



深圳市昱晟通讯设备有限公司

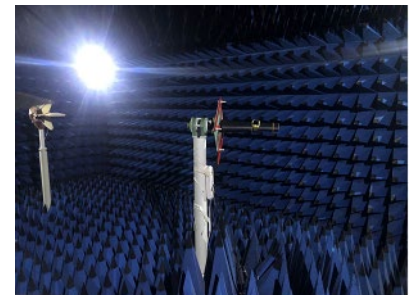
Yusheng Communications-equipment Co.,LTD

Qiwu LS25 Antenna test report

RF: He Lei

Date: 2024-12-16

Contact:15767667652



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Project commissioning introduction

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Outline of report versions

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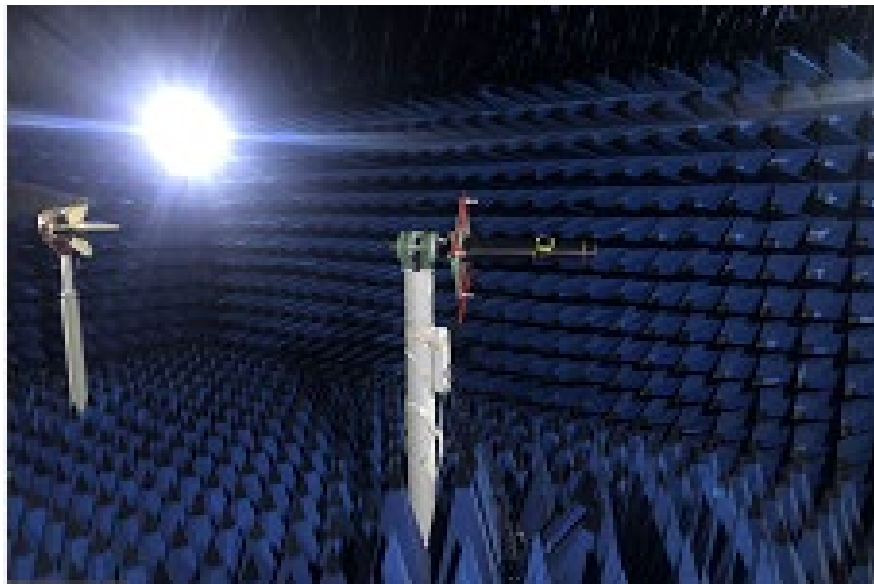
Antenna passive parameter

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Summary & Additional Notes

Project development environment

We are transitioning from the Internet era to the intelligent age, with the country building a digital society and smart cities. In the next 5-10 years, both the consumer electronics market and the IoT market will have tremendous potential for development. The wireless communications sector is highly diversified, and in the future, Yusheng will leverage its customer platform advantages in antenna core business and its overall strength to strive for providing customers with market-competitive professional-grade product solutions.



Yusheng Communications products almost cover all antenna applications for wireless terminal devices, including automotive antennas, high-precision surveying and mapping antennas, ground and satellite data navigation for drones, high-precision positioning antennas, wireless transmission for medical equipment, consumer antennas (mobile phone antennas, PADs, laptop antennas), base station/indoor distribution antennas, smart wearable antennas (smartwatches, TWS earphones), security home antennas, and various wireless data transmission and control smart device antennas.

