

# ShenzhenShi Yue Xin Tong Technology CO.,LTD

## ANTENNA SPECIFICATION FOR APPROVAL

Address:No.3 Oilfield Road, Henggang Anliang Community, Longgang District, Shenzhen City

CUSTOMER NAME:

Frequency Range(MHZ): 2400-2500MHz 5150-5850MHz

Version: A0

Date: 2024-04-16

Number: FS-WZ-JB-094

|                        |  |                         |  |
|------------------------|--|-------------------------|--|
| MANUFACTURER SIGNATURE |  |                         |  |
| <b>Structure:</b>      |  | <b>Radio frequency:</b> |  |
| APPROVED BY            |  | APPROVED BY:            |  |
| CUSTOMER SIGNATURE     |  |                         |  |
| APPROVED BY:           |  | APPROVED BY:            |  |

**INDEX.**

1) Profile ..... 1

2) Contents..... 2

3) 2D Drawing..... 3

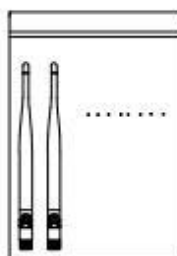
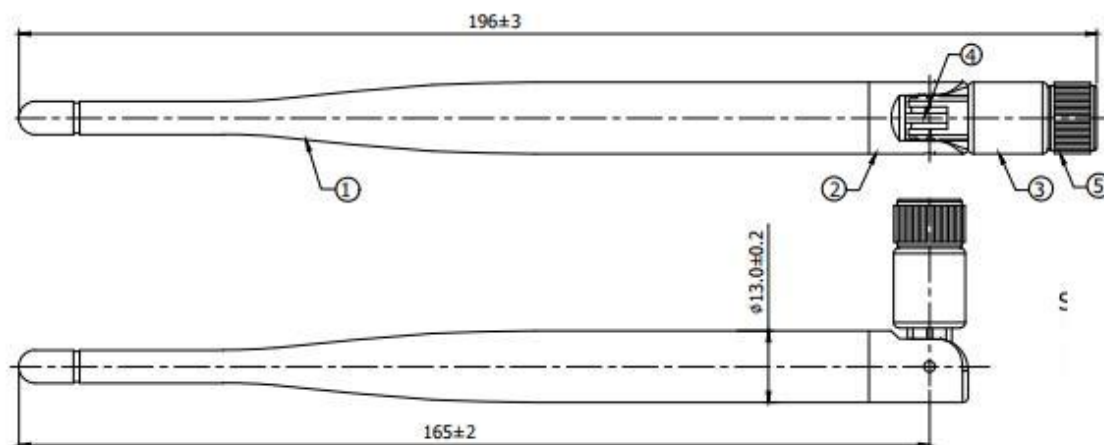
4) Product specifications..... 4

5) Passive Waveform Matching Test Report.....5-10

6) Environmental test report .....11-12

## 成品图

| REV | DATE | DESCRIPTION |
|-----|------|-------------|
| X1  | ?    | New Issue   |
| X2  |      | 更新频率范围      |



Packing

| 5  | Connetor    | SMA Plug                     | 1    |        |
|----|-------------|------------------------------|------|--------|
| 4  | Cable       | RG-178 Cable 50Ω Color:Brown | 1    |        |
| 3  | Bottom Base | ABS Color:Black              | 1    |        |
| 2  | Upper Base  | ABS Color:Black              | 1    |        |
| 1  | Antanna Cap | TPEE Color:Black             | 1    |        |
| NO | PART NAME   | DESCRIPTION                  | Q'TY | REMARK |

# Product Features Specification Sheet

## 1、Product basic characteristics:

| Product Type: : Adhesive Rod Antenna - Dual-Band WiFi - 5dB Adhesive Sleeve - SMA Male Connector - L=195MM |                                   |
|------------------------------------------------------------------------------------------------------------|-----------------------------------|
| DESCRIPTION                                                                                                | VALUE                             |
| Frequency range                                                                                            | 2400-2500MHz 5150-5850MHz         |
| Impedance                                                                                                  | 50 $\Omega$                       |
| V.S.W.R                                                                                                    | <3.0                              |
| Gain                                                                                                       | 2.4GHz: 5.23dBi<br>WIFI5: 3.31dBi |
| Radiation                                                                                                  | Omni-directional                  |
| Polarization                                                                                               | linear Vertical                   |
| Admitted power                                                                                             | 1W                                |
| Connector                                                                                                  | SMA                               |
| Operating temp                                                                                             | -45℃~+85℃                         |
| Storage temp                                                                                               | -45℃~+85℃                         |

## 1. Summary:

This report to account for the measurement setup and result of the Antenna. The measurement setup includes s-parameter, The measured data for Antenna are presented and analysis.

