

Antenna Datasheet

Product OC: YYH00A6AA

Version: 1.1

Date: 2024-08-02

Product Name: External 4G Antenna

Key Features:

Frequency Band: 600–960 MHz, 1710–2690 MHz, 3300–4200MHz

Dimensions: 157.2 × 17.6 × 5.8 mm

Efficiency: Up to 70%

RoHS and REACH Compliant

Overview

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Quectel also offers flexible installation with custom cable length and connector options.

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1 Specification

Test Condition: Free space

1.1. Electrical

Electrical	
Frequency Range	600–960 MHz, 1710–2690 MHz,3300–4200
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

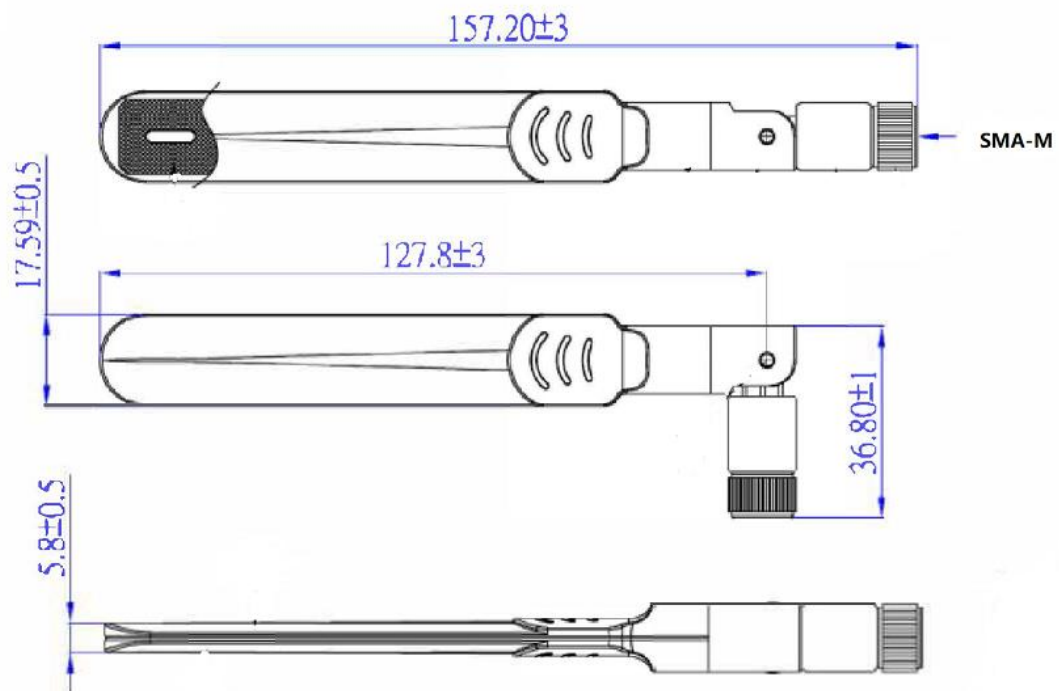
Electrical - Detail												
SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850
Max. VSWR		4.3	1.8	1.9	-	1.7	2.0	1.5	1.7	5.4	-	-
Max. Return Loss (dB)		-4.1	-10.9	-9.9	-	-11.6	-9.7	-13.7	-11.4	-3.3	-	-
AVG Eff. (%)		31.4	35.0	37.1	-	51.4	61.7	62.9	67.9	35.8	-	-
AVG Gain (dB)		-5.2	-4.6	-4.3	-	-2.9	-2.1	-2.0	-1.7	-4.6	-	-
Max. Peak Gain (dBi)		-0.9	-0.5	0.2	-	2.8	3.0	2.9	2.9	-0.92	-	-
VSWR						≤ 5.4						
Return Loss						≤ -3.3 dB						
Gain						≤ 3.0 dBi						

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	157.2 × 17.6 × 5.8 mm
Material & Color	ABS + PC & Black
Weight	Typ. 14.1 g
Mounting Type	Screw
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

