Antenna Sample Confirmation From

Vendor Name	ShenZhen Aihui Technology Co., Ltd				
Customer Name	SMARTCN LIMITED				
Sample Name	IT-701A				
Part Number	FPC				
Specification	Wire length 80mm, wire diameter 0.81 (black)				
Inspection Item	Performance	Total Appearance	structure	Others	Inspection Result
Remark					
QA Audit		Engineer Audit		Sales Confirm	
The following are filled by Customer					
Customer Evaluation					
Signation/ Chapter by Customer	date:2022-12-16				

Antenna Test Report

Test by：ShenZhen Aihui Technology Co.，Ltd			
Material	**FPC+coaxial line**		
Antenna Type	**PIFA**	**Polarization mode**	**Linear**
Application			
Band	**2400Mhz-2500Mhz**	**VSWR**	**≤2**
Power	**Max：2W**	**Impedance**	**50Ω**
dBi	**≥1dBi**		
Test Equipment	**HPE5071C、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.

1. Project images

2. Testing tools

3. Antenna matching circuit

4. S11 testing

4.0 S11 Test Method Description

5. Passive efficiency and gain of antennas

6. Darkroom testing equipment and data

6.0 Testing Equipment

6.1 Active test data

7. Antenna assembly diagram

8. Antenna environment processing

9. Antenna mass production indicators

10. Structural drawings

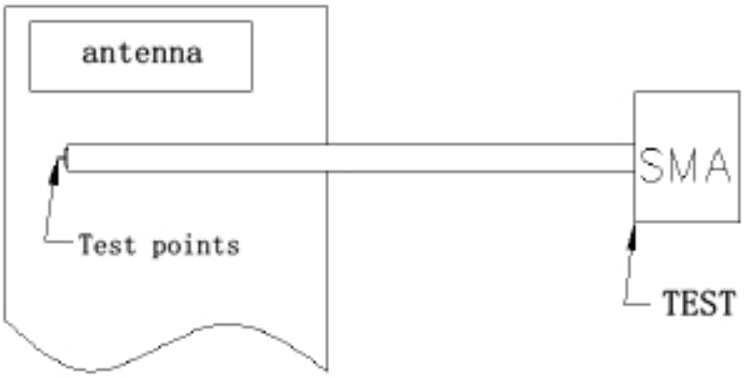
1. Project images

Explanation: The customer's final verification of antenna performance prototype should be retained by our company for at least one year to facilitate analysis and resolution of abnormal situations in antenna production, ensuring the quality of antenna shipment

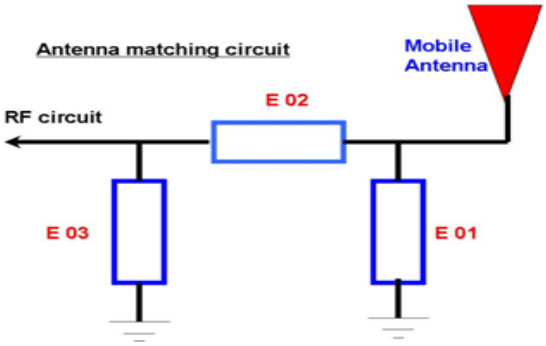
2. Testing tools

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

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



3、Antenna matching circuit



Modify

E01	E02	E03
No	No	No

Note: There are no modifications made to the matching.

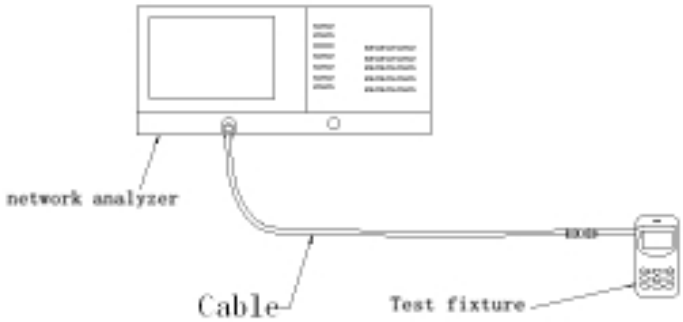
4. S11 testing

4.0 S11 Test Method Description

Test equipment: Network analyzer (E5071C)

Test method: Use a 50 ohm CABLE cable to export from the testing port of the instrument, calibrate it with a calibration piece, and connect it to the SMA connector of the mobile tool. Record the corresponding return loss and standing wave ratio of the relevant frequency points.

