



深圳市昱晟通讯设备有限公司

Yusheng Communications-equipment Co.,LTD

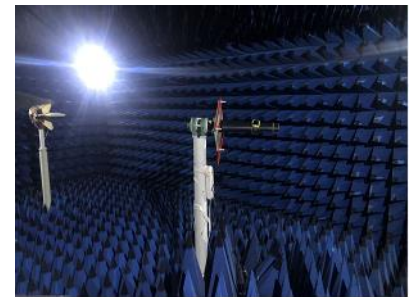
The T808G Antenna Test Report

RF: Hong Yuankai

Date: 2024

Contact information:

15119409299



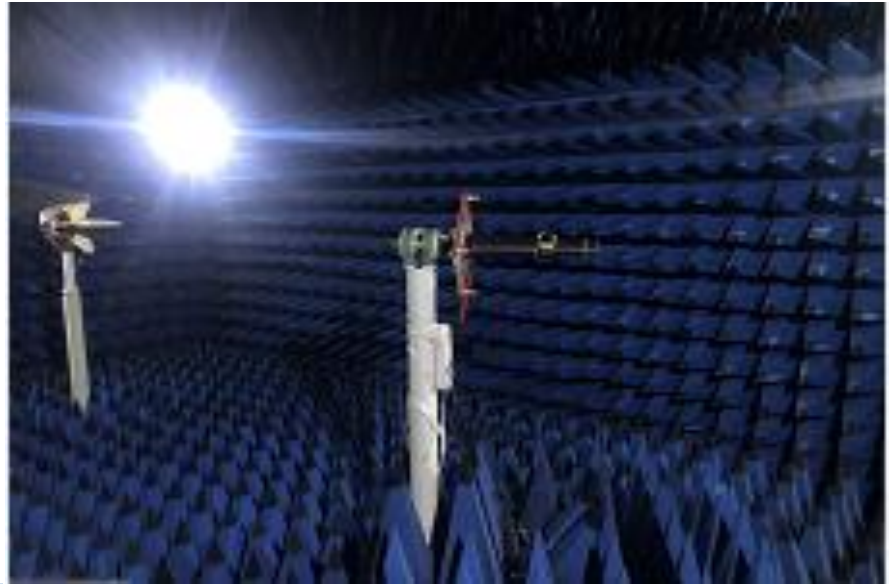


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Project development environment

We are moving from the Internet era to the intelligent era, and the country is building a digital society and a smart city. In the next 5-10 years, there is a huge development potential in both the consumer electronics market and the Internet of Things market. The field of wireless communication is very diversified. In the future, relying on the customer platform advantages of the main antenna industry, Yusheng will strive to provide customers with professional product solutions with market competitiveness.



Yu Sheng communication products cover almost all wireless terminal equipment antenna applications, including car antenna, high precision surveying and mapping antenna, drone ground and satellite data navigation, high precision positioning antenna, medical equipment wireless transmission, consumer antenna (mobile phone antenna, PAD, laptop antenna), base station / indoor distribution antenna, smart wear antenna (smart watches, TWS headphones), security household antenna and a variety of wireless data transmission and wireless control of intelligent equipment antenna, etc.

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Summary & additional note

**Project
commissioning brief**

| | | | | | |
|--|--|------------------------------------|------------------------------|-------------------------|--------------------|
| type | dull and stereotyped | | | | |
| template | motherboard | | | | |
| Frequency band and antenna material | main antenna | frequency range | | material quality | |
| | | 2G | GSM850/900/1800/1900 | | FPC+ coaxial cable |
| | | 3G | WCDMA B1/2/5/8 | | |
| | 4G | LTE B1/3/5/7/8/20/28AB 38/40/41 | | | |
| | Other antennas | GWB | 1575. 42MHz/2. 45GHz/5. 8GHz | | FPC+ coaxial cable |
| | | DRX | have | | FPC+ coaxial cable |
| performance requirement | According to the customer's requirements | | | | |



Outline of the
report version

| Report version | Report time | The antenna development solved the problem |
|----------------|-------------|---|
| V0.2 | 20230517 | Test report (remove earpiece hub cable and key cable conductor cloth) |
| V0.3 | 20240711 | Machine test report (add Apple map, etc.) |

Active parameters
of the main antenna

| Test | GSM 850 | | | PCS 1900 | | |
|-----------|---------|-------|---------|----------|-------|---------|
| Channel | 128 | 190 | 251 | 512 | 661 | 810 |
| TRP (dBm) | 24.12 | 24.10 | 24.03 | 24.15 | 24.19 | 24.25 |
| TIS (dBm) | | | -101.04 | | | -101.18 |

| Test | EGSM 900 | | | DCS 1800 | | |
|-----------|----------|-------|---------|----------|-------|--------|
| Channel | 128 | 190 | 251 | 512 | 661 | 810 |
| TRP (dBm) | 24.16 | 24.12 | 24.04 | 24.10 | 24.17 | 24.22 |
| TIS (dBm) | | | -101.09 | | | -99.60 |

Active parameters of
the main antenna

| Test | WCDMA_I | | | WCDMA_II | | |
|-----------|---------|-------|---------|----------|-------|---------|
| Channel | 10562 | 10700 | 10838 | 9662 | 9800 | 9938 |
| TRP (dBm) | 15.24 | 15.17 | 15.05 | 15.06 | 15.12 | 15.21 |
| TIS (dBm) | | | -103.12 | | | -103.11 |

| Test | WCDMA_V | | | WCDMA_V III | | |
|-----------|---------|-------|---------|-------------|-------|---------|
| Channel | 4357 | 4408 | 4458 | 2937 | 3013 | 3088 |
| TRP (dBm) | 14.55 | 14.38 | 14.30 | 14.53 | 14.32 | 14.16 |
| TIS (dBm) | | | -102.05 | | | -102.06 |



The main antenna is active

| Test | FDD B1 | | | FDD B3 | | |
|-----------|--------|-------|--------|--------|-------|--------|
| Channel | 18050 | 18300 | 18550 | 19250 | 19575 | 19900 |
| TRP (dBm) | 15.29 | 15.21 | 15.13 | 14.55 | 15.04 | 15.19 |
| TIS (dBm) | | | -91.58 | | | -91.11 |

| Test | FDD B5 | | | FDD B7 | | |
|-----------|--------|-------|--------|--------|-------|--------|
| Channel | 20450 | 20525 | 20600 | 20800 | 21100 | 21400 |
| TRP (dBm) | 15.08 | 14.87 | 14.69 | 15.51 | 15.57 | 15.65 |
| TIS (dBm) | | | -89.07 | | | -92.06 |

| Test | FDD B8 | | | FDD B20 | | |
|-----------|--------|-------|--------|---------|-------|--------|
| Channel | 21500 | 21650 | 21750 | 24200 | 24300 | 24400 |
| TRP (dBm) | 15.07 | 14.83 | 14.52 | 15.09 | 14.84 | 14.61 |
| TIS (dBm) | | | -89.06 | | | -89.10 |

The main antenna is active

| Test | FDD B28A | | | FDD B28B | | |
|-----------|----------|-------|--------|----------|-------|--------|
| Channel | 27260 | 27360 | 27460 | 27410 | 27510 | 27610 |
| TRP (dBm) | 13.21 | 13.71 | 14.06 | 13.24 | 13.65 | 14.12 |
| TIS (dBm) | | | -88.05 | | | -88.09 |

| Test | TDD B38 | | |
|-----------|---------|-------|--------|
| Channel | 37850 | 38000 | 38150 |
| TRP (dBm) | 15.12 | 15.25 | 15.34 |
| TIS (dBm) | | | -90.14 |

| Test | TDD B40 | | | FDD B41 | | |
|-----------|---------|-------|--------|---------|-------|--------|
| Channel | 38750 | 39150 | 39550 | 40240 | 40620 | 41490 |
| TRP (dBm) | 15.07 | 15.31 | 15.55 | 15.21 | 15.65 | 17.08 |
| TIS (dBm) | | | -90.11 | | | -90.10 |

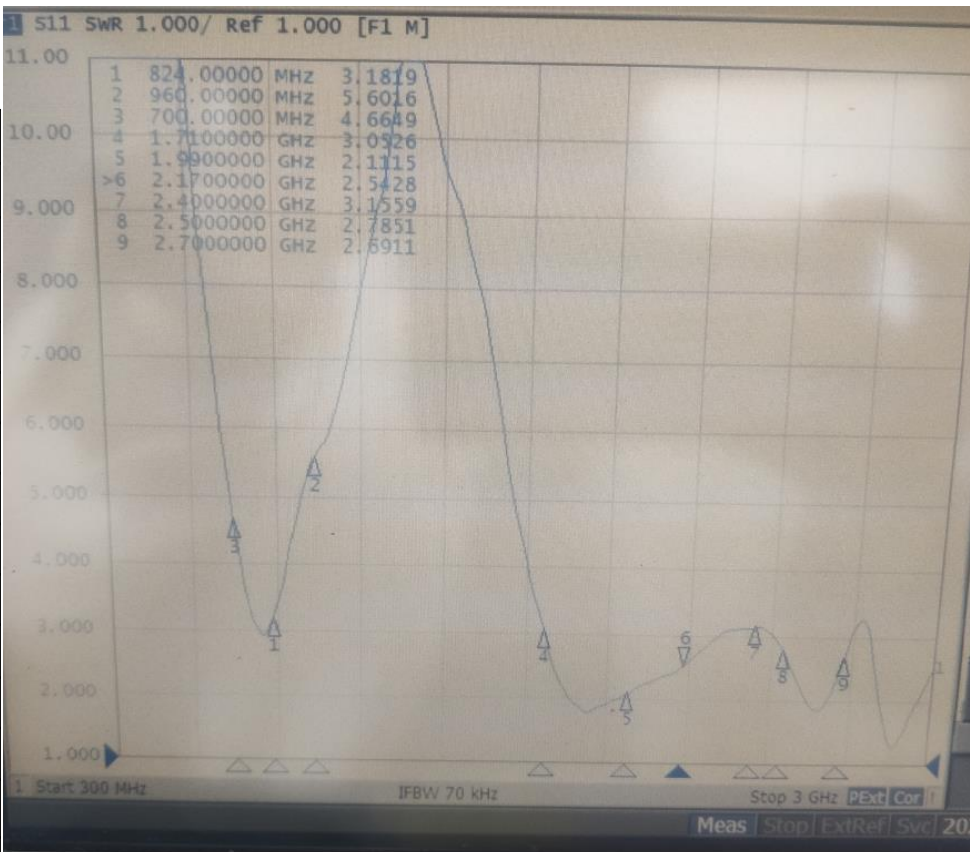
WiFi, with active parameters

| Test | 5.8WIFI-A | | | 2.4WIFI-B | | |
|-----------|-----------|------|--------|-----------|-------|--------|
| Channel | 149 | 157 | 165 | 1 | 6 | 11 |
| TRP (dBm) | 9.08 | 9.21 | 9.15 | 13.31 | 13.35 | 13.52 |
| TIS (dBm) | | | -72.12 | | | -84.51 |

| Test | 2.4WIFI-G | | | 2.4WIFI-N | | |
|-----------|-----------|-------|--------|-----------|-------|--------|
| Channel | 1 | 6 | 11 | 1 | 7 | 13 |
| TRP (dBm) | 12.82 | 13.04 | 13.21 | 11.10 | 11.16 | 11.28 |
| TIS (dBm) | | | -71.46 | | | -67.60 |

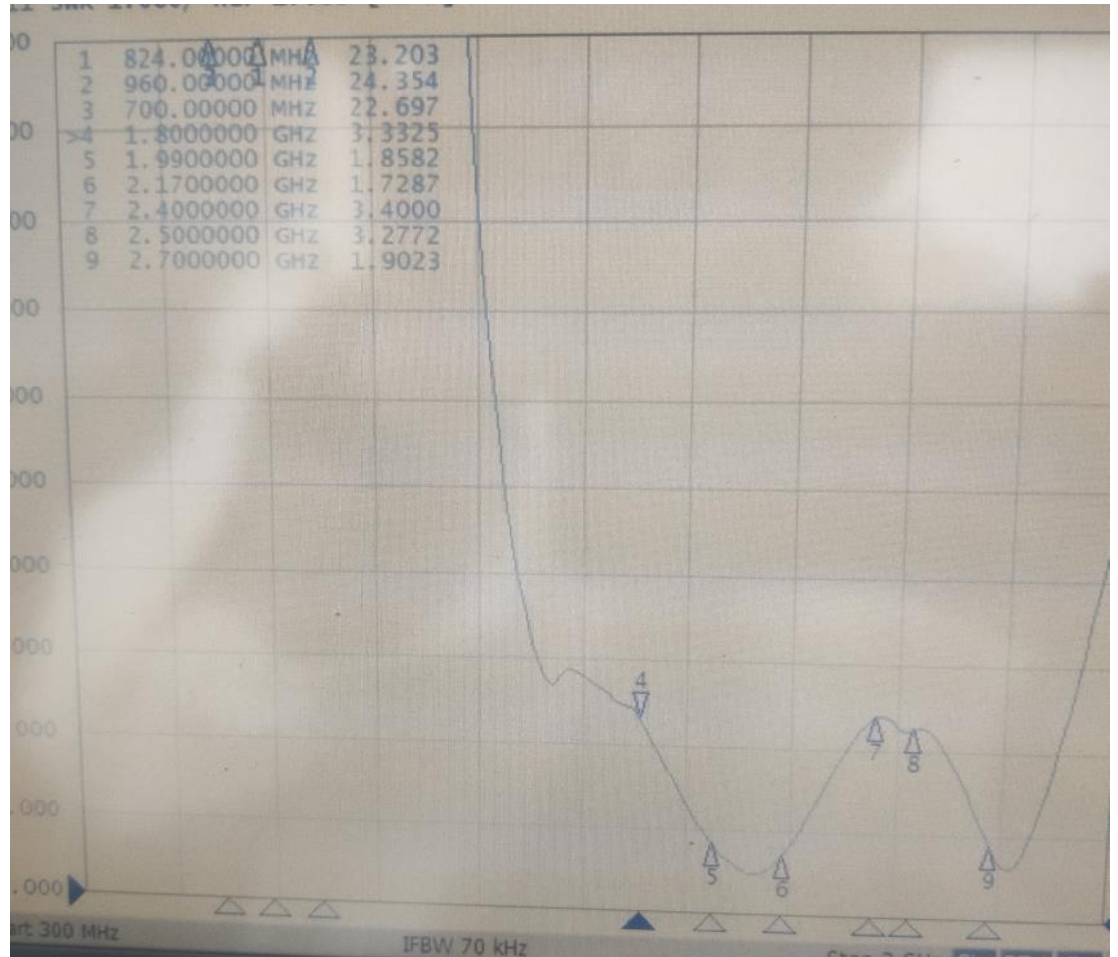
The main antenna has no passive parameters

| Passive Test | | Passive Test | | Passive Test | |
|--------------|-------|--------------|-------|--------------|-------|
| Freq | Effi | Freq | Effi | Freq | Effi |
| (MHz) | (%) | (MHz) | (%) | (MHz) | (%) |
| 700.0 | 16.5% | 1710.0 | 23.5% | 2230.0 | 25.9% |
| 740.0 | 17.4% | 1750.0 | 24.2% | 2270.0 | 25.3% |
| 760.0 | 18.6% | 1790.0 | 24.9% | 2310.0 | 24.5% |
| 780.0 | 19.7% | 1830.0 | 25.5% | 2350.0 | 25.6% |
| 800.0 | 20.9% | 1870.0 | 26.4% | 2390.0 | 26.2% |
| 820.0 | 23.8% | 1910.0 | 25.8% | 2430.0 | 26.8% |
| 840.0 | 24.5% | 1950.0 | 26.3% | 2470.0 | 27.5% |
| 860.0 | 25.3% | 1990.0 | 26.7% | 2510.0 | 26.9% |
| 880.0 | 26.0% | 2030.0 | 26.0% | 2550.0 | 26.2% |
| 900.0 | 25.4% | 2070.0 | 25.6% | 2590.0 | 25.7% |
| 920.0 | 24.9% | 2110.0 | 25.0% | 2630.0 | 25.2% |
| 940.0 | 24.3% | 2150.0 | 25.8% | 2670.0 | 25.9% |
| 960.0 | 23.9% | 2190.0 | 26.5% | 2690.0 | 25.4% |



