

# 样品承认书

## SAMPLE SPECIFICATION FOR APPROVAL

|                                |                             |
|--------------------------------|-----------------------------|
| 供应商名称<br>SUPPLIER              | Sunnyway Technology Co.,Ltd |
| 客户名称<br>CUSTOMER               | FAIOT Co., LTD              |
| 物料名称<br>DESCRIPTION            | FT01                        |
| 物料规格<br>SPECIFICATION          | FT01-BRACKET-ANT-2-5        |
| 物料编码<br>CUSTOMER PART NO       | 329900000107                |
| 供应商审核(公章)<br>SUPPLIER APPROVAL |                             |
| 客户审核<br>CUSTOMER APPROVAL      |                             |
| 承认日期<br>APPROVAL DATE          | 23.9.27                     |

| Check     |     |     |    |
|-----------|-----|-----|----|
| Baseband  | RF  | ME  | ID |
|           |     |     |    |
| Resources | SQE | PQM |    |
|           |     |     |    |

# Catalogue

## 1、 Sample

need ☒ ; no need ☐

## 2、 Specifications, drawings, material reports physical property table, related to fixture testing with SOP

paper archive ☒ ; electronic document ☒

## 3、 Visual inspection report

paper archive ☒ ; electronic document ☒

## 4、 Dimension report

paper archive ☒ ; electronic document ☒

## 5、 Functional test report

paper archive ☒ ; electronic document ☒

## 6、 Reliability test report

paper archive ☒ ; electronic document ☒

## 7、 Key dimensions CPK

paper archive ☒ ; electronic document ☒

## 8、 Flow chart

paper archive ☒ ; electronic document ☒

## 9、 Manner of packing

paper archive ☒ ; electronic document ☒

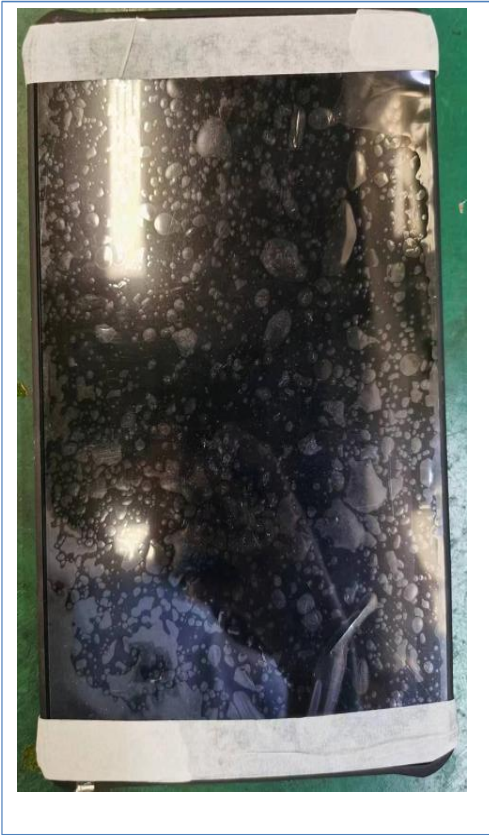
## 10、 Environmental information

Substance composition questionnaire ☒ ; RoHS ☒ ; Reach ☒ ; halogen-free ☒

comment: need ☒ ; no need ☐

## 1. Project information

### Machine information



### Antenna information

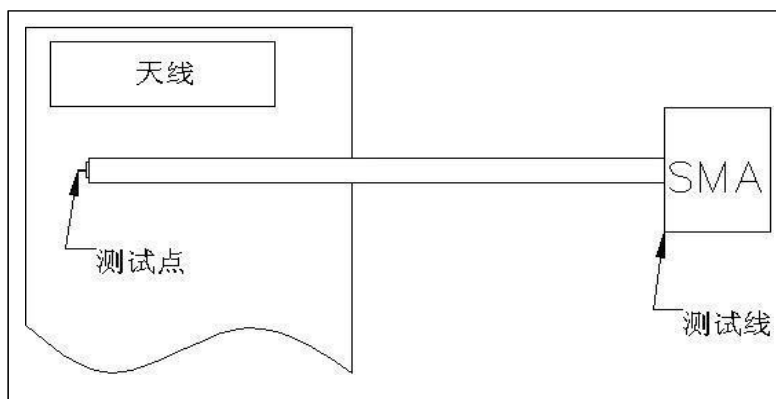
|      | Version   |
|------|-----------|
| ANT2 | ANT2-V1.0 |
| ANT6 | ANT6-V1.0 |

Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production.  
Ensure antenna shipment quality.

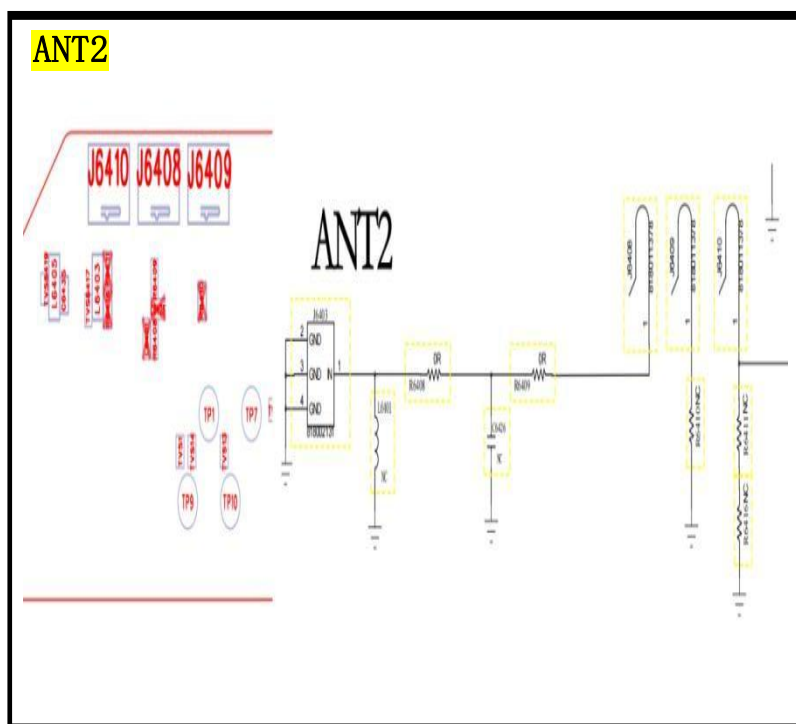
## 2. Test fixtures

Purpose: To test the passive parameters of the antenna as accurately as possible.

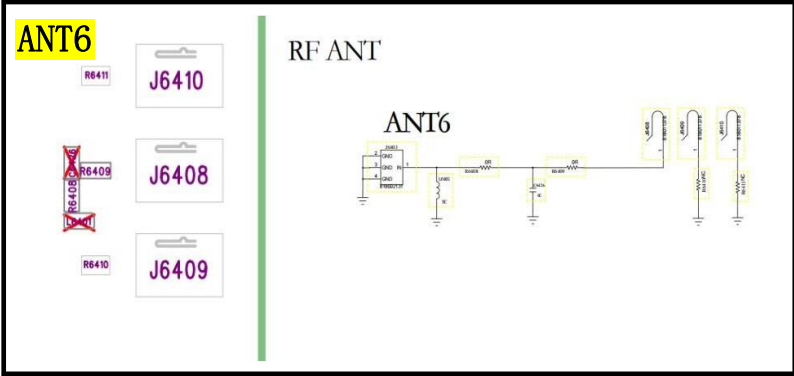
How to make: The prototyping mechanism is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit of the prototype motherboard (the front of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



## 3. Matching circuits



| ANT2     |           |  |
|----------|-----------|--|
| Location | Value     |  |
| J6403    | 818002131 |  |
| L6401    | NC        |  |
| R6408    | 1.8nh     |  |
| C6426    | 8.2nh     |  |
| R6409    | 33p       |  |
| J6408    | 818011378 |  |
| J6409    | 818011378 |  |
| J6410    | 818011378 |  |
| R6410    | 0 Ω       |  |
| R6411    | 0 Ω       |  |
| R6416    | 33p       |  |



| ANT6     |           |  |
|----------|-----------|--|
| Location | Value     |  |
| J6403    | 818002131 |  |
| L6401    | NC        |  |
| R6408    | 0 Ω       |  |
| C6426    | NC        |  |
| R6409    | 0 Ω       |  |
| J6408    | 818011378 |  |
| J6409    | 818011378 |  |
| J6410    | 818011378 |  |
| R6410    | 0 Ω       |  |
| R6411    | 0 Ω       |  |

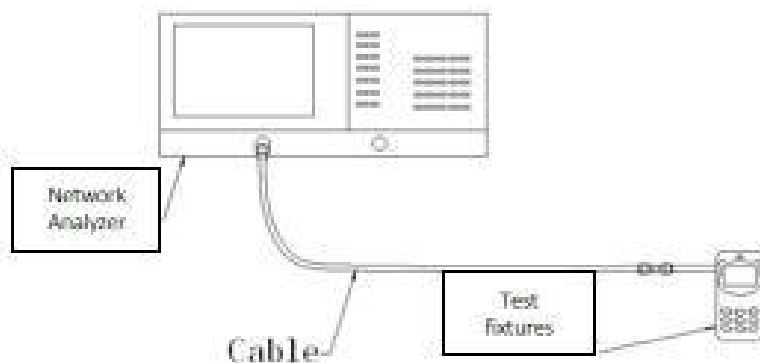
## 4. S11 test

### 1. S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

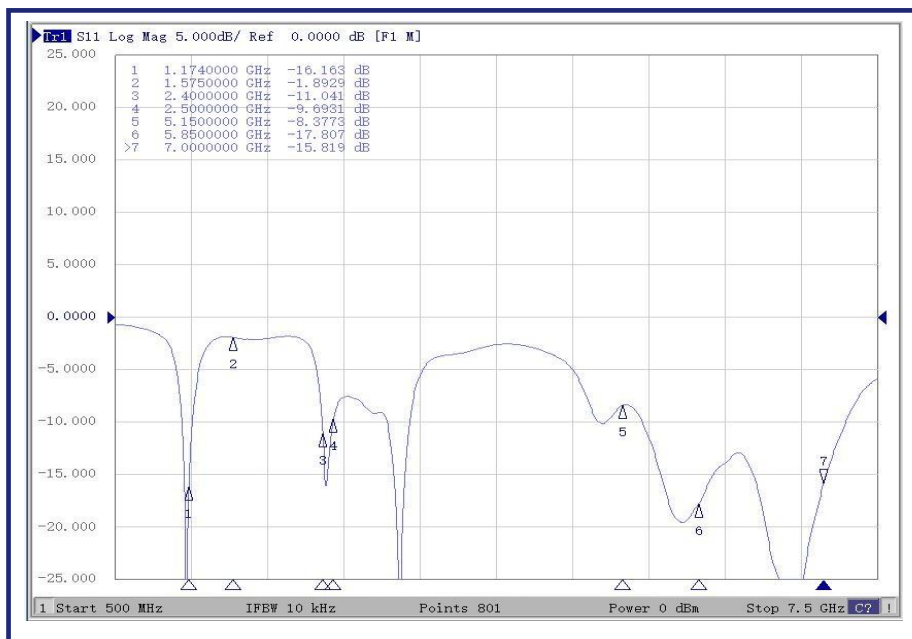
The test diagram is as follows:



