

Antenna Datasheet

Product OC: Y0BYB0CA0CA

Version: 1.0

Date: 2025-04-14

Product Name: 4G PCB Antenna

Key Features:

Frequency Band: 700–960 MHz, 1710–2690 MHz

Dimensions: 120 mm × 20 mm

Efficiency: Up to 64.89 %

RoHS Compliant

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1 Specification

Test Condition: Assembled in test device

1.1. Electrical

Electrical	
Frequency Range	700–960 MHz, 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional
VSWR	≤ 2.1
Peak Gain	4.6 dBi

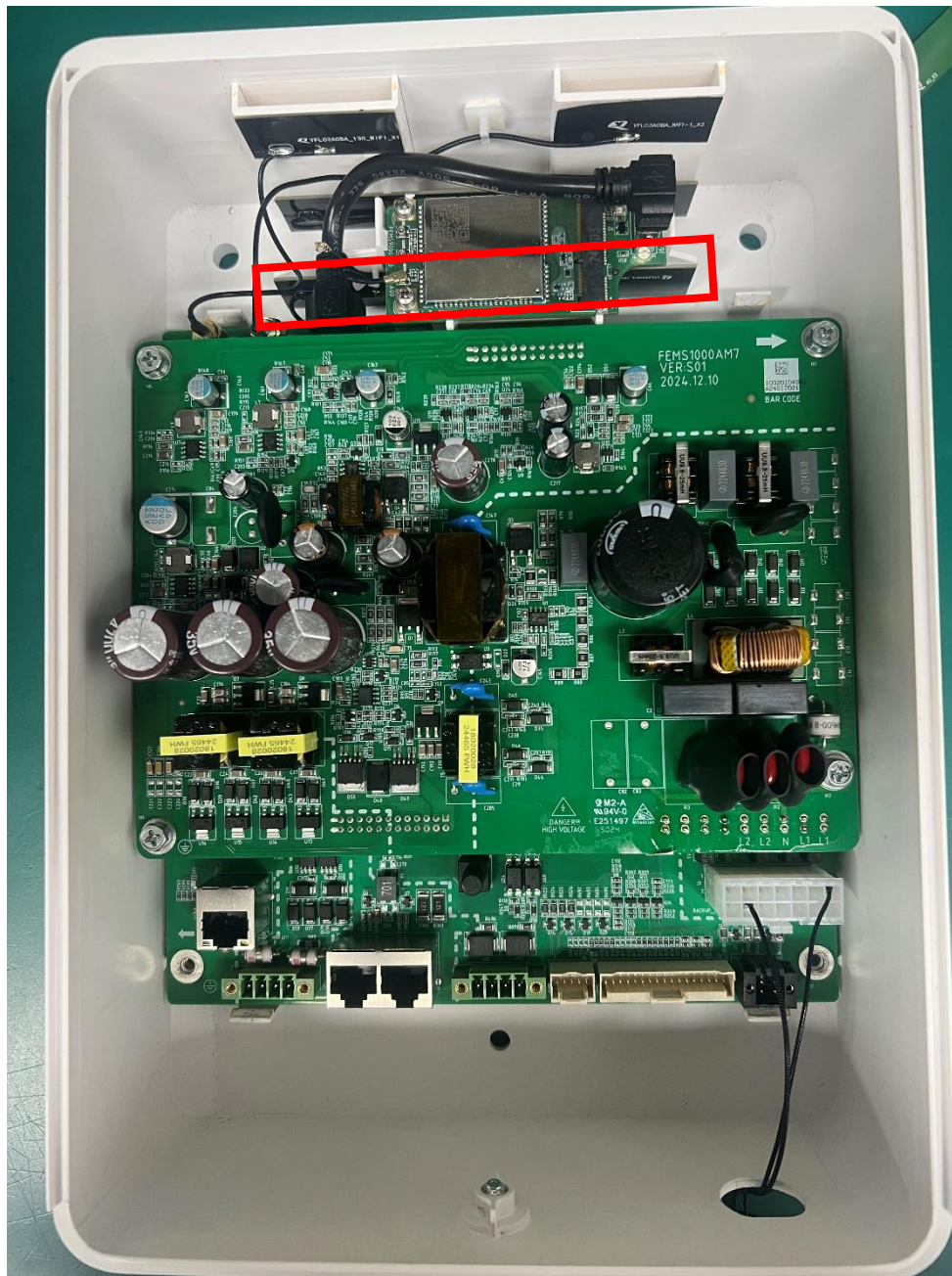
Electrical – Detail												
Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
SPEC	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850
Max. VSWR			2.4	2.9	-	1.8	2.6	2.6	2.6	-	-	-
Max. Return Loss (dB)			-7.6	-6.2	-	-10.9	-7.2	-7.2	-7.0	-	-	-
AVG Eff. (%)			25.2	22.0	-	41.8	40.4	38.2	41.0	-	-	-
AVG AVG Gain (dB)			-6.0	-6.6	-	-3.9	-4.0	-4.2	-3.9	-	-	-
Max. Peak Gain (dBi)			0.3	0.2	-	4.6	2.7	2.6	2.7	-	-	-
VSWR						≤ 2.9						

