



Antenna Datasheet

Product OC: YECT013W1A

Version: 1.1

Date: 2024-11-05

Status: Released

Product Name: External 5G Antenna

Key Features:

Frequency Band: 700–960 MHz, 1710–5000 MHz

Dimensions: Φ 13 × 196 × 16 mm

Efficiency: Up to 71.0 %

RoHS Compliant

Overview

The Quectel YECT013W1A is an external 5G terminal-mount omni-directional antenna with dimensions of $\Phi 13 \times 196 \times 16$ mm, it covers main 5G bands and is compatible with 4G/3G/2G/LPWA bands as well. can be mounted on the surface of devices via screw.

YECT013W1A is a high-performance antenna, which can be installed outside the device to barely influenced by the internal environment of devices. We provide more high-performance antennas with different sizes and network standards for providing a more flexible and reliable high-performance antenna solution for products in external application environments.

YECT013W1A allows high efficiency, stable signal transmission and reception for 5G dual bands from 700-960 MHz and 1710-5000 MHz.

Typical Applications Include:

- Oracle Database Unloader
- Router external antenna
- IoT gateway

Quectel provides customized service for optimization of your devices, 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: Free Space

1.1. Electrical

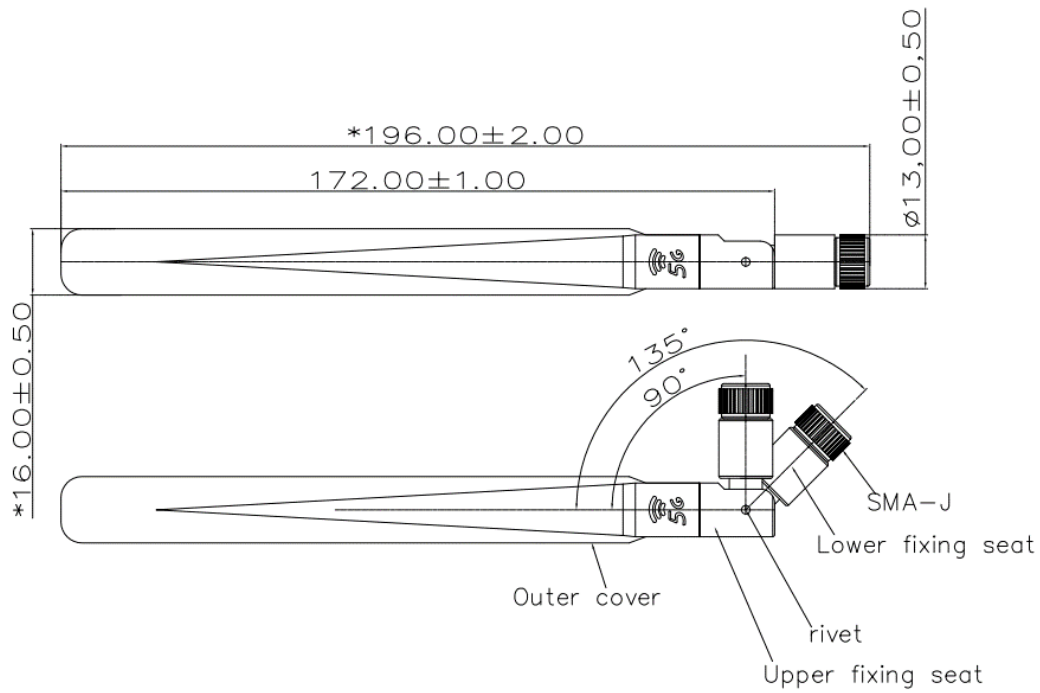
Electrical	
Frequency Range	700–960 MHz, 1710–5000 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

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		-	2.5	1.8	-	2.2	1.4	1.4	1.8	2.9	1.7	-	
Max. Return Loss (dB)		-	-7.4	-11.1	-	-8.7	-16.1	-15.5	-10.8	-6.3	-11.9	-	
AVG Eff. (%)		-	41.4	34.6	-	50.7	61.1	64.6	61.2	48.4	52.5	-	
AVG AVG Gain (dB)		-	-3.8	-4.6	-	-3.1	-2.1	-1.9	-2.1	-3.3	-2.8	-	
Max. Peak Gain (dBi)		-	1.3	2.0	-	2.1	3.0	1.5	1.0	2.9	5.6	-	
VSWR							≤ 2.9						
Return Loss							≤ -6.3 dB						
Peak Gain							≤ 5.6 dBi						

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 13 × 196 × 16 mm
Material & Color	ABS & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 20.15 g
Environmental	
Operation Temperature	-30 °C to + 70 °C
Storage Temperature	-30 °C to + 70 °C
RoHS Compliant	Yes