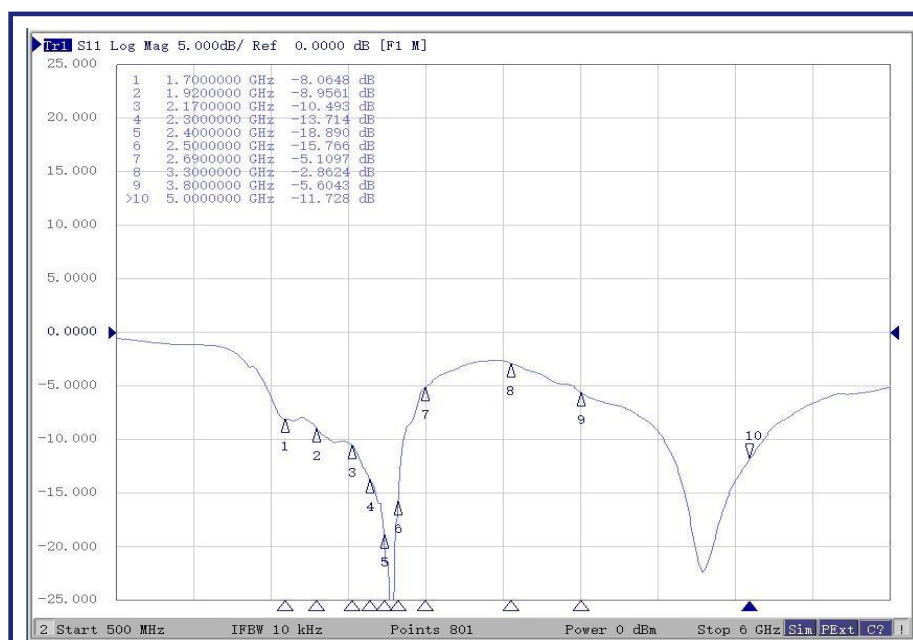
Test the schematic

## 4.2 S11 parameter

ANT2



| ANT2            |               |
|-----------------|---------------|
| frequency (MHz) | callback loss |
| 1174            | -16.16        |
| 2400            | -11.04        |
| 2500            | -9.69         |
| 5150            | -8.37         |
| 5850            | -17.80        |
| 7000            | -15.81        |



| ANT6            |               |
|-----------------|---------------|
| frequency (MHz) | callback loss |
| 1700            | -8.06         |
| 2170            | -10.49        |
| 2300            | -13.71        |
| 2500            | -15.76        |
| 2690            | -5.10         |
| 3300            | -2.86         |
| 5000            | -11.72        |

## 5 Darkroom test data

Test system: Shielded darkroom

Test environment: temperature

22°C±3°C, humidity

50%±15%

Test equipment: When testing passive data, use the

Network Analyzer

Agilent E5062C When testing

active data, the Comprehensive

Tester Agilent 8960

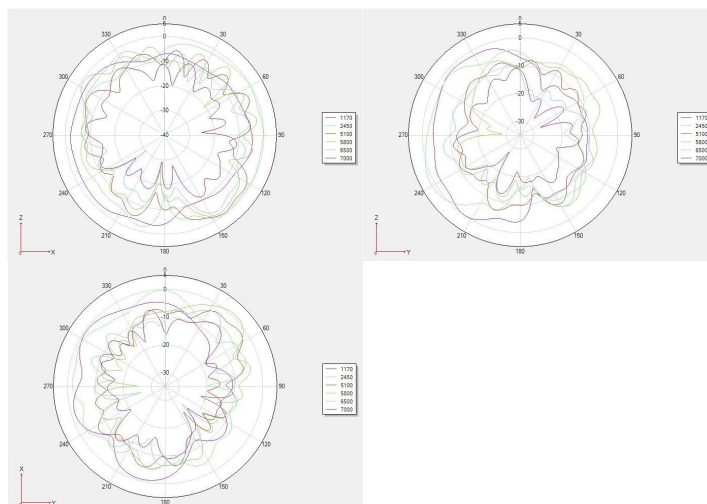
/CMW500/E4438C is used

## 5.1 Passive test data

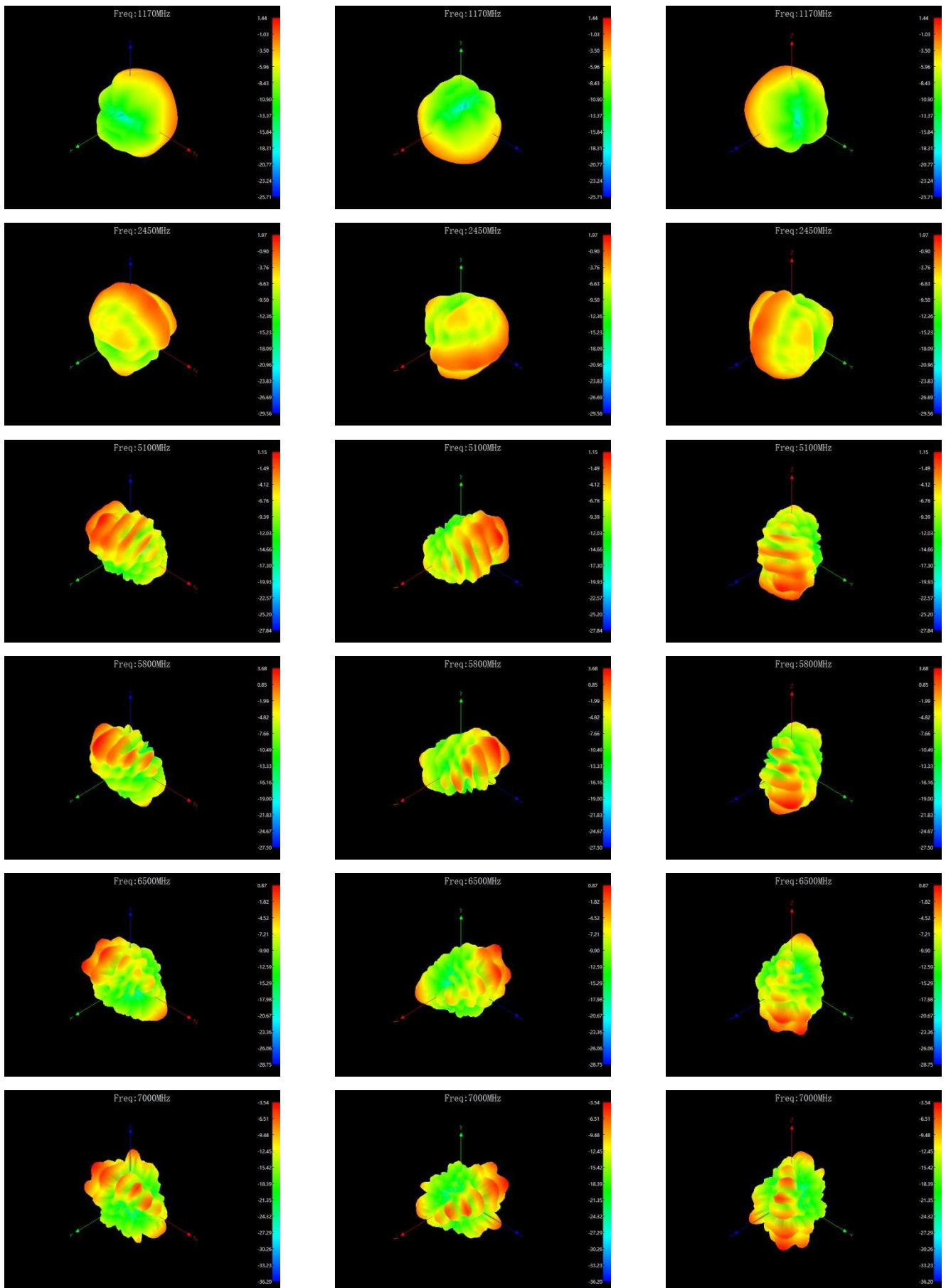
Antenna ANT2 passive efficiency

| ANT2  |       |       |       |      |        |       |       |
|-------|-------|-------|-------|------|--------|-------|-------|
| Freq. | Effi  | Effi  | Gain  |      |        |       |       |
| (MHz) | (dB)  | (%)   | (dBi) |      |        |       |       |
|       |       |       |       | 5100 | -6.53  | 22.23 | 1.15  |
| 1140  | -4.21 | 37.93 | 1.02  | 5200 | -6.90  | 20.42 | 2.23  |
| 1150  | -4.20 | 38.02 | 1.40  | 5300 | -6.75  | 21.13 | 2.94  |
| 1160  | -4.19 | 38.11 | 1.53  | 5400 | -5.96  | 25.35 | 2.37  |
| 1170  | -4.19 | 38.11 | 1.44  | 5500 | -5.85  | 26.00 | 2.70  |
| 1180  | -4.25 | 37.58 | 1.41  | 5600 | -5.82  | 26.18 | 3.11  |
| 1190  | -4.37 | 36.56 | 1.51  | 5700 | -6.48  | 22.49 | 3.50  |
| 1200  | -4.44 | 35.97 | 1.55  | 5800 | -6.27  | 23.60 | 3.68  |
|       |       |       |       | 5900 | -6.02  | 25.00 | 3.47  |
| 2400  | -4.78 | 33.27 | 1.34  | 6000 | -6.20  | 23.99 | 2.83  |
| 2410  | -4.35 | 36.73 | 0.76  | 6100 | -6.83  | 20.75 | 1.84  |
| 2420  | -3.97 | 40.09 | 1.85  | 6200 | -7.00  | 19.95 | 1.25  |
| 2430  | -4.13 | 38.64 | 2.36  | 6300 | -7.42  | 18.11 | 1.76  |
| 2440  | -4.28 | 37.33 | 1.21  | 6400 | -7.85  | 16.41 | 1.50  |
| 2450  | -4.25 | 37.58 | 1.97  | 6500 | -7.79  | 16.63 | 0.87  |
| 2460  | -4.51 | 35.40 | 1.85  | 6600 | -8.85  | 13.03 | -0.42 |
| 2470  | -4.56 | 34.99 | 1.49  | 6700 | -9.24  | 11.91 | -1.27 |
| 2480  | -4.84 | 32.81 | 1.93  | 6800 | -10.16 | 9.64  | -2.27 |
| 2490  | -4.87 | 32.58 | 1.61  | 6900 | -11.55 | 7.00  | -3.38 |
| 2500  | -4.68 | 34.04 | 1.68  | 7000 | -11.72 | 6.73  | -3.54 |

ANT2 antenna pattern



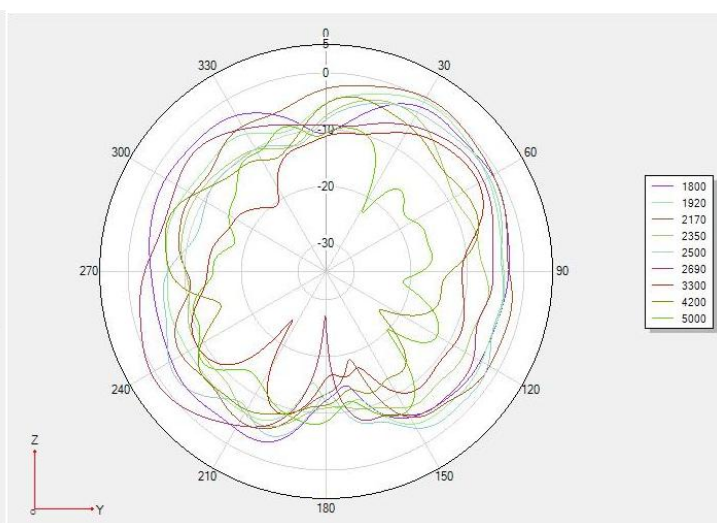
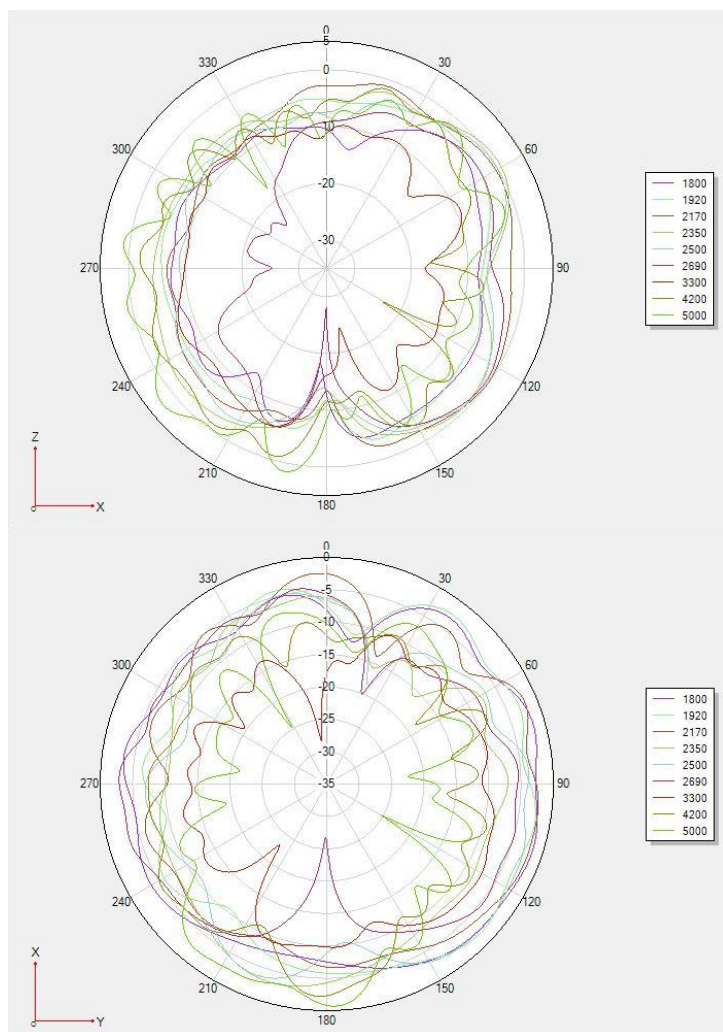
Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition  
ANT2 antenna Apple chart