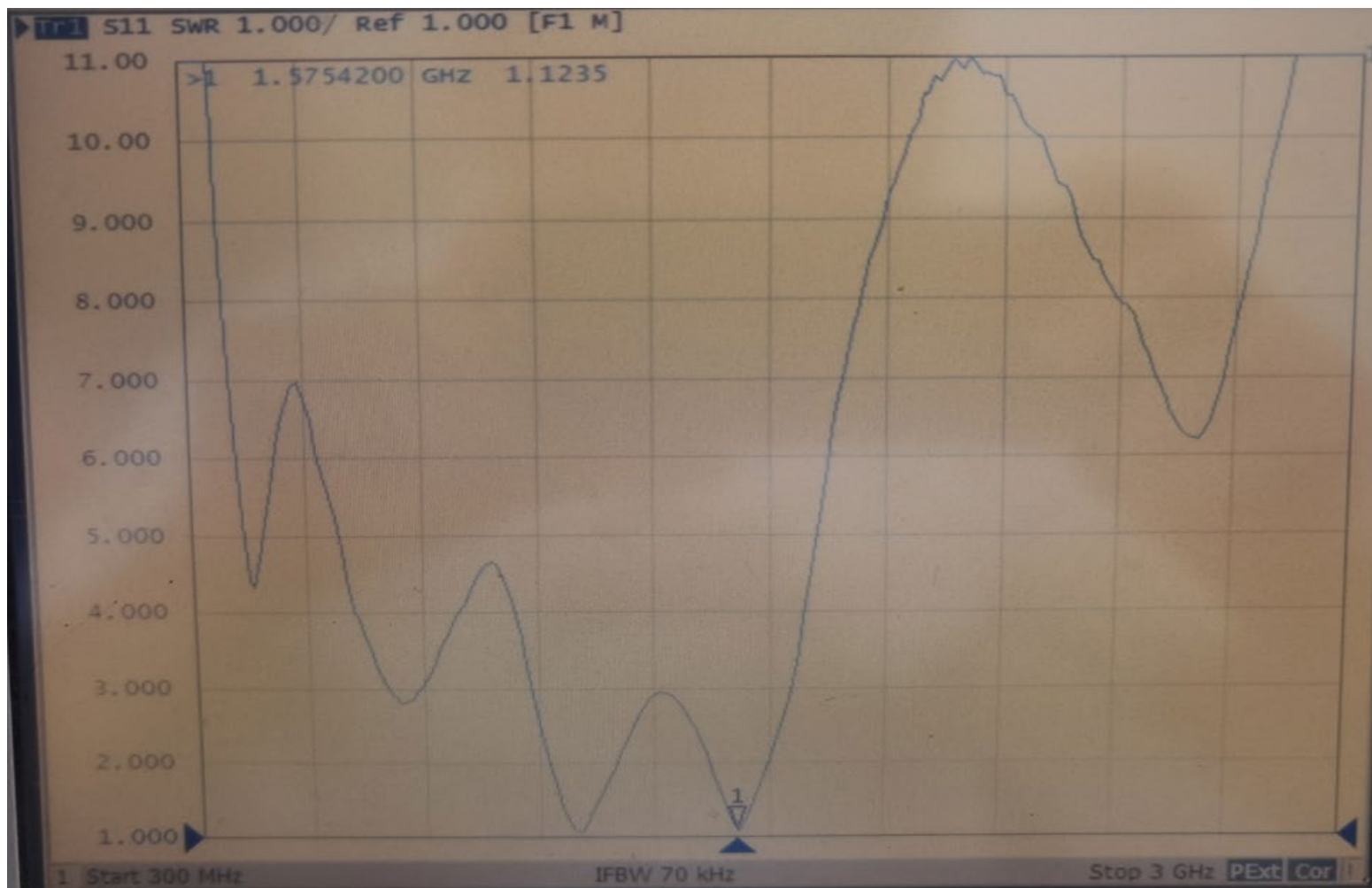
**Project commissioning
brief**

template				
Frequency band and antenna material	antenna	frequency range		material quality
		L1	1575Mhz	Metal frame
		BT	2. 4G–2. 5G	
performance requirement	Execute according to customer requirements			

Report version
outline

Report version	Reporting time	The problem solved by this antenna research and development
V0.1	2024-11-7	Handboard prototype debugging
V0.2	2024-12-10	Adjust the appearance machine
V0.3	2024-12-16	Single-sided conductive cloth confirmation

L1 (passive S11 SWR)