2 Drawing

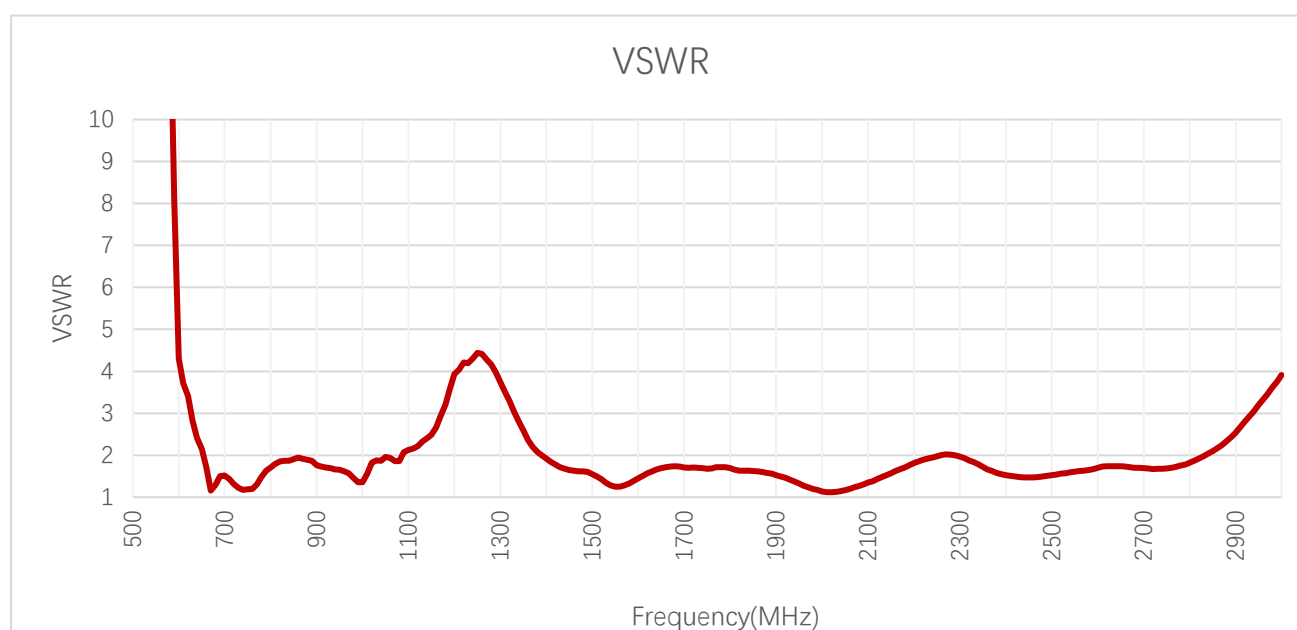
ROHS

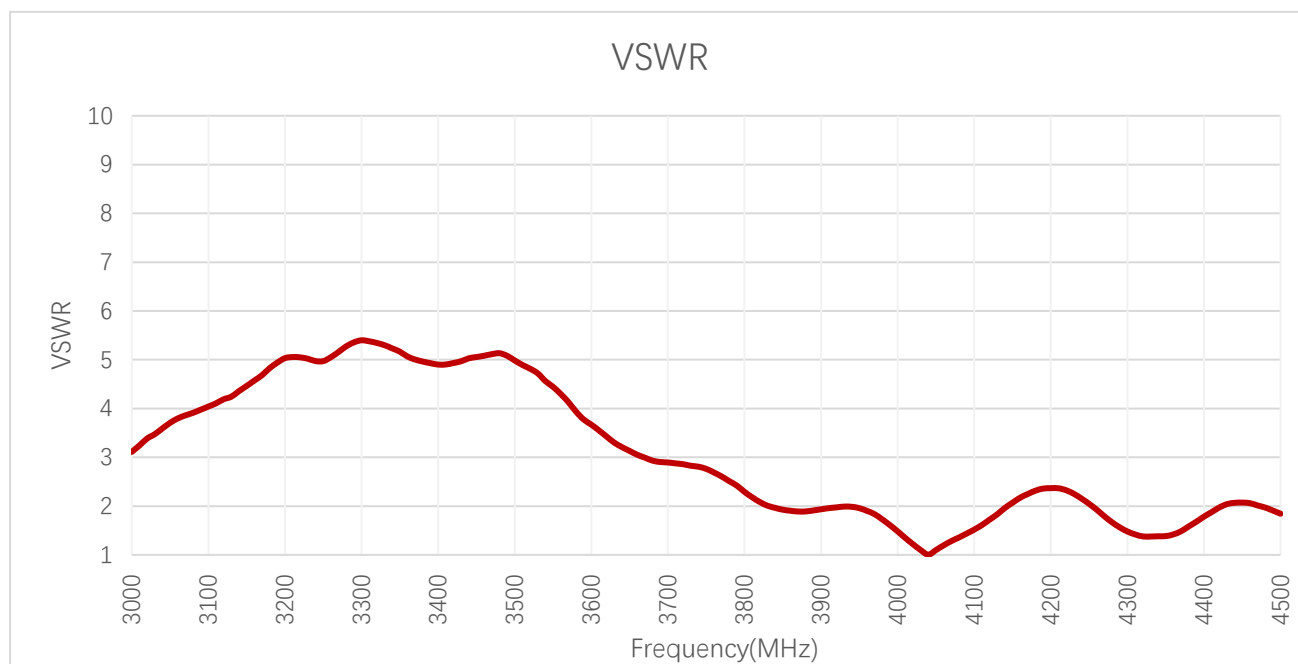


3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR

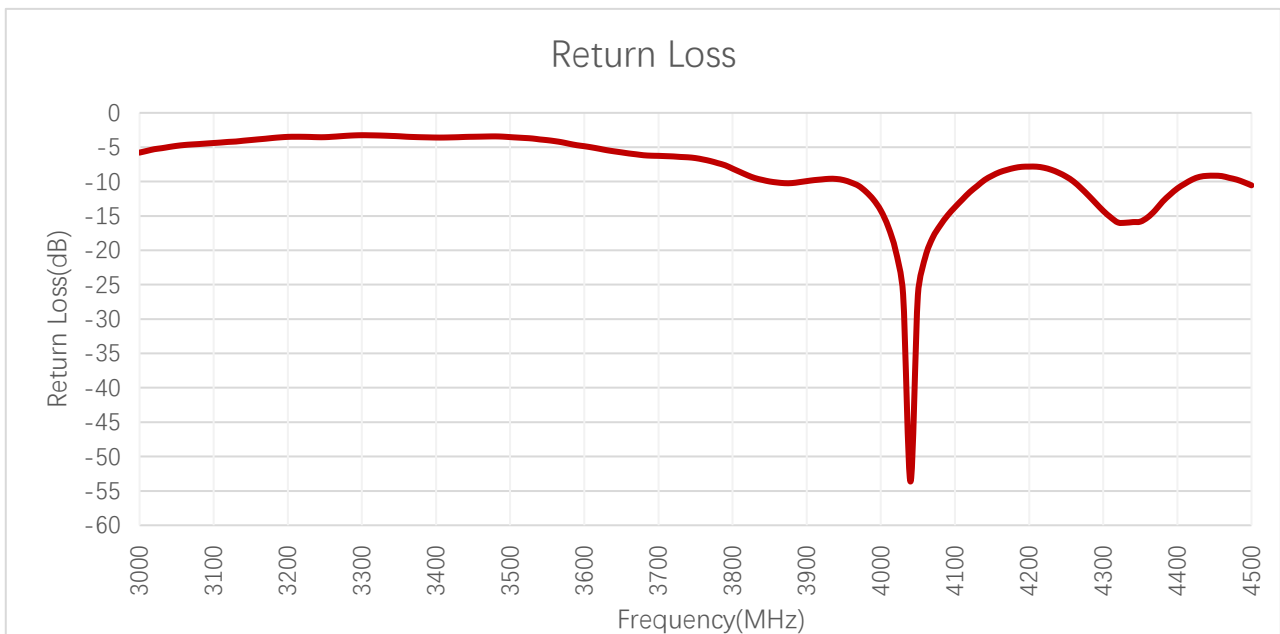
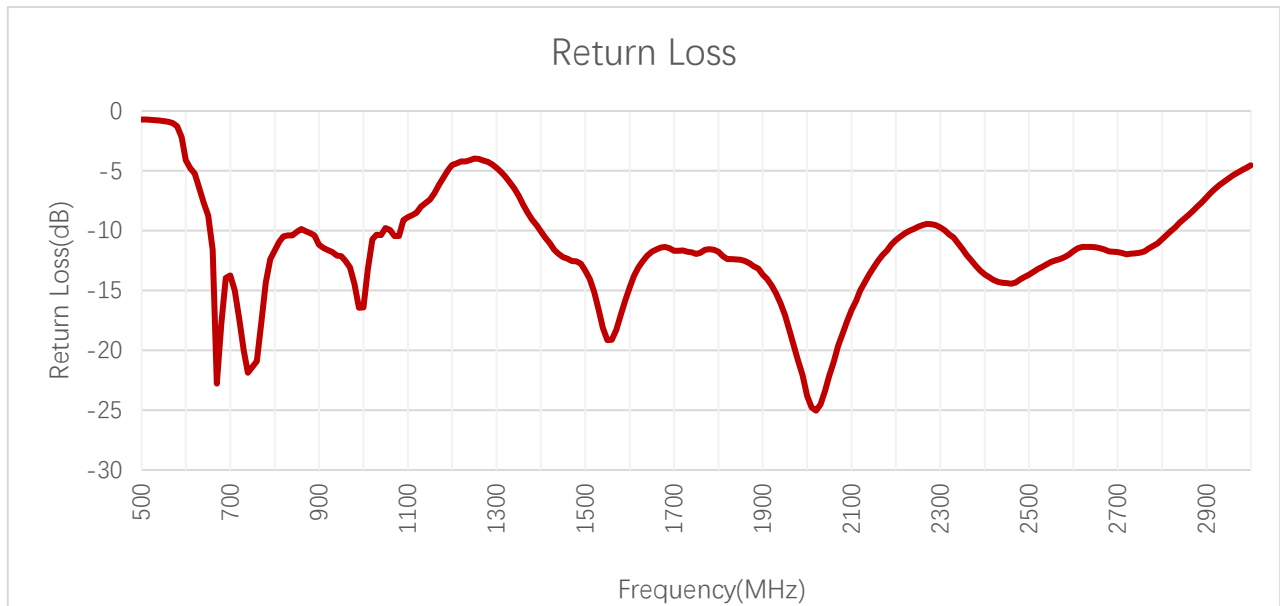




VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	4.3	2.8	1.4	1.9	1.8	1.6	-	1.7	1.7	1.6
Frequency (MHz)	1950	2140	2350	2450	2600	3500	4000	5000	5500	6000
VSWR	1.3	1.5	1.7	1.5	1.7	5.0	1.5	-	-	-

3.1.2. Return Loss

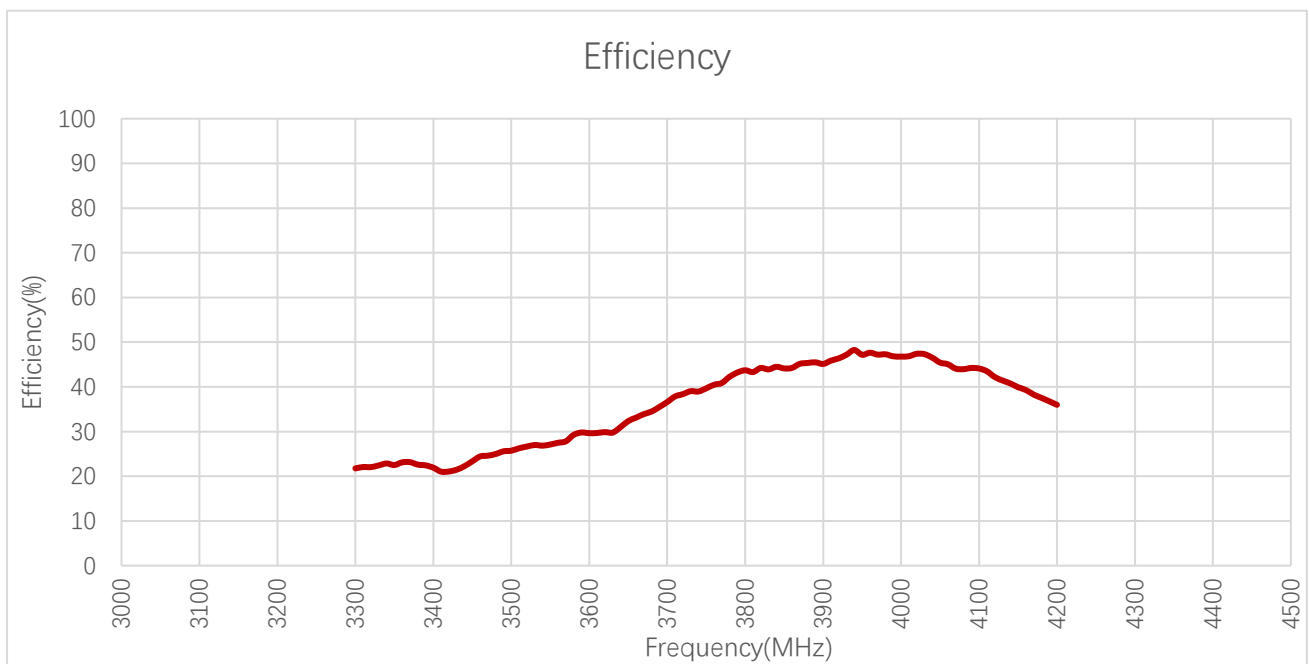
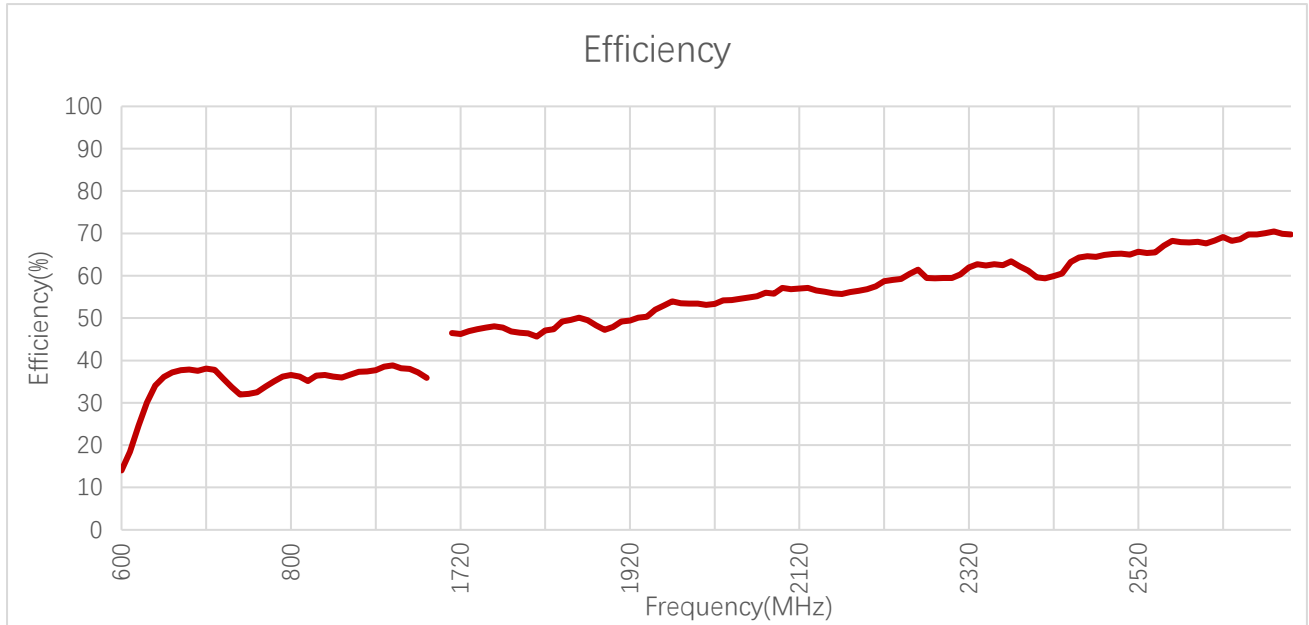


