

深圳市华讯视通科技有限公司

Shenzhen Huaxunshitong Technology Co., Ltd.

Antenna Specification Document

客户名称: 智美德

Project Name	A76-A13	Antenna frequency band	EGSM900/DCS1800 WCDMA: B1/B2/B5/B8 4G: B1/B2/B3/B5/B7/B8/ B20/B38/B39/B40/B41 GPS/WIFI
规格描述	☐ 支架+弹片	☐ 单弹片	☐ 支架+FPC+顶针
	☒ FPC	☐ FM 天线	☐ GPS 天线
	☐ 其它		
	☐ 同轴线	☐ WIFI 天线: ☒ FPC+线材: ☐ PCB+线长:	
客户确认			

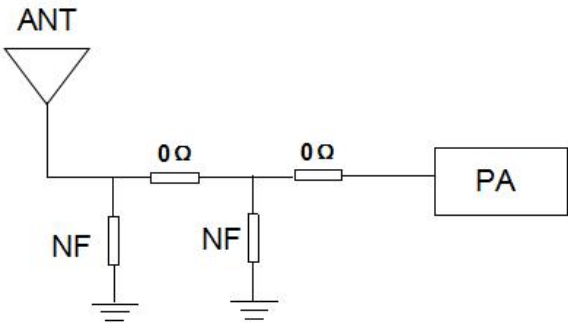
供应商确认	射频确认	结构确认	审核
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1.测试项目与设备

	测试项目	设备
1. S 参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B HP 8753D
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 E5515B ×2 StarPoint SP6011
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B HP 8753D



2.匹配电路-GSM 天线:



我司未对匹配电路做任何修改

3.天线性能:

Frequency Band	EGSM900			DCS1800		
channel	1	62	124	512	698	885
Tx Power	30.4		29.8	26.7		25.6
TRP	28.2		27.3	24.7		24.2
Sensitivity			-106.6			-102.8
TIS			-103.5			-101.2

Frequency Band	WCDMA B1			WCDMA B2		
channel	L	M	H	L	M	H
Tx Power	19.1		18.5	20.4		20.6
TRP	16.9		16.2	17.2		17.3
Sensitivity			-104.6			-104.0
TIS			-102.3			-102.0
Frequency Band	WCDMA B5			WCDMA B8		
channel	L	M	H	L	M	H
Tx Power	18.6		19.8	20.2		19.5
TRP	16.2		16.8	18.0		17.1
Sensitivity			-106.2			-108.0
TIS			-104.3			-105.0

Frequency Band	B1			B2		
channel	L	M	H	L	M	H
Tx Power	21.6		20.3	20.3		20.9
TRP	18.2		16.8	16.9		17.7
Sensitivity			-93.3			-93.0
TIS			-90.1			-90.6
Frequency Band	B3			B5		
channel	L	M	H	L	M	H
Tx Power	19.7		20.6	19.0		19.4
TRP	16.8		17.3	16.6		17.2
Sensitivity			-93.6			-92.4
TIS			-91.3			-90.5

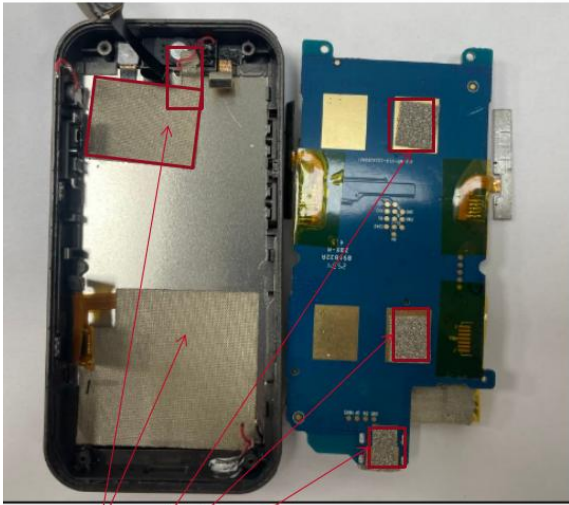
Frequency Band	B7			B8		
channel	L	M	H	L	M	H
Tx Power	20.7		20.9	20.4		20.7
TRP	17.2		17.4	18.2		18.4
Sensitivity			-92.8			-94.8
TIS			-90.4			-92.0
Frequency Band	B20			/		
channel	L	M	H	L	M	H
Tx Power	20.4		20.7		/	
TRP	18.2		18.4		/	
Sensitivity			-90.2		/	
TIS			-88.0		/	

Frequency Band	B38			B39		
channel	L	M	H	L	M	H
Tx Power	20.7		20.8	20.8		20.3
TRP	17.5		17.6	17.6		17.2
Sensitivity			-94.5			-93.7
TIS			-92.3			-91.5
Frequency Band	B40			B41		
channel	L	M	H	L	M	H
Tx Power	18.4		19.6		20.2	
TRP	16.2		17.3		17.5	
Sensitivity			-92.4		-94.4	
TIS			-89.2		-92.2	

4.环境处理:

备注：咪头线长17mm

环境处理

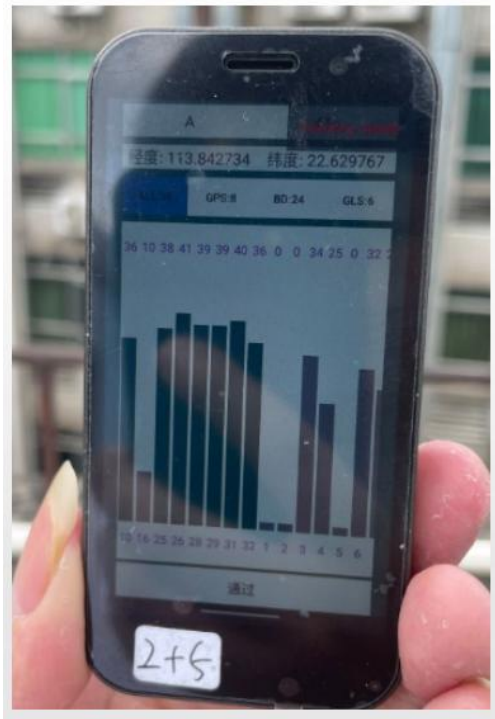


- 1.屏排线贴导电布屏蔽接地
- 2.喇叭贴导电布接地
- 3.贴导电泡棉和屏接地



- 4.喇叭贴导电布接地
- 5.电池贴导电布(喇叭导电布贴大一点)

