



深圳汉阳天线设计有限公司

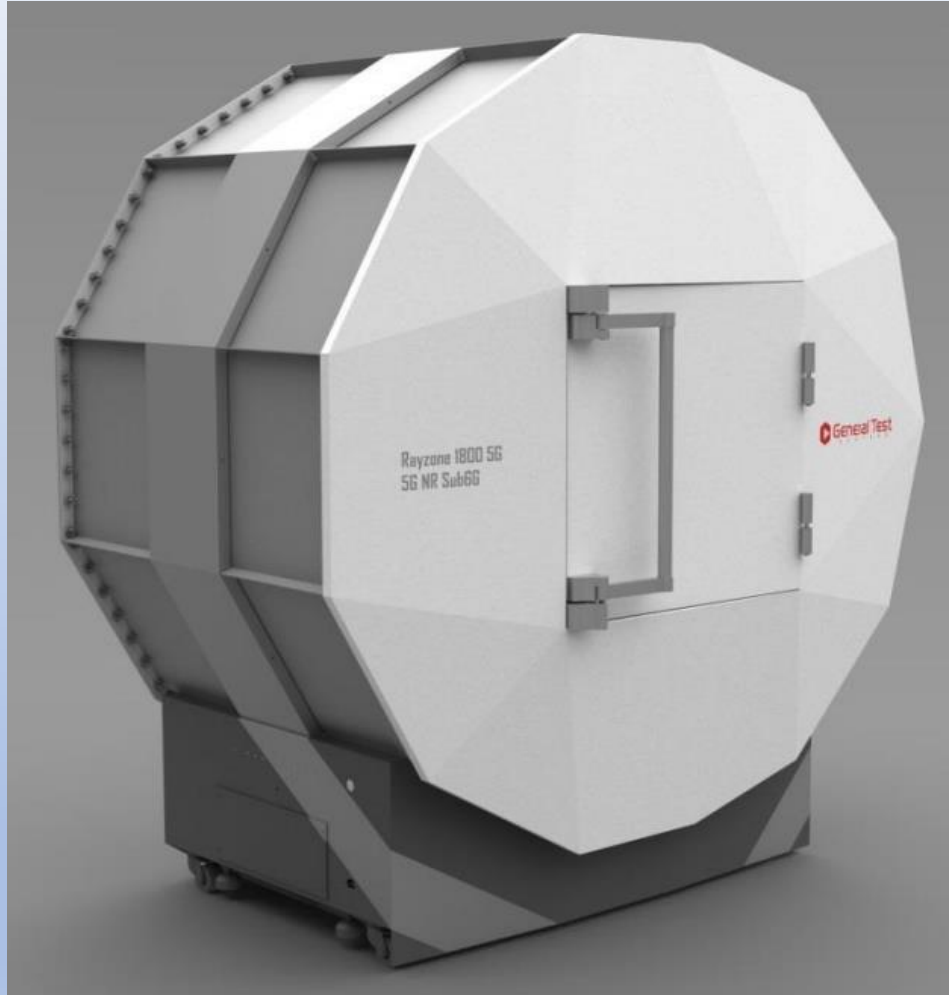
SHENZHEN HANYANG ANTENNA DESIGN CO.LTD.

Customer: GSD

Antenna report

Project name: DT3A

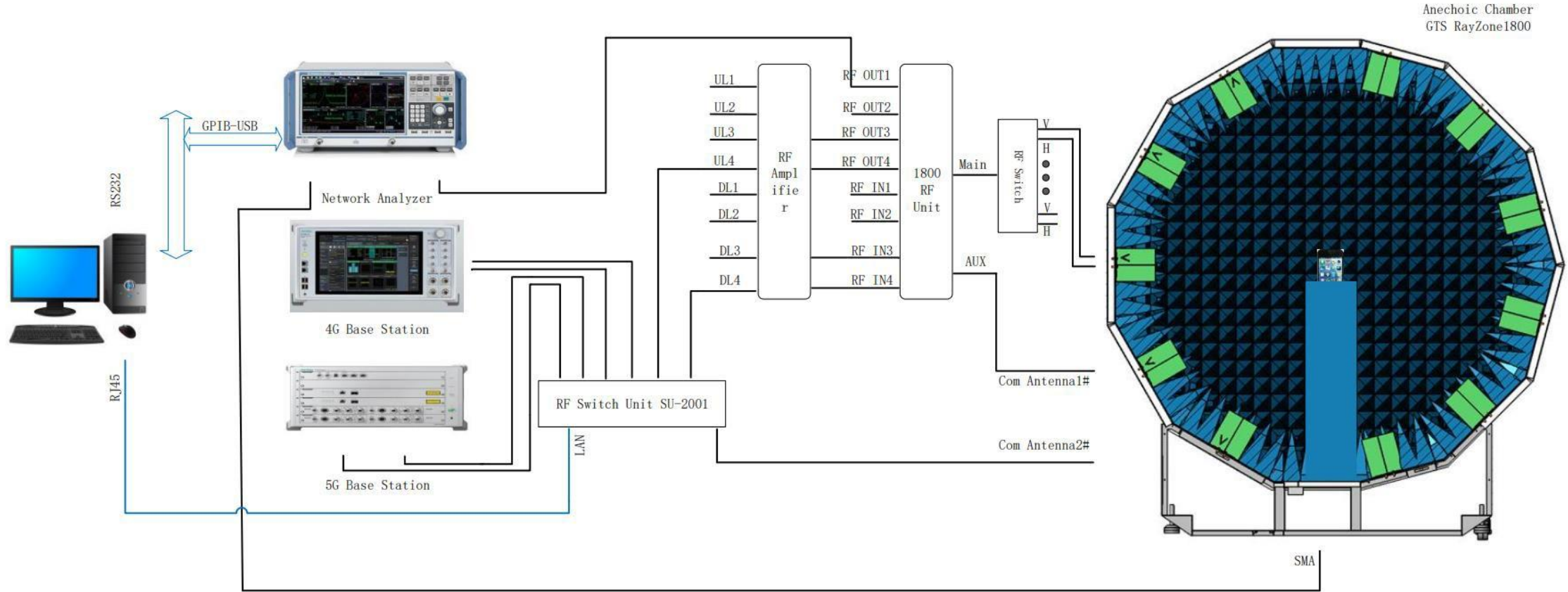
日期: 2023-04-27



Wireless communication standard:2G/3G/4G/5G(FR1)/GNSS/Wi-Fi/Bluetooth
Internet of Things communication standards:LTE Cat NB1(NB-IoT)/Cat-M1(e-MTC)
SISO test TRP/TIS/EIRP/EIS,2x2 MIMO Throughput test
Passive antenna test,Desense ,test ICS
Support 600MHz-7.5GHz frequency
GTS MaxSign 100 test software support antenna/OTA test, Provide visual data analysis
New EPP rigid and environmentally friendly absorbing material.
Low RCS high gain measurement antenna set , Transparent turntable and fixture
MIMO test fastly. Certification level test accuracy.
Integrated design,use and maintenance is simply.



