

Antenna Datasheet

Product OC: YECT007AA
Version: 3.3
Date: 2025-03-11
Status: Released

Product Name: 4G Pole Mount Fiberglass Dipole External Antenna
Key Features:
Frequency Band: 698–2690 MHz
Dimensions: Φ 20 mm × 300 mm
Efficiency: Up to 93 %
RoHS and REACH Compliant
IP65

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	698–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail

Band / 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	FS	-	2.0	2.9	-	1.8	1.2	1.2	1.7	-	-	-
Max. Return Loss (dB)	FS	-	-9.7	-6.1	-	-11.1	-19.6	-19.2	-11.6	-	-	-
AVG Eff. (%)	FS	-	51.6	46.5	-	80.7	84.5	86.9	73.7	-	-	-
AVG.AVG Gain (dB)	FS	-	-2.9	-3.3	-	-1.0	-0.7	-0.6	-1.3	-	-	-
Max. Peak Gain (dBi)	FS	-	0.1	1.3	-	0.9	1.4	1.9	1.9	-	-	-

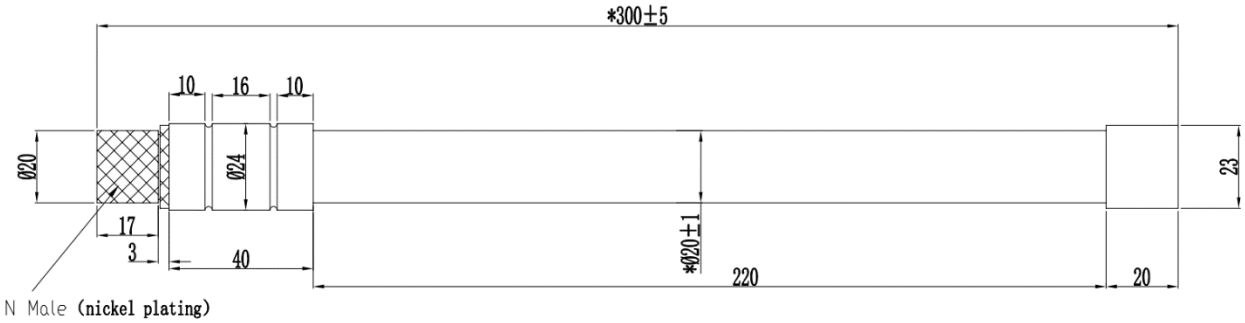
VSWR	**FS**	≤ 2.9
Return Loss	**FS**	≤ -6.1 dB

Peak Gain	**FS**	≤ 1.9 dBi

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 20 mm × 300 mm
Material & Color	Glass Fiber Reinforced Plastics & Gray
Connector Type	N Male
Mounting Type	Pole Mount
Weight	Typ. 146.2 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP65
RoHS and REACH Compliant	Yes

2 Drawing

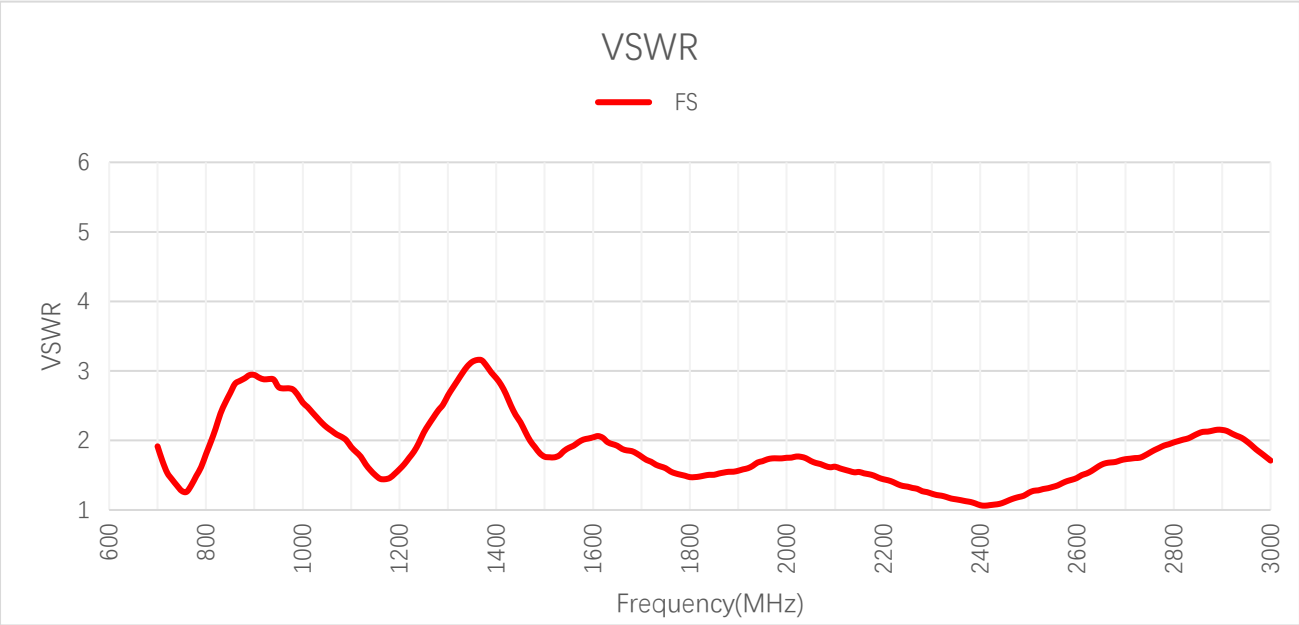

*300±5
10
16
10
Ø20
Ø24
23
17
3
40
*Ø20±1
220
20
N Male (nickel plating)



