



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: 昱科

MN: G149N

RF: 刘磊确

MD: 黄清清

MP: 13005478517

Date: 2024. 5. 13

REV :V1. 0



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测试信息

Test information

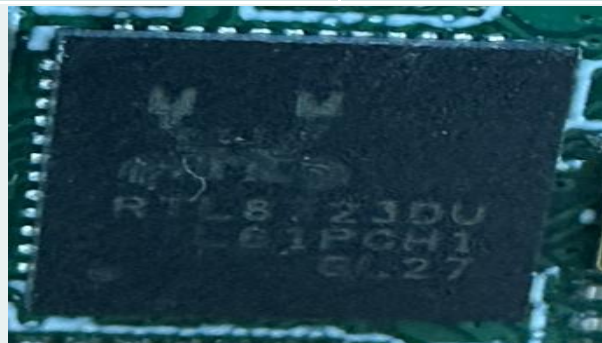
WIFI ANT Test information

Frequency

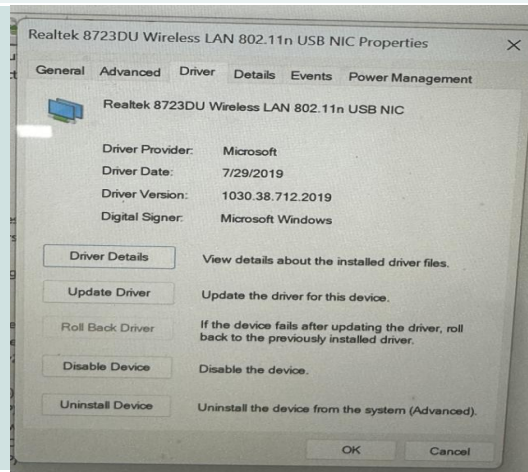
2. 4G (2402~2483) Mhz

5G (5150~5850) Mhz

Module
information



