



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: 长城

MN: WM122031S

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MD: 黄清清

MP: 13005478517

Date: 2025. 12. 17

REV :V1. 0



ANTENNA

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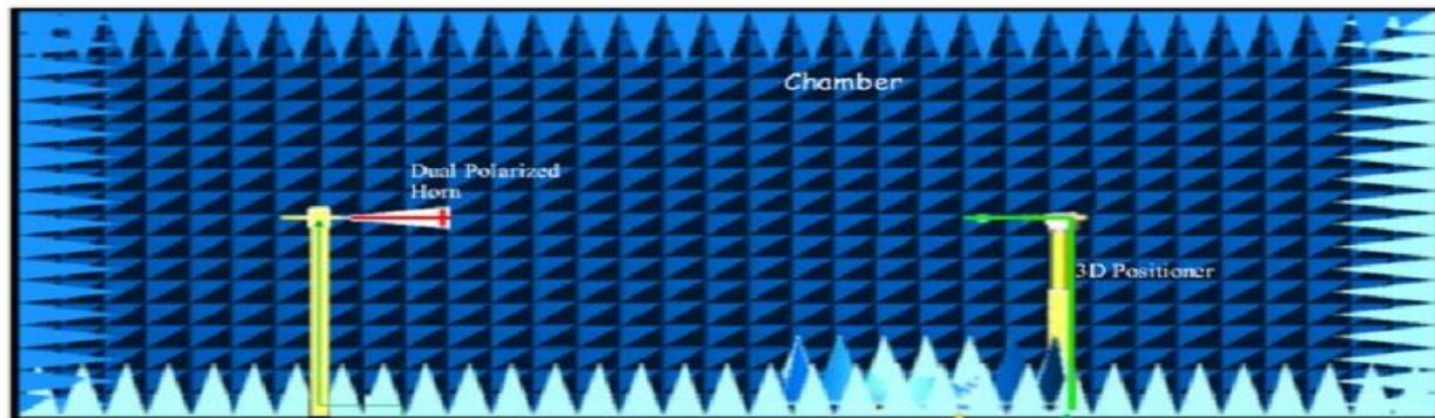
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测试信息

Test information

G/W/B ANT	BT/WIFI	2.4/5G	FPC	PIFA	NO
	GPS	1.575G	FPC	PIFA	NO

OTA Chamber Overview

0.1~12.5Ghz
RF Switch BoxWireless
Communications
Test Set 1Wireless
Communications
Test Set 2Network
Analyzer

Standard	
Passive	Agilent HP8753/E5062/E5071
GSM	Agilent 8960
CDMA2000	Agilent 8960
WCDMA	Agilent 8960
TDSCDMA	Agilent 8960
LTE	RS CMW500
BT	RS CMU500/200
WIFI	Agilent N4010

RF Link

GPIB Link

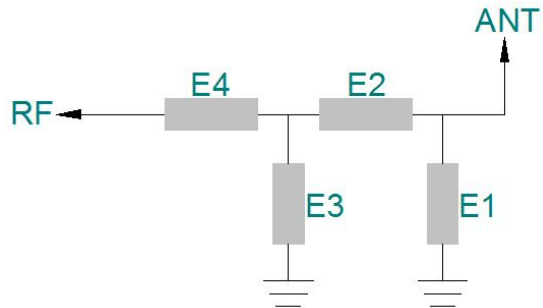
Optical Link

Serial Link

天线位置

Antenna position





	电容 (PF)	电感 (NH)
E1(0402)		
E2(0402)		
E3(0402)		
E4(0402)		

