



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: 亿莱顿

MN: EM1095M

RF: 刘磊确

MD: 黄清清

MP: 13005478517

Date: 2025. 10. 13

REV :V1. 0



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测试信息

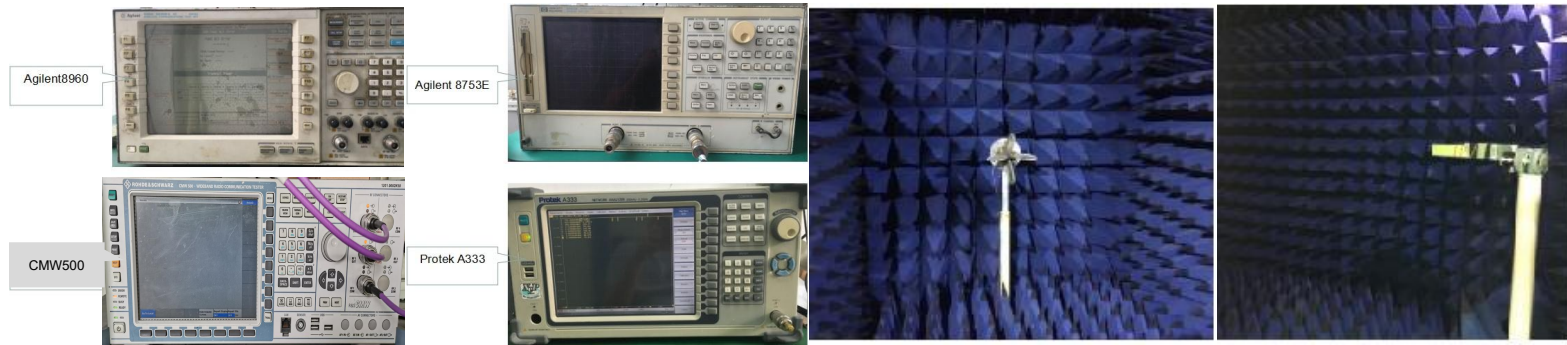
Test information

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	FPC	PIFA	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





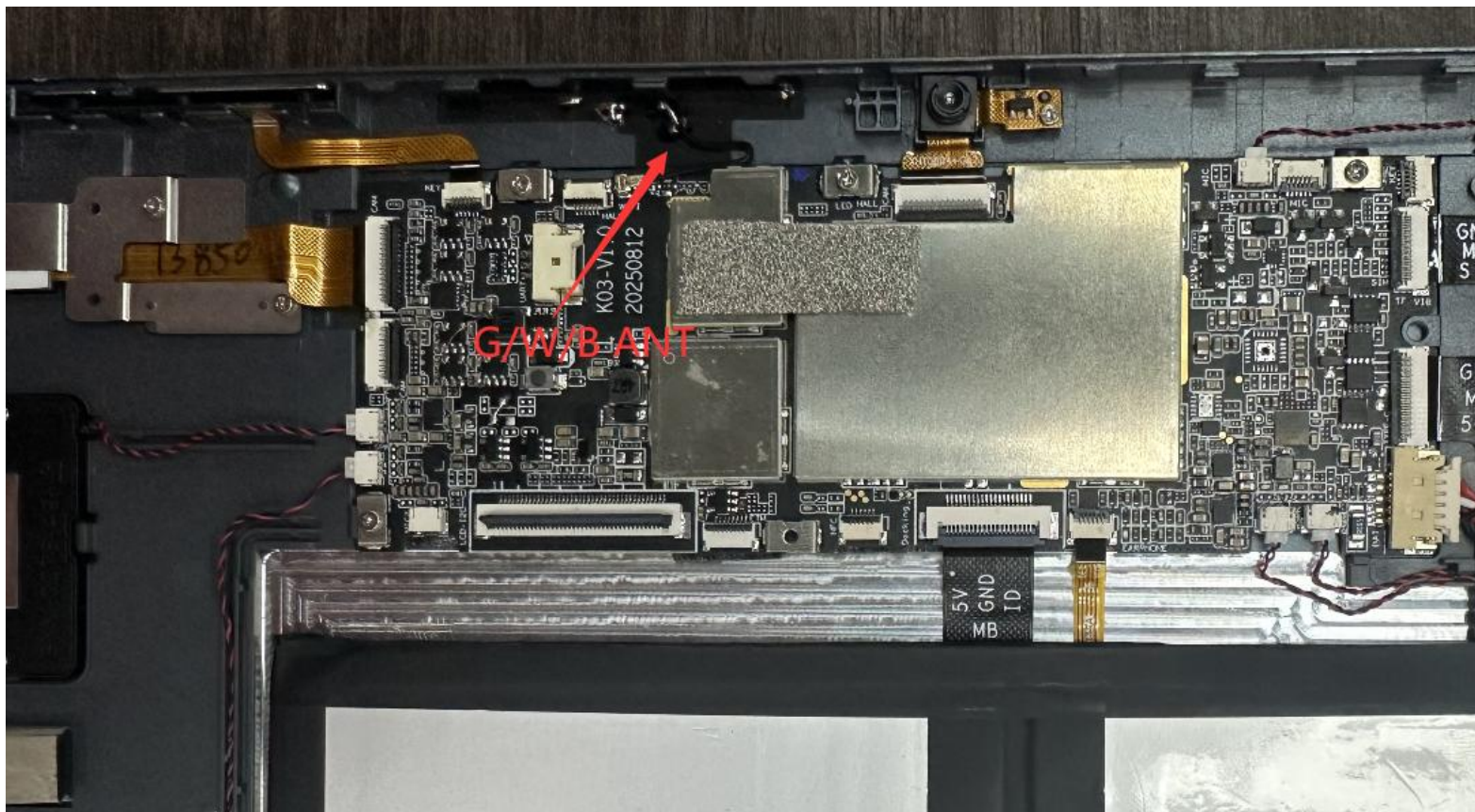
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天线位置