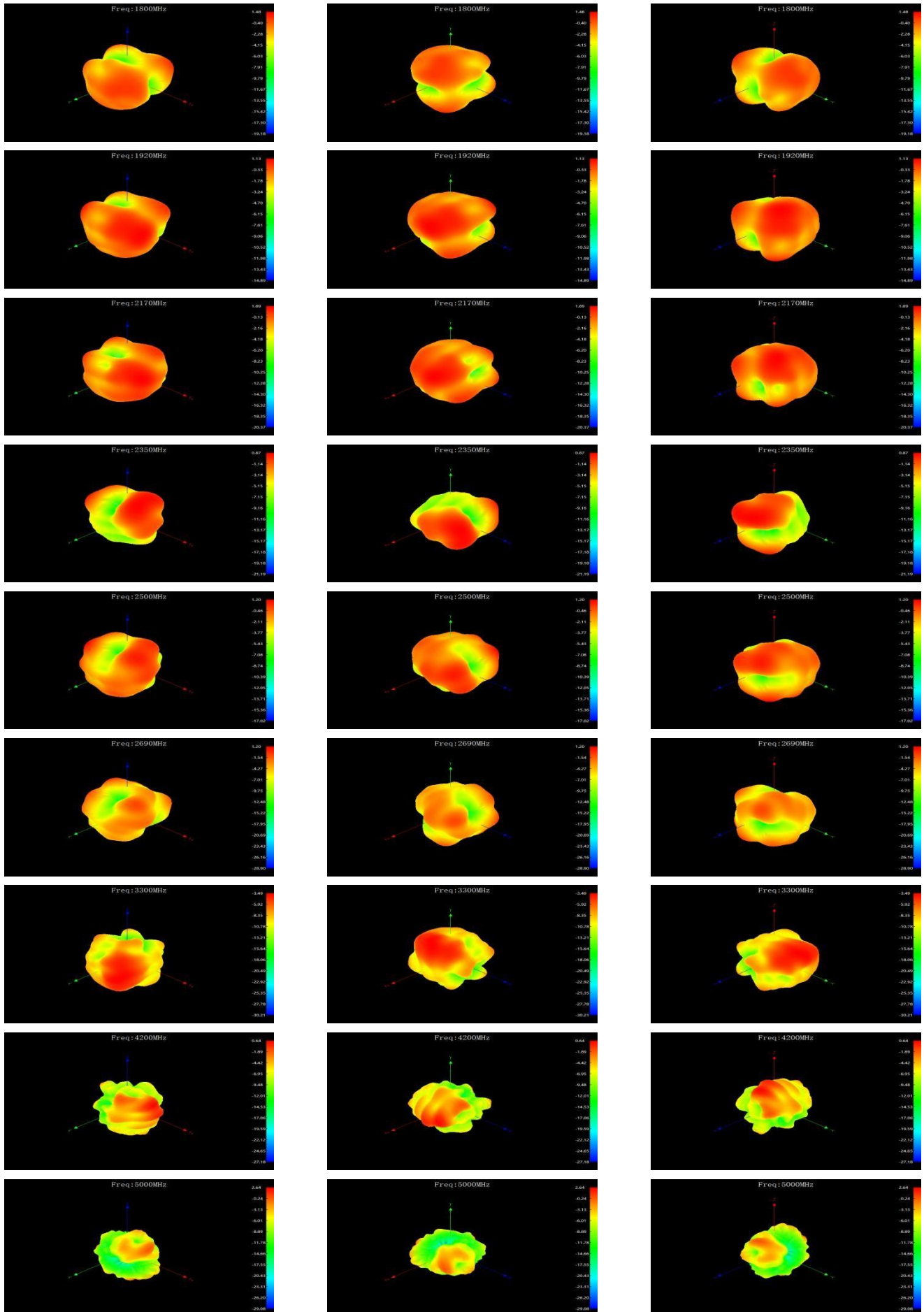
Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition  
Antenna ANT6 passive efficiency

| ANT6  |       |       |       |      |       |       |       |
|-------|-------|-------|-------|------|-------|-------|-------|
| Freq. | Effi  | Effi  | Gain  | 2300 | -3.67 | 42.95 | 0.36  |
| (MHz) | (dB)  | (%)   | (dBi) | 2310 | -3.93 | 40.46 | 0.03  |
| 1710  | -5.87 | 25.88 | 1.34  | 2320 | -3.92 | 40.55 | 0.13  |
| 1720  | -5.85 | 26.00 | 1.55  | 2330 | -4.03 | 39.54 | 0.78  |
| 1730  | -5.83 | 26.12 | 1.65  | 2340 | -4.02 | 39.63 | 1.25  |
| 1740  | -5.75 | 26.61 | 1.54  | 2350 | -4.05 | 39.36 | 0.87  |
| 1750  | -5.67 | 27.10 | 1.26  | 2360 | -4.08 | 39.08 | 0.87  |
| 1760  | -5.55 | 27.86 | 1.09  | 2370 | -4.15 | 38.46 | 1.25  |
| 1770  | -5.48 | 28.31 | 1.18  | 2380 | -4.05 | 39.36 | 1.08  |
| 1780  | -5.48 | 28.31 | 1.30  | 2390 | -4.05 | 39.36 | 0.83  |
| 1790  | -5.49 | 28.25 | 1.40  | 2400 | -4.32 | 36.98 | 1.36  |
| 1800  | -5.58 | 27.67 | 1.48  | 2500 | -4.78 | 33.27 | 1.20  |
| 1810  | -5.62 | 27.42 | 1.27  | 2510 | -5.16 | 30.48 | 1.37  |
| 1820  | -5.56 | 27.80 | 0.84  | 2520 | -5.37 | 29.04 | 1.06  |
| 1830  | -5.43 | 28.64 | 0.69  | 2530 | -5.41 | 28.77 | 0.80  |
| 1840  | -5.23 | 29.99 | 0.76  | 2540 | -5.33 | 29.31 | 0.70  |
| 1850  | -5.00 | 31.62 | 0.84  | 2550 | -5.44 | 28.58 | 0.25  |
| 1860  | -4.77 | 33.34 | 0.84  | 2560 | -5.34 | 29.24 | 0.75  |
| 1870  | -4.58 | 34.83 | 0.57  | 2570 | -5.30 | 29.51 | 1.10  |
| 1880  | -4.47 | 35.73 | 0.36  | 2580 | -5.13 | 30.69 | 0.81  |
| 1890  | -4.38 | 36.48 | 0.49  | 2590 | -5.32 | 29.38 | 0.85  |
| 1900  | -4.29 | 37.24 | 0.64  | 2600 | -5.60 | 27.54 | 0.75  |
| 1910  | -4.23 | 37.76 | 0.82  | 2610 | -5.80 | 26.30 | 0.56  |
| 1920  | -4.18 | 38.19 | 1.13  | 2620 | -6.11 | 24.49 | 0.50  |
| 1930  | -4.11 | 38.82 | 1.25  | 2630 | -6.43 | 22.75 | 0.16  |
| 1940  | -3.98 | 39.99 | 1.27  | 2640 | -6.86 | 20.61 | 0.76  |
| 1950  | -3.87 | 41.02 | 1.28  | 2650 | -7.12 | 19.41 | 0.75  |
| 1960  | -3.81 | 41.59 | 1.03  | 2660 | -7.37 | 18.32 | 0.65  |
| 1970  | -3.71 | 42.56 | 0.61  | 2670 | -7.59 | 17.42 | 1.37  |
| 1980  | -3.61 | 43.55 | 0.58  | 2680 | -7.82 | 16.52 | 0.80  |
| 1990  | -3.51 | 44.57 | 0.72  | 2690 | -7.63 | 17.26 | 1.20  |
| 2000  | -3.52 | 44.46 | 0.85  | 3300 | -9.19 | 12.05 | -3.49 |
| 2010  | -3.62 | 43.45 | 0.73  | 3400 | -8.52 | 14.06 | -2.25 |
| 2020  | -3.48 | 44.87 | 0.64  | 3500 | -7.97 | 15.96 | -0.44 |
| 2030  | -3.62 | 43.45 | 1.27  | 3600 | -6.81 | 20.84 | -1.37 |
| 2040  | -3.66 | 43.05 | 1.17  | 3700 | -6.42 | 22.80 | 0.36  |
| 2050  | -3.53 | 44.36 | 1.27  | 3800 | -5.15 | 30.55 | 1.34  |
| 2060  | -3.38 | 45.92 | 1.64  | 3900 | -4.71 | 33.81 | 1.27  |
| 2070  | -3.38 | 45.92 | 1.33  | 4000 | -5.39 | 28.91 | 0.80  |
| 2080  | -3.31 | 46.67 | 1.52  | 4100 | -5.07 | 31.12 | 0.98  |
| 2090  | -3.43 | 45.39 | 1.20  | 4200 | -5.07 | 31.12 | 0.64  |
| 2100  | -3.37 | 46.03 | 1.96  | 4300 | -5.62 | 27.42 | 0.93  |
| 2110  | -3.58 | 43.85 | 1.81  | 4400 | -5.29 | 29.58 | 0.94  |
| 2120  | -3.61 | 43.55 | 1.93  | 4500 | -5.19 | 30.27 | 1.35  |
| 2130  | -3.78 | 41.88 | 2.03  | 4600 | -5.33 | 29.31 | 2.14  |
| 2140  | -3.74 | 42.27 | 1.80  | 4700 | -4.93 | 32.14 | 2.97  |
| 2150  | -3.73 | 42.36 | 1.51  | 4800 | -4.65 | 34.28 | 3.43  |
| 2160  | -3.87 | 41.02 | 2.32  | 4900 | -4.74 | 33.57 | 3.41  |
| 2170  | -3.85 | 41.21 | 1.89  | 5000 | -5.06 | 31.19 | 2.64  |

## ANT6 antenna pattern



Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition  
ANT6 antenna Apple chart