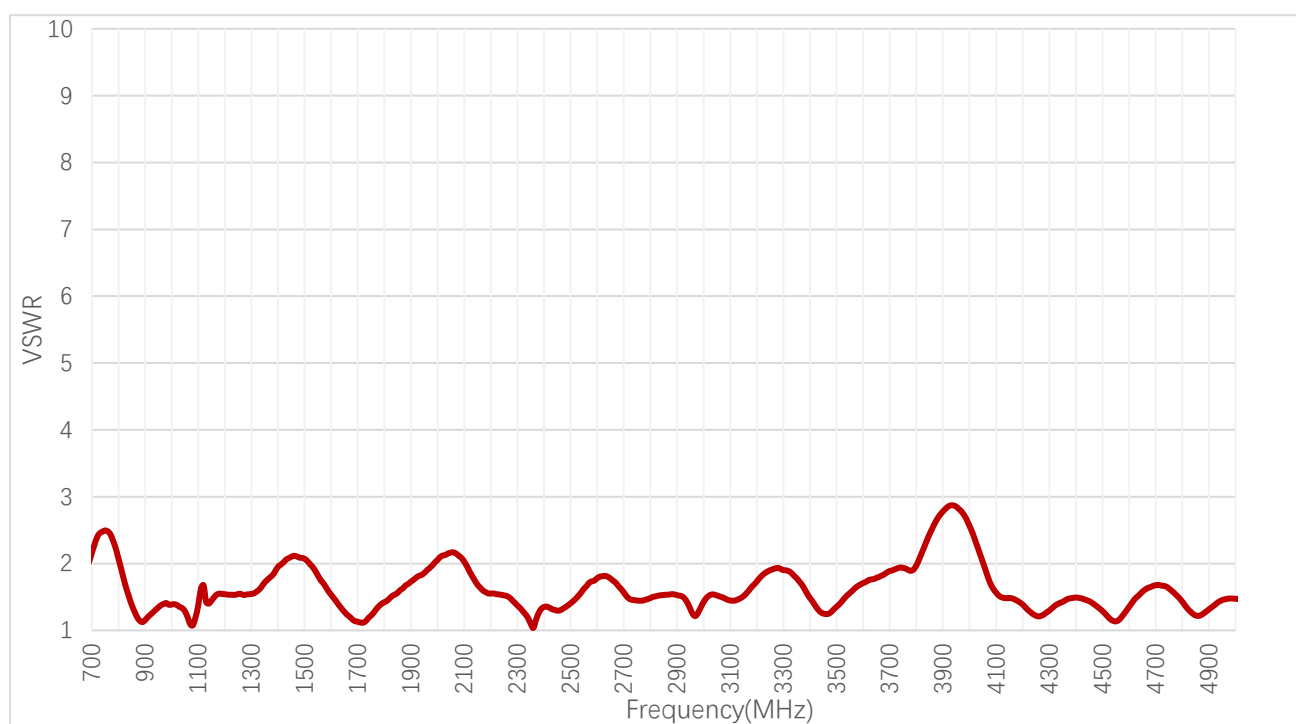
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

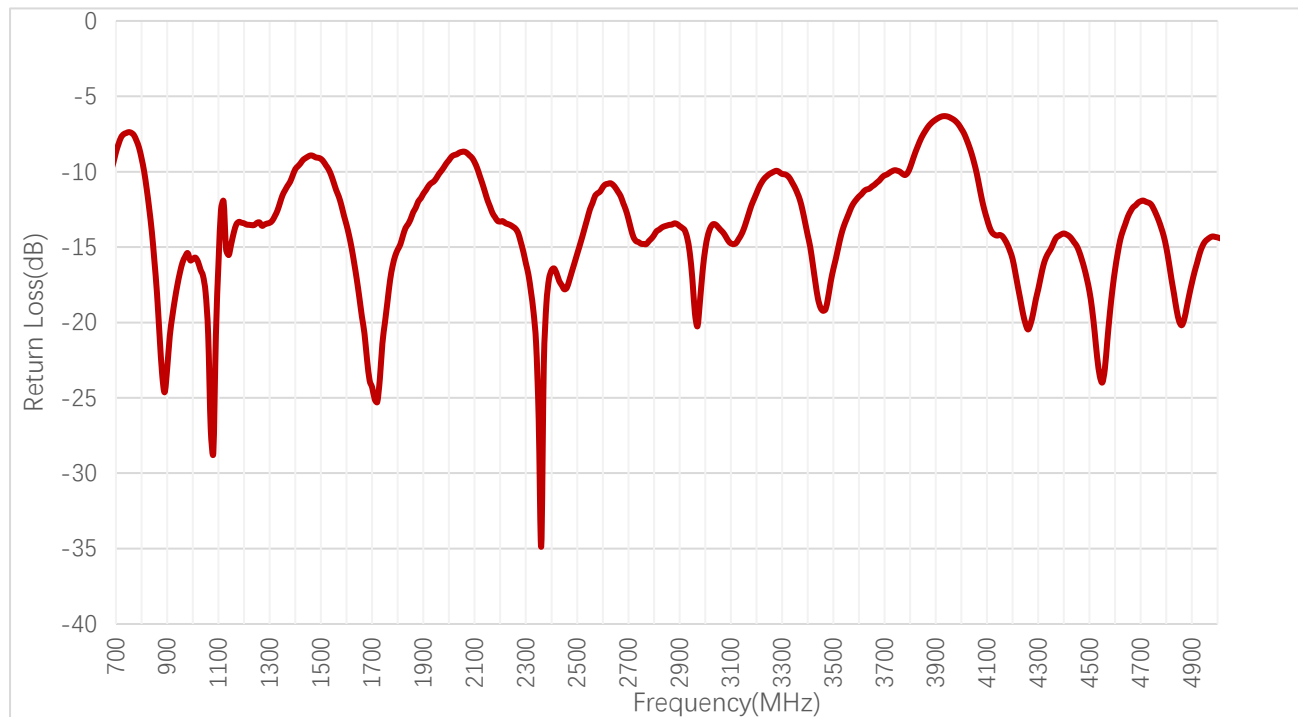
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	2.3	1.6	1.2	1.4	-	1.1	1.2	1.7
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
VSWR	1.9	1.7	1.1	1.3	1.8	1.7	1.7	1.5	-	-

