

# Antenna

# YEWN004AA Datasheet

**Antenna Services**

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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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# About the Document

## Revision History

Version	Date	Author	Note
-	2021-08-19	Mordecai LIU/ Jason LONG	Creation of the document
1.0	2021-08-19	Mordecai LIU/ Jason LONG	First official release
1.1	2021-12-03	Mordecai LIU/ Jason LONG	Updated the product description in Chapter 1.

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## 1 Product Description

To meet customers' requirements for the high performance, high integration, and integrated appearance of their products, Quectel provides a combined antenna box series. The antenna box can integrate a variety of antennas, such as 5G, 4G, GNSS, Wi-Fi antennas, to achieve communication functions of 5G MIMO, 4G, GNSS, and Wi-Fi. These antenna boxes can be mounted on the surface of devices via screw, adhesive or other methods, supports multiple connector types and cable lengths. It is a more flexible and reliable high-performance antenna solution for outdoor applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

## 2 Product Features

- Wi-Fi 2.4/5.8 GHz
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	2400–2500 MHz, 5000–6000 MHz
Input Impedence	50 $\Omega$
VSWR	$\leq 3.0$
Gain	$\leq 5.2$ dBi
Polarization Type	Linear

#### Mechanical Specifications

Antenna Size	$\Phi$ 46 mm x 15 mm
Casing	ABS + PC
Connector Type	SMA (Male pin with internal thread)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Adhesive
IP Rating	IP66

## 4 Overall Performance

### 4.1. Test Environment

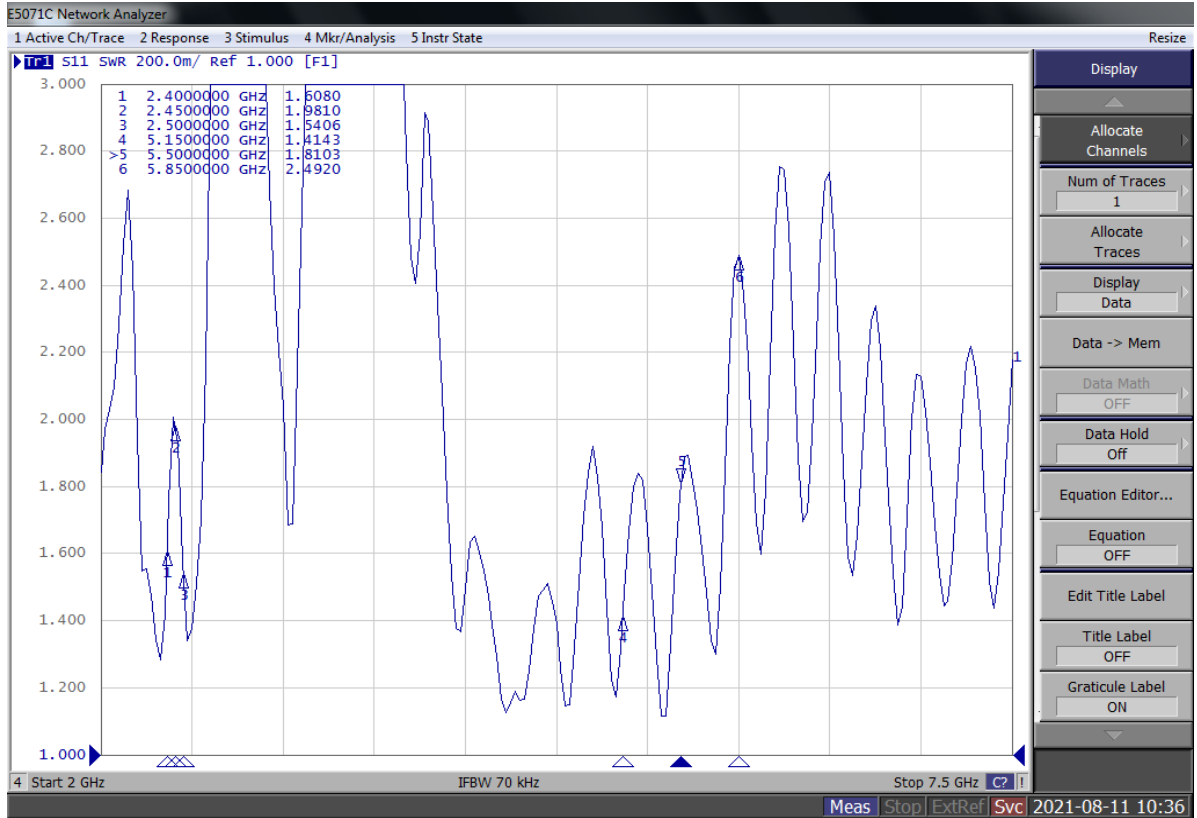
- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz





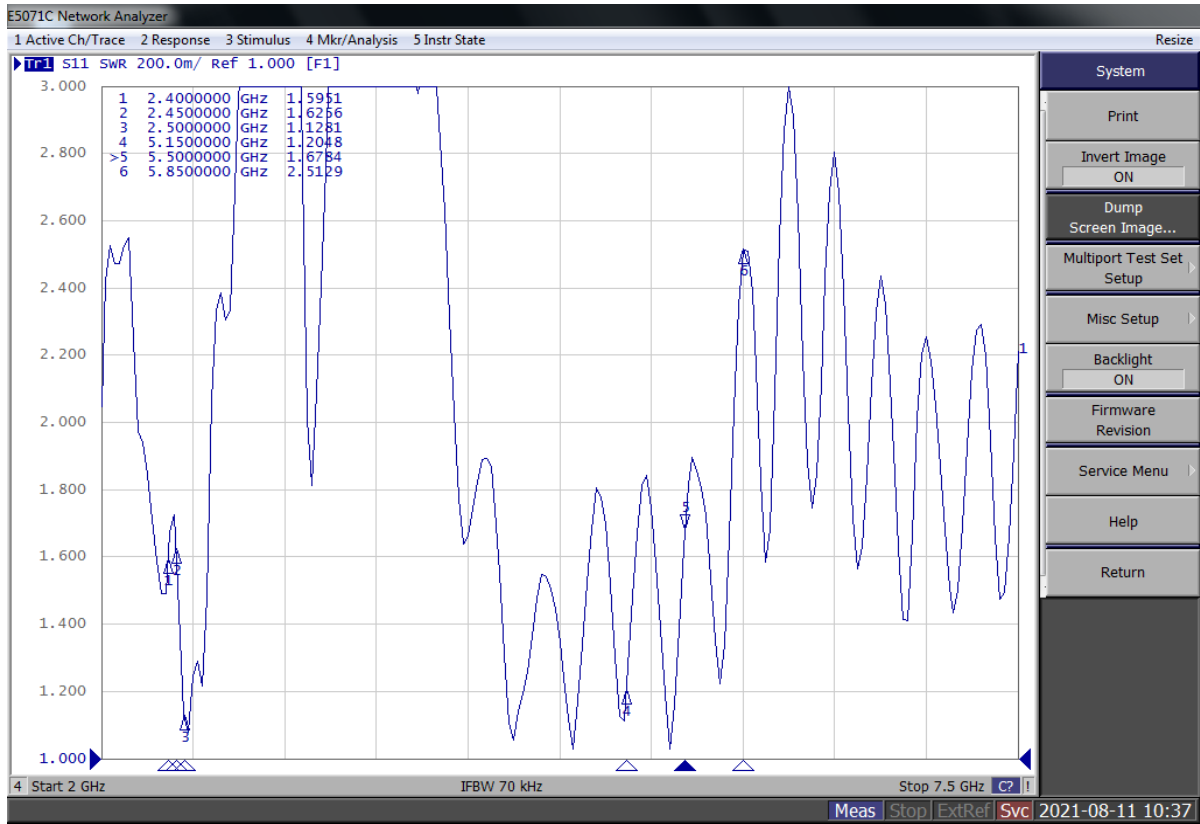
## 4.2. VSWR

### 4.2.1. Wi-Fi 1



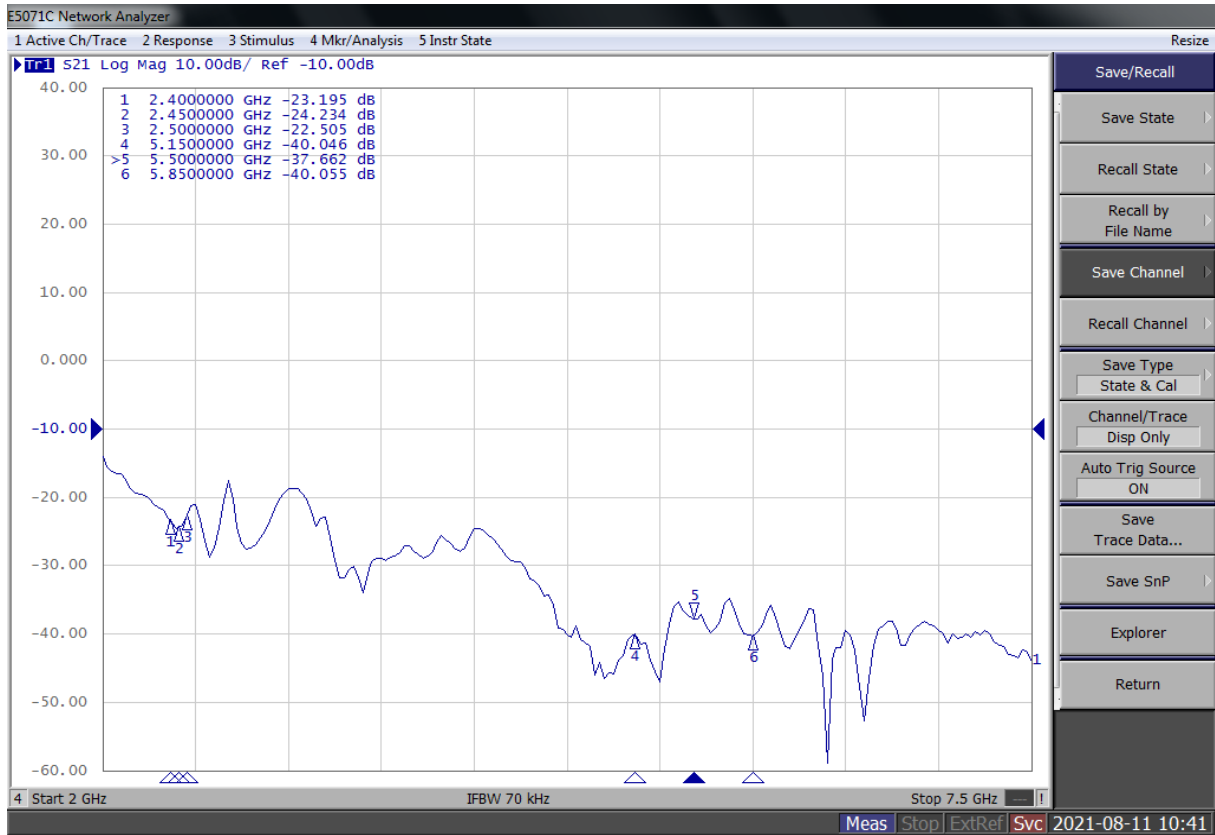
Frequency (MHz)	2400	2450	2500	5150	5500	5850
VSWR	1.50	1.98	1.54	1.41	1.81	2.49