RayZone1800 Test Setup



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

Test Date: 4/15/2023

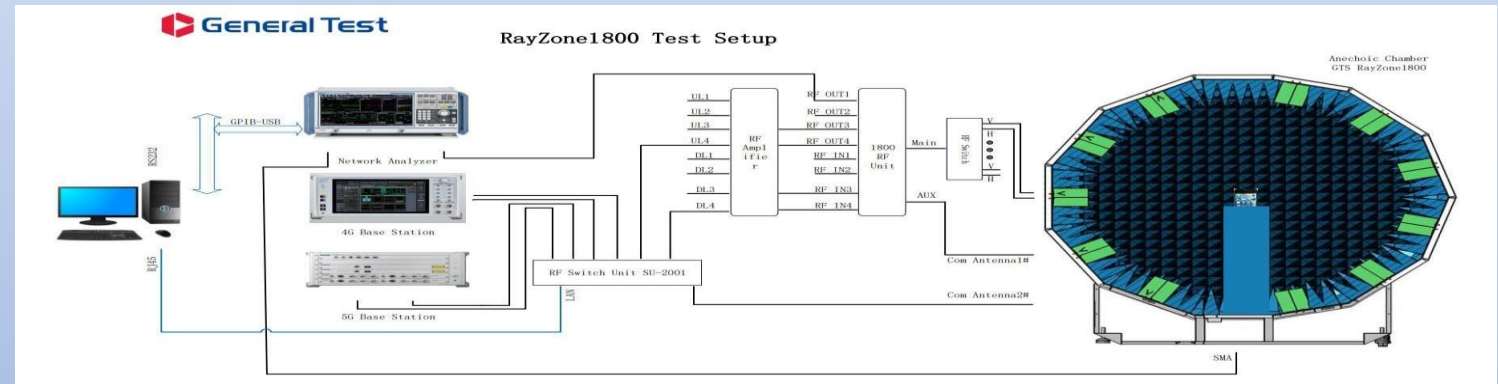
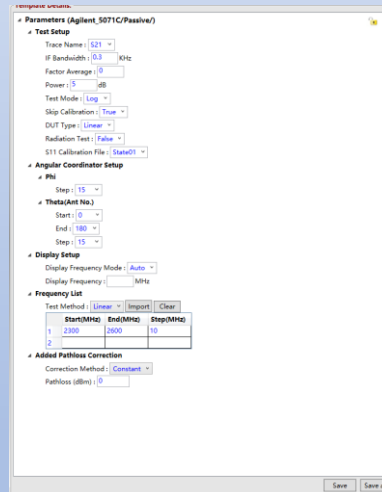
Test Engineer: Liu Deng

Software name and version: GTS_MAX SIGN Libra1.2.7

Cal Date:4/1/2023

Test Standard:Generic standard

Test set-up:



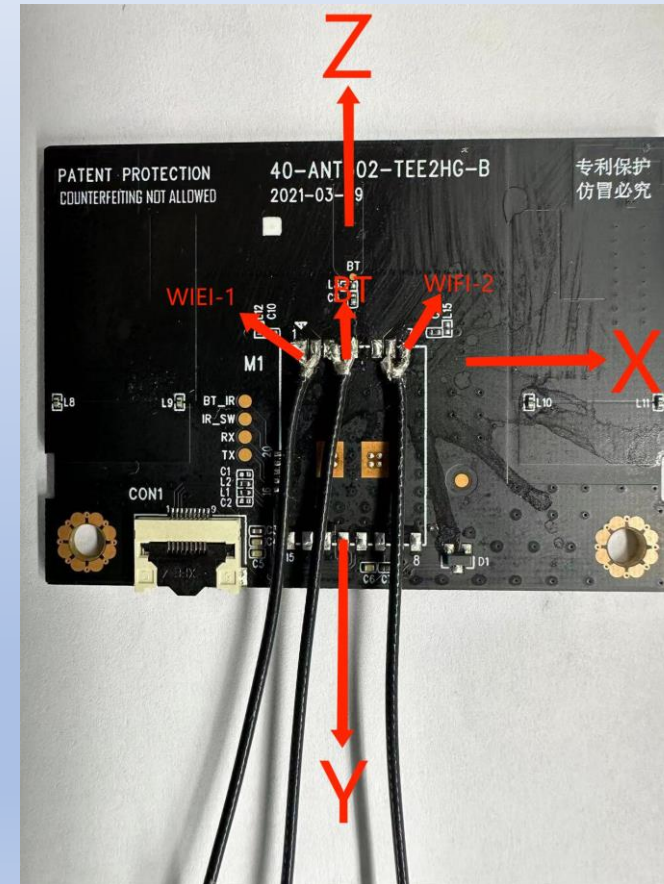
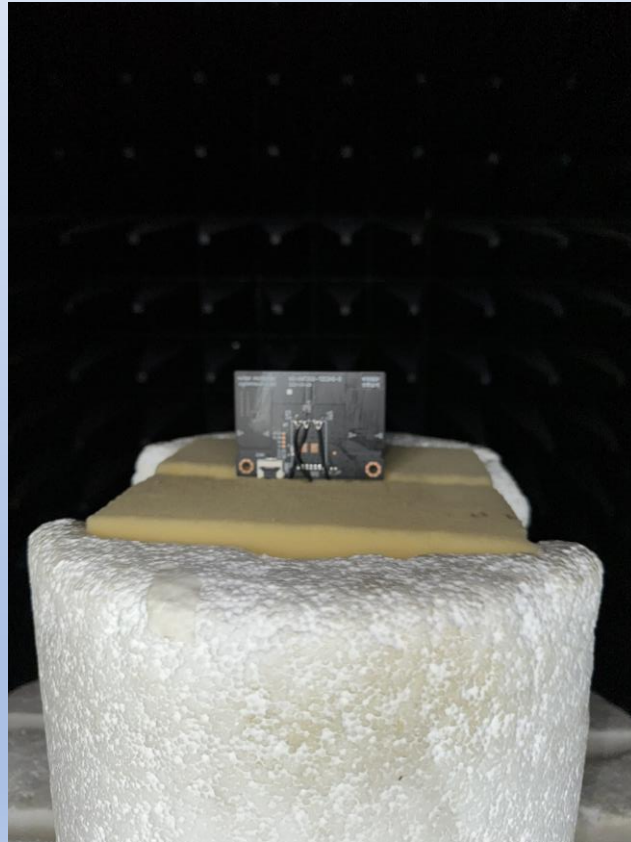
Test flow:

Setup photo



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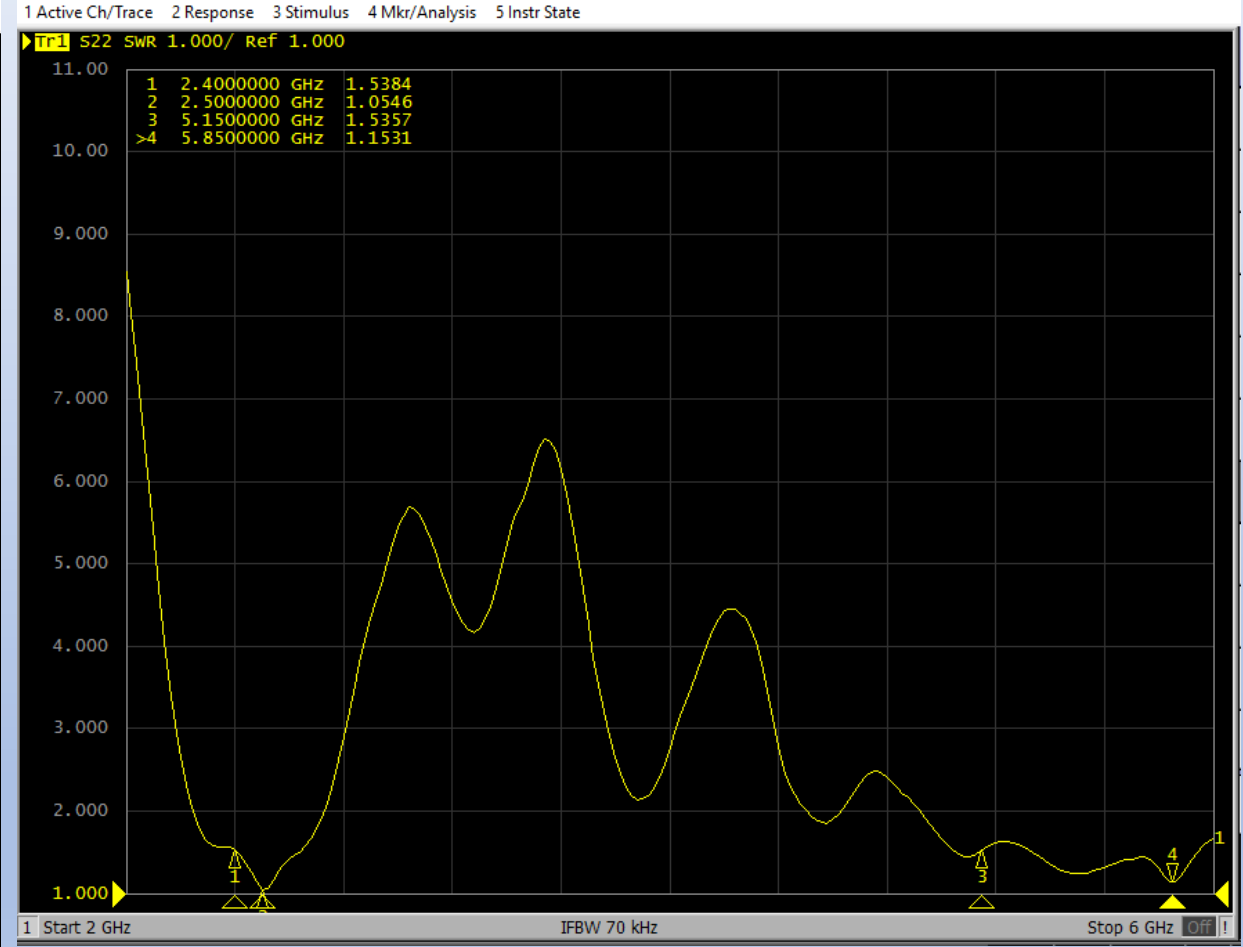
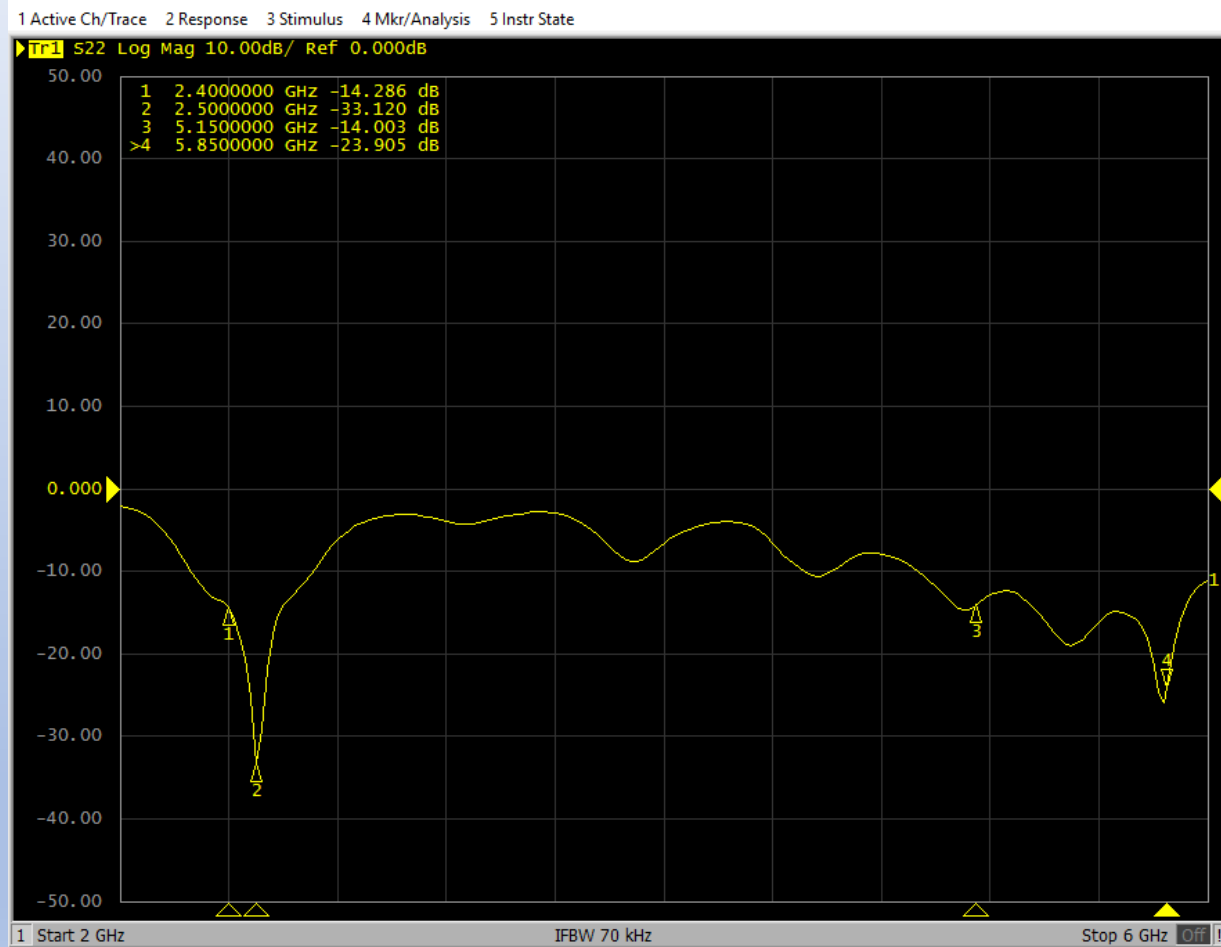
| Equipment list | Equipment | manufacturer | model | SN | Last Cal. | Due Cal |
|----------------|-----------------------------|--------------|--------|------------|------------|------------|
| | Network analyzer | Keysight | E5071C | MY47002902 | 2023.04.01 | 2023.03.30 |
| | CMW 500 Antenna test system | GTS | 1800 | / | 2023.04.01 | 2023.03.30 |



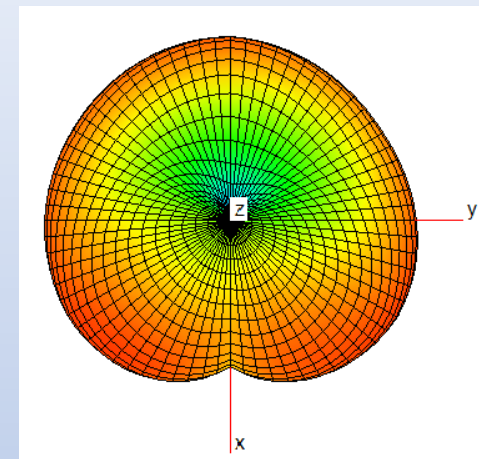
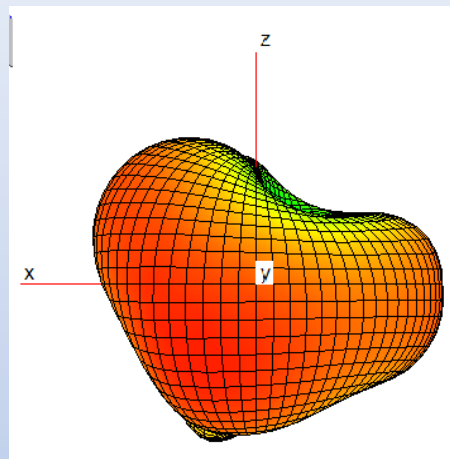
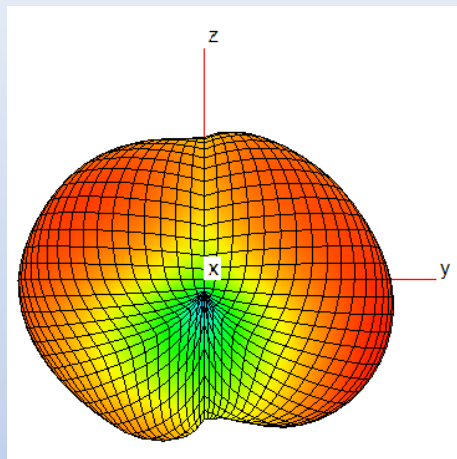