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-4.1	-6.4	-15.0	-10.4	-11.2	-12.5	-	-11.7	-11.8	-13.0
Frequency (MHz)	1950	2140	2350	2450	2600	3500	4000	5000	5500	6000
Return Loss (dB)	-17.1	-13.7	-11.5	-14.4	-11.7	-3.5	-14.2	-	-	-

3.2. Radiation Performance Test

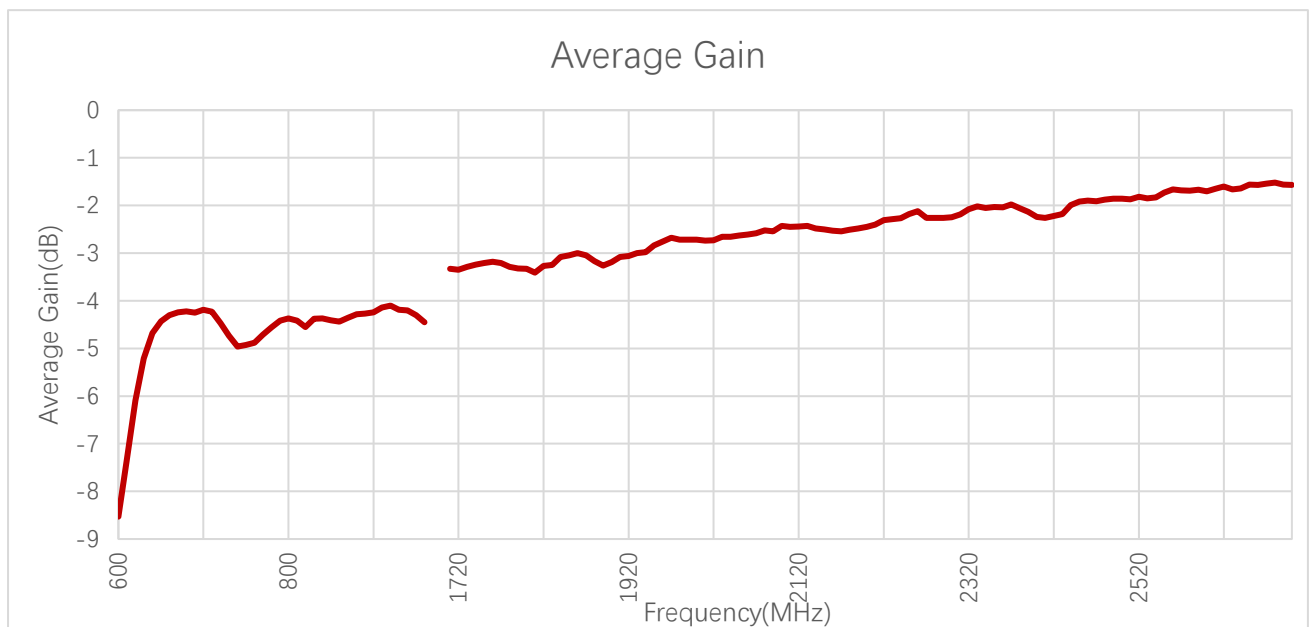
3.2.1. Efficiency

