



Antenna Datasheet

Product OC: YE0008BA

Version: 2.1

Date: 2024-01-02

Status: Released

Product Name: 4G External Antenna

Key Features:

Frequency Band: 700–960 MHz, 1710–2170 MHz

Dimensions: Φ 10.5 mm $\times$ 53.5 mm

Efficiency: Up to 75.42 %

RoHS and REACH Compliant

IP53

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: On 130 mm × 130 mm EVB

1.1. Electrical

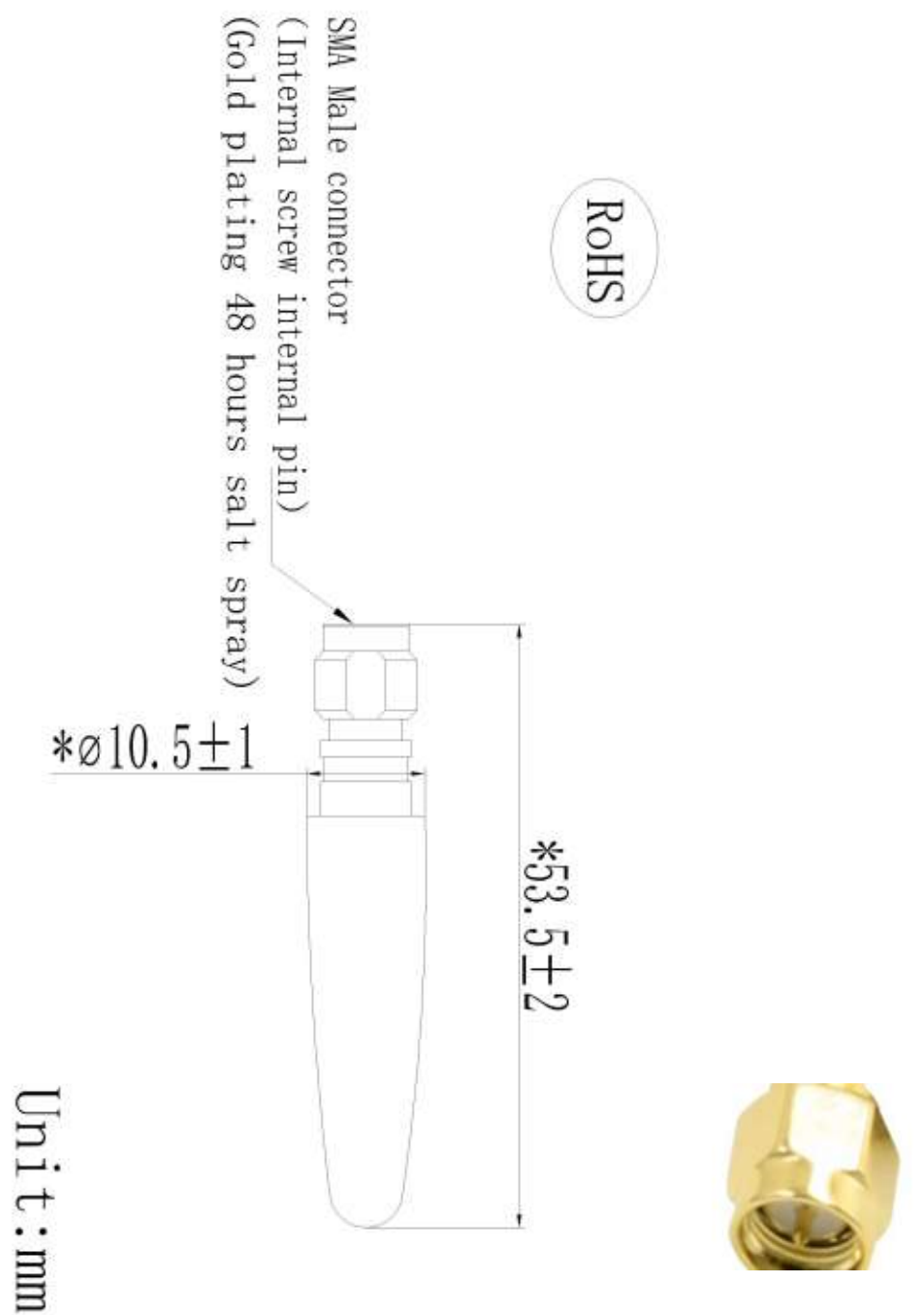
Electrical	
Frequency Range	700–960 MHz, 1710–2170 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

