



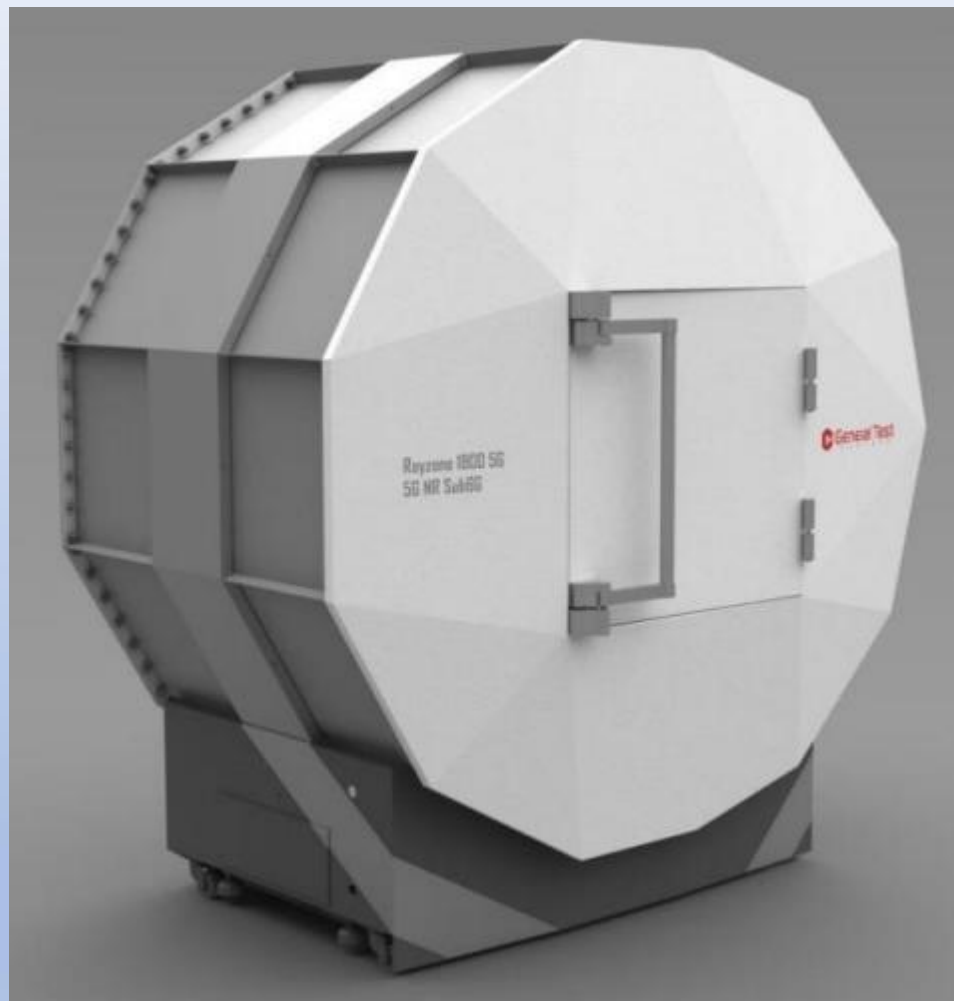
SHENZHEN HANYANG ANTENNA DESIGN CO. LTD.