| Freq | EfficiencydB | EfficiencyPcent | Gain |
|------|--------------|-----------------|-------|
| 2300 | -3.22 | 47.59 | 0.71 |
| 2310 | -3.13 | 48.62 | 0.7 |
| 2320 | -2.98 | 50.37 | 0.78 |
| 2330 | -2.85 | 51.84 | 0.82 |
| 2340 | -2.79 | 52.6 | 0.76 |
| 2350 | -2.72 | 53.42 | 0.68 |
| 2360 | -2.64 | 54.45 | 0.6 |
| 2370 | -2.6 | 54.89 | 0.49 |
| 2380 | -2.57 | 55.36 | 0.34 |
| 2390 | -2.55 | 55.61 | 0.16 |
| 2400 | -2.49 | 56.41 | 0.03 |
| 2410 | -2.41 | 57.43 | -0.08 |
| 2420 | -2.33 | 58.44 | 0.03 |
| 2430 | -2.3 | 58.87 | 0.09 |
| 2440 | -2.31 | 58.78 | 0.14 |
| 2450 | -2.3 | 58.84 | 0.21 |
| 2460 | -2.29 | 58.96 | 0.25 |
| 2470 | -2.31 | 58.73 | 0.28 |
| 2480 | -2.31 | 58.8 | 0.34 |
| 2490 | -2.36 | 58.07 | 0.33 |
| 2500 | -2.38 | 57.84 | 0.52 |
| 2510 | -2.4 | 57.55 | 0.64 |
| 2520 | -2.4 | 57.53 | 0.74 |
| 2530 | -2.42 | 57.33 | 0.81 |
| 2540 | -2.47 | 56.68 | 0.85 |
| 2550 | -2.53 | 55.81 | 0.8 |
| 2560 | -2.57 | 55.32 | 0.71 |
| 2570 | -2.62 | 54.73 | 0.57 |
| 2580 | -2.72 | 53.52 | 0.39 |
| 2590 | -2.79 | 52.63 | 0.15 |
| 2600 | -2.91 | 51.12 | -0.04 |

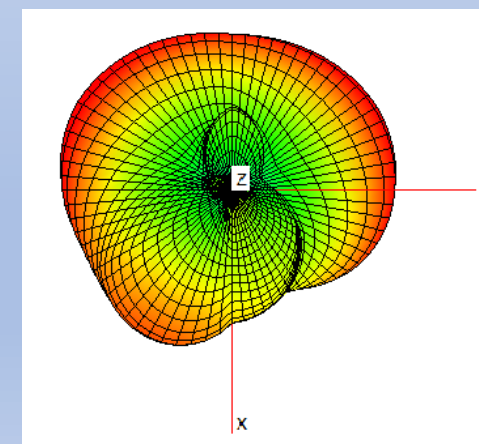
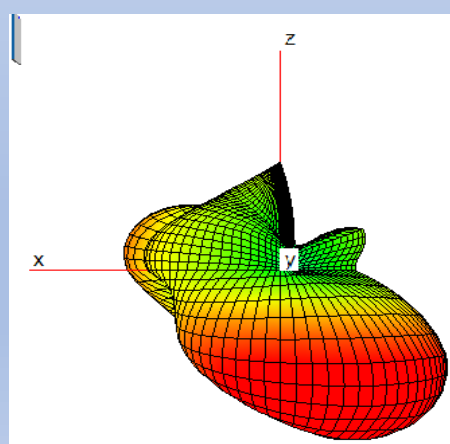
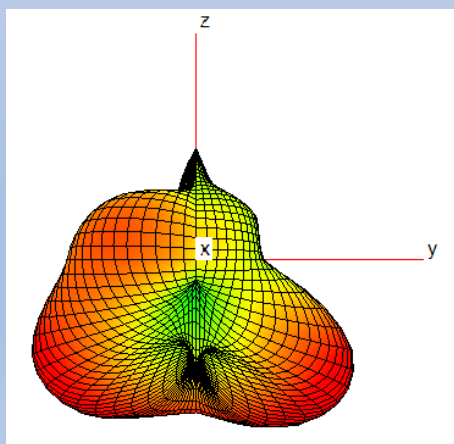
| Freq | EfficiencydB | EfficiencyPcent | Gain |
|------|--------------|-----------------|------|
| 5150 | -2.77 | 52.89 | 1.96 |
| 5175 | -2.69 | 53.82 | 2.02 |
| 5200 | -2.65 | 54.3 | 1.97 |
| 5225 | -2.58 | 55.24 | 1.96 |
| 5250 | -2.66 | 54.16 | 1.83 |
| 5275 | -2.74 | 53.16 | 1.68 |
| 5300 | -2.96 | 50.63 | 1.38 |
| 5325 | -2.83 | 52.08 | 1.44 |
| 5350 | -2.84 | 52 | 1.29 |
| 5375 | -2.59 | 55.09 | 1.44 |
| 5400 | -2.6 | 54.93 | 1.58 |
| 5425 | -2.48 | 56.52 | 1.84 |
| 5450 | -2.72 | 53.41 | 1.67 |
| 5475 | -2.96 | 50.55 | 1.52 |
| 5500 | -2.98 | 50.35 | 1.62 |
| 5525 | -2.93 | 50.88 | 1.77 |
| 5550 | -2.73 | 53.37 | 2 |
| 5575 | -2.73 | 53.38 | 2.13 |
| 5600 | -2.54 | 55.69 | 2.42 |
| 5625 | -2.69 | 53.86 | 2.35 |
| 5650 | -2.67 | 54.01 | 2.36 |
| 5675 | -3.13 | 48.62 | 1.83 |
| 5700 | -3.05 | 49.55 | 2.05 |
| 5725 | -3.44 | 45.34 | 1.85 |
| 5750 | -3.39 | 45.8 | 2.03 |
| 5775 | -3.61 | 43.55 | 1.93 |
| 5800 | -3.57 | 43.94 | 2.03 |
| 5825 | -3.85 | 41.26 | 1.78 |
| 5850 | -3.99 | 39.91 | 1.67 |