匹配电路原理图&位号图

GPS冷启动实测效果以下：
CN值40以上3颗
CN值35以上5颗
实际定位10+颗

备注：
GPS搜星测试。会因时间段
及地域而存在差异。以上数
据为我司测试（空旷地带）
最佳数据





Wifi/BT天线实测

Wifi Antenna test

WIFI

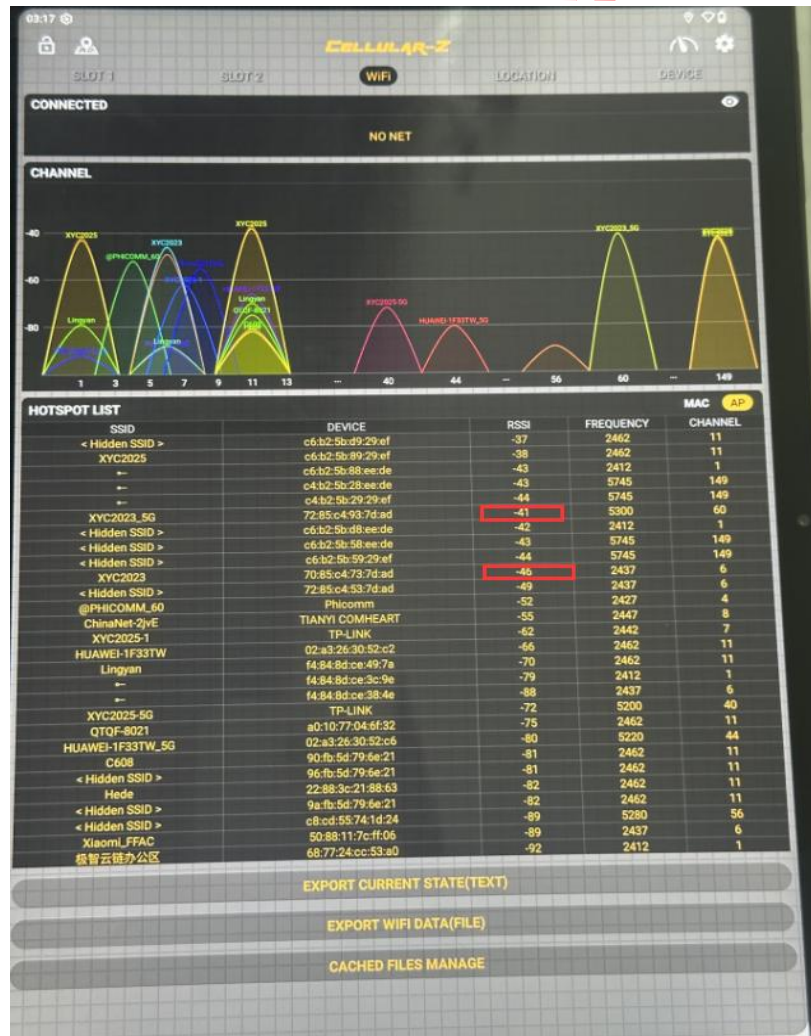
测试环境：开放空间

测试工具：Wifi Analytical Assistant

测试距离：10m

信号强度：2.4G :-41dBm 5G:-45dBm

测试结果如右图



BT

测试环境：开放空间(通道)

