



深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

ANTENNA

天线测试报告

Antenna Test Report

TC: 忆莱顿

MN: K109PRO

RF: 刘磊确

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MP: 13005478517

Address: 1506 Tangwei Stock Business Building, Tangwei Community, Fuhai Street,
Baoan District, Shenzhen

Date: 2024. 3. 16

REV :V1. 0



测试信息

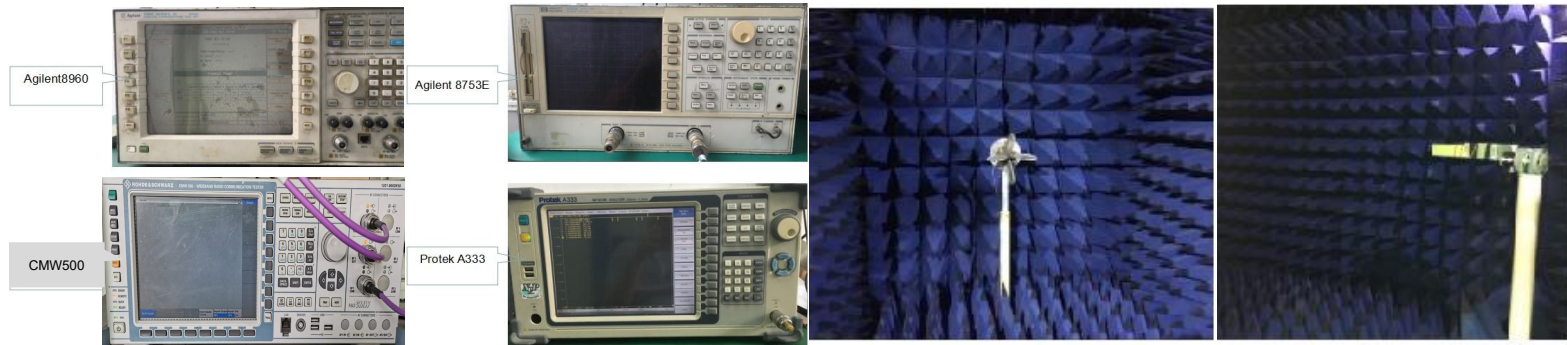
Test information

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				NO
	DIV				NO

测试环境

Test environment

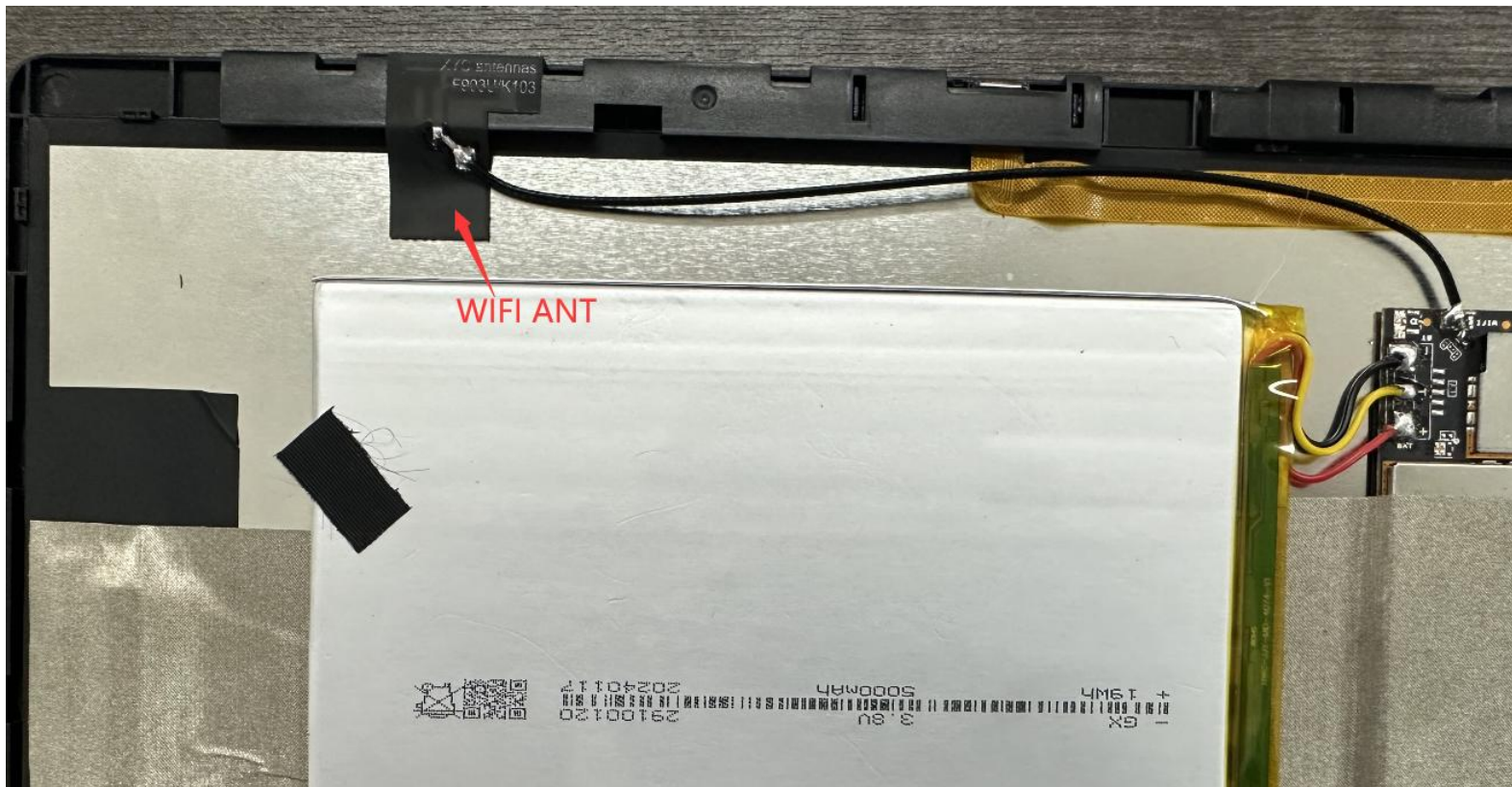
	测试项目	测试设备
S参数 (S-parameter)	1. 电压驻波比 (VSWR) 2. 回波损耗 (Rrtun Loss)	网络分析仪: Agilent8753ES
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 屏灭/屏亮	1. 暗室: 5*3*3m (3D) Chamber 2. 综测仪: Agilent8960 CMW500