Return Loss	≤ -6.2 dB
Peak Gain	≤ 4.6 dBi

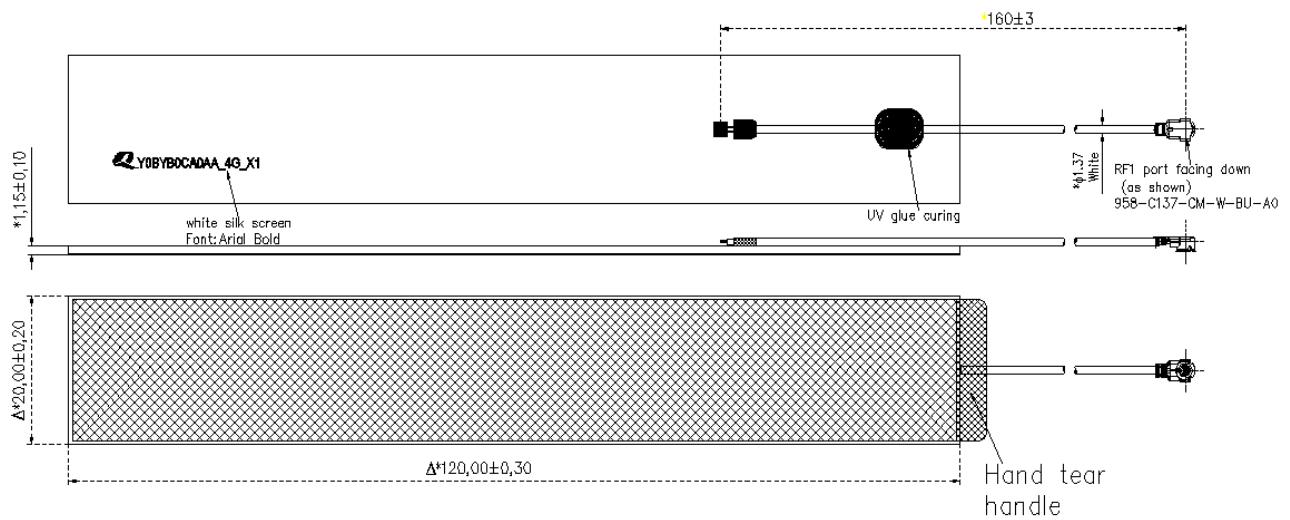
1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	120 mm × 20 mm
Material & Color	PCB & Black
Cable Type & Color & Length	Φ 1.37 & White & 160 mm
Connector Type	RF 1
Weight	/
Mounting Type	Adhesive
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

