



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: 众锐创

MN: Q157

RF: 关巍

MD: 黄清清

MP: 19918388579

Date: 2023. 3. 22

REV :V1. 0



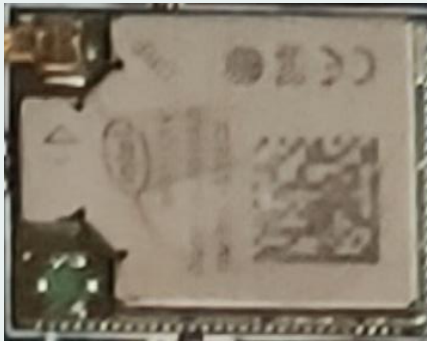
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测试信息

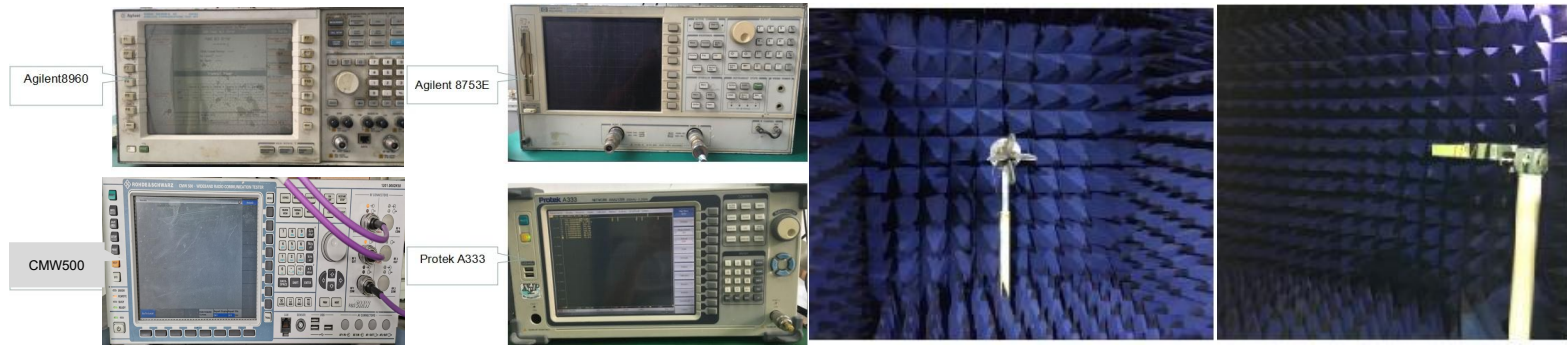
Test information

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

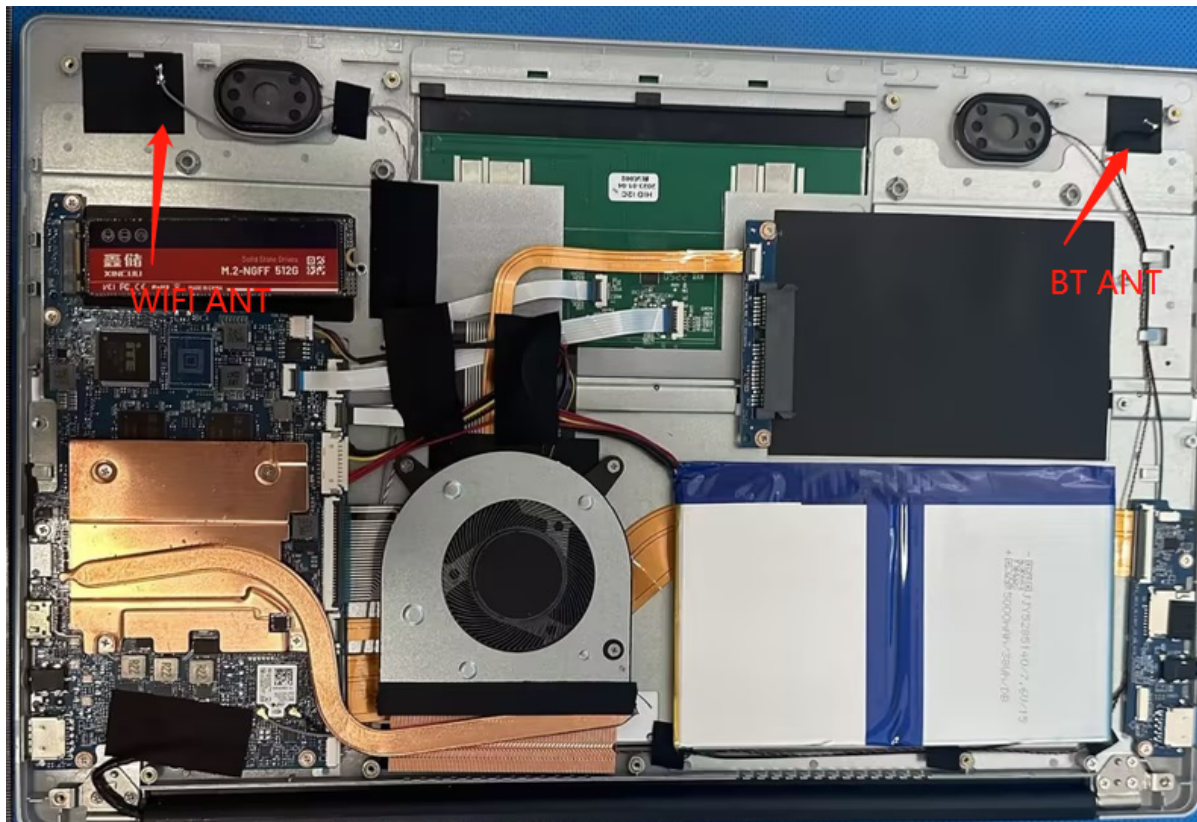
	测试项目	测试设备