4.2.2. Wi-Fi 2



Frequency (MHz)	2400	2450	2500	5150	5500	5850
VSWR	1.59	1.62	1.12	1.20	1.67	2.51

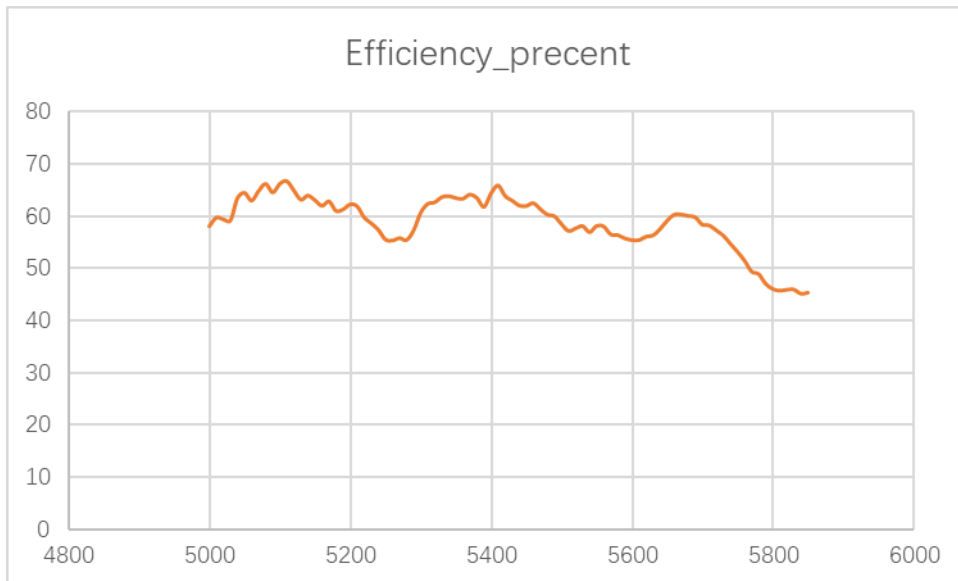
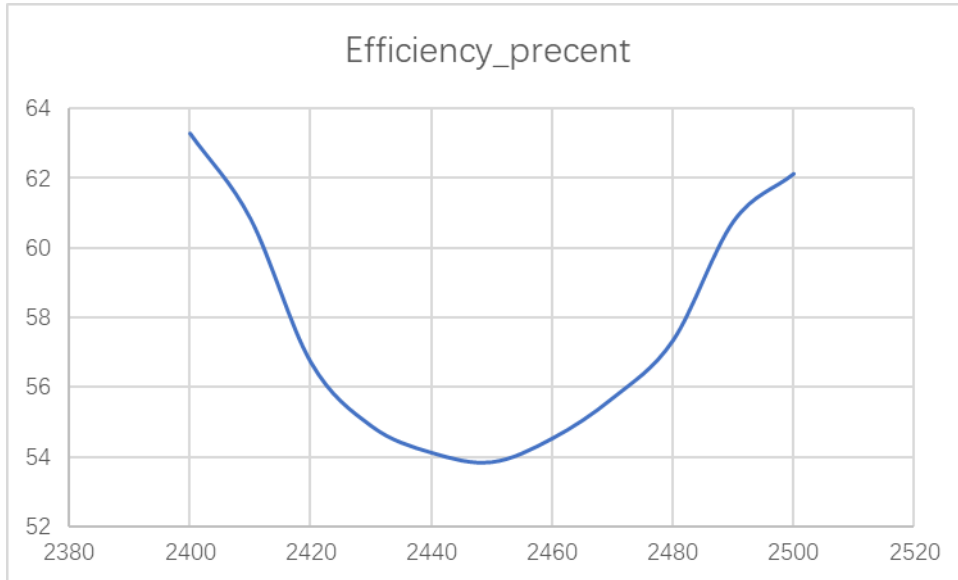
### 4.2.3. Isolation



<b>Frequency (MHz)</b>	2400	2450	2500	5150	5500	5850
<b>Isolation (dB)</b>	-23.19	-24.23	-22.50	-40.04	-37.66	-40.05

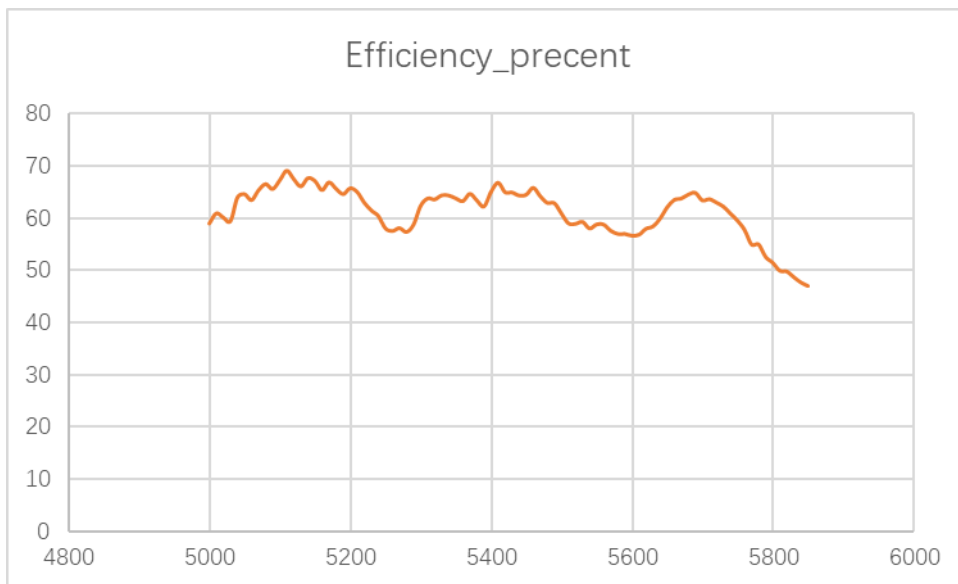
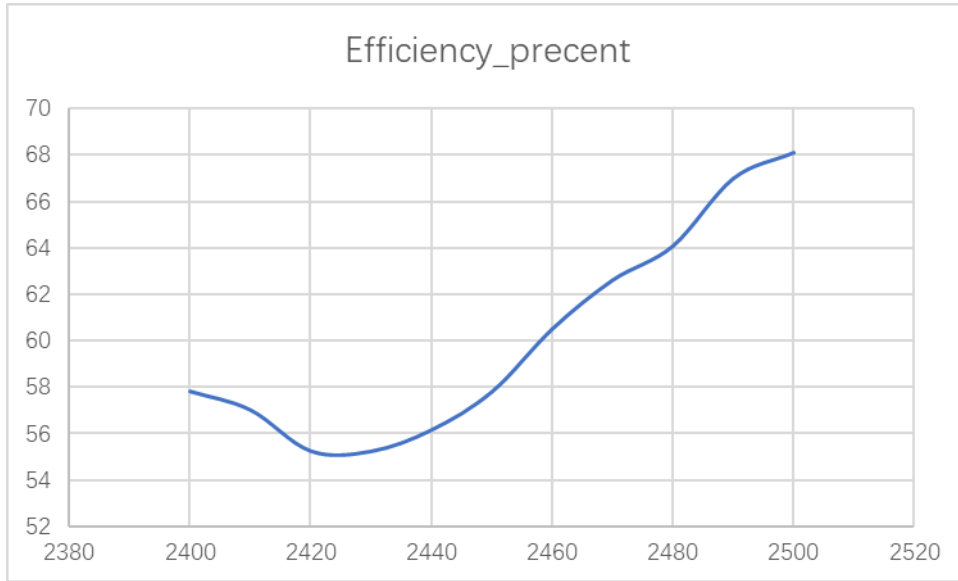
### 4.3. Efficiency

