

# Shanghai Shangyuan Communication Technology Co., LTD

## Antenna admission book

|                                     |                            |                          |
|-------------------------------------|----------------------------|--------------------------|
| Customer name: Yunjia               |                            | Project name: P711 一体机   |
| Working frequency band: WiFi2.4G&5G |                            |                          |
| Hardware version:                   |                            |                          |
| Hardware version:                   |                            |                          |
| Shangyuan material specifications   |                            |                          |
| specifications and models           | Shang Yuan material number | Customer material number |
| WIFI ant                            | SZ241821B74                | 2.1.09.12.002303         |
|                                     |                            |                          |

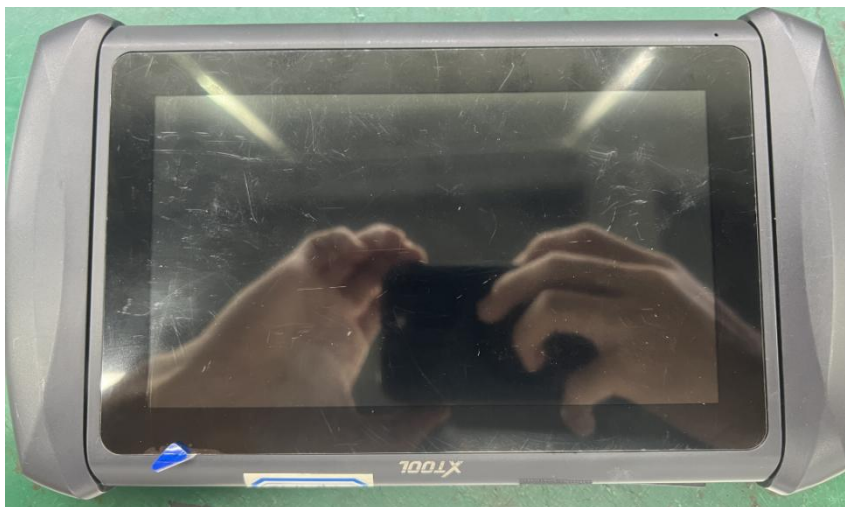
| Change the resume                 |                    |                       |                   |         |
|-----------------------------------|--------------------|-----------------------|-------------------|---------|
| Preparation / change date         | Change the content |                       | Change the person | edition |
| 2024.08.27                        | A new release      |                       | XUWEI             | A       |
|                                   |                    |                       |                   |         |
|                                   |                    |                       |                   |         |
| Shang Yuan will sign the column   |                    |                       |                   |         |
| research and development          | structure:         | examine and verify:   | Quality Engineer: | ratify: |
|                                   | radio frequency:   | examine and verify:   |                   |         |
| The customer will sign the column |                    |                       |                   |         |
| electronic engineer               | project manager    | construction engineer | Quality engineer  |         |
|                                   |                    |                       |                   |         |

## catalogue

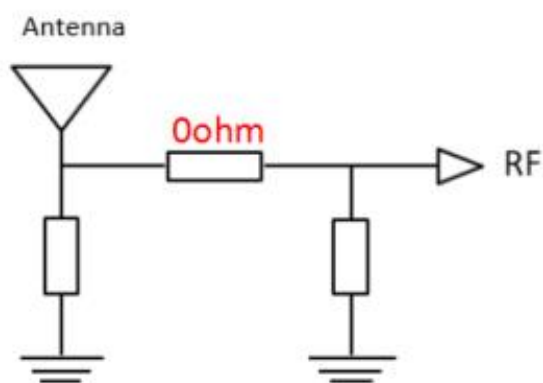
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|-----------------------------------------------------------------|----------|
| <b>Antenna admission book.....</b>                              | <b>1</b> |
| 1. item information .....                                       | 3        |
| 2. Antenna matching circuit.....                                | 3        |
| 3. Complete machine test data .....                             | 3        |
| 3.4 Active test data .....                                      | 5        |
| 4. The prototype environment processing mode .....              | 6        |
| 5. Antenna mounting position .....                              | 7        |
| Vi. Mass production antenna index .....                         | 7        |
| Vii. Engineering drawing .....                                  | 8        |
| Viii. ROHS restricted substance composition questionnaire ..... | 9        |
| Xii. Packaging method .....                                     | 15       |

## 一、 item information

### .11 Schematic diagram



## 二、 Antenna matching circuit



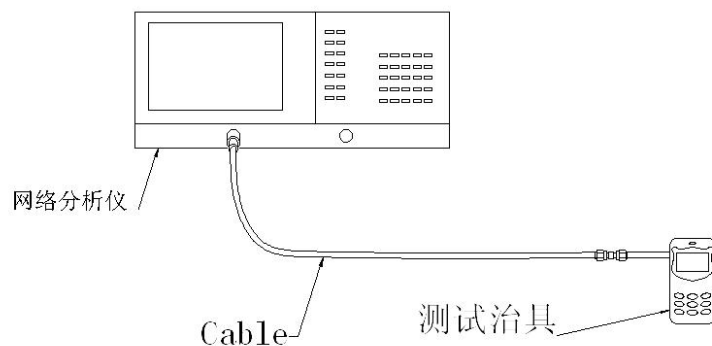
## 三、 Complete machine test data

### 3.1 S11 Description of the test method

Test Equipment: Network Analyzer (Agilent E5071C)

Test method: Export a 50 Ohm CABLE cable from the instrument test port, connect the SMA connector of the test device after the calibrator, and record the echo loss and standing wave ratio corresponding to the relevant frequency point.

The test schematic diagram is as follows:



Schematic diagram of the test

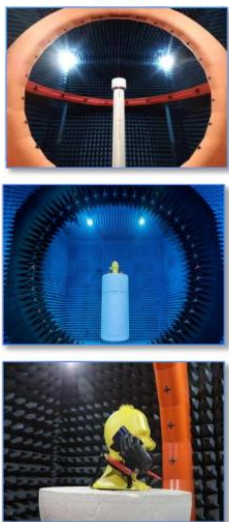
### 3.2 Test environment

Test System: MPS 6450 Multi-sensor OTA Measurement System (XH-IoT)

Test environment: temperature  $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , humidity  $50\% \pm 15\%$

Test equipment: Use the network analyzer R & S ZND / Agilent E5071C when testing the passive data  
When testing active data, use the comprehensive meter Agilent 8960 / CMW500 / S P9500E / SP 8315

