

Regulatory WWAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

| | |
|----------------------|---|
| Platform | |
| Platform Owner | DELL |
| Brand Name | DELL |
| Model Name | P126F |
| ODM | COMPAL ELECTRONICS |
| Target Launch Date | 2023/11/17 |
| | |
| Antenna | |
| Manufacturer | Speed |
| Part Number | <ul style="list-style-type: none"> ■ Tx1/Rx1 Antenna WWAN Main: Antenna P/N: F-0G-FH-6173-001-00 COMPAL P/N: DC33002V50L |
| | <ul style="list-style-type: none"> ■ Rx2 Antenna WWAN Aux : Antenna P/N: F-0G-FH-6173-001-00 COMPAL P/N: DC33002V50L |
| | <ul style="list-style-type: none"> ■ Tx2/Rx3 Antenna MIMO2 : Antenna P/N: F-0G-FH-6173-002-00 COMPAL P/N: DC33002V51L |
| | <ul style="list-style-type: none"> ■ Rx4 Antenna MIMO3 : Antenna P/N: F-0G-FH-6173-002-00 COMPAL P/N: DC33002V51L |
| Manufacturer address | |
| | |
| Module | |
| With WWAN Module | SDX62 · SDX12 |
| (Check Box) | |
| | |
| | |
| | |
| | |
| | |

Antenna Sample / Antenna Data Requirements for worldwide regulatory approval

| Section | Description of Required OEM / ODM Antenna Information | US / IC | EU | Japan | Taiwan | S.Korea |
|---------|---|----------|----------|----------|--------------------------|--------------------------|
| 1A | Part Number for Antenna only | Required | Required | Required | Required | Required |
| 1B | Antenna Manufacturer Name | Required | Required | Required | Required | Required |
| 1C | Description of Antenna Type | Required | N/A | N/A | N/A | N/A |
| 1D | Part number of Antenna Assembly / cable impedance, length & diameter. | Required | Desired | Desired | Desired | Desired |
| 1E | Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) * | Required | Required | Required | Required | Required |
| | 1E OR 1F, 1G, 1H | | | | | |
| 1F | Tx1, Tx2 & Tx3 antenna (Peak Gain only) * | Required | Required | Required | Required | Required |
| 1G | VSWR of cable including connector | Required | Required | Required | Required | Required |
| 1H | Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) * | Required | Required | Required | Required | Required |
| 2 | Dimensioned Photographs <u>and</u> Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas | Required | Required | Required | Required | Required |
| 3 | Radiation patterns of antennas loaded in the host platform. | Required | Desired | Required | N/A | Required |
| 4 | Platform model name / number - correlated to antenna manufacturer and antenna part number | Required | Required | Desired | Required | Desired |
| 5 | Photograph(s) or Drawings showing location of antennas in platform. (S. Korea requires <u>photographs of antennas for approval submission</u>). Taiwan requires pictures of each antenna type shown in the system. | Required | Required | Desired | <u>Required (Photos)</u> | <u>Required (Photos)</u> |
| 6 | Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement). | Required | N/A | N/A | N/A | N/A |
| 7 | Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required. | Required | N/A | N/A | N/A | N/A |
| 8 | Local representative contact information for LMA/ PARS process. | Required | N/A | N/A | N/A | N/A |

Antenna Information

Section 1. Antenna Assembly Specifications

| Communication System | Band | Frequency(MHz) from low to high spectrum | | 1A Part Number for Antenna Assembly | 1B Antenna Manufacturer Name | 1C Description of Antenna Type | 1D *Peak Gain W/ Cable loss (dBi) |
|-------------------------|-----------|--|-------------|---|------------------------------|--------------------------------|-----------------------------------|
| WCDMA/ LTE/5G NR FR1 | 1 | 1920 | 1980 | Tx/Rx1 Antenna Speed P/N: F-0G-FH-6173-001-00 Customer P/N DC33002V50L | speed | PIFA | -0.06 |
| WCDMA/ LTE/5G NR FR1 | 2 | 1850 | 1910 | | | | -0.39 |
| LTE/5G NR FR1 | 3 | 1710 | 1785 | | | | 0.33 |
| WCDMA/ LTE | 4 | 1710 | 1755 | | | | 0.13 |
| WCDMA/ LTE/5G NR FR1 | 5 | 824 | 849 | | | | -2.71 |
| LTE/5G NR FR1 | 7 | 2500 | 2570 | | | | 0.56 |
| WCDMA/ LTE/5G NR FR1 | 8 | 880 | 915 | | | | -2.79 |
| LTE/5G NR FR1 | 12 | 699 | 716 | | | | -1.04 |
| LTE/5G NR FR1 | 13 | 777 | 787 | | | | -0.91 |
| LTE/5G NR FR1 | 14 | 788 | 798 | | | | -0.89 |
| LTE | 17 | 704 | 716 | | | | -1.04 |
| LTE/5G NR FR1 | 18 | 815 | 830 | | | | -1.99 |
| LTE | 19 | 830 | 845 | | | | -2.71 |
| LTE/5G NR FR1 | 20 | 832 | 862 | | | | -2.71 |
| LTE/5G NR FR1 | 25 | 1850 | 1915 | | | | -0.39 |
| LTE/5G NR FR1 | 26 | 814 | 849 | | | | -1.69 |
| LTE/5G NR FR1 | 28 | 703 | 748 | | | | -1.04 |
| LTE/5G NR FR1 | 30 | 2305 | 2315 | | | | 0.7 |
| LTE | 34 | 2010 | 2025 | | | | -0.56 |
| LTE/5G NR FR1 | 38 | 2570 | 2620 | | | | 0.56 |
| LTE | 39 | 1880 | 1920 | | | | -0.39 |
| LTE/5G NR FR1 | 40 | 2300 | 2400 | | | | 0.91 |
| LTE/5G NR FR1 | 41 | 2496 | 2690 | | | | 0.56 |
| LTE | 42 | 3400 | 3600 | | | | -0.85 |
| LTE | 43 | 3600 | 3800 | | | | -0.36 |
| LTE/5G NR FR1 | 48 | 3550 | 3700 | | | | -0.52 |
| LTE/5G NR FR1 | 66 | 1710 | 1780 | | | | 0.3 |
| LTE/5G NR FR1 | 71 | 663 | 698 | | | | -1.47 |
| 5G NR FR1 | 77 | 3300 | 4200 | | | | -0.36 |
| 5G NR FR1 | 78 | 3300 | 3800 | | | | -0.36 |
| 5G NR FR1 | 79 | 4400 | 5000 | -0.8 | | | |
| 5G NR FR1 | 53 | 2483.5 | 2495 | 0.32 | | | |
| 5G NR FR1 | 70 | 1695 | 1710 | -0.39 | | | |

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

| Communication System | Band | Frequency(MHz) from low to high spectrum | | 1A Part Number for Antenna Assembly | 1B Antenna Manufacturer Name | 1C Description of Antenna Type | Tx2 *Peak Gain W/ Cable loss (dBi) |
|----------------------|------|--|------|---|------------------------------|--------------------------------|------------------------------------|
| WCDMA/ LTE FDD | 1 | 1920 | 1980 | Antenna P/N: F-0G-FH-6173-002-00 COMPAL P/N: DC33002V51L | Speed | MIMO | -2 |
| WCDMA/ LTE FDD | 2 | 1850 | 1910 | | | | -1.92 |
| LTE FDD | 3 | 1710 | 1785 | | | | -2.22 |
| WCDMA/ LTE FDD | 4 | 1710 | 1755 | | | | -2.22 |
| LTE FDD | 7 | 2500 | 2570 | | | | -1.23 |
| LTE FDD | 25 | 1850 | 1915 | | | | -1.92 |
| LTE FDD | 30 | 2305 | 2315 | | | | -1.49 |
| LTE FDD | 66 | 1710 | 1780 | | | | -2.22 |
| LTE TDD | 38 | 2570 | 2620 | | | | -1.05 |
| LTE TDD | 39 | 1880 | 1920 | | | | -1.92 |
| LTE TDD | 40 | 2300 | 2400 | | | | -0.83 |
| LTE TDD | 41 | 2496 | 2690 | | | | -1.05 |
| LTE TDD | 42 | 3400 | 3600 | | | | 0.59 |
| LTE TDD | 43 | 3600 | 3800 | | | | 0.49 |
| LTE TDD | 48 | 3550 | 3700 | | | | 0.55 |

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

Antenna Peak Gain Table: Low and middle band

| | Tx1 antenna |
|-----------------|-------------------------------|
| Frequency (MHz) | Peak Gain W/ Cable loss (dBi) |
| 663 | -1.90 |
| 680.5 | -1.47 |
| 698 | -1.63 |
| 699 | -1.55 |
| 703 | -1.26 |
| 704 | -1.06 |
| 707.5 | -1.67 |
| 710 | -1.04 |
| 716 | -1.77 |
| 725.5 | -1.78 |
| 748 | -2.09 |
| 777 | -0.91 |
| 782 | -0.93 |
| 787 | -0.92 |
| 788 | -0.89 |
| 793 | -0.95 |
| 798 | -1.37 |
| 814 | -1.69 |
| 815 | -1.99 |
| 822.5 | -2.53 |
| 824 | -2.79 |
| 830 | -2.90 |
| 831.5 | -2.95 |
| 832 | -2.90 |
| 836.5 | -3.04 |
| 837.5 | -2.97 |
| 845 | -2.71 |
| 847 | -2.79 |
| 849 | -2.87 |
| 862 | -2.89 |
| 880 | -2.79 |
| 897.5 | -3.29 |
| 915 | -3.06 |

High band

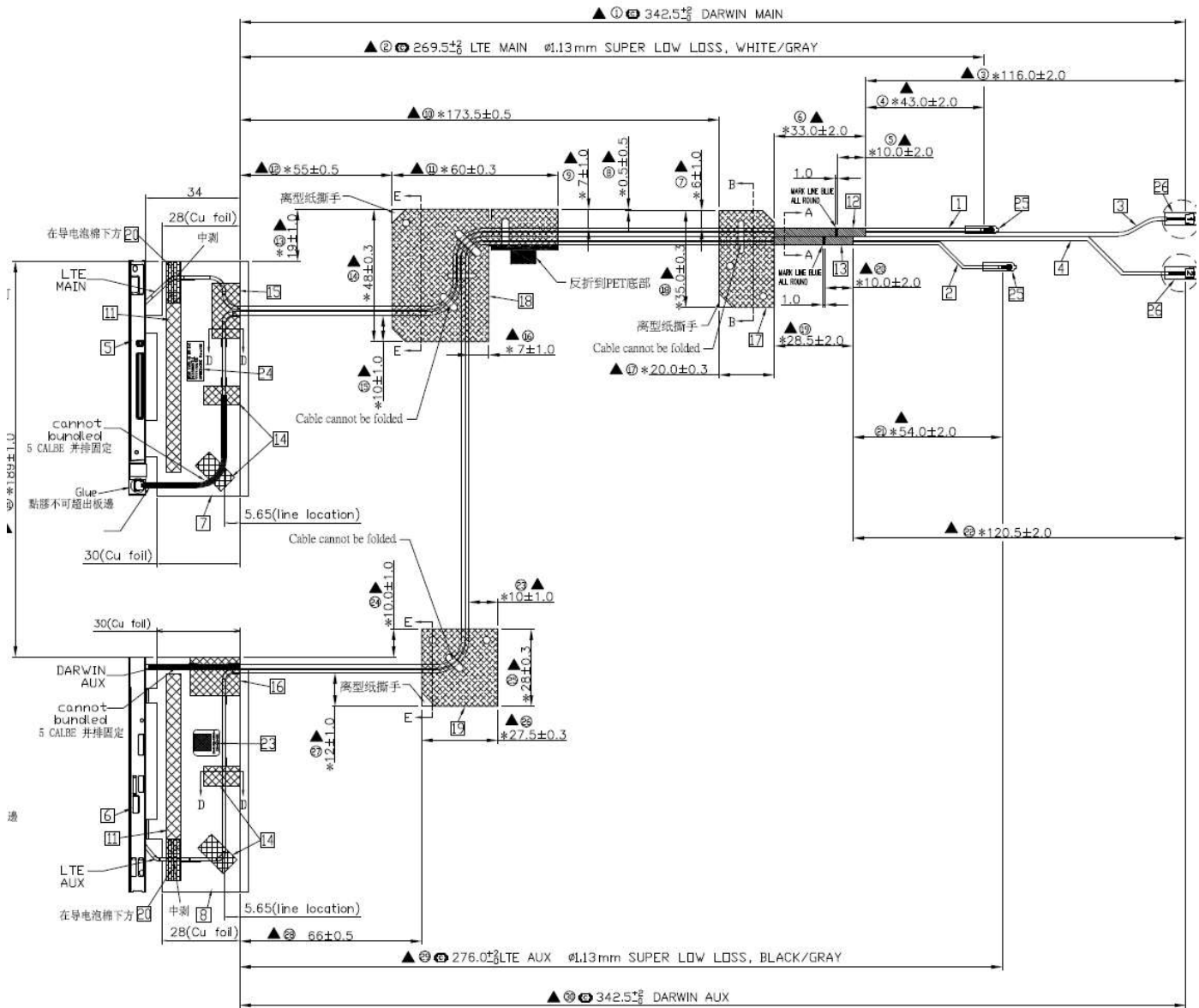
| | Tx1 antenna | Tx2 antenna(MIMO2) |
|-----------------|-------------------------------|-------------------------------|
| Frequency (MHz) | Peak Gain W/ Cable loss (dBi) | Peak Gain W/ Cable loss (dBi) |
| 1695 | -0.39 | -2.01 |
| 1702.5 | -0.45 | -2.13 |
| 1710 | -0.50 | -2.22 |
| 1732.5 | -0.60 | -2.48 |
| 1745 | -0.40 | -2.49 |
| 1747.5 | -0.28 | -2.49 |
| 1755 | 0.13 | -2.24 |
| 1780 | 0.30 | -2.41 |
| 1785 | 0.33 | -2.53 |
| 1850 | -0.83 | -2.87 |
| 1880 | -0.39 | -1.92 |
| 1882.5 | -0.87 | -1.98 |
| 1900 | -1.83 | -2.13 |
| 1910 | -2.29 | -2.54 |
| 1915 | -2.77 | -2.41 |
| 1920 | -2.97 | -2.28 |
| 1950 | -1.15 | -2.00 |
| 1980 | -0.06 | -2.10 |
| 2010 | -0.56 | -1.95 |
| 2017.5 | -0.71 | -1.83 |
| 2025 | -1.45 | -1.78 |
| 2300 | 0.91 | -1.16 |
| 2305 | 0.70 | -1.81 |
| 2310 | 0.58 | -1.65 |
| 2315 | 0.41 | -1.49 |
| 2350 | 0.36 | -1.20 |
| 2400 | 0.35 | -0.83 |
| 2483.5 | 0.32 | -1.15 |
| 2489.25 | 0.31 | -1.23 |
| 2495 | 0.28 | -1.36 |
| 2496 | 0.27 | -1.38 |
| 2500 | 0.11 | -1.46 |
| 2535 | 0.43 | -1.34 |
| 2570 | 0.56 | -1.23 |
| 2593 | 0.13 | -1.08 |
| 2595 | 0.15 | -1.05 |
| 2620 | -0.09 | -1.16 |

| | | |
|------|-------|-------|
| 2690 | -0.10 | -1.41 |
| 3300 | -0.88 | 0.55 |
| 3400 | -1.18 | 0.56 |
| 3500 | -2.17 | 0.59 |
| 3550 | -1.51 | 0.55 |
| 3600 | -0.85 | 0.49 |
| 3625 | -0.76 | 0.44 |
| 3700 | -0.52 | 0.21 |
| 3750 | -0.48 | -0.13 |
| 3800 | -0.36 | -0.54 |
| 4200 | -1.68 | -1.61 |
| 4400 | -2.30 | -2.47 |
| 4700 | -0.80 | -2.77 |
| 5000 | -1.38 | -2.19 |

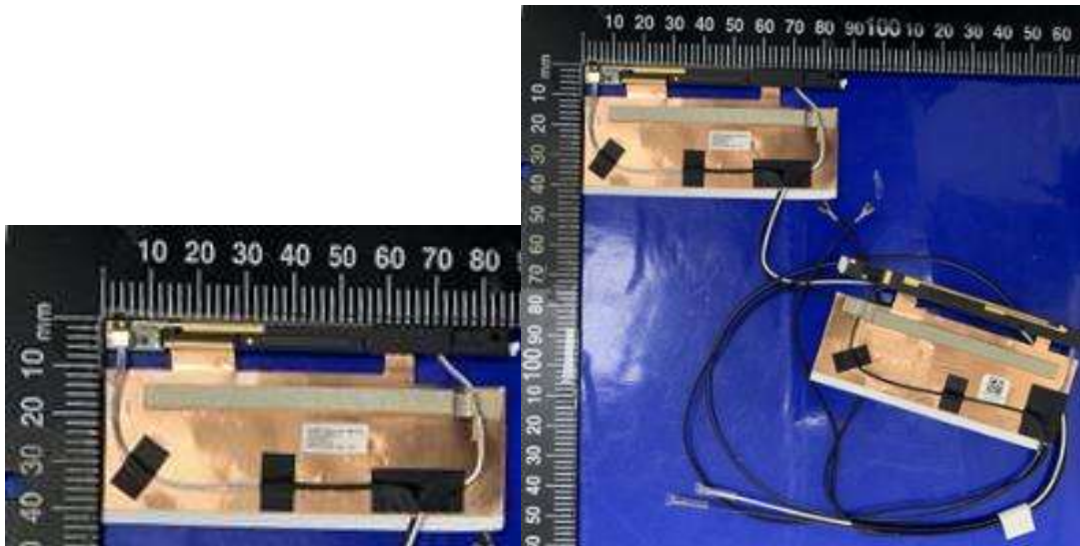
Section 2. Dimensioned Photos or Drawings of Antennas

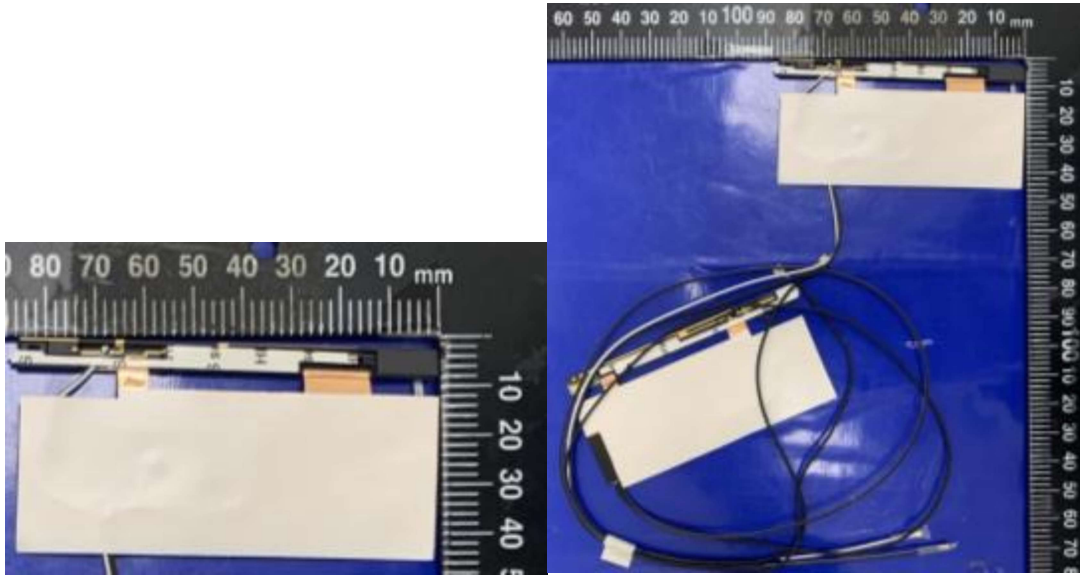
Include a dimensioned photo and dimensioned drawing of Main antenna here.

TPx Antenna Dimensioned Drawing:



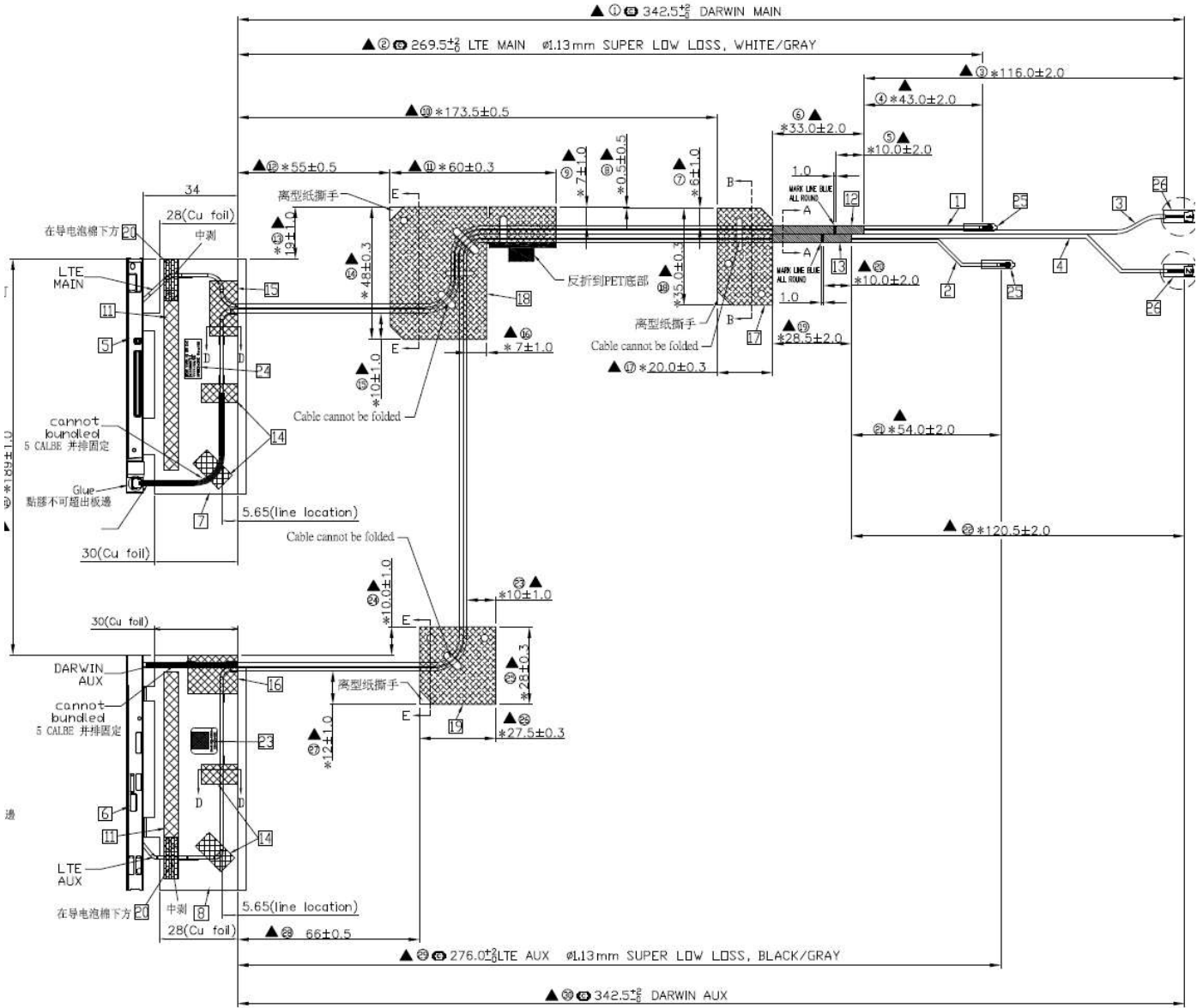
TPx Antenna Photo:



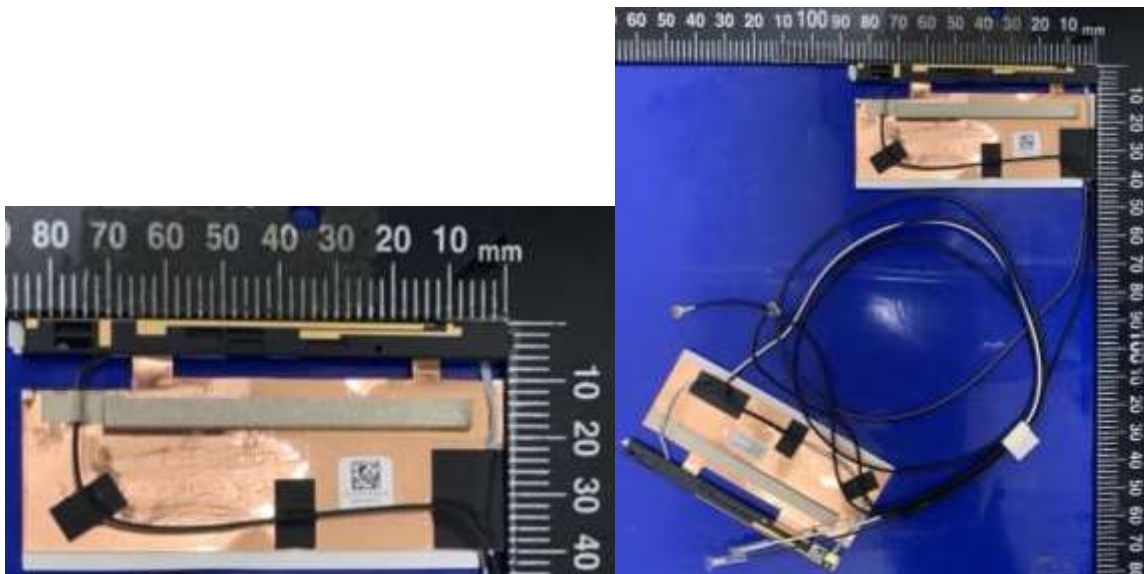


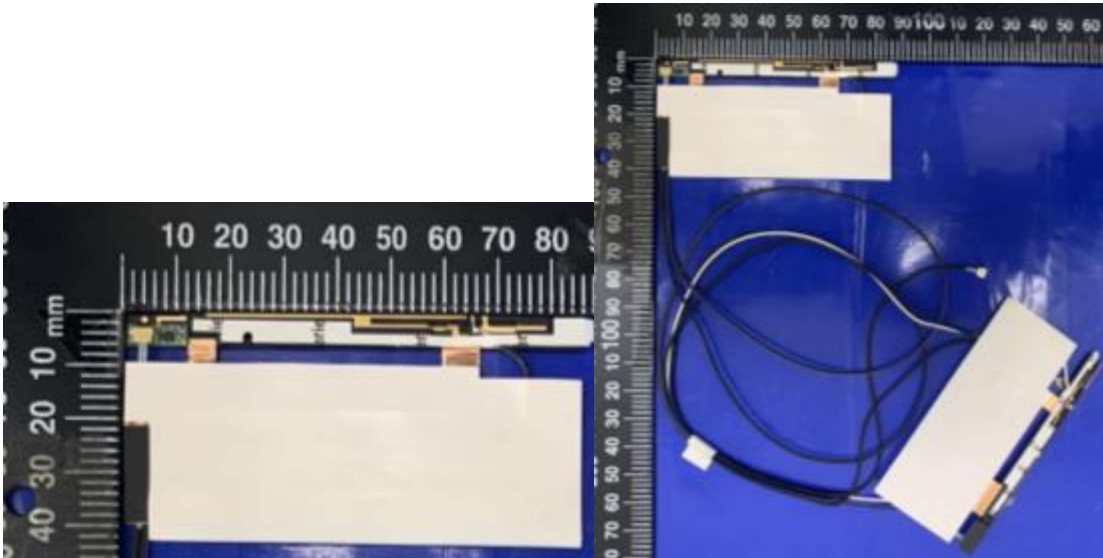
Include a dimensioned photo and dimensioned drawing of Aux antenna here.

