Shenzhen Shangyuan Technology Co., LTD

Acknowledgment of the cable

Customer name: Vigo	**Project Name: 9AY4**
Working frequency band: WIFI2.4/5.8	
Motherboard version:	

Shangyuan material specifications

specifications and models	Shangyuan Far Day	Customer material number
WIFI antenna components	SZ25210IB77-1	39600841

Change of history			
Date of preparation/revision	Changes	Changer	edition
2025.07.09	**editio princeps**	**Mo Heng**	**A**

Shangyuan's signature panel				
research and development	structure ：	examine and verify ：	Quality Engineer:	ratify ：
	radio frequency ：	examine and verify ：		

Customer signature column			
electronic engineer	project manager	construction engineer	Quality engineer

Tel: +86-021-64842326 (Shanghai); +86-0755-82504258 (Shenzhen)
Fax： + 86-021 - 64842328
Shanghai R&D Center: 1st Floor, Building 4, No.99, Lane 215, Gaoguang Road, Qingpu District, Shanghai
Shenzhen R&D Center: Room 405,4th Floor, Jinke Building, No.8 Qiongyu Road, Nanshan District, Shenzhen

catalogue

1. PROJECT PICTURES 3 4

2. TEST EQUIPMENT 3 4

3. MATCHING CIRCUIT 3 4

4.S11 TEST 3 5

4.1 S11 TEST METHOD DESCRIPTION 3 5

4.2 S11 PARAMETERS 4 5

4.3 PARAMETER PICTURES 4 5

5. DARKROOM TEST DATA 5 6

5.1 TEST EQUIPMENT 5 6

5.2 PASSIVE TEST DATA 5 5

5.3 DIRECTION DIAGRAM 6 6

6. MACHINE ASSEMBLY PICTURE 7 8

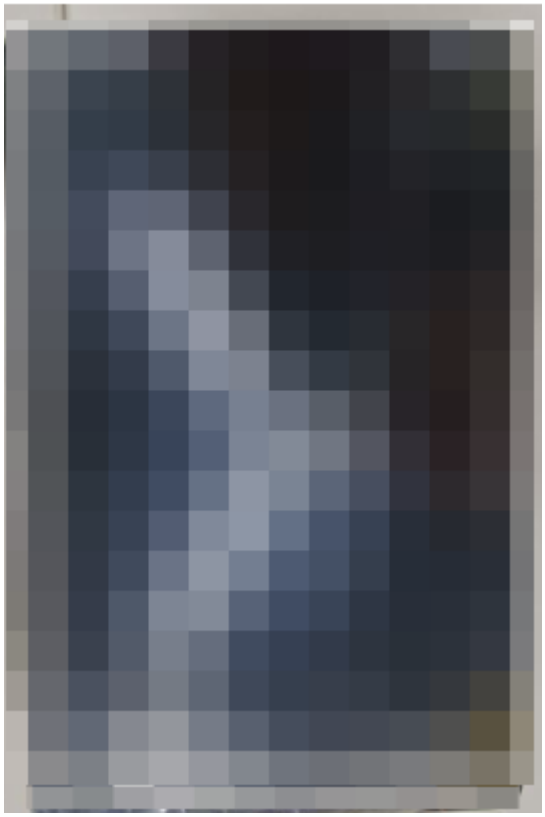
6.1 ASSEMBLY LOCATION DIAGRAM: 7 7

7. PRODUCTION ANTENNA INDICATORS 7 9

8. STRUCTURAL DRAWINGS 8 10

1. Project pictures

Project pictures are as follows:



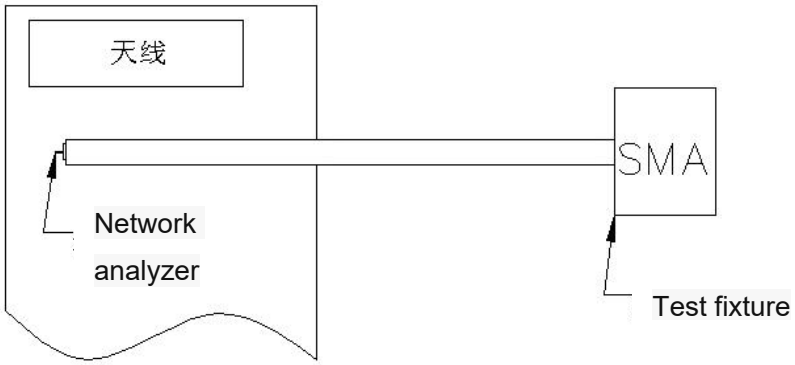
explain ：

The customer's final verification antenna performance machine will be kept in our company for at least one year, so as to analyze and solve the abnormal situation in the mass production of antenna and ensure the quality of antenna shipment.

