

Antenna Testing Report

Customer : Shenzhen sangge'er Polytron Technologies Inc

Project Name : DS3-61

Antenna Manufacturer: Sunnyway Technology(CHINA)

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

Report version: 2026/1/14
Research staff: Chenchuanbin

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2.Project Overview ·····

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5.Passive parameters ·····

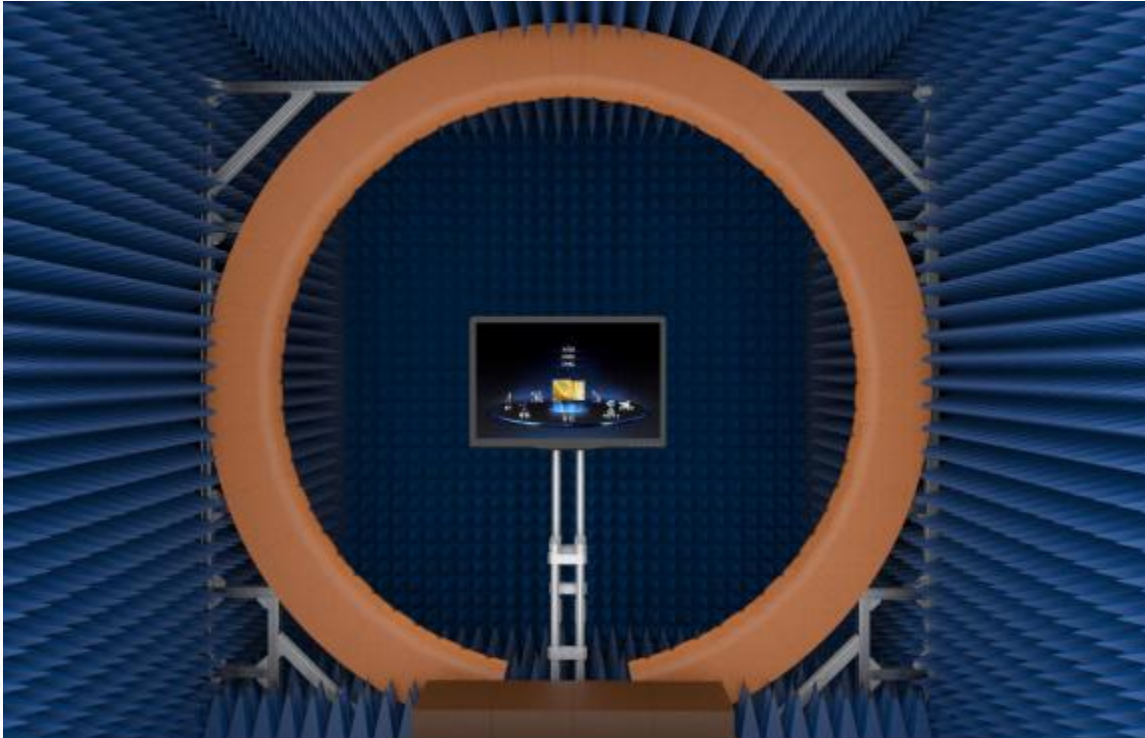
6.Passive efficiency and gain ·····

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Prototype status	Debugging machine	Project pictures 
Device type		
Number of antennas	WIFI/BT antenna;	
Frequency band	WIFI:2.4/5.8GHZ, WiFi6E	
Structural style	FPC+Cable	
Environment adjustment	NO Change made	
Matching modification	NO Change made	



The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

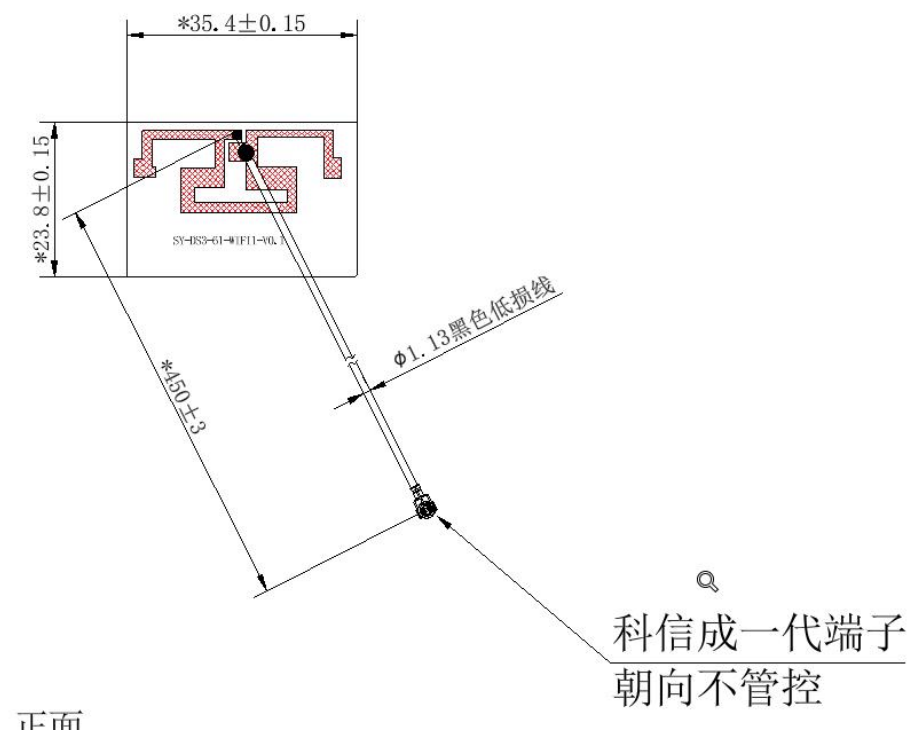
Device Llimitation: 2M

Load-bearing limitation:100KG

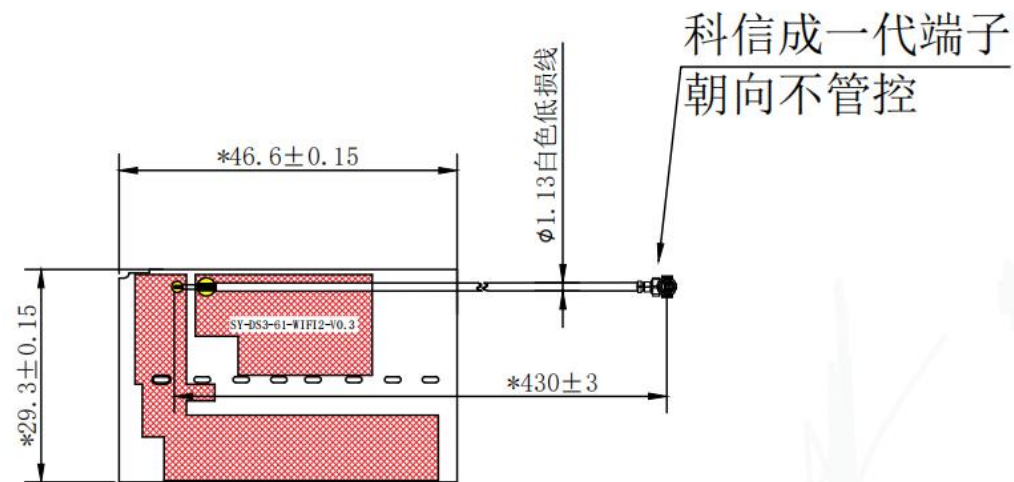
Equipments Items	Total Quantity	Quantity for Shanghai R&D	Quantity for Shenzhen R&D	Quantity for ChongQing R&D
OTA chamber	10	4	5	1
5G Tester (SP9500-CTS)	3	1	1	1
R&S Tester (high configuration CMW500)	6	3	2	1
Japan Anritsu Tester (Dual Channel 8820)	4	2	2	--
NB-IoT Tester (SP8315)	3	1	1	1
Agilent Tester (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

