



求是 价值 双赢

深圳市千目通讯科技有限公司

Shenzhen Qianmu Communication Technology Co., Ltd.

专注天线方案、设计与生产

客 户 (Customer) : 道格DOOGEE

项 目 (Item) : G01

日 期 (Date) : 2025.03.17

射 频 (Frequency) : ZHANG LI

制造商地址：固戍街道华丰智谷航程高科技产
业园A2座425Manufacturer's Address: Room
425, Building A2, Hangcheng High-tech
Industrial Park, Huafeng Zhigu, Gushu Street



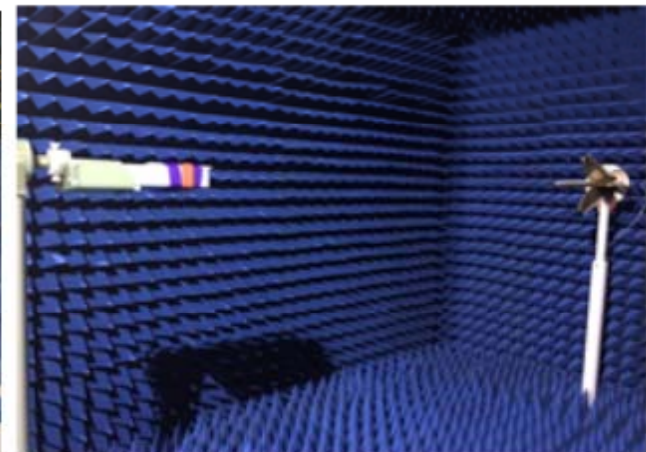
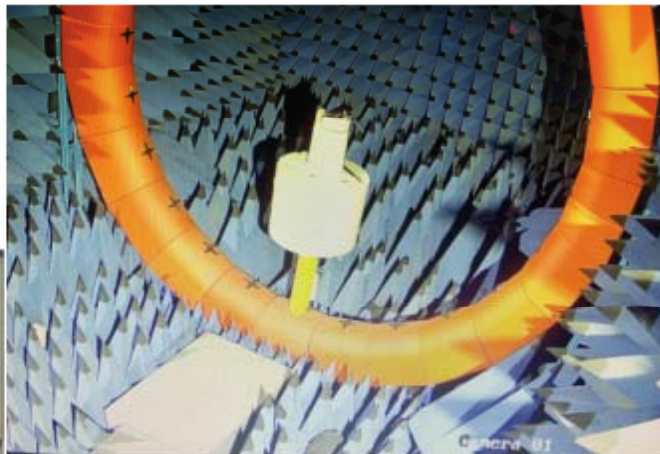
目 录 (Contents)

1. 测试环境 (testing environment)
2. 历次调试记录说明 (Records and Explanations of Previous Debugging Sessions)
3. 匹配电路说明 (Matching Circuit Description)
4. 有源测试数据 (Active test data)
5. 传导测试数据 (Conduct test data)
6. 通话电流声模拟测试 (Call current sound simulation test)
7. 环境处理说明 (Environmental Disposal Instructions)
8. GPS/WIFI/BT无源参数 (Passive parameters of GPS/WIFI/BT)
9. GPS/WIFI/BT实测效果 (GPS/WIFI/BT Actual Test Results)
10. 总结 (sum up)



测试环境（testing environment）

	测试项目	设备
1. S参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B ×2 HP 8753D PROTEK A338
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 频率误差 4. 屏灭、屏亮	1. 暗室: 飞图 7x4x3 m (24探头 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 ×2 CMW500 ×3/CMU200
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: 飞图 7x4x3 m (24探头 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B