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		-	10.5	6.0	-	6.3	-	-	-	-	-	-	
Max. Return Loss (dB)		-	-1.7	-2.9	-	-2.8	-	-	-	-	-	-	
AVG Eff. (%)		-	36.2	62.3	-	43.2	-	-	-	-	-	-	
AVG Gain (dB)		-	-4.8	-2.2	-	-3.7	-	-	-	-	-	-	
Max. Peak Gain (dBi)		-	-0.1	1.5	-	0.5	-	-	-	-	-	-	
VSWR						≤ 10.5							
Return Loss						≤ -1.7dB							
Peak Gain						≤ 1.5 dBi							

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 10.5 mm × 53.5 mm
Casing Material & Color	TPE & Black
Connector Type	SMA Male
Mounting Type	Terminal
Weight	Typ. 5.3 g
Environmental	
Operation Temperature	-20°C to +80 °C
Storage Temperature	-20°C to +80 °C
RoHS and REACH Compliant	Yes
Ingress Protection (IP) Rating	IP53

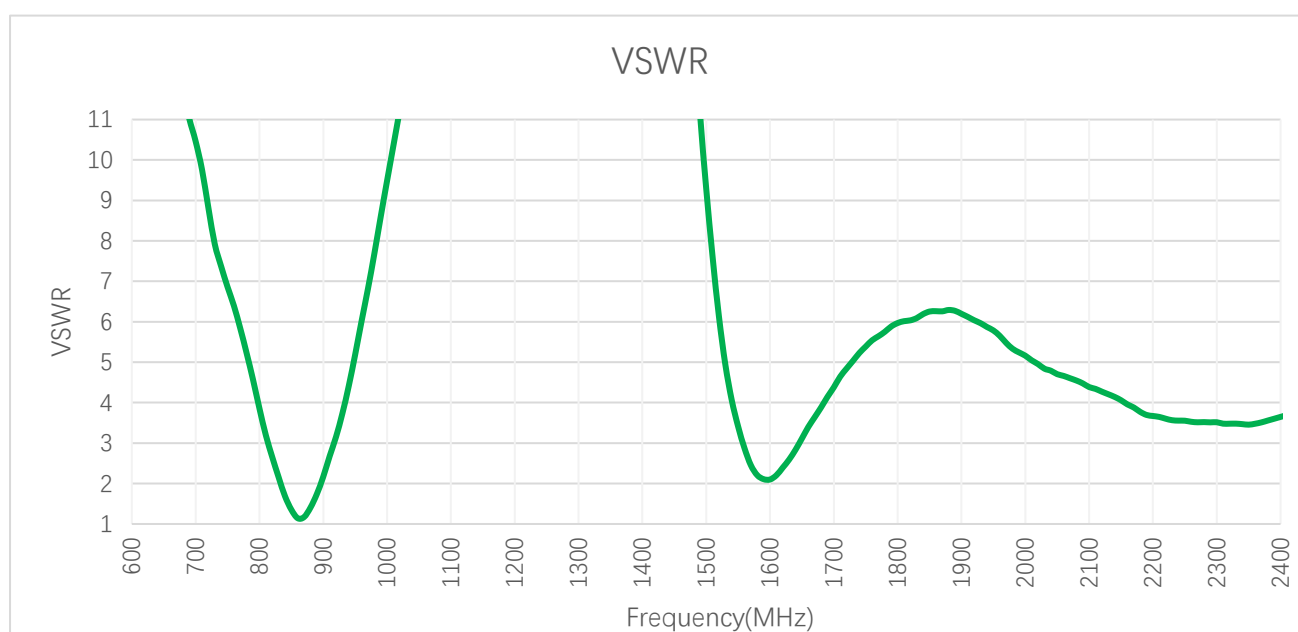
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

