



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: 桑格尔

MN: V3

RF: 戴进平

MD: 黄清清

MP: 19918388579

Date: 2022. 8. 31

REV :V1. 0



ANTENNA

深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

测试信息

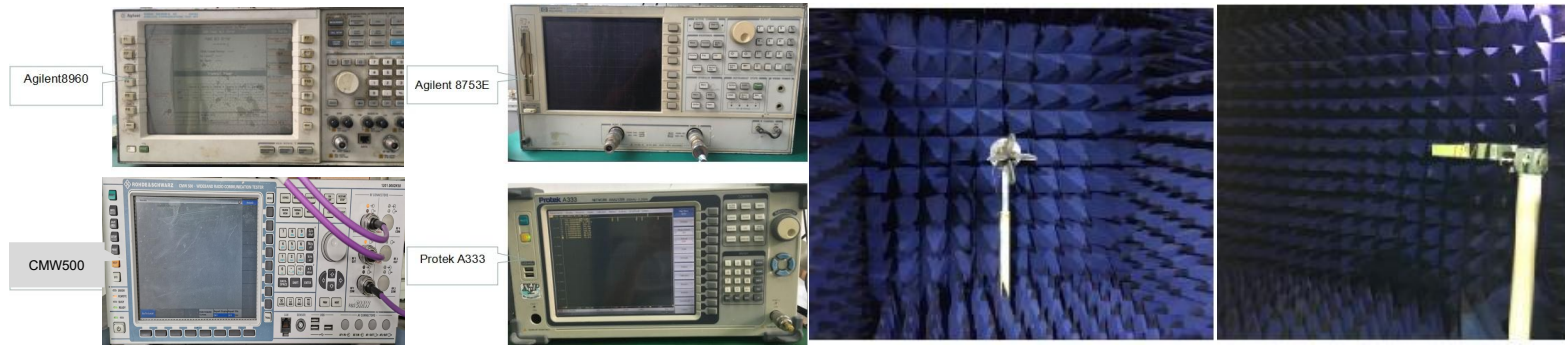
Test information

Antenna band		Antenna state	Antenna form	Match changes	Note
Main ANT	2G	850/900/1800/1900			
	3G	W2100/W1900/W900/W850	FPC	PIFA	NO
	4G	B1/B2/B3/B4/B7/B17/B38/39/B40/B41			
AUX ANT	BT/WIFI	2.4/5G	FPC	PIFA	NO
	GPS	1.575G	FPC	PIFA	NO
	DIV		FPC	PIFA	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





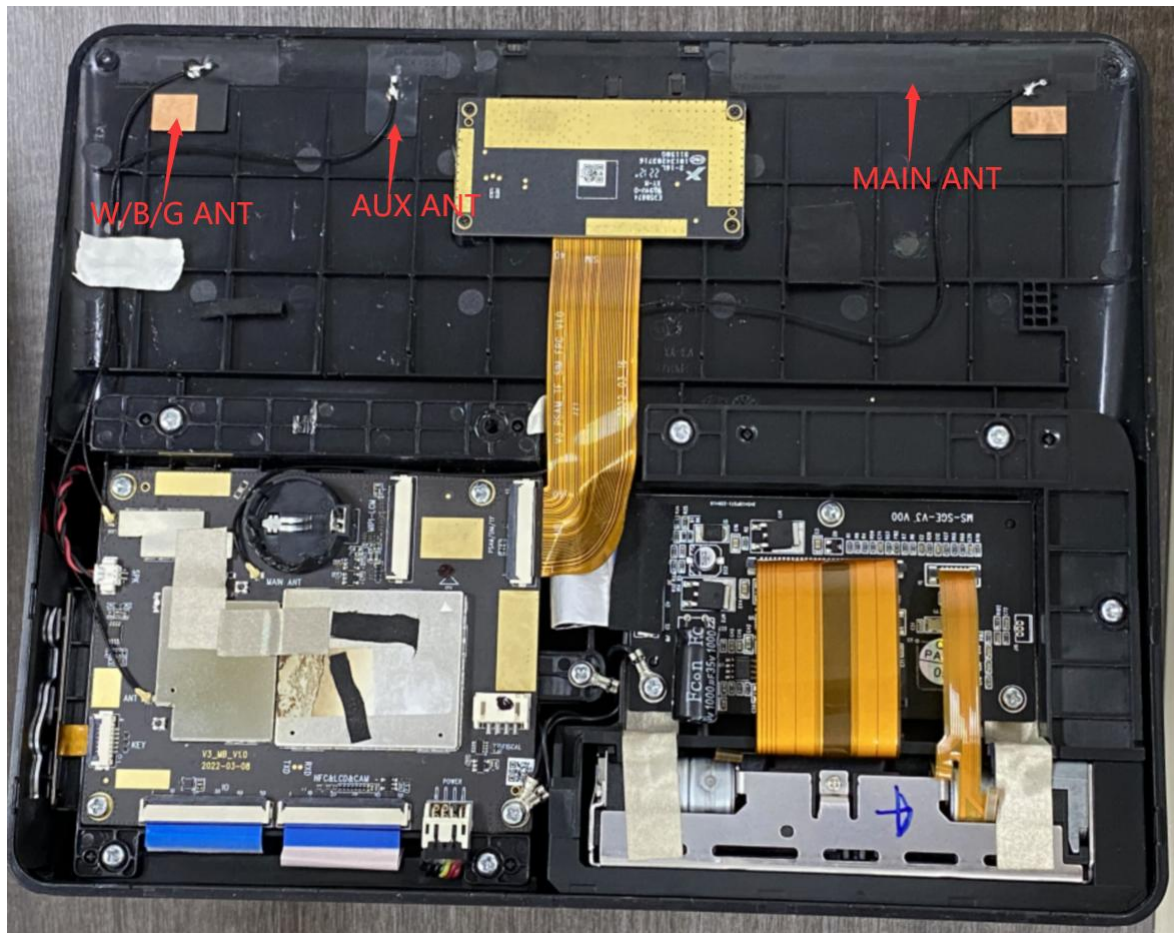
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天线位置