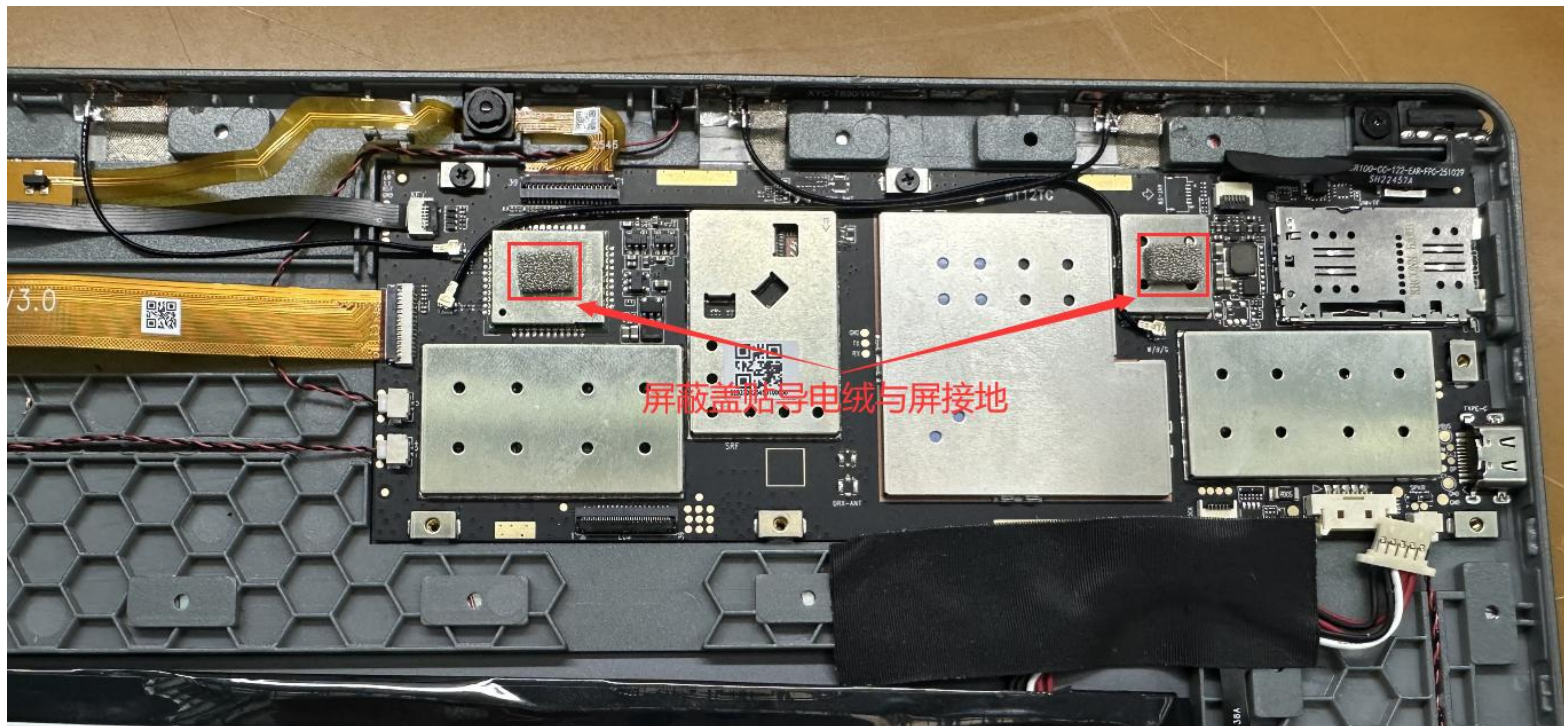
测试工具：蓝牙音响

测试距离：10+m

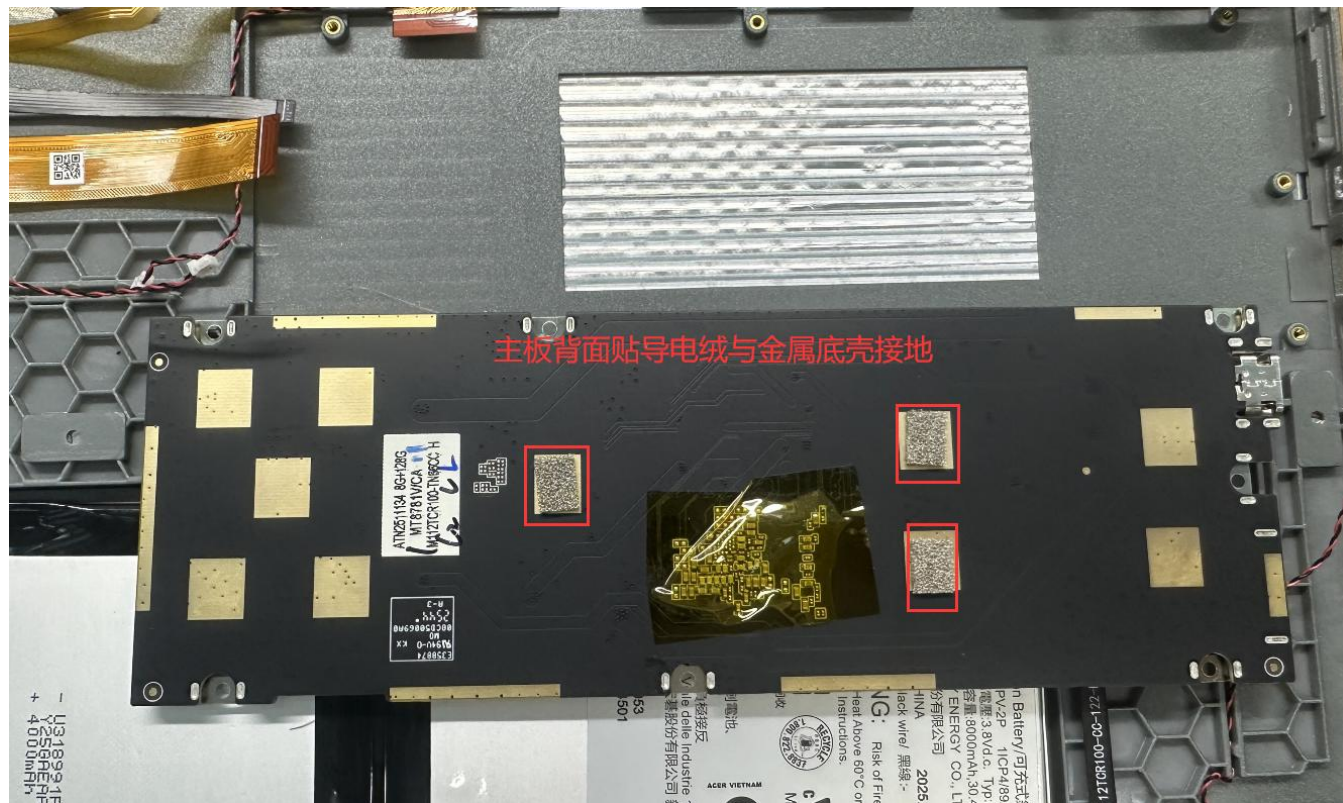
结果：播放音乐流畅，无杂音。

环境处理

Environmental treatment

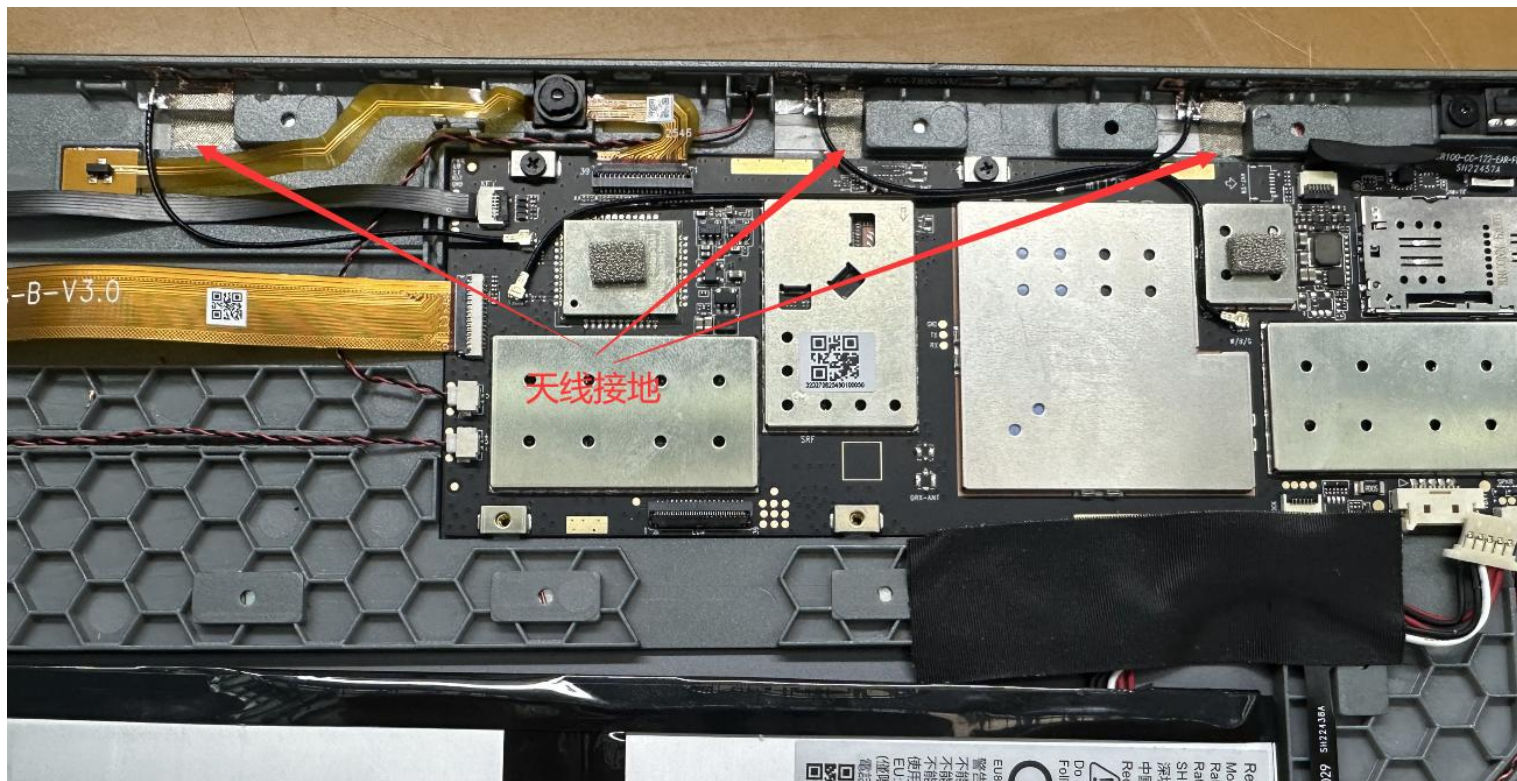


Environmental treatment



环境处理

Environmental treatment





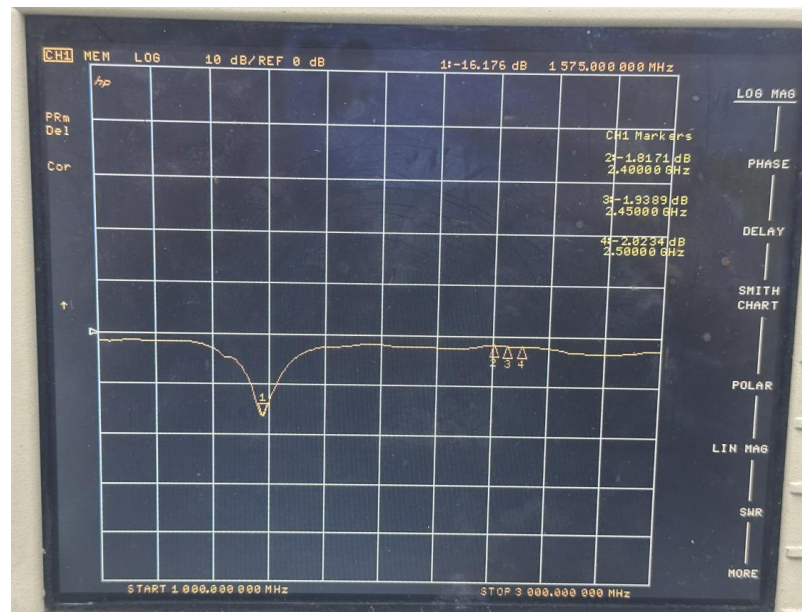
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无源测试数据
Passive test data

GPS ANT S11-VSWR&Return Loss



Frequency (MHZ)	1575
VSWR	1.36
Return Loss (DB)	-16.17



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无源测试数据
Passive test data

GPS ANT GAIN&Efficiency-GPS

Passive Test For GPS								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
1570	21.67	-6.64	-1.6	-3.75	10.771	10.898	-1.6	-15.37
1575	22.37	-6.5	-1.34	-3.49	11.11	11.261	-1.34	-18.41
1580	22.91	-6.4	-1.13	-3.28	11.388	11.524	-1.13	-20.96



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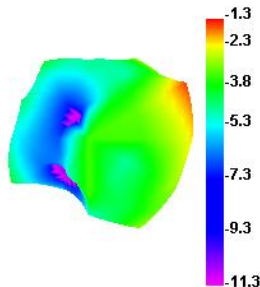
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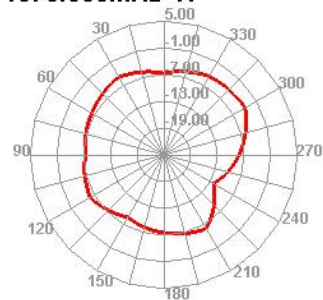
无源测试数据
Passive test data

GPS ANT Direction of figure(GPS)

