

Antenna Testing Report

Customer : yingda

Project Name : K8 Pro

Antenna Manufacturer: sunnyway(CHINA)

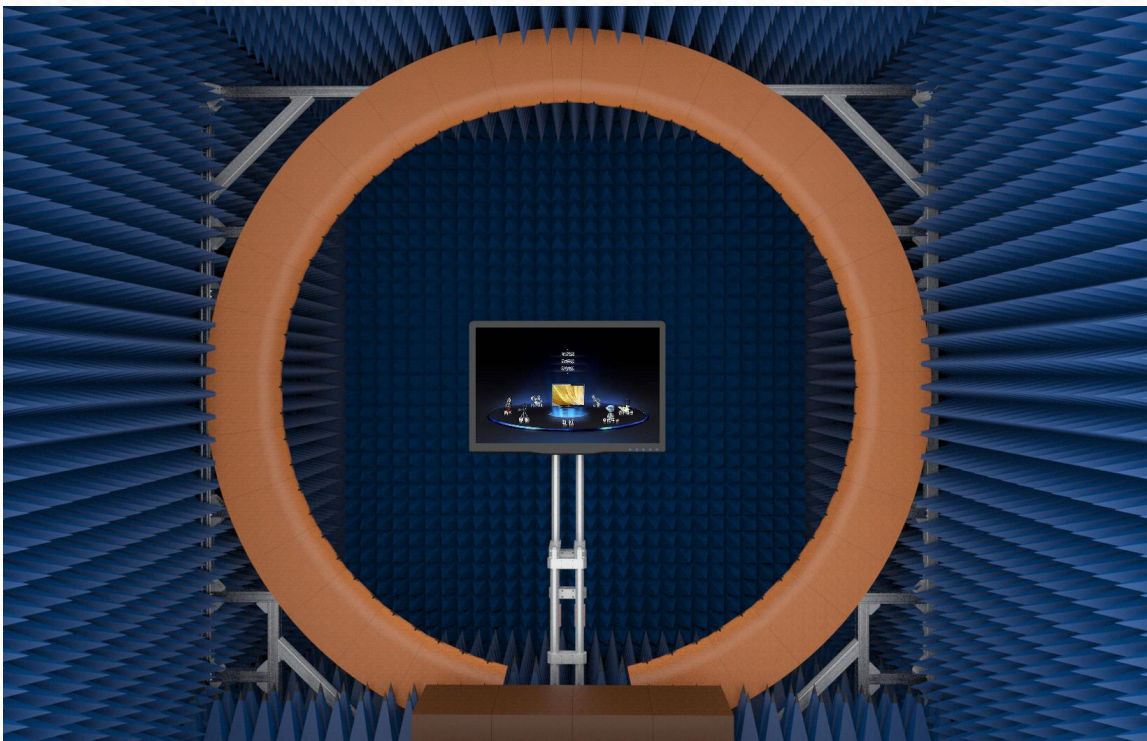
Address: The 6th floor, Building 5, Nantaiyun Innovation Valley Center,
Guangming District, Shenzhen City

Report version: March 12, 2025 A0
Research staff: HEJINZHU

Version	Report date	Remark
A0	2024.5.8	Antenna test report
A1		
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1.Record	
2.Project Overview	
3.Equipment List	
4. Antenna mounting position	
5.Passive parameters	
6.Passive efficiency and gain	
7.OTA test data	
8.DirectionaI pattern	
9.Summary	

Prototype status	Debugging machine	Project pictures
Device type		
Number of antennas	MAIN,DIV,BWG,WIFI6 ANT0,WIFI6 ANT1	
Frequency band	2G: 850/900/1800/1900 3G:W1/2/5/8 4G-LTE: B1/2/3/4/5/6/7/8/12/17/19/20/28A/28B/66 B34/38/39/40/41	
	GPS/2.4+5GWiFi	
Structural style	FPC	
Environment adjustment	NO	
Matching modification	NO	



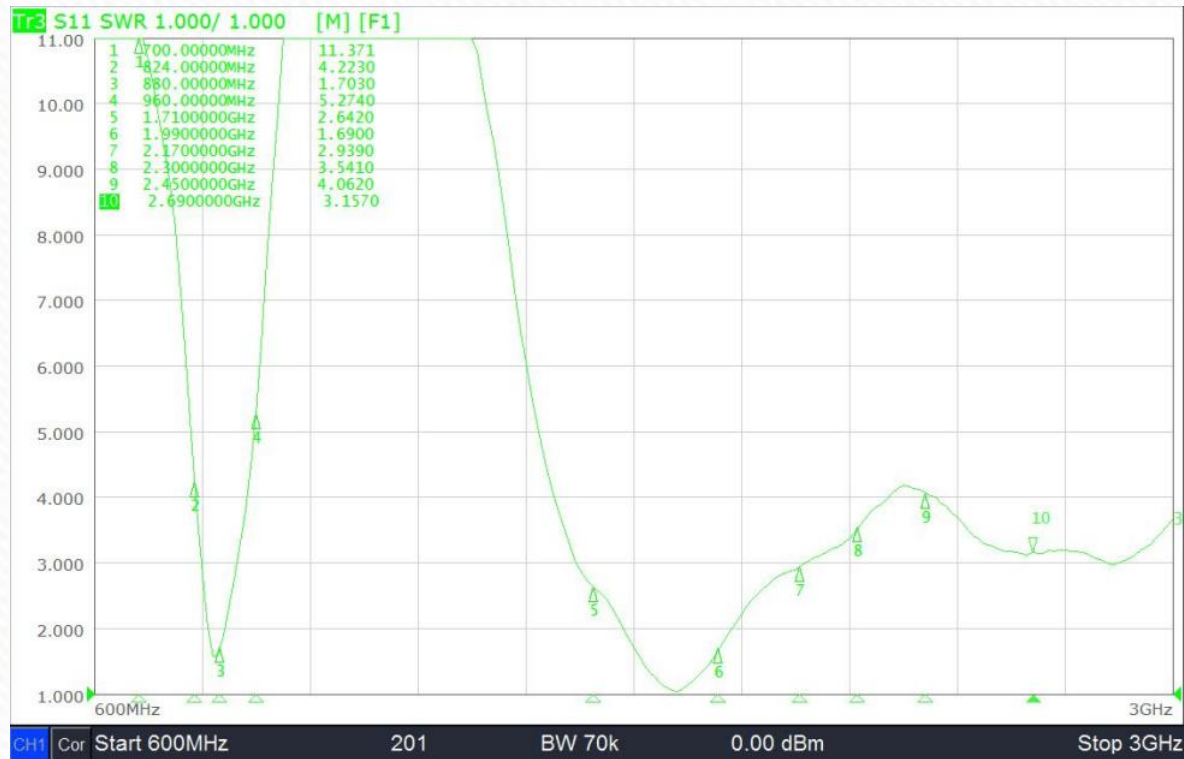
The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