GSD

Project Name: WIFI ANT

HY P/N: DCT1L

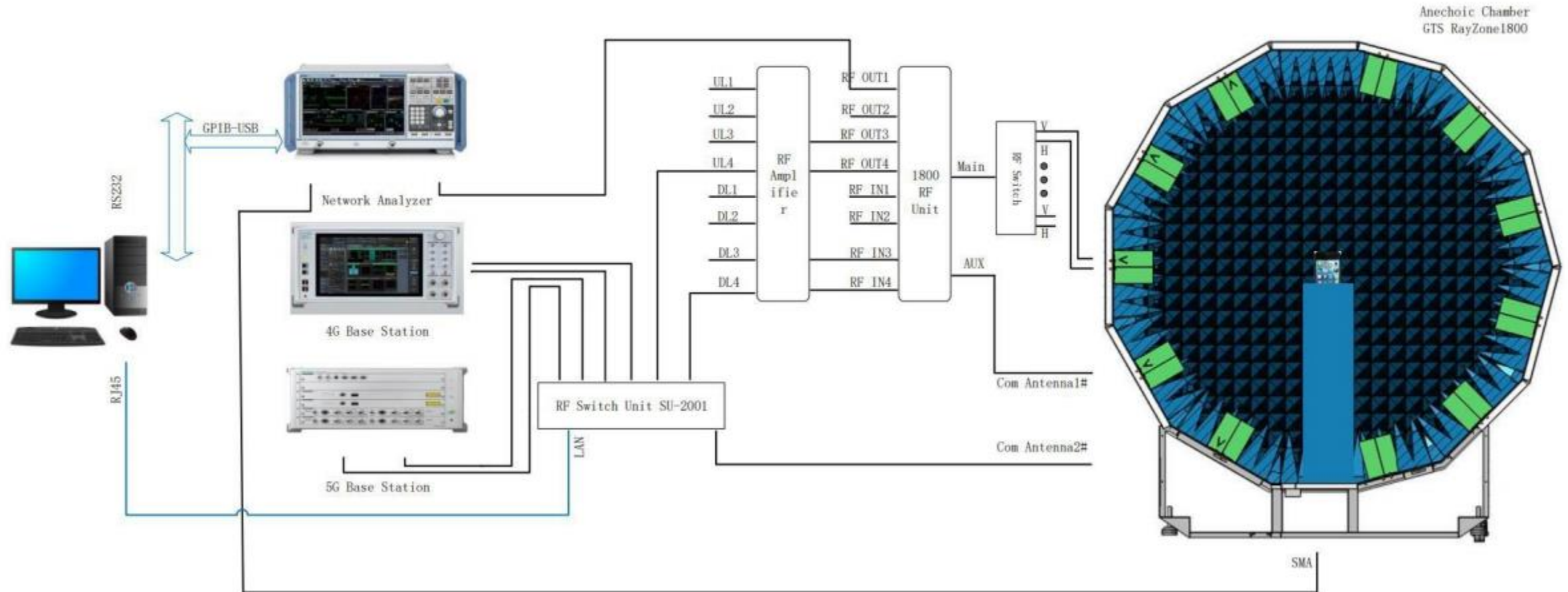
Date : 2023-04-20



- 无线通信标准: 2G/3G/4G/5G(FR1)/GNSS/A-GNSS/Wi-Fi/Bluetooth
- 物联网通信标准: LTE Cat NB1(NB-IoT)/Cat-M1(e-MTC)
- SISO测试TRP/TIS/EIRP/EIS, 2x2 MIMO吞吐率测试;
- 无源天线测试、Desense测试、ICS
- 支持600MHz-7.5GHz频段
- GTS MaxSign 100 测试软件支持天线/OTA测试, 提供可视化数据分析
- 新型EPP硬质环保吸波材料、低RCS高增益测量天线组、透波转台和夹具
- 快速MIMO测试; 认证级测试精度
- 一体化设计, 即插即用, 维护简单



RayZone1800 Test Setup





Address of the testing laboratory: Shenzhen Baoan District Qianjin 2 Road BaoYunda logistics information building 12A11

Test Date: 2023.04.20

Test Engineer: Liu Deng

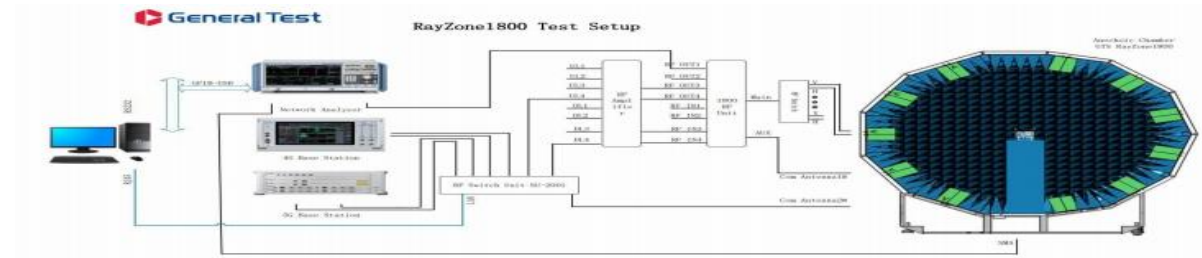
Software name and version: GTS_MAX SIGN Libra1.2.7

Cal Date: 4/1/2023

Equipment	Manufacturer	Model No.	Serial Model No.	Last Cal.	Due Date
Network Analyzer	Keysight	E5071C	MY47002902	2023.04.01	2024.03.30
CMW500 Antenna test system	GTS	1800	/	2023.04.01	2024.03.30

Test Principle: The test principle can be seen in accordance with the standard ANSI/IEEE std 149-2021

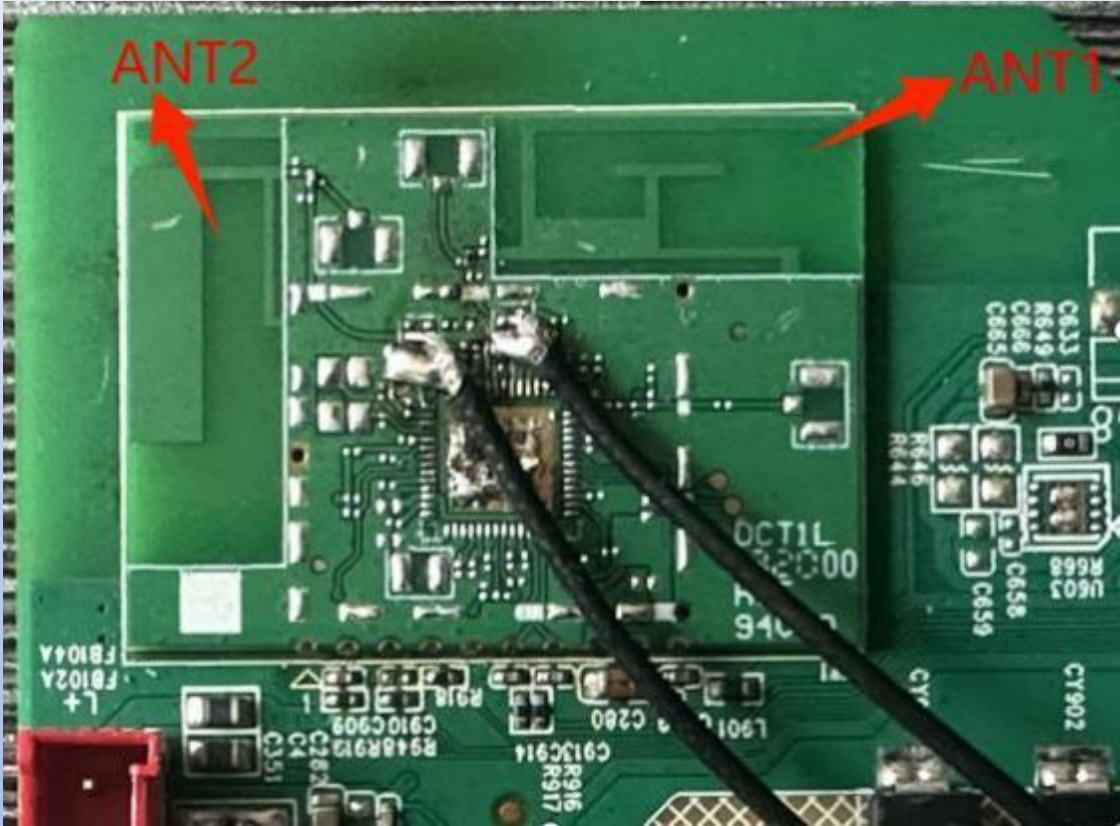
Test set-up:





Test flow:

1. Maintain the test ambient temperature of 23 ± 2 C, the instrument is powered on and preheated for more than 30 minutes
2. Turn on the darkroom power supply, connect the test cable, and set up the sample according to the standard
3. Outline sets the test content objectives and conducts calibration tests
4. Run the EMQuest OTA software, the test is complete, export the corresponding test diagram and test data, and save to the corresponding directory



Performance Test(Efficiency & Gain)-ANT 1

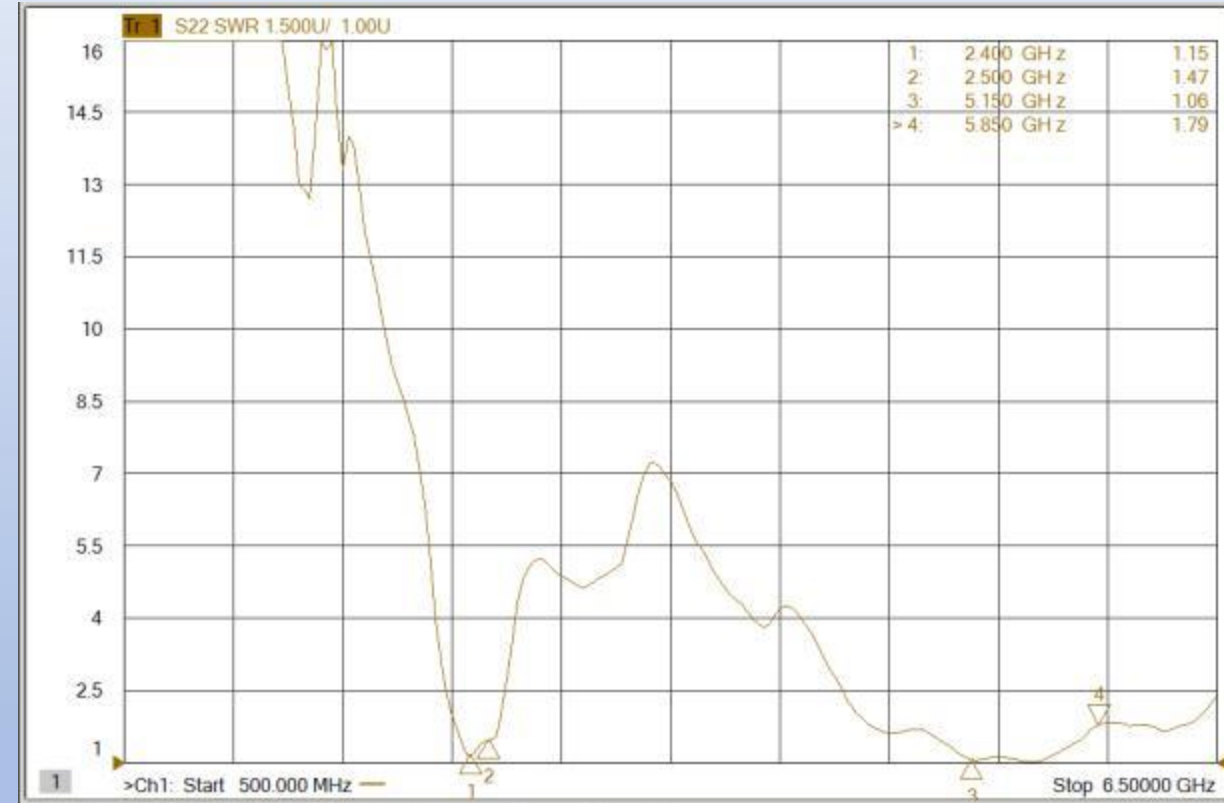
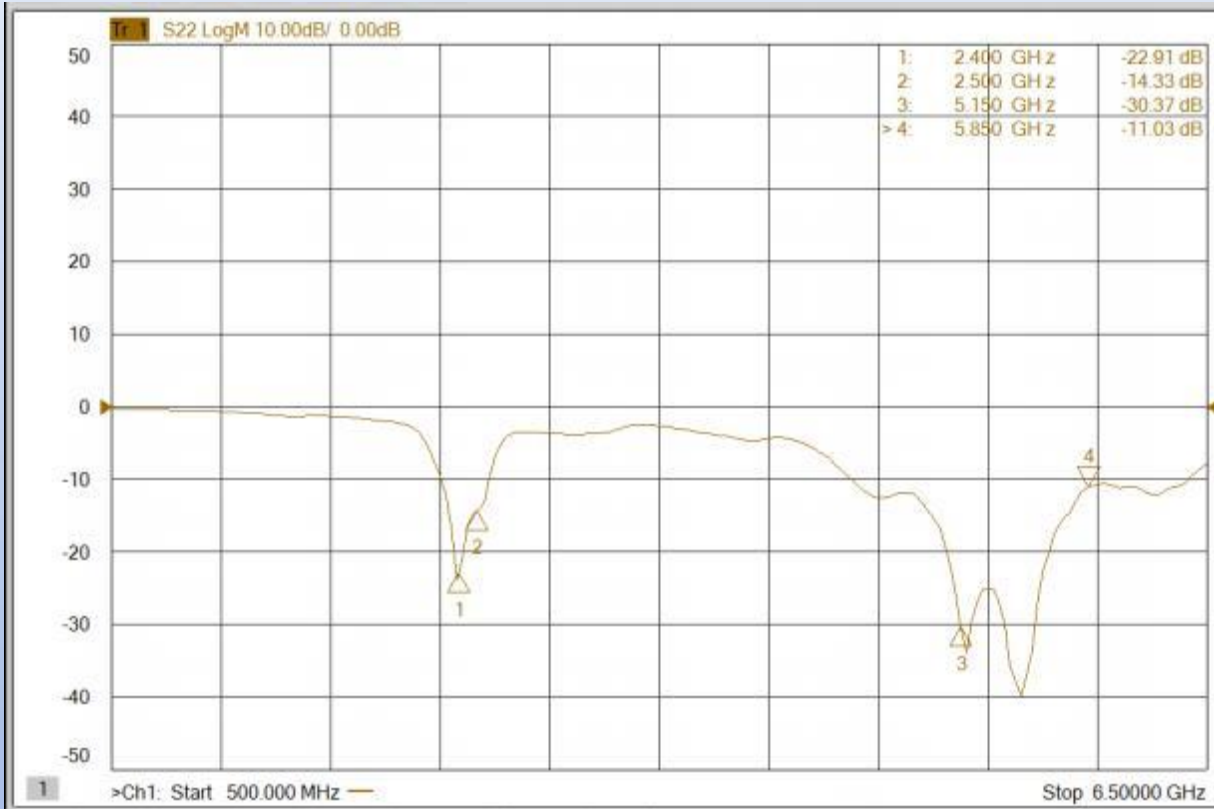