1.3. Antenna Assembly



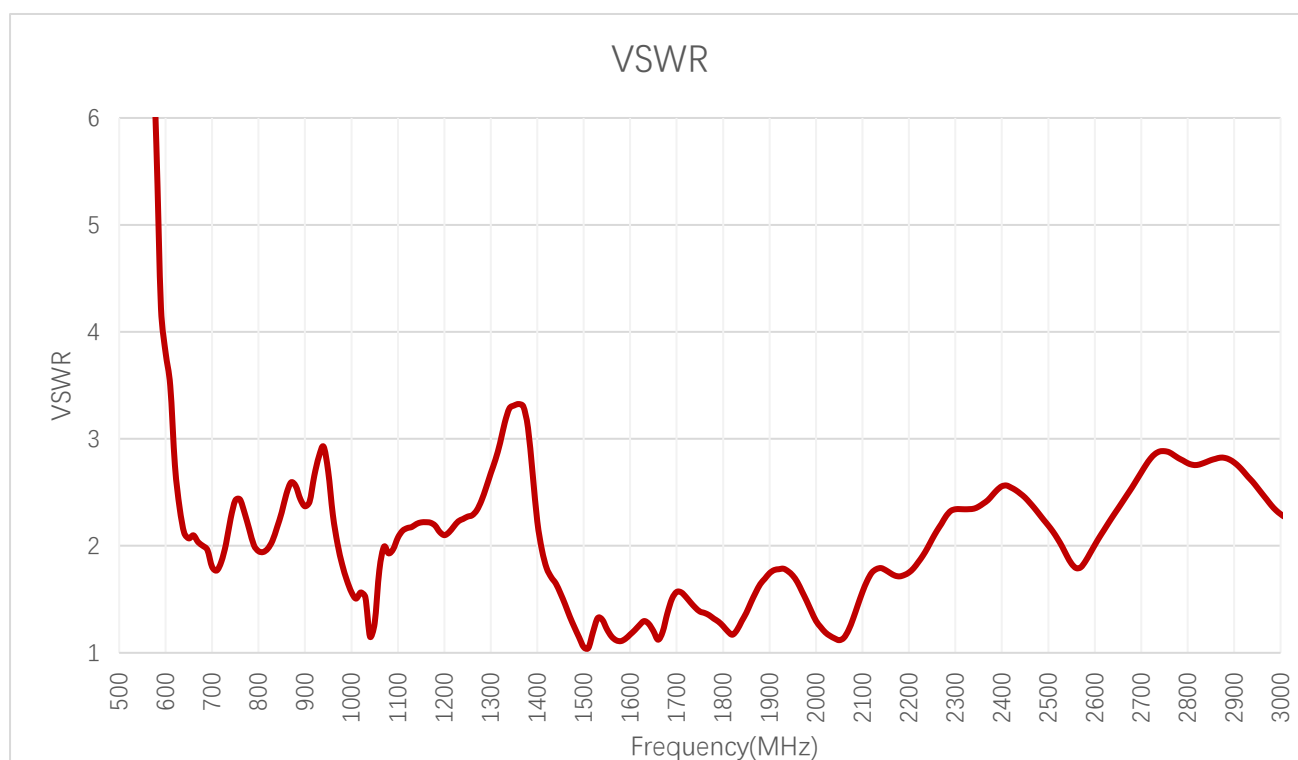
2 Drawing



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			1.8	2.0	2.4	2.3		1.6	1.4	1.6
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	1.7	1.8	2.4	2.5	2.0	2.6	-	-	-	-