3.1.2. Return Loss

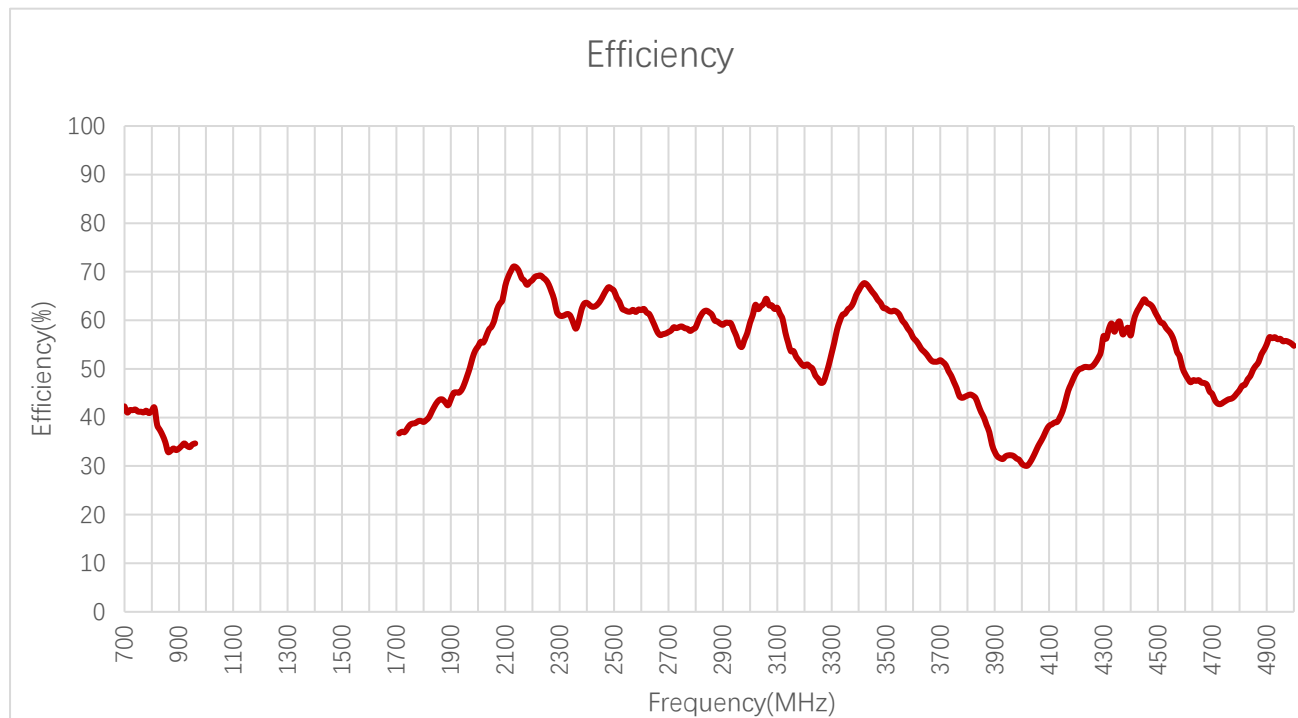


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-8.2	-12.5	-23.0	-16.0	-	-25.1	-21.4	-12.0
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Return Loss (dB)	-10.4	-11.3	-26.4	-17.8	-11.0	-11.6	-12.0	-14.4	-	-