Antenna position



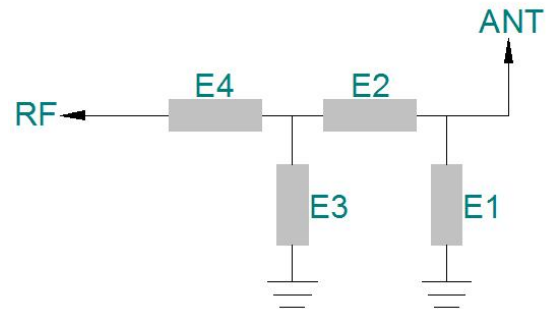


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匹配电路
Matching circuit



匹配电路原理图&位号图

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



802.11a		TRP	
	5180	CH36 6Mbps	10.36
	5300	CH60 6Mbps	9.98
	5805	CH161 6Mbps	8.25

备注：以上传导数据未加线损

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	14.11	CH1 11Mbps	-82.1
	2437	CH6 11Mbps	13.98	CH6 11Mbps	-82.65
	2467	CH11 11Mbps	13.16	CH11 11Mbps	-81.93
802.11g		TRP		TIS	
	2412	CH1 54Mbps	12.95	CH1 54Mbps	-67.98
	2437	CH6 54Mbps	12.35	CH6 54Mbps	-67.85
	2467	CH11 54Mbps	11.77	CH11 54Mbps	-68.58
802.11a		TRP		TIS	
	5180	CH36 6Mbps	8.55	CH36 54Mbps	-70.76
	5300	CH60 6Mbps	7.1	CH60 54Mbps	-70.68
	5805	CH161 6Mbps	6.14	CH161 54Mbps	-68.61
802.11g/n		TRP		TIS	
	2412	CH1 MCS7	12.28	CH1 MCS7	-64.23
	2437	CH6 MCS7	12.36	CH6 MCS7	-64.25
	2467	CH11 MCS7	12.08	CH11 MCS7	-65.18



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GPS搜星测试

GPS star search test

GPS冷启动实测效果以下:

CN值40以上4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 :-43dBm 5G:-51dBm

测试结果如右图

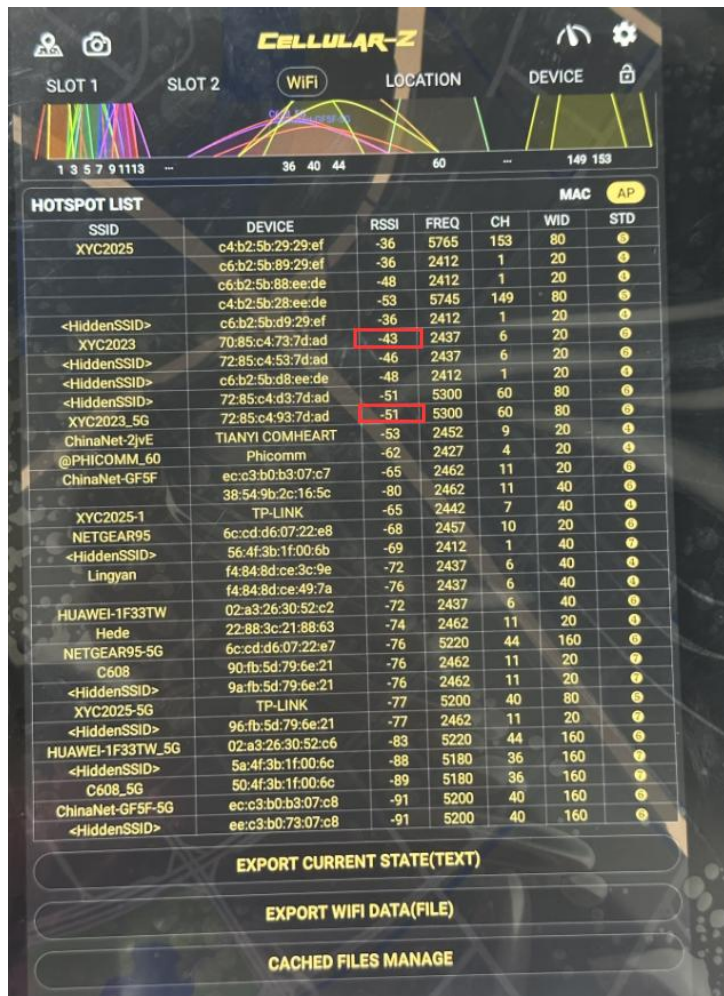
BT

测试环境：开放空间(通道)