2450MHZ



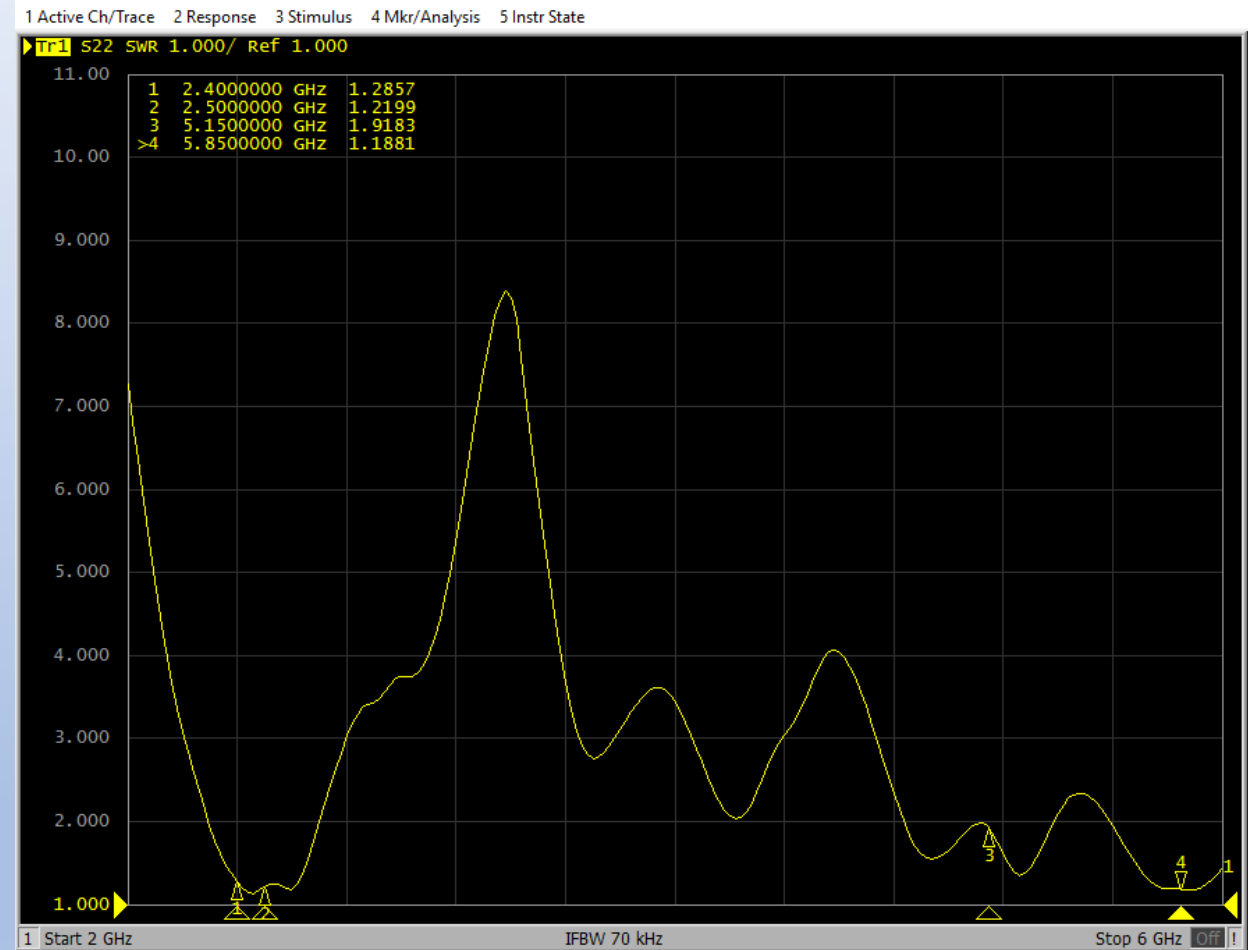
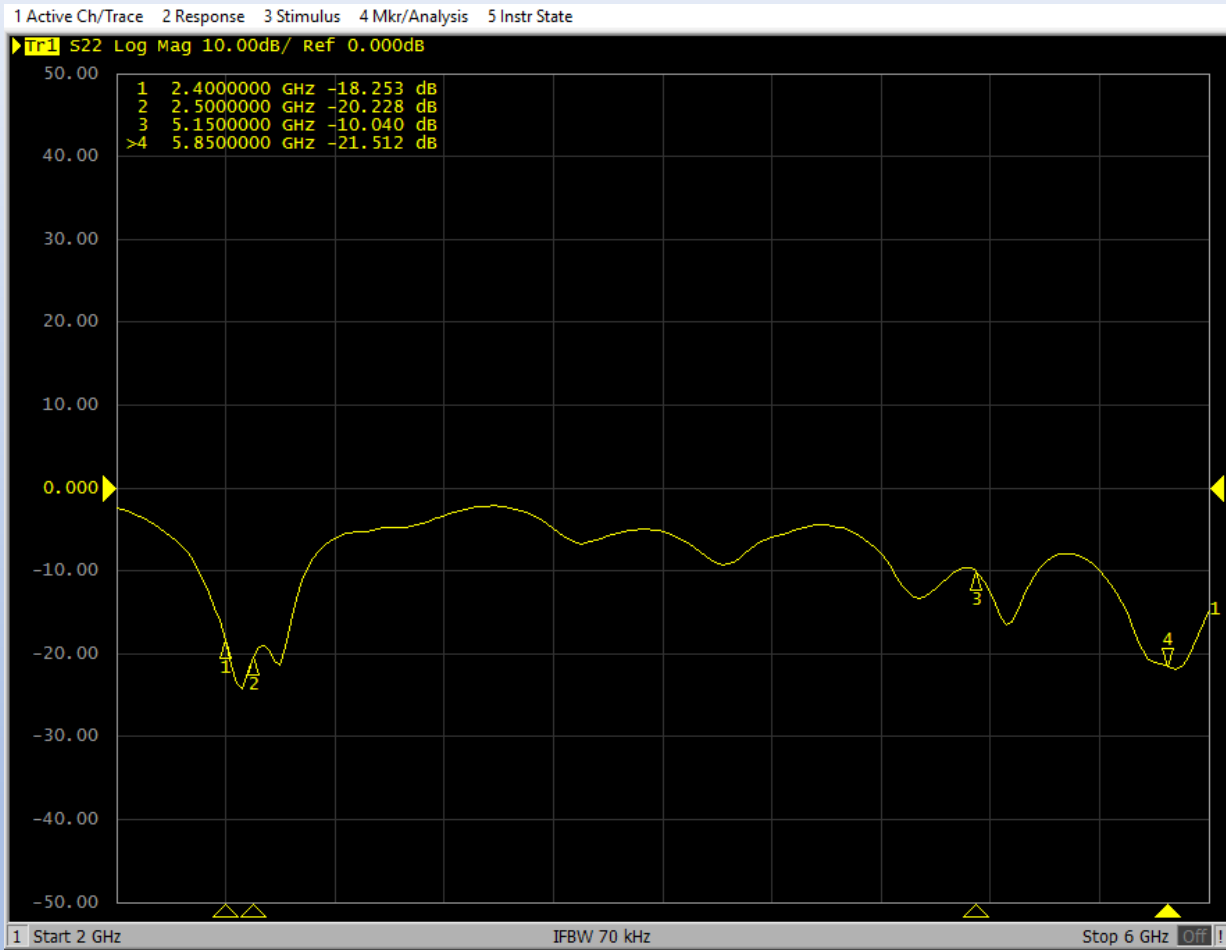
5650MHZ



