



Antenna Datasheet

Product OC: Y0TBX00A2AA

Version: 1.0

Date: 2024-01-27

Status: Preliminary

Product Name: 4G FPC Antenna

Key Features:

Frequency Band: 698–960MHz&1710-2690MHz

Dimensions: 61.5 * 31.8 mm

Efficiency: Up to 61.64%

RoHS and REACH Compliant

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1 Specification

Test Condition: Assembled in test device

1.1. Electrical

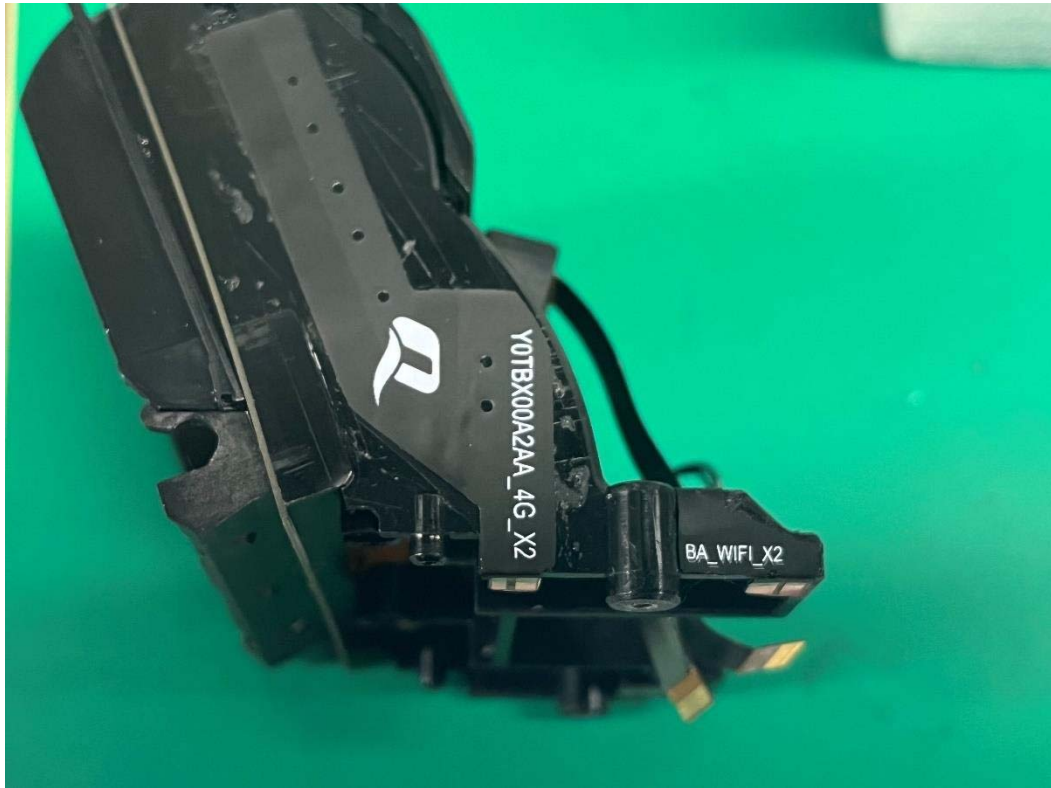
Electrical	
Frequency Range	698-960MHz, 1710-2690MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical - Detail												
SPEC	Band	B71	B12 /B13 /B28	B5 /B8 /B26	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41 B7	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		-	2.6	2.2	-	3.2	1.8	3.4	7.2	-	-	-
Max. Return Loss (dB)		-	-6.7	-8.4	-	-5.4	-10.5	-5.2	-2.4	-	-	-
AVG Eff. (%)		-	29.1	22.0	-	43.2	56.8	57.8	40.4	-	-	-
AVG AVG Gain (dB)		-	-5.3	-6.5	-	-3.6	-2.4	-2.3	-4.0	-	-	-
Max. Peak Gain (dBi)		-	-0.2	-1.0	-	3.3	1.8	1.8	1.2	-	-	-
VSWR						≤ 7.2						
Return Loss						≤ -2.4 dB						
Peak Gain						≤ 3.3 dBi						

