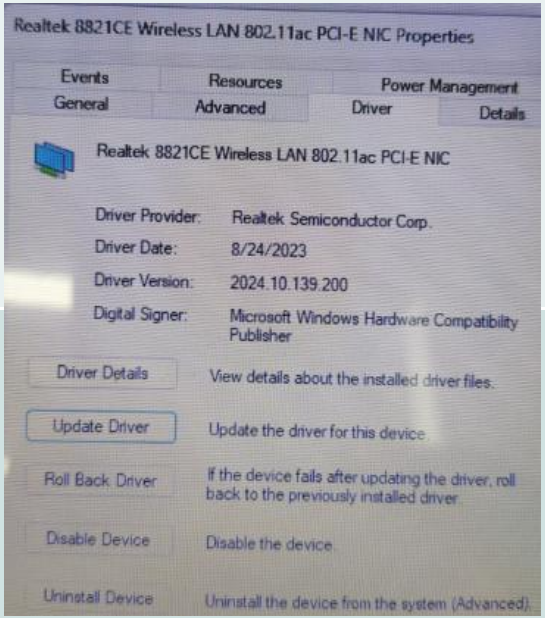
深圳市星源创科技有限公司
SHENZHEN Xingyuanchuang TECHNOLOGY CO.,LTD

天线测试报告

Antenna Test Report

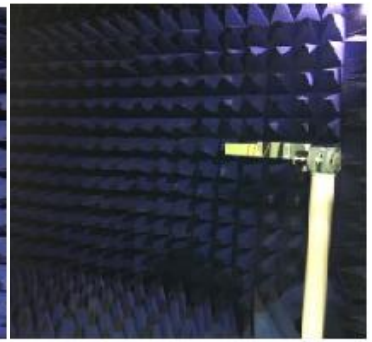
TC：思宇星
MN：Y1028
RF：戴进平
MD：黄清清
MP：19918388579

Date：2024.11.16
REV :V1.0

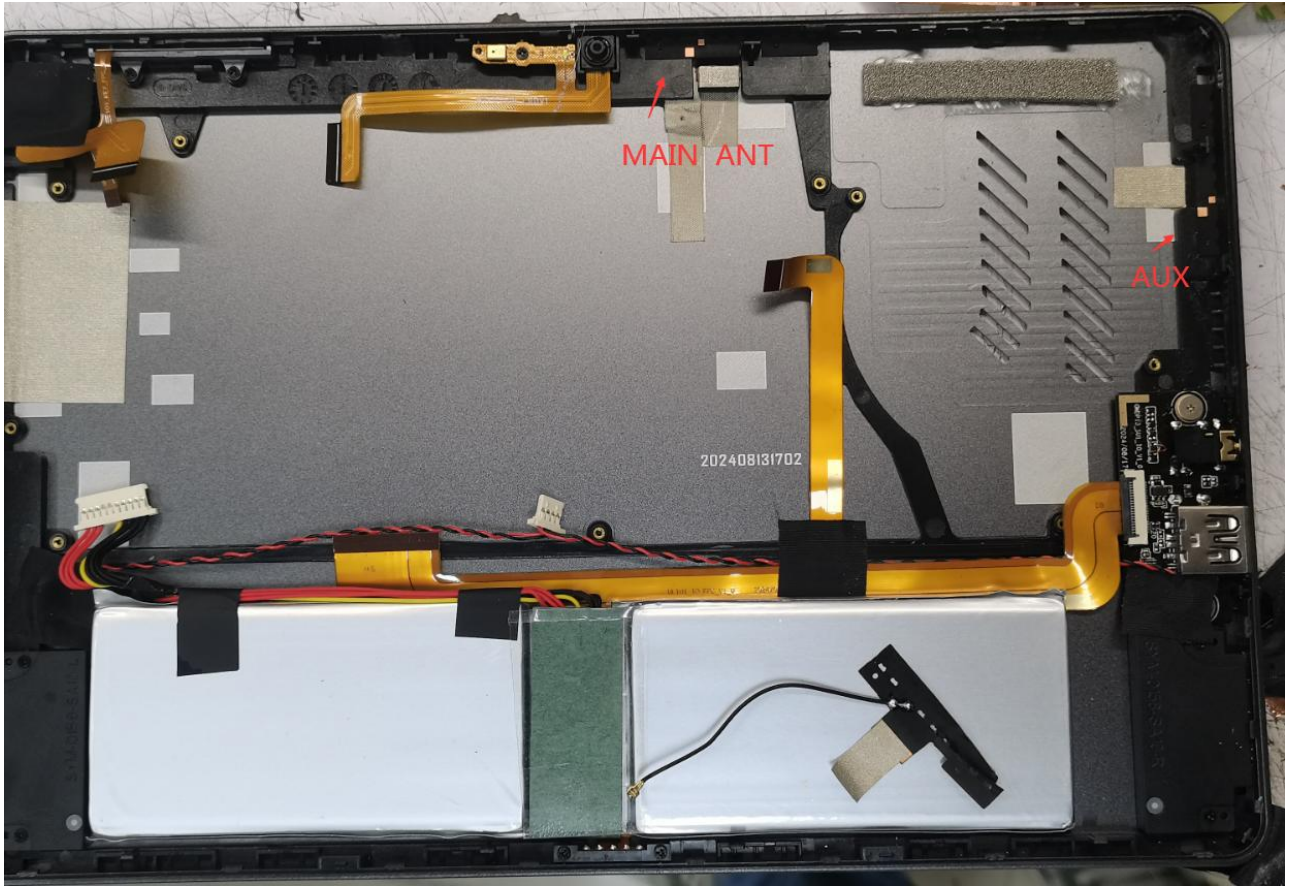
WIFI ANT Test information		
Frequency	2.4G(2402~2483)Mhz	5G(5150~5850)Mhz
Module information		
Driver version information		

测试环境
Test environment

	测试项目	测试设备
S参数 （S-parameter）	1.电压驻波比(VSWR) 2.回波损耗（Rrtun Loss）	网络分析仪：Agilent8753ES
2.有源测试 (Active)	1.发射功率（TRP） 2.接收灵敏度（TIS） 3.屏灭/屏亮	1.暗室：5*3*3m（3D）Chamber 2.综测仪：Agilent8960 CMW500
3.无源测试 （Passive）	1.天线增益(Gain) 2.天线效率（Efficiency）	1.暗室：5*3*3m（3D）Chamber 2.网络分析仪：Agilent 8753ES



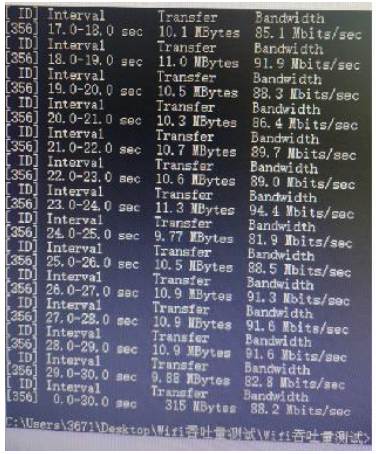
天线位置
Antenna position



有源测试数据
Active test data

	Frequency	TRP		TIS	
802.11b	2412	CH1 11Mbps	14.06	CH1 11Mbps	-70.27
	2437	CH6 11Mbps	14.68	CH6 11Mbps	-71.58
	2467	CH11 11Mbps	13.72	CH11 11Mbps	-72.79
802.11a		TRP		TIS	
	5180	CH36 6Mbps	9.05	CH36 54Mbps	-66.39
	5300	CH60 6Mbps	12.48	CH60 54Mbps	-64.80
	5805	CH161 6Mbps	10.01	CH161 54Mbps	-63.45

吞吐量测试
Throughput test

2.4G wifi 天吐量测试			
上行	75M	下行	88.20M
图片		图片	
备注			

```
[392] 16.0-17.0 sec  9.33 MBytes  78.2 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 17.0-18.0 sec  9.91 MBytes  83.2 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 18.0-19.0 sec  9.76 MBytes  81.9 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 19.0-20.0 sec  9.41 MBytes  79.0 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 20.0-21.0 sec  8.12 MBytes  68.1 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 21.0-22.0 sec  8.66 MBytes  72.7 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 22.0-23.0 sec  9.40 MBytes  78.8 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 23.0-24.0 sec  9.88 MBytes  