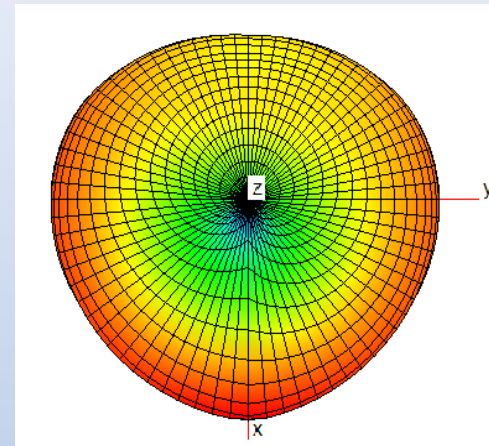
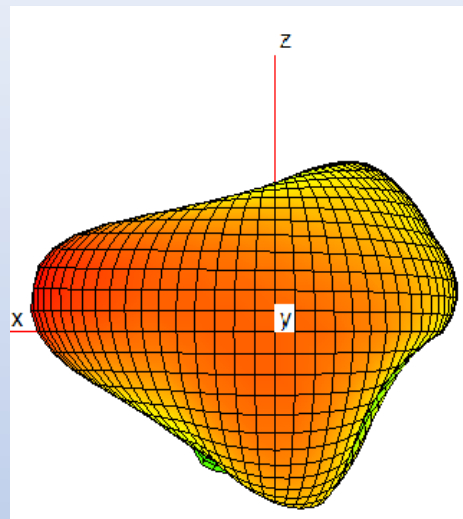
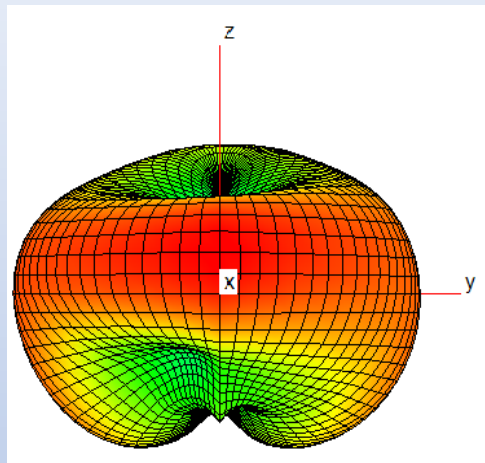


| Freq | EfficiencydB | EfficiencyPcent | Gain |
|------|--------------|-----------------|------|
| 2300 | -2.91 | 51.14 | 2.12 |
| 2310 | -2.81 | 52.32 | 2.12 |
| 2320 | -2.64 | 54.5 | 2.23 |
| 2330 | -2.55 | 55.54 | 2.22 |
| 2340 | -2.51 | 56.14 | 2.15 |
| 2350 | -2.46 | 56.8 | 2.06 |
| 2360 | -2.39 | 57.73 | 1.99 |
| 2370 | -2.34 | 58.31 | 1.89 |
| 2380 | -2.35 | 58.2 | 1.74 |
| 2390 | -2.37 | 57.93 | 1.61 |
| 2400 | -2.32 | 58.57 | 1.59 |
| 2410 | -2.28 | 59.11 | 1.57 |
| 2420 | -2.23 | 59.82 | 1.59 |
| 2430 | -2.24 | 59.64 | 1.53 |
| 2440 | -2.3 | 58.85 | 1.43 |
| 2450 | -2.32 | 58.55 | 1.39 |
| 2460 | -2.36 | 58.03 | 1.37 |
| 2470 | -2.4 | 57.5 | 1.32 |
| 2480 | -2.42 | 57.28 | 1.35 |
| 2490 | -2.51 | 56.13 | 1.27 |
| 2500 | -2.52 | 55.94 | 1.3 |
| 2510 | -2.53 | 55.86 | 1.35 |
| 2520 | -2.52 | 55.98 | 1.43 |
| 2530 | -2.52 | 55.97 | 1.5 |
| 2540 | -2.56 | 55.52 | 1.52 |
| 2550 | -2.59 | 55.03 | 1.59 |
| 2560 | -2.61 | 54.88 | 1.66 |
| 2570 | -2.61 | 54.77 | 1.77 |
| 2580 | -2.69 | 53.84 | 1.79 |
| 2590 | -2.73 | 53.28 | 1.92 |
| 2600 | -2.84 | 52 | 1.96 |

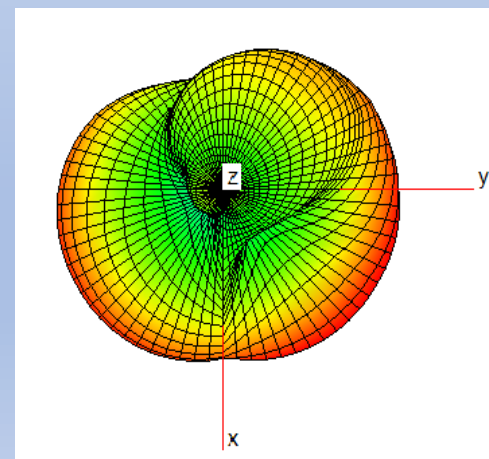
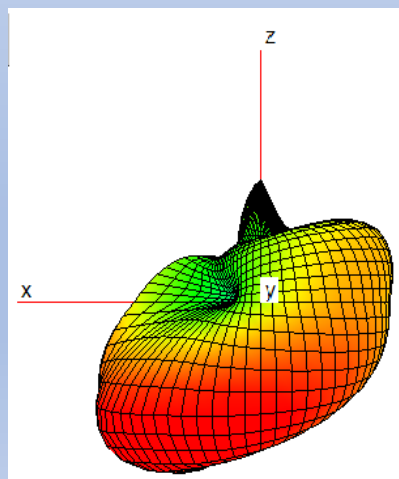
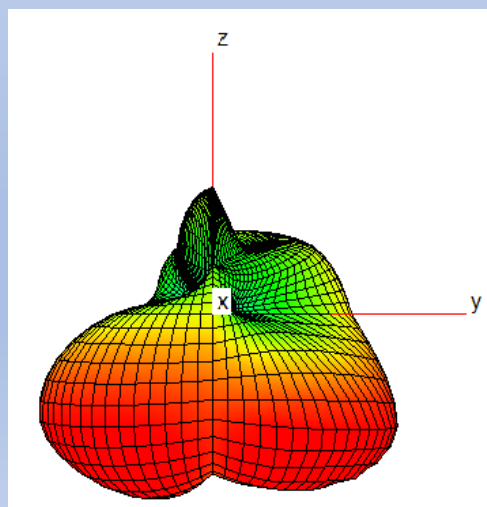
| Freq | EfficiencydB | EfficiencyPcent | Gain |
|------|--------------|-----------------|------|
| 5150 | -2.32 | 58.6 | 3 |
| 5175 | -2.21 | 60.13 | 3.06 |
| 5200 | -2.11 | 61.51 | 3.04 |
| 5225 | -1.98 | 63.43 | 3.09 |
| 5250 | -2.03 | 62.71 | 2.99 |
| 5275 | -2.12 | 61.32 | 3.04 |
| 5300 | -2.36 | 58.13 | 2.86 |
| 5325 | -2.23 | 59.88 | 3.06 |
| 5350 | -2.24 | 59.68 | 3.07 |
| 5375 | -2.05 | 62.35 | 3.27 |
| 5400 | -2.17 | 60.63 | 3.18 |
| 5425 | -2.14 | 61.13 | 3.29 |
| 5450 | -2.43 | 57.12 | 3.03 |
| 5475 | -2.73 | 53.29 | 2.69 |
| 5500 | -2.86 | 51.77 | 2.56 |
| 5525 | -2.93 | 50.88 | 2.36 |
| 5550 | -2.81 | 52.37 | 2.31 |
| 5575 | -2.81 | 52.39 | 2.27 |
| 5600 | -2.58 | 55.24 | 2.58 |
| 5625 | -2.66 | 54.17 | 2.57 |
| 5650 | -2.57 | 55.3 | 2.68 |
| 5675 | -2.92 | 51.06 | 2.3 |
| 5700 | -2.75 | 53.15 | 2.46 |
| 5725 | -3.03 | 49.81 | 2.15 |
| 5750 | -2.94 | 50.77 | 2.22 |
| 5775 | -3.13 | 48.65 | 2.12 |
| 5800 | -3.13 | 48.67 | 2.21 |
| 5825 | -3.42 | 45.55 | 1.95 |
| 5850 | -3.51 | 44.58 | 1.97 |