#### 4.3.1. Wi-Fi 1



<b>Frequency (MHz)</b>	2400	2450	2500	5150	5500	5850
<b>Efficiency (%)</b>	63.3	53.85	62.14	63.07	58.48	45.25

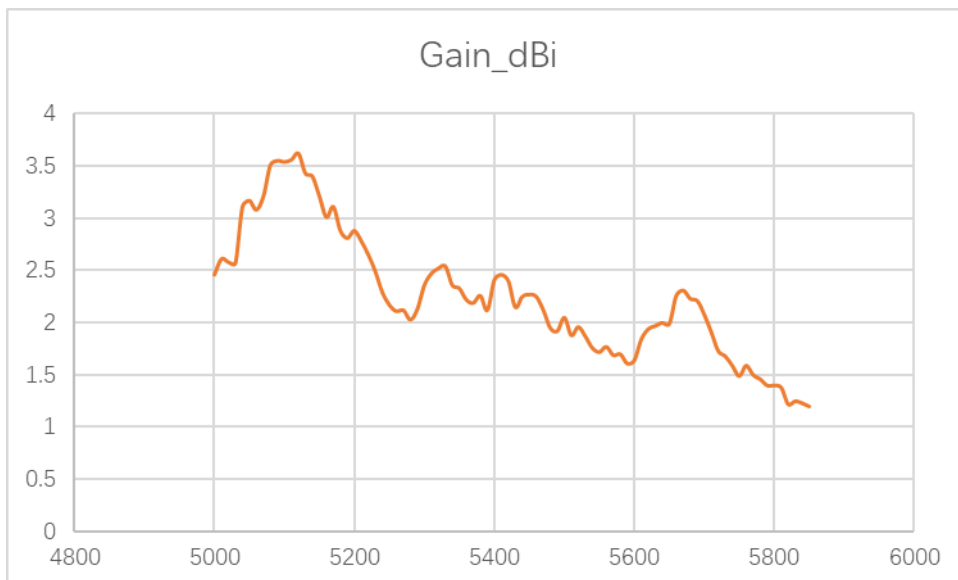
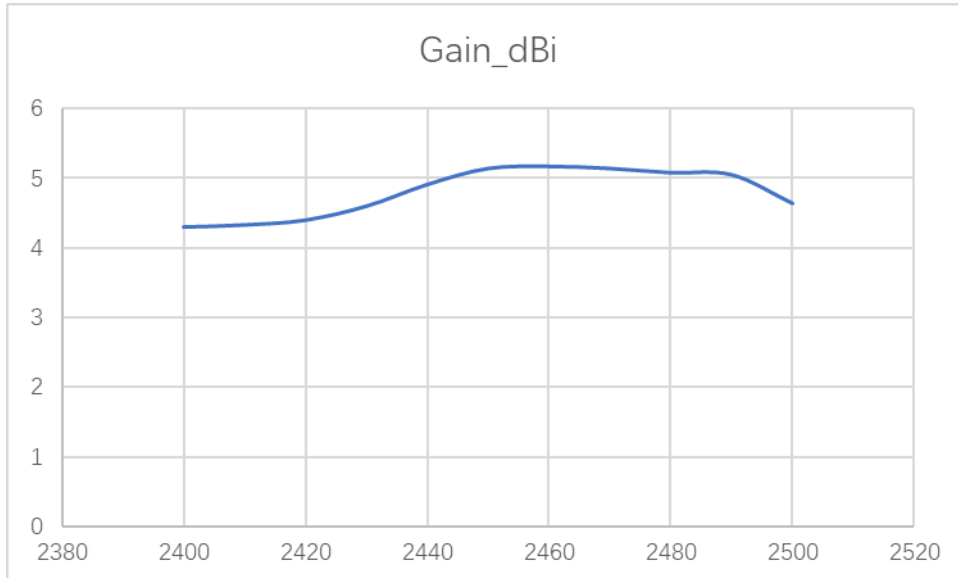
4.3.2. Wi-Fi 2



<b>Frequency (MHz)</b>	2400	2450	2500	5150	5500	5850
<b>Efficiency (%)</b>	57.84	57.82	68.10	67.01	60.78	46.96