#### OTA实验室



#### 综测仪器



SP9500-CTS-5G



CMW500



SP8315 NB-IoT /eMTC

#### 其他设备



OTA head hand



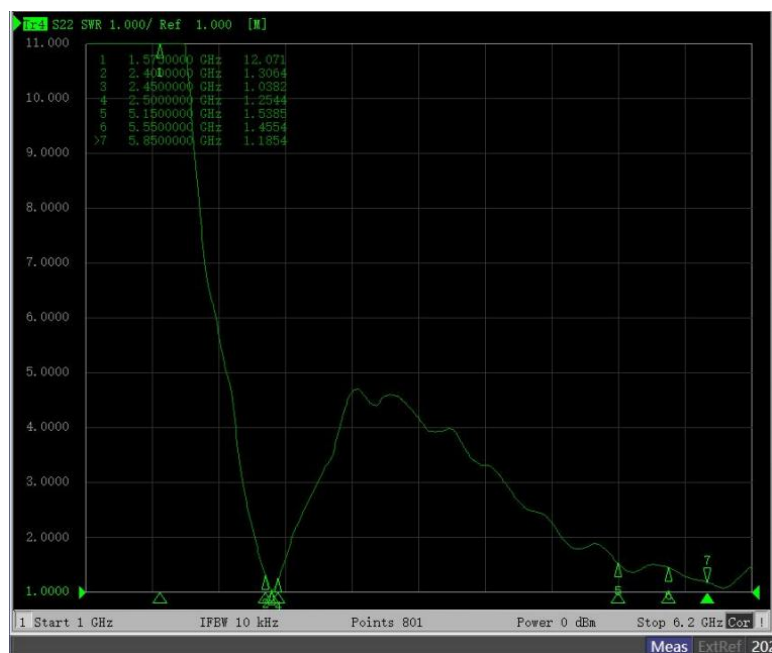
OTA ear hand



OTA arm hand

### 3.3 The passive test parameters

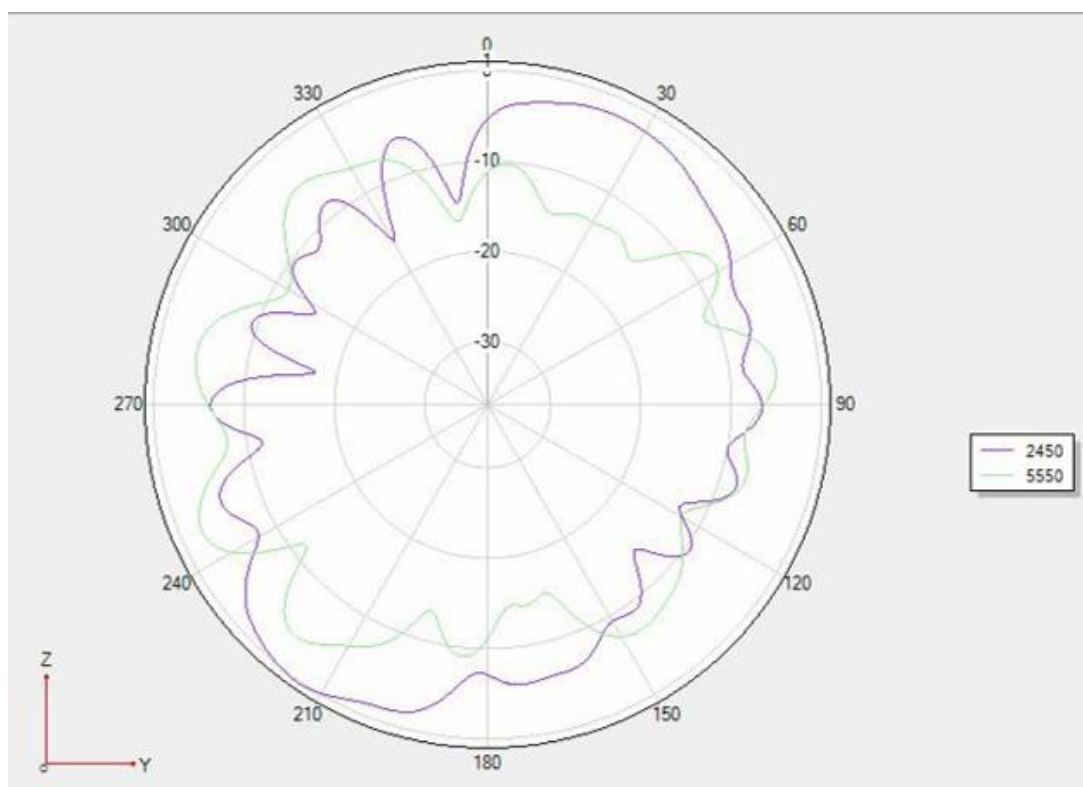
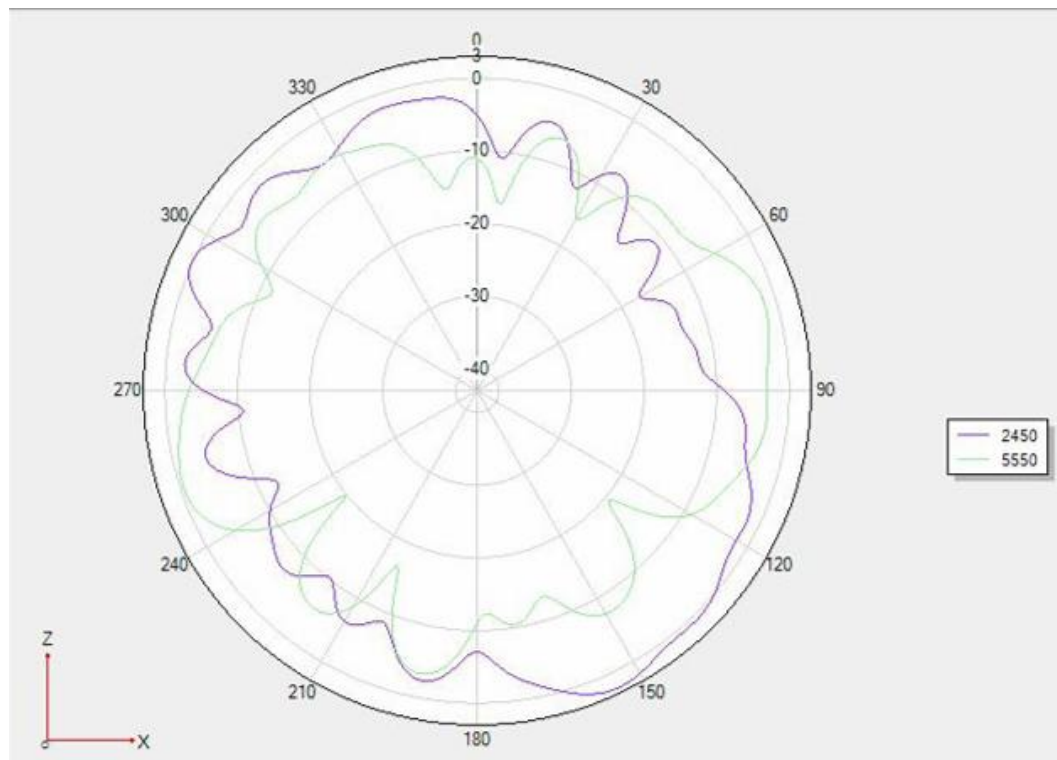
standing-wave ratio VSWR