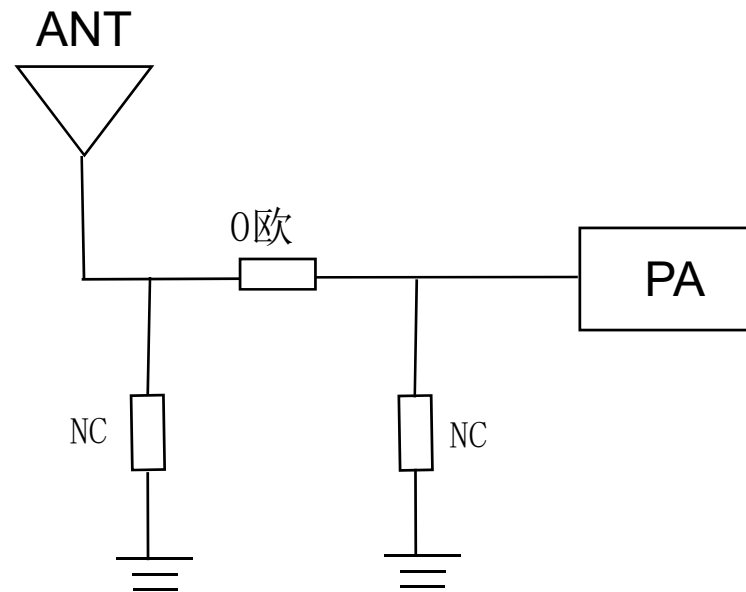


历次调试记录说明 (Previous debugging records explain)

日期date	版本 (versions)	调试记录说明 (Debugging Record Explanation)
2025-03-17	T:A	手板铜箔，调试样机 (Prototype copper foil, debugging prototype machine)



匹配电路-GPS/BT天线（Matching circuit - GPS/BT antenna）

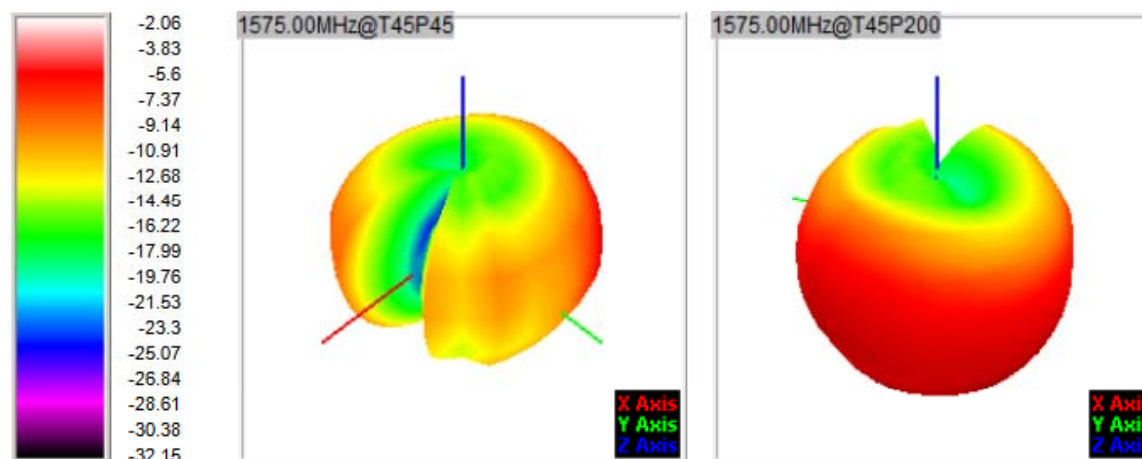


贵司主板原始匹配电路未做任何更改
The original matching circuit of your
company's motherboard has not been
modified in any way.