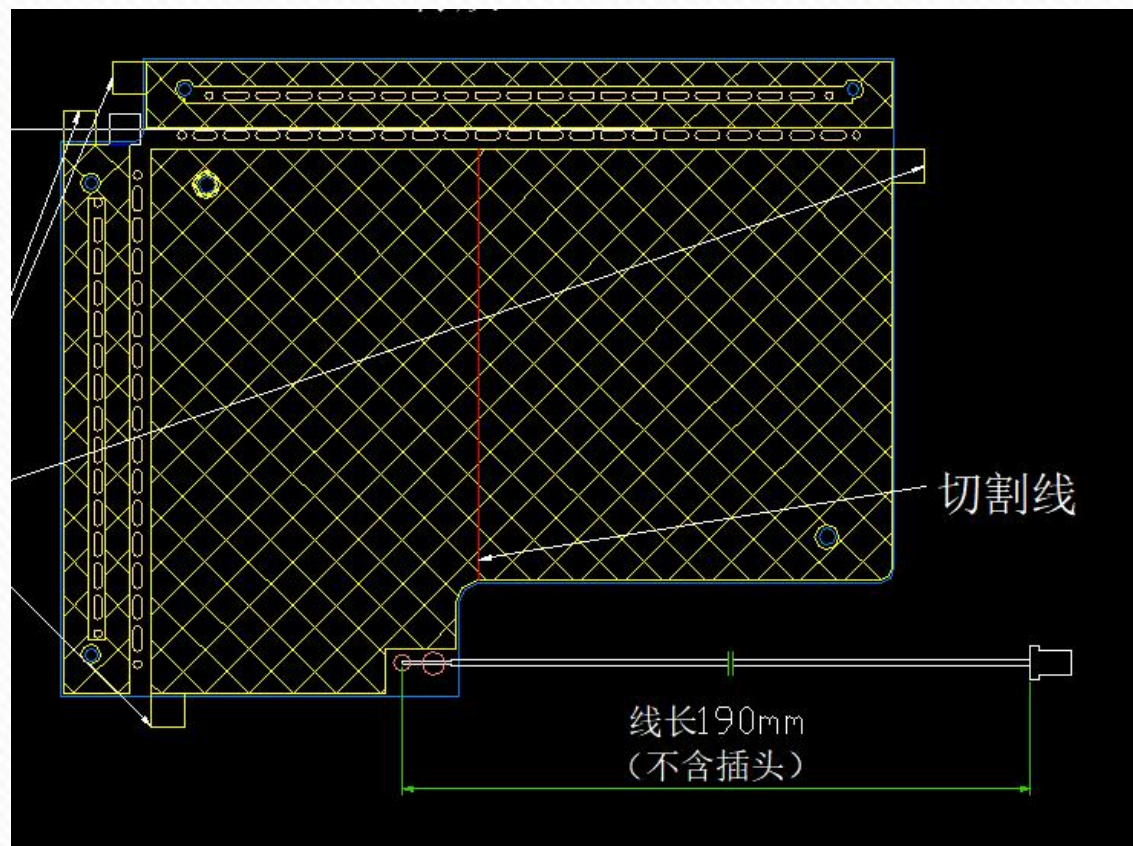
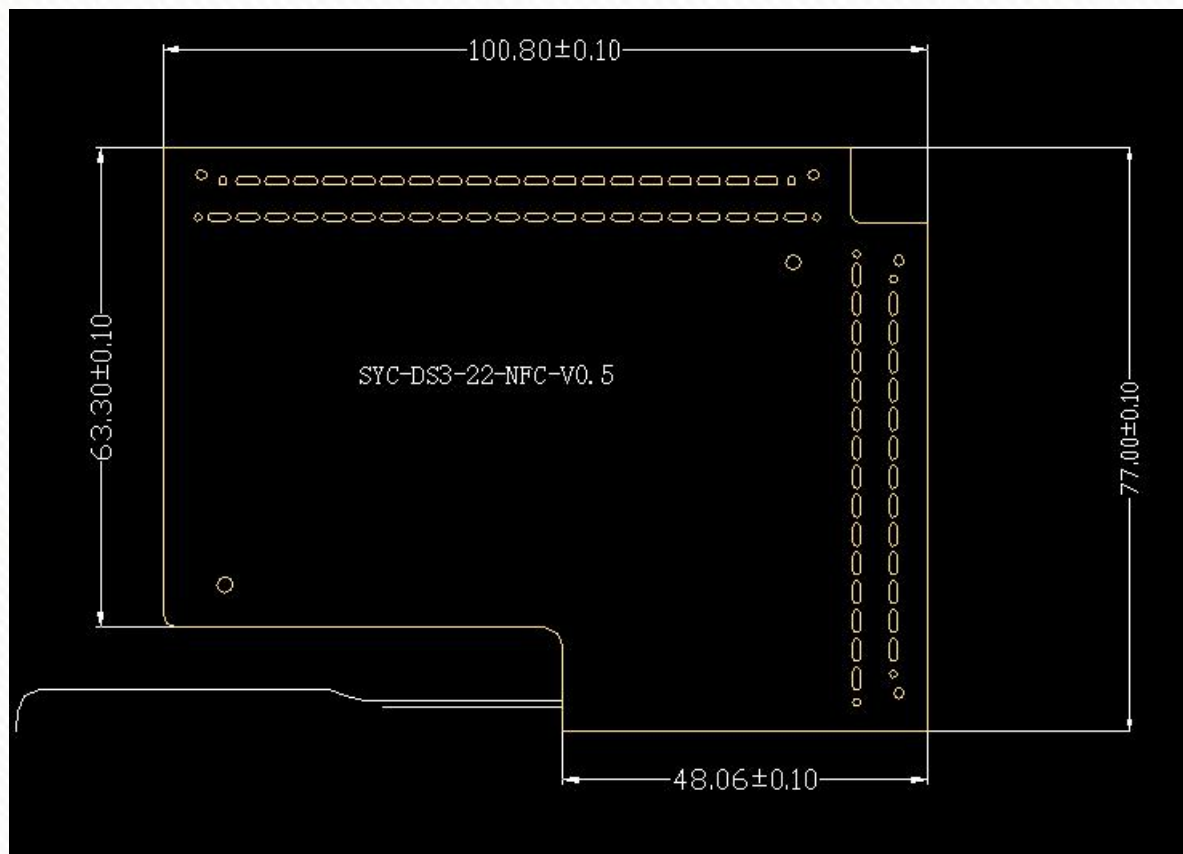
Antenna mounting position