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Freq	Efficiency_dB	Efficiency_Pcent	Gain
2400	-3.26	47.16	5.5
2410	-3.22	47.6	5.64
2420	-3.2	47.83	5.7
2430	-3.24	47.45	5.73
2440	-3.29	46.84	5.65
2450	-3.34	46.32	5.54
2460	-3.39	45.87	5.37
2470	-3.4	45.7	5.22
2480	-3.44	45.32	5
2490	-3.51	44.55	4.72
2500	-3.54	44.25	4.59

Freq	Efficiency_dB	Efficiency_Pcent	Gain
5150	-3.49	44.79	5.21
5175	-3.44	45.24	5.36
5200	-3.37	45.97	5.59
5225	-3.43	45.4	5.58
5250	-3.49	44.78	5.55
5275	-3.77	41.99	5.36
5300	-3.79	41.81	5.42
5325	-3.8	41.68	5.42
5350	-3.69	42.76	5.34
5375	-3.53	44.33	5.35
5400	-3.46	45.11	5.36
5425	-3.4	45.69	5.46
5450	-3.53	44.35	5.39
5475	-3.8	41.66	5.33
5500	-3.93	40.46	5.28
5525	-3.86	41.11	5.34
5550	-3.76	42.05	5.42
5575	-3.6	43.65	5.6
5600	-3.54	44.21	5.66
5625	-3.43	45.38	5.87
5650	-3.55	44.14	5.81
5675	-3.73	42.34	5.6
5700	-3.78	41.86	5.58
5725	-3.9	40.77	5.65
5750	-4.03	39.5	5.6
5775	-4.19	38.07	5.37
5800	-4.21	37.89	5.34
5825	-4.37	36.58	5.24
5850	-4.29	37.26	5.52