82.9 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 24.0-25.0 sec  9.73 MBytes  81.7 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 25.0-26.0 sec  10.4 MBytes  87.1 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 26.0-27.0 sec  9.02 MBytes  75.6 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 27.0-28.0 sec  9.02 MBytes  75.6 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 28.0-29.0 sec  9.45 MBytes  79.3 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392] 29.0-30.0 sec  9.27 MBytes  77.8 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[392]  0.0-30.0 sec   268 MBytes  75.0 Mbits/sec
```

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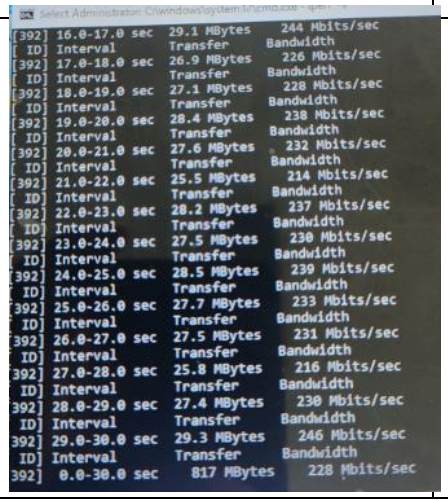
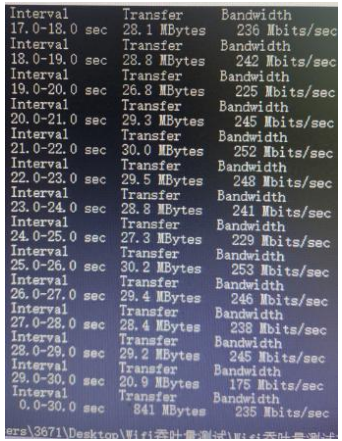
[ ID] Interval       Transfer     Bandwidth
[356] 17.0-18.0 sec  10.1 MBytes  85.1 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 18.0-19.0 sec  11.0 MBytes  91.9 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 19.0-20.0 sec  10.5 MBytes  88.3 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 20.0-21.0 sec  10.3 MBytes  86.4 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 21.0-22.0 sec  10.7 MBytes  89.7 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 22.0-23.0 sec  10.6 MBytes  89.0 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 23.0-24.0 sec  11.3 MBytes  94.4 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 24.0-25.0 sec  9.77 MBytes  81.9 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 25.0-26.0 sec  10.5 MBytes  88.5 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 26.0-27.0 sec  10.9 MBytes  91.3 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 27.0-28.0 sec  10.9 MBytes  91.6 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 28.0-29.0 sec  10.9 MBytes  91.6 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356] 29.0-30.0 sec  9.86 MBytes  82.8 Mbits/sec