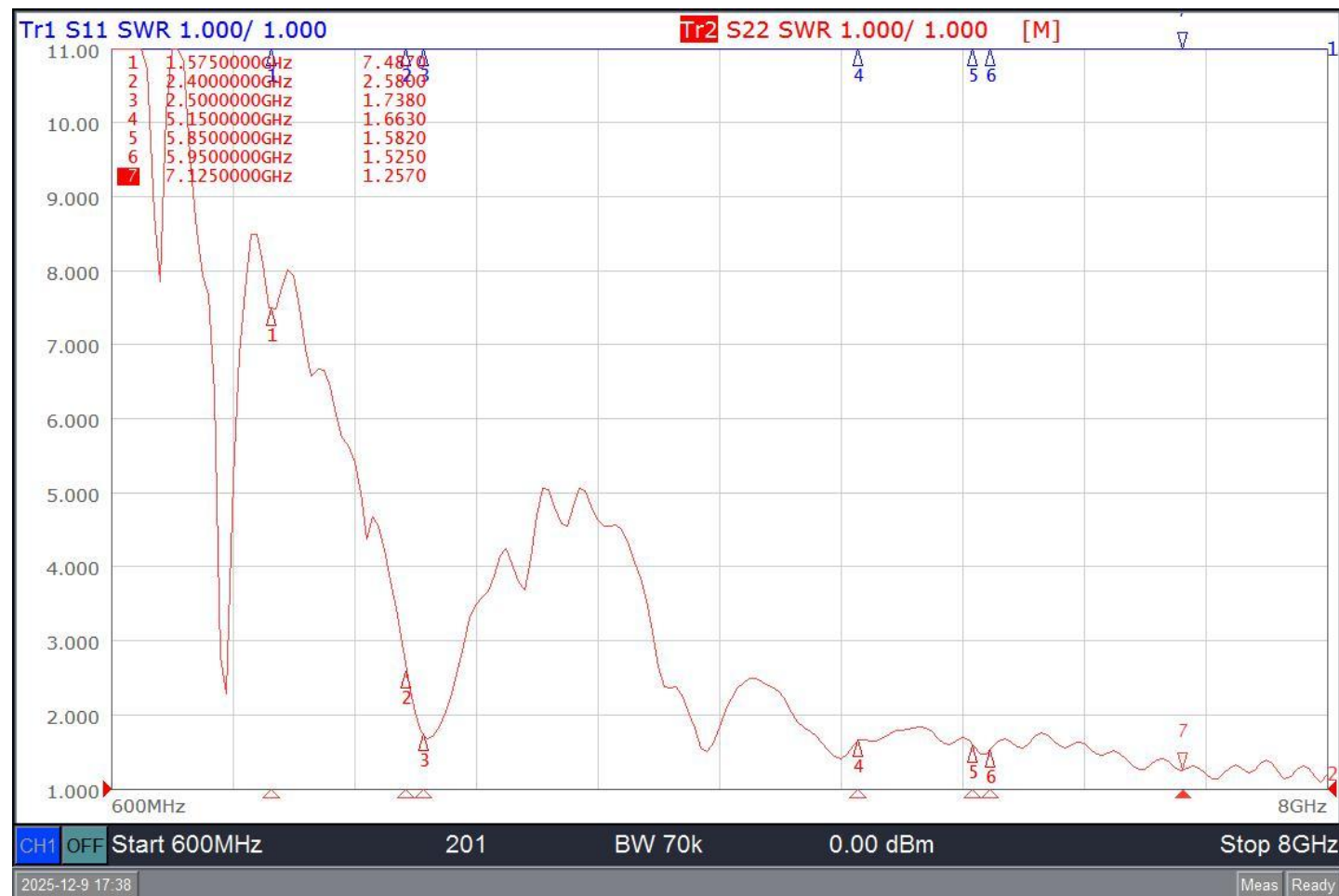
WIFI1



WIFI2

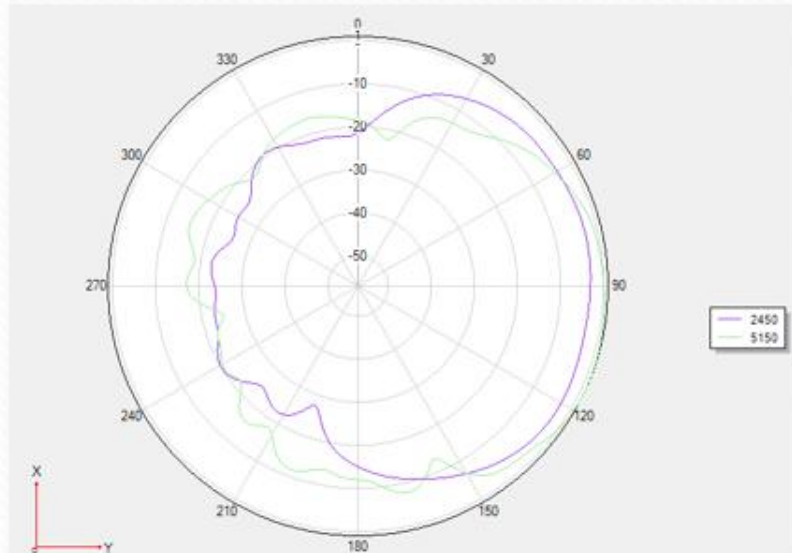
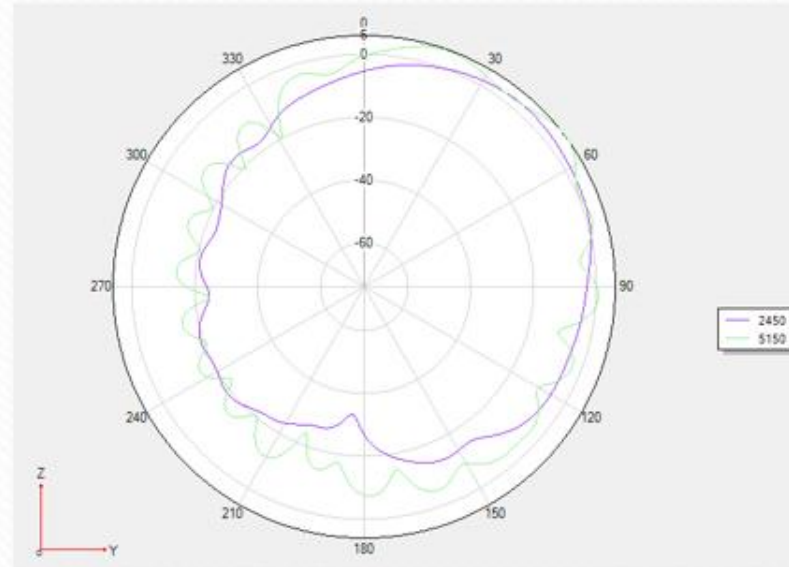
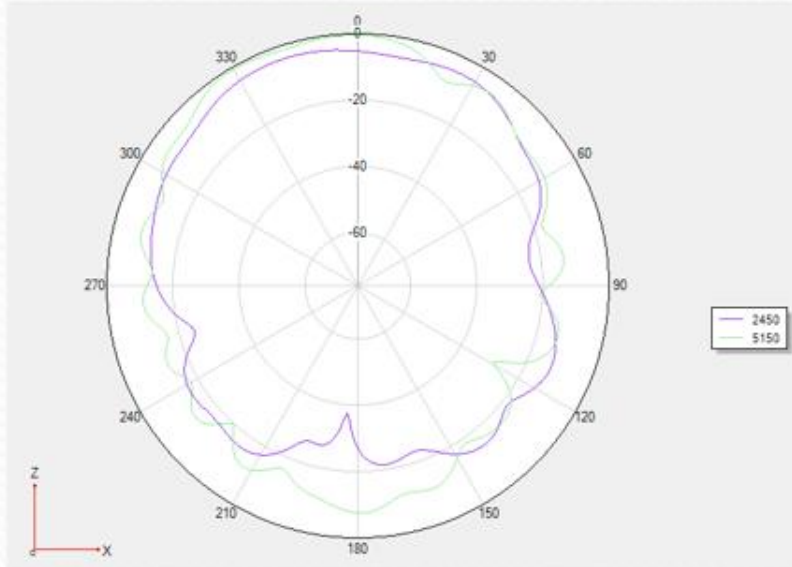