DRx Antenna Dimensioned Drawing:



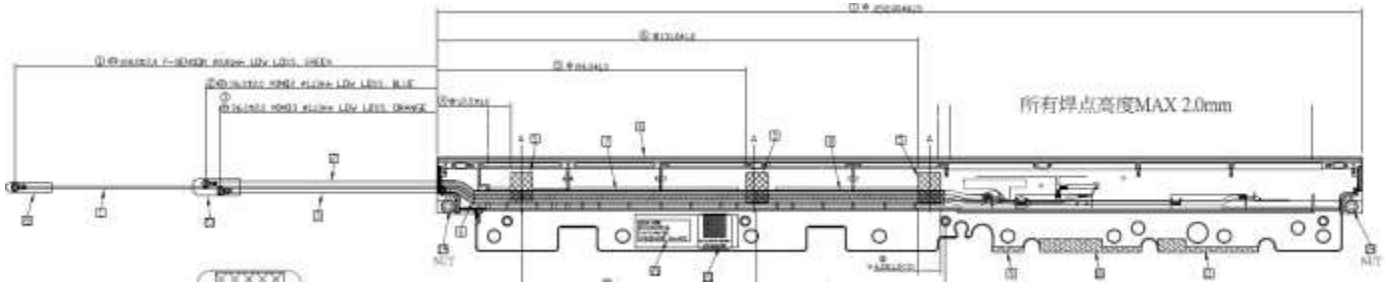
DRx Antenna Photo:



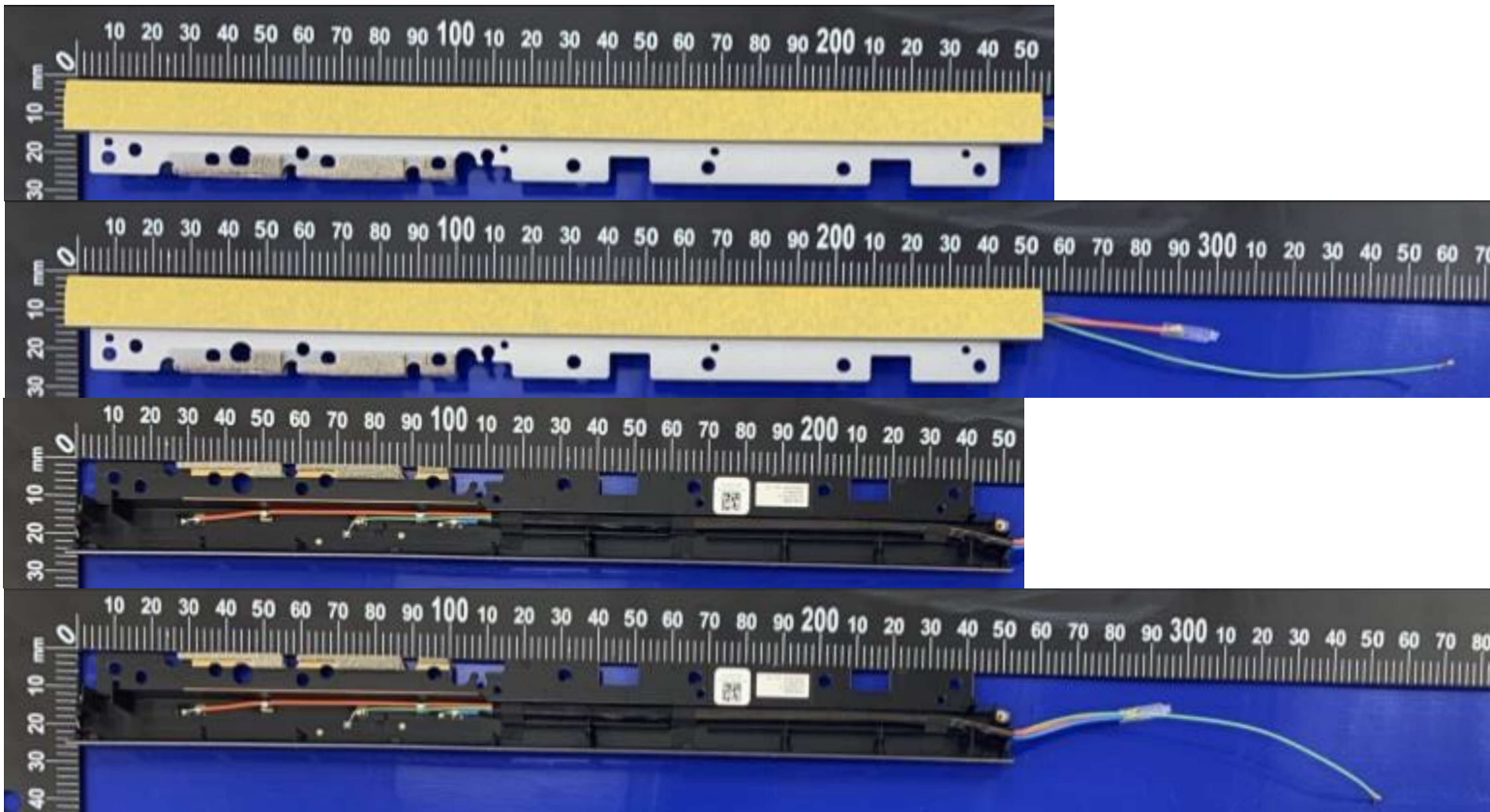


Include a dimensioned photo and dimensioned drawing of Aux antenna here.

DRx2 Antenna Dimensioned Drawing:

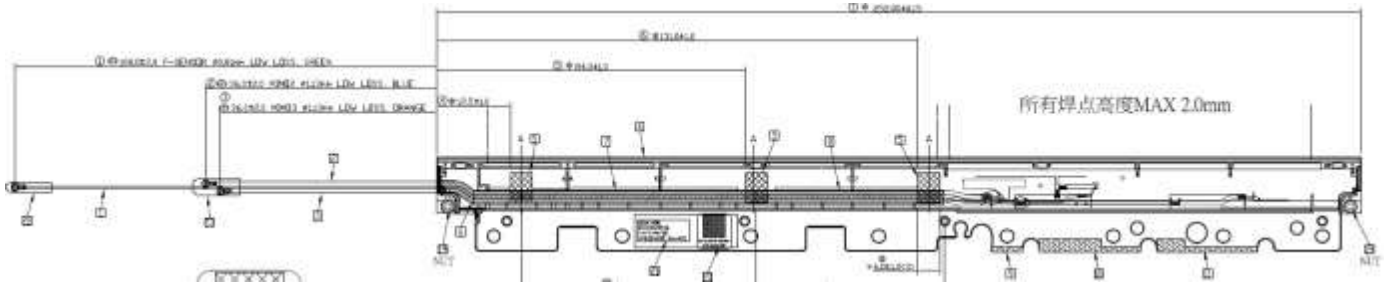


DRx2 Antenna Photo:

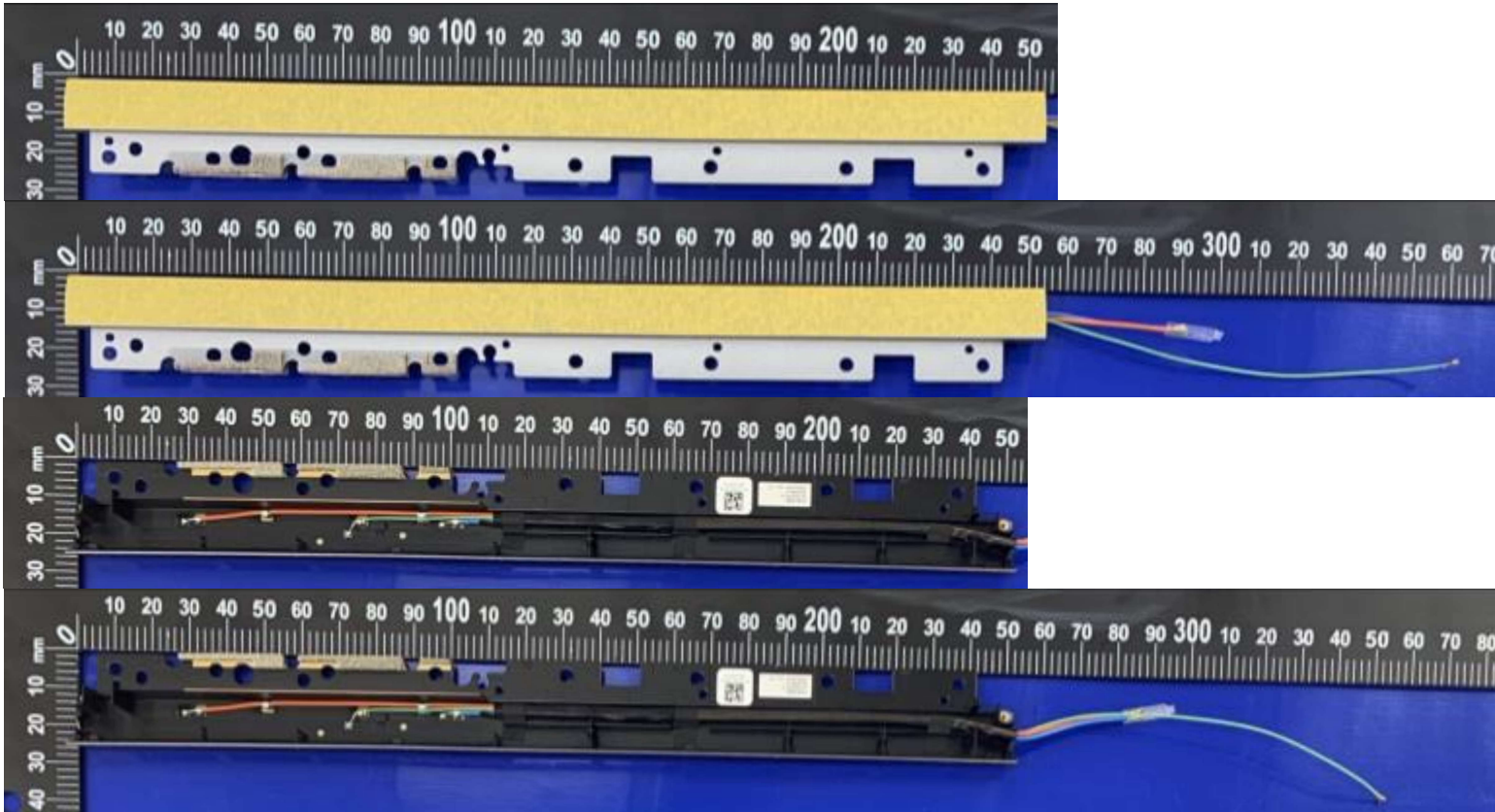


Include a dimensioned photo and dimensioned drawing of Aux antenna here.

DRx1 Antenna Dimensioned Drawing:



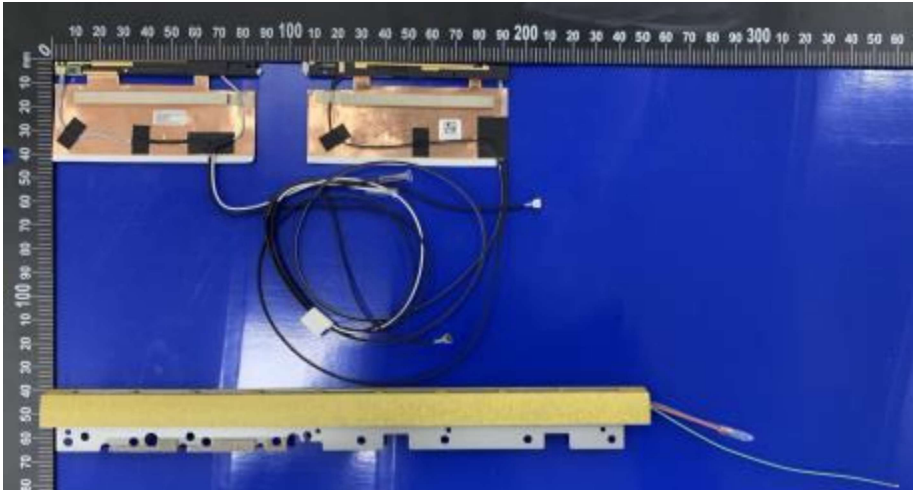
DRx1 Antenna Photo:



Include front view photo of all 2 antennas here.

Antenna Manufacturer: Speed

Antenna Part Number: DC33002V50L (F-0G-FH-6173-001-00)/ DC33002V51L (F-0G-FH-6173-002-00)



Include back view photo of all 2 antennas here.

Antenna Manufacturer: Speed

Antenna Part Number: DC33002V50L (F-0G-FH-6173-001-00)/ DC33002V51L (F-0G-FH-6173-002-00)

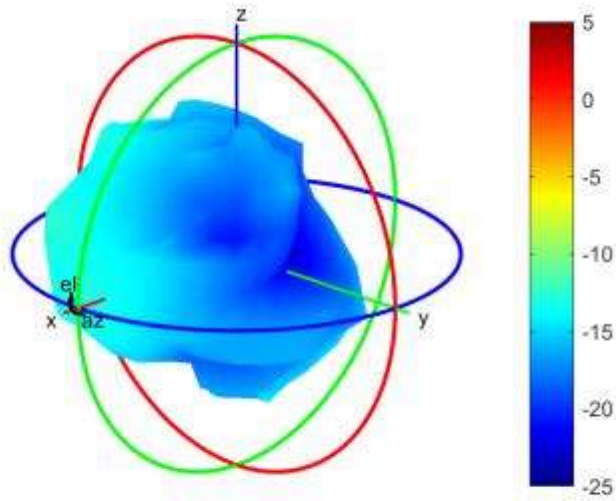


Note: antenna photo should include L type ruler

Section 3. Radiation characteristics of antennae Loaded in Host Platform

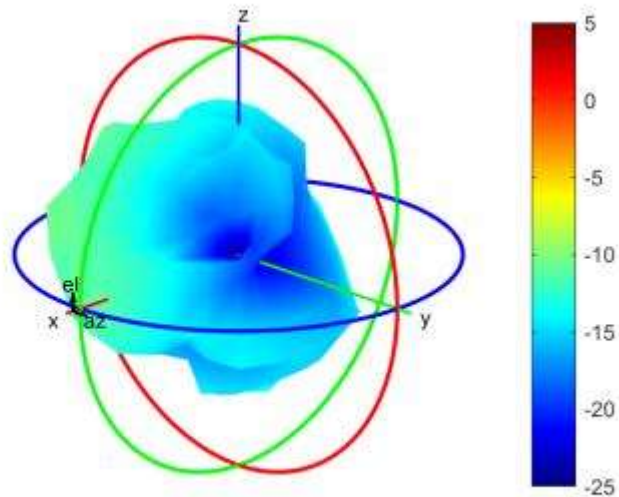
WWAN Main Antenna (Tx1)

663 MHz



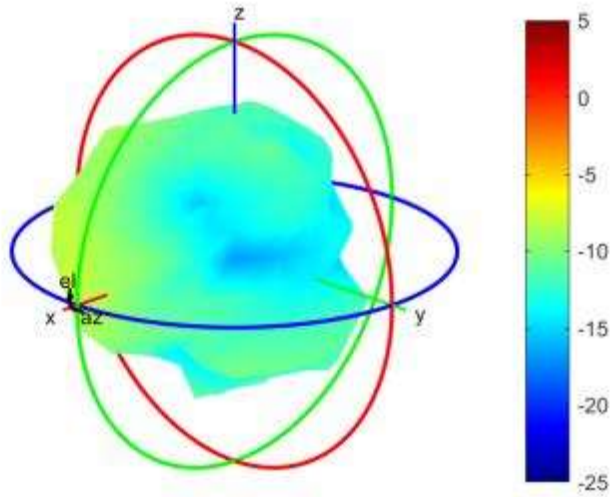
| | |
|-------------------------------|----------------|
| Center Frequency | 663 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.9 |

680.5 MHz



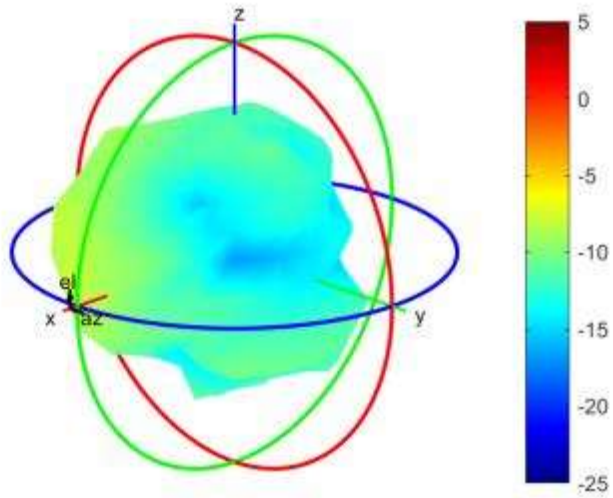
| | |
|-------------------------------|------------------|
| Center Frequency | 680.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.47 |

698MHz



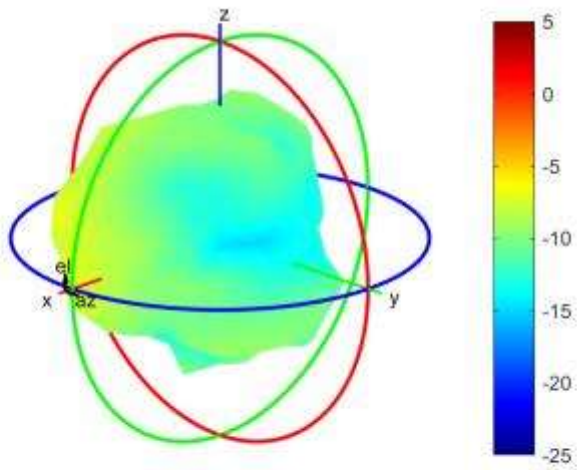
| | |
|-------------------------------|---------------|
| Center Frequency | 698MHz |
| Peak Gain W/ Cable loss (dBi) | -1.63 |

699MHz



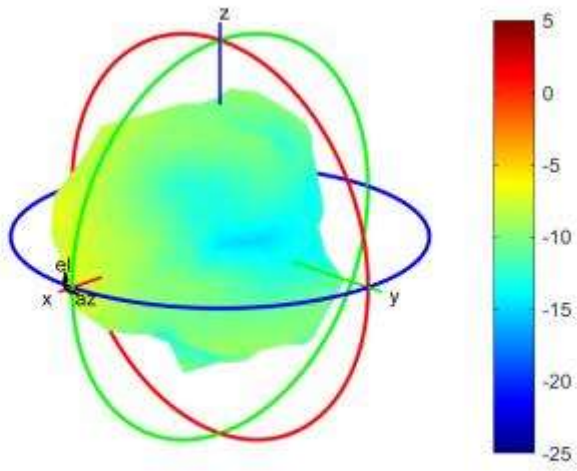
| | |
|-------------------------------|---------------|
| Center Frequency | 699MHz |
| Peak Gain W/ Cable loss (dBi) | -1.55 |

703MHz



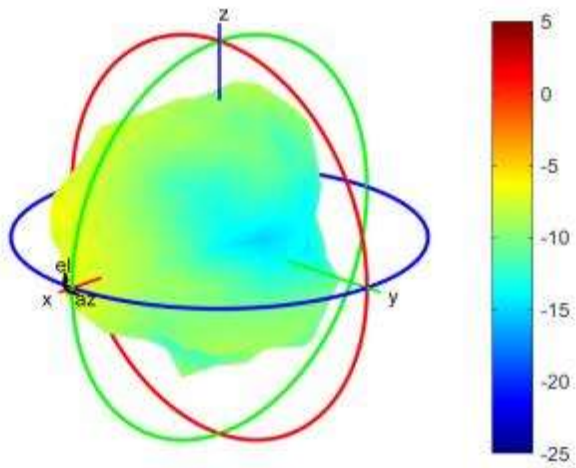
| | |
|-------------------------------|---------------|
| Center Frequency | 703MHz |
| Peak Gain W/ Cable loss (dBi) | -1.26 |

704MHz



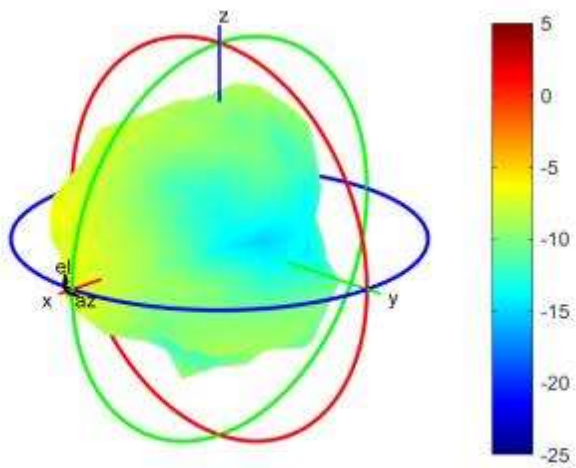
| | |
|-------------------------------|---------------|
| Center Frequency | 704MHz |
| Peak Gain W/ Cable loss (dBi) | -1.06 |

707.5MHz



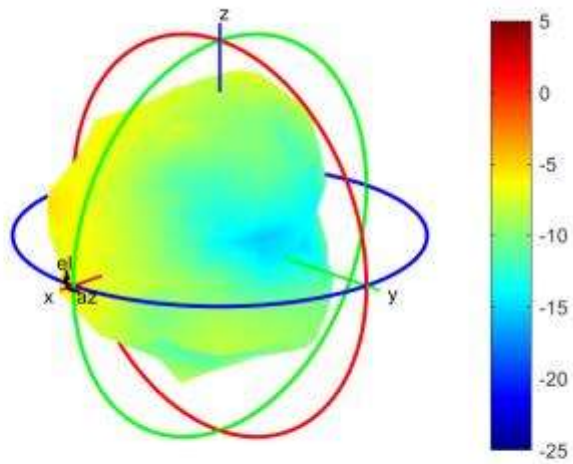
| | |
|-------------------------------|-----------------|
| Center Frequency | 707.5MHz |
| Peak Gain W/ Cable loss (dBi) | -1.67 |