## 2. S-Parameter Measurement S:

A. Reflection coefficient :

(a) Instrument: Network Analyzer.

(b) Setup:

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.

(2) Connect the antenna under test to the Network Analyzer.

(3) Measure the S11(reflection coefficient) shown in Fig. 1.

(4) Generally, the S11 is less than  $-10\text{dB}$  to ensure the 90% VSWR 2.0:1 power into antenna and only less than 10% power back to system.

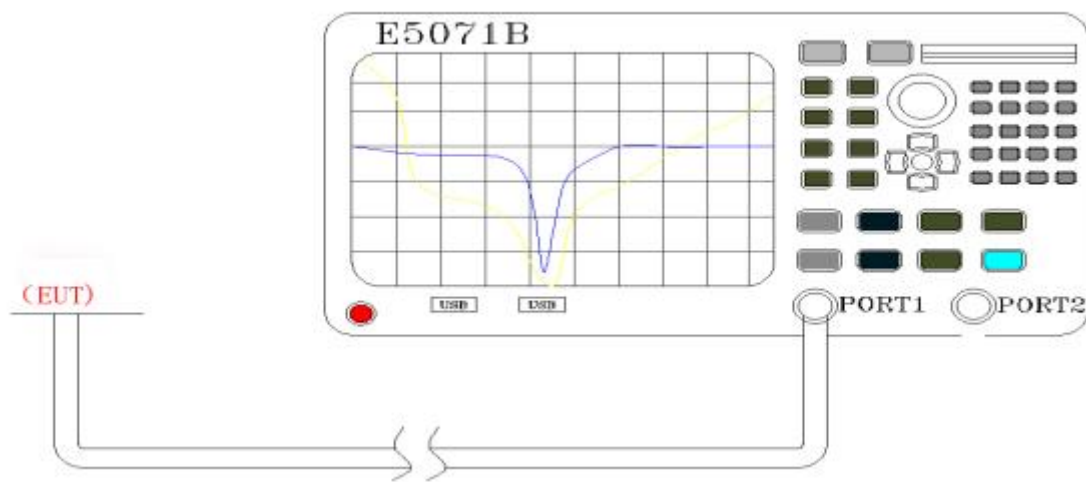


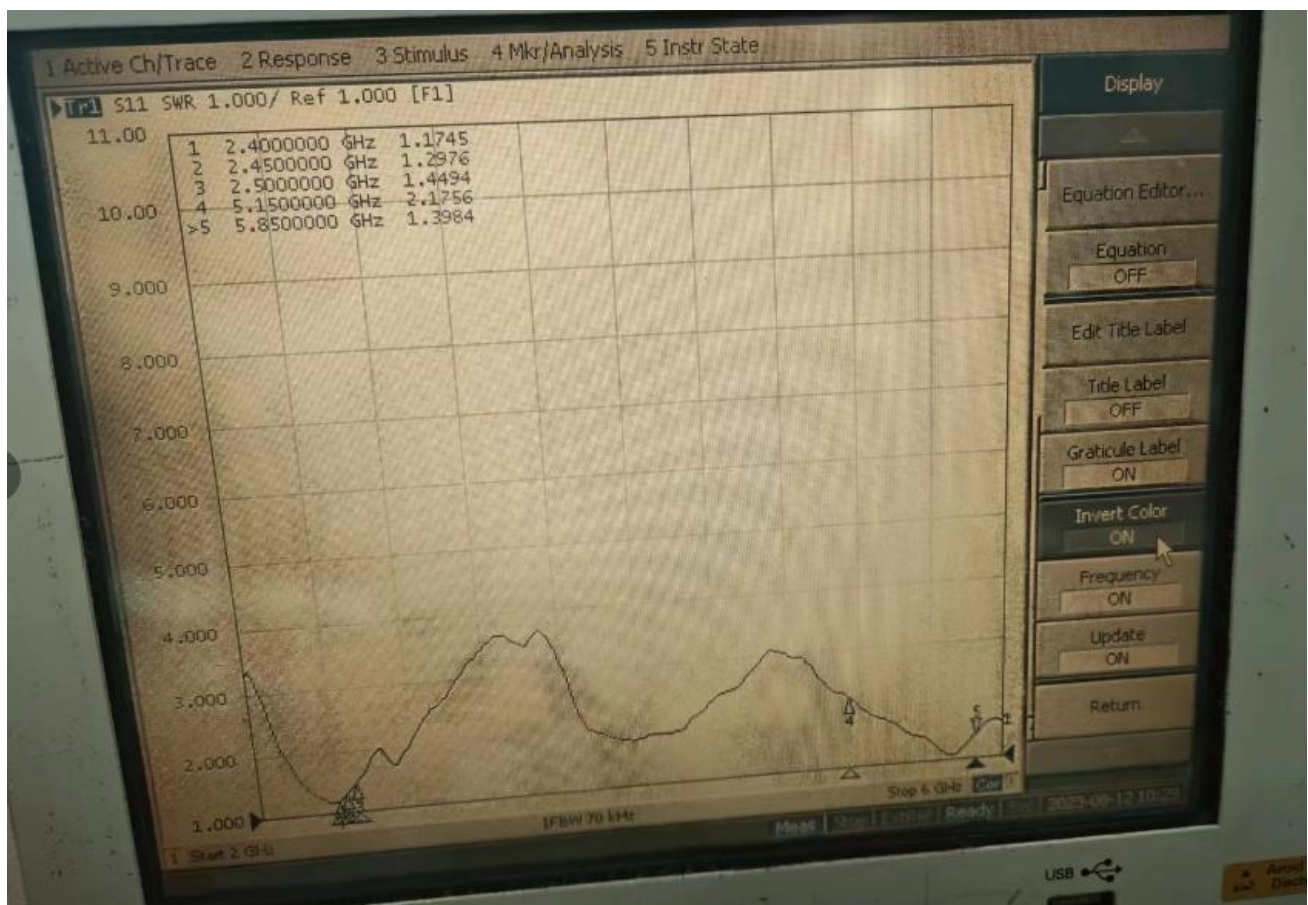
Fig.1 Antenna measured in Network Analyzer

### 3. S-Parameter Measurement Result :

S-Parameter test data :

| Frequency<br>MHz | 2400 | 2450 | 2500 | 5150 | 5850 |
|------------------|------|------|------|------|------|
| V.S.W.R          | 1.17 | 1.29 | 1.44 | 2.17 | 1.39 |

S-Parameter test image :



