

Antenna specification

Antenna Sample Confirmation From

Name of supplier	ShenZhen Aihui Technology Co. , Ltd				
Customer name	Ai Jian				
Sample name	M50-433M Spring				
model	The doorbell				
Sample size					
Inspection item	Performance test	Visual inspection	Structure	In the news	Test results
Notes					
Quality Audit		Project Audit		Business confirmation	
The following is to be completed by the client					

Customer feedback	
Customer signature/seal	date:

Antenna Test Report

Test Unit: Shenzhen Aihui Technology Co. , Ltd.			
Materials	Coaxial line+Copper pipes		
Antenna form	PIFA	Polarization mode	Linear
Application scenario	433Mhz		
Working band	433Mhz	VSWR	≤2

Power	Max: 2W	Impedance	50Ω
dBi	≥		
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 Image
2. Test Fixture
3. Antenna matching circuit
4. S11 test
5. Antenna passive efficiency and gain
6. Darkroom test equipment and data
7. Schematic diagram of antenna assembly
8. Antenna environment handling
9. Antenna mass production index
10. Structural drawing

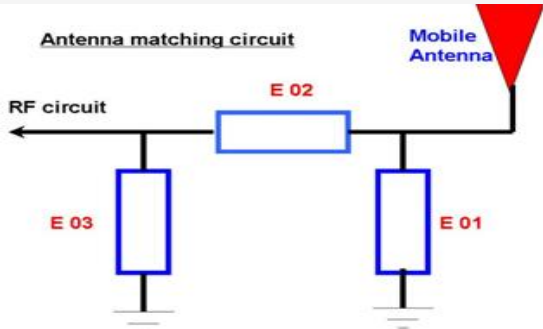
1.Project Image

The final verification antenna performance prototype in our company for at least one year, easy to analyze and solve the problem of antenna mass production, to ensure the quality of antenna shipment

2.Test Fixture

Objective: to test the passive parameters of antenna as accurately as possible. Making Method: the handset is made of a 50 ohm coaxial cable, one end of which is connected to the test point of the back end of the matching circuit of the handset motherboard (front end of the RF test hole) , and the other end is connected to the SMA joint. The diagram is as follows:

3、 Antenna matching circuit



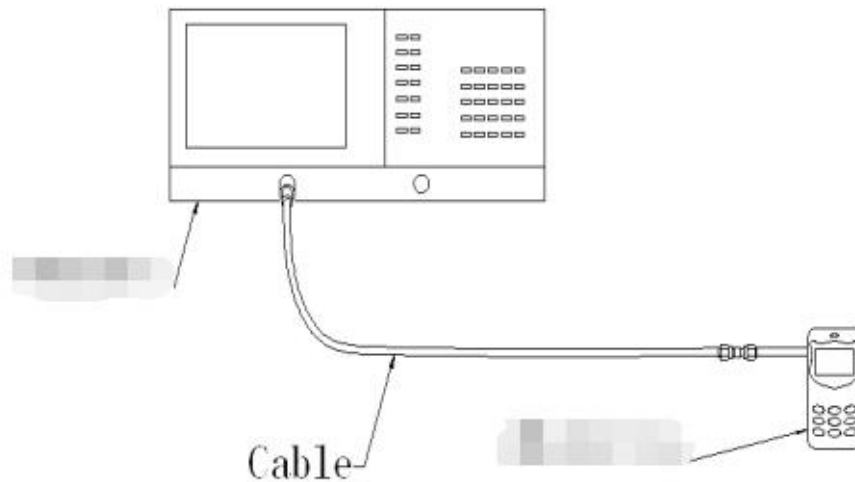
Modify

E01	E02	E03
No	No	No

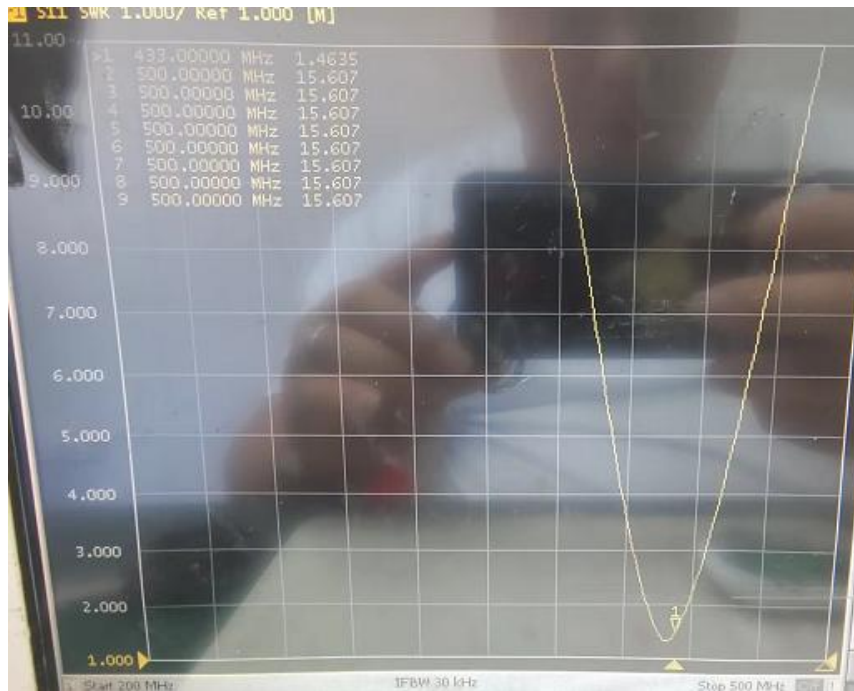
Note: The match is unmodified.

4.S11 test

4.0 4.0s11 test method description of test equipment: Network Analyzer (E5071C) test method: a 50 ohm CABLE is used to export from the instrument test port. The SMA connector for connecting the handset is calibrated using a calibration piece, record the echo loss and standing wave ratio corresponding to the relevant frequency points. The test schematic is as follows:



5.Darkroom test equipment and data

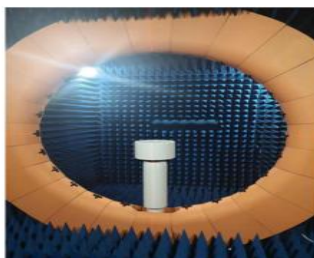


6.Test Equipment

Test system: shielded darkroom

The temperature was $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and the humidity was $50\% \pm 15\%$

Test equipment: when testing passive data, use the Network analyzer AGILENT E5071C to test active data, use the omnibus CMW500