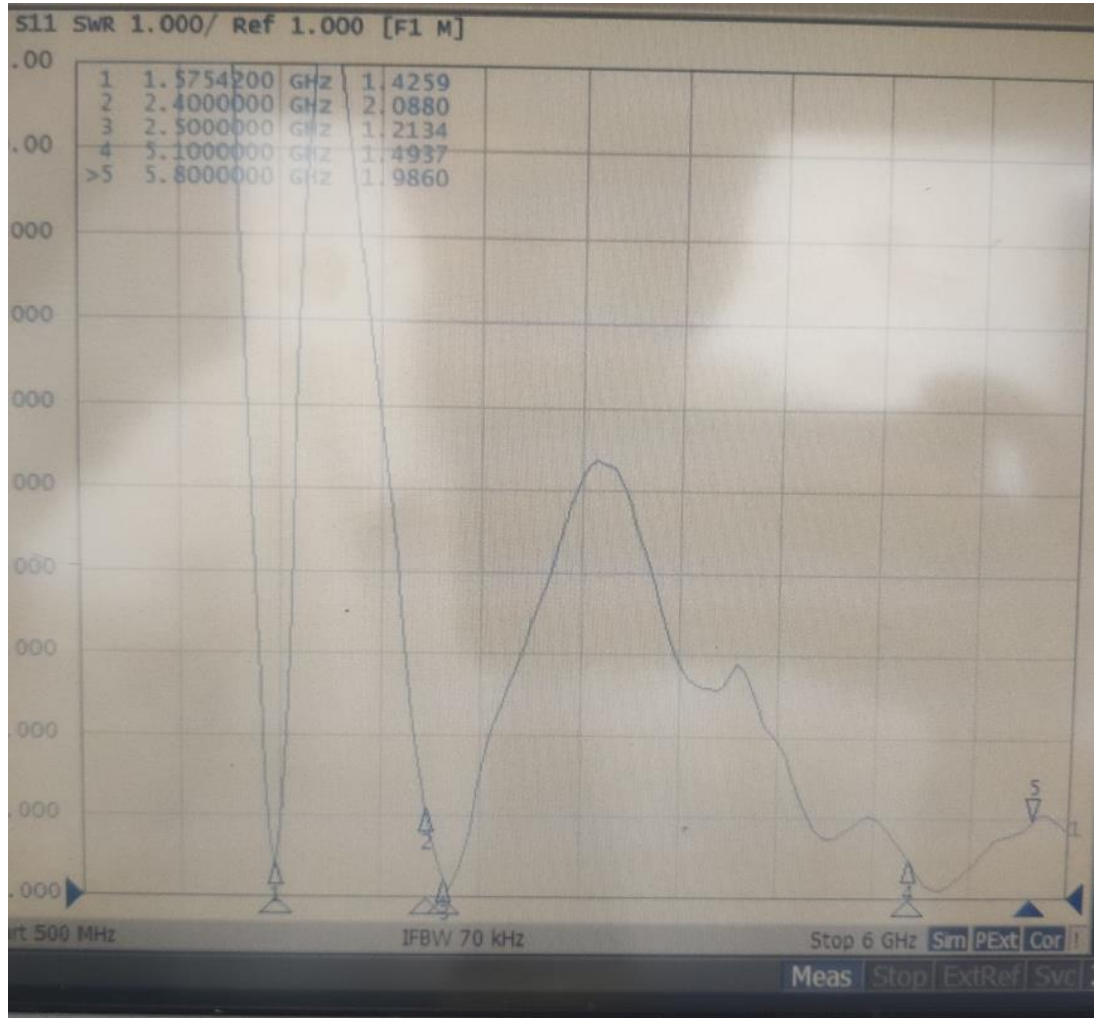
The diversity antenna has no passive parameters

| Passive Test | | Passive Test | |
|---------------|--------------|---------------|--------------|
| Freq | Effi | Freq | Effi |
| (MHz) | (%) | (MHz) | (%) |
| 1710.0 | 26.9% | 2230.0 | 28.0% |
| 1750.0 | 27.5% | 2270.0 | 27.2% |
| 1790.0 | 28.2% | 2310.0 | 26.4% |
| 1830.0 | 28.8% | 2350.0 | 25.8% |
| 1870.0 | 29.6% | 2390.0 | 26.5% |
| 1910.0 | 30.1% | 2430.0 | 27.0% |
| 1950.0 | 30.8% | 2470.0 | 28.0% |
| 1990.0 | 31.4% | 2510.0 | 28.6% |
| 2030.0 | 30.9% | 2550.0 | 29.1% |
| 2070.0 | 30.3% | 2590.0 | 29.8% |
| 2110.0 | 29.7% | 2630.0 | 29.4% |
| 2150.0 | 29.0% | 2670.0 | 28.7% |
| 2190.0 | 28.5% | 2690.0 | 28.2% |



Four-in-one antenna has no passive parameters

| Passive Test | | Passive Test | |
|--------------|-------|--------------|-------|
| Freq | Effi | Freq | Effi |
| (MHz) | (%) | (MHz) | (%) |
| 1600.0 | 36.2% | 5100.0 | 43.5% |
| 1650.0 | 36.9% | 5150.0 | 44.0% |
| 1700.0 | 37.5% | 5200.0 | 44.6% |
| 1750.0 | 38.7% | 5250.0 | 45.2% |
| 1800.0 | 37.9% | 5300.0 | 45.8% |
| | | 5350.0 | 46.3% |
| | | 5400.0 | 46.9% |
| 2400 | 40.7% | 5450.0 | 46.2% |
| 2420 | 41.6% | 5500.0 | 45.7% |
| 2440 | 42.5% | 5550.0 | 45.0% |
| 2460 | 43.2% | 5600.0 | 44.4% |
| 2480 | 42.6% | 5650.0 | 44.0% |
| 2500 | 41.8% | 5700.0 | 43.8% |
| | | 5750.0 | 43.3% |
| | | 5800.0 | 42.8% |



The GPS test asterisk Fig

1. At our office downstairs
Empty wide area,
Test on the lawn



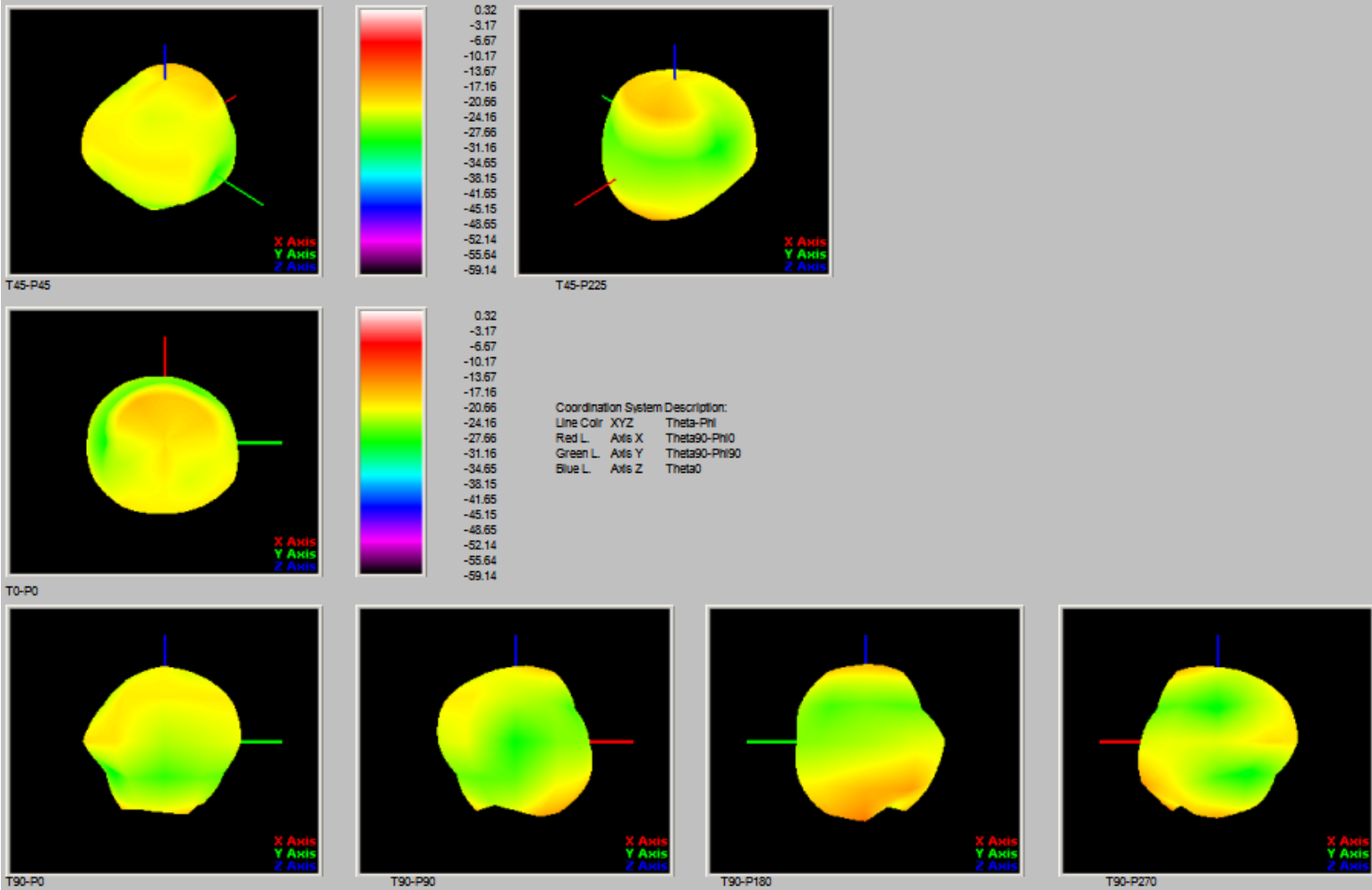


antenna gain

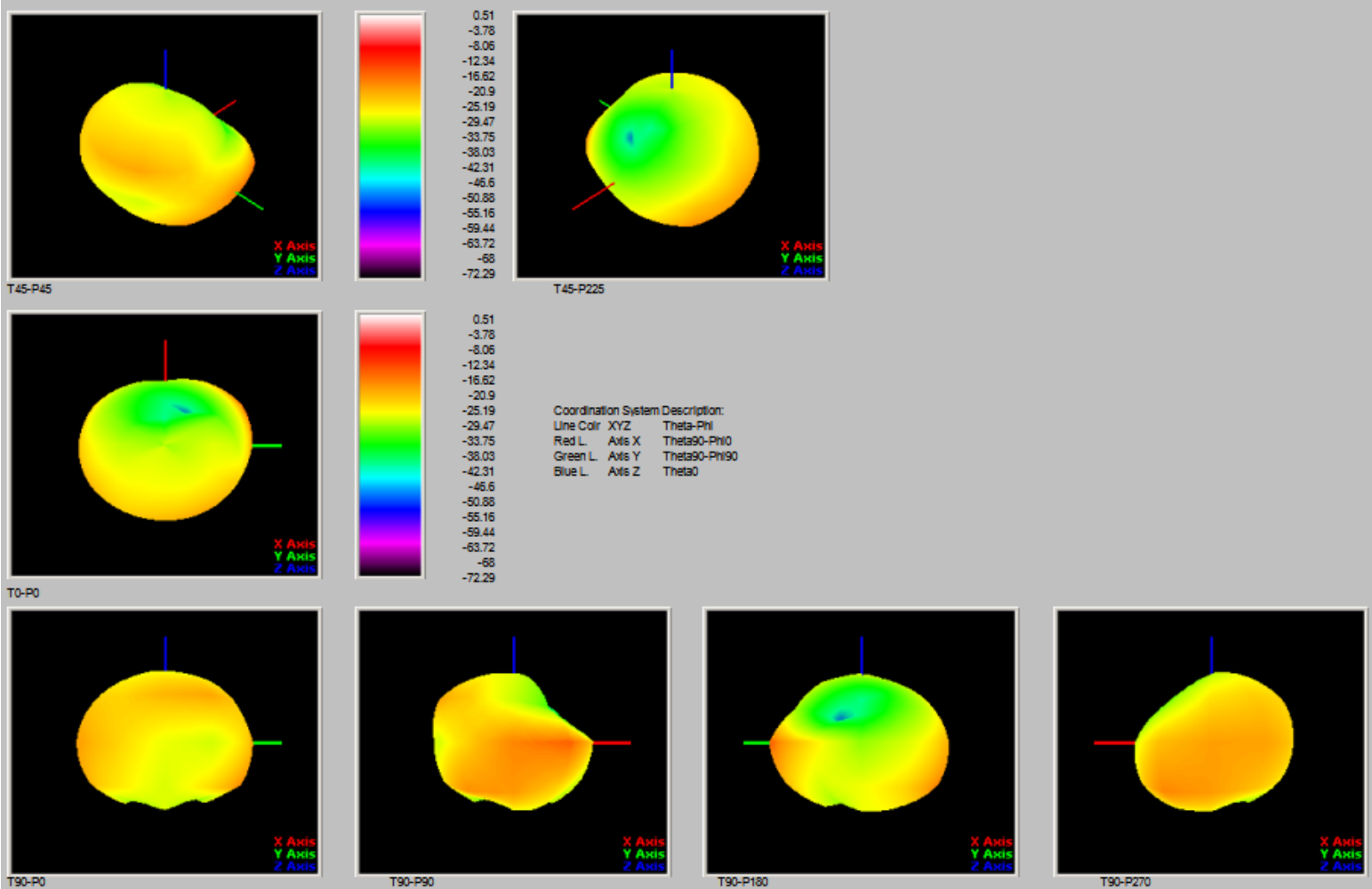
| Band | Gain (MAX) |
|-----------------|-------------|
| GSM850 | 0.57 |
| EGSM900 | 0.60 |
| DCS1800 | 1.06 |
| PCS1900 | 1.10 |
| WCDMA B1 | 1.14 |
| WCDMA B2 | 1.10 |
| WCDMA B5 | 0.57 |
| WCDMA B8 | 0.60 |
| | |
| Band1 | 1.14 |
| Band3 | 1.06 |
| Band5 | 0.57 |
| Band7 | 1.21 |
| Band8 | 0.60 |
| Band20 | 0.57 |
| Band28A | 0.53 |

| Band | Gain (MAX) |
|-----------------|-------------|
| Band28B | 0.53 |
| Band38 | 1.21 |
| Band40 | 1.19 |
| Band41 | 1.21 |
| | |
| GPS | 1.00 |
| 2.4GWiFi | 1.19 |
| BT | 1.19 |
| 5.8GWiFi | 1.32 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