测试工具：蓝牙音响

测试距离：10m

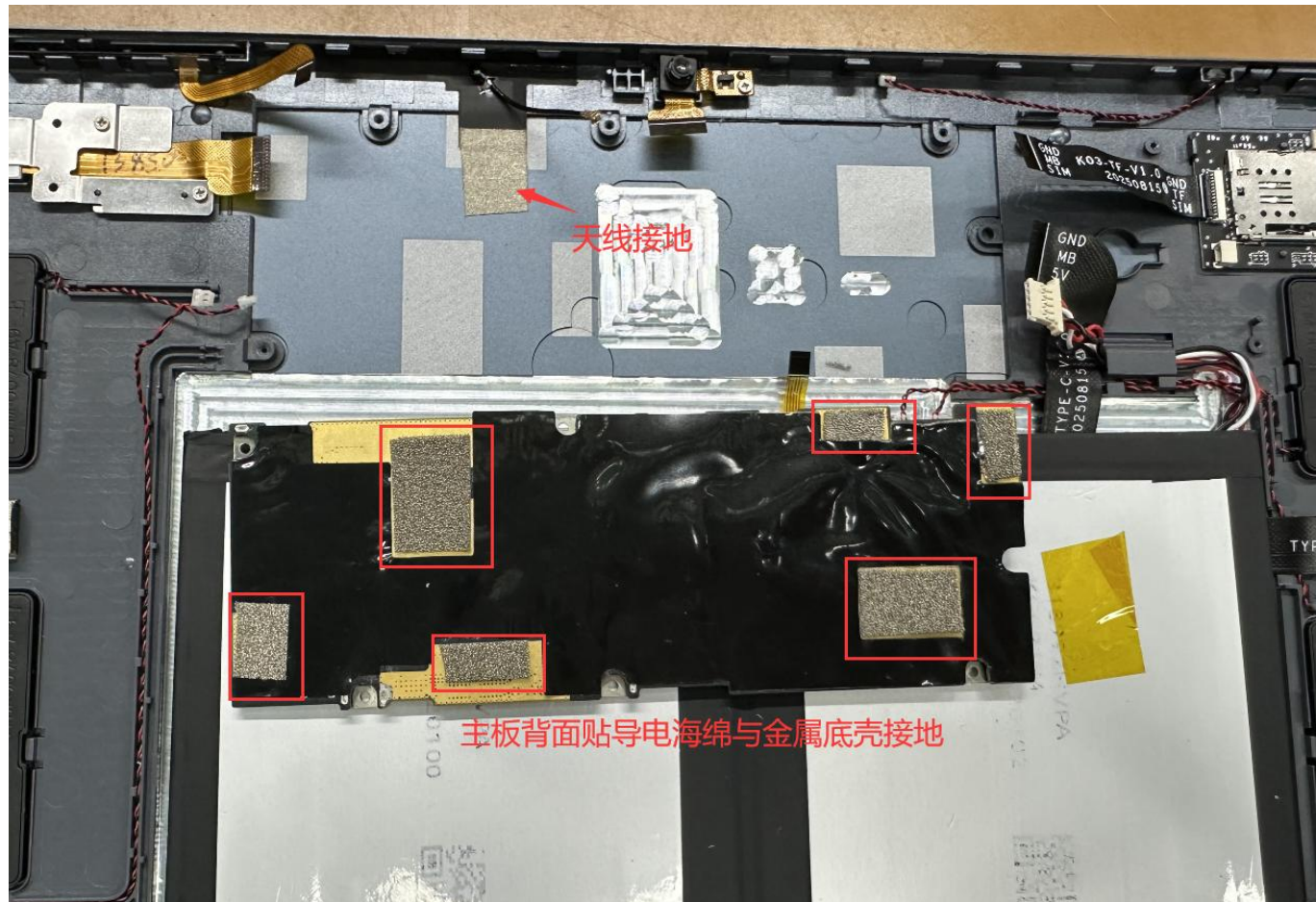
结果：播放音乐流畅，无杂音。





环境处理

Environmental treatment



环境处理

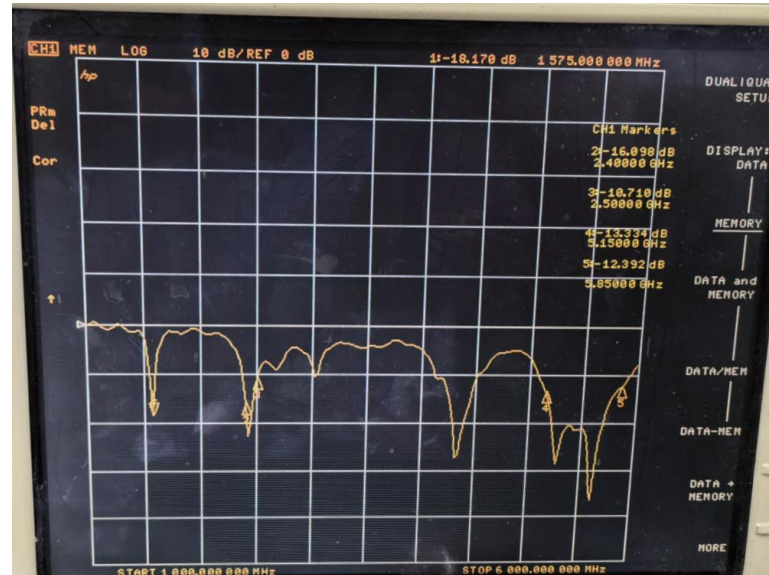
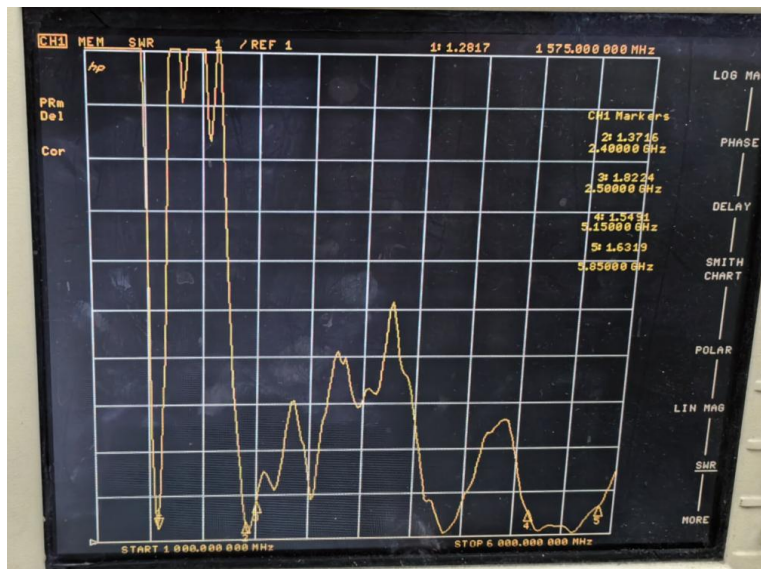
Environmental treatment





