

Shanghai Smart Control Co., Ltd.

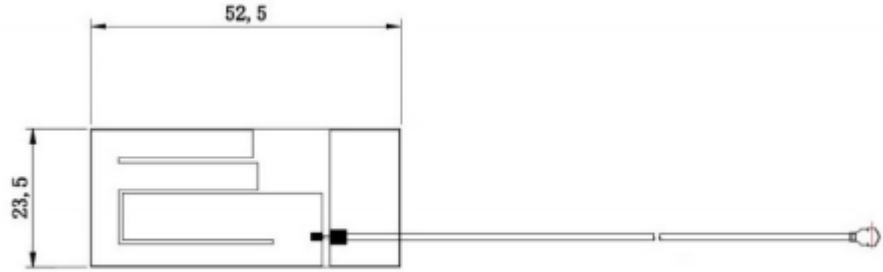
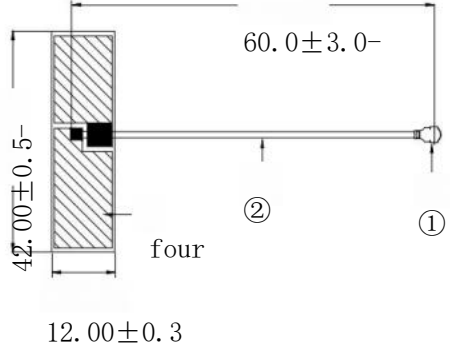
Antenna test report