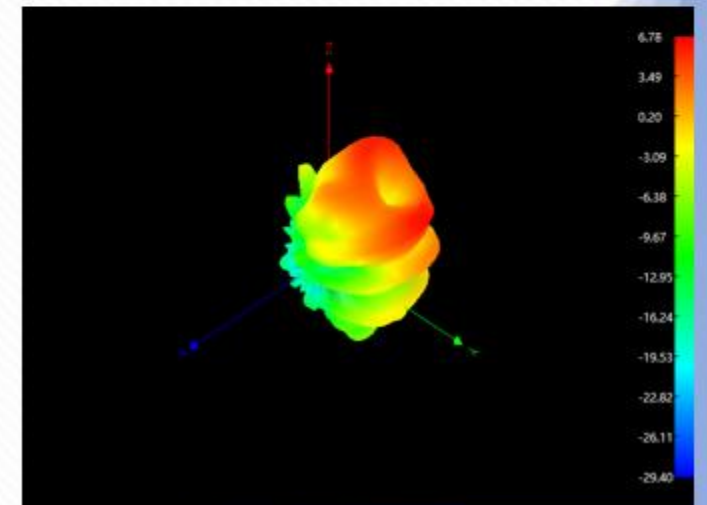
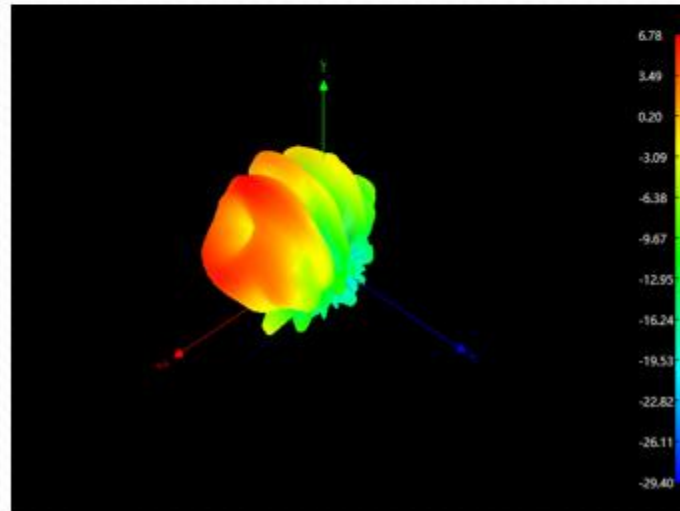
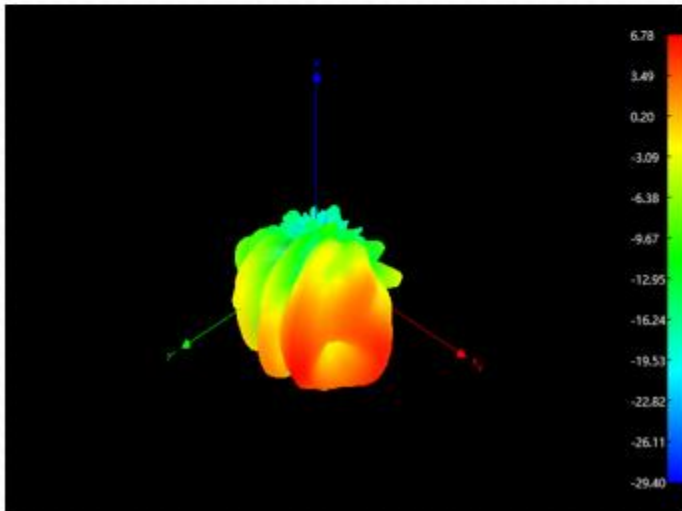
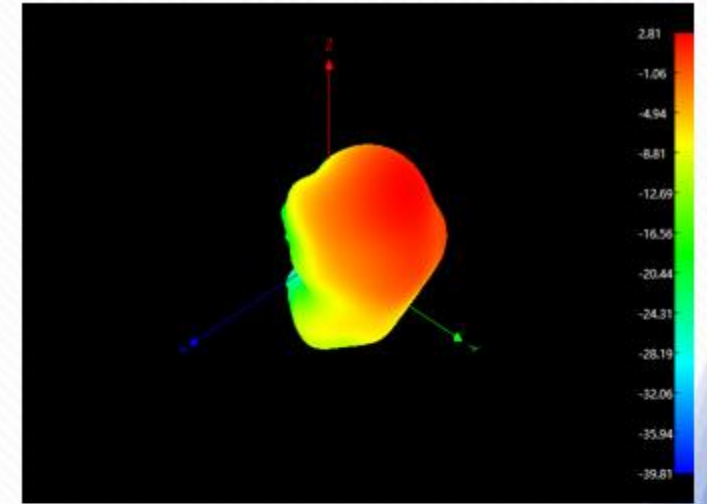
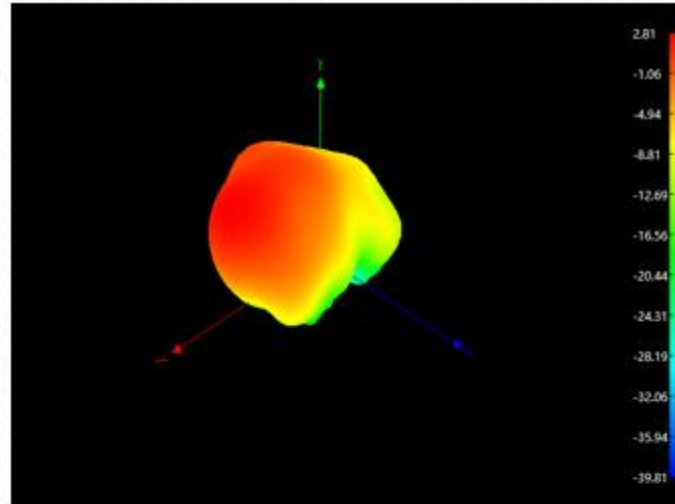
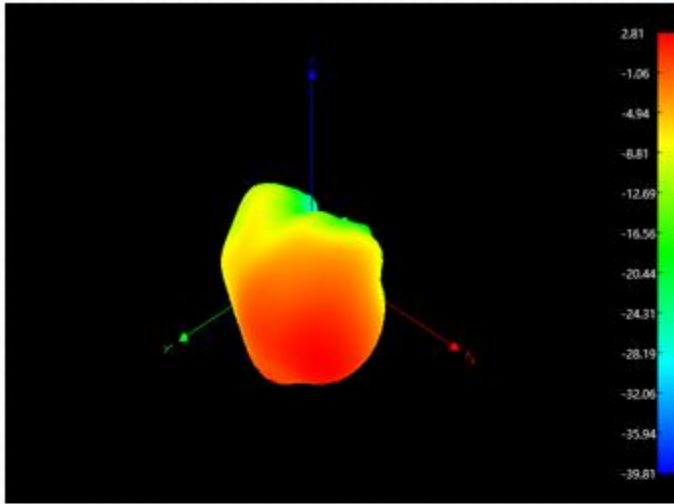


