

Shenzhen Aihui Technology Co., LTD

Antenna specification

Antenna Sample Confirmation From

| | | | | | |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------|--------------------------|
| Supplier name: Vendor Name | Shenzhen Aihui Technology Co., LTD ShenZhen Aihui Technology Co., Ltd | | | | |
| Customer name: Customer Name | Jie hong | | | | |
| Sample name: Sample Name | ZDT 310-YLDP 34 | | | | |
| Product model number, Part Number | | | | | |
| Sample specification : Specification | Main antenna; ZDT 310-YLDP 34-4G-AH line length 125mm 4 generation / P 30LTE panel Three in one; ZDT 310-YLDP 34-WGB-AH line length is 65 mm for 4 generations Collection; the DIV-AH line length is 135 mm for 4 generations | | | | |
| Inspection item Inspection Item | Performance test: Performance | Visual inspection of the Total Appearance | Structure of the structure | else Others | result Inspection Result |
| remarks Remark | | | | | |
| quality audit QA Audit | Engineering Review Engineer Audit | Chen Yichu | Business confirmation Sales Confirm |  | |
| The following is completed by the customer The following are filled by Customer | | | | | |
| Customer opinion Customer Evaluation | | | | | |

Customer's
signature /
seal
Signature /
Ch apter
by Customer

Date / date: 2024. 01. 02

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Antenna Test Report

Test unit: Shenzhen Aihui Technology Co., LTD
Test by : Shenzhen Aihui Technology Co., Ltd

| | | | |
|---------------------------------------------|-----------------------------------------------------|----------------------------------------|------------|
| material Material | FPC | | |
| Antenna type Antenna Type | MonopoleType | Polarization mode Polarization mode | Linear |
| application scenarios Application | | | |
| Work frequency band Band | GSM /WCDMA /LTE WiFi /BT /GPS | VSWR | ≤ 2 |
| power Power | Max : 2W | impedance Impedance | 50Ω |
| gain dB _i | $\geq 1\text{dB i}$ | | |
| testing facility Test Equipment | HPE 5071C 、 Shielding Room 、 3D automatic turntable | | |

Antenna Description ::

1. Grounding processing and picture description : no
2. Need to change the motherboard to match : no

●● Test voltage : 3.6V , check the antenna contact is good before testing .The RF cable of the integrated tester is kept in a natural state and can not be curled .

Specification : test the specified power level , all indicators must conform to the specifications .

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1. Project pictures
2. Test the manufacturing equipment
3. The antenna matching circuit
4. and S11 test
 - .04 S 11 Description of the test method
 - 4.1 S 11 parameter picture
5. Dark room test equipment and data
 - 5.0, to test the equipment
 - 5.1 Active test data
6. Schematic diagram of the antenna assembly
7. Treatment of the antenna environment
8. antenna mass production index
9. Structural drawings

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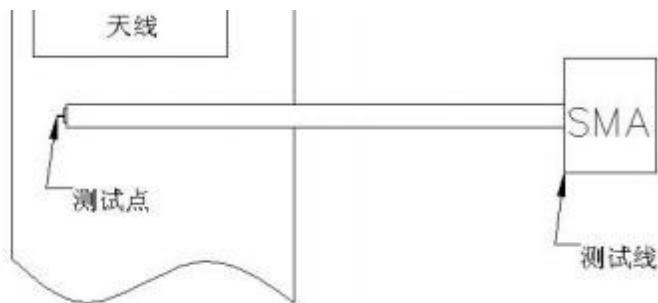
1. Project pictures not

have

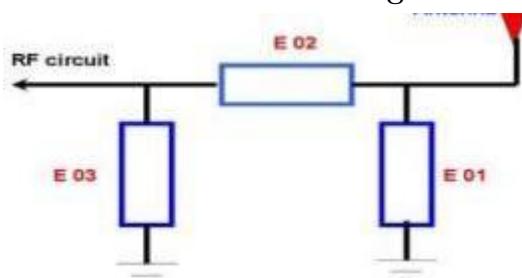
2. Test the manufacturing equipment

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

Preparation method: The hand mechanism uses a 50 ohm coaxial cable, one end is connected to the test point of the back end of the mobile phone motherboard (the front end of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. The antenna matching circuit



Modify the point / Modify

| E 01 | E 02 | E 03 |
|------|------|------|
| No | No | No |

Note: Match without modification.