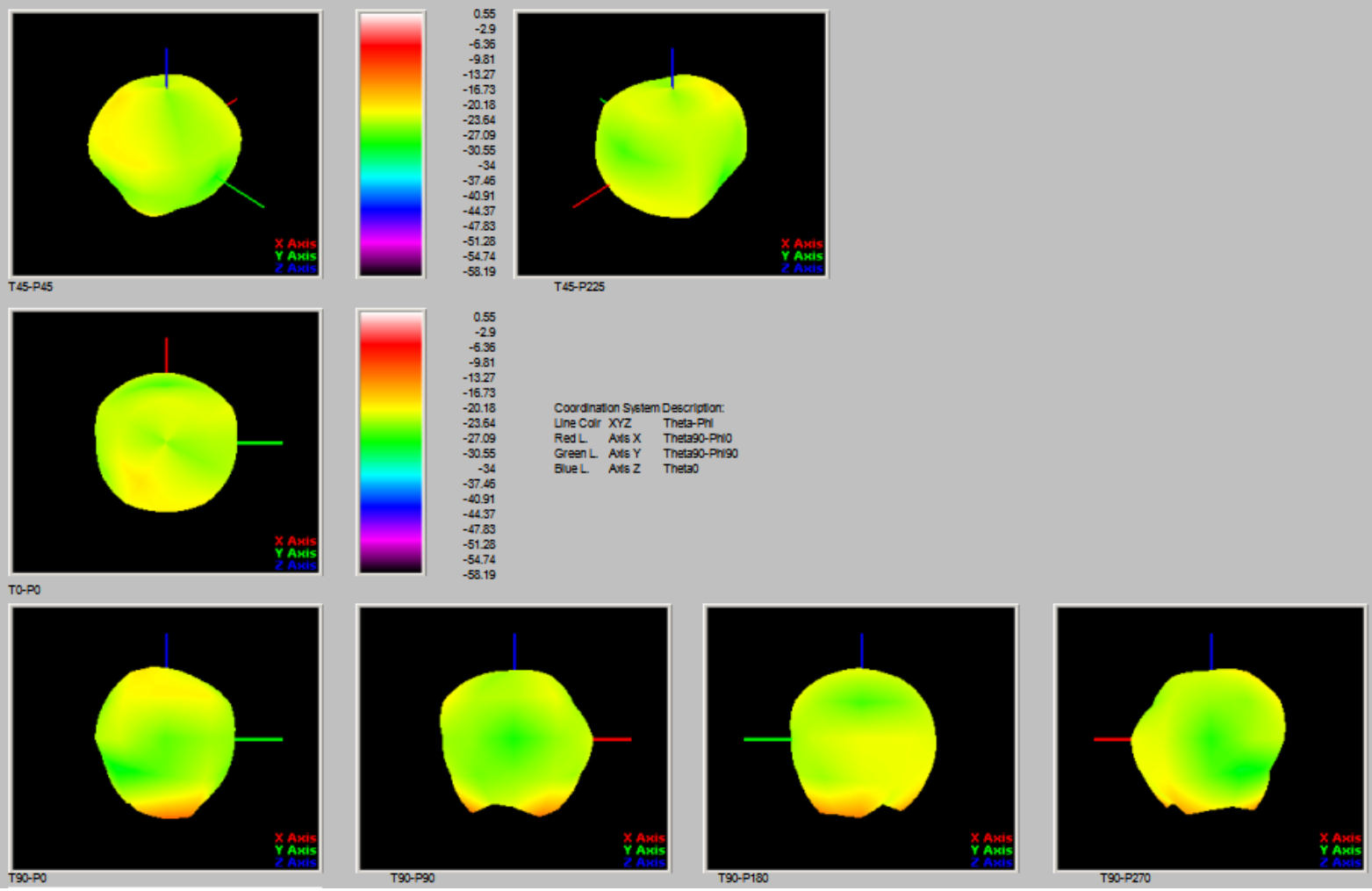
Primary antenna passive parameters-
Apple diagram-700 MHz-824 MHz



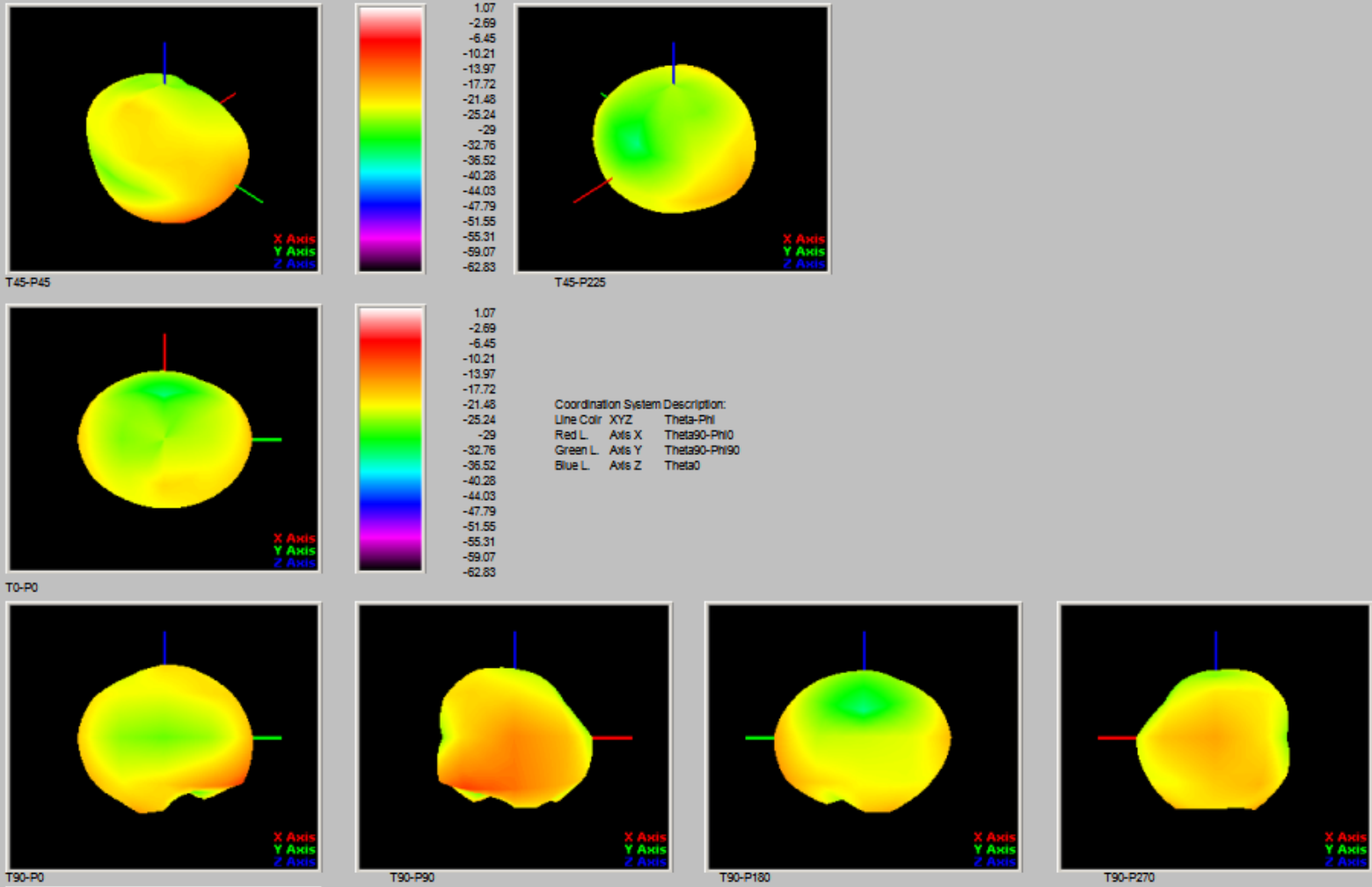
Primary antenna passive parameters-
Apple diagram-824 MHz-880 MHz



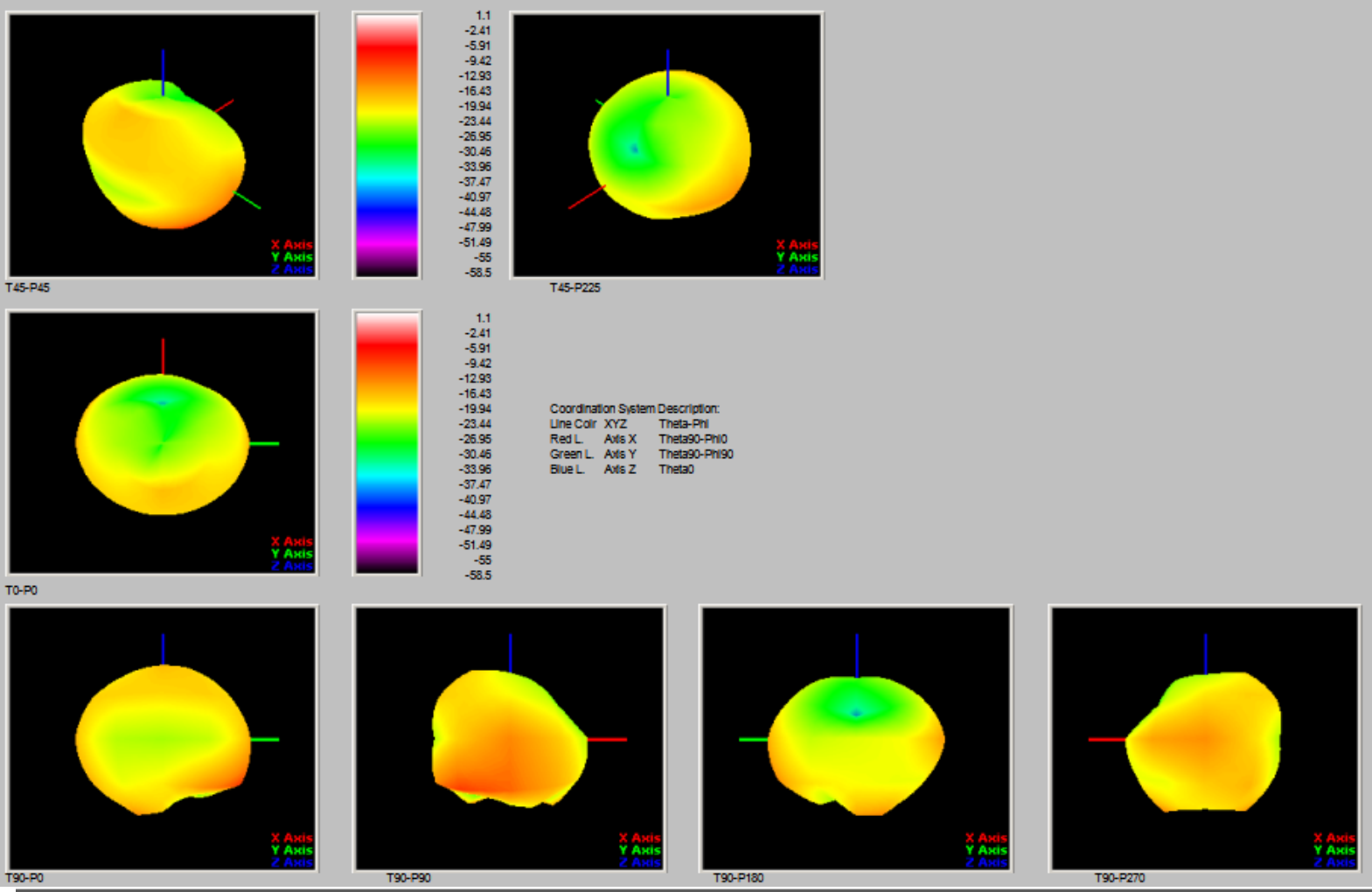
Primary antenna passive parameters-
Apple diagram-880 MHz-960 MHz



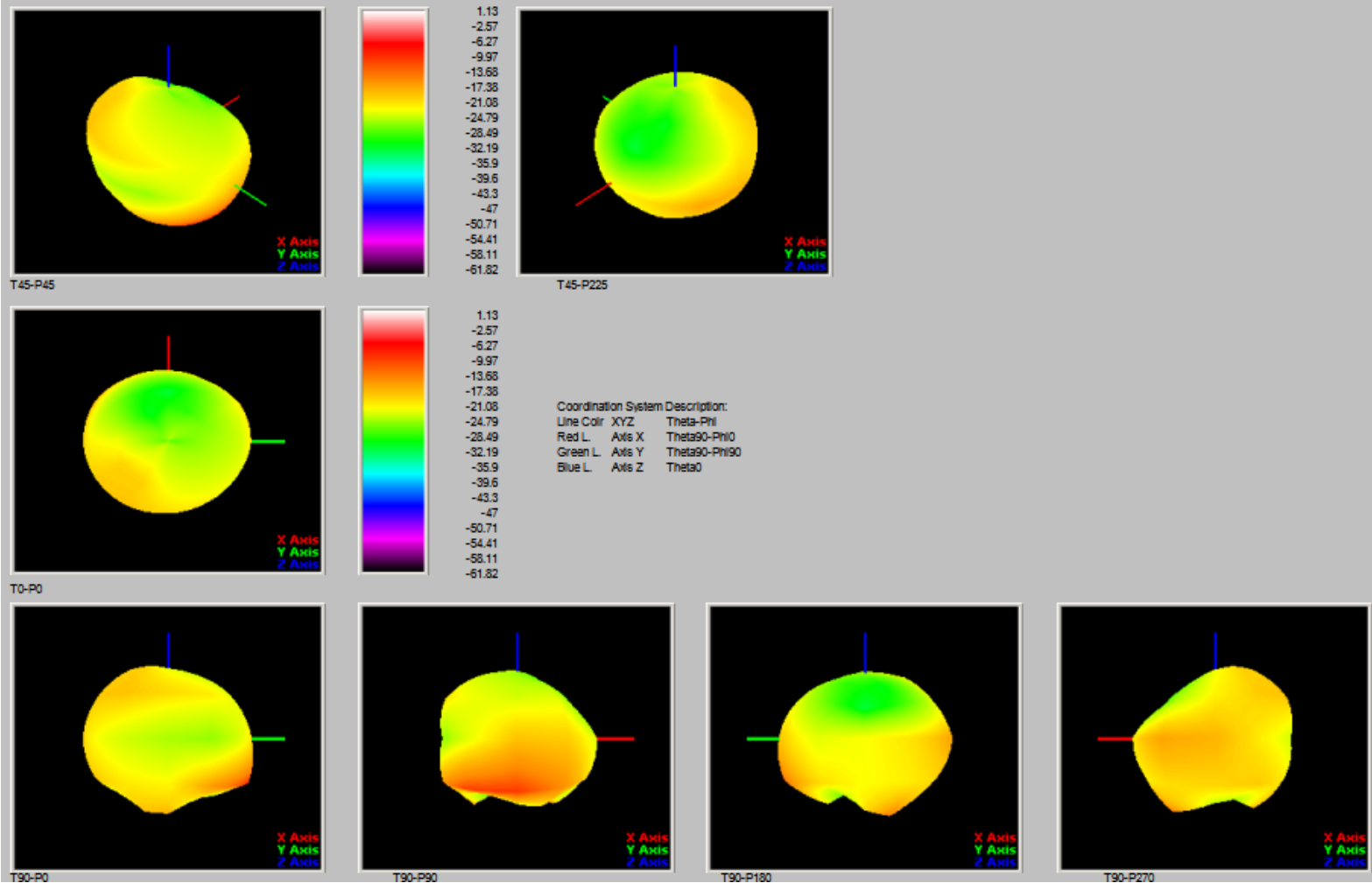
Primary antenna passive parameters-Apple
diagram-1710 MHz-1880 MHz