无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	1575	2400	2500	5150	5850
VSWR	1.28	1.37	1.82	1.54	1.63
Return Loss (DB)	-18.17	-16.09	-10.71	-13.33	-12.39



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无源测试数据
Passive test data

ANT1 GAIN&Efficiency-GPS



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无源测试数据
Passive test data

ANT1 Direction of figure(GPS)



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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)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
2400	42.31	-3.74	2.16	0.01	14.737	27.577	2.16	-18.09
2410	41.78	-3.79	2.14	-0.01	14.531	27.247	2.14	-19.39
2420	43.45	-3.62	2.36	0.21	15.333	28.116	2.36	-21.01
2430	41.92	-3.78	2.27	0.12	15.105	26.812	2.27	-22.72
2440	42.28	-3.74	2.41	0.26	15.455	26.82	2.41	-23.45
2450	45.72	-3.4	2.83	0.68	16.995	28.727	2.83	-21.75
2460	50.23	-2.99	3.27	1.12	18.94	31.288	3.27	-20.52
2470	50.28	-2.99	3.19	1.04	19.234	31.044	3.19	-19.56
2480	50.07	-3	3.13	0.98	19.482	30.584	3.13	-20.67
2490	48.65	-3.13	2.97	0.82	19.254	29.396	2.97	-24.98
2500	47.29	-3.25	2.91	0.76	19.194	28.097	2.91	-22.01



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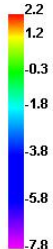
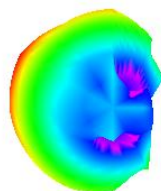
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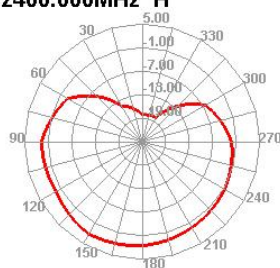
Passive test data

ANT1 Direction of figure(2.4/BT)

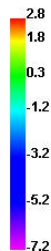
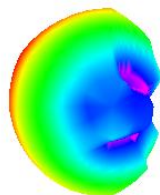
2400.000MHz



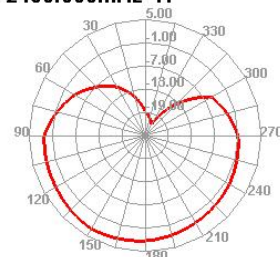
2400.000MHz H



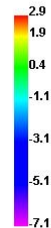
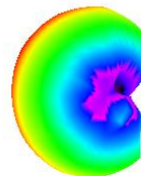
2450.000MHz