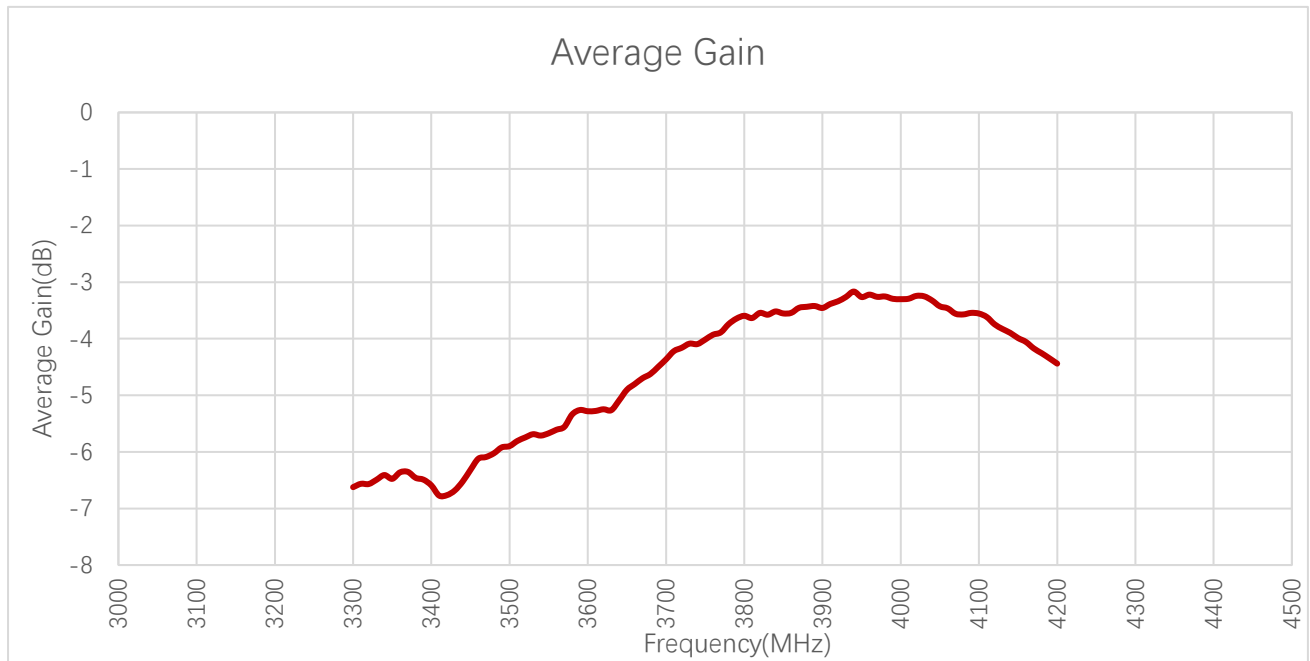


Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	14.0	30.1	37.8	36.4	37.7	35.9	-	46.4	47.4	48.3
Frequency (MHz)	1950	2140	2350	2450	2600	3500	4000	5000	5500	6000
Efficiency (%)	53.0	58.5	69.9	69.8	62.9	25.7	46.8	-	-	-

3.2.2. Average Gain

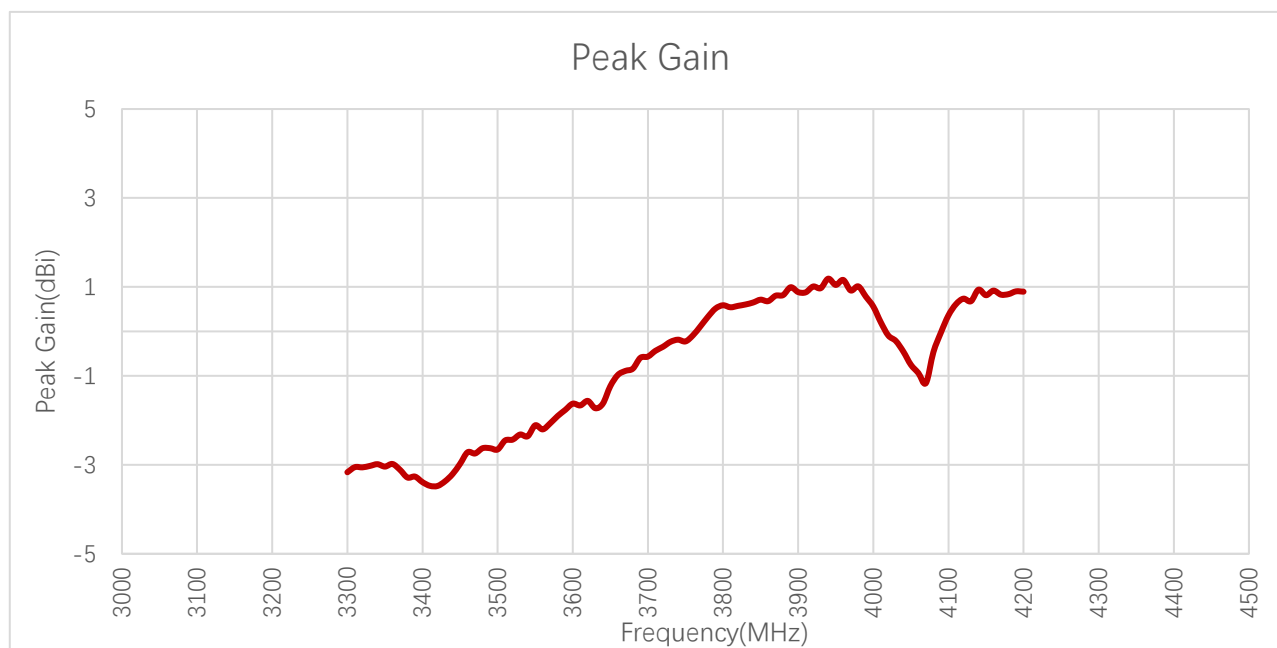
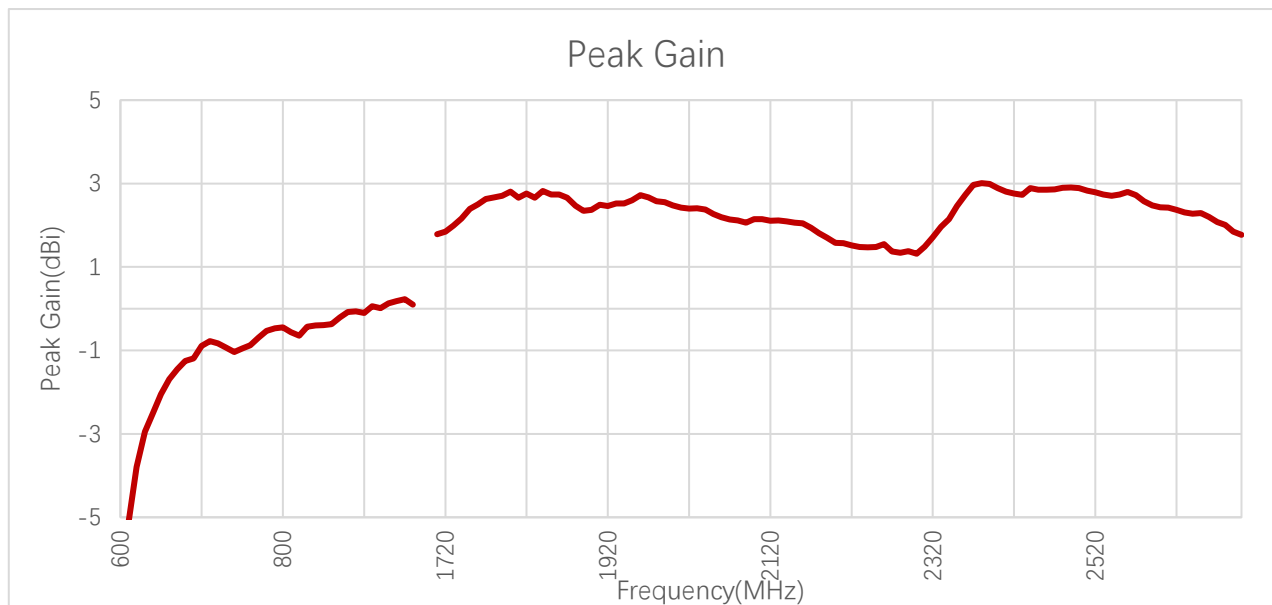




Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-8.5	-5.2	-4.2	-4.4	-4.2	-4.5	-	-3.3	-3.2	-3.2
Frequency (MHz)	1950	2140	2350	2450	2600	3500	4000	5000	5500	6000
Average Gain (dB)	-2.8	-2.5	-2.0	-1.9	-1.7	-5.9	-3.3	-	-	-

3.2.3. Peak Gain



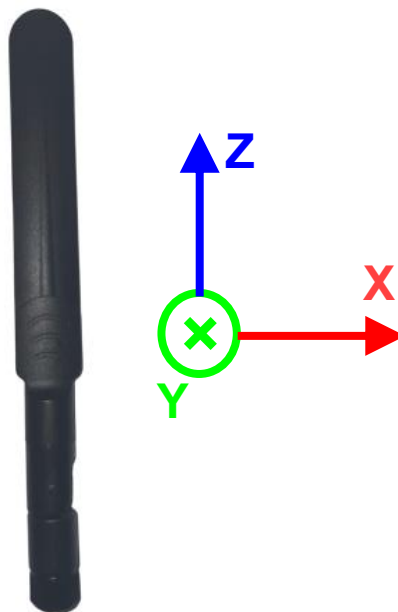
Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-6.3	-3.0	-0.8	-0.4	-0.1	0.1	-	1.8	2.2	2.5
Frequency (MHz)	1950	2140	2350	2450	2600	3500	4000	5000	5500	6000
Peak Gain (dBi)	2.6	2.1	2.5	2.9	2.4	-2.7	0.6	-	-	-

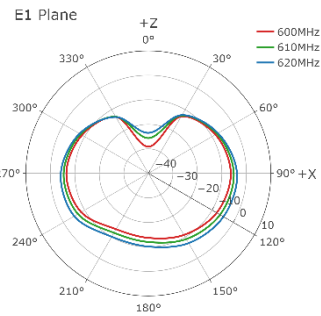
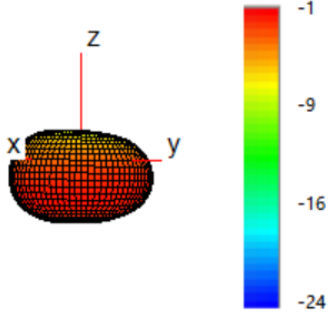
3.2.4. 3D & 2D Radiation Pattern

Test Condition: Free space

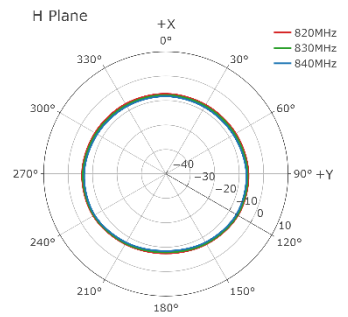
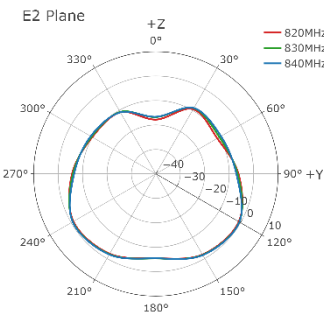
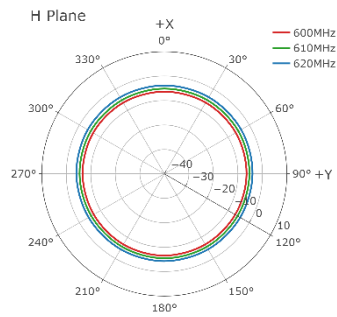
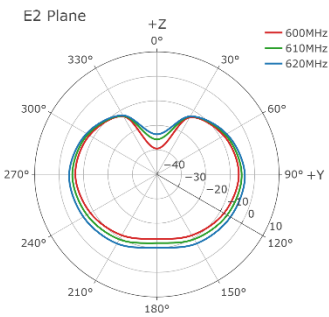
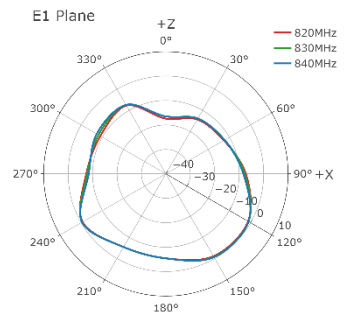
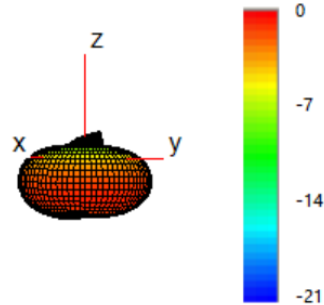
- Test Chamber: HF-G-1