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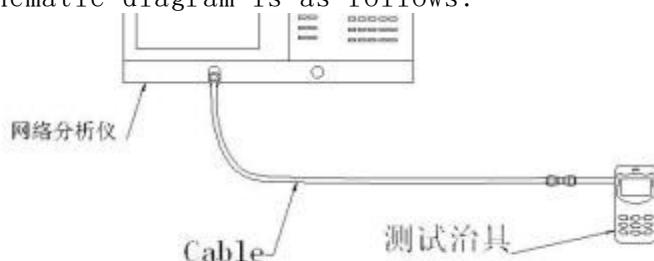
4. S 11 test

4.0 S 11 Description of the test method

Test Equipment: Network Analyzer (E 5071C)

Test method: Export a 50 ohm CABLE cable from the instrument test port, use the SMA connector of the calibration, 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

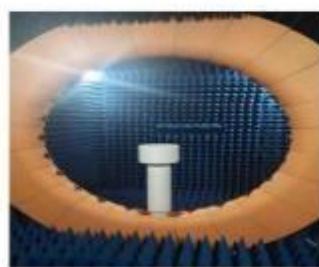
5. Dark room test equipment and data

5.0, to test the equipment

Test system: shield the dark room

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

Test equipment: Use the network analyzer Agilent E 5071C when testing the passive data
When testing active data, use the comprehensive meter CMW 500



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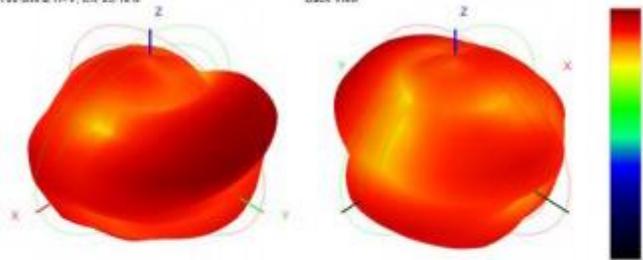
5.1 Antenna active test data

| channel | L | M | H | L | M | H |
|----------------|-------|-------|---------|-------|-------|---------|
| TRP | 23.26 | 23.18 | 23.05 | 22.35 | 22.19 | 22.98 |
| TIS | | | -102.03 | | | -102.1 |
| Frequency Band | W2 | | | W5 | | |
| channel | L | M | H | L | M | H |
| TRP | 15.54 | 15.55 | 15.25 | 14.54 | 14.24 | 14.31 |
| TIS | | | -102.35 | | | -101.14 |
| Frequency Band | B2 | | | B4 | | |
| channel | L | M | H | L | M | H |
| TRP | 16.31 | 16.05 | 16.14 | 15.35 | 15.26 | 15.41 |
| TIS | | | -89.13 | | | -87.63 |
| Frequency Band | B5 | | | B7 | | |
| channel | L | M | H | L | M | H |
| TRP | 14.25 | 14.13 | 14.22 | 16.75 | 16.42 | 16.24 |
| TIS | | | -86.22 | | | -86.75 |
| Frequency Band | B28-A | | | B28-B | | |
| channel | L | M | H | L | M | H |
| TRP | 13.16 | 13.53 | 13.47 | 13.01 | 13.52 | 13.14 |
| TIS | | | -85.69 | | | -85.99 |

5.1 antenna antenna test data

main antenna

| frequency | U.09 | -4.04 | 20.10% |
|-----------|------|-------|--------|
| 730M | 0.63 | -4.18 | 27.15% |
| 760M | 1.03 | -3.38 | 30.88% |
| 790M | 0.96 | -3.55 | 32.17% |
| 820M | 0.83 | -3.73 | 33.04% |
| 850M | 1.25 | -3.29 | 32.4% |
| 880M | 1.17 | -3.34 | 34.88% |
| 910M | 0.66 | -4.26 | 32.78% |

