

# Shenzhen Yishengbang Technology Co., Ltd

## Shenzhen Yishengbang Technology Co., Ltd Antenna Test Report

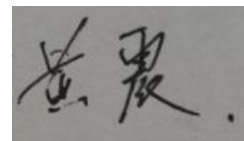
Customer: 迈迪杰

Project: NUCAL02

Product: WIFI Antenna

Report date: 2023.6.27

Prepared by : 范新竹



Checked by : Eason Huang

Approved by :

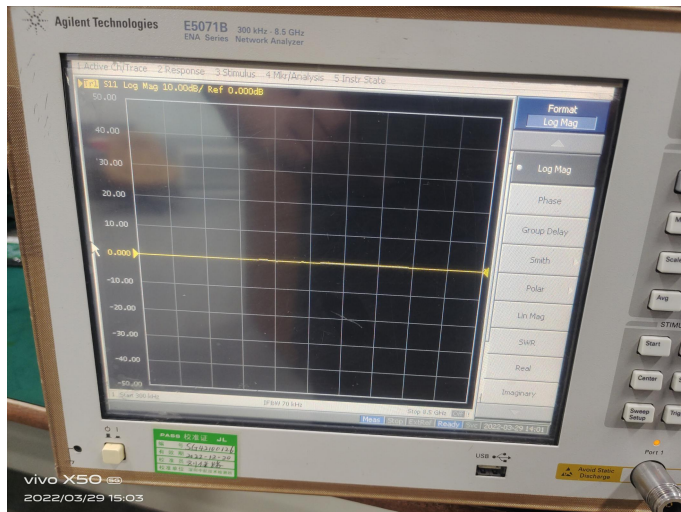
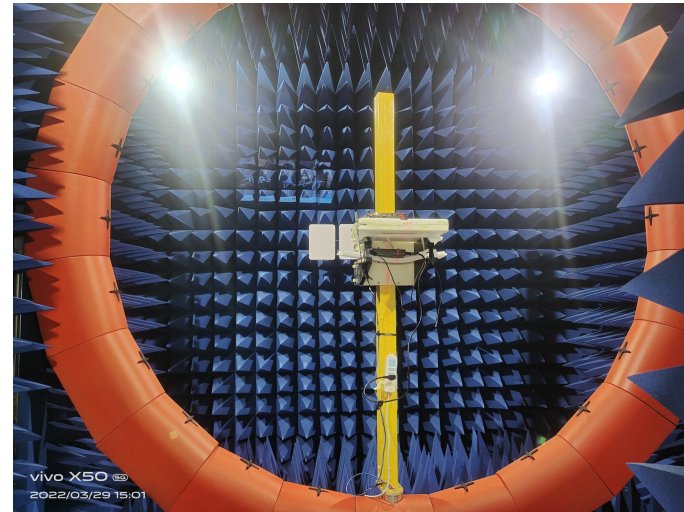
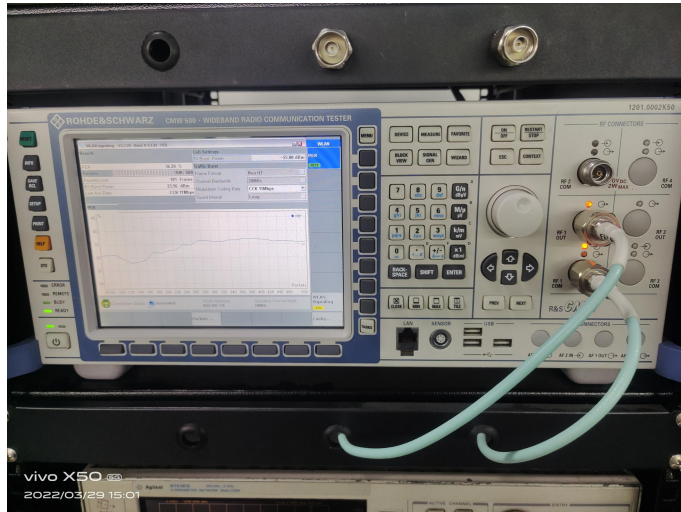
# ***Purpose***

This report is to measure the performance of SLK for Master Antenna on 迈迪杰. All measure data are showed below.