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: 5*3*3m (3D) Chamber 2. 网络分析仪: Agilent 8753ES





天线位置

Antenna position



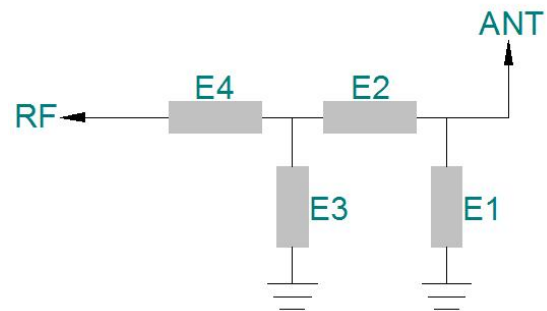


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匹配电路
Matching circuit



匹配电路原理图&位号图

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



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有源测试数据
Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	15.13	CH1 11Mbps	-80.79
	2437	CH6 11Mbps	16.89	CH6 11Mbps	-81.31
	2467	CH11 11Mbps	16.79	CH11 11Mbps	-81.57
802.11a		TRP		TIS	
	5180	CH36 6Mbps	14.22	CH36 54Mbps	-70.99
	5300	CH60 6Mbps	14.54	CH60 54Mbps	-71.48
	5805	CH161 6Mbps	13.45	CH161 54Mbps	-70.89