3 Detailed Performance

3.1. S-Parameter Test

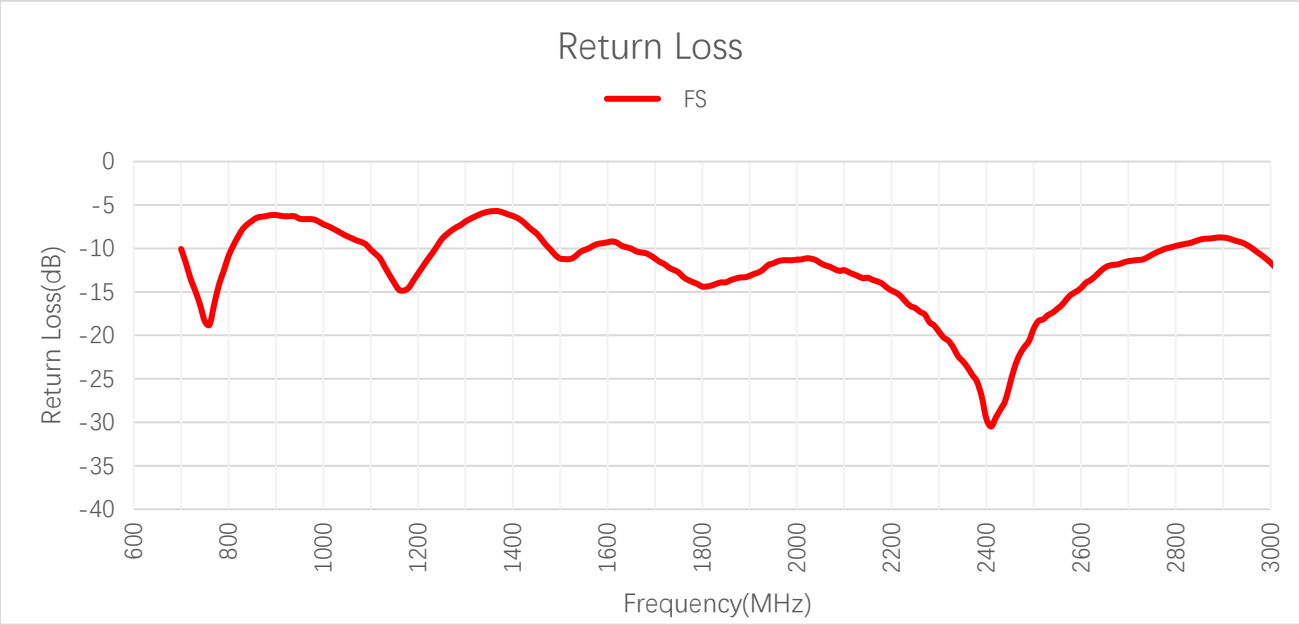
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	1.7	2.4	2.9	2.7	-	1.7	1.6	1.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	1.7	1.5	1.2	1.1	1.5	1.7	-	-	-	-

