



ANTENNA

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: WM1003S

RF: 戴进平

MD: 黄菁菁

MP: 19918388579

Date: 2023. 4. 13

REV :V1. 2

*深圳市宝安区福永镇福海大道塘尾社区塘尾股份商务大厦1506
1506, Tangwei Stock Business Building, Tangwei Community,
Fuhai Avenue, Fuyong Town, Bao'an District, Shenzhen*



ANTENNA

深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

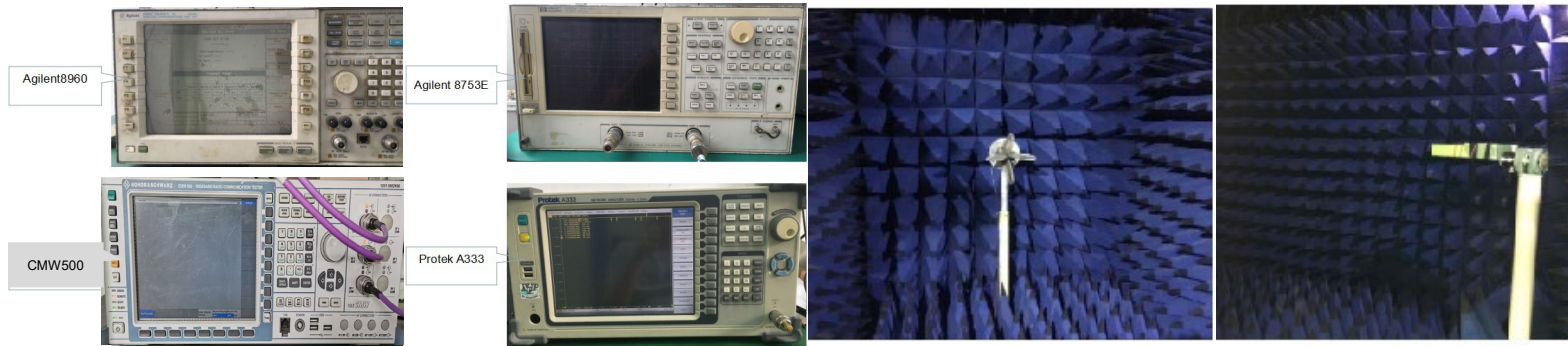
测试信息 Test information

	Antenna band	Antenna state	Antenna form	Match changes	Note
Main ANT	2G				
	3G			NO	
	4G				
AUX ANT	BT/WIFI	2.4/5G	FPC	PIFA	NO
	GPS	1.575G			NO
	DIV				NO

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





有源测试数据 Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	13.24	CH1 11Mbps	-83.50
2437	CH6 11Mbps	13.43	CH6 11Mbps	-83.32	
2467	CH11 11Mbps	12.85	CH11 11Mbps	-83.85	
802.11a		TRP		TIS	
	5180	CH36 54Mbps	10.81	CH36 54Mbps	-73.45
	5300	CH60 54Mbps	10.63	CH60 54Mbps	-72.19
	5805	CH161 54Mbps	9.23	CH161 54Mbps	-70.23