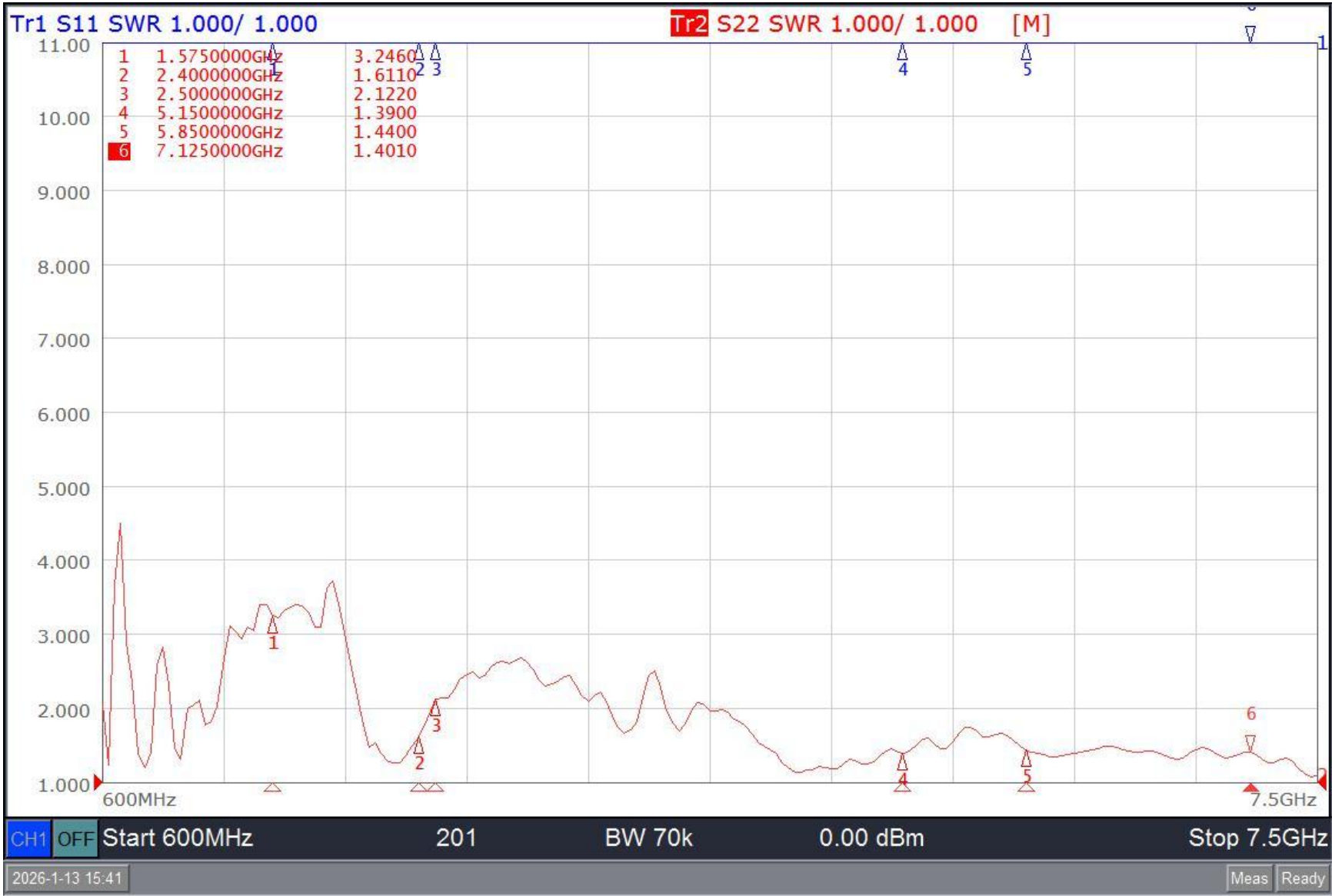
WiFi1 antenna efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	3.41	34.04	5150	6.78	39.45	5950	3.46	42.56
2410	4.24	38.71	5200	4.08	42.46	6000	3.77	39.9
2420	3.5	34.55	5250	4.18	42.46	6050	4.1	37.41
2430	4.73	35.18	5300	3.94	40.93	6100	4.79	43.85
2440	4.19	37.93	5350	4.27	46.45	6150	4.98	45.71
2450	4.81	40.9	5400	3.81	42.46	6200	3.99	41.98
2460	5.00	38.91	5450	3.9	42.36	6250	3.51	39.9
2470	4.33	38.05	5500	3.05	38.11	6300	4.63	42.95
2480	4.95	42.96	5550	3.24	38.28	6350	4.86	43.65
2490	4.56	46.39	5600	4.24	43.45	6400	5.17	46.77
2500	4.48	44.83	5650	5.07	50.23	6450	4.39	42.07
			5700	4.46	44.77	6500	4.47	40.36
			5750	3.38	36.9	6550	4.66	47.64
			5800	4.32	46.99	6600	3.8	42.56
			5850	4.06	47.53	6650	2.89	34.67
						6700	4.11	38.11
						6750	4.28	36.64
						6800	5.48	43.15
						6850	5.51	40.55
						6900	5.87	41.3
						6950	5.32	37.67
						7000	6.14	42.27
						7050	6.72	48.08
						7100	5.8	40.64
						7150	5.77	42.36
						7200	5.33	39.9
						7250	4.52	33.04