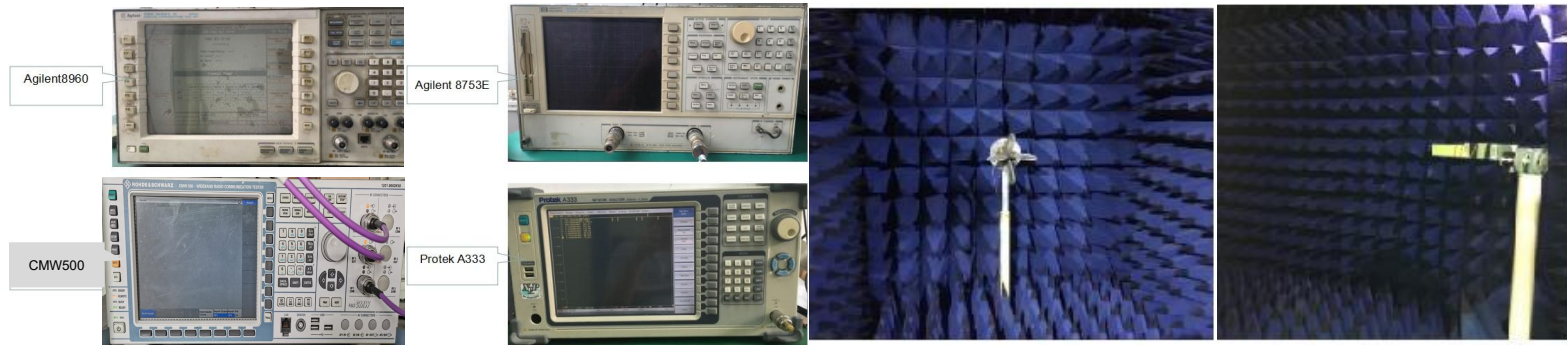
Driver version
information



测试环境

Test environment

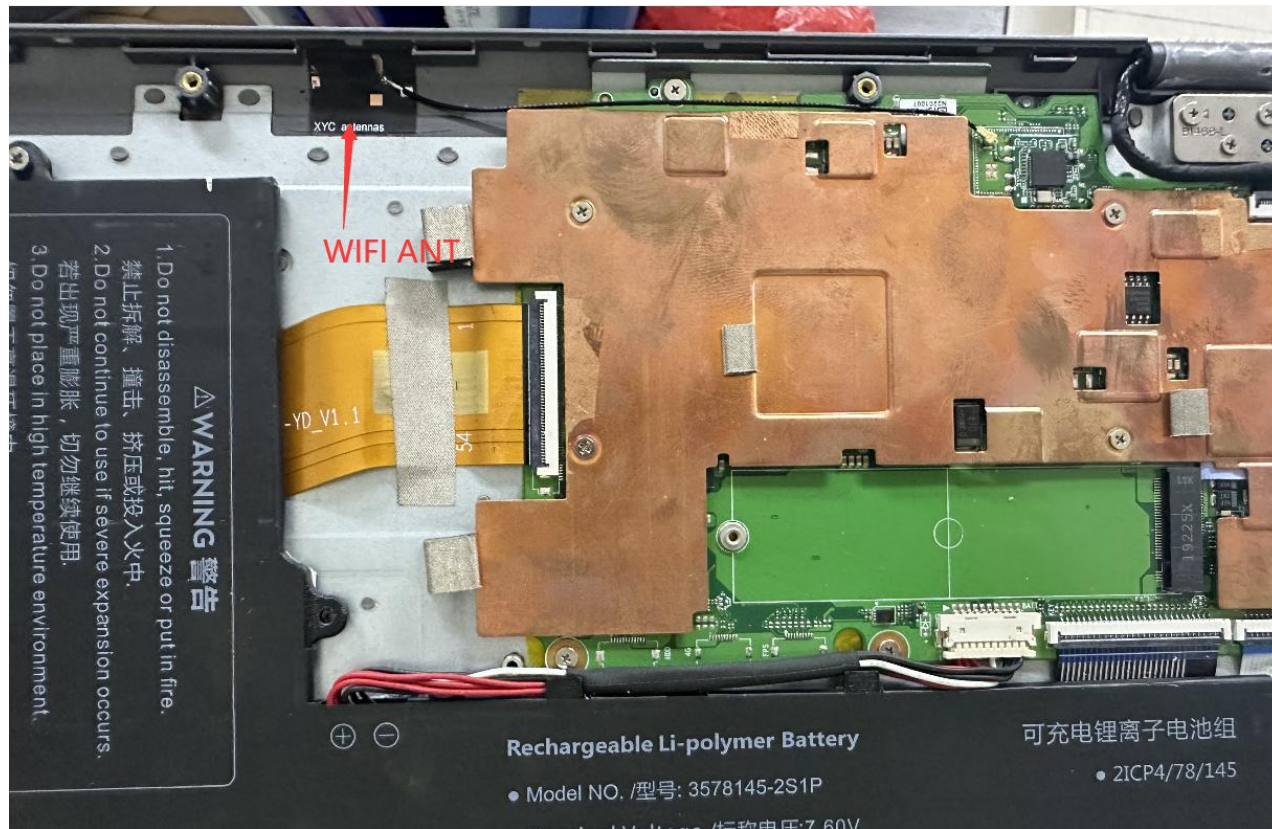
	测试项目	测试设备
S参数 (S-parameter)	1. 电压驻波比 (VSWR) 2. 回波损耗 (Rrtun Loss)	网络分析仪: Agilent8753ES
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 屏灭/屏亮	1. 暗室: 5*3*3m (3D) Chamber 2. 综测仪: Agilent8960 CMW500
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: 5*3*3m (3D) Chamber 2. 网络分析仪: Agilent 8753ES





