

Antenna specification

Antenna Sample Confirmation From

Name of supplier	ShenZhen Aihui Technology Co. , Ltd				
Customer name	Bo Yuan				
Sample name	13.4 inches				
model	Tablet				
Sample size	Main antenna: 35mm 3rd generation terminal FPC: 64.85*12.1mm Silkscreen: 13.4 inch-4G-AH Conductive fabric 10*20mm Three-in-one: 60mm 3rd generation terminal FPC: 39.32*13.7mm Silkscreen: 13.4 inch-WGB-AH Conductive fabric 10*20mm Series: 35mm 3rd generation terminal FPC: 5.4*19.8mm Silkscreen: DIV-AH				
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:				

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Antenna Test Report

Test Unit: Shenzhen Aihui Technology Co. , Ltd.			
Materials	FPC coaxial line		
Antenna type	MonopoleType	Polarization mode	Linear
Application scenario			
Working band	GSM/WCDMA/WIFI /BT /GPS	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

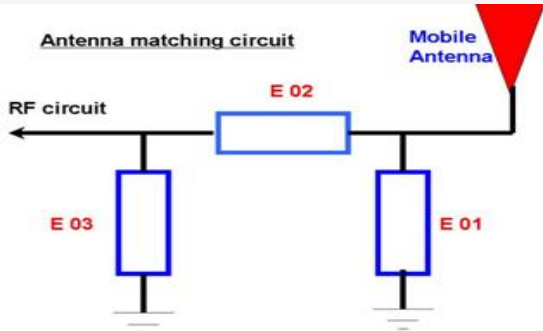
1.Project Image

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
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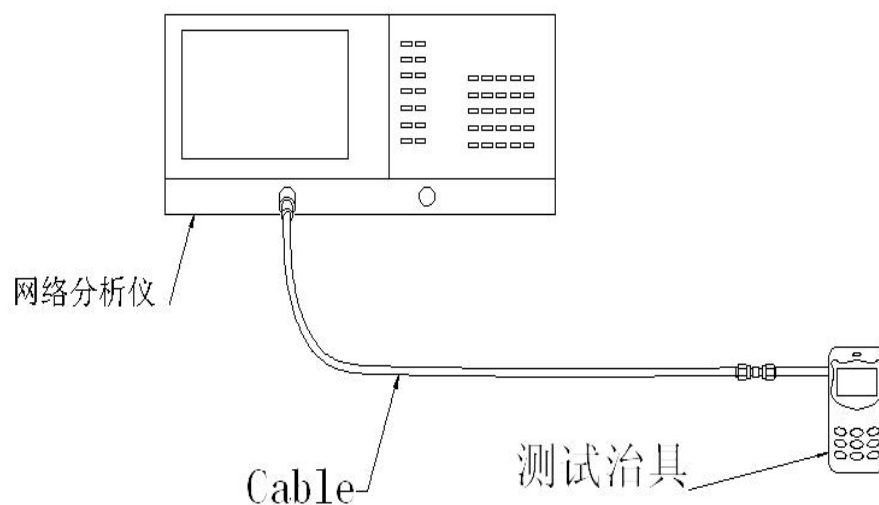
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No	No	No
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Note: The match is unmodified.

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

GSM

Frequency Band	LTE B1			LTE B3		
channel	L	M	H	L	M	H
TRP	14.33	14.52	14.44	14.63	15.21	14.82
TIS			-88.2			-87.30
Frequency Band	LTE B5			LTE B7		
channel	L	M	H	L	M	H
TRP	13.25	14.41	14.63	16.52	16.55	15.71
TIS			-86.32			-88.16
Frequency Band	LTE B8			LTE B20		
channel	L	M	H	L	M	H
TRP	12.63	12.22	12.41	14.25	14.32	14.15
TIS			-85.96			-86.36

Frequency Band	LTE B28A			LTE B28B		
channel	L	M	H	L	M	H
TRP	13.52	12.52	13.33	13.66	13.25	13.30
TIS			-85.14			-86.16
Frequency Band	LTE B38			LTE B39		
channel	L	M	H	L	M	H
TRP	14.52	15.55	15.61	13.55	14.44	14.25
TIS			-86.45			-85.16
Frequency Band	LTE B40			LTE B41		
channel	L	M	H	L	M	H
TRP	14.52	15.32	15.25	15.65	15.15	15.30
TIS			-85.65			-86.91