710MHz



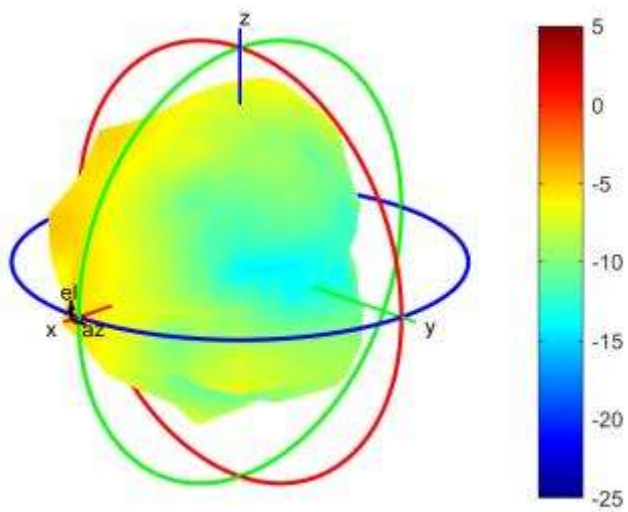
| | |
|-------------------------------|---------------|
| Center Frequency | 710MHz |
| Peak Gain W/ Cable loss (dBi) | -1.04 |

716 MHz



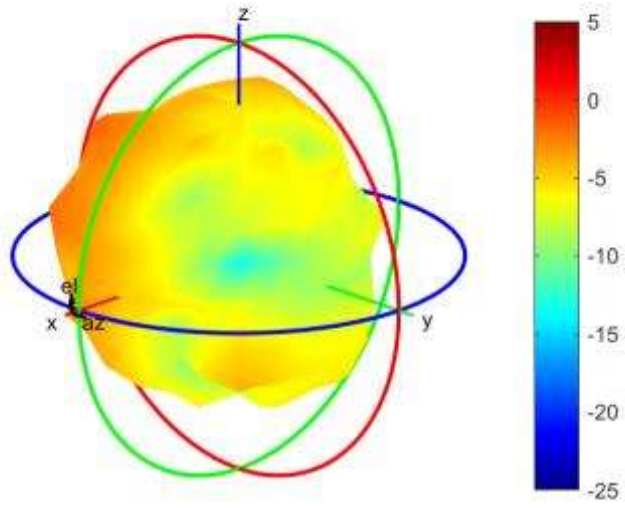
| | |
|-------------------------------|----------------|
| Center Frequency | 716 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.77 |

725.5 MHz



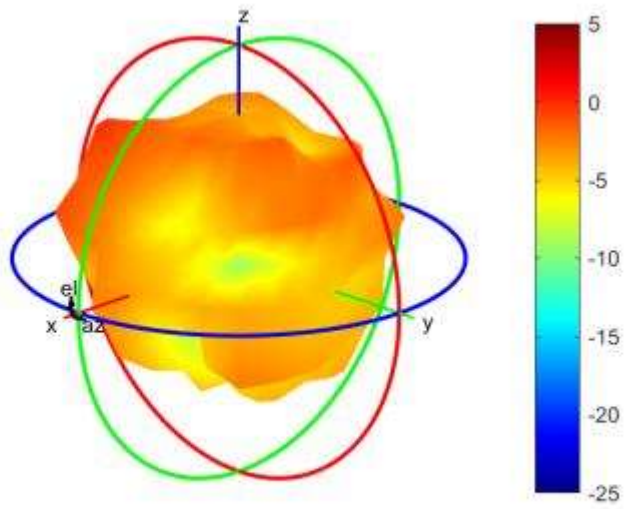
| | |
|-------------------------------|------------------|
| Center Frequency | 725.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.78 |

748MHz



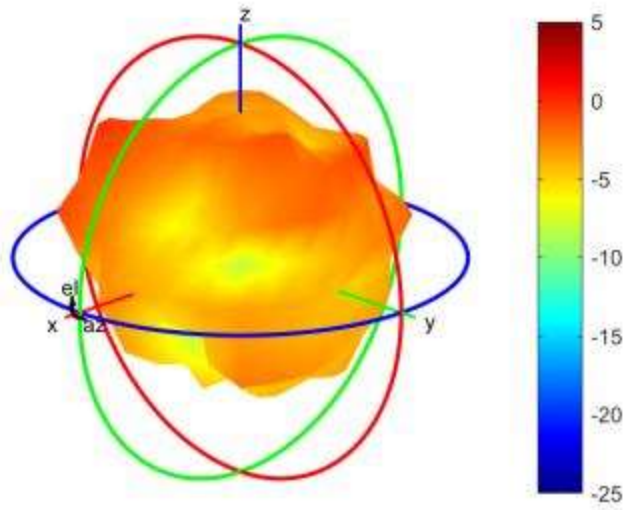
| | |
|-------------------------------|---------------|
| Center Frequency | 748MHz |
| Peak Gain W/ Cable loss (dBi) | -2.09 |

777MHz



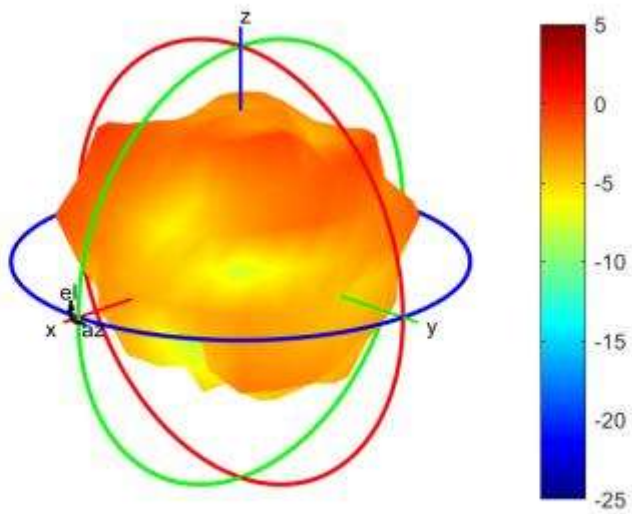
| | |
|-------------------------------|---------------|
| Center Frequency | 777MHz |
| Peak Gain W/ Cable loss (dBi) | -0.91 |

782MHz



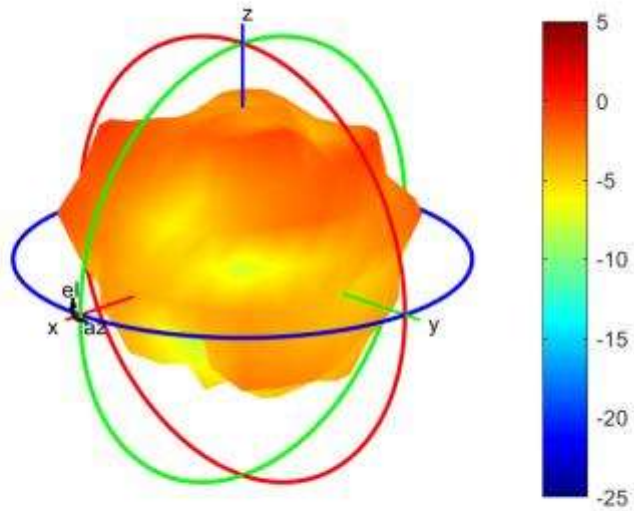
| | |
|-------------------------------|---------------|
| Center Frequency | 782MHz |
| Peak Gain W/ Cable loss (dBi) | -0.93 |

787MHz



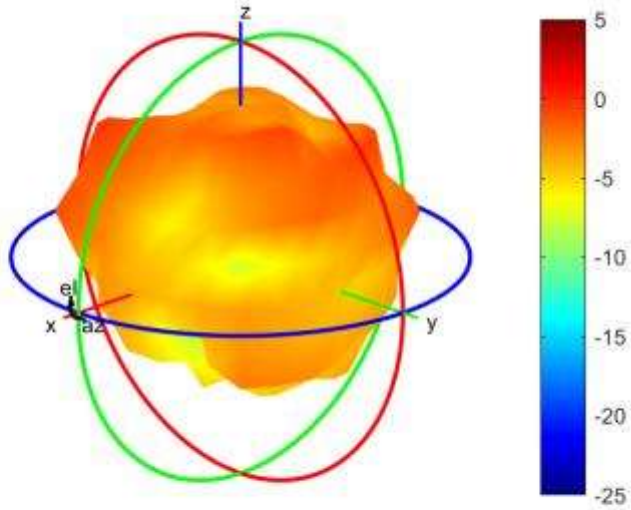
| | |
|-------------------------------|---------------|
| Center Frequency | 787MHz |
| Peak Gain W/ Cable loss (dBi) | -0.92 |

788 MHz



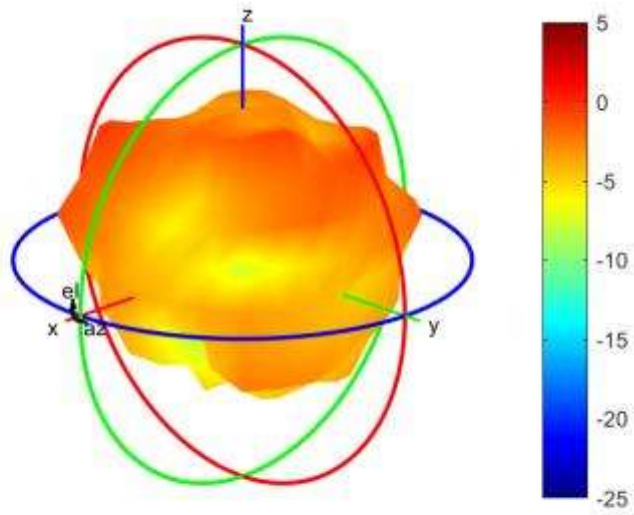
| | |
|-------------------------------|----------------|
| Center Frequency | 788 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.89 |

793 MHz



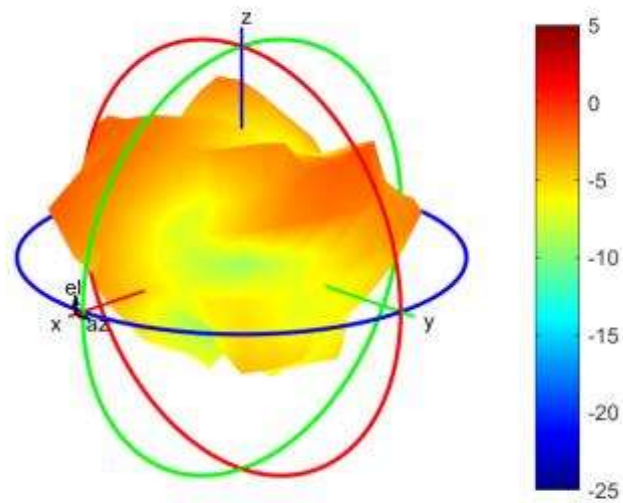
| | |
|-------------------------------|----------------|
| Center Frequency | 793 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.95 |

798MHz



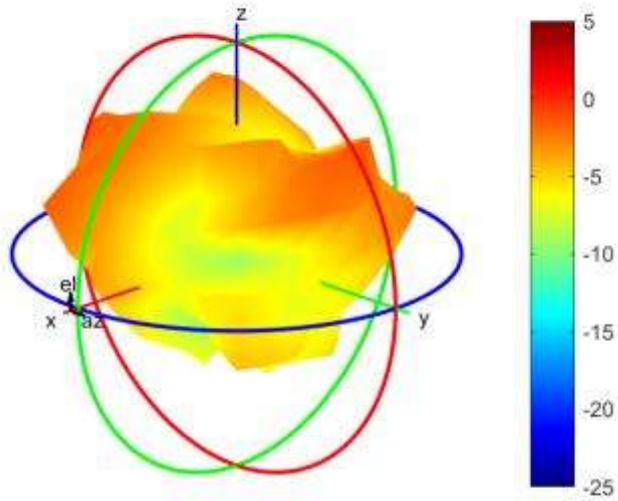
| | |
|-------------------------------|---------------|
| Center Frequency | 798MHz |
| Peak Gain W/ Cable loss (dBi) | -1.37 |

814MHz



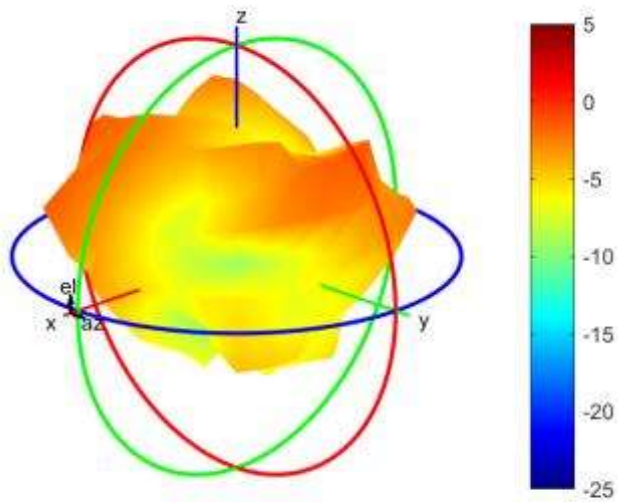
| | |
|-------------------------------|---------------|
| Center Frequency | 814MHz |
| Peak Gain W/ Cable loss (dBi) | -1.69 |

815MHz



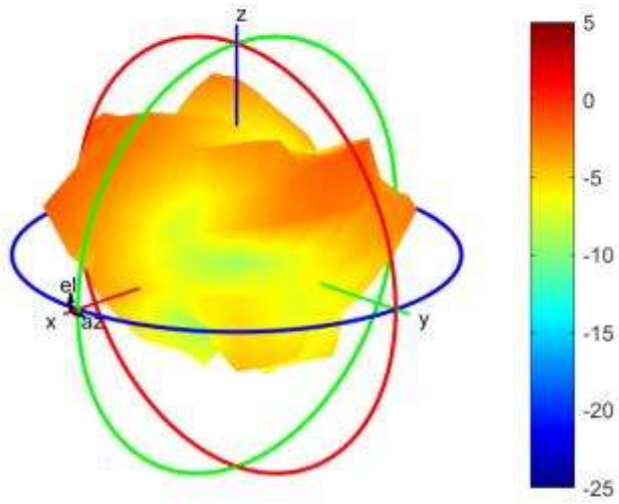
| | |
|-------------------------------|---------------|
| Center Frequency | 815MHz |
| Peak Gain W/ Cable loss (dBi) | -1.99 |

822.5MHz



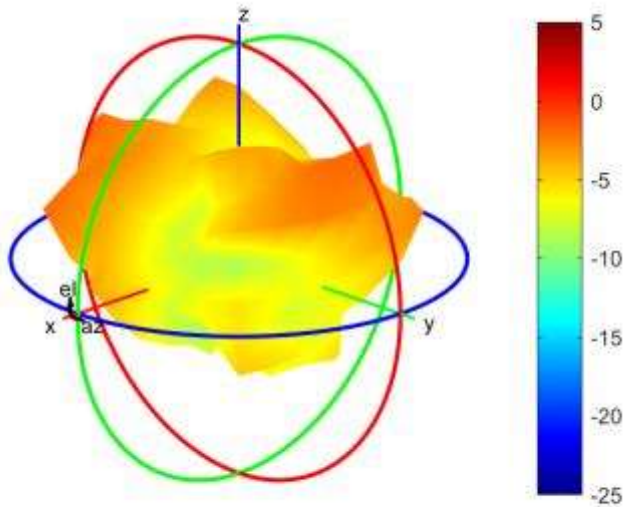
| | |
|-------------------------------|-----------------|
| Center Frequency | 822.5MHz |
| Peak Gain W/ Cable loss (dBi) | -2.53 |

824 MHz



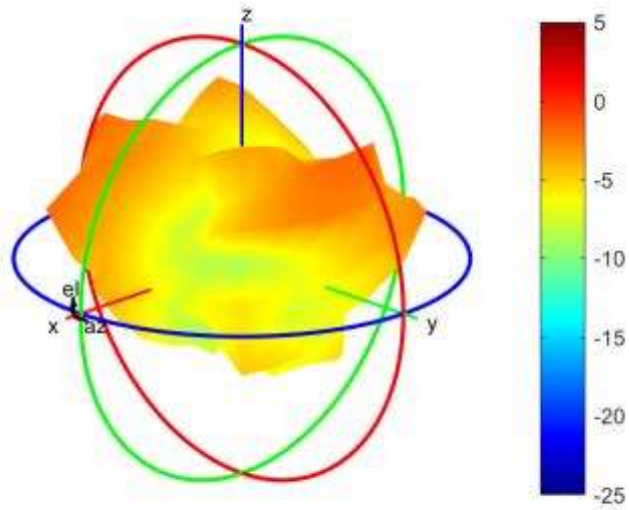
| | |
|-------------------------------|----------------|
| Center Frequency | 824 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.79 |

830 MHz



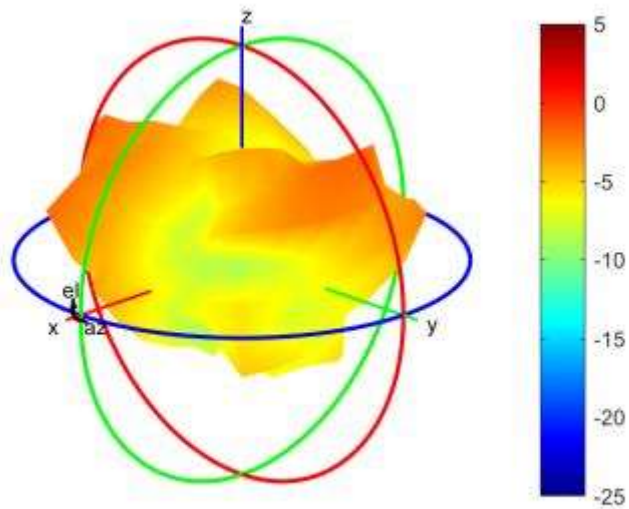
| | |
|-------------------------------|----------------|
| Center Frequency | 830 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.90 |

831.5MHz



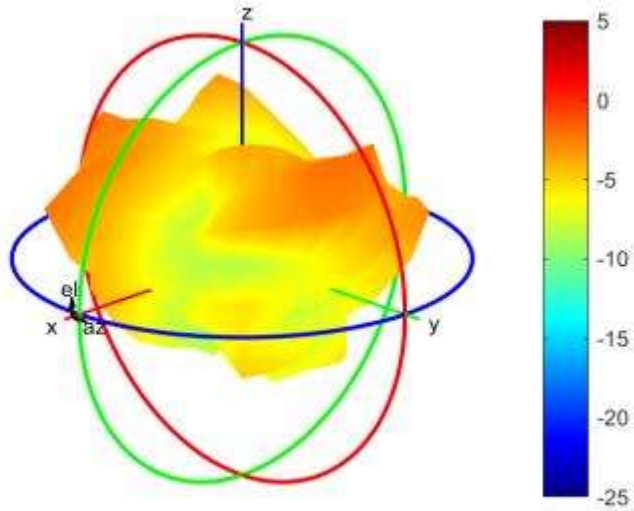
| | |
|-------------------------------|-----------------|
| Center Frequency | 831.5MHz |
| Peak Gain W/ Cable loss (dBi) | -2.95 |

832MHz



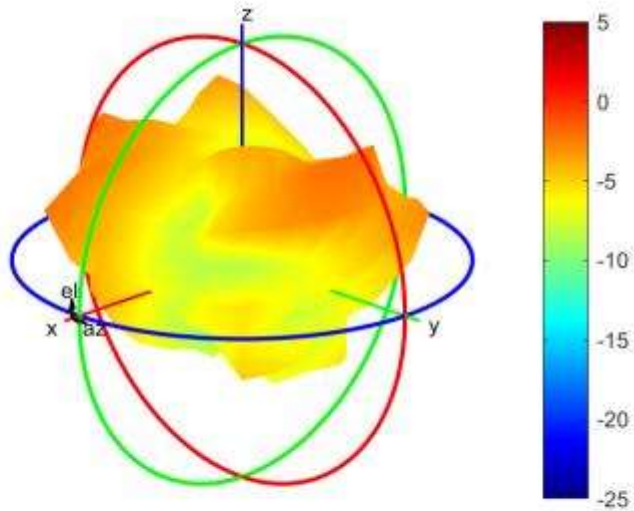
| | |
|-------------------------------|---------------|
| Center Frequency | 832MHz |
| Peak Gain W/ Cable loss (dBi) | -2.9 |

836.5MHz



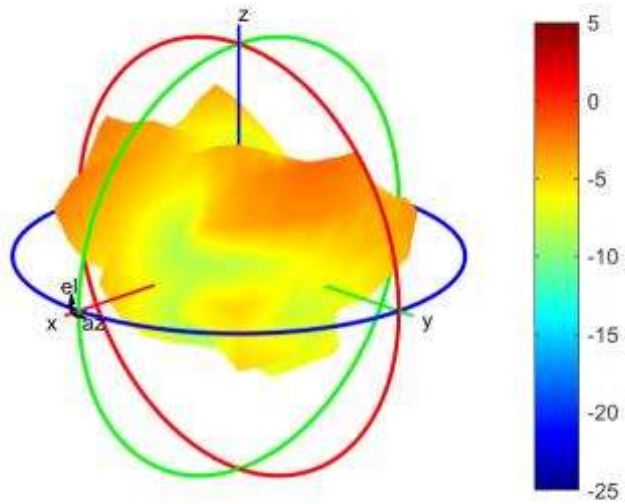
| | |
|-------------------------------|-----------------|
| Center Frequency | 836.5MHz |
| Peak Gain W/ Cable loss (dBi) | -3.04 |

837.5MHz



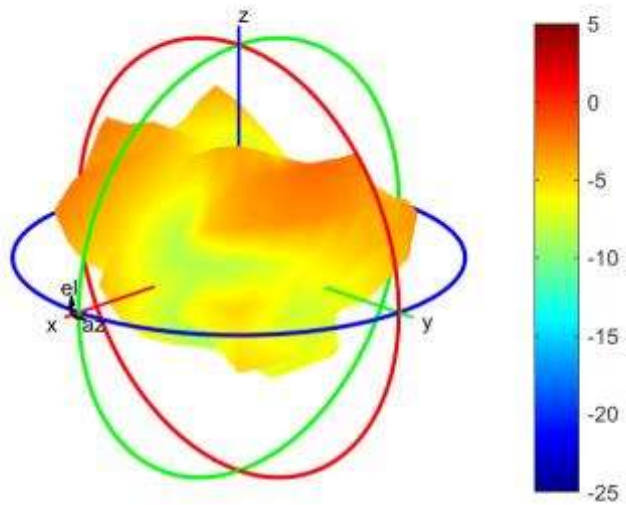
| | |
|-------------------------------|-----------------|
| Center Frequency | 837.5MHz |
| Peak Gain W/ Cable loss (dBi) | -2.97 |

845 MHz



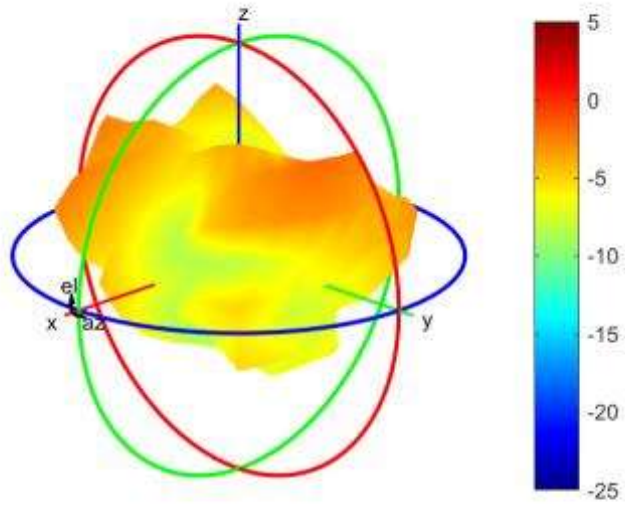
| | |
|-------------------------------|----------------|
| Center Frequency | 845 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.71 |

847 MHz



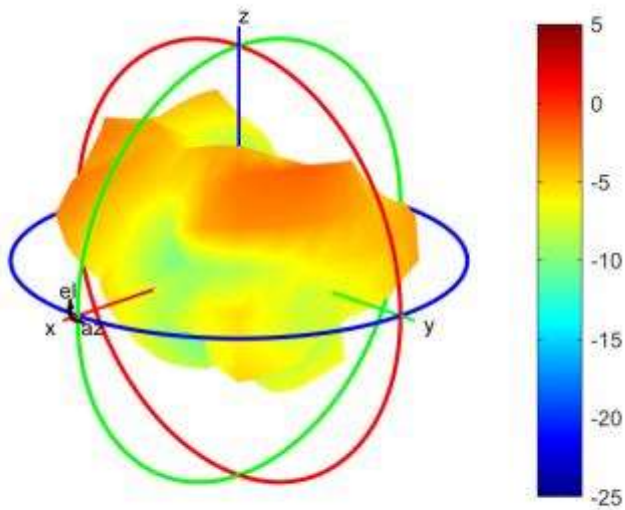
| | |
|-------------------------------|----------------|
| Center Frequency | 847 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.79 |

849MHz



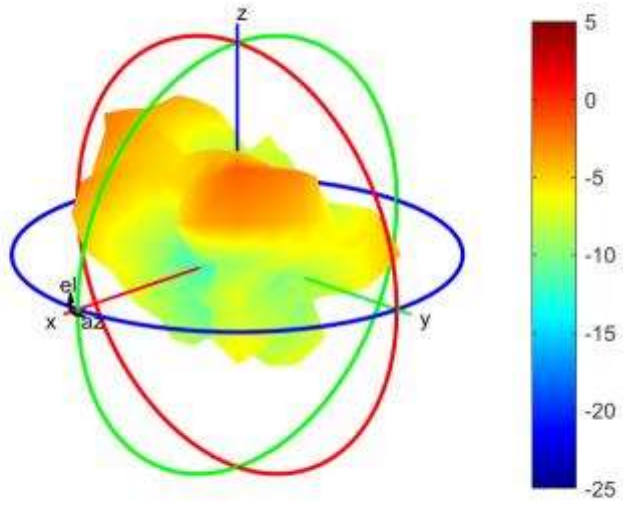
| | |
|-------------------------------|---------------|
| Center Frequency | 849MHz |
| Peak Gain W/ Cable loss (dBi) | -2.87 |