3.2. Radiation Performance Test

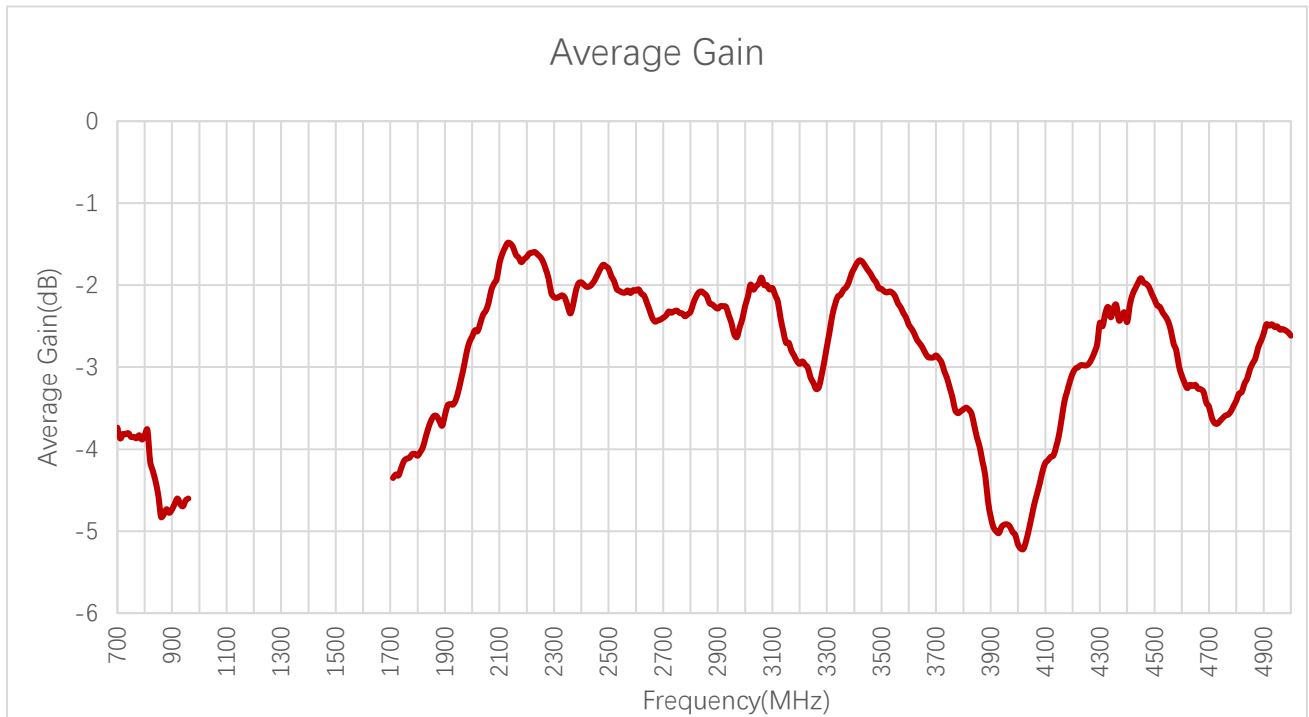
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	41.0	37.4	33.6	34.7	-	36.7	37.7	43.1
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Efficiency (%)	47.0	70.9	59.5	64.1	62.1	56.4	44.8	54.8	-	-

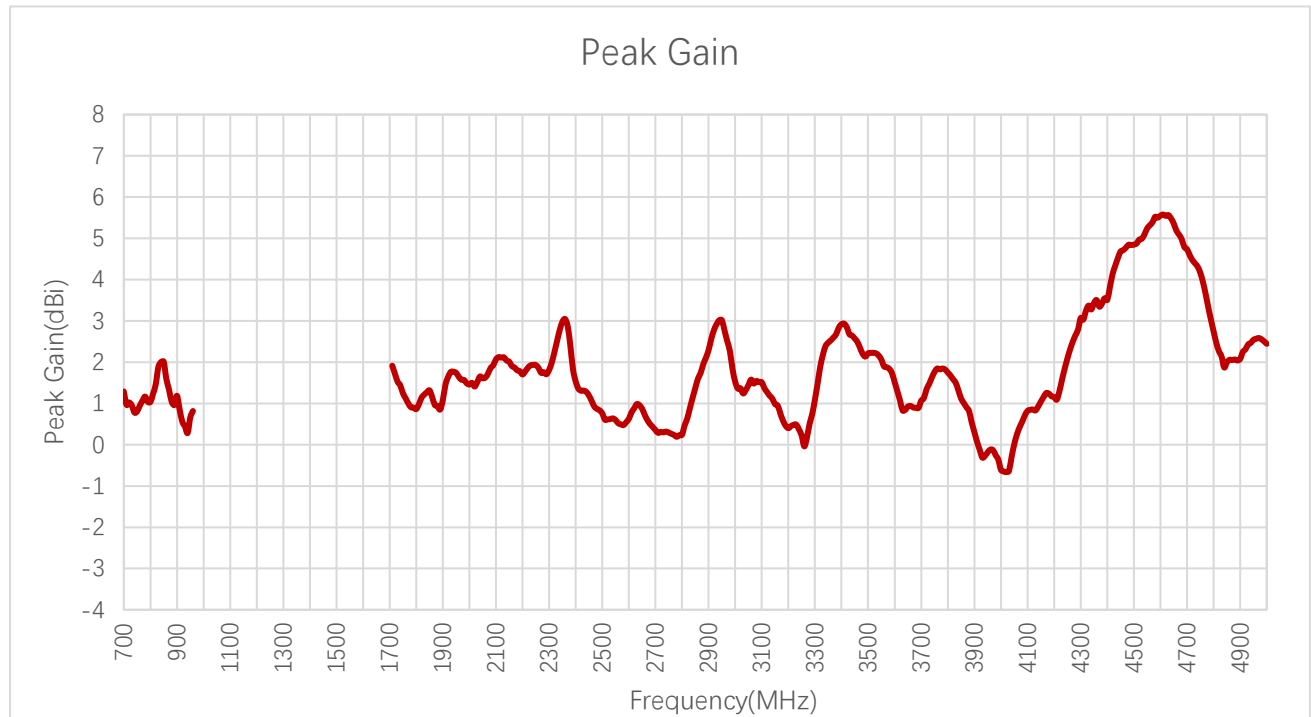
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-3.9	-4.3	-4.7	-4.6	-	-4.4	-4.2	-3.7
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Average Gain (dB)	-3.3	-1.5	-2.3	-1.9	-2.1	-2.5	-3.5	-2.6	-	-

