

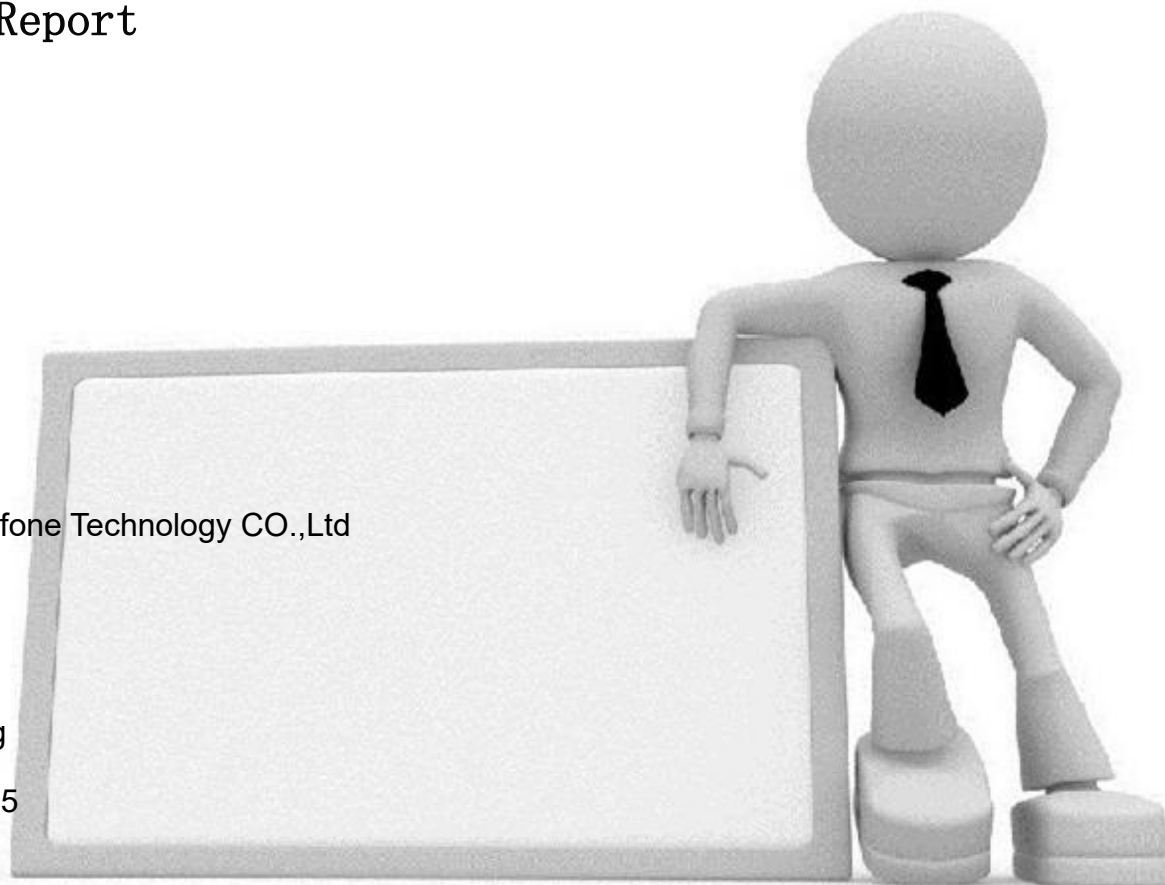


深圳市天威讯无线技术有限公司
Shenzhen Tianweixun Wireless Technology Co., Ltd

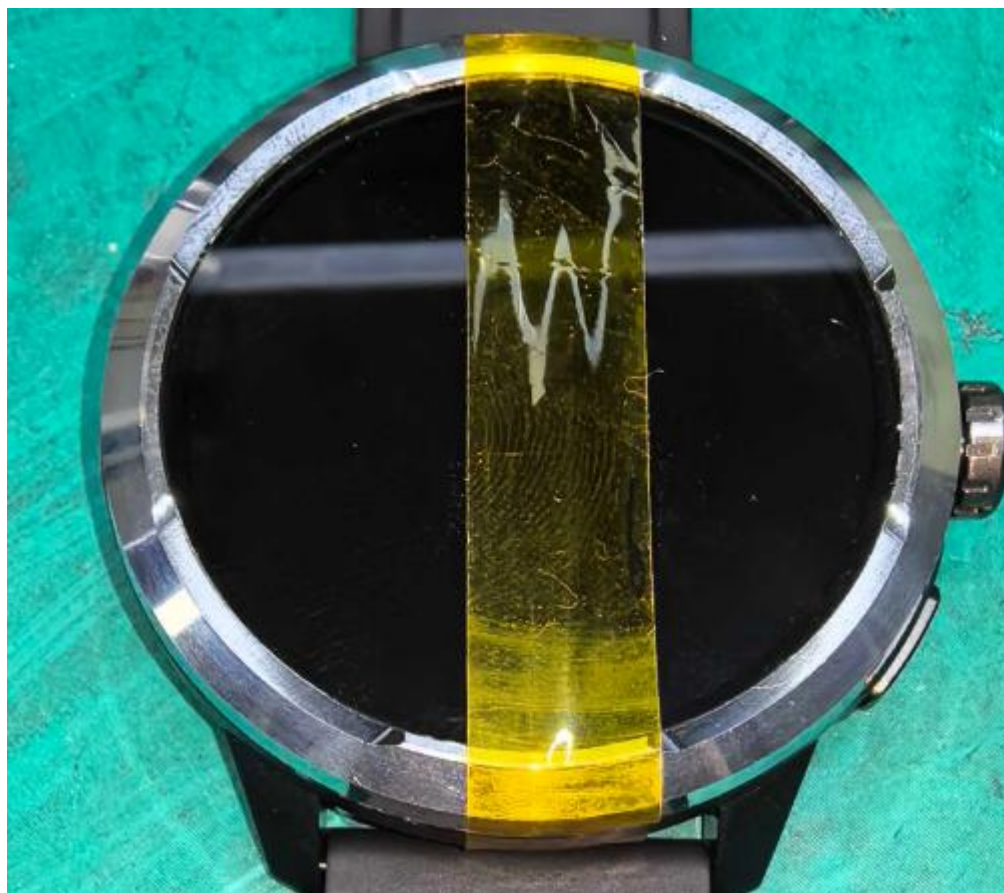
天线设计与数据报告

Antenna Design and Data Report

- ○ Customer Name: Shenzhen Ulefone Technology CO.,Ltd
- ○ Project Name: Armor Watch Pro
- ○ Required frequency band: GPS
- ○ R&D Engineering: Liao Xianming