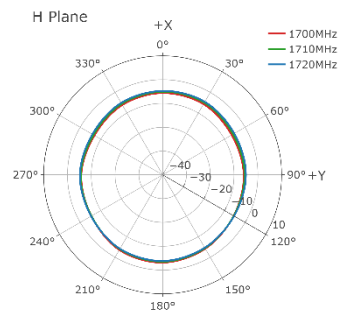
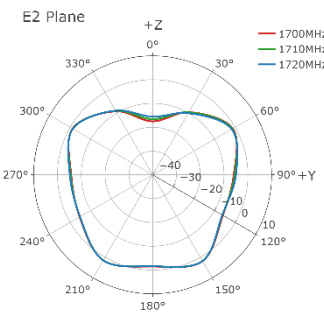
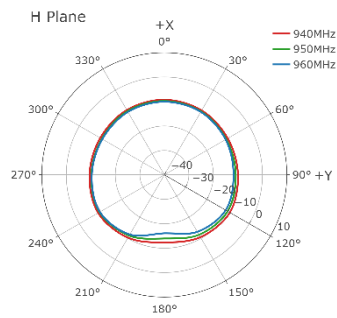
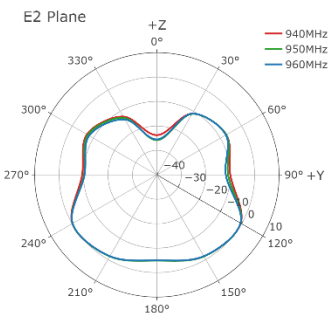
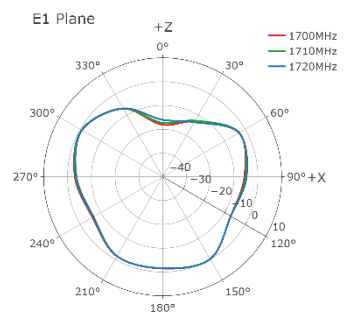
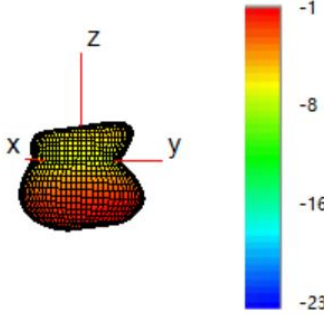
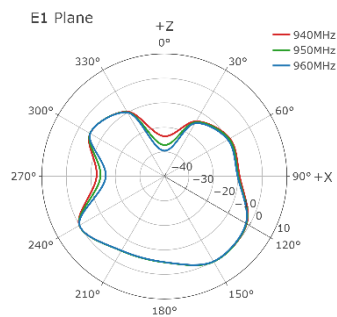
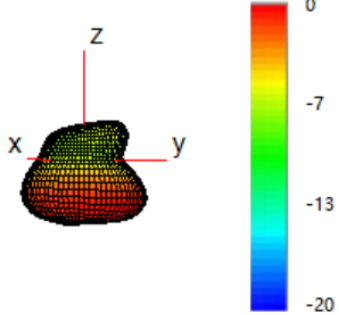
600 MHz