5. GPS 实测:



Gain and Efficiency

4G

Passive Test For D1												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
800	9.6	-10.18	-7.69	-9.84	4.892	4.706	-7.69	-22.79	2.49	30	42.72	42
810	9.99	-10	-7.35	-9.5	5.219	4.773	-7.35	-22.37	2.65	30	42.29	42.15
820	10.8	-9.67	-7.16	-9.31	5.642	5.154	-7.16	-23.55	2.51	60	42.18	42.13
830	11.91	-9.24	-6.77	-8.92	6.132	5.776	-6.77	-20.56	2.47	0	42.39	42.41
840	12.78	-8.93	-6.49	-8.64	6.601	6.182	-6.49	-18.76	2.45	0	42.51	42.62
850	13.79	-8.6	-5.98	-8.13	7.34	6.454	-5.98	-17.26	2.62	30	42.68	42.77
860	15.03	-8.23	-5.66	-7.81	8.11	6.918	-5.66	-17.15	2.57	30	42.82	43.1
870	15.59	-8.07	-5.63	-7.78	8.551	7.041	-5.63	-16.72	2.44	30	42.96	43.1
880	16.37	-7.86	-5.49	-7.64	9.042	7.333	-5.49	-17.68	2.36	30	43.16	43.39
890	16.06	-7.94	-5.44	-7.59	8.691	7.371	-5.44	-18.77	2.5	0	43.4	43.29
900	15.51	-8.09	-5.68	-7.83	7.932	7.574	-5.68	-18.68	2.42	30	43.53	43.46
910	13.89	-8.57	-6.3	-8.45	6.584	7.305	-6.3	-18.94	2.27	0	43.77	44.11
920	12.95	-8.88	-6.31	-8.46	5.681	7.271	-6.31	-19.68	2.57	90	44.16	44.23
930	10.93	-9.61	-6.29	-8.44	4.258	6.676	-6.29	-20.45	3.32	30	44.17	44.49
940	9.33	-10.3	-6.31	-8.46	3.483	5.847	-6.31	-19.61	3.99	30	44.31	44.56
950	8.48	-10.72	-6.01	-8.16	3.016	5.461	-6.01	-19.78	4.7	0	44.46	44.73
960	7.05	-11.52	-6.49	-8.64	2.532	4.514	-6.49	-18.83	5.03	0	44.12	44.24
970	6.22	-12.06	-6.76	-8.91	2.23	3.988	-6.76	-20.59	5.3	0	44.09	44.2
980	4.96	-13.04	-7.42	-9.57	1.77	3.194	-7.42	-21.69	5.62	0	44.13	43.98
990	4.26	-13.7	-8.01	-10.16	1.502	2.76	-8.01	-20.8	5.69	0	44.03	44.39
1000	6.55	-11.84	-5.96	-8.11	2.184	4.363	-5.96	-18.12	5.88	0	45.83	46.03

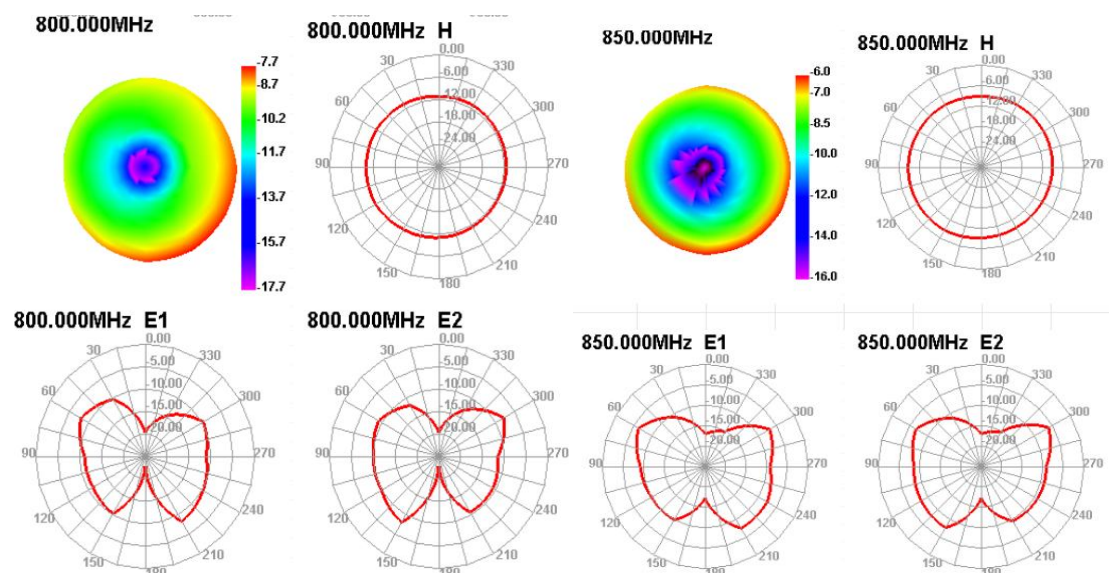
Passive Test For D3												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
1700	21.5	-6.68	-1.48	-3.63	11.998	9.499	-1.48	-14.1	5.19	30	50.56	50.76
1710	21.46	-6.68	-1.61	-3.76	11.936	9.529	-1.61	-14.72	5.08	30	50.68	50.58
1720	21.72	-6.63	-1.63	-3.78	12.132	9.583	-1.63	-15.51	5	30	50.66	50.74
1730	20.72	-6.84	-1.92	-4.07	11.607	9.113	-1.92	-15	4.92	30	50.63	50.79
1740	20.58	-6.87	-1.87	-4.02	11.5	9.081	-1.87	-15.08	4.99	30	50.93	50.48
1750	21.46	-6.68	-1.66	-3.81	11.979	9.476	-1.66	-14.83	5.03	60	51.18	51.06
1760	22.75	-6.43	-1.67	-3.82	12.65	10.104	-1.67	-14.29	4.76	60	51.44	50.93
1770	22.19	-6.54	-1.91	-4.06	12.305	9.88	-1.91	-14.78	4.63	60	51.35	51.44
1780	21.3	-6.72	-2.15	-4.3	11.815	9.487	-2.15	-15.67	4.57	60	51.41	51.39
1790	22.47	-6.48	-1.96	-4.11	12.482	9.993	-1.96	-16.93	4.52	60	51.42	51.58
1800	22.2	-6.54	-2.16	-4.31	12.172	10.029	-2.16	-16.99	4.38	30	51.3	51.49
1810	22.4	-6.5	-2.09	-4.24	12.209	10.187	-2.09	-17.34	4.4	30	51.51	51.58
1820	23.42	-6.3	-2.04	-4.19	12.732	10.69	-2.04	-16.2	4.27	30	51.55	51.83
1830	27	-5.69	-1.53	-3.68	14.609	12.388	-1.53	-14.84	4.15	30	51.89	52.62
1840	26.58	-5.75	-1.59	-3.74	14.132	12.449	-1.59	-15.26	4.16	90	51.93	52.2
1850	25.24	-5.98	-2.15	-4.3	13.406	11.835	-2.15	-15.68	3.83	90	51.96	52.02
1860	24.2	-6.16	-2.7	-4.85	12.881	11.322	-2.7	-15.99	3.46	90	51.72	52.31
1870	22.09	-6.56	-3.34	-5.49	11.791	10.301	-3.34	-16.04	3.22	90	51.56	51.35
1880	24.1	-6.18	-2.64	-4.79	13.468	10.629	-2.64	-15.17	3.54	240	51.54	52.32
1890	22.67	-6.44	-2.85	-5	12.876	9.799	-2.85	-15.22	3.59	180	51.56	51.7
1900	23.49	-6.29	-2.54	-4.69	13.649	9.842	-2.54	-15.22	3.75	180	51.87	51.96
1910	25.65	-5.91	-1.72	-3.87	15.277	10.37	-1.72	-15.27	4.19	150	51.92	52.75
1920	24.64	-6.08	-1.7	-3.85	14.989	9.648	-1.7	-15.58	4.38	150	52.13	52.95
1930	22.48	-6.48	-2.37	-4.52	13.653	8.832	-2.37	-16.21	4.11	150	52.26	52.74
1940	23.05	-6.37	-2.19	-4.34	14.231	8.819	-2.19	-15.6	4.18	150	52.26	52.72