Device Llimitation: 2M

Load-bearing limitation:100KG

Equipments Items	Total Quantity	Quantity for Shanghai R&D	Quantity for Shenzhen R&D	Quantity for ChongQing R&D
OTA chamber	10	4	5	1
5G Tester (SP9500-CTS)	3	1	1	1
R&S Tester (high configuration CMW500)	6	3	2	1
Japan Anritsu Tester (Dual Channel 8820)	4	2	2	--
NB-IoT Tester (SP8315)	3	1	1	1
Agilent Tester (8960)	9	4	4	--
Agilent Network Analyzer (E5062A)	7	3	3	1
Agilent Network Analyzer (E5071C 8.5GHZ)	11	5	5	1
Agilent Network Analyzer (E5071B 8.5GHZ)	7	3	3	1
R&S Network Analyzer (ZND)	9	4	4	1
R&S Network Analyzer (ZVB)	3	1	1	1
OTA head hand / ear hand / arm hand	5	2	2	1
GPS/WIFI active test equipment	5	2	2	1



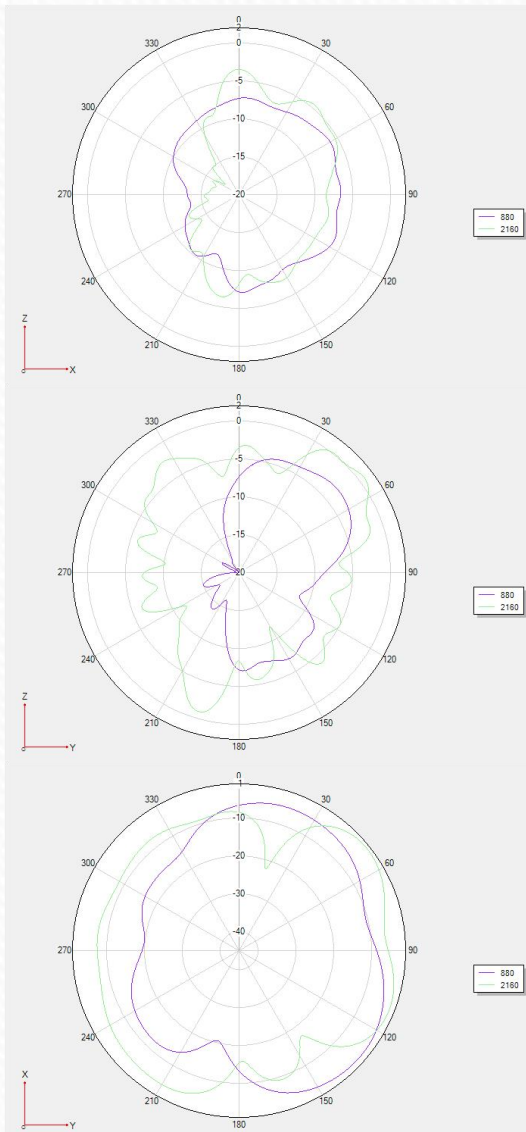
MAIN Antenna passive test data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
700	-3.32	22.49
710	-3.17	23.38
720	-2.48	24.21
730	-2.59	24.46
740	-3.18	25.42
750	-3.97	23.16
760	-3.68	22.38
770	-2.32	21.08
780	-2.57	19.44
790	-4.22	18.16
800	-3.4	24.89
810	-3.48	24.59
820	-2.57	25.02
830	-2.83	25.05
840	-2.5	26.37
850	-2.69	27.09
860	-2.45	27.58
870	-1.9	26.1
880	-1.66	25.6
890	-1.96	26.18
900	-2.18	26
910	-2.73	24.62
920	-2.93	23.94
930	-2.93	22.14
940	-3.1	20.03
950	-3.81	18.84
960	-4.53	18.47

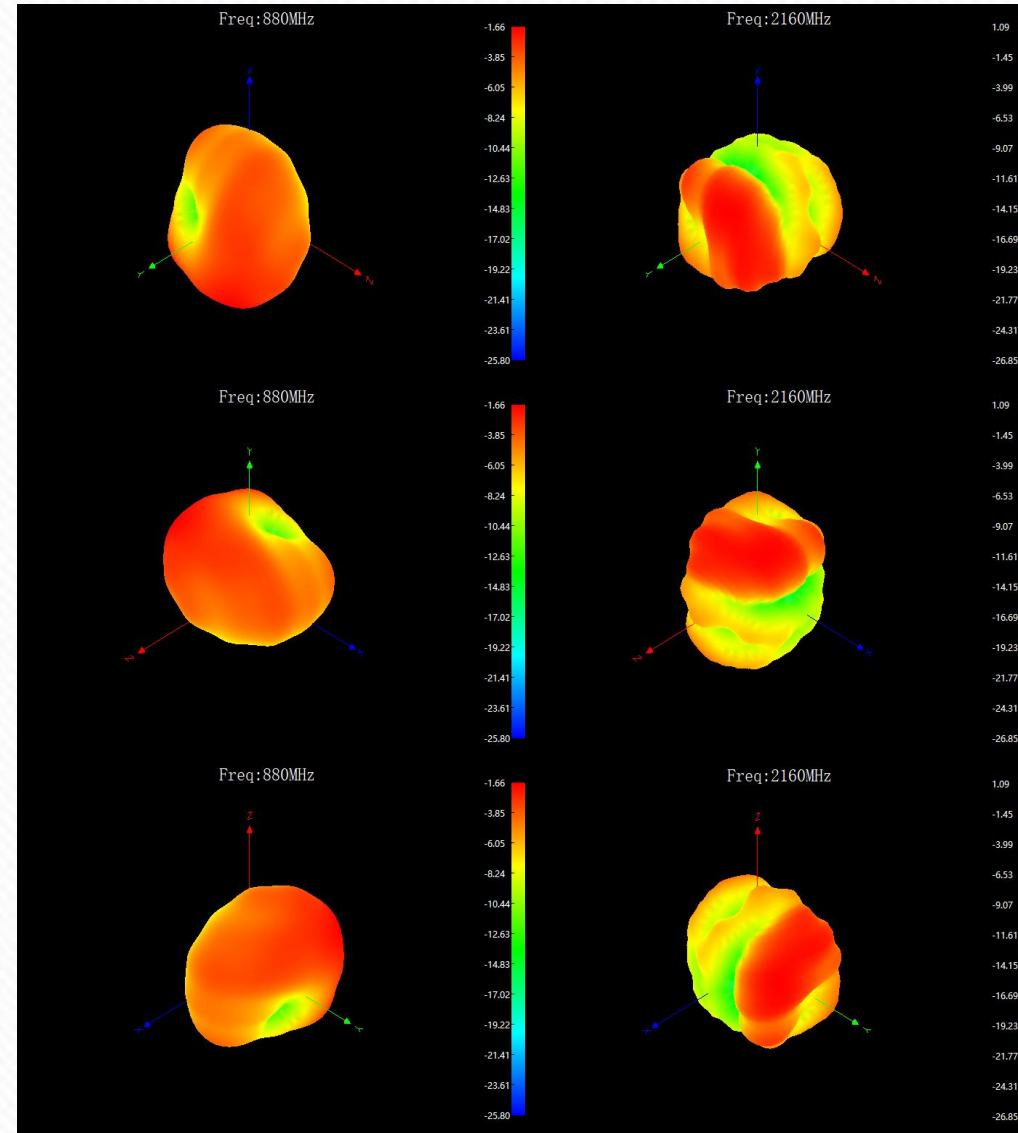
Frequency/Mhz	MaxGain/dBi	Efficiency / %
1700	-0.53	27.92
1720	-0.45	28.55
1740	-1.09	29.05
1760	-1.52	32.14
1780	-1.75	32.81
1800	-1.36	32.58
1820	-1.07	32.89
1840	-1.17	35.48
1860	-0.84	35.48
1880	-0.18	36.81
1900	0.38	39.81
1920	0.72	39.46
1940	1.26	43.08
1960	1.68	45.82
1980	1.97	42.97
2000	2.3	44.7
2020	2.71	41.49
2040	2.14	42.94
2060	2.66	42.66
2080	1.64	40.81
2100	1.76	40.67
2120	2.07	40.81
2140	1.4	42.81
2160	1.09	41.36
2180	2.56	43.58
2200	2.55	43.09