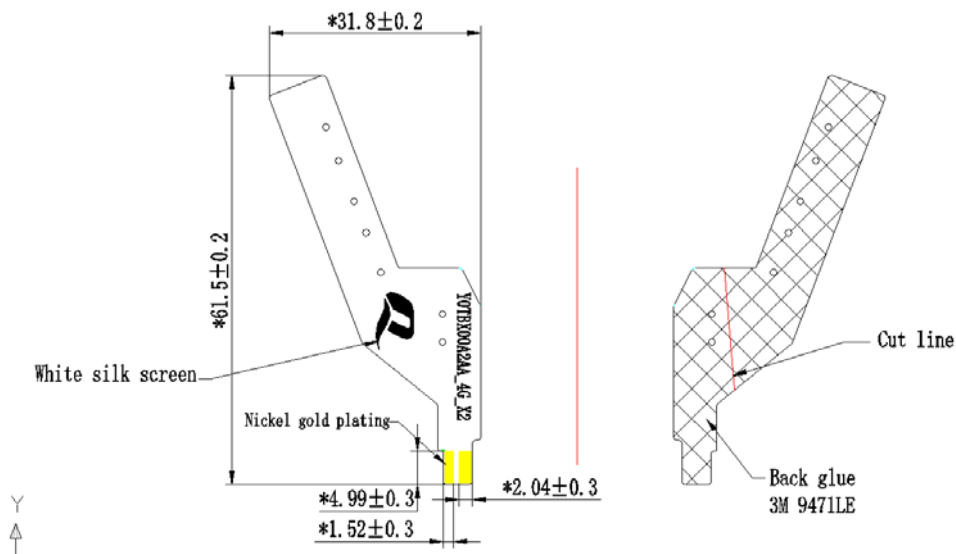
1.2. Mechanical, Environmental

Mechanical	
Antenna Dimensions	61.5 * 31.8 mm
Material & Color	FPC & Black
Mounting Type	Adhesive
Weight	Typ. 0.2g
Environmental	
Operation Temperature	-20 °C to +60 °C
Storage Temperature	-20 °C to +60 °C
RoHS & REACH Compliant	Yes

1.3. Antenna Assembly



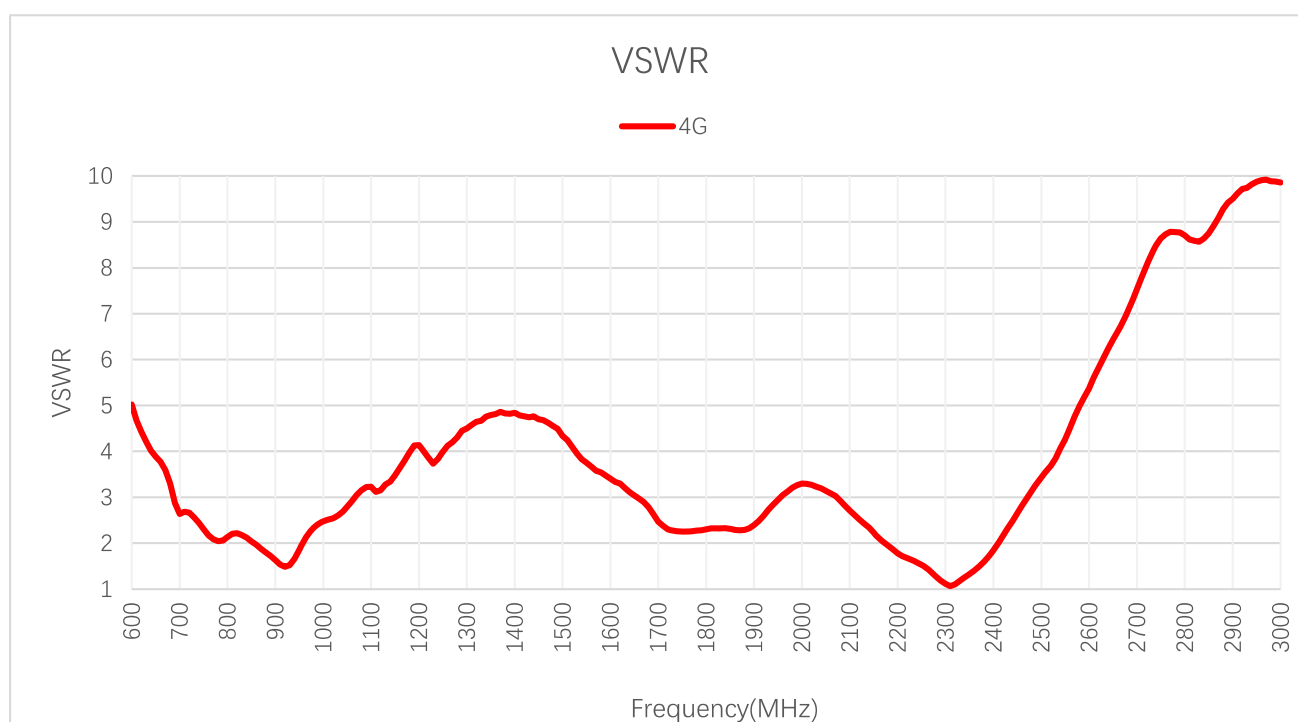
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