3.2.3. Peak Gain

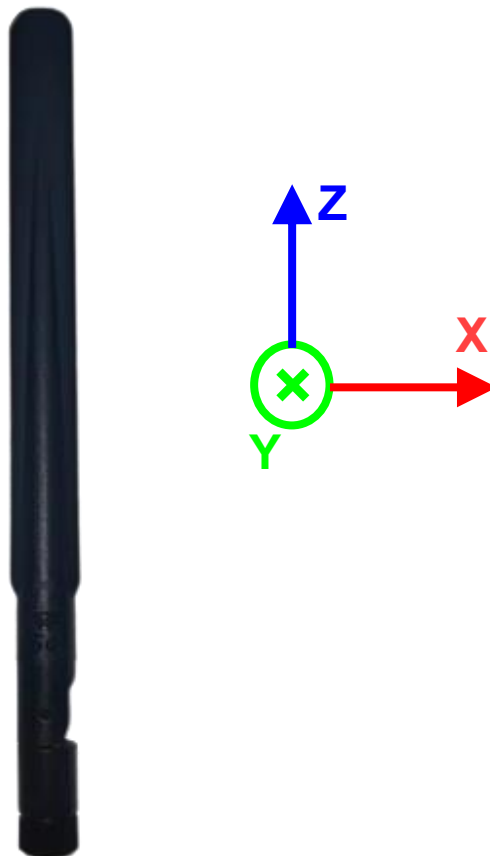


Peak Gain (dBi)

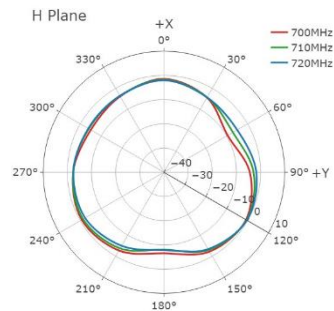
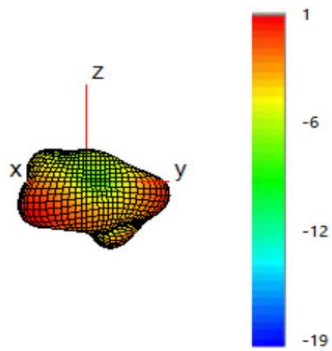
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	1.0	1.9	1.2	0.8	-	1.9	1.4	0.9
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
Peak Gain (dBi)	1.7	2.0	3.0	1.2	0.6	1.5	4.7	2.4	-	-

3.2.4. 2D Radiation Pattern

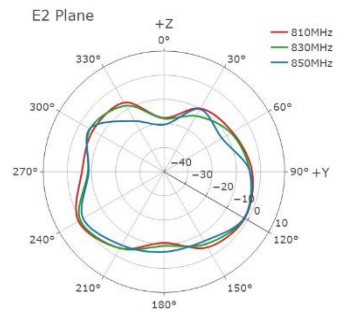
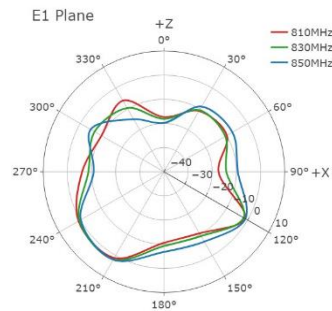
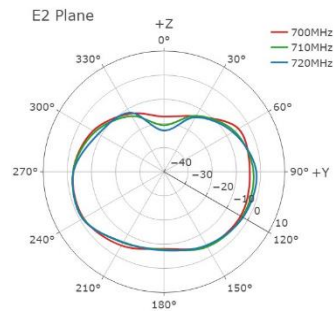
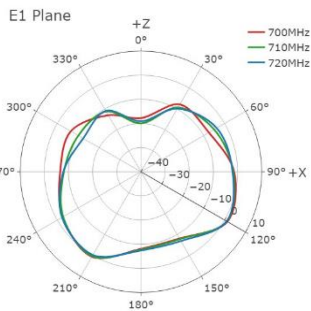
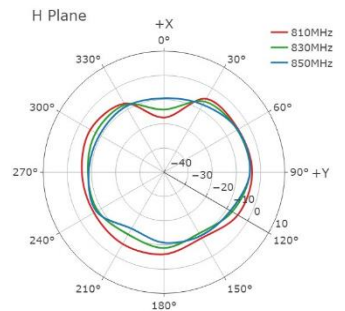
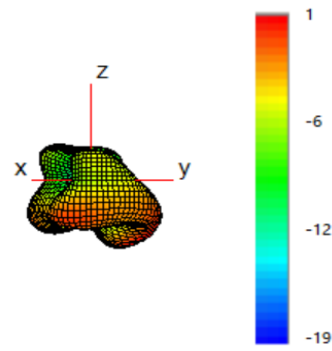
- Test Condition: Free Space
- Test Chamber: GL-G-1



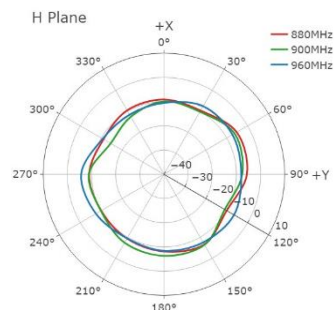
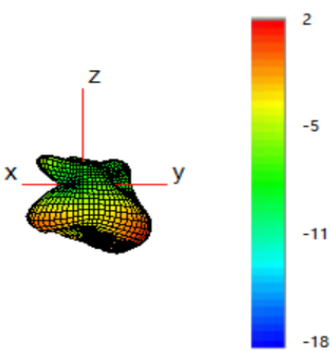
710 MHz