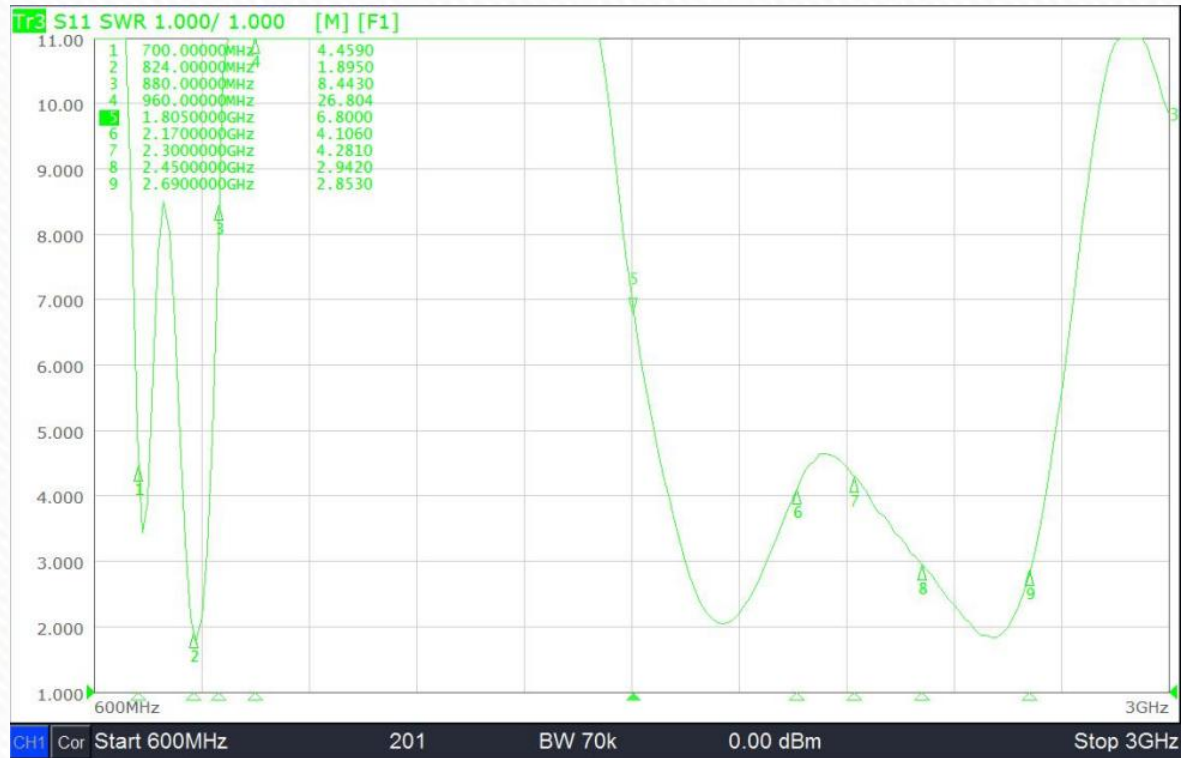
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2220	2.32	45.58
2240	2.02	42.32
2260	1.33	39.81
2280	0.16	33.97
2300	-2.8	25.74
2320	-1.43	25.47
2340	-1.28	28.52
2360	-1.67	26.83
2380	-0.48	26.33
2400	0.31	30.06
2420	0.36	30.7
2440	0.55	32.8
2460	0.64	35.62
2480	0.55	35.13
2500	0.62	35.9
2520	0.87	36.77
2540	0.84	35.69
2560	1.17	32.06
2580	1.36	32.73
2600	1.02	31.62
2620	1.25	32.28
2640	1.63	34.12
2660	1.71	32.66
2680	2.04	34.43
2700	2.42	34.28

2D



3D





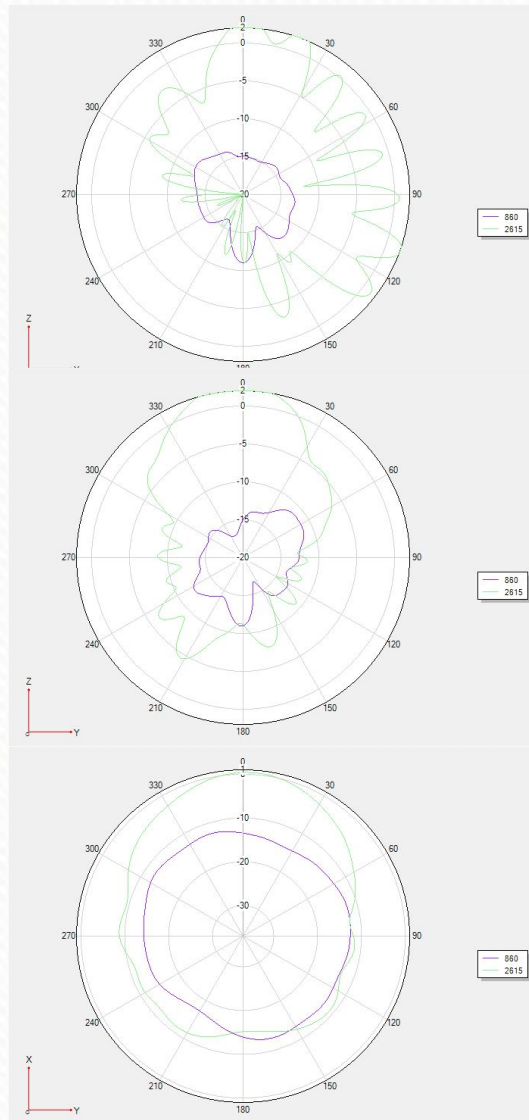
DIV Antenna passive test data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
800	-10.59	8.56
810	-10.02	9.55
820	-9.87	11.75
830	-9.09	14.61
840	-9.59	15.14
850	-10	17.22
860	-10.96	17.62
870	-10.99	17.02
880	-11.46	15.35
890	-12	16.09
900	-13.37	14.43
910	-13.63	12.04
920	-13.91	10.06
930	-14.15	9.28
940	-14.21	8.37
950	-15.08	7.68
960	-16.05	7.13