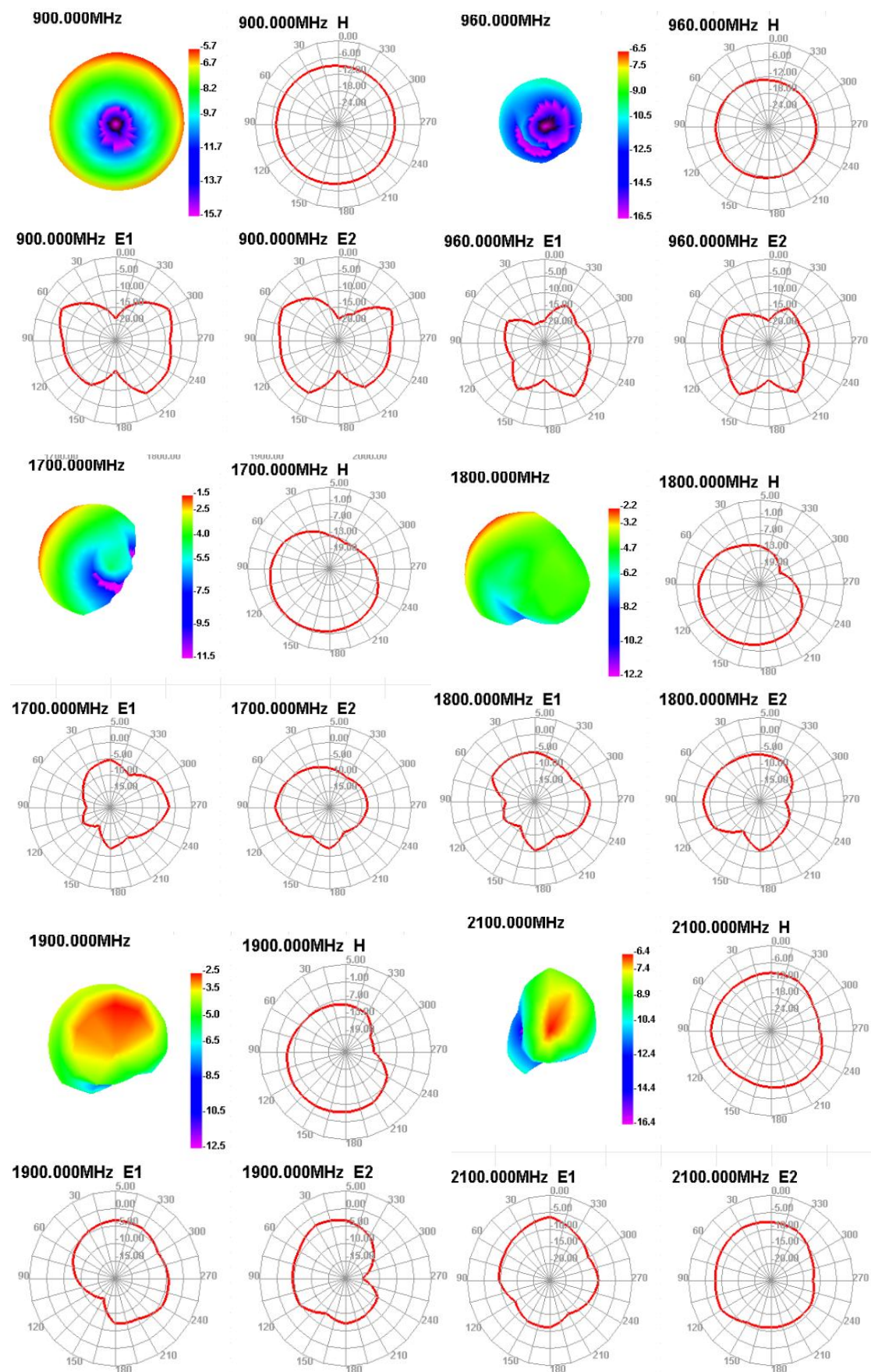
1950	22.53	-6.47	-2.39	-4.54	13.996	8.538	-2.39	-15.66	4.08	150	52.33	52.41
1960	19.83	-7.03	-3.02	-5.17	12.339	7.494	-3.02	-15.64	4	150	52.2	52.13
1970	19.33	-7.14	-3.2	-5.35	12.186	7.141	-3.2	-15.96	3.94	180	52.38	52.63
1980	20.5	-6.88	-2.88	-5.03	12.941	7.559	-2.88	-16.8	4	150	52.69	53.26
1990	19.82	-7.03	-3.3	-5.45	12.455	7.366	-3.3	-19.63	3.73	150	52.96	53.07
2000	18.19	-7.4	-3.76	-5.91	11.261	6.933	-3.76	-18.52	3.64	210	52.96	53.44
2010	17.4	-7.59	-4.21	-6.36	10.753	6.648	-4.21	-22	3.39	180	52.95	53.45
2020	16.62	-7.79	-4.4	-6.55	10.203	6.415	-4.4	-23.48	3.4	180	52.89	53.62
2030	15.21	-8.18	-5.22	-7.37	9.269	5.942	-5.22	-19.33	2.96	180	52.97	53.36
2040	13.78	-8.61	-5.51	-7.66	8.331	5.453	-5.51	-19.15	3.09	180	53.17	53.74
2050	12.54	-9.02	-5.61	-7.76	7.654	4.886	-5.61	-17.32	3.41	180	53.45	53.99
2060	12.94	-8.88	-5.43	-7.58	7.805	5.135	-5.43	-16.03	3.45	120	53.75	54.01
2070	13.25	-8.78	-5.42	-7.57	7.787	5.46	-5.42	-14.37	3.36	120	53.78	54.53
2080	11.25	-9.49	-6.21	-8.36	6.541	4.714	-6.21	-15.21	3.28	120	53.61	54.52
2090	8.97	-10.47	-6.91	-9.06	5.186	3.789	-6.91	-15.46	3.56	90	53.39	52.95
2100	10.08	-9.97	-6.41	-8.56	5.768	4.309	-6.41	-14.49	3.55	90	53.21	53.74