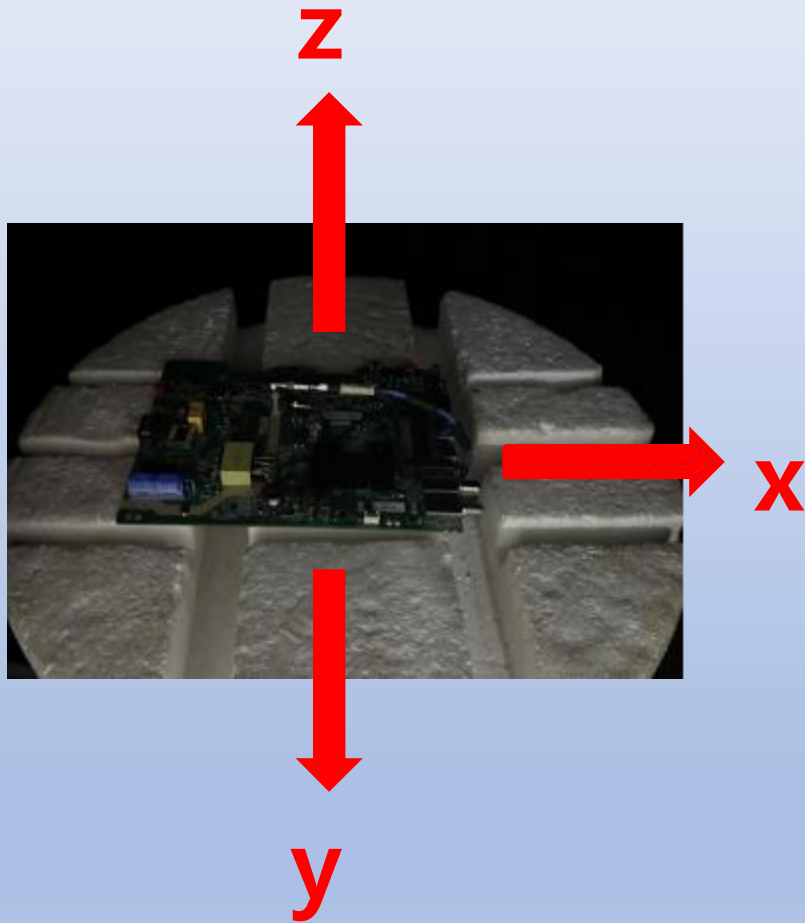
S11 Plot & SWR-ANT 1



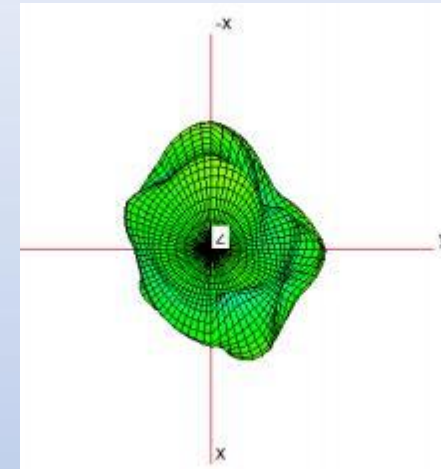
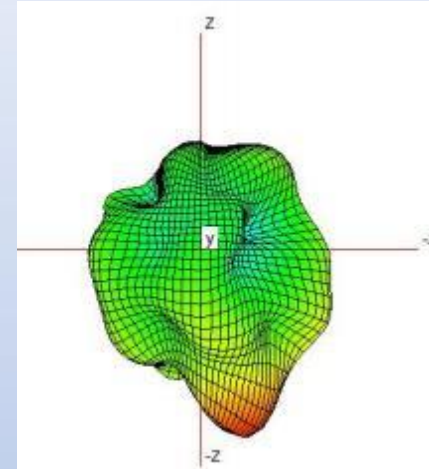
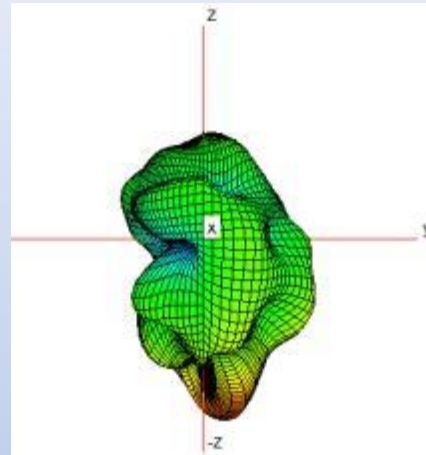
Radiation pattern-3D-ANT 1



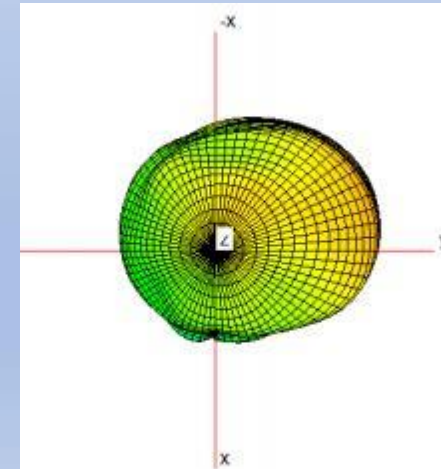
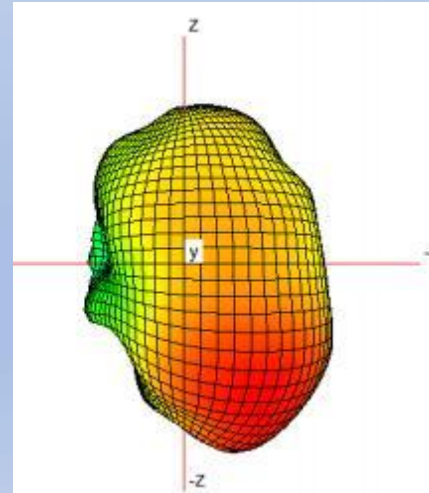
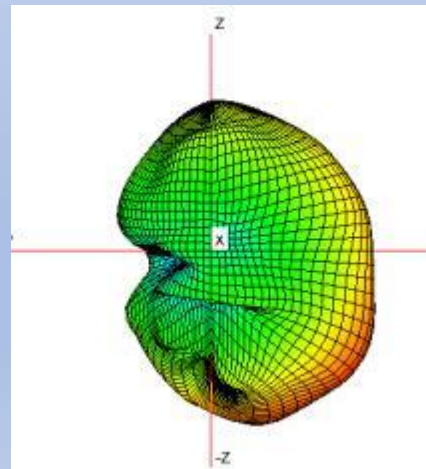
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2450MHZ