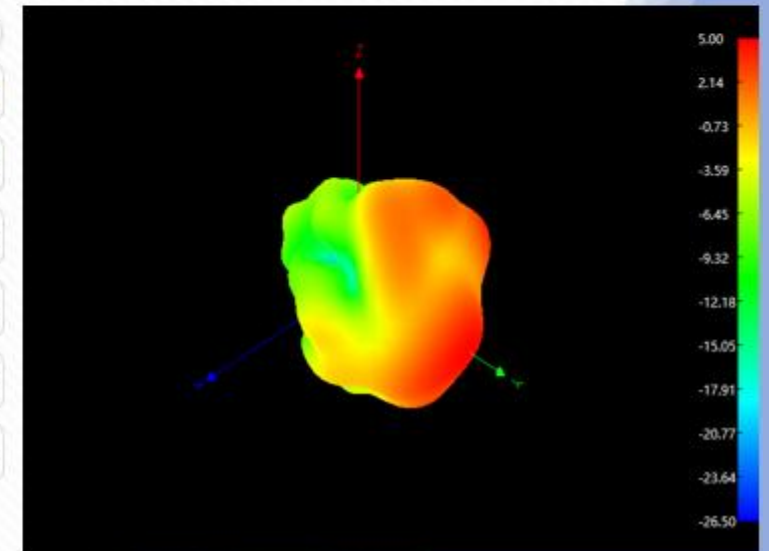
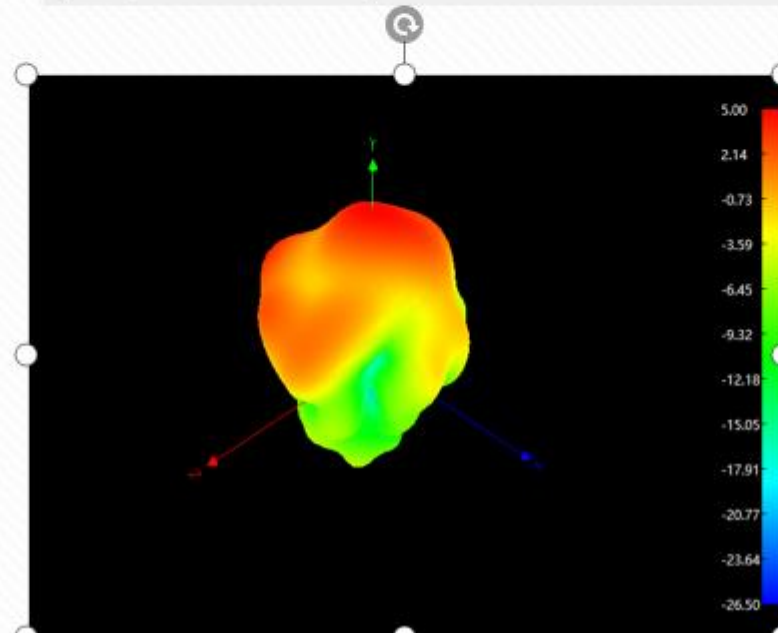
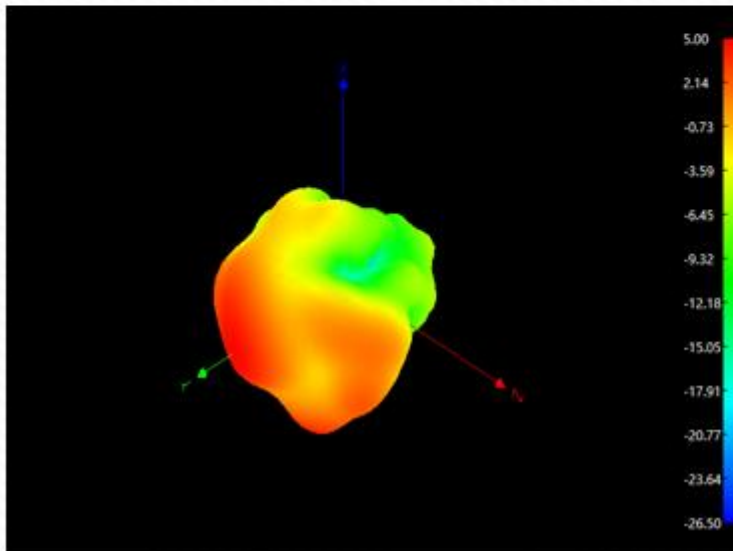
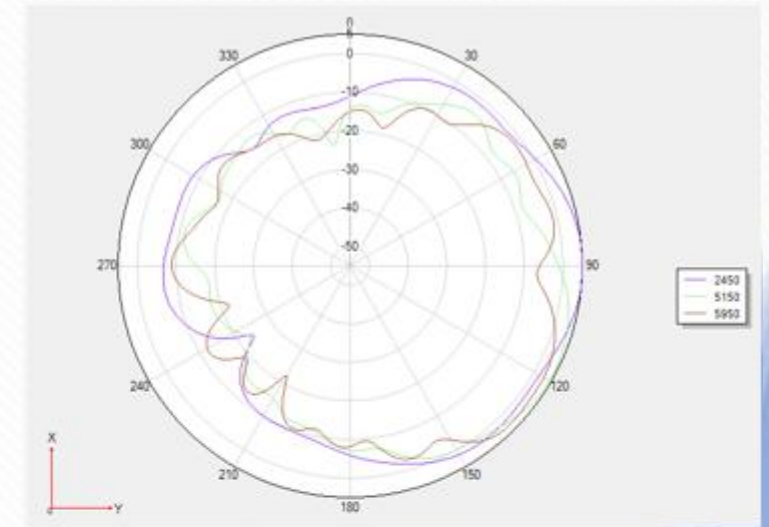
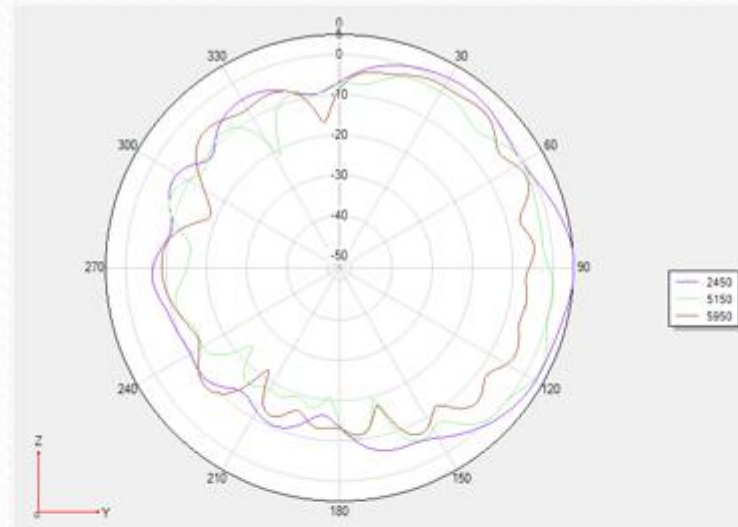
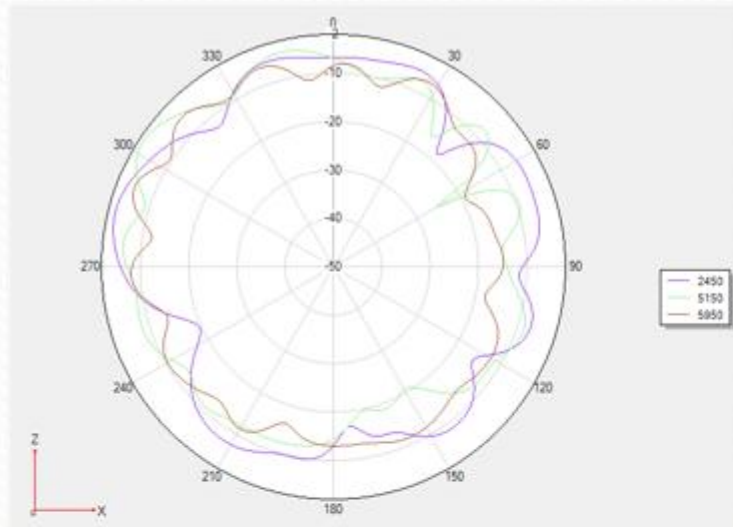
WIFI1 Directional pattern