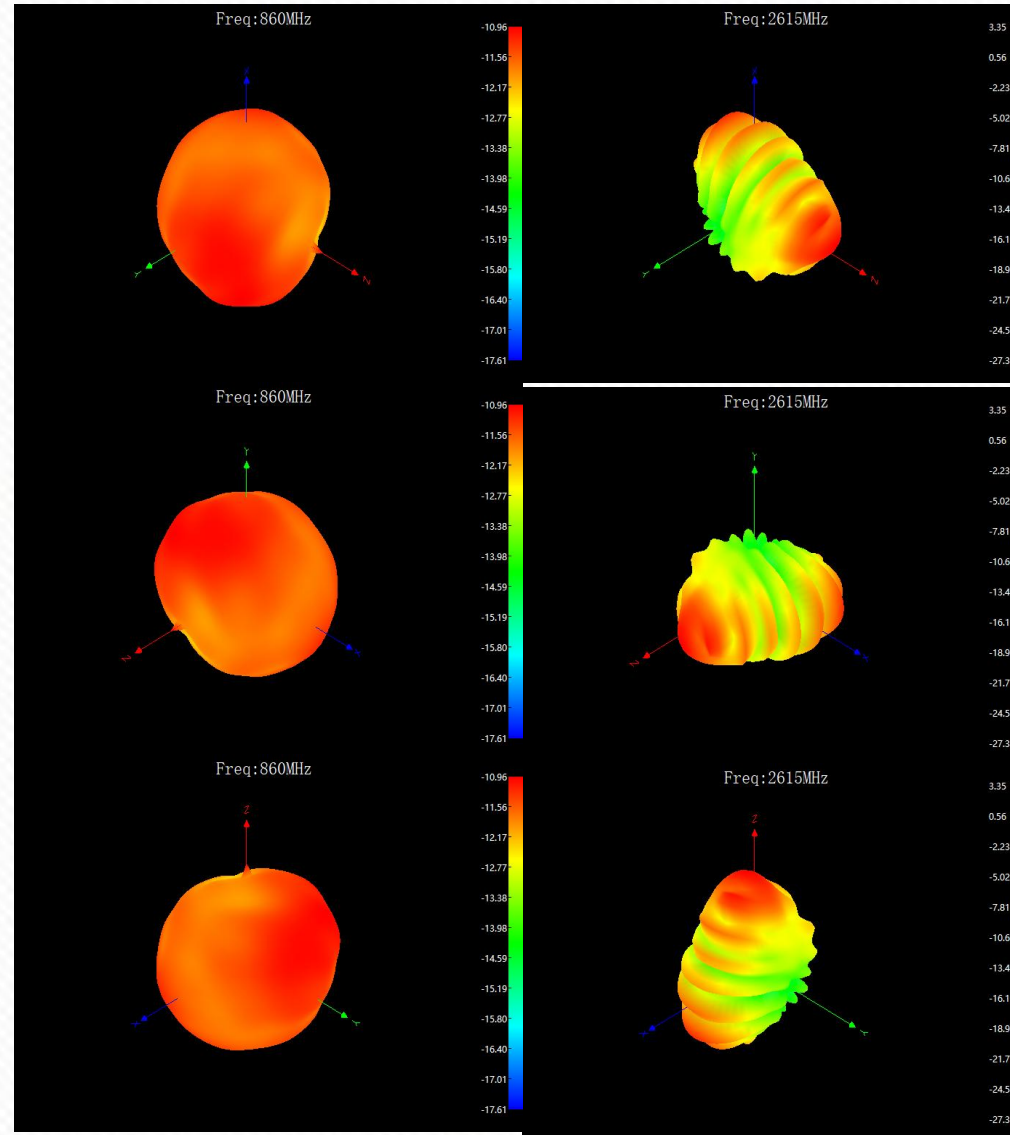
Frequency/Mhz	MaxGain/dBi	Efficiency / %
1800	-6.1	12.27
1820	-4.99	13.07
1840	-3.9	15.85
1860	-3.66	18.52
1880	-3.52	20.18
1900	-2.58	20.42
1920	-2.04	23.5
1940	-1.84	26
1960	-1.01	28.77
1980	-0.65	28.44
2000	-0.31	27.23
2020	-0.55	25.53
2040	-0.61	25.12
2060	0.27	30.48
2080	0.68	32.73
2100	0.82	33.5
2120	1.37	36.81
2140	1.23	36.64
2160	1.1	36.22
2180	1.18	37.58
2200	1.03	36.98
2220	0.84	36.22
2240	0.87	36.81

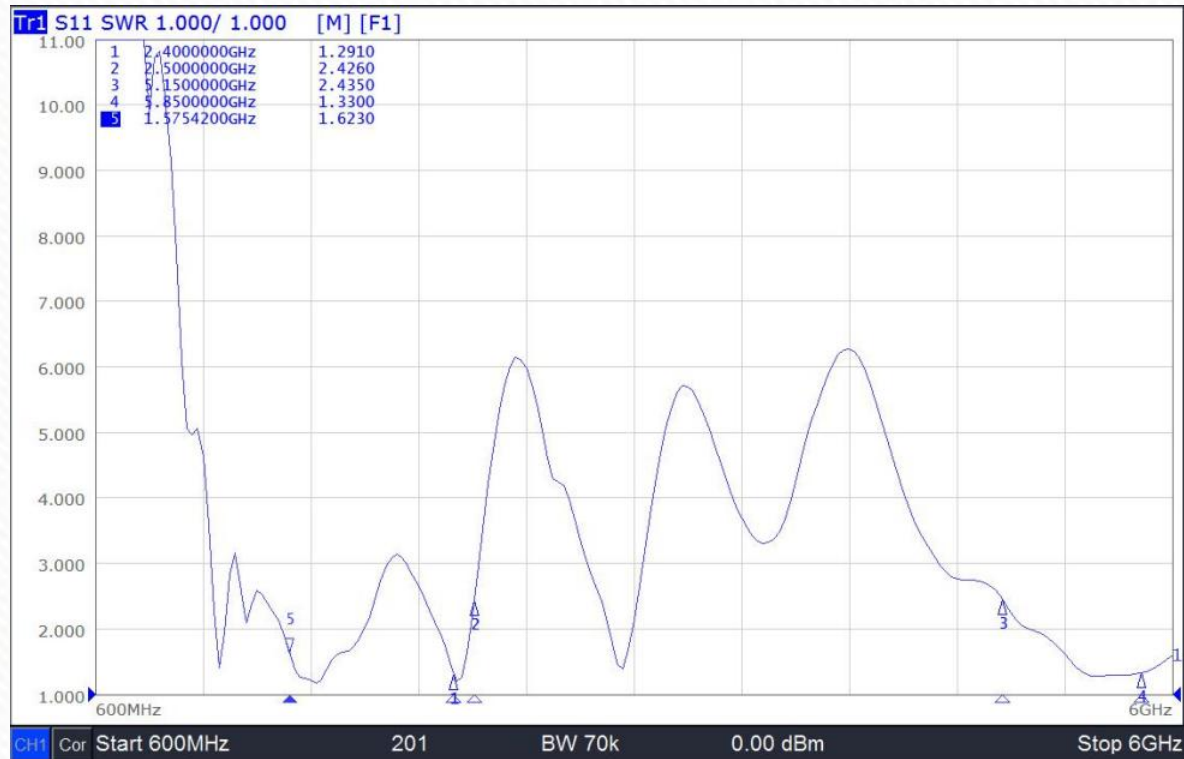
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2260	0.75	35.89
2280	1.14	37.24
2300	1.43	37.84
2320	1.01	36.56
2340	0.94	38.99
2360	1.35	31.59
2380	1.27	30.64
2400	1.34	31.21
2420	1.44	31.78
2440	1.36	30.74
2460	1.72	33.05
2480	1.98	35.29
2500	1.98	34.06
2520	0.37	35.29
2540	0.89	37.75
2560	1.17	37.21
2580	1.65	35.89
2600	2.08	37.76
2615	3.35	36.7
2640	2.51	38.97
2660	2.84	39.08
2680	2.88	38.72
2700	2.98	36.7