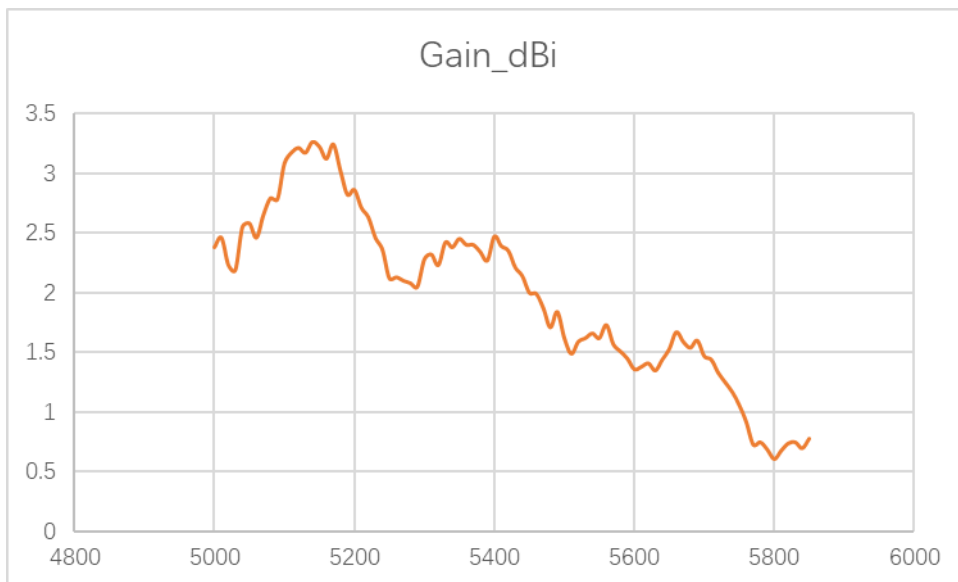
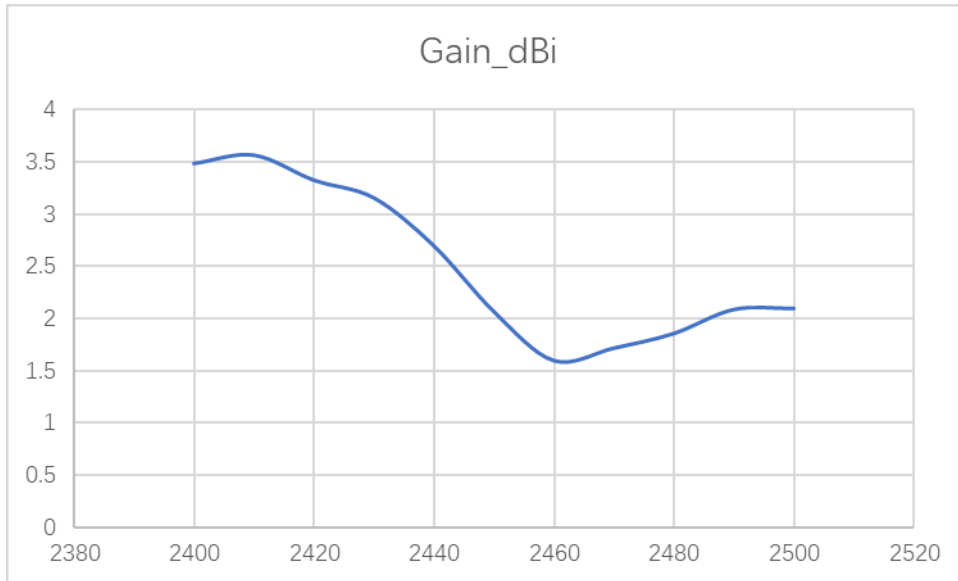
## 4.4. Gain

### 4.4.1. Wi-Fi 1



Frequency (MHz)	2400	2450	2500	5150	5500	5850
Gain (dBi)	4.3	5.14	4.64	3.21	2.05	1.2

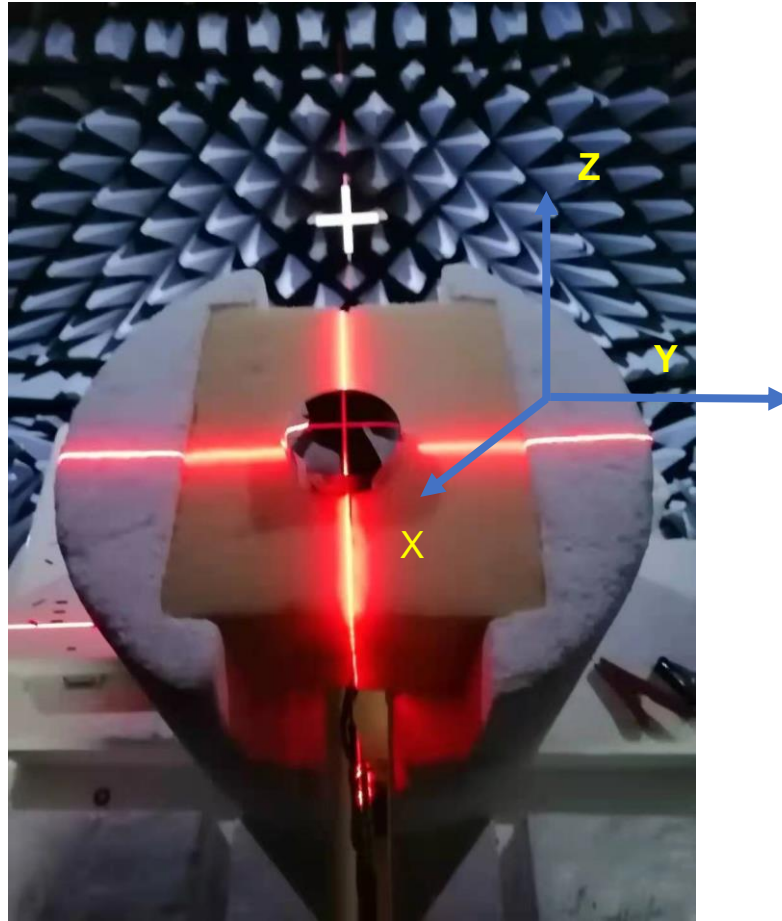
4.4.2. Wi-Fi 2



<b>Frequency (MHz)</b>	2400	2450	2500	5150	5500	5850
<b>Gain (dBi)</b>	3.49	2.07	2.10	2.46	1.62	0.78

## 4.5. Radiation Pattern

- Test condition: free space.



H plane: the tangent of XY  
E1 plane: the tangent of XZ  
E2 plane: the tangent of YZ



