Shenzhen Aihui Technology Co. , Ltd.

Antenna specification

Antenna Sample Confirmation From

Name of supplier	ShenZhen Aihui Technology Co., Ltd				
Customer name	**Visos**				
Sample name	SP4702				
model					
Sample size	FPC 52.2*11.9 19.15*10.3				
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					

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Customer feedback	
Customer signature/seal	date:

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/LTE/WIFI /BT /GPS**	**VSWR**	**≤2**
Power	**Max：2W**	**Impedance**	**50Ω**

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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.

Shenzhen Aihui Technology Co. , Ltd.

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

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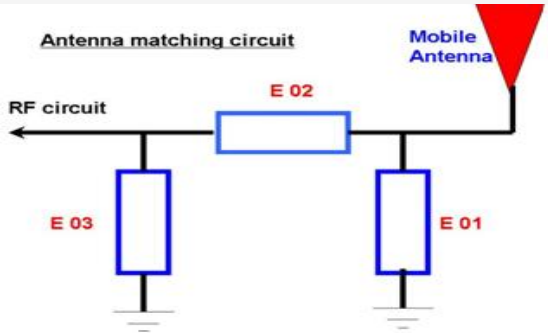
1.Project Image

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.

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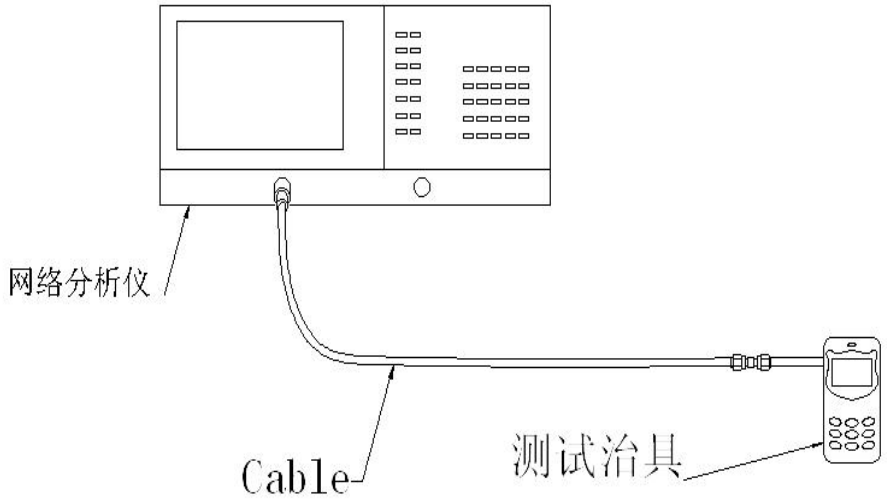
4.S11 test

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

LTE:

Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
680M	-0.39	-4.54	35.18%
700M	0.38	-4.18	38.15%
720M	1.57	-3.38	45.88%
740M	1.31	-3.55	44.17%
760M	0.3	-4.43	36.04%
780M	-0.18	-4.89	32.4%
800M	-0.45	-5.55	27.88%
820M	0.13	-5.26	29.78%
840M	-0.02	-5.4	28.86%
860M	-0.33	-5.67	27.12%
880M	-0.65	-5.82	26.2%
900M	-0.7	-5.4	28.83%
920M	-1.25	-5.61	27.5%
960M	-2.02	-6.25	23.69%
980M	-2.34	-6.25	23.71%

Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1710M	2.94	-4.06	39.24%
1743M	3.2	-4.07	39.16%
1777M	3.55	-3.87	40.99%
1811M	3.66	-4.08	39.1%
1845M	3.81	-4.27	37.38%
1878M	3.86	-3.94	40.34%
1912M	3.73	-3.72	42.45%
1946M	2.73	-3.94	40.38%
1980M	2.5	-3.86	41.08%
2014M	2.64	-3.45	45.19%
2047M	2.76	-3.65	43.18%
2081M	2.76	-3.62	43.49%
2115M	3.2	-3.35	46.28%
2149M	2.49	-3.8	41.72%
2183M	0.77	-4.56	34.98%
2216M	0.36	-4.6	34.68%

