

# Antenna

# YGL001AA Datasheet

## Antenna Services

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# About the Document

## Revision History

Version	Date	Author	Note
-	2020-06-17	Kenny YIN	Creation of the document
1.0	2020-08-05	Kenny YIN	First official release
1.1	2020-12-17	Kenny YIN	Updated the picture of the antenna in Chapter 2.
1.2	2021-01-27	Kenny YIN	Added IP rating description in Chapter 3.
2.0	2021-03-19	Kenny YIN	Updated the test data in the datasheets.
2.1	2021-07-25	Kenny YIN	Updated working temperature (Chapter 3).
2.2	2021-11-27	Kenny YIN	Updated the product description in Chapter 1.
3.0	2022-04-25	Kenny YIN	Updated the RF data (Chapter 4).
3.1	2022-07-04	Kenny YIN	Added the packaging information (Chapter 6).
3.2	2022-10-17	Aria CHU	Deleted the IP rating.

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## 1 Product Description

This Quectel external 5G antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal omni-directional antenna solution to ensure high-speed data transmission, which can be widely used in a diversity of wireless communication devices such as AP, routers, outdoor equipment, real-time monitoring equipment, and many more. The antenna is designed to work with any ground plane size or in free space for ease of integration. Quectel also offers flexible installation with custom cable length and connector options.

## 2 Product Features

- Cellular 5G
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	600–960 MHz, 1710–2690 MHz, 3300-5000 MHz
Input Impedence	50 Ω
VSWR	≤ 5.0
Gain	≤ 3 dBi
Polarization Type	Linear

#### Detailed Passive Electrical Specifications

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	3.2	-	-	2.3	2.1	3.1	3.1	-
Average Efficiency (%)	36.8	-	-	51	67.2	44.4	50.2	-
Max. Peak Gain (dBi)	0.63	-	-	1.65	2.73	3.08	3.26	-

#### Mechanical Specifications

Antenna Size	196.2 mm × 16 mm × 13 mm
Casing	ABS
Cable Type& Length	-
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Weight	Typ. 19.3 g
Radome Color	White

## 4 Overall Performance

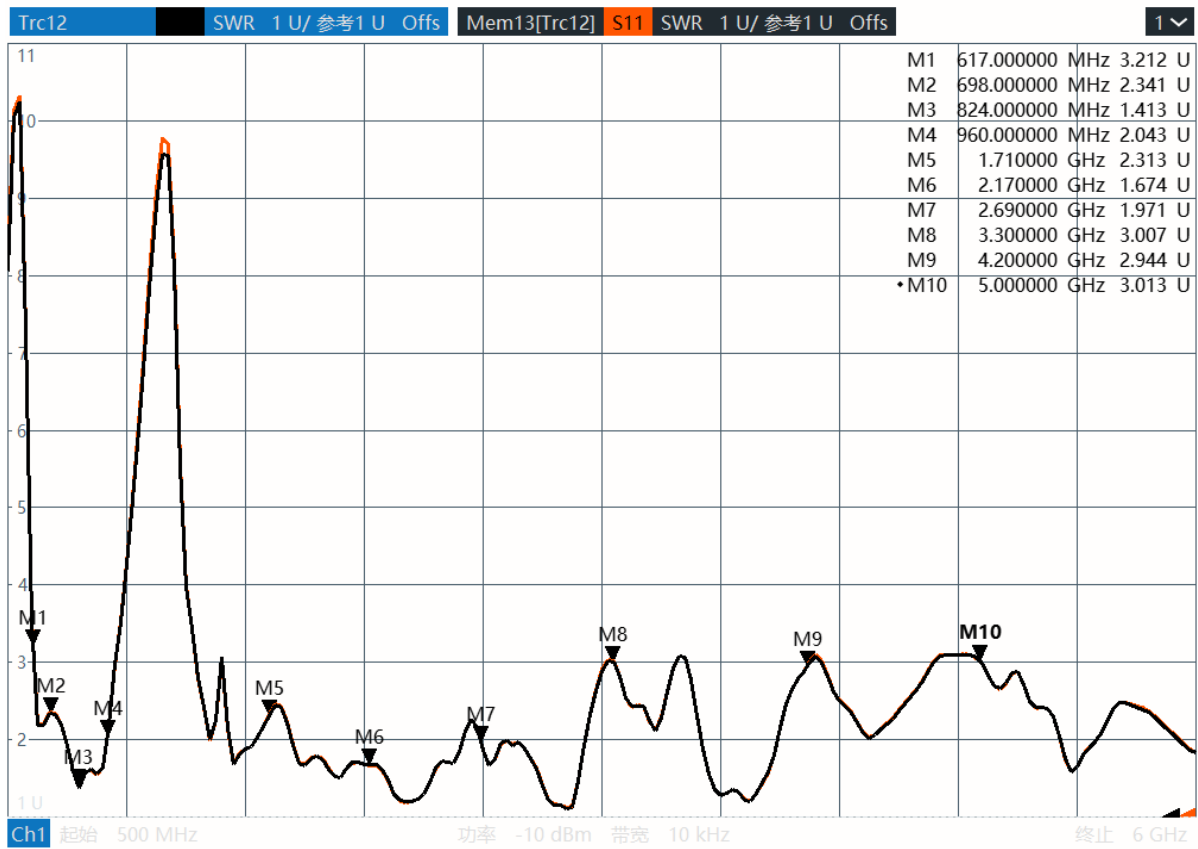
### 4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A, 100 kHz – 8.5 GHz.
- RayZone®2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz.





