



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: K1095T

RF: 戴进平

MD: 黄菁菁

MP: 19918388579

Date: 2023. 03. 30

REV :V1. 0



ANTENNA

测试信息

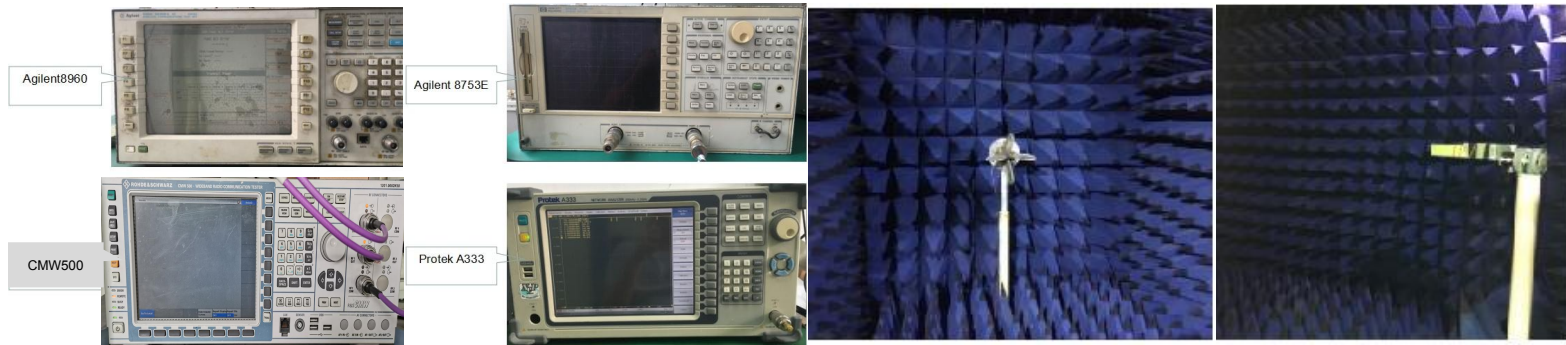
Test information

	Antenna band	Antenna state	Antenna form	Match changes	Note
Main ANT	2G				
	3G			NO	
	4G				
AUX ANT	BT/WIFI	2.4G/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



天线位置
Antenna position



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有源测试数据 Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	13.50	CH1 11Mbps	-82.47
2437	CH6 11Mbps	16.73	CH6 11Mbps	-81.70	
2467	CH11 11Mbps	13.07	CH11 11Mbps	-82.93	
802.11a		TRP		TIS	
	5180	CH36 6Mbps	12.46	CH36 54Mbps	-71.64
	5300	CH60 6Mbps	10.24	CH60 54Mbps	-71.93
	5805	CH161 6Mbps	12.53	CH161 54Mbps	-71.70