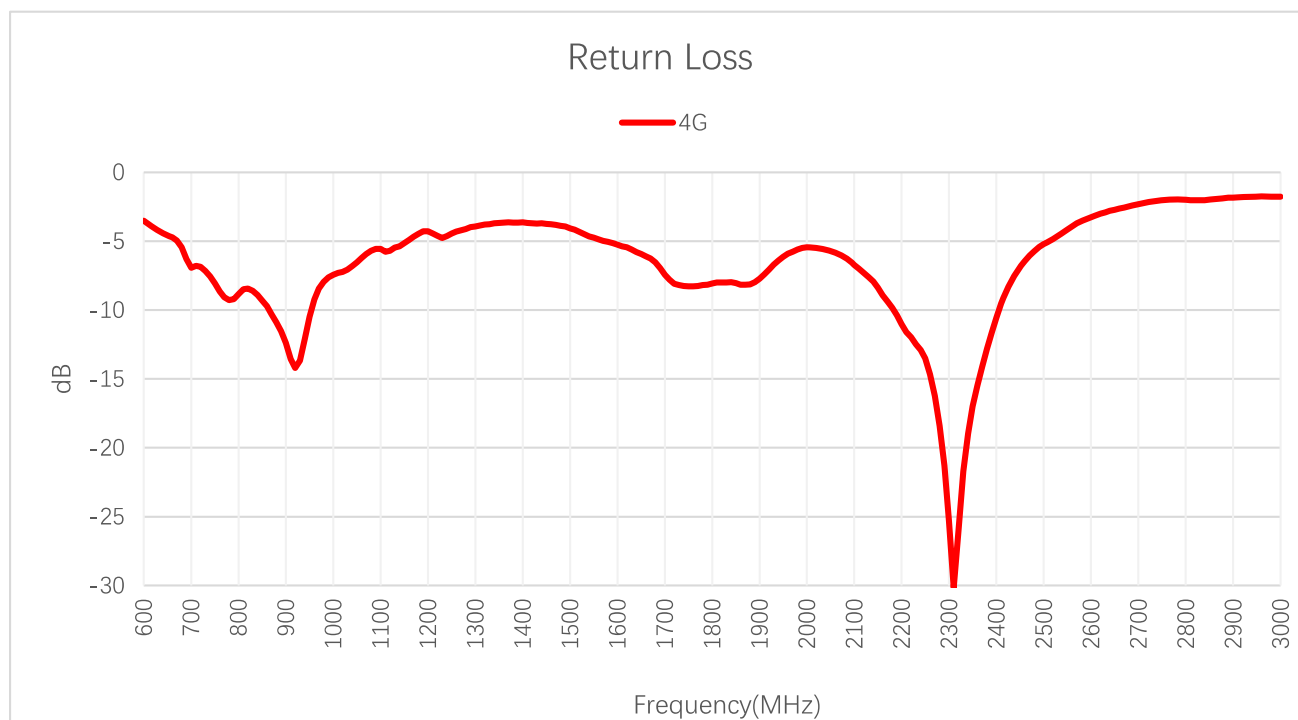
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	2.6	2.1	1.6	2.0	-	2.3	2.2	2.2
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	2.9	2.3	1.3	2.6	5.3	7.2	-	-	-	-

3.1.2. Return Loss

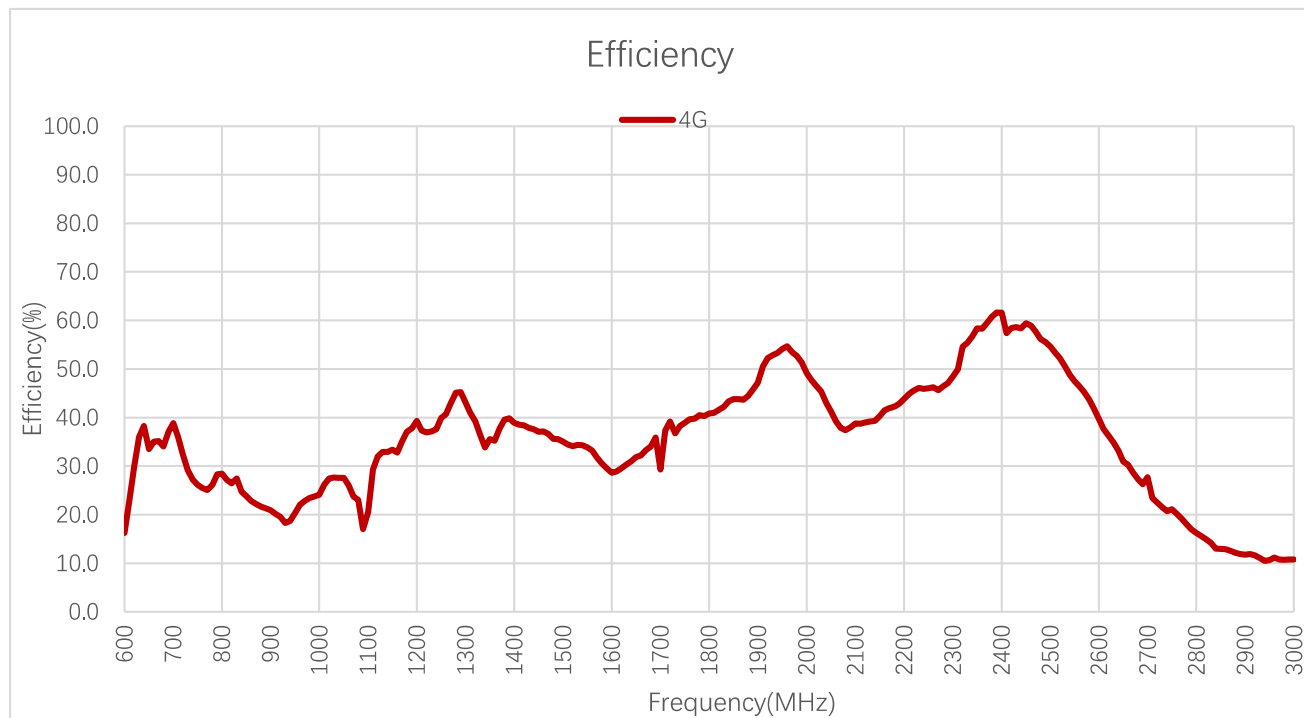


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-6.8	-8.6	-12.4	-9.2	-	-7.8	-8.3	-8.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	-6.1	-7.9	-17.0	-6.9	-3.3	-2.4	-	-	-	-