## ***Content***

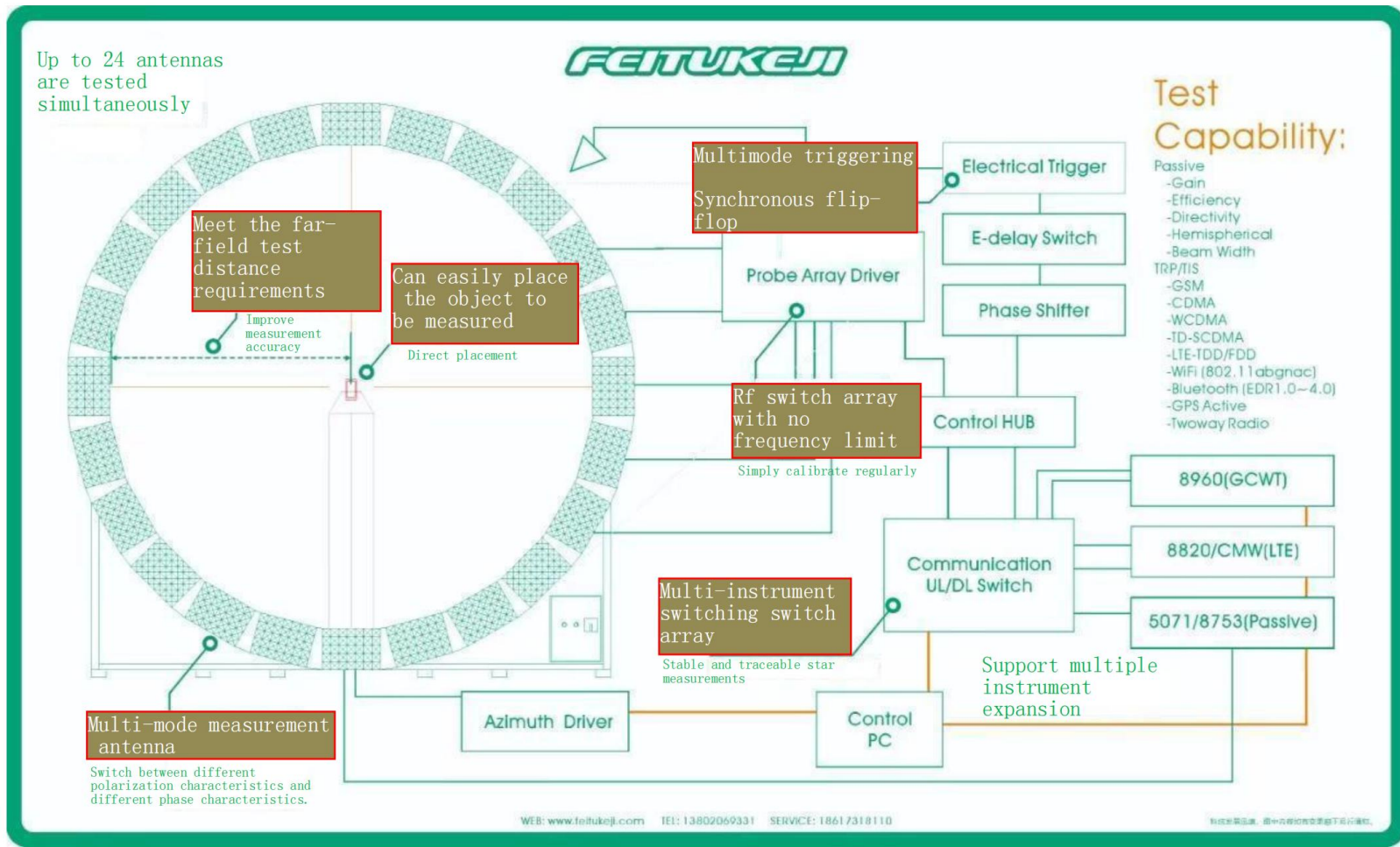
1. Test equipment
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  - 7.4 Schematic Diagram Of Antenna Size

# 1. Test equipment



| Test equipment                                                                          | Test content                                                                                                                          |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| network analyzer: 5071B                                                                 | <ol style="list-style-type: none"> <li>1.VSWR</li> <li>2.Return loss</li> <li>3.Smith</li> </ol>                                      |
| network analyzer: 5071B<br>chamber: 4*4*4M24 probe anechoic chamber                     | <ol style="list-style-type: none"> <li>1.Antenna efficiency</li> <li>2.Antenna gain</li> <li>3.3D field pattern of antenna</li> </ol> |
| Comprehensive measuring instrument: CMW500<br>chamber: 4*4*4M 24 probe anechoic chamber | <ol style="list-style-type: none"> <li>1.TRP</li> <li>2.TIS</li> </ol>                                                                |

## 2. Test setup



### 3. Test site

Test site: Shenzhen Yishengbang Technology Co., Ltd  
101, Building C, Qianwan Hard Technology Industrial Park,  
Xixiang Street, Bao'an District, Shenzhen City, Guangdong  
Province, China  
24 probe anechoic chamber.