The test schematic is as follows:



5. Darkroom testing equipment and data

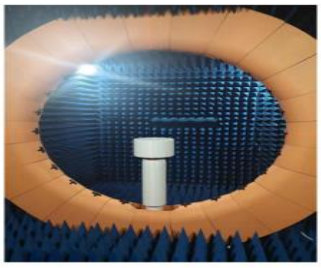
6.0 Testing Equipment

Test system: shielded darkroom

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

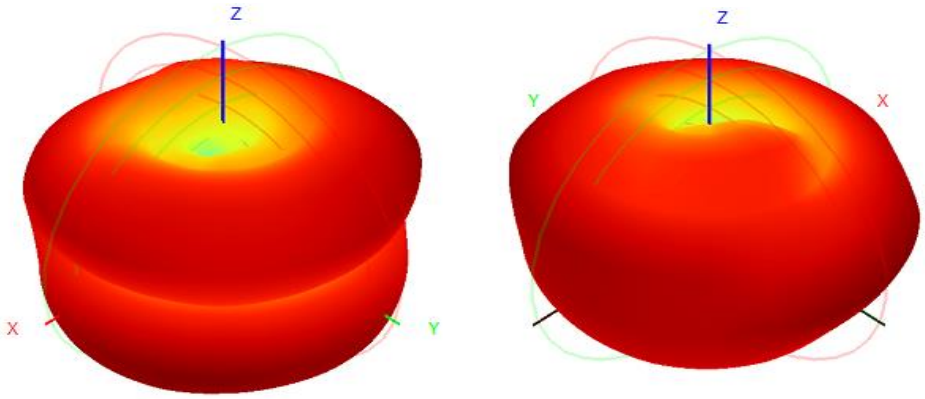
Test equipment: When testing passive data, use a network analyzer AgilentE5071C

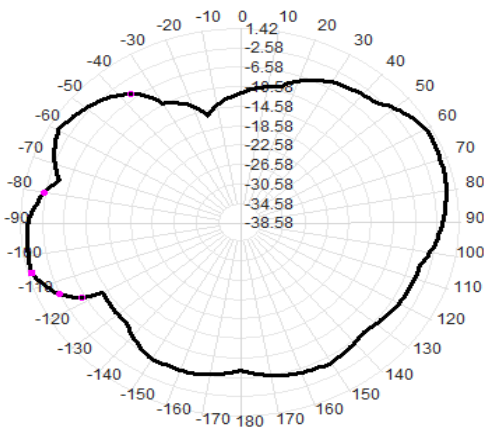
When testing active data, use a comprehensive tester CMW500

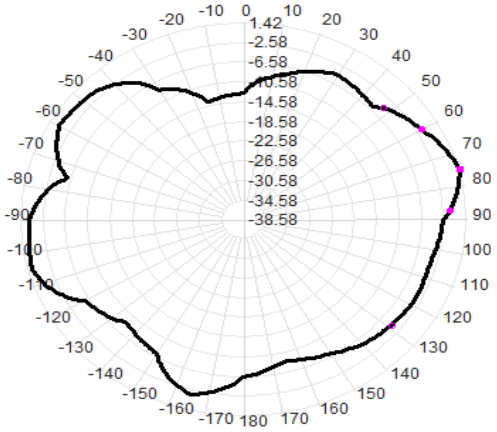


6.Passive antenna test data

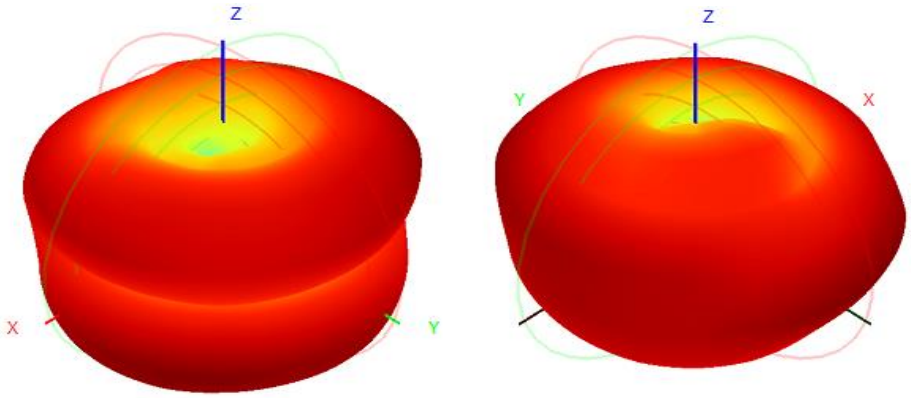
Test data:		
WIFI 2.4G		
Freq(MHz)	Efficiency (%)	Gain (dBi)
2400	58.62	1.06
2410	57.41	1.00
2420	56.55	1.05
2430	57.21	1.42
2440	54.69	1.26
2450	55.25	1.33
2460	54.30	1.40
2470	51.09	1.26
2480	52.30	1.04