## 5.2 Active test data

Main antenna active testdate (Free space, screen off)

|       |          |         | standard |        | sample verification |         |
|-------|----------|---------|----------|--------|---------------------|---------|
|       | Band     | channel | TRP      | TIS    | TRP                 | TIS     |
| GSM   | GSM_850  | L       | 26       | -102.5 | 28.02               | -105.12 |
|       |          | M       |          |        | 28.89               | -104.72 |
|       |          | H       |          |        | 28.84               | -104.47 |
|       | GSM_900  | L       | 26       | -102.5 | 27.54               | -105.06 |
|       |          | M       |          |        | 27.44               | -104.52 |
|       |          | H       |          |        | 27.51               | -104.03 |
|       | DCS_1800 | L       | 25       | -105   | 25.14               | -106.42 |
|       |          | M       |          |        | 25.02               | -106.31 |
|       |          | H       |          |        | 25.39               | -106.13 |
|       | PCS_1900 | L       | 25       | -105   | 25.18               | -106.38 |
|       |          | M       |          |        | 25.55               | -106.28 |
|       |          | H       |          |        | 25.42               | -106.21 |
| WCDMA | WCDMA_B1 | L       | 19       | -106   | 19.71               | -105.8  |
|       |          | M       |          |        | 20.12               | -106.23 |
|       |          | H       |          |        | 20.32               | -106.29 |
|       | WCDMA_B2 | L       | 19       | -106   | 18.92               | -105.77 |
|       |          | M       |          |        | 18.68               | -106.05 |
|       |          | H       |          |        | 19.13               | -106.38 |
|       | WCDMA_B5 | L       | 18       | -104   | 19.28               | -105.83 |
|       |          | M       |          |        | 19.56               | -105.61 |
|       |          | H       |          |        | 19.76               | -105.23 |
|       | WCDMA_B8 | L       | 17       | -104   | 18.82               | -105.71 |
|       |          | M       |          |        | 19.06               | -105.53 |
|       |          | H       |          |        | 19.24               | -105.72 |

## 5.2 Active test data

Main antenna active testdate (Free space, screen off)

|         |         |         | standard |       | sample verification |        |
|---------|---------|---------|----------|-------|---------------------|--------|
|         | Band    | channel | TRP      | TIS   | TRP                 | TIS    |
| LTE-FDD | FDD_B1  | L       | 19       | -93.5 | 19.45               | -95.8  |
|         |         | M       |          |       | 20.04               | -96.04 |
|         |         | H       |          |       | 20.45               | -95.44 |
|         | FDD_B2  | L       | 20       | -93.5 | 20.58               | -94.78 |
|         |         | M       |          |       | 20.57               | -95.44 |
|         |         | H       |          |       | 20.68               | -95.25 |
|         | FDD_B3  | L       | 19       | -93.5 | 20.07               | -94.92 |
|         |         | M       |          |       | 20.55               | -95.64 |
|         |         | H       |          |       | 20.67               | -95.88 |
|         | FDD_B4  | L       | 20       | -93.5 | 20.61               | -95.33 |
|         |         | M       |          |       | 20.81               | -95.78 |
|         |         | H       |          |       | 20.66               | -93.79 |
|         | FDD_B5  | L       | 18       | -93.5 | 19.33               | -94.52 |
|         |         | M       |          |       | 19.55               | -94.72 |
|         |         | H       |          |       | 19.53               | -93.72 |
|         | FDD_B7  | L       | 18.5     | -93.5 | 20.5                | -94.83 |
|         |         | M       |          |       | 20.41               | -95.41 |
|         |         | H       |          |       | 20.71               | -94.44 |
|         | FDD_B8  | L       | 17       | -91   | 19.62               | -92.94 |
|         |         | M       |          |       | 19.5                | -92.98 |
|         |         | H       |          |       | 19.03               | -92.41 |
|         | FDD_B12 | L       | 18       | -92.5 | 19.37               | -93.58 |
|         |         | M       |          |       | 19.68               | -93.62 |
|         |         | H       |          |       | 19.71               | -93.81 |
|         | FDD_B13 | L       | 18       | -93.5 | 18.55               | -94.75 |
|         |         | M       |          |       | 18.69               | -94.21 |
|         |         | H       |          |       | 18.72               |        |
|         | FDD_B17 | L       | 18       | -90.5 | 19.06               | -92.44 |
|         |         | M       |          |       | 19.23               | -92.62 |
|         |         | H       |          |       | 19.55               | -92.31 |
|         | FDD_B20 | L       | 17       | -91   | 18.69               | -93.05 |
|         |         | M       |          |       | 18.77               | -93.18 |
|         |         | H       |          |       | 18.78               | -92.8  |
|         | FDD_B28 | L       | 17       | -91   | 18.79               | -93.06 |
|         |         | M       |          |       | 18.82               | -93.12 |
|         |         | H       |          |       | 18.92               | -93.09 |
|         | FDD_B66 | L       | 20       | -94.5 | 20.21               | -95.75 |
|         |         | M       |          |       | 20.36               | -95.82 |
|         |         | H       |          |       | 20.47               | -95.65 |
|         | FDD_B71 | L       | 17       | -90.5 | 18.43               | -91.25 |
|         |         | M       |          |       | 18.62               | -91.58 |
|         |         | H       |          |       | 18.58               | -91.68 |

## 5.2 Active test data

Main antenna active testdate (Free space, screen off)

|         |         |         | standard |       | sample verification |        |
|---------|---------|---------|----------|-------|---------------------|--------|
|         | Band    | channel | TRP      | TIS   | TRP                 | TIS    |
| LTE-TDD | TDD_B38 | L       | 18.5     | -93.5 | 19.14               | -93.59 |
|         |         | M       |          |       | 19.74               | -93.55 |
|         |         | H       |          |       | 20.23               | -93.63 |
|         | TDD_B39 | L       | 19       | -93   | 20.34               | -94.11 |
|         |         | M       |          |       | 20.32               | -94.17 |
|         |         | H       |          |       | 20.33               | -93.88 |
|         | TDD_B40 | L       | 18.5     | -93.5 | 19.22               | -93.9  |
|         |         | M       |          |       | 19.36               | -94.08 |
|         |         | H       |          |       | 19.43               | -93.57 |
|         | TDD_B41 | L       | 18.5     | -93.5 | 19.57               | -94.14 |
|         |         | M       |          |       | 19.92               | -94.23 |
|         |         | H       |          |       | 20.13               | -93.59 |

## 5.2 Active test data

Main antenna active testdate (Free space, screen off)

|        |      |         | standard |       | sample verification |        |
|--------|------|---------|----------|-------|---------------------|--------|
|        | Band | channel | TRP      | TIS   | TRP                 | TIS    |
| NR-FDD | N1   | L       | 19       | -93.5 | 20.57               | -94.72 |
|        |      | M       |          |       | 20.88               | -95.03 |
|        |      | H       |          |       | 20.77               | -94.47 |
|        | N2   | L       | 20       | -93.5 | 20.4                | -94.22 |
|        |      | M       |          |       | 20.43               | -95.34 |
|        |      | H       |          |       | 20.34               | -94.11 |
|        | N3   | L       | 19       | -93.5 | 19.82               | -93.72 |
|        |      | M       |          |       | 20.13               | -93.76 |
|        |      | H       |          |       | 20.86               | -94.55 |
|        | N5   | L       | 18       | -93.5 | 19.29               | -93.27 |
|        |      | M       |          |       | 19.25               | -94.46 |
|        |      | H       |          |       | 19.06               | -93.26 |
|        | N7   | L       | 18.5     | -93.5 | 20.78               | -94.71 |
|        |      | M       |          |       | 20.47               | -95.22 |
|        |      | H       |          |       | 20.23               | -94.33 |
|        | N8   | L       | 17       | -91   | 18.6                | -92.83 |
|        |      | M       |          |       | 18.21               | -93.28 |
|        |      | H       |          |       | 18.07               | -92.35 |
|        | N12  | L       | 18       | -92.5 |                     |        |
|        |      | M       |          |       | 18.62               | -93.05 |
|        |      | H       |          |       |                     |        |
|        | N28  | L       | 17       | -91   | 18.59               | -92.15 |
|        |      | M       |          |       | 19.14               | -92.04 |
|        |      | H       |          |       | 19.26               | -92.05 |
|        | N66  | L       | 20       | -94.5 | 20.87               | -95.61 |
|        |      | M       |          |       | 20.92               | -95.65 |
|        |      | H       |          |       |                     |        |
|        | N71  | L       | 17       | -90.5 | 18.33               | -90.51 |
|        |      | M       |          |       | 18.43               | -90.68 |
|        |      | H       |          |       | 18.51               | -91.21 |
| NR-TDD | N41  | L       | 21       | -87   | 21.16               | -88.61 |
|        |      | M       |          |       | 21.05               | -88.85 |
|        |      | H       |          |       | 21.22               | -88.64 |

## 5.2 Active test data

NSA active test data (Free space, screen off)

|        | Band | channel | TRP | TIS | TRP   | TIS    |
|--------|------|---------|-----|-----|-------|--------|
| NR-TDD | N77  | L       | 21  | -85 | 21    | -88.82 |
|        |      | M       |     |     | 20    | -89.03 |
|        |      | H       |     |     | 20.82 | -89.33 |
|        | N78  | L       | 20  | -85 | 21.13 | -88.25 |
|        |      | M       |     |     | 20.24 | -88.39 |
|        |      | H       |     |     | 19.29 | -89.65 |
|        | N79  | L       | 20  | -85 | 21.9  | -89.67 |
|        |      | M       |     |     | 21.86 | -89.66 |
|        |      | H       |     |     | 21.76 | -88.15 |

Triple three in one triad ternion active test data (Free space, screen off)

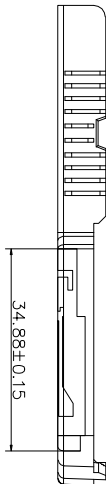
| Band                | Channel | FREQ (MHz) | OTA (dBm)合路                                          |          |          |
|---------------------|---------|------------|------------------------------------------------------|----------|----------|
|                     |         |            | SPEC (dBm)                                           | TRP (dB) | TIS (dB) |
| 2.4G 802.11B-11Mbps | 1       | 2412       | TRP $\geq 16\text{dBm}$ TIS $\leq -83.5\text{dBm}$   | 16.05    |          |
|                     | 6       | 2437       |                                                      | 17.17    |          |
|                     | 11      | 2462       |                                                      | 16.55    | -84.01   |
| 5.8G 802.11A-54Mbps | 36      | 5150       | TRP $\geq 12.5\text{dBm}$ TIS $\leq -69.5\text{dBm}$ | 13.48    |          |
|                     | 149     | 5500       |                                                      | 12.59    |          |
|                     | 169     | 5850       |                                                      | 13.69    | -70.1    |
| GPS-L1              | 多星追踪    | 1575.42    | TIS                                                  | -146.43  |          |

## 6. Mass production antenna indicators

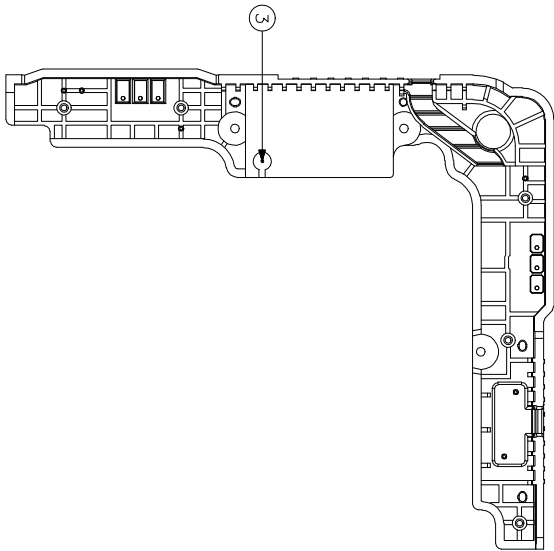
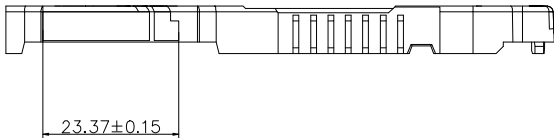
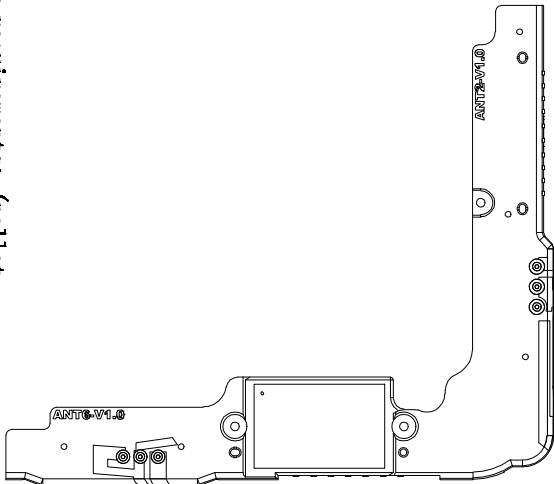
When the antenna is mass-produced, the standing wave ratio is used as the mass production test standard. According to the differences in the project itself, the following criteria are given:

| frequency (MHz) | mass production standard                                               |
|-----------------|------------------------------------------------------------------------|
| ANT2            | VSWR (Mass production performance)<br><VSWR(Acknowledge performance)+1 |
| ANT6            | VSWR (Mass production performance)<br><VSWR(Acknowledge performance)+1 |

