703-748	-2.2
TDD < 4 dBi	B39	1888-1920	0.0
	B41 (Disable HPUE)	2496-2690	3.7
	B42	3400-3600	3.5

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 12.4 mm × 50.8 mm
Casing Material & Color	PC & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 7.7 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS and REACH Compliant	Yes
IP Rating	IP65 (After installation IP67)

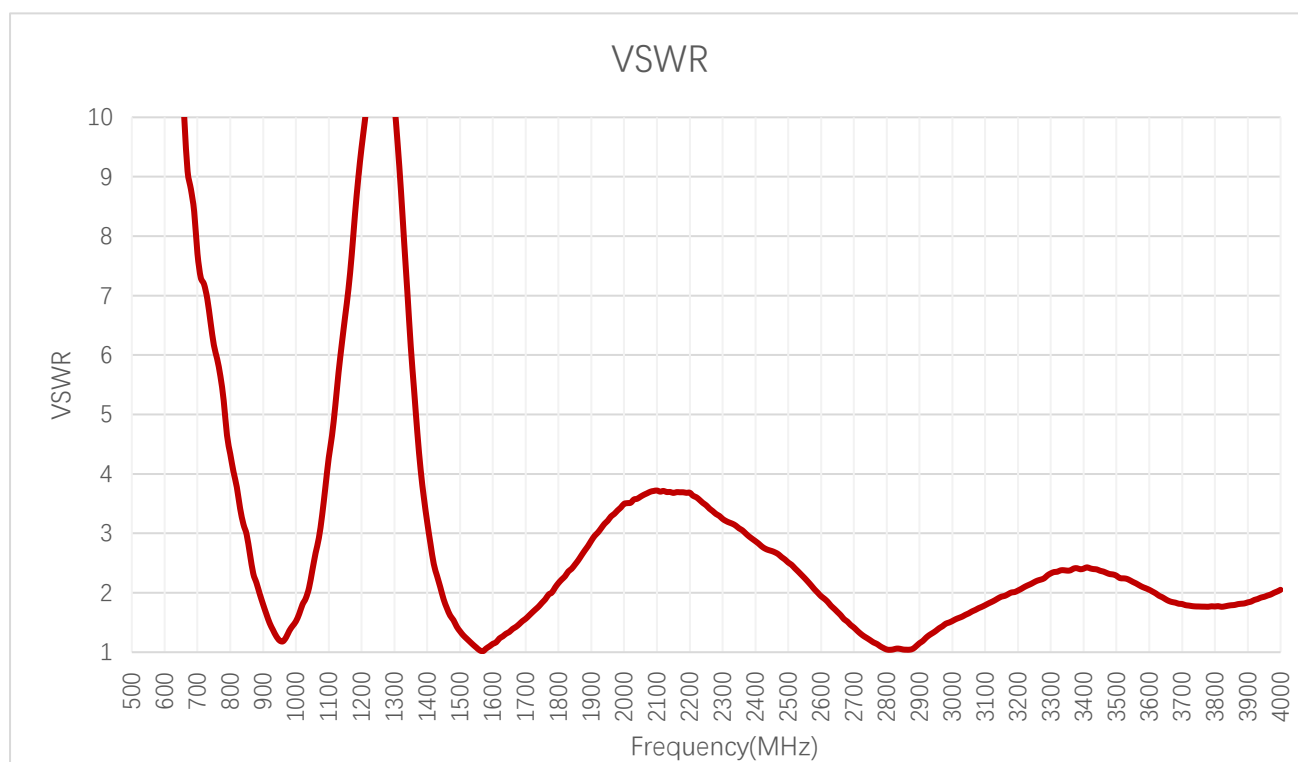
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

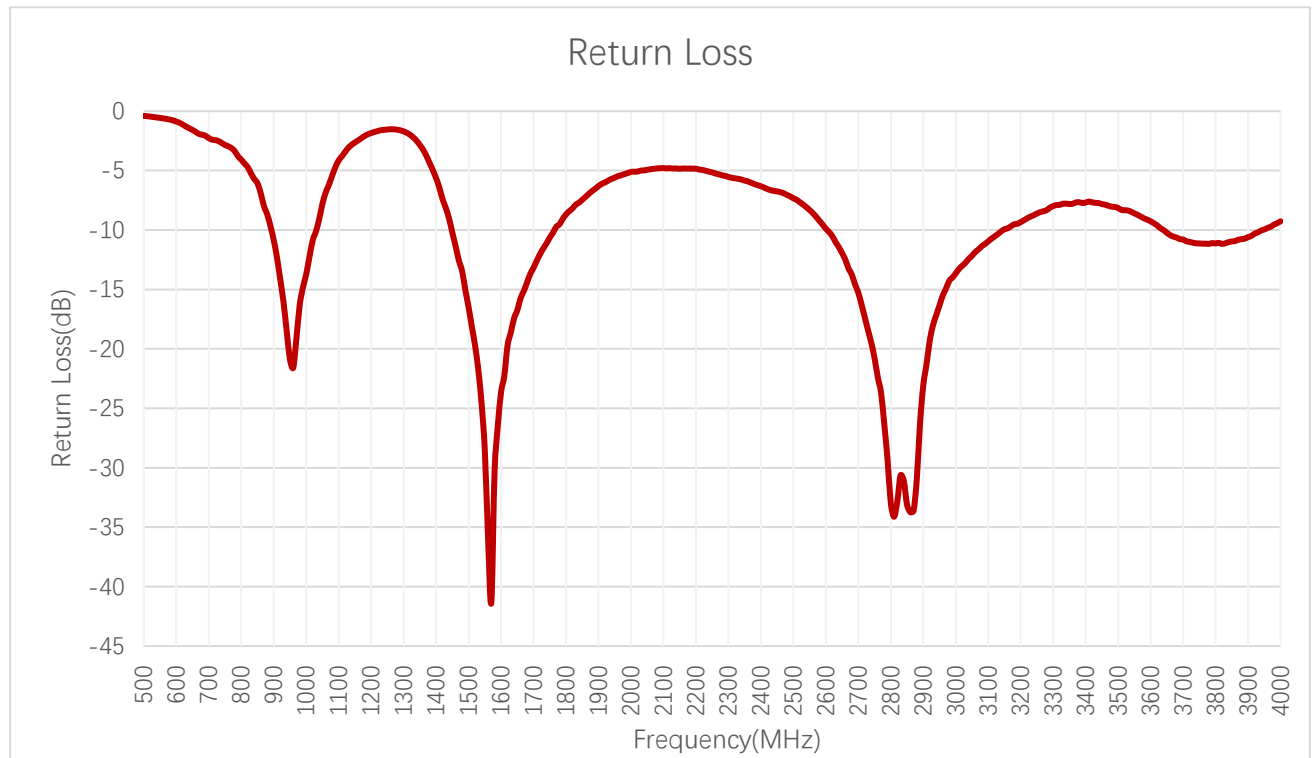
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	7.3	3.4	1.8	1.2	2.1	1.6	1.8	2.7
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
VSWR	3.2	3.7	3.1	2.7	1.9	2.0	-	-	-	-