[ ID] Interval       Transfer     Bandwidth
[356]  0.0-30.0 sec   315 MBytes  88.2 Mbits/sec
C:\Users\3671\Desktop\Wifi吞吐量测试\Wifi吞吐量测试>
```

吞吐量测试
Throughput test

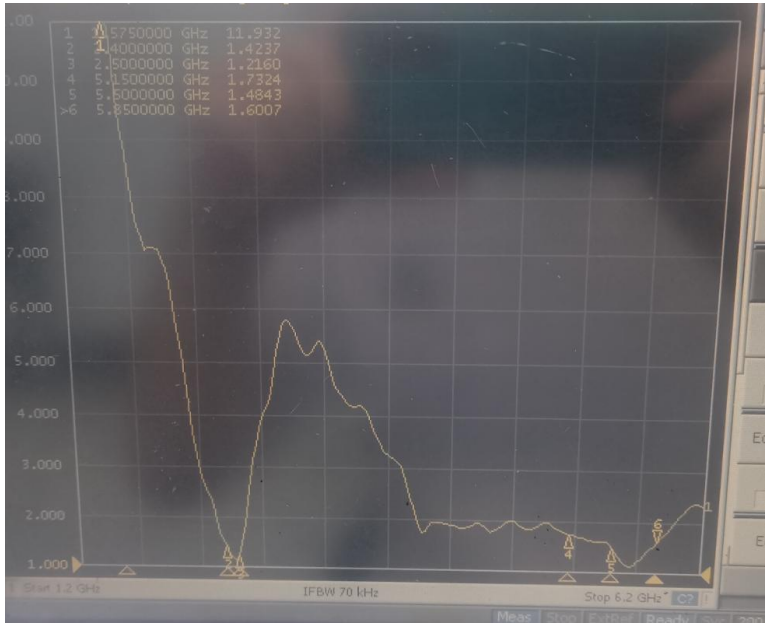
5G wifi 天吐量测试			
上行	228M	下行	235M
图片		图片	
备注			

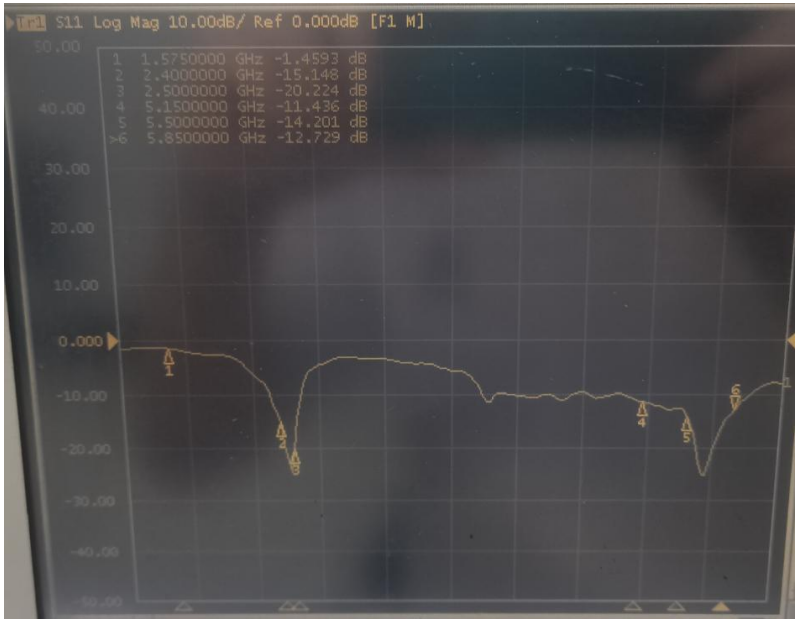
[392] 16.0-17.0 sec 29.1 MBytes 244 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 17.0-18.0 sec 26.9 MBytes 226 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 18.0-19.0 sec 27.1 MBytes 228 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 19.0-20.0 sec 28.4 MBytes 238 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 20.0-21.0 sec 27.6 MBytes 232 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 21.0-22.0 sec 25.5 MBytes 214 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 22.0-23.0 sec 28.2 MBytes 237 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 23.0-24.0 sec 27.5 MBytes 230 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 24.0-25.0 sec 28.5 MBytes 239 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 25.0-26.0 sec 27.7 MBytes 233 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 26.0-27.0 sec 27.5 MBytes 231 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 27.0-28.0 sec 25.8 MBytes 216 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 28.0-29.0 sec 27.4 MBytes 230 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 29.0-30.0 sec 29.3 MBytes 246 Mbits/sec
[ID] Interval Transfer Bandwidth
[392] 0.0-30.0 sec 817 MBytes 228 Mbits/sec

Interval Transfer Bandwidth
17.0-18.0 sec 28.1 MBytes 236 Mbits/sec
Interval Transfer Bandwidth
18.0-19.0 sec 28.8 MBytes 242 Mbits/sec
Interval Transfer Bandwidth
19.0-20.0 sec 26.8 MBytes 225 Mbits/sec