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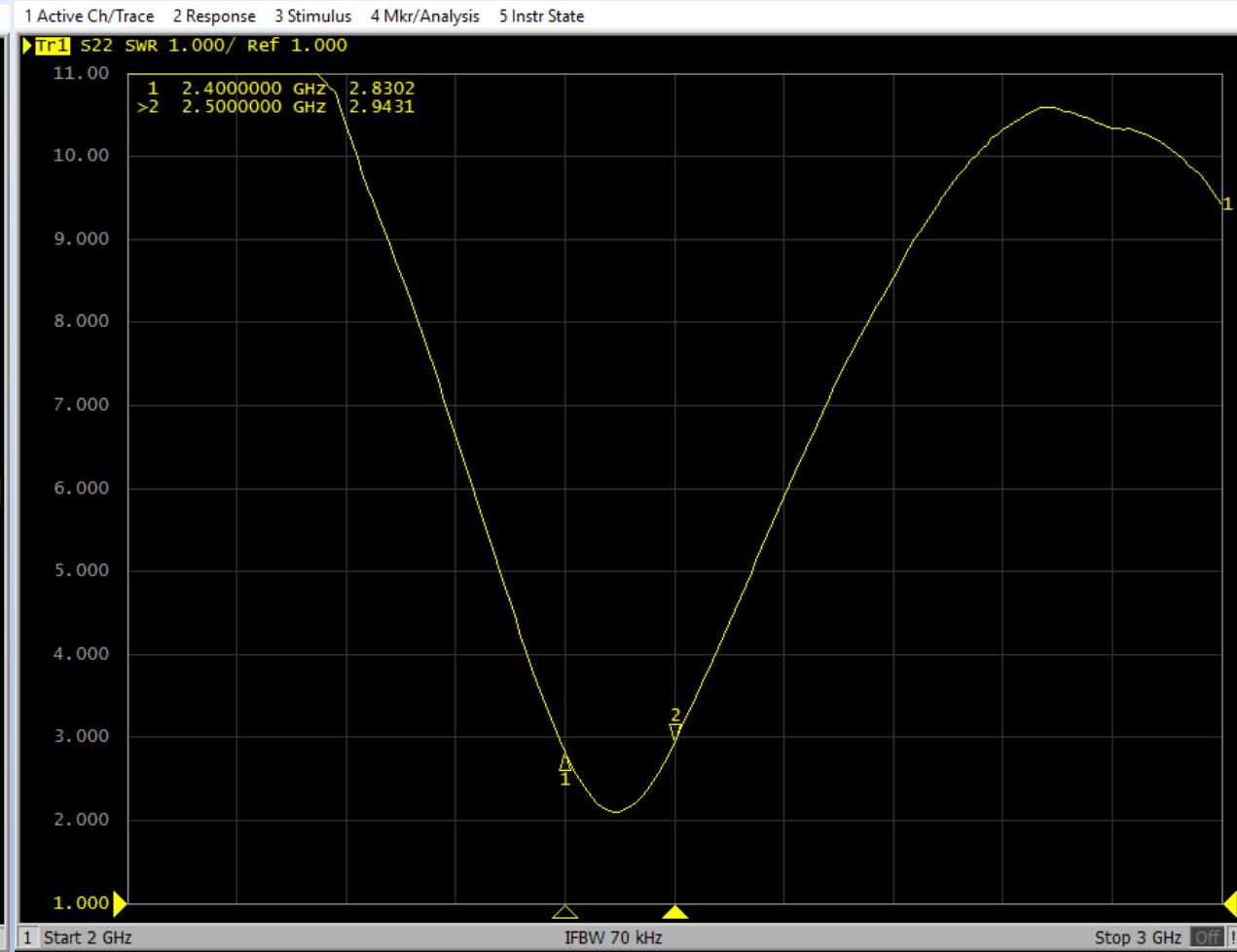
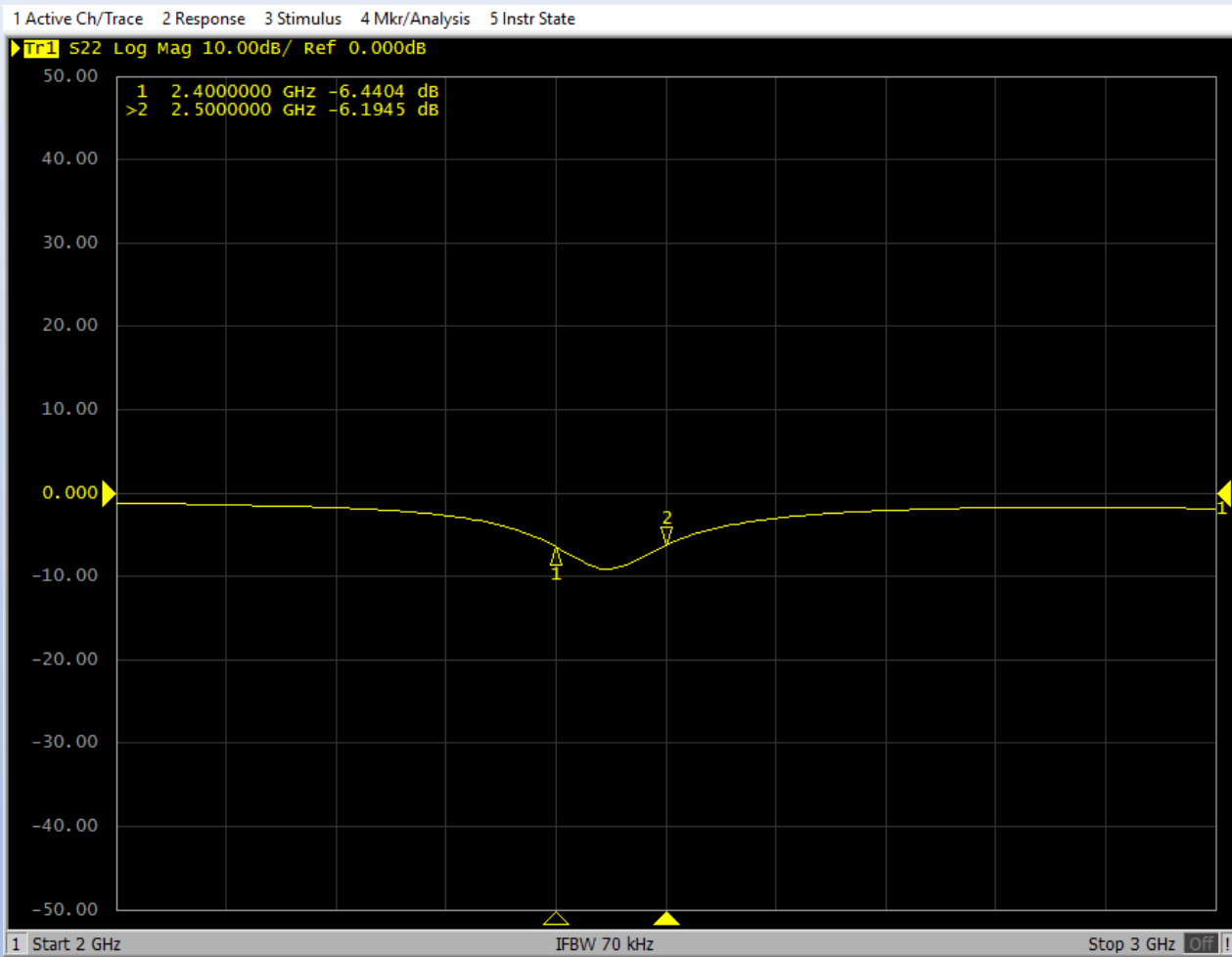