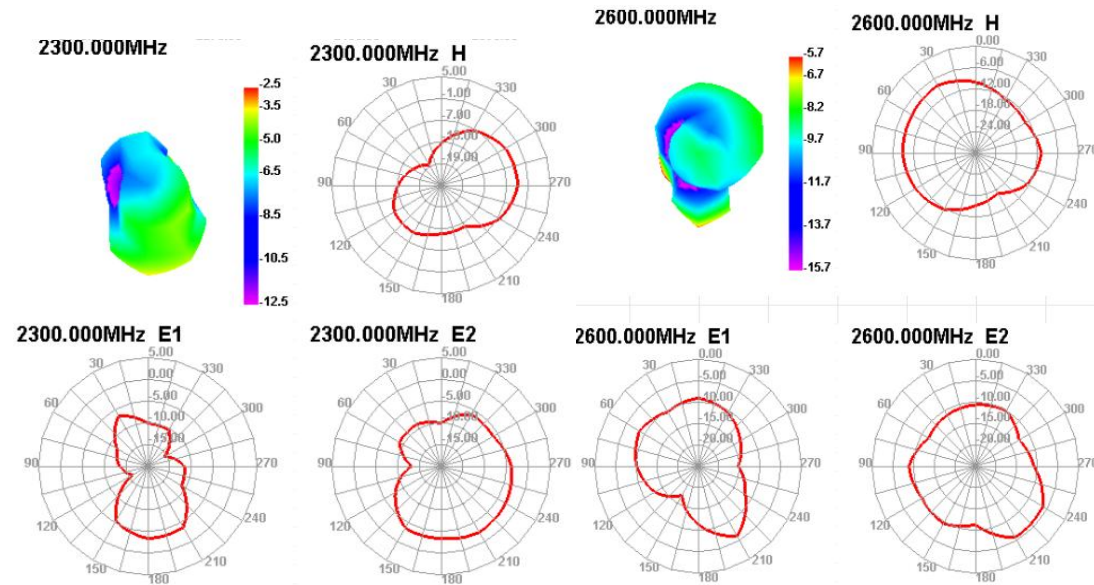
Passive Test For D4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2110	9.17	-10.37	-6.75	-8.9	5.282	3.893	-6.75	-14.99	3.63	60	52.81	53.4
2120	9.35	-10.29	-6.99	-9.14	5.287	4.061	-6.99	-15.55	3.3	90	53.09	54.12
2130	9.1	-10.41	-6.56	-8.71	5.137	3.962	-6.56	-16.21	3.85	90	53.4	53.93
2140	9.77	-10.1	-6.07	-8.22	5.47	4.302	-6.07	-15.02	4.03	30	53.42	53.81
2150	8.72	-10.59	-6.59	-8.74	4.836	3.889	-6.59	-15.85	4	30	53.14	53.74
2160	8.91	-10.5	-6.74	-8.89	4.851	4.062	-6.74	-15.73	3.76	90	53.36	54.43
2170	9.7	-10.13	-6.63	-8.78	5.308	4.391	-6.63	-15.65	3.5	90	53.24	54.18
2180	9.55	-10.2	-6.66	-8.81	5.045	4.506	-6.66	-15.23	3.54	60	53.12	53.45
2190	10.31	-9.87	-6.65	-8.8	5.338	4.973	-6.65	-15.61	3.21	90	53.06	53.71
2200	11.45	-9.41	-6.44	-8.59	5.789	5.666	-6.44	-16.04	2.97	60	53.52	54.5
2210	12.68	-8.97	-6.02	-8.17	6.204	6.478	-6.02	-17.42	2.95	60	53.71	54.72
2220	13.14	-8.81	-5.84	-7.99	6.437	6.704	-5.84	-15.57	2.97	60	53.67	54.38
2230	12.22	-9.13	-5.84	-7.99	5.837	6.382	-5.84	-15.65	3.29	60	53.53	54.57
2240	12.78	-8.94	-5.54	-7.69	6.064	6.714	-5.54	-16.51	3.39	60	53.59	54.86
2250	13.76	-8.61	-4.78	-6.93	6.207	7.552	-4.78	-16.1	3.84	60	53.72	55.1
2260	15.31	-8.15	-3.89	-6.04	6.517	8.788	-3.89	-18.73	4.26	60	53.84	55.61
2270	13.36	-8.74	-4.3	-6.45	5.406	7.951	-4.3	-18.23	4.44	60	53.94	55.12
2280	13.28	-8.77	-4.1	-6.25	5.096	8.184	-4.1	-19.41	4.67	60	54.09	55.43
2290	15.36	-8.14	-3.31	-5.46	5.714	9.645	-3.31	-18.98	4.83	60	54.85	56.01
2300	18.01	-7.44	-2.51	-4.66	6.54	11.471	-2.51	-18.52	4.94	60	55.12	56.6
2310	16.54	-7.81	-2.57	-4.72	5.695	10.845	-2.57	-20.37	5.24	60	54.91	56.5
2320	13.89	-8.57	-3.21	-5.36	4.452	9.437	-3.21	-22.61	5.36	60	54.8	56.13
2330	13.74	-8.62	-3.18	-5.33	4.295	9.445	-3.18	-24.08	5.44	60	55.05	56.33
2340	16.34	-7.87	-2.03	-4.18	4.966	11.377	-2.03	-22.05	5.84	30	55.41	57.9
2350	14.3	-8.45	-2.41	-4.56	4.253	10.047	-2.41	-22.49	6.03	30	55.72	57.75