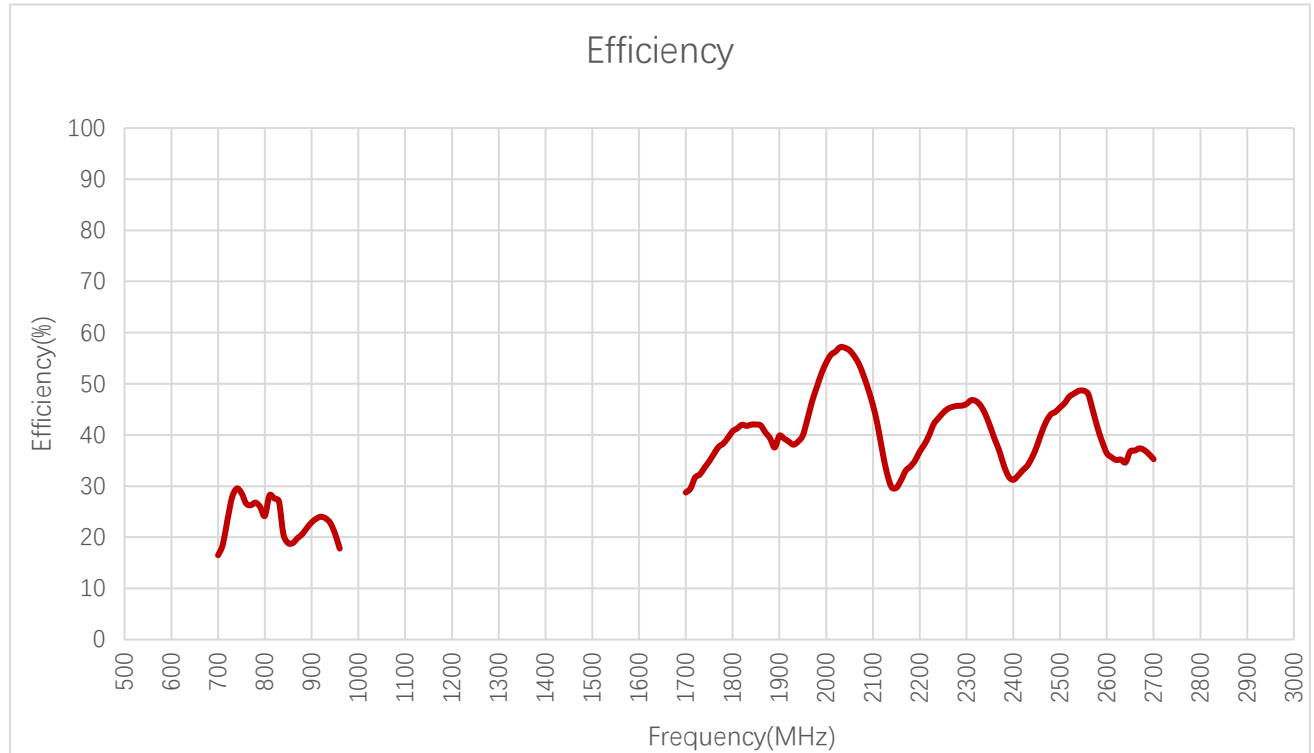
3.2. OTA Test Data

- Based on module: EC25-AF
- Test Condition: Assembled in test device

Band		Channel	TRP (dBm)	Channel	TIS (dBm)
LTE	B2 (10M)	18650	18.74	650	
		18900	18.3	900	
		19150	18.95	1150	-82.05
	B4 (10M)	20000	19.49	2000	
		20175	18.22	2175	
		20350	17.99	2350	-82.66
	B5 (10M)	20450	18.13	2450	
		20525	16.09	2525	
		20600	16.23	2600	-78.24
	B12 (5M)	23060	15.48	5035	
		23095	16.13	5095	
		23130	17.75	5155	-74.01
	B13 (10M)				
		23230	19.92	5230	-74.62
	B66 (10M)	132022	20.24	66486	
		132322	19.49	66886	
		132622	19.51	67286	-84.62

3.3. Radiation Performance Test

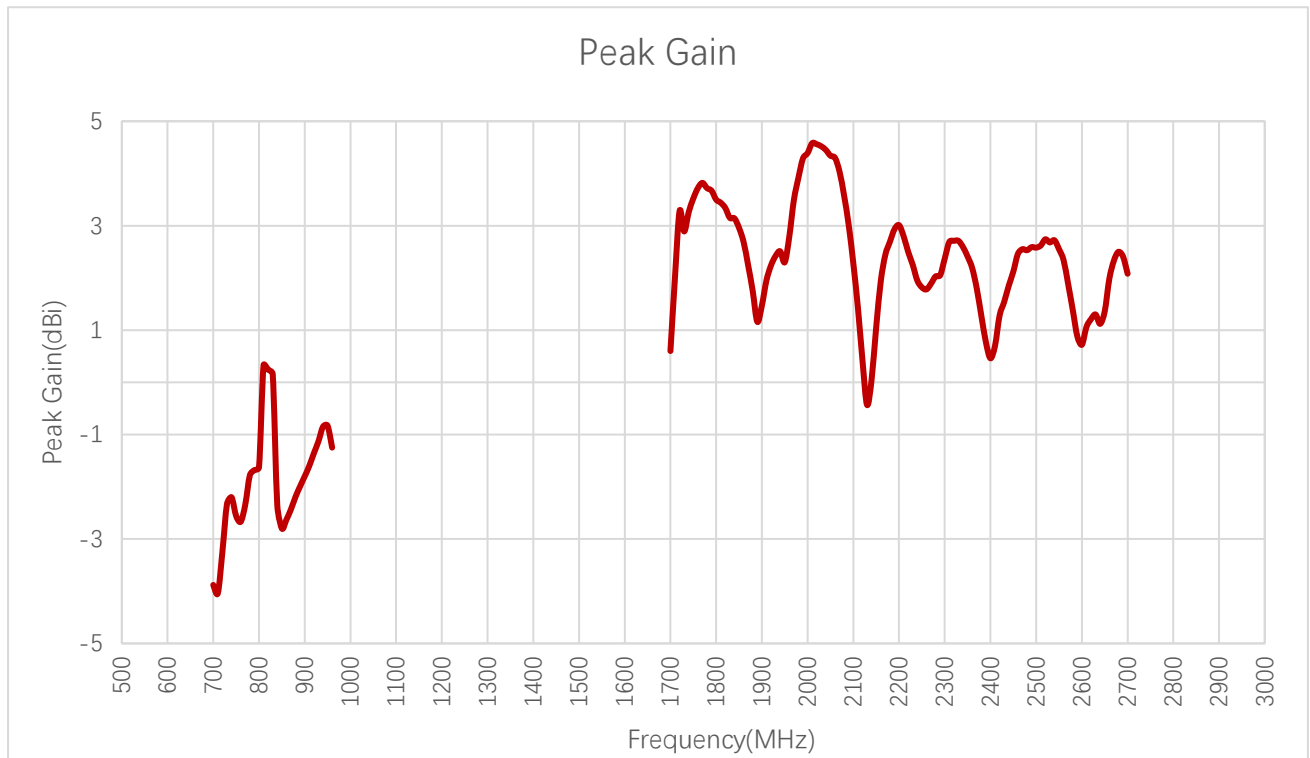
3.3.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)			18.5	27.1	22.9	17.8		29.6	33.6	39.4
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	39.9	29.8	41.8	37.7	36.5	36.3				