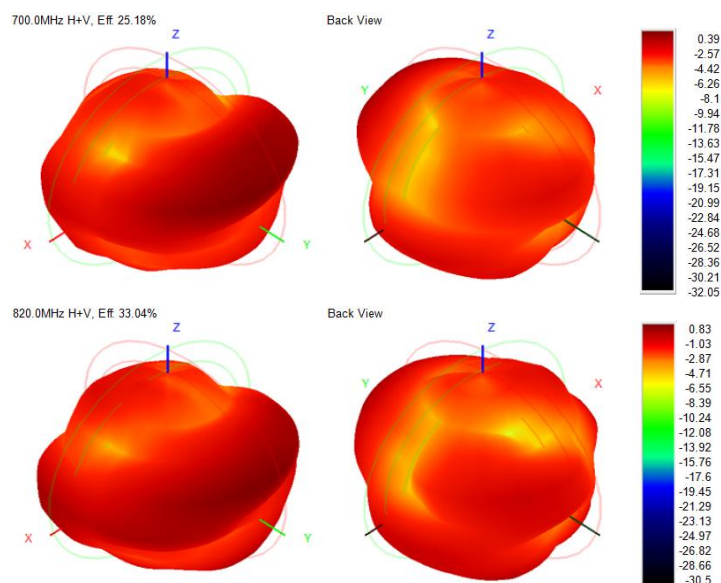
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Frequency Band	WIFI-2.4G-B模			WIFI-2.4G-G模		
channel	L	M	H	L	M	H
TRP	10.52	10.66	10.16	9.65	9.44	9.26
TIS			-75.25			-68.21
Frequency Band	WIFI-2.4G-N模			WIFI-5.8G-A模		
channel	L	M	H	L	M	H
TRP	8.55	8.16	9.30	9.65	9.44	8.82
TIS			-67.65			-69.16

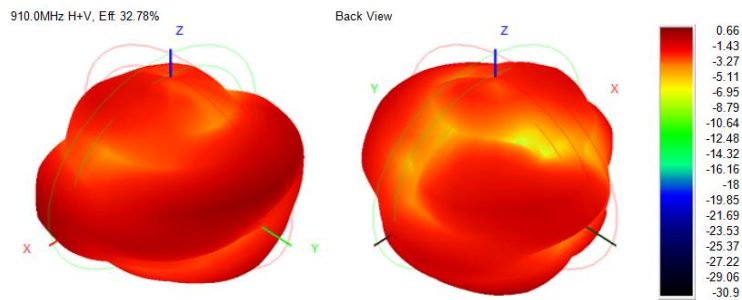
5.1 Antenna Passive Test Data

Main antenna

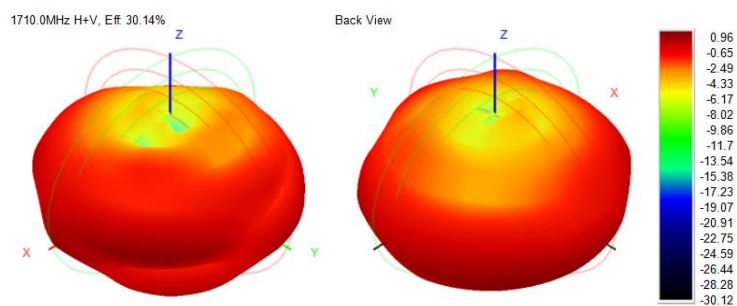
Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
700M	0.39	-4.54	25.18%
730M	0.63	-4.18	27.15%
760M	1.03	-3.38	30.88%
790M	0.96	-3.55	32.17%
820M	0.83	-3.73	33.04%
850M	1.25	-3.29	32.4%
880M	1.17	-3.34	34.88%
910M	0.66	-4.26	32.78%