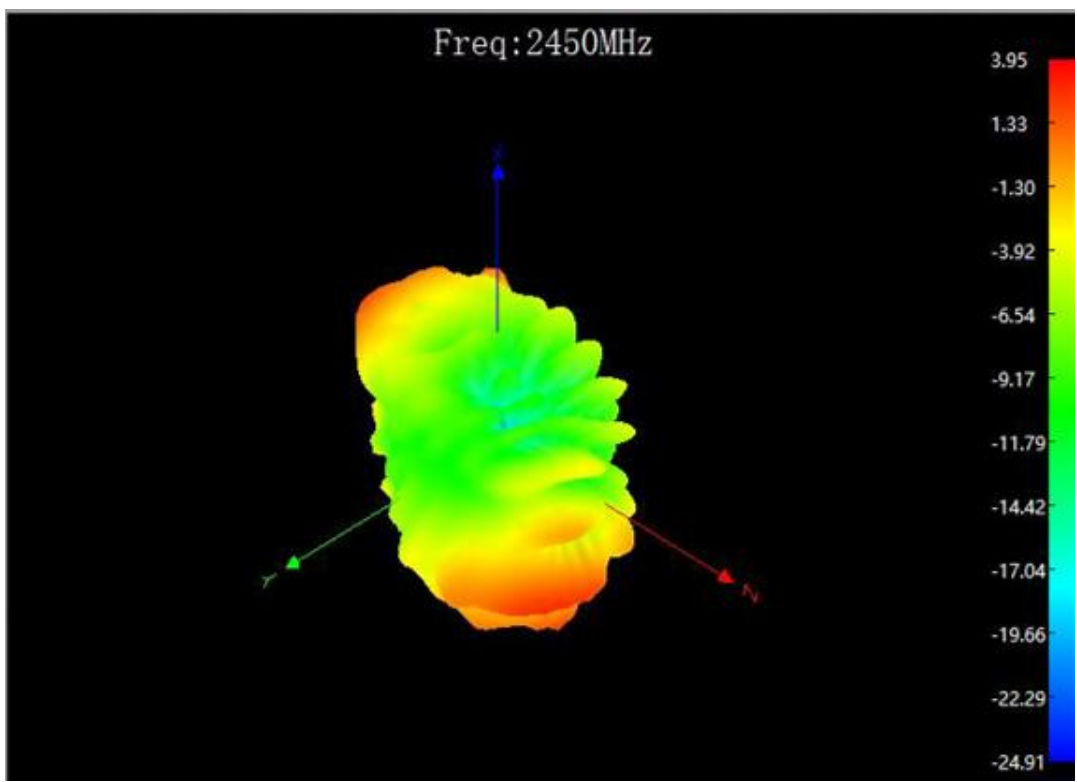
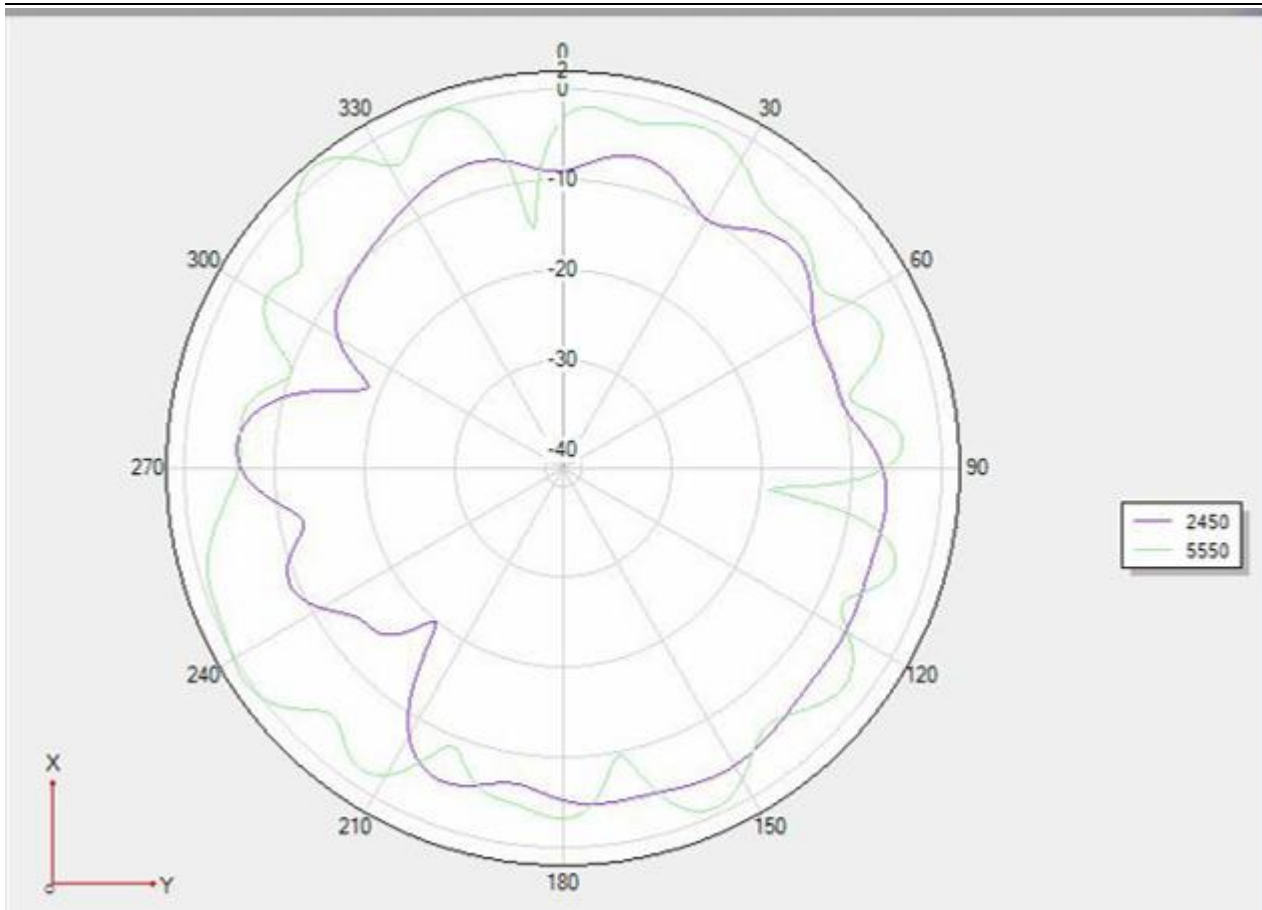