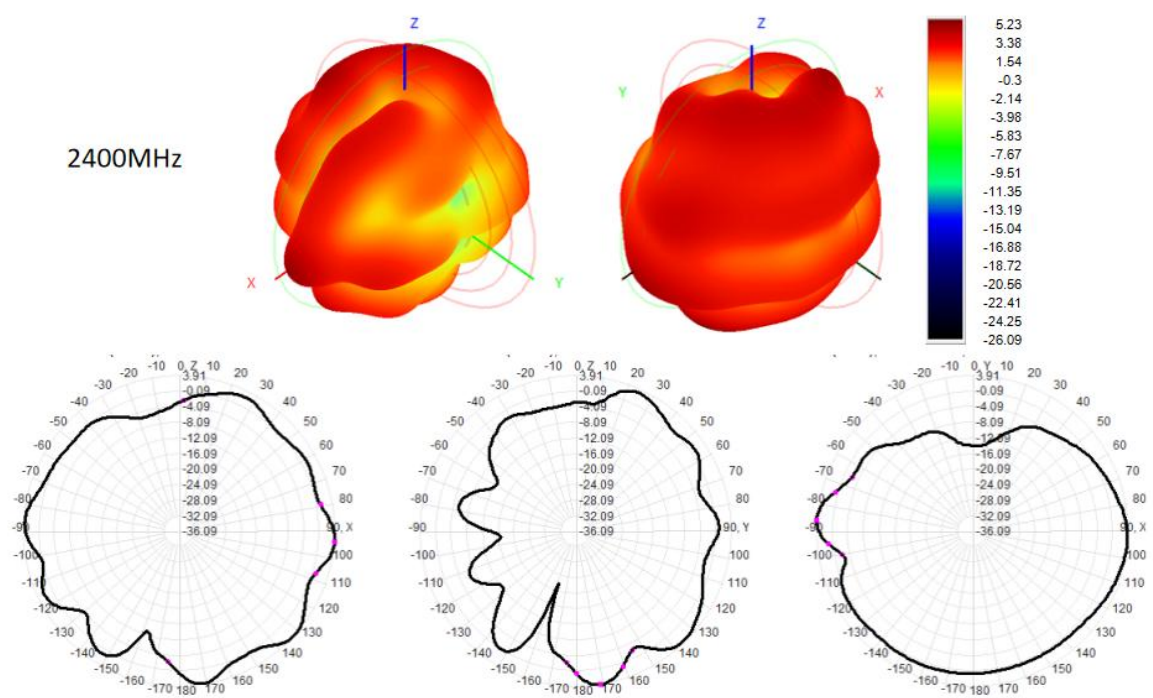
**Antenna picture:**



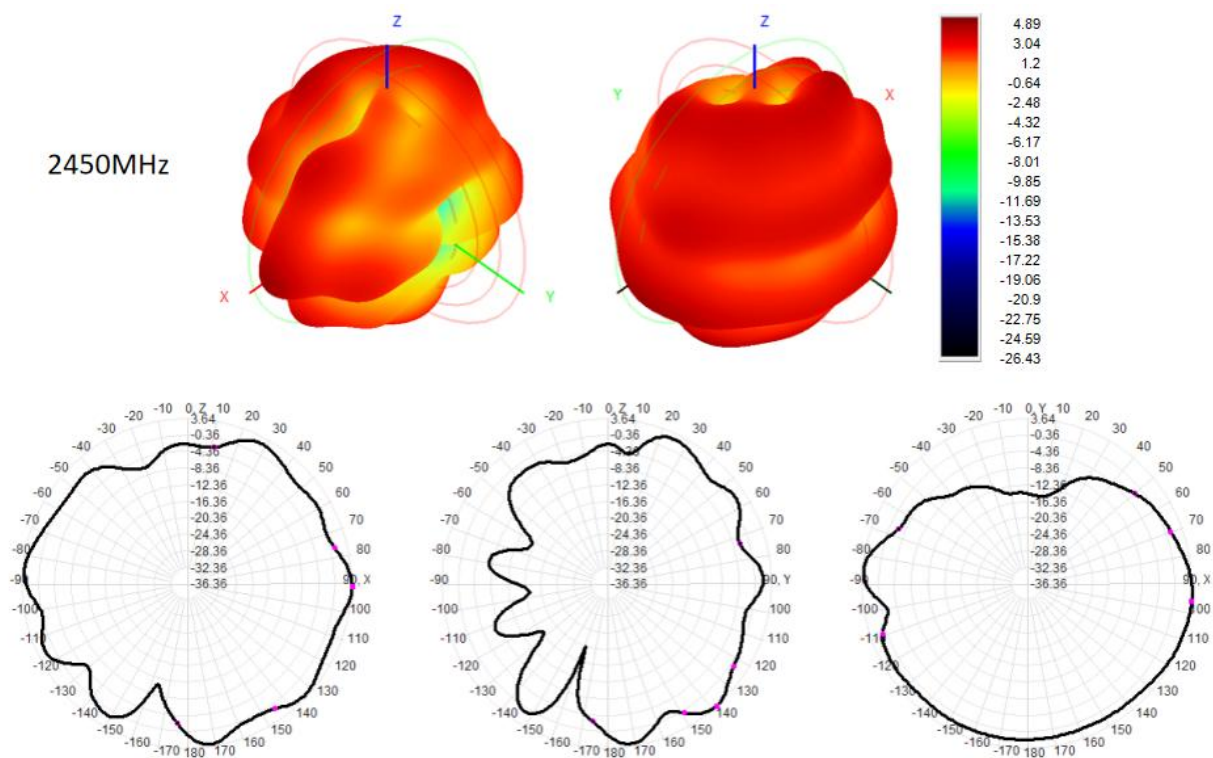
**Passive value:**

| Frequency (MHz) | Efficiency (%) | Peak GAIN (dBi) |
|-----------------|----------------|-----------------|
| 2400            | 88. 53         | 5. 23           |
| 2450            | 85. 27         | 4. 89           |
| 2500            | 78. 31         | 4. 62           |
| 5150            | 61. 18         | 2. 42           |
| 5850            | 65. 85         | 3. 31           |