Antenna Evaluation Report Customer Name: Hongying Intelligence

Project name: WIFI (2G and 5G) antenna test, 4G antenna test

R&d: Xu Yuechao

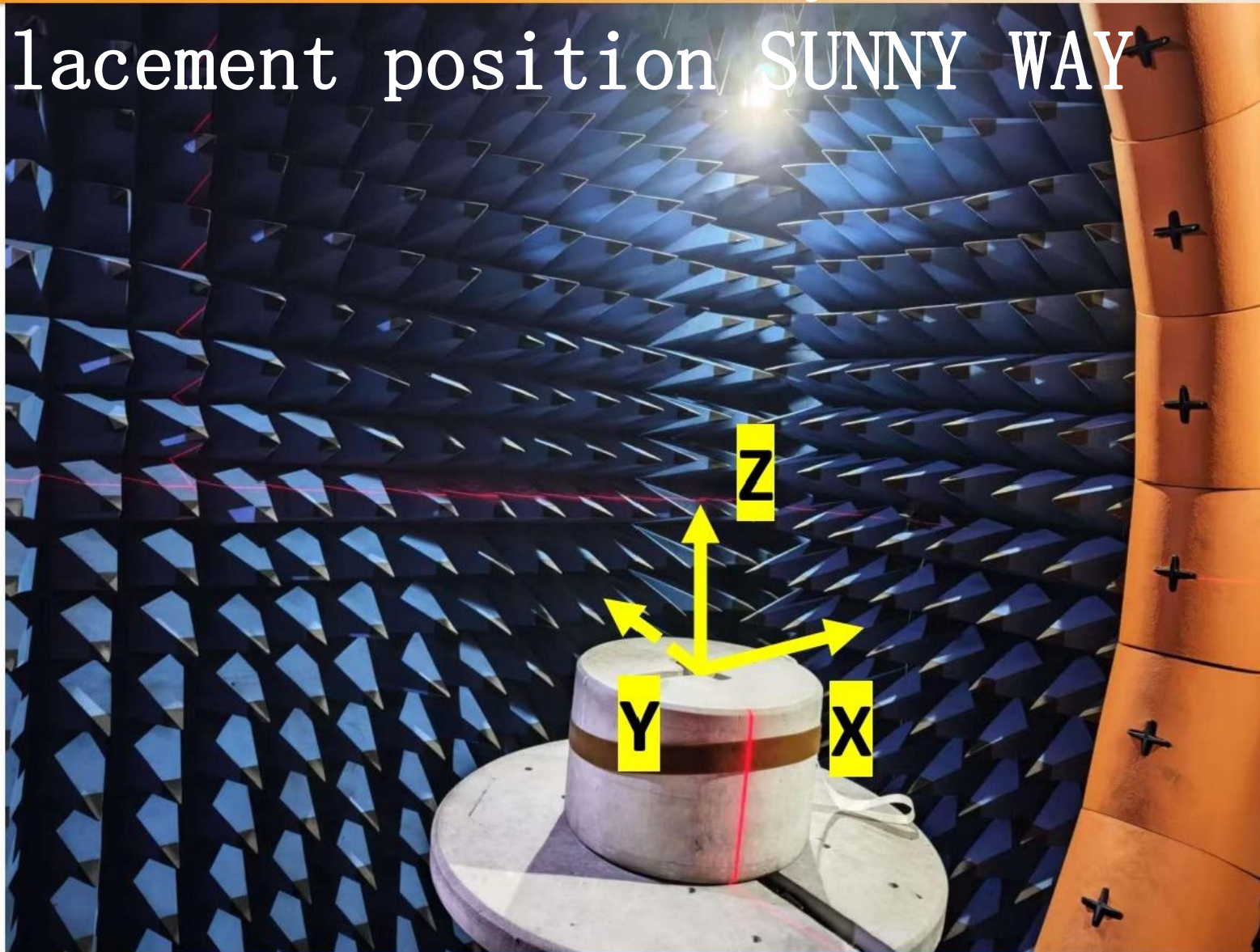
Report version: 2025.06.12

Company name (manufacturer)	Dongguan Chuangjie Electronics Co., LTD.
Company address (manufacturer)	No.36, Lane 3, Dingwu New Village, Dongkeng Town, Dongguan City, Guangdong Province, China (No.36, Lane 3, Dingwu New Village, Dongkeng Town, Dongguan City, Guangdong Province)
4G antenna drawing	
Bluetooth/WiFi drawings	

5 Project pictures and SUNNYWAY passive jig



OTA darkroom coordinate system definition and test placement position SUNNY WAY



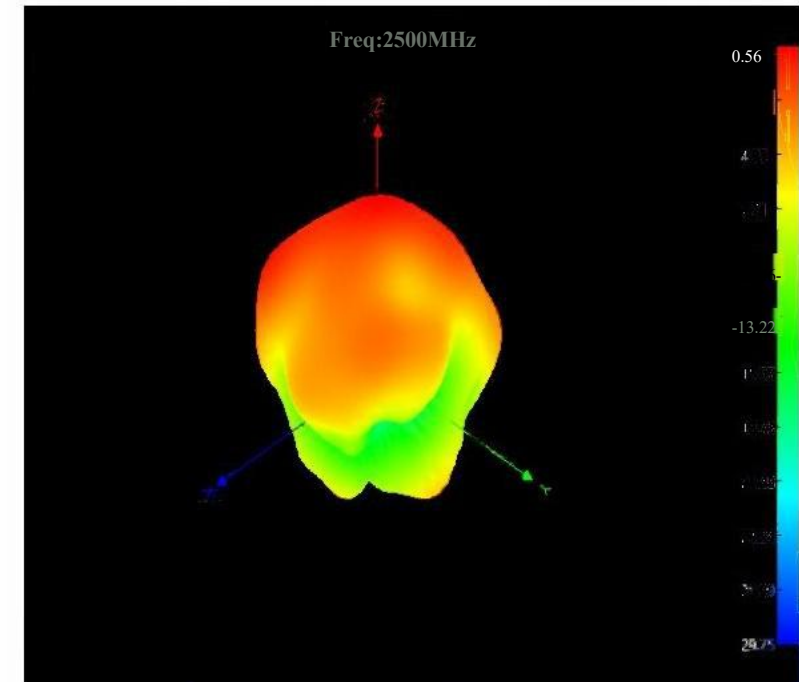
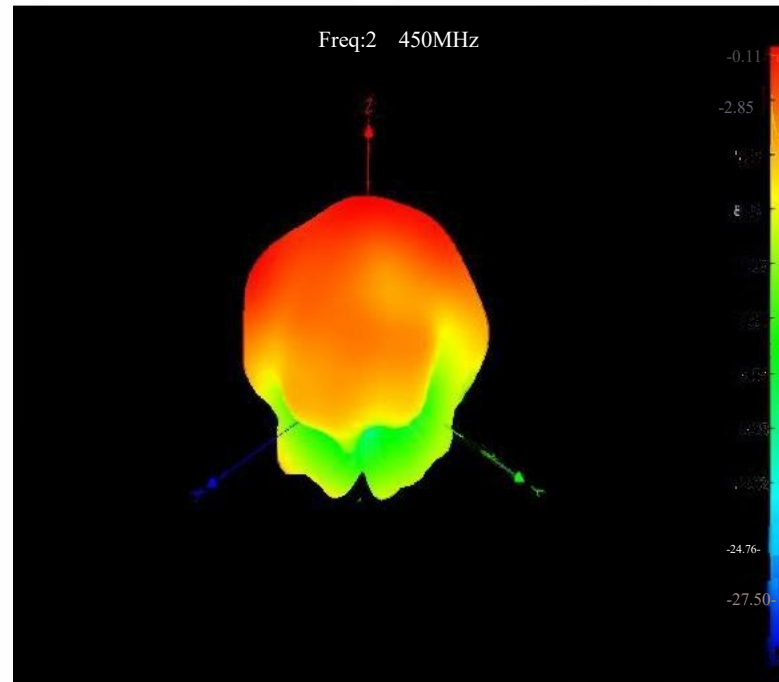
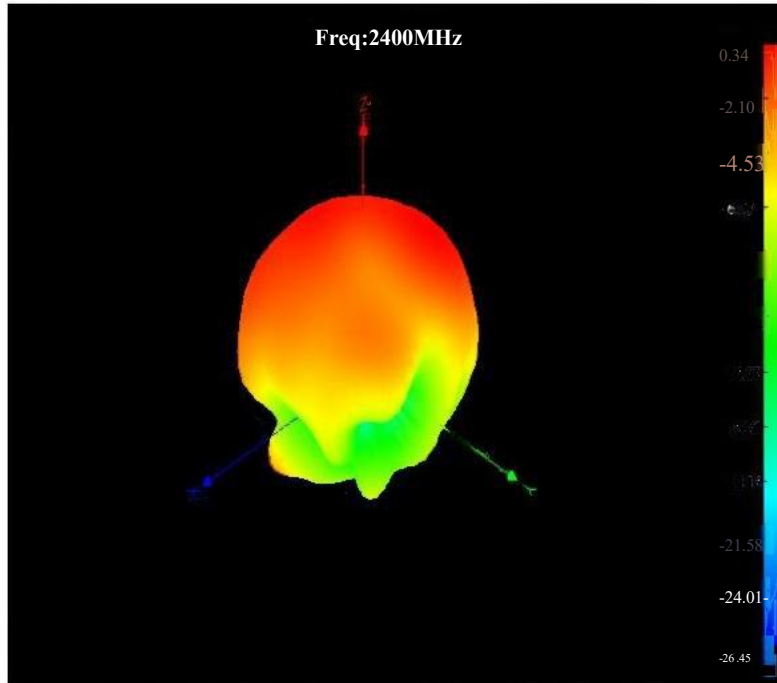
Antenna 1 (WIFI 2G) radiation