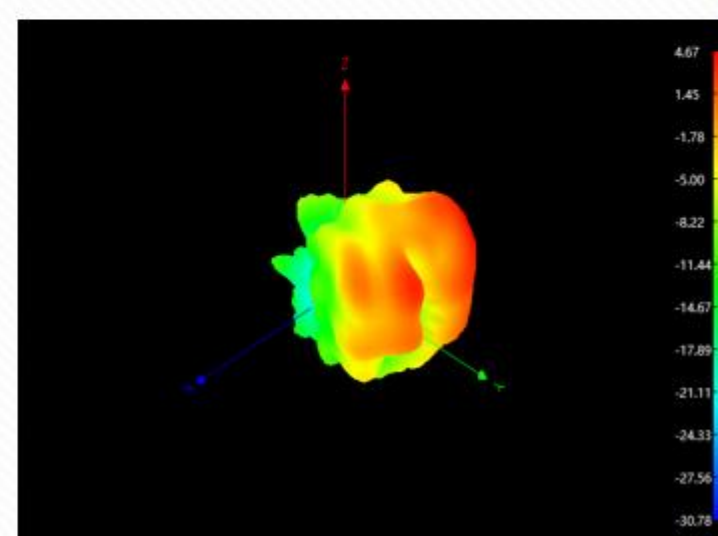
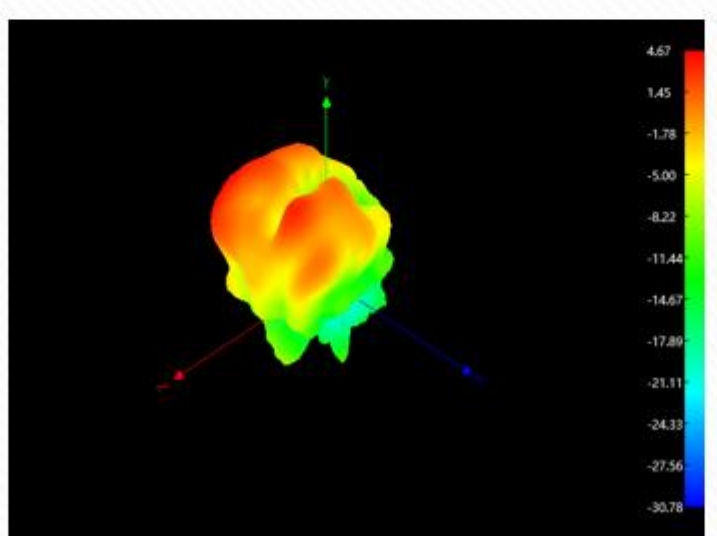
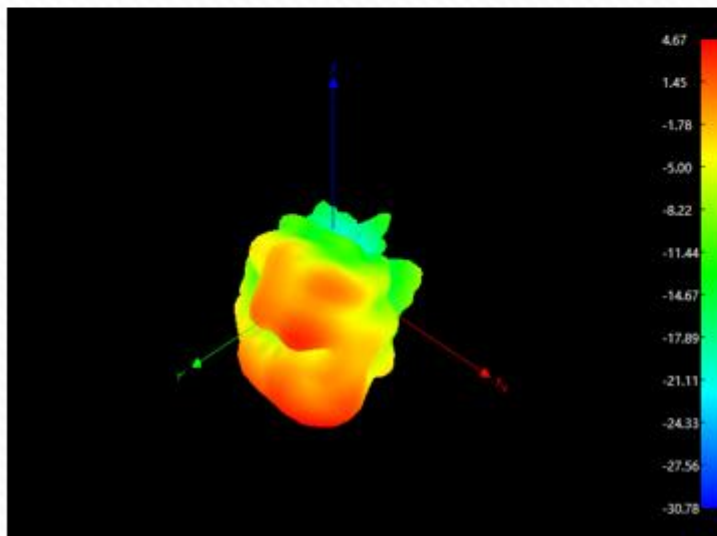
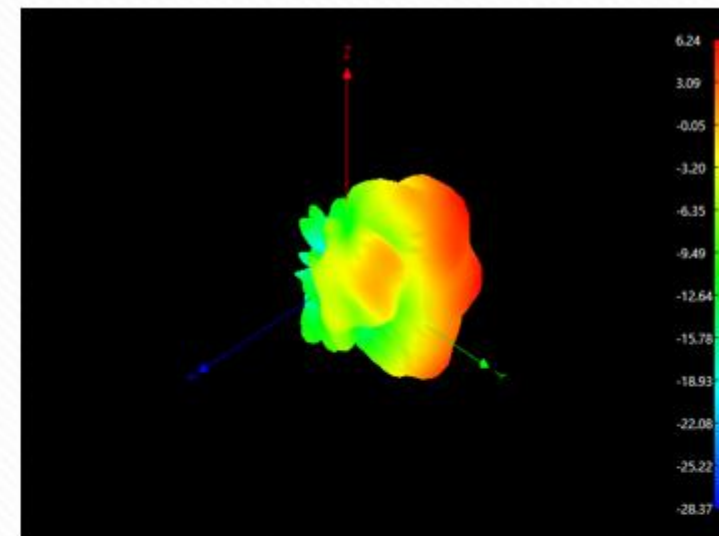
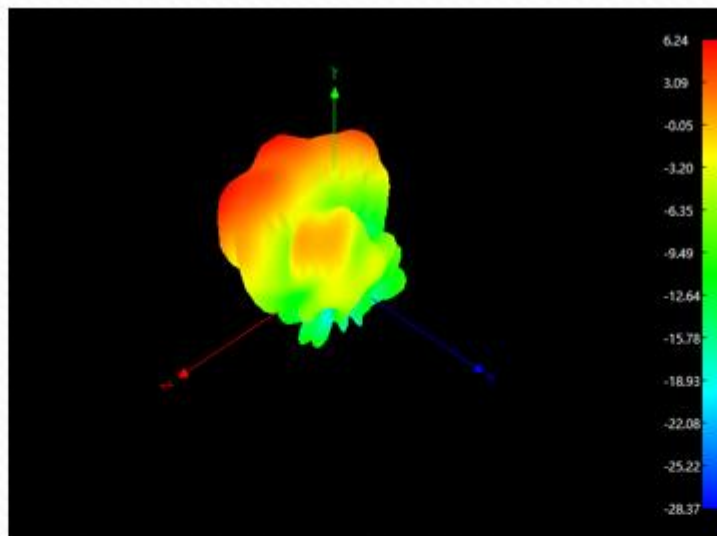
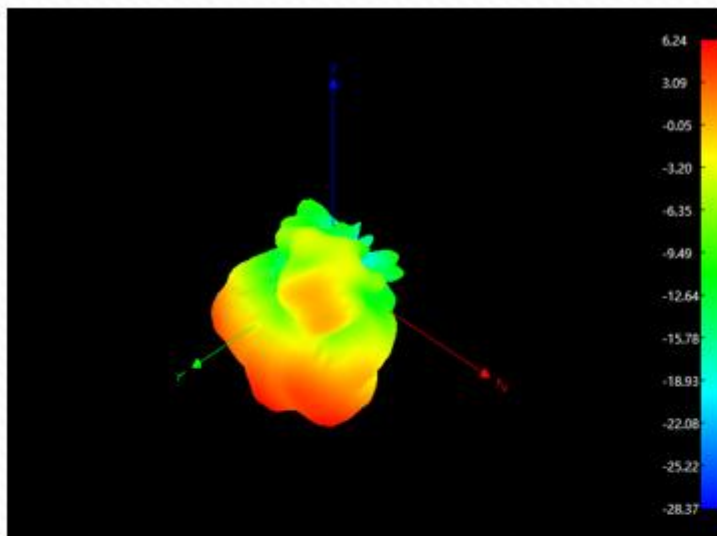