862MHz



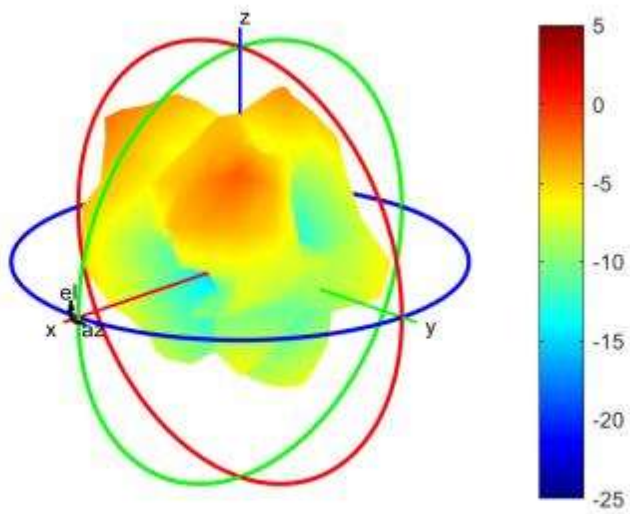
| | |
|-------------------------------|---------------|
| Center Frequency | 862MHz |
| Peak Gain W/ Cable loss (dBi) | -2.89 |

880MHz



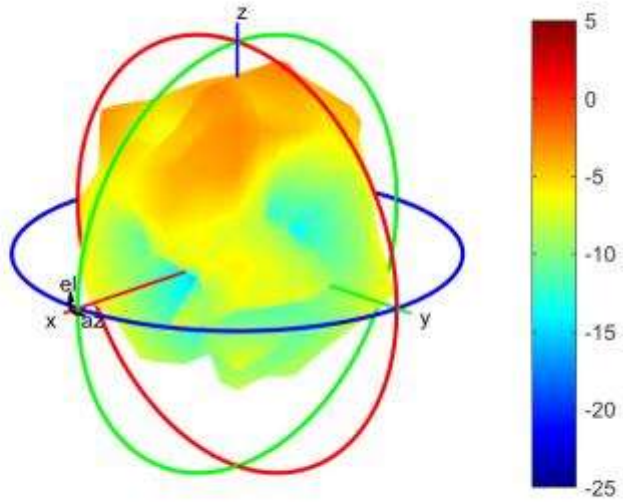
| | |
|-------------------------------|---------------|
| Center Frequency | 880MHz |
| Peak Gain W/ Cable loss (dBi) | -2.79 |

897.5MHz



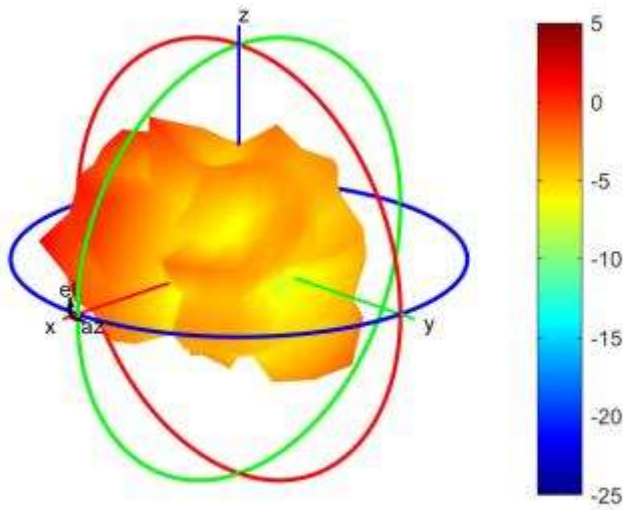
| | |
|-------------------------------|-----------------|
| Center Frequency | 897.5MHz |
| Peak Gain W/ Cable loss (dBi) | -3.29 |

915 MHz



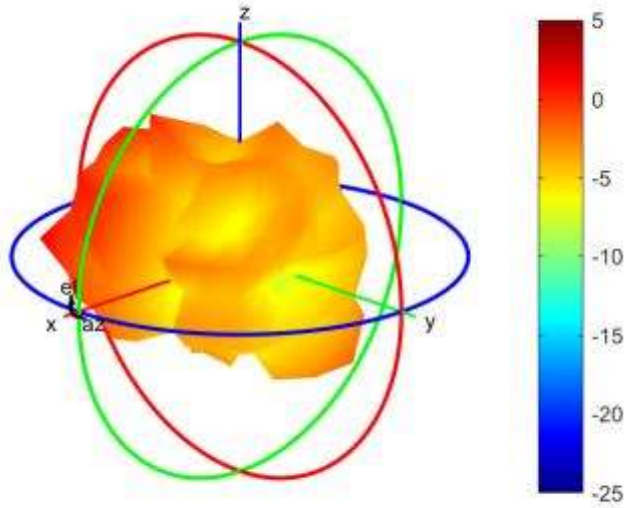
| | |
|-------------------------------|----------------|
| Center Frequency | 915 MHz |
| Peak Gain W/ Cable loss (dBi) | -3.06 |

1695 MHz



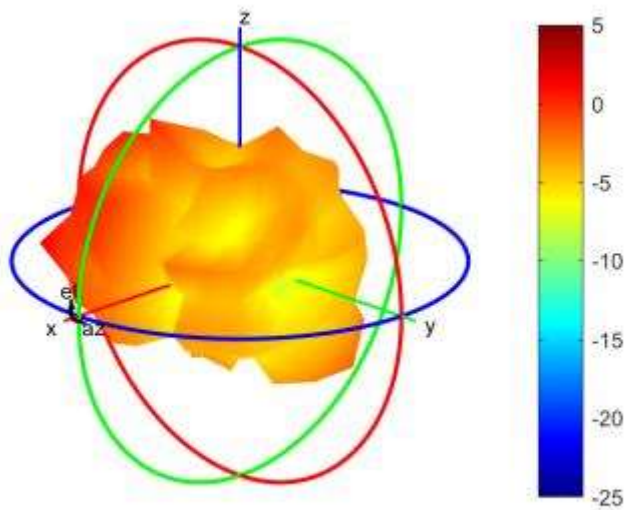
| | |
|-------------------------------|-----------------|
| Center Frequency | 1695 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.39 |

1702.5 MHz



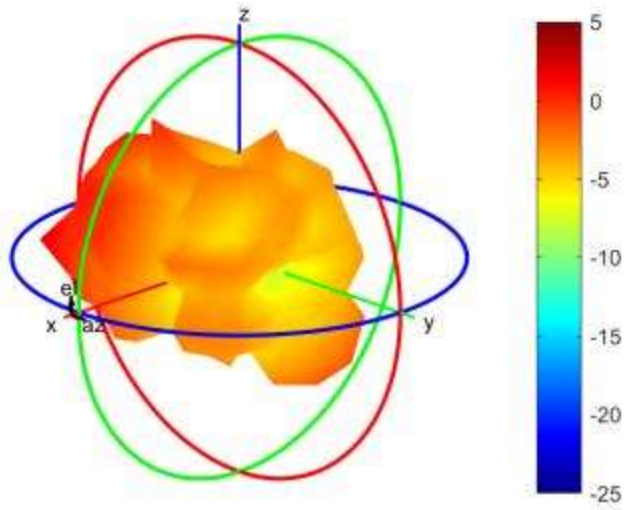
| | |
|-------------------------------|------------------|
| Center Frequency | 1702.5MHz |
| Peak Gain W/ Cable loss (dBi) | -0.45 |

1710 MHz



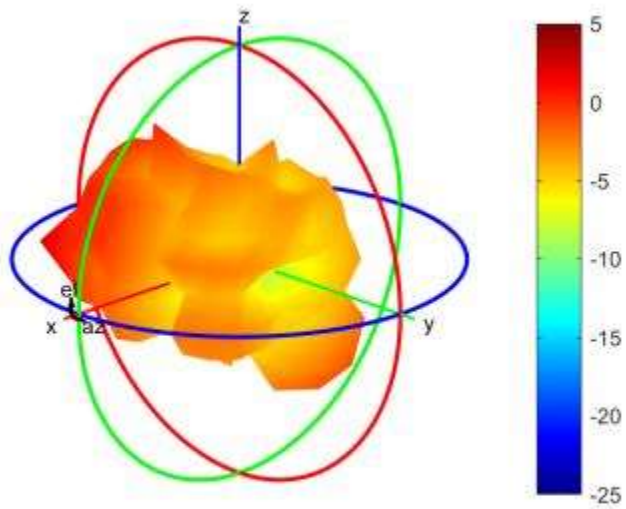
| | |
|-------------------------------|-----------------|
| Center Frequency | 1710 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.5 |

1732.5MHz



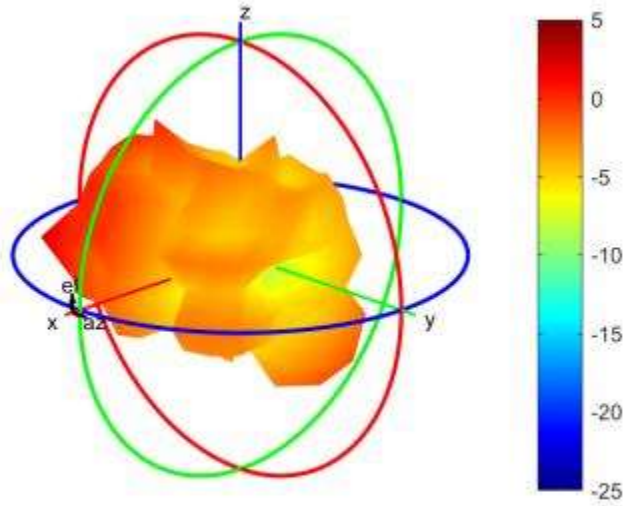
| | |
|-------------------------------|------------------|
| Center Frequency | 1732.5MHz |
| Peak Gain W/ Cable loss (dBi) | -0.6 |

1745MHz



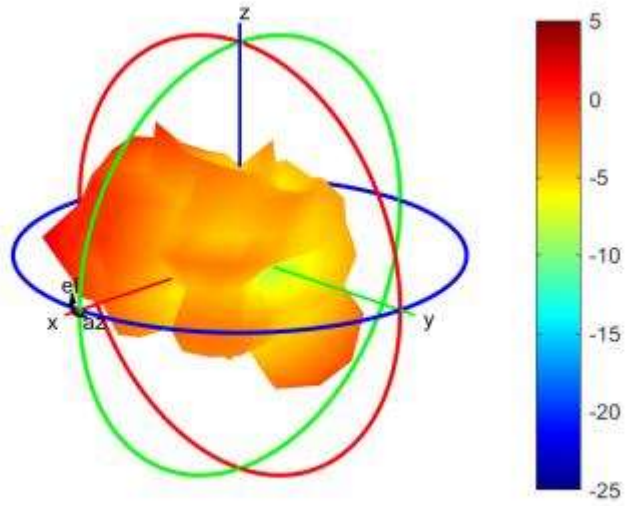
| | |
|-------------------------------|----------------|
| Center Frequency | 1745MHz |
| Peak Gain W/ Cable loss (dBi) | -0.4 |

1747.5MHz



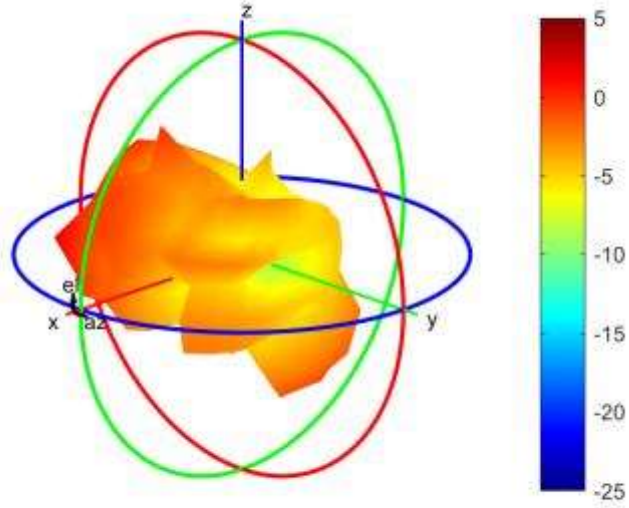
| | |
|-------------------------------|------------------|
| Center Frequency | 1747.5MHz |
| Peak Gain W/ Cable loss (dBi) | -0.28 |

1755MHz



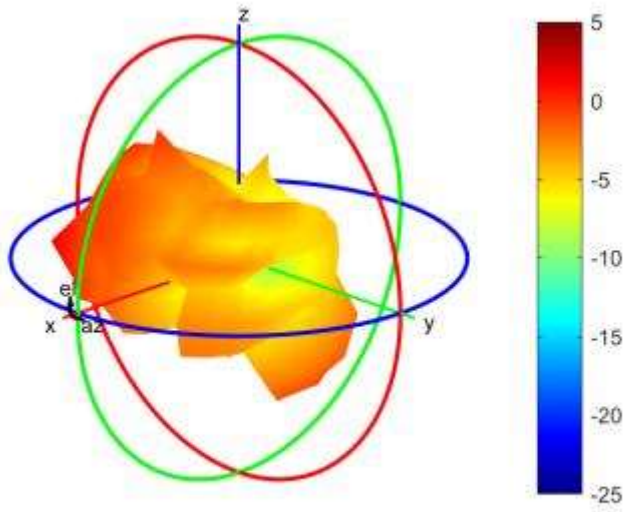
| | |
|-------------------------------|----------------|
| Center Frequency | 1755MHz |
| Peak Gain W/ Cable loss (dBi) | 0.13 |

1780 MHz



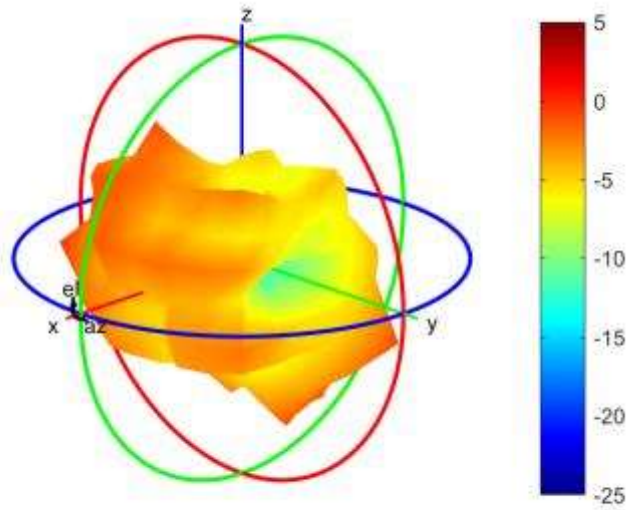
| | |
|-------------------------------|-----------------|
| Center Frequency | 1780 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.3 |

1785 MHz



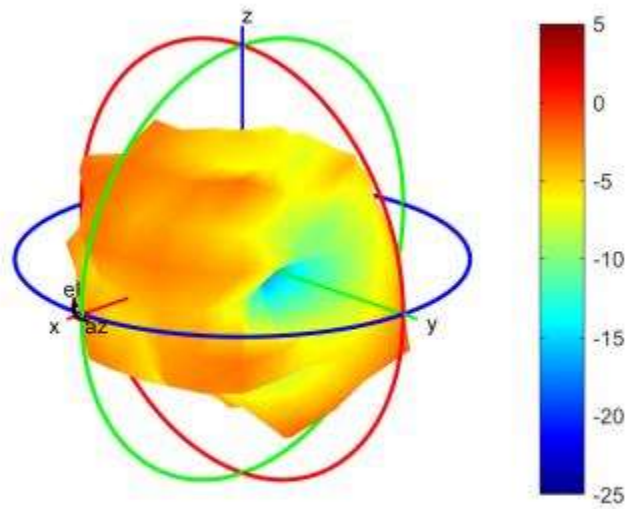
| | |
|-------------------------------|-----------------|
| Center Frequency | 1785 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.33 |

1850MHz



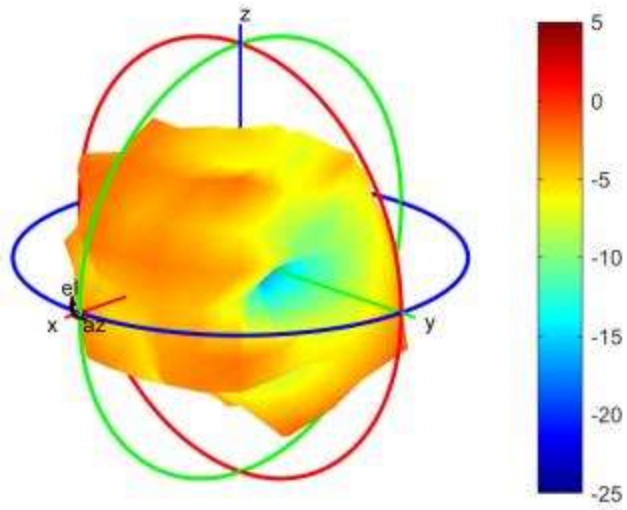
| | |
|-------------------------------|----------------|
| Center Frequency | 1850MHz |
| Peak Gain W/ Cable loss (dBi) | -0.83 |

1880MHz



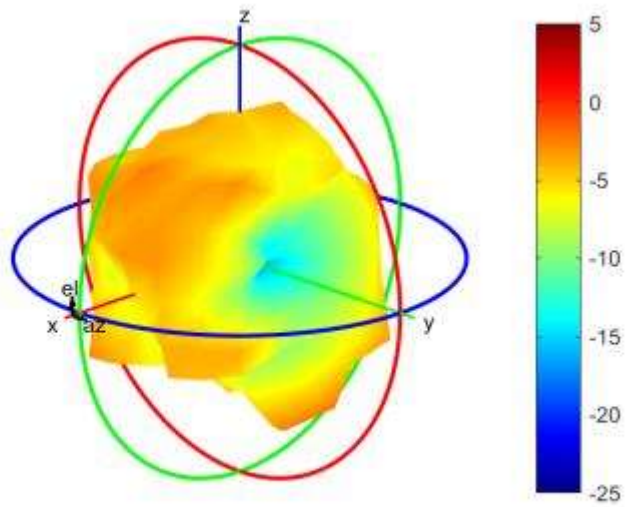
| | |
|-------------------------------|----------------|
| Center Frequency | 1880MHz |
| Peak Gain W/ Cable loss (dBi) | -0.39 |

1882.5MHz



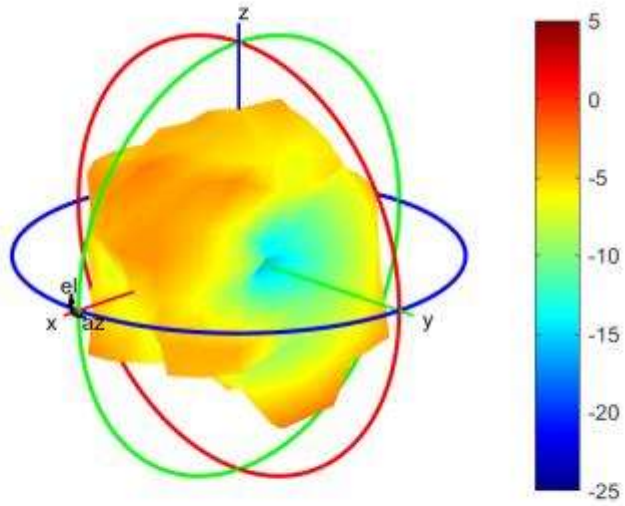
| | |
|-------------------------------|------------------|
| Center Frequency | 1882.5MHz |
| Peak Gain W/ Cable loss (dBi) | -0.87 |

1900MHz



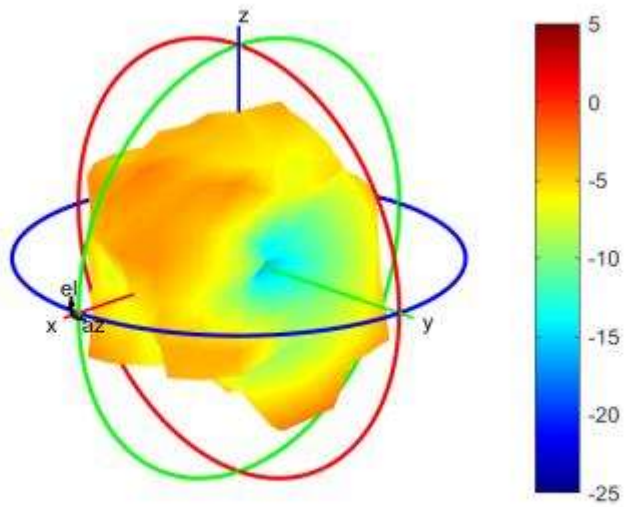
| | |
|-------------------------------|----------------|
| Center Frequency | 1900MHz |
| Peak Gain W/ Cable loss (dBi) | -1.83 |

1910 MHz



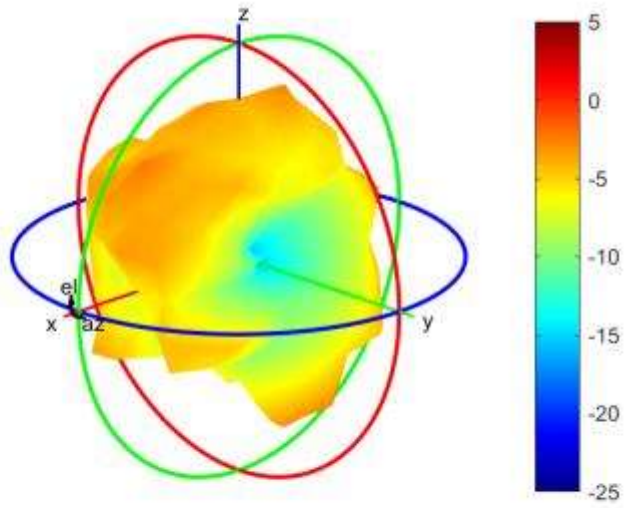
| | |
|-------------------------------|-----------------|
| Center Frequency | 1910 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.29 |

1915 MHz



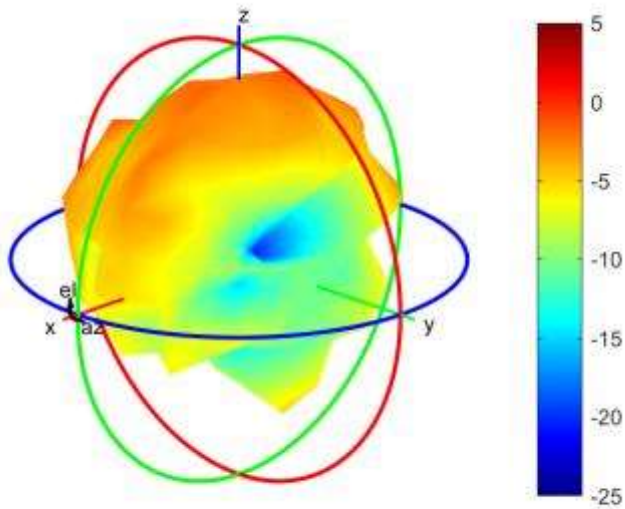
| | |
|-------------------------------|-----------------|
| Center Frequency | 1915 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.77 |

1920MHz



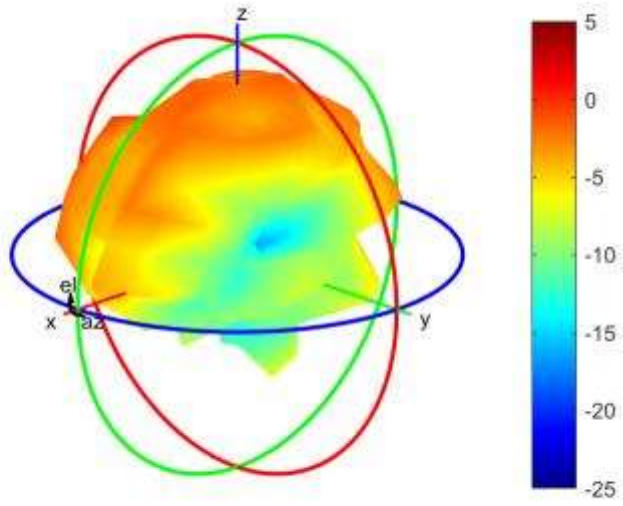
| | |
|-------------------------------|----------------|
| Center Frequency | 1920MHz |
| Peak Gain W/ Cable loss (dBi) | -2.97 |