3.3.2. Peak Gain

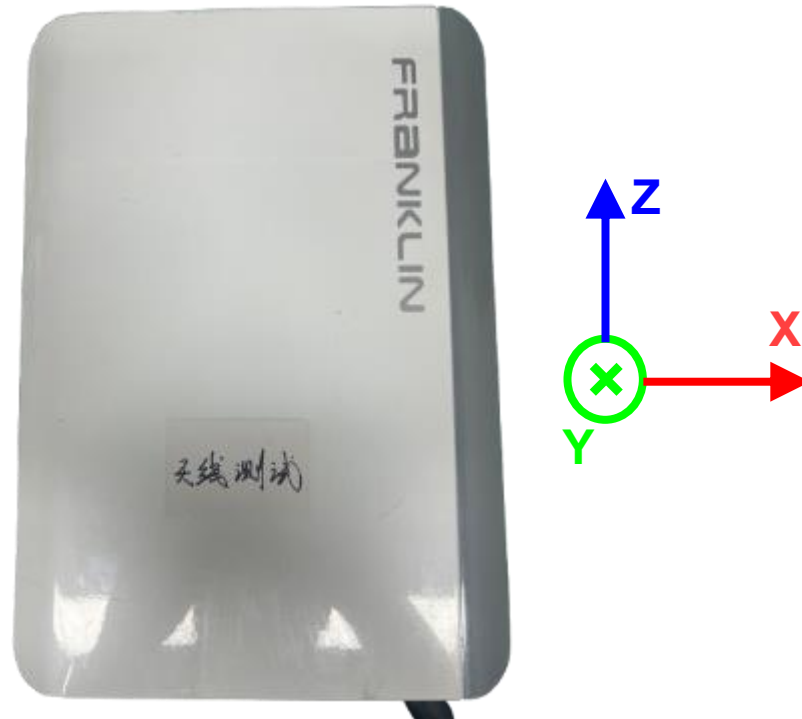


Peak Gain (dBi)

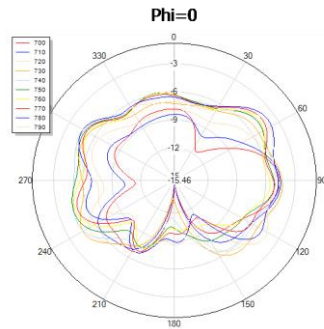
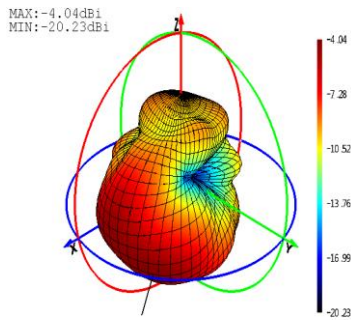
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)			-4.0	0.2	-1.8	-1.3		2.0	3.3	1.8
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	2.3	0.1	2.4	2.1	0.7	2.4	-	-	-	-

3.3.3. 2D Radiation Pattern

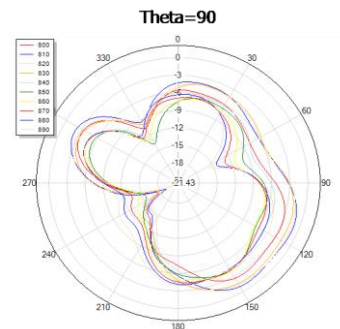
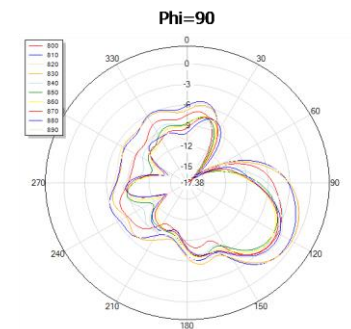
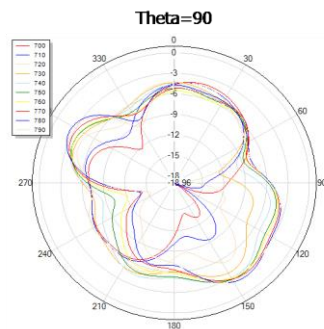
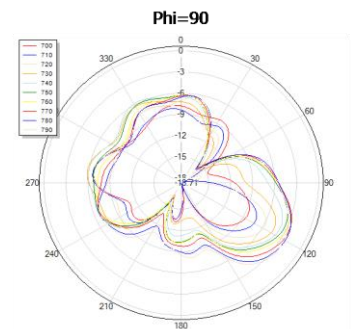
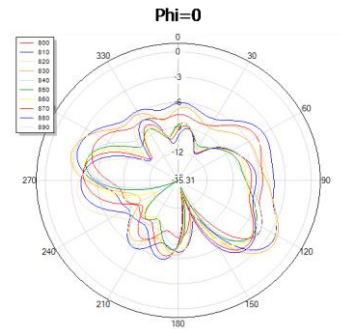
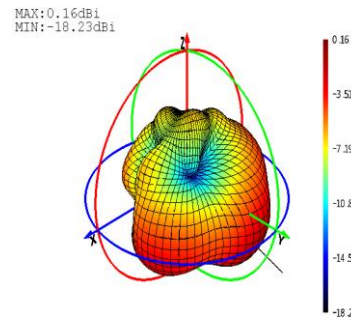
- Test Condition: Assembled in test device
- Test Chamber: SZ-S-1