S参数 (S-parameter)	1. 电压驻波比 (VSWR) 2. 回波损耗 (Rrtun Loss)	网络分析仪: Agilent8753ES
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 屏灭/屏亮	1. 暗室: 5*3*3m (3D) Chamber 2. 综测仪: Agilent8960 CMW500
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: 5*3*3m (3D) Chamber 2. 网络分析仪: Agilent 8753ES





天线位置

Antenna position



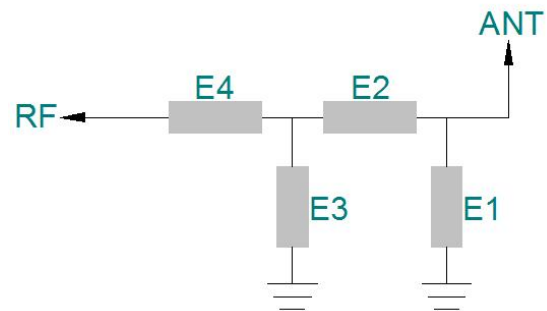
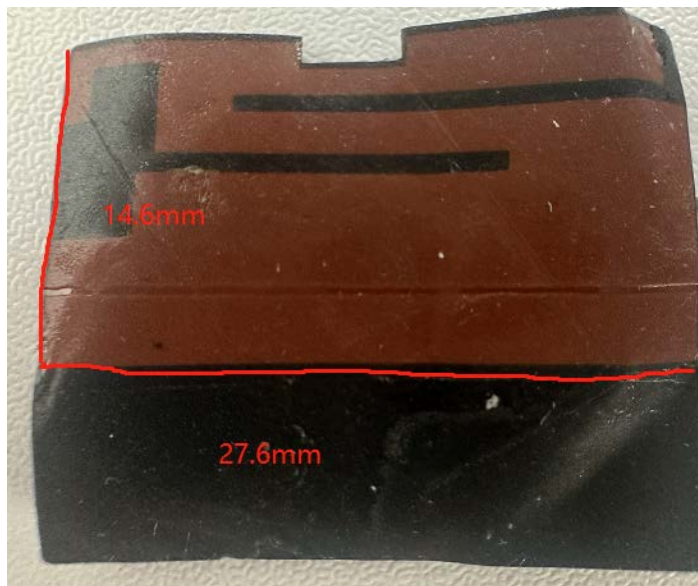