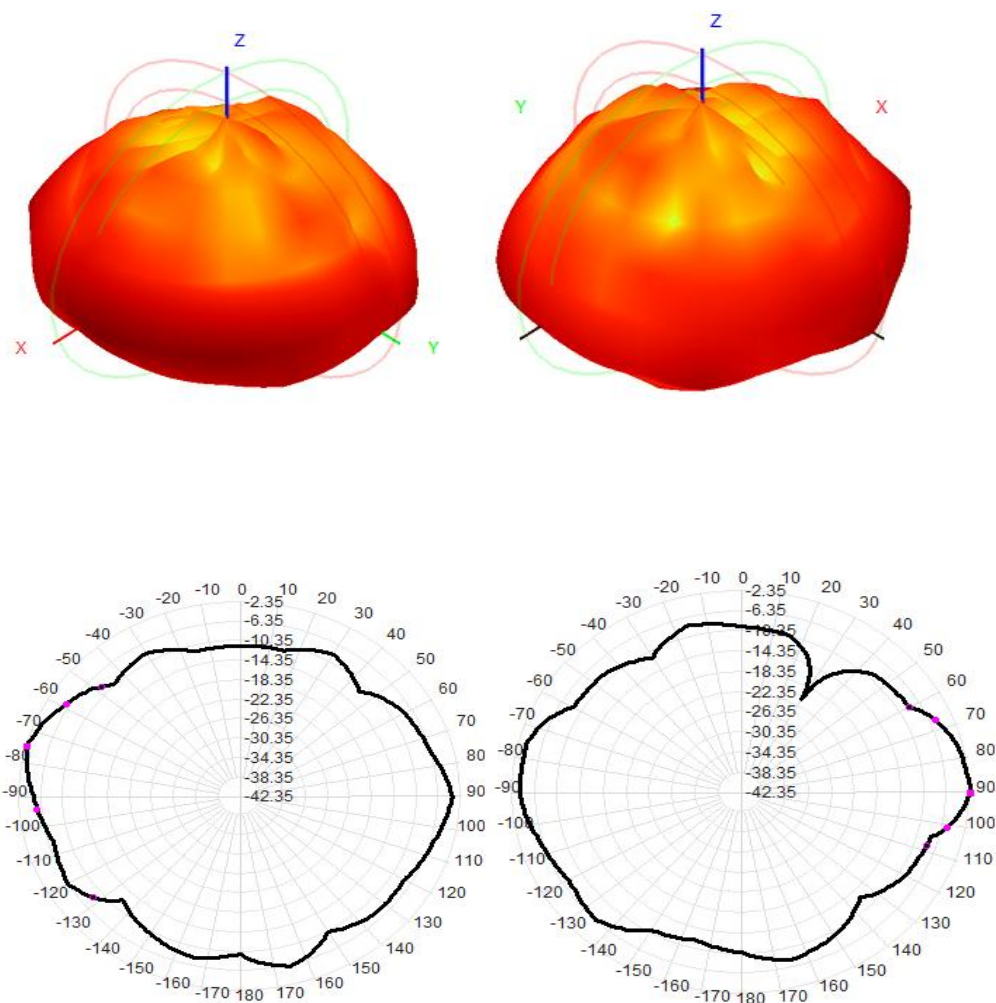


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Shenzhen

7.Active antenna test data

WIFI Test Data:		
433Mhz: 433		
Frequency (MHZ)	Efficiency (%)	Gain (dbi)
430	29.58	-1.51
431	29.36	-1.30
432	30.11	-1.65
433	32.25	-1.74
434	34.25	-1.88
435	31.65	-1.98
436	30.11	-1.55
437	29.60	-1.98
438	28.47	-2.05

433Mhz



6.The panel matches the change schematic



7.Antenna environment handling



The original environment, we do not do processing

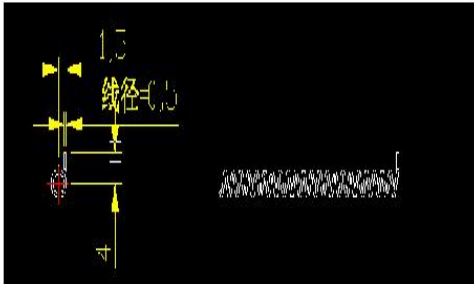
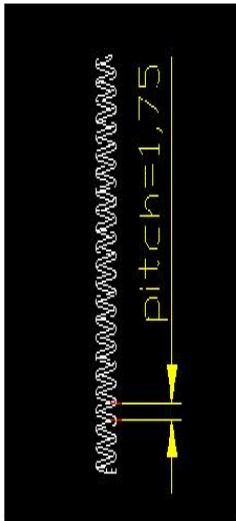
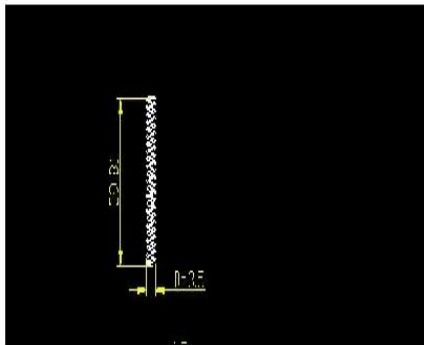
8.Antenna mass production index

When the antenna is mass-produced, the standing wave ratio is taken as the mass-produced test standard.

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

Frequency	Standard for volume production
433Mhz	VSWR (Mass Production performance) & LT; VSWR(recognition performance) 0.5

9.Structural drawings

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D	<table><tr><th colspan="2">Material description</th><th colspan="6">Shenzhen Aihui Technology Co. , Ltd.</th></tr><tr><td>①</td><td>Spring antenna</td><td></td><td>Type</td><td>M50</td><td>Date</td><td colspan="2">2024/04/09</td></tr><tr><td>②</td><td></td><td></td><td>0.02</td><td>Name</td><td>433Antenna</td><td>Design</td><td>SEANZHANG</td></tr><tr><td>③</td><td>IPEX connector (Generation 1)</td><td></td><td>0.03</td><td>Material number</td><td></td><td>Structure</td><td></td></tr><tr><td>④</td><td></td><td></td><td>0.02</td><td>Material</td><td>Nickel line</td><td>Audit</td><td>RF</td></tr><tr><td></td><td></td><td></td><td>0.04</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td>0.02</td><td>Weld surface pressing</td><td></td><td>Confirm</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>Appearance treatment</td><td></td><td>Unit</td><td>mm/Inches</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>FIT</td><td>Version</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>R: A</td></tr></table>							Material description		Shenzhen Aihui Technology Co. , Ltd.						①	Spring antenna		Type	M50	Date	2024/04/09		②			0.02	Name	433Antenna	Design	SEANZHANG	③	IPEX connector (Generation 1)		0.03	Material number		Structure		④			0.02	Material	Nickel line	Audit	RF				0.04								0.02	Weld surface pressing		Confirm						Appearance treatment		Unit	mm/Inches							FIT	Version								R: A	D
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