1950MHz



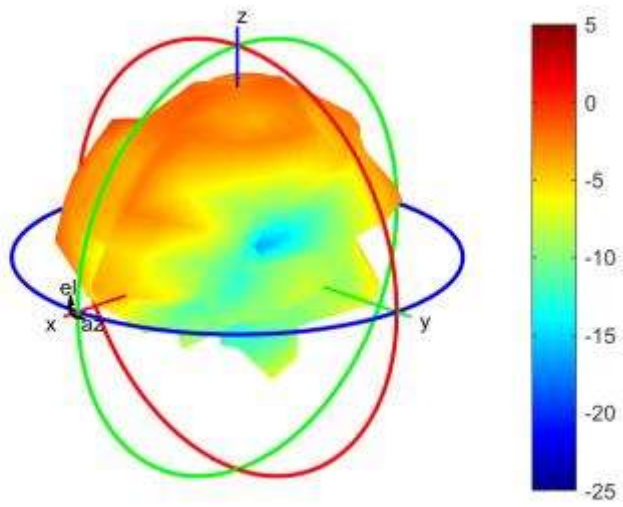
| | |
|-------------------------------|----------------|
| Center Frequency | 1950MHz |
| Peak Gain W/ Cable loss (dBi) | -1.15 |

1980MHz



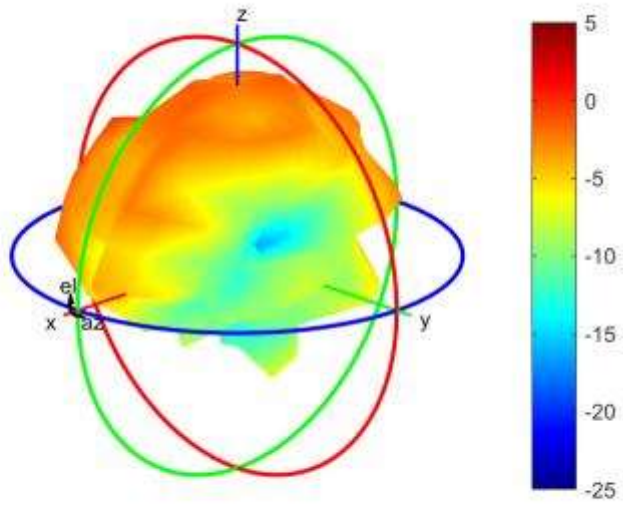
| | |
|-------------------------------|----------------|
| Center Frequency | 1980MHz |
| Peak Gain W/ Cable loss (dBi) | -0.06 |

2010MHz



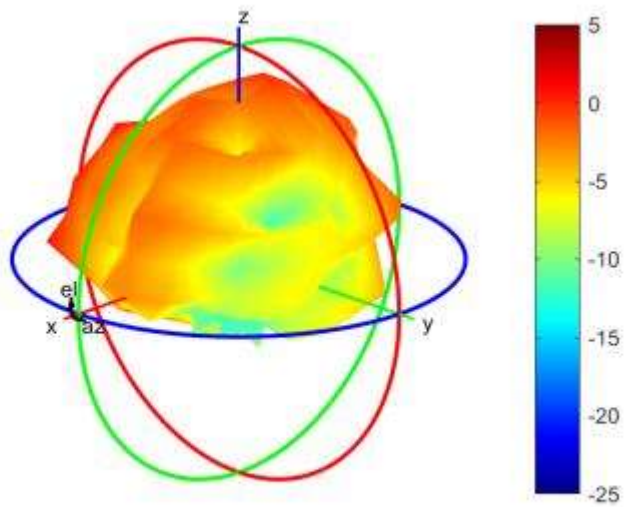
| | |
|-------------------------------|----------------|
| Center Frequency | 2010MHz |
| Peak Gain W/ Cable loss (dBi) | -0.56 |

2017.5 MHz



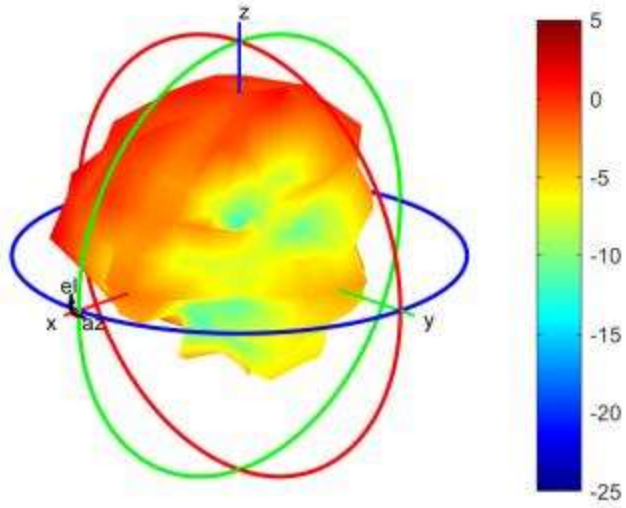
| | |
|-------------------------------|-------------------|
| Center Frequency | 2017.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.71 |

2025 MHz



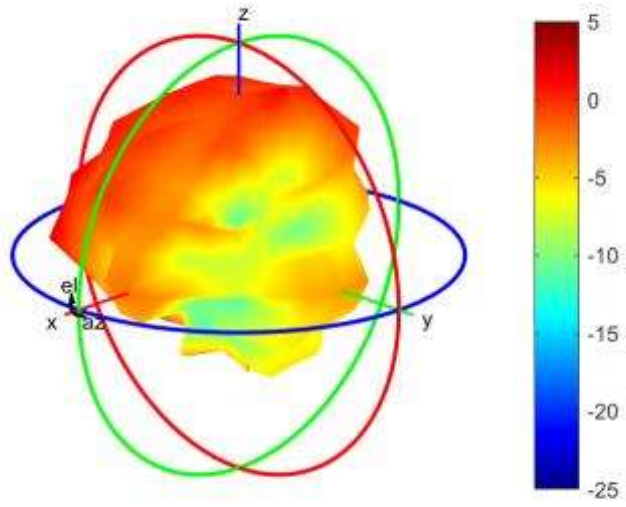
| | |
|-------------------------------|-----------------|
| Center Frequency | 2025 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.45 |

2300MHz



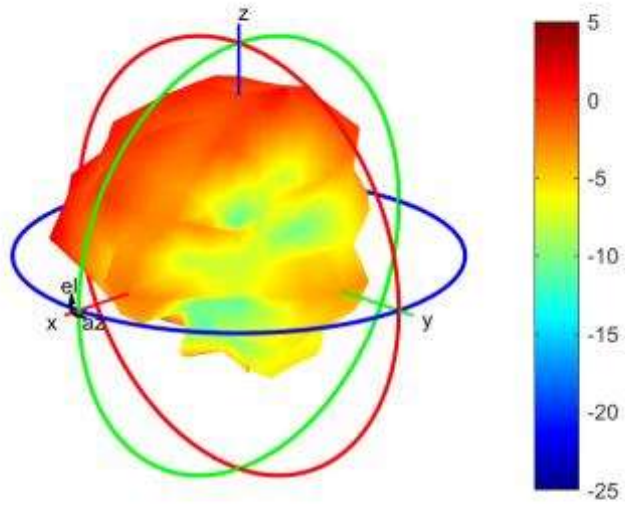
| | |
|-------------------------------|----------------|
| Center Frequency | 2300MHz |
| Peak Gain W/ Cable loss (dBi) | 0.91 |

2305MHz



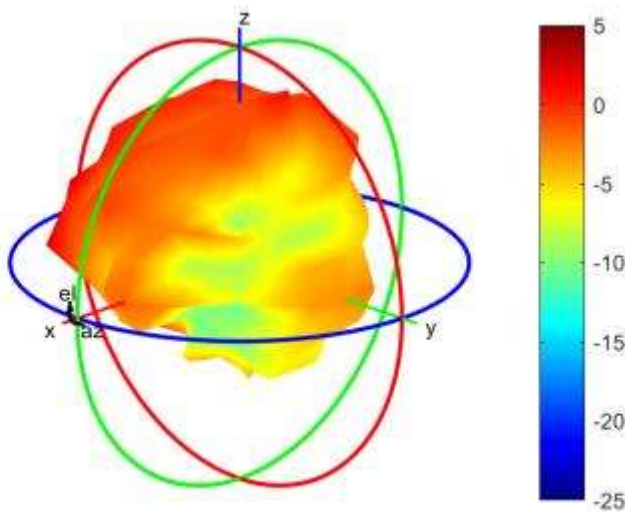
| | |
|-------------------------------|----------------|
| Center Frequency | 2305MHz |
| Peak Gain W/ Cable loss (dBi) | 0.7 |

2310MHz



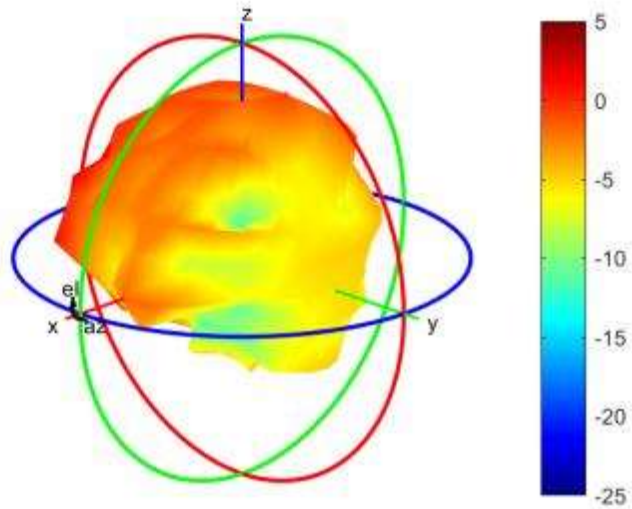
| | |
|-------------------------------|----------------|
| Center Frequency | 2310MHz |
| Peak Gain W/ Cable loss (dBi) | 0.58 |

2315MHz



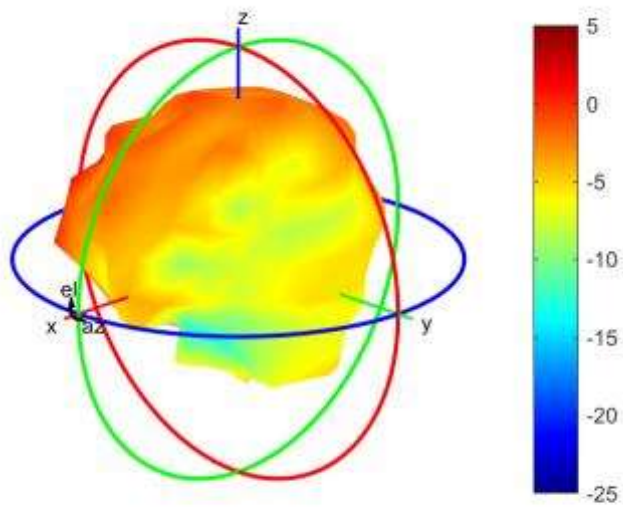
| | |
|-------------------------------|----------------|
| Center Frequency | 2315MHz |
| Peak Gain W/ Cable loss (dBi) | 0.41 |

2350 MHz



| | |
|-------------------------------|-----------------|
| Center Frequency | 2350 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.36 |

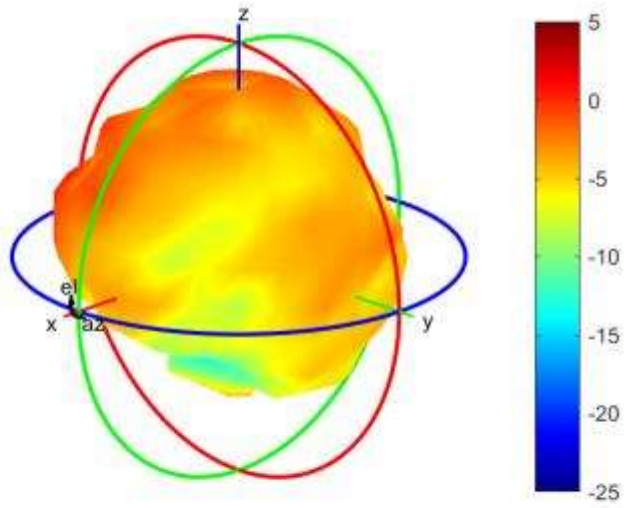
2400 MHz



| | |
|-------------------------------|-----------------|
| Center Frequency | 2400 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.35 |

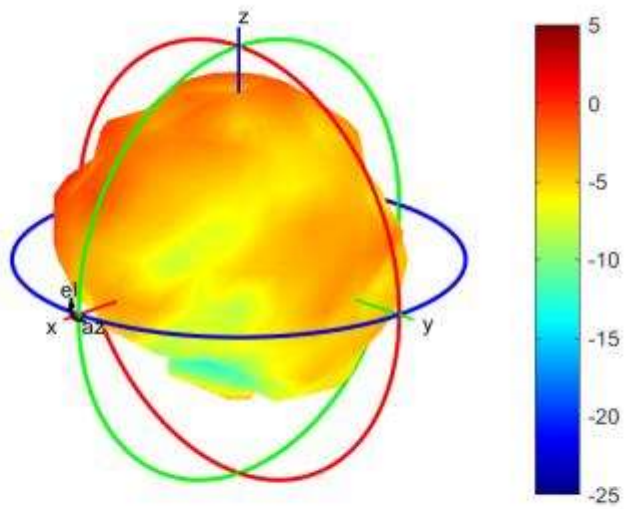
v

2483.5 MHz



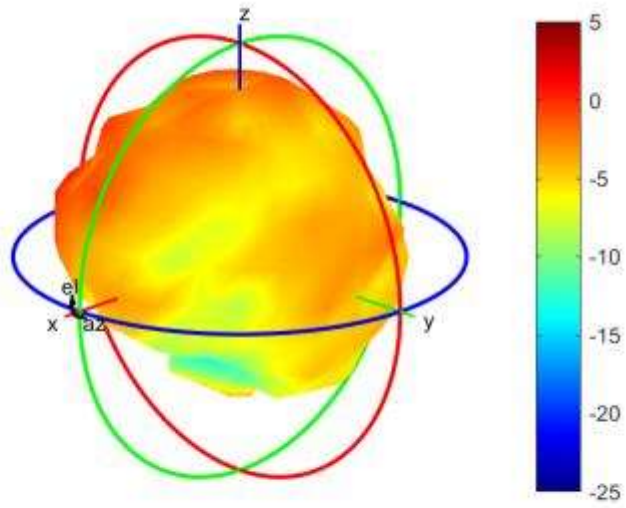
| | |
|-------------------------------|-------------------|
| Center Frequency | 2483.5 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.32 |

2489.25 MHz



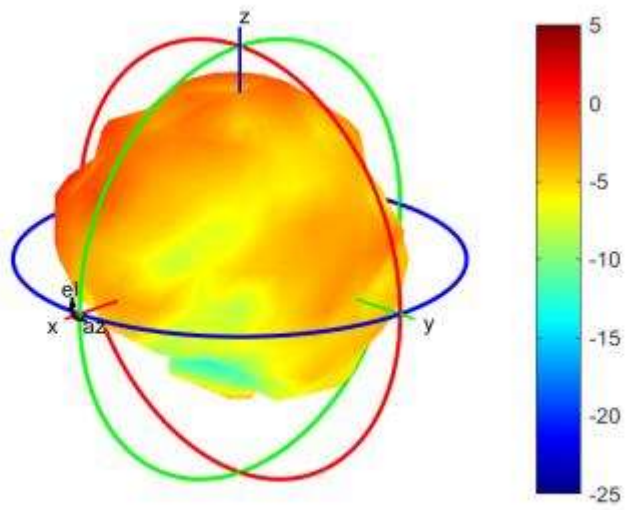
| | |
|-------------------------------|--------------------|
| Center Frequency | 2489.25 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.31 |

2495 MHz



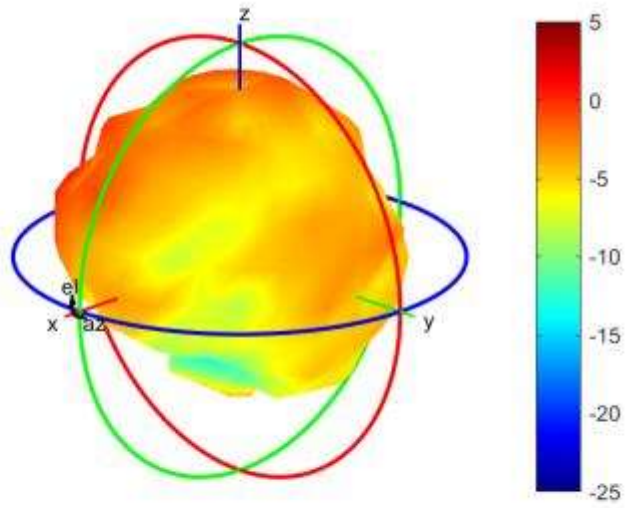
| | |
|-------------------------------|-----------------|
| Center Frequency | 2495 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.28 |

2496 MHz



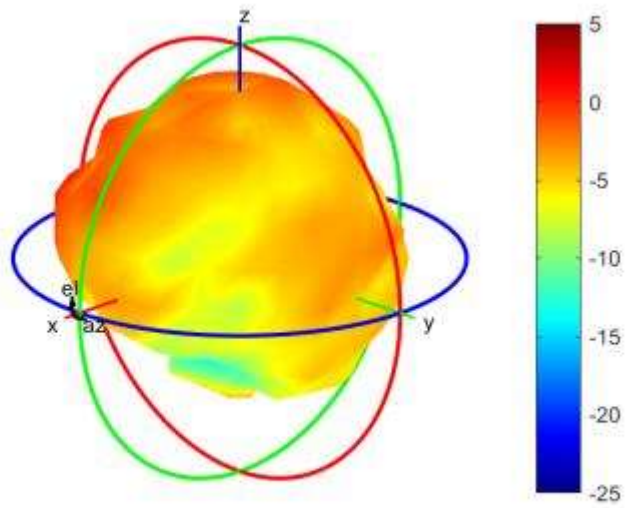
| | |
|-------------------------------|-----------------|
| Center Frequency | 2496 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.27 |

2500MHz



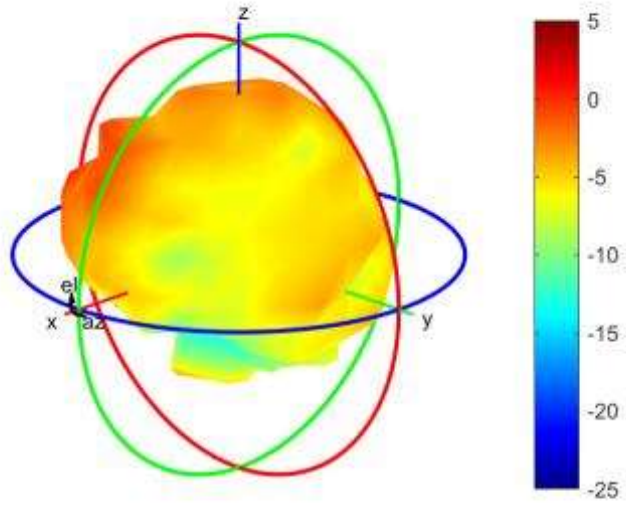
| | |
|-------------------------------|----------------|
| Center Frequency | 2500MHz |
| Peak Gain W/ Cable loss (dBi) | 0.11 |

2535MHz



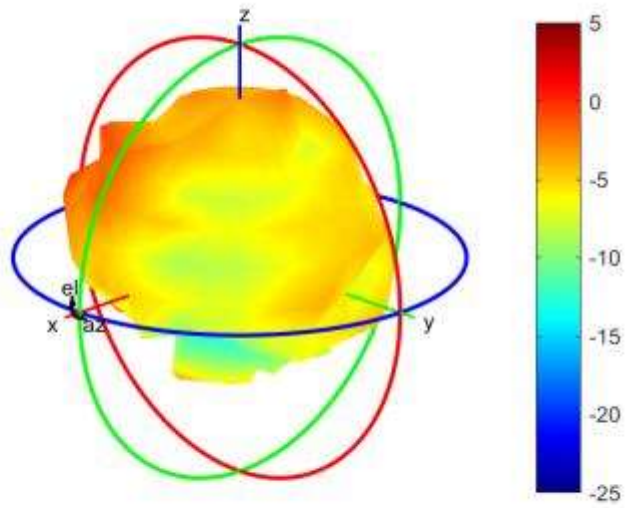
| | |
|-------------------------------|----------------|
| Center Frequency | 2535MHz |
| Peak Gain W/ Cable loss (dBi) | 0.43 |

2570MHz



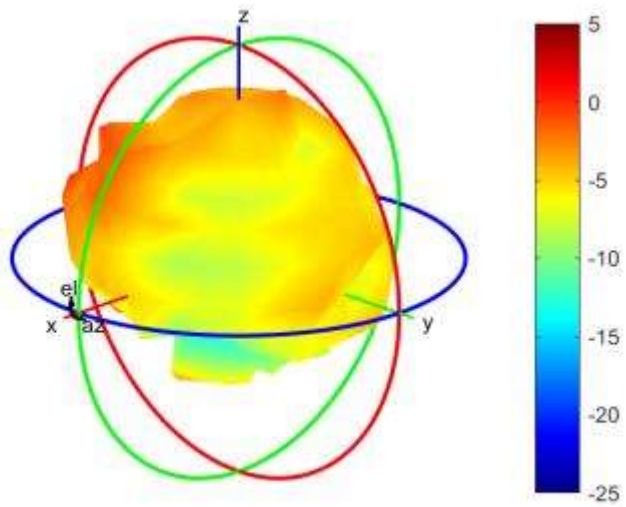
| | |
|-------------------------------|----------------|
| Center Frequency | 2570MHz |
| Peak Gain W/ Cable loss (dBi) | 0.56 |

2593 MHz



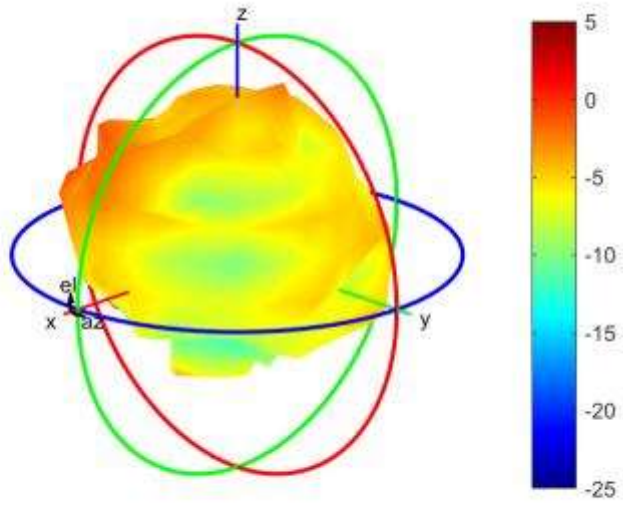
| | |
|-------------------------------|-----------------|
| Center Frequency | 2593 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.13 |

2595 MHz



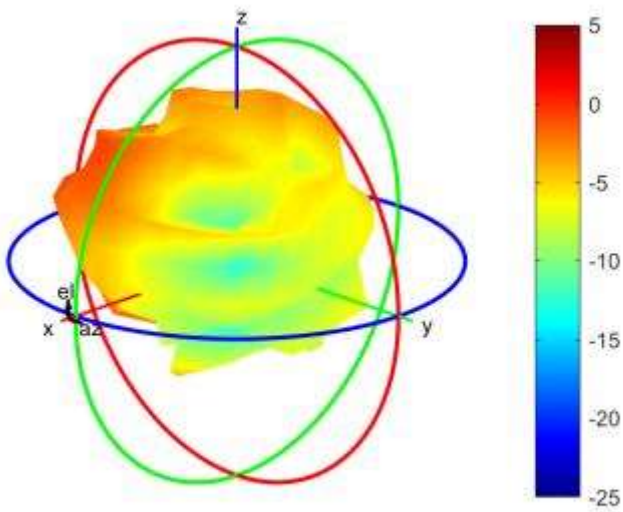
| | |
|-------------------------------|-----------------|
| Center Frequency | 2595 MHz |
| Peak Gain W/ Cable loss (dBi) | 0.15 |

2620MHz



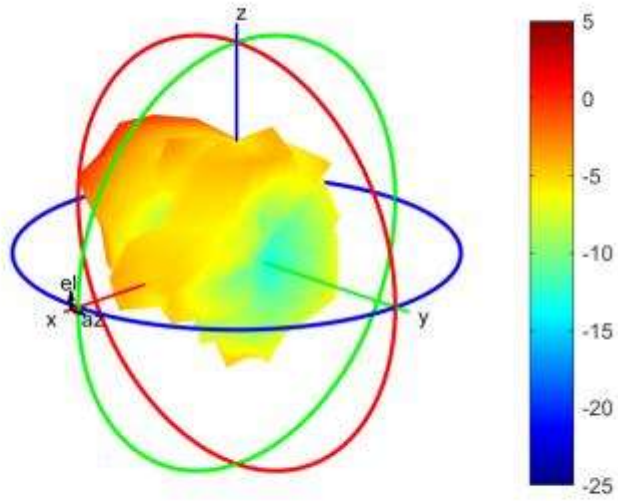
| | |
|-------------------------------|----------------|
| Center Frequency | 2620MHz |
| Peak Gain W/ Cable loss (dBi) | -0.09 |