3.1.2. Return Loss

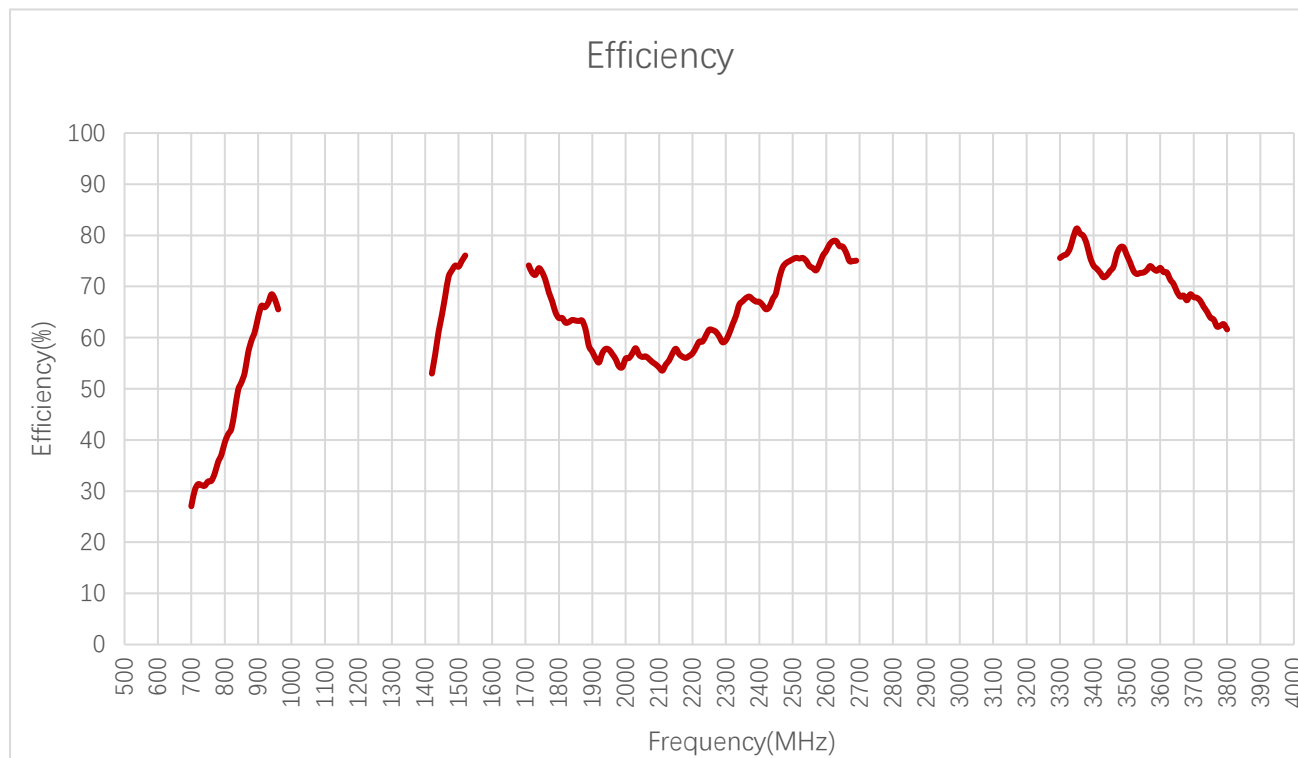


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-2.4	-5.2	-10.8	-21.6	-9.0	-12.6	-11.1	-6.7
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Return Loss (dB)	-5.6	-4.8	-5.8	-6.7	-9.9	-9.3	-	-	-	-