ANTENNA

GPS搜星测试

GPS star search test

GPS冷启动实测效果以下：

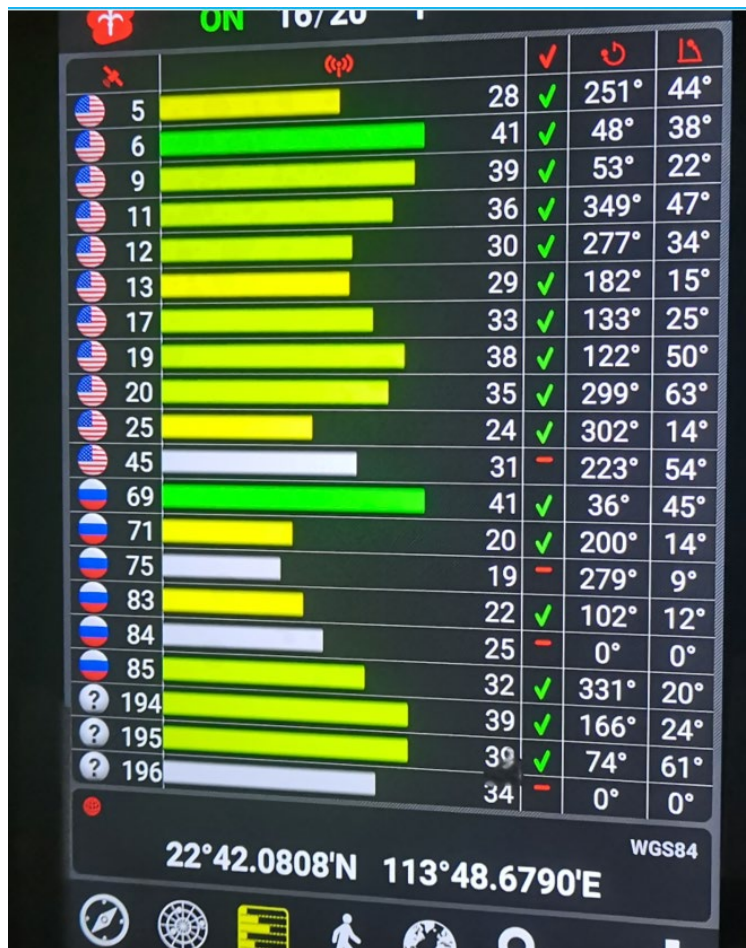
CN值40以上3颗

CN值35以上5+颗

实际定位8+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:-56dBm

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

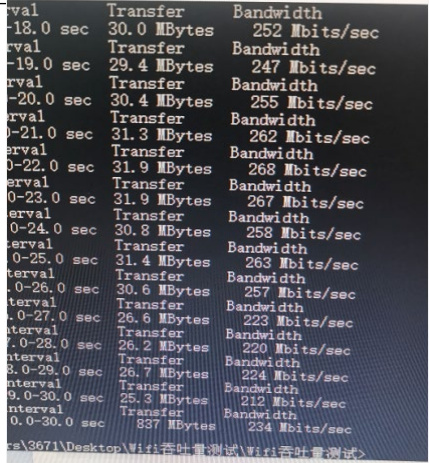
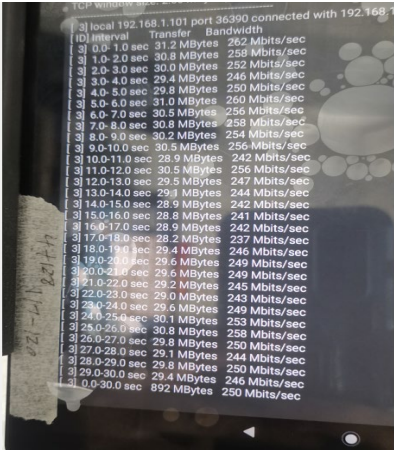
测试距离：10m

结果：播放音乐流畅，无杂音。

吞吐量测试 Throughput test

2.4G wifi 吞吐量测试			
上行	50.5M	下行	42.8M
图片			
备注			

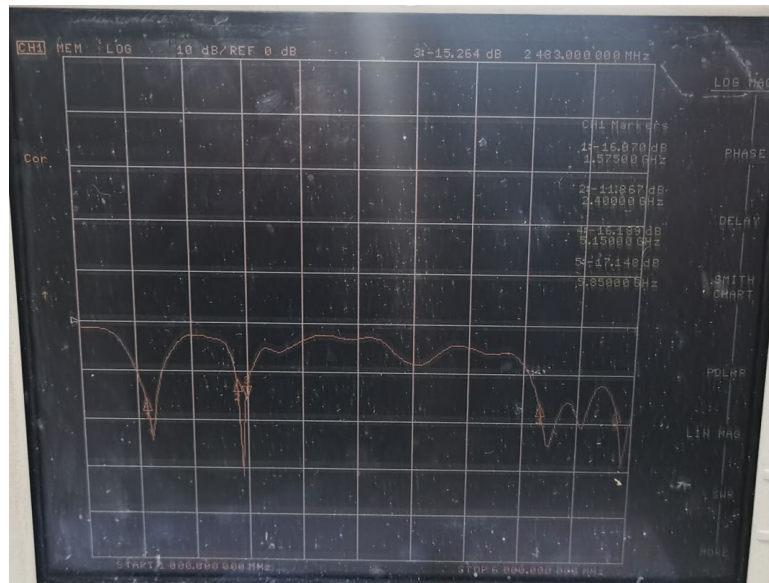
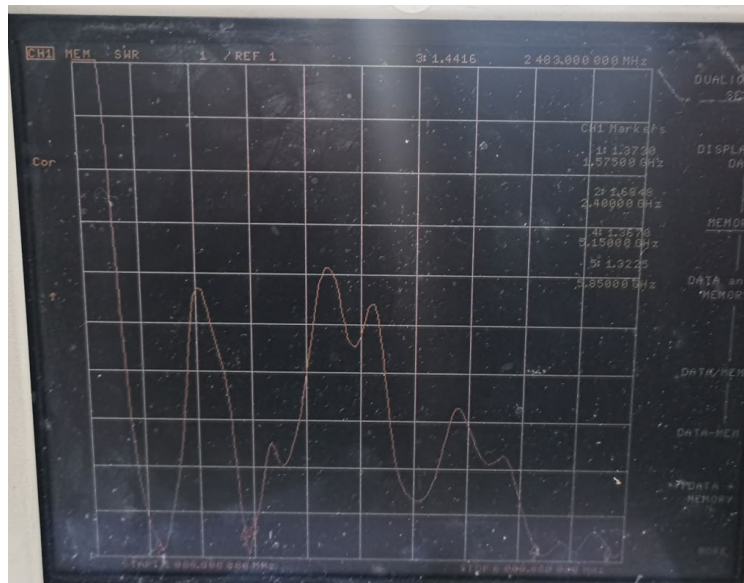
吞吐量测试 Throughput test