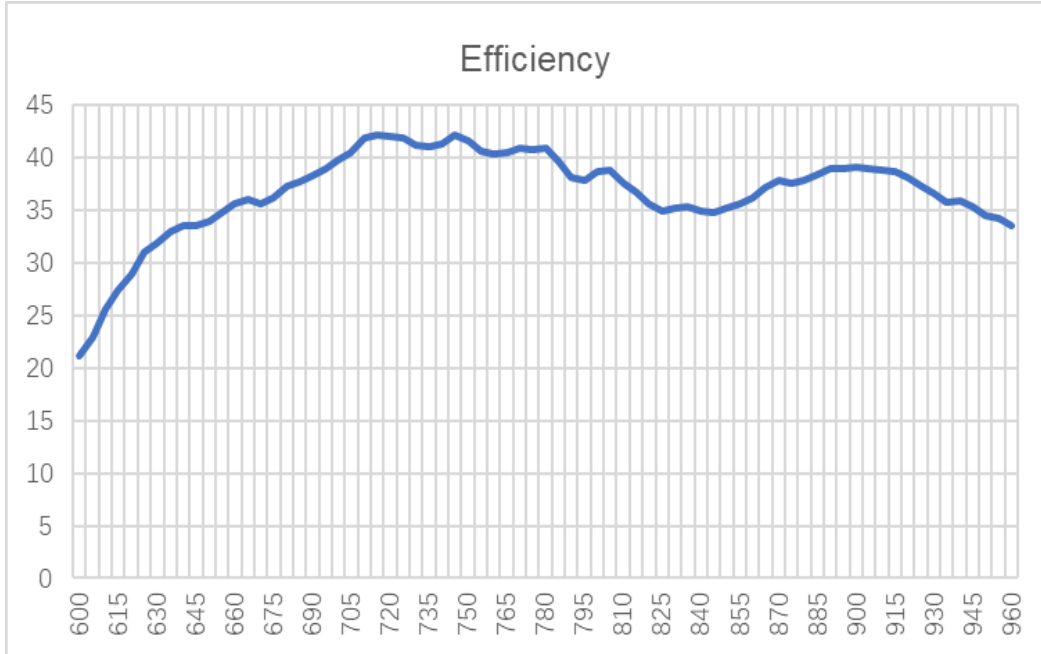
## 4.2. VSWR



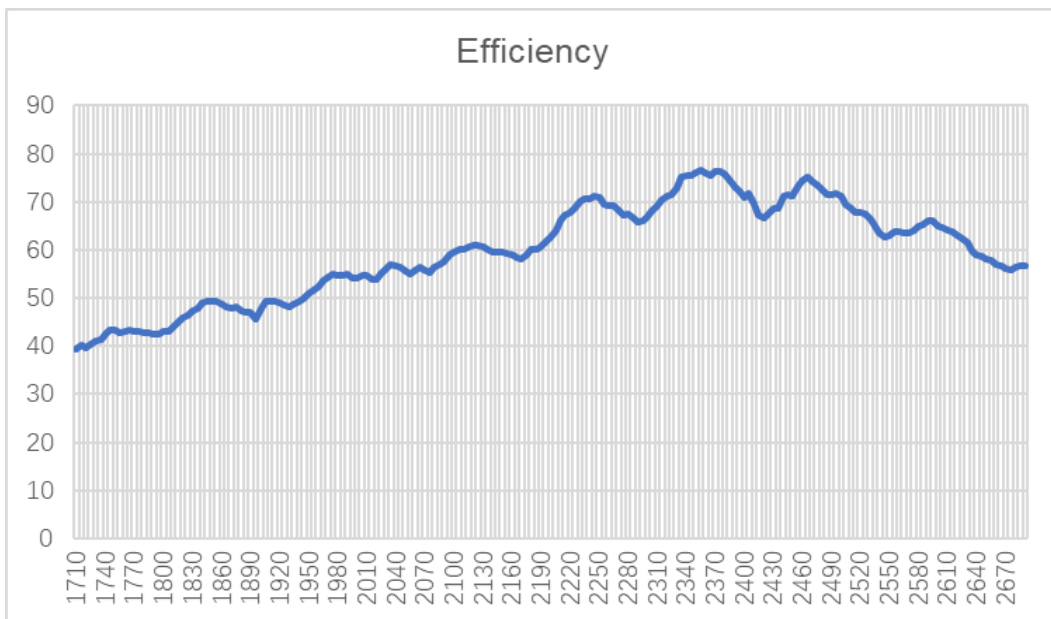
Frequency (MHz)	617	698	824	960	1710	2170	2690	3300	4200	5000
VSWR	3.2	2.3	1.4	2.0	2.3	1.7	2.0	3.0	2.9	3.0