Frequency/Mhz	Efficiency/dB	Efficiency/%	MaxGain/dBi
2400	-6.52	22.28	0.34
2410	-6.66	21.58	-0.23
2420	-6.77	21.04	-0.21
2430	-6.69	21.43	-0.28
2440	-6.51	22.34	-0.63
2450	-6.4	22.91	-0.11
2460	-6.21	23.93	0.17
2470	-6.04	24.89	0.19
2480	-5.92	25.59	0.2
2490	-5.67	27.1	0.78
2500	-5.48	28.31	0.56

Antenna 1 (WIFI, 2G) antenna gain

SUNNYWAY

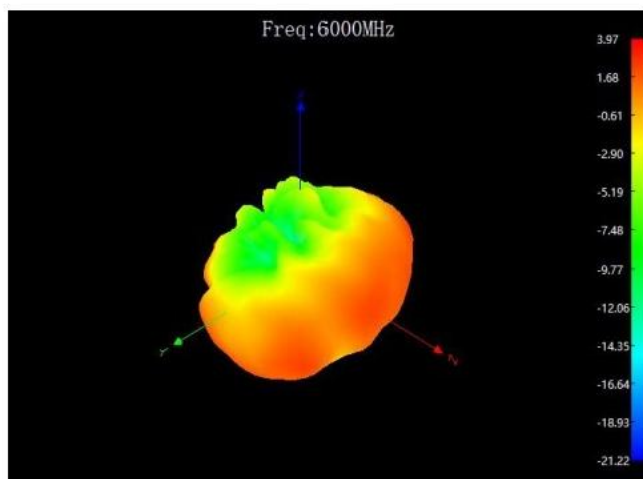
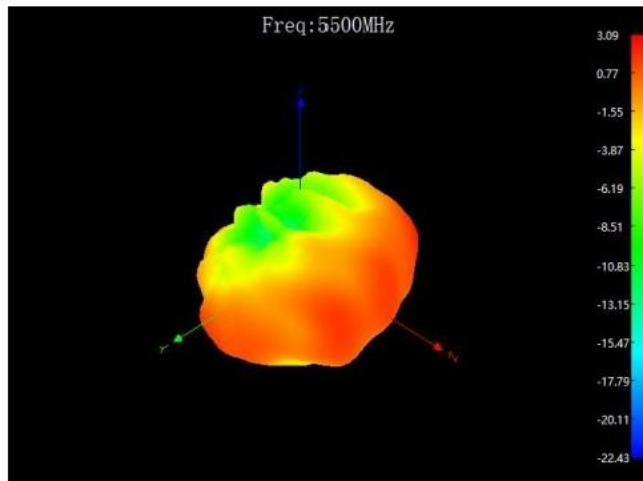
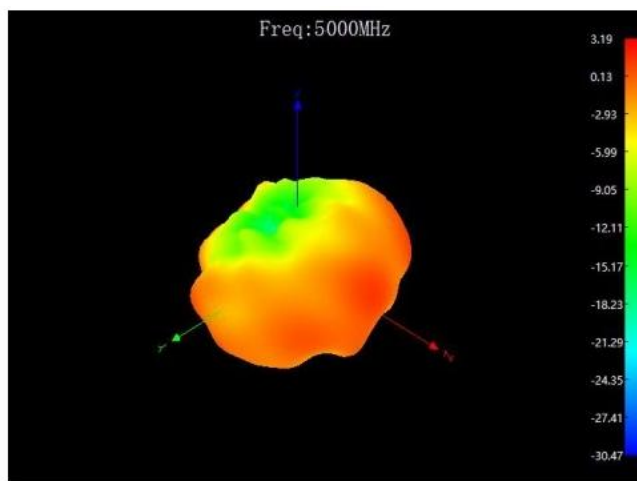
3D GAIN PATTERN