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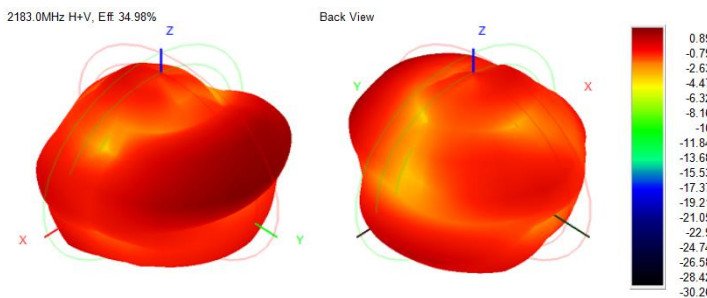
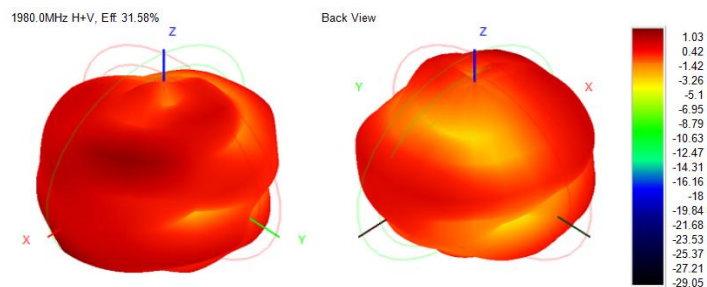


Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1710M	0.96	-4.21	30.14%
1743M	0.76	-3.96	32.22%
1777M	1.01	-3.77	33.24%
1811M	1.3	-3.98	32.58%
1845M	0.99	-3.57	34.19%
1878M	0.82	-4.08	31.69%
1912M	1.21	-3.42	33.75%
1946M	1.33	-3.34	35.44%
1980M	1.03	-4.05	31.58%
2014M	0.68	-4.16	30.62%
2047M	0.85	-3.85	32.61%
2081M	0.91	-3.62	34.62%
2115M	1.13	-3.85	33.98%
2149M	1.45	-3.89	32.12%
2183M	0.89	-3.56	34.98%

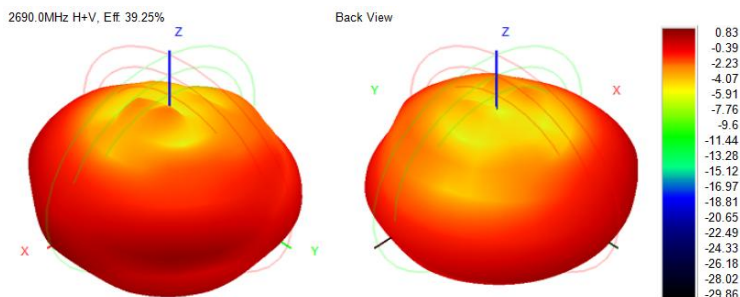
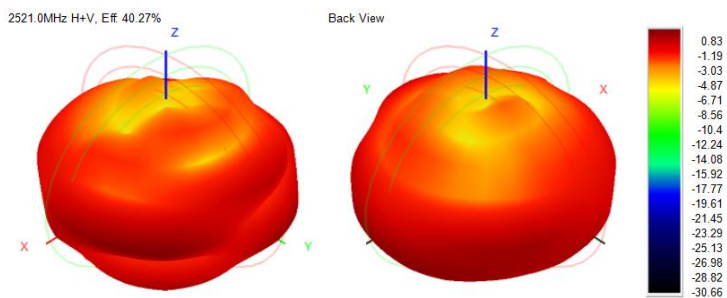