3.1.2. Return Loss

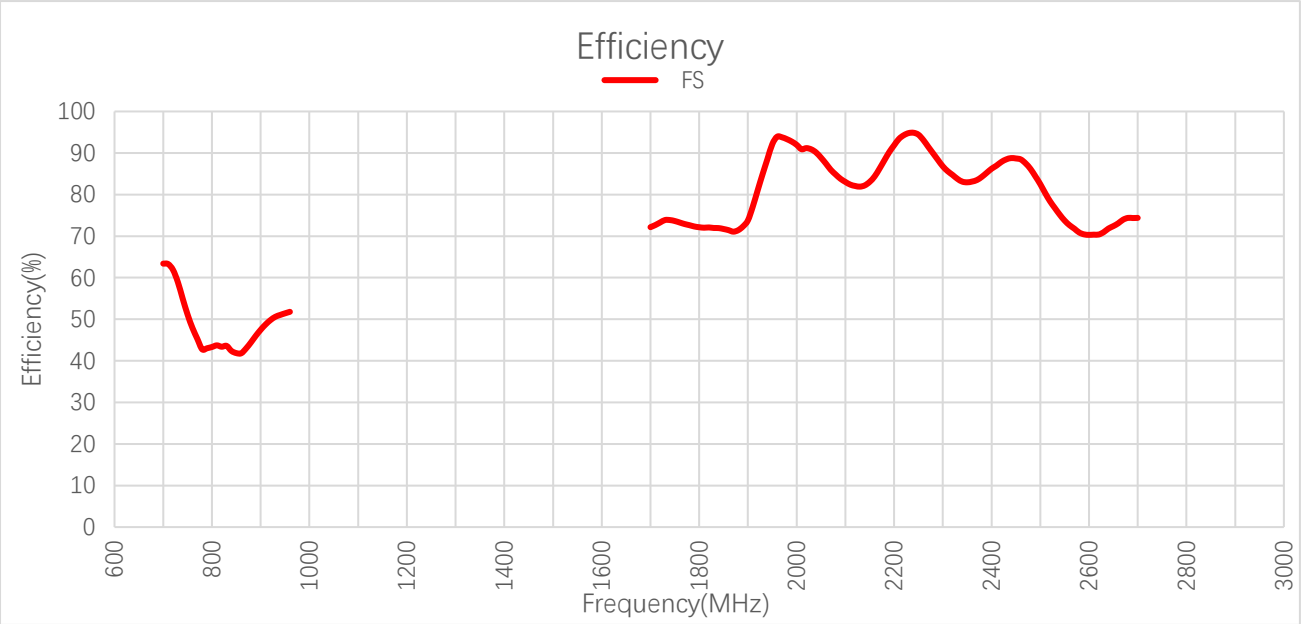


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-11.7	-7.8	-6.1	-6.6	-	-11.5	-12.5	-13.3
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Return Loss (dB)	-11.7	-13.4	-23.0	-25.5	-14.6	-11.6	-	-	-	-

3.2. Radiation Performance Test

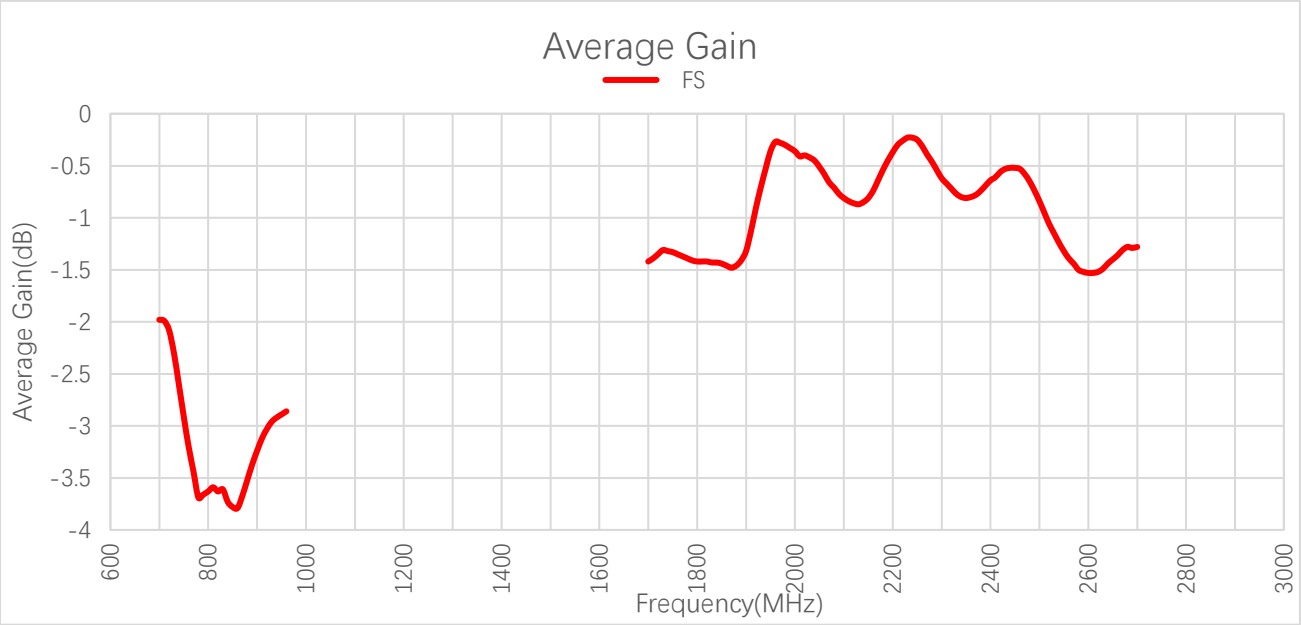
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	63.3	43.6	47.5	51.8	-	72.7	73.9	71.4
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Efficiency (%)	92.1	82.2	83.0	88.7	70.3	74.4	-	-	-	-