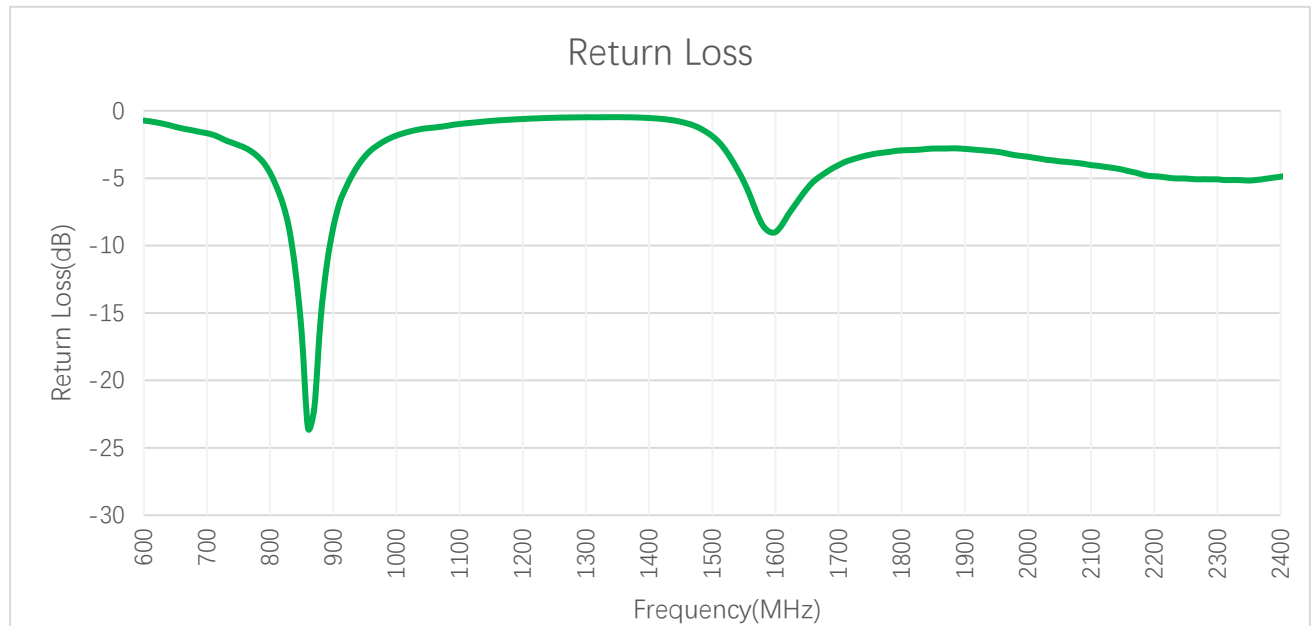
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	9.8	2.2	2.2	6.0	-	4.6	5.2	6.3
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4000	4700	5500	6000
VSWR	5.8	4.1	-	-	-	-	-	-	-	-