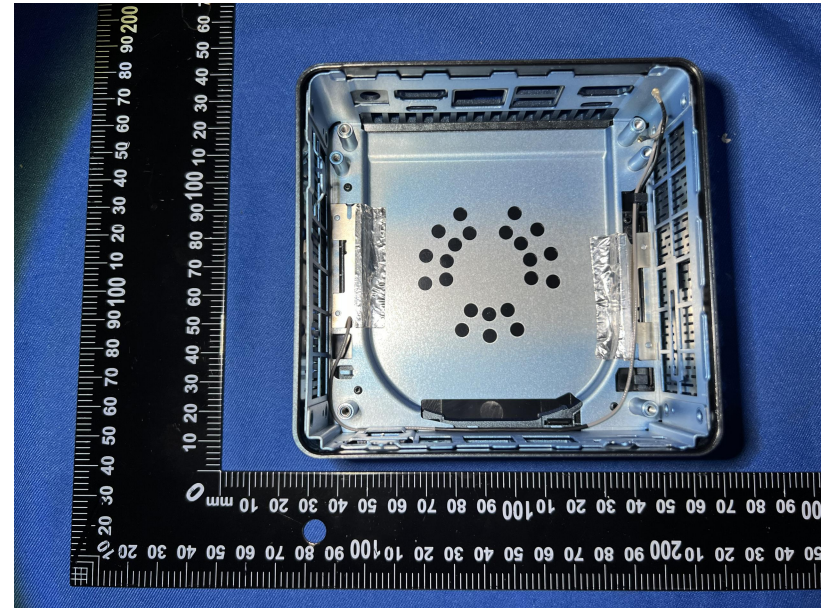
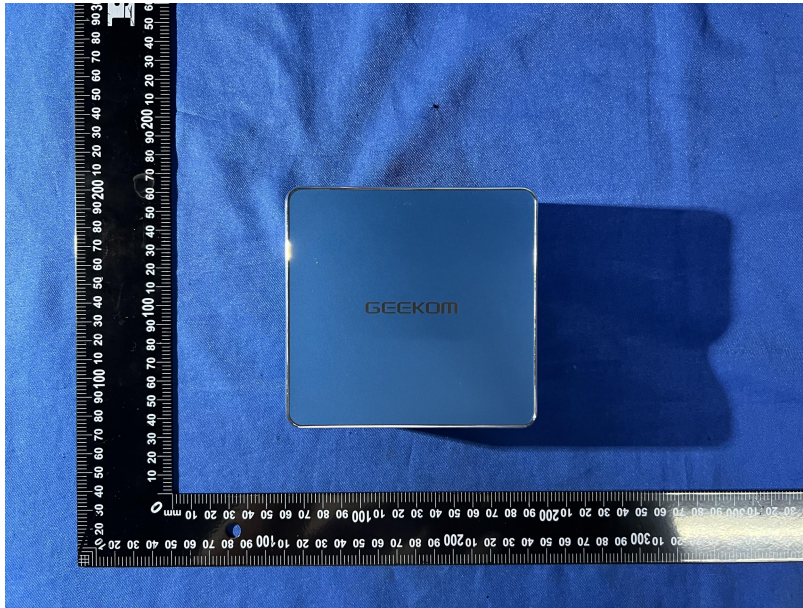
## 4. Test equipment list

|   | Test equipment   | Equipment model                        | Manufacturer | Calibration time | Remarks |
|---|------------------|----------------------------------------|--------------|------------------|---------|
| 1 | network analyzer | agilent E5071B                         | Agilent      | 2022-11-9        |         |
| 2 | anechoic chamber | 4*4*4M<br>24 probe<br>anechoic chamber | FEITUKEJI    | 2022-11-9        |         |
| 3 | computer         | Lenovo<br>desktop computer             | Lenovo       | 2022-11-9        |         |

## 5. Measurement procedure

|   | Procedure                                                                                         | Remarks |
|---|---------------------------------------------------------------------------------------------------|---------|
| 1 | Calibrate network analyzer                                                                        |         |
| 2 | Analyze the overall situation of the machine and select a suitable location for antenna debugging |         |
| 3 | Optimize antenna standing wave ratio to ensure meeting customer needs                             |         |
| 4 | Testing items such as passive efficiency and gain of antennas                                     |         |
| 5 | Provide antenna samples to customers based on debugging specifications                            |         |