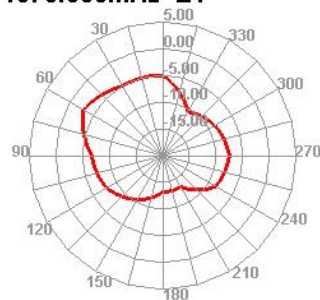
1575.000MHz



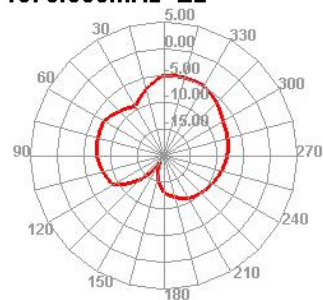
1575.000MHz H



1575.000MHz E1



1575.000MHz E2

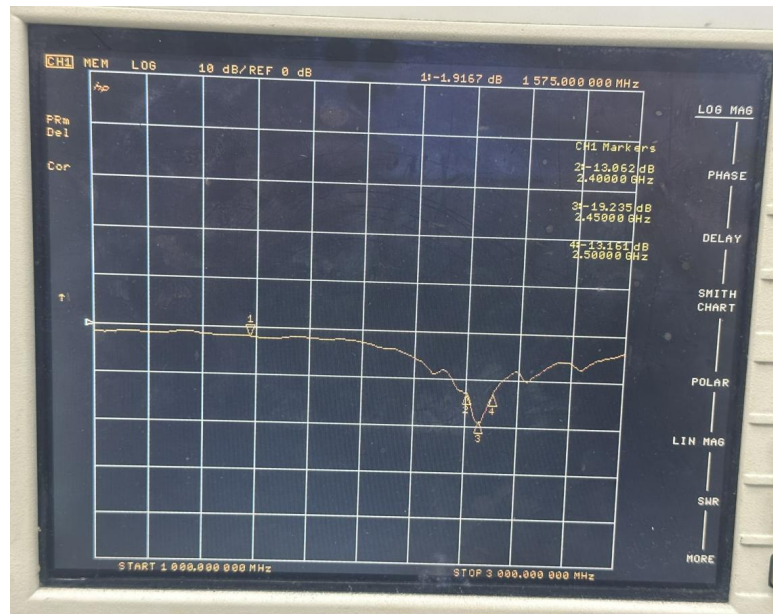
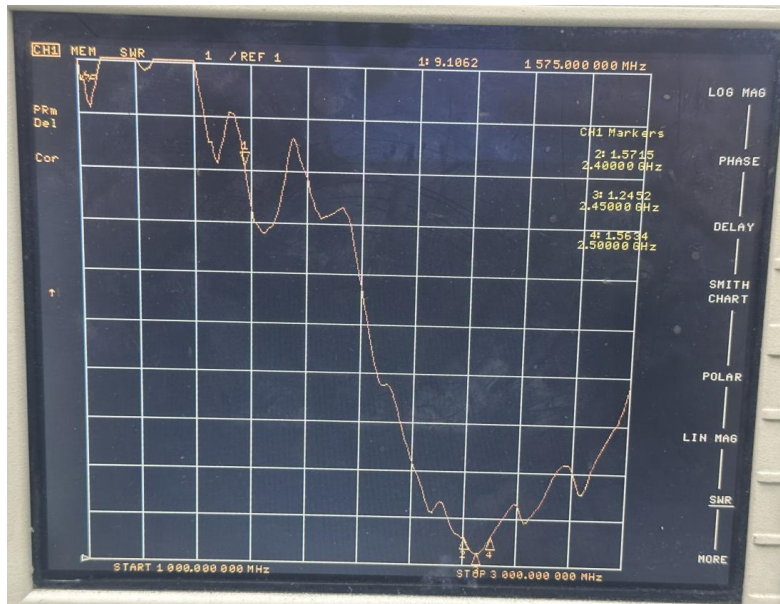




无源测试数据

Passive test data

BT ANT S11-VSWR&Return Loss



Frequency (MHZ)	2400	2450	2500
VSWR	1.57	1.24	1.56
Return Loss (DB)	-13.06	-19.23	-13.16



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无源测试数据

Passive test data

BT ANT GAIN&Efficiency-BT

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	28.99	-5.38	0.66	-1.49	13.271	15.719	0.66	-13.85
2410	28.82	-5.4	0.46	-1.69	13.72	15.102	0.46	-14.72
2420	28.48	-5.46	0.21	-1.94	14.022	14.454	0.21	-14.2
2430	28.39	-5.47	-0.32	-2.47	14.404	13.988	-0.32	-14.59
2440	28.81	-5.4	-0.77	-2.92	14.849	13.962	-0.77	-16.75
2450	28.89	-5.39	-0.64	-2.79	15.019	13.868	-0.64	-17.97
2460	29.31	-5.33	-0.54	-2.69	15.238	14.076	-0.54	-17.4
2470	31.49	-5.02	-0.21	-2.36	16.369	15.122	-0.21	-15.97
2480	32.55	-4.87	-0.06	-2.21	17.043	15.51	-0.06	-15.31
2490	31.62	-5	-0.19	-2.34	16.697	14.923	-0.19	-15.17
2500	33.03	-4.81	0.01	-2.14	17.485	15.547	0.01	-14.88



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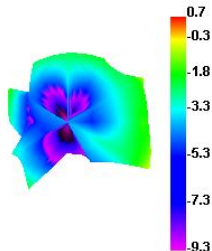
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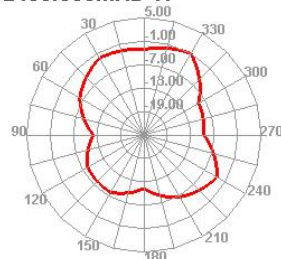
无源测试数据
Passive test data

BT ANT Direction of figure(BT)