2690MHz



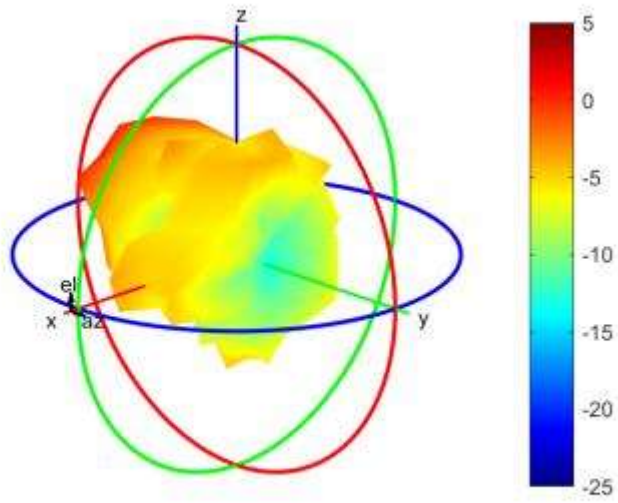
| | |
|-------------------------------|----------------|
| Center Frequency | 2690MHz |
| Peak Gain W/ Cable loss (dBi) | -0.1 |

3300MHz



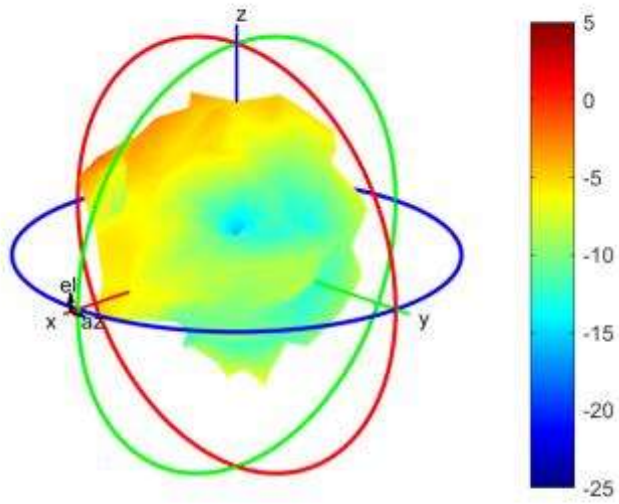
| | |
|-------------------------------|----------------|
| Center Frequency | 3300MHz |
| Peak Gain W/ Cable loss (dBi) | -0.88 |

3400MHz



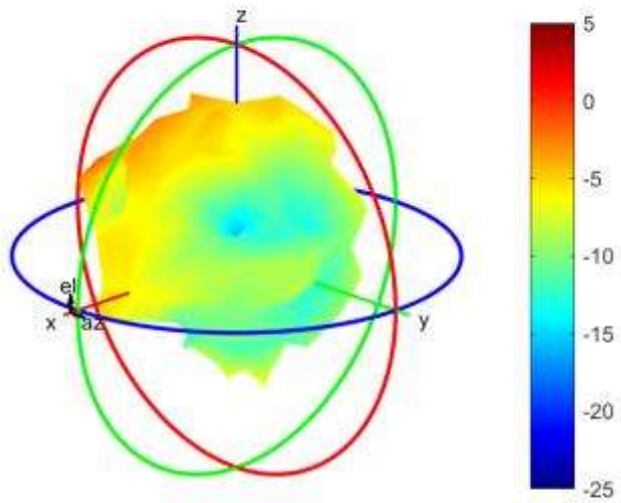
| | |
|-------------------------------|----------------|
| Center Frequency | 3400MHz |
| Peak Gain W/ Cable loss (dBi) | -1.18 |

3500 MHz



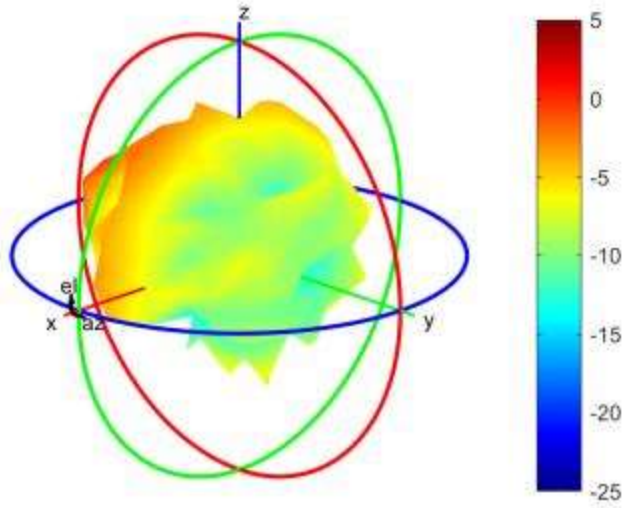
| | |
|-------------------------------|-----------------|
| Center Frequency | 3500 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.17 |

3550 MHz



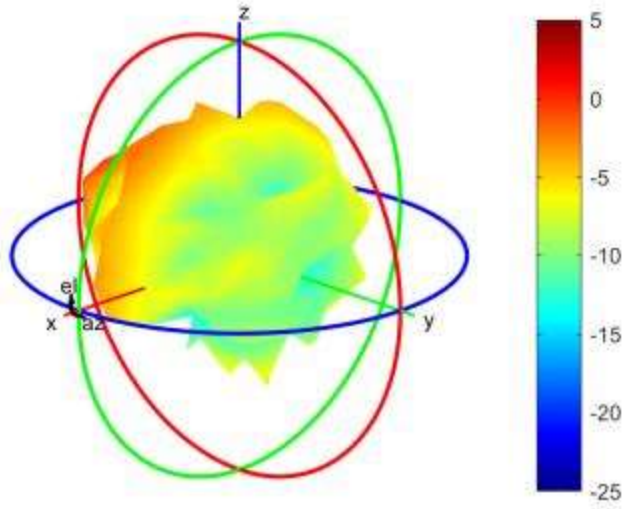
| | |
|-------------------------------|-----------------|
| Center Frequency | 3550 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.51 |

3600MHz



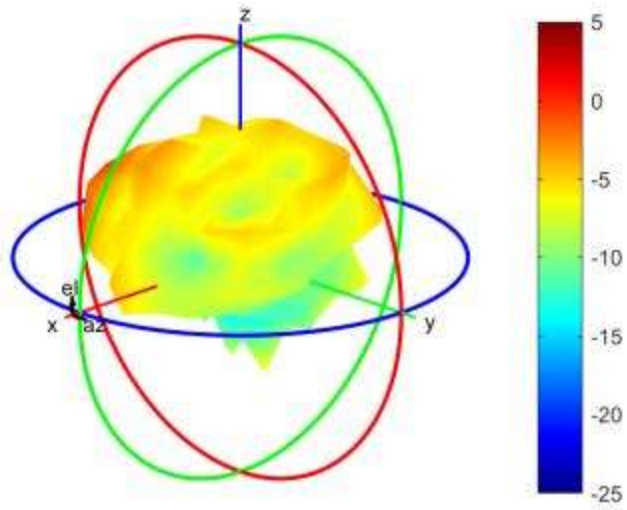
| | |
|-------------------------------|----------------|
| Center Frequency | 3600MHz |
| Peak Gain W/ Cable loss (dBi) | -0.85 |

3625MHz



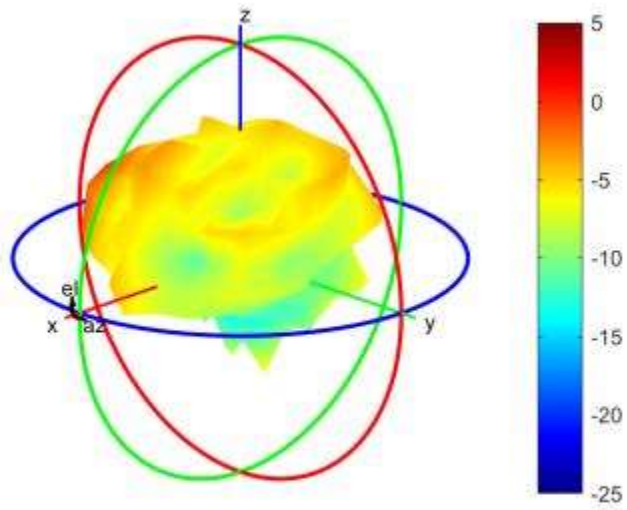
| | |
|-------------------------------|----------------|
| Center Frequency | 3625MHz |
| Peak Gain W/ Cable loss (dBi) | -0.76 |

3700MHz



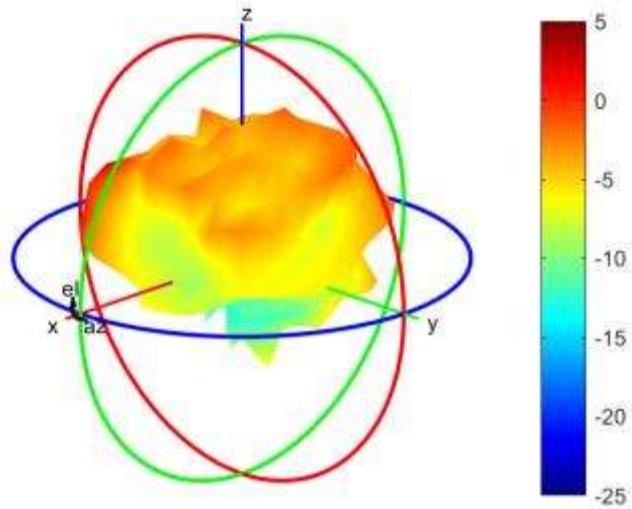
| | |
|-------------------------------|----------------|
| Center Frequency | 3700MHz |
| Peak Gain W/ Cable loss (dBi) | -0.52 |

3750MHz



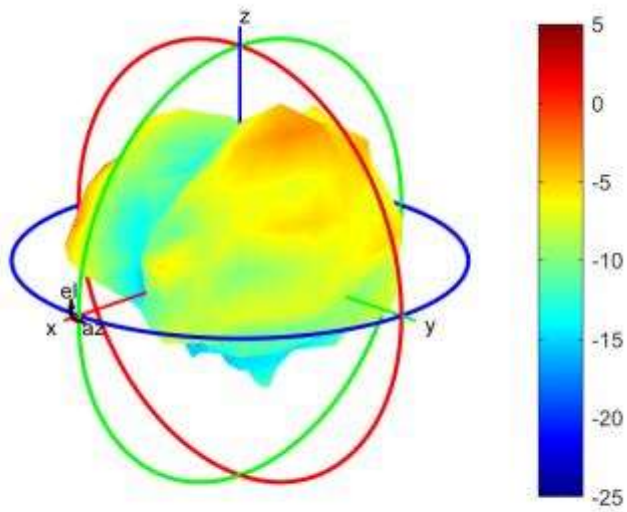
| | |
|-------------------------------|----------------|
| Center Frequency | 3750MHz |
| Peak Gain W/ Cable loss (dBi) | -0.48 |

3800 MHz



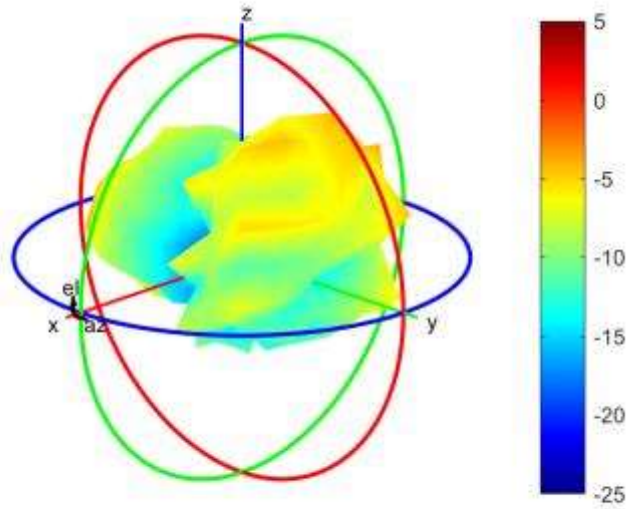
| | |
|-------------------------------|-----------------|
| Center Frequency | 3800 MHz |
| Peak Gain W/ Cable loss (dBi) | -0.36 |

4200 MHz



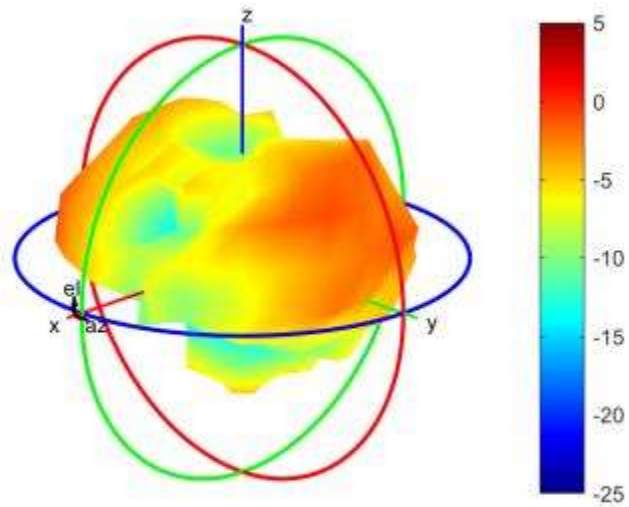
| | |
|-------------------------------|-----------------|
| Center Frequency | 4200 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.68 |

4400MHz



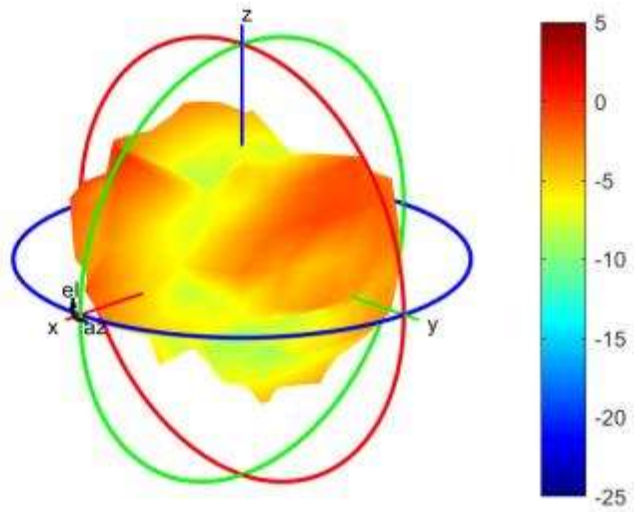
| | |
|-------------------------------|----------------|
| Center Frequency | 4400MHz |
| Peak Gain W/ Cable loss (dBi) | -2.3 |

4700MHz



| | |
|-------------------------------|----------------|
| Center Frequency | 4700MHz |
| Peak Gain W/ Cable loss (dBi) | -0.8 |

5000MHz

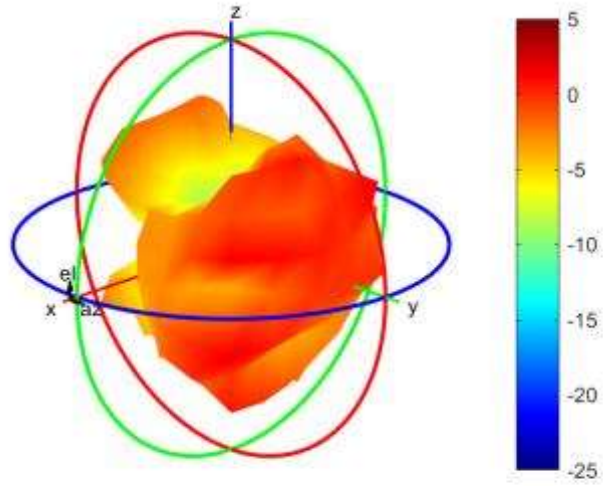


| | |
|-------------------------------|----------------|
| Center Frequency | 5000MHz |
| Peak Gain W/ Cable loss (dBi) | -1.38 |



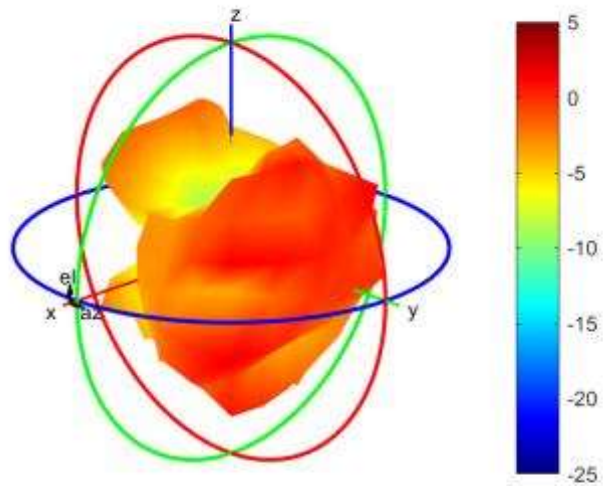
MIMO2 Antenna (DRx2)

1695 MHz



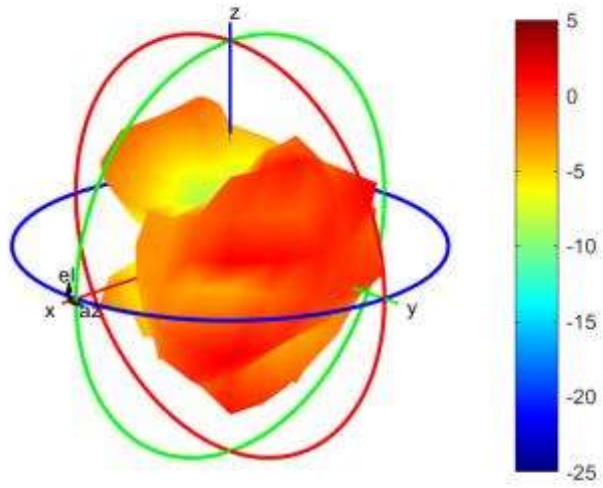
| | |
|-------------------------------|-----------------|
| Center Frequency | 1695 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.01 |

1702.5 MHz



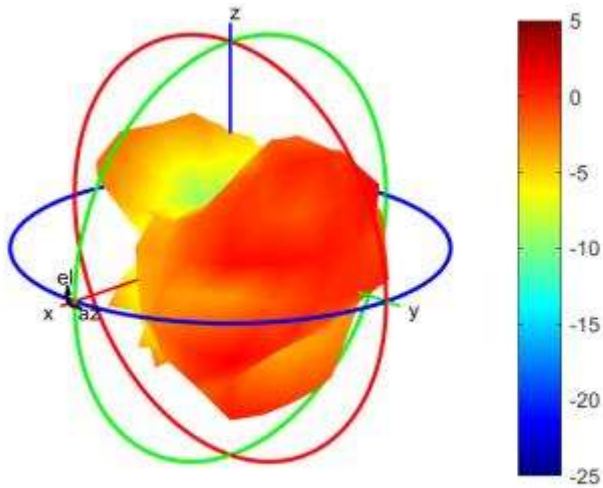
| | |
|-------------------------------|-------------------|
| Center Frequency | 1702.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.13 |

1710 MHz



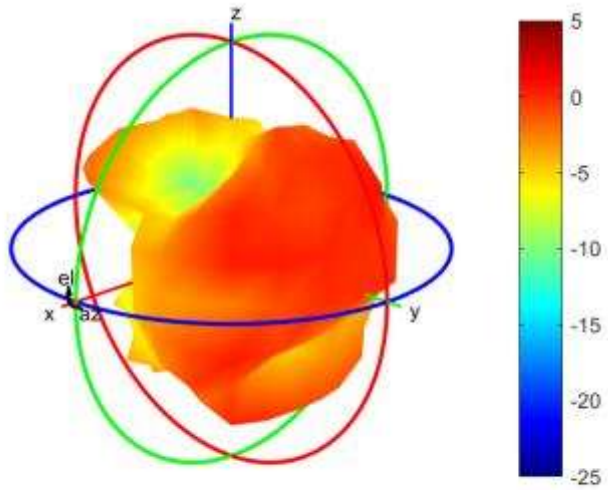
| | |
|-------------------------------|-----------------|
| Center Frequency | 1710 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.22 |

1732.5 MHz



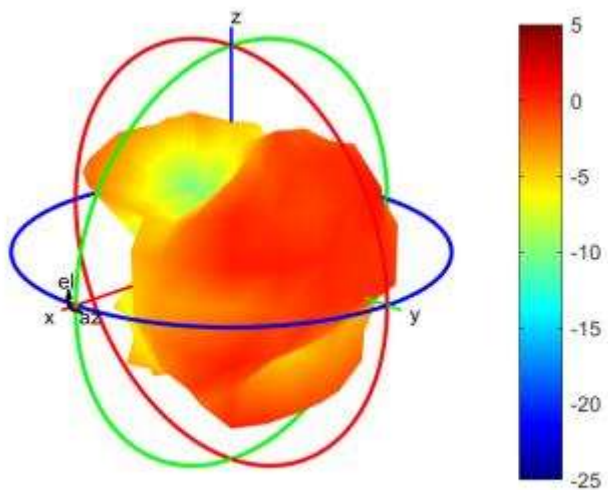
| | |
|-------------------------------|-------------------|
| Center Frequency | 1732.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.48 |

1745 MHz



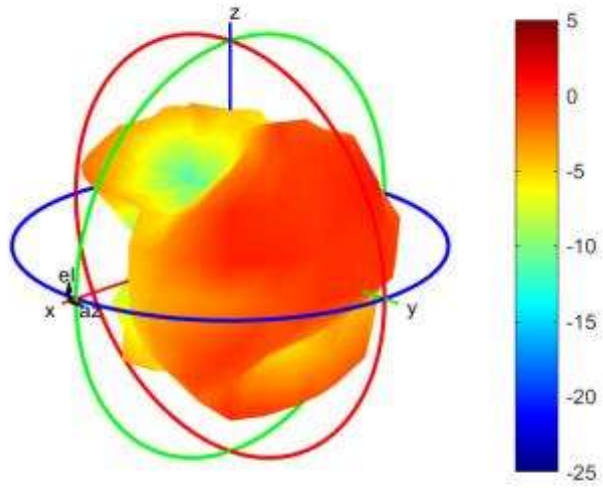
| | |
|-------------------------------|-----------------|
| Center Frequency | 1745 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.49 |

1747.5 MHz



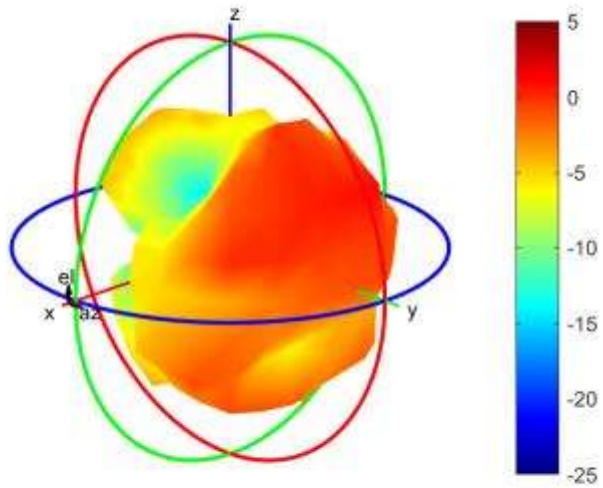
| | |
|-------------------------------|-------------------|
| Center Frequency | 1747.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.49 |

1755 MHz



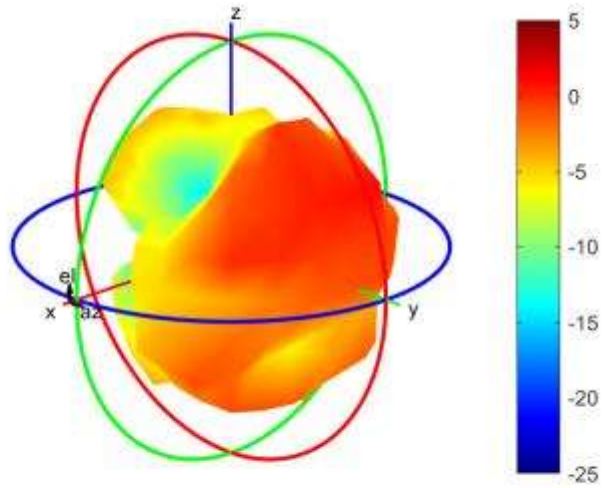
| | |
|-------------------------------|-----------------|
| Center Frequency | 1755 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.24 |

1780 MHz



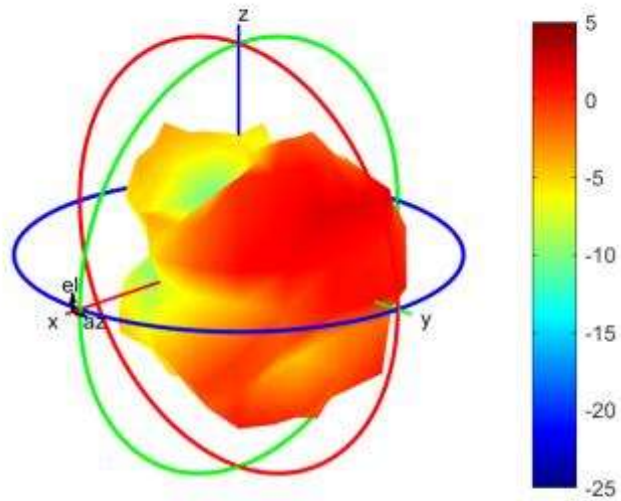
| | |
|-------------------------------|-----------------|
| Center Frequency | 1780 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.41 |