ROHS、REACH



| edition | modify content | modify | date |
|---------|----------------|--------|------|
|         |                |        |      |
|         |                |        |      |
|         |                |        |      |



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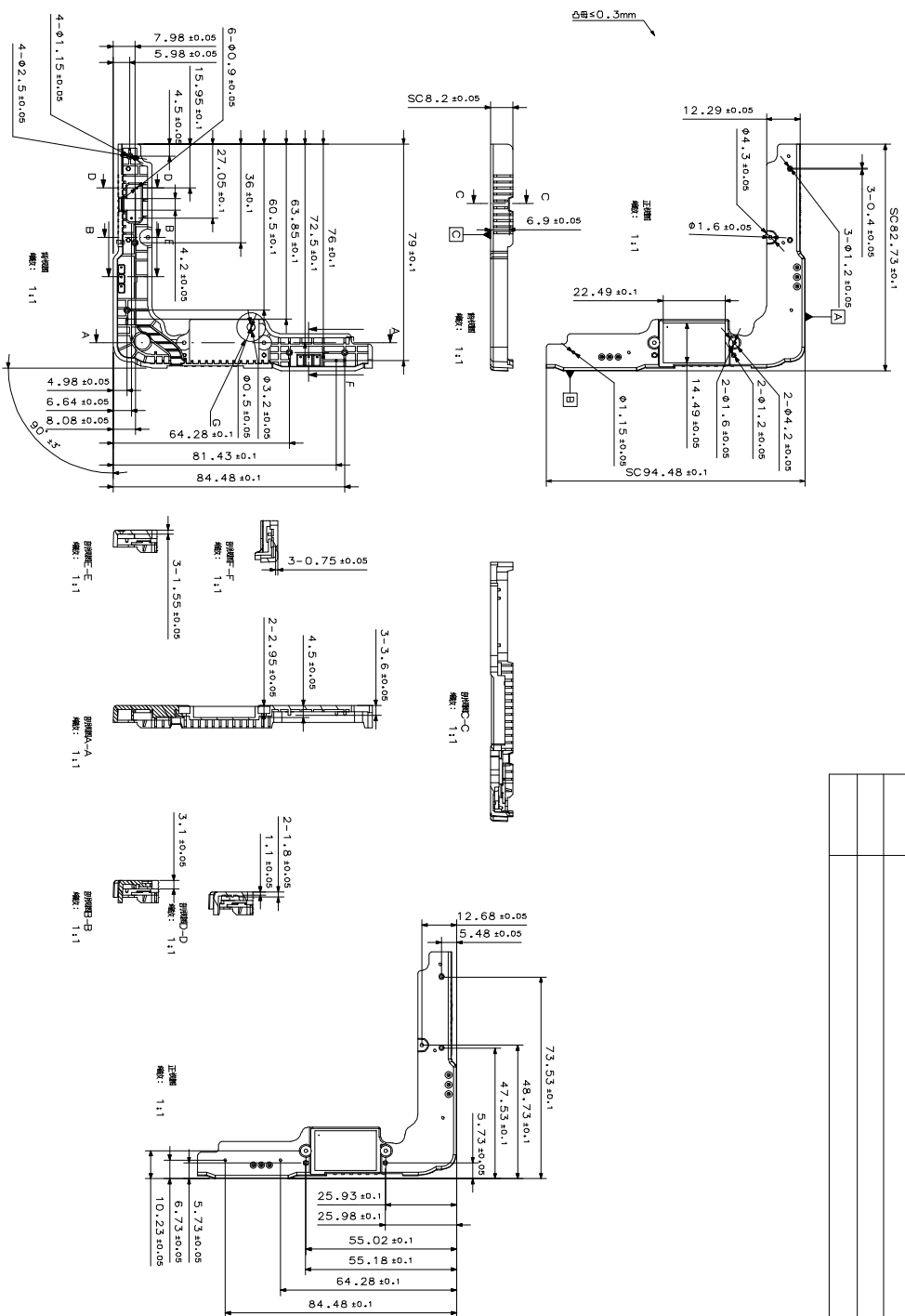
- Technical requirement
1. Shipping and packaging requirements: (pallet packaging and shipping)
  2. LDS surface has no sensitive scratch, leakage and overflow plating. (Due to plating process antenna surface will appear non-inductive scratches);
  3. With \* as the key size, the unmarked tolerance size is plus or minus 0.15MM;
  4. The copper plating thickness of LDS antenna is  $8\mu\text{m}$ – $12\mu\text{m}$ , and the nickel plating thickness is  $3\mu\text{m}$ – $5\mu\text{m}$ . The salt spray has been tested for 48H.
  5. Electroplating material: copper-nickel
  6. According to the general requirements
  7. Products meet the requirements of ROHS and REACH.

| ③                                                | Damping cloth | SH220803B12-11 | Damping cloth | 黑色 | 1 |
|--------------------------------------------------|---------------|----------------|---------------|----|---|
| ②                                                | bracket       | SH231711B02-3  | DX11355       | 黑色 | 1 |
| ①                                                | LDS           | SH231711B04-3  |               | 本色 | 1 |
| numble name Part Number materials color quantity |               |                |               |    |   |

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|                                                  |                                    |                     |
|--------------------------------------------------|------------------------------------|---------------------|
|                                                  | PART NAME :LDS<br>FT01 (ANT2/ANT6) | DATE :<br>2023.6.19 |
| TOLERANCE<br>X.X ±0.25<br>.XX ±0.20<br>.XXX±0.05 | PART NO: SH231711B89-3             | DRAWN :<br>ZHANGYU  |
| ANGULAR $\angle \pm 0.5^\circ$                   | MATERIAL:                          | CHECKED: YUJIANG    |
| UNIT: mm                                         | FINISHING:                         | APPROVED:           |
| COLOUR:                                          | SCALE: 1:1                         | REV: 7A             |

| 版 本 | 修 改 内 容 | 修改人 | 日期 |
|-----|---------|-----|----|
|     |         |     |    |
|     |         |     |    |
|     |         |     |    |



### Technical requirements:

1. The drawing size is used to check the shape, function and assembly of the parts without spraying, and the main size is referred to the 3D Pro/E parts drawing:

2. The key dimensions marked with \* should be checked for each shipment and Quality for CP/CPK under normal circumstances. The CP value must be greater than 2.0 and the CPK value must be greater than 1.33. The first piece inspection is required before each batch production.

3. Raw materials should be used when injection molding;
4. Material life requirements according to ISO92059 standard, PC+ABS T85;

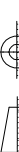
5. The height difference between the thimble, the inclined top, and the plane where it is located: negative 0.05MM for transparent parts, negative 0.1MM for non-transparent parts

6. Please refer to without tolerance;

7. Product appearance, clean appearance, no shrinkage, lack of glue, pattern, no impurities, no raw edge;

8. The Angle of uninjected drawing die is 1.0-1.5 d (0.15MM after drawing die), and the R Angle is 0.2MM

9. The product meets the standards of on-board projects;

| Free tolerance zone |            |   |                                                                                     |          |             |           |
|---------------------|------------|---|-------------------------------------------------------------------------------------|----------|-------------|-----------|
| A                   | B          | C |                                                                                     |          |             |           |
| 0-6                 | ±0.07±0.10 |   |  |          |             |           |
| >6-18               | ±0.12±0.15 |   |                                                                                     |          |             |           |
| >18-30              | ±0.15±0.18 |   | TOLERANCE                                                                           |          |             |           |
| >30-50              | ±0.18±0.20 |   |                                                                                     |          |             |           |
| >50-80              | ±0.22±0.25 |   | MATERIAL : PC sabcic DX11355                                                        |          |             |           |
| >80-120             | ±0.25±0.30 |   |                                                                                     |          |             |           |
| >120-160            | ±0.31±0.35 |   | FINISHING :                                                                         |          |             |           |
| >160-200            | ±0.37±0.43 |   |                                                                                     |          |             |           |
| >200-250            | ±0.44±0.50 |   | UNIT : mm                                                                           | COLOUR : | SCALE : 1:1 | REV. : RA |

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## Outgoing inspection record

|                               |                                                                                                                               |                       |                              |     |             |               |                             |        |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------|-----|-------------|---------------|-----------------------------|--------|
| customer name                 | 广翼                                                                                                                            | project name          | FT01                         |     | Part Number | SH23171IB89-3 |                             | color  |
| order number                  |                                                                                                                               |                       |                              |     |             |               |                             | silver |
| shipping Qty.                 |                                                                                                                               |                       | sampling plan                | AQL | AC          | RE            | the quantity of bad quality | judge  |
| sampling quantity             |                                                                                                                               |                       | Inspection sampling standard | 0.4 |             |               | 0                           | OK     |
|                               |                                                                                                                               |                       |                              | 1.0 |             |               | 0                           | OK     |
| inspection item:              |                                                                                                                               |                       |                              |     |             |               |                             |        |
| appearance:                   |                                                                                                                               |                       |                              |     |             |               |                             | 判定     |
| plastic parts                 | The surface is smooth and clean, without missing materials, no peeling, scratches, deformation, shrinkage and other phenomena |                       |                              |     |             |               |                             | OK     |
| 金属片                           | 表面平整清洁、无划痕、压伤、变形、缺料、少孔、偏位等现象                                                                                                  |                       |                              |     |             |               |                             | /      |
| FPC                           | 表面平整清洁、无划痕、压伤、露铜、溢胶、破损、冲形不良等现象                                                                                                |                       |                              |     |             |               |                             | /      |
| 组装件                           | 弹片与壳料不可有间隙（0.30MM以内）、变形、缺料等现象                                                                                                 |                       |                              |     |             |               |                             | /      |
| reliability:                  |                                                                                                                               |                       |                              |     |             |               |                             | 判定     |
| performance test              | Detection performance without broken lines, performance without bias, etc                                                     |                       |                              |     |             |               |                             | OK     |
| Salt Spray Test               | After the test, there is no color difference on the surface, no ink falling off, no deformation, oxidation, etc               |                       |                              |     |             |               |                             | OK     |
| 附着力测试                         | 测试面积油墨脱落小于等于5%                                                                                                                |                       |                              |     |             |               |                             | /      |
| Good quantity:                |                                                                                                                               | defect description: / |                              |     |             |               |                             |        |
| number of defectives : 0      |                                                                                                                               |                       |                              |     |             |               |                             |        |
| packing inspection            | OK                                                                                                                            |                       |                              |     |             |               |                             |        |
| 其它                            | /                                                                                                                             |                       |                              |     |             |               |                             |        |
| 说明：对需检测的产品如在此中有不需要的检测项目用“/”表示 |                                                                                                                               |                       |                              |     |             |               |                             |        |