3.1.2. Return Loss

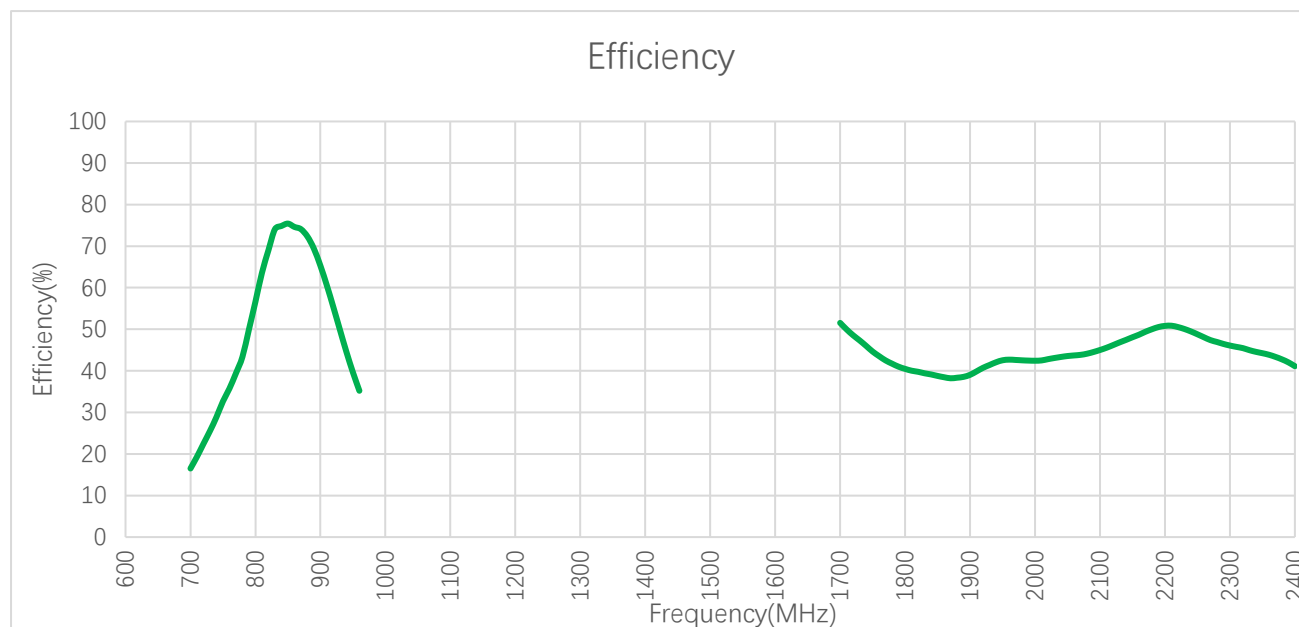


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-1.8	-8.7	-8.7	-2.9	-	-3.8	-3.4	-2.8
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4000	4700	5500	6000
Return Loss (dB)	-3.0	-4.3	-	-	-	-	-	-	-	-

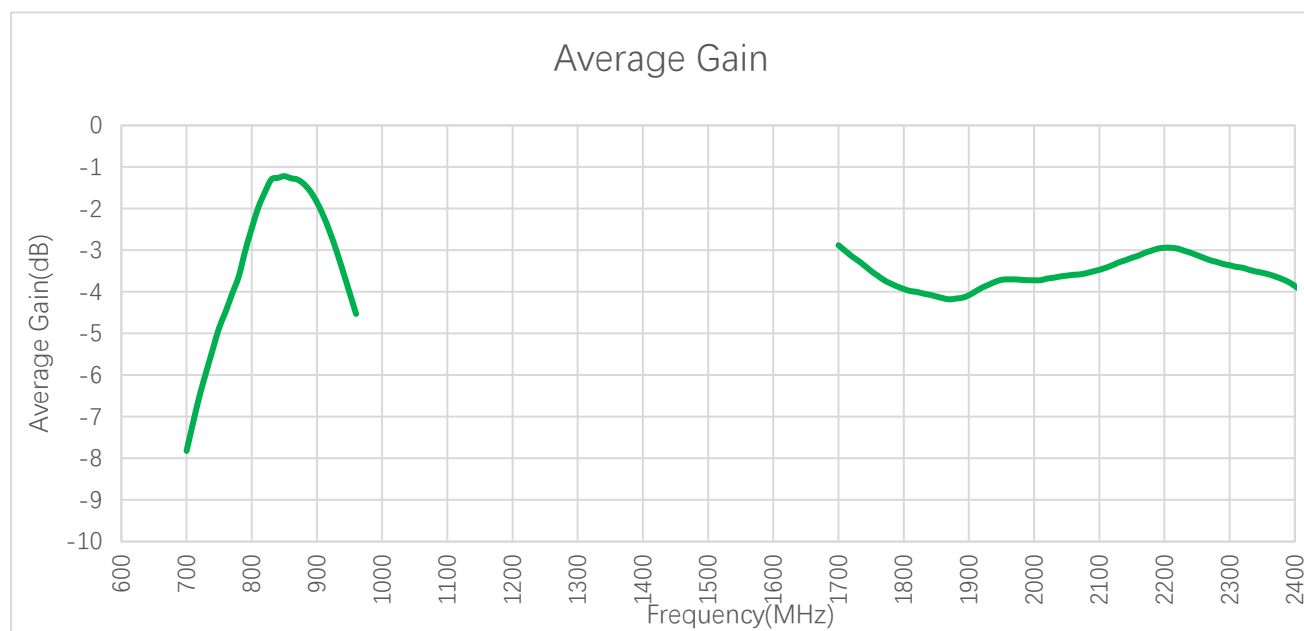
3.2. Radiation Performance Test

3.2.1. Efficiency



Efficiency (%)										
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	19.3	74.1	65.3	35.2	-	50.0	46.0	38.3
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4000	4700	5500	6000
Efficiency (%)	42.5	47.4	-	-	-	-	-	-	-	-