3.2. Radiation Performance Test

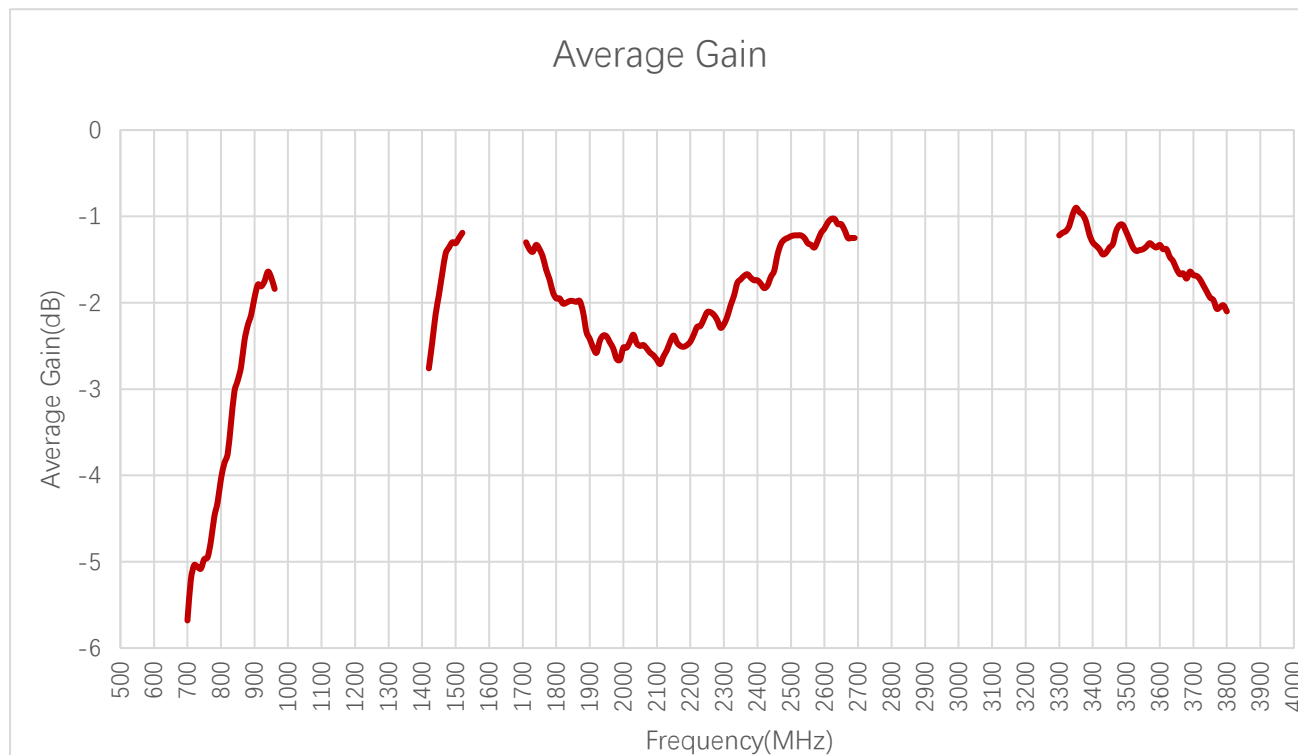
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	30.1	45.8	64.0	65.5	61.1	74.1	73.6	61.6
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Efficiency (%)	57.6	56.9	67.1	68.7	77.0	73.6	-	-	-	-

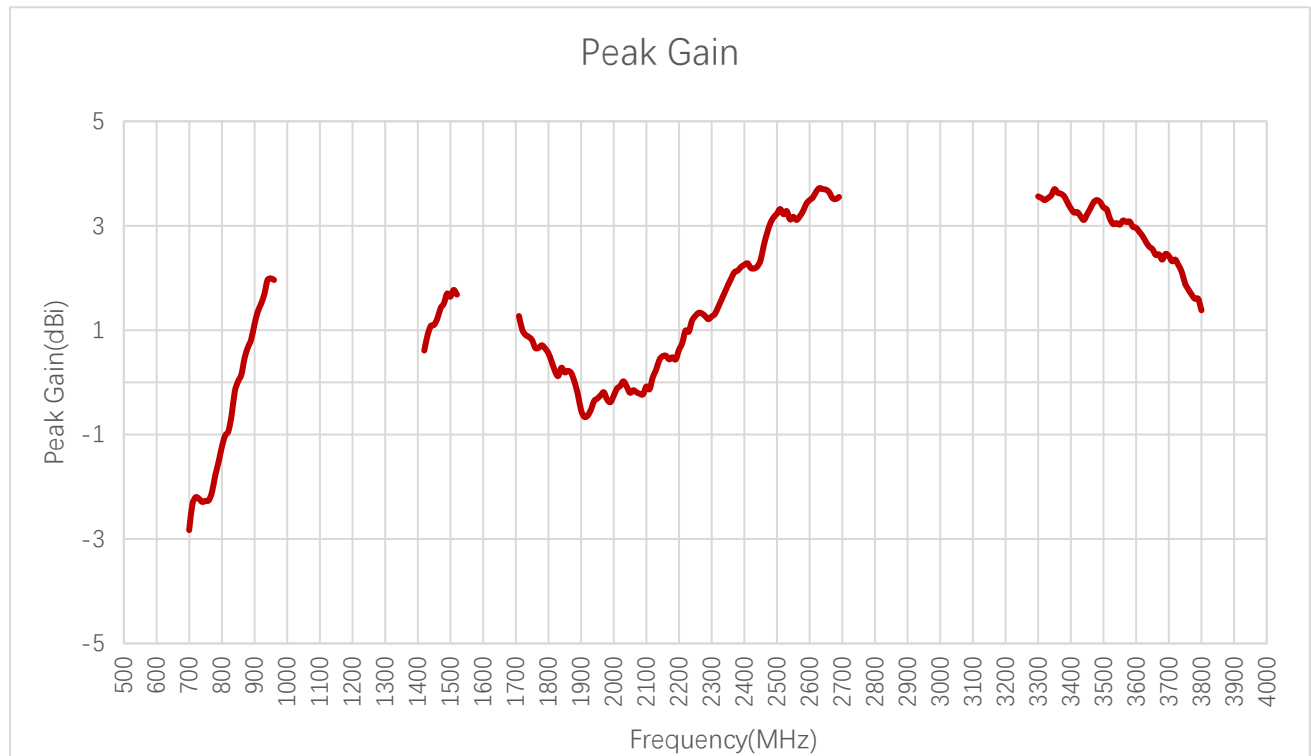
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-5.2	-3.4	-1.9	-1.8	-2.1	-1.3	-1.3	-2.1
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Average Gain (dB)	-2.4	-2.5	-1.7	-1.6	-1.1	-1.3	-	-	-	-