Antenna position



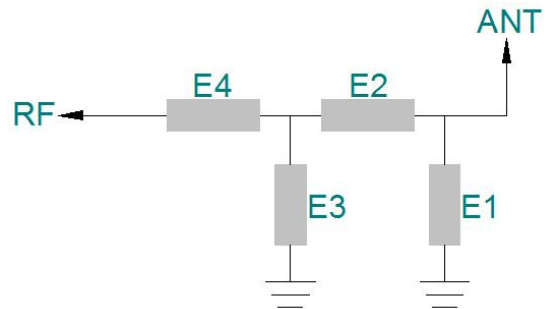


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匹配电路
Matching circuit

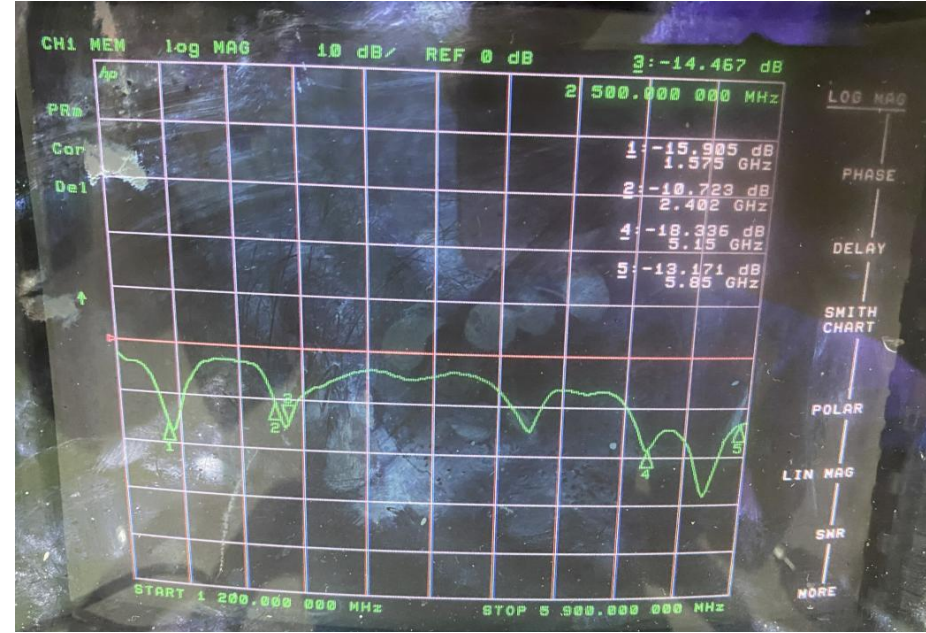
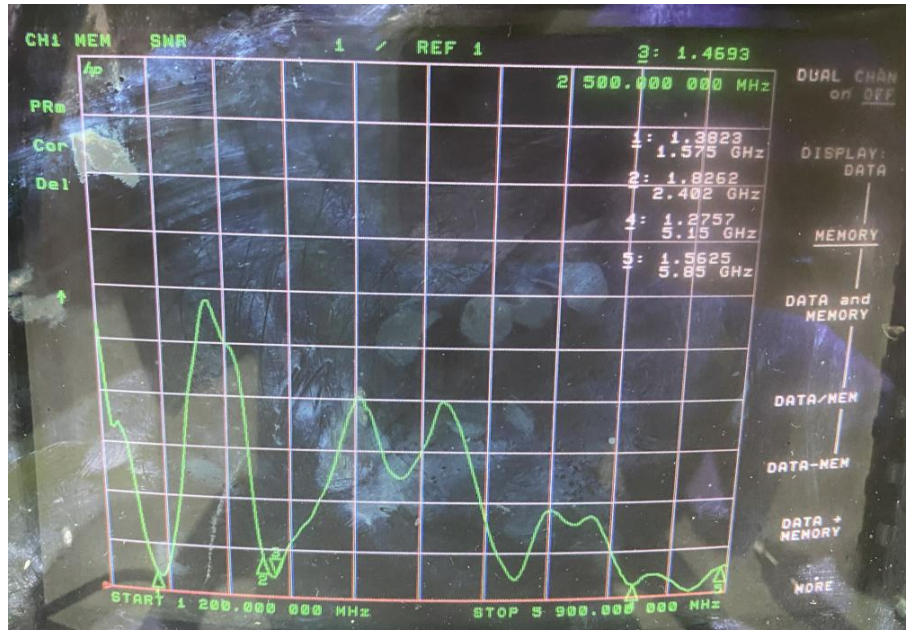


匹配电路原理图&位号图

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

无源测试数据 Passive test data

W/B/G ANT S11-VSWR&Return Loss



Frequency (MHZ)	1. 575	2400	2500	5150	5850
VSWR	1.38	1.82	1.46	1.27	1.56
Return Loss (DB)	-15.9	-10.72	-14.46	-18.33	-13.17

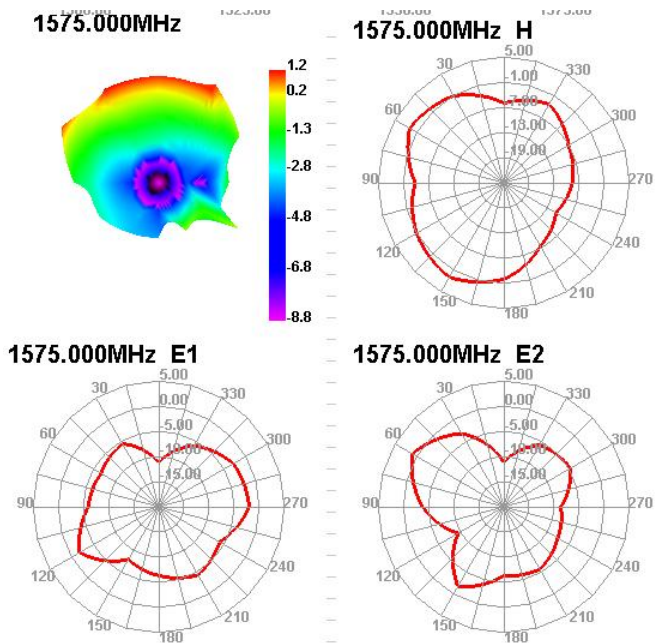
无源测试数据
Passive test data

W/B/G ANT GAIN&Efficiency-GPS

Passive Test For GPS								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
1560	38.4	-4.16	0.54	-1.61	22.577	15.822	0.54	-13.04
1565	40.41	-3.94	0.72	-1.43	23.85	16.557	0.72	-12.48
1570	44.86	-3.48	1.14	-1.01	26.515	18.345	1.14	-11.9
1575	46.96	-3.28	1.24	-0.91	27.578	19.383	1.24	-11.22
1580	46.51	-3.32	1.16	-0.99	27.2	19.309	1.16	-11.18

无源测试数据
Passive test data

W/B/G ANT Direction of figure(GPS)



无源测试数据

Passive test data

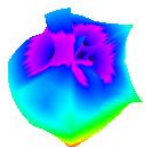
W/B/G ANT GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
2400	42.85	-3.68	3.73	1.58	15.262	27.588	3.73	-13.32
2410	44.59	-3.51	3.81	1.66	15.907	28.683	3.81	-13.39
2420	47.78	-3.21	4.09	1.94	17.172	30.606	4.09	-13.04
2430	46.26	-3.35	3.89	1.74	16.795	29.465	3.89	-14.54
2440	44.27	-3.54	3.55	1.4	16.292	27.977	3.55	-17.09
2450	46.8	-3.3	3.6	1.45	17.429	29.368	3.6	-18.64
2460	53.84	-2.69	4	1.85	20.371	33.466	4	-17.6
2470	53.78	-2.69	3.73	1.58	20.531	33.252	3.73	-16.01
2480	53.75	-2.7	3.55	1.4	20.53	33.222	3.55	-14.54
2490	52.27	-2.82	3.23	1.08	19.884	32.39	3.23	-13.1
2500	56.5	-2.48	3.49	1.34	21.434	35.062	3.49	-11.53