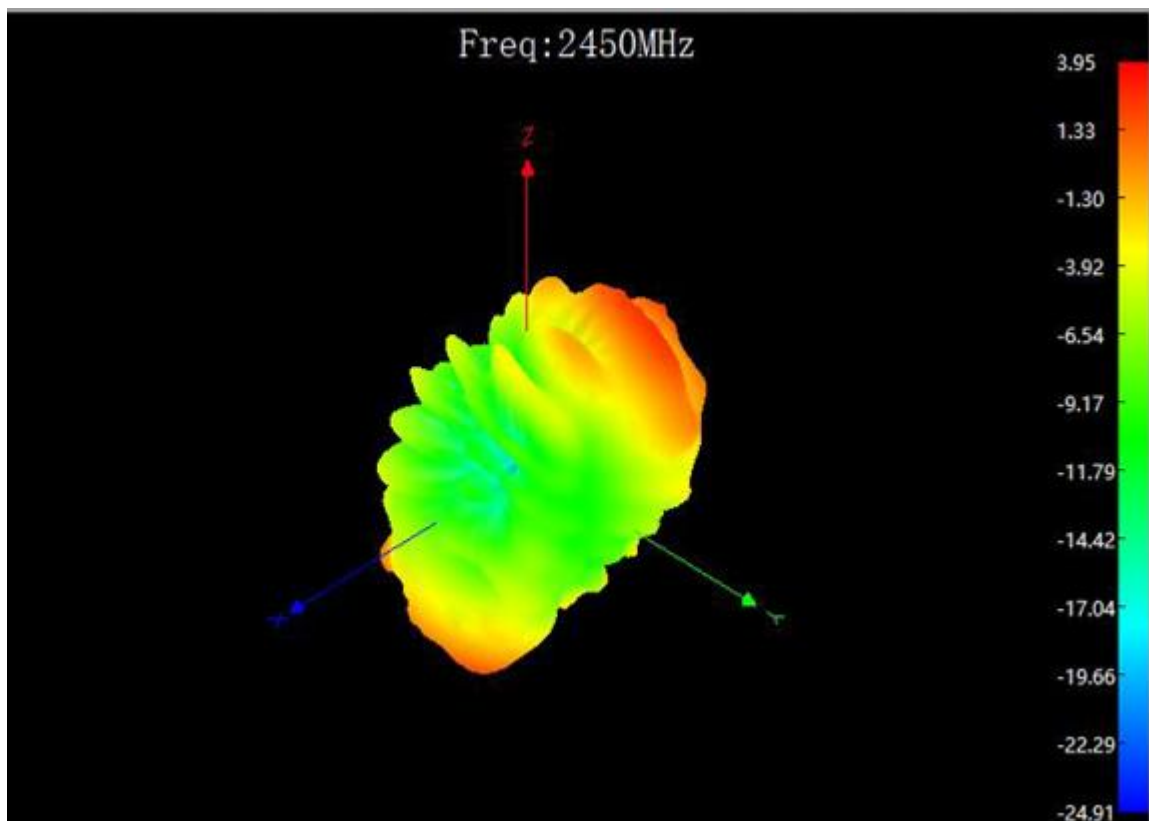
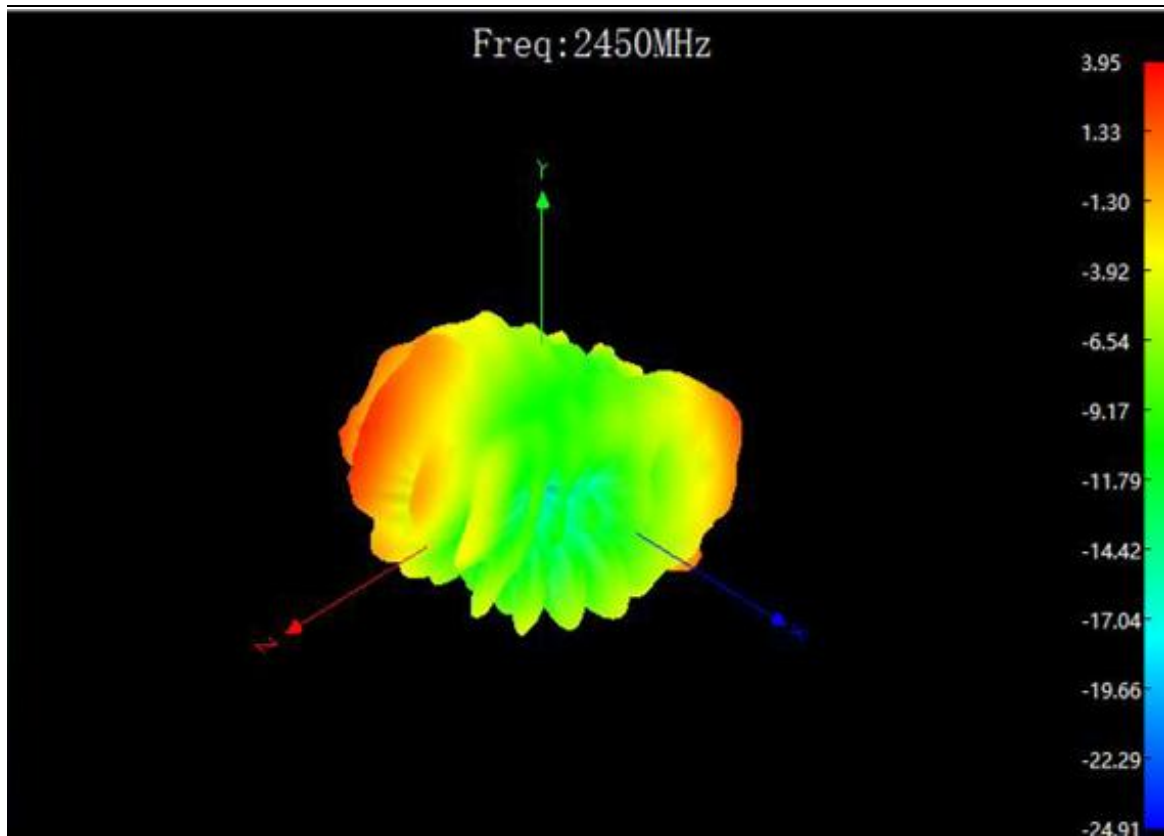
Passive efficiency