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 :-46dBm ;5G -52dBm

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

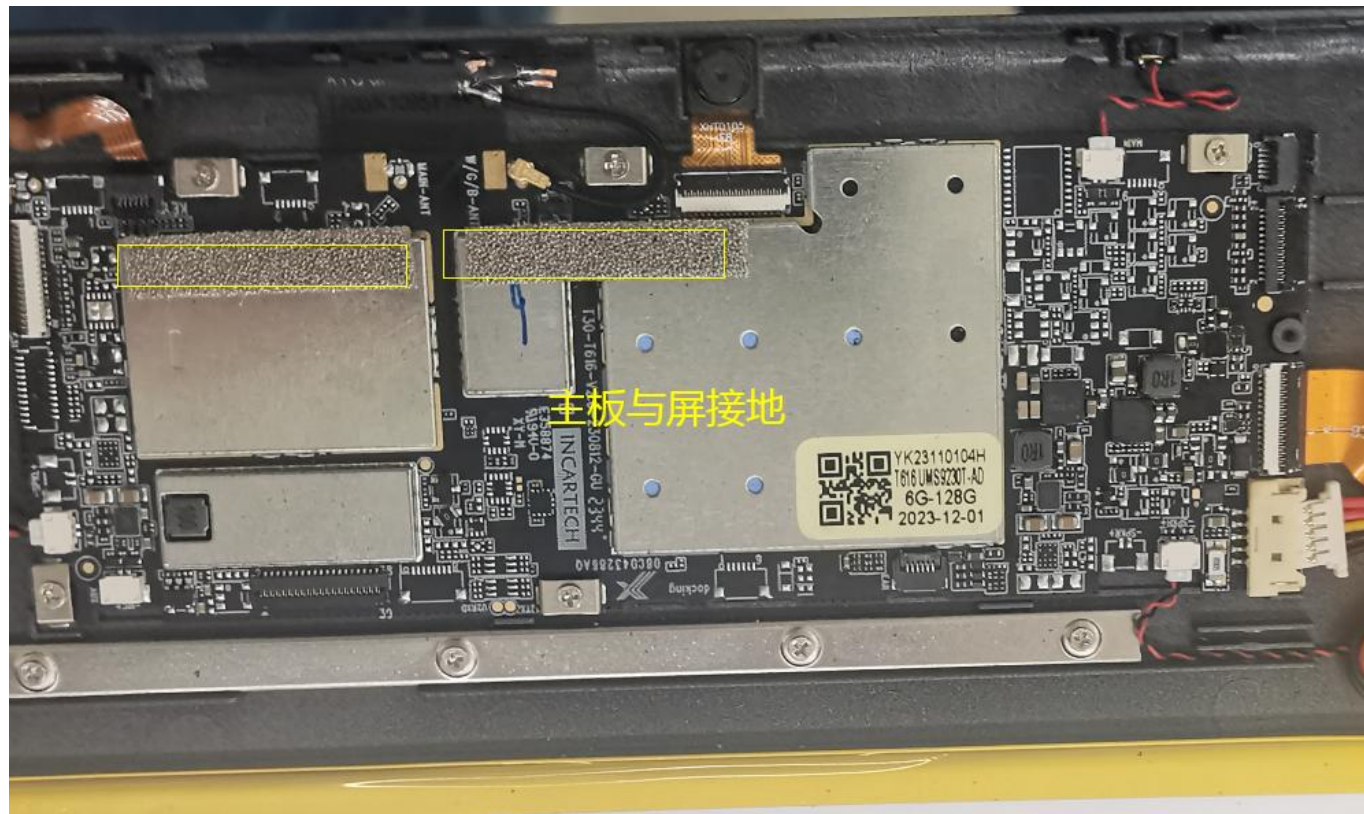
测试距离：10+m

结果：播放音乐流畅，无杂音。



环境处理

Environmental treatment





环境处理

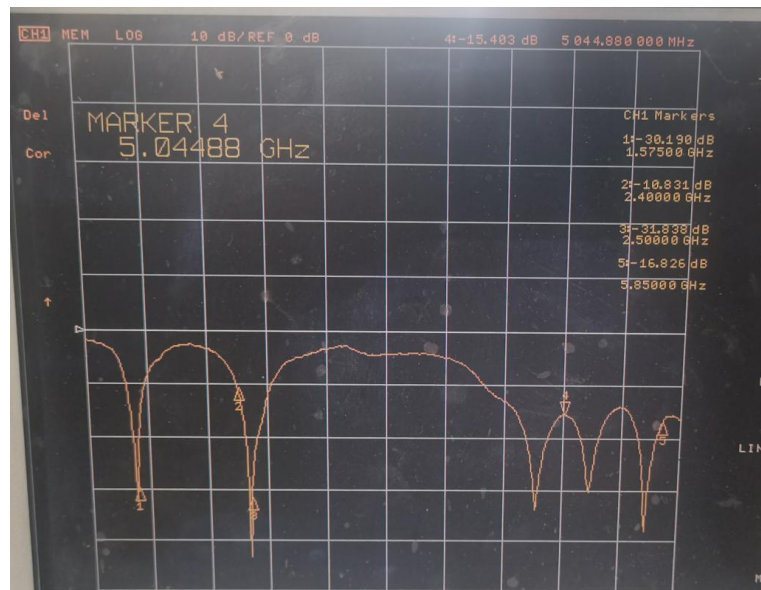
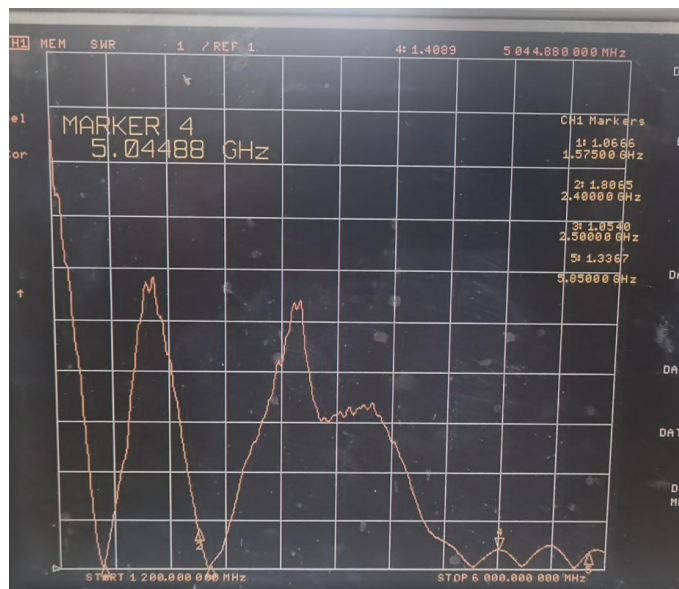
Environmental treatment