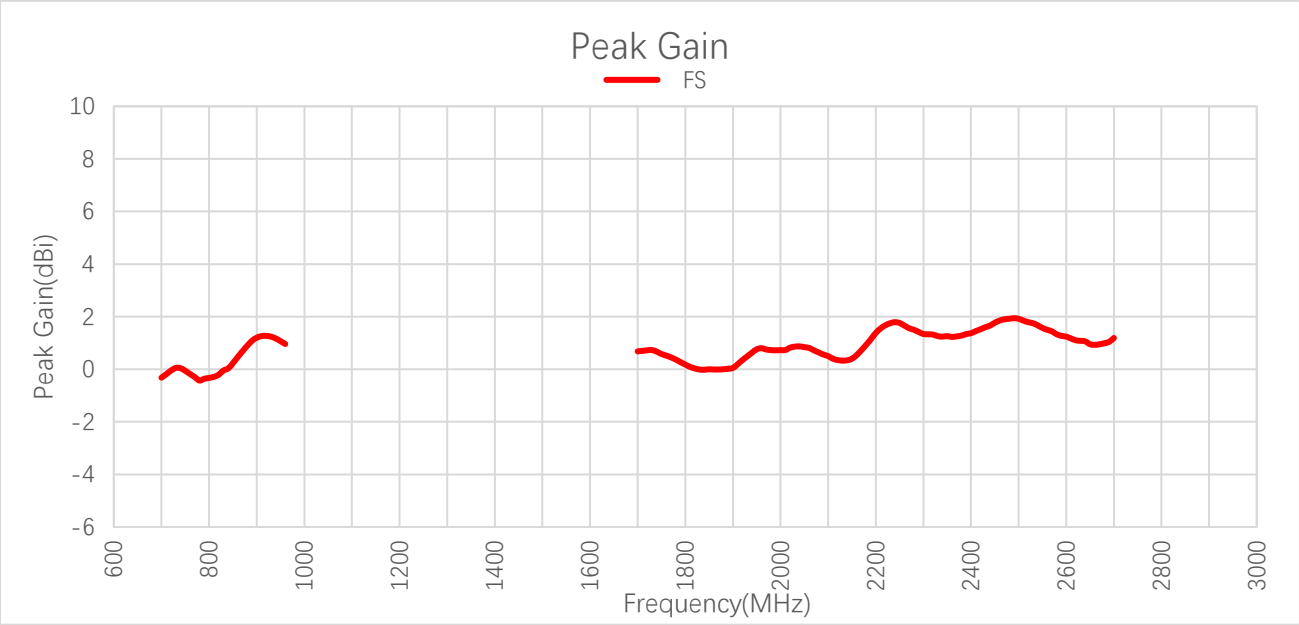
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-2.0	-3.6	-3.2	-2.9	-	-1.4	-1.3	-1.5
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Average Gain (dB)	-0.4	-0.9	-0.8	-0.5	-1.5	-1.3	-	-	-	-

3.2.3. Peak Gain



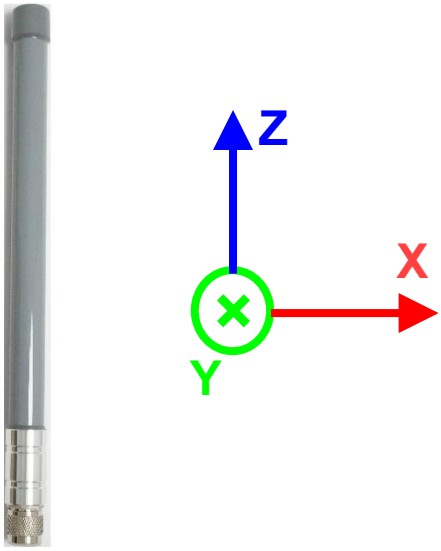
Peak Gain (dBi)