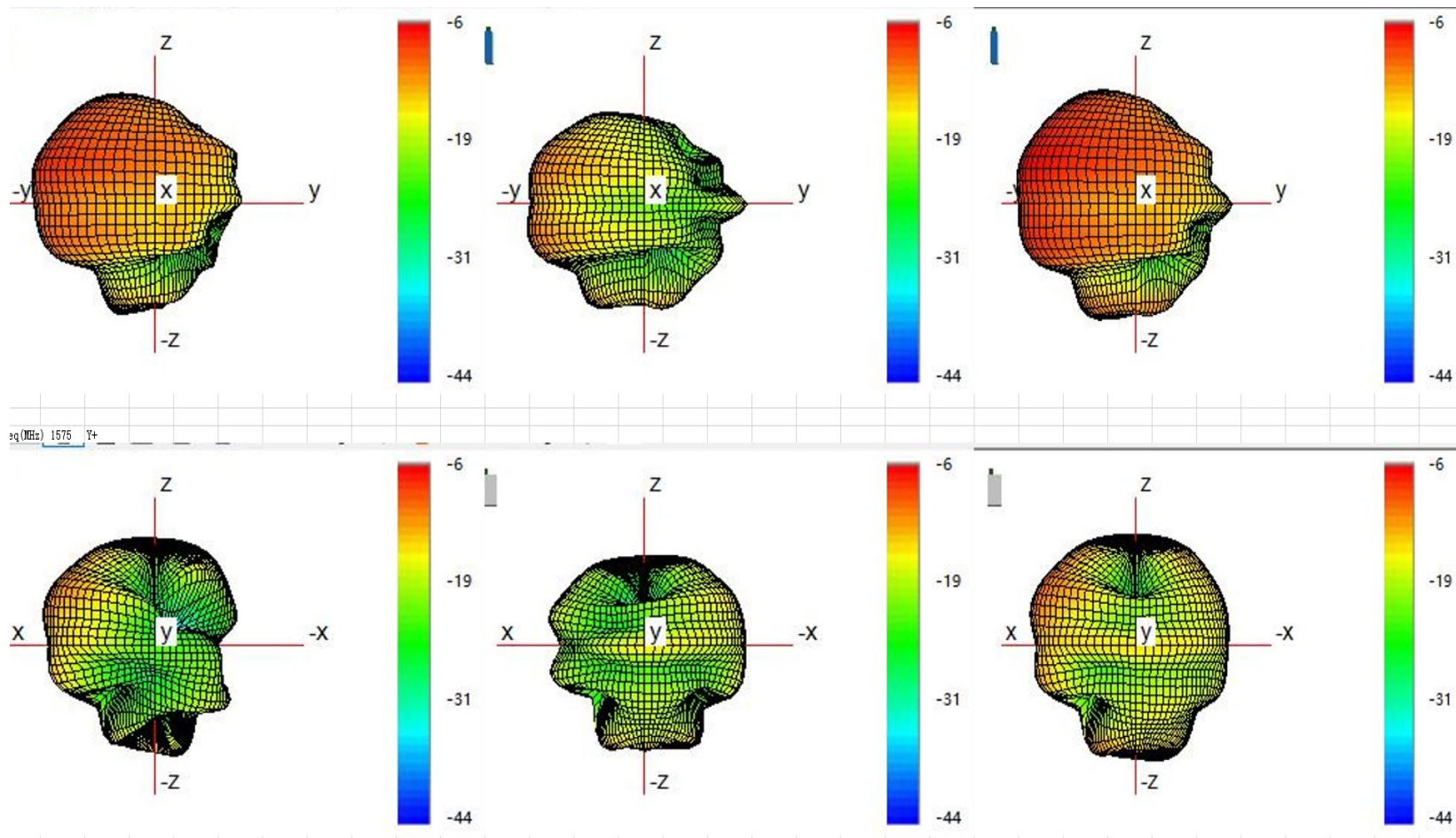


L1-Antenna efficiency and gain

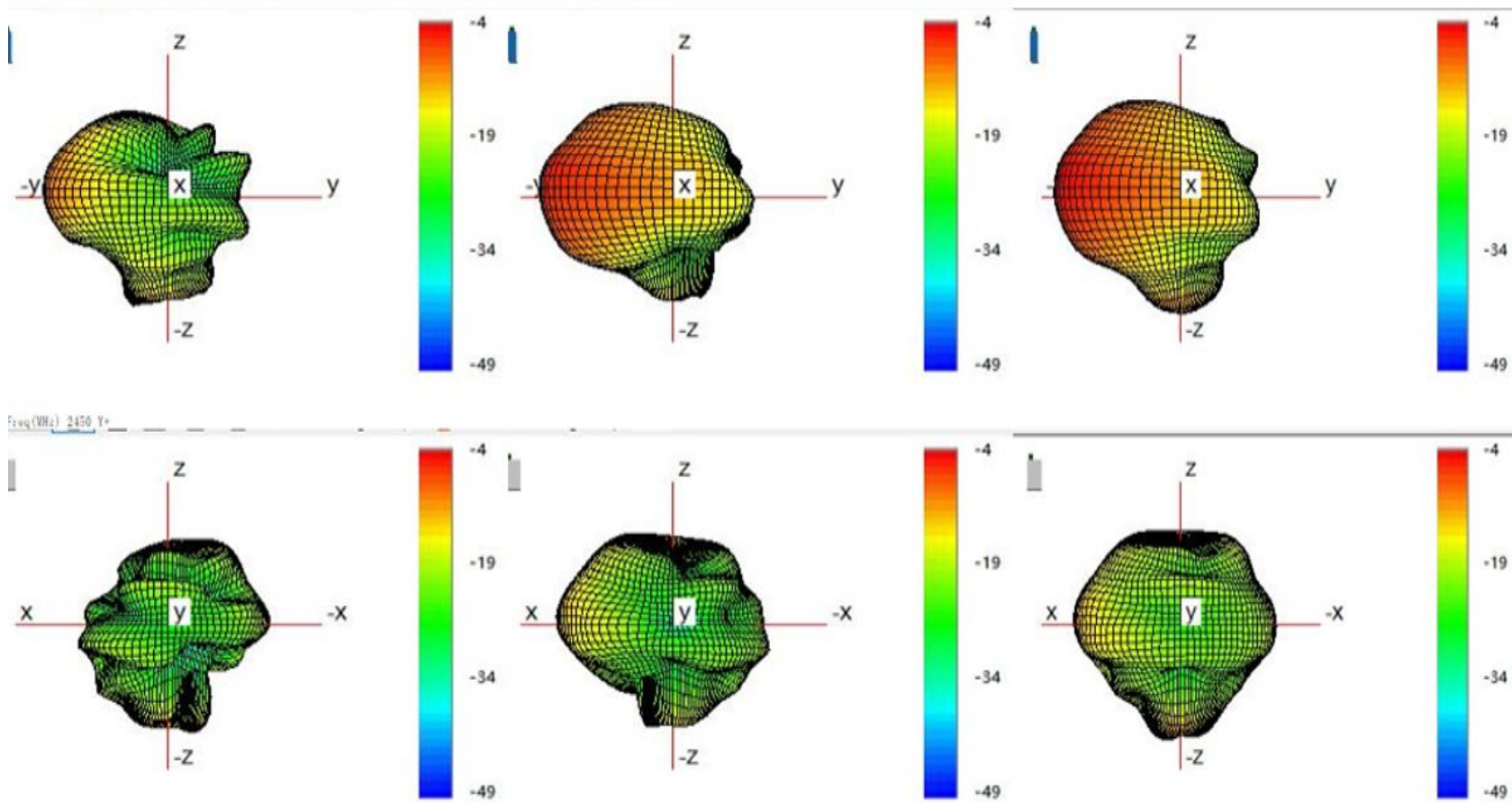
Arm、Passive Test For 1575MHz				
Freq	Effi	Gain		
(MHz)	(%)	(dBi)		
1550	4.1%	-6.54		
1555	4.1%	-6.58		
1560	4.2%	-6.52		
1565	4.3%	-6.47		
1570	4.4%	-6.41		
1575	4.5%	-6.39		
1580	4.6%	-6.31		
1585	4.7%	-6.24		
1590	4.7%	-6.19		

Aam、Passive Test For 2400MHz~2500MHz				
Freq	Effi	Effi	Gain	
(MHz)	(%)	(dB)	(dBi)	
2400	3.1%	-15.09	-6.79	
2410	3.8%	-14.20	-6.66	
2420	4.3%	-13.67	-6.53	
2430	4.7%	-13.28	-6.51	
2440	4.4%	-13.57	-6.43	
2450	5.5%	-12.60	-6.32	
2460	4.8%	-13.19	-6.37	
2470	4.1%	-13.87	-6.52	
2480	3.4%	-14.69	-6.58	
2490	2.9%	-15.38	-6.69	
2500	2.6%	-15.85	-6.74	