一式两联

第一联客户

第二联存档

Inspector: 戴巧玲                      Data:      23.10.08                      Check:

| Full scale measurement report |           |                 |        |        |      |                              |              |                          |              |                 |                               |                 |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
|-------------------------------|-----------|-----------------|--------|--------|------|------------------------------|--------------|--------------------------|--------------|-----------------|-------------------------------|-----------------|-------------|---------------------------------------------------------------------------------|---------|----------|-------|------------|---------------------|-----------------|----------------------------|-----------|--------|--------|--|--|
| Vendor(供应商)                   |           | 材质名称            |        | LDS    |      | Part NO (料号)                 |              | 329900000108             |              | Tool Number(模号) |                               | Cav. Number(穴数) |             | Unit(单位)                                                                        |         |          |       |            |                     | Comments(设计者签字) |                            |           |        |        |  |  |
| 尚远                            |           | 材质牌号            |        | LDS    |      | Part Name<br>(零件名称)          |              | FT01-BRACKET-<br>ANT-2-6 |              |                 |                               | /               |             | <input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 日期                            |           | 2023.9.27       |        |        |      | MEASURED DIMENSION<br>(实测尺寸) |              |                          |              |                 | % TOLERANCE USED<br>(公差使用百分比) |                 | DISPOSITION |                                                                                 |         |          |       |            | ACCEPTABLE VARIANCE |                 |                            |           |        |        |  |  |
|                               |           |                 |        |        |      | SAMPL<br>E 1                 | SAMPL<br>E 2 | SAMPL<br>E 3             | SAMPL<br>E 4 | SAMPL<br>E 5    | UPPER                         | LOWER           | 0%-25%      | 25%-50%                                                                         | 50%-75% | 75%-100% | 100%+ | Re-Measure | Accept              | Fix Tool        | Accept<br>With<br>Variance | DIMENSION | + TOL. | - TOL. |  |  |
| DIM. #                        | DIMENSION | DRAWING<br>ZONE | + TOL. | - TOL. | NOTE |                              |              |                          |              |                 |                               |                 |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 1                             | 94.48     |                 | 0.10   | 0.10   |      | 94.53                        | 94.55        | 94.56                    | 94.54        | 94.52           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 2                             | 82.73     |                 | 0.10   | 0.10   |      | 82.75                        | 82.76        | 82.75                    | 82.74        | 82.76           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 3                             | 84.48     |                 | 0.10   | 0.10   |      | 84.53                        | 84.52        | 84.55                    | 84.55        | 84.52           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 4                             | 79        |                 | 0.10   | 0.10   |      | 79.02                        | 79.03        | 79.02                    | 79.04        | 79.03           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 5                             | 76        |                 | 0.10   | 0.10   |      | 76.03                        | 76.02        | 76.03                    | 76.04        | 76.03           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 6                             | 73.53     |                 | 0.10   | 0.10   |      | 73.52                        | 73.56        | 73.54                    | 73.58        | 73.55           |                               | 10%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 7                             | 72.5      |                 | 0.10   | 0.10   |      | 72.5                         | 72.52        | 72.53                    | 72.5         | 72.51           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 8                             | 64.28     |                 | 0.10   | 0.10   |      | 64.35                        | 64.3         | 64.33                    | 64.34        | 64.32           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 9                             | 63.85     |                 | 0.10   | 0.10   |      | 63.83                        | 63.84        | 63.82                    | 63.85        | 63.83           |                               | 30%             |             | X                                                                               |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 10                            | 60.5      |                 | 0.10   | 0.10   |      | 60.47                        | 60.48        | 60.48                    | 60.46        | 60.48           |                               | 40%             |             | X                                                                               |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 11                            | 55.18     |                 | 0.10   | 0.10   |      | 55.21                        | 55.23        | 55.21                    | 55.2         | 55.22           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 12                            | 55.02     |                 | 0.10   | 0.10   |      | 55.05                        | 55.03        | 55.02                    | 55.04        | 55.05           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 13                            | 48.73     |                 | 0.10   | 0.10   |      | 48.76                        | 48.75        | 48.7                     | 48.74        | 48.76           |                               | 30%             |             | X                                                                               |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 14                            | 47.53     |                 | 0.10   | 0.10   |      | 47.55                        | 47.51        | 47.52                    | 47.53        | 47.54           |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 15                            | 36.53     |                 | 0.10   | 0.10   |      | 36.51                        | 36.53        | 36.51                    | 36.52        | 36.51           |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 16                            | 27.05     |                 | 0.10   | 0.10   |      | 27.03                        | 27.05        | 27.03                    | 27.04        | 27.03           |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 17                            | 25.98     |                 | 0.10   | 0.10   |      | 25.96                        | 25.96        | 25.97                    | 25.96        | 25.98           |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 18                            | 25.93     |                 | 0.10   | 0.10   |      | 25.95                        | 25.93        | 25.94                    | 25.93        | 25.95           |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 19                            | 12.68     |                 | 0.05   | 0.05   |      | 12.65                        | 12.67        | 12.66                    | 12.65        | 12.65           |                               | 60%             |             |                                                                                 | X       |          |       |            |                     |                 |                            |           |        |        |  |  |
| 20                            | 5.48      |                 | 0.05   | 0.05   |      | 5.5                          | 5.5          | 5.5                      | 5.5          | 5.5             |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 21                            | 10.23     |                 | 0.05   | 0.05   |      | 10.22                        | 10.24        | 10.22                    | 10.25        | 10.23           |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 22                            | 6.73      |                 | 0.05   | 0.05   |      | 6.72                         | 6.74         | 6.72                     | 6.73         | 6.73            |                               | 20%             | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 23                            | 8.2       |                 | 0.05   | 0.05   |      | 8.22                         | 8.2          | 8.23                     | 8.21         | 8.2             |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 24                            | 4.3       |                 | 0.05   | 0.05   |      | 4.32                         | 4.31         | 4.31                     | 4.32         | 4.33            |                               | 0%              |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 25                            | 1.15      |                 | 0.05   | 0.05   |      | 1.16                         | 1.12         | 1.15                     | 1.1          | 1.16            |                               | 100%            |             |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 26                            | 1.6       |                 | 0.05   | 0.05   |      | 1.6                          | 1.6          | 1.6                      | 1.6          | 1.6             |                               | 0%              | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |
| 27                            | 2.5       |                 | 0.05   | 0.05   |      | 2.5                          | 2.5          | 2.5                      | 2.5          | 2.5             |                               | 0%              | X           |                                                                                 |         |          |       |            |                     |                 |                            |           |        |        |  |  |

[illegible]

CPK Report

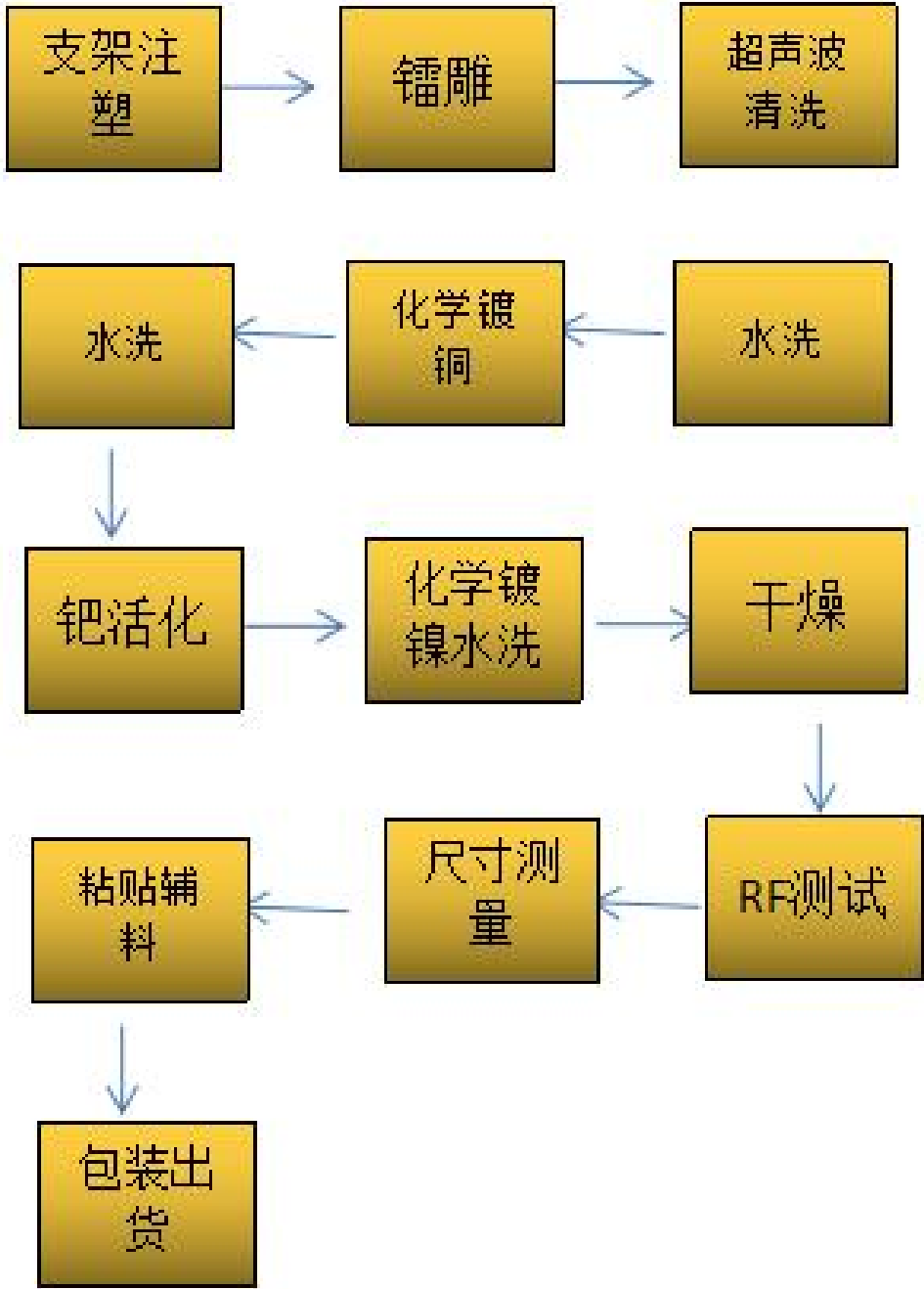
|                   |                      |                     |           |
|-------------------|----------------------|---------------------|-----------|
| Part Number(料号)   | 329900000108         | Vendor(供应商)         | 尚远        |
| Description(零件名称) | FT01-BRACKET-ANT-2-6 | Inspected(确认者)      | 陈小平       |
| Tool Number(模号)   | /                    | Inches/MM(英寸/毫米)    | MM        |
| Cavity(穴号)        | /                    | Material Name(材质名称) | FPC       |
|                   |                      | Material Code(材质牌号) | FPC       |
| Revision(版本)      | V1.0                 | Date(日期)            | 2023.9.27 |