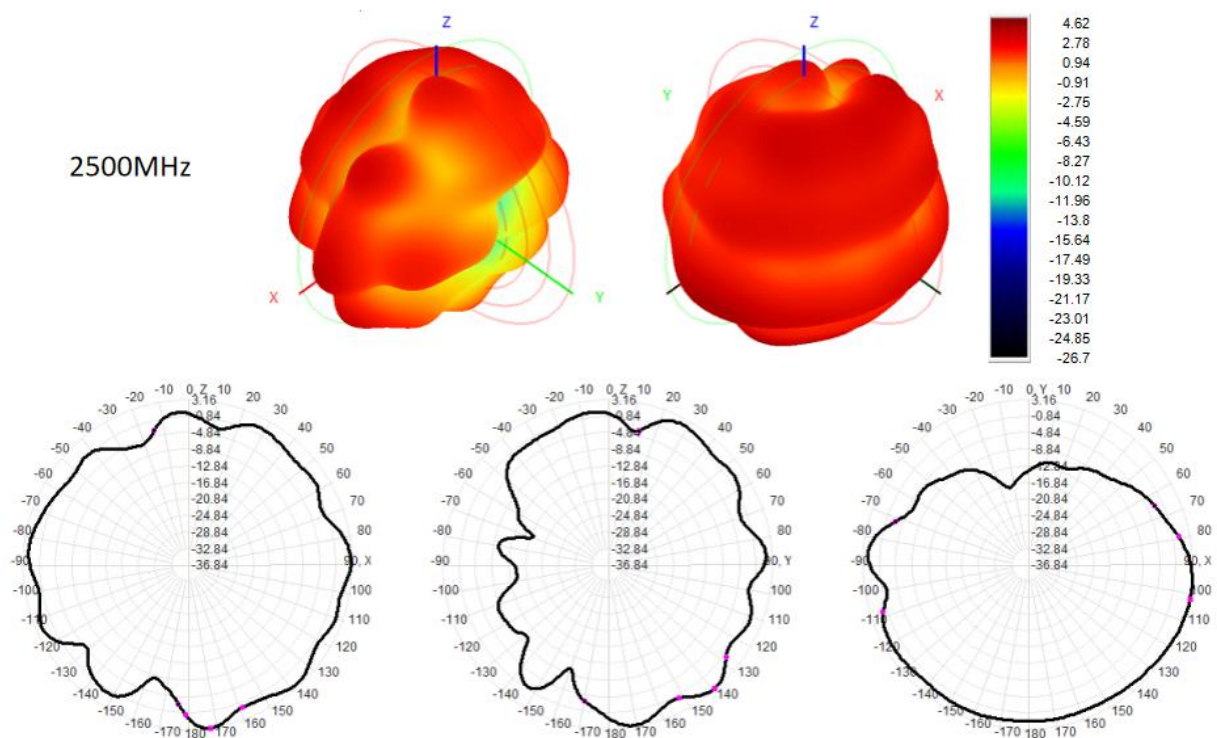
2D、3D:



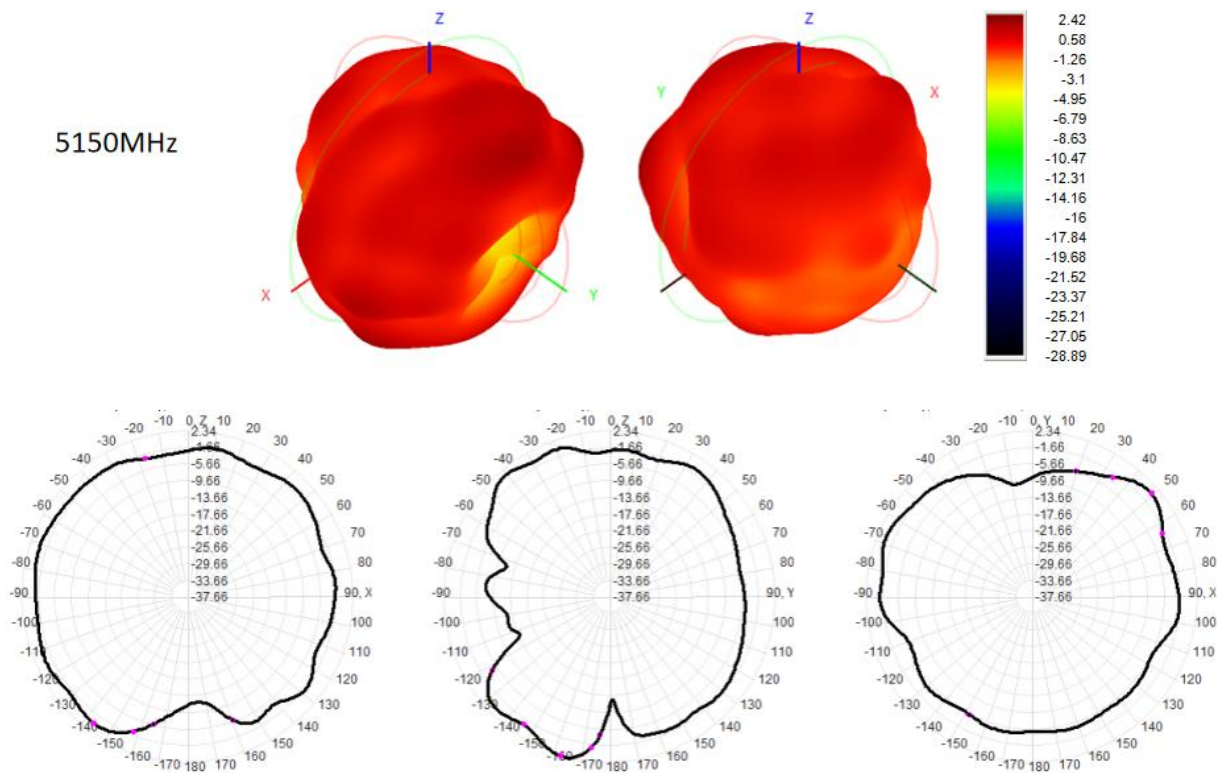
2450MHz



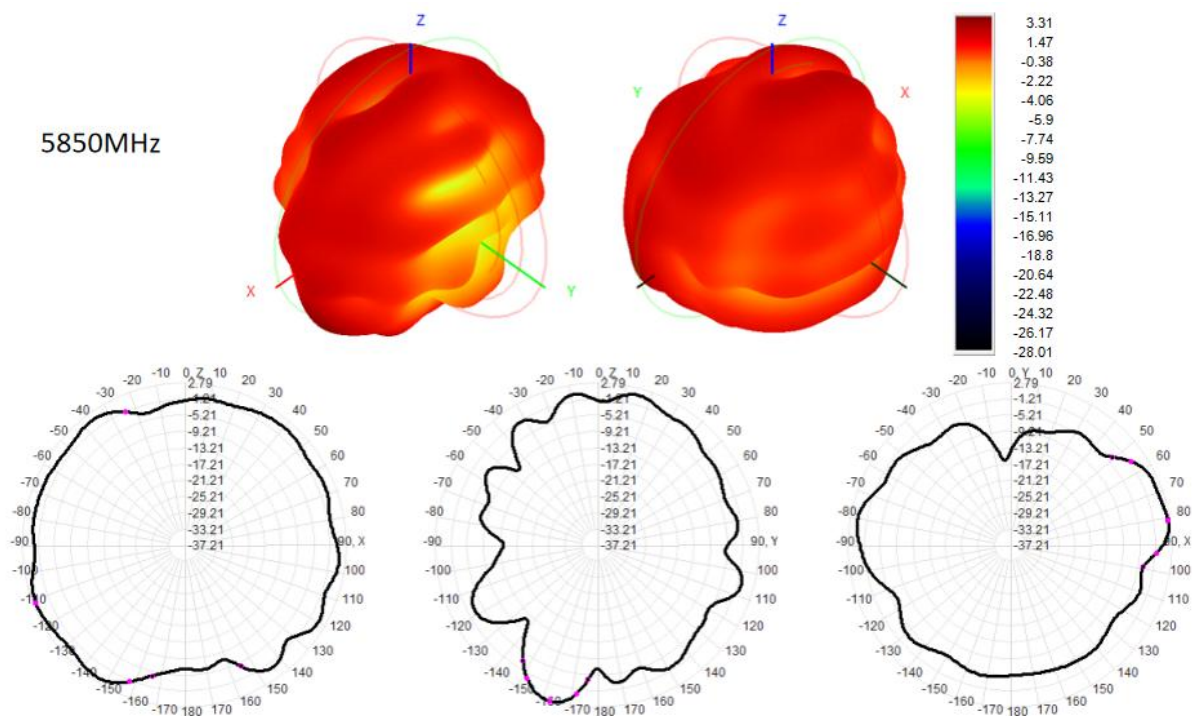
2500MHz



5150MHz



5850MHz



## Environmental testing requirements

| No. | Test Item                     | Test Methods and Conditions                                                                                                                                                                                                                                             | Test Equipment           | Test Results |
|-----|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------|
| 1   | Temperature and humidity test | Referring to EIA 364-31 Method 3, Test Condition A, the purpose of this test procedure is to evaluate the performance of products used in the detailed standard test methods, which are affected by the influence of high humidity and heat on the material properties. | K.SON INS<br>THS-A4L-150 | Qualified    |
|     |                               | Requirements:<br>Temperature: 85°C;<br>Humidity: 90~95% (RH);<br>Time: 72 hours                                                                                                                                                                                         |                          |              |
| 2   | Low temperature test          | The sample to be tested should be placed in a constant temperature environment, with the temperature set at -45°C                                                                                                                                                       | K.SON INS<br>THS-A4L-150 | Qualified    |
|     |                               | Requirements:<br>Time: 24 hours                                                                                                                                                                                                                                         |                          |              |
| 3   | High temperature test         | The sample to be tested should be placed in a constant temperature environment, with the temperature set at 85°C.                                                                                                                                                       | K.SON INS                | Qualified    |
|     |                               | Requirements:<br>Time: 24 hours                                                                                                                                                                                                                                         |                          |              |

|   |                 |                                                                                                                                                                                                   |                   |           |
|---|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|
|   |                 |                                                                                                                                                                                                   | THS-A4L-150       |           |