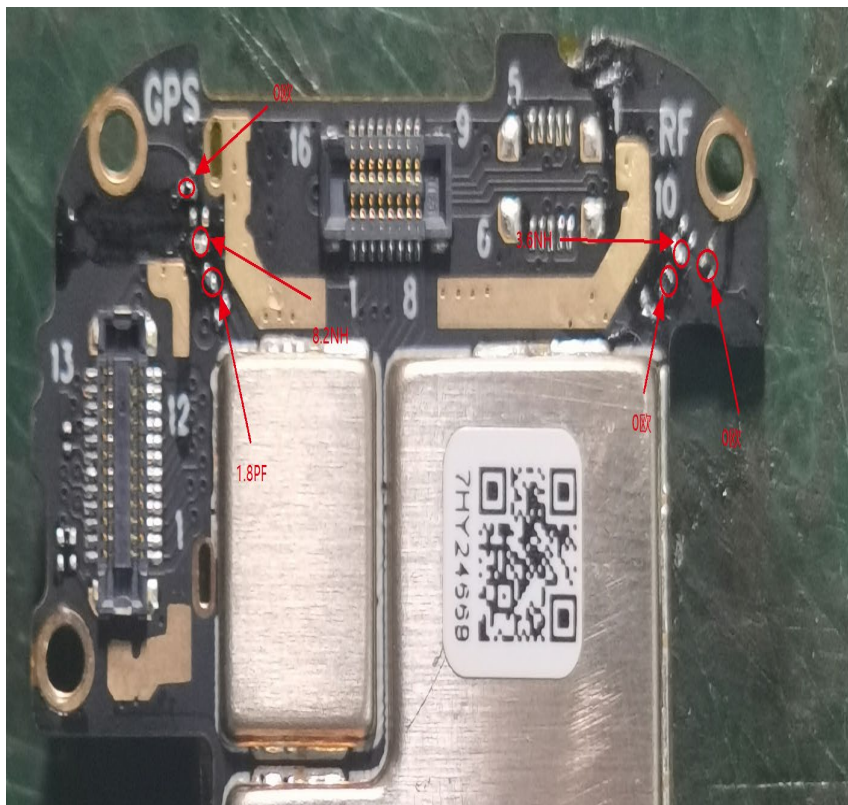
L1、Arm-directional diagram



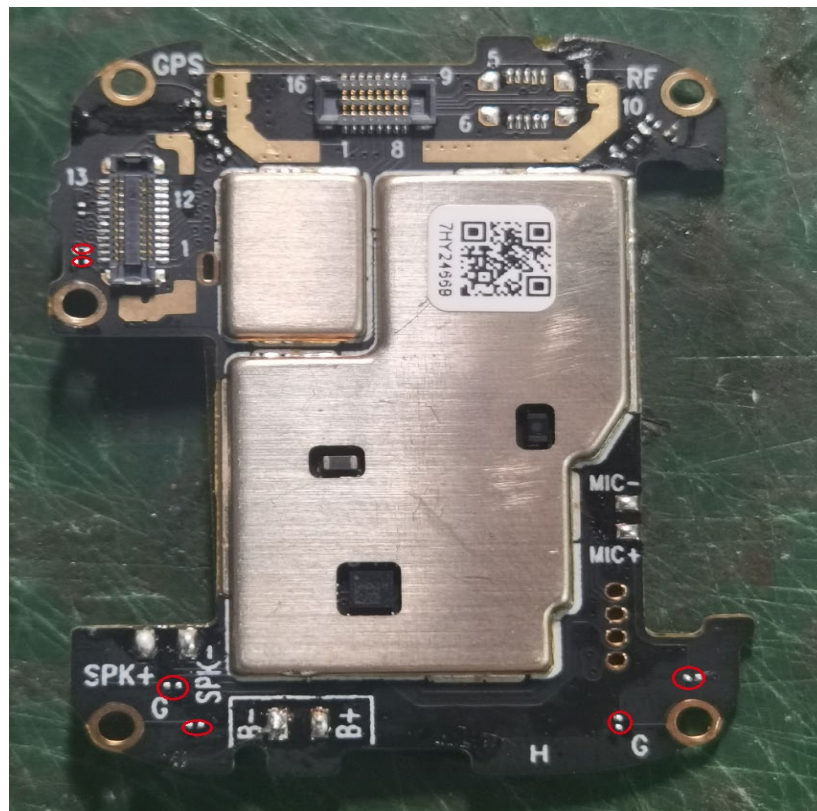
BT Apple key—Arm



L1 motherboard matching



1, the main road and 8.2NH, string 1.8PF, 1 o'clock return to 3.6NH
The BT string bit is 0 ohms, and the 0 ohms of other GND are cancelled