2D



3D





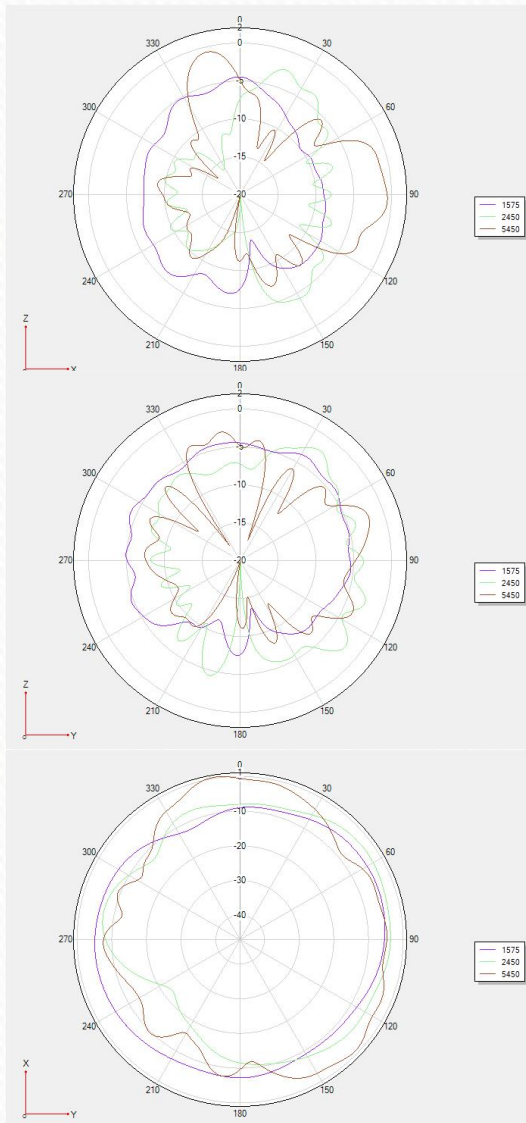
BWG Antenna passive test data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
1560	-3.12	39.66
1561	-3	39.66
1562	-3.05	39.98
1563	-3.1	40.63
1564	-3.27	41.29
1565	-3.26	41.94
1566	-3.35	42.95
1567	-3.35	43.28
1568	-3.13	42.78
1569	-2.98	41.45
1570	-2.97	39.98
1571	-3.16	39.02
1572	-3.31	38.39
1573	-3.54	38.23
1574	-3.67	38.71
1575	-3.76	39.5
1576	-3.88	39.66
1577	-3.7	39.98
1578	-3.25	40.47
1579	-2.88	41.12
1580	-2.65	41.61

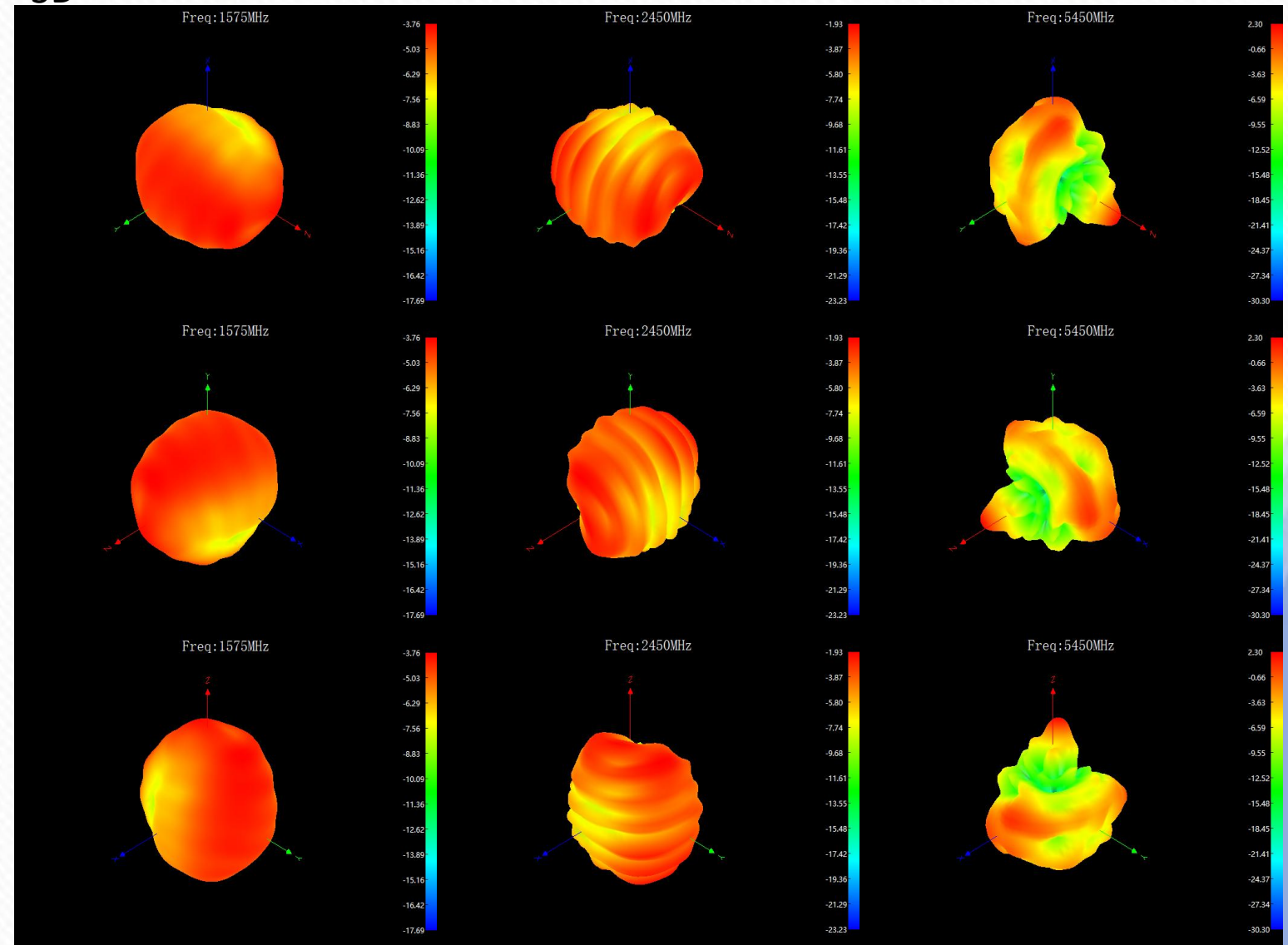
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-2.7	42.56
2410	-2.15	41.78
2420	-2.95	42.76
2430	-2.83	41.78
2440	-2.33	43.65
2450	-1.93	41.88
2460	-2.03	43.65
2470	-2.58	41.98
2480	-2.21	42.95
2490	-2.43	41.11
2500	-2.43	39.99