5G wifi 吞吐量测试			
上行	234M	下行	250M
图片		图片	
备注			



无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	1575	2400	2483	5200	5850
VSWR	1.37	1.69	1.36	1.36	1.32
Return Loss (DB)	-16.0	-11.8	-15.2	-16.1	-17.1

无源测试数据
Passive test data

ANT1 GAIN&Efficiency-GPS

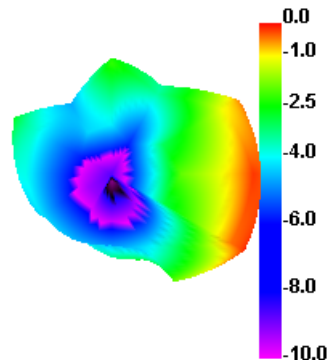
Passive Test For GPS						
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)
1560	35.78	-4.46	-0.07	-2.22	18.318	17.463
1565	36.31	-4.4	0.34	-1.81	18.616	17.698
1570	35.75	-4.47	0.12	-2.03	18.313	17.441
1575	35.96	-4.44	0.01	-2.14	18.442	17.52
1580	37.03	-4.31	0.12	-2.03	19.007	18.019



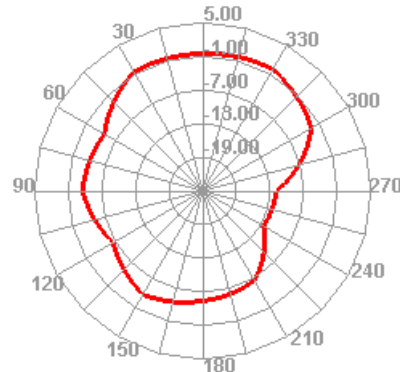
无源测试数据
Passive test data

ANT1 Direction of figure(GPS)