### 4.3. Efficiency

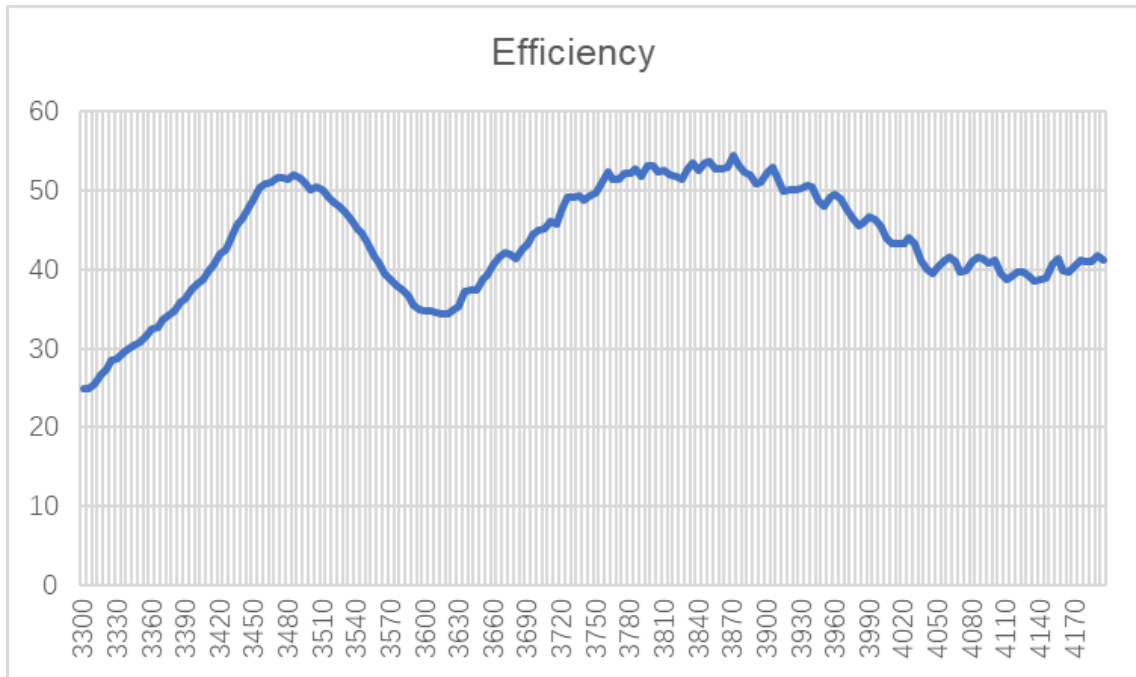
#### 4.3.1. 600–960 MHz



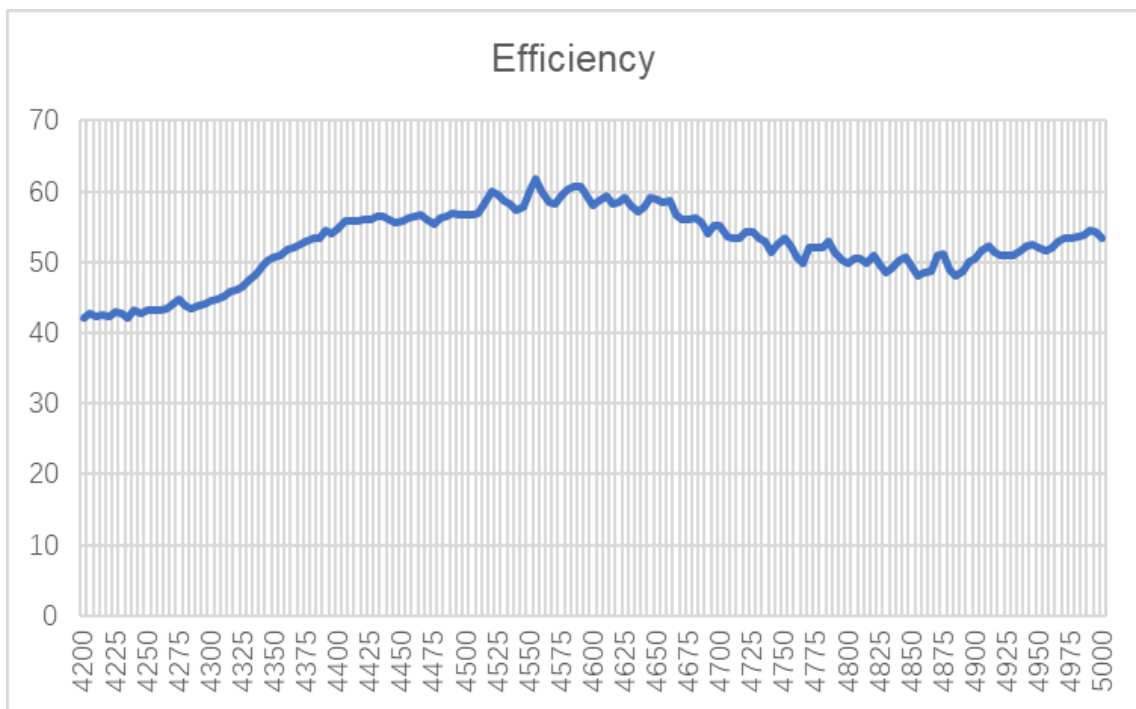
#### 4.3.2. 1710–2690 MHz



**4.3.3. 3300–4200 MHz**



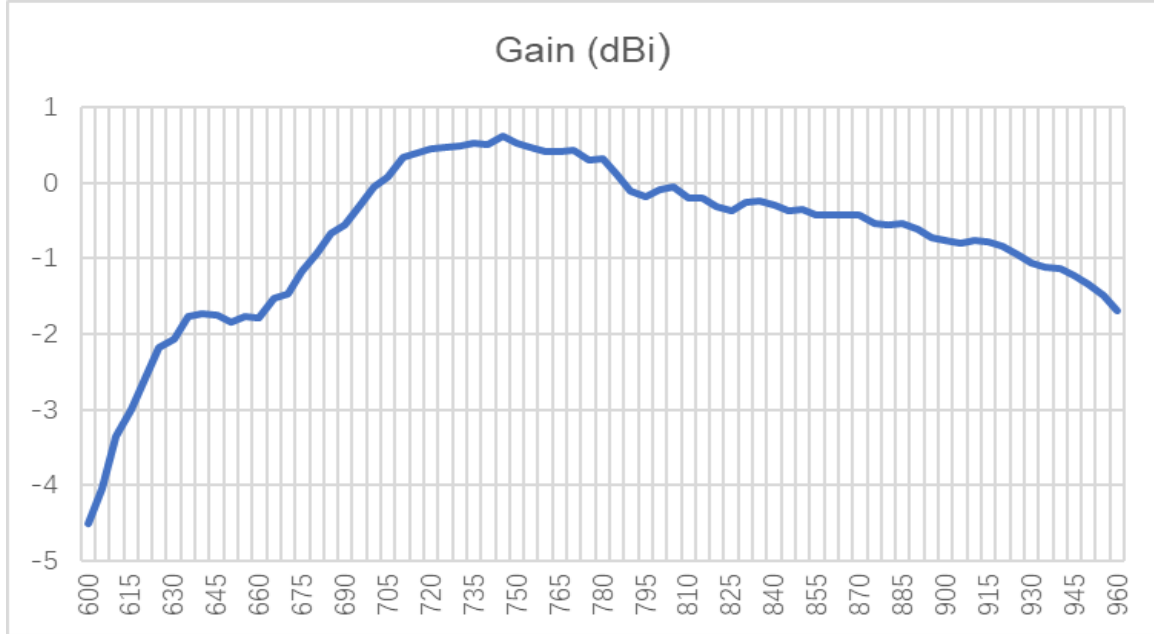
**4.3.4. 4200-5000 MHz**



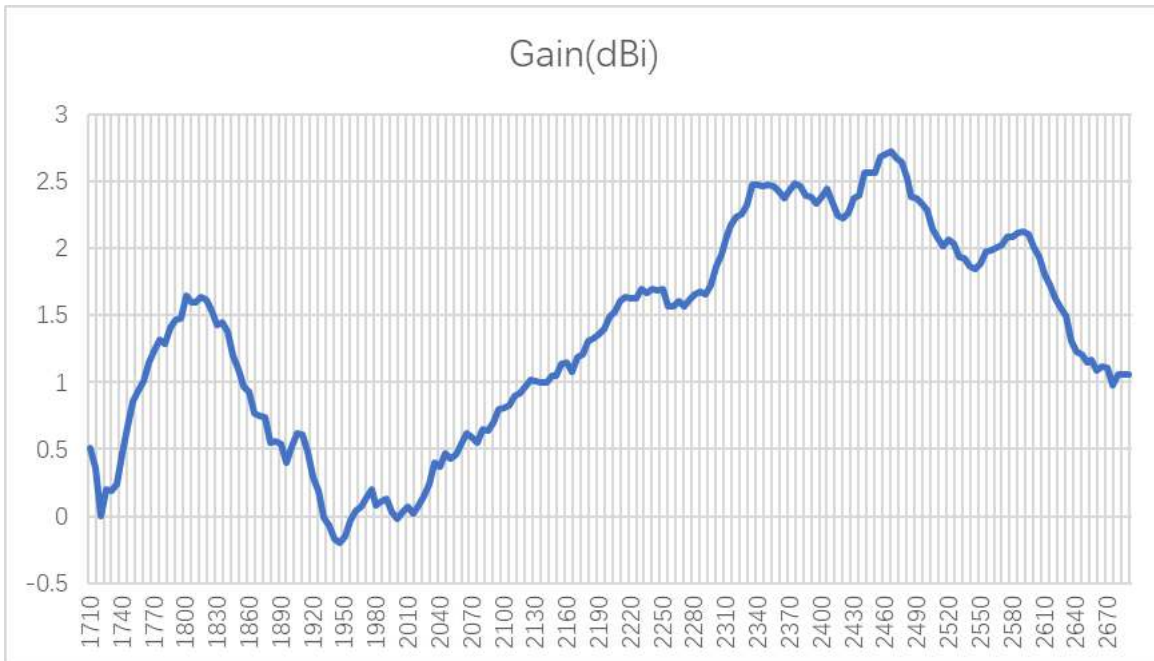
<b>Frequency (MHz)</b>	617	698	824	960	1710	2170	2690	3300	4200	5000
<b>Efficiency (%)</b>	28.1	39.3	34.3	33.6	39.5	58.2	56.7	24.8	42.2	53.4