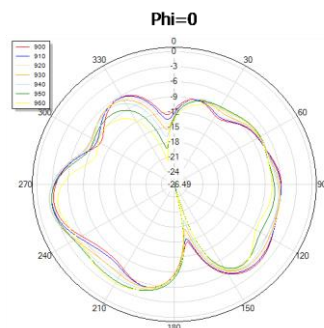
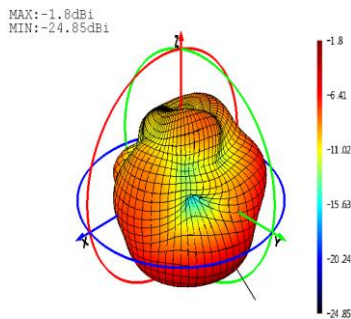
710MHz



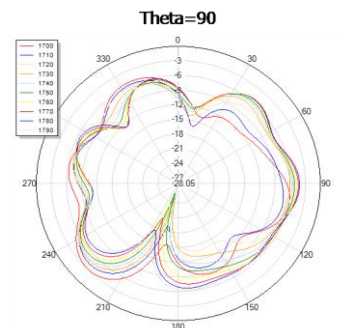
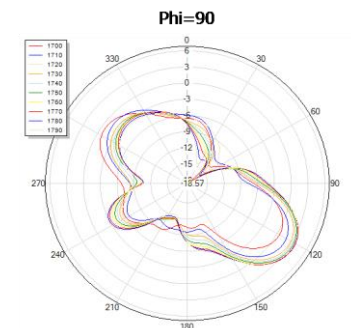
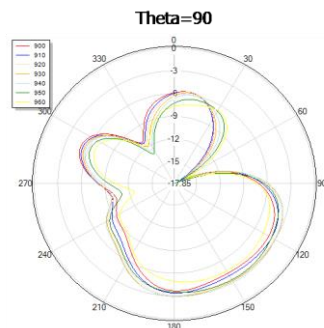
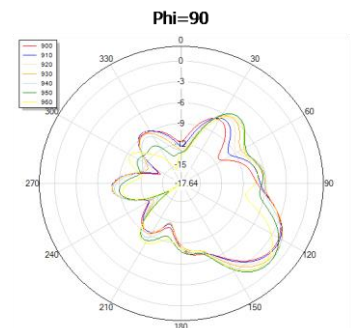
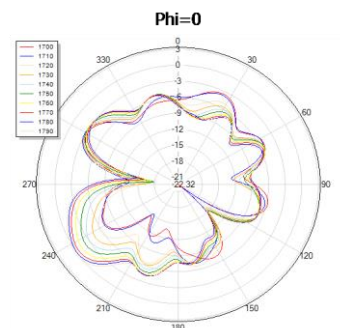
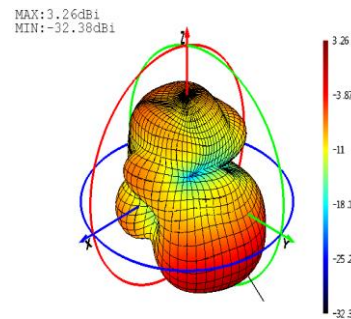
830MHz



900MHz

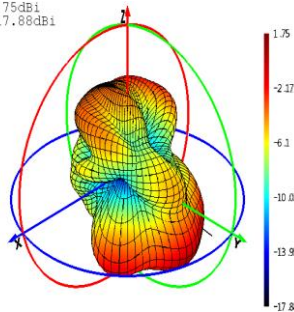


1740MHz

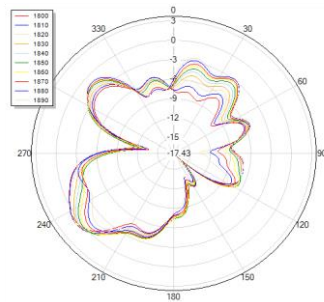


1880MHz

MAX: 1.75dBi
MIN: -17.88dBi

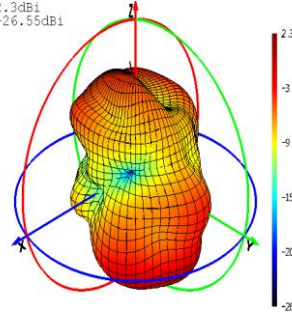


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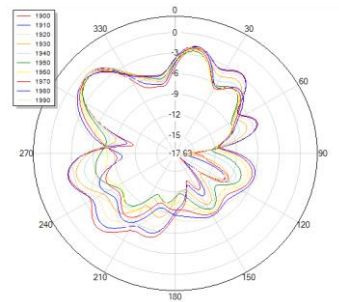