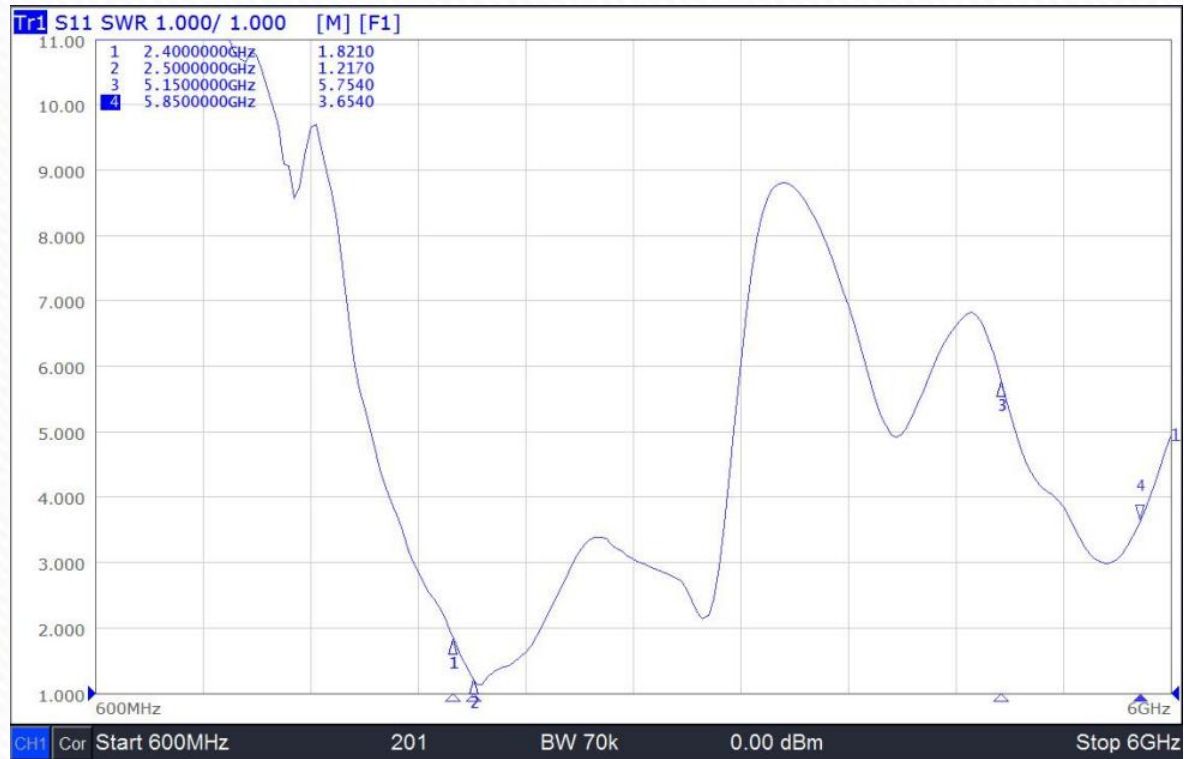
Frequency/Mhz	MaxGain/dBi	Efficiency / %
5150	2.4	35.65
5180	2.4	34.36
5210	2.69	34.36
5240	2.58	34.28
5270	2.69	32.51
5300	2.83	33.88
5330	2.94	34.04
5360	3.08	34.83
5390	3	34.91
5420	2.94	34.36
5450	2.3	36.06
5480	2.73	34.91
5510	2.59	35.89
5540	2.79	35.97
5570	2.52	35.4
5600	2.82	35.73
5630	2.59	35.81
5660	2.66	35.81
5690	2.55	36.56
5720	2.37	34.99
5750	2.36	35.97
5780	1.92	34.04
5810	1.86	32.89
5840	1.58	32.58