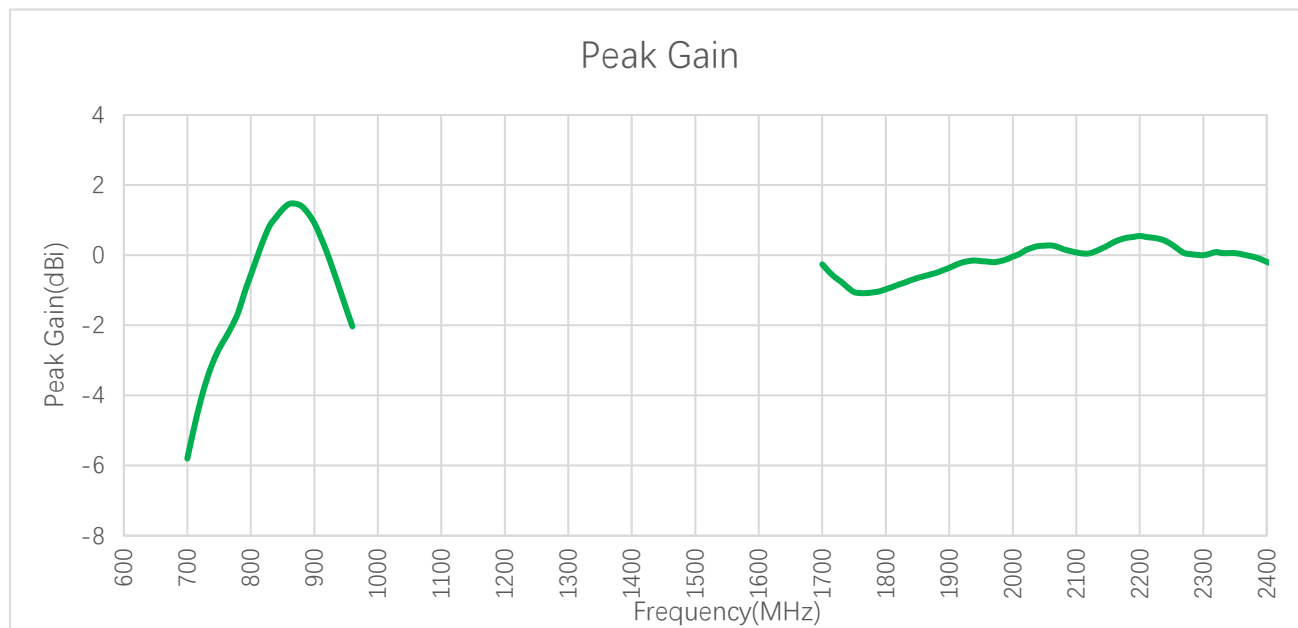
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-7.1	-1.3	-1.9	-4.5	-	-3.0	-3.4	-4.2
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4000	4700	5500	6000
Average Gain (dB)	-3.7	-3.2	-	-	-	-	-	-	-	-

3.2.3. Peak Gain



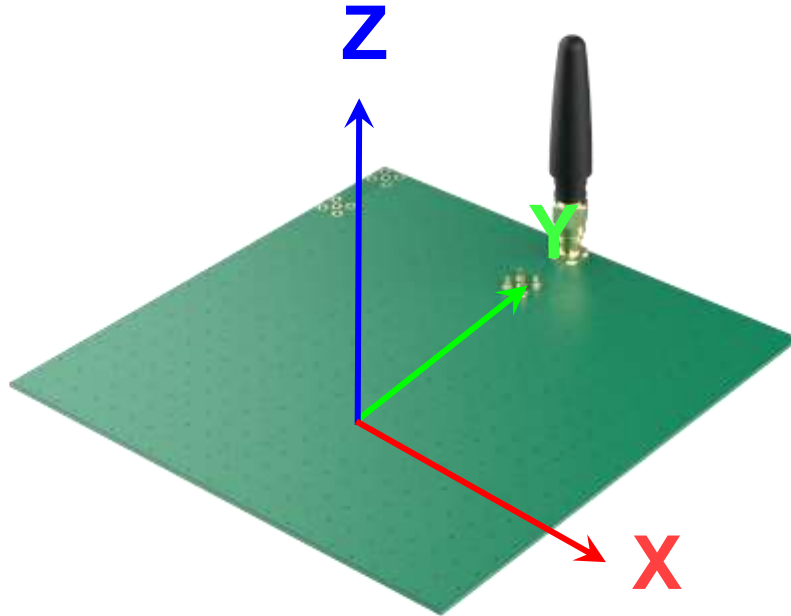
Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-5.0	0.9	0.9	-2.0	-	-0.5	-0.9	-0.5
Frequency (MHz)	1950	2140	2350	2450	2600	3600	4000	4700	5500	6000
Peak Gain (dBi)	-0.2	0.2	-	-	-	-	-	-	-	-