无源测试数据 Passive test data

ANT1 S11-VSWR&Return Loss



Frequency (MHZ)	1575	2400	2500	5150		5850
VSWR	1.06	1.80	1.05	1.48		1.33
Return Loss (DB)	-30.1	-10.0	-31.0	-15.4		-16.8



无源测试数据
Passive test data

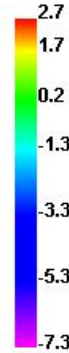
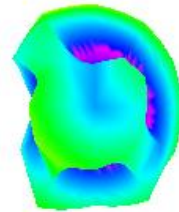
G/W/B GAIN&Efficiency-GPS

Passive Test For GPS												
1560	57.2	-2.43	2.84	0.69	19.02	38.181	2.84	-13.73	5.27	0	41.34	40.88
1565	57.03	-2.44	2.85	0.7	19.156	37.876	2.85	-13.19	5.29	0	41.42	40.95
1570	57.02	-2.44	2.79	0.64	19.419	37.604	2.79	-12.94	5.23	0	41.5	41.03
1575	57.87	-2.38	2.72	0.57	20.066	37.807	2.72	-12.88	5.1	0	41.68	41.23
1580	58.72	-2.31	2.63	0.48	20.652	38.068	2.63	-13.08	4.94	0	41.78	41.35
1585	59.81	-2.23	2.52	0.37	21.14	38.667	2.52	-13.6	4.75	0	41.85	41.4
1590	60.73	-2.17	2.49	0.34	21.47	39.261	2.49	-14.16	4.66	0	41.99	41.53
1595	60.86	-2.16	2.58	0.43	21.505	39.354	2.58	-15.04	4.73	0	42.09	41.67
1600	58.93	-2.3	2.51	0.36	20.706	38.228	2.51	-16.24	4.81	0	42.04	41.62

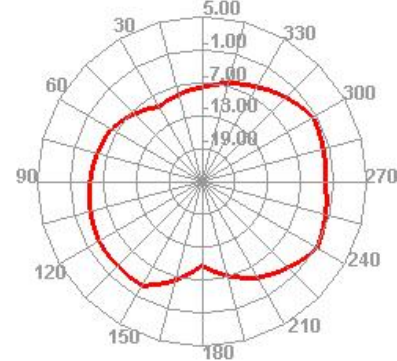
无源测试数据
Passive test data

G/W/B Direction of figure(GPS)