Wifi/BT天线实测

Wifi Antenna test

WIFI

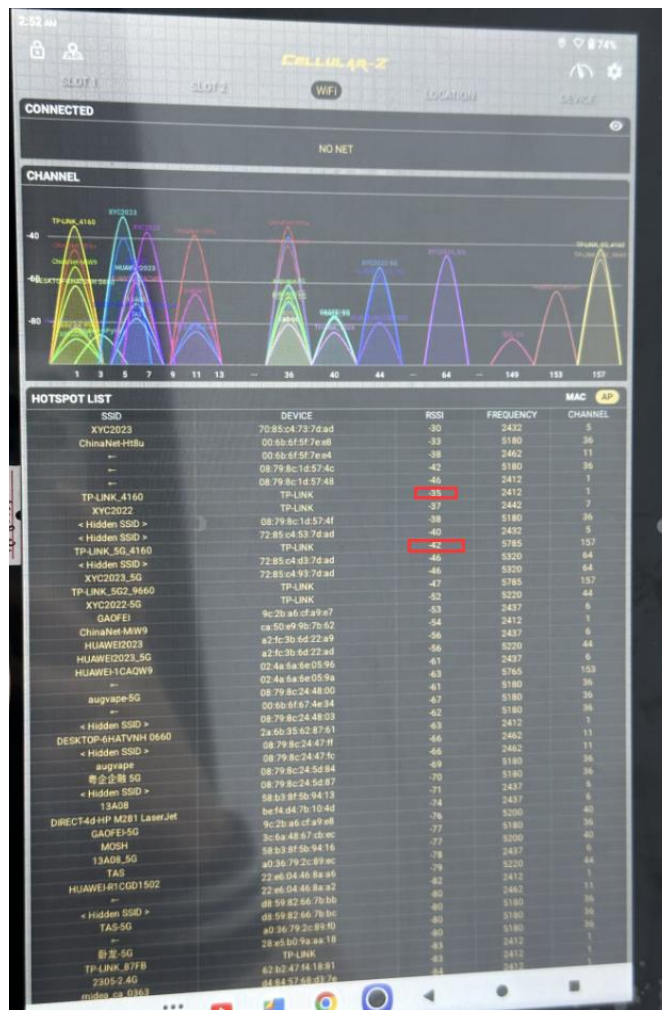
测试环境：开放空间

测试工具: Wifi Analytical Assistant

测试距离: 10m

信号强度: 2.4G :-35dBm 5G:-42dBm