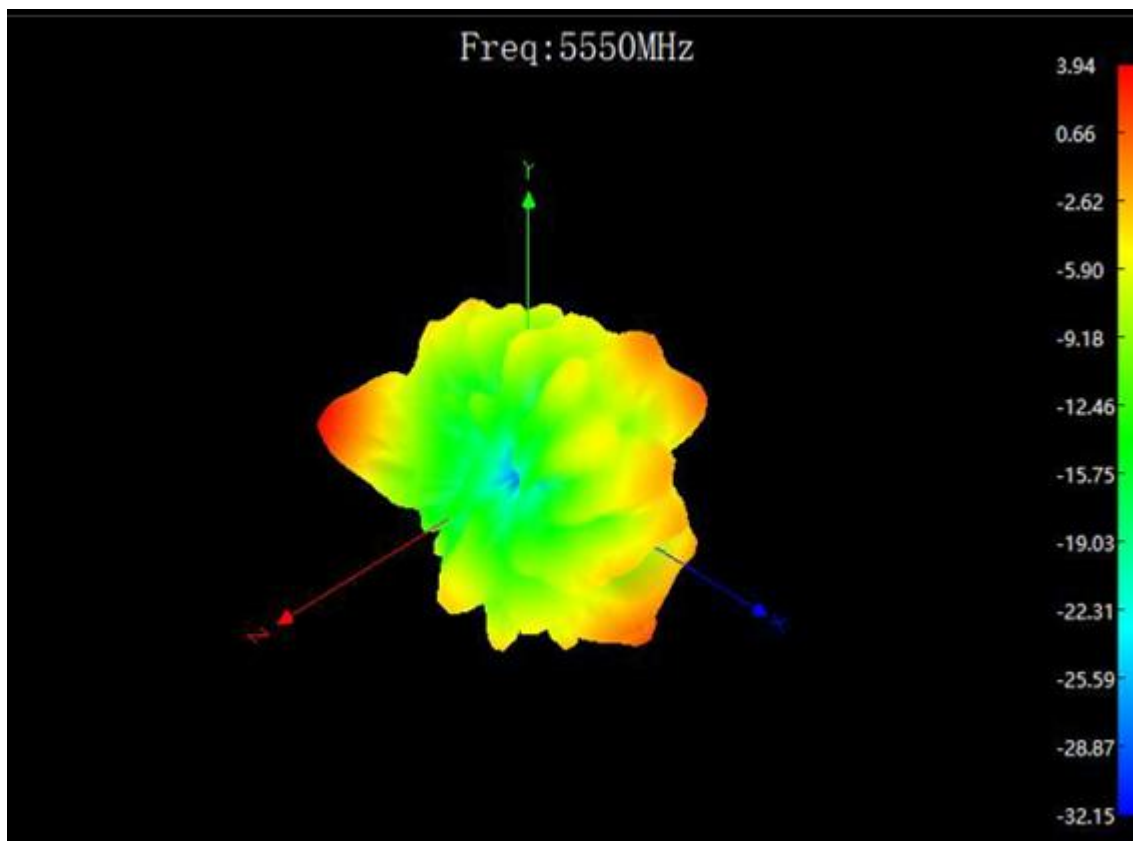
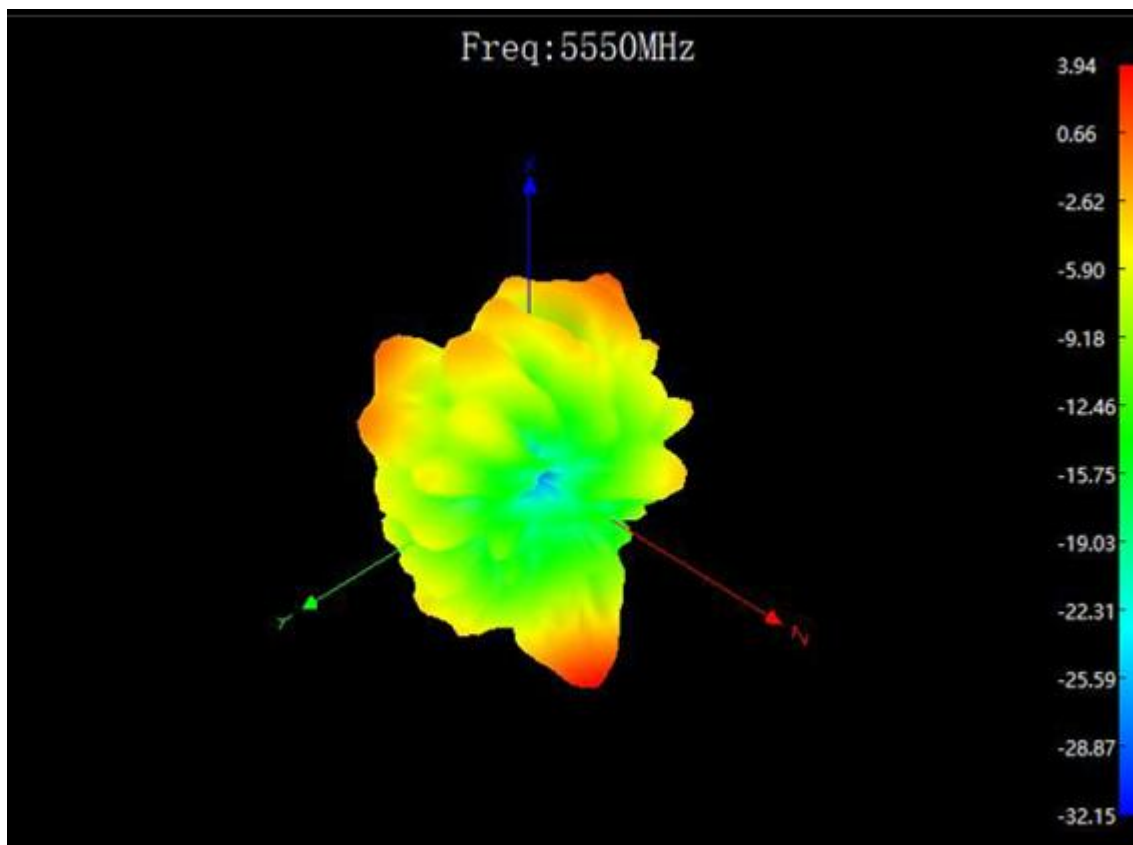
| Frequency/Mhz | MaxGain/dBi | Efficiency / % | Frequency/Mhz | MaxGain/dBi | Efficiency / % |
|---------------|-------------|----------------|---------------|-------------|----------------|
| 2400          | 2.89        | 52.21          | 5150          | 4.72        | 42.43          |
| 2410          | 2.79        | 52.51          | 5200          | 4.74        | 42.06          |
| 2420          | 2.74        | 53.19          | 5250          | 4.62        | 41.26          |
| 2430          | 3.28        | 53.88          | 5300          | 4.44        | 40.83          |
| 2440          | 3.41        | 55.4           | 5350          | 4.16        | 40.97          |
| 2450          | 3.95        | 56.39          | 5400          | 4.05        | 42.58          |
| 2460          | 3.84        | 58.11          | 5450          | 5.68        | 43.11          |
| 2470          | 4.21        | 58.73          | 5500          | 5.36        | 43.5           |
| 2480          | 3.96        | 50.27          | 5550          | 3.94        | 42.73          |
| 2490          | 4.25        | 50.64          | 5600          | 4.52        | 42.81          |
| 2500          | 3.88        | 50.36          | 5650          | 4.13        | 43.73          |
|               |             |                | 5700          | 4.06        | 43.27          |
|               |             |                | 5750          | 4.03        | 43.34          |
|               |             |                | 5800          | 4.09        | 42.81          |
|               |             |                | 5850          | 3.91        | 43.73          |