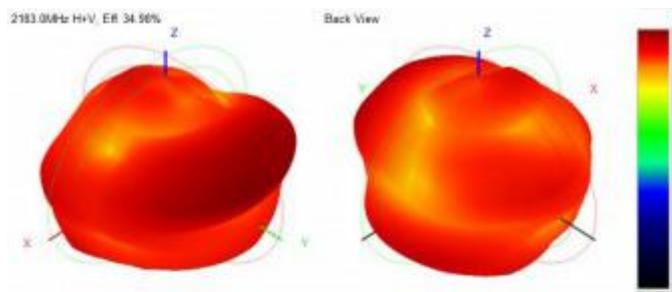


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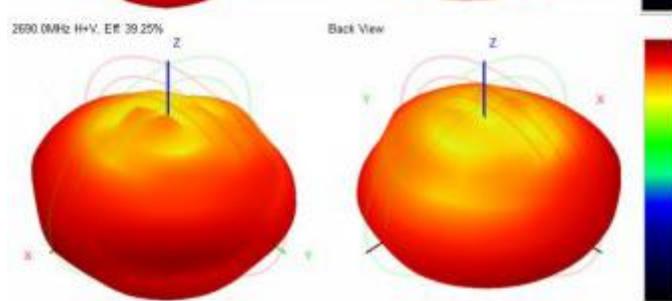
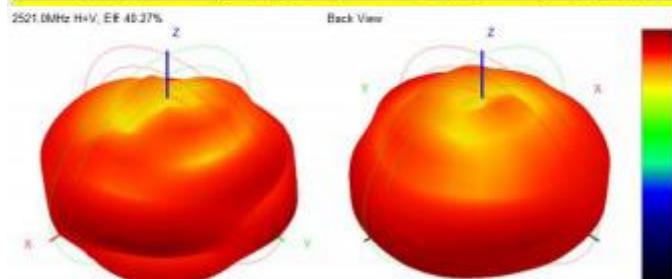
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| | | | |
|-------|------|--------|--------|
| 2521M | 0.83 | -3.95 | 40.24% |
| 2554M | 0.86 | -3.9 | 40.72% |
| 2588M | 1.39 | -4.13 | 38.65% |
| 2622M | 1.25 | -4.23 | 37.73% |
| 2656M | 0.62 | -4.31 | 37.1% |
| 2690M | 0.83 | -39.99 | 39.25% |

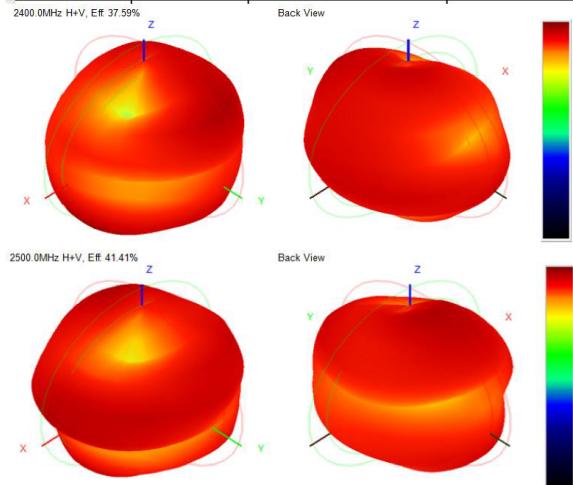


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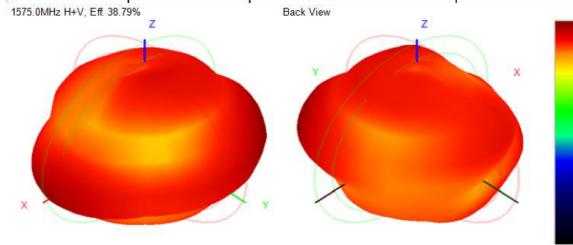
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Three-in-one antenna

| Gain&Efficiency 增益和效率 | | | |
|--------------------------|----------------|----------------------|------------------|
| frequency 频率(Hz) | gain 增益(dB) | efficiency 效率(dB) | efficiency 效率 |
| 2400M | 0.86 | -3.73 | 37.59% |
| 2420M | 1.16 | -3.38 | 38.59% |
| 2440M | 1.27 | -3.13 | 38.49% |
| 2460M | 0.96 | -3.63 | 40.18% |
| 2480M | 1.24 | -3.15 | 40.03% |
| 2500M | 1.53 | -3.04 | 41.41% |