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。



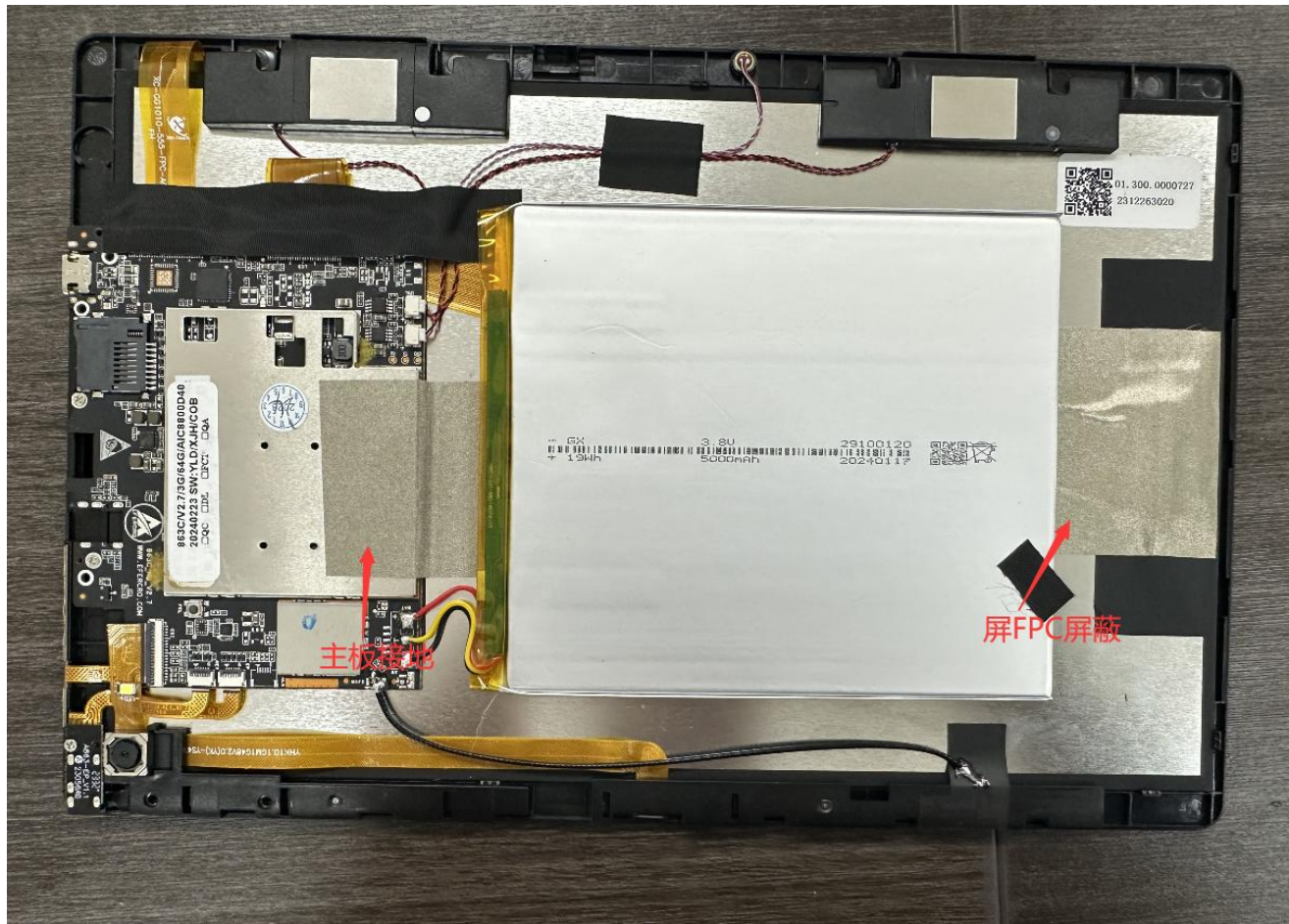
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环境处理