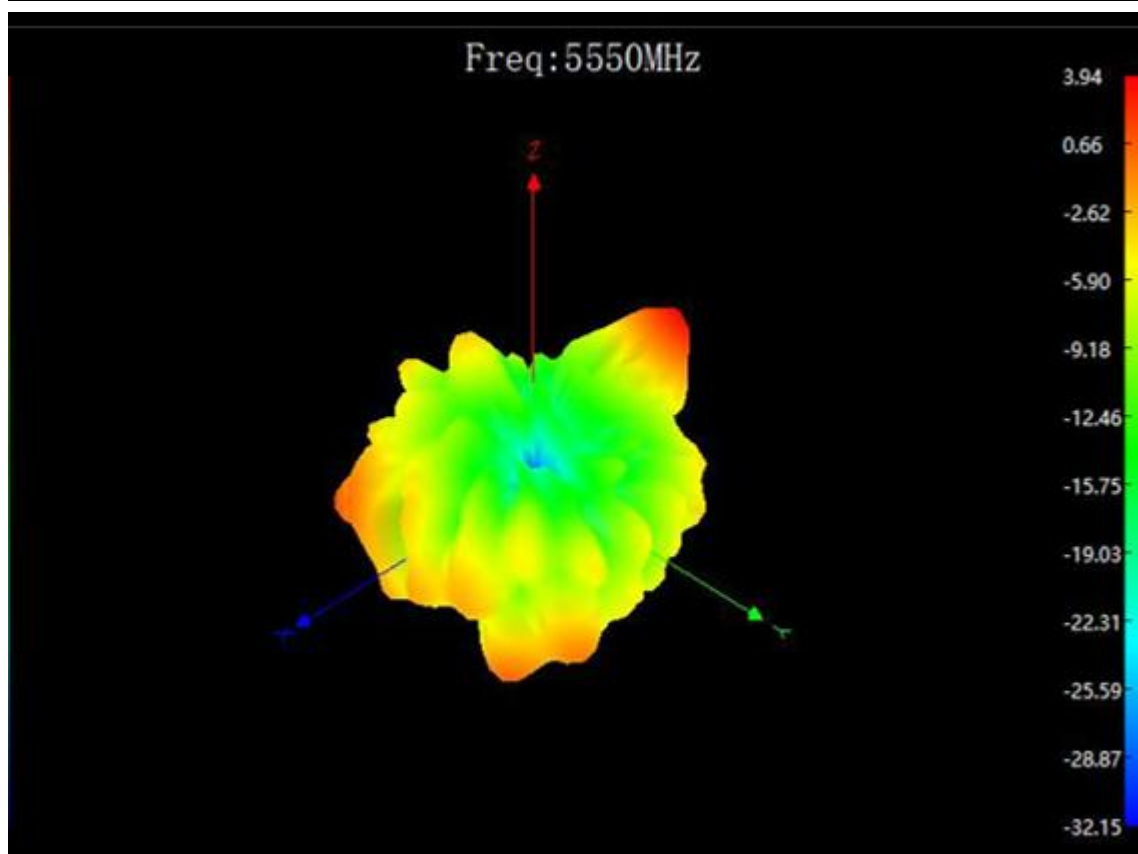
Passive direction diagram







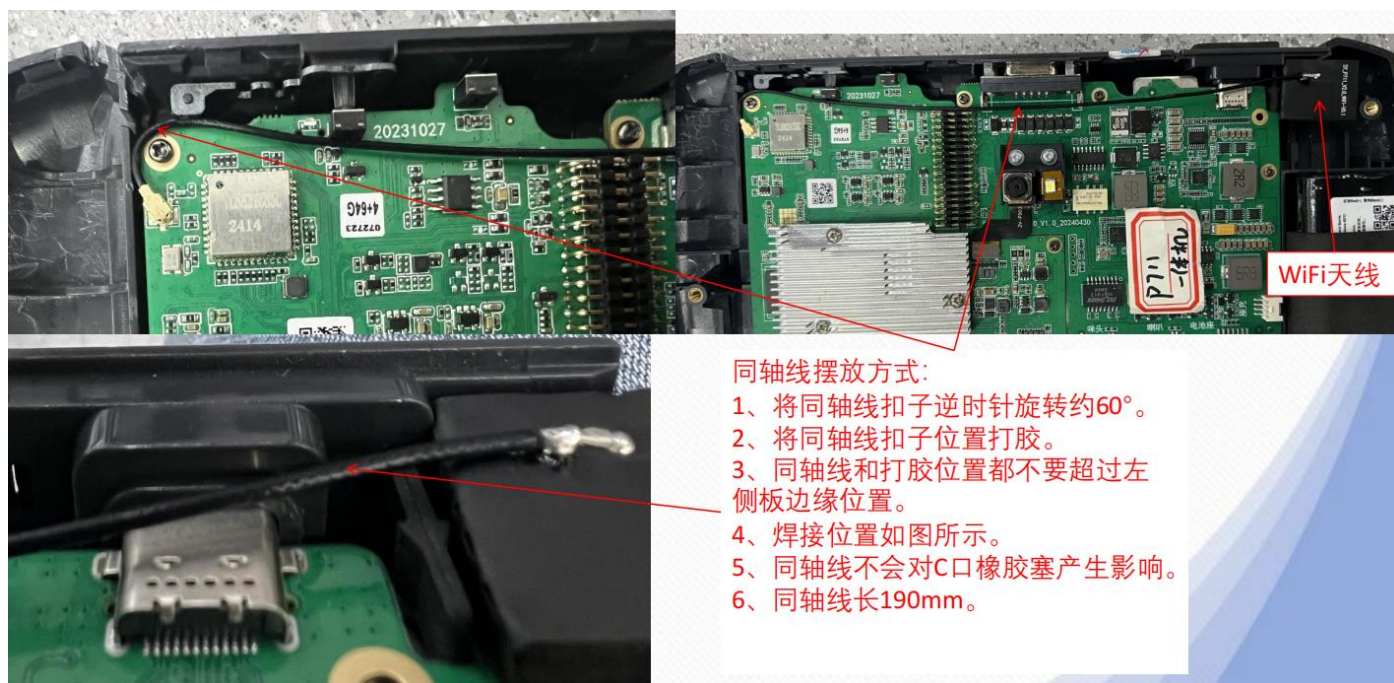




### 3.4 Active test data

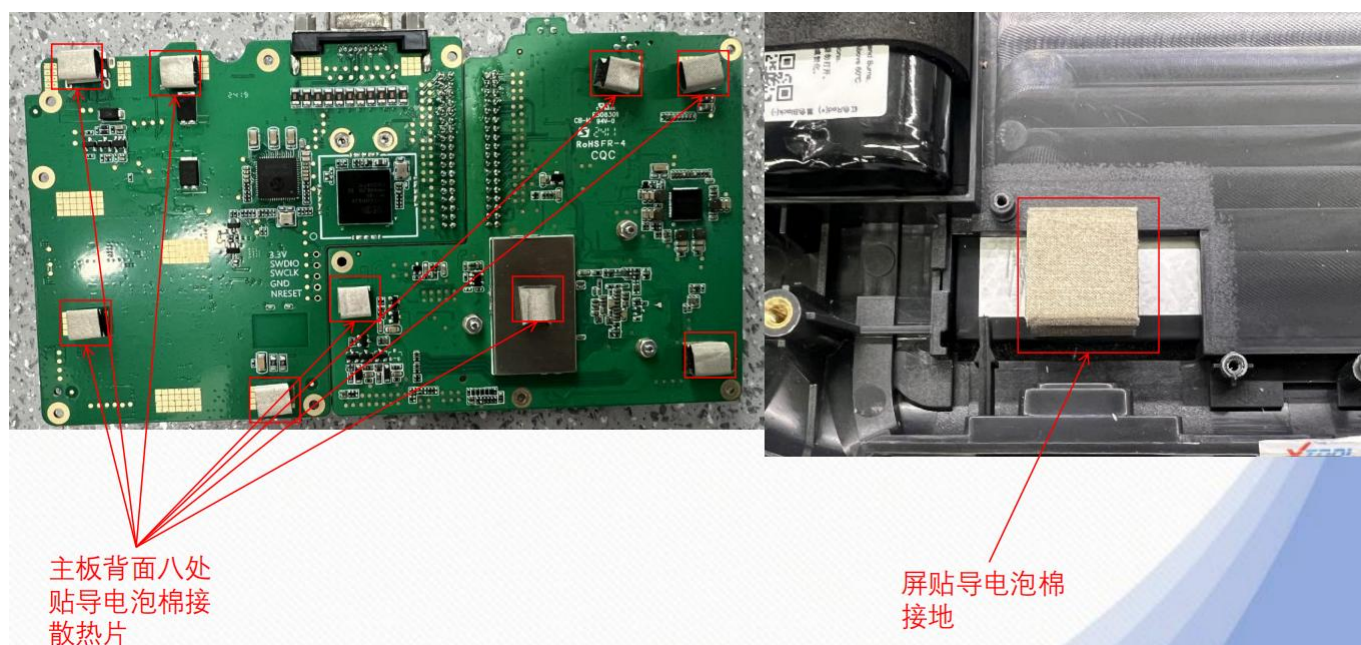
| Measurement | Band              | Channel | Frequency | Total  |
|-------------|-------------------|---------|-----------|--------|
| TRP         | WIFI_B (1M)       | 1       | 2412      | 15.06  |
| TRP         | WIFI_B (1M)       | 6       | 2437      | 15.14  |
| TRP         | WIFI_B (1M)       | 11      | 2462      | 15.64  |
| TIS(EIRP)   | WIFI_B (11M)      | 1       | 2412      | -81.33 |
| TIS(EIRP)   | WIFI_B (11M)      | 6       | 2437      | -82.4  |
| TIS(EIRP)   | WIFI_B (11M)      | 11      | 2462      | -81.39 |
| TRP         | WIFI_G (6M)       | 1       | 2412      | 13.64  |
| TRP         | WIFI_G (6M)       | 6       | 2437      | 14.4   |
| TRP         | WIFI_G (6M)       | 11      | 2462      | 15.33  |
| TIS(EIRP)   | WIFI_G (54M)      | 1       | 2412      | -65.84 |
| TIS(EIRP)   | WIFI_G (54M)      | 6       | 2437      | -65.04 |
| TIS(EIRP)   | WIFI_G (54M)      | 11      | 2462      | -65.22 |