Interval Transfer Bandwidth
20.0-21.0 sec 29.3 MBytes 245 Mbits/sec
Interval Transfer Bandwidth
21.0-22.0 sec 30.0 MBytes 252 Mbits/sec
Interval Transfer Bandwidth
22.0-23.0 sec 29.5 MBytes 248 Mbits/sec
Interval Transfer Bandwidth
23.0-24.0 sec 28.8 MBytes 241 Mbits/sec
Interval Transfer Bandwidth
24.0-25.0 sec 27.3 MBytes 229 Mbits/sec
Interval Transfer Bandwidth
25.0-26.0 sec 30.2 MBytes 253 Mbits/sec
Interval Transfer Bandwidth
26.0-27.0 sec 29.4 MBytes 246 Mbits/sec
Interval Transfer Bandwidth
27.0-28.0 sec 28.4 MBytes 238 Mbits/sec
Interval Transfer Bandwidth
28.0-29.0 sec 29.2 MBytes 245 Mbits/sec
Interval Transfer Bandwidth
29.0-30.0 sec 20.9 MBytes 175 Mbits/sec
Interval Transfer Bandwidth
0.0-30.0 sec 841 MBytes 235 Mbits/sec

无源测试数据
Passive test data

ANT1 S11-VSWR&Return Loss





Frequency(MHZ)	2400		2483	5150	5500	5850
VSWR	1.42		1.21	1.73	1.48	1.60
Return Loss(DB)	-15.14		-20.22	-11.43	-14.21	-12.79

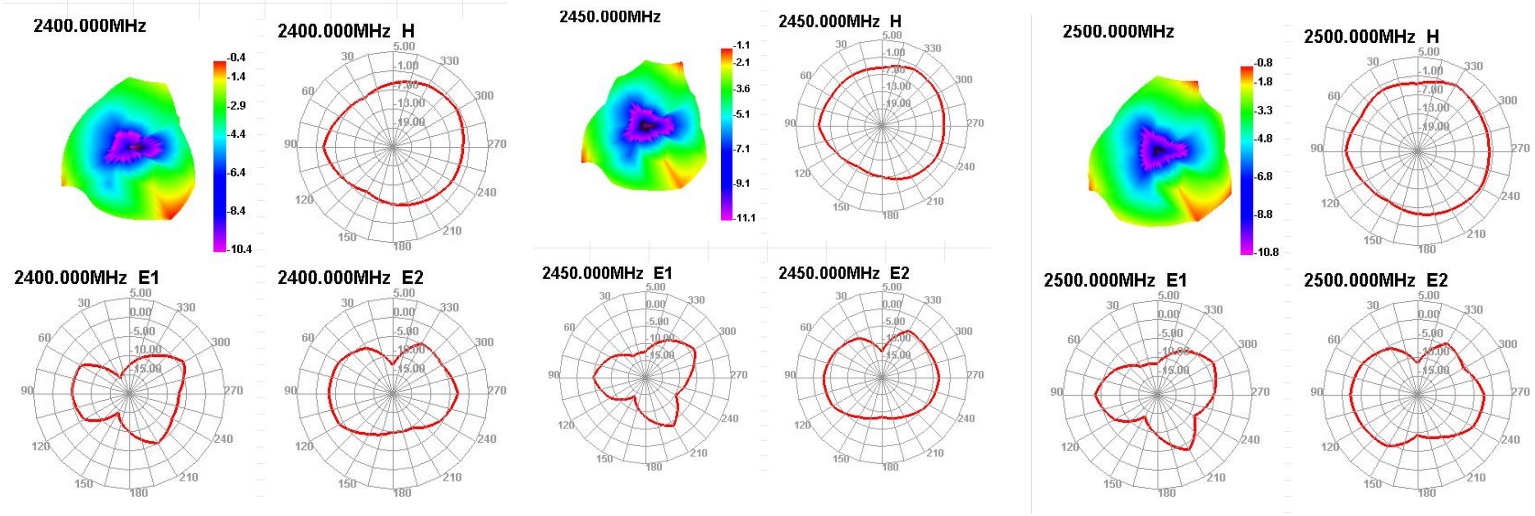
无源测试数据
Passive test data

ANT1 GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	31.76	-4.98	-0.42	-2.57	17.884	13.872	-0.42	-15.42	4.56	0	45.78	46.01
2410	28.7	-5.42	-1.16	-3.31	15.88	12.822	-1.16	-15.63	4.26	0	46.01	46.29
2420	32.16	-4.93	-0.84	-2.99	17.765	14.391	-0.84	-14.65	4.09	0	45.73	46
2430	32.02	-4.95	-1.05	-3.2	17.737	14.284	-1.05	-14.09	3.9	0	46.01	46.36
2440	32.46	-4.89	-1.04	-3.19	17.912	14.55	-1.04	-13.49	3.85	0	46.12	46.48
2450	32.25	-4.92	-1.1	-3.25	17.526	14.72	-1.1	-13.73	3.81	0	46.12	46.54
2460	34.83	-4.58	-0.64	-2.79	18.735	16.096	-0.64	-14.44	3.94	0	46.14	46.52
2470	36.88	-4.33	-0.37	-2.52	19.742	17.134	-0.37	-14.67	3.96	0	46.4	46.8
2480	37.24	-4.29	-0.52	-2.67	19.735	17.506	-0.52	-14.04	3.77	30	46.26	46.64
2490	39.53	-4.03	-0.51	-2.66	20.711	18.816	-0.51	-13.61	3.52	30	46.51	46.91
2500	38.74	-4.12	-0.79	-2.94	20.181	18.559	-0.79	-13.39	3.33	30	46.47	46.86