2D



3D



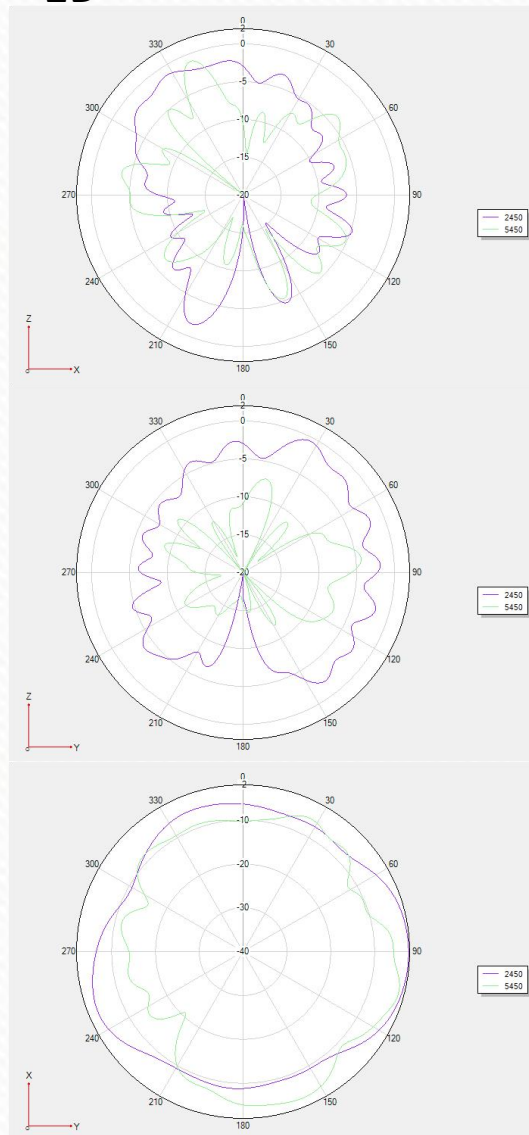


WIFI6 ANT0 Antenna passive test data

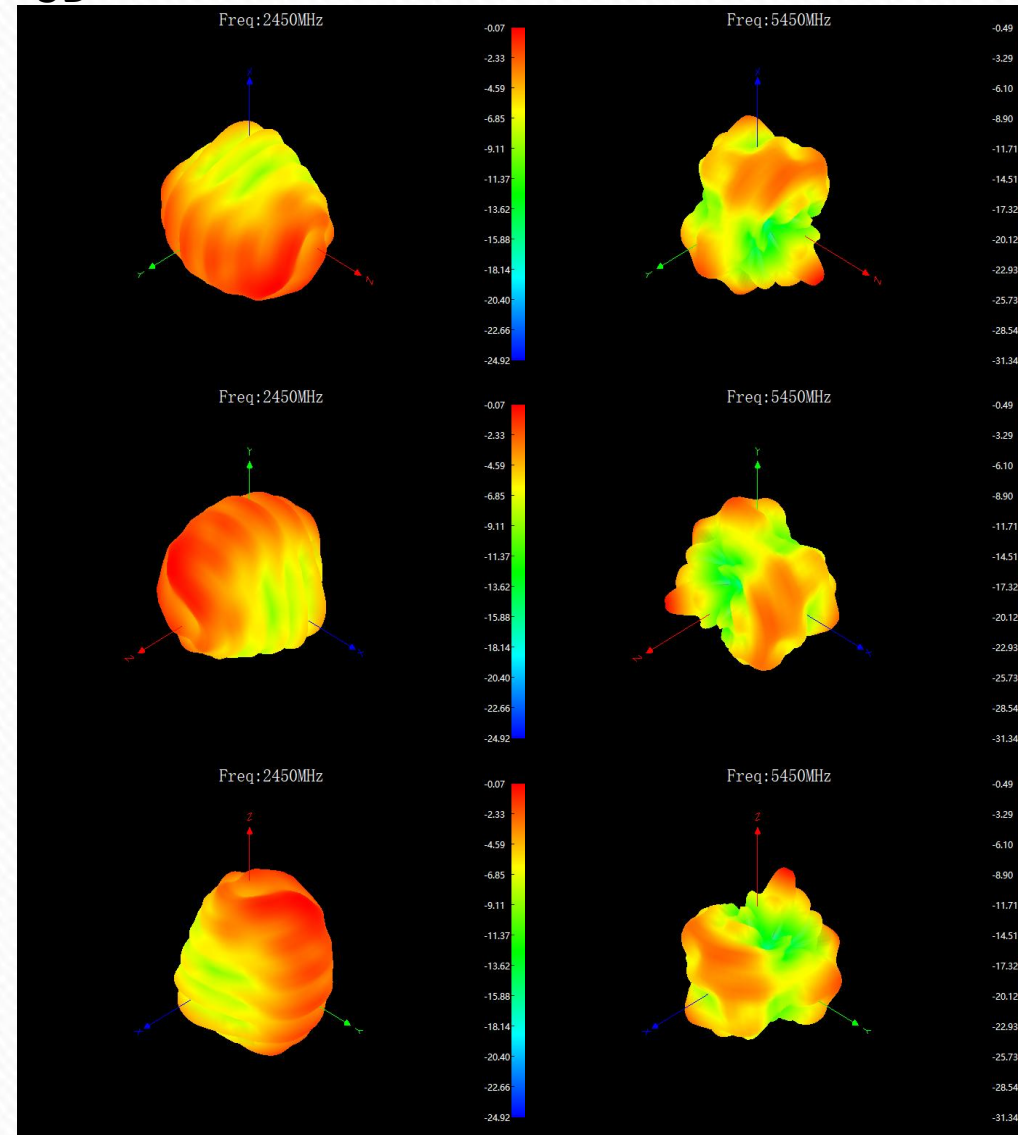
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-1.31	46.05
2410	-0.97	45.75
2420	-1.86	44.13
2430	-1.44	43.85
2440	-0.77	44.26
2450	-0.07	41.59
2460	-0.13	42.66
2470	-0.12	42.07
2480	0.74	41.98
2490	0.94	41.5
2500	1.12	43.55

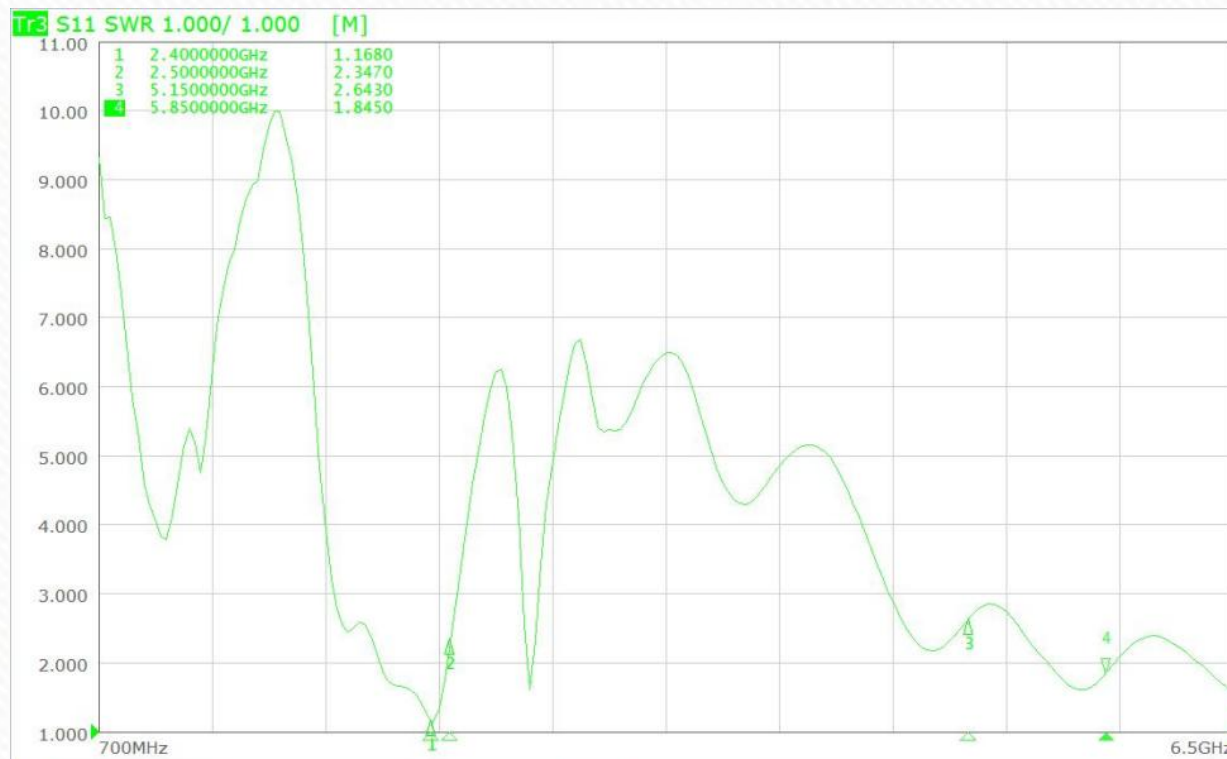
Frequency/Mhz	MaxGain/dBi	Efficiency / %
5150	-1.01	22.22
5200	-0.98	22.35
5250	-0.63	24.14
5300	-0.75	24.49
5350	-0.92	25.95
5400	-0.69	25.38
5450	-0.49	28.55
5500	0.59	27.17
5550	0.89	27.88
5600	1.03	26.28
5650	1.03	27.38
5700	1.06	26.99
5750	1.15	26.23
5800	0.7	26.09
5850	0.29	25.59