| TRP         | WIFI_N_ISM (6.5M) | 1       | 2412      | 13.52  |
| TRP         | WIFI_N_ISM (6.5M) | 6       | 2437      | 15.59  |
| TRP         | WIFI_N_ISM (6.5M) | 11      | 2462      | 14.65  |
| TIS(EIRP)   | WIFI_N_ISM (65M)  | 1       | 2412      | -65.31 |
| TIS(EIRP)   | WIFI_N_ISM (65M)  | 6       | 2437      | -65.56 |
| TIS(EIRP)   | WIFI_N_ISM (65M)  | 11      | 2462      | -65.75 |
| TRP         | WIFI_A (6M)       | 36      | 5180      | 15.21  |
| TRP         | WIFI_A (6M)       | 149     | 5745      | 17.41  |
| TRP         | WIFI_A (6M)       | 165     | 5825      | 16.34  |
| TIS(EIRP)   | WIFI_A (54M)      | 36      | 5180      | -68.88 |
| TIS(EIRP)   | WIFI_A (54M)      | 149     | 5745      | -67.35 |
| TIS(EIRP)   | WIFI_A (54M)      | 165     | 5825      | -67.1  |

#### 四、 The prototype environment processing mode



#### 五、 Antenna loading position

The antenna is assembled in the following figure



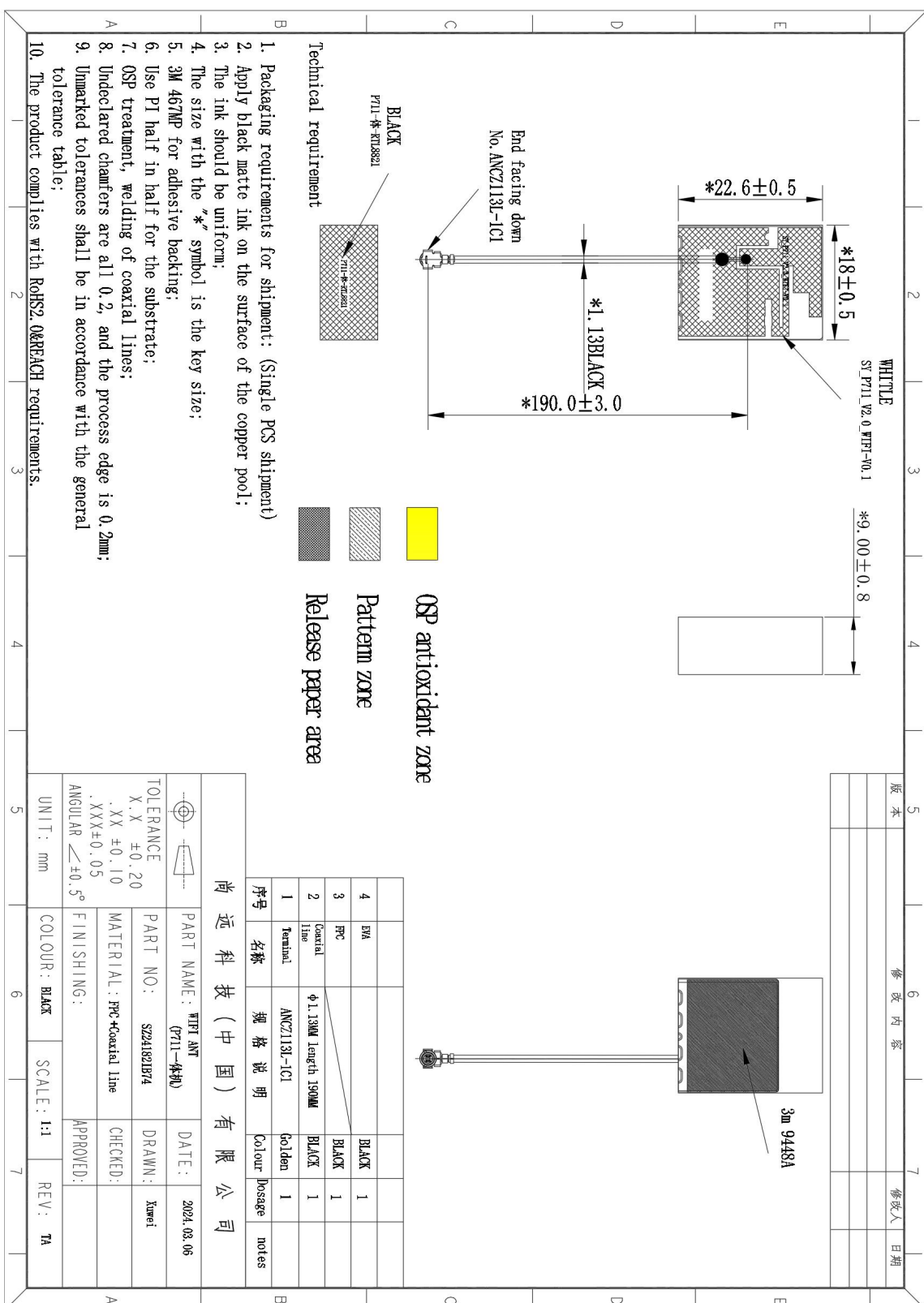
## 六、 Mass production antenna index

When the antenna is in mass production, the standing wave ratio is used as the test standard for mass production.