3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-2.3	-0.6	1.1	2.0	1.1	1.3	0.9	0.0
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Peak Gain (dBi)	-0.3	0.4	1.9	2.3	3.5	3.0	-	-	-	-

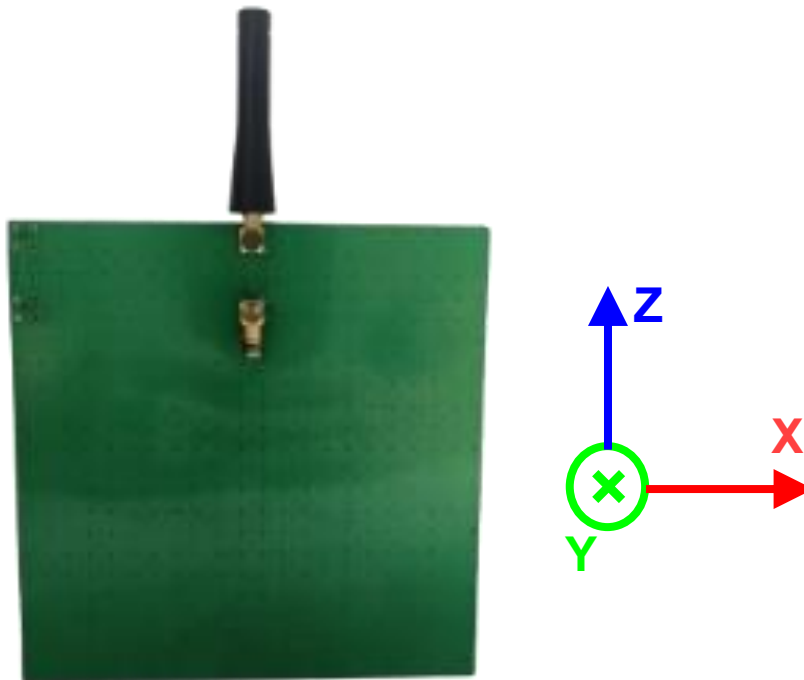
Max Peak Gain (dBi)

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
Frequency (MHz)	-	810	940	1510	1710	2400	2490	2620	3350	-	-
Peak Gain (dBi)	-	-1.0	2.0	1.8	1.3	2.3	3.2	3.7	3.7	-	-

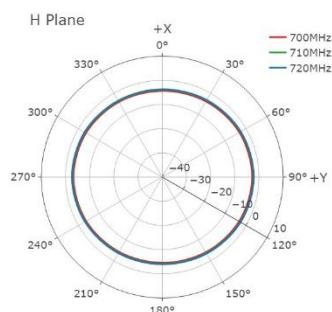
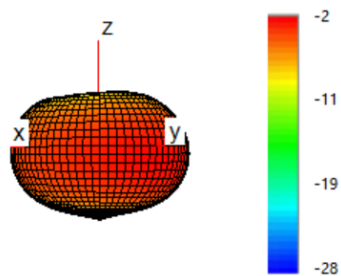
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: 130 mm × 130 mm EVB

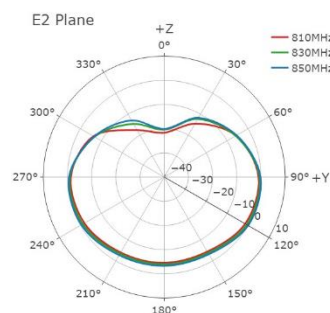
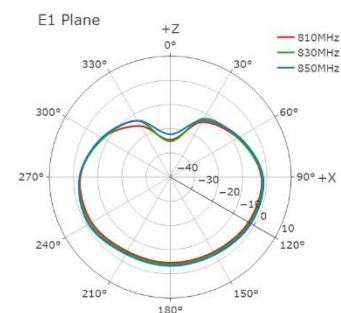
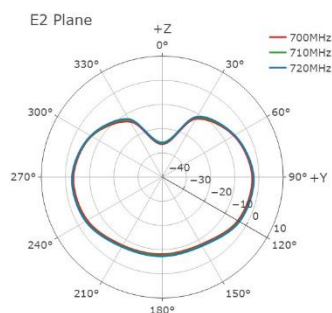
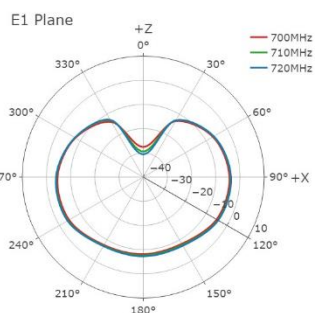
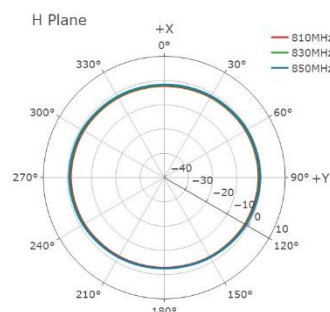
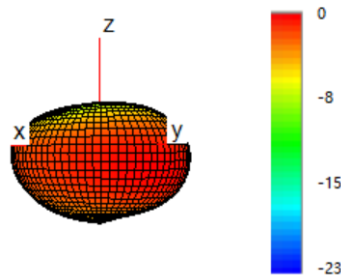
- Test Chamber: HF-G-1