| 4 | Thermal shock   | The sample to be tested should be placed in a fixed environment with a temperature set between <b>-45~85°C.</b>                                                                                   | K.SON INS         | Qualified |
|   |                 | Requirements:<br>8 hours or more (30 minutes per session, 12 cycles)                                                                                                                              | THS-A4L-150       |           |
| 5 | Salt spray test | The sample to be tested should be placed in a fixed environment with the following requirements:<br>NaCl concentration: 40-60 g/kg<br>pH value: 6.5-7.2<br>Testing time: <b>24H</b>               | Salt spray tester | Qualified |
|   |                 | 1. Gold-plated products must not have rust spots or peeling.<br>2. Other nickel-plated, tin-plated, and zinc-plated products must not have more than two rust spots on the same shaft or surface. |                   |           |

## Environmental testing requirements

| No. | Test Item      | Test Methods and Conditions                                                                                                                                                        | Test Equipment            | Test Results |
|-----|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------|
| 1   | Vibration test | Test Condition A<br>The purpose of this test procedure is to evaluate the properties of products used in detailed standard test methods, which are affected by motion or handling. | Vibration testing machine | Qualified    |
|     |                | Requirements:<br>Vibration Range: 10-55Hz<br>Displacement Amplitude: 0.35mm<br>Acceleration Amplitude: 50.0m/s<br>Number of Sweep Cycles: 30                                       |                           |              |
| 2   | Drop Test      | The sample to be tested should be placed at a certain height, set at 1 meter, and dropped freely three times from all six sides.                                                   | Drop testing fixture      | Qualified    |
|     |                | Requirement:<br>The product's mechanical properties should remain normal after the drop test.                                                                                      |                           |              |

|   |              |                                                                                                                                                                                                   |                         |                  |
|---|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|
| 3 | Tensile Test | Refer to Feisheng Electronics testing specifications: The test object is fixed in place by a fixture. A certain force is applied in the opposite direction; the product assembly must not detach. | Tension testing machine | <b>Qualified</b> |
|   |              | Requirement:<br>1. The product assembly must not detach.                                                                                                                                          |                         |                  |