3.2. Radiation Performance Test

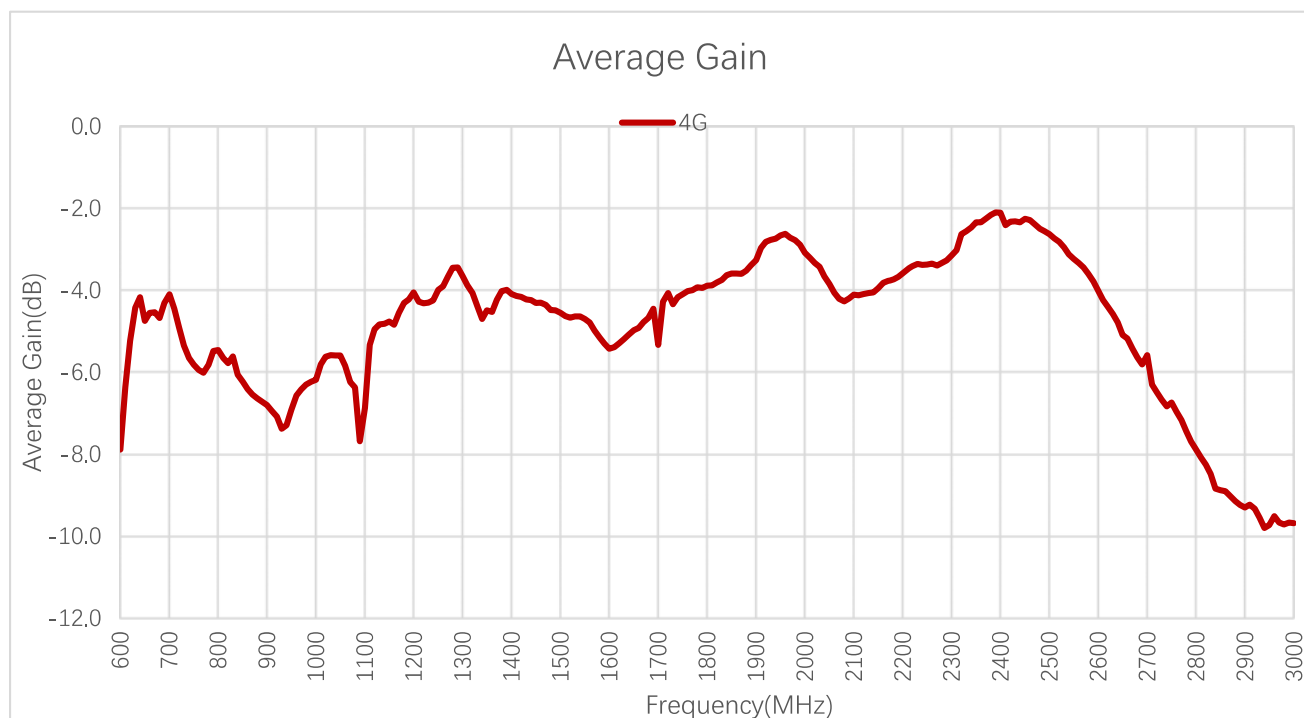
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	35.9	27.5	20.9	22.0	-	37.4	38.3	44.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	54.2	39.4	58.4	59.4	39.7	26.3	-	-	-	-