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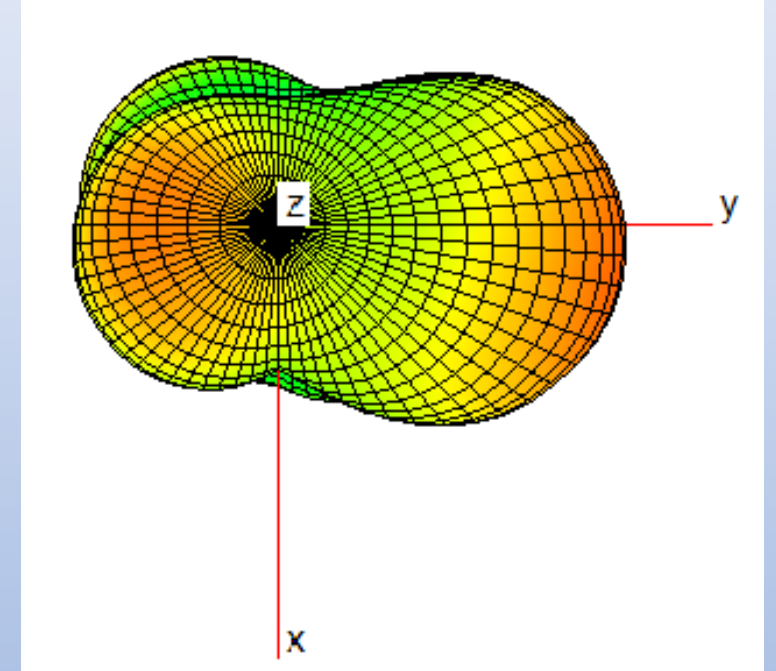
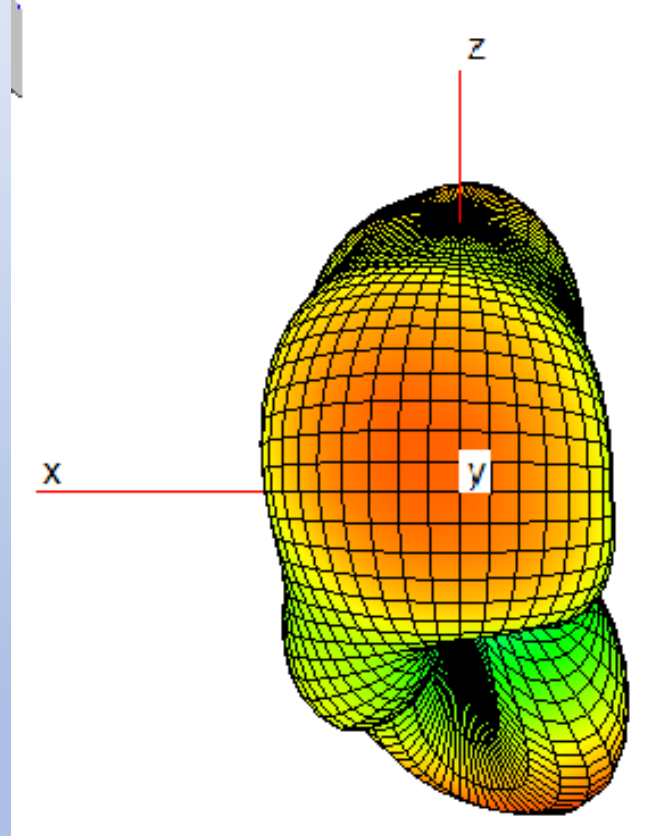
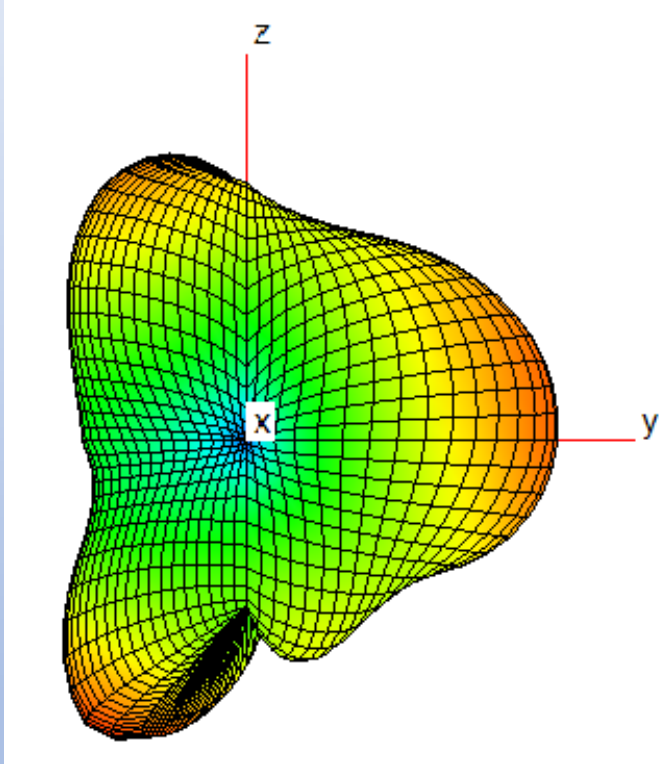




| Freq | EfficiencydB | EfficiencyPcent | Gain |
|------|--------------|-----------------|--------|
| 2300 | -14.31 | 3.71 | -10.06 |
| 2310 | -13.68 | 4.29 | -9.61 |
| 2320 | -13.16 | 4.83 | -9.23 |
| 2330 | -12.68 | 5.4 | -8.66 |
| 2340 | -12.1 | 6.17 | -8.04 |
| 2350 | -11.6 | 6.93 | -7.48 |
| 2360 | -11.04 | 7.86 | -6.65 |
| 2370 | -10.6 | 8.72 | -6.02 |
| 2380 | -10.23 | 9.48 | -5.55 |
| 2390 | -9.74 | 10.62 | -4.99 |
| 2400 | -9.33 | 11.68 | -4.52 |
| 2410 | -8.96 | 12.7 | -4.17 |
| 2420 | -8.67 | 13.57 | -4.01 |
| 2430 | -8.54 | 14 | -4.01 |
| 2440 | -8.43 | 14.34 | -4.1 |
| 2450 | -8.43 | 14.35 | -4.12 |
| 2460 | -8.53 | 14.03 | -4.1 |
| 2470 | -8.73 | 13.41 | -4.23 |
| 2480 | -8.94 | 12.78 | -4.48 |
| 2490 | -9.22 | 11.96 | -4.76 |
| 2500 | -9.59 | 10.99 | -5.12 |
| 2510 | -9.95 | 10.12 | -5.49 |
| 2520 | -10.26 | 9.42 | -5.8 |
| 2530 | -10.58 | 8.76 | -6.15 |
| 2540 | -10.84 | 8.23 | -6.53 |
| 2550 | -11.21 | 7.57 | -7.01 |
| 2560 | -11.59 | 6.93 | -7.46 |
| 2570 | -11.88 | 6.48 | -7.8 |
| 2580 | -12.25 | 5.95 | -8.23 |
| 2590 | -12.55 | 5.55 | -8.66 |
| 2600 | -12.9 | 5.12 | -9.16 |



2450MHZ





深圳汉阳天线设计有限公司

SHENZHEN HANYANG ANTENNA DESIGN CO., LTD.

5G

Welcome calls consultations, negotiations and guidance come!

Thank you

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电话：0755-23069700

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