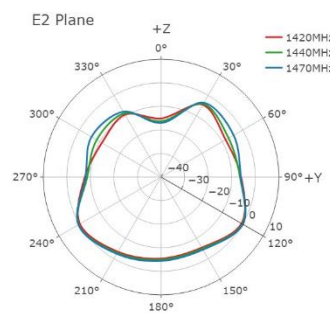
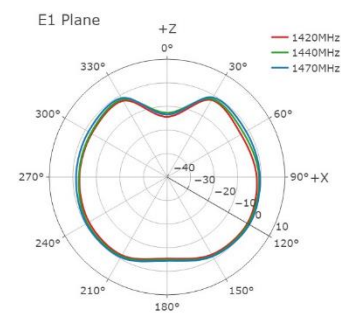
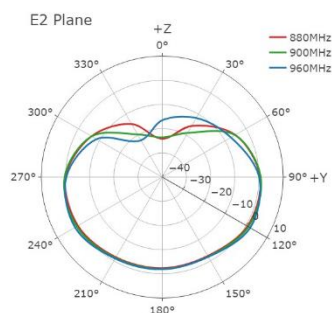
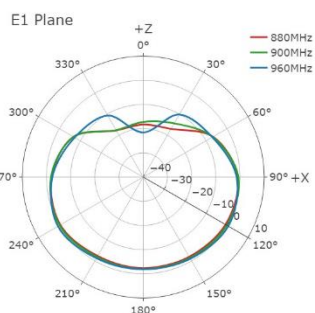
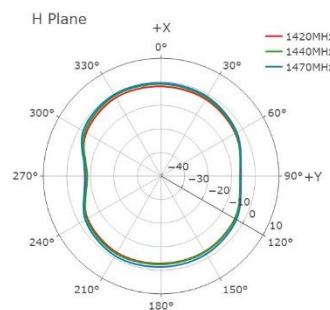
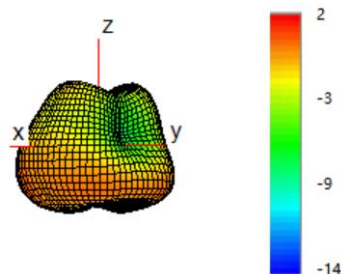
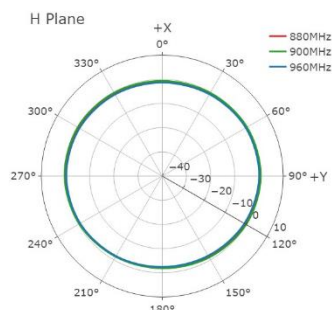
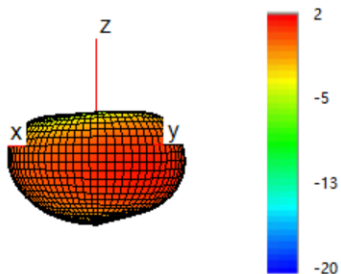
710 MHz