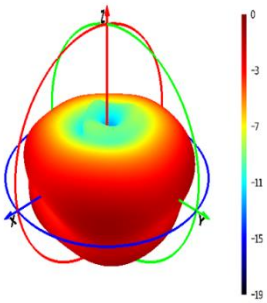
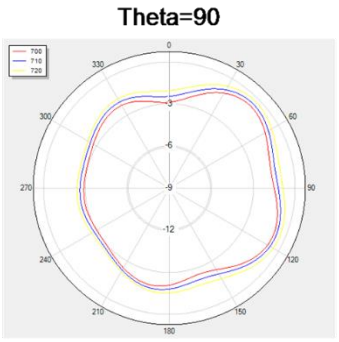
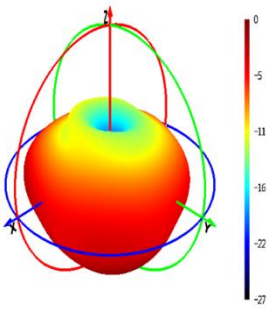
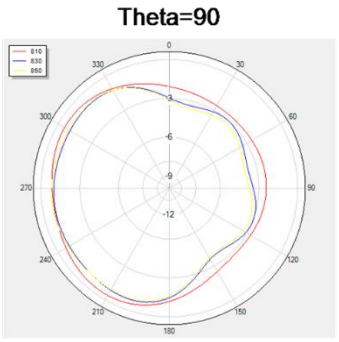
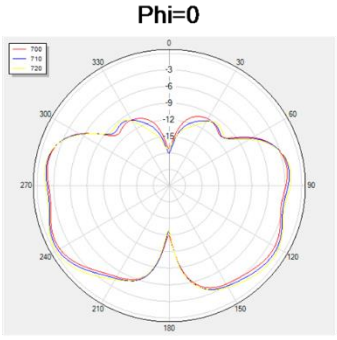
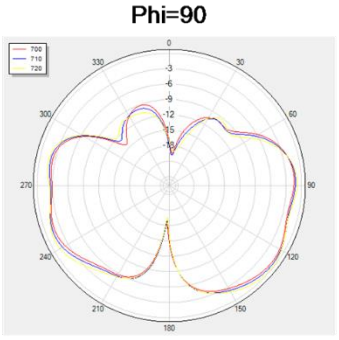
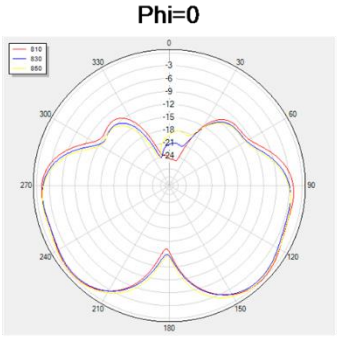
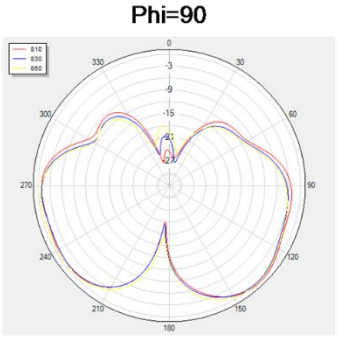
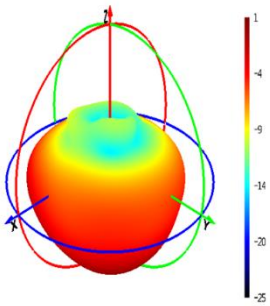
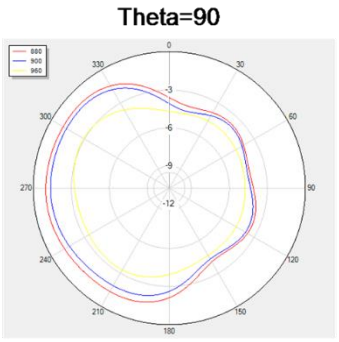
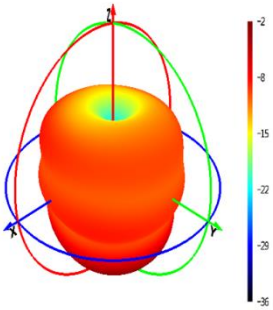
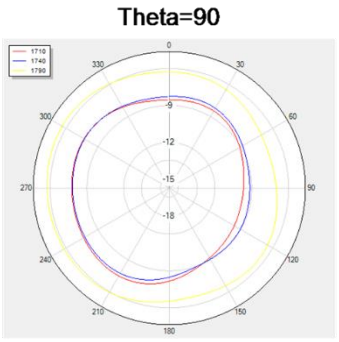
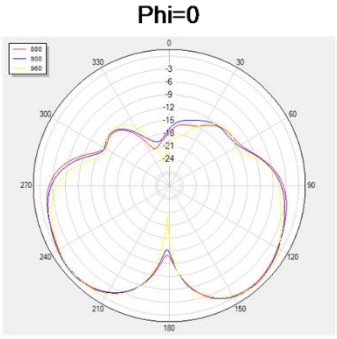
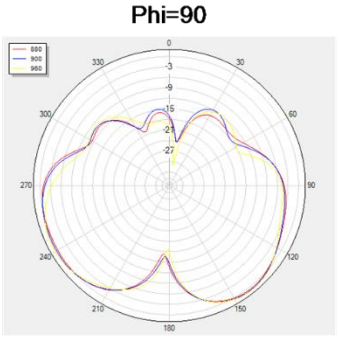
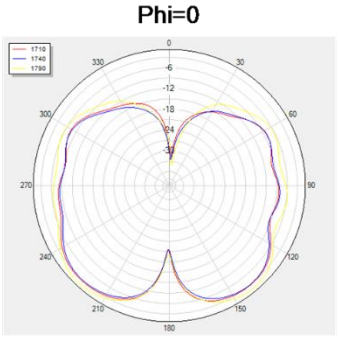
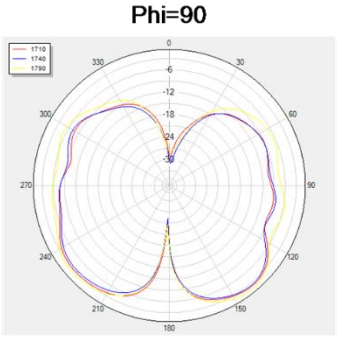
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-0.2	-0.1	1.2	1.0	-	0.7	0.7	0.0
Frequency (MHz)	**1950**	**2140**	**2350**	**2450**	**2600**	**2690**	**4700**	**5000**	**5500**	**6000**
Peak Gain (dBi)	0.8	0.3	1.3	1.8	1.2	1.0	-	-	-	-