1785 MHz



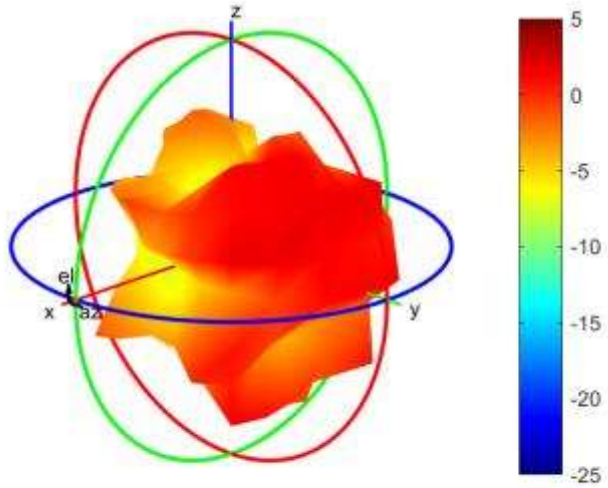
| | |
|-------------------------------|-----------------|
| Center Frequency | 1785 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.53 |

1850 MHz



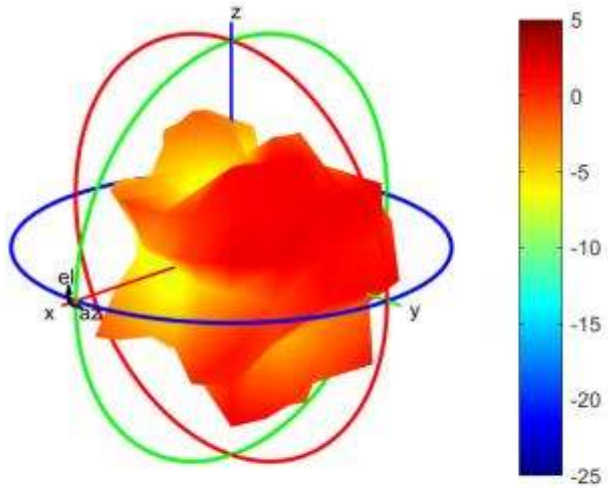
| | |
|-------------------------------|-----------------|
| Center Frequency | 1850 MHz |
| Peak Gain W/ Cable loss (dBi) | -2.87 |

1880 MHz



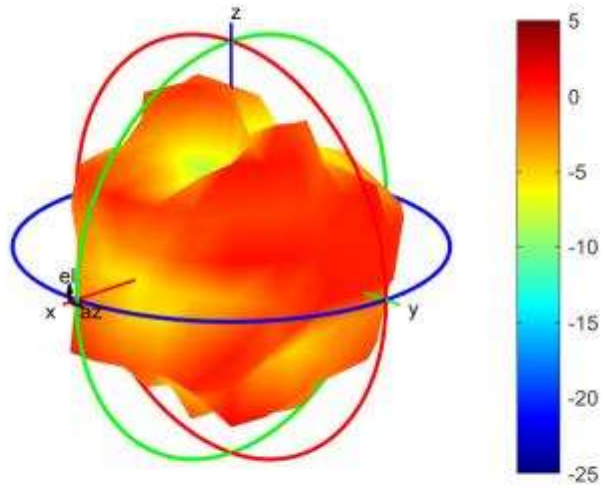
| | |
|-------------------------------|-----------------|
| Center Frequency | 1880 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.92 |

1882.5 MHz



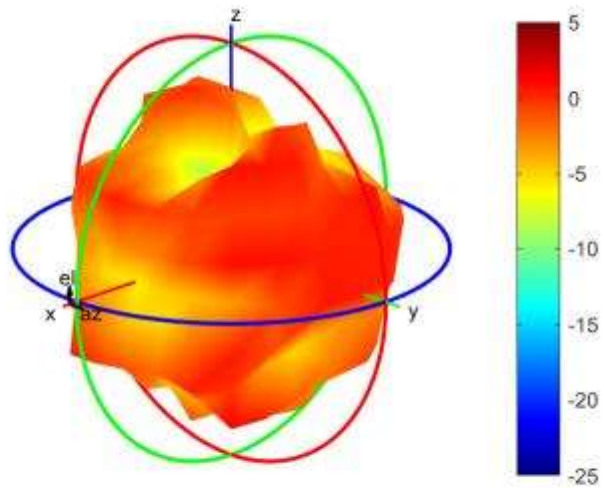
| | |
|-------------------------------|-------------------|
| Center Frequency | 1882.5 MHz |
| Peak Gain W/ Cable loss (dBi) | -1.98 |

1900MHz



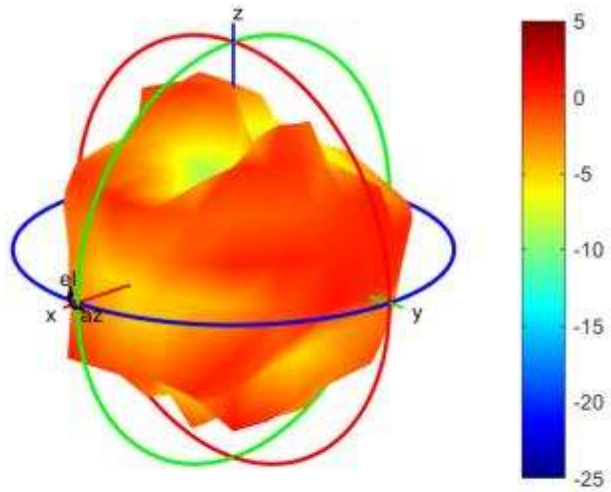
| | |
|-------------------------------|----------------|
| Center Frequency | 1900MHz |
| Peak Gain W/ Cable loss (dBi) | -2.13 |

1910MHz



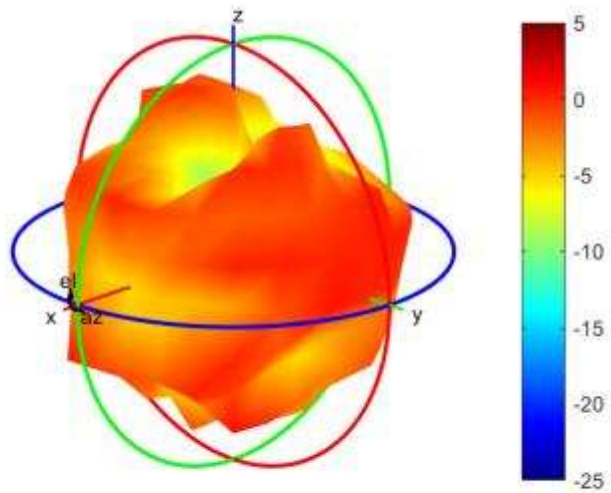
| | |
|-------------------------------|----------------|
| Center Frequency | 1910MHz |
| Peak Gain W/ Cable loss (dBi) | -2.54 |

1915MHz



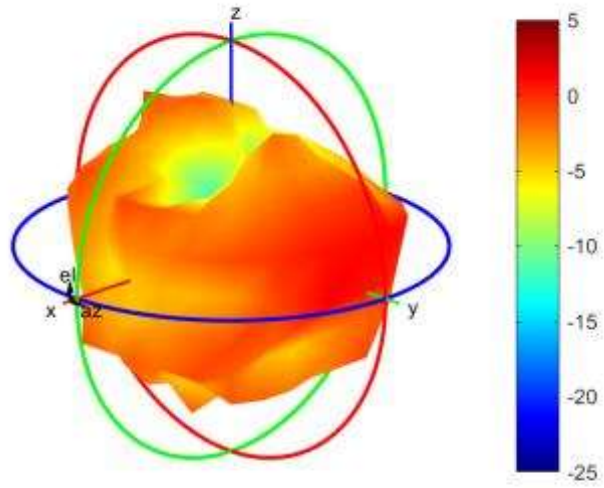
| | |
|-------------------------------|----------------|
| Center Frequency | 1915MHz |
| Peak Gain W/ Cable loss (dBi) | -2.41 |

1920MHz



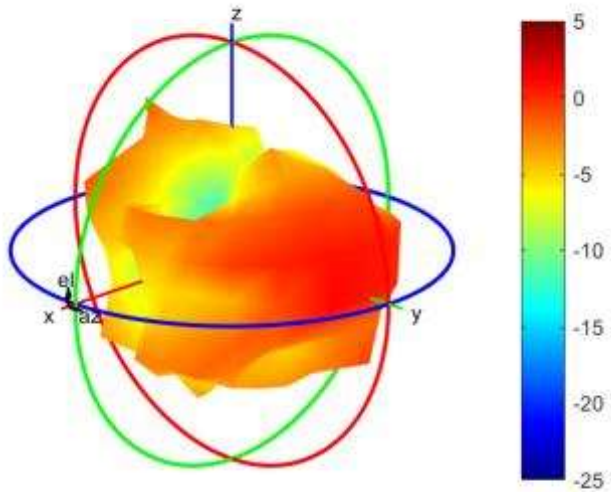
| | |
|-------------------------------|----------------|
| Center Frequency | 1920MHz |
| Peak Gain W/ Cable loss (dBi) | -2.28 |

1950MHz



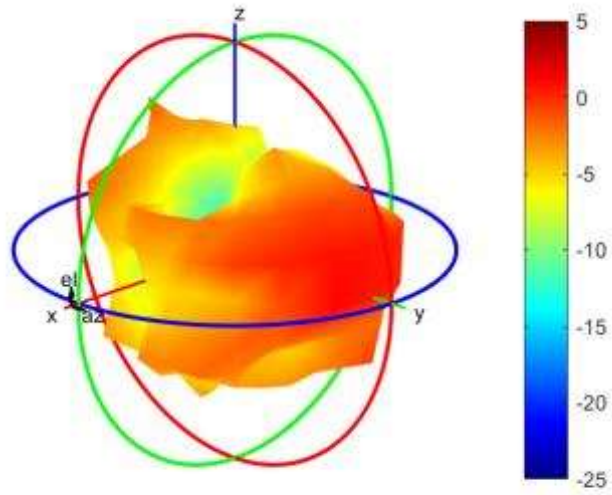
| | |
|-------------------------------|----------------|
| Center Frequency | 1950MHz |
| Peak Gain W/ Cable loss (dBi) | -2.00 |

1980MHz



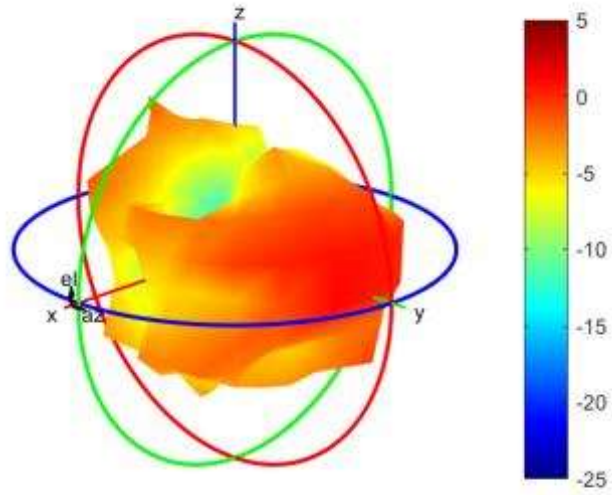
| | |
|-------------------------------|----------------|
| Center Frequency | 1980MHz |
| Peak Gain W/ Cable loss (dBi) | -2.10 |

2010MHz



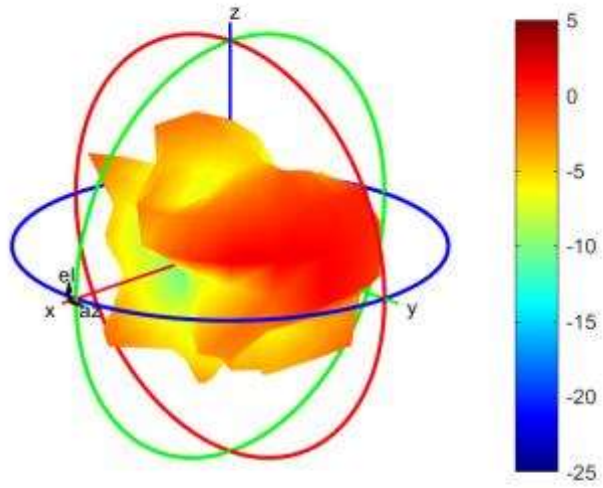
| | |
|-------------------------------|----------------|
| Center Frequency | 2010MHz |
| Peak Gain W/ Cable loss (dBi) | -1.95 |

2017.5MHz



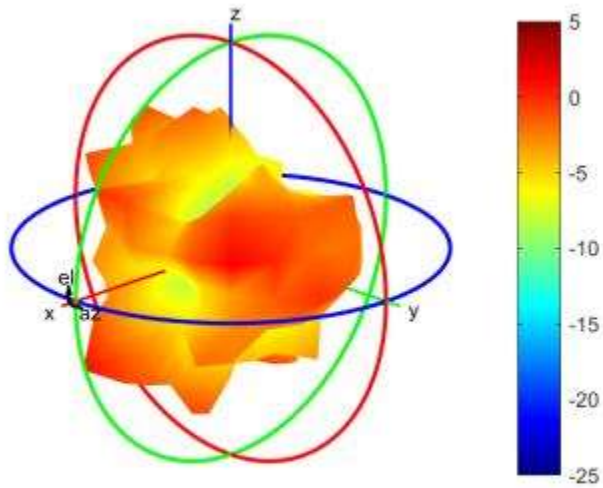
| | |
|-------------------------------|------------------|
| Center Frequency | 2017.5MHz |
| Peak Gain W/ Cable loss (dBi) | -1.83 |

2025MHz



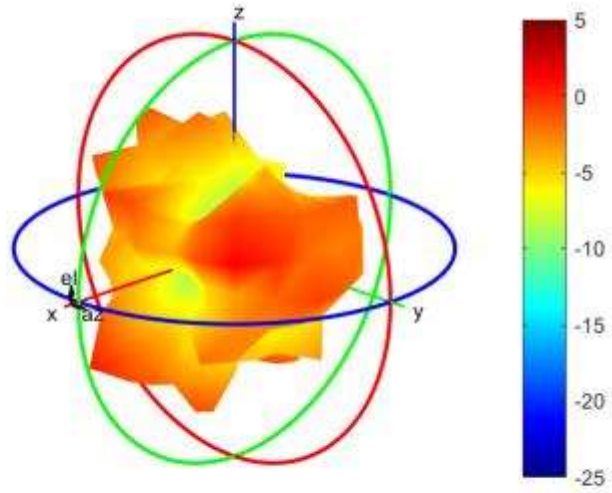
| | |
|-------------------------------|----------------|
| Center Frequency | 2025MHz |
| Peak Gain W/ Cable loss (dBi) | -1.78 |

2300MHz



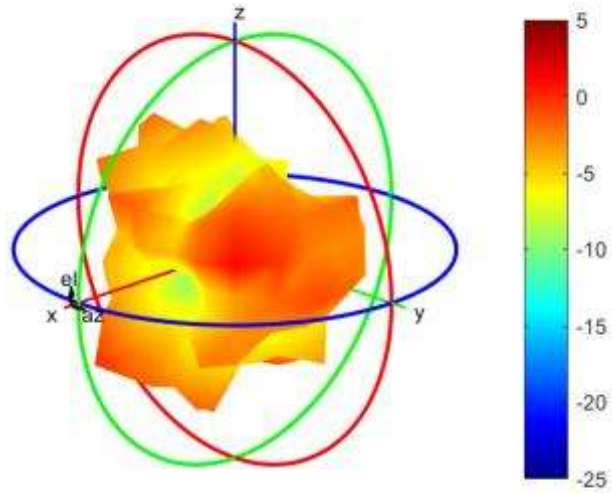
| | |
|-------------------------------|----------------|
| Center Frequency | 2300MHz |
| Peak Gain W/ Cable loss (dBi) | -1.16 |

2305MHz



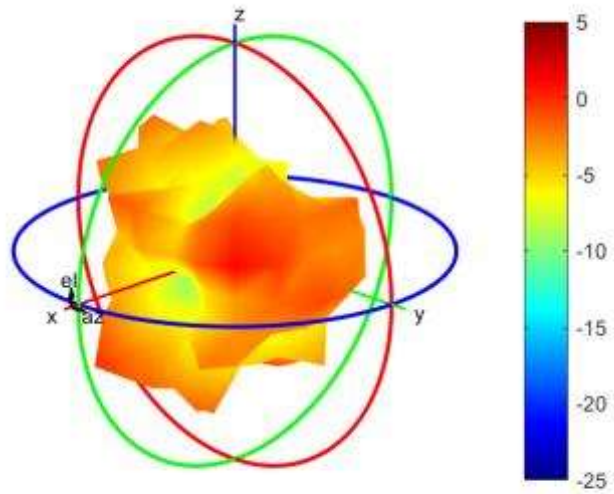
| | |
|-------------------------------|----------------|
| Center Frequency | 2305MHz |
| Peak Gain W/ Cable loss (dBi) | -1.81 |

2310MHz



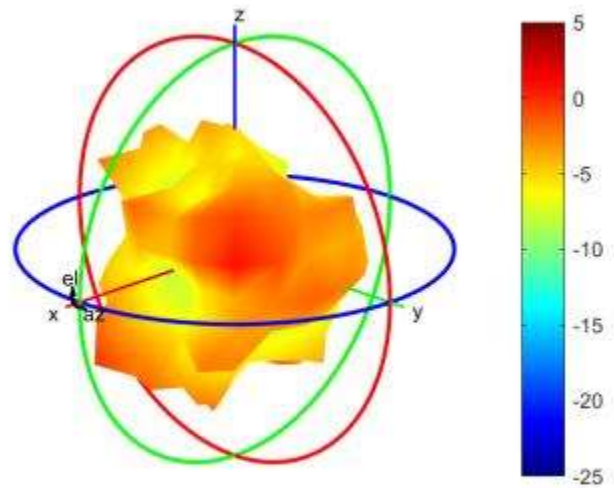
| | |
|-------------------------------|----------------|
| Center Frequency | 2310MHz |
| Peak Gain W/ Cable loss (dBi) | -1.65 |

2315MHz



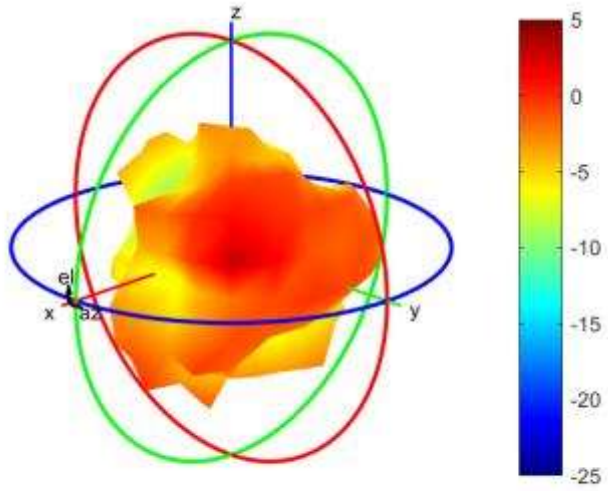
| | |
|-------------------------------|----------------|
| Center Frequency | 2315MHz |
| Peak Gain W/ Cable loss (dBi) | -1.49 |

2350MHz



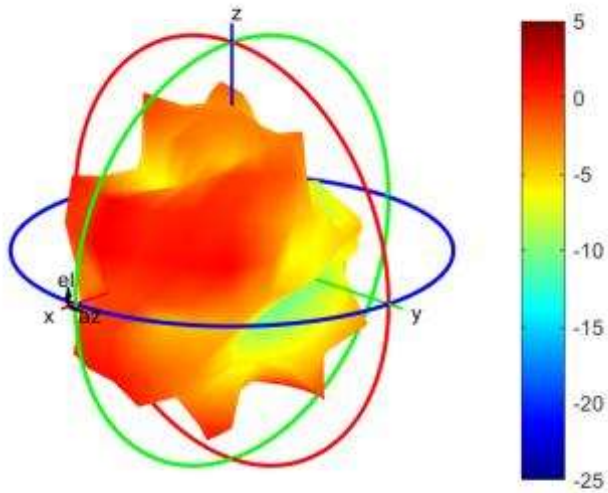
| | |
|-------------------------------|----------------|
| Center Frequency | 2350MHz |
| Peak Gain W/ Cable loss (dBi) | -1.2 |

2400MHz



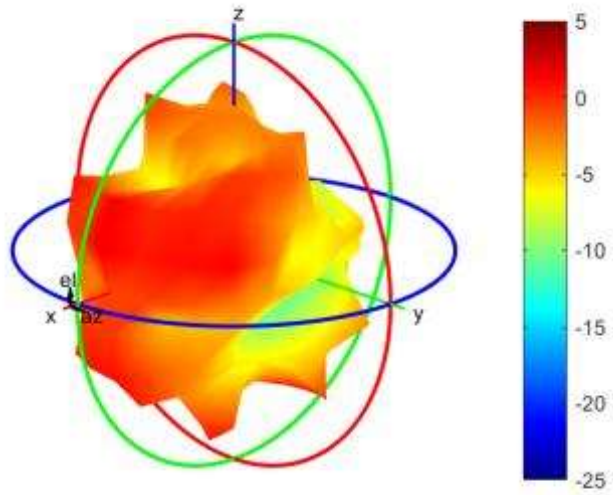
| | |
|-------------------------------|----------------|
| Center Frequency | 2400MHz |
| Peak Gain W/ Cable loss (dBi) | -0.83 |

2483.5MHz



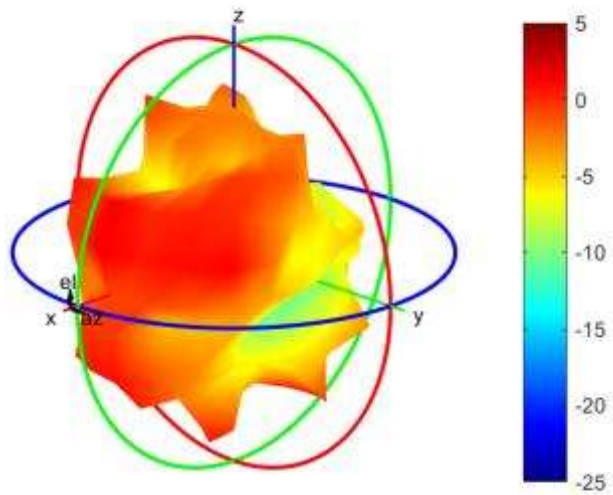
| | |
|-------------------------------|------------------|
| Center Frequency | 2483.5MHz |
| Peak Gain W/ Cable loss (dBi) | -1.15 |

2489.25MHz



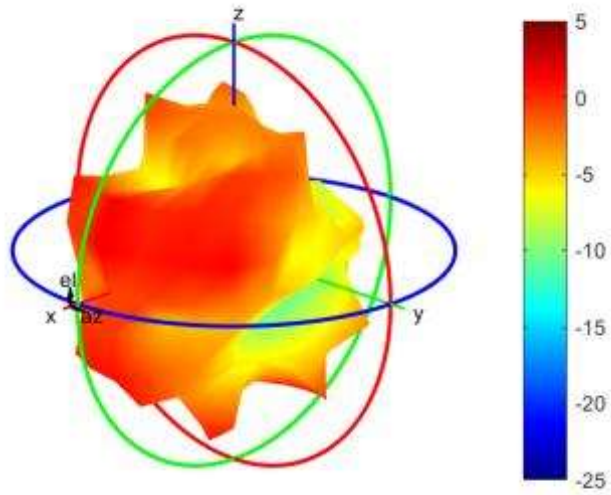
| | |
|-------------------------------|-------------------|
| Center Frequency | 2489.25MHz |
| Peak Gain W/ Cable loss (dBi) | -1.23 |

2495MHz



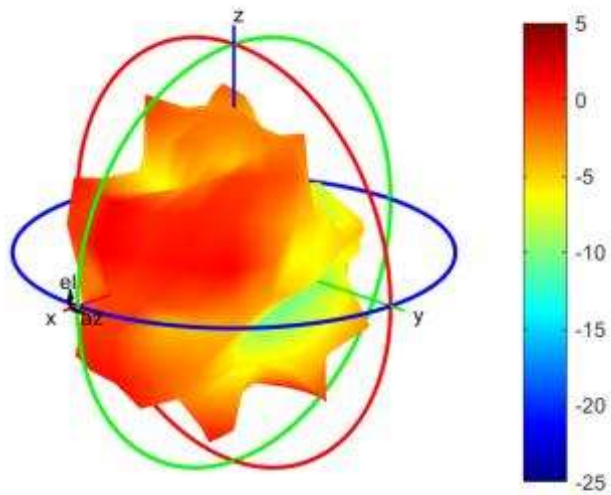
| | |
|-------------------------------|----------------|
| Center Frequency | 2495MHz |
| Peak Gain W/ Cable loss (dBi) | -1.36 |