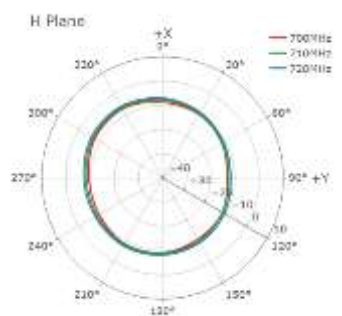
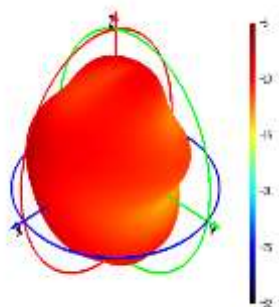
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: On 130 mm × 130 mm EVB

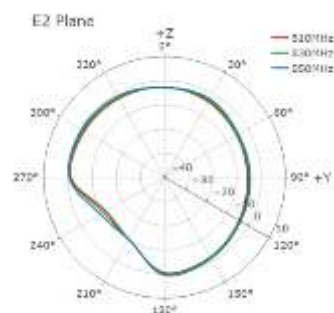
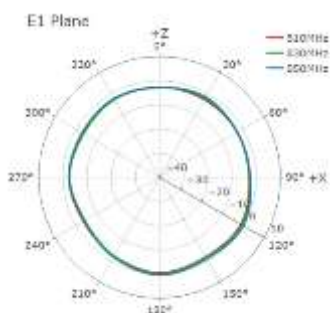
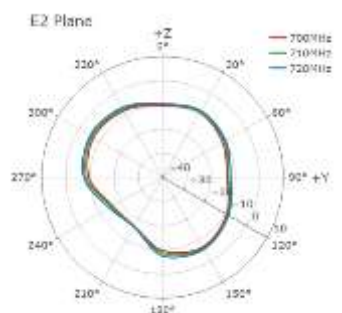
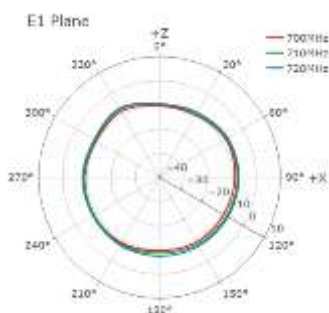
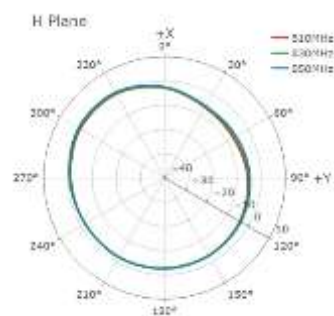
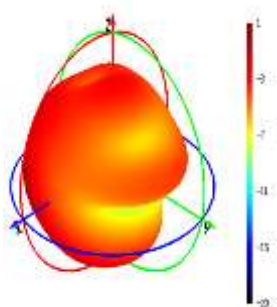
- Test Chamber: GL-S-1



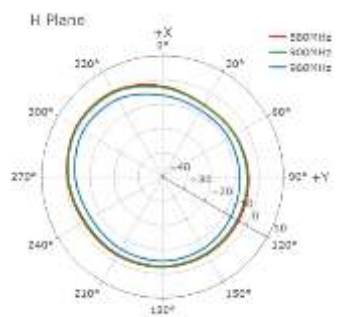
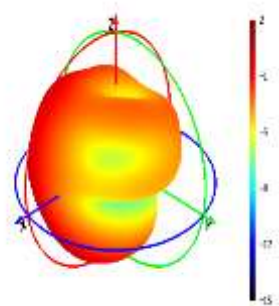
710 MHz