Antenna 1 (WIFI 5G) radiation efficiency and Peak Gain

Frequency/Mhz	Efficiency / dB	Efficiency /%	MaxGain/dBi
5000	-2.05	62.37	3.19
5050	-1.84	65.46	3.5
5100	-1.73	67.14	3.3
5150	-1.72	67.3	3.39
5200	-1.73	67.14	3.53
5250	-1.96	63.68	3.47
5300	-1.96	63.68	3.11
5350	-2.01	62.95	2.78
5400	-2.02	62.81	2.8
5450	-1.65	68.39	3.05
5500	-1.68	67.92	3.09
5550	-1.58	69.5	2.85
5600	-1.58	69.5	3.36
5650	-1.6	69.18	3.26
5700	-1.42	72.11	3.33
5750	-1.6	69.18	3
5800	-1.59	69.34	3.34
5850	-1.63	68.71	3.44
5900	-1.3	74.13	3.71
5950	-1.36	73.11	3.6
6000	-1.31	73.96	3.97

Antenna 1 (WIFI 5G) antenna gain direction diagram 3D GAIN PATTERN



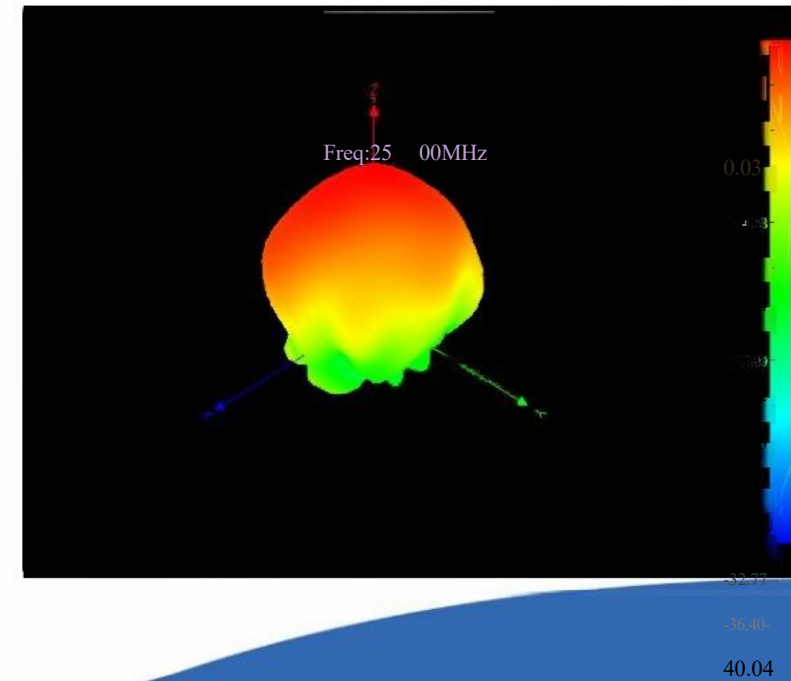
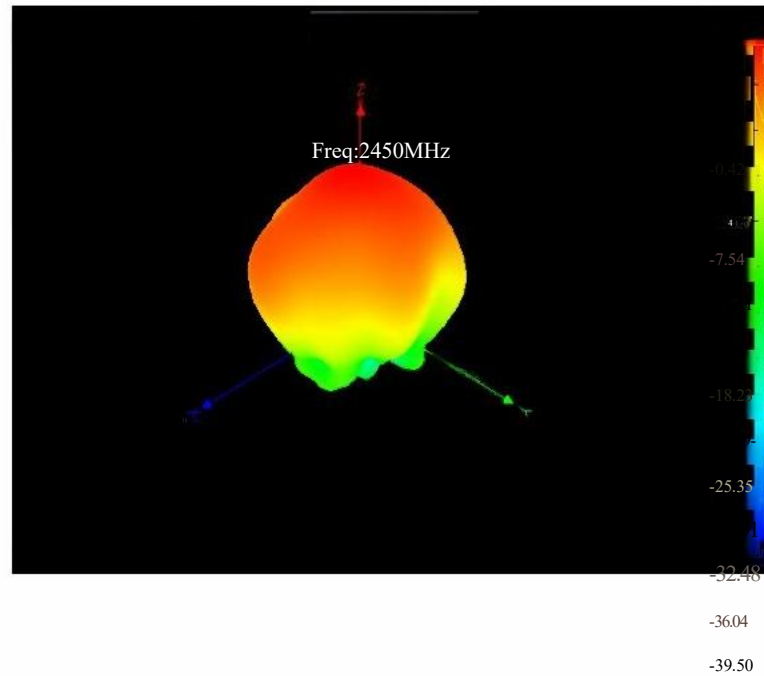
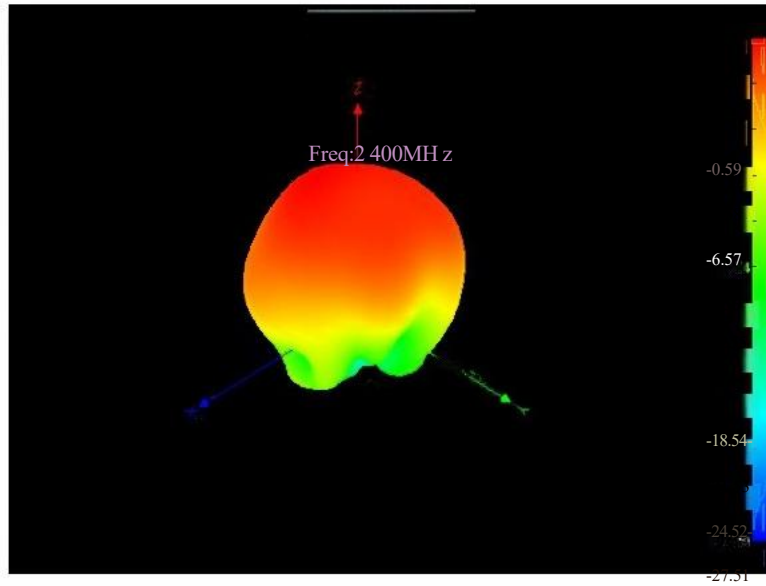
5 Antennas 2 (WIFI 2G) Radiation efficiency

Frequency/Mhz	Efficiency/dB	Efficiency/%	MaxGain/dBi
2400	-8.06	15.63	-0.59
2410	-8.17	15.24	-1.08
2420	-8.3	14.79	-0.92
2430	-8.26	14.93	-0.66
2440	-8.14	15.35	-0.99
2450	-8.09	15.52	-0.42
2460	-7.85	16.41	-0.03
2470	-7.71	16.94	-0.21
2480	-7.58	17.46	-0.25
2490	-7.34	18.45	0.28
2500	-7.16	19.23	-0.03