|                       |       |       |       |       |       |       |       |       |  |  |  |  |  |  |  |  |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|--|--|--|
| Dim. Designator(尺寸序号) | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |  |  |  |  |  |  |  |  |
| Nominal(公称尺寸)         | 94.48 | 82.73 | 84.48 | 79    | 76    | 73.53 | 72.5  | 64.28 |  |  |  |  |  |  |  |  |
| + Tolerance(正公差)      | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  |  |  |  |  |  |  |  |  |
| - Tolerance(负公差)      | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 |  |  |  |  |  |  |  |  |
| Upper Limit(规格上限)     | 94.58 | 82.83 | 84.58 | 79.10 | 76.10 | 73.63 | 72.60 | 64.38 |  |  |  |  |  |  |  |  |
| Lower Limit(规格下限)     | 94.38 | 82.63 | 84.38 | 78.90 | 75.90 | 73.43 | 72.40 | 64.18 |  |  |  |  |  |  |  |  |
| 1                     | 94.45 | 82.75 | 84.45 | 79.02 | 76.03 | 73.56 | 72.52 | 64.27 |  |  |  |  |  |  |  |  |
| 2                     | 94.49 | 82.70 | 84.51 | 79.03 | 75.98 | 73.55 | 72.48 | 64.31 |  |  |  |  |  |  |  |  |
| 3                     | 94.51 | 82.71 | 84.50 | 78.97 | 76.01 | 73.50 | 72.47 | 64.25 |  |  |  |  |  |  |  |  |
| 4                     | 94.45 | 82.75 | 84.51 | 79.02 | 76.02 | 73.51 | 72.53 | 64.27 |  |  |  |  |  |  |  |  |
| 5                     | 94.46 | 82.72 | 84.46 | 78.98 | 75.99 | 73.52 | 72.51 | 64.25 |  |  |  |  |  |  |  |  |
| 6                     | 94.47 | 82.76 | 84.49 | 78.99 | 75.97 | 73.51 | 72.53 | 64.30 |  |  |  |  |  |  |  |  |
| 7                     | 94.49 | 82.70 | 84.51 | 79.00 | 76.01 | 73.54 | 72.48 | 64.29 |  |  |  |  |  |  |  |  |
| 8                     | 94.51 | 82.71 | 84.50 | 78.98 | 76.00 | 73.56 | 72.49 | 64.30 |  |  |  |  |  |  |  |  |
| 9                     | 94.51 | 82.72 | 84.51 | 79.02 | 76.02 | 73.50 | 72.52 | 64.27 |  |  |  |  |  |  |  |  |
| 10                    | 94.45 | 82.75 | 84.46 | 79.02 | 75.99 | 73.51 | 72.53 | 64.25 |  |  |  |  |  |  |  |  |
| 11                    | 94.46 | 82.76 | 84.49 | 78.98 | 75.97 | 73.52 | 72.53 | 64.30 |  |  |  |  |  |  |  |  |
| 12                    | 94.47 | 82.71 | 84.51 | 78.99 | 76.01 | 73.51 | 72.51 | 64.29 |  |  |  |  |  |  |  |  |
| 13                    | 94.49 | 82.70 | 84.50 | 79.00 | 76.00 | 73.54 | 72.53 | 64.30 |  |  |  |  |  |  |  |  |
| 14                    | 94.51 | 82.71 | 84.51 | 78.98 | 76.01 | 73.56 | 72.48 | 64.29 |  |  |  |  |  |  |  |  |
| 15                    | 94.47 | 82.72 | 84.49 | 79.02 | 76.00 | 73.54 | 72.49 | 64.30 |  |  |  |  |  |  |  |  |
| 16                    | 94.49 | 82.75 | 84.51 | 78.98 | 76.02 | 73.56 | 72.52 | 64.27 |  |  |  |  |  |  |  |  |
| 17                    | 94.51 | 82.76 | 84.50 | 79.02 | 75.99 | 73.50 | 72.53 | 64.25 |  |  |  |  |  |  |  |  |
| 18                    | 94.51 | 82.71 | 84.51 | 79.02 | 75.97 | 73.51 | 72.53 | 64.30 |  |  |  |  |  |  |  |  |
| 19                    | 94.45 | 82.70 | 84.46 | 78.98 | 75.97 | 73.54 | 72.53 | 64.29 |  |  |  |  |  |  |  |  |
| 20                    | 94.51 | 82.71 | 84.49 | 79.02 | 76.01 | 73.56 | 72.51 | 64.30 |  |  |  |  |  |  |  |  |
| MAX.                  | 94.51 | 82.76 | 84.51 | 79.03 | 76.03 | 73.56 | 72.53 | 64.31 |  |  |  |  |  |  |  |  |
| MIN.                  | 94.45 | 82.70 | 84.45 | 78.97 | 75.97 | 73.50 | 72.47 | 64.25 |  |  |  |  |  |  |  |  |
| AVERAGE               | 94.48 | 82.73 | 84.49 | 79.00 | 76.00 | 73.53 | 72.51 | 64.28 |  |  |  |  |  |  |  |  |
| STDEV                 | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  |  |  |  |  |  |  |  |  |
| CP                    | 1.37  | 1.45  | 1.66  | 1.67  | 1.75  | 1.44  | 1.57  | 1.63  |  |  |  |  |  |  |  |  |
| Cpk                   | 1.33  | 1.37  | 1.44  | 1.65  | 1.73  | 1.44  | 1.40  | 1.59  |  |  |  |  |  |  |  |  |
| TOOLING(测量工具)         | 二次元   | 二次元   | 二次元   | 二次元   | 二次元   | 二次元   | 二次元   | 二次元   |  |  |  |  |  |  |  |  |

|         |         |              |
|---------|---------|--------------|
| 制表: 戴巧玲 | 审核: 陈小平 | 日期:2023.9.28 |
|---------|---------|--------------|

Process Flow Chart(制造流程图)

|                   |                          |                 |     |                     |           |
|-------------------|--------------------------|-----------------|-----|---------------------|-----------|
| Customer(客户)      | 广翼                       | Written By(制作)  | 张远方 | Orig. Date(制作日期)    | 2023.9.27 |
| Part Number(料号)   | 329900000108             | Revised By(校订)  | 于姜  | Revised Date(校订日期)  | 2023.9.27 |
| Description(零件名称) | FT01-BRACKET-<br>ANT-2-6 | Approved By(确认) | 曹进茂 | Approved Date(确认日期) | 2023.9.27 |



# QC engineering drawing

| Customer(客户)      |     | 广翼                   |     |                           | Written By(制作)  |      | 张远芳         |       | Orig. Date(制作日期)            |                               | 2023.9.27 |      |                                                                         |            |                                     |                                            |
|-------------------|-----|----------------------|-----|---------------------------|-----------------|------|-------------|-------|-----------------------------|-------------------------------|-----------|------|-------------------------------------------------------------------------|------------|-------------------------------------|--------------------------------------------|
| Part Number(料号)   |     | 329900000108         |     |                           | Revised By(校订)  |      | 于姜          |       | Revised Date(校订日期)          |                               | 2023.9.27 |      |                                                                         |            |                                     |                                            |
| Description(零件名称) |     | FT01-BRACKET-ANT-2-6 |     |                           | Approved By(确认) |      | 曹进茂         |       | Approved Date(确认日期)         |                               | 2023.9.27 |      |                                                                         |            |                                     |                                            |
| 序号                | 流程图 | 工序名称                 | 重要度 | 制程说明                      | 生产设备            | 检验特性 | 检验项目        | 操作    | 品质管制方法                      |                               |           |      | 检验标准(重点)                                                                | 异常处理       | 相关文件                                | 备注                                         |
|                   |     |                      |     |                           |                 |      |             |       | 工具                          | 数量                            | 巡检人       | 巡检次数 |                                                                         |            |                                     |                                            |
| 1                 |     | 来料检查                 |     | 按《IQC检验指导书》对来料进行检验        | 目视/卡尺           | 抽检   | 尺寸、外观、功能    | IQC   | 目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机 | 按AQL抽样<br>MAJ:0.4<br>MIN:1.0  | IQC       | 每批/次 | 目视来料的支架有无缺胶、多胶; FPC有无色差、脏污、划伤、压印、漏铜等。尺寸按图纸要求检验; 相关的性能测试按《IQC检验指导书》所规定进行 | 退货、挑选或加工使用 | 《IQC检验指导书》、《支架类来料检验规范》、《FPC类来料检验规范》 | 加工选用类返工产品必须出返工方案, 重新挑选再送检, 直至合格为止          |
| 2                 |     | 首件检验                 |     | 按《IPQC检验指导书》对首件产品进行检验     | 目视/卡尺           | 抽检   | 尺寸、外观、功能、实配 | 生产组长  | 目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机 | 外观:50PCS<br>尺寸:5PCS           | IPQC      | 每批/次 | 按《成品检验标准书》进行检查, 相关的性能测试按《IPQC检验指导书》进行, 首件所做可靠性测试为留样分析用(5PCS)            | 重新生产送检     | 《IPQC检验指导书》、《成品检验标准书》               | 首件确认合格后产线/IPQC各留1PCS样品, 方可正式生产             |
| 3                 |     | 外观检查                 |     | 将贴好的的成品进行外观检查             | 目视              | 全检   | 外观          | 产线员工  | 目视                          | IPQC随机抽样<br>20PCS-30PCS       | IPQC      | 1H/次 | 目视贴好的FPC有无脏污, 断裂, 漏焊等现象, 支架有无缺胶, 多胶, 批锋等不良现象。                           | 返工或挑选      | 《支架类成品检验规范》、《FPC类成品检验规范》            | 注意佩带手套, 用专用工具辅助粘贴。                         |
| 4                 |     | RF测试                 |     | 将外观\尺寸合格后的成品按作业指导书作RF性能测试 | 网络分析仪           | 全检   | 电性能         | RF测试员 | 网络分析仪                       | RF测试员全检                       | IPQC      | 每批/次 | 电性能是否达到规定要求                                                             | 报射频测试或评审   | 《RF测试作业指导书》                         | 测试时注意调整正确的程序                               |
| 5                 |     | 包装                   |     | 按《包装作业指导书》对检验合格的成品进行检验    | 手工              | 全检   | 数量/标识/材料/配件 | 包装员   | 包装材料/胶带/封胶机                 | IPQC随机抽样                      | IPQC      | 每批/次 | 包装材料有无用错无短装、漏配件、标识无误                                                    | 重新包装或补数量   | 《产品包装作业指导书》                         | 包装时注意包装材料有无脏污                              |
| 6                 |     | 入库                   |     | 规定摆放、标识                   | 手工              | 全检   | 包装、数量       | 物料员   | 手套                          | IPQC随机抽样                      | IPQC      | 每批/次 | 包装及数量标识明确                                                               | 重新包装或补数量   | 《仓库管理程序》                            | 标识清楚产品名称及数量                                |
| 7                 |     | 出货检查                 |     | 按《OQC检验指导书》对成品进行检验        | 目视/卡尺           | 抽检   | 外观/尺寸/功能等   | OQC   | 目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机 | 按AQL抽样<br>MAJ:0.25<br>MIN:1.0 | OQC       | 每批/次 | 目视贴好的FPC有无脏污等现象, 支架有无缺胶、多胶等不良; 尺寸按图纸要求检验; 相关的性能测试按《OQC检验指导书》所规定进行       | 返工或挑选      | 《OQC检验指导书》、《支架类成品检验规范》、《FPC类成品检验规范》 | 抽检时注意有无短装, 选用或返工产品必须出返工方案, 重新挑选再送检, 直至合格为止 |
| 8                 |     | 出货                   |     | 包装数量                      | 目视              | 全检   | 标识/包装       | 仓管员   | 目视                          | 按AQL抽样<br>MAJ:0.25<br>MIN:1.0 | OQC       | 每批/次 | 标识/包装/数量/产品规格/产品名称等是否与出货通知单相对应                                          | 开箱检查或重新包装  | 《出货管理程序》                            | 注意出货产品客户是否有特殊要求如: 需附出货检验报告等                |

| Reliability test report |                          |                 |     |                     |           |
|-------------------------|--------------------------|-----------------|-----|---------------------|-----------|
| Customer(客户)            | 广翼                       | Written By(制作)  | 张远方 | Orig. Date(制作日期)    | 2023.9.27 |
| Part Number(料号)         | 329900000108             | Revised By(校订)  | 于姜  | Revised Date(校订日期)  | 2023.9.27 |
| Description1(零件名称)      | FT01-BRACKET<br>-ANT-2-6 | Approved By(确认) | 曹进茂 | Approved Date(确认日期) | 2023.9.27 |