GPS天线效率（GPS antenna efficiency）：

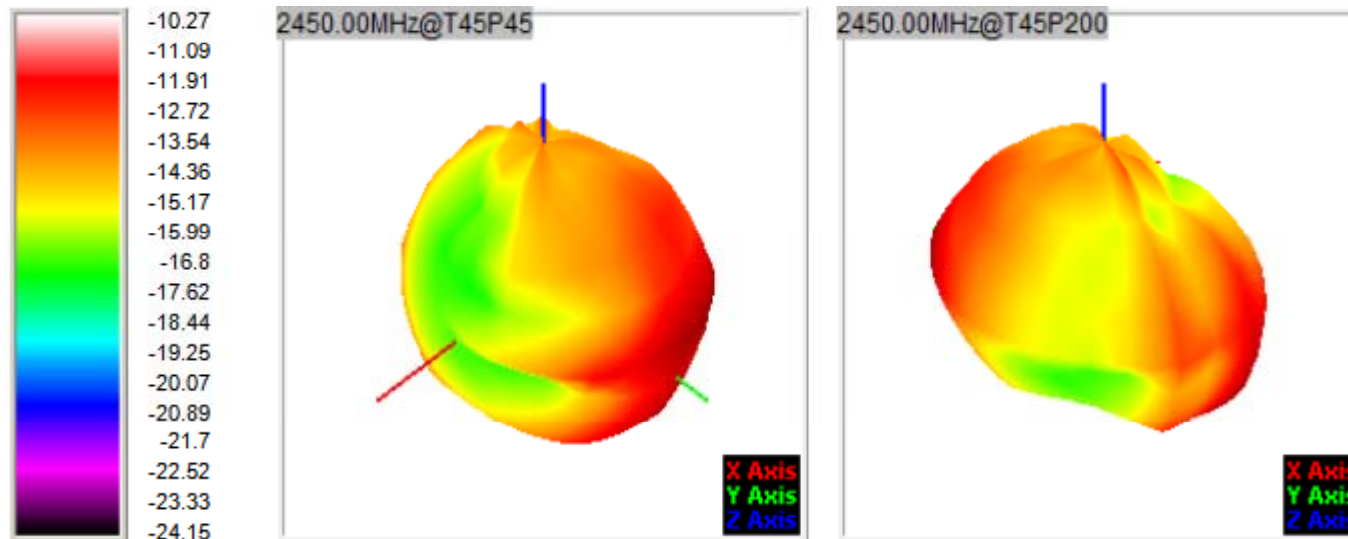
FEITUKEJI											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	1570.0	1571.0	1572.0	1573.0	1574.0	1575.0	1576.0	1577.0	1578.0	1579.0	1580.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-6.72	-6.70	-6.69	-6.69	-6.68	-6.66	-6.65	-6.63	-6.60	-6.56	-6.51
Peak EIRP (dBm)	-2.11	-2.10	-2.09	-2.09	-2.07	-2.06	-2.05	-2.03	-2.01	-1.99	-1.98
Directivity (dBi)	4.61	4.60	4.61	4.60	4.61	4.60	4.60	4.60	4.59	4.57	4.53
Efficiency (dB)	-6.72	-6.70	-6.69	-6.69	-6.68	-6.66	-6.65	-6.63	-6.60	-6.56	-6.51
Efficiency (%)	21.30	21.40	21.40	21.40	21.50	21.60	21.60	21.70	21.90	22.10	22.30
Gain (dBi)	-2.11	-2.10	-2.09	-2.09	-2.07	-2.06	-2.05	-2.03	-2.01	-1.99	-1.98
NHPRP $\pm\pi/4$ (dBm)	-7.38	-7.37	-7.36	-7.36	-7.35	-7.33	-7.32	-7.30	-7.26	-7.22	-7.18
NHPRP $\pm\pi/6$ (dBm)	-8.69	-8.68	-8.67	-8.67	-8.66	-8.64	-8.63	-8.61	-8.58	-8.53	-8.48
NHPRP $\pm\pi/8$ (dBm)	-9.78	-9.77	-9.76	-9.76	-9.76	-9.74	-9.73	-9.71	-9.68	-9.64	-9.58
Upper Hem. PRP (dBm)	-10.68	-10.66	-10.65	-10.66	-10.66	-10.66	-10.66	-10.65	-10.63	-10.58	-10.53
Lower Hem. PRP (dBm)	-8.94	-8.94	-8.93	-8.92	-8.90	-8.87	-8.85	-8.82	-8.79	-8.75	-8.70
Upper Hem. PRP (%)	8.55	8.59	8.60	8.60	8.59	8.59	8.59	8.61	8.66	8.74	8.85
Lower Hem. PRP (%)	12.75	12.77	12.80	12.84	12.89	12.97	13.03	13.11	13.23	13.35	13.49