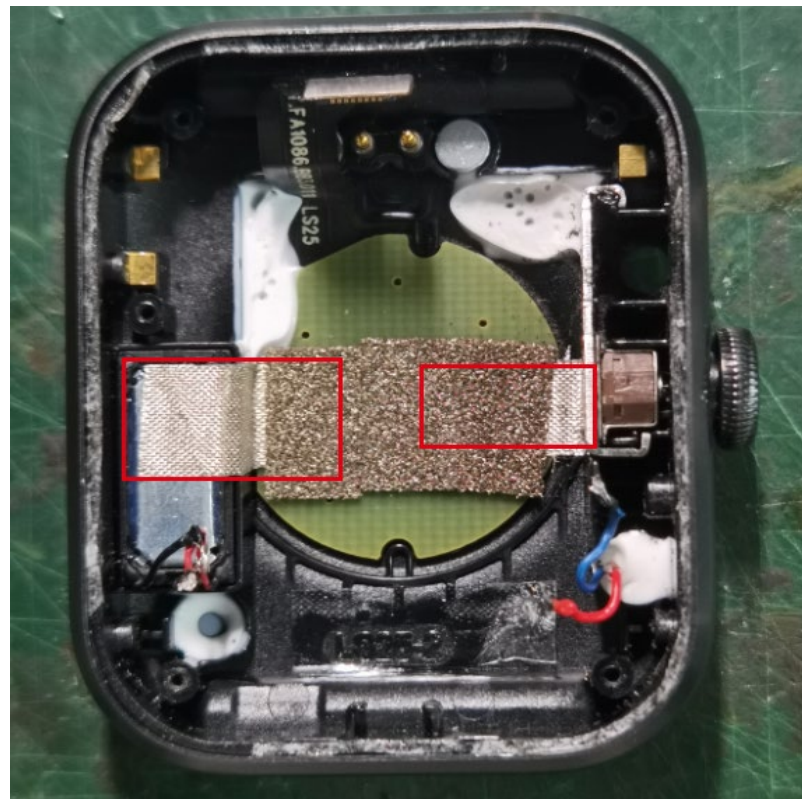


2. The 0 ohm resistance in the red box is all NC

Machine precautions:



1. The motherboard is grounded with sponge and screen



2. The speaker and the key steel sheet are attached with conductive cloth and then the sponge is grounded with the battery