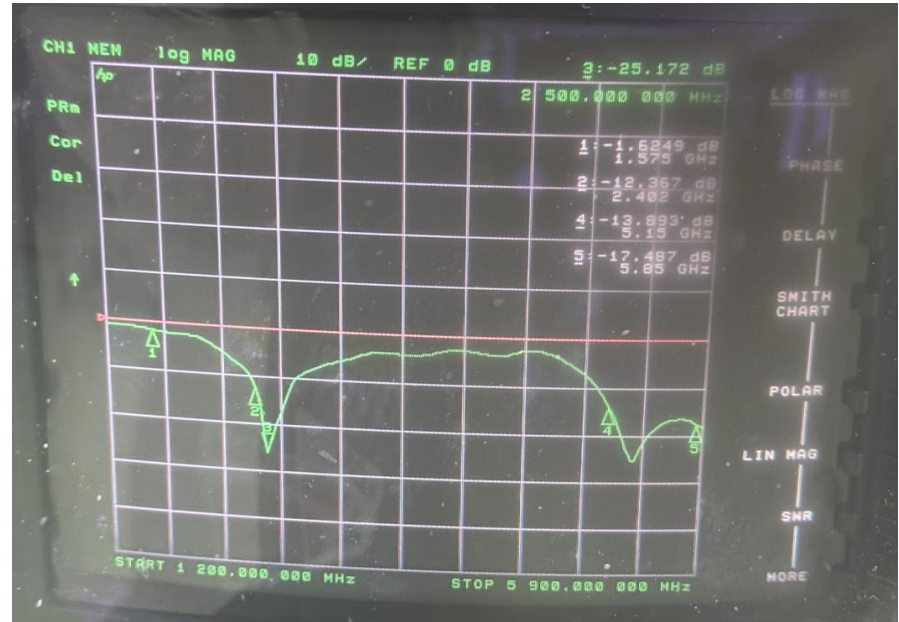
Environmental treatment





无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	2400	2500	5150	5850
VSWR	1.63	1.11	1.5	1.3
Return Loss (DB)	-12.36	-25.17	-13.89	-17.48



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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	41.16	-3.86	1.91	-0.24	24.956	16.206	1.91	-17.36
2410	38.02	-4.2	1.38	-0.77	23.009	15.015	1.38	-18
2420	39.9	-3.99	1.47	-0.68	24.147	15.756	1.47	-17.4
2430	40.86	-3.89	1.53	-0.62	25.056	15.806	1.53	-17.84
2440	42.23	-3.74	1.49	-0.66	26.217	16.016	1.49	-18.02
2450	39.45	-4.04	1.23	-0.92	24.519	14.935	1.23	-20.4
2460	38.01	-4.2	0.99	-1.16	23.491	14.518	0.99	-20.41
2470	41.73	-3.8	1.35	-0.8	25.35	16.377	1.35	-17.4
2480	42.69	-3.7	1.46	-0.69	25.743	16.948	1.46	-15.91
2490	40.63	-3.91	1.28	-0.87	24.343	16.289	1.28	-15.84
2500	37.64	-4.24	0.97	-1.18	22.394	15.25	0.97	-16.77



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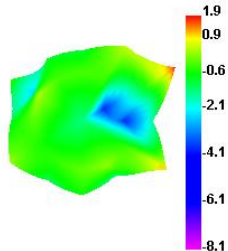
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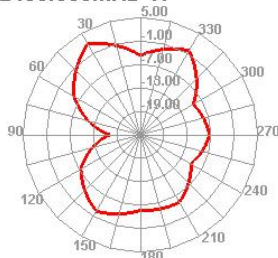
无源测试数据
Passive test data

ANT1 Direction of figure(2.4/BT)