2360	13.09	-8.83	-2.89	-5.04	4.019	9.07	-2.89	-22	5.94	30	55.95	57.79
2370	11.79	-9.29	-3.56	-5.71	3.757	8.029	-3.56	-24.99	5.72	30	55.79	57.25
2380	12.03	-9.2	-3.47	-5.62	3.939	8.091	-3.47	-23.26	5.73	30	55.95	57.45
2390	12.21	-9.13	-3.41	-5.56	4.137	8.068	-3.41	-25.39	5.73	30	55.8	57.98
2400	10.54	-9.77	-4.28	-6.43	3.689	6.848	-4.28	-26.1	5.49	60	55.76	57.21
2410	12.53	-9.02	-3.08	-5.23	4.617	7.917	-3.08	-23.86	5.94	30	55.83	58.53
2420	12.27	-9.11	-3.5	-5.65	4.676	7.591	-3.5	-27.67	5.61	30	56.07	58.09
2430	12.3	-9.1	-3.46	-5.61	4.655	7.648	-3.46	-25.71	5.64	60	56.25	58.05
2440	12.69	-8.97	-3.32	-5.47	4.951	7.735	-3.32	-23.59	5.65	30	56.61	58.56
2450	12.55	-9.02	-3.25	-5.4	4.972	7.573	-3.25	-20.49	5.76	30	56.87	58.64
2460	11.71	-9.32	-3.79	-5.94	4.759	6.949	-3.79	-20.31	5.52	30	56.54	57.97
2470	11.14	-9.53	-3.88	-6.03	4.397	6.743	-3.88	-21.24	5.66	30	56.17	58.01
2480	11.22	-9.5	-4.11	-6.26	4.455	6.767	-4.11	-17.98	5.39	30	56.4	57.83
2490	10.87	-9.64	-4.52	-6.67	4.316	6.556	-4.52	-19.91	5.11	30	56.48	57.83
2500	10.24	-9.9	-4.74	-6.89	4.222	6.018	-4.74	-16.67	5.15	30	56.61	58.07
2510	10.7	-9.71	-4.87	-7.02	4.217	6.486	-4.87	-17.02	4.83	30	56.67	57.71
2520	10.17	-9.93	-4.96	-7.11	4.166	6.002	-4.96	-16.49	4.96	30	56.43	57.53
2530	10.22	-9.9	-5.03	-7.18	4.069	6.155	-5.03	-17.36	4.87	0	56.01	57.64
2540	8.87	-10.52	-5.15	-7.3	3.663	5.204	-5.15	-18.16	5.37	30	55.93	56.88
2550	9.12	-10.4	-5.5	-7.65	3.838	5.28	-5.5	-16.71	4.91	0	56.13	56.87
2560	9.75	-10.11	-5.22	-7.37	4.103	5.644	-5.22	-16.72	4.89	30	56.34	57.38
2570	10.6	-9.75	-4.3	-6.45	4.416	6.184	-4.3	-19.15	5.44	0	56.6	58.31
2580	8.59	-10.66	-6.1	-8.25	3.642	4.953	-6.1	-17.71	4.56	0	56.27	56.52
2590	9	-10.46	-5.72	-7.87	3.687	5.311	-5.72	-18.41	4.74	0	56.34	56.49
2600	9.36	-10.29	-5.71	-7.86	3.859	5.503	-5.71	-17.18	4.57	0	56.36	56.49
2610	9.88	-10.05	-5.29	-7.44	4.157	5.723	-5.29	-19.12	4.76	0	56.44	57
2620	9.06	-10.43	-4.97	-7.12	3.572	5.485	-4.97	-20.86	5.46	30	56.28	56.17
2630	10.23	-9.9	-5.11	-7.26	4.113	6.112	-5.11	-16.94	4.79	0	56.47	56.78

2640	11.43	-9.42	-4.42	-6.57	4.544	6.885	-4.42	-18.27	5	0	56.79	57.41
2650	10.23	-9.9	-4.91	-7.06	3.933	6.302	-4.91	-19.07	4.99	0	57.31	57.11
2660	12.63	-8.99	-4	-6.15	4.727	7.903	-4	-18.72	4.98	0	57.71	58.3
2670	14.96	-8.25	-2.88	-5.03	5.523	9.439	-2.88	-19.72	5.37	0	57.8	58.5
2680	15.35	-8.14	-2.68	-4.83	5.544	9.809	-2.68	-22.13	5.46	0	57.75	58.3
2690	14.13	-8.5	-2.74	-4.89	4.857	9.27	-2.74	-22.06	5.76	0	57.63	57.85
2700	12.23	-9.13	-2.96	-5.11	4.085	8.144	-2.96	-22.72	6.17	0	57.44	57.44
2710	13.6	-8.66	-2.44	-4.59	4.428	9.172	-2.44	-22.66	6.23	0	57.88	58.15
2720	16.01	-7.95	-1.6	-3.75	4.911	11.104	-1.6	-23.52	6.35	0	58.5	58.3
2730	17.03	-7.69	-1.62	-3.77	5.316	11.713	-1.62	-15.44	6.07	0	58.49	58.98
2740	16.8	-7.75	-1.24	-3.39	5.117	11.688	-1.24	-15.91	6.51	0	58.67	59.01
2750	16.22	-7.9	-1.95	-4.1	5.157	11.064	-1.95	-17.33	5.95	0	58.87	58.56