### 4.4. Gain

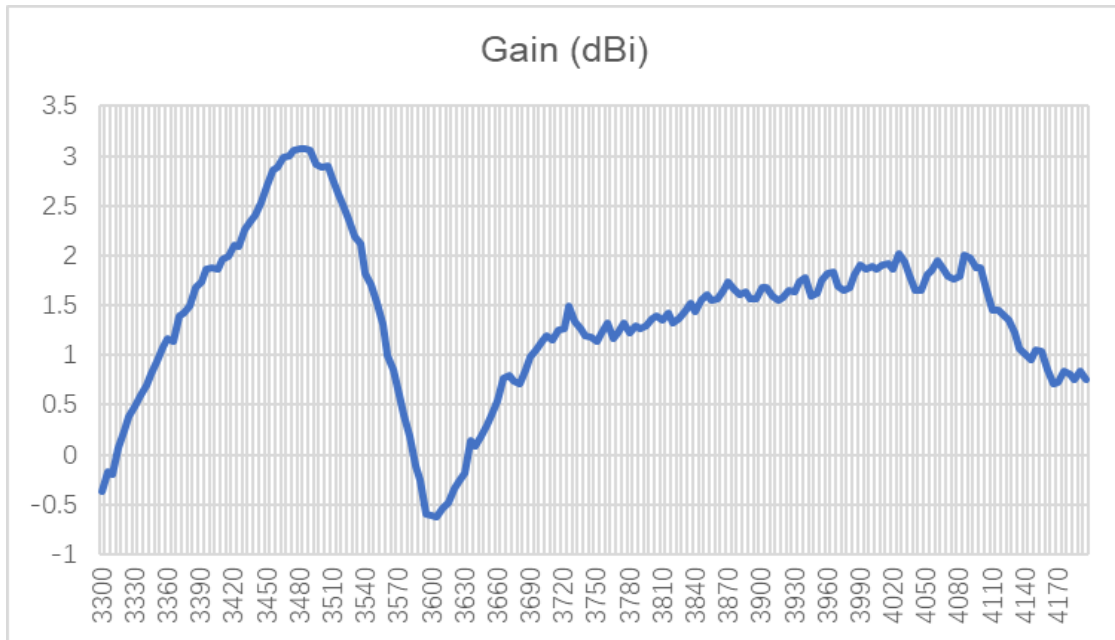
#### 4.4.1. 600–960 MHz



#### 4.4.2. 1710–2690 MHz



**4.4.3. 3300–4200 MHz**



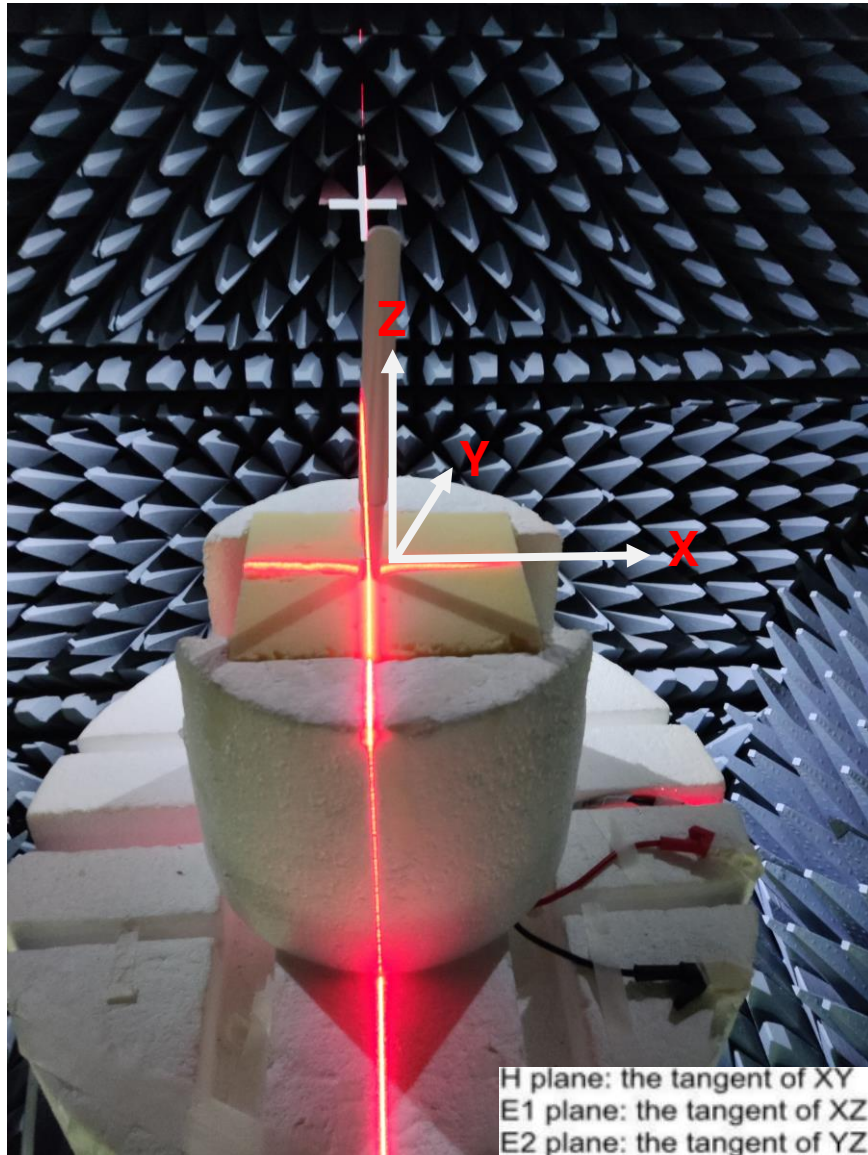
**4.4.4. 4300-5000 MHz**



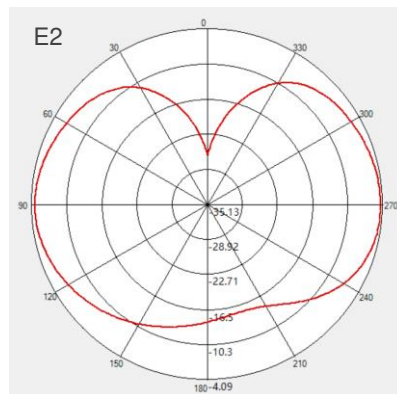
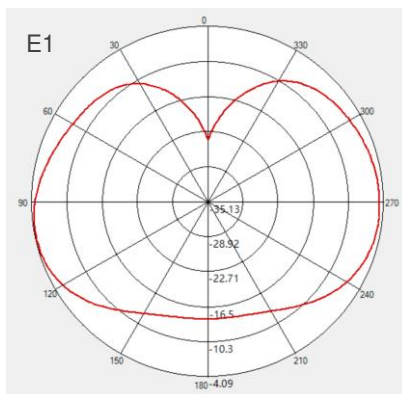
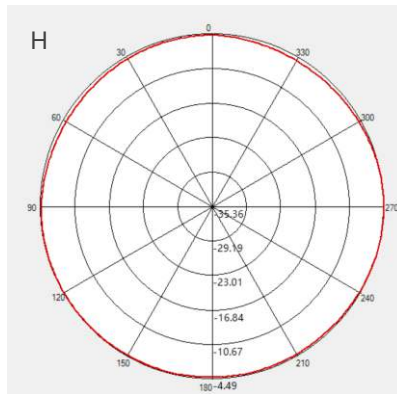
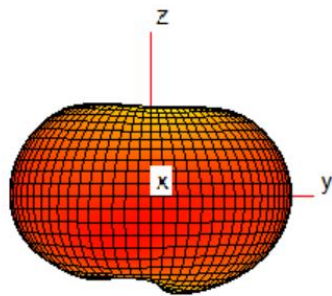
<b>Frequency (MHz)</b>	617	698	824	960	1710	2170	2690	3300	4200	5000
<b>Gain (dBi)</b>	-2.7	-0.1	-0.35	-1.68	0.51	1.91	1.06	-0.37	0.71	3.24

## 4.5. Radiation Pattern

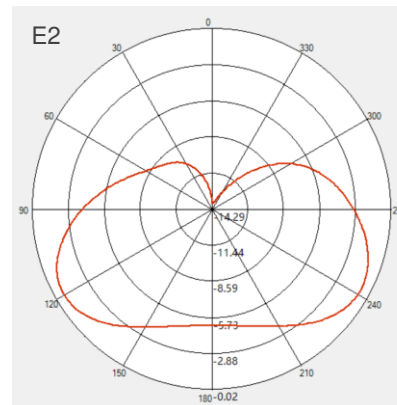
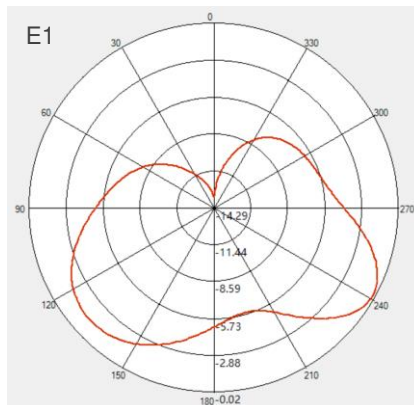
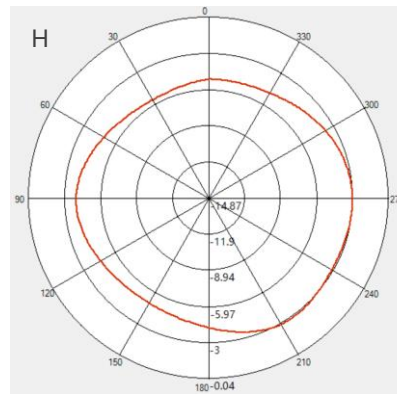
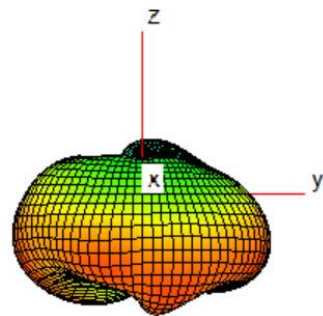
- Test condition: free space.



**4.5.1. 600 MHz**

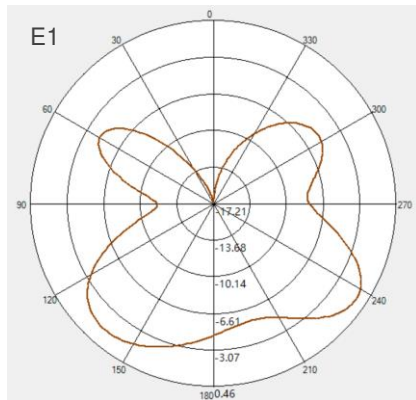
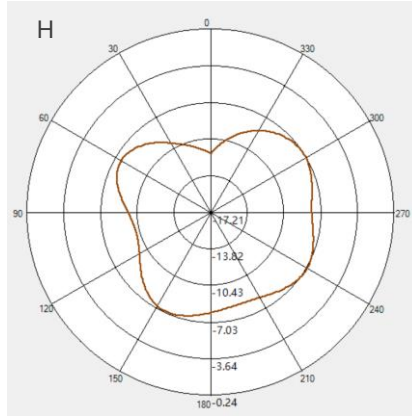
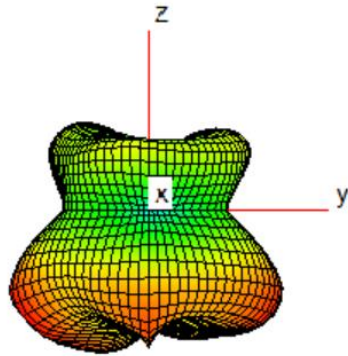