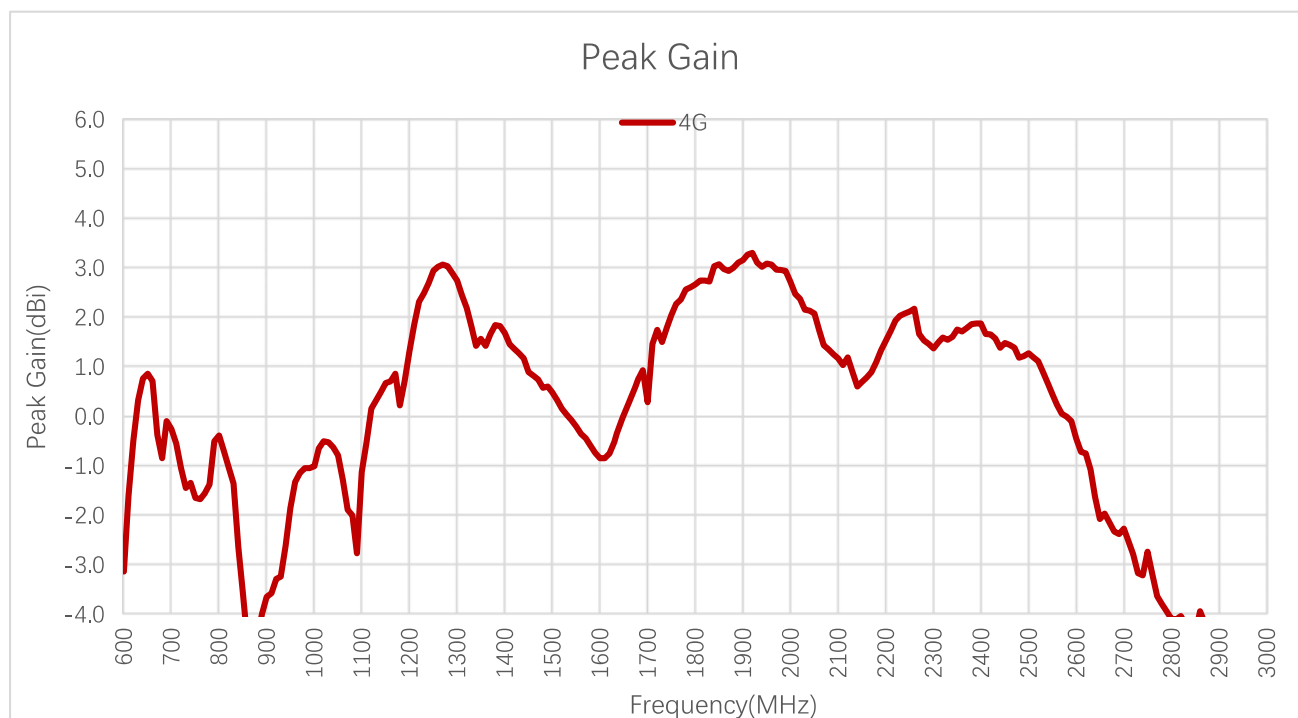
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-4.5	-5.6	-6.8	-6.6	-	-4.3	-4.2	-3.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	-2.7	-4.1	-2.3	-2.3	-4.0	-5.8	-	-	-	-

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	-1.4	-3.6	-1.0	-	1.5	1.8	3.0
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	3.3	0.6	1.8	1.8	1.2	-2.4	-	-	-	-