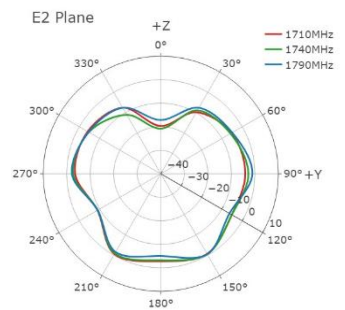
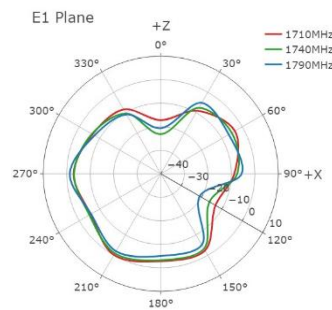
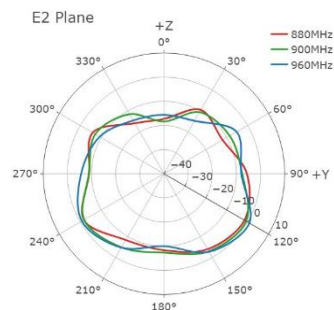
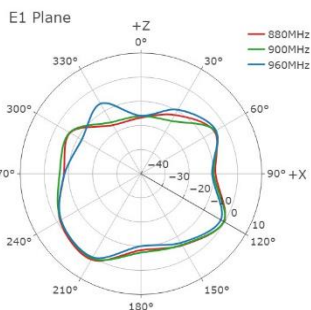
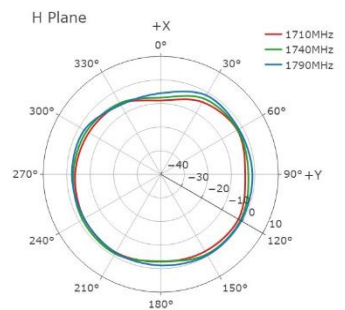
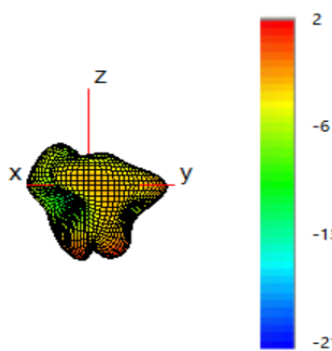
830 MHz