**4.5.2. 700 MHz**

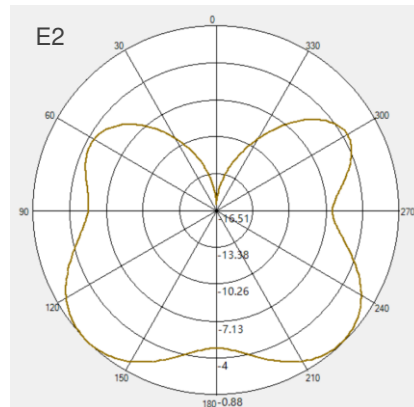
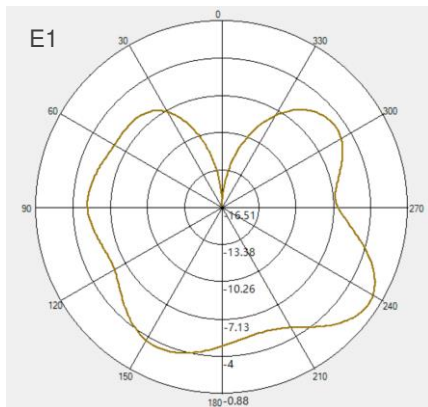
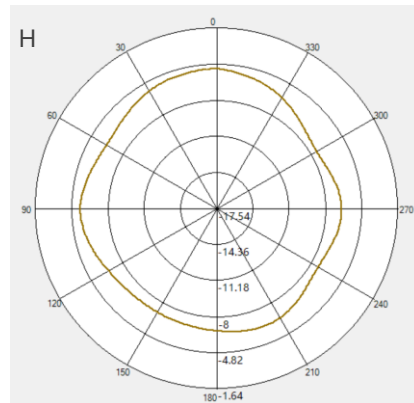
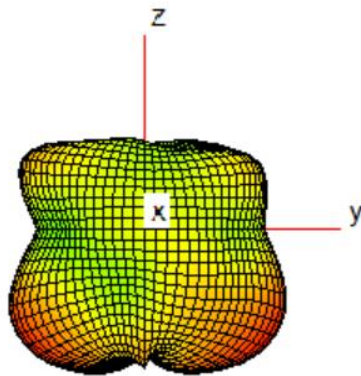