5650MHZ

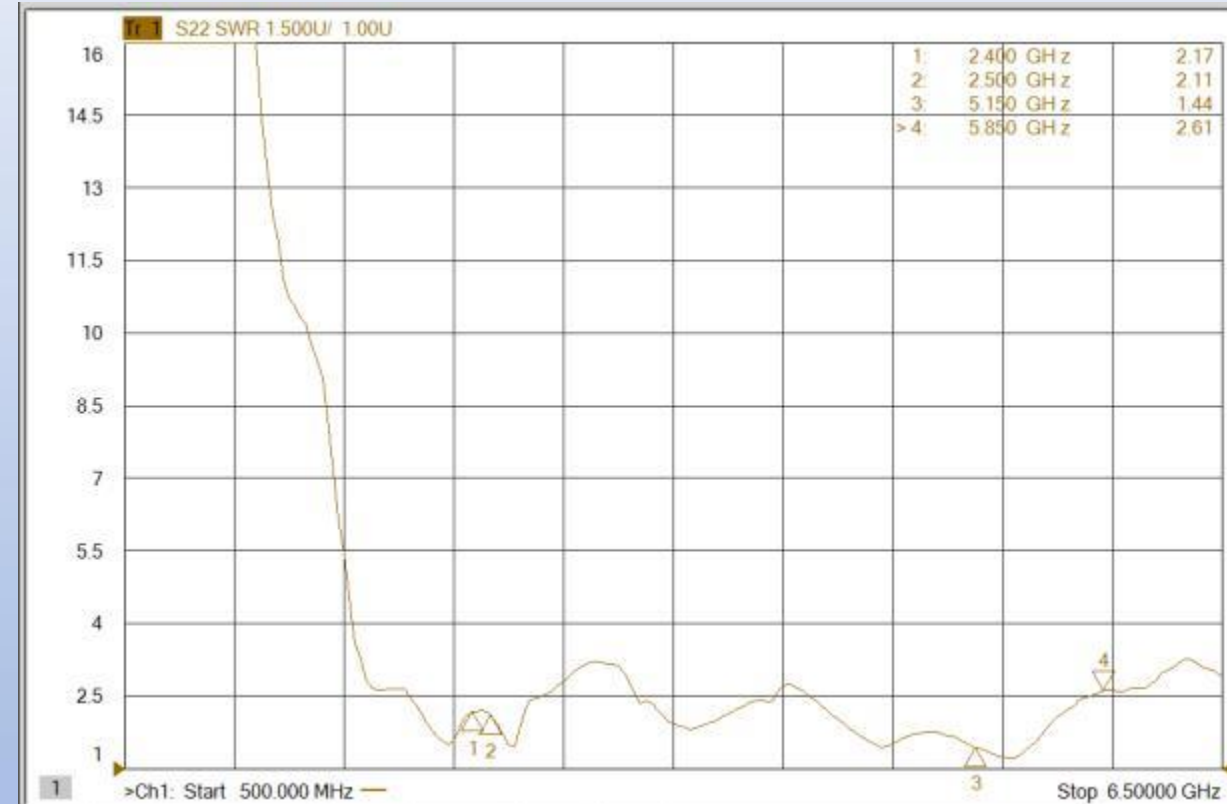
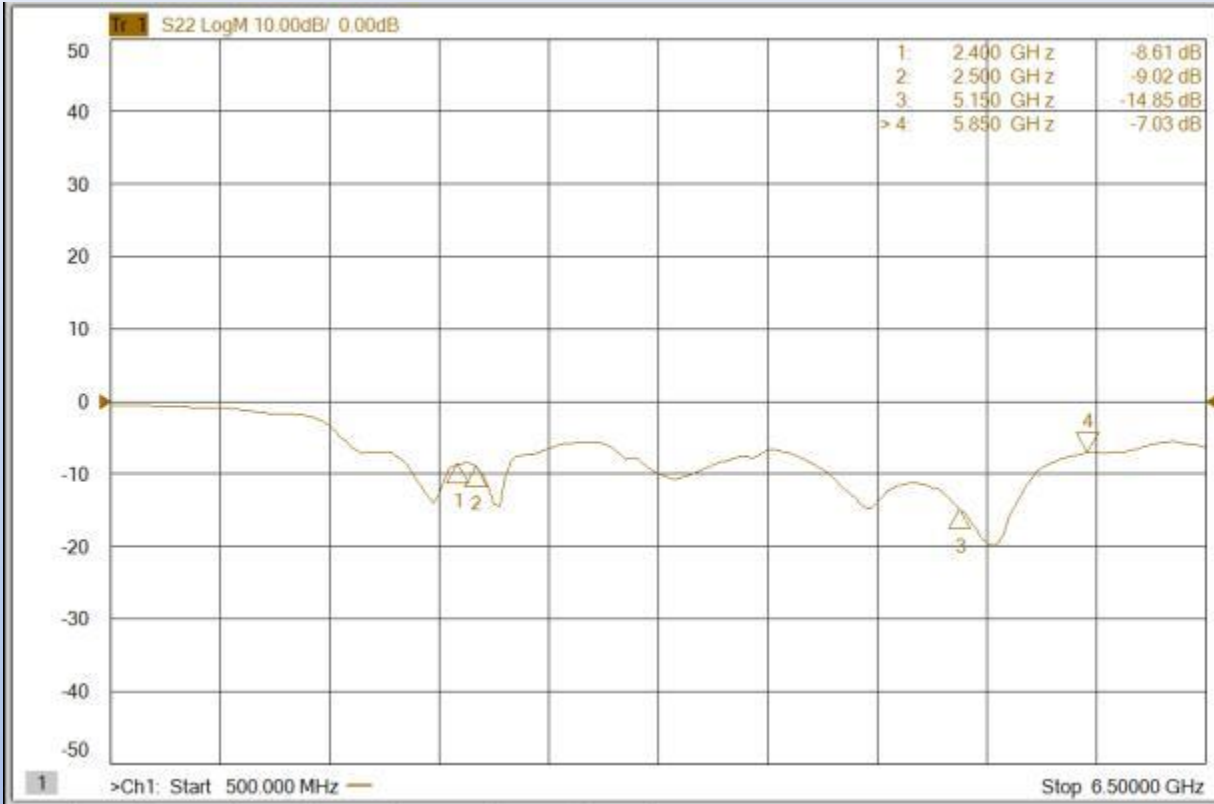