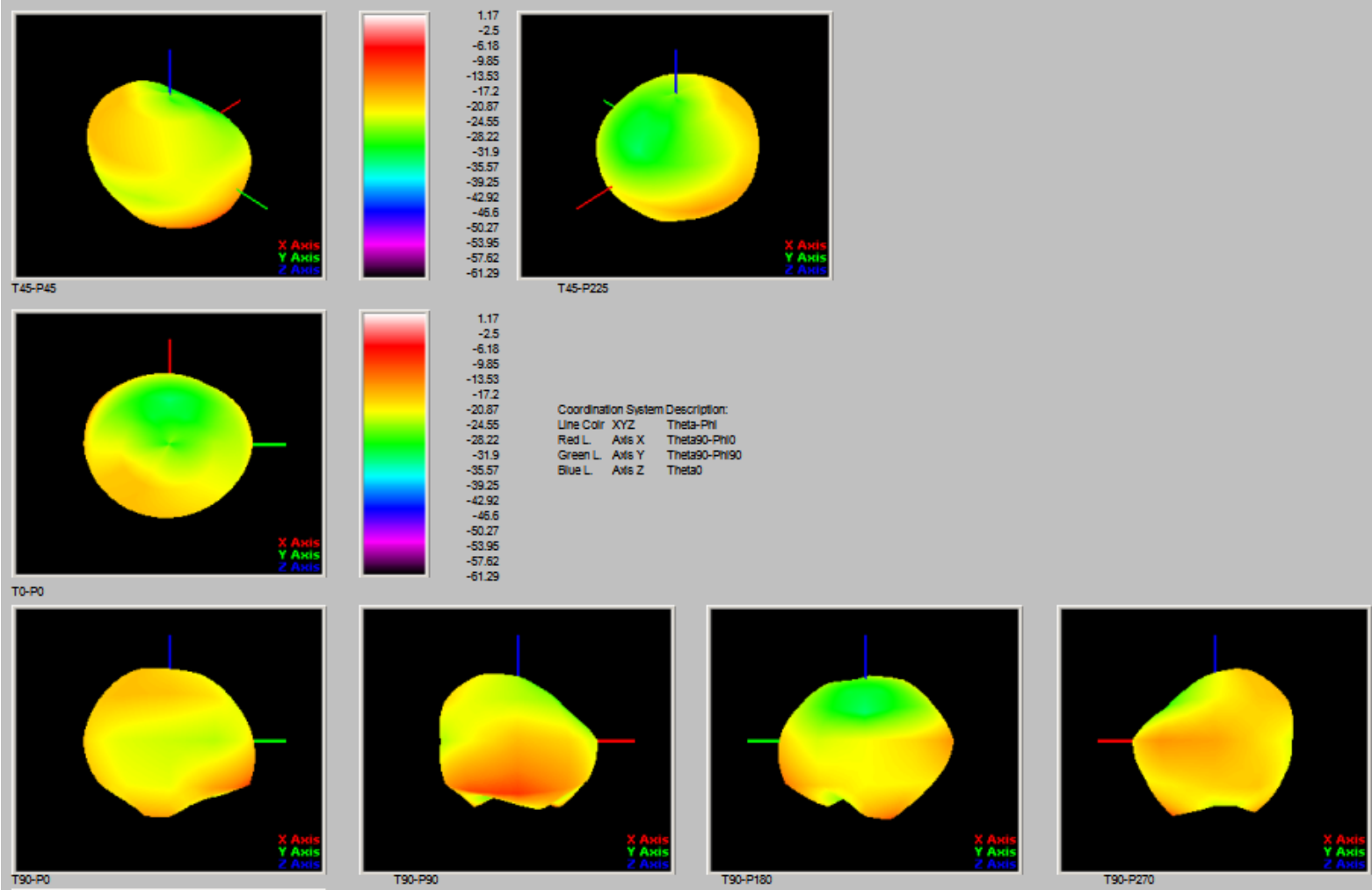
Primary antenna passive parameters-Apple
diagram-1880 MHz-1990 MHz



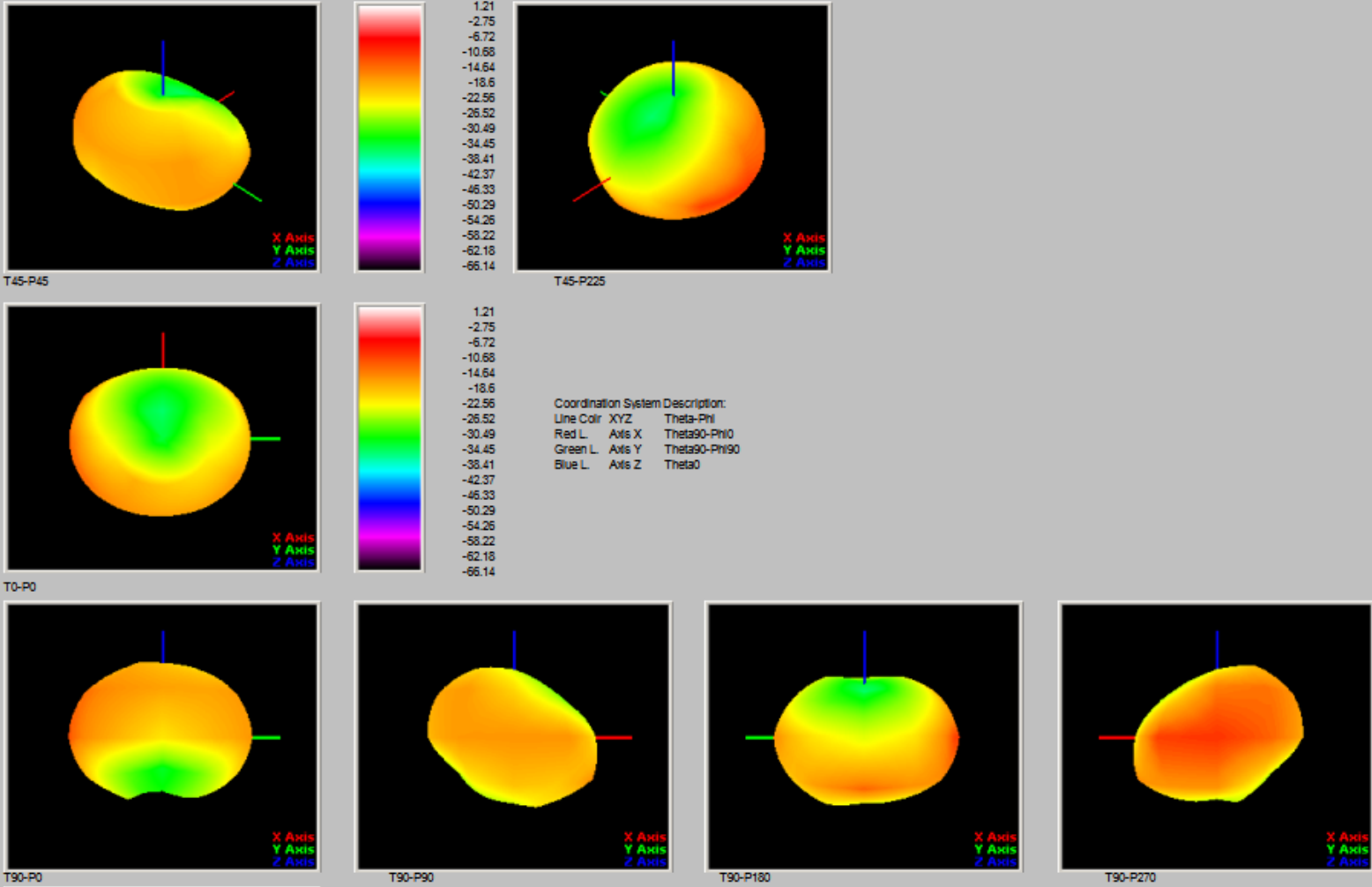
Primary antenna passive parameters-Apple
diagram-1990 MHz-2170 MHz



Primary antenna passive parameters-Apple
diagram-2300 MHz-2400 MHz

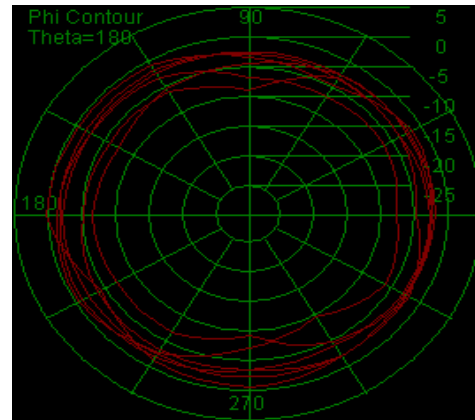
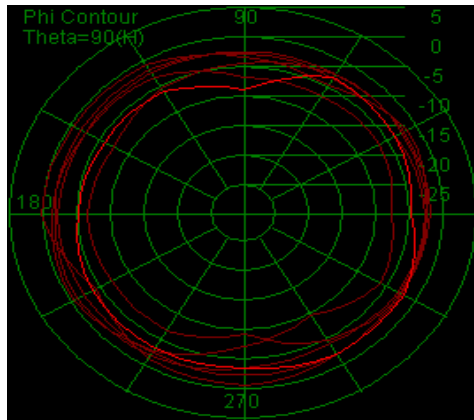
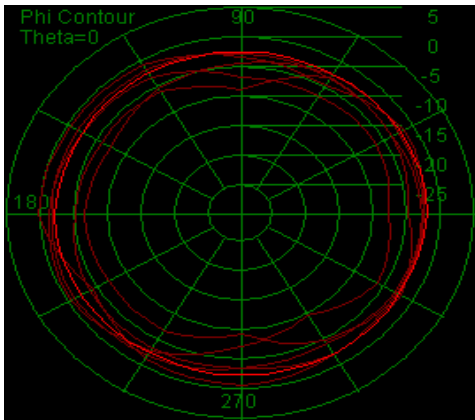


Primary antenna passive parameters-Apple
diagram-2500 MHz-2700 MHz

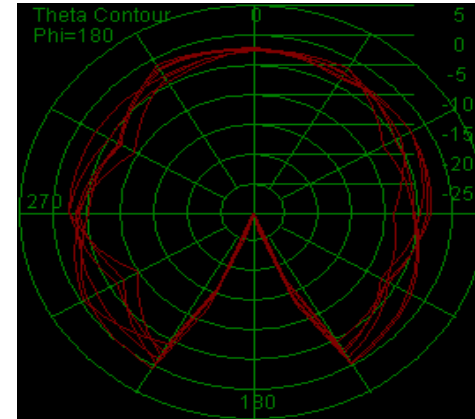
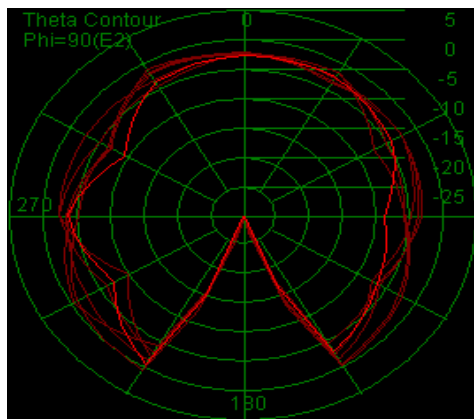
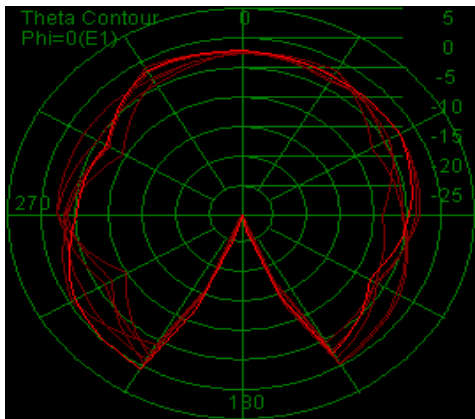


Primary antenna passive parameter-flat
plan-700 MHz-824 MHz

Horizontal

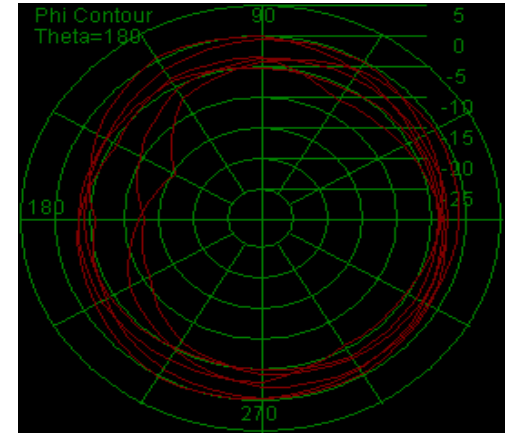
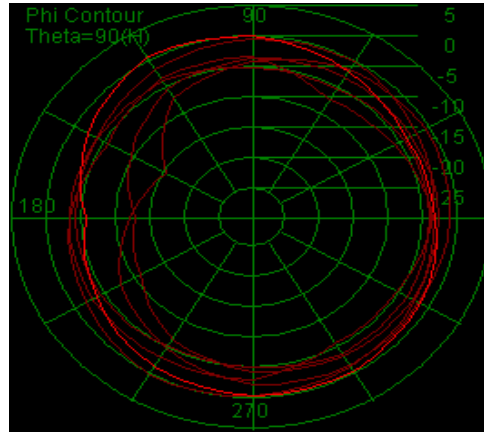
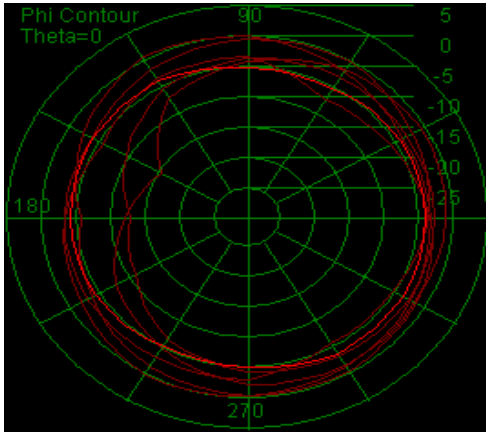


Vertical :

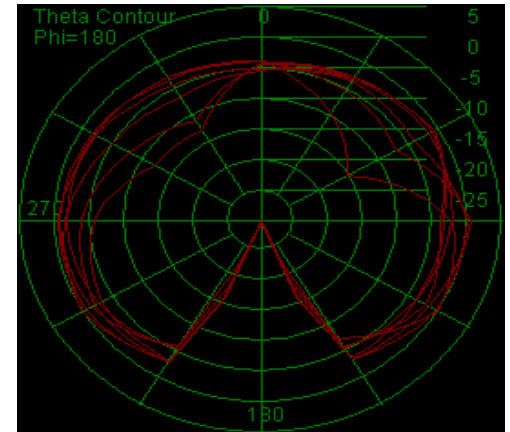
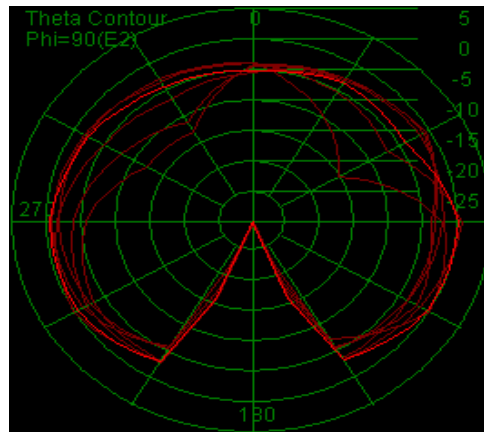
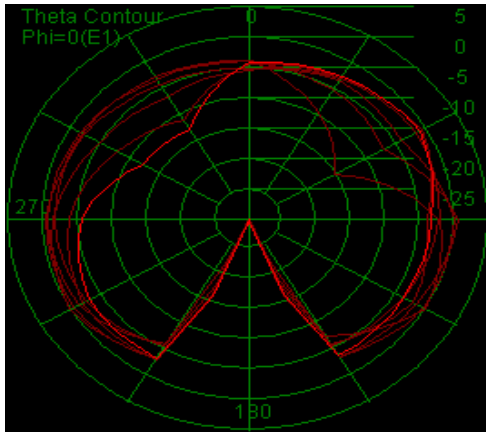