- ○ Completion date: August 11, 2025



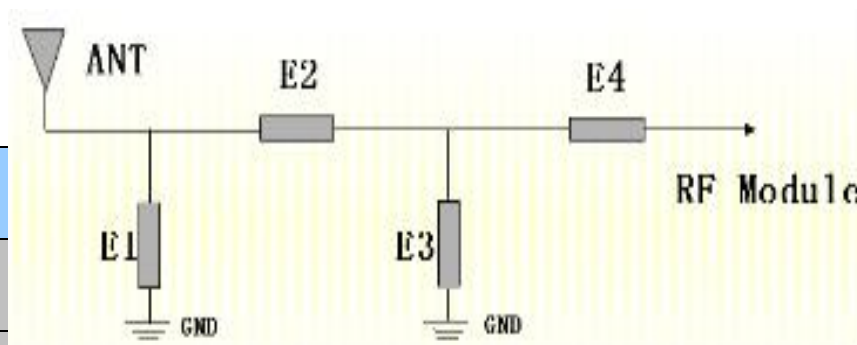
Product image (steel shell)



GPS antenna matching circuit description:

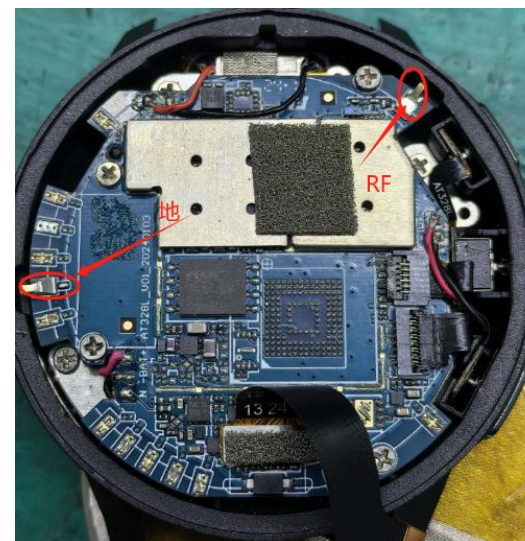


Antenna circuit matching description



Element	Element	Value	Vender
RF	E1(0402)	5.6NH	
	E2(0402)	3.3PF	
	E3(0402)	NC	
	E4(0402)	100PF	
地脚	地脚	0.6NH	