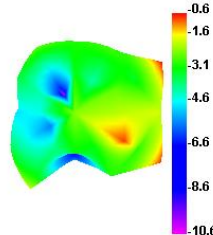
2400.000MHz



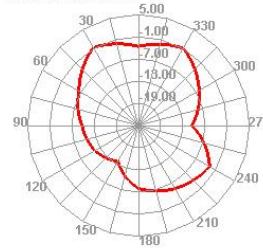
2400.000MHz H



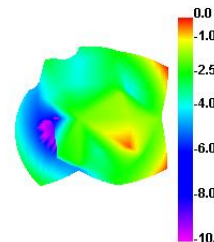
2450.000MHz



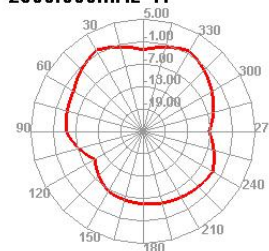
2450.000MHz H



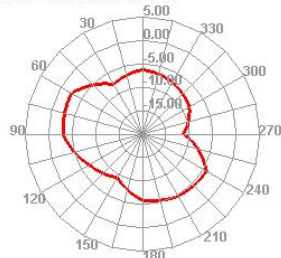
2500.000MHz



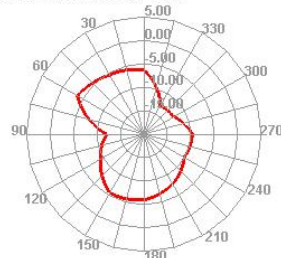
2500.000MHz H



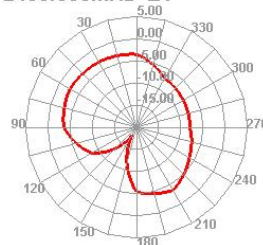
2400.000MHz E1



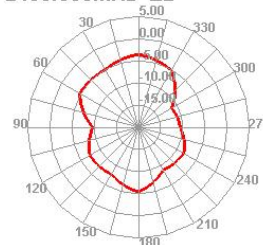
2400.000MHz E2



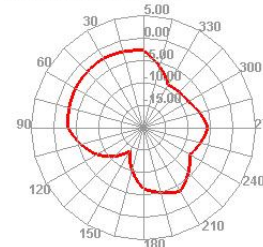
2450.000MHz E1



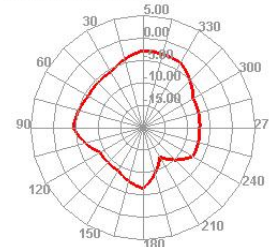
2450.000MHz E2



2500.000MHz E1



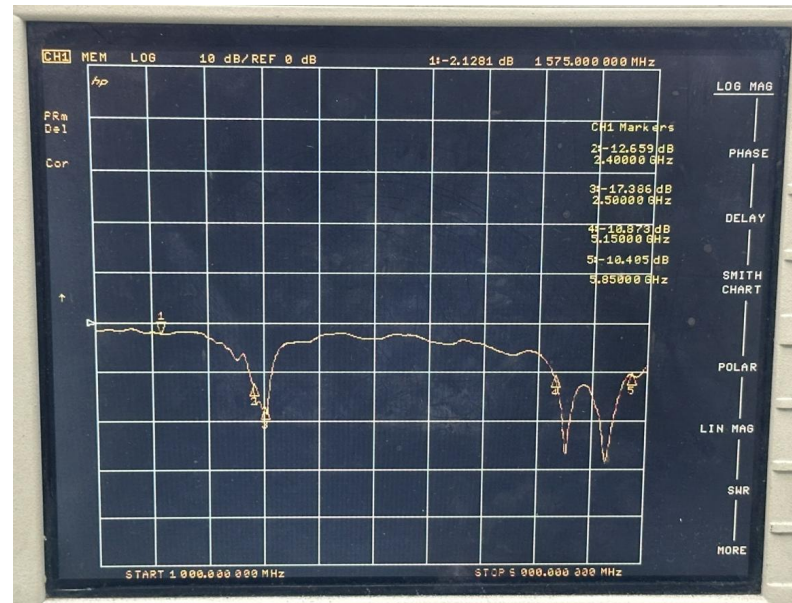
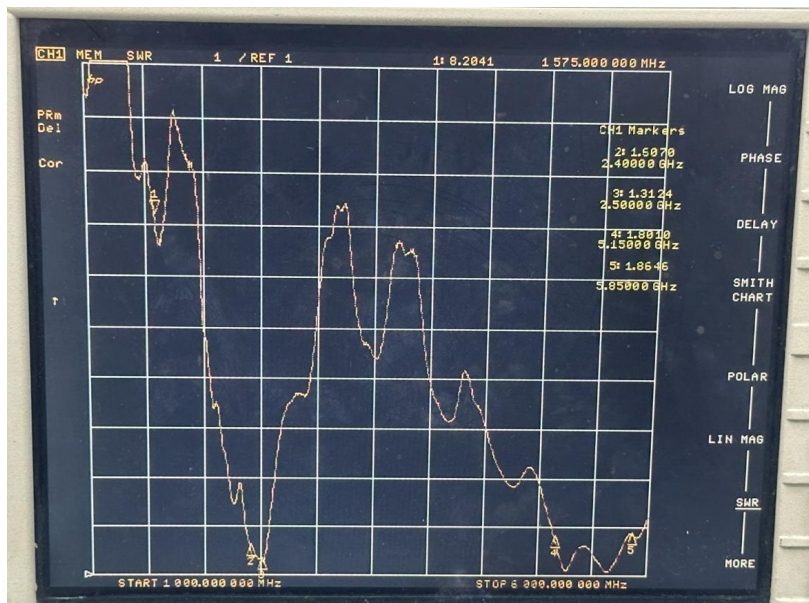
2500.000MHz E2





无源测试数据 Passive test data

WIFI ANT S11-VSWR&Return Loss



Frequency (MHZ)	2400	2500	5150	5850
VSWR	1.6	1.31	1.8	1.86
Return Loss (DB)	-12.65	-17.38	-10.87	-10.4