Main antenna passive parameters-flat plan-
824 MHz-880 MHz

Horizontal

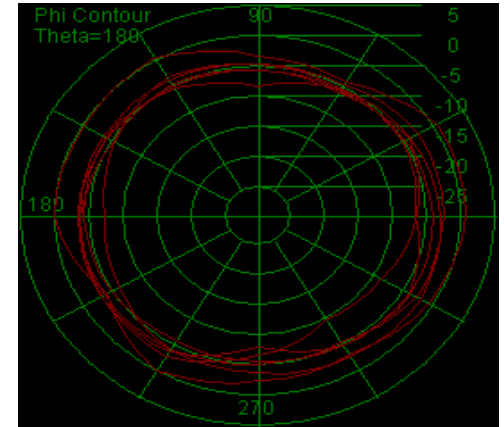
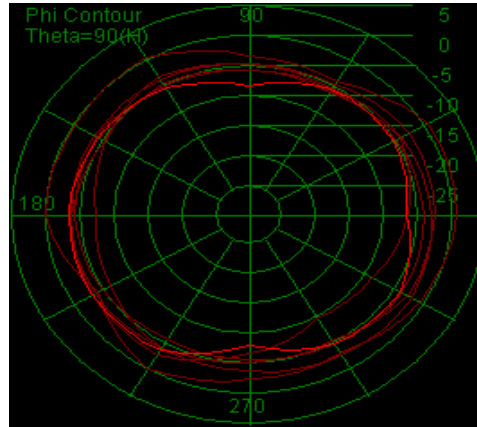
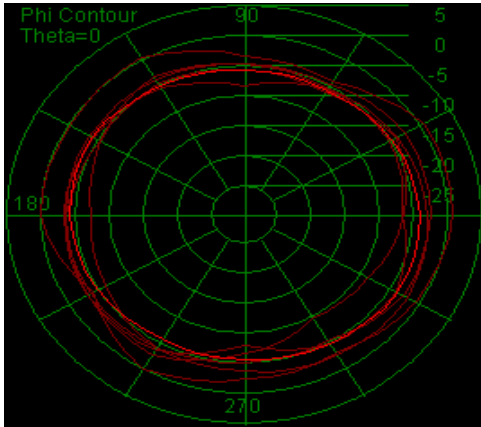


Vertical :

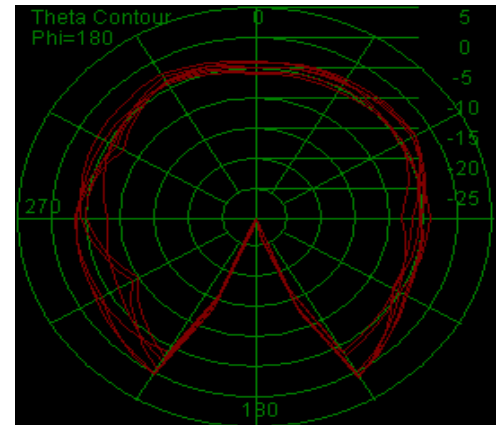
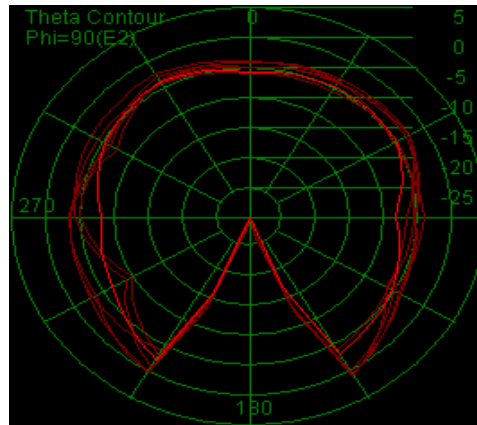
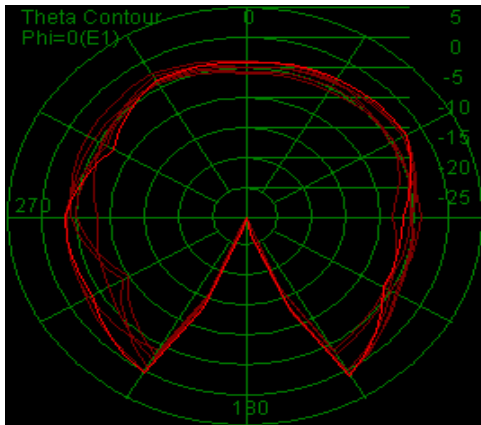


Primary antenna passive parameters-flat
plan-880 MHz-960 MHz

Horizontal

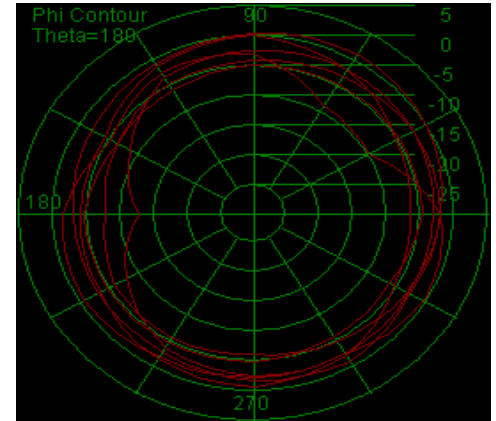
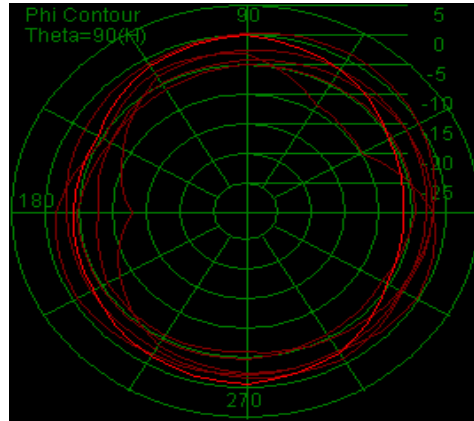
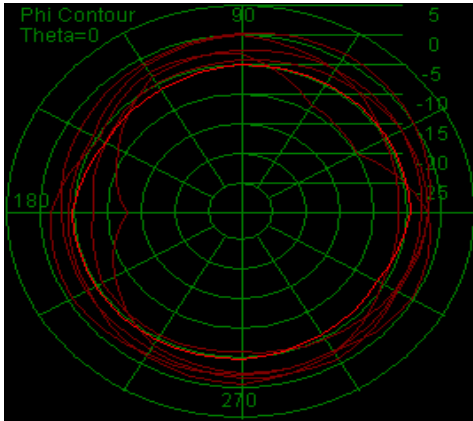


Vertical :

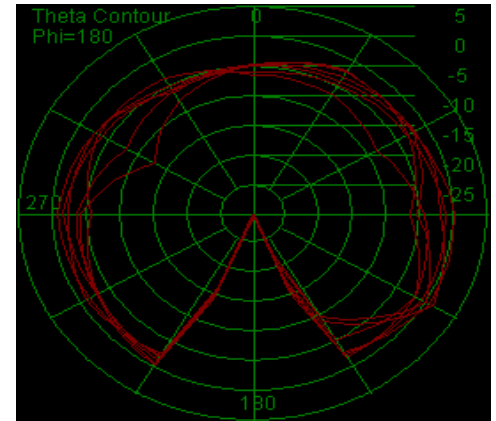
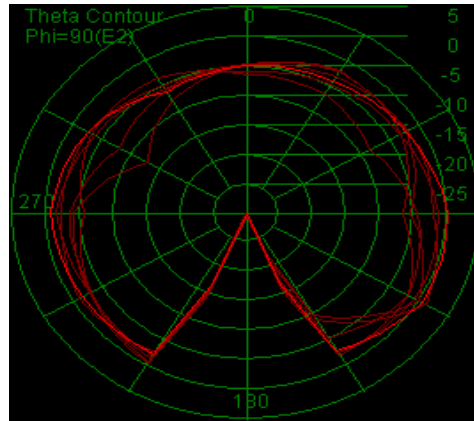
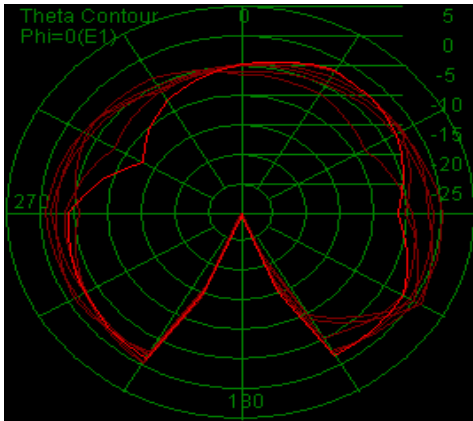


Main antenna passive parameter-flat plan-
1710 MHz-1880 MHz

Horizontal

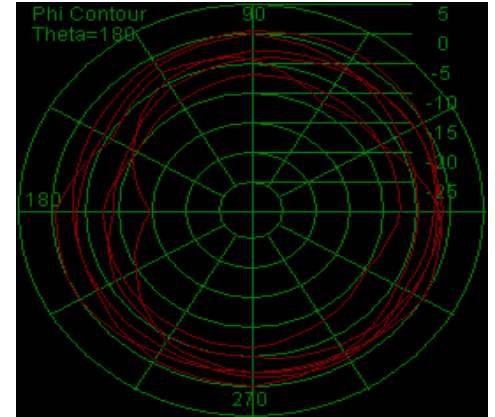
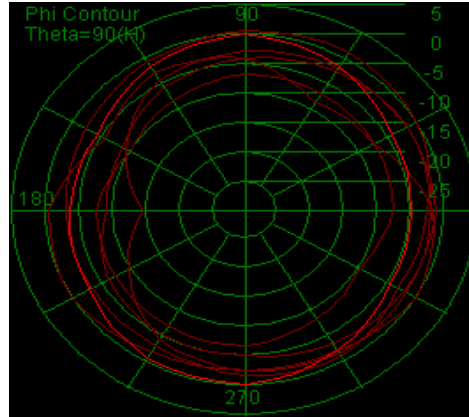
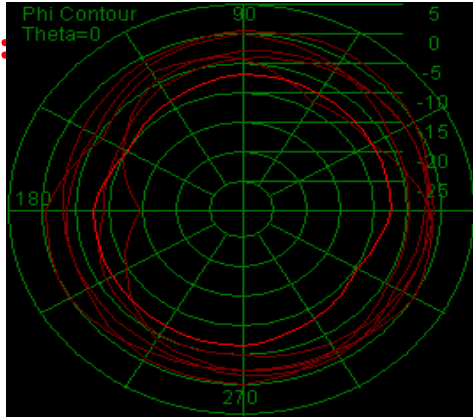


Vertical :

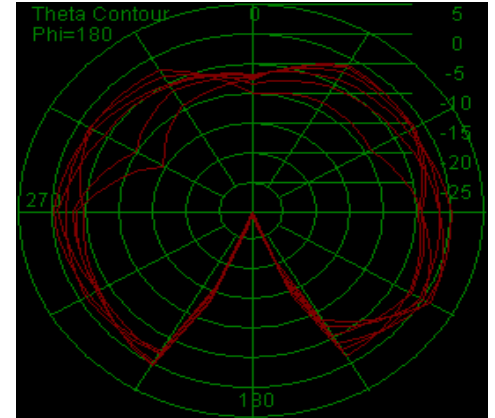
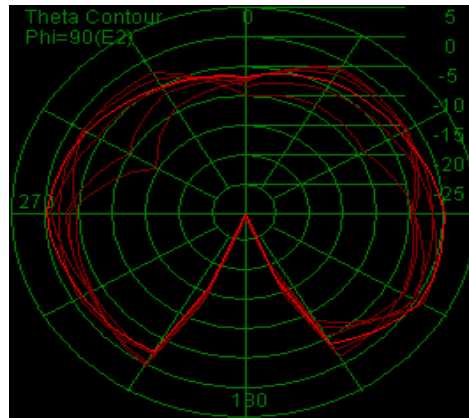
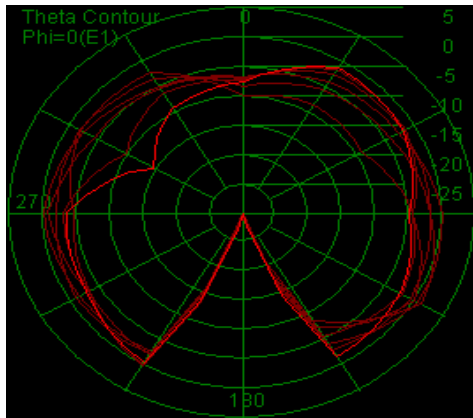


Main antenna-plane plan-1880 MHz-1990 MHz

Horizontal :

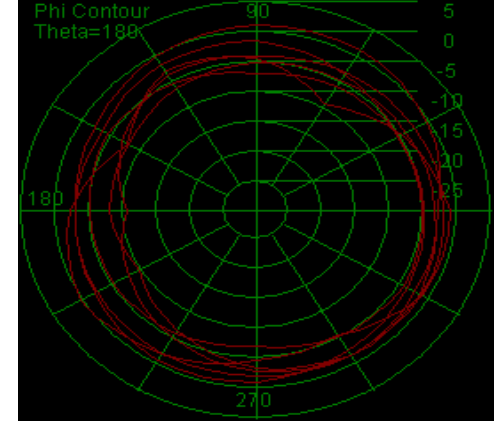
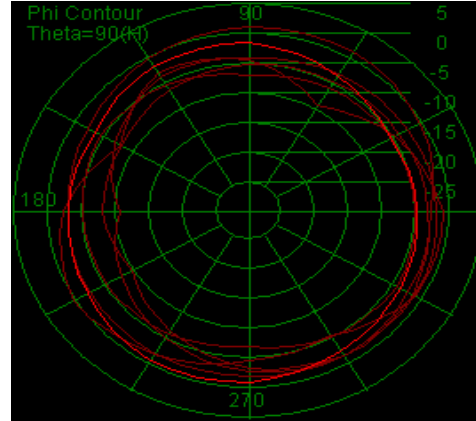
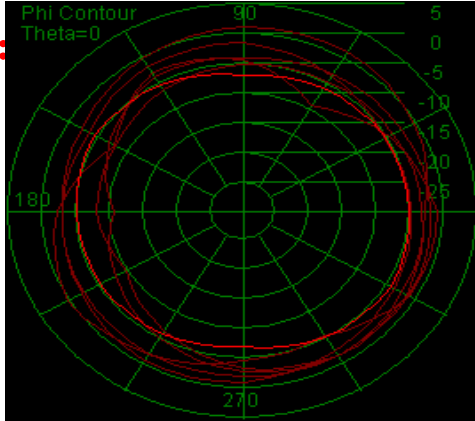


Vertical :

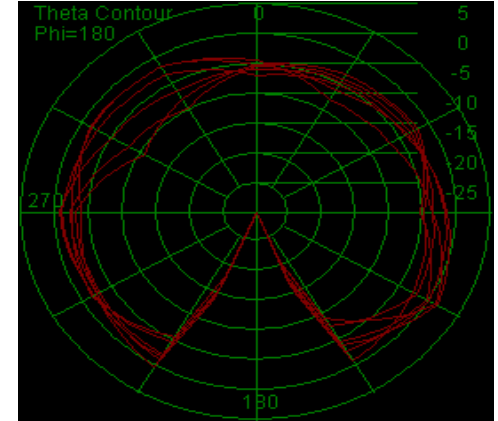
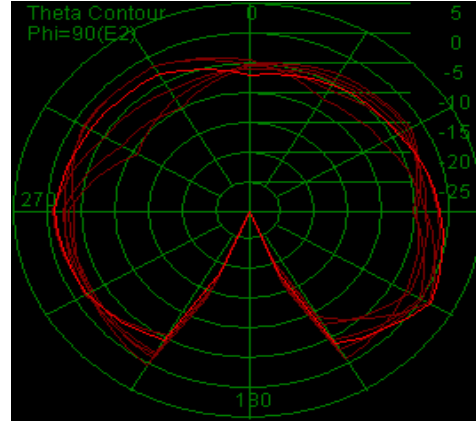
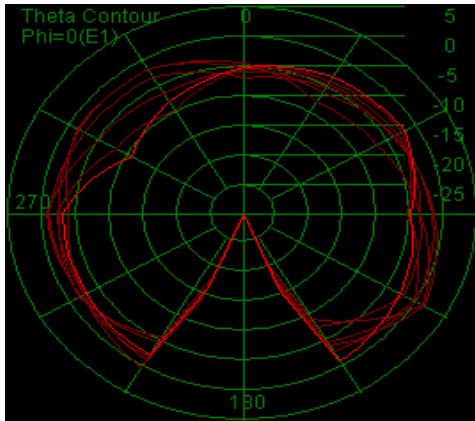