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匹配电路 Matching circuit



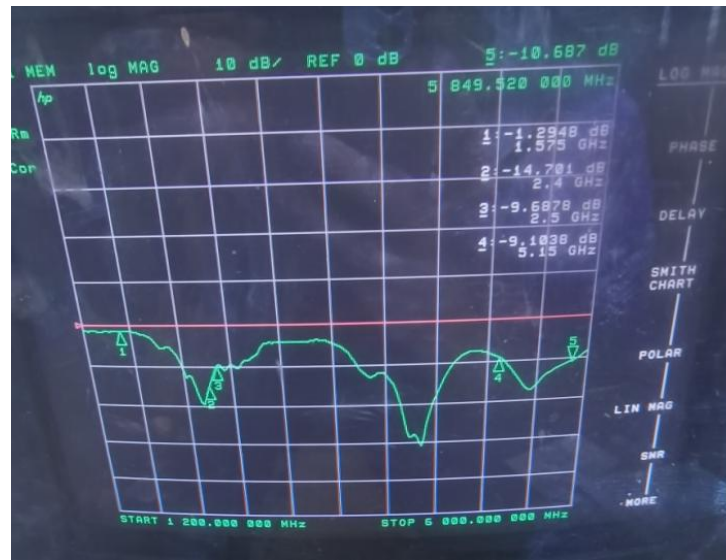
	电容 (PF)	电感 (NH)
E1(0402)		
E2(0402)		
E3(0402)		
E4(0402)		

匹配电路原理图&位号图



无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	2400	2500	5150	5850
VSWR	1.45	1.97	2.08	1.82
Return Loss (DB)	-14.70	-9.68	-9.10	-10.68



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无源测试数据

Passive test data

ANT1 GAIN&Efficiency-WIFI2.4G/BT

Passive Test For 2.4G

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	35.68	-4.48	1.18	-0.97	14.493	21.187	1.18	-15.86	5.66	0	52.44	52.61
2410	32.16	-4.93	0.92	-1.23	12.958	19.205	0.92	-16.65	5.85	0	52.37	52.53
2420	32.87	-4.83	1.29	-0.86	13.167	19.708	1.29	-17.47	6.13	0	52.38	52.56
2430	32.54	-4.88	1.41	-0.74	13.009	19.535	1.41	-18.64	6.29	0	52.56	52.67
2440	32.72	-4.85	1.64	-0.51	12.998	19.721	1.64	-18.61	6.49	0	52.86	53.02
2450	33.62	-4.73	1.65	-0.5	13.462	20.16	1.65	-18.66	6.39	15	52.73	52.84
2460	32.41	-4.89	1.47	-0.68	12.974	19.439	1.47	-21.12	6.36	15	52.67	52.76
2470	31.81	-4.97	1.21	-0.94	12.861	18.946	1.21	-23.42	6.19	15	52.57	52.66
2480	32.42	-4.89	1.38	-0.77	13.001	19.419	1.38	-27.14	6.28	75	52.78	52.88
2490	33.79	-4.71	1.48	-0.67	13.565	20.226	1.48	-20.15	6.19	75	53.06	53.25
2500	33.7	-4.72	1.55	-0.6	13.387	20.313	1.55	-19.25	6.27	75	52.92	53.06



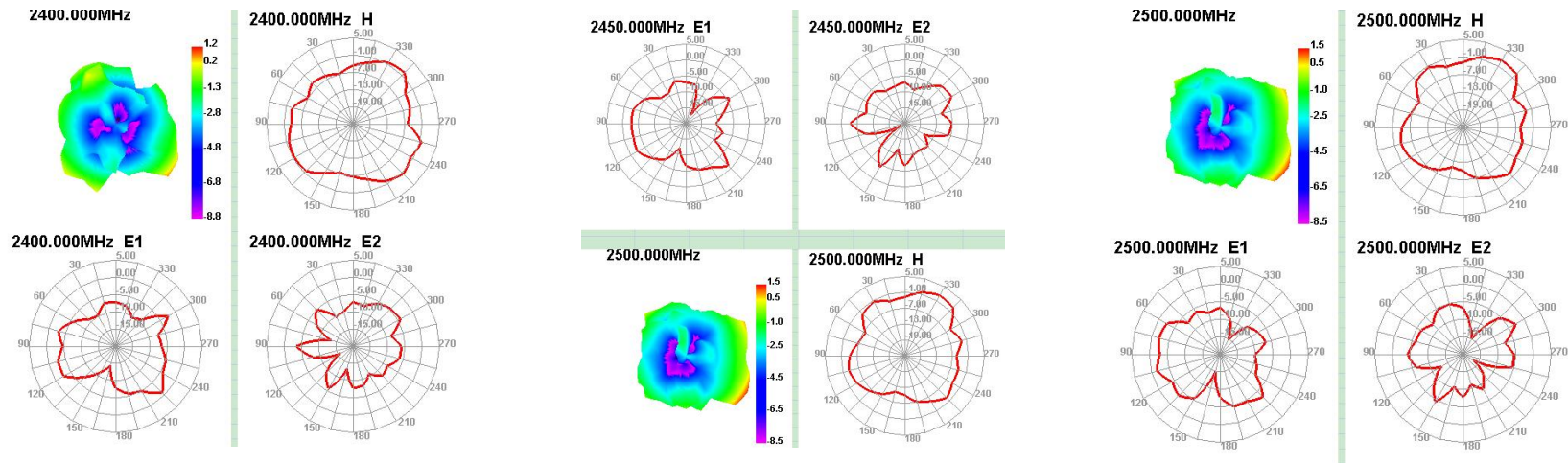
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无源测试数据
Passive test data