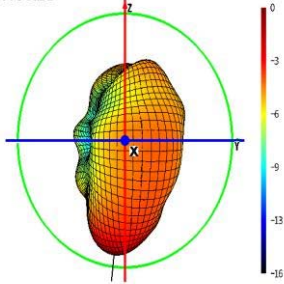
3.2.4. 3D & 2D Radiation Pattern

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

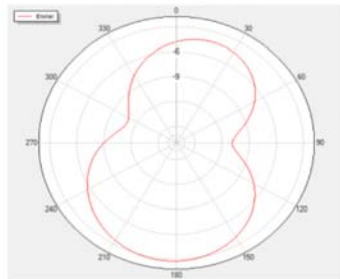


710MHz

MAX:-0.54dBi
MIN:-16.84dBi

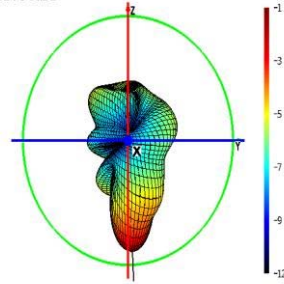


Theta=90 Freq=710MHz

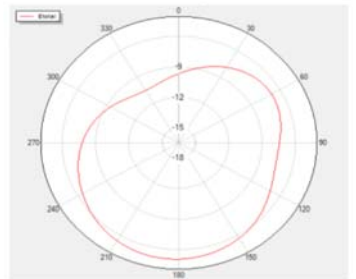


830MHz

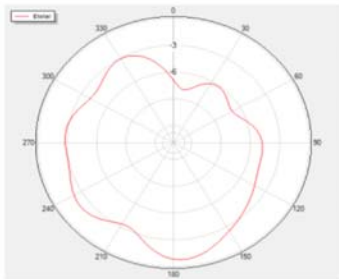
MAX:-1.35dBi
MIN:-12.54dBi



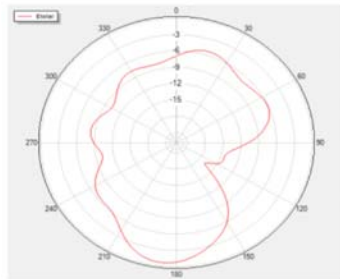
Theta=90 Freq=830MHz



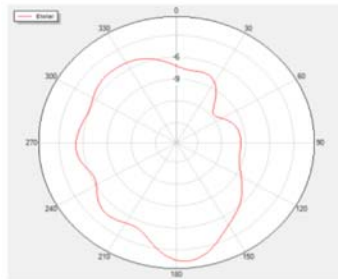
Phi=0 Freq=710MHz



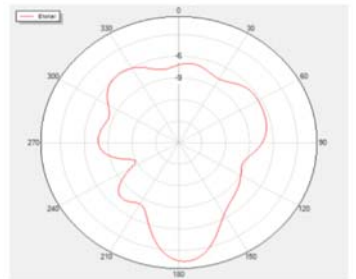
Phi=90 Freq=710MHz



Phi=0 Freq=830MHz

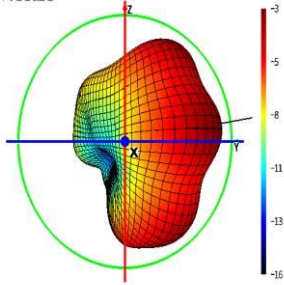


Phi=90 Freq=830MHz

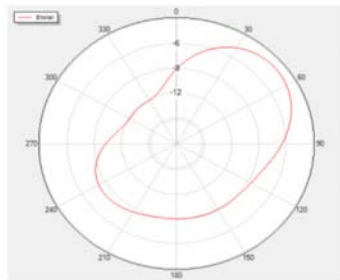


900MHz

MAX:-3.64dBi
MIN:-17.21dBi

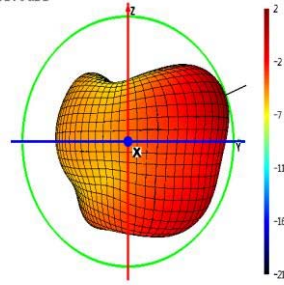


Theta=90 Freq=900MHz

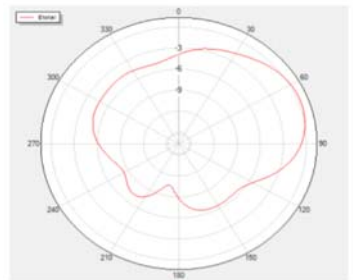


1740MHz

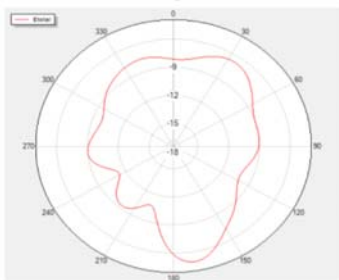
MAX:1.8dBi
MIN:-21.5dBi



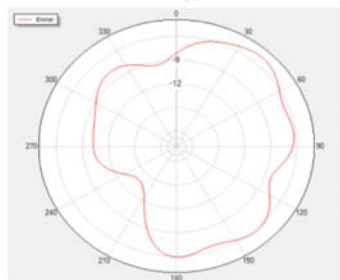
Theta=90 Freq=1740MHz



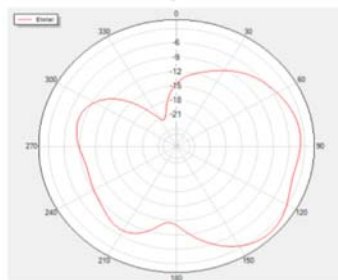
Phi=0 Freq=900MHz



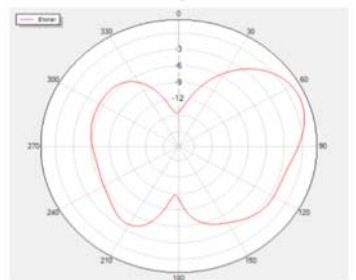
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Phi=0 Freq=1740MHz