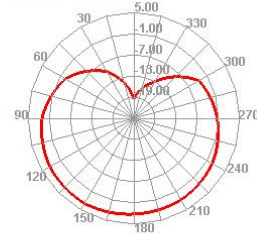
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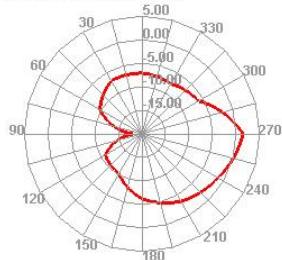
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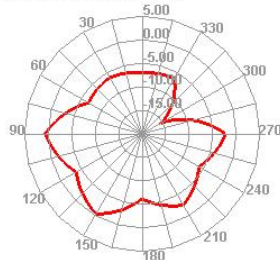
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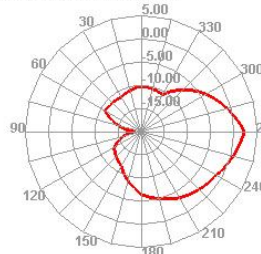
2400.000MHz E1



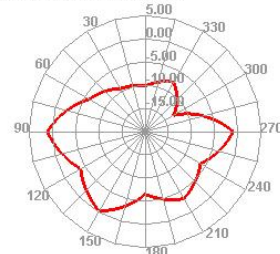
2400.000MHz E2



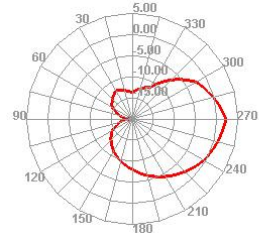
2450.000MHz E1



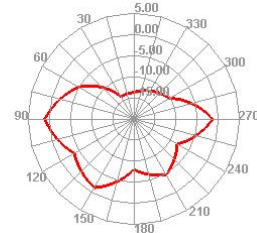
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2





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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 (dEd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
5150	32.1	-4.94	-1.19	-3.34	19.862	12.233	-1.19	-19.32
5170	28.46	-5.46	-1.83	-3.98	17.72	10.745	-1.83	-19.87
5190	34.27	-4.65	-1.17	-3.32	21.637	12.638	-1.17	-18.64
5210	31.57	-5.01	-1.13	-3.28	20.077	11.49	-1.13	-17.49
5230	35.75	-4.47	-0.47	-2.62	22.792	12.962	-0.47	-17.23
5250	39.08	-4.08	0.02	-2.13	25.058	14.024	0.02	-15.6
5270	41.13	-3.86	0.22	-1.93	26.682	14.45	0.22	-14.18
5290	45.48	-3.42	0.75	-1.4	29.68	15.798	0.75	-14.25
5310	39	-4.09	0	-2.15	25.363	13.639	0	-13.22
5330	38.68	-4.13	0	-2.15	25.236	13.442	0	-13.71
5350	40.27	-3.95	0.3	-1.85	26.632	13.643	0.3	-13.26
5370	37.59	-4.25	0.26	-1.89	25.047	12.542	0.26	-14.75
5390	36.98	-4.32	0.48	-1.67	24.63	12.349	0.48	-17.37
5410	42.67	-3.7	1.11	-1.04	28.445	14.22	1.11	-19.94
5430	42.45	-3.72	0.83	-1.32	28.485	13.962	0.83	-16.79
5450	45.2	-3.45	1.02	-1.13	30.415	14.781	1.02	-14.62
5470	41.68	-3.8	0.55	-1.6	27.905	13.779	0.55	-14.6
5490	41	-3.87	0.29	-1.86	27.345	13.656	0.29	-15.51
5510	43.42	-3.62	0.32	-1.83	28.806	14.613	0.32	-13.36
5530	43.53	-3.61	0.85	-1.3	28.751	14.775	0.85	-13.31
5550	46.6	-3.32	0.96	-1.19	30.322	16.283	0.96	-13.19
5570	42.11	-3.76	0.09	-2.06	26.79	15.321	0.09	-13.69
5590	43.05	-3.66	0.34	-1.81	26.921	16.13	0.34	-14.56
5610	41.04	-3.87	0.32	-1.83	25.484	15.554	0.32	-18.67
5630	38.02	-4.2	-0.38	-2.53	23.229	14.79	-0.38	-19.37
5650	35.25	-4.53	-0.72	-2.87	21.246	14.003	-0.72	-16.11
5670	39.35	-4.05	-0.14	-2.29	23.419	15.935	-0.14	-15.57
5690	31.26	-5.05	-1.36	-3.51	18.799	12.463	-1.36	-17.71
5710	39.61	-4.02	-0.01	-2.16	23.996	15.616	-0.01	-16.02
5730	34.44	-4.63	-0.55	-2.7	20.915	13.527	-0.55	-14.21
5750	35.42	-4.51	-0.3	-2.45	21.472	13.946	-0.3	-13.7
5770	36.98	-4.32	0.06	-2.09	22.536	14.446	0.06	-15.44
5790	36.05	-4.43	0.01	-2.14	22.365	13.684	0.01	-17.1
5810	37.36	-4.28	0.14	-2.01	23.345	14.014	0.14	-15.72
5830	38.29	-4.17	-0.06	-2.21	24.012	14.275	-0.06	-14.53
5850	37.51	-4.26	-0.03	-2.18	23.619	13.894	-0.03	-15.94