Main antenna passive parameter-plane plan-
1990 MHz-2170 MHz

Horizontal :

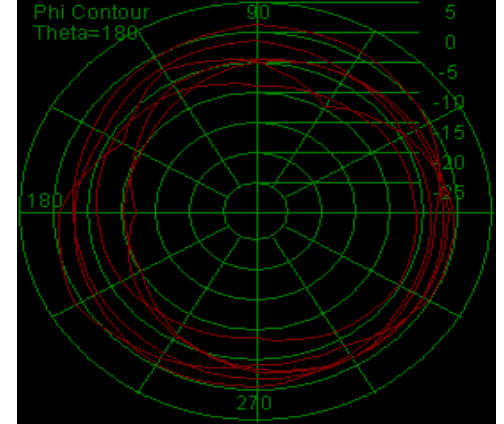
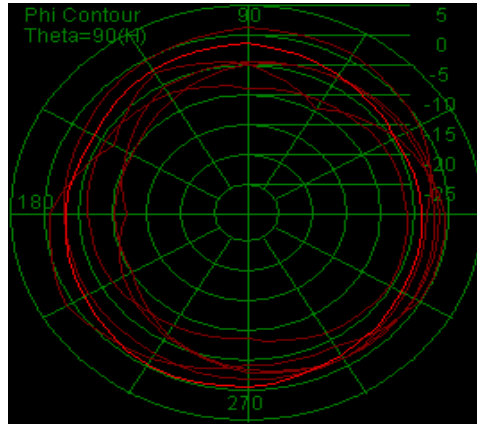
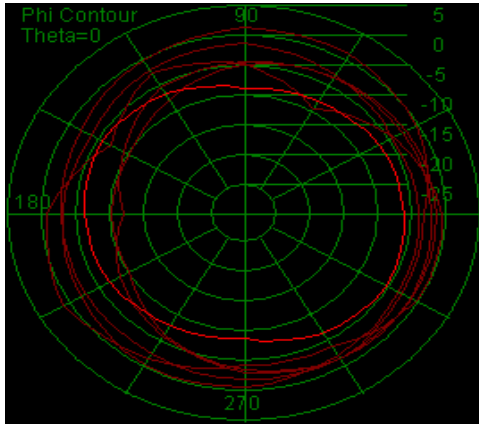


Vertical :

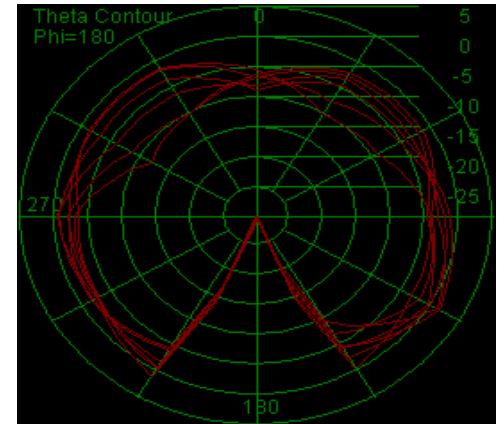
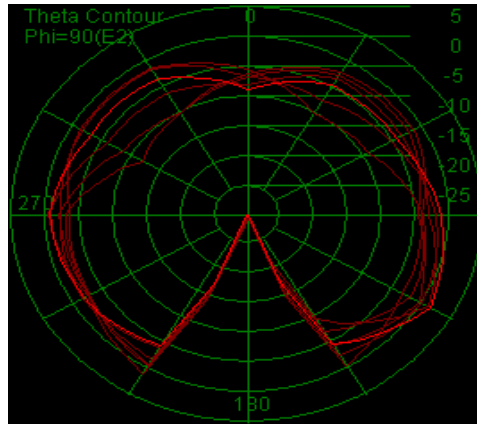
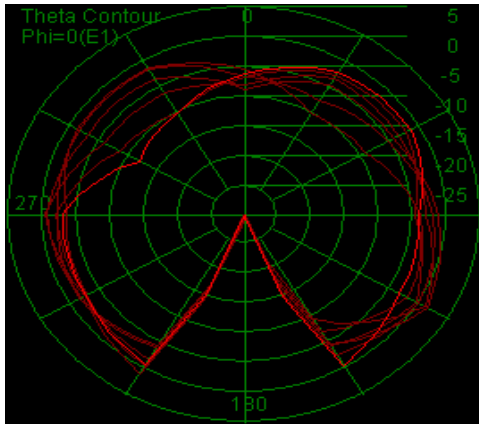


Main antenna-plane plan-2300 MHz-2400 MHz

Horizontal

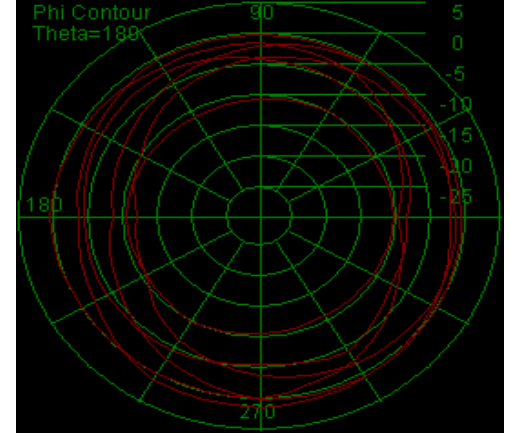
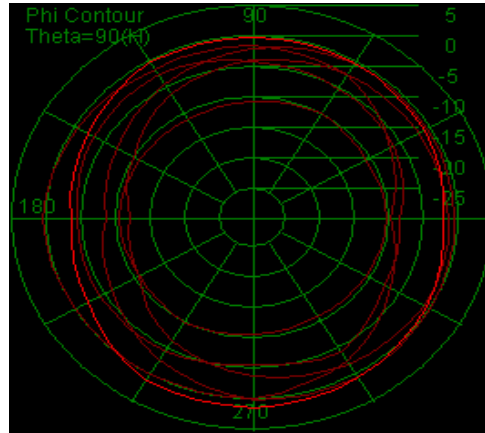
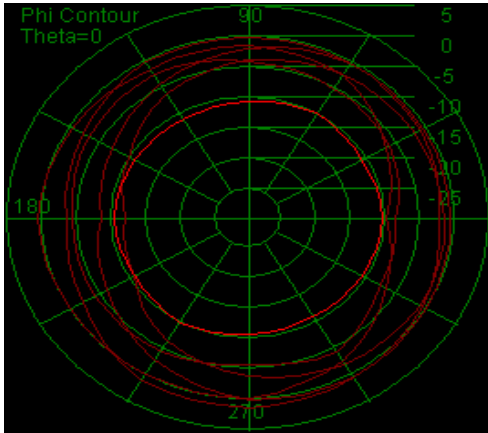


Vertical :

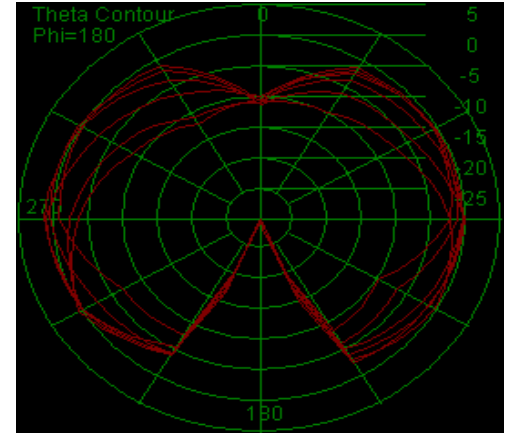
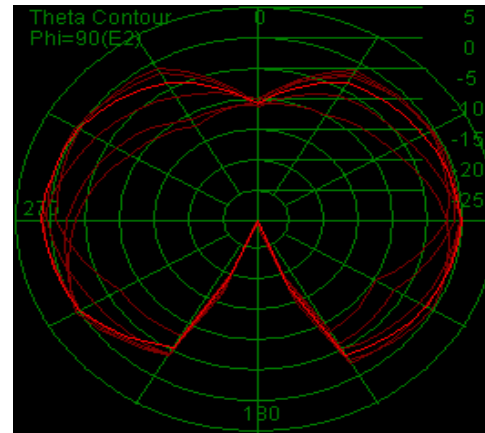
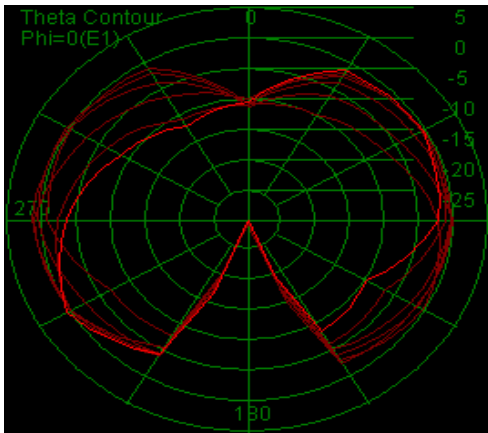


Main antenna-plane plan-2500 MHz-2700 MHz

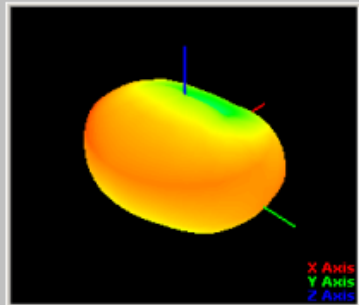
Horizontal



Vertical :



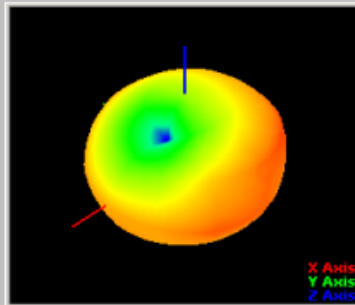
GPS passive parameters—Apple diagram—1561MHz—
1575.42MHz



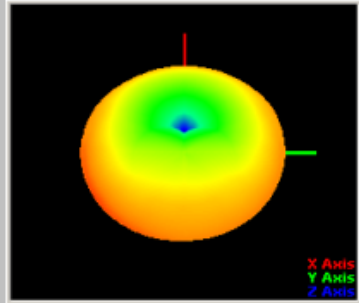
T45-P45



1.02
-2.64
-6.3
-9.96
-13.61
-17.27
-20.93
-24.59
-28.25
-31.9
-35.56
-39.22
-42.88
-46.54
-50.2
-53.85
-57.51
-61.17



T45-P225

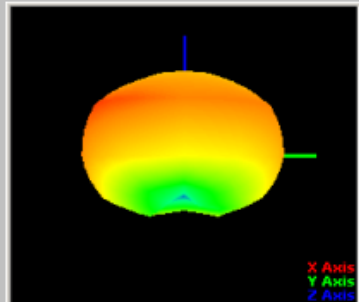


T0-P0

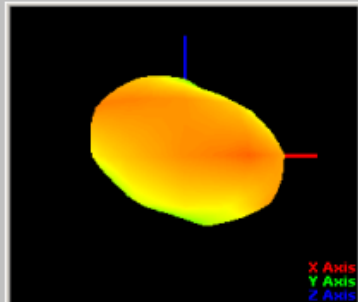


1.02
-2.64
-6.3
-9.96
-13.61
-17.27
-20.93
-24.59
-28.25
-31.9
-35.56
-39.22
-42.88
-46.54
-50.2
-53.85
-57.51
-61.17

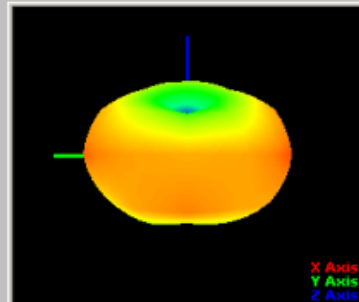
Coordination System Description:
Line Color XYZ Theta-Phi
Red L Axis X Theta90-Phi0
Green L Axis Y Theta90-Phi90
Blue L Axis Z Theta0