BT天线效率（BT antenna efficiency）：

FEITUKEJI											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-15.32	-15.39	-15.67	-15.58	-15.36	-15.33	-14.69	-14.80	-14.41	-14.00	-13.50
Peak EIRP (dBm)	-10.09	-10.19	-10.36	-10.32	-10.11	-10.27	-9.74	-9.85	-9.40	-8.65	-8.00
Directivity (dBi)	5.23	5.21	5.31	5.26	5.25	5.06	4.95	4.96	5.00	5.35	5.50
Efficiency (dB)	-15.32	-15.39	-15.67	-15.58	-15.36	-15.33	-14.69	-14.80	-14.41	-14.00	-13.50
Efficiency (%)	2.90	2.90	2.70	2.80	2.90	2.90	3.40	3.30	3.60	4.00	4.50
Gain (dBi)	-10.09	-10.19	-10.36	-10.32	-10.11	-10.27	-9.74	-9.85	-9.40	-8.65	-8.00
NHPRP $\pm\pi/4$ (dBm)	-16.83	-16.87	-17.08	-16.90	-16.61	-16.55	-15.89	-16.02	-15.65	-15.30	-14.87
NHPRP $\pm\pi/6$ (dBm)	-18.32	-18.36	-18.55	-18.36	-18.06	-18.02	-17.37	-17.50	-17.14	-16.77	-16.34
NHPRP $\pm\pi/8$ (dBm)	-19.46	-19.50	-19.70	-19.52	-19.23	-19.19	-18.56	-18.69	-18.32	-17.93	-17.48
Upper Hem. PRP (dBm)	-19.19	-19.27	-19.49	-19.29	-19.00	-18.95	-18.30	-18.42	-18.06	-17.72	-17.30
Lower Hem. PRP (dBm)	-17.62	-17.68	-18.00	-17.99	-17.81	-17.81	-17.17	-17.28	-16.85	-16.40	-15.85
Upper Hem. PRP (%)	1.21	1.18	1.12	1.18	1.26	1.27	1.48	1.44	1.56	1.69	1.86
Lower Hem. PRP (%)	1.73	1.71	1.59	1.59	1.65	1.65	1.92	1.87	2.06	2.29	2.60



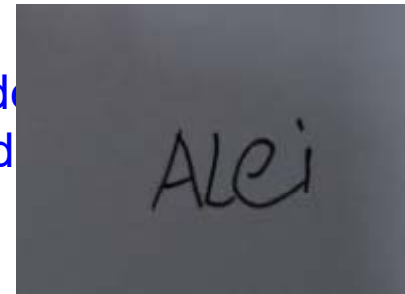


GPS实际测试（Actual GPS testing）：

人手
(manpower)