1950MHz

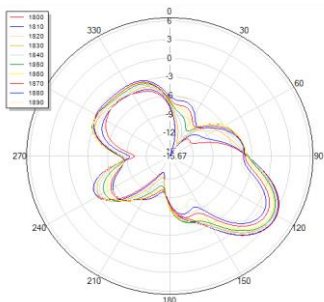
MAX: 2.3dBi
MIN: -26.55dBi



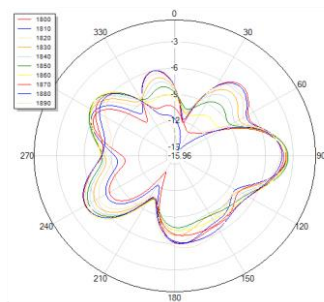
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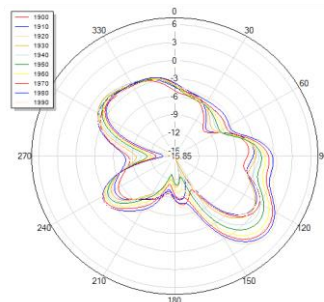
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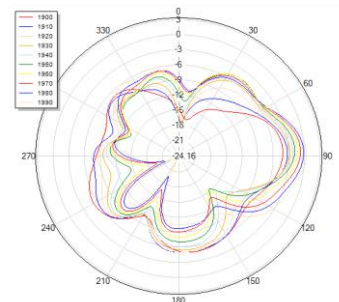
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Phi=90

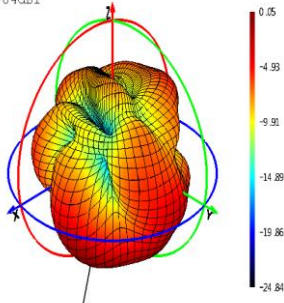


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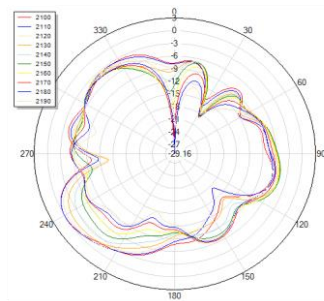


2140MHz

MAX: 0.05dBi
MIN: -24.84dBi

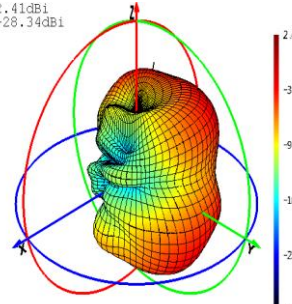


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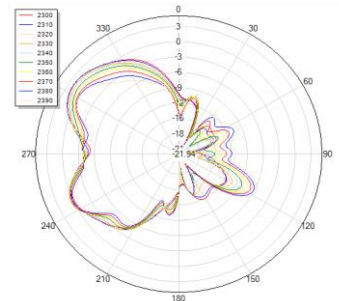


2350MHz

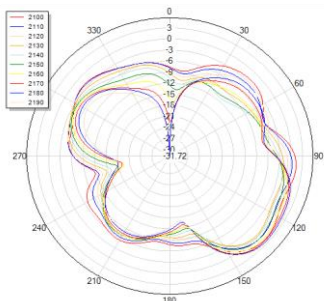
MAX: 2.41dBi
MIN: -28.34dBi



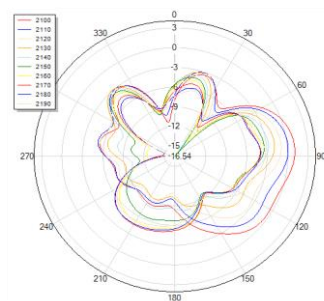
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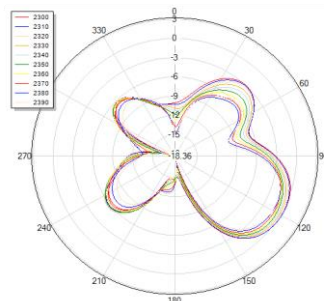
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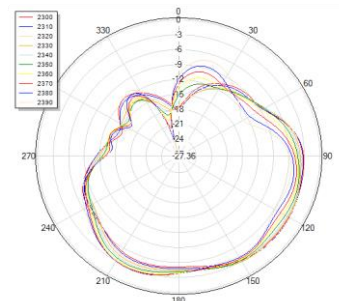
Theta=90



Phi=90

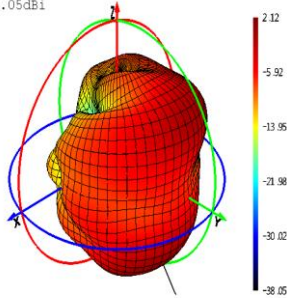


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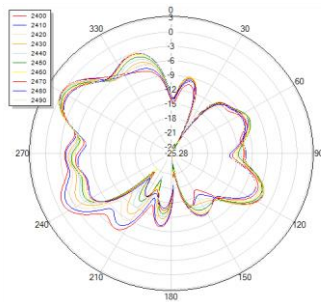