Antenna 2 (WIFI, 2G) antenna gain direction diagram

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3D GAIN PATTERN



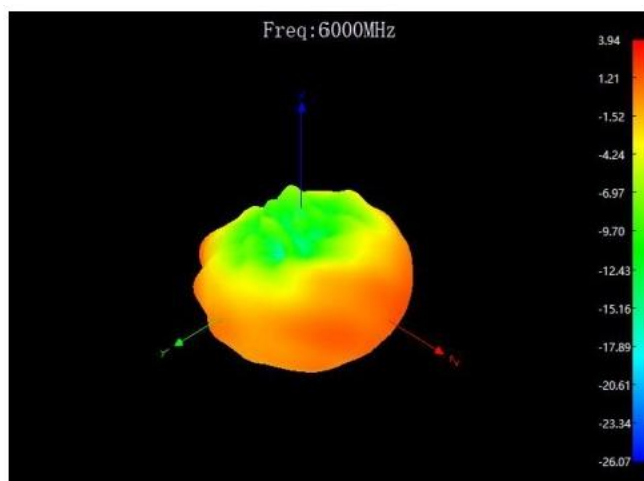
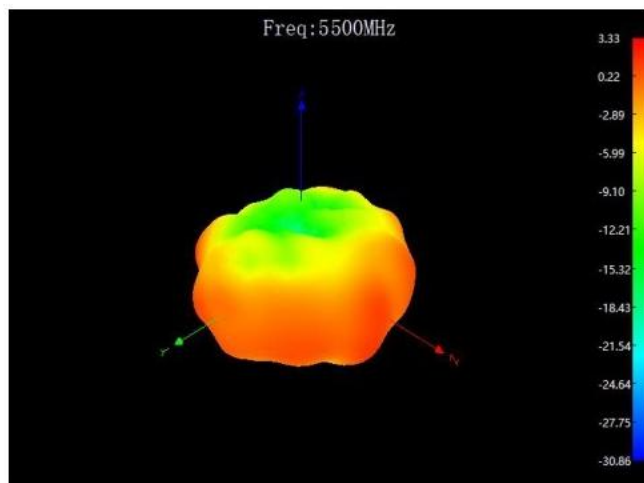
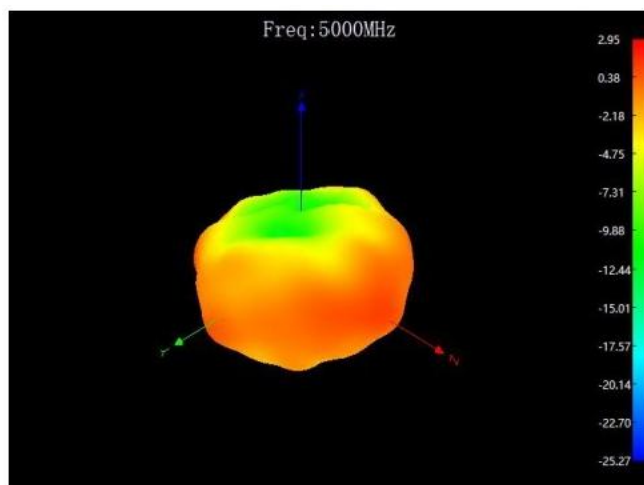
Antenna 2 (WIFI 5G) radiation efficiency and Peak Gain

Frequency/Mhz	Efficiency / dB	Efficiency /%	AvgGain/dBi
5000	-2.05	62.37	-2.05
5050	-1.91	64.42	-1.91
5100	-1.76	66.68	-1.76
5150	-1.76	66.68	-1.76
5200	-1.75	66.83	-1.75
5250	-1.96	63.68	-1.96
5300	-2.05	62.37	-2.05
5350	-2.05	62.37	-2.05
5400	-2.05	62.37	-2.05
5450	-1.67	68.08	-1.67
5500	-1.68	67.92	-1.68
5550	-1.63	68.71	-1.63
5600	-1.62	68.87	-1.62
5650	-1.61	69.02	-1.61
5700	-1.46	71.45	-1.46
5750	-1.58	69.5	-1.58
5800	-1.56	69.82	-1.56
5850	-1.63	68.71	-1.63
5900	-1.3	74.13	-1.3
5950	-1.35	73.28	-1.35
6000	-1.27	74.64	-1.27

Antenna 2 (WIFI 5G) antenna

gain direction diagram 3D GAIN

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Antenna 3 (4G) radiation efficiency and Peak

Frequency/Mhz	Efficiency/dB	Efficiency/%	MaxGain/dBi
700	-8.24	15	-1.44
710	-8.07	15.6	-0.98
720	-7.86	16.37	-0.72
730	-7.69	17.02	-0.66
740	-7.45	17.99	-0.82
750	-7.33	18.49	-1.21
760	-7.1	19.5	-1
770	-6.92	20.32	-0.46
780	-6.54	22.18	0.36
790	-5.93	25.53	1.26
800	-5.54	27.93	1.88
810	-5.32	29.38	2.53
820	-5.21	30.13	3.01
830	-5.21	30.13	3.04
840	-5.27	29.72	2.73
850	-5.27	29.72	2.43
860	-5.06	31.19	1.98
870	-4.73	33.65	2.16
880	-4.61	34.59	2.2
890	-4.38	36.48	2.6
900	-4.45	35.89	2.65
910	-4.89	32.43	2.52
920	-5.75	26.61	1.92
930	-7.34	18.45	0.18
940	-9.37	11.56	-1.88
950	-12.16	6.08	-4.82
960	-15.43	2.86	-8.79