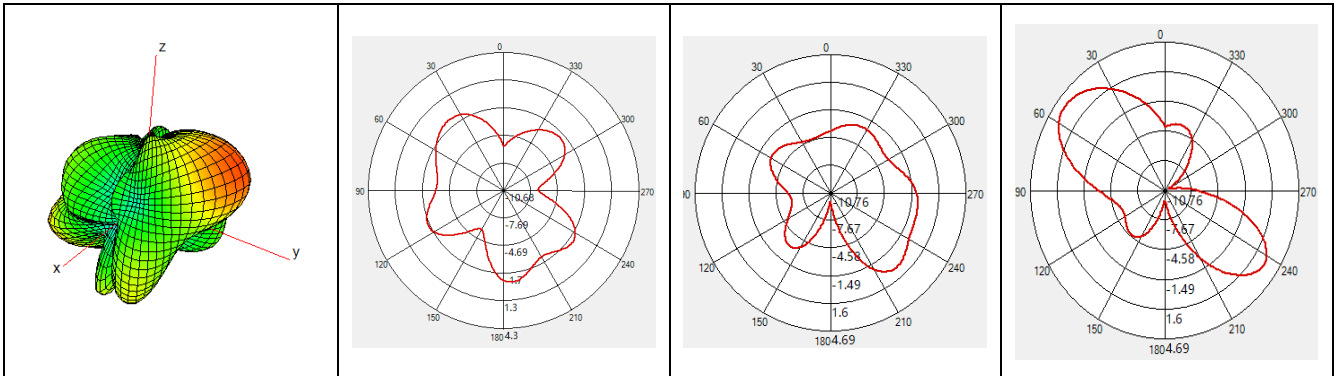
**4.5.1. Wi-Fi 1**

2400 MHz

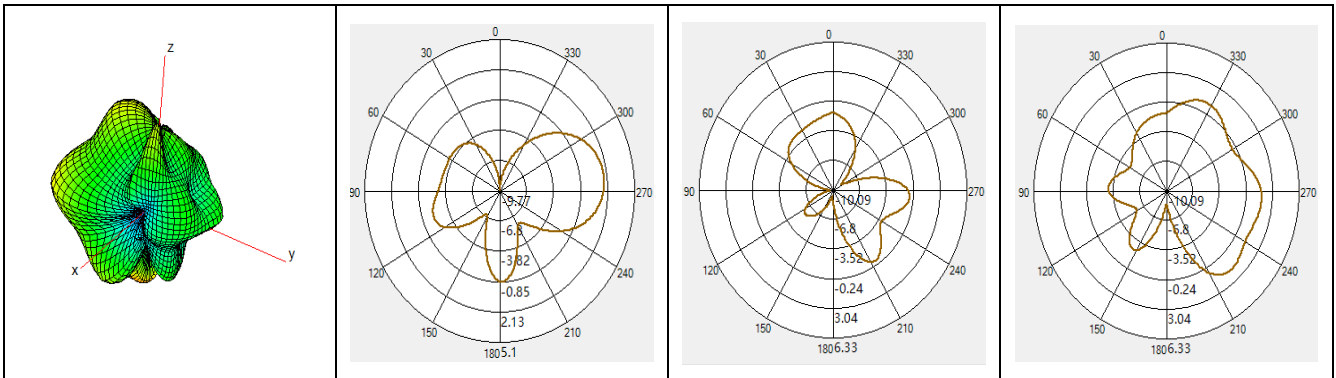
**H**

**E1**

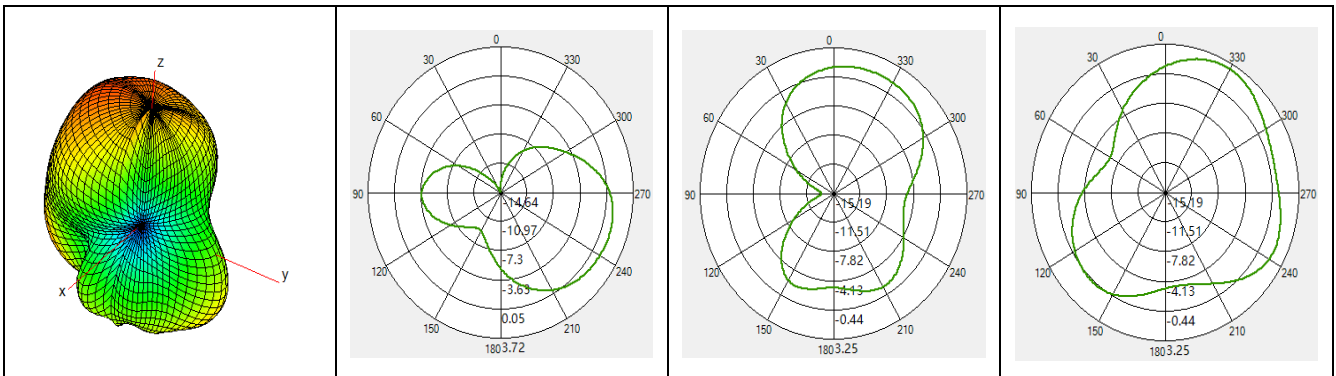
**E2**



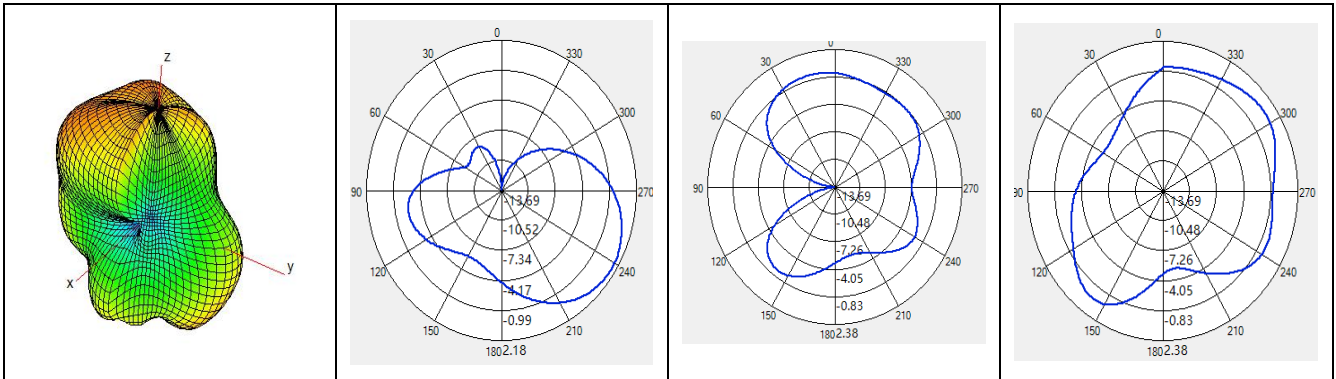
2500 MHz