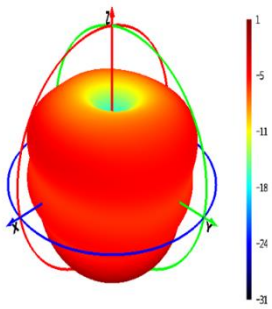
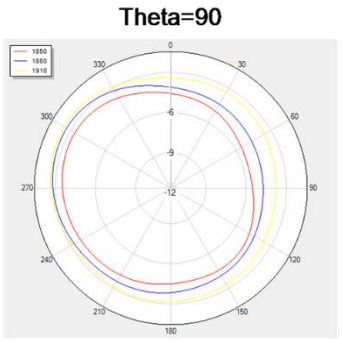
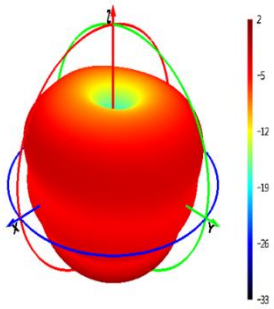
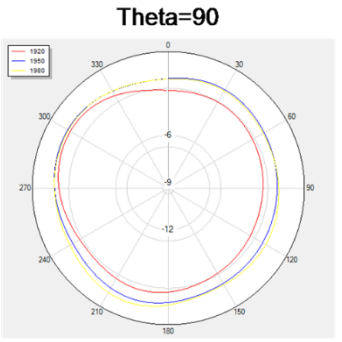
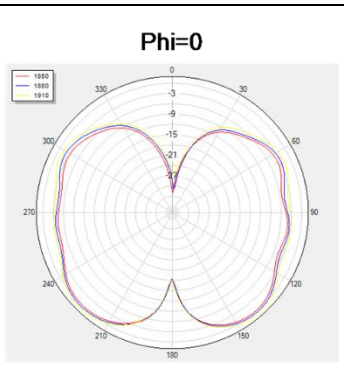
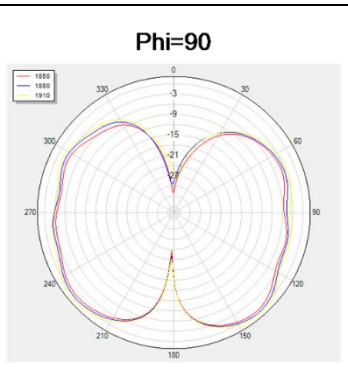
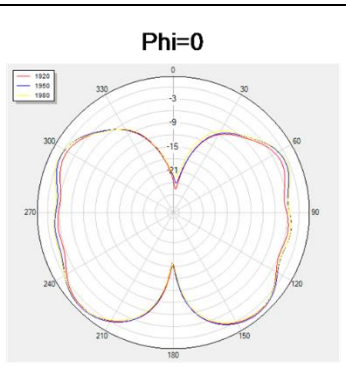
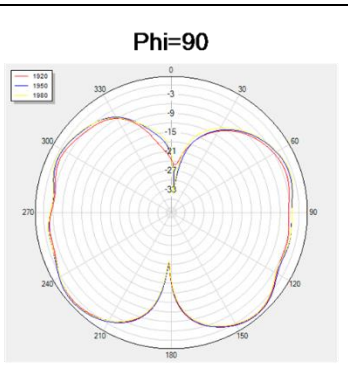
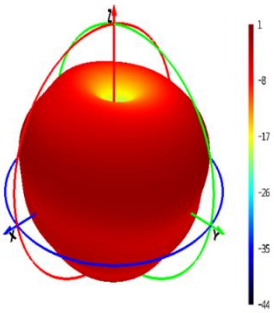
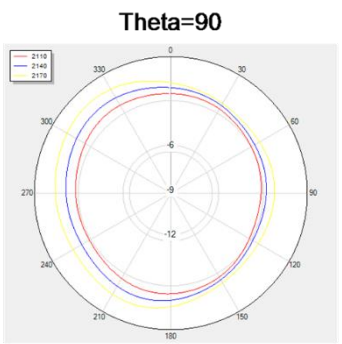
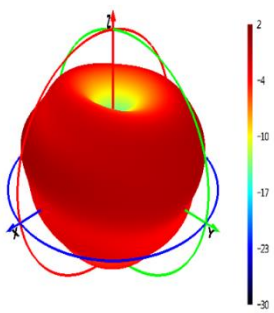
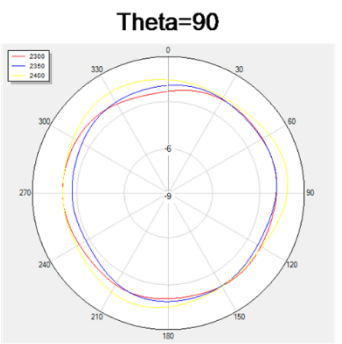
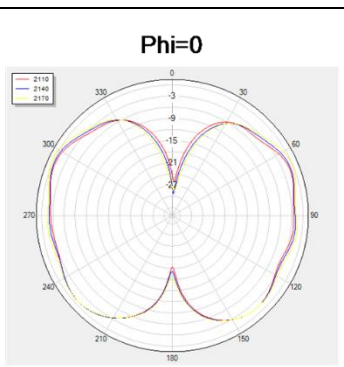
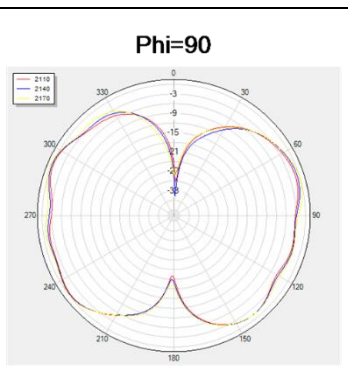
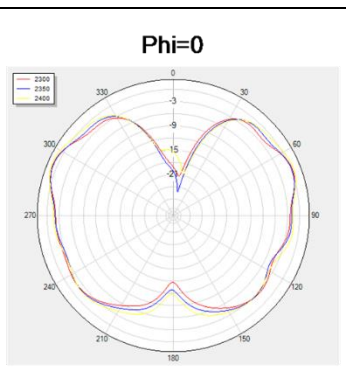
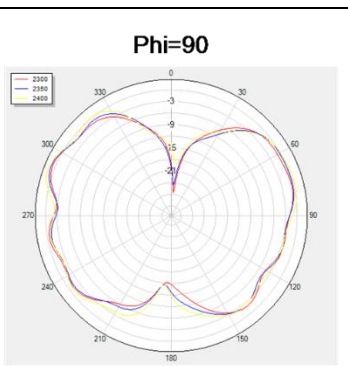
3.2.4. 3D & 2D Radiation Pattern