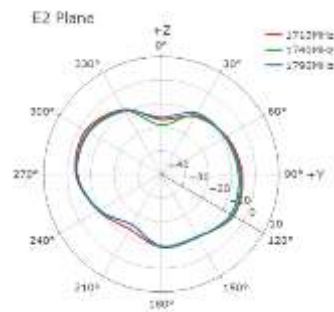
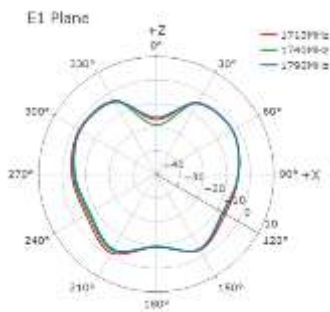
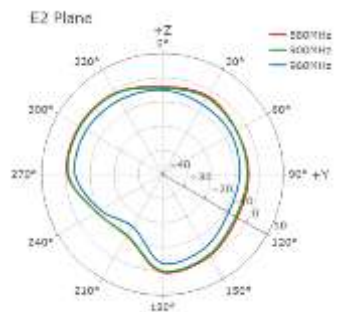
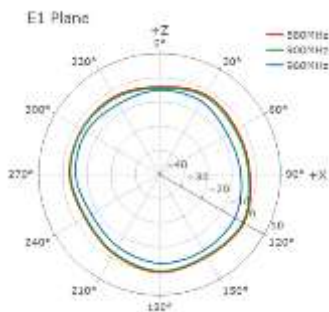
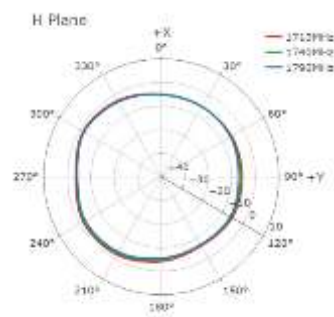
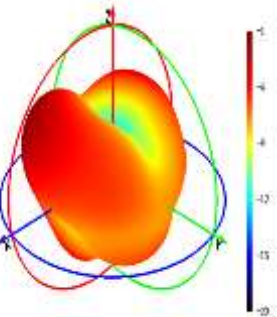
830 MHz