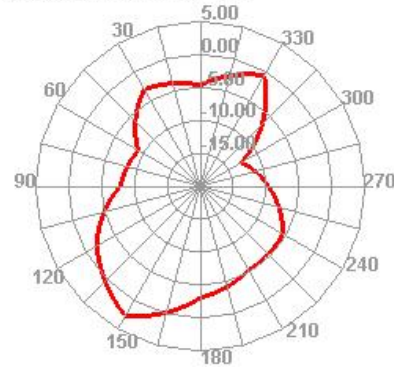
1500.00 1525.00
1575.000MHz



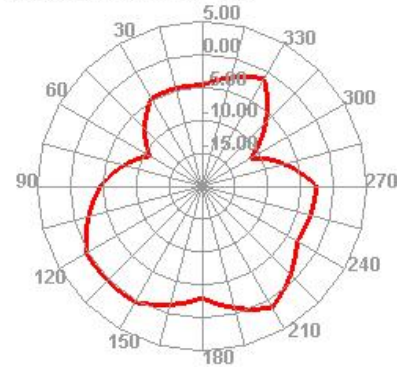
1550.00 1575.00
1575.000MHz H



1575.000MHz E1



1575.000MHz E2





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无源测试数据

Passive test data

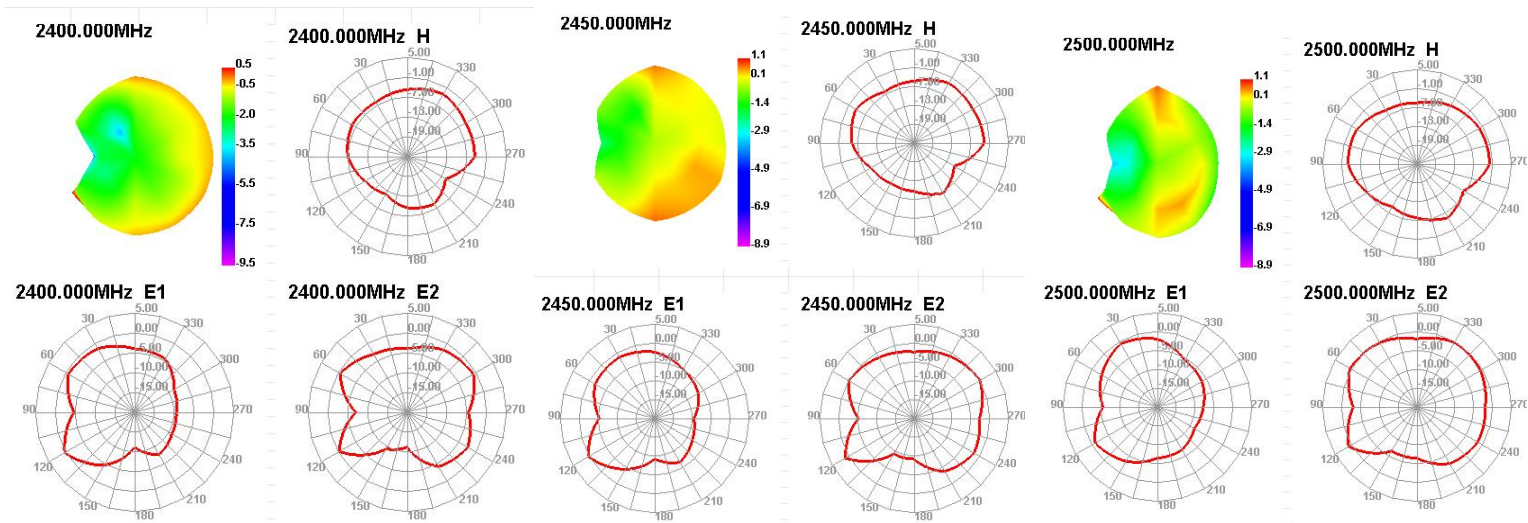
G/W/B GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	49.73	-3.03	0.51	-1.64	25.263	24.471	0.51	-17.07	3.54	0	45.78	46.01
2410	46.02	-3.37	0.3	-1.85	23.329	22.691	0.3	-19.01	3.67	0	46.01	46.29
2420	50.74	-2.95	0.67	-1.48	25.667	25.07	0.67	-20.88	3.62	0	45.73	46
2430	52.12	-2.83	0.87	-1.28	26.521	25.601	0.87	-23.22	3.7	0	46.01	46.36
2440	53.54	-2.71	1.09	-1.06	27.318	26.219	1.09	-24.18	3.8	0	46.12	46.48
2450	54.44	-2.64	1.06	-1.09	27.863	26.581	1.06	-22.7	3.7	0	46.12	46.54
2460	55.88	-2.53	1.08	-1.07	28.475	27.406	1.08	-21.29	3.61	0	46.14	46.52
2470	57.86	-2.38	1.19	-0.96	29.235	28.628	1.19	-20.14	3.57	0	46.4	46.8
2480	59.21	-2.28	1.22	-0.93	29.783	29.424	1.22	-18.9	3.49	0	46.26	46.64
2490	61.04	-2.14	1.36	-0.79	30.464	30.571	1.36	-17.12	3.51	30	46.51	46.91
2500	55.58	-2.55	1.08	-1.07	27.696	27.879	1.08	-16.16	3.63	60	46.47	46.86