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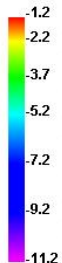
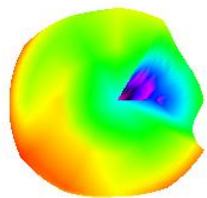
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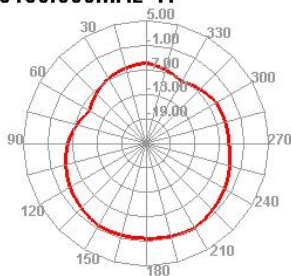
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Passive test data

ANT1 Direction of figure(5G)

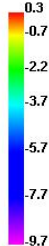
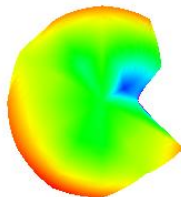
5150.000MHz



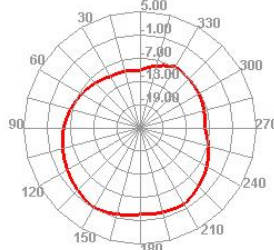
5150.000MHz H



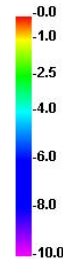
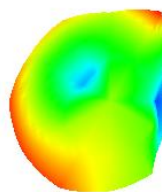
5490.000MHz



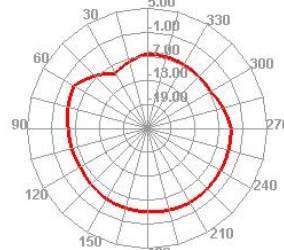