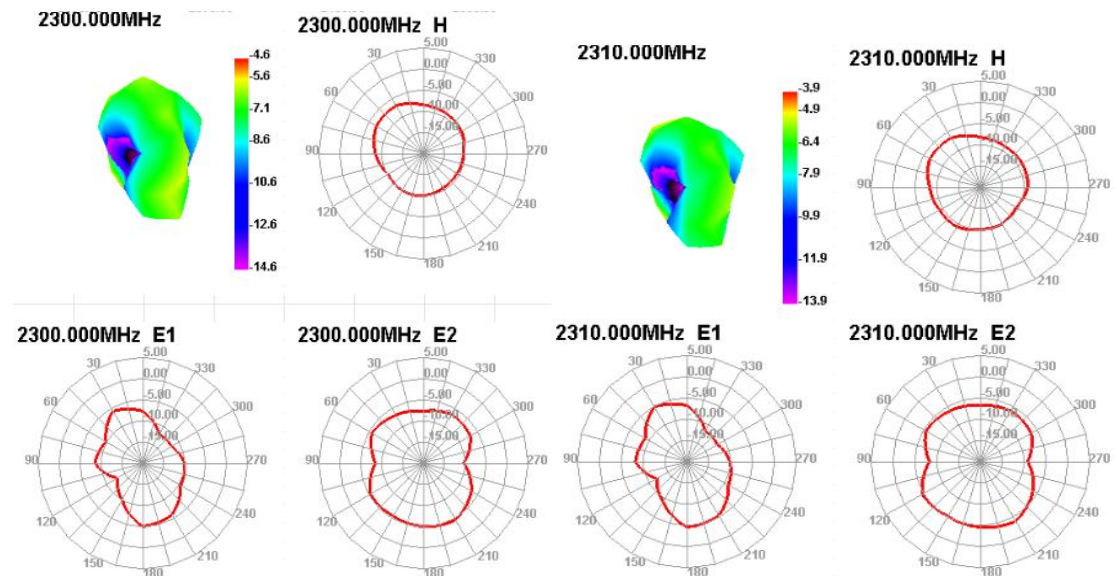






WiFi-2.4G

Passive Test For 2.4G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2300	16.26	-7.89	-4.59	-6.74	7.702	8.553	-4.59	-13.01	3.3	30	55.12	56.6
2310	18.2	-7.4	-3.85	-6	8.442	9.761	-3.85	-12.06	3.54	30	54.91	56.5
2320	17.53	-7.56	-4.24	-6.39	8.117	9.412	-4.24	-12.9	3.32	30	54.8	56.13
2330	19.29	-7.15	-3.87	-6.02	8.959	10.335	-3.87	-12.39	3.28	30	55.05	56.33
2340	26.58	-5.75	-2.4	-4.55	12.499	14.085	-2.4	-11	3.36	30	55.41	57.9
2350	29.29	-5.33	-2.13	-4.28	13.915	15.378	-2.13	-10.59	3.2	30	55.72	57.75
2360	27.4	-5.62	-2.66	-4.81	13.1	14.303	-2.66	-11.65	2.96	30	55.95	57.79
2370	25.23	-5.98	-2.84	-4.99	11.766	13.465	-2.84	-12.31	3.14	30	55.79	57.25
2380	29.86	-5.25	-2.01	-4.16	13.688	16.175	-2.01	-11.66	3.24	30	55.95	57.45
2390	33.07	-4.81	-1.4	-3.55	15.066	18.007	-1.4	-11.59	3.41	30	55.8	57.98
2400	30.55	-5.15	-1.92	-4.07	14.333	16.221	-1.92	-12.3	3.23	30	55.76	57.21
2410	36.82	-4.34	-0.96	-3.11	17.62	19.201	-0.96	-11.31	3.38	30	55.83	58.53
2420	38.02	-4.2	-0.63	-2.78	18.419	19.606	-0.63	-10.7	3.57	30	56.07	58.09
2430	42.88	-3.68	-0.14	-2.29	20.662	22.214	-0.14	-10.96	3.53	30	56.25	58.05
2440	45.57	-3.41	0.17	-1.98	21.663	23.903	0.17	-10.25	3.58	30	56.61	58.56
2450	46.74	-3.3	0.41	-1.74	22.18	24.557	0.41	-10.31	3.72	30	56.87	58.64
2460	46.83	-3.29	0.39	-1.76	22.53	24.3	0.39	-10.34	3.68	30	56.54	57.97
2470	50.51	-2.97	1	-1.15	24.982	25.531	1	-10.19	3.96	30	56.17	58.01
2480	51.63	-2.87	1.21	-0.94	25.603	26.025	1.21	-9.85	4.08	30	56.4	57.83
2490	53.49	-2.72	1.29	-0.86	26.48	27.012	1.29	-9.8	4.01	30	56.48	57.83
2500	54.38	-2.65	1.44	-0.71	26.977	27.399	1.44	-10.39	4.09	30	56.61	58.07
2510	56.81	-2.46	1.5	-0.65	28.299	28.514	1.5	-10.58	3.95	30	56.67	57.71
2520	56.79	-2.46	1.54	-0.61	28.533	28.252	1.54	-11.05	3.99	30	56.43	57.53
2530	59.02	-2.29	1.54	-0.61	30.241	28.779	1.54	-12.68	3.83	60	56.01	57.64
2540	52.29	-2.82	0.94	-1.21	26.903	25.384	0.94	-12.31	3.76	30	55.93	56.88
2550	51.33	-2.9	0.9	-1.25	26.256	25.07	0.9	-11.84	3.8	60	56.13	56.87
2560	55.3	-2.57	1.41	-0.74	28.326	26.975	1.41	-12.4	3.98	60	56.34	57.38
2570	66.85	-1.75	2.35	0.2	34.117	32.731	2.35	-11.15	4.1	60	56.6	58.31
2580	48.56	-3.14	0.71	-1.44	24.685	23.879	0.71	-13.59	3.85	60	56.27	56.52
2590	46.54	-3.32	0.33	-1.82	24.021	22.514	0.33	-14.19	3.65	60	56.34	56.49
2600	49.2	-3.08	0.46	-1.69	25.691	23.51	0.46	-14.55	3.54	60	56.36	56.49