### 内置天线环境测试报告

客户名称 广翼 项目名称: FT01 产品名称: 天线成品 尚远料号: SH231711B89-3

样品数量: 每项5PCS 测试时间: 2023.9.27

| 测试时间                    | 测试项目   | 测试条件和需求                                                                | 测试设备   | 测试结果                                             |                         |                         |                         |                         |                         |
|-------------------------|--------|------------------------------------------------------------------------|--------|--------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 23.9.24<br>-<br>23.9.25 | 低温存储   | 在温箱中（-40℃）保存24个小时，在常温常湿（20℃，50%RH）下放2小时恢复干燥后测试，电性能（VSWR）和结构外形良好        | 标准温湿度箱 | <div><div></div><div>RF</div><div>外观</div></div> | 1                       | 2                       | 3                       | 4                       | 5                       |
|                         |        |                                                                        |        |                                                  | -40℃                    | -40℃                    | -40℃                    | -40℃                    | -40℃                    |
|                         |        |                                                                        |        |                                                  | OK                      | OK                      | OK                      | OK                      | OK                      |
| 23.9.24<br>-<br>23.9.25 | 高温存储   | 在温箱中（65℃）保存24个小时，在常温常湿（20℃，50%RH）下放2小时恢复干燥后测试，电性能（VSWR）和结构外形良好         | 标准温湿度箱 | <div><div></div><div>RF</div><div>外观</div></div> | 1                       | 2                       | 3                       | 4                       | 5                       |
|                         |        |                                                                        |        |                                                  | +70℃                    | +70℃                    | +70℃                    | +70℃                    | +70℃                    |
|                         |        |                                                                        |        |                                                  | OK                      | OK                      | OK                      | OK                      | OK                      |
| 23.9.24<br>-<br>23.9.26 | 恒温恒湿试验 | 温度为65℃，湿度为90%-95%RH，48H后，要求结构无破损，电性能无变化。                               | 标准温湿度箱 | <div><div></div><div>RF</div><div>外观</div></div> | 1                       | 2                       | 3                       | 4                       | 5                       |
|                         |        |                                                                        |        |                                                  | 25℃~55℃/95%~25℃~55℃/95% | 25℃~55℃/95%~25℃~55℃/95% | 25℃~55℃/95%~25℃~55℃/95% | 25℃~55℃/95%~25℃~55℃/95% | 25℃~55℃/95%~25℃~55℃/95% |
|                         |        |                                                                        |        |                                                  | OK                      | OK                      | OK                      | OK                      | OK                      |
| 23.9.24<br>-<br>23.9.26 | 冷热冲击测试 | 高温65℃、低温-35℃各1H，32个循环，要求结构无破损，电性能无变化。                                  | 标准温湿度箱 | <div><div></div><div>RF</div><div>外观</div></div> | 1                       | 2                       | 3                       | 4                       | 5                       |
|                         |        |                                                                        |        |                                                  | -40℃~-70℃               | -40℃~-70℃               | -40℃~-70℃               | -40℃~-70℃               | -40℃~-70℃               |
|                         |        |                                                                        |        |                                                  | OK                      | OK                      | OK                      | OK                      | OK                      |
| 23.9.24<br>-<br>23.9.26 | 耐盐雾实验  | 盐雾浓度为5%的NaCl溶液，在35℃条件下，对天线连续喷雾48小时，然后移出清洗之后进行16小时晾干。天线表面应无锈蚀、变色、及镀层剥落。 | 盐雾机    | <div><div></div><div>RF</div><div>外观</div></div> | 1                       | 2                       | 3                       | 4                       | 5                       |
|                         |        |                                                                        |        |                                                  | 35℃/5%                  | 35℃/5%                  | 35℃/5%                  | 35℃/5%                  | 35℃/5%                  |
|                         |        |                                                                        |        |                                                  | OK                      | OK                      | OK                      | OK                      | OK                      |

审核: 于姜

确认: 黄工

测试: 刘飞

## RoHS 2.0 Restricted Substance composition questionnaire

| SALEABLE PART |     |
|---------------|-----|
| 1             | 1   |
| 2             | 2   |
| 3             | 3   |
| 4             | 4   |
| 5             | 5   |
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| 7             | 7   |
| 8             | 8   |
| 9             | 9   |
| 10            | 10  |
| 11            | 11  |
| 12            | 12  |
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| 14            | 14  |
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| 16            | 16  |
| 17            | 17  |
| 18            | 18  |
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| 89            | 89  |
| 90            | 90  |
| 91            | 91  |
| 92            | 92  |
| 93            | 93  |
| 94            | 94  |
| 95            | 95  |
| 96            | 96  |
| 97            | 97  |
| 98            | 98  |
| 99            | 99  |
| 100           | 100 |

| 零件料号          | 零件名称/型号              | 供应商料号        | 制造商名称 | 供应商绿色物料标识方法 |
|---------------|----------------------|--------------|-------|-------------|
| SH231711B89-3 | FT01-BRACKET-ANT-2-6 | 329900000108 | 尚远    | ROHS标识标签    |

|          |  |
|----------|--|
| SUB-PART |  |
|----------|--|

[illegible]

|        |        |                |
|--------|--------|----------------|
| 制表：戴巧玲 | 审核：林长青 | 制表日期：2023.9.27 |
|--------|--------|----------------|

|        |        |                |
|--------|--------|----------------|
| 制表：戴巧玲 | 审核：林长青 | 制表日期：2023.9.27 |
|--------|--------|----------------|

|        |        |                |
|--------|--------|----------------|
| 制表：戴巧玲 | 审核：林长青 | 制表日期：2023.9.27 |
|--------|--------|----------------|

Bill Of Material

■ ROHS2.0（ROSH新指令2011/65/EU）

| 序号 | 零件料号          | 零件名称                     | 零件描述 | 供应商名称 | 供应商型号        | 数量 | 是/否<br>ROSH<br>物料 | 备注<br>Remark |
|----|---------------|--------------------------|------|-------|--------------|----|-------------------|--------------|
| 1  | SH23171IB89-3 | FT01-BRACKET-<br>ANT-2-6 | LDS  | 尚远    | 329900000108 | 1  | 是                 |              |
| 2  |               |                          |      |       |              |    |                   |              |
| 3  |               |                          |      |       |              |    |                   |              |
| 4  |               |                          |      |       |              |    |                   |              |
| 5  |               |                          |      |       |              |    |                   |              |
| 6  |               |                          |      |       |              |    |                   |              |
| 7  |               |                          |      |       |              |    |                   |              |
| 8  |               |                          |      |       |              |    |                   |              |
| 9  |               |                          |      |       |              |    |                   |              |
| 10 |               |                          |      |       |              |    |                   |              |
| 11 |               |                          |      |       |              |    |                   |              |

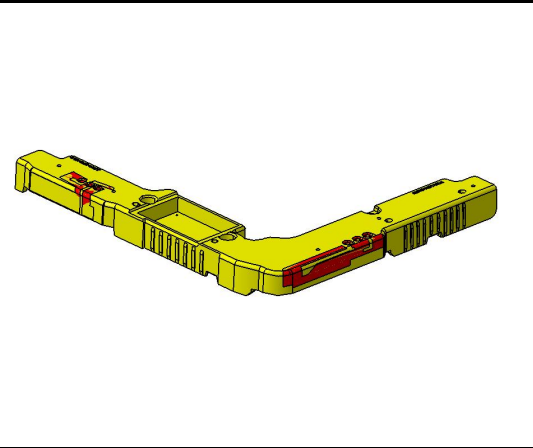
制表：张远方

审核：于姜

制表日期：2023.9.27

Manner of packing

1. 单个产品包装照片或2D图(针对单体有包装的物) 2. 单层产品包装照片或2D图(整齐性和可靠性体现)

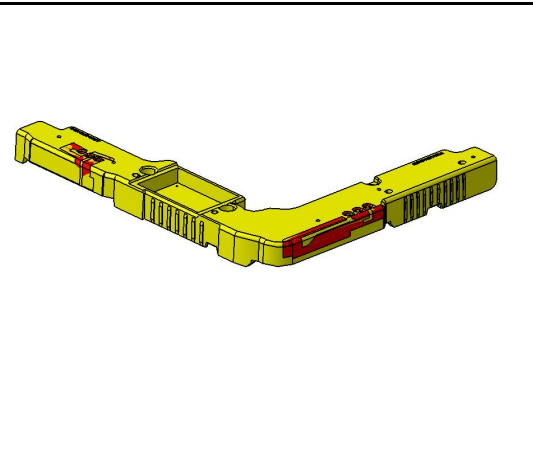


产品名称 FT01-BRACKET-ANT-2-6

产品料号 329900000108

物料描述

3. 箱内所有层产品放置的照片(密封性、可靠性体现) 4. 整箱封箱后的整体照片或2D图(整体封箱状态)



包装方式  
描述或者  
包装材料描述

托盘+纸箱

箱内  
包装  
数量

每层或每包  
的数量  
层数或包数  
每箱的数量

备注

5. 单包产品标签 (料号、产品名称、数量等信息) 6. 外箱标签 (料号、产品名称、数量等信息)

客户名称: 上海广翼智联科技有限公司  
产品名称: FT01  
订单号码: -  
尚远科技编码: SH231711B89-3  
客户物料编码:  
数 量: 4  
供应商 上海尚远通讯科技有限公  
检验员: 4  
(盖章) 4  
发货日期: \_\_\_\_年\_\_\_\_月\_\_\_\_日 4  
注意事项: 防潮、防震、防压, 小心轻放…… 4

客户名称: 上海广翼智联科技有限公司  
产品名称: FT01  
订单号码: -  
尚远科技编码: SH231711B89-3  
客户物料编码:  
数 量: 4  
供应商 上海尚远通讯科技有限公  
检验员: 4  
(盖章) 4  
发货日期: \_\_\_\_年\_\_\_\_月\_\_\_\_日 4  
注意事项: 防潮、防震、防压, 小心轻放…… 4

1. 準備所需包材放於有利工作之位置. 2. 按照SYC-BZ01包裝規範, 用紙箱(SYC-01), 封口袋(PE)包裝, 1000PCS/包 3. 每箱以实际包装为准

供应商  
签字

杜宪敏

日期

2023.9.27

| MI test report |              |    |                                                                                            |             |                                                                 |
|----------------|--------------|----|--------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------|
| 客户             |              | 机种 | FT01-BRACKET-ANT-0-1<br>FT01-BRACKET-ANT-3-5<br>FT01-BRACKET-ANT-2-6<br>FT01-BRACKET-ANT-4 | 料号          | SH23171IB89-1/SH23171IB89-2<br>/SH23171IB89-3<br>/SH23171IB89-4 |
| 测试日期           | 2023. 09. 25 | 材质 | DX11355                                                                                    | 色号          | BKNAT                                                           |
| 原料批号           |              |    |                                                                                            | MIstandard值 | MVR: 9-18CC/10min                                               |
| 测试条件           |              |    | MI测试数据                                                                                     | 17CC/10min  | 判定结果                                                            |
| 烘料温度           | 110° C       |    |                                                                                            |             | OK                                                              |
| 烘料时间           | 4H           |    |                                                                                            |             |                                                                 |
| 设定温度           | 300℃         |    |                                                                                            |             |                                                                 |
| 砝码荷重           | 1. 2kg       |    |                                                                                            |             |                                                                 |
| 剪取时间           | 30秒          |    |                                                                                            |             |                                                                 |

## Certificate of Analysis

**Certificate Type:**

Insp. certificate "3.1" EN

10204

Date printed: JUL/06/2022

**Shipped from details:**

SHPP (Shanghai) Co. Ltd

Shanghai Site

3F NO 58 AIDU ROAD

200131

SHANGHAI

China

Material Number 22029223  
Material Description DX11355-BKNAT-BAG-00-00-00  
Material Group LNP™ THERMOCOMP™ compound  
Batch Number 1003095409  
Manufacturing Plant Shanghai  
Manufacturing Date JUL/02/2022

| Characteristic                       | Unit         | Value        | Lower Limit | Upper Limit | Inspection method |
|--------------------------------------|--------------|--------------|-------------|-------------|-------------------|
| MVR 300°C @1.2KG                     | CC/10'       | 16.9         | 9.0         | 18.0        | ASTM D1238        |
| <b>IZOD IMPACT NOTCH 23°C, 3.2MM</b> | <b>J/m</b>   | <b>792.6</b> | -           | -           | <b>ASTM D256</b>  |
| <b>SPECIFIC GRAVITY</b>              | <b>g/cm3</b> | <b>1.277</b> | -           | -           | <b>ASTM D792</b>  |
| <b>TENSILE STRENGTH, 3.2MM</b>       | <b>MPa</b>   | <b>58</b>    | -           | -           | <b>ASTM D638</b>  |
| <b>TENSILE ELONGATION, 3.2MM</b>     | <b>%</b>     | <b>109</b>   | -           | -           | <b>ASTM D638</b>  |

The results in bold/italics are audit tests, latest done on 03/21/2022.

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\*\*\* End \*\*\*