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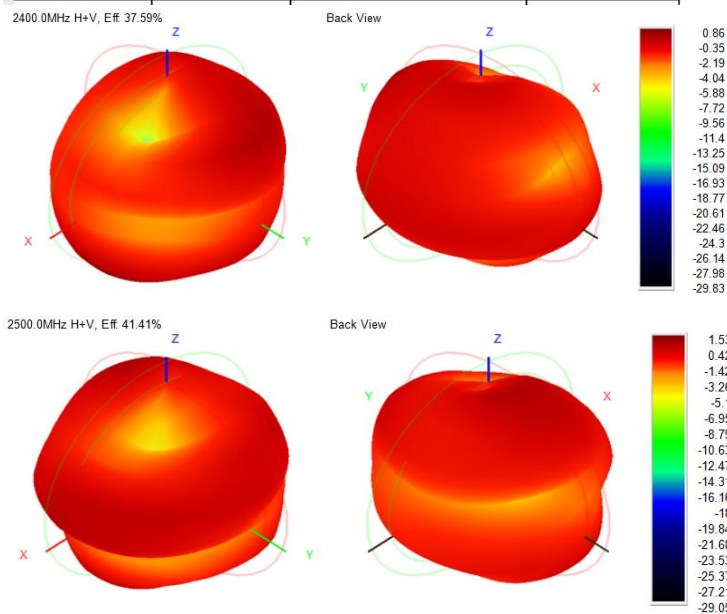
2521M	0.83	-3.95	40.24%
2554M	0.86	-3.9	40.72%
2588M	1.39	-4.13	38.65%
2622M	1.25	-4.23	37.73%
2656M	0.62	-4.31	37.10%
2690M	0.83	-3.99	39.25%



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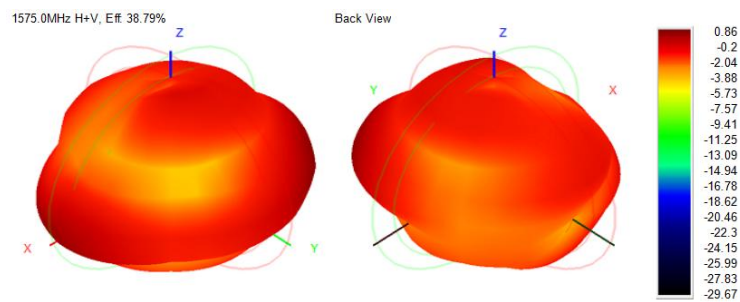
Three-in-one daily moving average

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%



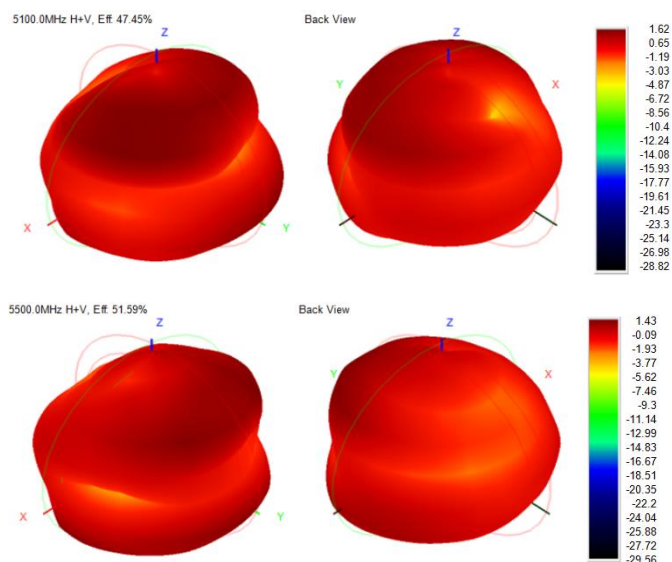
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Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1565M	0.98	-4.23	36.68%
1575M	0.86	-4.33	38.79%
1585M	0.93	-4.16	36.39%
1595M	0.83	-4.38	35.42%