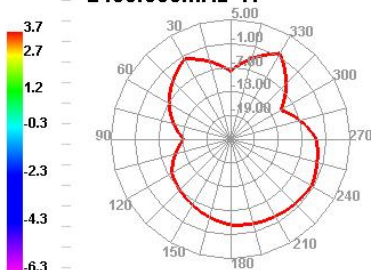
无源测试数据
Passive test data

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

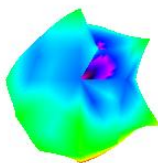
2400.000MHz



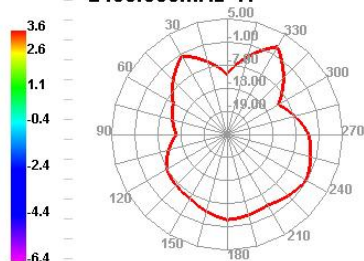
2400.000MHz H



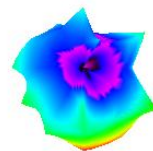
2450.000MHz



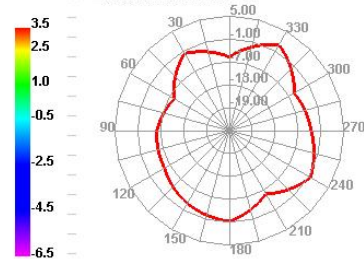
2450.000MHz H



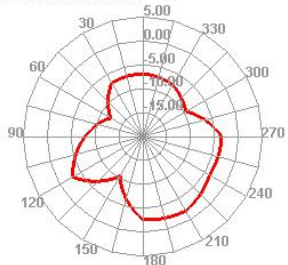
2500.000MHz



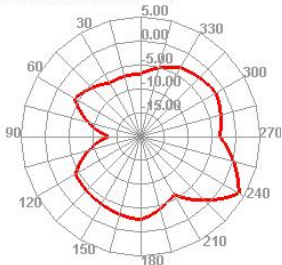
2500.000MHz H



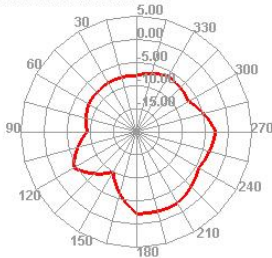
2400.000MHz E1



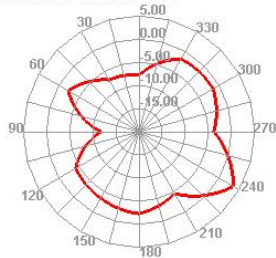
2400.000MHz E2



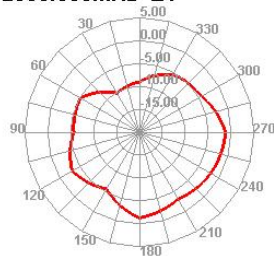
2450.000MHz E1



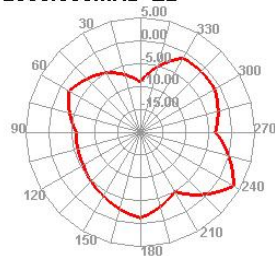
2450.000MHz E2



2500.000MHz E1



2500.000MHz E2



无源测试数据 Passive test data

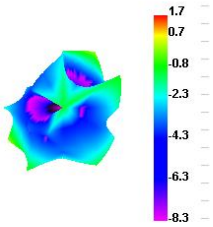
W/B/G ANT GAIN&Efficiency-WIFI 5G

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
5150	33.1	-4.8	1.75	-0.4	10.98	22.124	1.75	-15.38
5170	30.16	-5.21	1.26	-0.89	10.362	19.802	1.26	-14.86
5190	34.44	-4.63	1.63	-0.52	11.967	22.471	1.63	-13.45
5210	29.84	-5.25	1.16	-0.99	9.984	19.857	1.16	-14.35
5230	35.11	-4.55	2.08	-0.07	11.559	23.548	2.08	-14.88
5250	29.38	-5.32	1.07	-1.08	10.028	19.349	1.07	-17.57
5270	35.1	-4.55	1.23	-0.92	12.525	22.57	1.23	-15.35
5290	33.74	-4.72	0.89	-1.26	12.157	21.586	0.89	-14.59
5310	34.83	-4.58	1.05	-1.1	12.442	22.388	1.05	-14.86
5330	34.72	-4.59	1.43	-0.72	12.625	22.1	1.43	-16.08
5350	37.3	-4.28	1.49	-0.66	13.979	23.323	1.49	-15.86
5370	38.33	-4.16	0.94	-1.21	14.645	23.684	0.94	-15.18
5390	35	-4.56	0.11	-2.04	13.555	21.446	0.11	-15.65
5410	43.89	-3.58	1.22	-0.93	17.383	26.505	1.22	-14.35
5430	39.46	-4.04	0.69	-1.46	16.227	23.229	0.69	-15.25
5450	42.89	-3.68	0.93	-1.22	18.311	24.579	0.93	-15.02
5470	40.28	-3.95	0.99	-1.16	17.549	22.729	0.99	-13.55
5490	45.57	-3.41	2.12	-0.03	20.199	25.37	2.12	-12.71
5510	41.09	-3.86	1.95	-0.2	18.611	22.474	1.95	-13.25
5530	46.87	-3.29	2.13	-0.02	21.809	25.057	2.13	-12.54
5550	45.08	-3.46	1.61	-0.54	21.367	23.714	1.61	-12.2
5570	46.53	-3.32	2.03	-0.12	22.381	24.148	2.03	-15.28
5590	46.98	-3.28	2.32	0.17	22.892	24.091	2.32	-19.25
5610	44.45	-3.52	1.52	-0.63	21.851	22.595	1.52	-16.75
5630	42.97	-3.67	0.61	-1.54	21.356	21.617	0.61	-13.33
5650	39.52	-4.03	0.62	-1.53	19.739	19.779	0.62	-11.82
5670	41.1	-3.86	1.01	-1.14	20.49	20.608	1.01	-11.22
5690	36.22	-4.41	0.47	-1.68	17.83	18.389	0.47	-12.81
5710	40.44	-3.93	1.01	-1.14	19.725	20.718	1.01	-11.86
5730	37.51	-4.26	0.74	-1.41	18.277	19.235	0.74	-12.37
5750	40.09	-3.97	1.02	-1.13	19.274	20.82	1.02	-13.58
5770	38.43	-4.15	0.62	-1.53	18.158	20.274	0.62	-17.1
5790	39.57	-4.03	0.38	-1.77	18.477	21.098	0.38	-18.04
5810	39.35	-4.05	0.27	-1.88	18.433	20.919	0.27	-16.12
5830	42.15	-3.75	1.02	-1.13	19.801	22.351	1.02	-15.14
5850	41.17	-3.85	0.98	-1.17	19.386	21.784	0.98	-14.14