天线位置

Antenna position



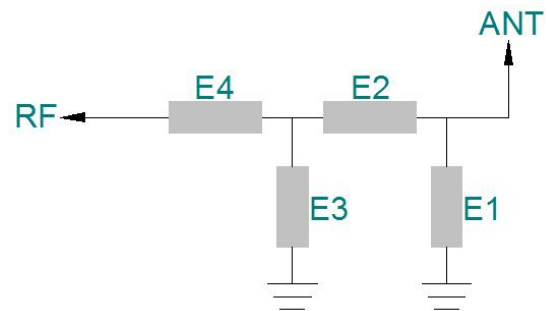


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匹配电路
Matching circuit



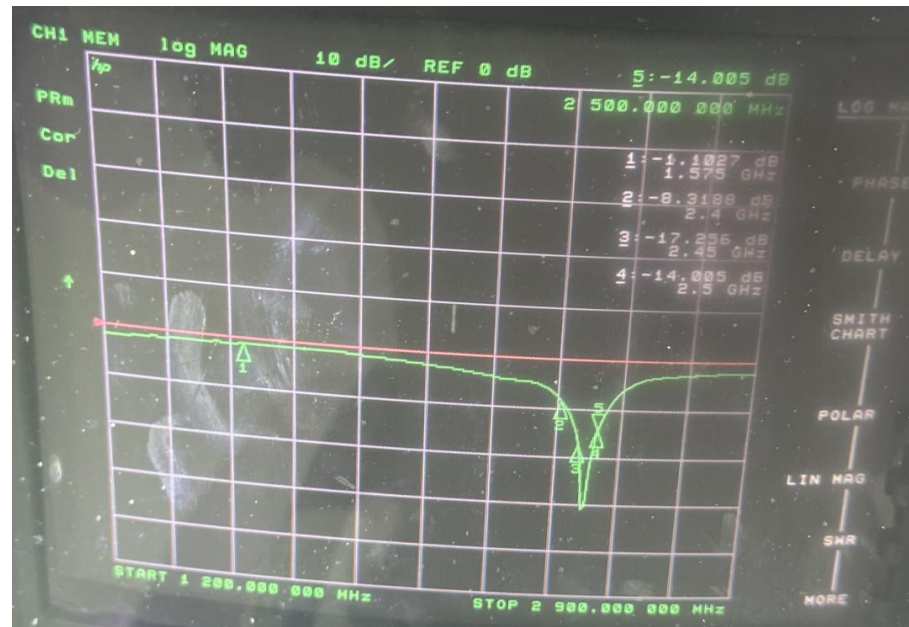
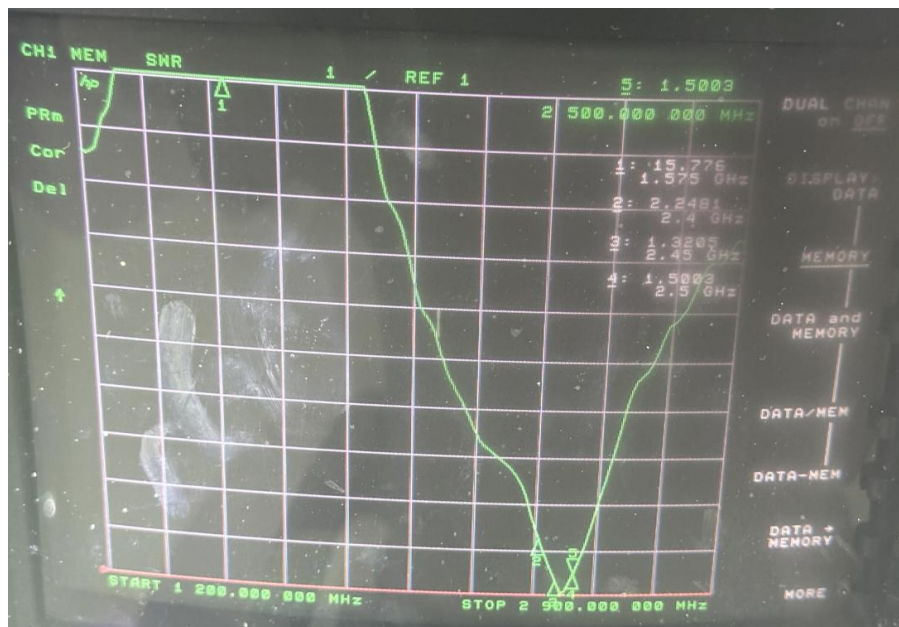
匹配电路原理图&位号图