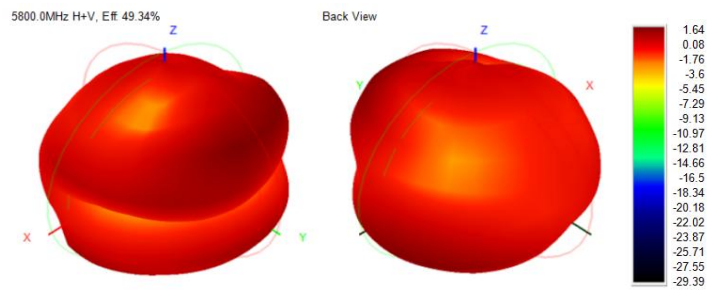


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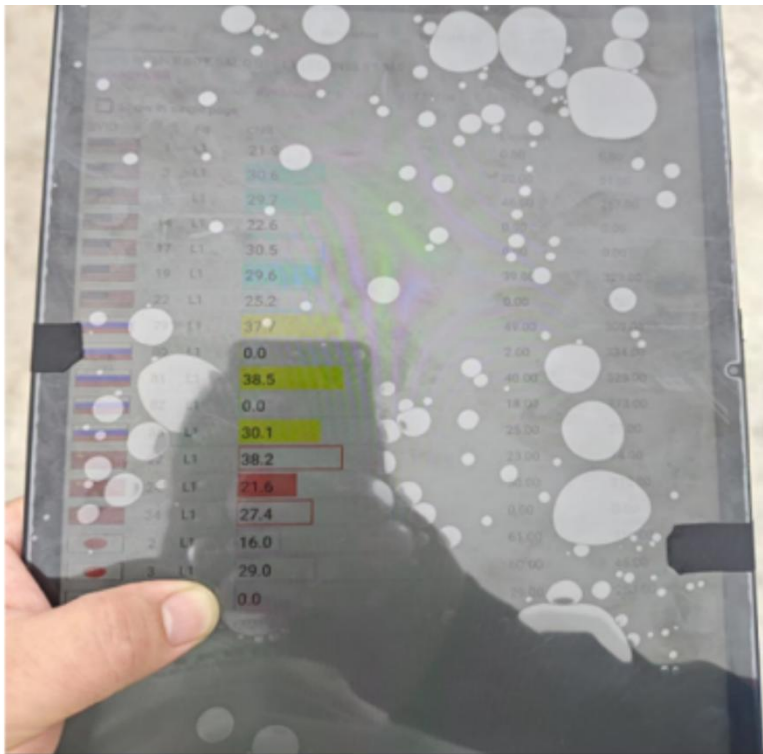
Gain&Efficiency			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
5050M	1.56	-3.47	48.34%
5100M	1.62	-3.43	47.45%
5150M	1.44	-3.86	49.29%
5200M	1.36	-3.17	50.43%
5250M	1.51	-2.97	52.42%
5300M	1.61	-3.13	51.47%
5350M	1.63	-3.55	50.33%
5400M	1.35	-3.02	52.14%
5450M	1.47	-3.34	50.17%
5500M	1.43	-3.43	51.19%
5550M	1.58	-3.24	48.69%
5600M	1.57	-3.61	49.51%
5650M	1.37	-3.88	48.13%
5700M	1.8	-3.79	50.87%
5750M	1.74	-4.1	52.09%
5800M	1.64	-4.22	49.34%
5850M	1.49	-4.31	50.19%



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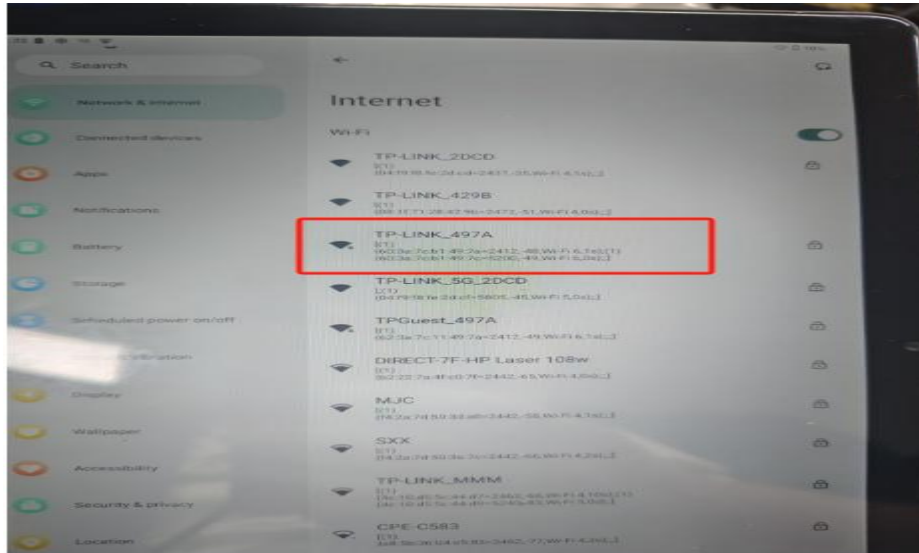
5.2 GPS testing



The test location is on the rooftop. Found 30 satellites, 1-2 above 38. Positioning time: 60 seconds.