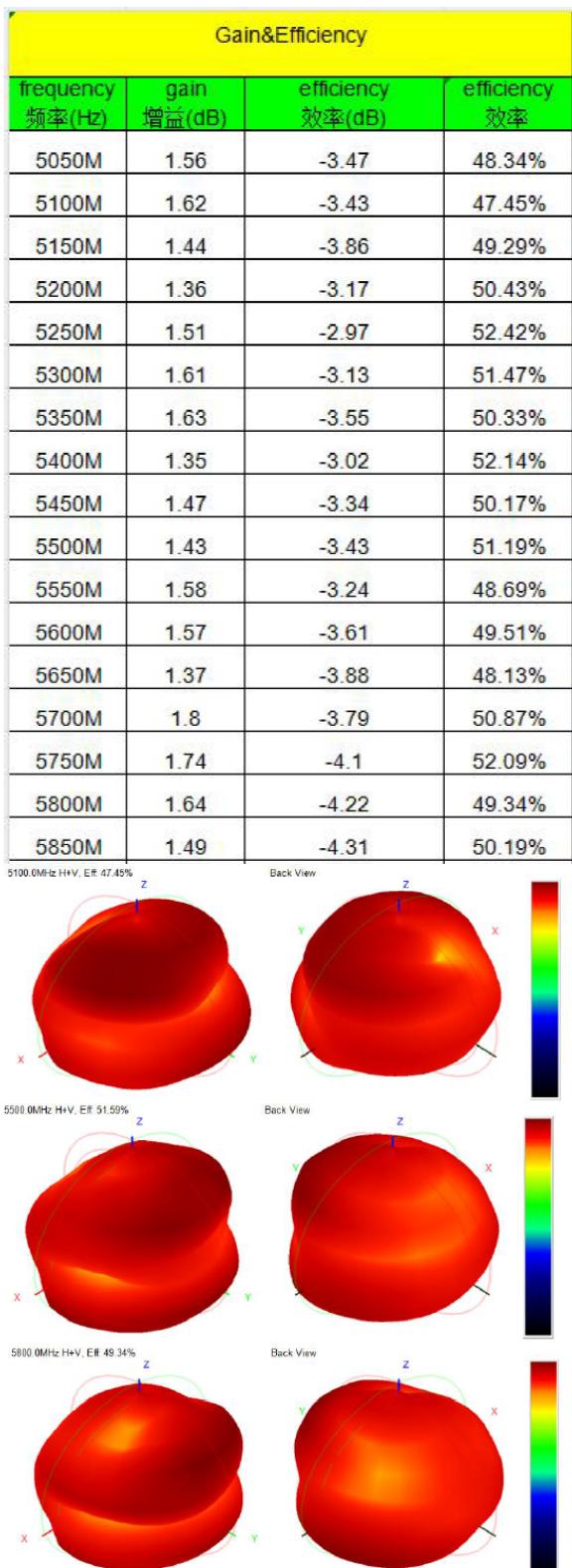
| Gain&Efficiency 增益和效率 | | | |
|--------------------------|----------------|----------------------|------------------|
| frequency 频率(Hz) | gain 增益(dB) | efficiency 效率(dB) | efficiency 效率 |
| 1565M | 0.98 | -4.23 | 36.68% |
| 1575M | 0.86 | -4.33 | 38.79% |
| 1585M | 0.93 | -4.16 | 36.39% |
| 1595M | 0.83 | -4.38 | 35.42% |