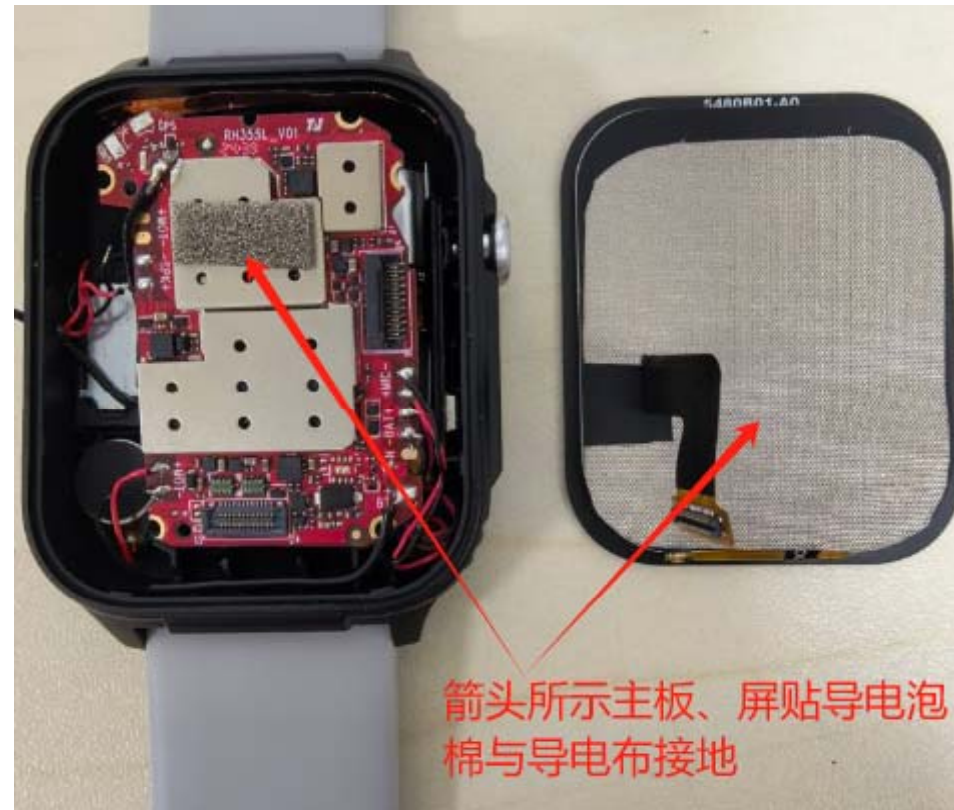


GPS实际测试：楼顶空旷位置，冷启动40秒以内定位
GPS actual test: In an open area on the rooftop, the device
can achieve positioning within 40 seconds after a cold





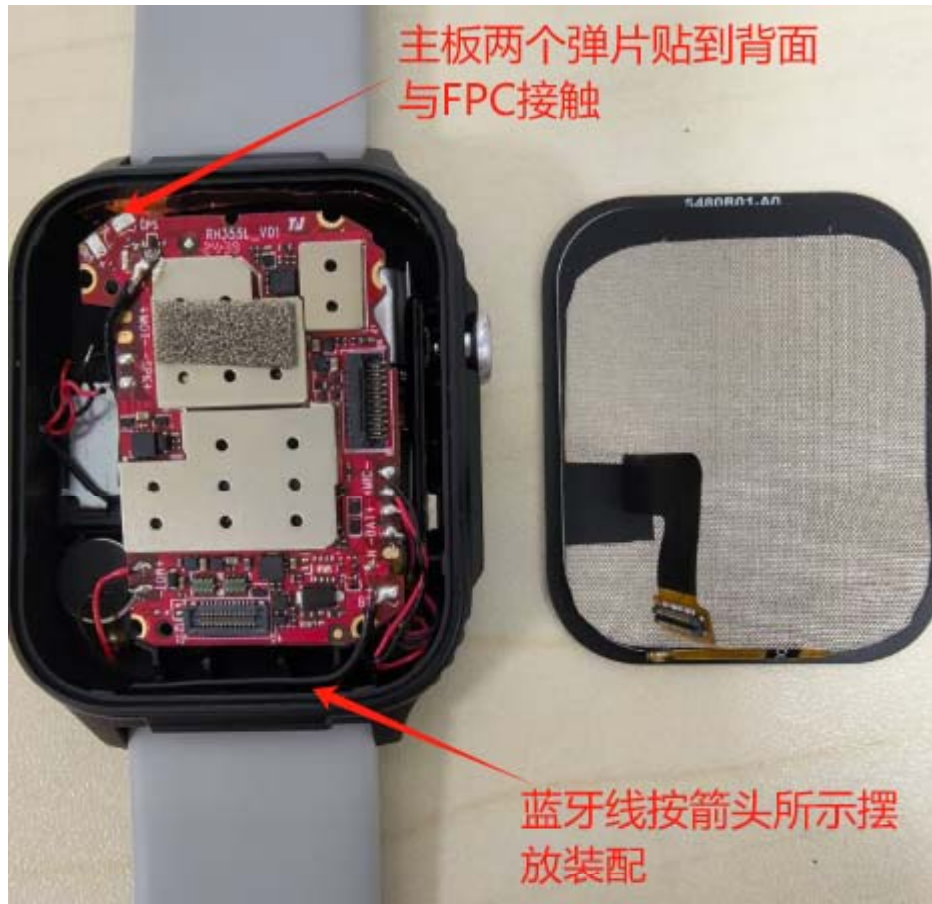
环境处理说明（Environmental Treatment Instructions）：



The motherboard indicated by the arrow, the conductive foam on the screen and the conductive fabric are all grounded.



GPS与BT天线装配说明（GPS and BT Antenna Assembly Instructions）：



Two tabs on the motherboard are attached to the back and come into contact with the FPC

Place the Bluetooth cable as indicated by the arrow for assembly.



谢谢（thanks）！

此报告中所包含的一切信息、版权归我司所有，再未经我司许可的情况下，请勿散播给第三方
All the information contained in this report is the property of our company. Without our prior permission, please do not disseminate it to any third party.