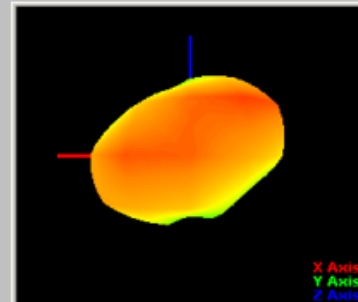
T90-P0



T90-P90

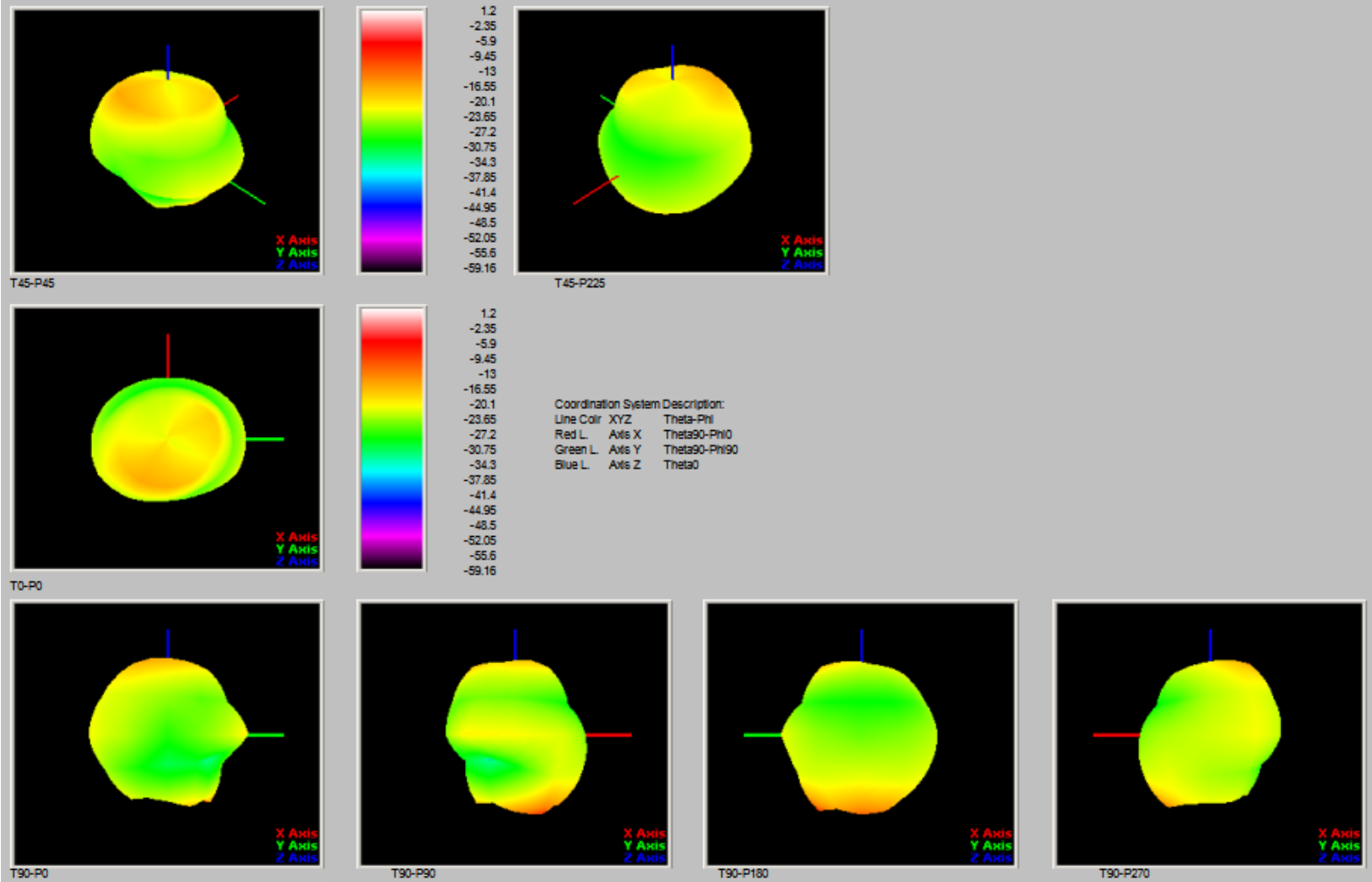


T90-P180

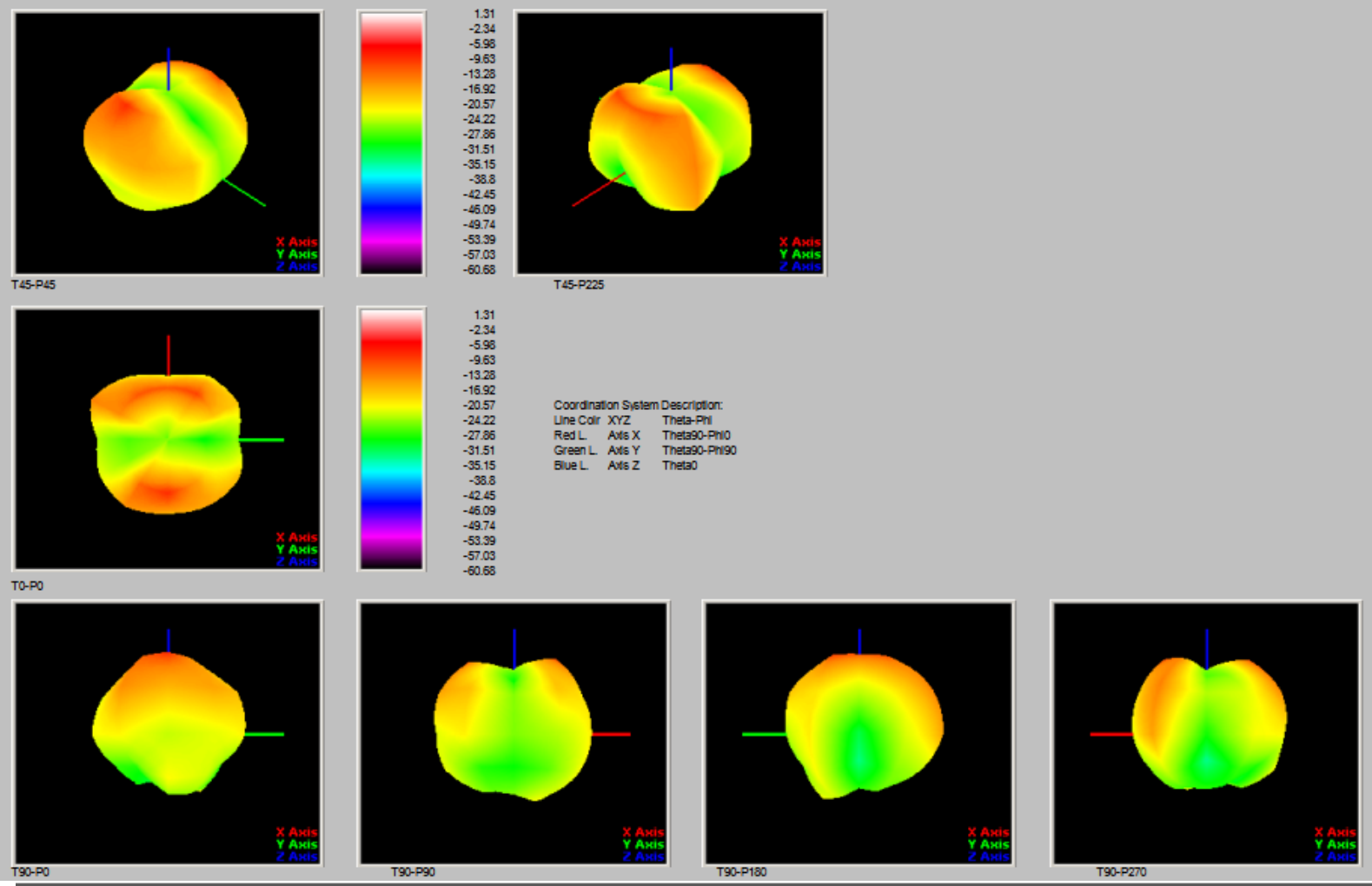


T90-P270

2.4GWiFi passive parameter-Apple diagram-2400 MHz-2500 MHz

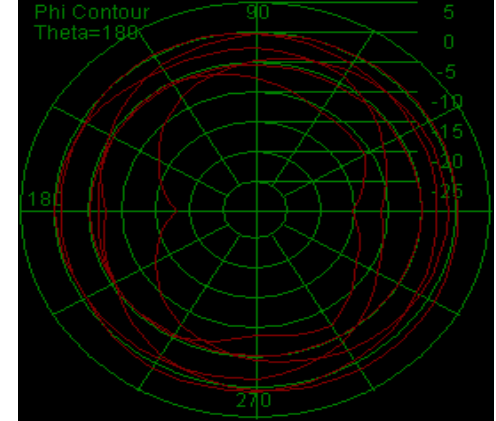
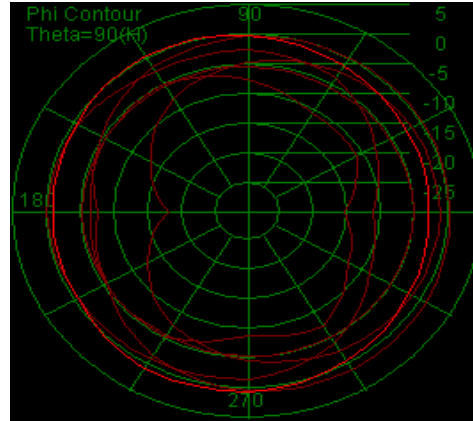
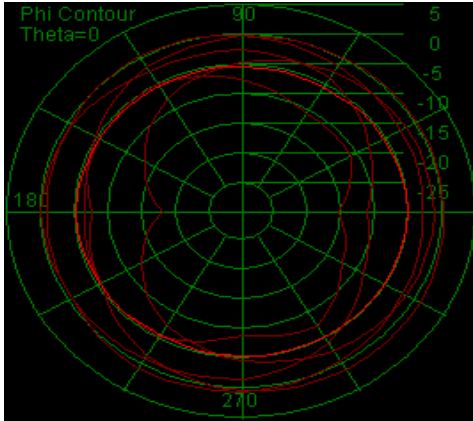


5.8WiFi passive parameters-Apple diagram-
5100 MHz-5800 MHz

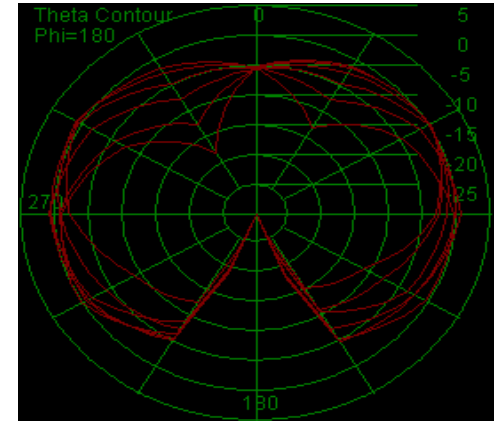
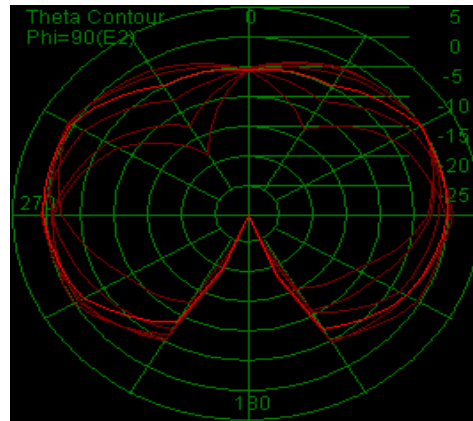
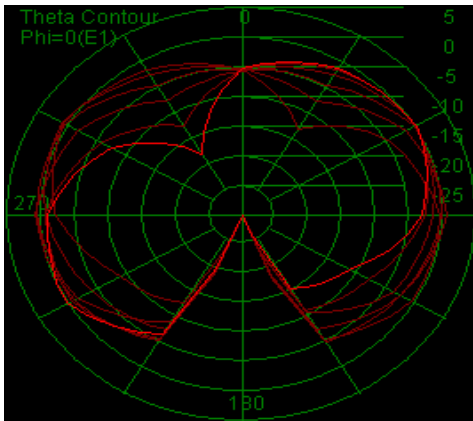


GPS passive parameter-planar map-1561MHz-
1575.42MHz

Horizontal

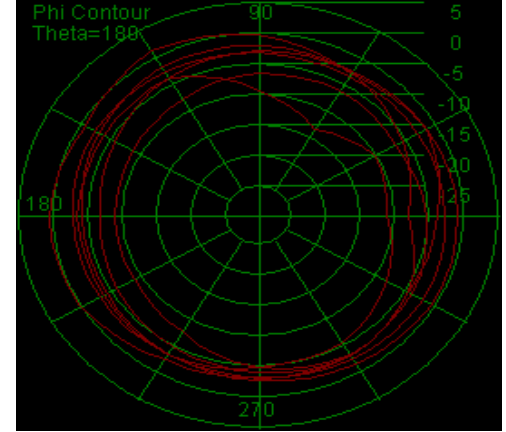
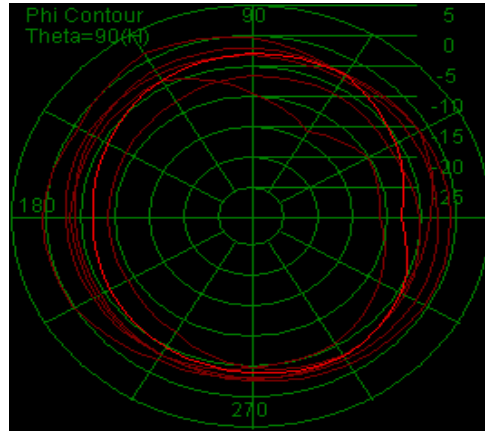
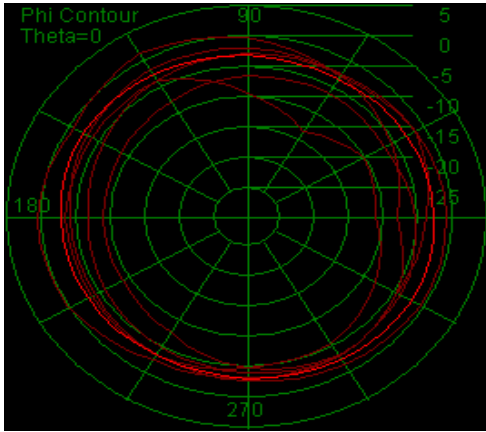


Vertical :

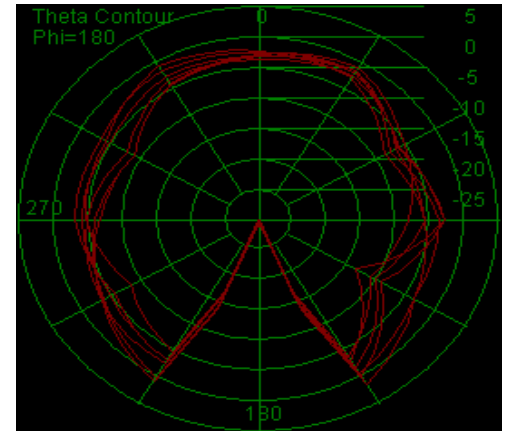
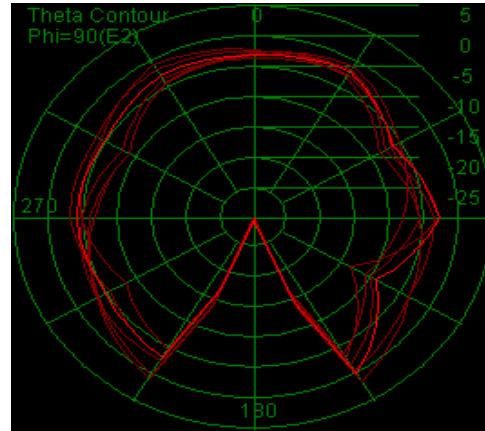
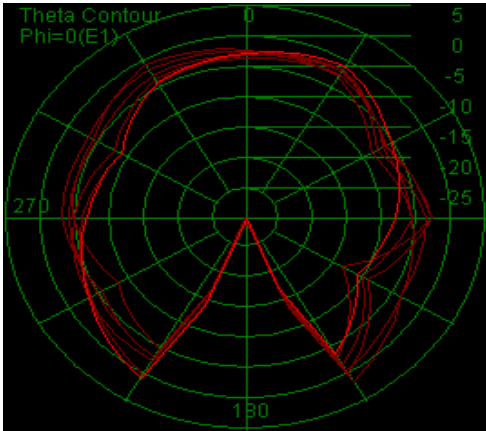


2. 4GWiFi passive parameters-flat plan-2400 MHz-2500 MHz

Horizontal

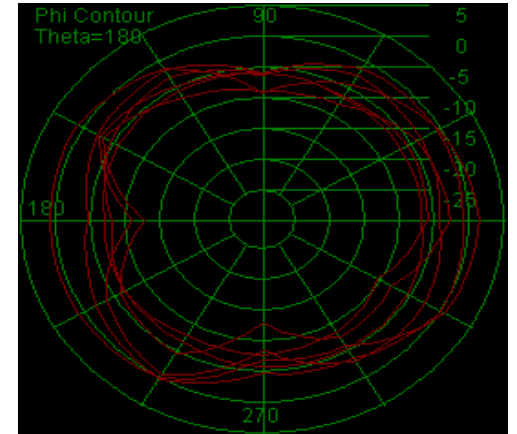
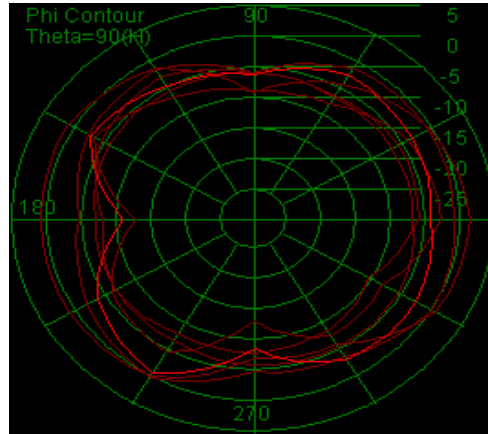
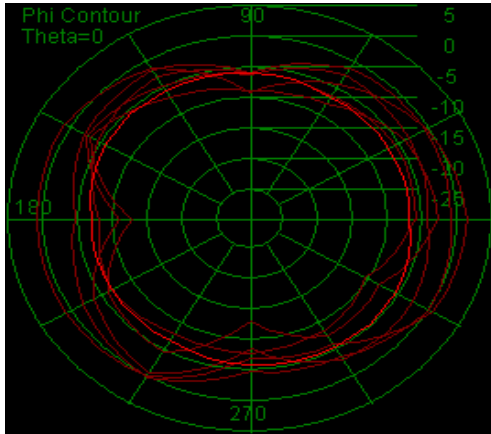


Vertical :