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



无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	2400	2450	2500
VSWR	2.24	1.32	1.5
Return Loss (DB)	-8.31	-17.25	-14



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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	34.89	-4.57	1.45	-0.7	20.972	13.92	1.45	-16.8
2410	33.33	-4.77	1.3	-0.85	19.923	13.403	1.3	-18.53
2420	34.6	-4.61	1.82	-0.33	20.617	13.987	1.82	-19.37
2430	34.79	-4.59	2.04	-0.11	20.577	14.213	2.04	-17.71
2440	36.82	-4.34	2.42	0.27	21.676	15.144	2.42	-14.81
2450	36.28	-4.4	2.29	0.14	21.27	15.009	2.29	-13.98
2460	34.51	-4.62	2.05	-0.1	20.078	14.432	2.05	-14.14
2470	35.52	-4.5	2.29	0.14	20.574	14.945	2.29	-14.17
2480	36.11	-4.42	2.19	0.04	20.493	15.615	2.19	-14.43
2490	36.06	-4.43	1.98	-0.17	20.099	15.958	1.98	-15.03
2500	32.32	-4.91	1.54	-0.61	18.03	14.29	1.54	-16



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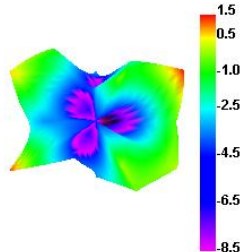
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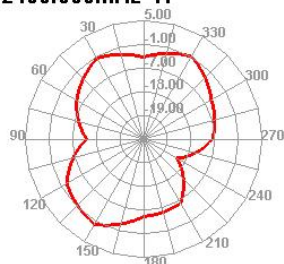
无源测试数据
Passive test data

ANT1 Direction of figure(2.4/BT)