无源测试数据
Passive test data

ANT1 Direction of figure(2.4/BT)



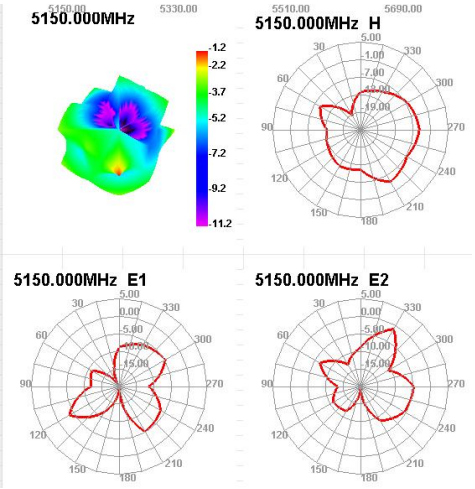
无源测试数据
Passive test data

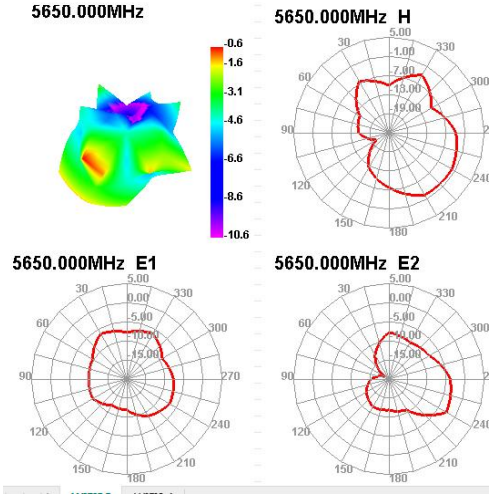
ANT1 GAIN&Efficiency-WIFI 5G

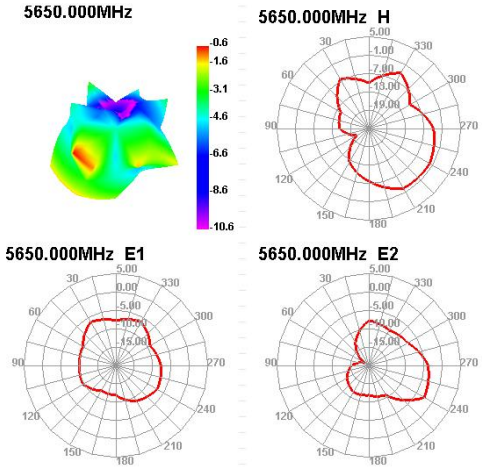
Passive Test For WIFI5G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	14.68	-8.33	-1.17	-3.32	7.433	7.251	-1.17	-21.91	7.16	0	49.82	49.4
5170	15.95	-7.97	-1.12	-3.27	7.852	8.096	-1.12	-22.24	6.85	0	50.13	49.77
5190	16.2	-7.9	-1.82	-3.97	7.589	8.612	-1.82	-21.54	6.08	0	50.42	49.95
5210	19.49	-7.1	-0.68	-2.83	8.791	10.701	-0.68	-19.05	6.42	0	50.88	50.49
5230	17.85	-7.48	-0.73	-2.88	7.836	10.019	-0.73	-20.28	6.75	0	50.42	50.08
5250	21.37	-6.7	0.28	-1.87	9.282	12.091	0.28	-18.74	6.98	0	51.02	50.72
5270	21.41	-6.69	0.54	-1.61	9.298	12.116	0.54	-17.07	7.23	0	50.85	50.6
5290	24	-6.2	0.82	-1.33	10.646	13.355	0.82	-14.93	7.02	30	51.34	51.12
5310	21.69	-6.64	-0.02	-2.17	9.824	11.863	-0.02	-16.76	6.62	30	50.44	50.36
5330	21.15	-6.75	-0.52	-2.67	9.74	11.411	-0.52	-18.4	6.23	30	51.08	51.01
5350	21.89	-6.6	-0.42	-2.57	10.287	11.6	-0.42	-17.97	6.18	30	51.02	51.01
5370	20.55	-6.87	-0.81	-2.96	9.87	10.675	-0.81	-17.22	6.06	0	50.91	50.95
5390	19.52	-7.1	-1	-3.15	9.656	9.862	-1	-19.38	6.09	0	50.46	50.43
5410	21.72	-6.63	-0.35	-2.5	11.029	10.694	-0.35	-21.35	6.29	0	51.18	51.09
5430	21.82	-6.61	-0.23	-2.38	11.227	10.596	-0.23	-21.51	6.38	90	50.69	50.7
5450	22.29	-6.52	-0.02	-2.17	11.741	10.551	-0.02	-21.36	6.5	90	50.71	50.85
5470	21.89	-6.6	0.08	-2.07	11.759	10.133	0.08	-22.09	6.68	90	50.93	50.83
5490	20.96	-6.79	0.13	-2.02	11.367	9.596	0.13	-22.58	6.92	90	50.92	50.79
5510	22.12	-6.55	0.51	-1.64	12.024	10.094	0.51	-20.85	7.06	90	51.18	51.16
5530	21.91	-6.59	0.35	-1.8	11.96	9.95	0.35	-22.38	6.94	90	51.44	51.3