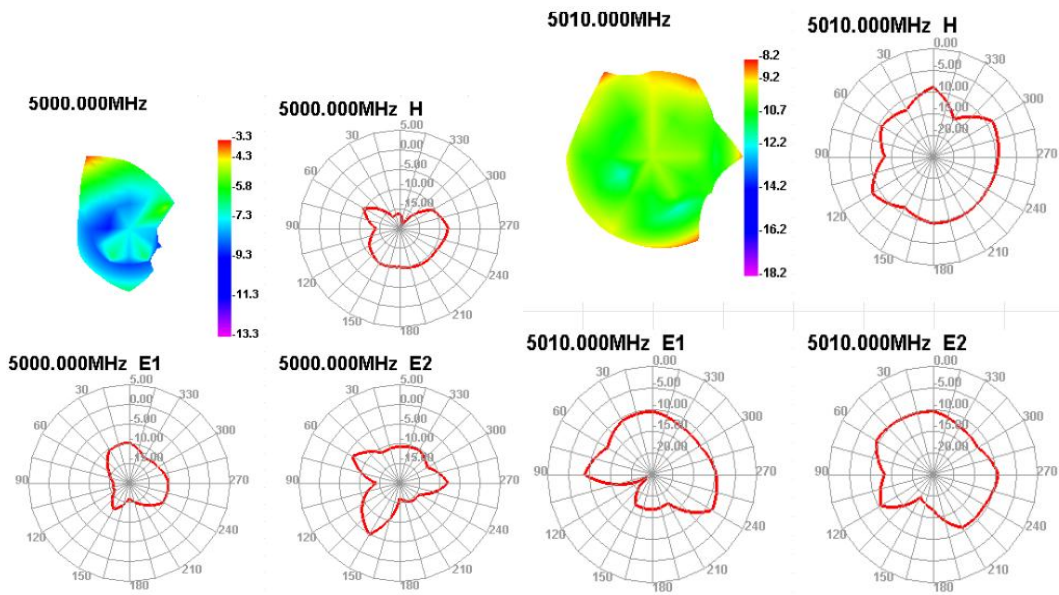
WIFI-5G

Passive Test For 5.8G-WIFI												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5000	9.44	-10.25	-3.27	-5.42	5.237	4.201	-3.27	-19.2	6.98	150	67.59	67.15
5010	7.97	-10.99	-8.21	-10.36	3.949	4.021	-8.21	-23.64	2.78	30	67.25	67.25
5020	8.59	-10.66	-1.11	-3.26	4.992	3.595	-1.11	-20.74	9.55	0	67.11	66.78
5030	8.74	-10.58	-5.24	-7.39	5.226	3.515	-5.24	-20.37	5.35	0	67.76	67.35
5040	8.31	-10.8	-5.19	-7.34	4.439	3.871	-5.19	-20.09	5.61	60	67.13	67.04
5050	6.54	-11.84	-7.61	-9.76	3.815	2.724	-7.61	-24.82	4.23	0	66.47	66.63
5060	9.31	-10.31	-2.35	-4.5	4.663	4.643	-2.35	-20.21	7.97	0	67.42	66.67
5070	8.74	-10.58	-4.05	-6.2	4.634	4.109	-4.05	-23.87	6.54	0	67.46	67.76
5080	9.46	-10.24	-4.26	-6.41	4.866	4.598	-4.26	-29.46	5.98	0	67.63	67.28
5090	6.31	-12	-1.98	-4.13	3.221	3.094	-1.98	-23.24	10.02	0	66.15	66.39
5100	5.39	-12.68	-7.74	-9.89	2.919	2.473	-7.74	-24.55	4.95	0	66.56	66.39
5110	6.02	-12.21	-7.43	-9.58	3.026	2.993	-7.43	-18.27	4.78	0	66.88	66.93
5120	8.54	-10.69	-4.94	-7.09	3.622	4.918	-4.94	-23.44	5.75	60	67.44	67.82
5130	6.92	-11.6	-5	-7.15	3.551	3.372	-5	-21.48	6.6	0	67	66.75
5140	6.44	-11.91	-4.69	-6.84	3.348	3.097	-4.69	-22.58	7.22	30	66.68	67
5150	7.7	-11.14	-3.5	-5.65	4.392	3.307	-3.5	-25.41	7.64	0	67.18	67.14
5160	7.29	-11.37	-6.18	-8.33	3.611	3.683	-6.18	-19.89	5.19	90	66.81	67.73
5170	7.09	-11.5	-4.93	-7.08	3.176	3.91	-4.93	-22.68	6.57	60	65.87	66.43
5180	5.95	-12.25	-5.81	-7.96	2.705	3.247	-5.81	-22.64	6.44	0	66.36	66.36
5190	6.14	-12.12	-7.03	-9.18	2.672	3.464	-7.03	-21.45	5.09	0	66.92	66.86
5200	8.44	-10.74	-2.79	-4.94	4.405	4.033	-2.79	-23.93	7.94	90	67.83	67.32
5210	7.97	-10.98	-1.39	-3.54	4.589	3.386	-1.39	-28.47	9.59	60	66.63	66.87
5220	6.7	-11.74	-4.19	-6.34	3.018	3.682	-4.19	-21.41	7.55	30	66.14	66.79
5230	6.38	-11.95	-7.25	-9.4	3.136	3.242	-7.25	-25.74	4.71	90	66.62	66.67
5240	8.74	-10.58	-5.88	-8.03	3.884	4.857	-5.88	-19.21	4.7	0	67.24	67.2

5250	8.31	-10.8	-5.8	-7.95	3.978	4.331	-5.8	-21.7	5.01	30	66.74	66.84
5260	6.97	-11.57	-6.27	-8.42	3.268	3.698	-6.27	-24.66	5.3	150	66.13	66.86
5270	8.39	-10.76	-3.68	-5.83	3.661	4.734	-3.68	-21.39	7.08	90	67.31	67.39
5280	9.45	-10.24	-5.83	-7.98	4.431	5.021	-5.83	-23.73	4.41	30	67.44	67.58
5290	12.47	-9.04	-3.49	-5.64	6.009	6.466	-3.49	-24.14	5.55	30	67.18	67.28
5300	9.57	-10.19	-1.11	-3.26	4.623	4.944	-1.11	-23.1	9.08	0	66.54	66.18
5310	12.24	-9.12	-0.87	-3.02	6.336	5.905	-0.87	-19.21	8.25	0	67.13	67.4
5320	12.75	-8.95	-2.99	-5.14	6.069	6.68	-2.99	-19.12	5.96	180	67.85	67.87
5330	20.82	-6.81	1.1	-1.05	9.915	10.907	1.1	-20.54	7.92	0	68.01	67.78
5340	13.73	-8.62	-4.06	-6.21	7.182	6.553	-4.06	-20.92	4.57	0	67.21	67.25
5350	14.81	-8.29	-3.75	-5.9	6.621	8.188	-3.75	-15.95	4.54	0	67.31	67.51
5360	18.71	-7.28	-1.06	-3.21	10.136	8.574	-1.06	-18.34	6.22	0	68.07	68.63
5370	17.27	-7.63	-2.44	-4.59	9.486	7.78	-2.44	-19.9	5.18	0	67.01	67.79
5380	14.16	-8.49	-3.51	-5.66	7.18	6.98	-3.51	-19.9	4.98	30	67.01	67.08
5390	15.79	-8.01	-4.34	-6.49	8.468	7.327	-4.34	-15.05	3.68	90	67.71	68.23
5400	18.62	-7.3	-2.33	-4.48	10.598	8.018	-2.33	-14.28	4.97	30	68.37	68.36
5410	22.41	-6.5	-1.36	-3.51	11.37	11.04	-1.36	-15.87	5.14	30	68.69	68.99
5420	16.99	-7.7	-3.31	-5.46	8.852	8.143	-3.31	-16.09	4.39	0	68.22	68.54
5430	17.34	-7.61	-2.57	-4.72	8.326	9.016	-2.57	-15.74	5.04	60	68.79	68.71
5440	21.39	-6.7	-0.56	-2.71	12.854	8.54	-0.56	-16.69	6.13	30	69.15	69.68
5450	24.57	-6.1	-1.15	-3.3	14.071	10.503	-1.15	-13.32	4.95	0	69.39	70.32
5460	22.11	-6.55	-1.08	-3.23	10.948	11.158	-1.08	-17.55	5.48	0	68.71	69.65
5470	24.76	-6.06	-0.37	-2.52	13.34	11.421	-0.37	-16.7	5.69	0	69.96	70.43
5480	22.46	-6.49	-0.62	-2.77	11.506	10.949	-0.62	-14.89	5.86	120	70.59	70.87
5490	31.48	-5.02	1.23	-0.92	17.805	13.68	1.23	-18.8	6.25	150	71.44	72.04
5500	29.84	-5.25	-0.69	-2.84	18.238	11.598	-0.69	-17.27	4.57	120	70.94	71.47
5510	26.32	-5.8	-1.18	-3.33	14.361	11.954	-1.18	-15.6	4.62	30	71.33	71.74
5520	23.17	-6.35	-1.69	-3.84	12.952	10.217	-1.69	-15.64	4.66	30	71.27	72.5