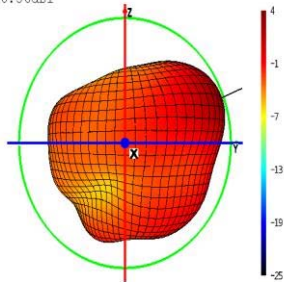


Phi=90 Freq=1740MHz

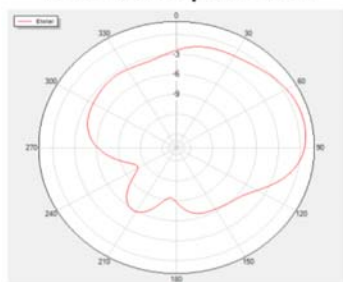


1880Hz

MAX:3.01dBi
MIN:-26.56dBi

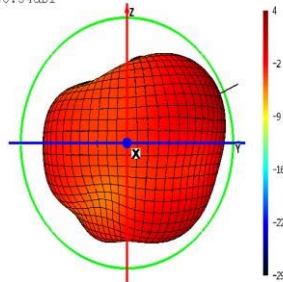


Theta=90 Freq=1880MHz

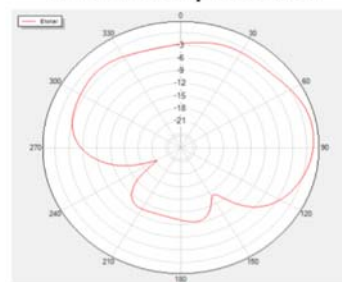


1950MHz

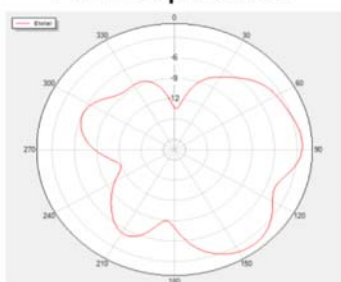
MAX:3.09dBi
MIN:-30.54dBi



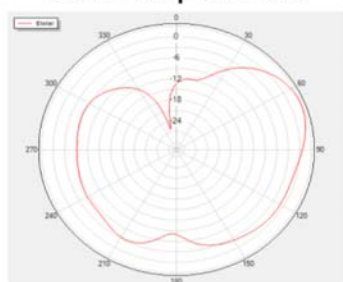
Theta=90 Freq=1950MHz



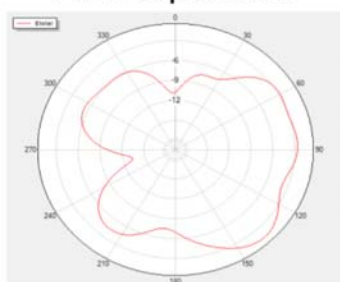
Phi=0 Freq=1880MHz



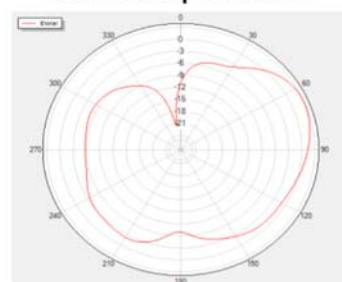
Phi=90 Freq=1880MHz



Phi=0 Freq=1950MHz

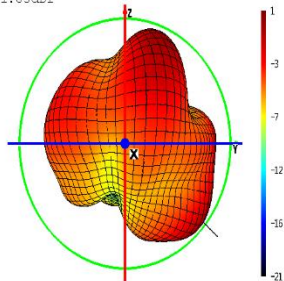


Phi=90 Freq=1950MHz

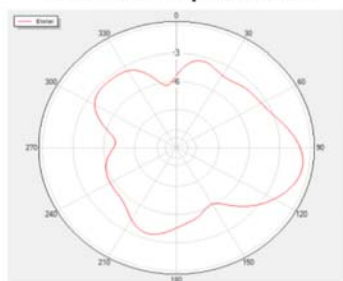


2140MHz

MAX:0.61dBi
MIN:-21.83dBi

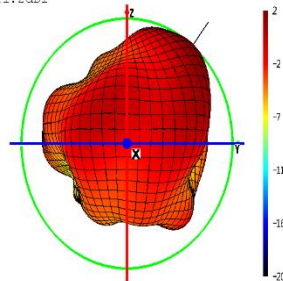


Theta=90 Freq=2140MHz

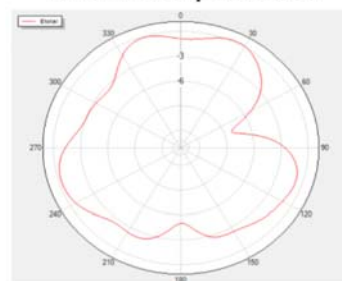


2350MHz

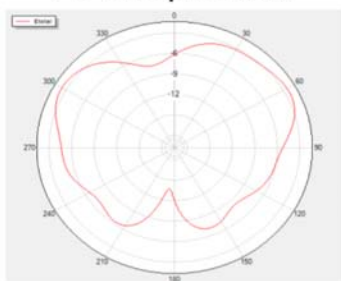
MAX:1.76dBi
MIN:-21.2dBi



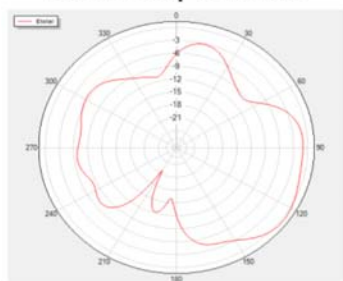
Theta=90 Freq=2350MHz



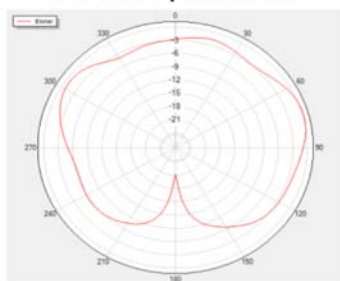
Phi=0 Freq=2140MHz



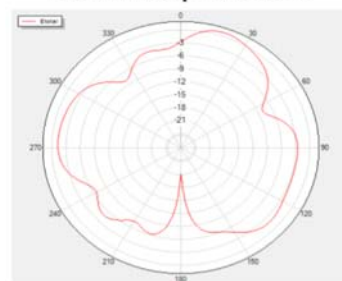
Phi=90 Freq=2140MHz



Phi=0 Freq=2350MHz

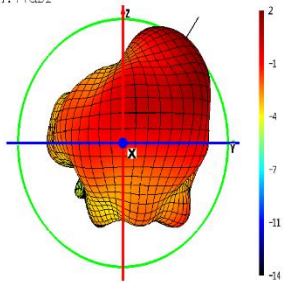


Phi=90 Freq=2350MHz

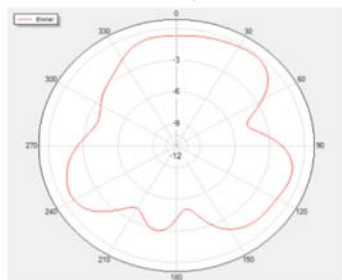


2450Hz

MAX:1.49dBi
MIN:-14.77dBi

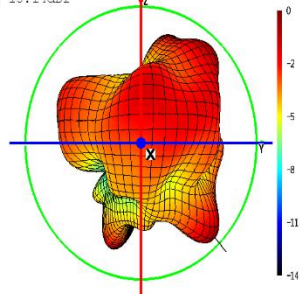


Theta=90 Freq=2450MHz

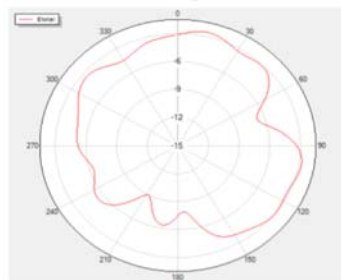


2600MHz