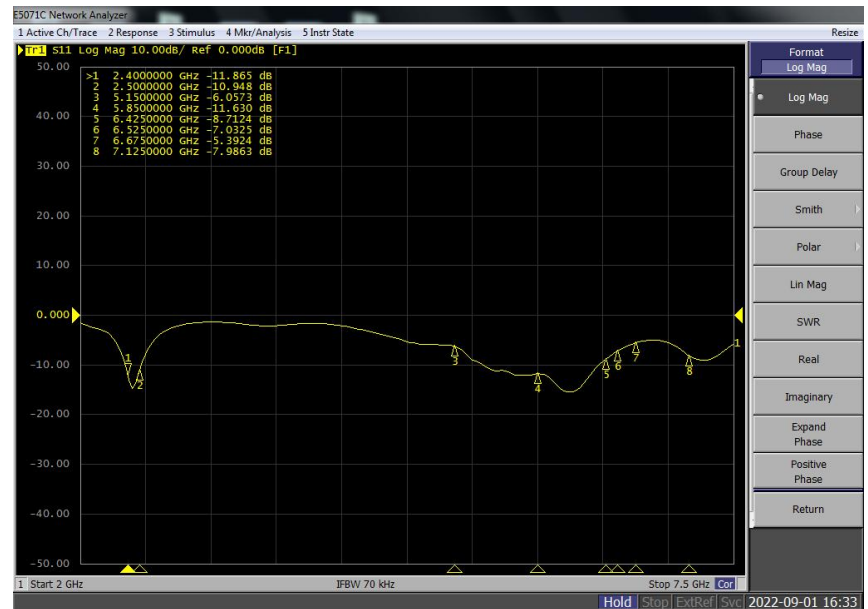
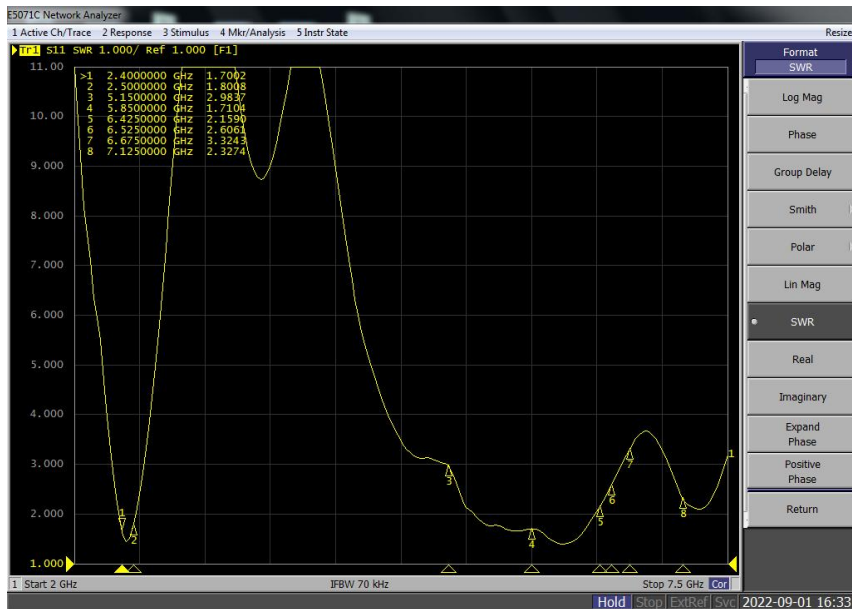
## 6. Product Overview