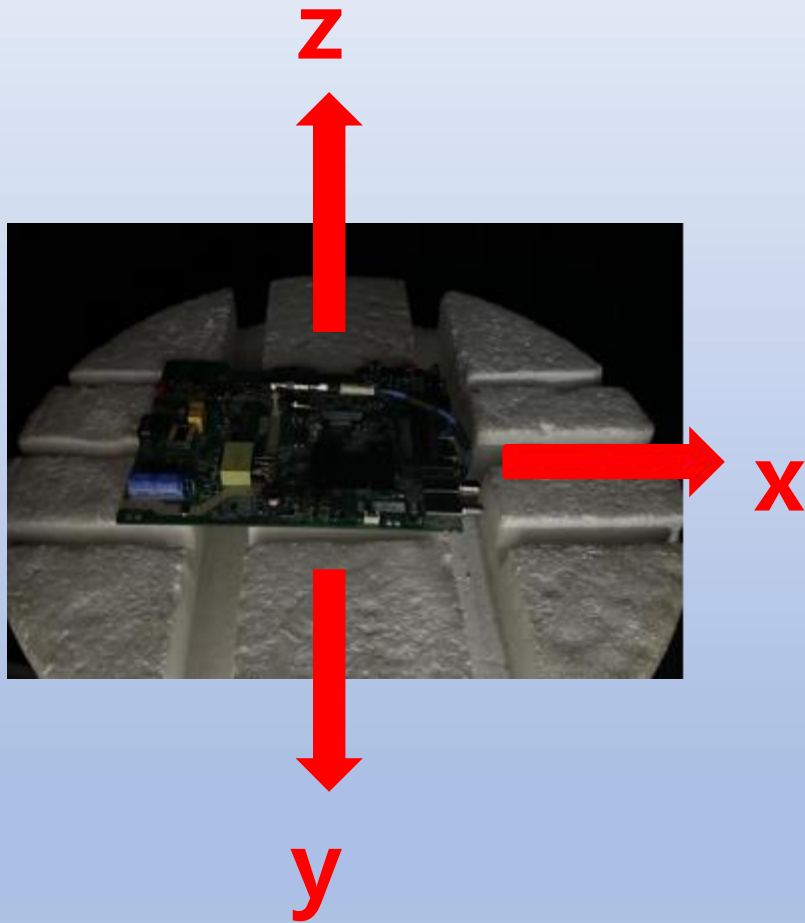


Freq	Efficiency_dB	Efficiency_Pcent	Gain
2400	-3.62	43.4	2.97
2410	-3.56	44.06	3.12
2420	-3.5	44.67	3.21
2430	-3.53	44.38	3.28
2440	-3.55	44.2	3.34
2450	-3.53	44.39	3.48
2460	-3.53	44.38	3.59
2470	-3.5	44.65	3.78
2480	-3.52	44.51	3.94
2490	-3.56	44.03	4.02
2500	-3.53	44.4	4.15