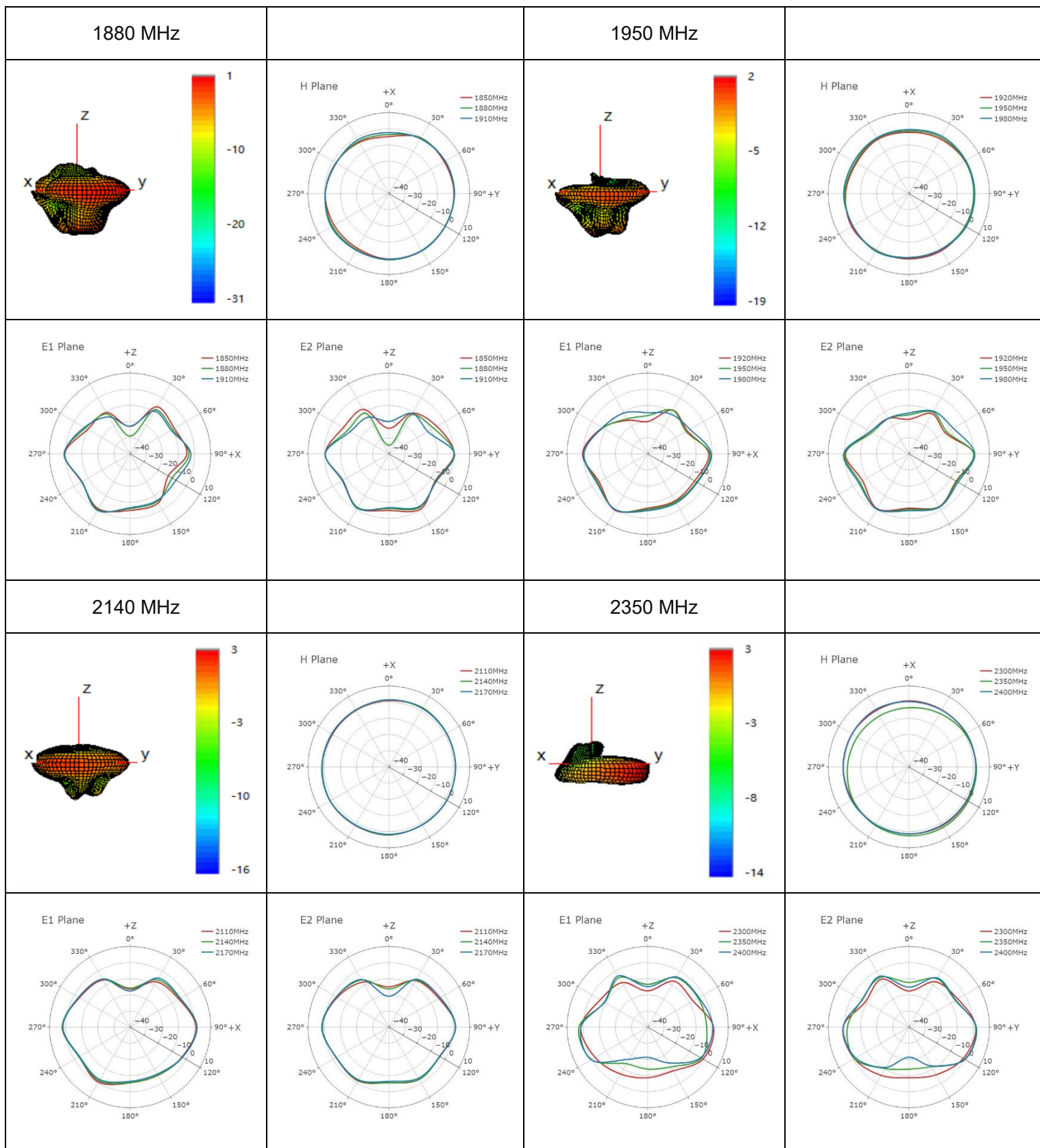


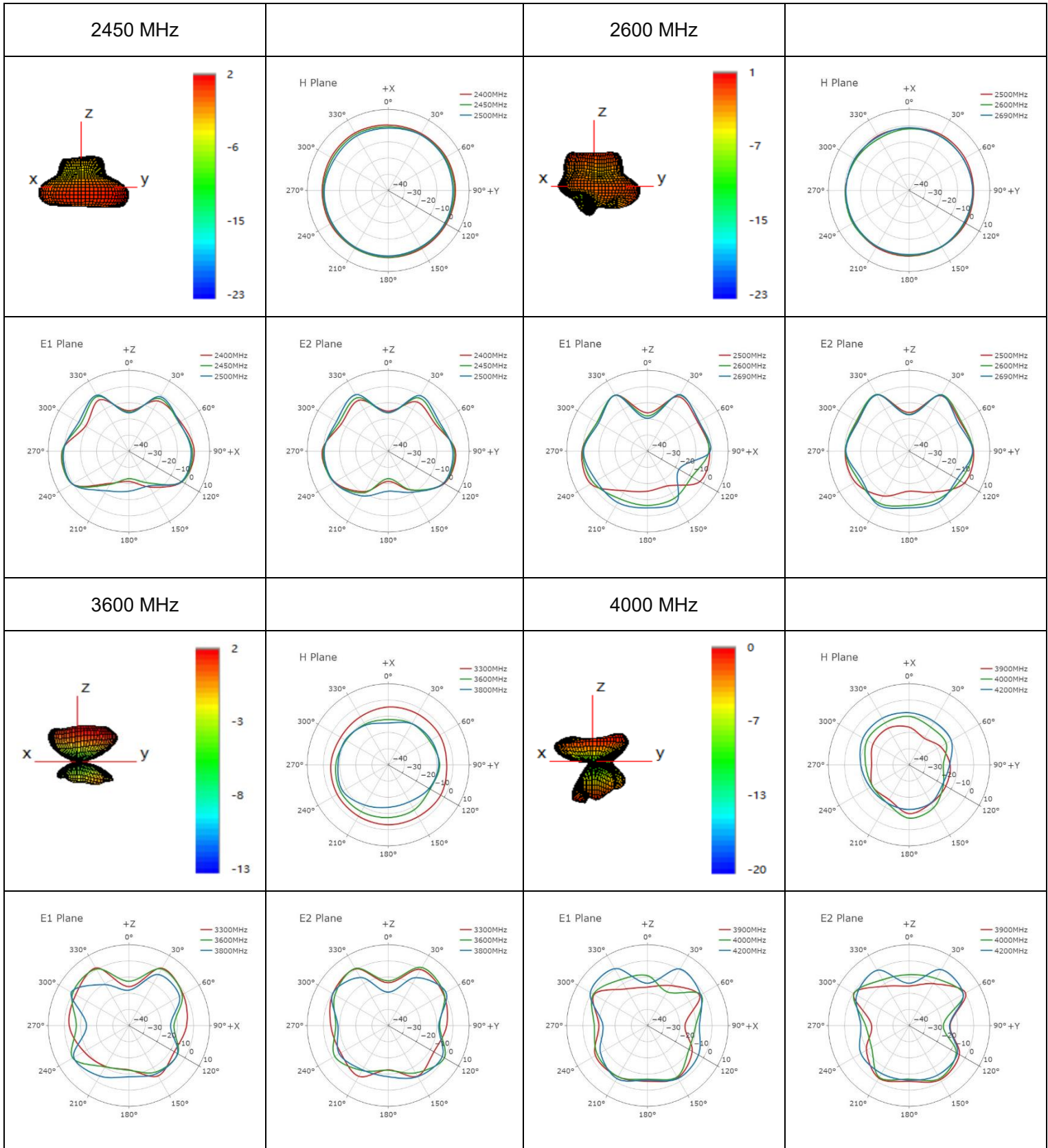
900 MHz

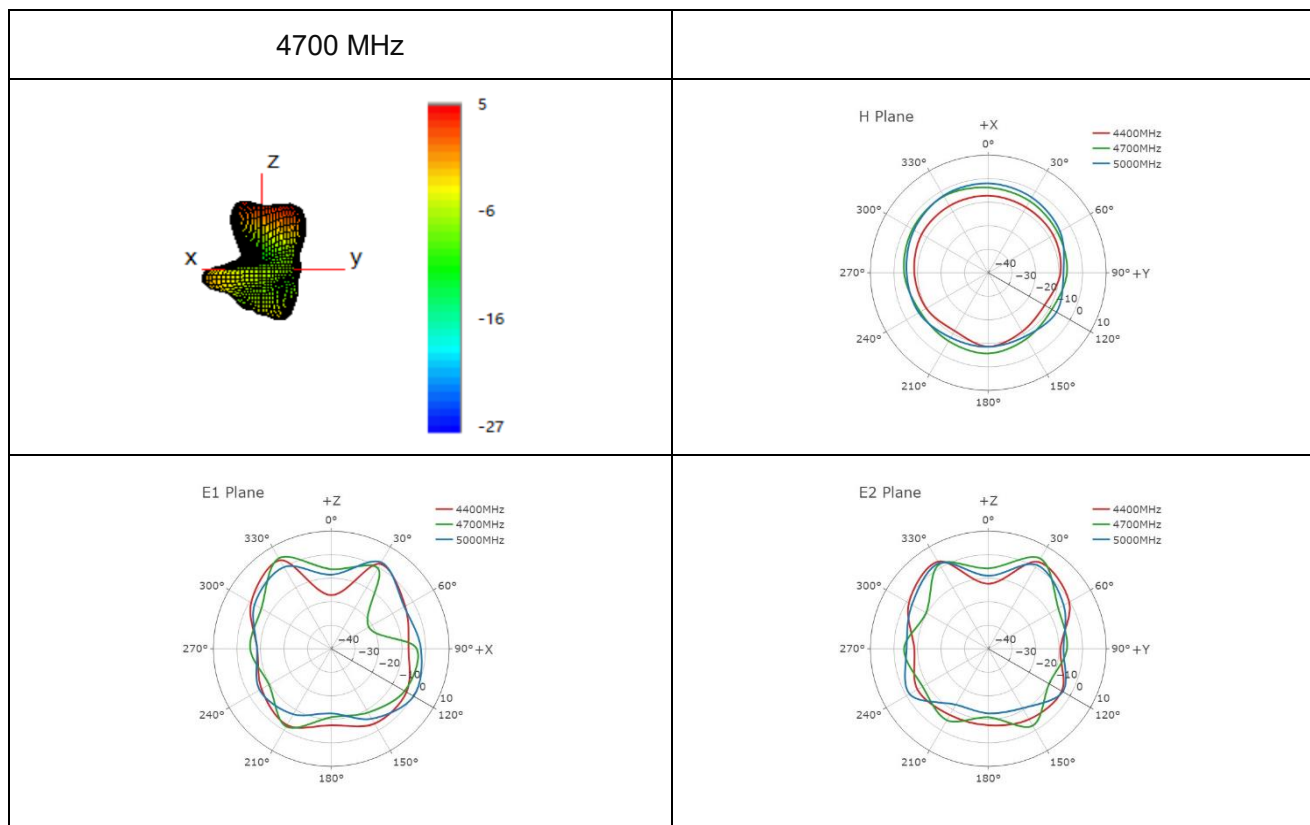


1740 MHz

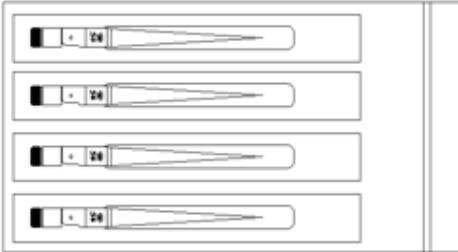
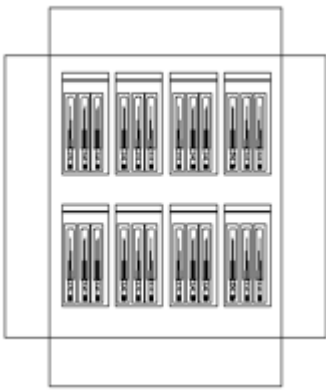


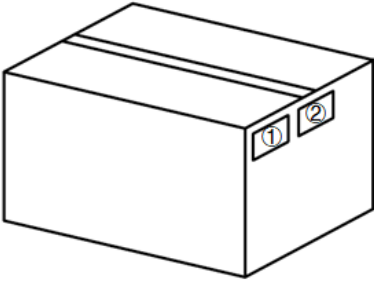
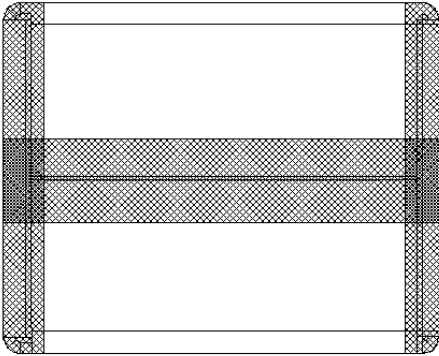






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 antenna product in a small PE bag. 1 PCS / Small PE Bag
2		40 antenna products in a big PE bag. 40 PCS / Big PE Bag
3		11 PE Bags / Carton Box (440 PCS / 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 “┬” 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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Email: info@quectel.com

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

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Revision History

Version	Date	Author	Note
-	2024-03-20	Sly LIU/ Lucky FENG/ David LIU/ Rainey LIAO	Creation of the document
1.0	2024-03-20	Sly LIU/ Lucky FENG/ David LIU/ Rainey LIAO	First official release
1.1	2024-11-05	Rainey LIAO	Updated the overview.



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