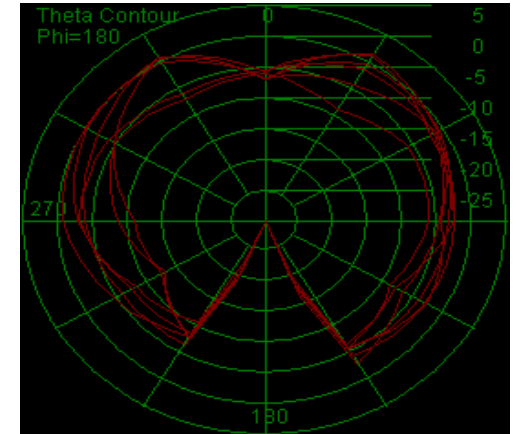
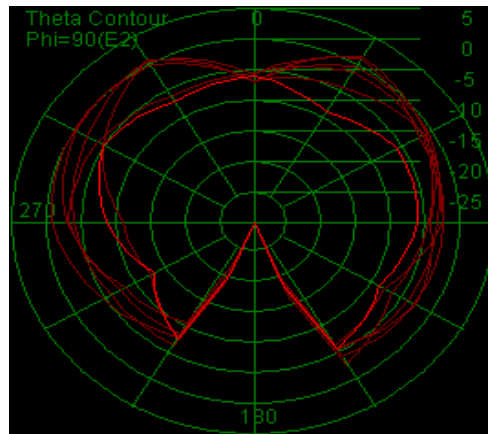
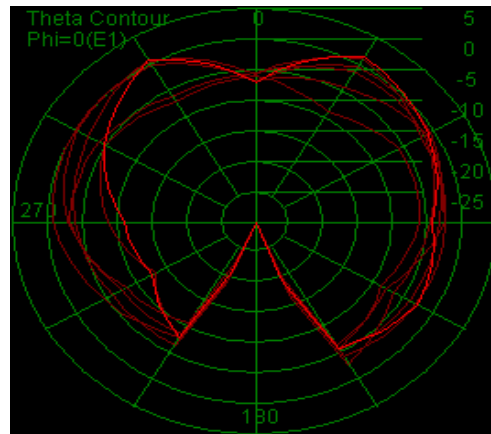


5.8GWiFi passive parameters-flat plan-5100 MHz-5800 MHz

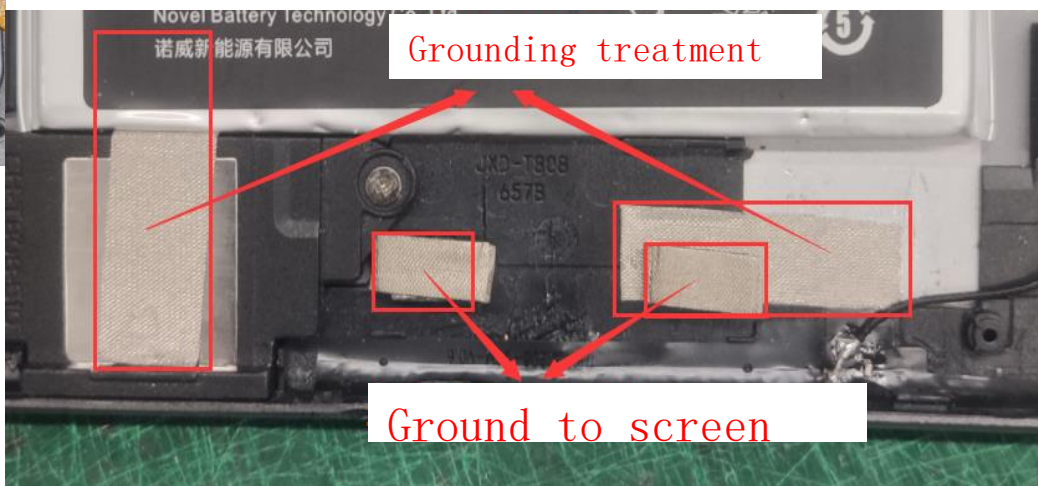
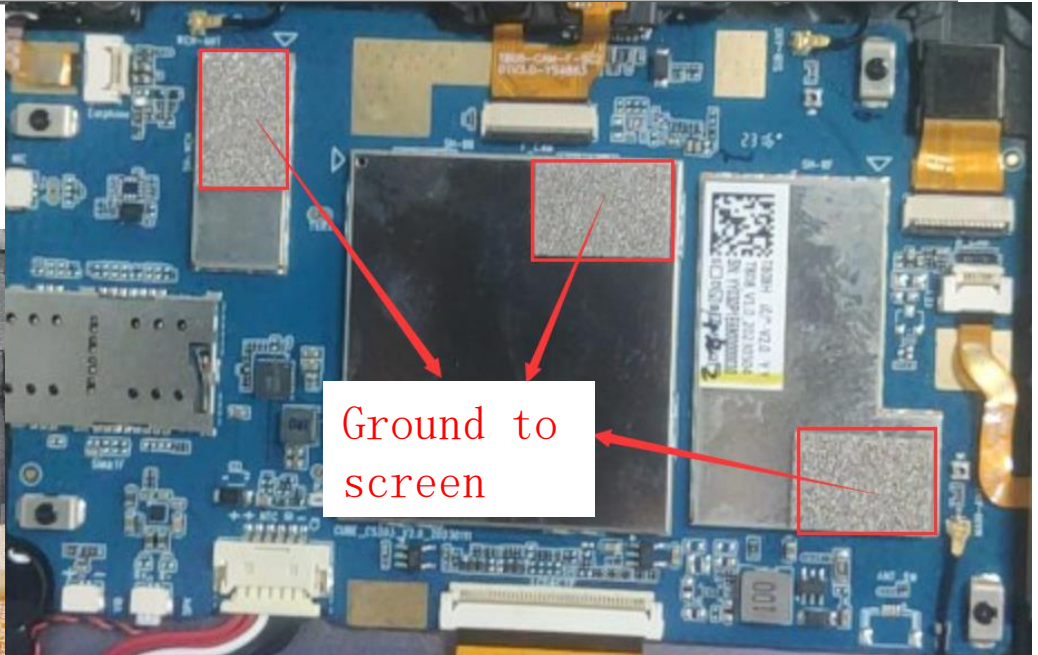
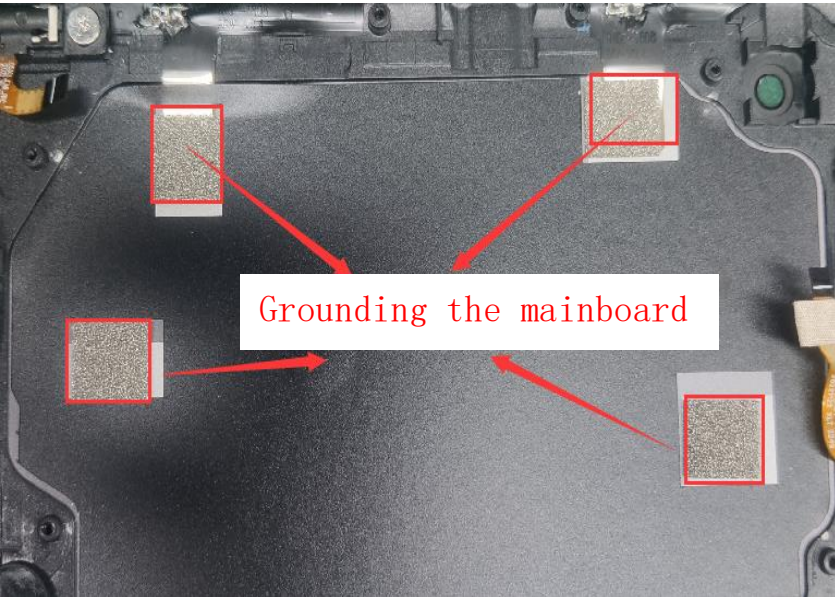
Horizontal



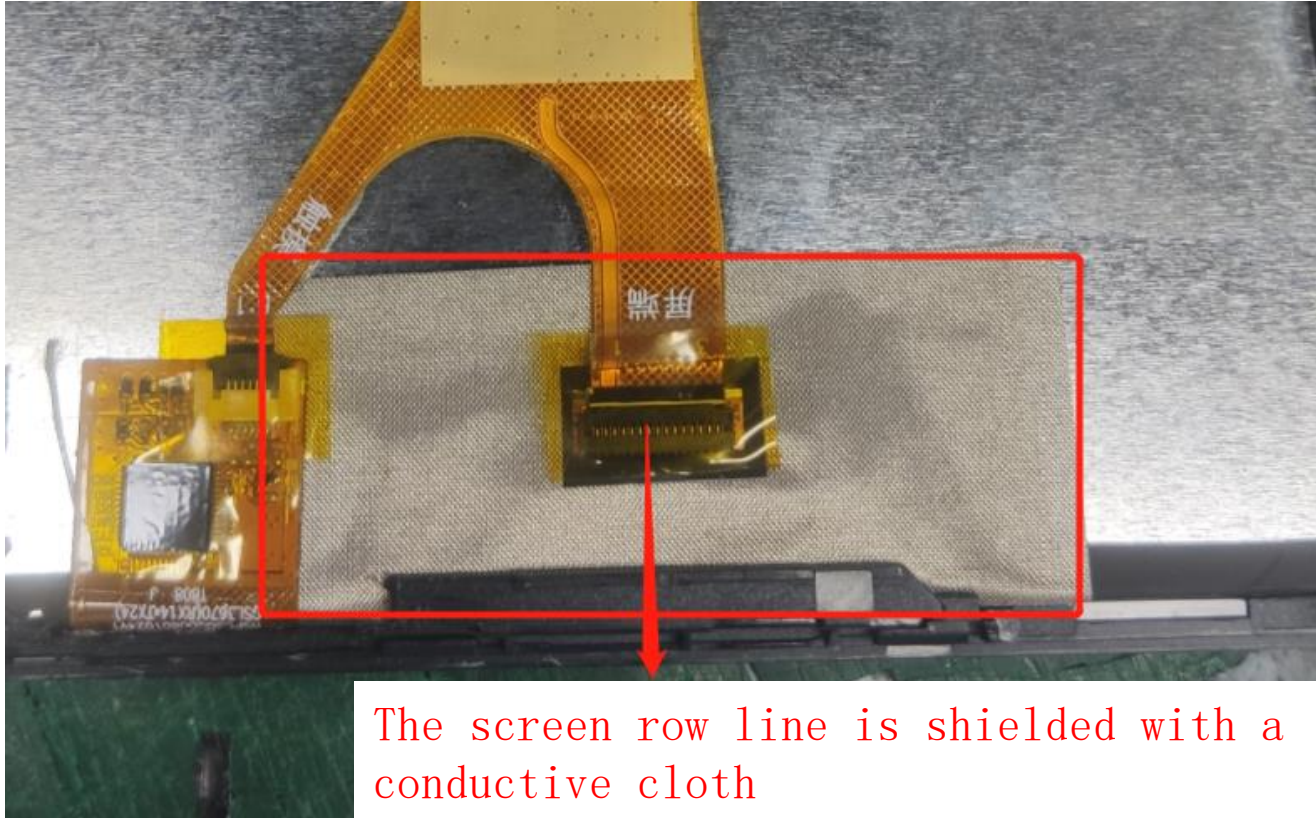
Vertical :



Antenna environment treatment and improvement

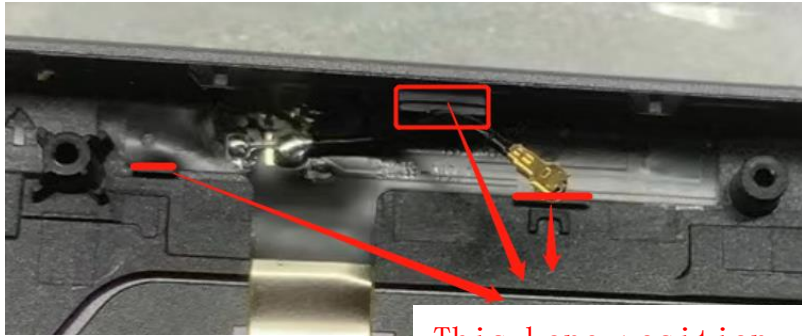


Antenna environment
treatment and improvement



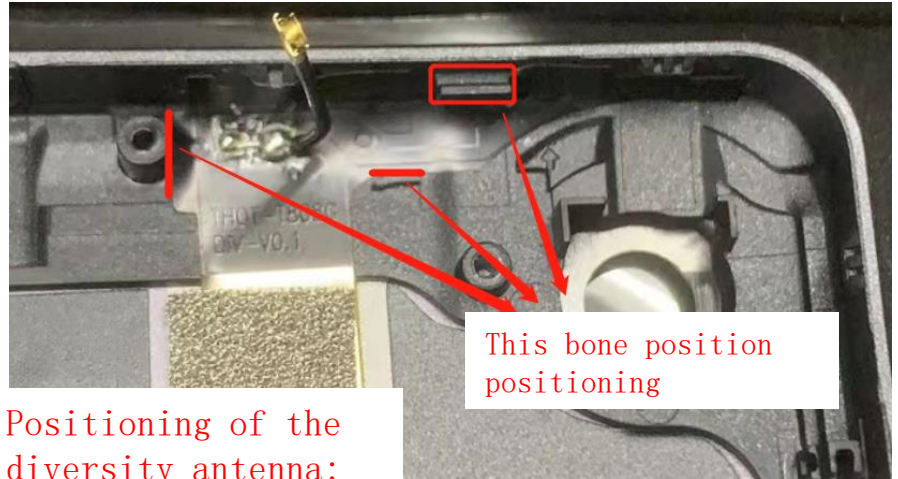
The screen row line is shielded with a
conductive cloth
Conductive cloth and screen conduction

Antenna assembly



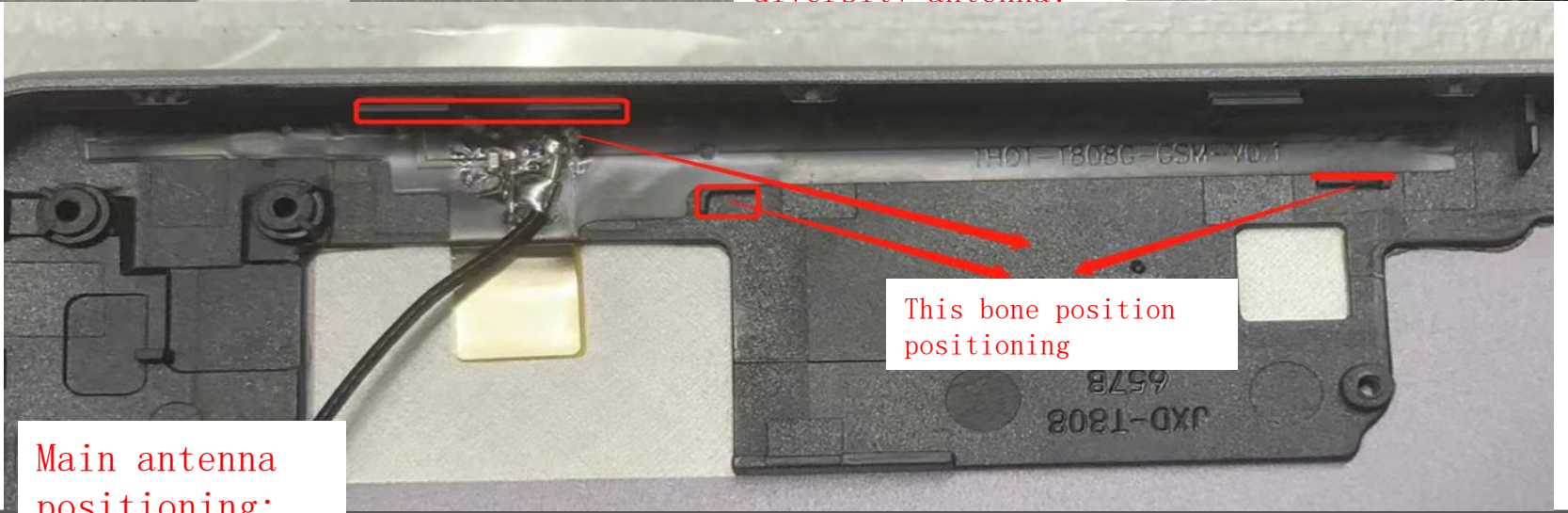
Four-in-one antenna positioning:

This bone position positioning



Positioning of the diversity antenna:

This bone position positioning



Main antenna positioning:

This bone position positioning



sum up

1. Attention should be paid to handling the environment installed as in the report to ensure the consistency of the whole machine

Thank you!



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