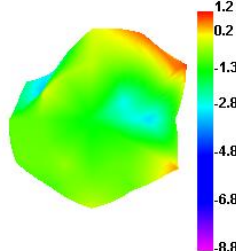
2400.000MHz



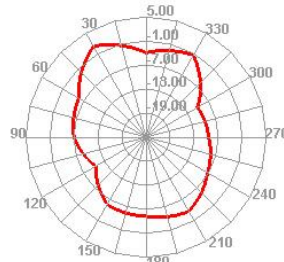
2400.000MHz H



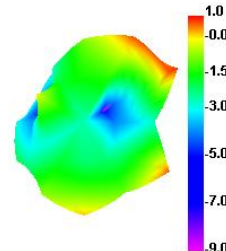
2450.000MHz



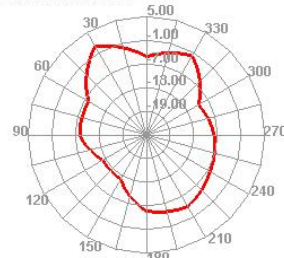
2450.000MHz H



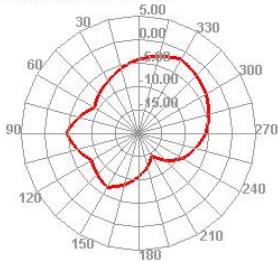
2500.000MHz



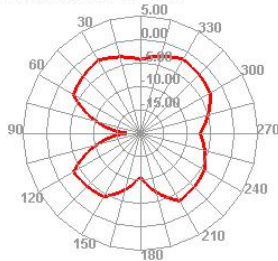
2500.000MHz H



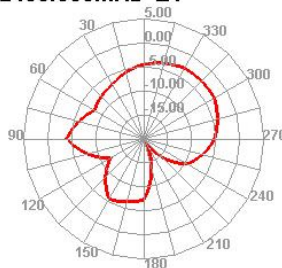
2400.000MHz E1



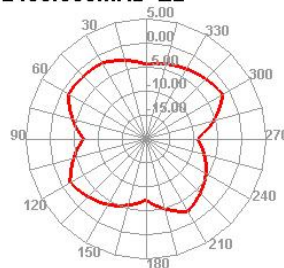
2400.000MHz E2



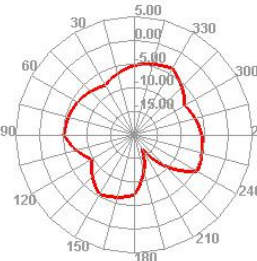
2450.000MHz E1



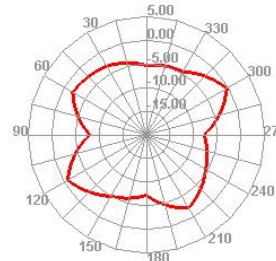
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2





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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 (%)	Max (dB)	Min (dB)
5150	36.48	-4.38	2.7	0.55	21.396	15.085	2.7	-15.44
5170	37.37	-4.28	2.76	0.61	22.043	15.323	2.76	-16.16
5190	39.3	-4.06	3.01	0.86	23.239	16.063	3.01	-16.88
5210	42.59	-3.71	3.32	1.17	24.979	17.614	3.32	-18.78
5230	42.44	-3.72	3.34	1.19	25.001	17.441	3.34	-20.19
5250	45.89	-3.38	3.64	1.49	27.184	18.71	3.64	-18.61
5270	46.6	-3.32	3.42	1.27	27.56	19.044	3.42	-18.36
5290	51.83	-2.85	3.48	1.33	30.674	21.152	3.48	-16.78
5310	48.85	-3.11	2.7	0.55	28.927	19.922	2.7	-17.71
5330	52.37	-2.81	2.92	0.77	31.094	21.278	2.92	-18.83
5350	53	-2.76	2.94	0.79	31.527	21.468	2.94	-18.55
5370	51.7	-2.86	2.54	0.39	30.841	20.861	2.54	-17.7
5390	45.98	-3.37	1.77	-0.38	27.489	18.495	1.77	-20.21
5410	52.81	-2.77	2.19	0.04	31.34	21.473	2.19	-26.55
5430	46.92	-3.29	1.34	-0.81	27.274	19.648	1.34	-19.49
5450	51.1	-2.92	2.31	0.16	29.296	21.808	2.31	-18.17
5470	50.6	-2.96	1.67	-0.48	29.539	21.066	1.67	-19.34
5490	50.58	-2.96	1.13	-1.02	29.897	20.679	1.13	-18.41
5510	53.64	-2.71	1.55	-0.6	31.275	22.36	1.55	-16.75
5530	54.65	-2.62	1.8	-0.35	31.073	23.573	1.8	-13.8
5550	58.84	-2.3	2.16	0.01	33.035	25.804	2.16	-12.79
5570	53.21	-2.74	2.4	0.25	30.005	23.206	2.4	-14.71
5590	54.93	-2.6	2.52	0.37	31.032	23.897	2.52	-14.08
5610	51.53	-2.88	2.25	0.1	28.902	22.63	2.25	-15.99
5630	53.94	-2.68	2.68	0.53	29.925	24.012	2.68	-15.01
5650	51.55	-2.88	2.79	0.64	28.459	23.091	2.79	-14.72
5670	51.61	-2.87	2.86	0.71	28.346	23.26	2.86	-15.21
5690	49.48	-3.06	3.05	0.9	27.064	22.411	3.05	-16.25
5710	50.05	-3.01	3.19	1.04	27.495	22.553	3.19	-15.85
5730	51.85	-2.85	3.28	1.13	28.785	23.068	3.28	-15.55
5750	47.36	-3.25	2.98	0.83	26.539	20.823	2.98	-16.67
5770	48.41	-3.15	3.2	1.05	27.357	21.048	3.2	-18.18
5790	46.24	-3.35	2.75	0.6	26.478	19.759	2.75	-18.42
5810	47.01	-3.28	2.55	0.4	27.451	19.557	2.55	-19.65
5830	46.71	-3.31	2.78	0.63	27.503	19.208	2.78	-20.88
5850	45.87	-3.38	2.94	0.79	27.273	18.595	2.94	-19.06