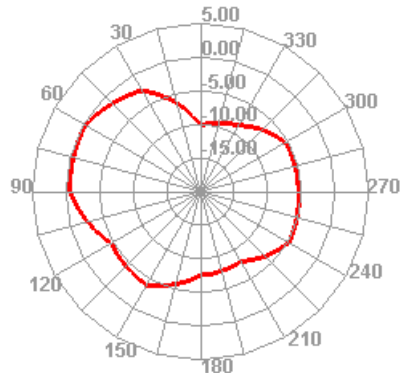
1575.000MHz



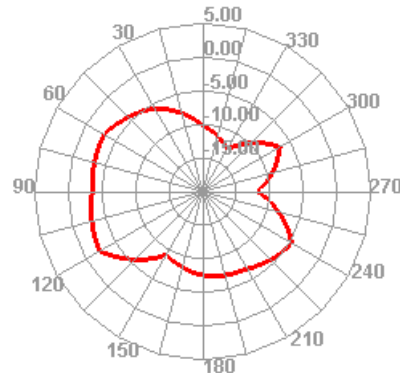
1575.000MHz H



1575.000MHz E1



1575.000MHz E2





ANTENNA

深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

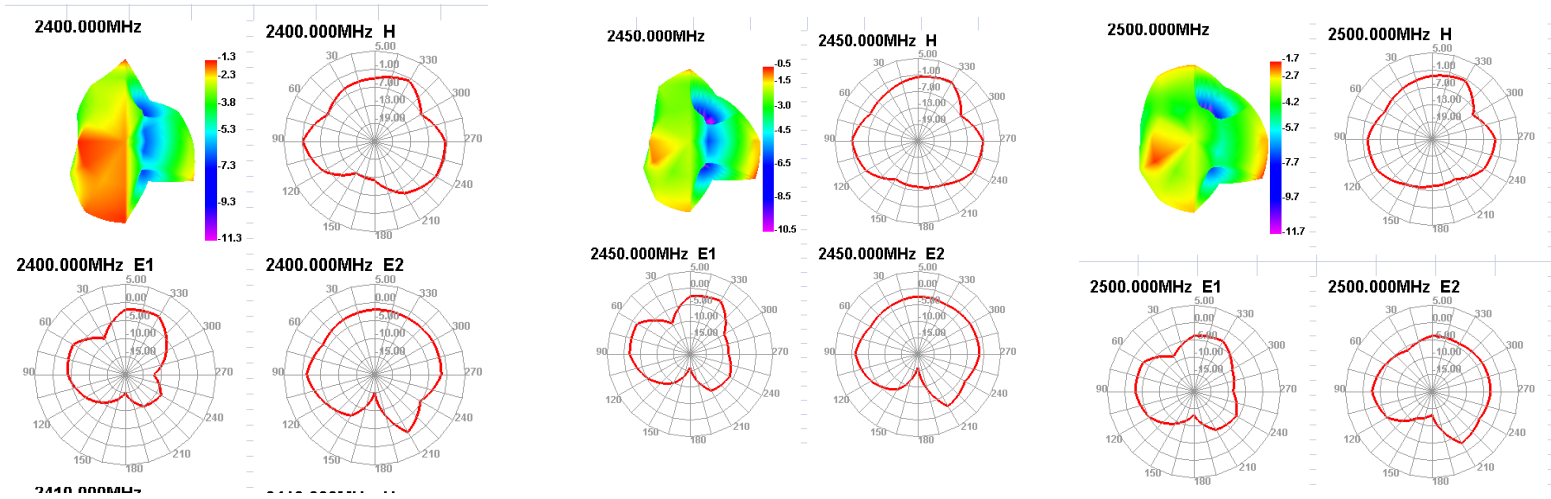
无源测试数据
Passive test data

ANT1 GAIN&Efficiency-WIFI 2.4/BT

Passive Test For WIFI2.4						
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)
2400	32.91	-4.83	-1.3	-3.45	19.468	13.445
2410	32.76	-4.85	-1.27	-3.42	19.181	13.575
2420	35.37	-4.51	-0.96	-3.11	20.609	14.758
2430	35.25	-4.53	-1.06	-3.21	20.199	15.056
2440	35.85	-4.46	-0.88	-3.03	19.943	15.904
2450	36.72	-4.35	-0.45	-2.6	19.923	16.798
2460	35.32	-4.52	-0.53	-2.68	18.815	16.501
2470	34.48	-4.62	-0.76	-2.91	18.23	16.255
2480	35.24	-4.53	-0.72	-2.87	18.272	16.964
2490	34.05	-4.68	-0.94	-3.09	17.548	16.498
2500	29.07	-5.37	-1.71	-3.86	15.115	13.956