5530	28.67	-5.43	3.03	0.88	13.746	14.925	3.03	-12.62	8.45	90	71.35	72.23
5540	31.08	-5.08	-0.56	-2.71	18.044	13.034	-0.56	-14.55	4.52	60	71.82	72.96
5550	23.01	-6.38	-1.27	-3.42	13.16	9.853	-1.27	-12.05	5.11	0	71.36	72.61
5560	28.34	-5.48	4.09	1.94	13.472	14.865	4.09	-15.46	9.56	0	71.89	72.61
5570	27.7	-5.58	3.05	0.9	12.349	15.349	3.05	-15.35	8.63	0	71.6	72.72
5580	25	-6.02	0.4	-1.75	13.956	11.045	0.4	-15.87	6.42	30	71.96	73.06
5590	26.28	-5.8	0.96	-1.19	14.25	12.025	0.96	-16.81	6.77	0	71.65	72.87
5600	28.64	-5.43	2.19	0.04	15.544	13.096	2.19	-15.03	7.62	0	71.47	73.22
5610	22.49	-6.48	-1.56	-3.71	11.56	10.93	-1.56	-19.5	4.92	0	71.96	72.93
5620	19.28	-7.15	-1.88	-4.03	10.95	8.326	-1.88	-21.5	5.27	0	71.01	72.79
5630	20.17	-6.95	0.5	-1.65	10.503	9.663	0.5	-18.85	7.45	180	70.85	72.39
5640	24.73	-6.07	1	-1.15	11.387	13.346	1	-13.44	7.06	30	71.18	71.44
5650	26.92	-5.7	3.71	1.56	13.86	13.058	3.71	-14.91	9.41	0	71.79	72.29
5660	18.98	-7.22	-0.32	-2.47	11.988	6.99	-0.32	-18.4	6.9	60	70.44	72.31
5670	21.42	-6.69	-0.73	-2.88	11.122	10.297	-0.73	-20.55	5.96	150	70.08	72.1
5680	14.19	-8.48	-2.5	-4.65	8.582	5.612	-2.5	-16.91	5.98	90	70.33	71.36
5690	16.95	-7.71	0.19	-1.96	10.189	6.759	0.19	-16.25	7.89	30	70.33	71.86
5700	18.58	-7.31	0.55	-1.6	10.167	8.415	0.55	-18.9	7.85	0	70.18	70.93
5710	18.34	-7.37	5.01	2.86	9.035	9.302	5.01	-16.47	12.38	0	69.69	70.25
5720	14.38	-8.42	-1.67	-3.82	7.672	6.707	-1.67	-17.72	6.75	0	69.32	70.36
5730	17.6	-7.55	2.3	0.15	9.506	8.094	2.3	-16.39	9.85	0	68.89	69.94
5740	14.62	-8.35	-2.21	-4.36	8.065	6.55	-2.21	-18.83	6.14	0	69.81	70.54
5750	18.34	-7.37	-0.87	-3.02	8.365	9.976	-0.87	-19.39	6.5	0	69.58	70.68
5760	14.71	-8.32	0.5	-1.65	9.139	5.568	0.5	-23.34	8.83	60	69.91	71.25
5770	12.77	-8.94	-0.65	-2.8	7.122	5.651	-0.65	-19.63	8.28	0	69.93	70.79
5780	15.22	-8.18	3.12	0.97	10.6	4.622	3.12	-18.59	11.29	0	70.15	71.07
5790	11.93	-9.24	-1.72	-3.87	7.484	4.441	-1.72	-20.96	7.51	30	69.67	70.57
5800	18.81	-7.26	3.43	1.28	8.994	9.812	3.43	-17.51	10.68	0	70	71.21

5810	14.2	-8.48	1.68	-0.47	7.985	6.213	1.68	-17.66	10.16	60	69.83	71.13
5820	13.06	-8.84	-1.32	-3.47	6.803	6.255	-1.32	-22.32	7.53	30	70.29	71.5
5830	14.51	-8.38	2.06	-0.09	9.384	5.122	2.06	-20.9	10.44	30	70.64	70.74
5840	14.35	-8.43	-0.42	-2.57	8.065	6.281	-0.42	-17.67	8.01	0	70.75	72.13
5850	15.64	-8.06	-0.49	-2.64	6.635	9.007	-0.49	-17.71	7.57	0	70.78	70.75
5860	17.15	-7.66	3.52	1.37	9.665	7.48	3.52	-23.68	11.18	0	71.11	71.73
5870	18.57	-7.31	0.22	-1.93	9.124	9.442	0.22	-18.32	7.53	120	70.79	71.9
5880	19.8	-7.03	3.33	1.18	12.028	7.775	3.33	-19.08	10.37	0	70.61	73.79
5890	14.69	-8.33	-1.23	-3.38	7.893	6.8	-1.23	-18.44	7.1	0	70.99	72.54
5900	14.82	-8.29	-1.79	-3.94	7.986	6.83	-1.79	-21.37	6.5	0	70.5	72.38
5910	17.18	-7.65	-1.2	-3.35	7.333	9.843	-1.2	-18.63	6.45	0	71.07	72.21
5920	19.92	-7.01	0.39	-1.76	10.712	9.211	0.39	-22.17	7.4	30	70.67	72.55
5930	26.06	-5.84	2.28	0.13	10.923	15.142	2.28	-20.23	8.12	0	72.39	72.43
5940	15.95	-7.97	3.93	1.78	8.52	7.434	3.93	-21.02	11.9	30	70.81	71.61
5950	17.48	-7.57	1.8	-0.35	10.287	7.193	1.8	-20.74	9.38	150	71.56	72.9
5960	26.31	-5.8	2.56	0.41	12.508	13.805	2.56	-15.54	8.36	0	71.3	73.73
5970	30.9	-5.1	2.51	0.36	15.708	15.196	2.51	-18.16	7.61	0	73.57	73.74
5980	26.08	-5.84	2.47	0.32	13.988	12.093	2.47	-19.77	8.31	30	72.19	74.22
5990	0	-75.88	-64.33	-66.48	0	0	-64.33	-91.69	11.55	0	0	0
6000	0	-80.47	-74.19	-76.34	0	0	-74.19	-92.31	6.28	30	0	0



6.天线结构图：