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5.3 WiFi Field Test



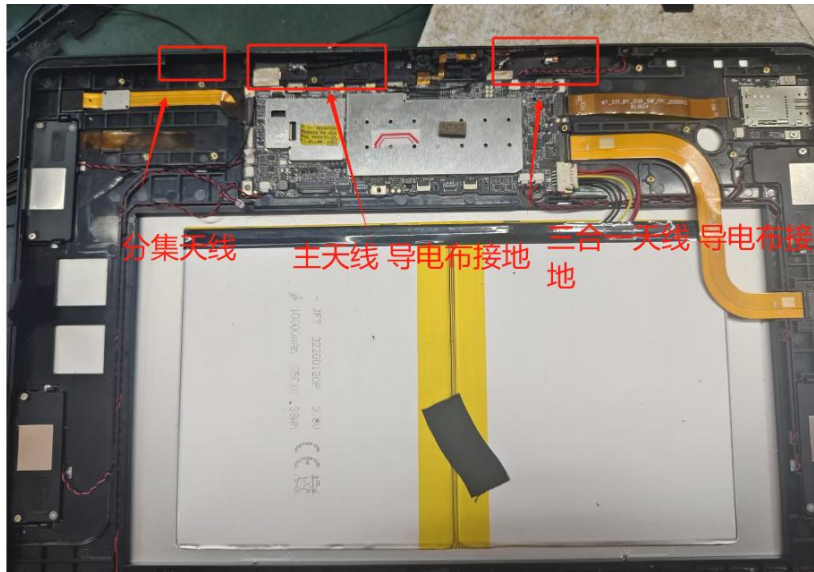
The hotspot penetrates walls up to 10 meters, signal is full.

Internet works normally.

5.4 Bluetooth Actual Test

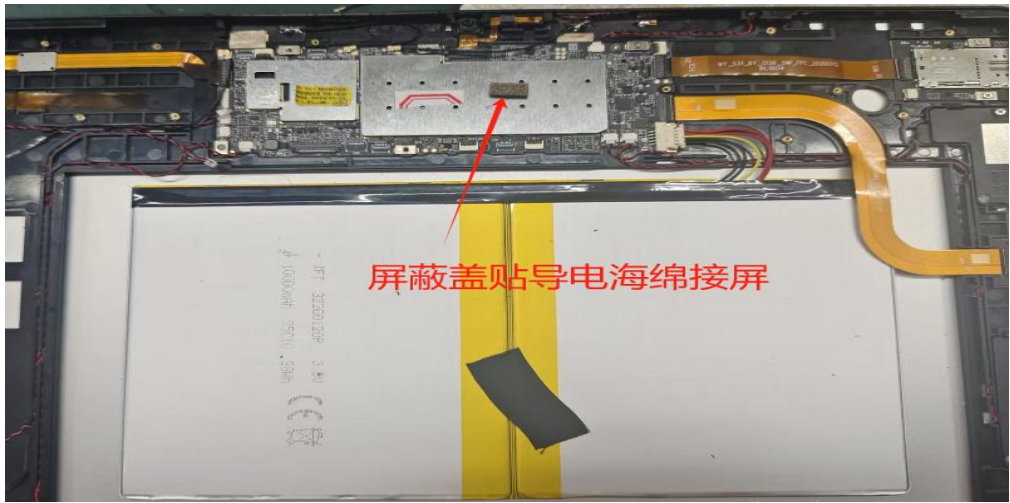
Bluetooth actual test 10M, connected to WIFI, playing music without stuttering