**4.5.3. 820 MHz**

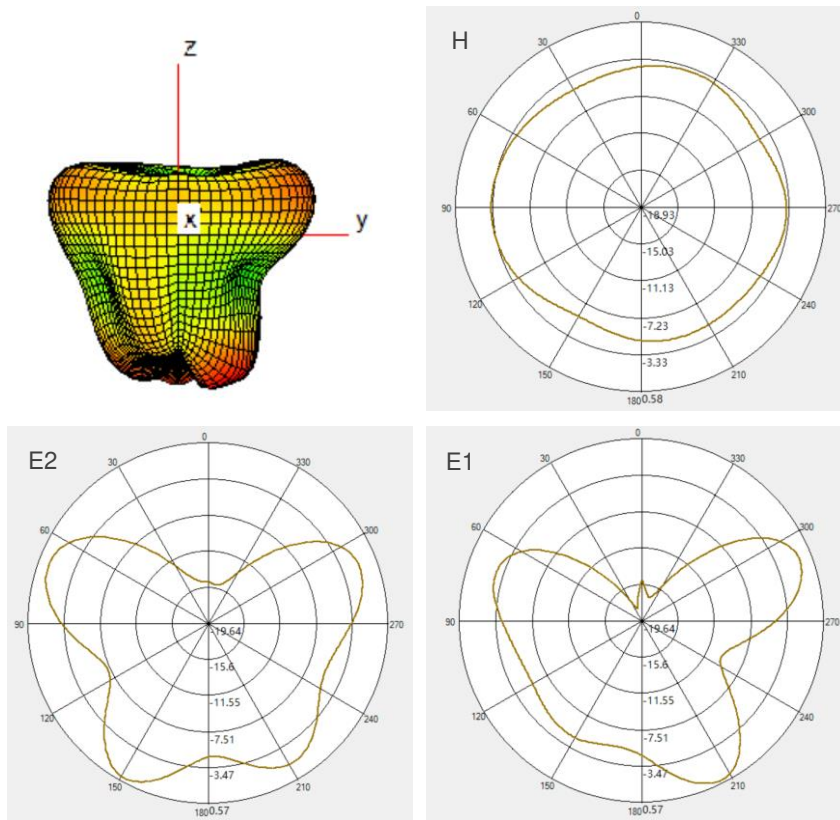


**4.5.4. 960 MHz**

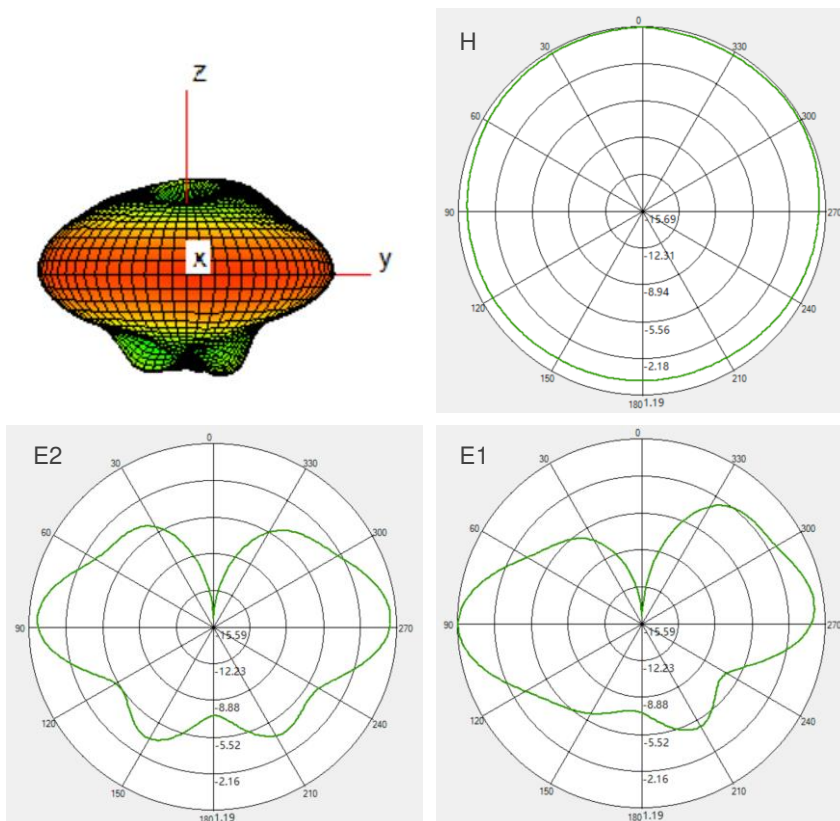




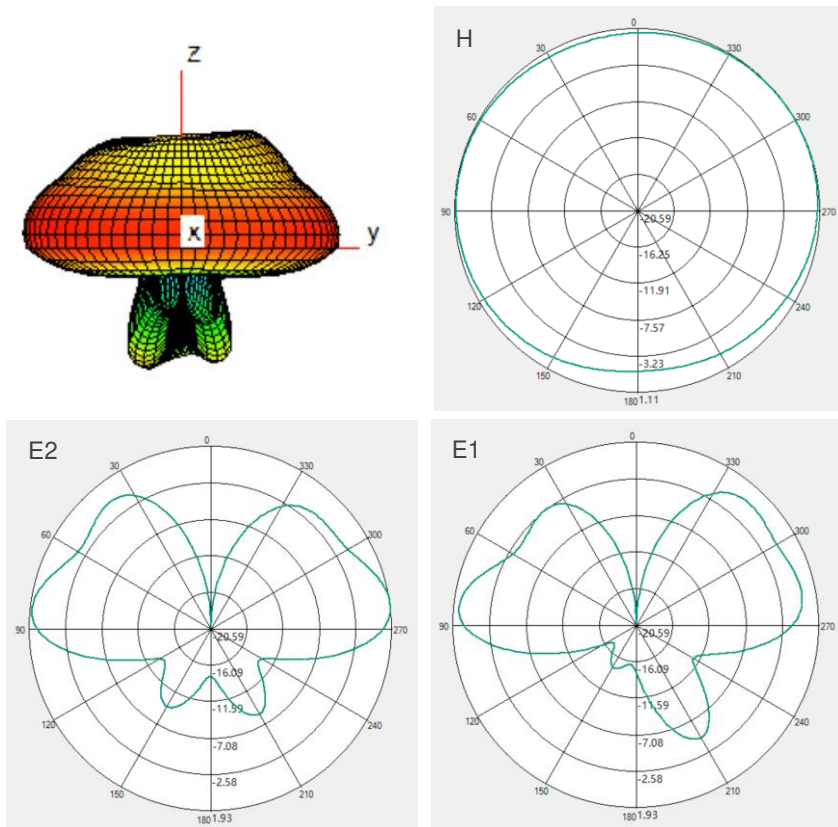
**4.5.5. 1710 MHz**



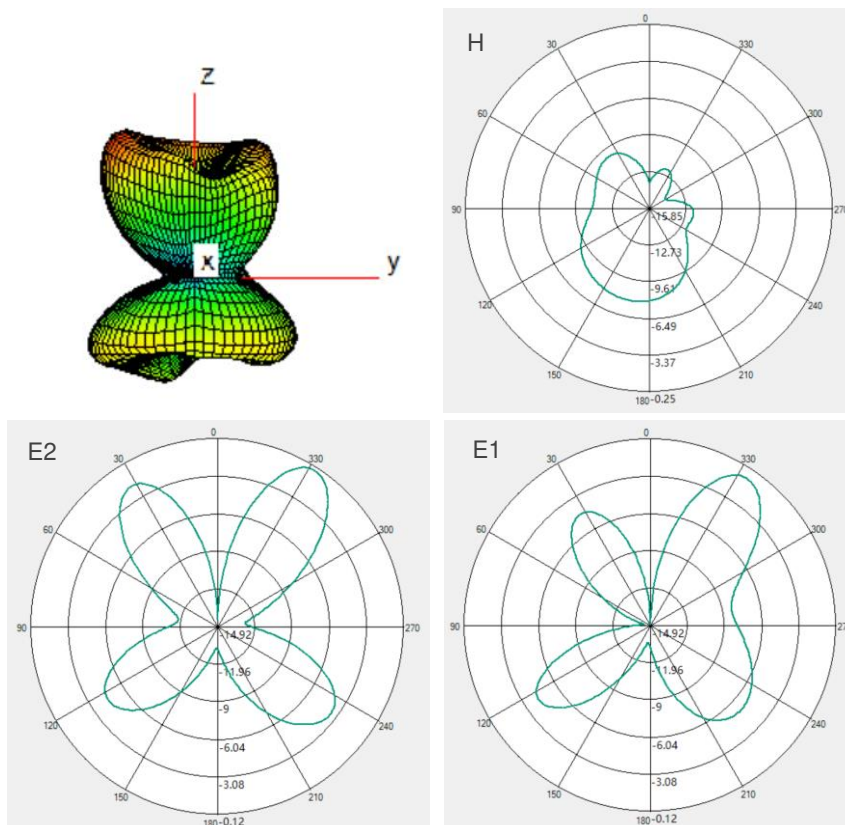
**4.5.6. 2170 MHz**



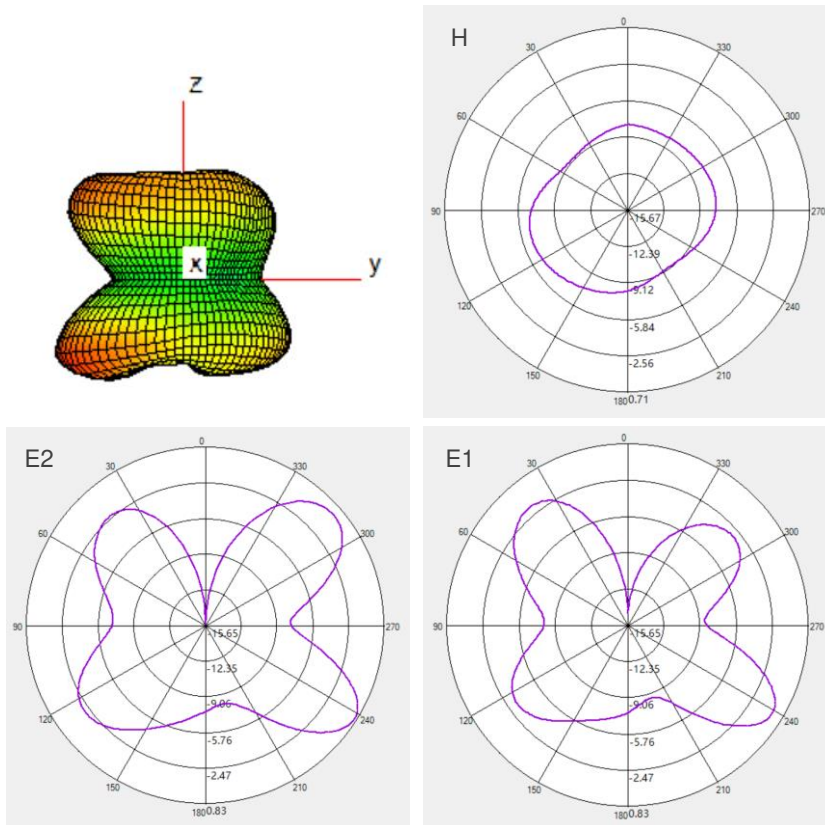
**4.5.7. 2690 MHz**



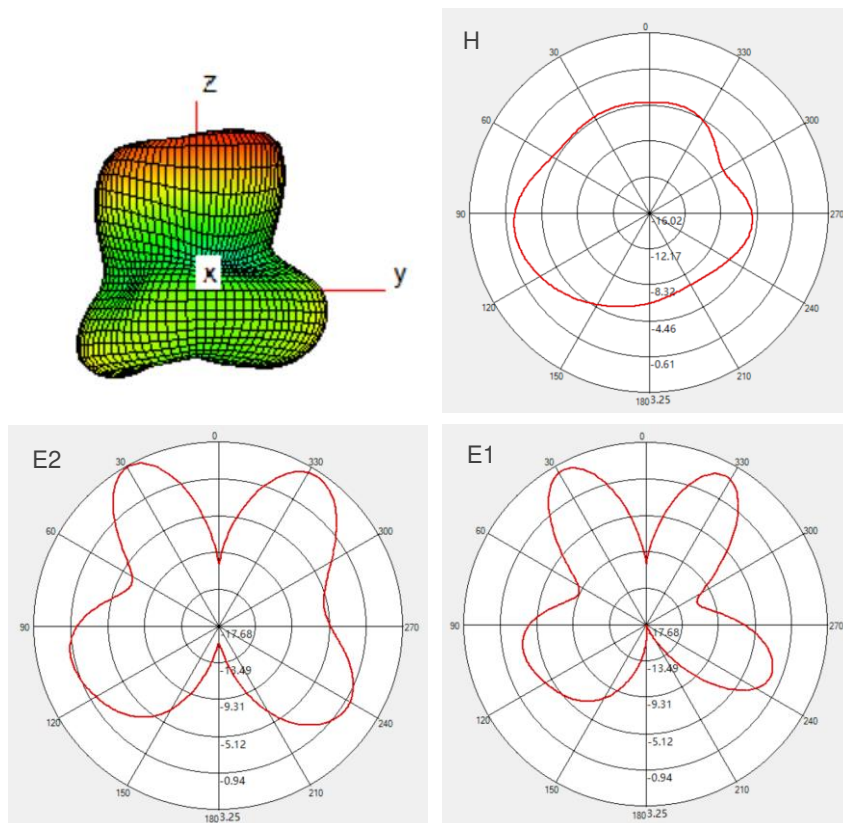
**4.5.8. 3300 MHz**



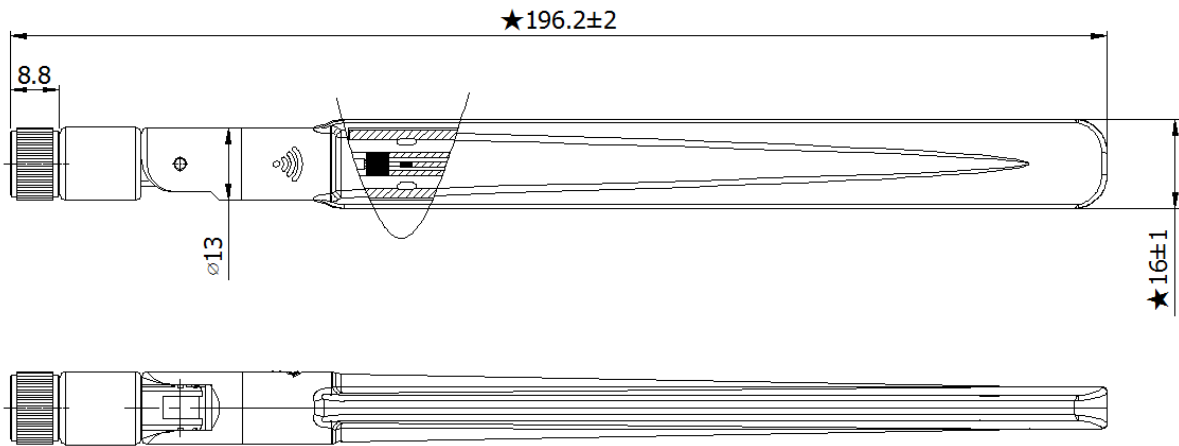
**4.5.9. 4200 MHz**



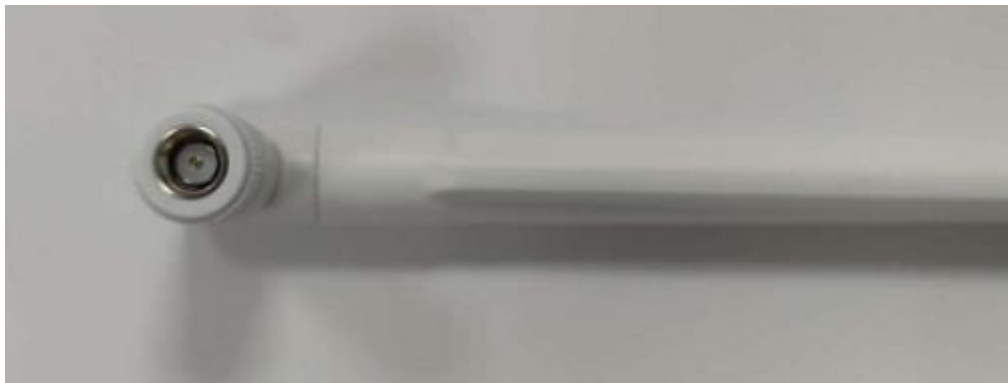
**4.5.10. 5000 MHz**






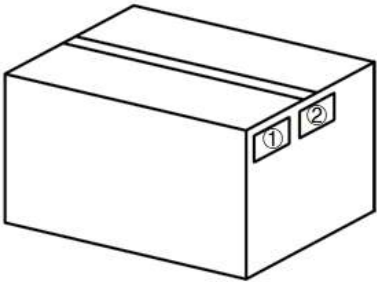