无源测试数据 Passive test data

G/W/B Direction of figure(2.4/BT)





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无源测试数据
Passive test data

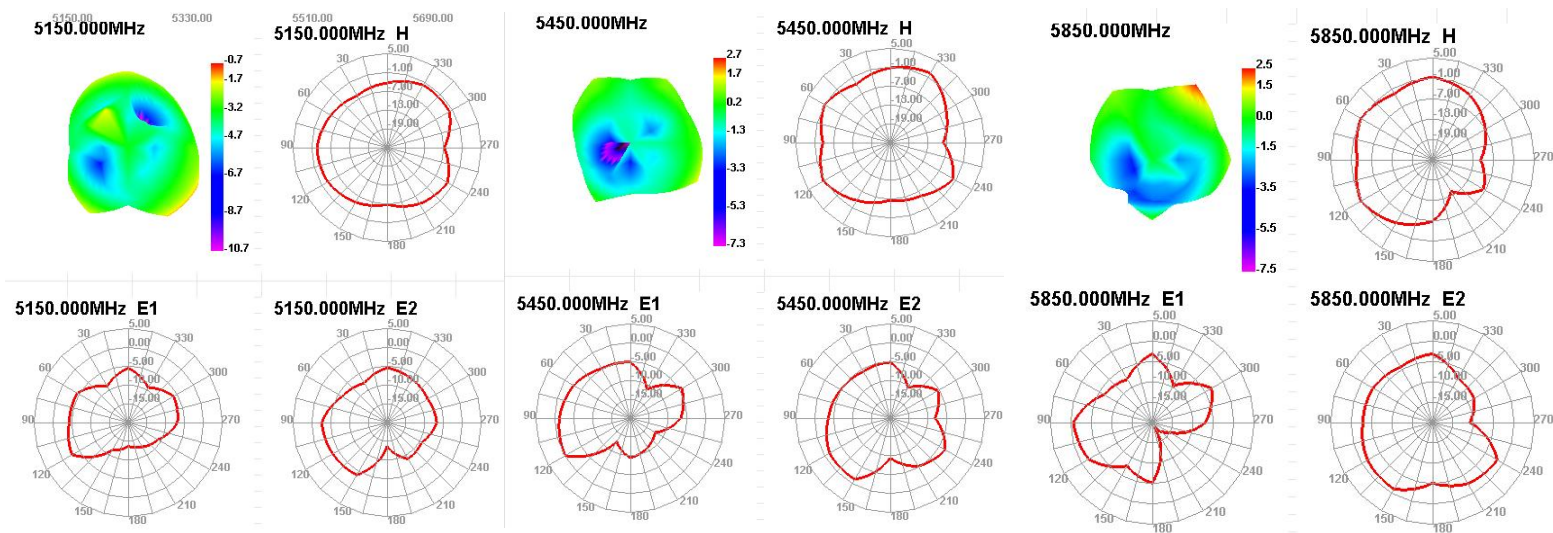
G/W/B GAIN&Efficiency-WIFI5G

Passive Test For WIFI5G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	29.73	-5.27	-0.74	-2.89	12.608	17.119	-0.74	-19.21	4.53	60	49.82	49.4
5170	32.81	-4.84	-0.41	-2.56	13.789	19.026	-0.41	-19.37	4.43	60	50.13	49.77
5190	32.42	-4.89	-0.3	-2.45	13.478	18.938	-0.3	-17.82	4.6	60	50.42	49.95
5210	35.61	-4.48	0.57	-1.58	14.642	20.969	0.57	-17.97	5.05	60	50.88	50.49
5230	32.95	-4.82	0.61	-1.54	13.424	19.53	0.61	-18.77	5.43	60	50.42	50.08
5250	38.33	-4.16	1.54	-0.61	15.413	22.915	1.54	-18.1	5.71	30	51.02	50.72
5270	38.55	-4.14	1.9	-0.25	15.432	23.122	1.9	-16.7	6.04	30	50.85	50.6
5290	41.72	-3.8	2.46	0.31	16.654	25.068	2.46	-16.65	6.26	60	51.34	51.12
5310	36.59	-4.37	2.14	-0.01	14.65	21.936	2.14	-18.92	6.51	60	50.44	50.36
5330	39.55	-4.03	2.51	0.36	15.995	23.557	2.51	-18.15	6.54	0	51.08	51.01
5350	40.47	-3.93	2.52	0.37	16.474	23.996	2.52	-16.02	6.45	0	51.02	51.01
5370	42.34	-3.73	2.68	0.53	17.339	25.006	2.68	-16.1	6.42	0	50.91	50.95
5390	36.77	-4.35	2.06	-0.09	14.998	21.767	2.06	-17.64	6.41	60	50.46	50.43
5410	45.8	-3.39	2.99	0.84	18.788	27.009	2.99	-17.81	6.38	60	51.18	51.09
5430	39.42	-4.04	2.15	0	16.215	23.21	2.15	-18.84	6.2	30	50.69	50.7
5450	46.26	-3.35	2.68	0.53	19.274	26.987	2.68	-20.18	6.03	60	50.71	50.85