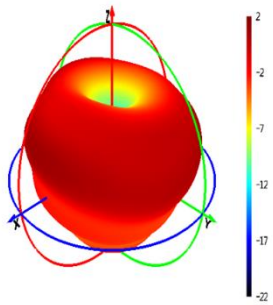
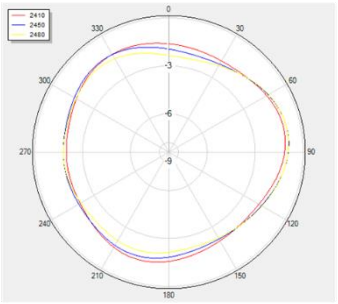
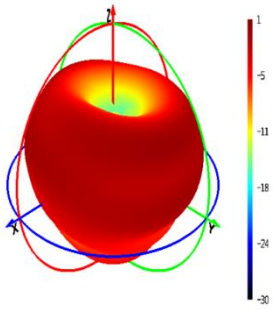
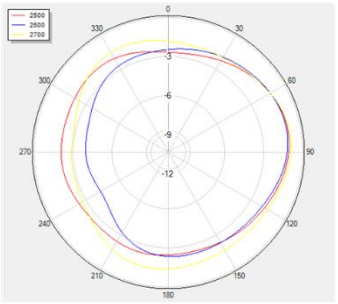
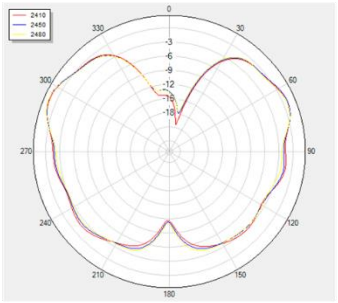
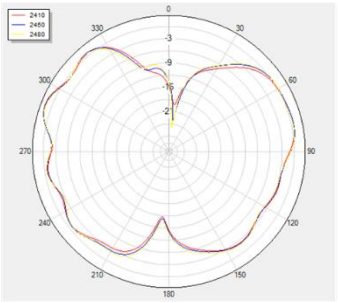
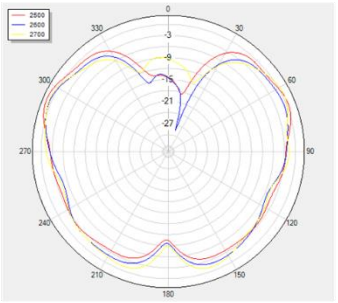
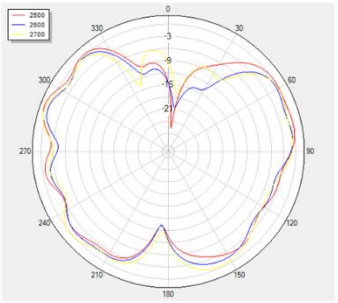
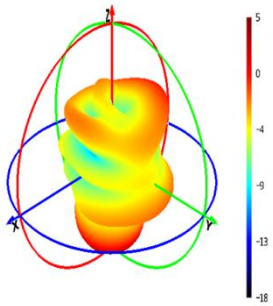
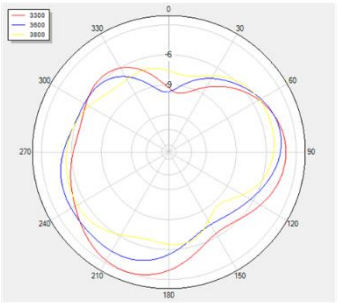
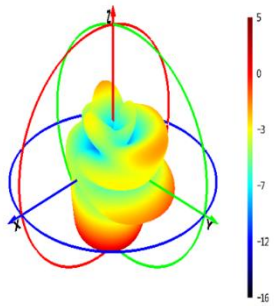
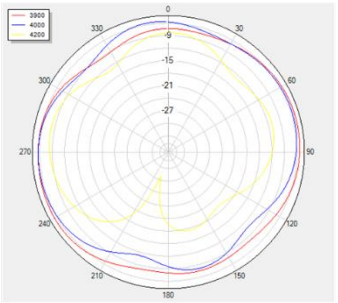
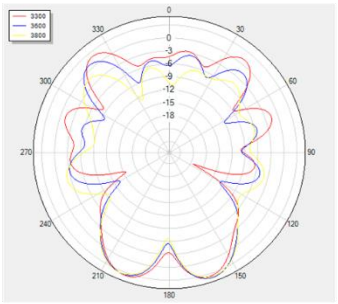
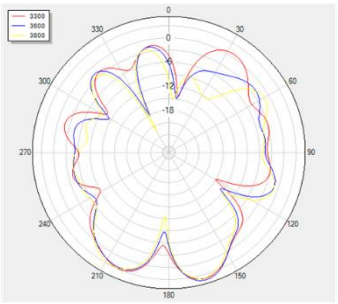
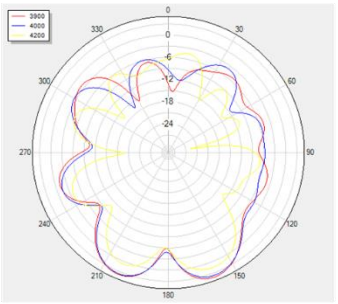
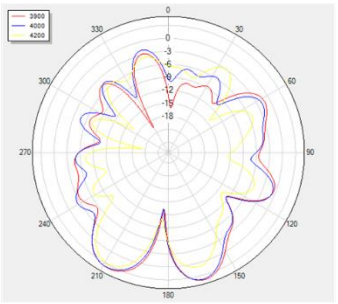
3.2.4.1. Test Condition: Free Space