2D



3D



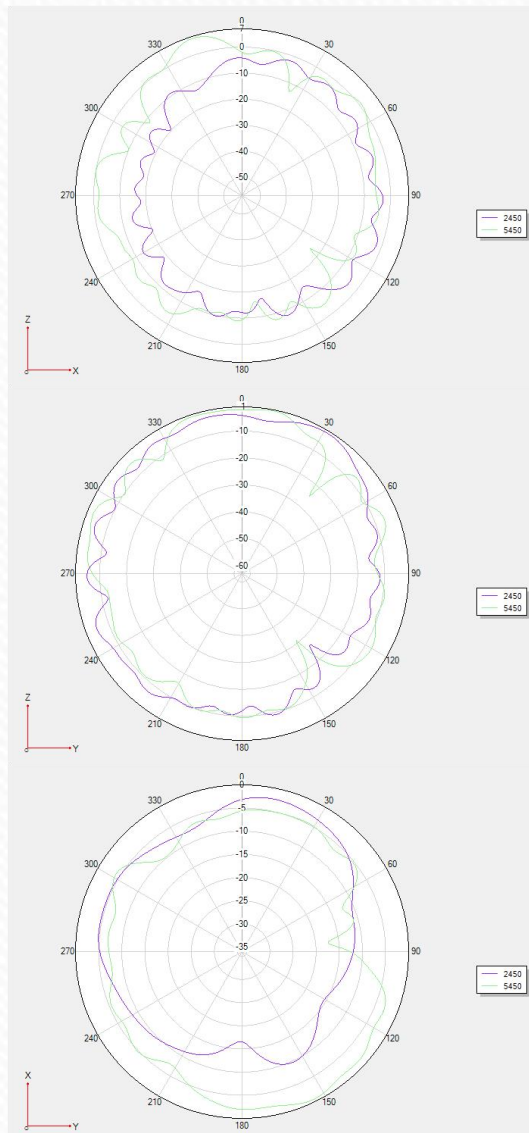


WIFI6 ANT1 Antenna passive test data

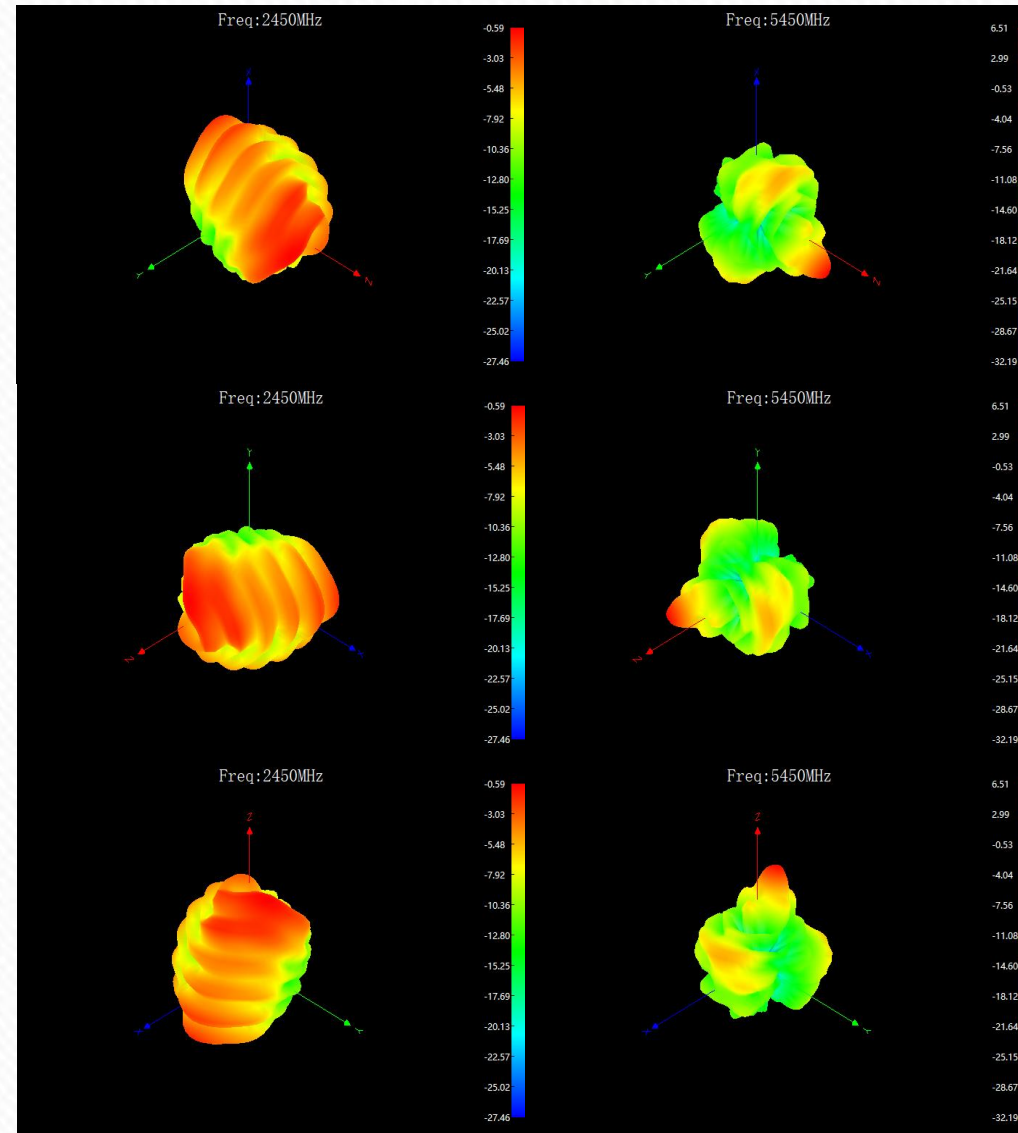
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-0.91	36.12
2410	-0.43	34.61
2420	-1.25	34.79
2430	-1.25	33.7
2440	-0.84	34.3
2450	-0.59	33.64
2460	-0.8	34.67
2470	-1.59	34.42
2480	-1.4	35.42
2490	-1.91	35.73
2500	-2.08	36.97

Frequency/Mhz	MaxGain/dBi	Efficiency / %
5150	2.76	30.75
5200	1.95	27.95
5250	1.83	27.91
5300	1.36	28.23
5350	1.94	27.23
5400	1.87	27.95
5450	1.72	29.23
5500	1.31	27.23
5550	1.37	28.46
5600	1.04	27.72
5650	1.2	26.66
5700	0.49	26.49
5750	-0.19	25.3
5800	-1.1	23
5850	-1.52	22.09

2D



3D



Thank You

Shanghai R&D Center: 1F, Building 4, No.99, Lane 215, Gaoguang Road, Qingpu District, Shanghai, 201799, PRC

Shenzhen R&D Center: The 6th floor, Building 5, Nantaiyun Innovation Valley Center, Guangming District, Shenzhen City

ChongQing R&D Center: 1F, ARM Ecological Industrial Park, 19 East Datugu Road, Xiantao, Yubei District, Chongqing, 401120, PRC

Huizhou Factory: 4-5F, No.1, Central Village Road, Longhu Industrial Zone, Shuikou Town, Huicheng District, Huizhou, 516255, PRC

TEL: 021-60835368 E-mail: sales@sunnyway-iot.com

www.sunnyway-iot.com