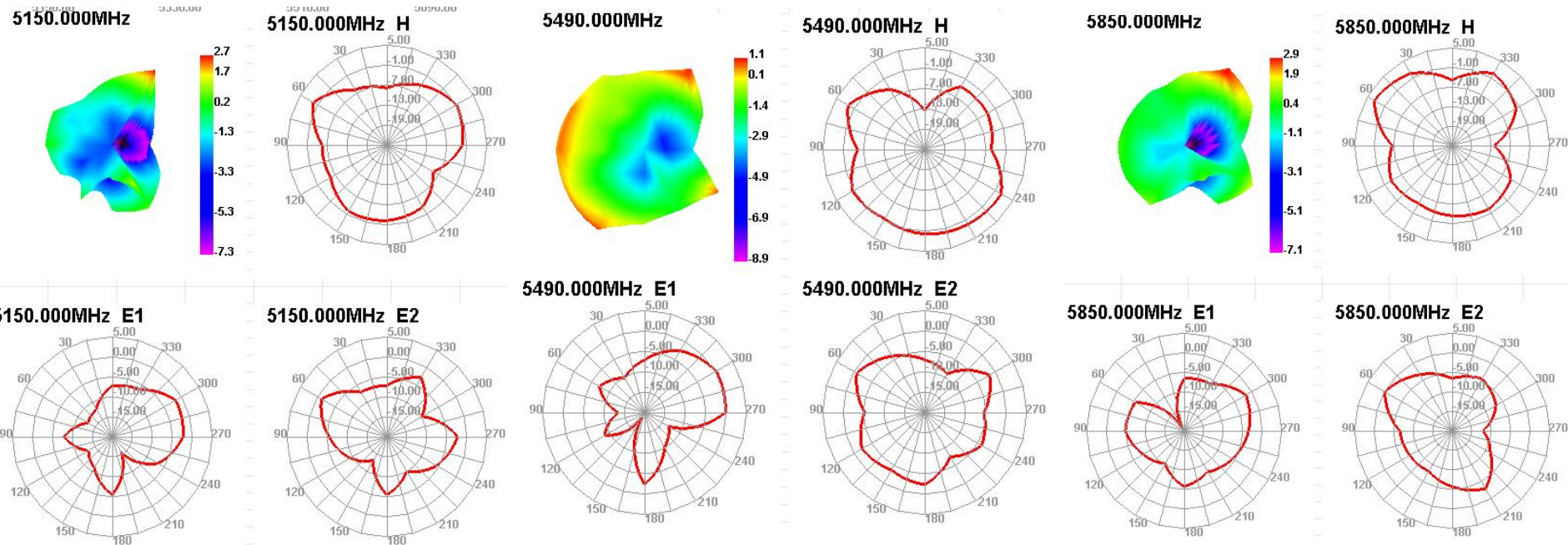
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无源测试数据
Passive test data

ANT1 Direction of figure(5G)



合作共赢