1710	-4.72	33.73	1.81
1720	-4.55	35.08	2.11
1730	-4.37	36.56	1.95
1740	-4.19	38.11	2.23
1750	-4.19	38.11	2.15
1760	-4.18	38.19	1.93
1770	-4.24	37.67	1.59
1780	-4.34	36.81	1.26
1790	-4.35	36.73	1.33
1800	-4.4	36.31	1.58
1810	-4.38	36.48	1.78
1820	-4.37	36.56	1.83
1830	-4.34	36.81	1.82
1840	-4.29	37.24	1.83
1850	-4.25	37.58	1.77
1860	-4.27	37.41	1.61
1870	-4.46	35.81	1.22
1880	-4.73	33.65	0.81
1890	-5.08	31.05	0.83
1900	-5.38	28.97	0.63
1910	-5.58	27.67	0.39
1920	-5.74	26.67	0.56
1930	-5.71	26.85	1.01
1940	-5.53	27.99	1.57
1950	-5.35	29.17	2.09

1960	-5.1	30.9	2.54
1970	-4.82	32.96	2.83
1980	-4.58	34.83	2.93
1990	-4.44	35.97	2.91
2000	-4.5	35.48	2.96
2010	-4.33	36.9	2.98
2020	-4.44	35.97	2.95
2030	-4.42	36.14	3.12
2040	-4.33	36.9	3.14
2050	-4.36	36.64	2.91
2060	-4.31	37.07	2.75
2070	-4.08	39.08	2.98
2080	-3.71	42.56	3.41
2090	-3.4	45.71	3.63
2100	-3.22	47.64	3.55
2110	-3.11	48.87	3.79
2120	-3.14	48.53	3.54
2130	-3.33	46.45	3.53
2140	-3.55	44.16	3.33
2150	-3.94	40.36	2.85
2160	-4.08	39.08	2.89
2170	-4.11	38.82	3.27
2180	-4.2	38.02	2.99
2190	-4.16	38.37	3.26
2200	-4.11	38.82	3.38