Modify the matching of GPS antenna according to the above circuit



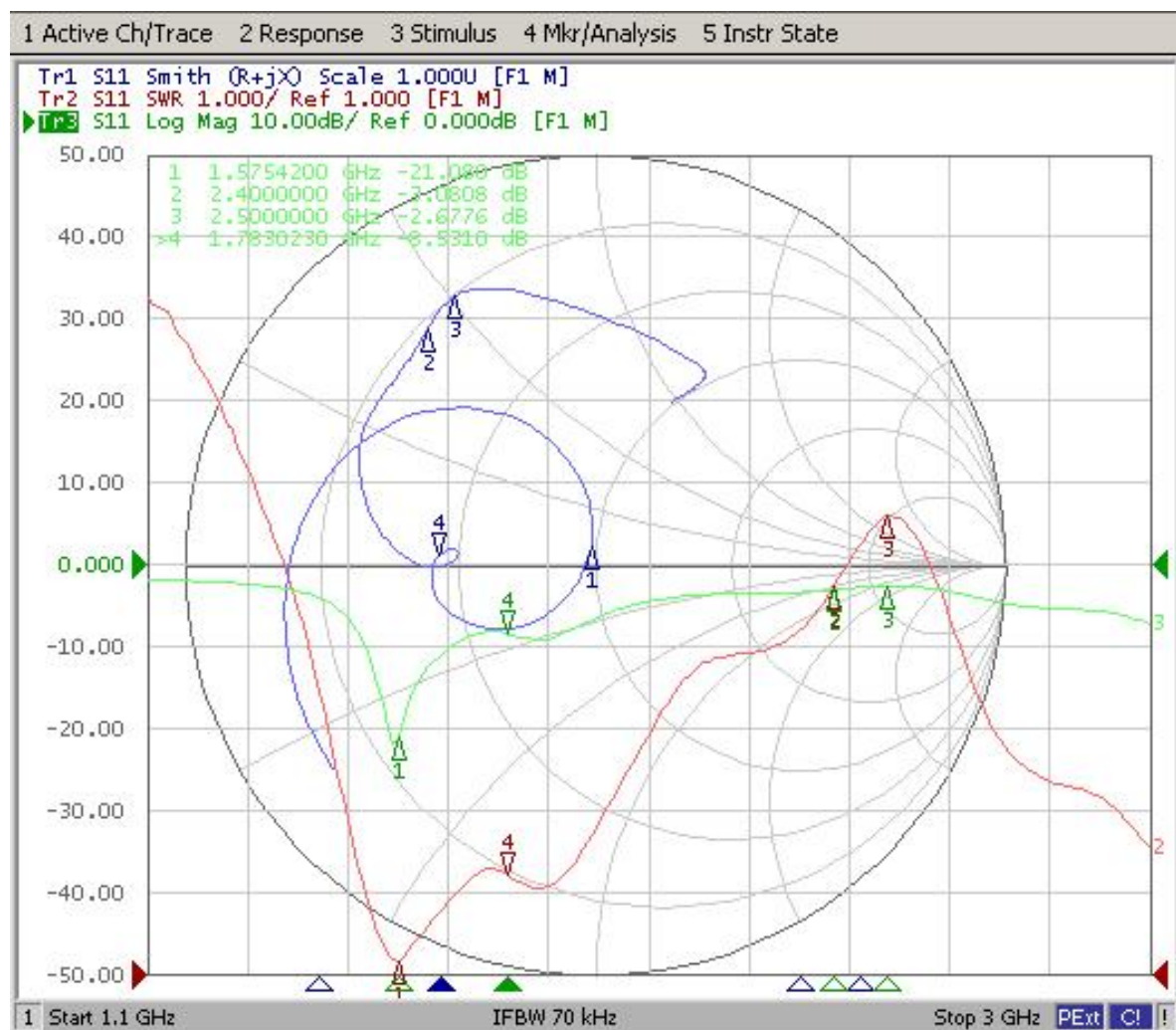
GPS antenna field measurement data



The above data was tested on the rooftop of our company during rainy weather.