WiFi2 antenna efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	4.01	52.24	5150	6.24	45.92	5950	4.67	35.56
2410	4.89	52.37	5200	6.55	47.53	6000	4.91	33.96
2420	4.3	52.97	5250	6.24	44.36	6050	4.36	31.84
2430	4.26	51.29	5300	5.66	40.74	6100	5.3	38.28
2440	4.6	53.7	5350	6.15	46.45	6150	5.9	39.17
2450	5	58.08	5400	6.03	44.16	6200	5.87	34.59
2460	4.76	54.45	5450	6.04	41.98	6250	4.81	31.48
2470	4.42	51.17	5500	5.92	42.41	6300	4.67	32.66
2480	4.83	56.49	5550	5.41	38.88	6350	4.51	32.51
2490	4.95	59.7	5600	5.94	42.93	6400	5.24	36.22
2500	4.6	57.02	5650	6.78	41.3	6450	4.58	32.21
			5700	4.91	39.12	6500	3.98	34.99
			5750	4.17	37.38	6550	4.14	37.43
			5800	5.3	42.84	6600	3.87	35.62
			5850	5.01	40.64	6650	3.5	30.5
						6700	4.48	30.64
						6750	4.72	29.1
						6800	6.22	34.31
						6850	5.85	32.16
						6900	5.35	30.88
						6950	5.3	30.01
						7000	5.05	30.27
						7050	4.58	34.72
						7100	4.42	30.72



WIFI2 Directional pattern



Measurement	Band	Channel	Total
TRP	WIFI_B (1M)	1	17.66
TRP	WIFI_B (1M)	6	17.09
TRP	WIFI_B (1M)	11	17.07
TIS(EIRP)	WIFI_B (11M)	11	-84.67
TRP	WIFI_G (6M)	1	16.01
TRP	WIFI_G (6M)	6	16.08
TRP	WIFI_G (6M)	11	15.1
TIS(EIRP)	WIFI_G (54M)	11	-73.06
TRP	WIFI_N_ISM (6.5M)	1	15.18
TRP	WIFI_N_ISM (6.5M)	6	15.43
TRP	WIFI_N_ISM (6.5M)	11	15.48
TIS(EIRP)	WIFI_N_ISM (65M)	11	-70.12
TRP	WIFI_A (6M)	36	13.37
TRP	WIFI_A (6M)	149	13.97
TRP	WIFI_A (6M)	165	13.93
TIS(EIRP)	WIFI_A (54M)	165	-70.98
TRP	WIFI_N_UNII (6.5M)	36	12.33
TRP	WIFI_N_UNII (6.5M)	149	13.91
TRP	WIFI_N_UNII (6.5M)	165	12.34
TIS(EIRP)	WIFI_N_UNII (65M)	165	-68.24

Band	Channel	TRP(dBm)
802.11ax6e	229	14.01
802.11ax6e	117	14.53
802.11ax6e	5	15.77
802.11ax6e	229	-70.55

Band	Channel	TRP(dBm)
802.11ax	42	13.67
802.11ax	42	-52.04

WiFi1

Measurement	Band	Channel	Total
TRP	WIFI_B (1M)	1	13.77
TRP	WIFI_B (1M)	6	13.48
TRP	WIFI_B (1M)	11	13.36
TIS(EIRP)	WIFI_B (11M)	11	-84.22
TRP	WIFI_G (6M)	1	11.68
TRP	WIFI_G (6M)	6	11.58
TRP	WIFI_G (6M)	11	12.35
TIS(EIRP)	WIFI_G (54M)	11	-73.33
TRP	WIFI_N_ISM (6.5M)	1	10.78
TRP	WIFI_N_ISM (6.5M)	6	11.31
TRP	WIFI_N_ISM (6.5M)	11	11.86
TIS(EIRP)	WIFI_N_ISM (65M)	11	-72.34
TRP	WIFI_A (6M)	36	12.12
TRP	WIFI_A (6M)	149	12.33
TRP	WIFI_A (6M)	165	12.1
TIS(EIRP)	WIFI_A (54M)	165	-70.22
TRP	WIFI_N_UNII (6.5M)	36	11.23
TRP	WIFI_N_UNII (6.5M)	149	11.22
TRP	WIFI_N_UNII (6.5M)	165	11.35
TIS(EIRP)	WIFI_N_UNII (65M)	165	-66.44

WiFi2

Measurement	Band	Channel	Total
TRP	WIFI_B (1M)	1	14.81
TRP	WIFI_B (1M)	6	15.74
TRP	WIFI_B (1M)	11	14.98
TIS(EIRP)	WIFI_B (11M)	11	-84.33
TRP	WIFI_G (6M)	1	14.79
TRP	WIFI_G (6M)	6	14.17
TRP	WIFI_G (6M)	11	13.54
TIS(EIRP)	WIFI_G (54M)	11	-74.01
TRP	WIFI_N_ISM (6.5M)	1	13.05
TRP	WIFI_N_ISM (6.5M)	6	12.95
TRP	WIFI_N_ISM (6.5M)	11	12.07
TIS(EIRP)	WIFI_N_ISM (65M)	11	-70.76
TRP	WIFI_A (6M)	36	12.55
TRP	WIFI_A (6M)	149	11.67
TRP	WIFI_A (6M)	165	12.18
TIS(EIRP)	WIFI_A (54M)	165	-70.21
TRP	WIFI_N_UNII (6.5M)	36	10.72
TRP	WIFI_N_UNII (6.5M)	149	10.64
TRP	WIFI_N_UNII (6.5M)	165	10.65
TIS(EIRP)	WIFI_N_UNII (65M)	165	-66.44

Measurement	Band	Channel	Total
TRP	BLUETOOTH	0	8.52
TRP	BLUETOOTH	39	9.89
TRP	BLUETOOTH	78	11.13
TIS(EIRP)	BLUETOOTH	0	-86
TIS(EIRP)	BLUETOOTH	39	-87.93
TIS(EIRP)	BLUETOOTH	78	-87.41

1. Antenna version: sample antenna
2. Matching circuit: no changes by default on the machine;
3. Environmental processing: no changes by default on the machine;
4. Current summary:
5. Follow-up Plan:

Thank You

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

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