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无源测试数据

Passive test data

WIFI ANT GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	30.51	-5.16	-0.38	-2.53	16.411	14.097	-0.38	-13.88
2410	31.14	-5.07	-0.68	-2.83	16.762	14.382	-0.68	-13.54
2420	29.65	-5.28	-1.01	-3.16	15.899	13.749	-1.01	-14.37
2430	27.91	-5.54	-1.42	-3.57	14.879	13.036	-1.42	-12.75
2440	27.37	-5.63	-1.86	-4.01	14.488	12.884	-1.86	-13.16
2450	26.94	-5.7	-2.08	-4.23	14.149	12.79	-2.08	-13.71
2460	26.71	-5.73	-2.61	-4.76	13.85	12.864	-2.61	-14.19
2470	29.77	-5.26	-2.35	-4.5	15.267	14.502	-2.35	-14.2
2480	31.65	-5	-2.42	-4.57	16.239	15.413	-2.42	-13.79
2490	31.17	-5.06	-2.42	-4.57	16.072	15.096	-2.42	-12.56
2500	32.92	-4.83	-1.94	-4.09	17.106	15.811	-1.94	-11.1



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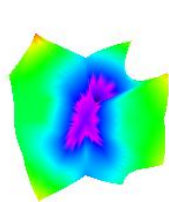
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无源测试数据

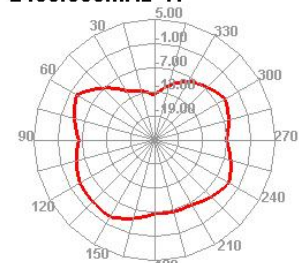
Passive test data

WIFI ANT Direction of figure(2.4/BT)

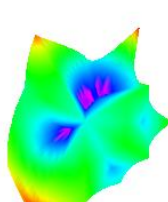
2400.000MHz



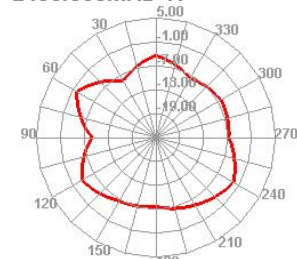
2400.000MHz H



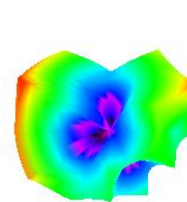
2450.000MHz



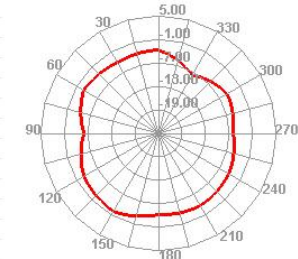
2450.000MHz H



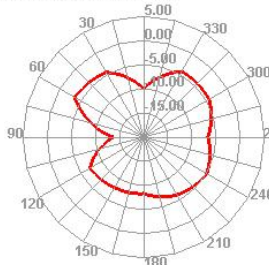
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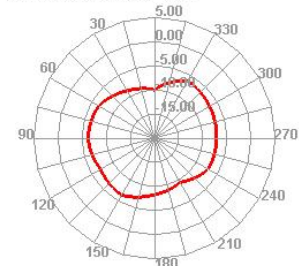
2500.000MHz H



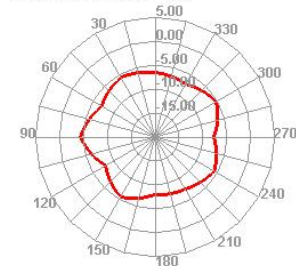
2400.000MHz E1



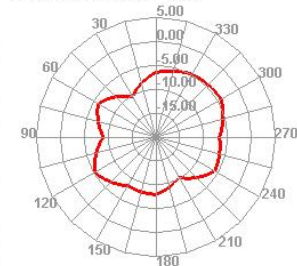
2400.000MHz E2



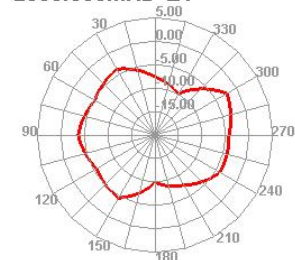
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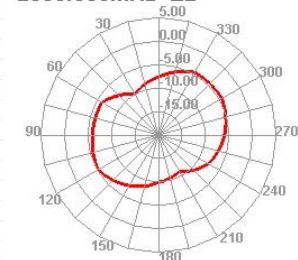
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2