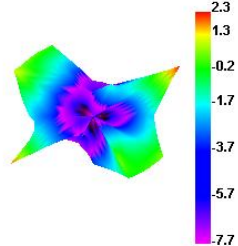
2400.000MHz



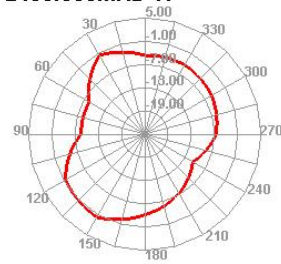
2400.000MHz H



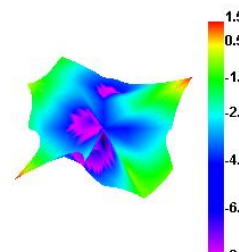
2450.000MHz



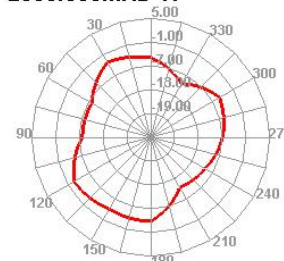
2450.000MHz H



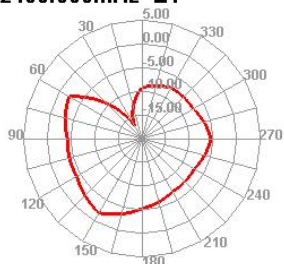
2500.000MHz



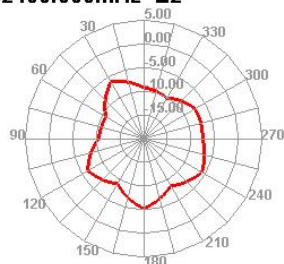
2500.000MHz H



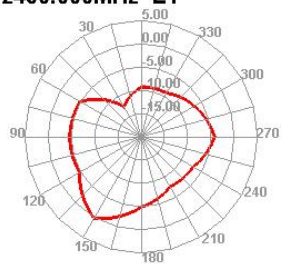
2400.000MHz E1



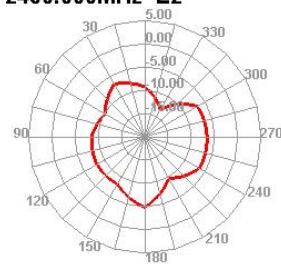
2400.000MHz E2



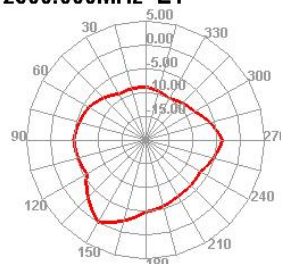
2450.000MHz E1



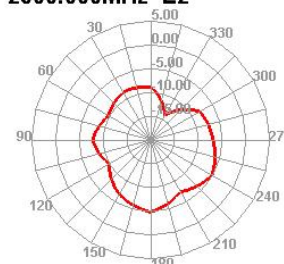
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2





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有源测试数据
Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	11.24	CH1 11Mbps	-77.9
	2437	CH6 11Mbps	12.36	CH6 11Mbps	-78.25
	2467	CH11 11Mbps	12.47	CH11 11Mbps	-78.66



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吞吐量测试

Throughput test

2.4G wifi 天吐量测试									
上行		66.1M		下行		80.1M			
图片	[384]	7.0-8.0 sec	8.28 MBytes	69.5 Mbits/sec	图片	[348]	17.0-18.0 sec	10.5 MBytes	88.1 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	8.0-9.0 sec	6.20 MBytes	52.0 Mbits/sec		[348]	18.0-19.0 sec	8.68 MBytes	72.8 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	9.0-10.0 sec	7.56 MBytes	63.4 Mbits/sec		[348]	19.0-20.0 sec	9.07 MBytes	76.1 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	10.0-11.0 sec	7.33 MBytes	61.5 Mbits/sec		[348]	20.0-21.0 sec	10.4 MBytes	86.9 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	11.0-12.0 sec	8.30 MBytes	69.6 Mbits/sec		[348]	21.0-22.0 sec	10.1 MBytes	84.9 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	12.0-13.0 sec	8.15 MBytes	68.4 Mbits/sec		[348]	22.0-23.0 sec	9.98 MBytes	83.7 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	13.0-14.0 sec	8.41 MBytes	70.6 Mbits/sec		[348]	23.0-24.0 sec	10.4 MBytes	87.0 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	14.0-15.0 sec	8.30 MBytes	69.6 Mbits/sec		[348]	24.0-25.0 sec	10.2 MBytes	85.4 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	15.0-16.0 sec	7.91 MBytes	66.3 Mbits/sec		[348]	25.0-26.0 sec	9.47 MBytes	79.4 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
	[384]	16.0-17.0 sec	8.53 MBytes	71.6 Mbits/sec		[348]	26.0-27.0 sec	10.2 MBytes	85.7 Mbits/sec
	[ID]	Interval	Transfer	Bandwidth		[ID]	Interval	Transfer	Bandwidth
[384]	17.0-18.0 sec	8.04 MBytes	67.4 Mbits/sec	[348]	27.0-28.0 sec	10.5 MBytes	88.4 Mbits/sec		
[ID]	Interval	Transfer	Bandwidth	[ID]	Interval	Transfer	Bandwidth		
[384]	18.0-19.0 sec	8.41 MBytes	70.5 Mbits/sec	[348]	28.0-29.0 sec	10.2 MBytes	85.7 Mbits/sec		
[ID]	Interval	Transfer	Bandwidth	[ID]	Interval	Transfer	Bandwidth		
[384]	19.0-20.0 sec	8.16 MBytes	68.5 Mbits/sec	[348]	29.0-30.0 sec	9.57 MBytes	80.3 Mbits/sec		
[ID]	Interval	Transfer	Bandwidth	[ID]	Interval	Transfer	Bandwidth		
[384]	0.0-20.0 sec	158 MBytes	66.1 Mbits/sec	[348]	0.0-30.0 sec	287 MBytes	80.1 Mbits/sec		
备注									



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BT天线实测 BT Antenna test

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。

合作共赢