# 7. Test Result

## 7.1 VSWR/S11

MAIN

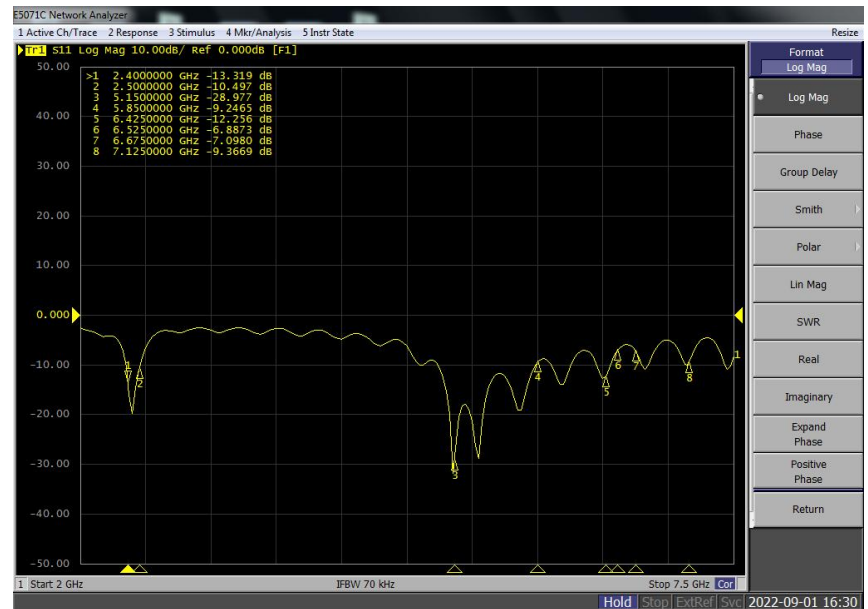
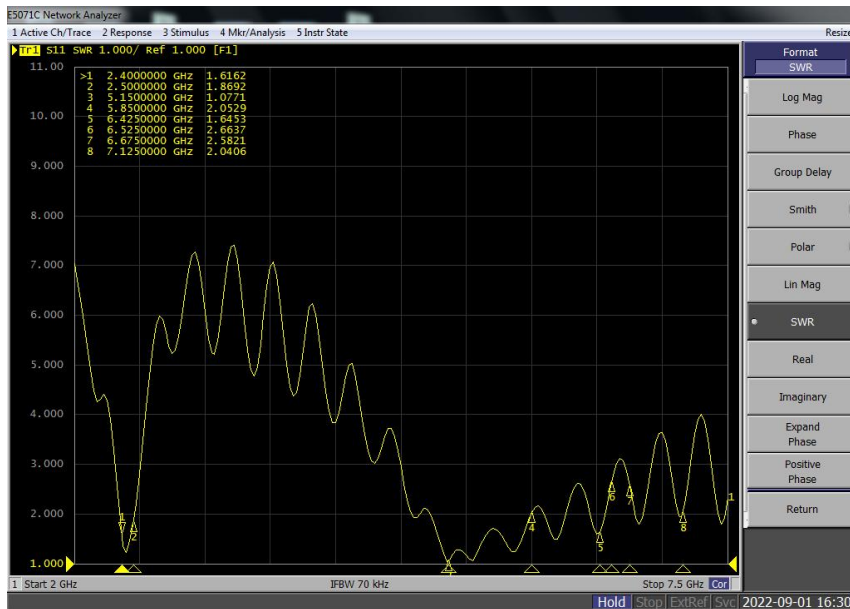


Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

# 7. Test Result

## 7.1 VSWR/S11

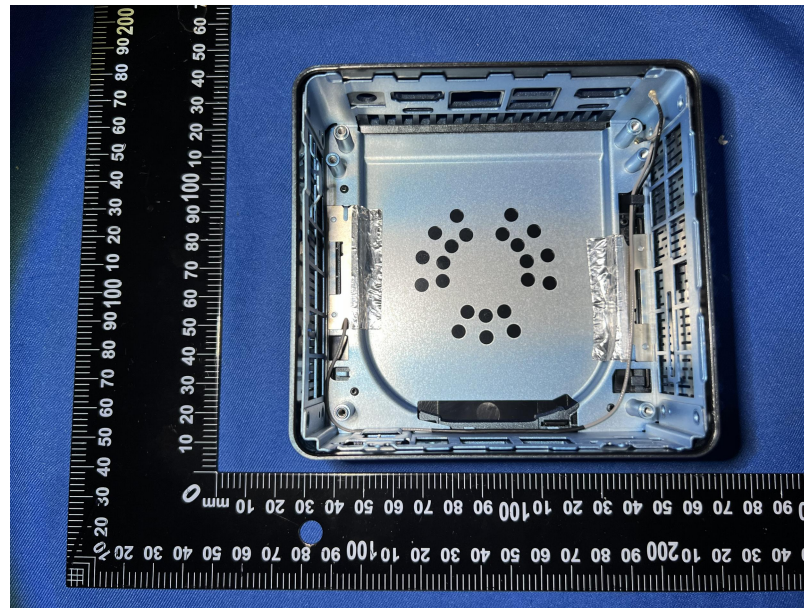
AUX



Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

## 7. Test Result

### 7.2 Antenna Parameters

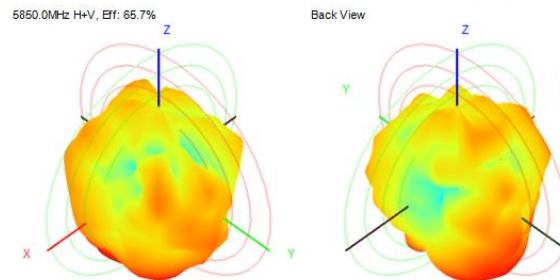
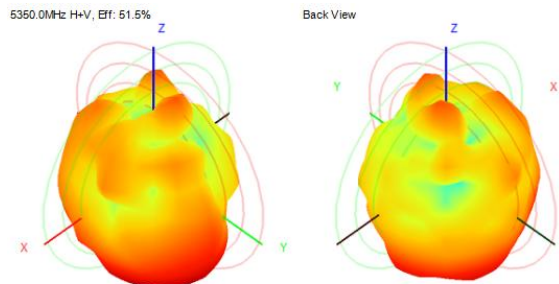
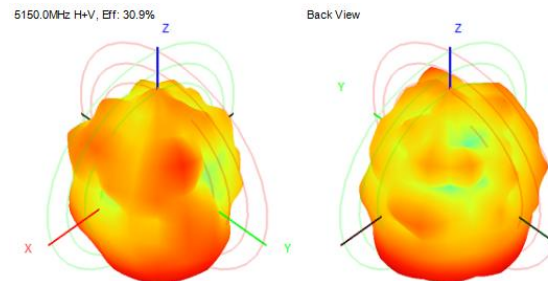
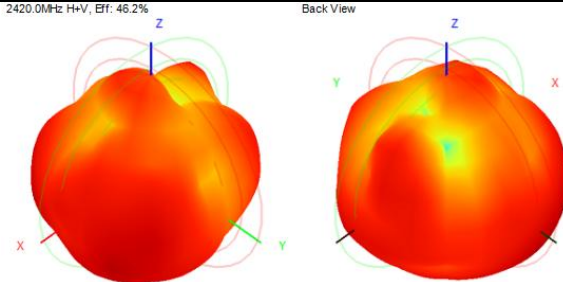


# 7. Test Result

## 7.3 Gain/Efficiency/3D DATA

MAIN

| Frequency (MHz)  | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 5230.0 | 5350.0 | 5690.0 | 5820.0 | 6010.0 | 6450.0 | 6550.0 | 6890.0 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Efficiency (dBi) | -3.41  | -3.36  | -3.35  | -3.30  | -3.32  | -3.38  | -3.17  | -3.67  | -4.32  | -4.18  | -2.88  | -1.80  | -1.71  | -1.90  | -3.49  | -3.40  | -4.22  |
| Gain (dBi)       | 1.01   | 1.16   | 1.23   | 1.15   | 0.91   | 0.97   | 1.21   | 0.77   | 0.09   | 3.28   | 4.83   | 6.60   | 7.53   | 8.35   | 5.55   | 4.55   | 3.86   |
| Efficiency (%)   | 45.56  | 46.15  | 46.22  | 46.77  | 46.51  | 45.90  | 48.14  | 42.99  | 37.01  | 38.16  | 51.48  | 66.08  | 67.50  | 64.50  | 44.77  | 45.72  | 37.88  |



Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

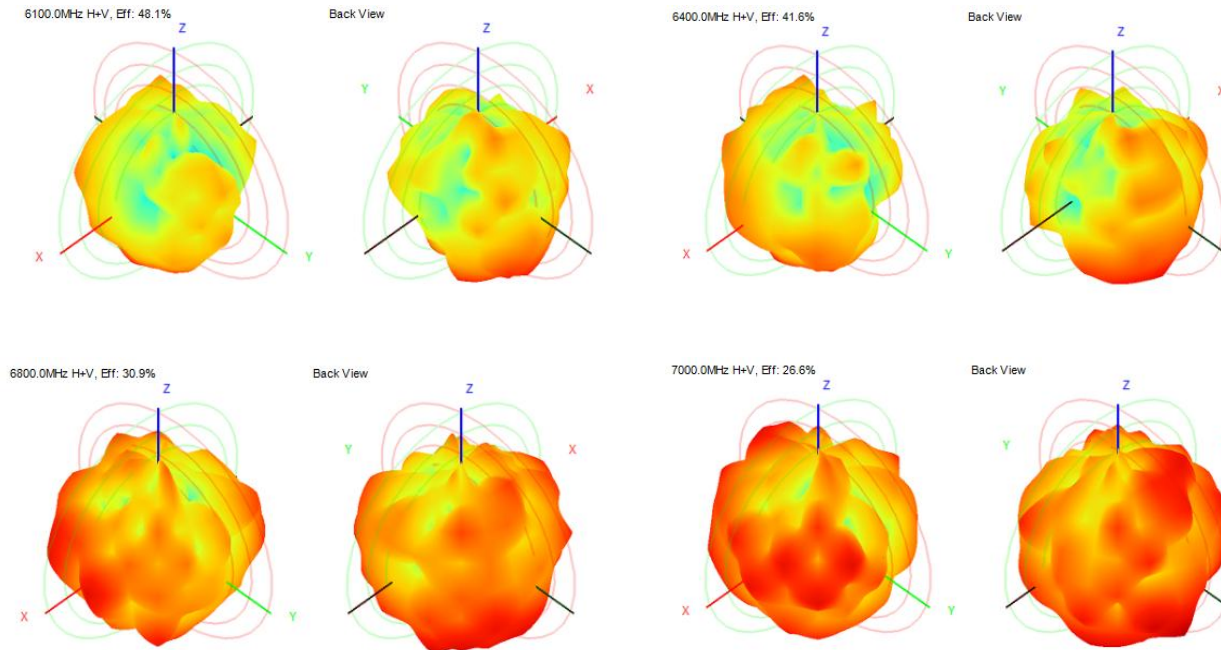
5230mhz is the maximum gain point of 5150-5250mhz

5820mhz is the maximum gain point of 5.8G segment

# 7. Test Result

## 7.3 Gain/Efficiency/3D DATA

MAIN



Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

# 7. Test Result

## 7.3 Gain/Efficiency/3D DATA

AUX

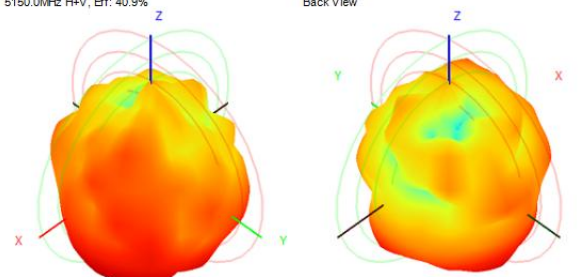
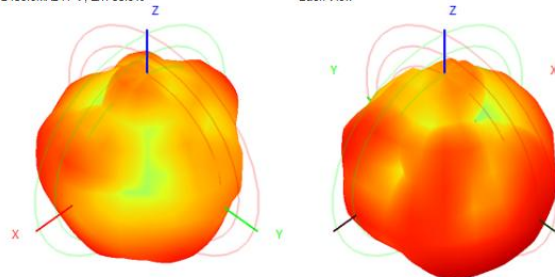
| Frequency (MHz)  | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 5250.0 | 5350.0 | 5520.0 | 5820.0 | 6010.0 | 6450.0 | 6550.0 | 6890.0 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Efficiency (dBi) | -5.45  | -5.34  | -5.17  | -4.99  | -4.75  | -4.70  | -4.58  | -4.55  | -4.70  | -2.90  | -2.21  | -2.02  | -2.21  | -2.99  | -4.39  | -4.20  | -4.90  |
| Gain (dBi)       | 0.57   | 0.62   | 0.81   | 1.14   | 1.43   | 1.47   | 1.43   | 1.25   | 1.07   | 4.39   | 5.80   | 7.24   | 5.95   | 6.54   | 5.00   | 3.53   | 2.53   |
| Efficiency (%)   | 28.51  | 29.27  | 30.41  | 31.67  | 33.51  | 33.91  | 34.80  | 35.06  | 33.91  | 51.30  | 60.10  | 62.84  | 60.09  | 50.21  | 36.37  | 38.02  | 32.35  |

2450.0MHz H+V, Eff: 33.9%

Back View

5150.0MHz H+V, Eff: 40.9%

Back View

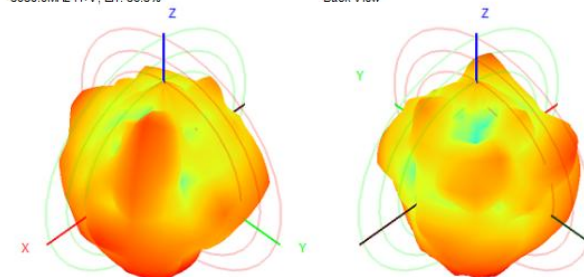
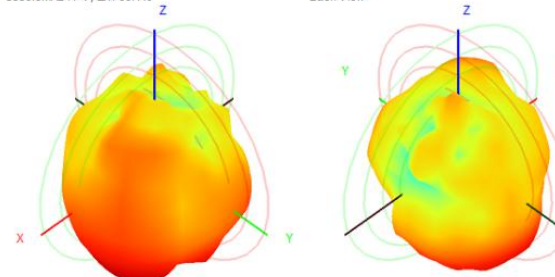