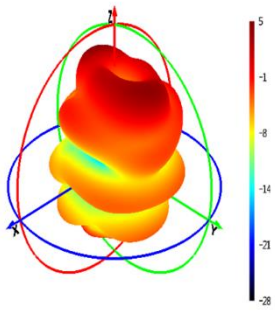
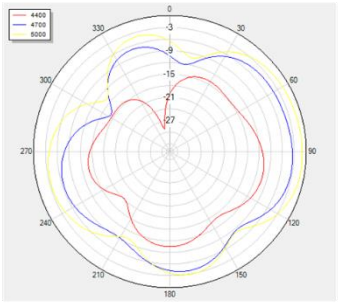
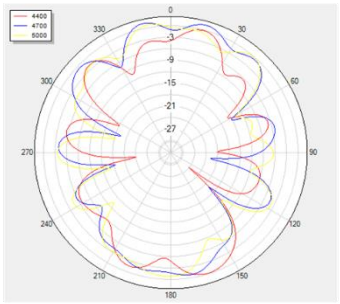
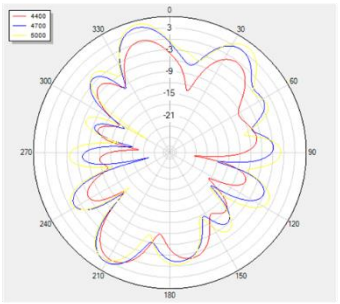
- Test Chamber: GL-S-1



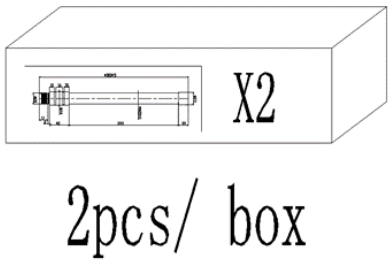
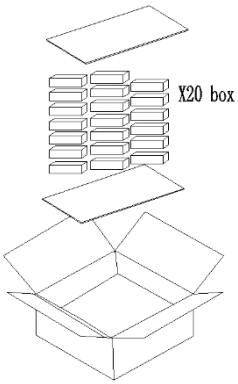
710 MHz		830 MHz	
			
			
900 MHz		1740 MHz	
			
			

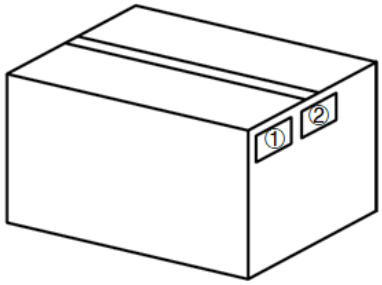
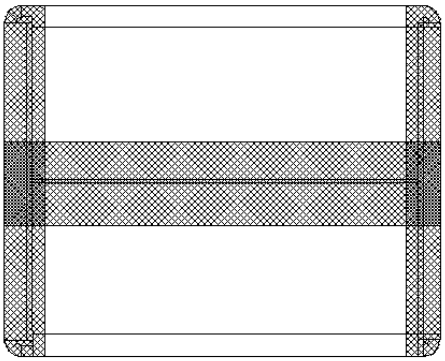
1880 MHz		1950 MHz	
			
			
2140 MHz		2350 MHz	
			
			

2450 MHz		2600 MHz	
	Theta=90 		Theta=90 
Phi=0 	Phi=90 	Phi=0 	Phi=90 
3600 MHz		4000 MHz	
	Theta=90 		Theta=90 
Phi=0 	Phi=90 	Phi=0 	Phi=90 

4700 MHz	
	Theta=90 
Phi=0 	Phi=90 

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		1 pc antenna product in a bubble bag. (1 PC / Bubble Bag)
2		(2 PCS Antennas / Inner Box)
3		(20 Inner Boxes / Carton Box) (40 PCS Antennas / Carton Box) Carton Size: L × W × H = 360 × 200 × 360 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** H-shaped 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
-	2021-09-22	Mordecai LIU/ Jason LONG	Creation of the document
1.0	2021-09-22	Mordecai LIU/ Jason LONG	First official release
2.0	2022-03-01	Mordecai LIU/ Jason LOG	Updated all test data in this datasheet.
2.1	2022-04-27	Mordecai LIU/ Jason LONG	Updated mounting type (Chapter 6).
2.2	2022-12-29	Jason LONG	Update the drawings in Chapter 6.
3.0	2023-05-17	Damon ZHANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
3.1	2023-12-05	Lucky FENG/ Aria CHU	Added storage temperature and REACH compliant (Chapter 1.1).
3.2	2024-07-04	Lucky FENG	Update the drawing (Chapter 2).
3.3	2025-03-11	Rainey LIAO	Updated the starting frequency to 698 MHz (Homepage and Chapter 1.1).



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