5550	23.48	-6.29	0.52	-1.63	13.024	10.459	0.52	-22.75	6.81	90	51.89	51.76
5570	21.96	-6.58	0.17	-1.98	12.142	9.82	0.17	-22.43	6.75	60	51.42	51.33
5590	22.9	-6.4	0.25	-1.9	12.607	10.291	0.25	-21.88	6.65	60	51.71	51.76
5610	20	-6.99	-0.49	-2.64	10.977	9.023	-0.49	-22.5	6.5	60	51.17	51.22
5630	20.47	-6.89	-0.38	-2.53	11.239	9.231	-0.38	-19.93	6.51	60	51.78	51.77
5650	19.18	-7.17	-0.61	-2.76	10.346	8.831	-0.61	-20.64	6.57	180	51.47	51.55
5670	21.97	-6.58	0.05	-2.1	11.649	10.326	0.05	-18.98	6.63	180	52.12	52.28
5690	20.36	-6.91	-0.57	-2.72	10.647	9.717	-0.57	-18.66	6.34	60	52.12	52.25
5710	22.21	-6.53	-0.42	-2.57	11.567	10.644	-0.42	-18.62	6.12	60	51.95	52.05
5730	23.14	-6.36	-0.41	-2.56	11.973	11.164	-0.41	-19.74	5.95	60	51.59	51.69
5750	22.26	-6.53	-0.69	-2.84	11.471	10.788	-0.69	-20.44	5.83	0	51.12	51.15
5770	24.27	-6.15	-0.7	-2.85	12.375	11.895	-0.7	-20.06	5.45	0	51.02	51.06
5790	22.22	-6.53	-0.8	-2.95	11.15	11.066	-0.8	-22.37	5.74	0	51.08	51.16
5810	24.14	-6.17	-0.01	-2.16	12.064	12.073	-0.01	-23.8	6.16	0	51.36	51.43
5830	23.81	-6.23	-0.02	-2.17	11.924	11.887	-0.02	-22.38	6.21	0	51.65	51.66
5850	27	-5.69	0.79	-1.36	13.5	13.496	0.79	-19.3	6.47	0	51.88	52.05

无源测试数据
Passive test data

ANT1 Direction of figure(5G)

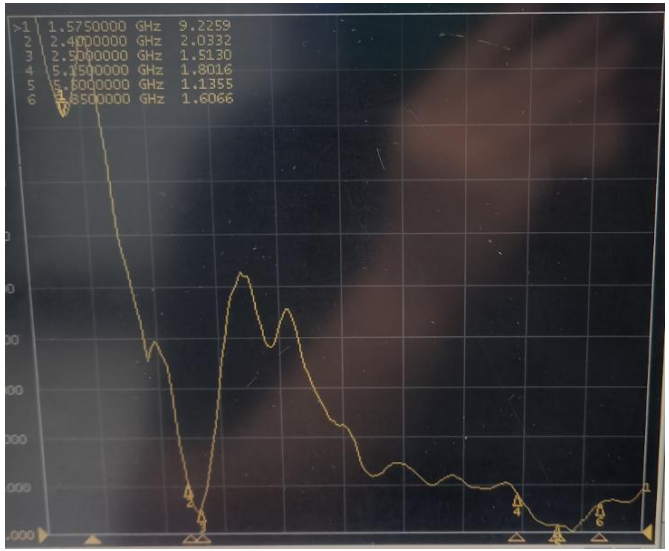


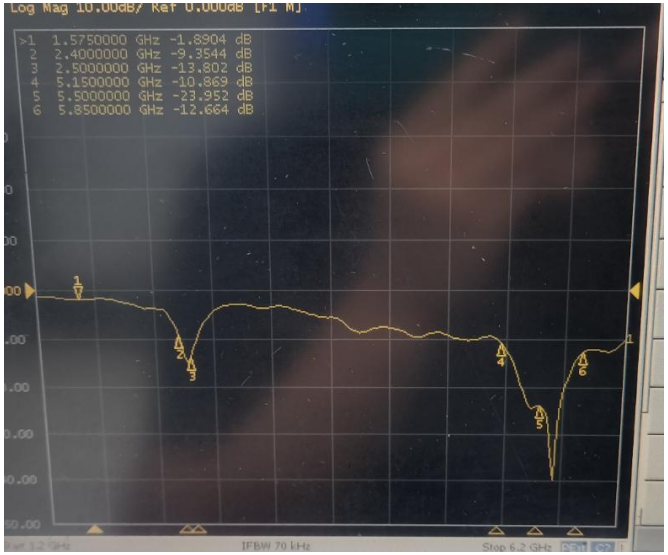




无源测试数据
Passive test data

ANT1 S11-VSWR&Return Loss





Frequency(MHZ)	2400		2483	5150	5500	5850
VSWR	2.03		1.51	1.80	1.13	1.60
Return Loss(DB)	-9.35		-13.80	-10.86	-23.95	-12.64

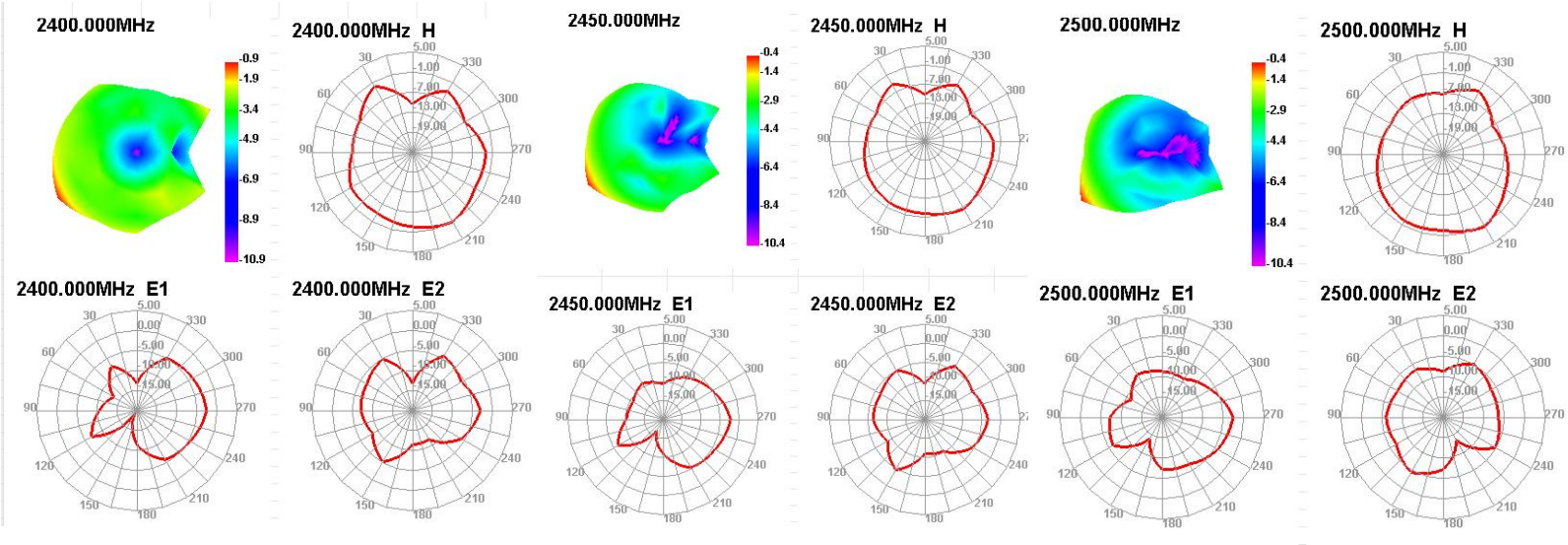
无源测试数据
Passive test data

ANT2 GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	28.75	-5.41	-0.9	-3.05	15.254	13.497	-0.9	-21.05	4.52	90	45.78	46.01
2410	26.82	-5.72	-1.02	-3.17	14.096	12.726	-1.02	-21.23	4.7	90	46.01	46.29
2420	29	-5.38	-0.44	-2.59	15.152	13.846	-0.44	-19.68	4.94	60	45.73	46