5490.000MHz H



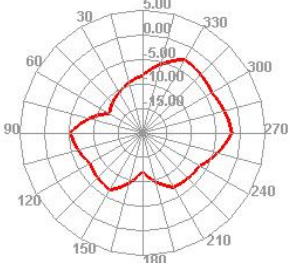
5850.000MHz



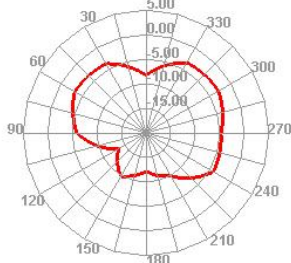
5850.000MHz H



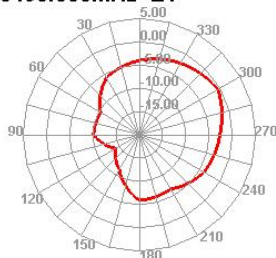
5150.000MHz E1



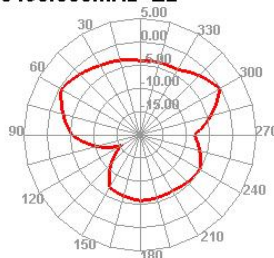
5150.000MHz E2



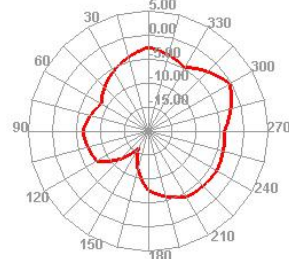
5490.000MHz E1



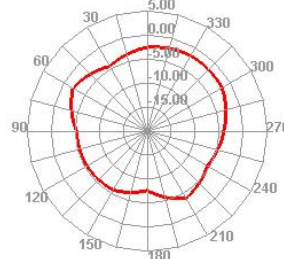
5490.000MHz E2



5850.000MHz E1



5850.000MHz E2

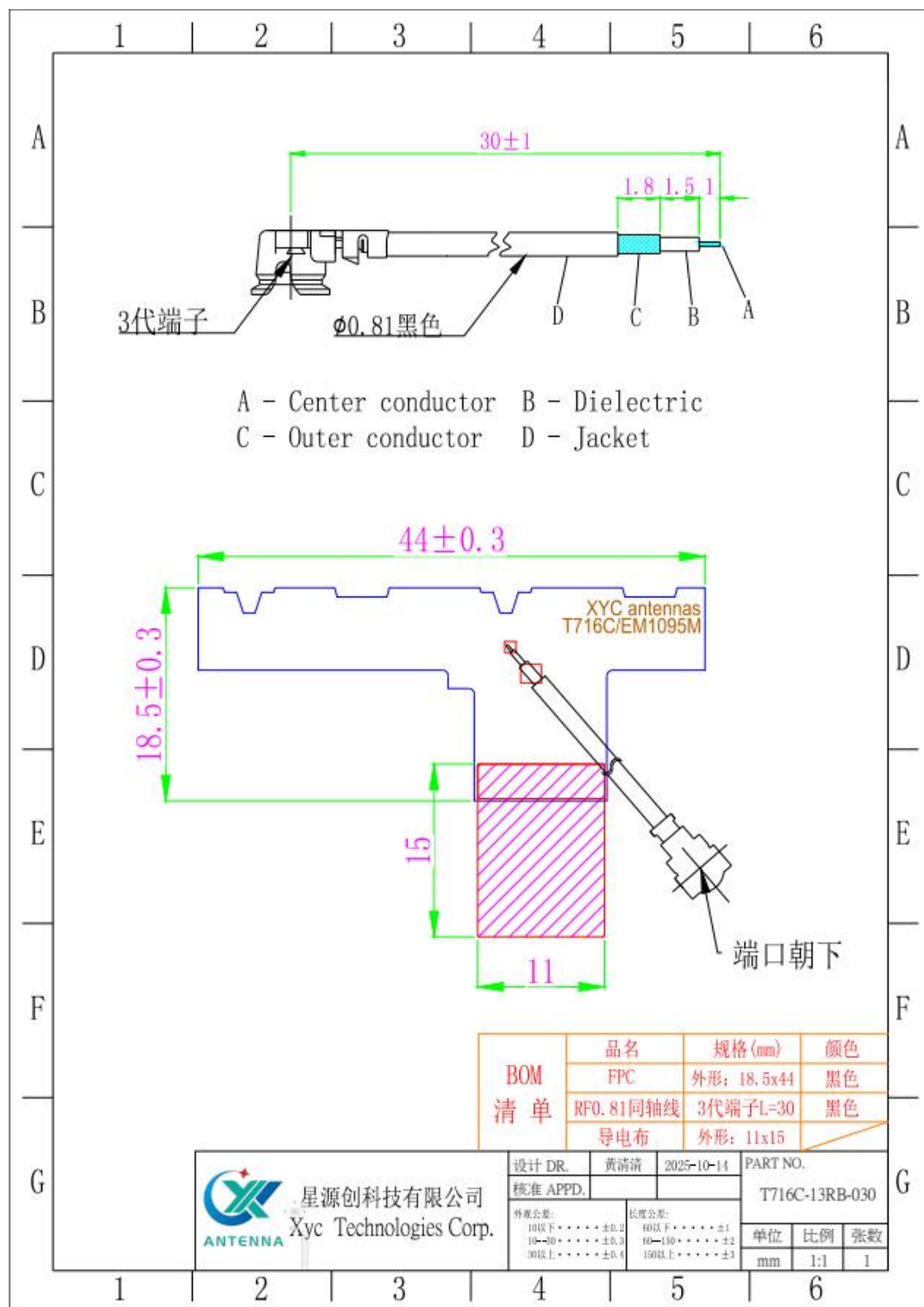




深圳市星源创科技有限公司

Shen Zhen Xing Yuan Chuang Technology Co., Ltd

Antenna Assembly



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合作共赢