2. Test equipment

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

Making method: The machine tool is a 50 ohm coaxial cable, one end connected to the test point at the back of the matching circuit on the machine motherboard (front end of the RF test hole), and the other end connected to the SMA connector. The schematic diagram is as follows:



3. Matching circuit

The match has not been changed

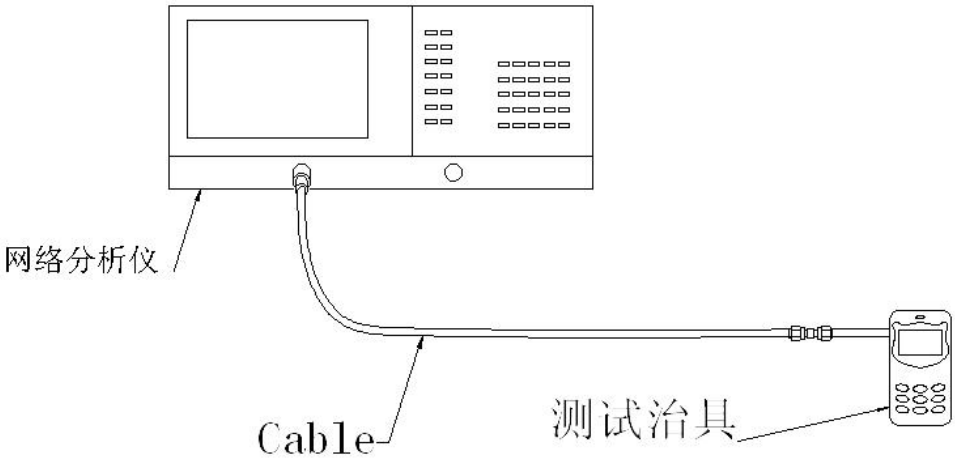
4.S11 test

4.1 S11 test method description

Test equipment: network analyzer (HP 8753E);

Test method: Use a 50 ohm CABLE cable to export from the test port of the instrument, use the calibration piece to calibrate and connect the SMA connector of the machine tool, and record the corresponding echo loss and VSWR at relevant frequency points;

The test diagram is as follows:



Schematic diagram of test

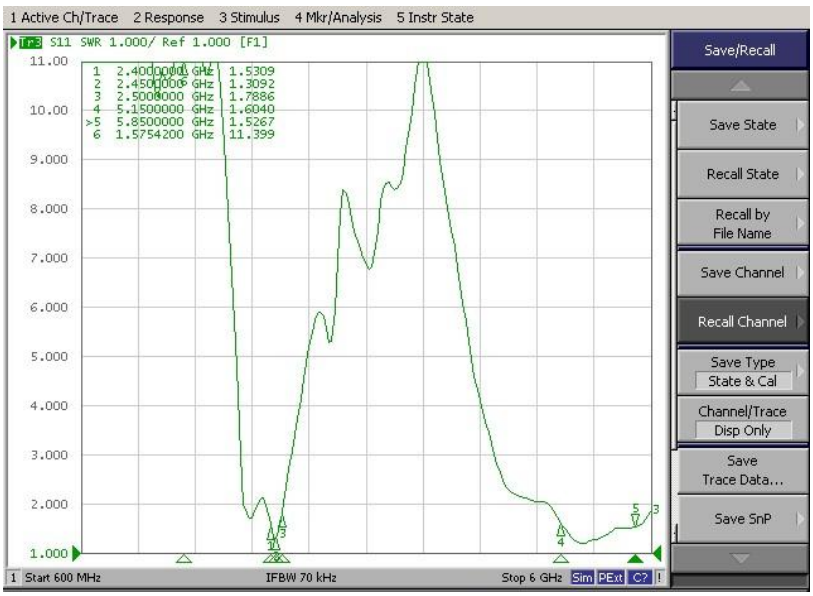
4.2 S11 parameters

WIFI antenna ：

frequency （MHZ）	2400	2500	5150	5850
standing-wave ratio	1.5	1.78	1.6	1.5

4.3 Parameter pictures

S11：WIFI



5. Darkroom test data

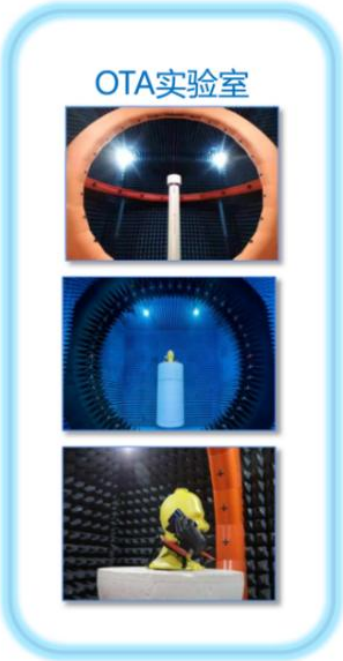
5.1 Test equipment

Test system: shielded anechoic chamber

Test environment: temperature 22℃±3℃, humidity 50%±15%

Test equipment: When testing passive data, use network analyzer AgilentE5062C

When testing active data, use the Agilent8960 CMW500 comprehensive tester



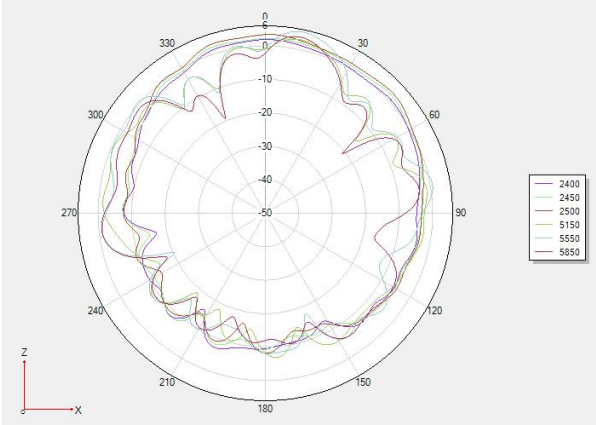
5.2 Passive test data

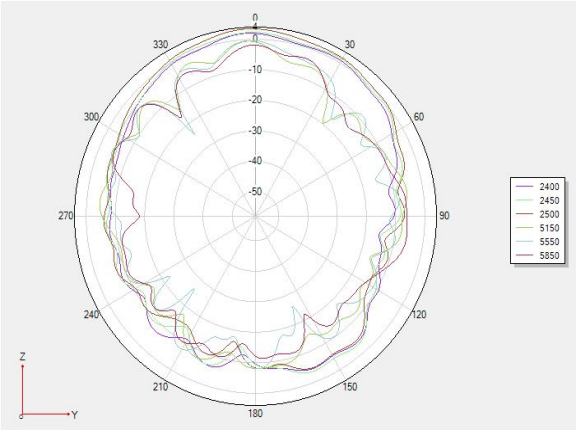
WiFi antenna test data:

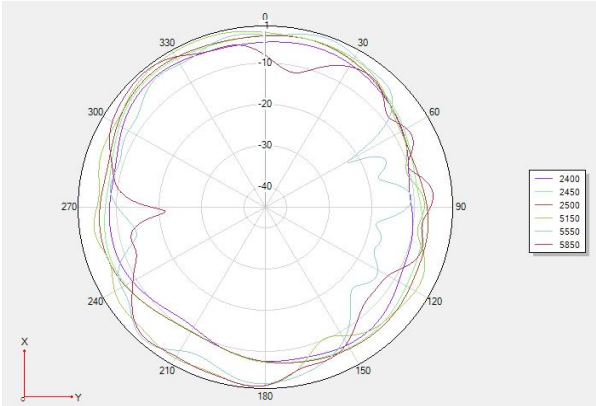
productiveness ：

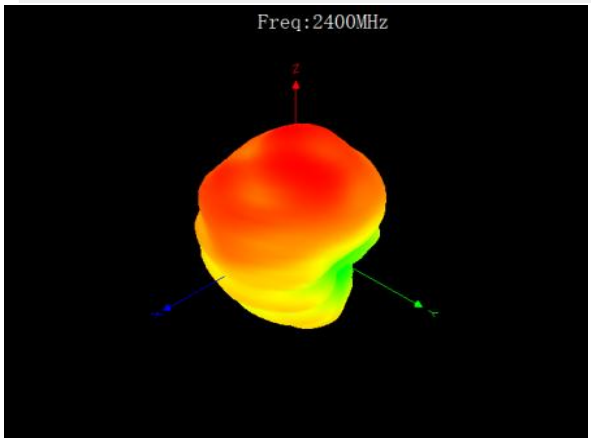
Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	2.05	61.64	5150	4.99	54.08
2410	2.82	62.36	5200	4.62	51.81
2420	2.61	61.67	5250	4.78	51.08
2430	2.38	62.56	5300	4.11	52.43
2440	2.25	63.7	5350	4.34	54.88
2450	2.41	64.33	5400	4.87	53.53
2460	2.94	64.58	5450	4.9	52.29
2470	2.66	63.09	5500	5.07	54.57
2480	2.25	65.46	5550	5.28	54.02
2490	2.95	62.48	5600	5.03	54.95
2500	2.48	64.7	5650	4.84	56.1
			5700	4.69	54.08
			5750	4.38	52.97
			5800	4.19	54.45
			5850	4.77	51.64

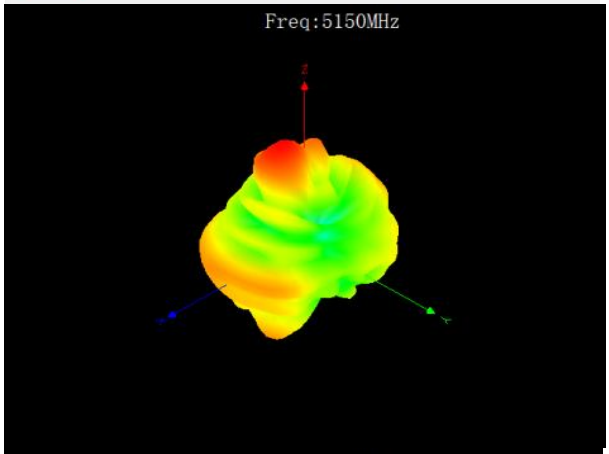
2D/3D direction diagram:

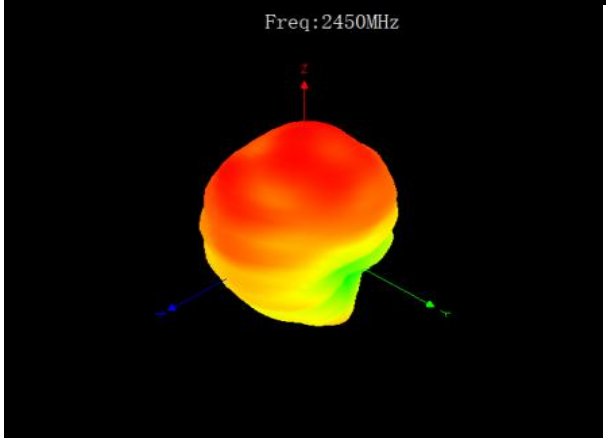


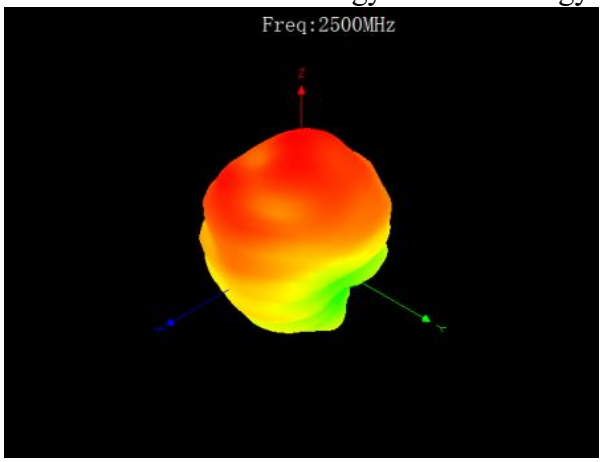


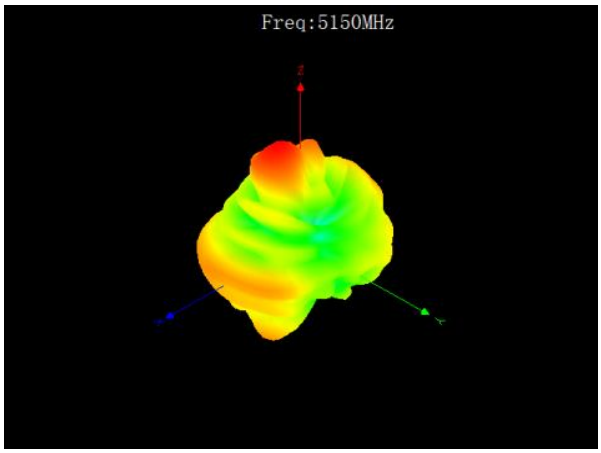


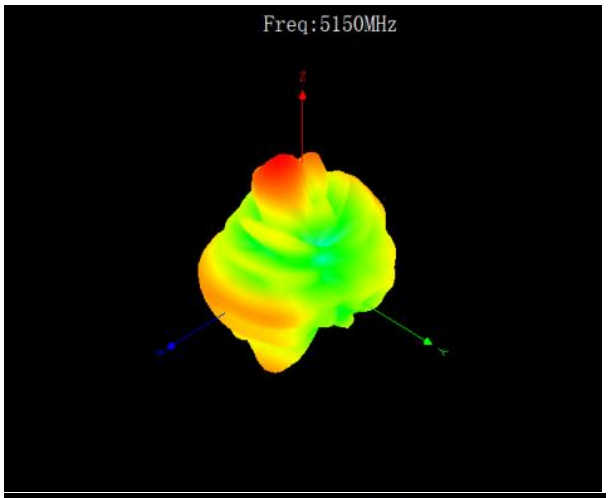


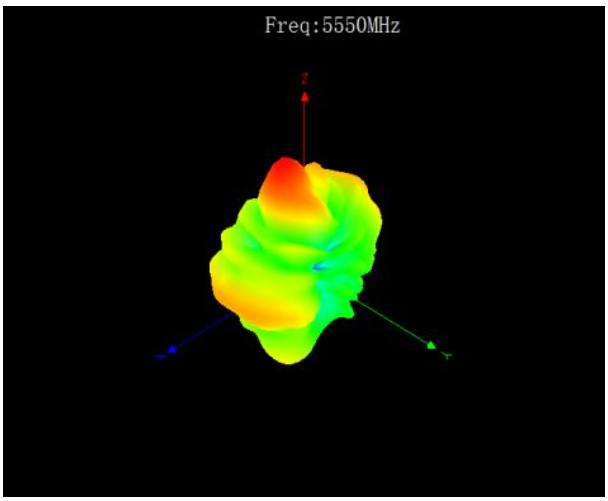


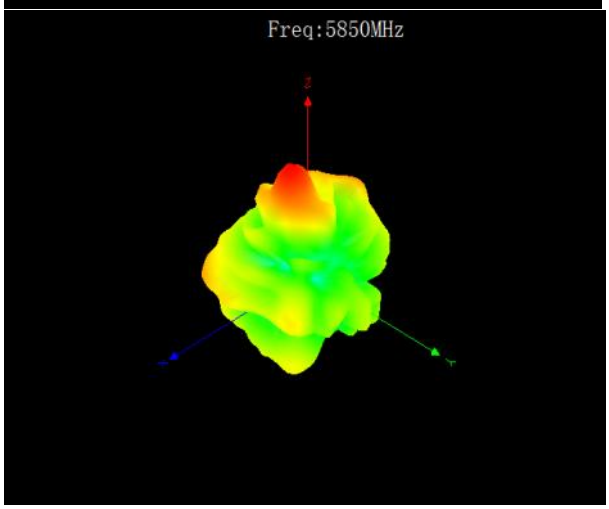



Freq:2500MHz


Freq:5150MHz

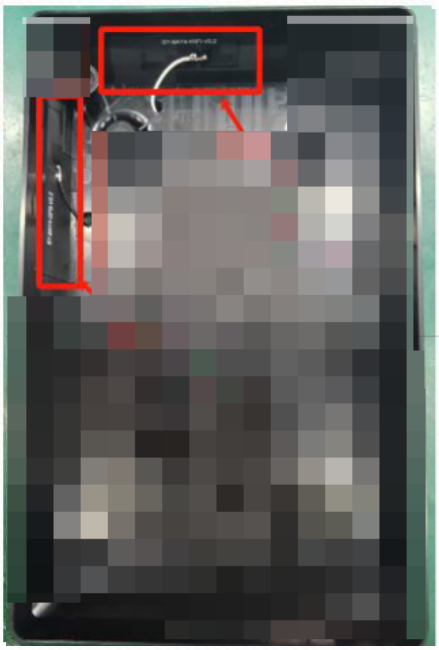

Freq:5150MHz


Freq:5550MHz


Freq:5850MHz

6. Machine assembly pictures

Schematicdiagram of antenna



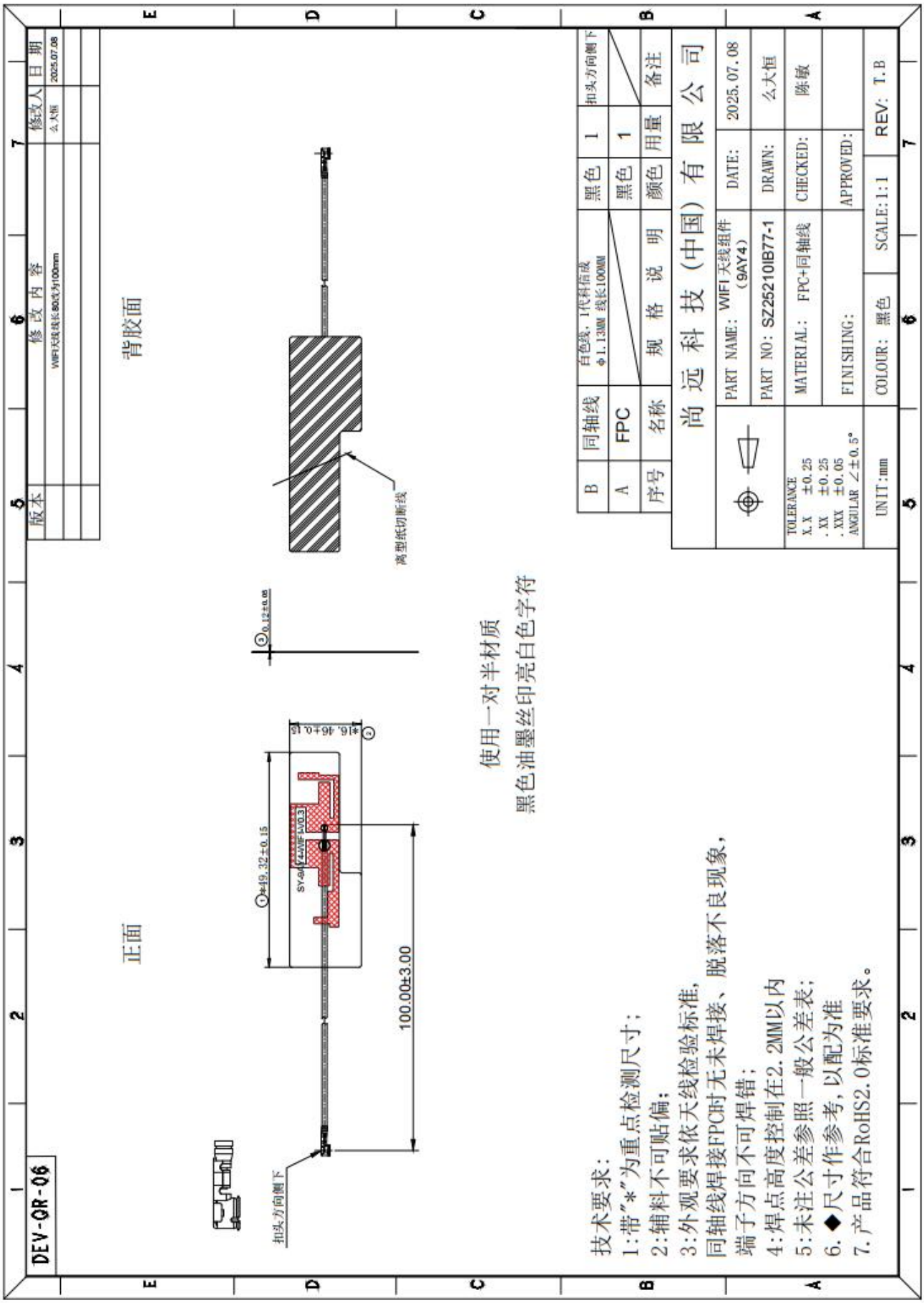
WiFi Antenna White RF Lines GPS Antenna Black RF Cables

The antenna position is assembled according to the above figure

7. Production antenna indicators

In antenna mass production, the VSWR is used as the mass production test standard.

According to the differences of the project itself, the following criteria are given:

frequency	Production standards
2400-2500Mhz	VSWR (mass production performance) <VSWR (acceptance performance) ±0.5
5150-5850Mhz	VSWR (mass production performance) <VSWR (acceptance performance) ±0.5

8. Structural drawings