2450MHz

MAX: 2.12dBi
MIN: -38.05dBi

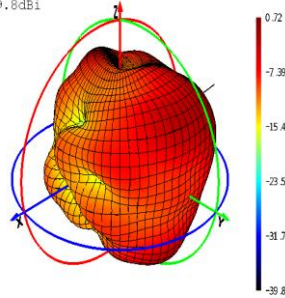


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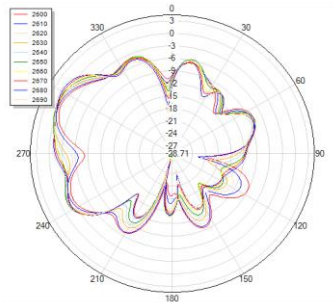


2600MHz

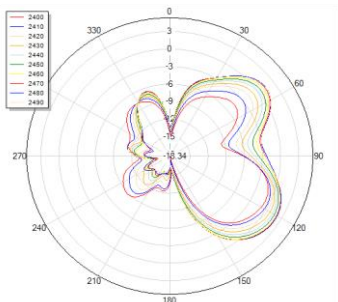
MAX: 0.72dBi
MIN: -39.8dBi



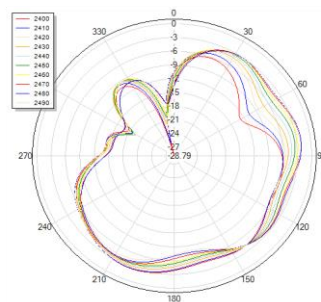
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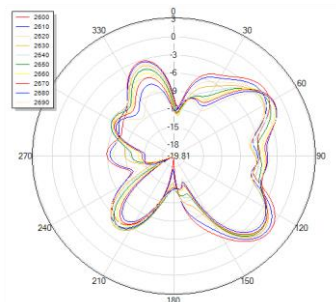
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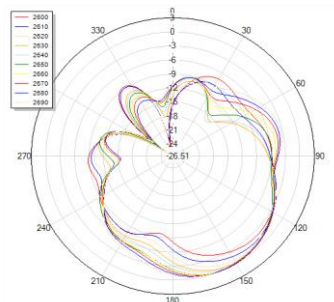
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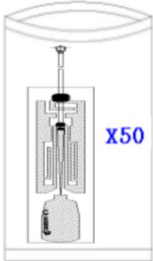
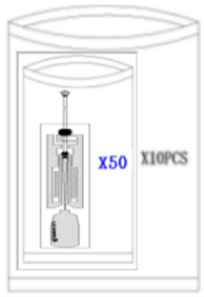
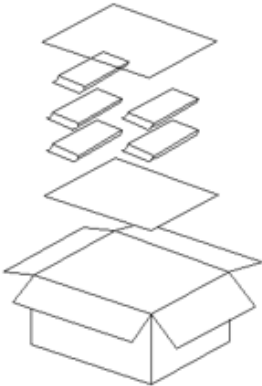
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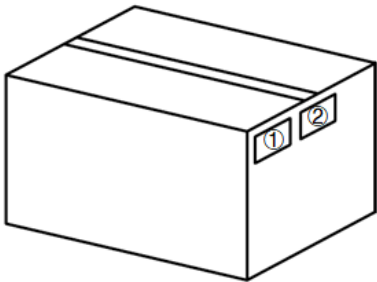
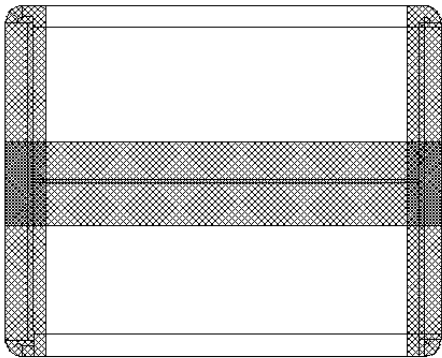


Theta=90



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 <p>50PCS/Bag</p>	50 pcs antenna products in a small PE bag (50 PCS Antennas / Small PE Bag)
2	 <p>500PCS/bag</p>	500 pcs antenna products in a big PE bag. (500 PCS Antennas / Big PE Bag)
3	 <p>5BAGS/CTN</p>	<p>(5 Big PE Bags / Carton Box) (2500 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></p>

4		<p>Position for Attaching Labels</p> <p>① Carton Label</p> <p>② Quality Label</p>
5		<p>Sealing Cartons</p> <p>H-shaped sealing cartons</p>
Note	<p>The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.</p>	

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

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Revision History

Version	Date	Author	Note
-	2025-04-14	Qinming PENG/ Bill MO/ Riva REN/ Aria CHU	Creation of the document
1.0	2025-04-14	Qinming PENG/ Bill MO/ Riva REN/ Aria CHU	First official release



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