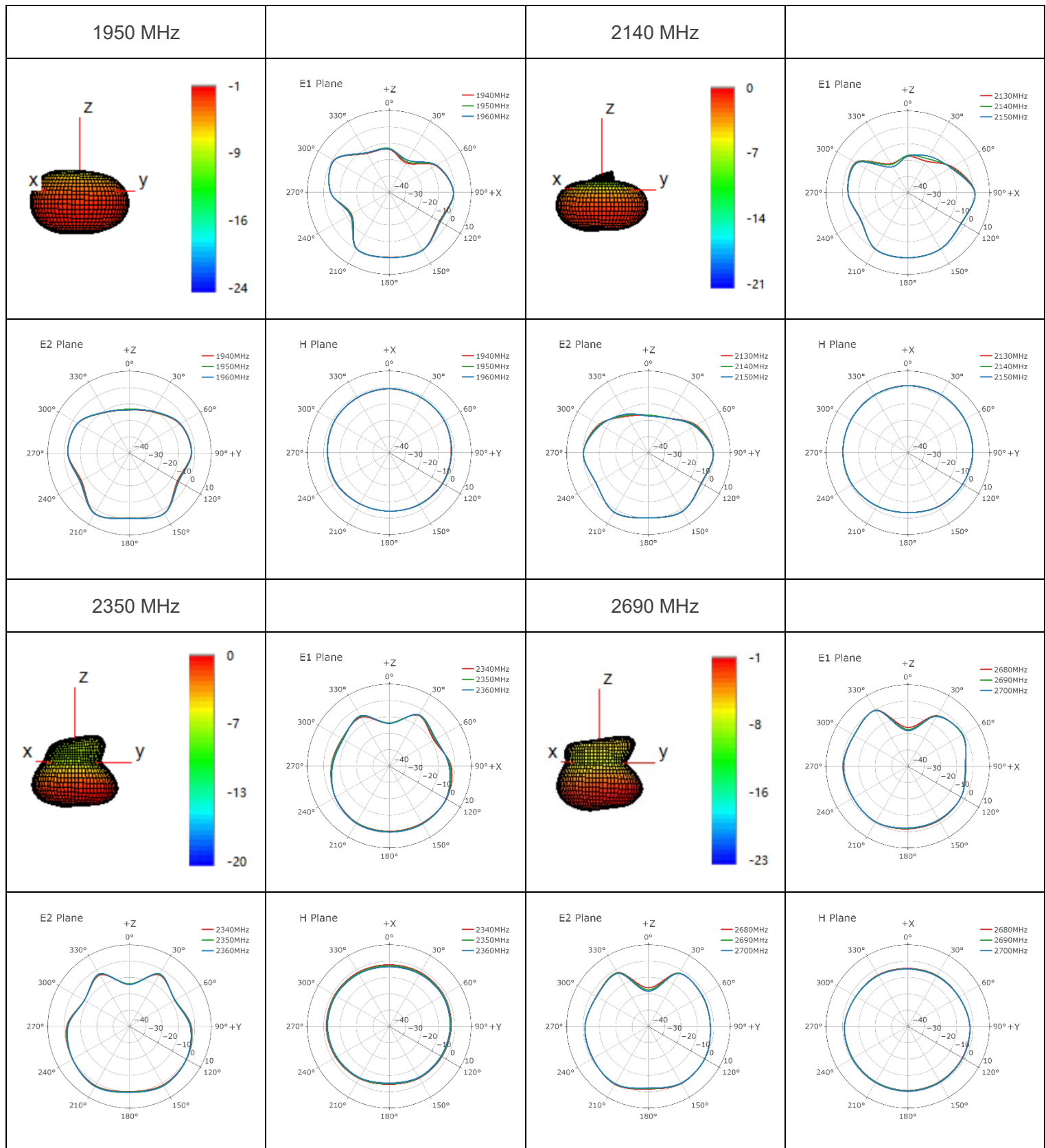


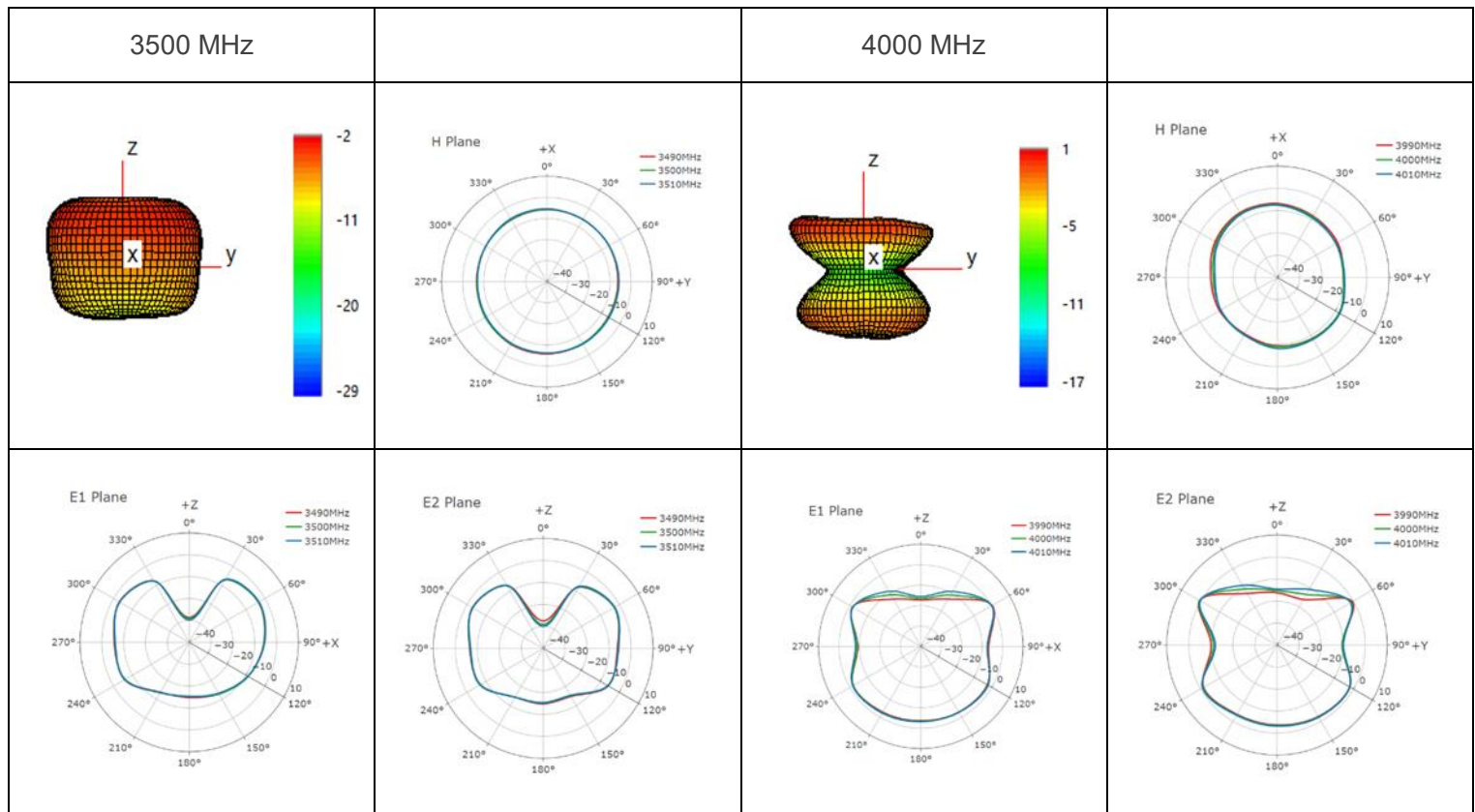
830 MHz



960 MHz

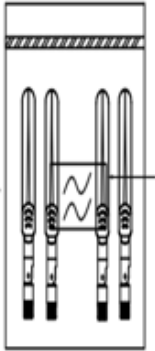
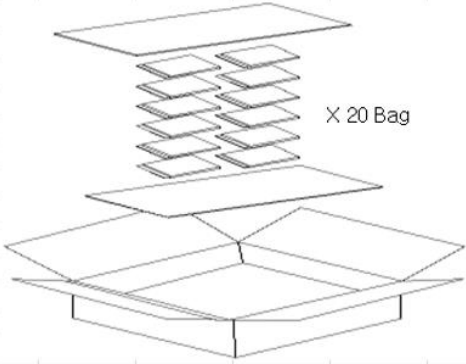
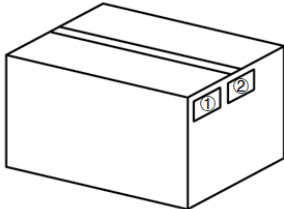
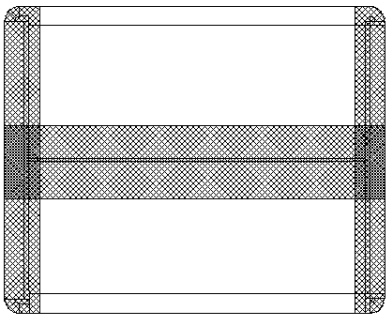






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	10 pcs /One-piece bag	Put the product in a one-piece bag; Each one-piece bag contains 10 products.

2	 20 pcs / bag	20 pcs antenna products in a PE bag; (20 pcs antennas per PE bag) <u>PE Bag Size: L × W = 220 × 180 mm</u>
3	 X 20 Bag	Place a clapboard at the bottom and top; (20 PE bags per carton box) (400 pcs antennas per carton box) <u>Carton Size:</u> <u>L × W × H = 400 × 280 × 200 mm</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label
5		Sealing Cartons “工” type sealing cartons

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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Tel: +86 21 5108 6236

Email: info@quectel.com

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

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Revision History

Version	Date	Author	Note
-	2023-02-21	Aslan CHEN/ Joye WANG/ David LIU/ Vinnie LIU	Creation of the document
1.0	2023-02-21	Aslan CHEN/ Joye WANG/ David LIU/ Vinnie LIU	First official release
1.1	2024-08-02	Simon SHENG	Add 3300-4500 data



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