ANT1 Direction of figure(2.4/BT)





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无源测试数据

Passive test data

ANT1 GAIN&Efficiency-WIFI 5G

Passive Test For 5G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	34.61	-4.61	2.71	0.56	23.161	11.451	2.71	-25.76	7.31	60	62.66	62.14
5170	30.35	-5.18	2.53	0.38	20.277	10.078	2.53	-22.37	7.7	45	62.13	61.73
5190	27.97	-5.53	2.32	0.17	18.656	9.315	2.32	-21.57	7.86	30	61.9	61.56
5210	30.1	-5.21	2.8	0.65	19.881	10.22	2.8	-20.09	8.01	60	62.58	62.08
5230	29.46	-5.31	2.82	0.67	19.219	10.239	2.82	-20.3	8.13	60	62	61.81
5250	29.14	-5.36	2.8	0.65	18.865	10.273	2.8	-23.16	8.15	45	61.89	61.7
5270	26.54	-5.76	2.3	0.15	17.044	9.498	2.3	-23.02	8.07	60	61.76	61.41
5290	29.4	-5.32	2.41	0.26	18.673	10.727	2.41	-22.47	7.72	45	61.94	61.89
5310	25.59	-5.92	1.75	-0.4	16.272	9.314	1.75	-26.71	7.67	45	61.61	61.56
5330	25.66	-5.91	1.67	-0.48	16.215	9.444	1.67	-20.39	7.58	45	61.83	61.76
5350	27.17	-5.66	1.38	-0.77	17.203	9.968	1.38	-19.63	7.04	45	62.08	62.46
5370	28.03	-5.52	1.09	-1.06	17.659	10.371	1.09	-28.27	6.62	45	62.14	62.36
5390	25.08	-6.01	0.15	-2	15.698	9.381	0.15	-19.38	6.16	45	61.64	61.88
5410	28.76	-5.41	0.67	-1.48	17.928	10.831	0.67	-21.06	6.08	45	62.69	63.01
5430	26.85	-5.71	0.66	-1.49	16.603	10.247	0.66	-24.01	6.37	45	62.41	62.93
5450	25.87	-5.87	0.56	-1.59	15.774	10.095	0.56	-22.32	6.44	45	62.21	62.94
5470	23.92	-6.21	0.42	-1.73	14.623	9.297	0.42	-22.32	6.63	30	62.56	63.24
5490	22.57	-6.47	0.16	-1.99	13.584	8.982	0.16	-24.05	6.63	30	63.06	63.84
5510	22.85	-6.41	-0.01	-2.16	13.513	9.337	-0.01	-27.99	6.41	30	63.46	64.44
5530	23.95	-6.21	0.26	-1.89	14.284	9.661	0.26	-23.14	6.47	30	63.75	64.89
5550	26.37	-5.79	0.62	-1.53	15.652	10.716	0.62	-19.69	6.41	30	64.34	65.2
5570	26.42	-5.78	0.76	-1.39	15.456	10.962	0.76	-21.37	6.54	45	64.38	65.25
5590	25.69	-5.9	0.63	-1.52	15.023	10.663	0.63	-20.92	6.53	45	64.47	64.74
5610	26.84	-5.71	1.07	-1.08	15.724	11.117	1.07	-22.92	6.78	45	64.28	65.11
5630	27.69	-5.58	0.67	-1.48	15.998	11.692	0.67	-20.97	6.25	45	64.52	65.32
5650	27.87	-5.55	0.87	-1.28	16.006	11.863	0.87	-20.34	6.42	45	64.43	65.08
5670	26.08	-5.84	0.27	-1.88	14.867	11.214	0.27	-24.52	6.11	45	64.58	65.06
5690	27.38	-5.63	0.44	-1.71	15.644	11.732	0.44	-20.61	6.07	45	64.65	66
5710	25.84	-5.88	0.52	-1.63	14.683	11.153	0.52	-23.85	6.4	45	65.18	65.08
5730	28.59	-5.44	0.3	-1.85	16.234	12.356	0.3	-16.66	5.74	45	64.91	65.55
5750	25.26	-5.98	-0.23	-2.38	14.458	10.804	-0.23	-19.56	5.75	45	64.64	64.89
5770	25.38	-5.95	-0.29	-2.44	14.531	10.851	-0.29	-19.95	5.67	45	64.61	65.28
5790	24.02	-6.19	-0.39	-2.54	13.557	10.462	-0.39	-23.16	5.8	45	64.83	64.78
5810	25.76	-5.89	0.01	-2.14	14.385	11.374	0.01	-25.36	5.9	60	64.97	65.66
5830	25.28	-5.97	0.13	-2.02	13.966	11.315	0.13	-26.45	6.11	60	65.45	66.02
5850	26.11	-5.83	0.1	-2.05	14.236	11.873	0.1	-21.97	5.93	15	65.65	66.39