Antenna 3, (4G) radiation efficiency and

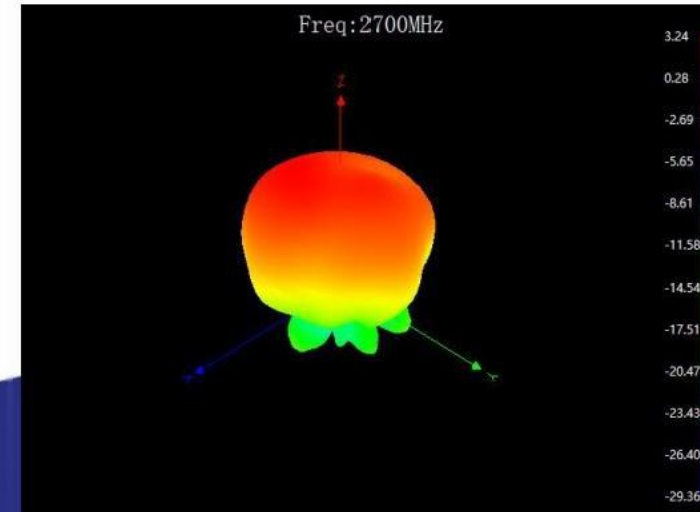
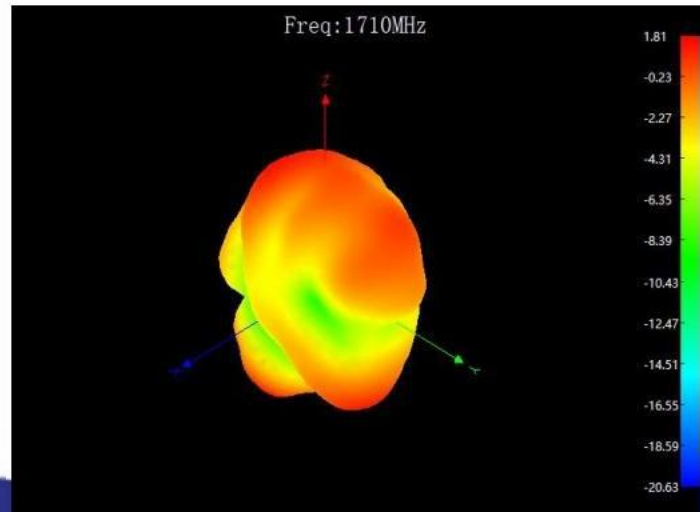
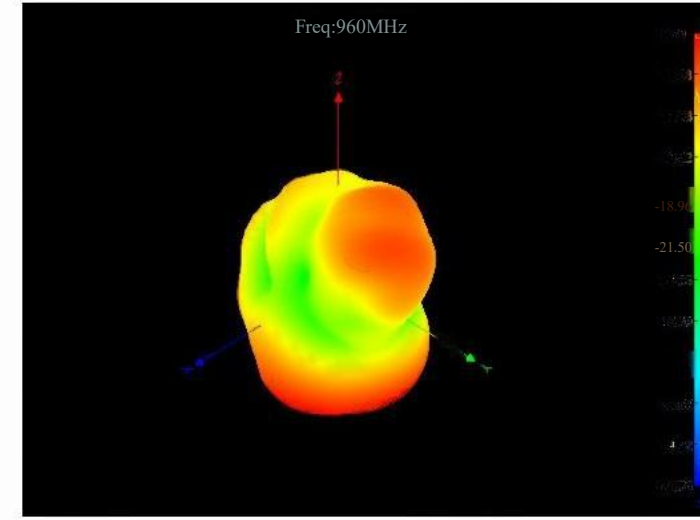
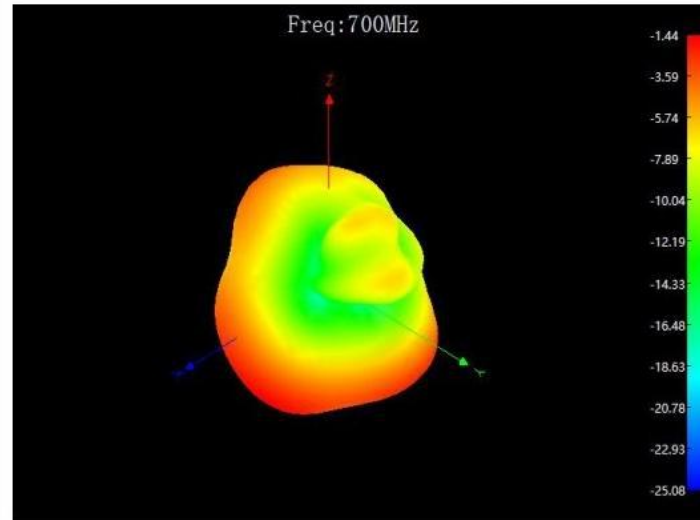
Frequency/Mhz	Efficiency/dB	Efficiency/%	MaxGain/dBi
2210	-4.03	39.54	3.05
2220	-3.77	41.98	3.29
2230	-3.62	43.45	3.33
2240	-3.42	45.5	3.09
2250	-3.25	47.32	3.51
2260	-3.34	46.34	2.18
2270	-3.42	45.5	2.5
2280	-3.44	45.29	2.4
2290	-3.42	45.5	2.22
2300	-3.34	46.34	2.39
2310	-3.24	47.42	2.56
2320	-3.15	48.42	2.73
2330	-3.16	48.31	3.11
2340	-3.23	47.53	2.78
2350	-3.35	46.24	2.35
2360	-3.52	44.46	1.95
2370	-3.65	43.15	2.38
2380	-3.76	42.07	2.2
2390	-3.92	40.55	1.75
2400	-4.01	39.72	2.64
2410	-4.07	39.17	1.87
2420	-4.24	37.67	2.03
2430	-4.29	37.24	2.45
2440	-4.34	36.81	1.26
2450-4.49	35.56	1.6	

Frequency/Mhz	Efficiency/dB	Efficiency/%	MaxGain/dBi
2460	-4.48	35.65	2.18
2470	-4.62	34.51	1.35
2480	-4.65	34.28	1.55
2490	-4.53	35.24	2.14
2500	-4.45	35.89	1.71
2510	-4.37	36.56	2.43
2520	-4.27	37.41	2.32
2530	-4.22	37.84	1.99
2540	-4.23	37.76	2.45
2550	-4.35	36.73	1.91
2560	-4.52	35.32	1.99
2570	-4.74	33.57	1.98
2580	-4.92	32.21	1.59
2590	-5.12	30.76	1.38
2600	-5.27	29.72	1.47
2610	-5.35	29.17	1.19
2620	-5.29	29.58	1.28
2630	-5.22	30.06	0.98
2640	-5.12	30.76	1.52
2650	-5.04	31.33	2.08
2660	-4.92	32.21	1.86
2670	-4.89	32.43	3
2680	-4.77	33.34	2.58
2690	-4.81	33.04	2.36
2700	-4.87	32.58	3.24

Antenna 3 (4G) antenna

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3D GAIN PATTERN



**THANK YOU
FOR YOUR
ATTENTION**