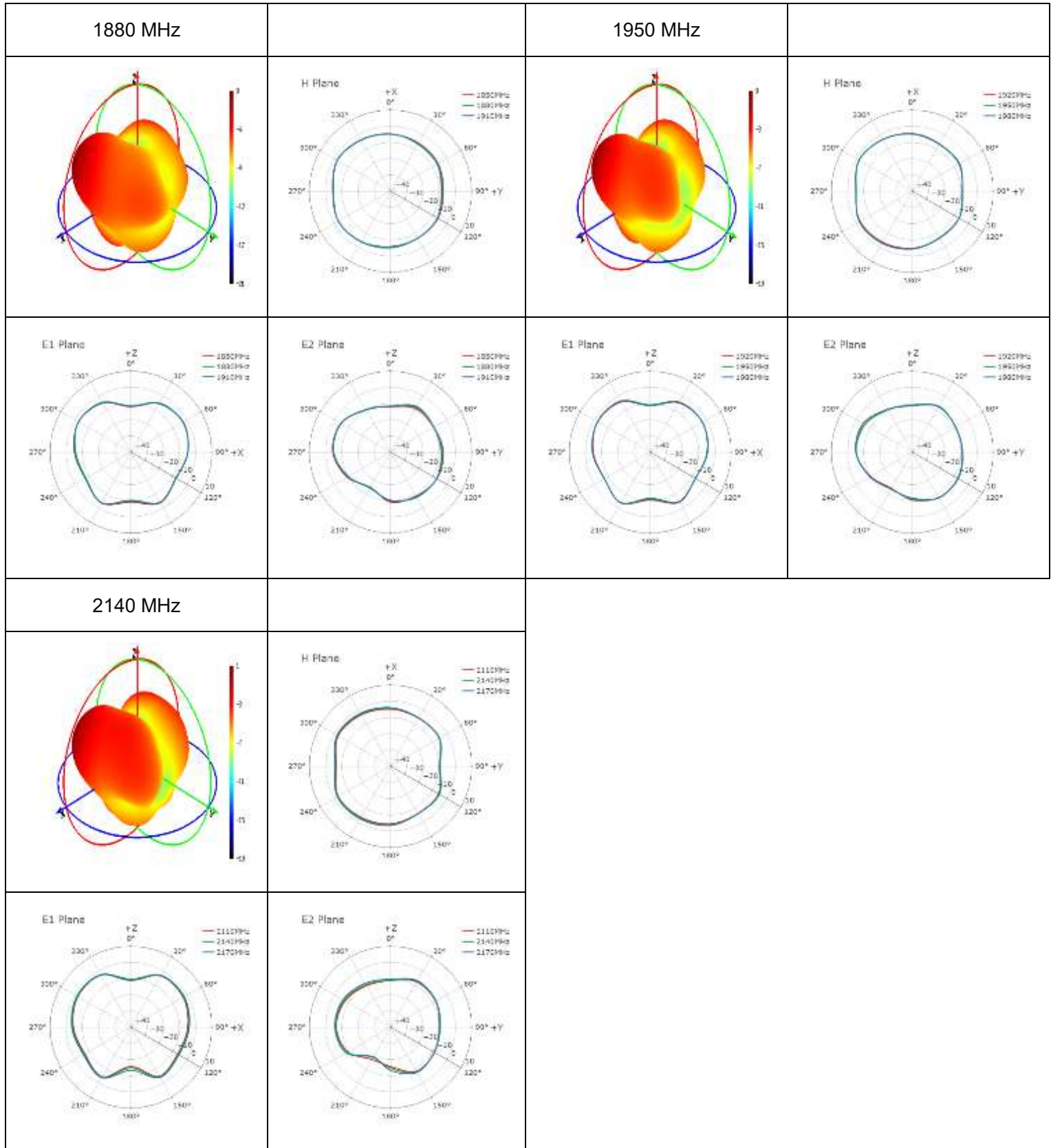


900 MHz



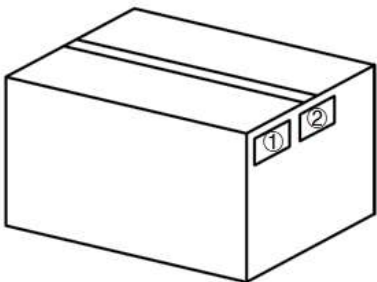
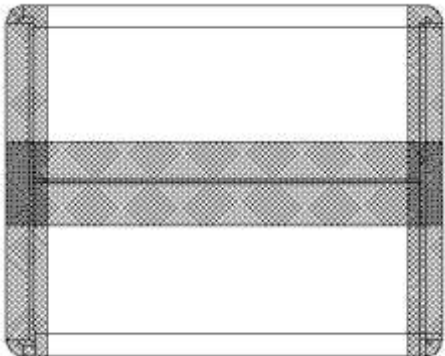
1740 MHz





4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Put the product in a one-piece bag; Each one-piece bag contains 10 products.
2		400 pcs antenna products in a PE bag. (400 PCS / PE Bag)
3		(6 PE Bags / Carton Box) (2400 PCS Antennas / Carton Box) <u>Carton Size:</u> <u>L × W × H = 405 × 293 × 185 mm</u>

4		Put a bubble bag on the top of product.
5		Position for Attaching Labels ① Carton Label ② Quality Label
6		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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Or our local offices. For more information, please visit:

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Or email us at: support@quectel.com.

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Revision History

Version	Date	Author	Note
-	2022-07-08	Jason LONG	Creation of the document
1.0	2022-07-08	Jason LONG	First official release
1.1	2022-10-17	Aria CHU	Updated the IP rating.
1.2	2023-01-15	Bunny ZHANG	Updated the antenna weight (Chapter 3).
2.0	2023-04-27	Joyful HUANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
2.1	2024-01-02	Lucky FENG	Updated casing material and operating temperature (Chapter 1.2)



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