Shrapnel structure
changes

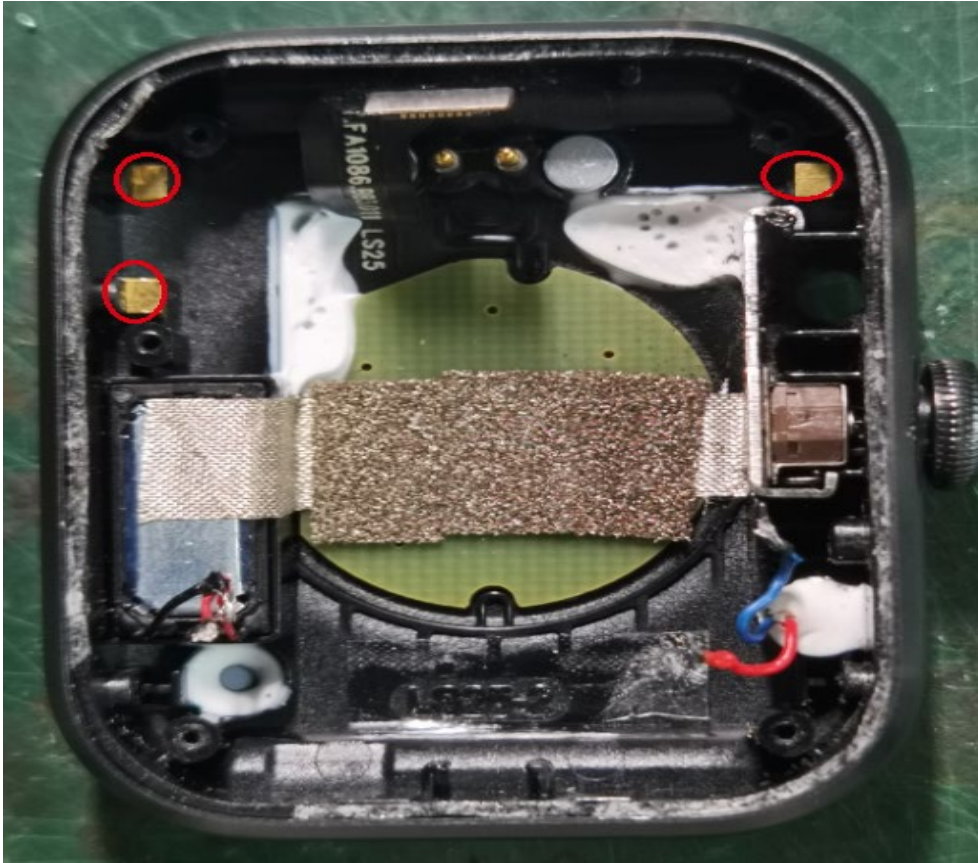


1, the battery from the front bread to the back



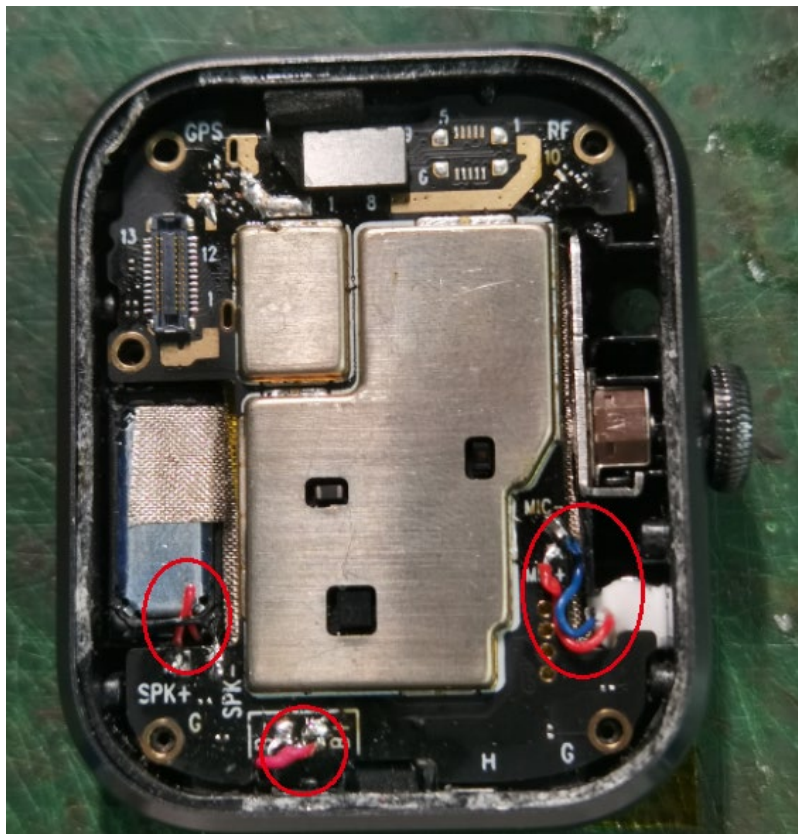
2, the motherboard copper leakage area paste sponge and battery grounding

Machine precautions:

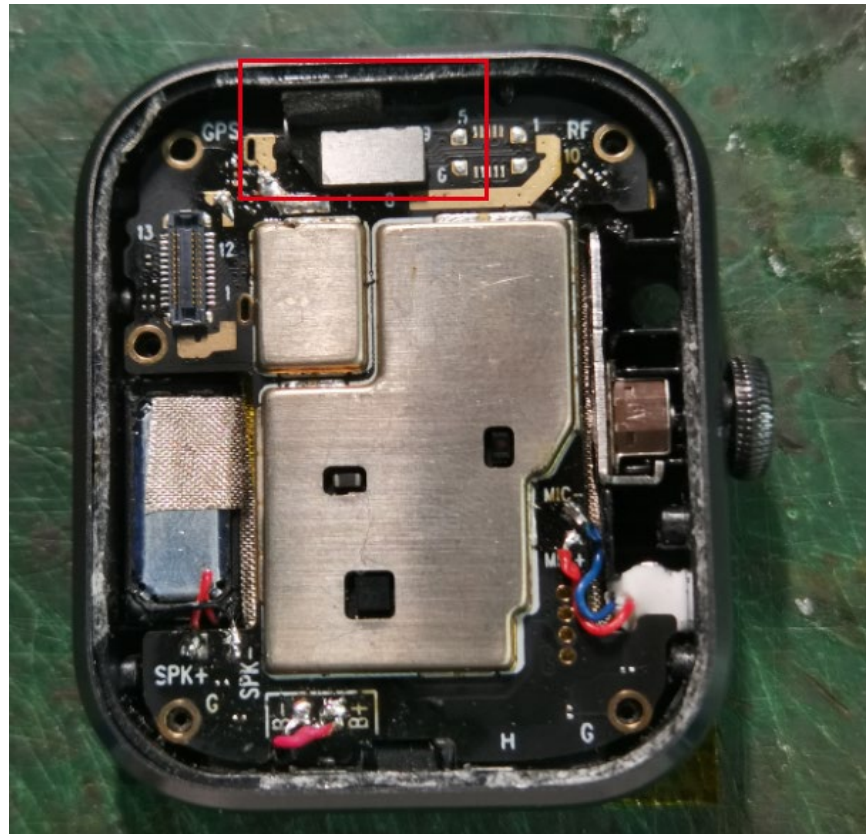


1, only keep these three places of the thimble, the other contact frame of the thimble all cancelled, in addition to the motherboard shrapnel need to increase the contact thimble.

Machine precautions:



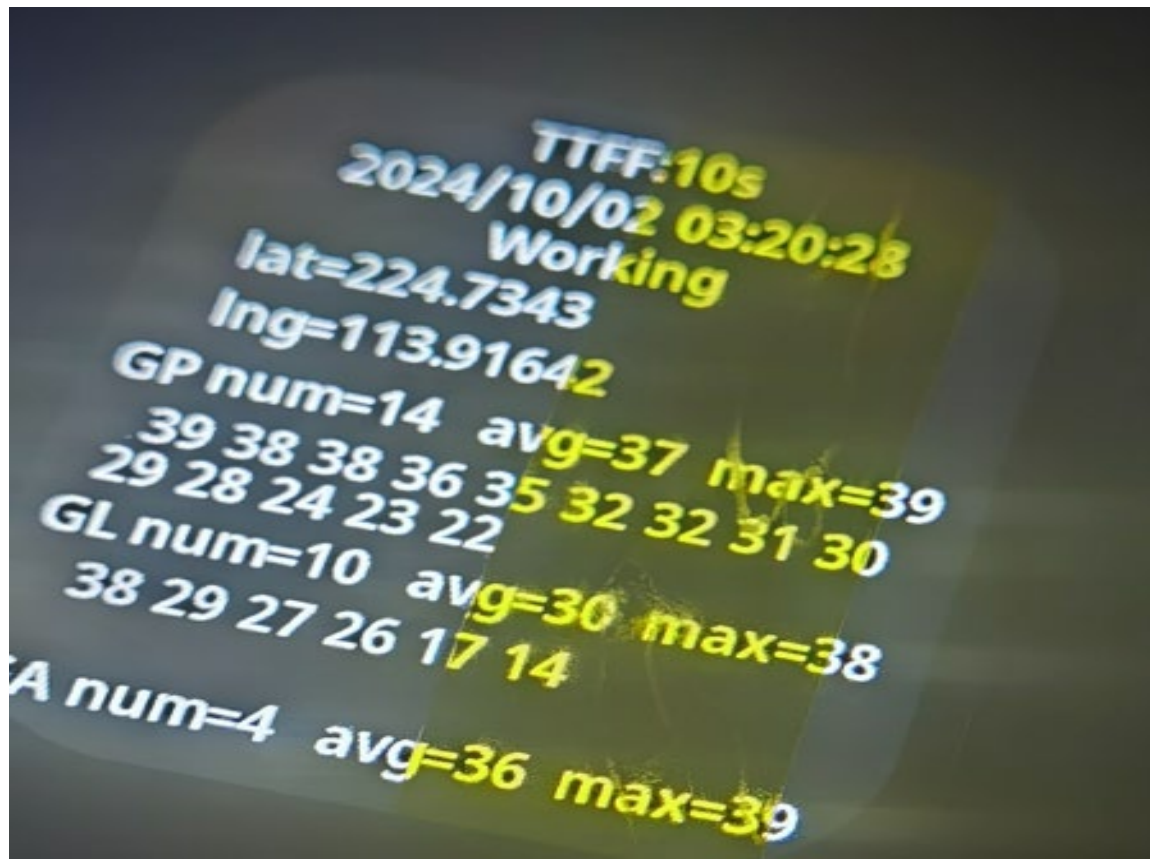
1, the speaker line at the red box, MIC line, battery line cut short.



2. The heart rate small button in the red frame is far away from the antenna.

Test the CN value of
the whole machine:

Both sides of the battery are shielded with conductive cloth



Thank you!



**Address: Building 2, 4th floor, Taiyun Valley, South
Guangming Avenue, Guangming New District, Shenzhen**

Tel: 0755-23984257

Fax: 0755-86090455