GPS antenna test data





Hand model antenna efficiency

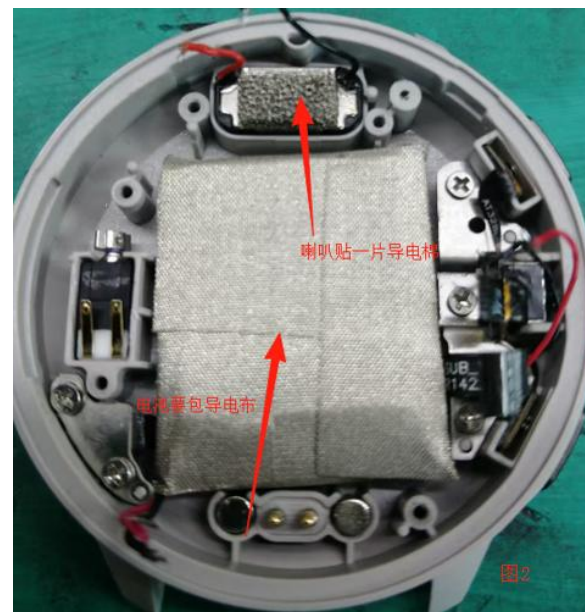
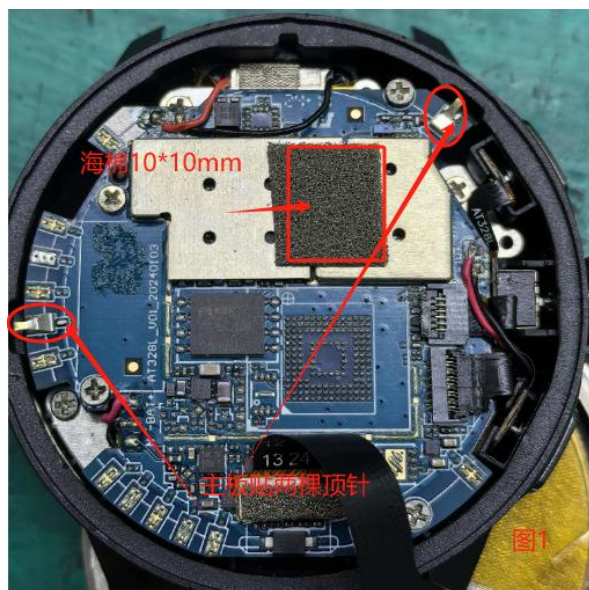
Test Point ID	Freq. (MHz)	Gain (dBi)	Efficiency (%)
1	1505.0	-8.57	3.8%
2	1515.0	-8.10	4.2%
3	1525.0	-7.42	5.0%
4	1535.0	-7.28	5.4%
5	1545.0	-6.99	6.2%
6	1555.0	-6.88	6.8%
7	1565.0	-6.84	7.0%
8	1575.0	-6.36	7.8%
9	1585.0	-6.12	7.2%
10	1595.0	-5.98	7.4%
11	1605.0	-5.96	7.2%
12	2400.0	-13.00	1.4%
13	2410.0	-13.65	1.2%
14	2420.0	-13.38	1.4%
15	2430.0	-13.99	1.2%
16	2440.0	-13.76	1.3%
17	2450.0	-13.74	1.3%
18	2460.0	-13.95	1.3%
19	2470.0	-13.82	1.3%
20	2480.0	-13.69	1.4%
21	2490.0	-14.08	1.3%
22	2500.0	-14.00	1.3%



Environmental treatment



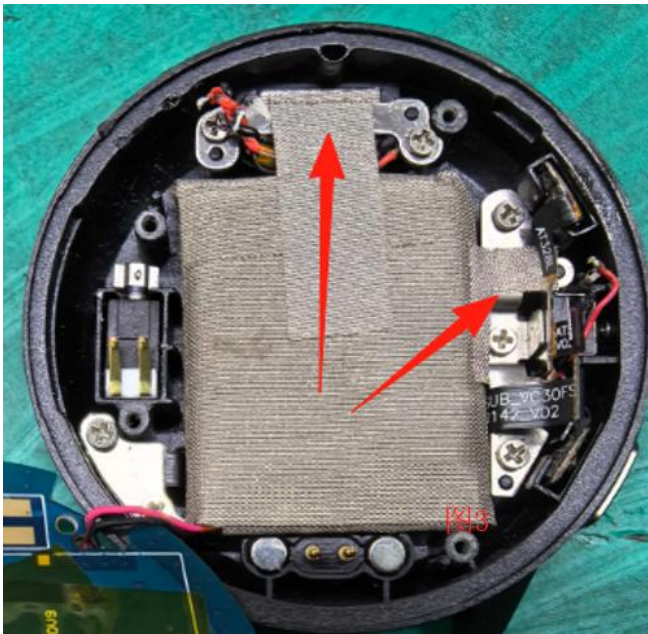
1. As shown in Figure 1, a piece of conductive sponge is attached to the motherboard shielding cover and grounded to the conductive cloth on the screen. The size of the conductive sponge is modified to 10 * 10mm (note: the conductive cloth on the speaker and shielding cover has been removed).
2. As shown in Figure 2, attach a piece of conductive cotton or cloth to the horn and ground it to the steel plate on top; The battery needs to be fully covered with conductive cloth shielding treatment.