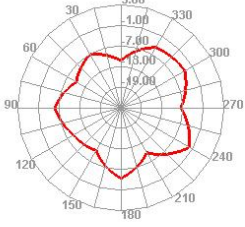
无源测试数据 Passive test data

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

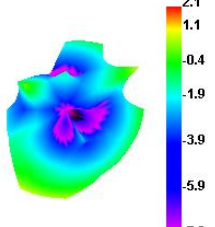
5150.000MHz



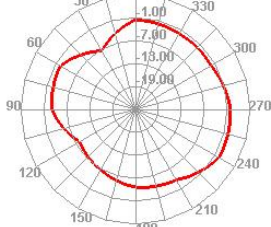
5150.000MHz H



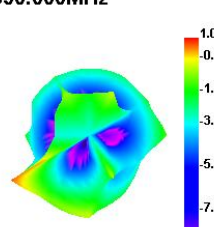
5490.000MHz



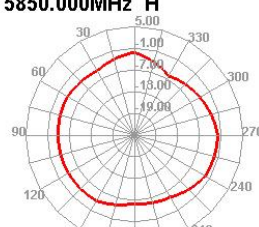
5490.000MHz H



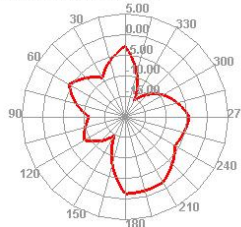
5850.000MHz



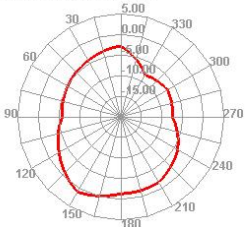
5850.000MHz H



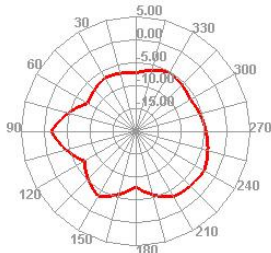
5150.000MHz E1



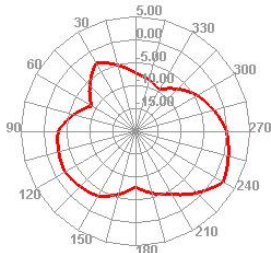
5150.000MHz E2



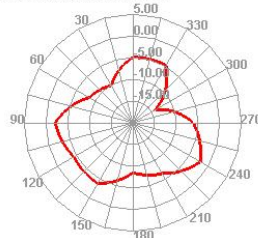
5490.000MHz E1



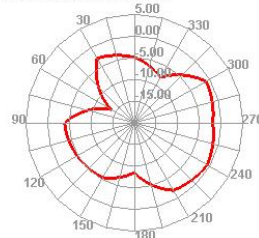
5490.000MHz E2



5850.000MHz E1

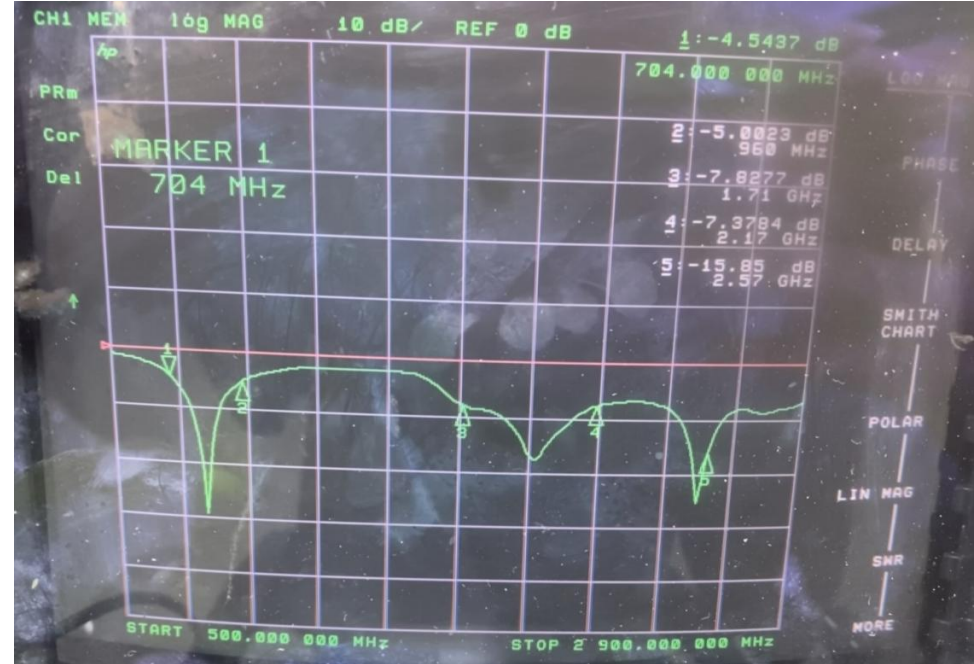


5850.000MHz E2



无源测试数据
Passive test data

MAIN ANT S11-VSWR&Return Loss



Frequency (MHZ)	704	960	1710	2170	2570
VSWR	3.91	3.57	2.36	2.49	1.39
Return Loss (DB)	-4.54	-5.	-7.82	-7.37	-15.85

无源测试数据

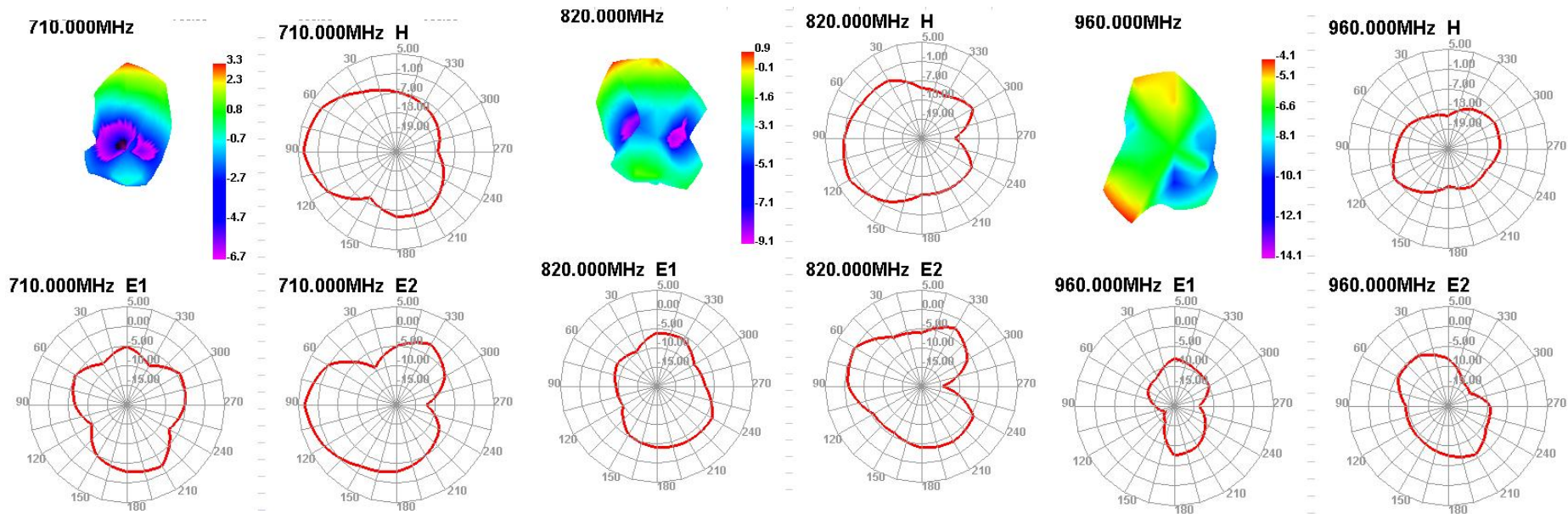
Passive test data

MAIN ANT GAIN&Efficiency-(700-960)

Passive Test For 低频								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
690	28.53	-5.45	0.59	-1.56	13.053	15.474	0.59	-12.15
700	30.64	-5.14	1.71	-0.44	14.331	16.307	1.71	-12.97
710	41.71	-3.8	3.33	1.18	20.242	21.468	3.33	-12.35
720	45.51	-3.42	3.67	1.52	22.701	22.81	3.67	-13.59
730	47.12	-3.27	3.53	1.38	23.876	23.245	3.53	-15.32
740	46.82	-3.3	3.03	0.88	23.399	23.424	3.03	-18.86
750	47.73	-3.21	2.79	0.64	23.615	24.111	2.79	-18.29
760	46.04	-3.37	2.48	0.33	22.556	23.484	2.48	-17.65
770	37.61	-4.25	1.48	-0.67	18.647	18.961	1.48	-16.84
780	35.19	-4.54	1.18	-0.97	17.734	17.452	1.18	-15.94
790	35.12	-4.54	1	-1.15	17.878	17.244	1	-16.42
800	34.73	-4.59	0.89	-1.26	17.737	16.994	0.89	-17.7
810	33.37	-4.77	0.86	-1.29	17.013	16.355	0.86	-16.13
820	34.11	-4.67	0.88	-1.27	16.779	17.328	0.88	-14.63
830	31.94	-4.96	0.39	-1.76	15.068	16.874	0.39	-14.54
840	28.09	-5.51	-0.59	-2.74	13.163	14.932	-0.59	-13.96
850	26.8	-5.72	-0.99	-3.14	12.9	13.905	-0.99	-14.67
860	24.96	-6.03	-1.39	-3.54	12.292	12.666	-1.39	-14.8
870	32.5	-4.8	0.59	-1.56	15.165	17.339	0.59	-15.27
880	30.25	-5.26	-0.2	-2.35	14.081	16.167	-0.2	-17.29
890	27.52	-5.88	-0.9	-3.05	12.907	14.616	-0.9	-23.49
900	28.07	-5.75	-0.64	-2.79	13.567	14.508	-0.64	-18.29
910	26.61	-6.12	-0.87	-3.02	13.14	13.473	-0.87	-16.36
920	24.15	-6.81	-0.88	-3.03	11.845	12.3	-0.88	-21.22
930	24.49	-6.71	-0.74	-2.89	12.075	12.414	-0.74	-23.45
940	25.42	-6.44	-0.78	-2.93	12.868	12.557	-0.78	-23.25
950	23.58	-6.99	-1	-3.15	11.909	11.667	-1	-22.72
960	21.13	-7.86	-1.48	-3.63	10.506	10.622	-1.48	-20.28

无源测试数据 Passive test data

MAIN ANT Direction of figure(700-960)



无源测试数据

Passive test data

MAIN ANT GAIN&Efficiency-(1700-1900)