Based on the differences of the project itself, the following criteria are given:

| Frequency (MHz) | Mass production standards                |
|-----------------|------------------------------------------|
| 2400-2450MHz    | VSWR (mass production performance)       |
| 5150-5850MHz    | <VSWR (recognized performance) $\pm 0.5$ |

## 七、 schedule drawing



## 八、 ROHS restricted substance composition questionnaire

## RoHS List of RoHS restricted substances

| SALEABLE PART       |               |                           |               |                                    |                            |                      |                                                |          |         |      |                  |     |                               |                    |            |                         |               |
|---------------------|---------------|---------------------------|---------------|------------------------------------|----------------------------|----------------------|------------------------------------------------|----------|---------|------|------------------|-----|-------------------------------|--------------------|------------|-------------------------|---------------|
| 零件料号/Part number    |               | 零件名称/型号/Part name / model |               |                                    | 供应商料号/Supplier item number |                      | 制造商名称/Name of manufacturer                     |          |         |      |                  |     |                               |                    |            |                         |               |
|                     |               | P711一体机                   |               |                                    | SZ241821B74                |                      | 深圳市尚远科技有限公司                                    |          |         |      |                  |     |                               |                    |            |                         |               |
| SUB-PART            |               |                           |               |                                    |                            |                      |                                                |          |         |      |                  |     |                               |                    |            |                         |               |
| 序号<br>Serial number | 名称/name       |                           | 料号<br>Item No | 单件产品<br>Usage of single product(g) | 供应商/supplier               | 检测报告<br>/Test report | 限用物质含量PPM/Content of restricted substances ppm |          |         |      |                  |     | 控制方法<br>/Control method       | SGS Report         |            |                         | 备注<br>Remarks |
|                     | 单体<br>Monomer | 成分<br>/component          |               |                                    |                            |                      | 有/无<br>Yes / no                                | 铅<br>/Pb | 镉<br>Cd | 汞/Hg | 六价<br>铬<br>/Cr6+ | PBB |                               | PBDE               | 编号/number  | 生效日期<br>/effective date |               |
| 1                   | FPC           | 基材/base material          |               |                                    | 蔡伦格蒂<br>/Cherengetti       | 有/yes                | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS report | SHAEC23021627701   | 2023/12/27 | www.sgsgroup.com.cn     | /             |
| 2                   | FPC           | 油墨<br>/printing ink       |               |                                    | 优立/You li                  | 有/yes                | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS report | ETR23701480        | 2023/6/13  | www.sgsgroup.com.cn     | /             |
| 3                   | FPC           | 背胶/Gum back               |               |                                    | 3M                         | 有/yes                | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | SHAEC23021627701   | 2023/12/27 | www.sgsgroup.com.cn     | /             |
| 4                   | FPC           | 电线<br>/Dianjin            |               |                                    | 鑫达昇                        | 有/yes                | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS report | A2230153997101001E | 2023/4/12  | www.sgsgroup.com.cn     | /             |
| 5                   | CABLE         | 镀锡圆铜线                     |               |                                    | 震雄铜业                       | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | A2230496550101001C | 2023/09/22 | www.sgsgroup.com.cn     | /             |
| 6                   | CABLE         | FEP                       |               |                                    |                            | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | NGBPC24000131241   | 2024/1/16  | www.sgsgroup.com.cn     | /             |
| 7                   | CABLE         | 线材色母                      |               |                                    | 见龙                         | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | A2240269286101001C | 2024/5/16  | www.sgsgroup.com.cn     | /             |
| 8                   | CABLE         | C5191                     |               |                                    | 紫金铜业                       | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | CANEC24000977304   | 2024/01/22 | www.sgsgroup.com.cn     | /             |
| 9                   | CABLE         | C5210                     |               |                                    | 紫金铜业                       | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | CANEC24000977302   | 2024/01/22 | www.sgsgroup.com.cn     | /             |
| 10                  | CABLE         | 胶芯                        |               |                                    |                            | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | ETR23705937        | 2023/08/04 | www.sgsgroup.com.cn     | /             |
| 11                  | CABLE         | 镀金                        |               |                                    | 翔腾电子                       | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | A2230400553101001E | 2023/08/09 | www.sgsgroup.com.cn     | /             |
| 12                  | CABLE         | 镀镍                        |               |                                    | 翔腾电子                       | N.D                  | N.D                                            | N.D      | N.D     | N.D  | N.D              | N.D | 审核SGS报告<br>/Review SGS        | A2230400553101002E | 2023/08/09 | www.sgsgroup.com.cn     | /             |
| 13                  |               |                           |               |                                    |                            |                      |                                                |          |         |      |                  |     |                               |                    |            |                         |               |

制表/Tabulation: 陈小平

制表者部门/Tabulator Department:: 品质部/品质工程师

日期/date: 2024/6/10

## 九、 manner of packing

| Parts packing instructions report                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                    |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|
| customer name                                                                                 | Yunjia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | manufacturer | SUNNYWAY           |
| entry name                                                                                    | SZ24182IB74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | product name | FPC antenna module |
| Bale quantity                                                                                 | 50 PCS * 1 <input type="checkbox"/> bundle <input checked="" type="checkbox"/> PE bag <input type="checkbox"/> disc <input type="checkbox"/> layer <input type="checkbox"/> other _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                    |
| Moisture-proof & slow walking                                                                 | <input type="checkbox"/> desiccant <input type="checkbox"/> Vacuum bag <input type="checkbox"/> Bubble pack <input type="checkbox"/> foam <input type="checkbox"/> Paper wood <input checked="" type="checkbox"/> other _____                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                    |
| 内包装方式及标签                                                                                      | <div style="display: flex; align-items: center;">  <div> <p>客户名称: 云伽<br/>           产品名称: FPC天线组件<br/>           订单号码:<br/>           厂商编码: SZ24182IB74<br/>           客户编码:<br/>           数量:<br/>           检验员 :<br/>           发货日期: ____年__月__日<br/>           注意事项: 防潮, 防震, 防压, 小心轻放.....</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>50pcs / PE bag</span> <span>Carton label</span> </div>                                                                                         |              |                    |
| 外包装方式示意图及标签                                                                                   | <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> <p>客户名称: 云伽<br/>           产品名称: FPC天线组件<br/>           订单号码:<br/>           厂商编码: SZ24182IB74<br/>           客户编码:<br/>           数量:<br/>           检验员 :<br/>           发货日期: ____年__月__日<br/>           注意事项: 防潮, 防震, 防压, 小心轻放.....</p> </div>  </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>Carton label</span> <span>Check packaging, paste product</span> </div> |              |                    |
|                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | manufacturer |                    |
|                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | XUWEI        |                    |
| * The packaging picture is a schematic, does not mean that the picture is the actual product. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                    |