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无源测试数据
Passive test data

WIFI ANT GAIN&Efficiency-WIFI 5G

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
5150	31.73	-4.99	0.44	-1.71	18.786	12.943	0.44	-14.87
5170	34.73	-4.59	1.27	-0.88	20.977	13.751	1.27	-16.69
5190	34.72	-4.59	1.28	-0.87	21.251	13.471	1.28	-17.3
5210	38.6	-4.13	1.8	-0.35	23.831	14.766	1.8	-14.38
5230	35.04	-4.55	1.29	-0.86	21.604	13.44	1.29	-14.7
5250	39.01	-4.09	1.46	-0.69	23.929	15.083	1.46	-14.25
5270	40.47	-3.93	1.36	-0.79	24.882	15.588	1.36	-14.64
5290	37.95	-4.21	0.82	-1.33	23.192	14.763	0.82	-16.02
5310	38.21	-4.18	0.98	-1.17	23.138	15.069	0.98	-15.08
5330	35.64	-4.48	0.63	-1.52	21.251	14.388	0.63	-13.41
5350	37.03	-4.31	0.44	-1.71	21.695	15.332	0.44	-13.12
5370	35.82	-4.46	0.3	-1.85	20.853	14.964	0.3	-13.99
5390	37.81	-4.22	0.45	-1.7	21.949	15.857	0.45	-14.4
5410	36.42	-4.39	0.2	-1.95	21.062	15.353	0.2	-16.18
5430	38.54	-4.14	0.4	-1.75	22.604	15.936	0.4	-16.67
5450	37.73	-4.23	0.35	-1.8	22.508	15.224	0.35	-14.48
5470	38.24	-4.17	0.49	-1.66	22.948	15.291	0.49	-14.32
5490	40.54	-3.92	0.51	-1.64	24.116	16.422	0.51	-17
5510	39.56	-4.03	0.01	-2.14	23.464	16.101	0.01	-22.58
5530	39.72	-4.01	-0.15	-2.3	23.483	16.241	-0.15	-21.47
5550	40.43	-3.93	0.14	-2.01	23.901	16.533	0.14	-17.76
5570	39.02	-4.09	0.02	-2.13	23.023	15.995	0.02	-16.53
5590	39.01	-4.09	0.01	-2.14	23.001	16.009	0.01	-15.78
5610	34.63	-4.61	-0.61	-2.76	20.238	14.391	-0.61	-17.59
5630	33.35	-4.77	-0.37	-2.52	19.217	14.135	-0.37	-19.48
5650	28.84	-5.4	-0.48	-2.63	16.203	12.636	-0.48	-21.23
5670	33.87	-4.7	0.29	-1.86	18.697	15.176	0.29	-20.96
5690	24.31	-6.14	-1.4	-3.55	13.173	11.133	-1.4	-22.24
5710	30.01	-5.23	-0.75	-2.9	16.206	13.8	-0.75	-22.67
5730	22.24	-6.53	-2.56	-4.71	11.923	10.322	-2.56	-24.15
5750	25.38	-5.95	-1.89	-4.04	13.493	11.888	-1.89	-21.21
5770	22.95	-6.39	-2.26	-4.41	11.935	11.016	-2.26	-18.67
5790	23.47	-6.3	-1.94	-4.09	11.945	11.521	-1.94	-16.57
5810	22.77	-6.43	-1.78	-3.93	11.385	11.381	-1.78	-15.03
5830	24.25	-6.15	-1.38	-3.53	12.185	12.063	-1.38	-15.64
5850	23.19	-6.35	-1.62	-3.77	11.706	11.485	-1.62	-18.3



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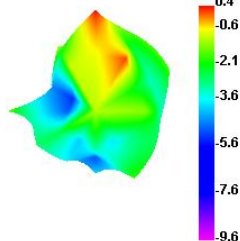
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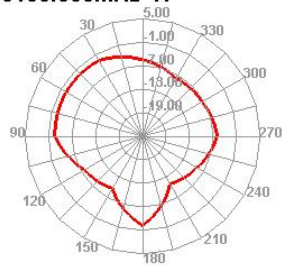
无源测试数据
Passive test data

WIFI ANT Direction of figure(5G)

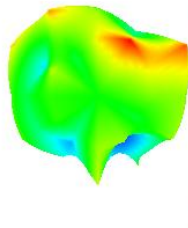
5150.000MHz



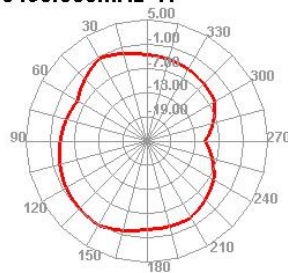
5150.000MHz H



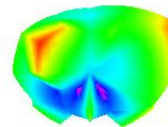
5490.000MHz



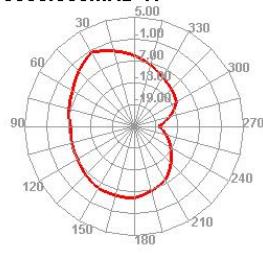
5490.000MHz H



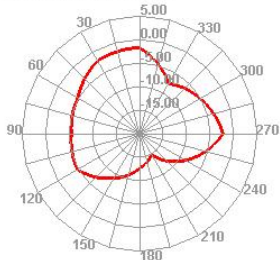
5850.000MHz



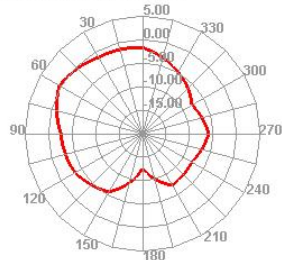
5850.000MHz H



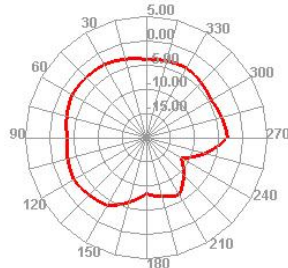
5150.000MHz E1



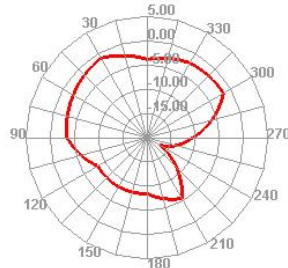
5150.000MHz E2



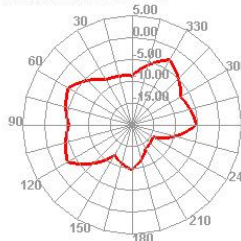
5490.000MHz E1



5490.000MHz E2



5850.000MHz E1



5850.000MHz E2