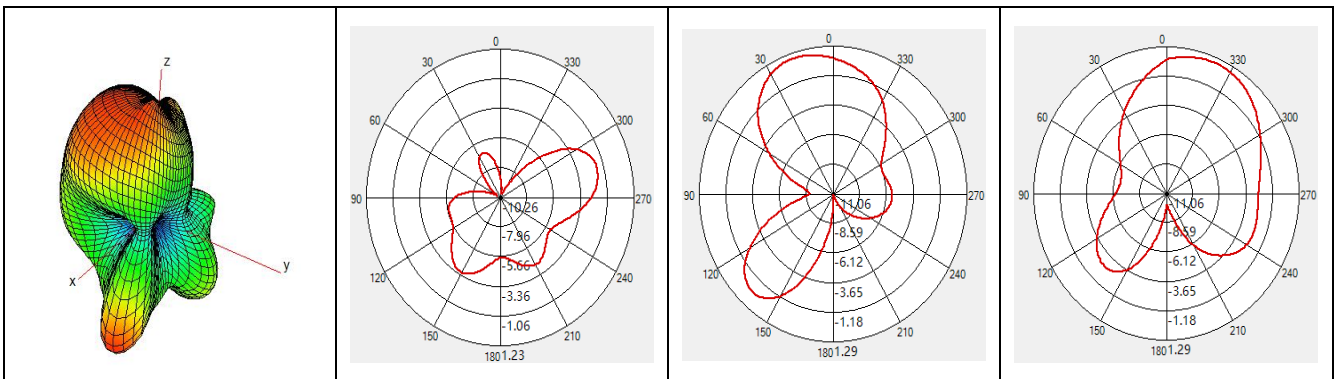
5150 MHz



**5500 MHz**

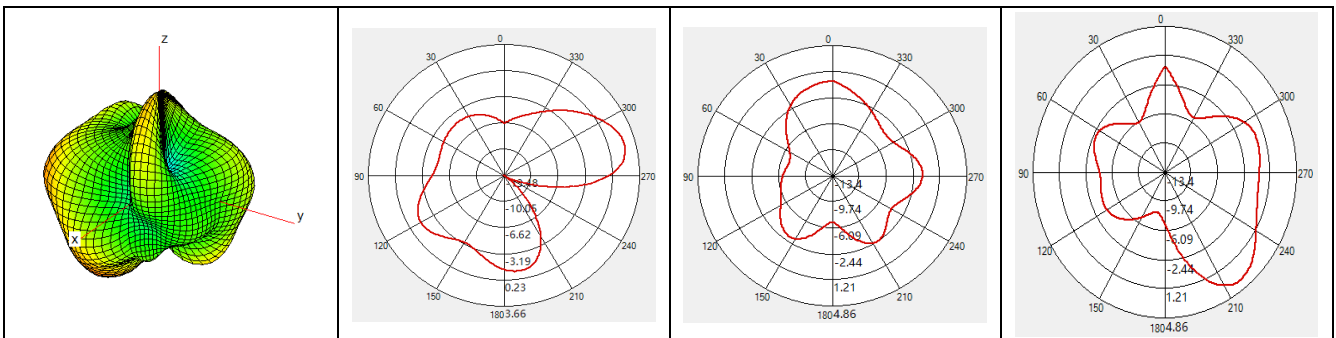


**5850 MHz**

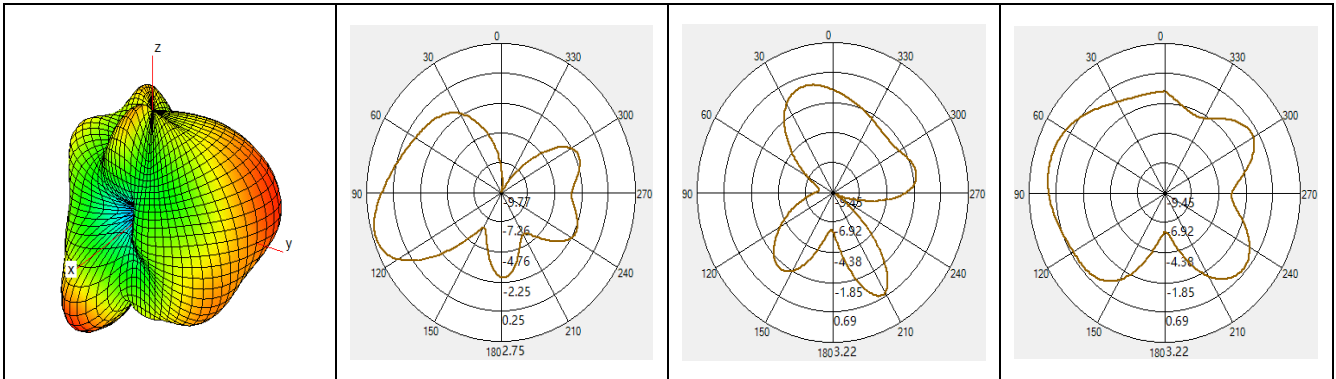


**4.5.2. Wi-Fi 2**

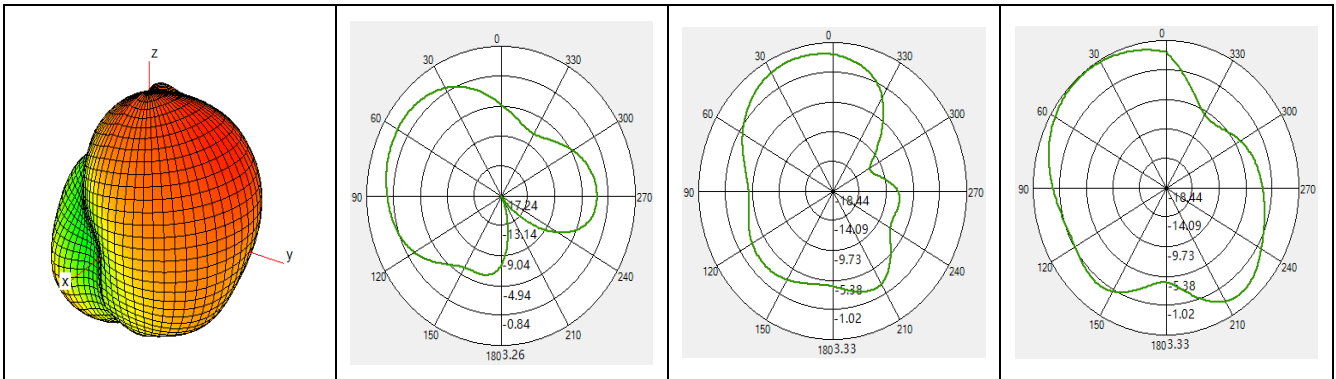