Passive Test For D3								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
1700	40.57	-3.92	1.13	-1.02	19.172	21.402	1.13	-11.09
1705	42.08	-3.76	1.25	-0.9	19.616	22.464	1.25	-10.43
1710	40.99	-3.87	1.07	-1.08	18.862	22.126	1.07	-10.44
1715	39.94	-3.99	0.86	-1.29	18.161	21.78	0.86	-10.51
1720	38.63	-4.13	0.59	-1.56	17.432	21.202	0.59	-10.51
1725	38.02	-4.2	0.39	-1.76	17.001	21.019	0.39	-10.2
1730	39.55	-4.03	0.46	-1.69	17.528	22.022	0.46	-9.67
1735	41.76	-3.79	0.76	-1.39	18.437	23.322	0.76	-9.12
1740	42.86	-3.68	0.86	-1.29	18.865	23.99	0.86	-8.76
1745	43.66	-3.6	0.96	-1.19	19.279	24.379	0.96	-8.75
1750	43.79	-3.59	1.03	-1.12	19.412	24.382	1.03	-8.48
1755	42.87	-3.68	0.99	-1.16	19.11	23.758	0.99	-8.38
1760	43.02	-3.66	1.07	-1.08	19.355	23.668	1.07	-8.63
1765	45.44	-3.43	1.39	-0.76	20.541	24.898	1.39	-9.02
1770	48.38	-3.15	1.65	-0.5	22.083	26.301	1.65	-9.19
1775	50.88	-2.93	1.89	-0.26	23.366	27.517	1.89	-9.1
1780	53.24	-2.74	2.08	-0.07	24.56	28.684	2.08	-9.25
1785	52.03	-2.84	2.04	-0.11	23.957	28.07	2.04	-9.75
1790	49.04	-3.09	1.88	-0.27	22.513	26.527	1.88	-10.1
1795	48.68	-3.13	2	-0.15	22.229	26.451	2	-10.54
1800	48.72	-3.12	2.12	-0.03	22.071	26.651	2.12	-10.44
1805	47.04	-3.28	2.09	-0.06	21.077	25.966	2.09	-10.44
1810	47.42	-3.24	2.21	0.06	21.105	26.311	2.21	-10.48
1815	49.12	-3.09	2.45	0.3	21.712	27.413	2.45	-10.21
1820	47.42	-3.24	2.35	0.2	20.78	26.639	2.35	-10.76
1825	44.95	-3.47	2.15	0	19.617	25.334	2.15	-11.41
1830	45.1	-3.46	2.16	0.01	19.634	25.47	2.16	-11.61
1835	45.22	-3.45	2.23	0.08	19.607	25.615	2.23	-11.69
1840	43.79	-3.59	2.03	-0.12	18.98	24.812	2.03	-11.98
1845	45.54	-3.42	2.13	-0.02	19.798	25.743	2.13	-11.98
1850	49.7	-3.04	2.53	0.38	21.582	28.122	2.53	-11.65
1855	50.15	-3	2.57	0.42	21.817	28.335	2.57	-11.76
1860	49.49	-3.06	2.48	0.33	21.628	27.858	2.48	-11.98
1865	49.47	-3.06	2.45	0.3	21.704	27.769	2.45	-12.03
1870	48.64	-3.13	2.37	0.22	21.305	27.34	2.37	-12.21
1875	49.28	-3.07	2.31	0.16	21.626	27.657	2.31	-12.18
1880	52.79	-2.77	2.51	0.36	23.167	29.62	2.51	-11.95
1885	54.49	-2.64	2.53	0.38	23.871	30.623	2.53	-11.92
1890	53.27	-2.74	2.3	0.15	23.318	29.951	2.3	-12.18
1895	53.46	-2.72	2.17	0.02	23.468	29.988	2.17	-12.14
1900	53.83	-2.69	2	-0.15	23.661	30.164	2	-12.19

无源测试数据 Passive test data

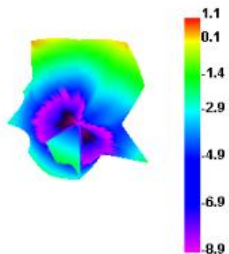
MAIN ANT GAIN&Efficiency-(1905-2100)

1905	51.98	-2.84	1.67	-0.48	22.879	29.102	1.67	-12.38
1910	50.84	-2.94	1.38	-0.77	22.41	28.433	1.38	-12.71
1915	53.04	-2.75	1.52	-0.63	23.493	29.548	1.52	-12.65
1920	55.39	-2.57	1.71	-0.44	24.621	30.773	1.71	-12.41
1925	55.99	-2.52	1.8	-0.35	24.968	31.023	1.8	-12.43
1930	57.71	-2.39	1.89	-0.26	25.863	31.843	1.89	-12.23
1935	57.82	-2.38	1.95	-0.2	26.039	31.785	1.95	-12.16
1940	55.61	-2.55	1.87	-0.28	25.01	30.603	1.87	-12.09
1945	56.51	-2.48	1.99	-0.16	25.222	31.289	1.99	-11.8
1950	59.08	-2.29	2.28	0.13	26.004	33.081	2.28	-11.62
1955	57.75	-2.38	2.39	0.24	24.972	32.777	2.39	-12.7
1960	54.21	-2.66	2.33	0.18	23.082	31.126	2.33	-13.39
1965	54.36	-2.65	2.49	0.34	22.876	31.485	2.49	-12.83
1970	54.24	-2.66	2.65	0.5	22.78	31.457	2.65	-11.76
1975	52.2	-2.82	2.67	0.52	22.013	30.189	2.67	-11.5
1980	53.21	-2.74	2.89	0.74	22.503	30.711	2.89	-11.88
1985	56.77	-2.46	3.27	1.12	24.232	32.542	3.27	-12.14
1990	58.13	-2.36	3.44	1.29	25.041	33.092	3.44	-12.48
1995	57.67	-2.39	3.46	1.31	25.036	32.633	3.46	-12.76
2000	56.94	-2.45	3.44	1.29	24.942	32	3.44	-12.93
2005	55.61	-2.55	3.24	1.09	24.608	30.999	3.24	-13.4
2010	52.02	-2.84	2.89	0.74	23.286	28.73	2.89	-14.22
2015	50.69	-2.95	2.7	0.55	22.919	27.769	2.7	-14.88
2020	50.55	-2.96	2.55	0.4	23.08	27.465	2.55	-15.66
2025	50.19	-2.99	2.29	0.14	23.218	26.968	2.29	-16.51
2030	49.01	-3.1	2.06	-0.09	22.967	26.04	2.06	-16.76
2035	48.26	-3.16	1.85	-0.3	22.882	25.383	1.85	-16.61
2040	45.71	-3.4	1.58	-0.57	21.945	23.762	1.58	-17.08
2045	42.33	-3.73	1.32	-0.83	20.59	21.739	1.32	-17.37
2050	42.03	-3.76	1.36	-0.79	20.667	21.367	1.36	-16.57
2055	43.76	-3.59	1.64	-0.51	21.757	22.001	1.64	-15.36
2060	44.64	-3.5	1.73	-0.42	22.395	22.245	1.73	-14.52
2065	45.28	-3.44	1.75	-0.4	22.897	22.382	1.75	-14.35
2070	46.9	-3.29	1.81	-0.34	23.871	23.03	1.81	-14.09
2075	47.36	-3.25	1.78	-0.37	24.283	23.078	1.78	-14.27
2080	45.74	-3.4	1.58	-0.57	23.613	22.124	1.58	-14.69
2085	44.29	-3.54	1.33	-0.82	22.981	21.311	1.33	-15.06
2090	43.8	-3.59	1.22	-0.93	22.867	20.934	1.22	-15.2
2095	43.5	-3.61	1.12	-1.03	22.799	20.704	1.12	-14.9
2100	43.83	-3.58	1.09	-1.06	23.018	20.815	1.09	-17.28

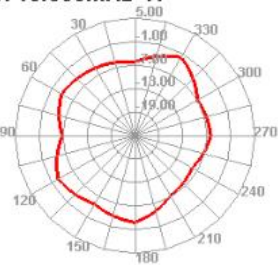
无源测试数据
Passive test data

MAIN ANT Direction of figure(1700-2100)