2430	28.2	-5.5	-0.42	-2.57	14.514	13.687	-0.42	-18.77	5.08	60	46.01	46.36
2440	28.35	-5.47	-0.34	-2.49	14.336	14.013	-0.34	-17.49	5.13	60	46.12	46.48
2450	27.71	-5.57	-0.38	-2.53	13.735	13.978	-0.38	-16.5	5.19	60	46.12	46.54
2460	27.79	-5.56	-0.29	-2.44	13.597	14.188	-0.29	-15.41	5.27	90	46.14	46.52
2470	28.75	-5.41	0.05	-2.1	14.015	14.73	0.05	-14.54	5.46	90	46.4	46.8
2480	27.85	-5.55	-0.05	-2.2	13.535	14.317	-0.05	-14.17	5.5	90	46.26	46.64
2490	27.9	-5.54	-0.1	-2.25	13.588	14.312	-0.1	-14.5	5.44	30	46.51	46.91
2500	26.88	-5.71	-0.42	-2.57	13.001	13.878	-0.42	-13.97	5.29	30	46.47	46.86

无源测试数据
Passive test data

ANT2 Direction of figure(2.4/BT)



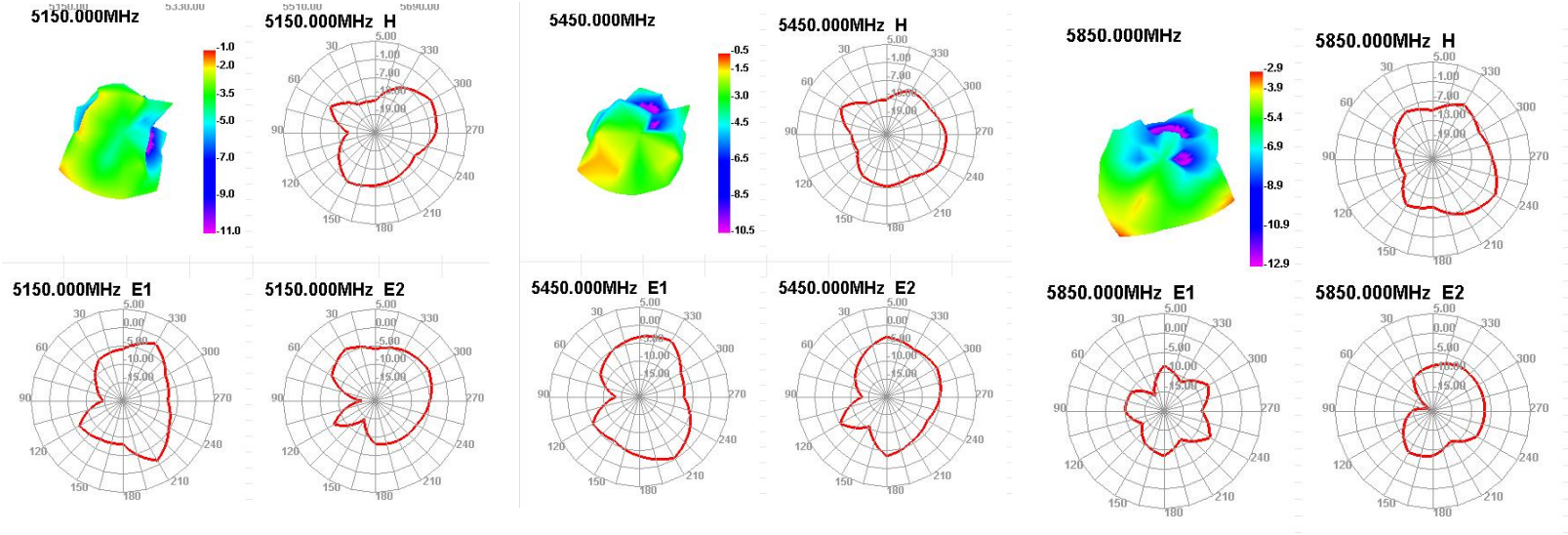
无源测试数据
Passive test data

ANT2 GAIN&Efficiency-WIFI 5G

Passive Test For WIFI5G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	22.67	-6.45	-0.96	-3.11	13.135	9.531	-0.96	-16.31	5.49	0	49.82	49.4
5170	20.31	-6.92	-1.54	-3.69	11.728	8.586	-1.54	-17.36	5.38	0	50.13	49.77
5190	24.81	-6.05	-0.32	-2.47	14.155	10.655	-0.32	-18.72	5.73	0	50.42	49.95
5210	24.76	-6.06	-0.05	-2.2	13.87	10.89	-0.05	-21.51	6.01	0	50.88	50.49
5230	25.35	-5.96	0.17	-1.98	14.036	11.31	0.17	-23.36	6.13	0	50.42	50.08
5250	27.94	-5.54	0.78	-1.37	15.481	12.46	0.78	-21.59	6.31	0	51.02	50.72
5270	29.08	-5.36	1.16	-0.99	16.277	12.798	1.16	-19.5	6.52	0	50.85	50.6
5290	31.64	-5	1.44	-0.71	17.844	13.801	1.44	-18.54	6.44	0	51.34	51.12
5310	27.95	-5.54	0.56	-1.59	15.752	12.199	0.56	-18.39	6.09	0	50.44	50.36
5330	27.54	-5.6	0.41	-1.74	15.56	11.985	0.41	-19.22	6.01	0	51.08	51.01
5350	27.87	-5.55	0.37	-1.78	15.905	11.968	0.37	-19.03	5.92	0	51.02	51.01
5370	27.59	-5.59	0.16	-1.99	15.825	11.761	0.16	-17.35	5.76	0	50.91	50.95
5390	24.83	-6.05	-0.61	-2.76	14.144	10.686	-0.61	-16.87	5.44	0	50.46	50.43
5410	27.31	-5.64	-0.2	-2.35	15.269	12.038	-0.2	-16.47	5.44	0	51.18	51.09