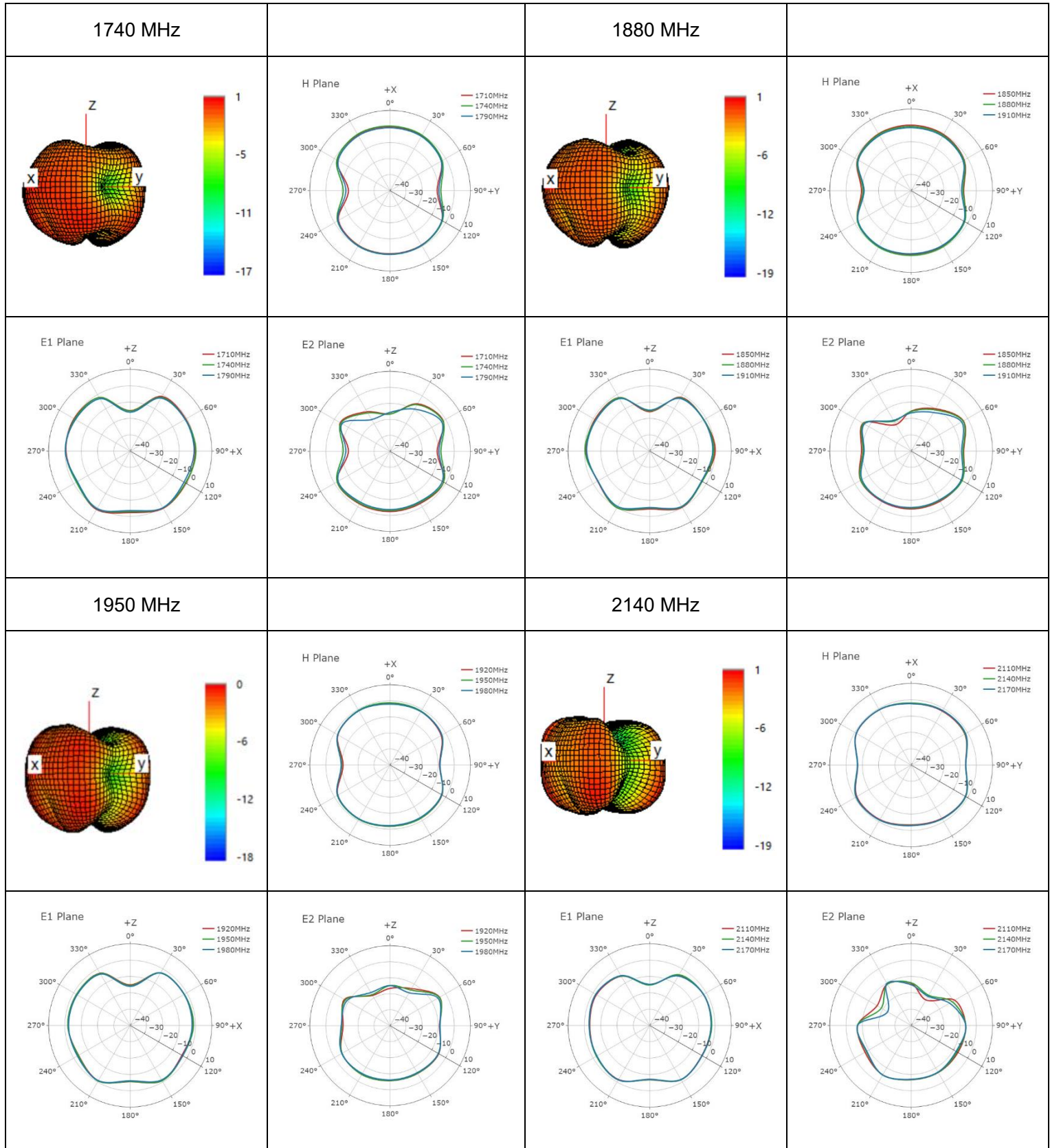


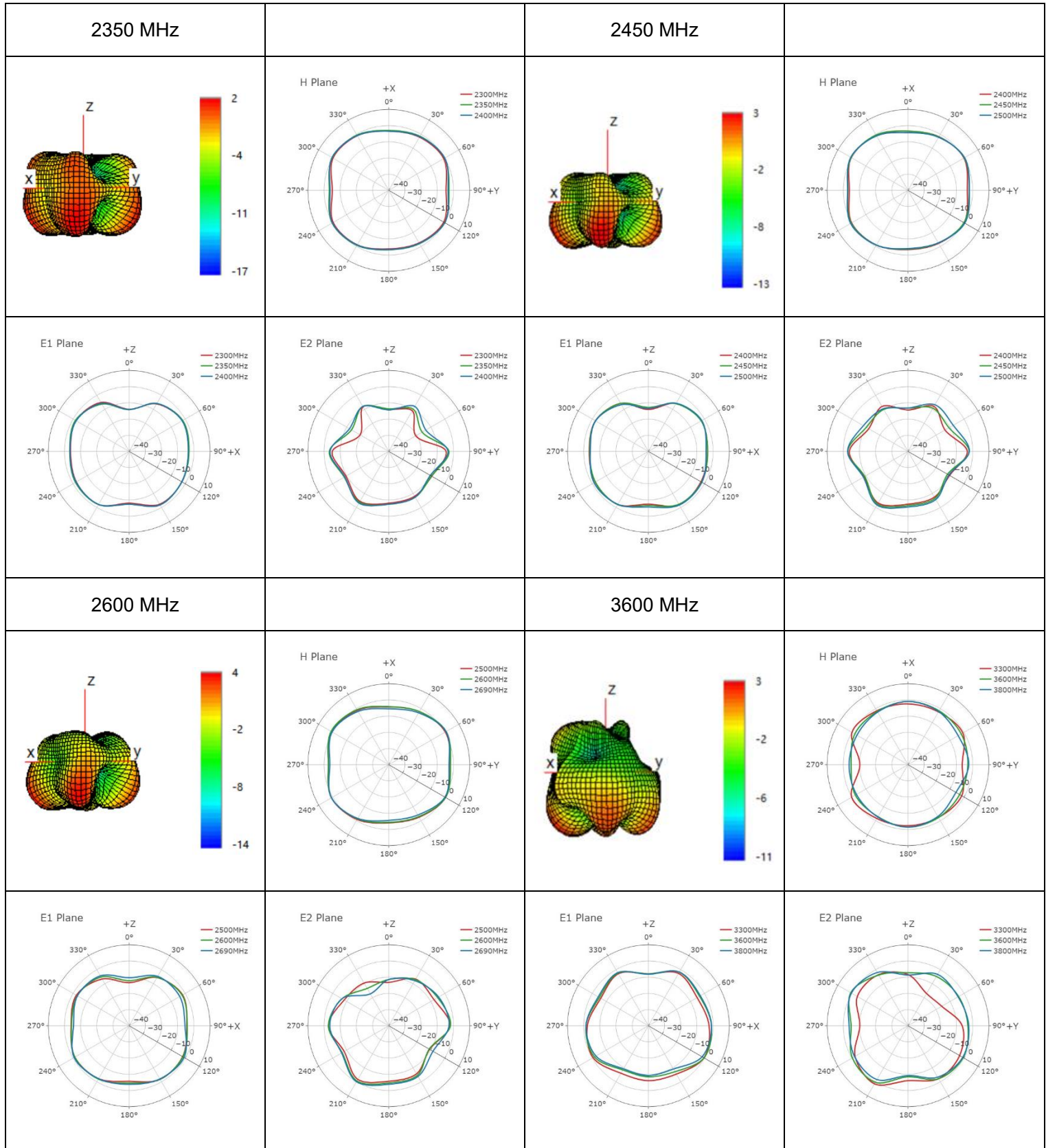
830 MHz



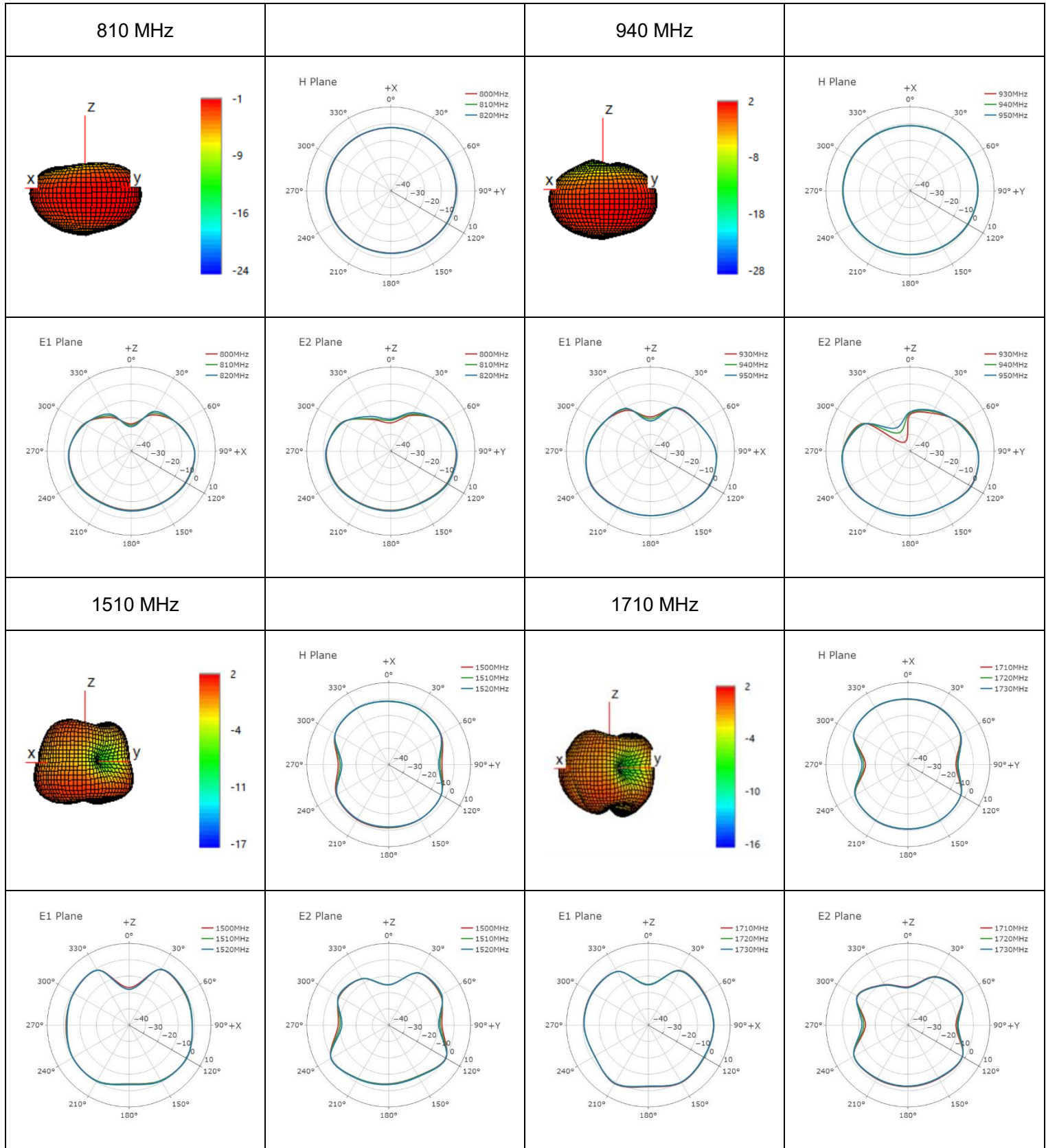
900 MHz

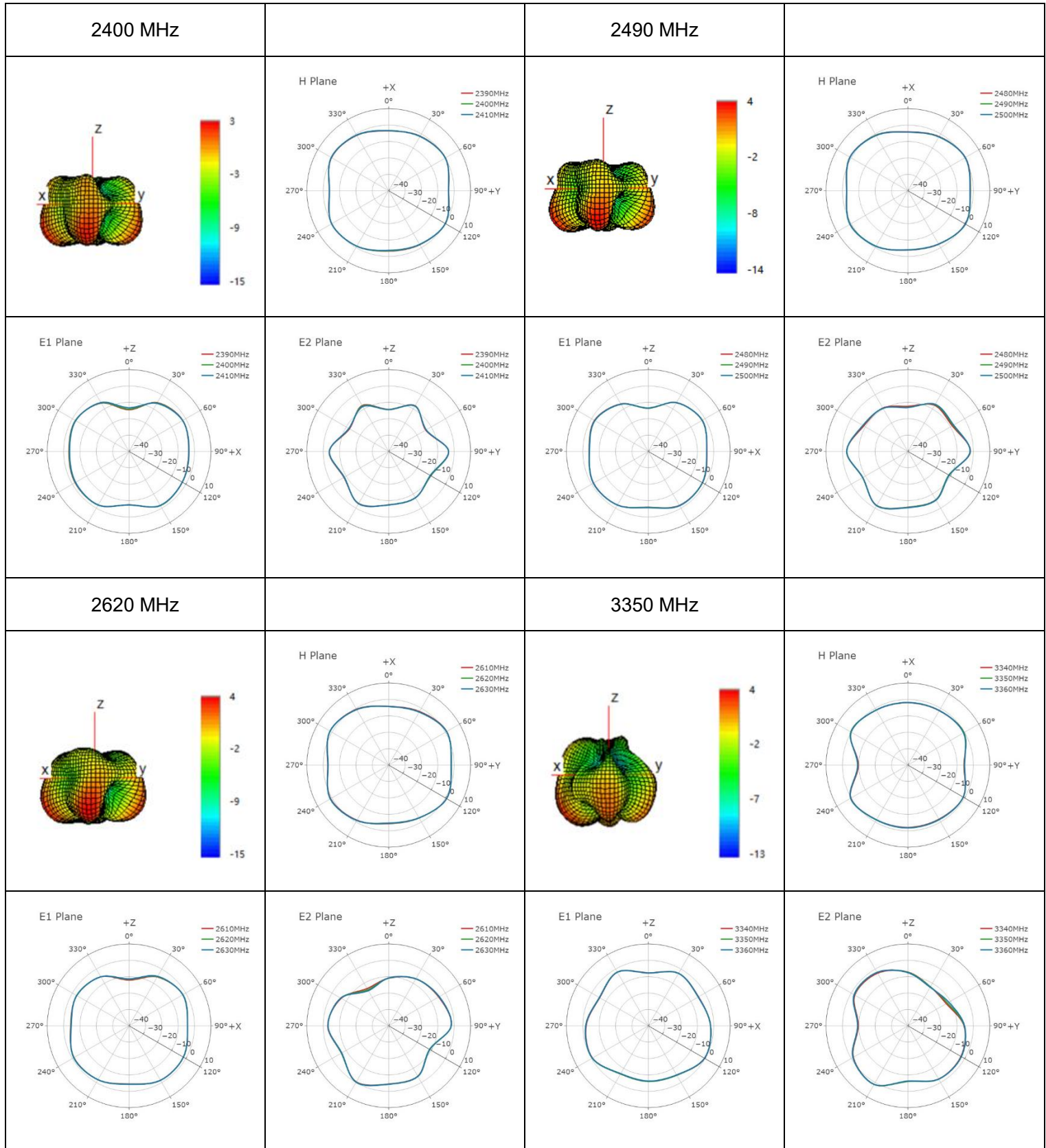




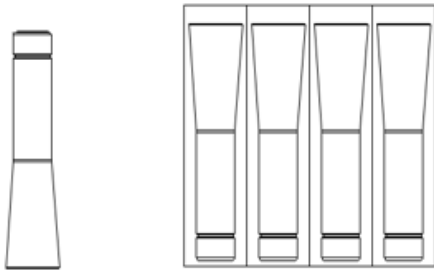
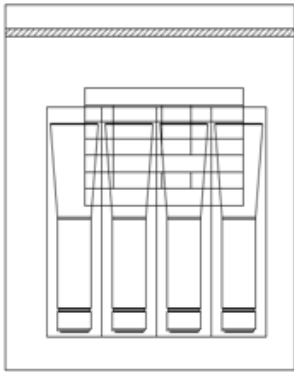
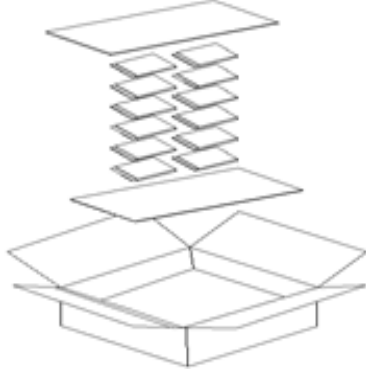


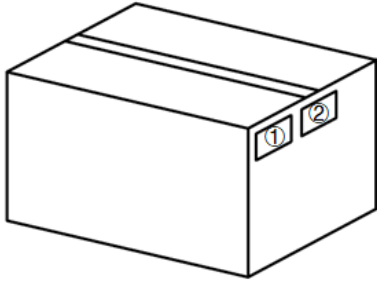
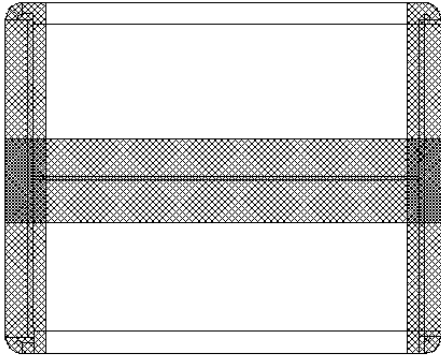
● **Max Peak Gain**





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		10 pcs antenna products in a one-piece bag. (10 PCS / One-piece Bag)
2		40 pcs antenna products in a PE bag. (40 PCS / PE Bag)
3		(25 PE Bags / Carton Box) (1000 PCS 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 “I” type sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

Contact Us

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

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Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2024-02-02	Mordecai LIU/ Bailey ZHANG/ David LIU/ Aria CHU	Creation of the document
1.0	2024-02-02	Mordecai LIU/ Bailey ZHANG/ David LIU/ Aria CHU	First official release
1.1	2024-04-10	Mordecai LIU Aria CHU	Changed homepage description from 5G to 4G.
2.0	2024-06-27	Mordecai LIU/ Aria CHU	Numerous changes were made to this document. It should be read in its entirety.



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