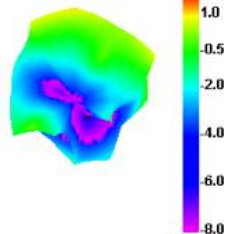
1710.000MHz



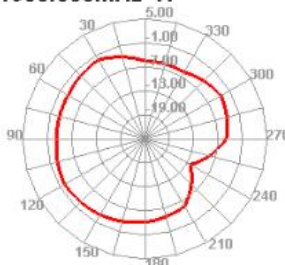
1710.000MHz H



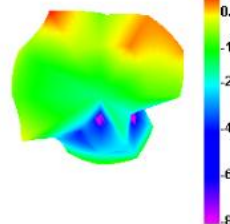
1900.000MHz



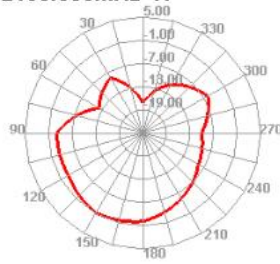
1900.000MHz H



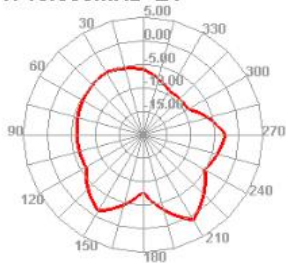
2100.000MHz



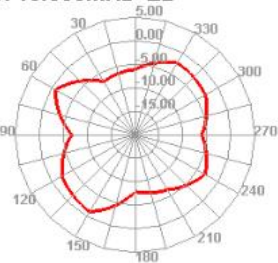
2100.000MHz H



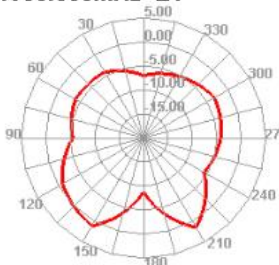
1710.000MHz E1



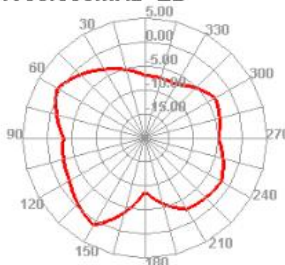
1710.000MHz E2



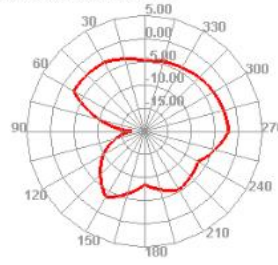
1900.000MHz E1



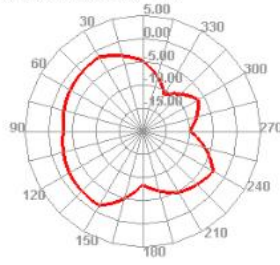
1900.000MHz E2



2100.000MHz E1



2100.000MHz E2



无源测试数据

Passive test data

MAIN ANT GAIN&Efficiency-(2300-2500)

Passive Test For D4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2300	34.44	-4.63	-0.29	-2.44	17.059	17.378	-0.29	-15.27
2305	38.01	-4.2	0.48	-1.67	18.918	19.093	0.48	-14.61
2310	40.88	-3.88	1.15	-1	20.408	20.472	1.15	-13.93
2315	43.33	-3.63	1.7	-0.45	21.706	21.626	1.7	-14.61
2320	43.51	-3.61	1.97	-0.18	21.842	21.666	1.97	-16.09
2325	41.04	-3.87	1.91	-0.24	20.686	20.358	1.91	-17.65
2330	38.86	-4.11	1.8	-0.35	19.663	19.192	1.8	-19.03
2335	37.49	-4.26	1.71	-0.44	19.065	18.428	1.71	-19.92
2340	37.02	-4.32	1.69	-0.46	18.921	18.098	1.69	-19.82
2345	39.42	-4.04	2	-0.15	20.217	19.202	2	-18.62
2350	43.08	-3.66	2.42	0.27	22.213	20.865	2.42	-16.87
2355	42.86	-3.68	2.41	0.26	22.227	20.632	2.41	-15.8
2360	40.59	-3.92	2.19	0.04	21.141	19.448	2.19	-14.88
2365	39.76	-4.01	2.11	-0.04	20.771	18.991	2.11	-13.92
2370	39.56	-4.03	2.1	-0.05	20.73	18.827	2.1	-13.99
2375	39.88	-3.99	2.18	0.03	20.896	18.982	2.18	-14.51
2380	40.16	-3.96	2.28	0.13	20.989	19.173	2.28	-14.66
2385	40.41	-3.93	2.37	0.22	21.09	19.325	2.37	-14.79
2390	41.24	-3.85	2.5	0.35	21.449	19.791	2.5	-15.09
2395	42.01	-3.77	2.63	0.48	21.738	20.271	2.63	-15.07
2400	40.92	-3.88	2.56	0.41	21.073	19.845	2.56	-15.22
2405	40.32	-3.95	2.48	0.33	20.675	19.641	2.48	-15.22
2410	42.56	-3.71	2.71	0.56	21.727	20.837	2.71	-15.04
2415	45.33	-3.44	2.94	0.79	23.041	22.291	2.94	-14.69
2420	45.32	-3.44	2.86	0.71	22.989	22.327	2.86	-14.49
2425	44.39	-3.53	2.64	0.49	22.497	21.895	2.64	-14.71
2430	43.11	-3.65	2.38	0.23	21.829	21.282	2.38	-14.92
2435	41.73	-3.8	2.08	-0.07	21.112	20.614	2.08	-15.36
2440	40.73	-3.9	1.94	-0.21	20.668	20.064	1.94	-15.74
2445	41.33	-3.84	2.19	0.04	21.063	20.272	2.19	-16.3
2450	43.3	-3.64	2.6	0.45	22.155	21.141	2.6	-16.4
2455	46.23	-3.35	3.12	0.97	23.82	22.406	3.12	-16.63
2460	49.47	-3.06	3.62	1.47	25.639	23.835	3.62	-16.65
2465	50.28	-2.99	3.84	1.69	26.173	24.107	3.84	-16.62
2470	49.3	-3.07	3.87	1.72	25.675	23.63	3.87	-16.37
2475	50.86	-2.94	4.04	1.89	26.361	24.498	4.04	-16.29
2480	50.93	-2.93	4.02	1.87	26.265	24.667	4.02	-16.04
2485	50.58	-2.96	3.93	1.78	25.975	24.608	3.93	-15.69
2490	52.98	-2.76	4.04	1.89	26.993	25.986	4.04	-15.69
2495	56.12	-2.51	4.18	2.03	28.43	27.691	4.18	-15.17
2500	56.82	-2.46	4.14	1.99	28.727	28.092	4.14	-15.08

无源测试数据

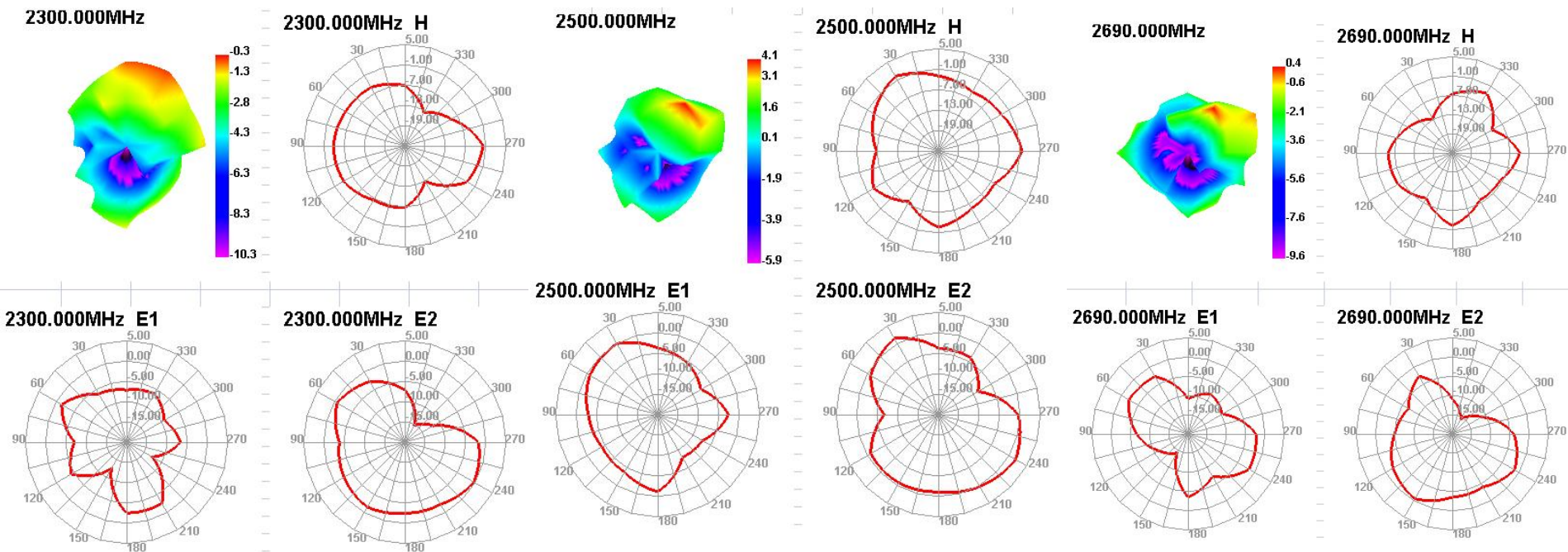
Passive test data

MAIN ANT GAIN&Efficiency-(2505-2690)