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)	UHS (%)	DHIS (%)
5150	30.95	-5.09	0.58	-1.57	19.174	11.78
5170	34.88	-4.57	1.14	-1.01	21.379	13.497
5190	32.84	-4.84	1.06	-1.09	19.789	13.047
5210	39.13	-4.07	1.89	-0.26	22.974	16.159
5230	37.32	-4.28	1.54	-0.61	21.496	15.828
5250	42.2	-3.75	1.78	-0.37	24.076	18.121
5270	42.61	-3.71	1.54	-0.61	24.063	18.545
5290	45.77	-3.39	1.4	-0.75	25.27	20.502
5310	43.01	-3.66	0.52	-1.63	23.239	19.776
5330	44.23	-3.54	0.46	-1.69	23.597	20.638
5350	45.11	-3.46	0.7	-1.45	23.592	21.517
5370	43.19	-3.65	0.27	-1.88	21.923	21.27
5390	37.08	-4.31	-0.32	-2.47	18.344	18.738
5410	43.67	-3.6	0.43	-1.72	21.528	22.138
5430	35.94	-4.44	-0.39	-2.54	17.593	18.351
5450	39.51	-4.03	0.35	-1.8	19.083	20.424
5470	34	-4.68	0.11	-2.04	16.316	17.686
5490	35.03	-4.56	0.07	-2.08	16.902	18.13
5510	35	-4.56	-0.38	-2.53	16.991	18.006
5530	36.62	-4.36	-0.29	-2.44	17.867	18.757
5550	36.86	-4.33	-0.27	-2.42	18.169	18.689
5570	34.21	-4.66	-0.59	-2.74	16.875	17.338
5590	36.22	-4.41	-0.04	-2.19	17.921	18.295
5610	34.37	-4.64	0.06	-2.09	16.964	17.406
5630	34.76	-4.59	0.13	-2.02	17.012	17.749
5650	31.85	-4.97	-0.21	-2.36	15.622	16.231
5670	31.38	-5.03	-0.16	-2.31	15.525	15.852
5690	32.93	-4.82	0.4	-1.75	16.183	16.744
5710	29.3	-5.33	0.2	-1.95	14.307	14.988
5730	31.93	-4.96	0.68	-1.47	15.734	16.191
5750	27.47	-5.61	-0.05	-2.2	13.736	13.731
5770	30.01	-5.23	0.41	-1.74	15.061	14.949
5790	26.95	-5.69	0.1	-2.05	13.461	13.49
5810	28.52	-5.45	0.35	-1.8	14.394	14.127
5830	27.32	-5.63	-0.02	-2.17	14.099	13.225
5850	29.88	-5.25	0.17	-1.98	15.687	14.194



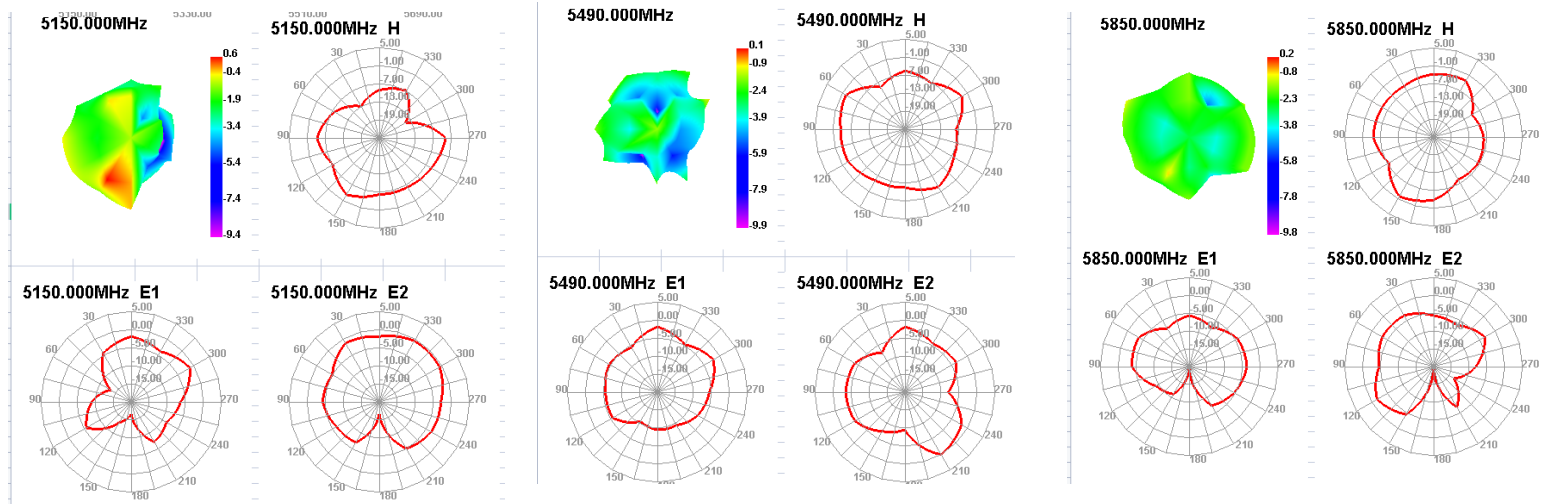
ANTENNA

深圳市星源创科技有限公司

SHENZHEN Xingyuan Chuang TECHNOLOGY CO., LTD

无源测试数据
Passive test data

ANT1 Direction of figure(5G)



合作 共赢