5430	24.3	-6.14	-0.61	-2.76	13.503	10.793	-0.61	-16.67	5.53	0	50.69	50.7
5450	25.46	-5.94	-0.47	-2.62	14.051	11.412	-0.47	-15.89	5.47	0	50.71	50.85
5470	24.06	-6.19	-0.74	-2.89	13.138	10.926	-0.74	-17.98	5.44	30	50.93	50.83
5490	23.28	-6.33	-0.83	-2.98	12.498	10.779	-0.83	-18.82	5.5	0	50.92	50.79
5510	22.02	-6.57	-0.94	-3.09	11.715	10.306	-0.94	-17.34	5.63	0	51.18	51.16
5530	22.48	-6.48	-0.75	-2.9	11.858	10.617	-0.75	-14.92	5.73	0	51.44	51.3
5550	22.94	-6.39	-0.62	-2.77	11.967	10.972	-0.62	-15.4	5.78	30	51.89	51.76
5570	23.57	-6.28	-0.6	-2.75	12.089	11.48	-0.6	-19.2	5.68	60	51.42	51.33
5590	22.92	-6.4	-0.86	-3.01	11.717	11.199	-0.86	-17.16	5.53	60	51.71	51.76
5610	21.99	-6.58	-1.21	-3.36	11.318	10.669	-1.21	-16.02	5.37	60	51.17	51.22
5630	20.41	-6.9	-1.49	-3.64	10.672	9.742	-1.49	-17.11	5.41	60	51.78	51.77
5650	19.93	-7	-1.68	-3.83	10.453	9.478	-1.68	-19.37	5.33	60	51.47	51.55
5670	20.94	-6.79	-1.73	-3.88	10.932	10.01	-1.73	-22.9	5.06	60	52.12	52.28
5690	18.69	-7.28	-2.27	-4.42	9.868	8.825	-2.27	-21.29	5.01	60	52.12	52.25
5710	19.99	-6.99	-2.43	-4.58	10.735	9.253	-2.43	-19.14	4.56	60	51.95	52.05
5730	18.43	-7.34	-3.08	-5.23	10.004	8.428	-3.08	-20.17	4.27	60	51.59	51.69
5750	16.42	-7.85	-3.41	-5.56	8.913	7.504	-3.41	-21.04	4.44	60	51.12	51.15
5770	16.02	-7.95	-3.33	-5.48	8.742	7.281	-3.33	-21.76	4.62	60	51.02	51.06
5790	14.16	-8.49	-3.59	-5.74	7.853	6.305	-3.59	-21.96	4.9	0	51.08	51.16
5810	14.31	-8.44	-3.36	-5.51	8.048	6.258	-3.36	-21.23	5.08	0	51.36	51.43
5830	13.86	-8.58	-3.41	-5.56	7.796	6.062	-3.41	-19.67	5.17	0	51.65	51.66
5850	14.4	-8.42	-2.92	-5.07	8.075	6.326	-2.92	-20.13	5.5	0	51.88	52.05

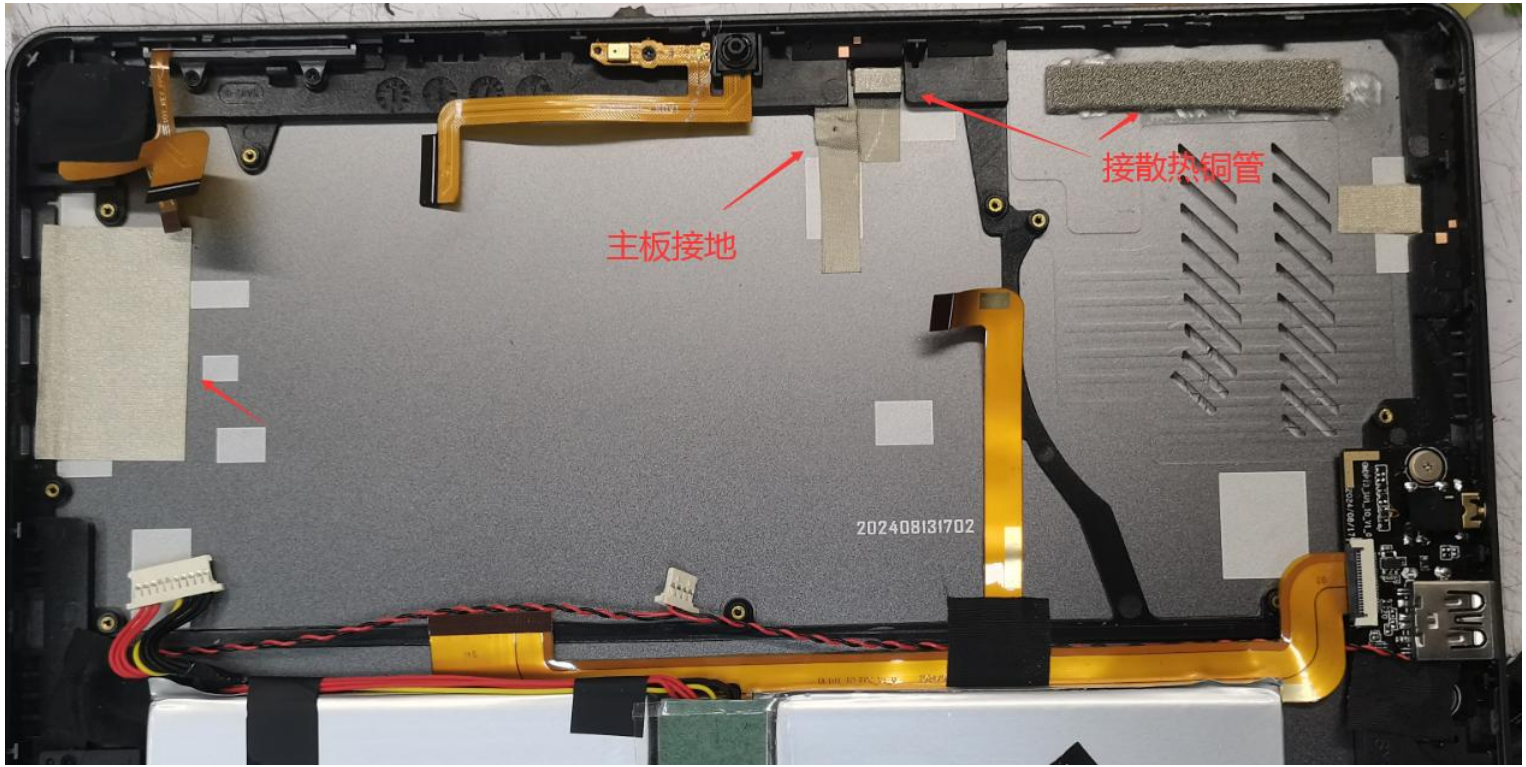
无源测试数据
Passive test data

ANT2 Direction of figure(5G)



环境处理

Environmental treatment



环境处理

Environmental treatment

合作共赢