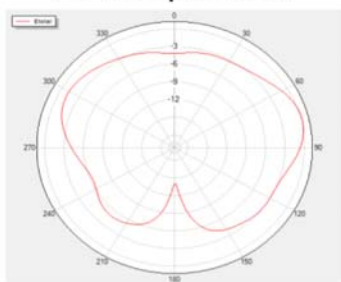
MAX:-0.44dBi
MIN:-16.14dBi



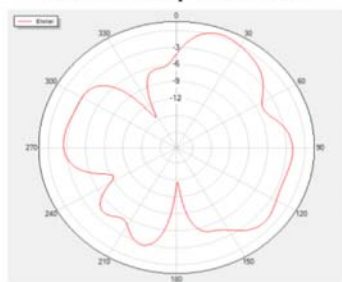
Theta=90 Freq=2600MHz



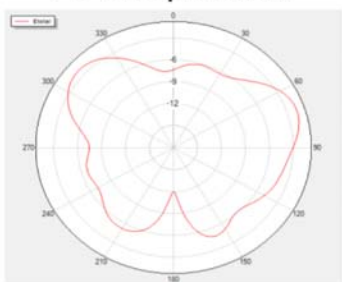
Phi=0 Freq=2450MHz



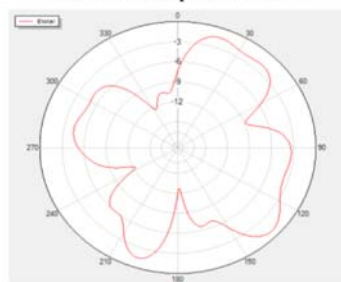
Phi=90 Freq=2450MHz



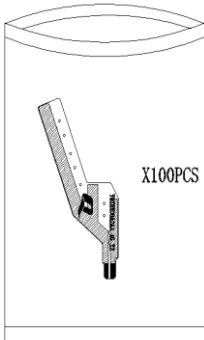
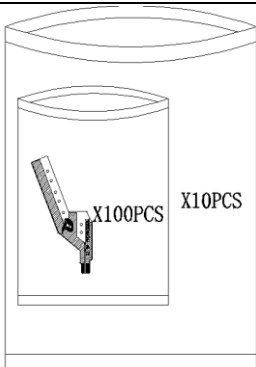
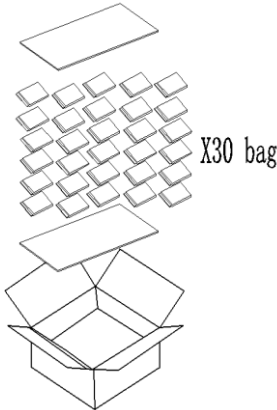
Phi=0 Freq=2600MHz

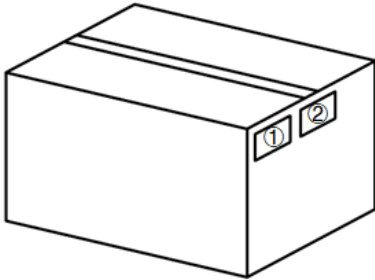
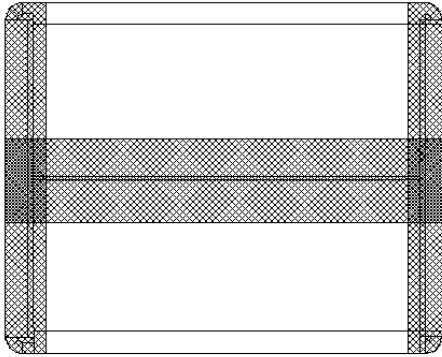


Phi=90 Freq=2600MHz



4 Packaging

Step	Packaging picture / 2D picture	Description
1		100 pcs Antenna products in a small PE bags; 100 pcs Antenna / Per small PE Bag
2		1000 pcs Antenna products in a big PE bags; 1000 pcs Antenna / Per big PE Bag
3		30 PE Bag / Per Carton Box (30000 pcs Antenna / Per Carton Box) Estimated quantity Products that are not full will be packaged in suitable cardboard boxes <u>Carton Size:L*W*H=370*370*295mm</u>

4		<p>Position for Attaching Labels---</p> <p>① Carton Label</p> <p>② Quality Label</p>
5		<p>Sealing Cartons---</p> <p>“Ⅰ” type sealing cartons</p>
6	<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
-	2024-01-27	Charming YANG Bill MO David LIU Aria CHU	Creation of the document
1.0	2024-01-27	Charming YANG Bill MO David LIU Aria CHU	First official release



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