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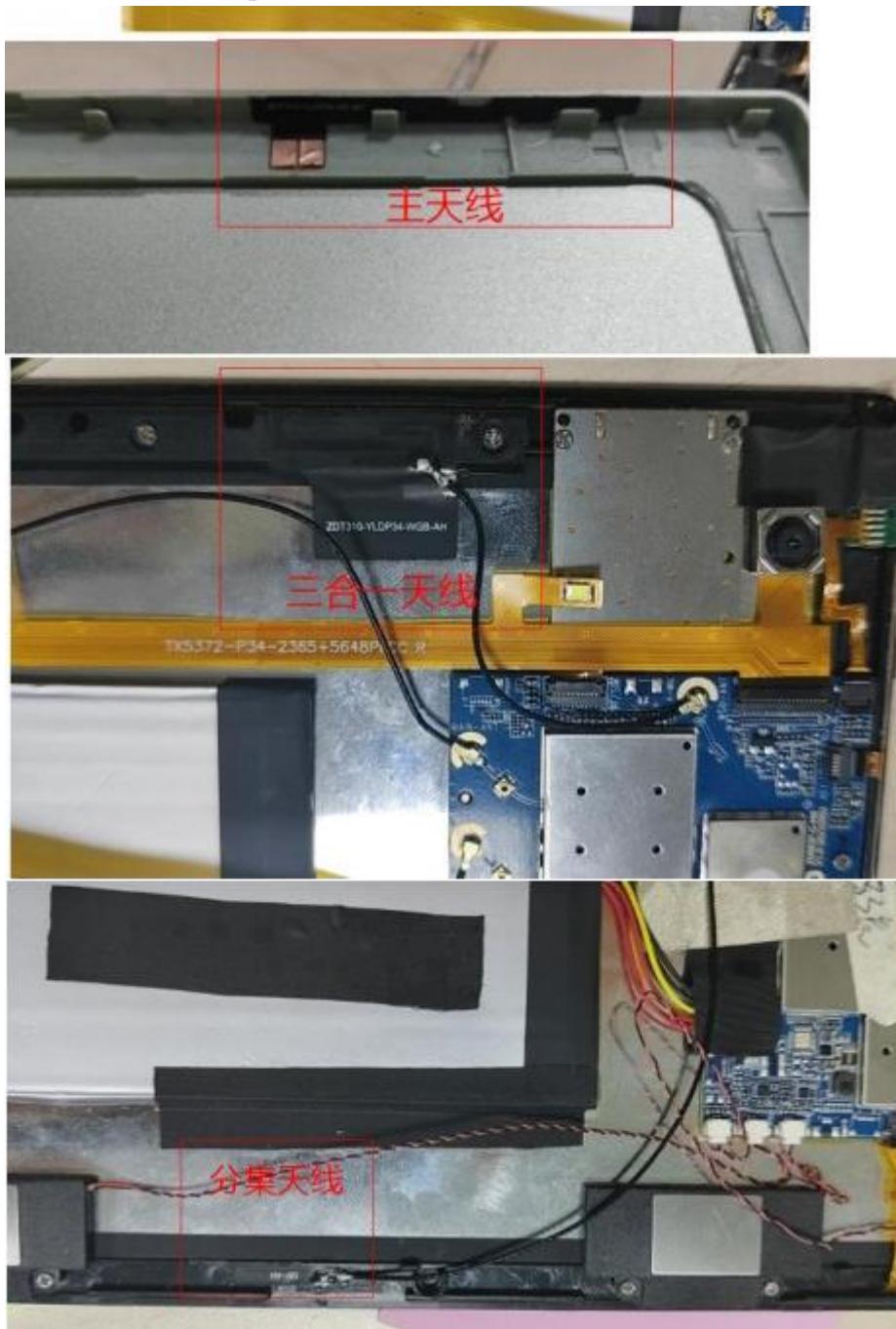
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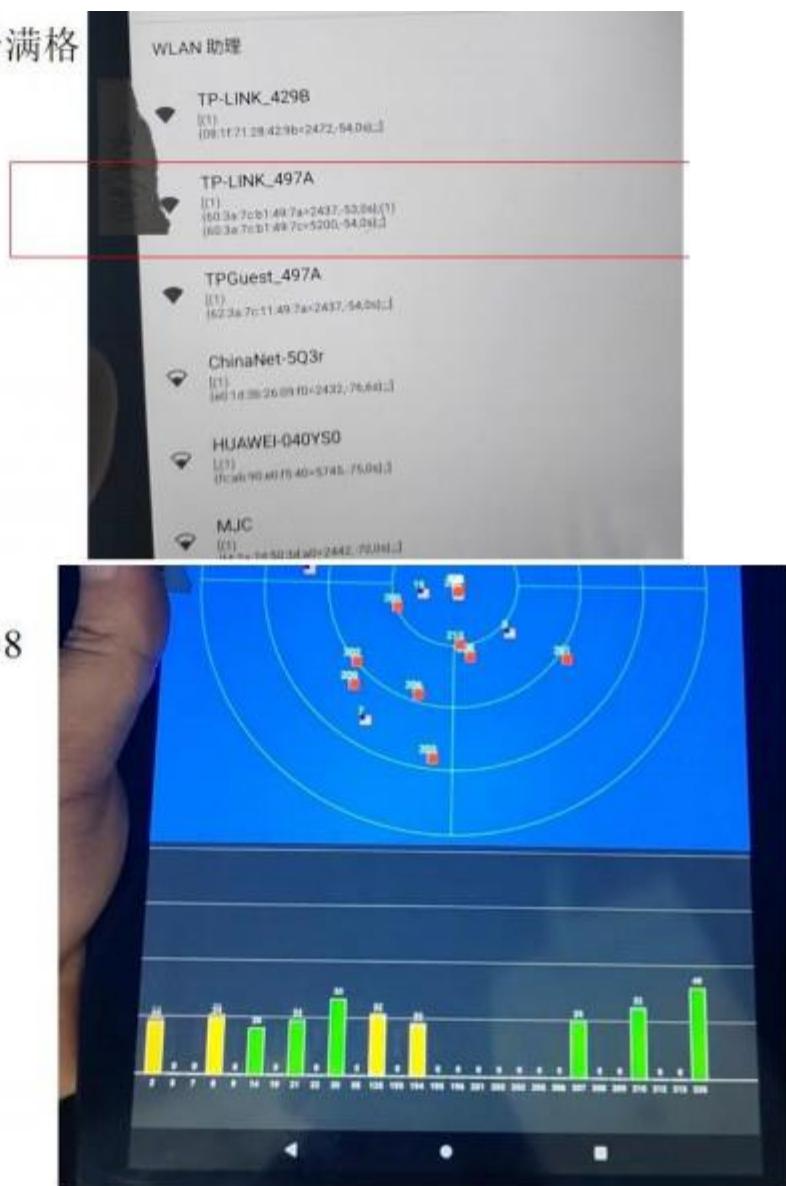
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.16 Antenna position