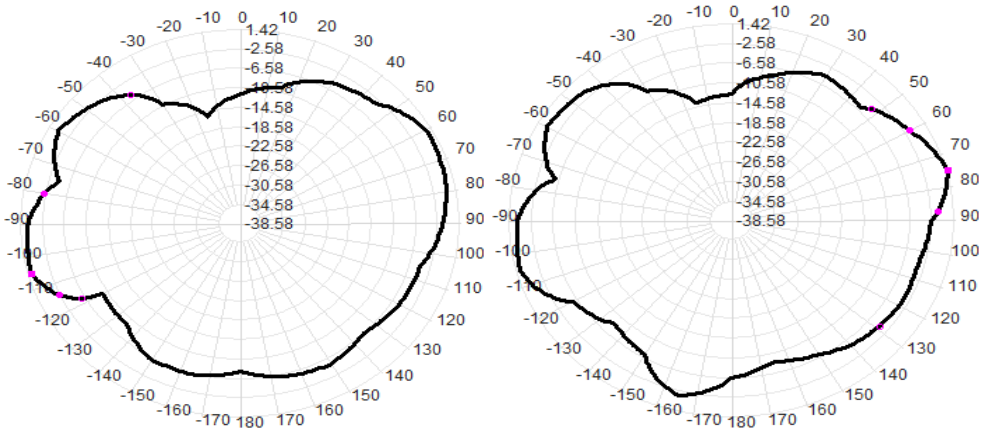




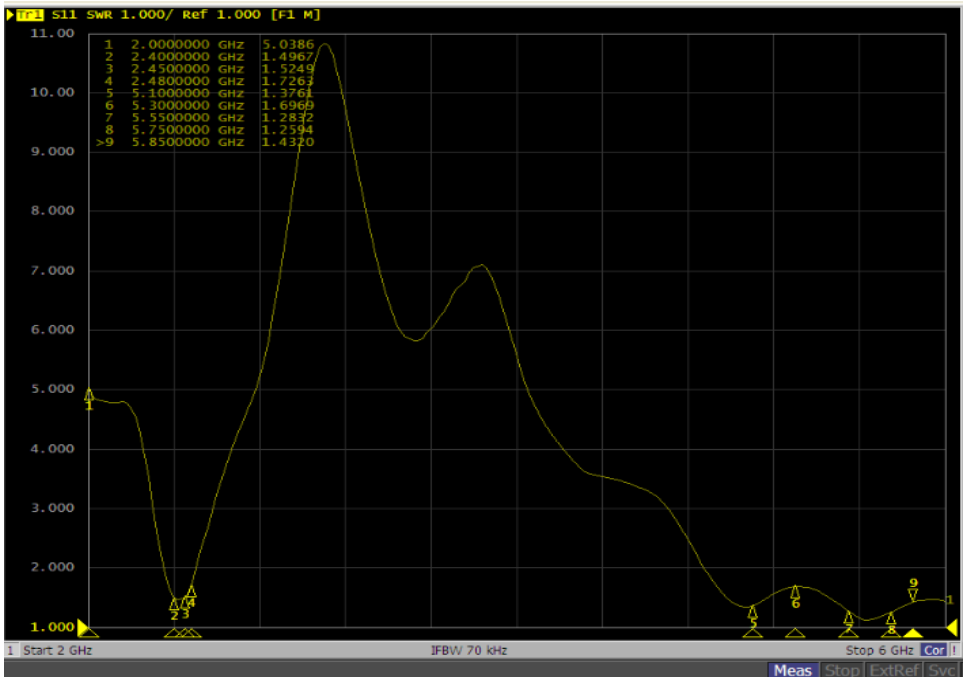


Test data:		
BT 2400Mhz -2500Mhz		
Freq(MHz)	Efficiency (%)	Gain (dBi)
2400	58.62	1.06
2410	57.41	1.00
2420	56.55	1.05
2430	57.21	1.42
2440	54.69	1.26
2450	55.25	1.33
2460	54.30	1.40
2470	51.09	1.26
2480	52.30	1.04
2490	54.33	1.03
2500	52.65	1.04





6.2 ANT VSWR

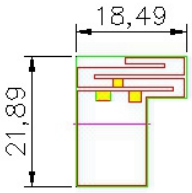
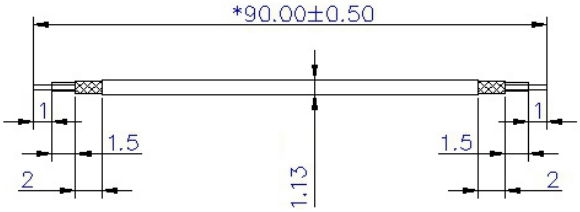


7、Antenna mass production indicators

When producing antennas, the standing wave ratio is used as the production testing standard. Based on the differences in the project itself, the following standards are provided:

Frequency	Mass production standards
2400 MHZ -2500MHZ 5100MHZ-5850MHZ	VSWR<VSWR+0.5

8.Structural drawings

NOTE

1. Check the dimensions with a focus on *, and the hole size shall be based on the actual configuration.
2. Undeclared rounded corner R=0.30mm, it is best to achieve the middle value of the size in the figure. For other unmarked tolerances, please refer to the instructions in the frame.
3. The material is electrolytic copper+PI (half to half), with an overall thickness less than 0.10 mm (excluding 3M adhesive).
4. The surface is black, and the back is covered with a whole piece of 3M 300 LSE adhesive.
5. The cross section is made of copper wire, and the green diagonal section is not covered with copper, leaving a substrate for connection. Material description.The overall shape follows the profile shape wheel configuration.
6. The surface should not scratch exposed copper, poor electroplating, oxidation, notches, indentations, bubbles, cracks, or burrs; And it is not allowed to have foreign objects, dirty spots, misalignment, and other phenomena
7. Seal the engineering sample.
8. Pay attention to the terminal port side.