2250M	-0.47	-5.12	30.76%
2284M	-0.58	-4.91	32.28%
2318M	-0.16	-4.55	35.07%
2352M	-0.62	-4.75	33.5%
2385M	-1.07	-4.87	32.58%
2419M	-0.39	-4.28	37.35%
2453M	0.23	-4.03	39.57%
2487M	-0.08	-4.33	36.92%
2521M	0.23	-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	-4.65	34.25%

GPS

Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1550	1.15	-3.35	33.70%
1555	1.6	-3.35	34.50%
1560	0.95	-3.34	35.60%
1565	0.52	-3.52	36.54%
1570	0.63	-4.30	31.41%
1575	0.25	-0.25	33.50%

WIFI&BT

2400	-3.33	-3.5	37.90%
2420	-3.45	-3	39.60%
2440	-3.36	-3.54	39.40%
2460	-3.00	-3.41	35.80%
2480	-3.12	-3.3	34.68%
2500	-3.27	-3.5	34.80%

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5.2.Test Equipment

Test system: shielded darkroom

The temperature was 22 ° C ± 3 ° C and the humidity was 50% ± 15%

Test equipment: when testing passive data, use the Network analyzer AGILENTE5071C to test active data, use the omnibus CMW500

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6.Active antenna test data

Frequency Band	GSM900					
channel	L	M	H	L	M	H
Tx Power	31		31.5			
TRP	27.5		27.4			
Sensitity			-106.8			
TIS			-103.5			
Frequency Band	EGSM850			PCS1900		
channel	L	M	H	L	M	H
Tx Power	31.5		30.7	30		29.98
TRP	26.9		27.8	27		26.89
Sensitity			-106.8			-108.5
TIS			-102.5			-104.4

Frequency Band	WCDMA B1			WCDMA B2		
channel	L	M	H	L	M	H
Tx Power	23.2		23.7	23.4		23.5
TRP	20.4		20.5	20.2		20.1
Sensitity			-105.6			-106.6
TIS			-102.3			-102.4

Frequency Band	WCDMA B5			WCDMA B8		
channel	L	M	H	L	M	H
Tx Power	22.8		22.9	23.4		21.9
TRP	20		20.5	22.1		20.6
Sensitity			-106.8			-108.2
TIS			-103.5			-105
Frequency Band	LTE-B2			LTE-B4		
channel	L	M	H	L	M	H
Tx Power	21.5		20.5	22.2		20.8
TRP	18.1		17.6	18.8		17.5
Sensitity			-90.5			-91

Frequency Band	LTE-B7			LTE-B8		
channel	L	M	H	L	M	H
Tx Power	23.8		23.9	21.2		21.9
TRP	20.4		20.8	17.5		17.9
Sensitity			-92.6			-90.7
TIS			-89.3			-87.6