6.2 WIFI / GPS

距离热点10M 信号满格
上网正常



测试地点为窗台,38
以上星值1颗

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7. Environmental treatment



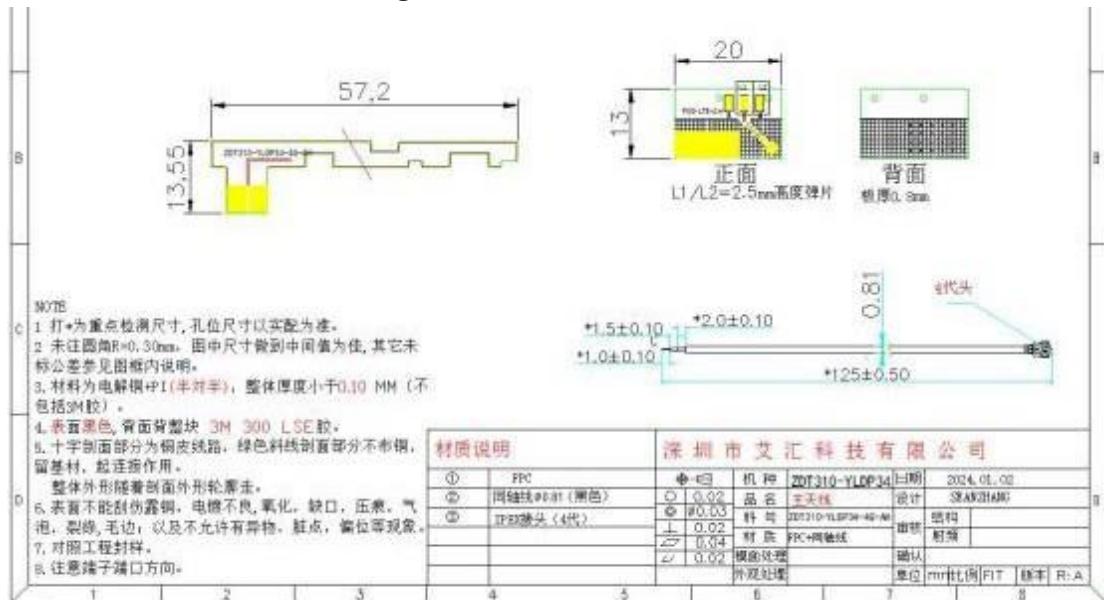
8. Antenna mass production index

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 | Mass production standards |
|------------------|----------------------------------------------------------------------------|
| 824MHZ -2170MHZ | VSWR (mass production performance) <VSWR (recognized performance) + 0.5 |
| 1575MHZ | VSWR (mass production performance) <VSWR (recognized performance) + 0.5 |
| 2400MHZ -2500MHZ | VSWR (mass production performance) <VSWR (recognized performance) + 0.5 |

9. Structural drawings



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