2505	55.4	-2.57	3.99	1.84	28.018	27.379	3.99	-15.24
2510	53.96	-2.68	3.82	1.67	27.321	26.64	3.82	-15.64
2515	52.13	-2.83	3.6	1.45	26.368	25.763	3.6	-16.14
2520	49.69	-3.04	3.35	1.2	25.149	24.546	3.35	-16.7
2525	49.16	-3.08	3.32	1.17	24.844	24.318	3.32	-17.33
2530	49.37	-3.07	3.37	1.22	24.854	24.514	3.37	-17.97
2535	48.91	-3.11	3.38	1.23	24.541	24.371	3.38	-18.19
2540	47.9	-3.2	3.35	1.2	23.958	23.943	3.35	-18.94
2545	48.22	-3.17	3.44	1.29	24.022	24.197	3.44	-19.21
2550	47.43	-3.24	3.37	1.22	23.546	23.881	3.37	-19.33
2555	45.18	-3.45	3.17	1.02	22.399	22.785	3.17	-19.6
2560	43.77	-3.59	3.1	0.95	21.65	22.12	3.1	-19.27
2565	44.26	-3.54	3.21	1.06	21.838	22.425	3.21	-18.9
2570	45.23	-3.45	3.28	1.13	22.208	23.024	3.28	-18.25
2575	45.05	-3.46	3.22	1.07	22.012	23.04	3.22	-17.8
2580	45.16	-3.45	3.17	1.02	21.983	23.181	3.17	-17.09
2585	45.35	-3.43	3.12	0.97	21.979	23.373	3.12	-16.48
2590	44.39	-3.53	2.93	0.78	21.367	23.019	2.93	-16.03
2595	43.12	-3.65	2.75	0.6	20.657	22.466	2.75	-15.46
2600	41.04	-3.87	2.54	0.39	19.56	21.485	2.54	-15.14
2605	39.13	-4.08	2.32	0.17	18.55	20.577	2.32	-14.88
2610	38.55	-4.14	2.25	0.1	18.174	20.373	2.25	-14.45
2615	37.62	-4.25	2.15	0	17.641	19.975	2.15	-14.29
2620	35.42	-4.51	1.93	-0.22	16.513	18.906	1.93	-14.25
2625	34.28	-4.65	1.83	-0.32	15.909	18.376	1.83	-14.63
2630	35.06	-4.55	1.88	-0.27	16.127	18.929	1.88	-14.72
2635	37.26	-4.29	2.15	0	17.034	20.23	2.15	-14.37
2640	37.77	-4.23	2.17	0.02	17.187	20.58	2.17	-14.5
2645	36.47	-4.38	2.01	-0.14	16.538	19.936	2.01	-14.81
2650	35.48	-4.5	1.86	-0.29	16.044	19.439	1.86	-15.13
2655	34.31	-4.65	1.71	-0.44	15.525	18.787	1.71	-15.22
2660	32.7	-4.85	1.49	-0.66	14.833	17.87	1.49	-15.55
2665	32.28	-4.91	1.4	-0.75	14.646	17.638	1.4	-15.63
2670	33.17	-4.79	1.4	-0.75	15.055	18.111	1.4	-15.5
2675	34.42	-4.63	1.48	-0.67	15.589	18.83	1.48	-15.17
2680	35.18	-4.54	1.4	-0.75	15.831	19.346	1.4	-14.96
2685	34.11	-4.67	1.05	-1.1	15.249	18.859	1.05	-14.85
2690	31.61	-5	0.45	-1.7	13.982	17.626	0.45	-15.58

无源测试数据
Passive test data

MAIN ANT Direction of figure(2300-2690)





有源测试数据 OTA test data

2G												
Band	GSM850			GSM900			GSM-1800(DCS)			GSM-1900(PCS)		
Channel	128	192	251	1	62	124	512	698	885	512	660	810
TRP(dBm)	29. 91	28. 34	27. 74	27. 26	27. 24	26. 87	27. 47	28. 12	27. 04	27. 04	27. 54	27. 5
TIS(LCD OFF)						-101. 27						
TIS(LCD ON)			-100. 65			-98. 87			-105. 79			-105. 02
3G												
Band	WCDMA-1			WCDMA-8			WCDMA-2			WCDMA-5		
Channel	10562	10700	10838	2937	3013	3088	9662	9800	9938	4357	4400	4458
TRP(dBm)	19. 36	19. 65	19. 52	17. 08	17. 02	17. 08	19. 21	19. 15	19. 12	18. 19	18. 12	17. 56
TIS(LCD OFF)						-101. 09						
TIS(LCD ON)			-104. 42			-99. 49			-105. 76			-101. 96
4G(FDD 10M)												
Band	FDD-Band 1			FDD-Band 2			FDD-Band 3			FDD-Band 4		
Channel	18050	18300	18550	18650	18900	19150	19250	19575	19900	20000	20175	23050
TRP(dBm)	19. 76	19. 81	19. 7	19. 16	19. 58	19. 38	19. 63	19. 99	19. 69	19. 36	18. 12	18. 97
TIS(LCD OFF)												
TIS(LCD ON)			-93. 25			-92. 69			93. 36			-92. 96
Band	FDD-Band 5			FDD-Band 7			FDD-Band 8			FDD-Band17		
Channel	20450	20525	20600	20800	21100	21400	21500	21620	21750	23780	23790	23800
TRP(dBm)				16. 48	15. 73	15. 35				15. 11	15. 92	16. 61
TIS(LCD OFF)												-88. 33
TIS(LCD ON)						-91. 31						-85. 61
4G(TDD 20M)												
Band	FDD-Band 38			FDD-Band 39			FDD-Band 40			FDD-Band 41		
Channel	37850	38000	38150	38350	38450	38550	38750	39150	39550	39750	40620	41490
TRP(dBm)	14. 08	14. 24	15. 9	19. 25	19. 25	19. 14	17. 16	17. 06	17. 04		15. 82	
TIS(LCD OFF)												
TIS(LCD ON)			-90. 49			-91. 47			-87. 64		-89. 67	



ANTENNA

深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

有源测试数据
Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	13.59	CH1 11Mbps	-81.36
	2437	CH6 11Mbps	14.69	CH6 11Mbps	-80.58
	2467	CH11 11Mbps	13.24	CH11 11Mbps	-80.47
802.11a		TRP		TIS	
	5180	CH36 6Mbps	12.32	CH36 54Mbps	-72.69
	5300	CH60 6Mbps	11.28	CH60 54Mbps	-72.58
	5805	CH161 6Mbps	12.43	CH161 54Mbps	-73.65