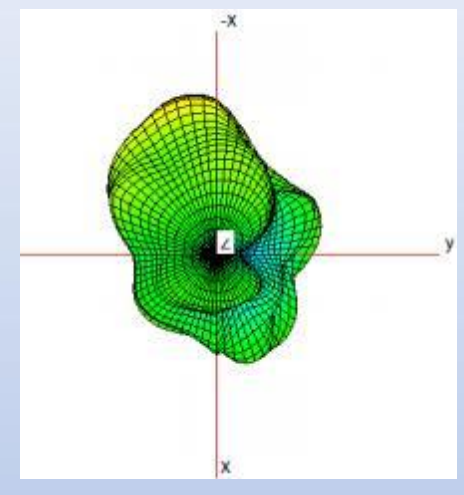
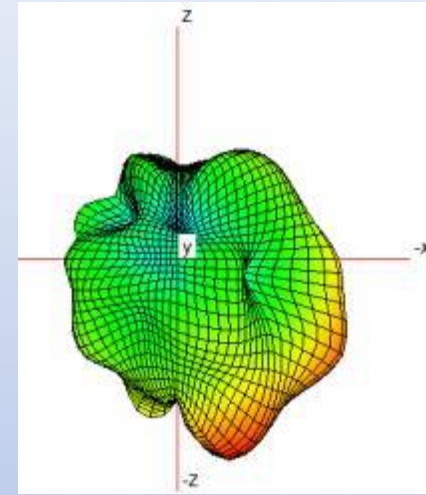
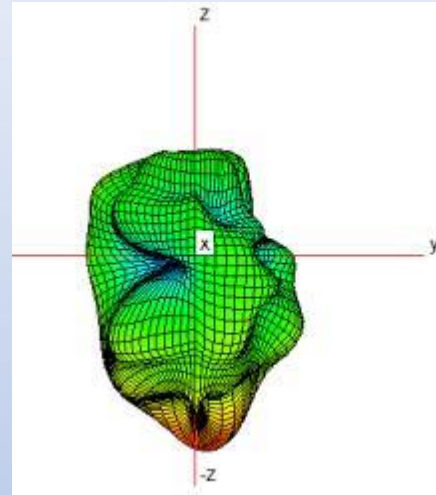
Freq	Efficiency_dB	Efficiency_Pcent	Gain
5150	-4.44	35.94	5.13
5175	-4.39	36.41	5.4
5200	-4.31	37.06	5.53
5225	-4.3	37.15	5.67
5250	-4.31	37.08	5.76
5275	-4.59	34.77	5.42
5300	-4.64	34.34	5.35
5325	-4.71	33.84	5.18
5350	-4.66	34.2	5.15
5375	-4.6	34.68	5.09
5400	-4.64	34.35	4.88
5425	-4.71	33.78	4.59
5450	-4.97	31.84	4.02
5475	-5.38	28.97	3.3
5500	-5.63	27.37	2.78
5525	-5.69	26.96	2.49
5550	-5.75	26.61	2.21
5575	-5.82	26.18	1.87
5600	-6.01	25.04	1.39
5625	-6.14	24.33	0.91
5650	-6.41	22.88	0.78
5675	-6.72	21.27	0.71
5700	-6.86	20.63	0.74
5725	-7.13	19.37	0.71
5750	-7.24	18.86	0.74
5775	-7.42	18.1	0.59
5800	-7.42	18.1	0.65
5825	-7.68	17.06	0.39
5850	-7.58	17.46	0.52

S11 Plot & SWR-ANT 2

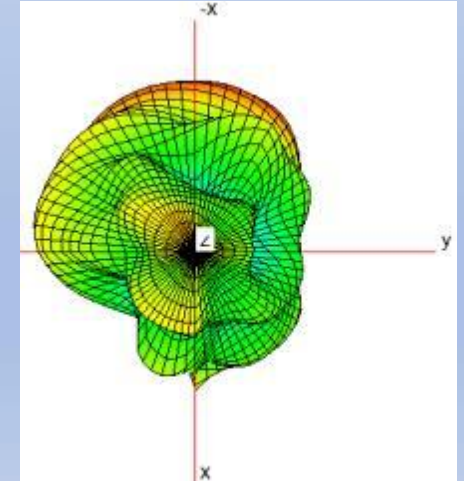
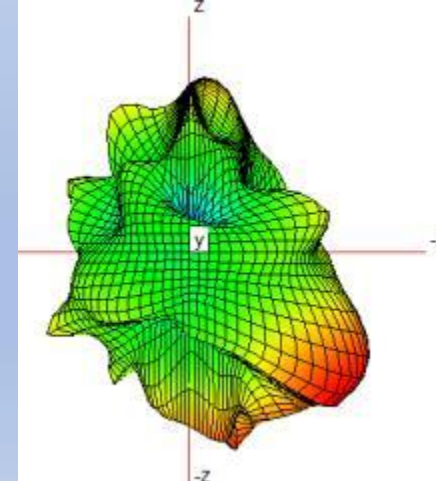
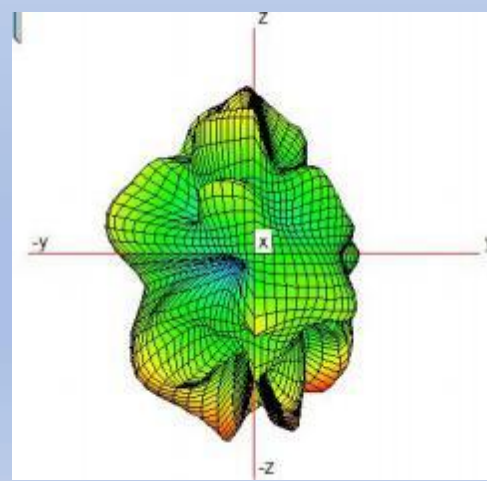




2450MHZ



5650MHZ





5G

Welcome calls consultations, negotiations and guidance come!

Thank you