6.Schematic diagram of antenna assembly



7.1.Antenna environment handling

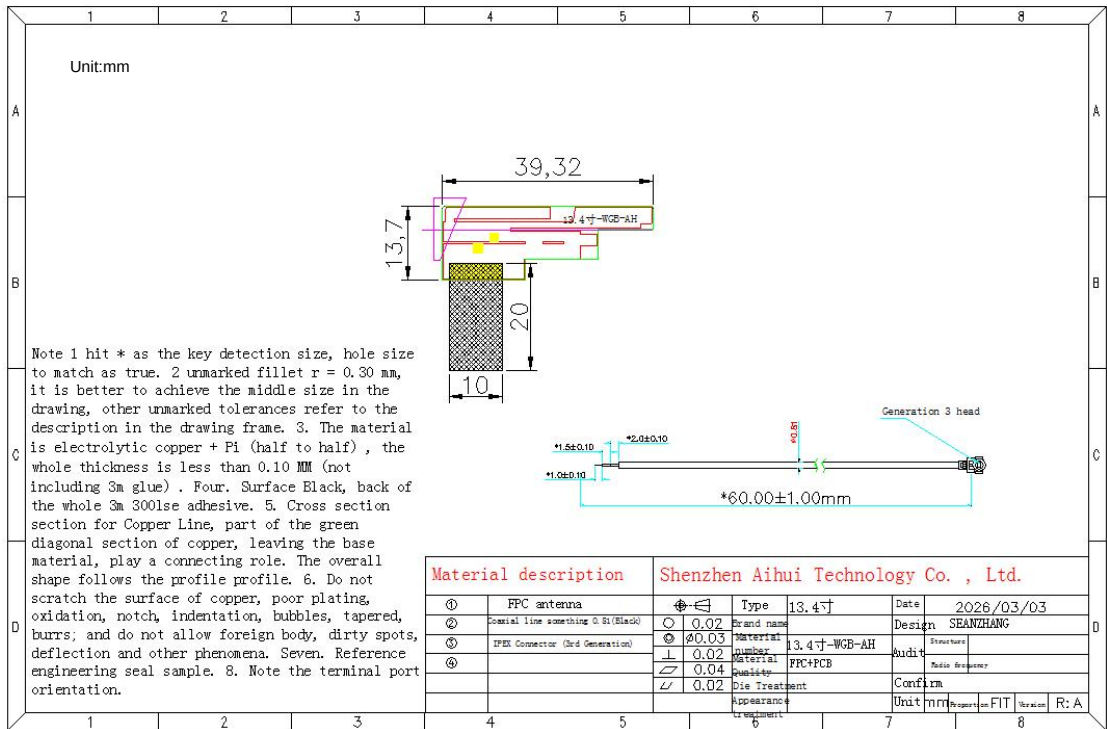
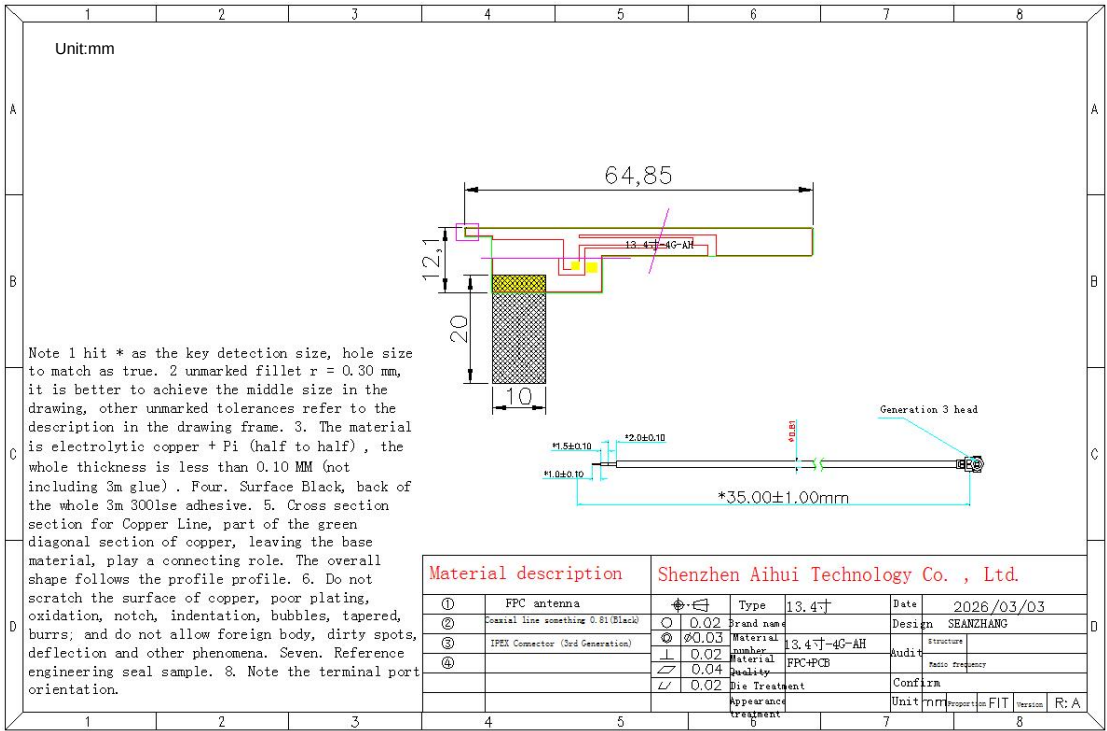