**2400 MHz**



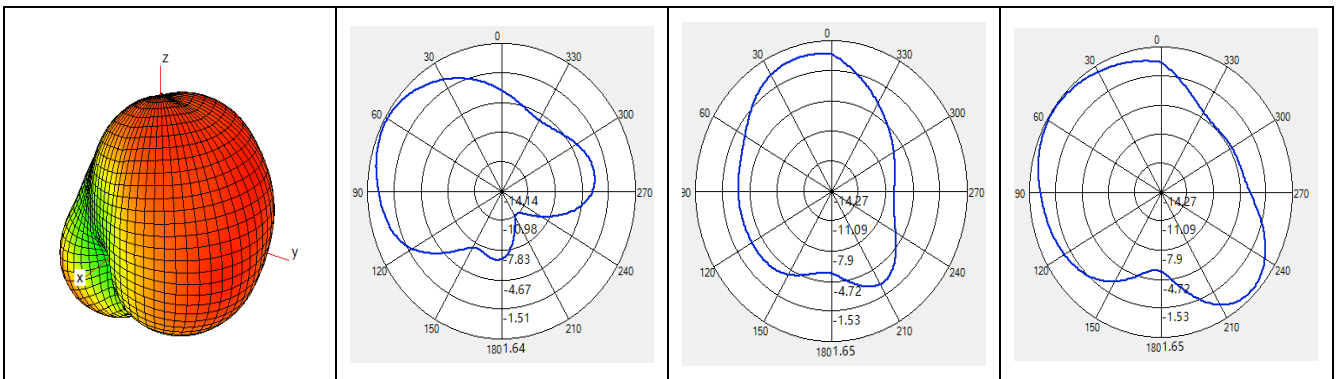
**2500 MHz**



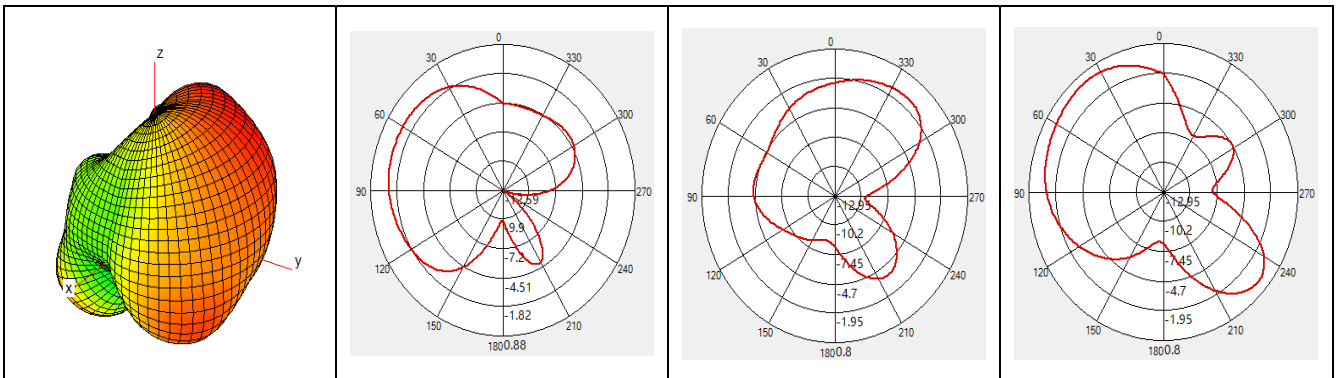
**5150 MHz**



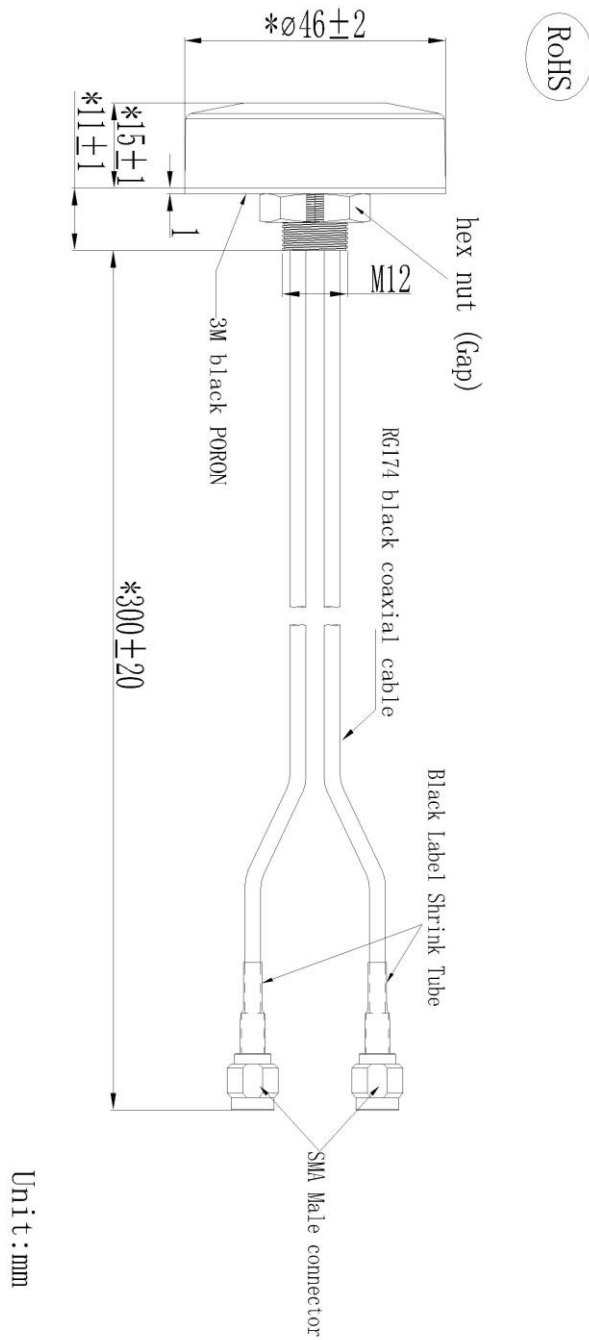
**5500 MHz**



**5850 MHz**



## 5 Product Size



RoHS