## 5 Product Size

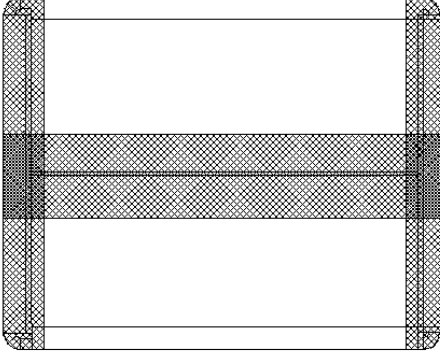


ROHS



## 6 Packaging

Step	Packaging Picture/ 2D Picture	Description
1		<ul style="list-style-type: none"> <li>● Put the product into the PE bag.</li> <li>● Uniform the placement direction.</li> <li>● 50 PCS/PE Bag.</li> </ul>
2		<ul style="list-style-type: none"> <li>● 3 PE Bags/ Layer.</li> <li>● 5 Layers/ Carton.</li> </ul>
3		<ul style="list-style-type: none"> <li>● Each layer is neatly arranged.</li> <li>● Antenna Quantity: 750 PCS.</li> <li>● Carton Size: 450 × 240 × 290 mm.</li> </ul>
4		<p><b>Position for Attaching Labels</b></p> <ul style="list-style-type: none"> <li>① Carton Label</li> <li>② Quality Label</li> </ul>

5	 A technical drawing of a rectangular sealing carton. The carton is shown in a perspective view, with a cross-shaped seal pattern. The seal pattern consists of a horizontal band and a vertical band, both filled with a dense cross-hatch texture. The corners of the carton are rounded.	<p><b>Sealing Cartons</b> "工" type sealing cartons.</p>
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