7.Real-time WiFi results

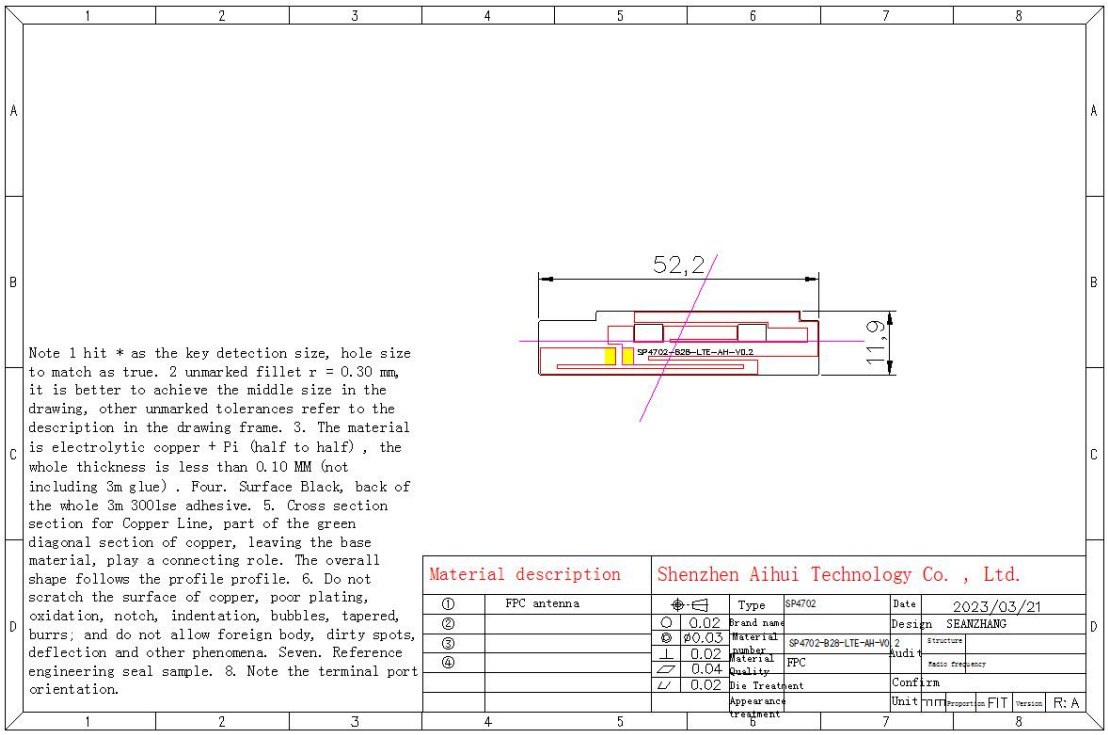
8.Schematic diagram of antenna assembly

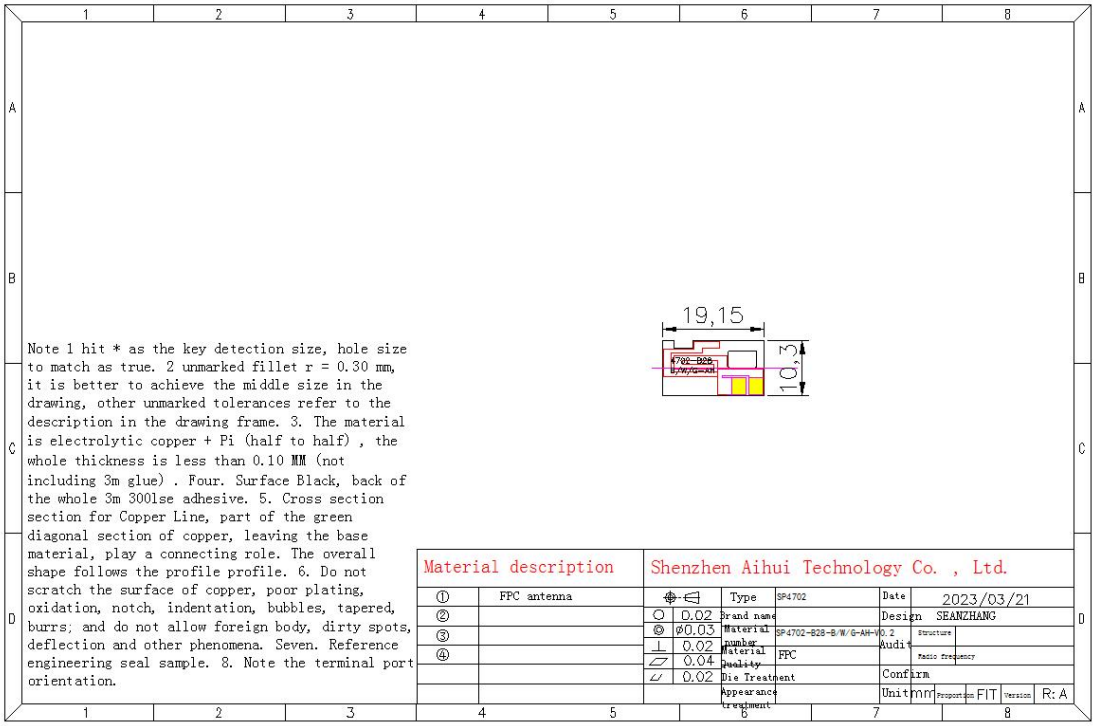
8.1.Antenna environment handling

9.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
680MHZ-2700Mhz	VSWR (Mass Production performance) & LT; VSWR(recognition performance) 0.5

10. Structural drawings





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