ANTENNA

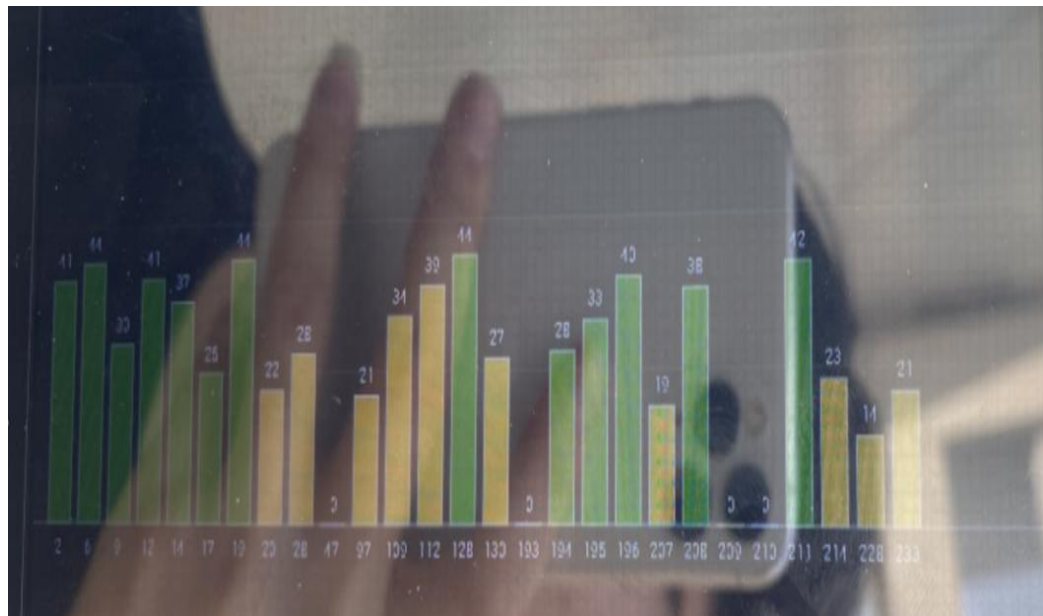
深圳市星源创科技有限公司

SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

GPS搜星测试 GPS star search test

GPS冷启动实测效果以下：
CN值40以上7颗
CN值35以上9颗
实际定位13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





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SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

Wifi/BT天线实测

Wifi Antenna test

WIFI

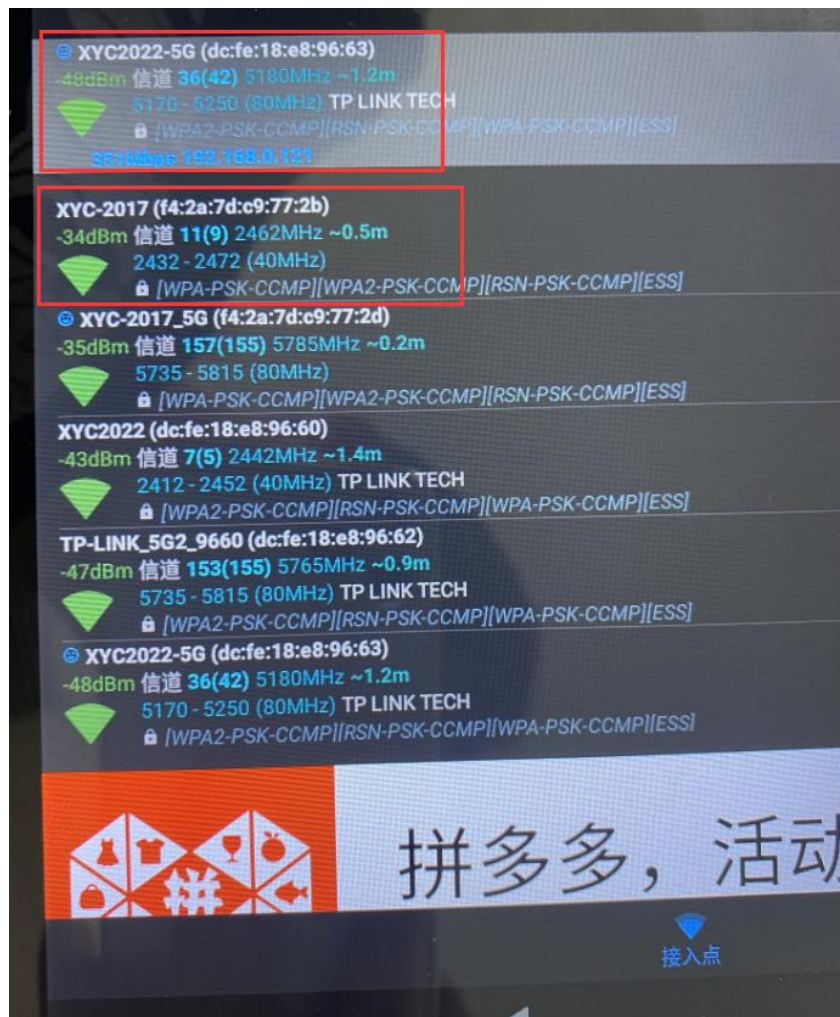
测试环境：开放空间

测试工具：Wifi Analytical Assistant

测试距离：10m

信号强度：2.4G :-34dBm 5G:-48dBm

测试结果如右图





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SHENZHEN Xingyuanchuang TECHNOLOGY CO., LTD

附加说明

Additional instructions





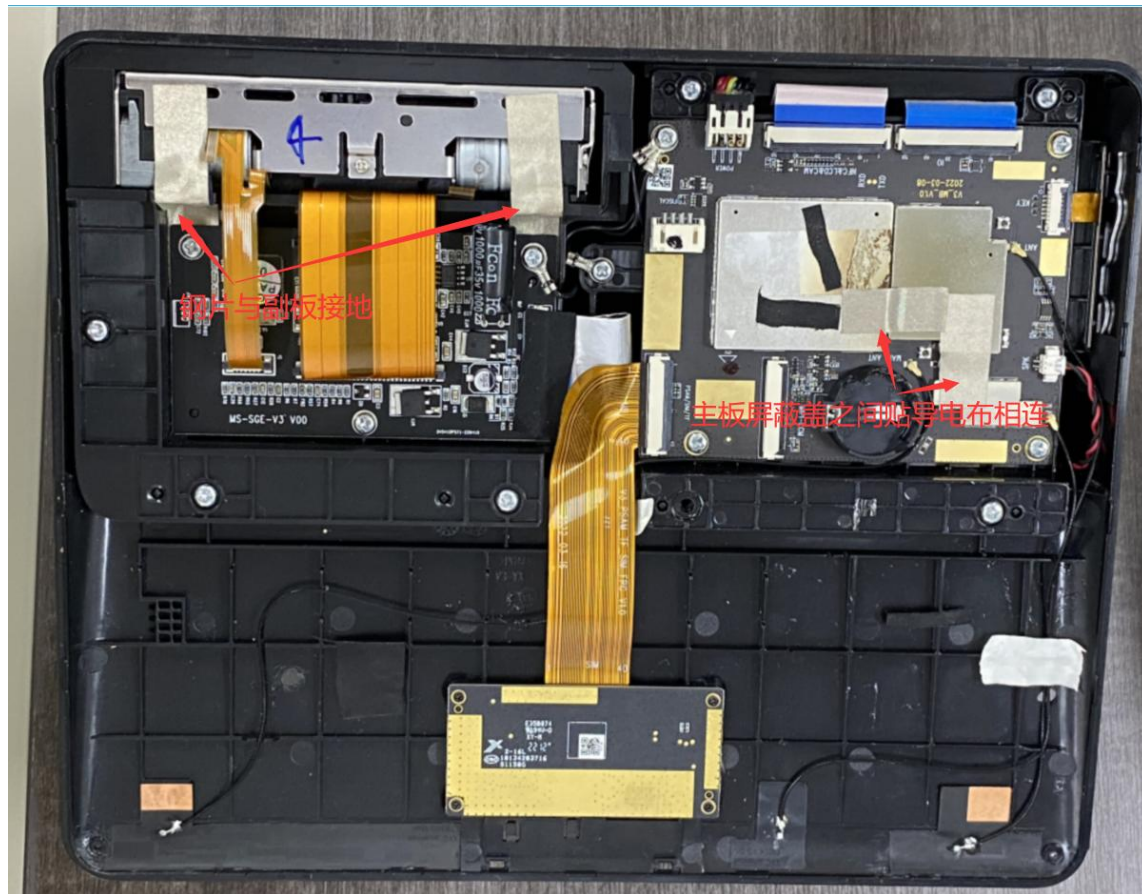
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环境处理

Environmental treatment



合作 共赢