5350.0MHz H+V, Eff: 60.1%

Back View

5850.0MHz H+V, Eff: 66.3%

Back View



Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

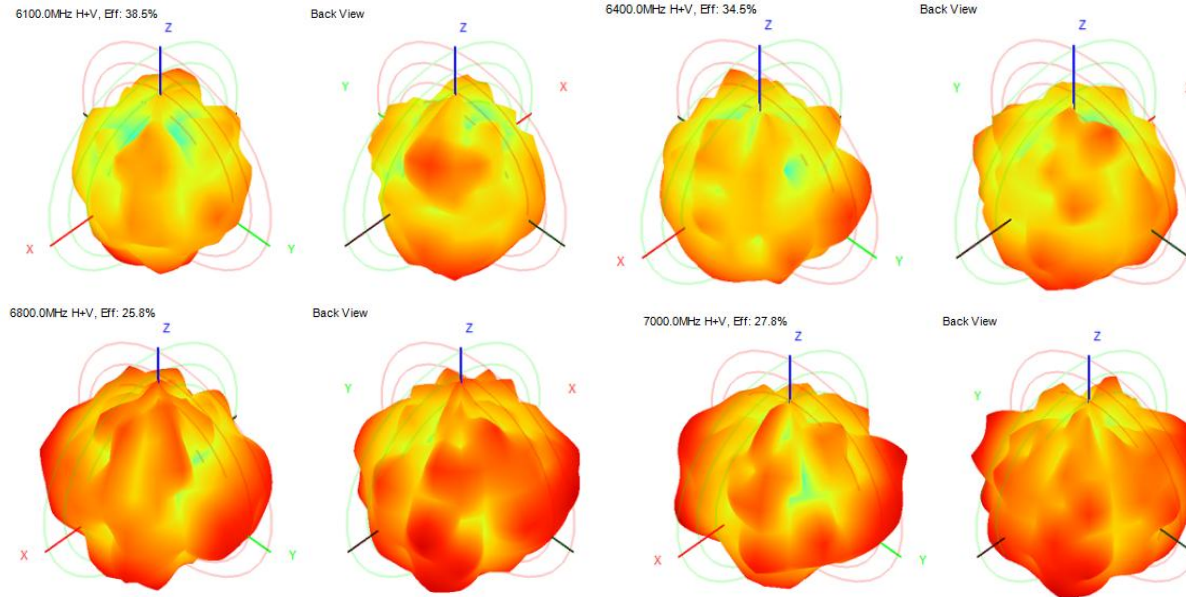
5250mhz is the maximum gain point of 5150-5250mhz

5820mhz is the maximum gain point of 5.8G segment

# 7. Test Result

## 7.3 Gain/Efficiency/3D DATA

AUX

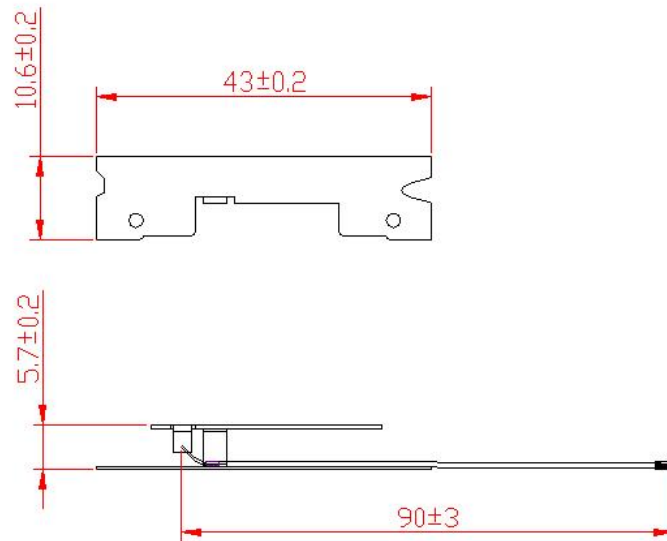


Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

## 7. Test Result

### 7.4 Schematic Diagram Of Antenna Size

MAIN



## 7. Test Result

### 7.4 Schematic Diagram Of Antenna Size

AUX