5470	41.23	-3.85	2.02	-0.13	17.288	23.938	2.02	-25.38	5.87	60	50.93	50.83
5490	43.07	-3.66	2.04	-0.11	18.032	25.036	2.04	-18.33	5.7	60	50.92	50.79
5510	43.88	-3.58	1.9	-0.25	18.418	25.46	1.9	-17.21	5.47	30	51.18	51.16
5530	47.2	-3.26	2.1	-0.05	19.808	27.388	2.1	-17.01	5.36	30	51.44	51.3
5550	49.07	-3.09	2.27	0.12	20.573	28.498	2.27	-15.09	5.37	30	51.89	51.76
5570	46.4	-3.33	2.04	-0.11	19.386	27.013	2.04	-14.93	5.38	30	51.42	51.33
5590	49.48	-3.06	2.3	0.15	20.629	28.854	2.3	-15.32	5.35	30	51.71	51.76
5610	45.96	-3.38	2.05	-0.1	19.323	26.635	2.05	-13.8	5.43	30	51.17	51.22
5630	48.84	-3.11	2.45	0.3	20.749	28.093	2.45	-14.52	5.56	60	51.78	51.77
5650	43.92	-3.57	2.01	-0.14	18.687	25.233	2.01	-15.08	5.58	60	51.47	51.55
5670	46.79	-3.3	2.38	0.23	19.995	26.795	2.38	-15.89	5.68	60	52.12	52.28
5690	43.88	-3.58	2.22	0.07	18.789	25.087	2.22	-15.63	5.8	60	52.12	52.25
5710	44.6	-3.51	2.36	0.21	19.35	25.251	2.36	-16.05	5.87	60	51.95	52.05
5730	46.11	-3.36	2.53	0.38	20.098	26.012	2.53	-16.47	5.89	60	51.59	51.69
5750	41.62	-3.81	2.1	-0.05	18.157	23.459	2.1	-17.66	5.91	60	51.12	51.15
5770	43.91	-3.57	2.29	0.14	19.285	24.628	2.29	-18.72	5.87	30	51.02	51.06
5790	40.67	-3.91	2.08	-0.07	17.938	22.735	2.08	-18.81	5.99	30	51.08	51.16
5810	42.28	-3.74	2.27	0.12	18.743	23.534	2.27	-18.55	6.01	30	51.36	51.43
5830	41.49	-3.82	2.25	0.1	18.467	23.026	2.25	-18.51	6.07	30	51.65	51.66
5850	44.37	-3.53	2.5	0.35	19.905	24.464	2.5	-18.52	6.03	30	51.88	52.05



无源测试数据 Passive test data

G/W/B Direction of figure(5G)



合作 共赢