8.Antenna mass production index

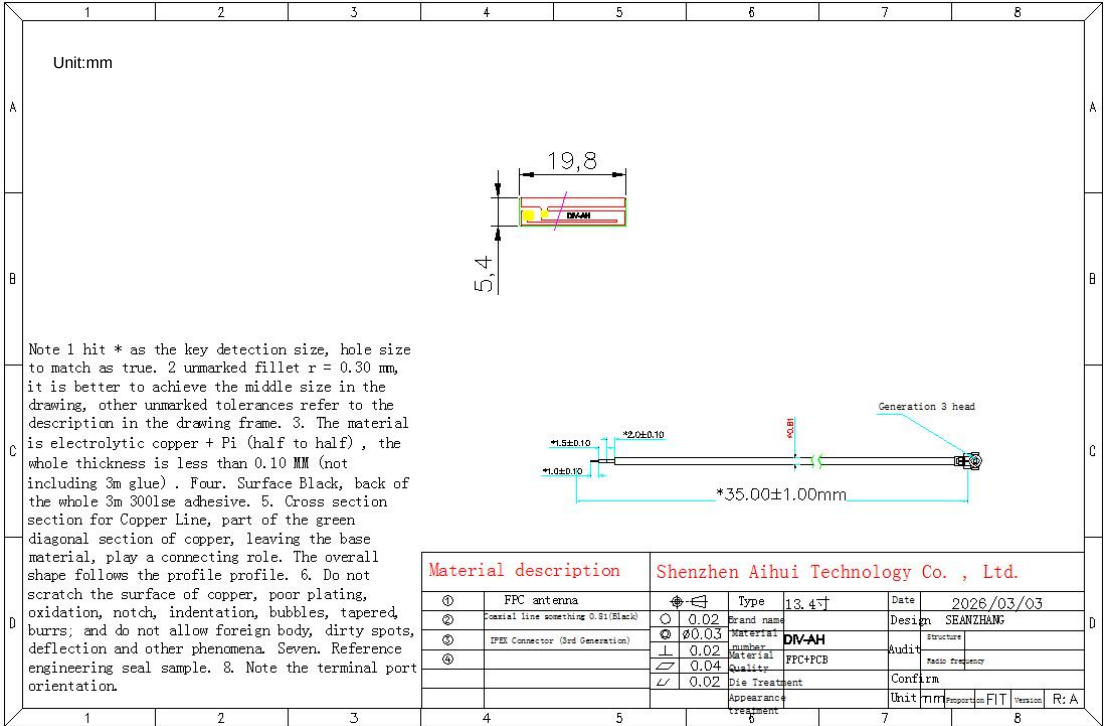
When the antenna is mass-produced, the standing wave ratio is taken as the mass-produced test standard. Based on the differences of the project itself, the following criteria are given:	Standard for volume production
824MHZ-2700Mhz	VSWR (Mass Production performance) & LT; VSWR(recognition performance) 0.5

9. Structural drawings



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