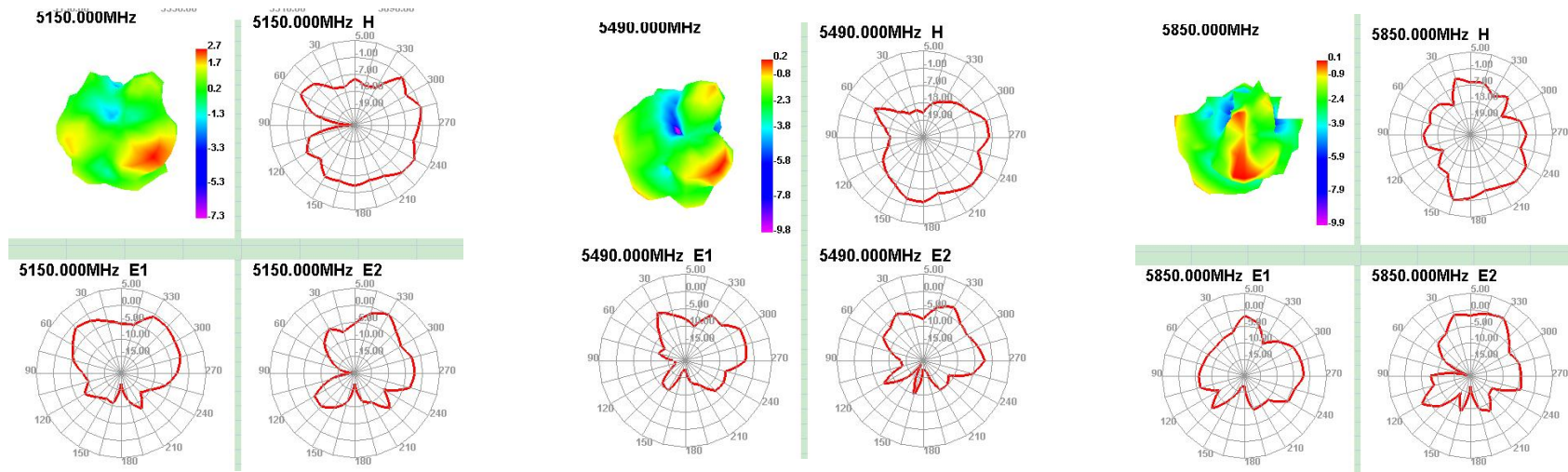
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无源测试数据
Passive test data

ANT1 Direction of figure(5G)





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有源测试数据
Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	8.84	CH1 11Mbps	-73.65
	2437	CH6 11Mbps	8.36	CH6 11Mbps	-75.52
	2467	CH11 11Mbps	8.27	CH11 11Mbps	-73.55
802.11a		TRP		TIS	
	5180	CH36 6Mbps	8.28	CH36 54Mbps	-66.58
	5300	CH60 6Mbps	7.53	CH60 54Mbps	-66.53
	5805	CH161 6Mbps	8.24	CH161 54Mbps	-67.29



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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：15m

结果：播放音乐流畅，无杂音。

合作共赢