Environmental treatment



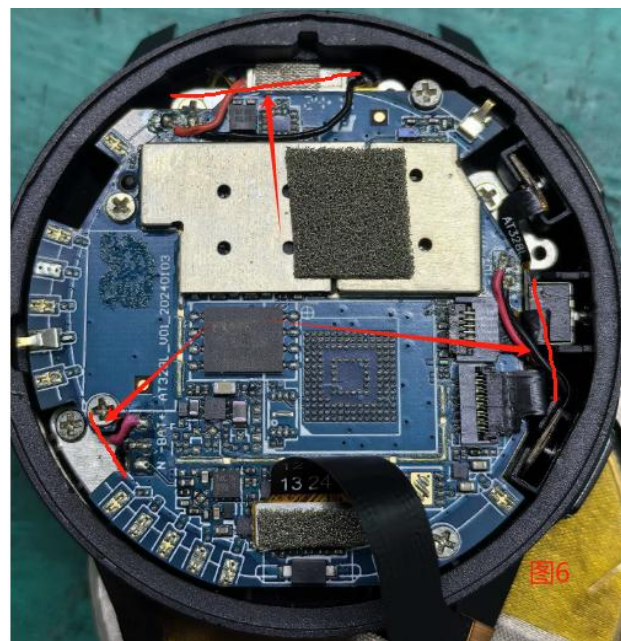
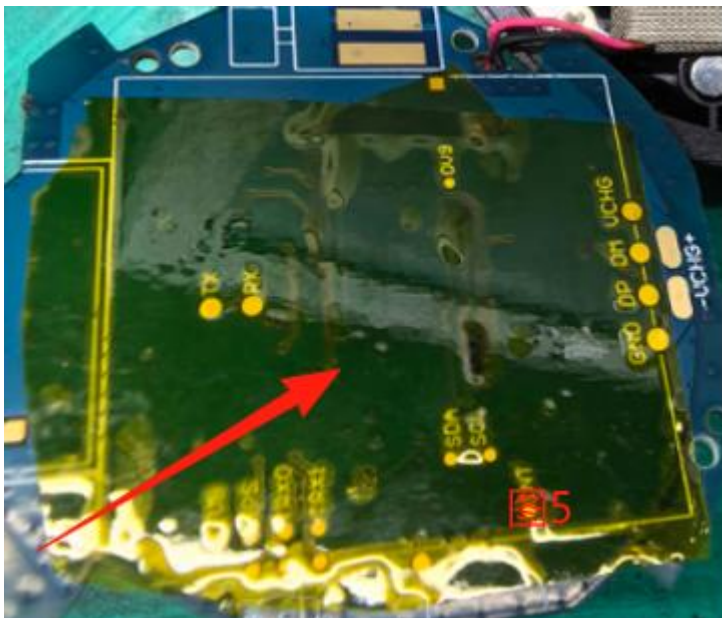
3. As shown in Figure 3, connect the battery to the steel plate on the horn with a conductive cloth for grounding;
The side key steel sheet should also be attached with conductive cloth to connect with the battery, and the horn wire should be wound into a Fried Dough Twists shape.
4. As shown in Figure 4, place a piece of conductive cloth on the screen to shield the interference between the screen and TP. The conductive cloth can be 0.5-1mm smaller than the screen. Note that the conductive cloth around the components should not be lifted. Lifting the conductive cloth will interfere with the signal.



Environmental treatment

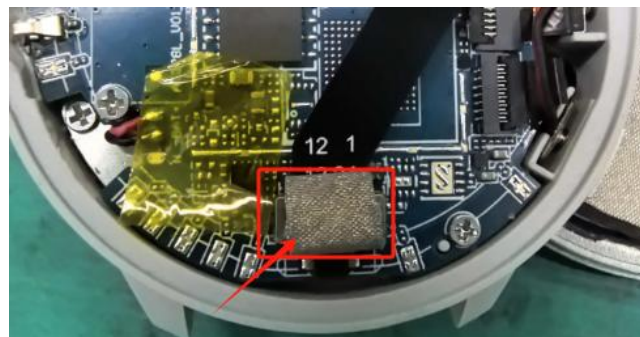


5. As shown in Figure 5, the bottom of the motherboard should be insulated with high-temperature adhesive.
6. As shown in Figure 6, try to press the speaker wire and battery wire under the motherboard as much as possible; The MIC cable can be placed on top of two FPC boards and cannot protrude to the edge of the screen.





7. According to the diagram, the steel plate of the screen cable socket is bonded with a piece of conductive foam and grounded with the conductive cloth of the screen.





Thank you for your patient reading!



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