2496MHz



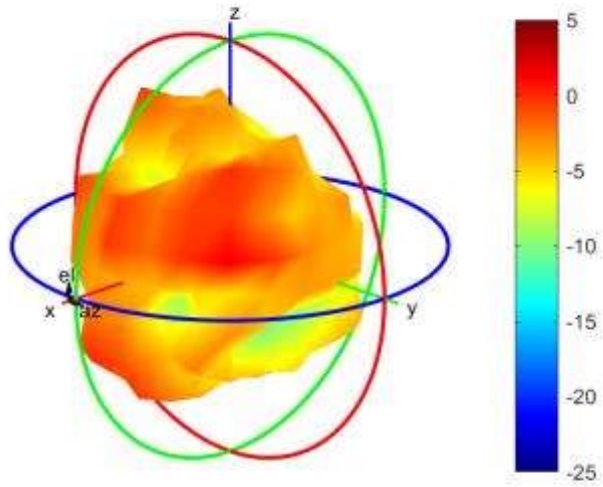
| | |
|-------------------------------|----------------|
| Center Frequency | 2496MHz |
| Peak Gain W/ Cable loss (dBi) | -1.38 |

2500MHz



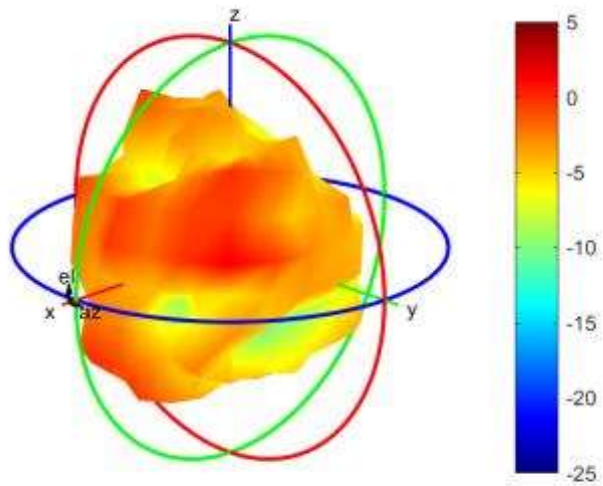
| | |
|-------------------------------|----------------|
| Center Frequency | 2500MHz |
| Peak Gain W/ Cable loss (dBi) | -1.46 |

2535MHz



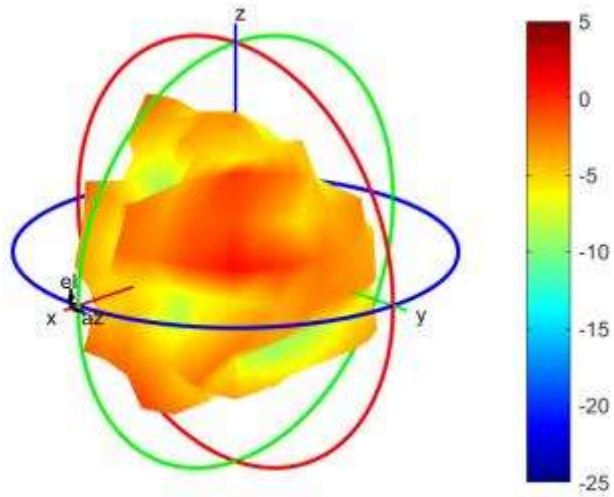
| | |
|-------------------------------|----------------|
| Center Frequency | 2535MHz |
| Peak Gain W/ Cable loss (dBi) | -1.34 |

2570MHz



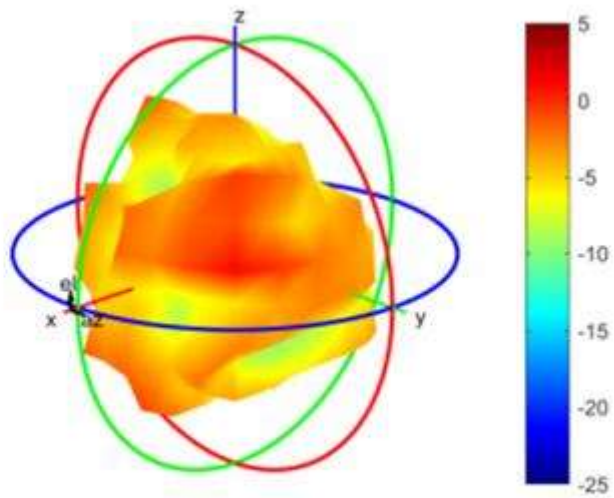
| | |
|-------------------------------|----------------|
| Center Frequency | 2570MHz |
| Peak Gain W/ Cable loss (dBi) | -1.23 |

2593MHz



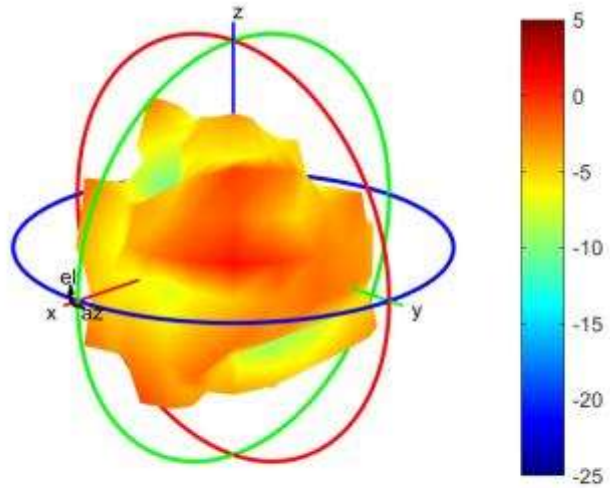
| | |
|-------------------------------|----------------|
| Center Frequency | 2593MHz |
| Peak Gain W/ Cable loss (dBi) | -1.08 |

2595MHz



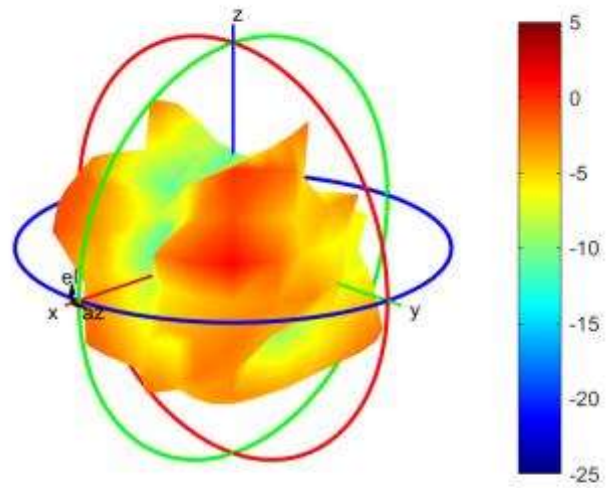
| | |
|-------------------------------|----------------|
| Center Frequency | 2595MHz |
| Peak Gain W/ Cable loss (dBi) | -1.05 |

2620MHz



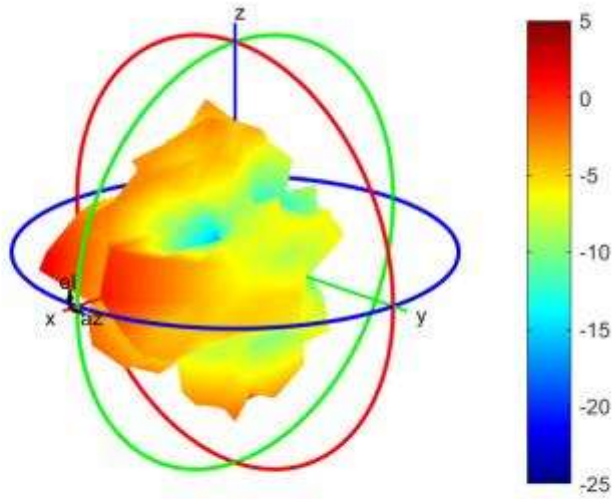
| | |
|-------------------------------|----------------|
| Center Frequency | 2620MHz |
| Peak Gain W/ Cable loss (dBi) | -1.16 |

2690MHz



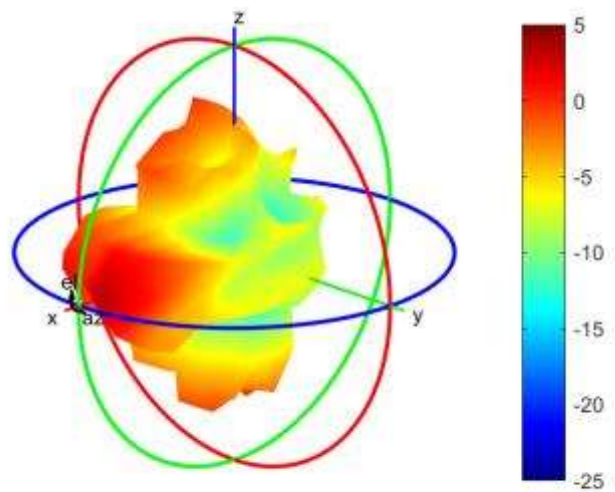
| | |
|-------------------------------|----------------|
| Center Frequency | 2690MHz |
| Peak Gain W/ Cable loss (dBi) | -1.41 |

3300MHz



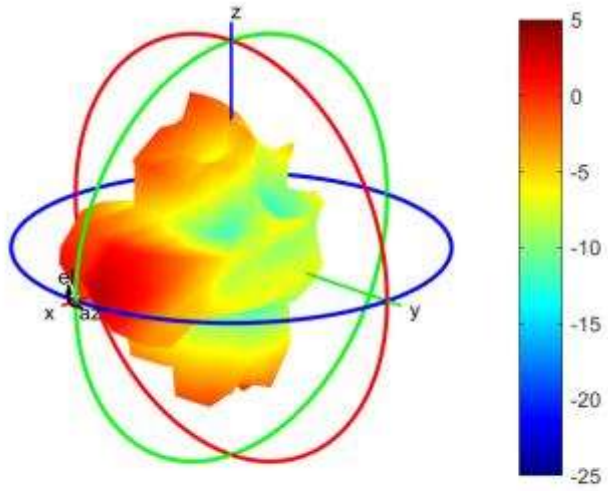
| | |
|-------------------------------|----------------|
| Center Frequency | 3300MHz |
| Peak Gain W/ Cable loss (dBi) | 0.55 |

3400MHz



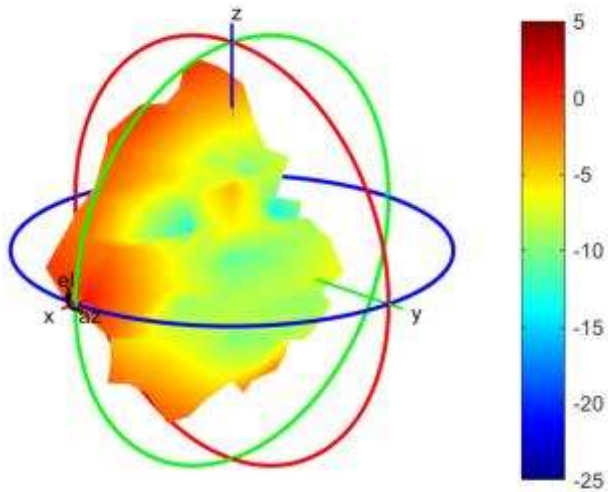
| | |
|-------------------------------|----------------|
| Center Frequency | 3400MHz |
| Peak Gain W/ Cable loss (dBi) | 0.56 |

3500MHz



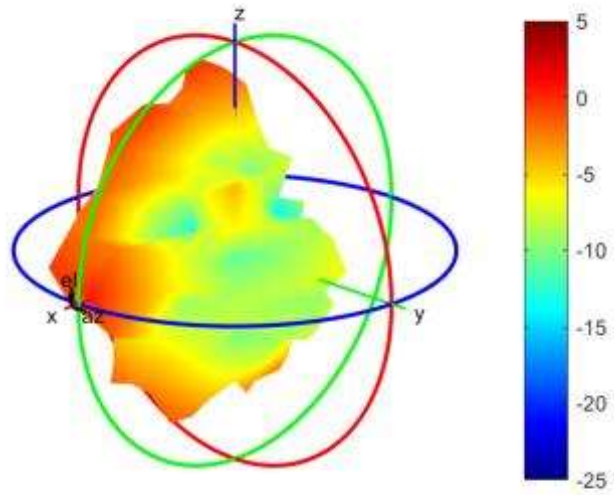
| | |
|-------------------------------|----------------|
| Center Frequency | 3500MHz |
| Peak Gain W/ Cable loss (dBi) | 0.59 |

3550MHz



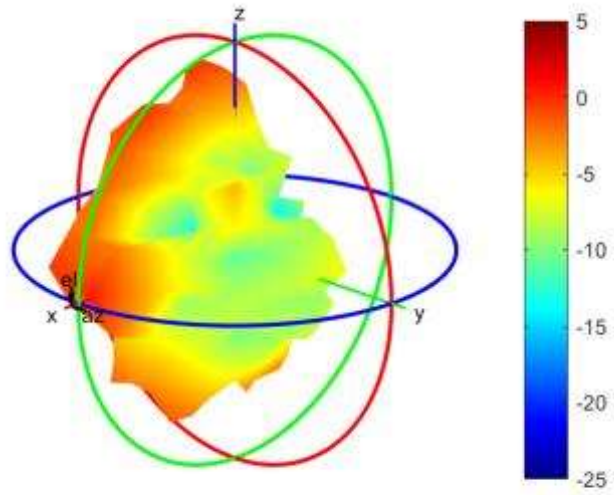
| | |
|-------------------------------|----------------|
| Center Frequency | 3550MHz |
| Peak Gain W/ Cable loss (dBi) | 0.55 |

3600MHz



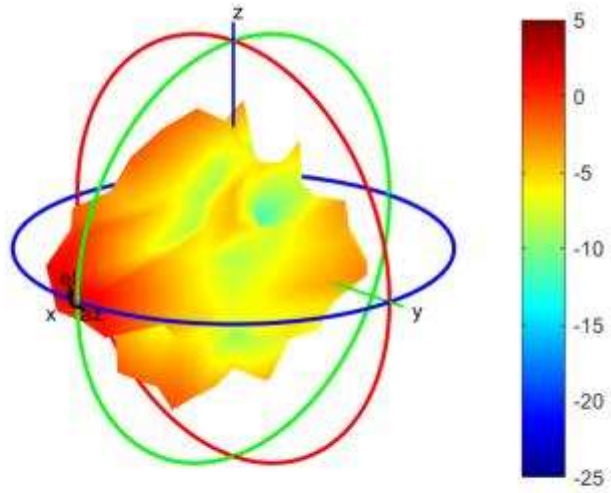
| | |
|-------------------------------|----------------|
| Center Frequency | 3600MHz |
| Peak Gain W/ Cable loss (dBi) | 0.49 |

3625MHz



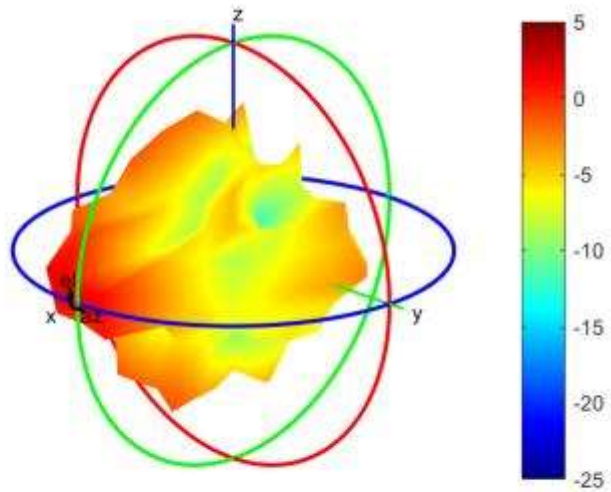
| | |
|-------------------------------|----------------|
| Center Frequency | 3625MHz |
| Peak Gain W/ Cable loss (dBi) | 0.44 |

3700MHz



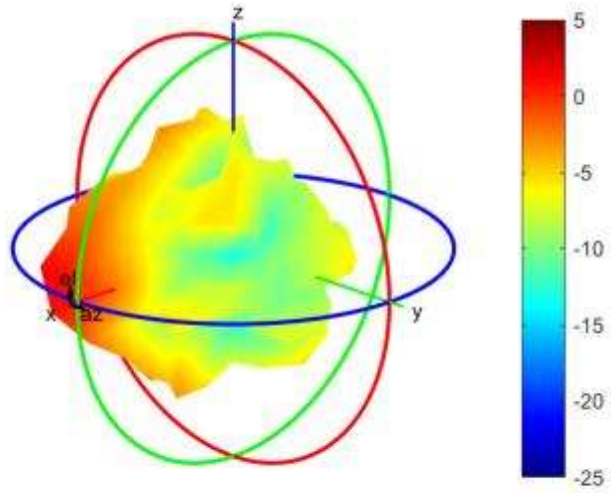
| | |
|-------------------------------|----------------|
| Center Frequency | 3700MHz |
| Peak Gain W/ Cable loss (dBi) | 0.21 |

3750MHz



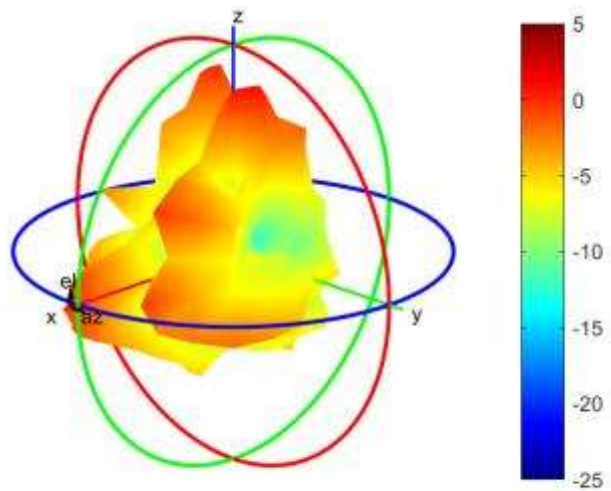
| | |
|-------------------------------|----------------|
| Center Frequency | 3750MHz |
| Peak Gain W/ Cable loss (dBi) | -0.13 |

3800MHz



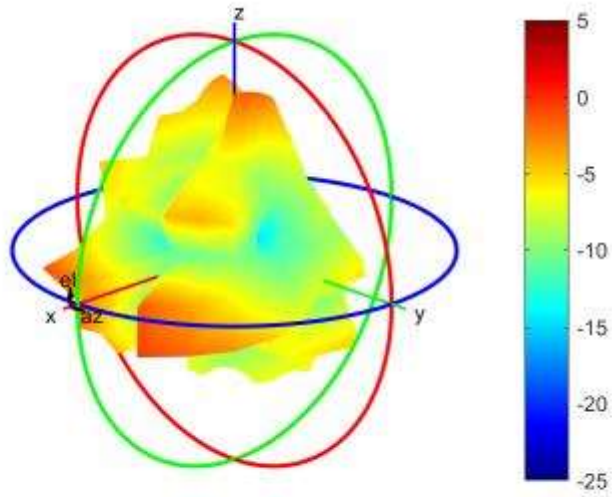
| | |
|-------------------------------|----------------|
| Center Frequency | 3800MHz |
| Peak Gain W/ Cable loss (dBi) | -0.54 |

4200MHz



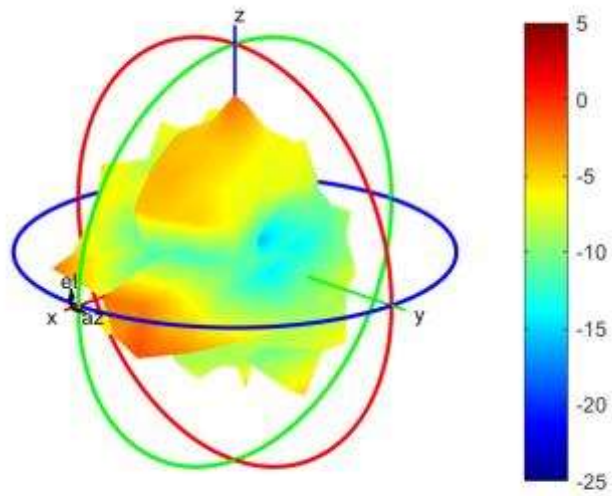
| | |
|-------------------------------|----------------|
| Center Frequency | 4200MHz |
| Peak Gain W/ Cable loss (dBi) | -1.61 |

4400MHz



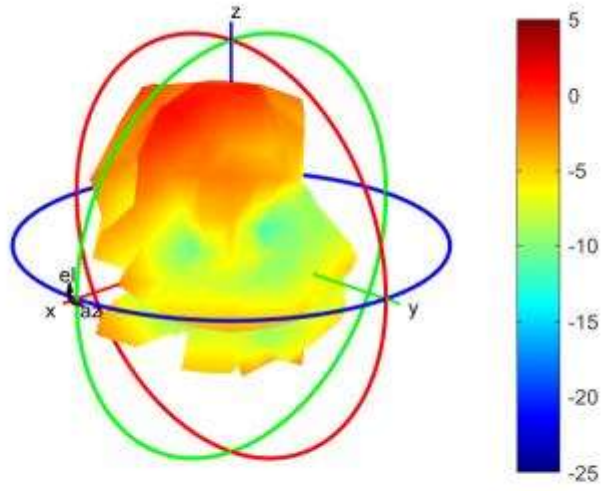
| | |
|-------------------------------|----------------|
| Center Frequency | 4400MHz |
| Peak Gain W/ Cable loss (dBi) | -2.47 |

4700MHz



| | |
|-------------------------------|----------------|
| Center Frequency | 4700MHz |
| Peak Gain W/ Cable loss (dBi) | -2.77 |

5000MHz



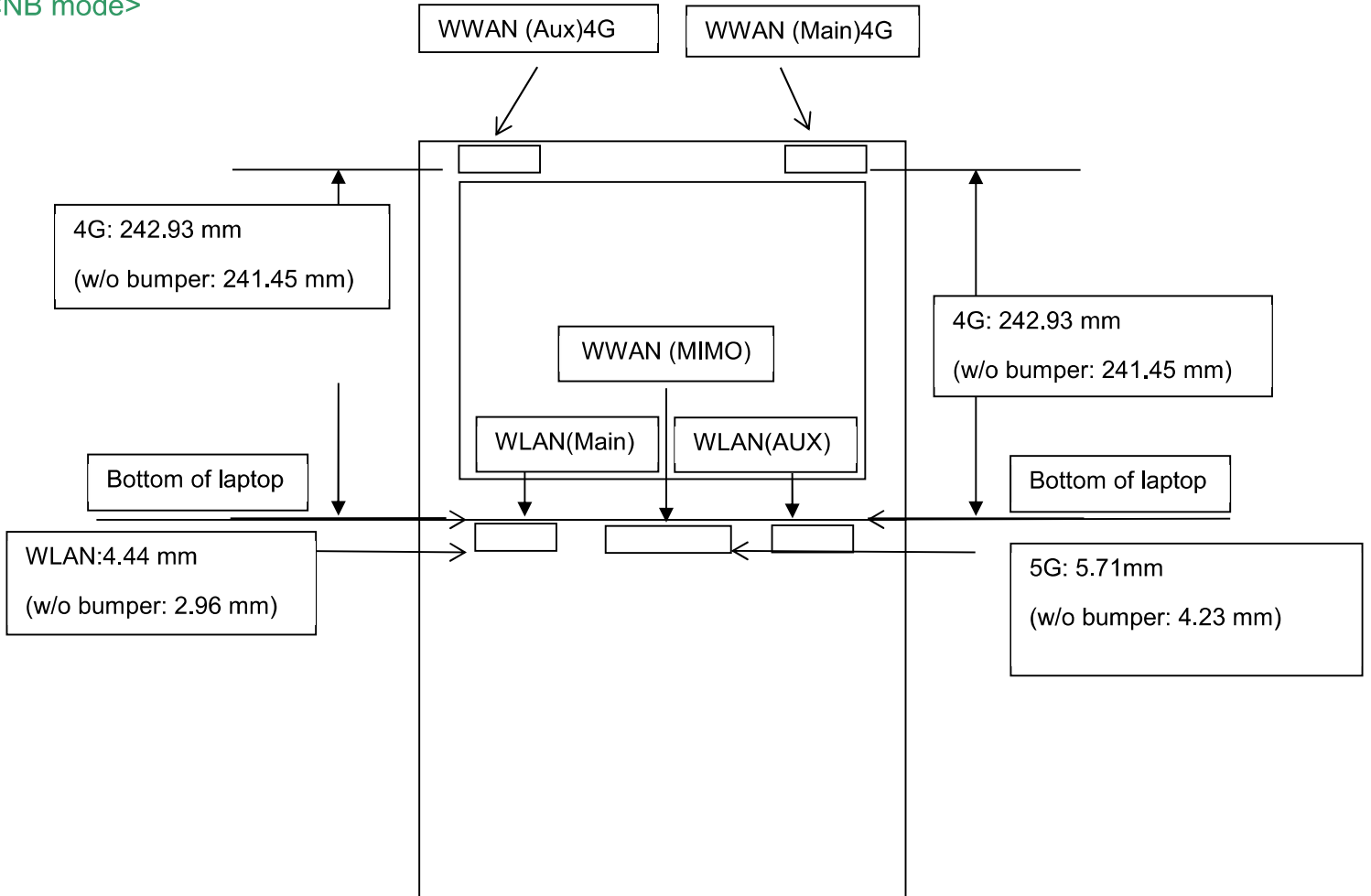
| | |
|-------------------------------|----------------|
| Center Frequency | 5000MHz |
| Peak Gain W/ Cable loss (dBi) | -2.19 |

Section 4. Antenna Host Platform Location Information

Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna).

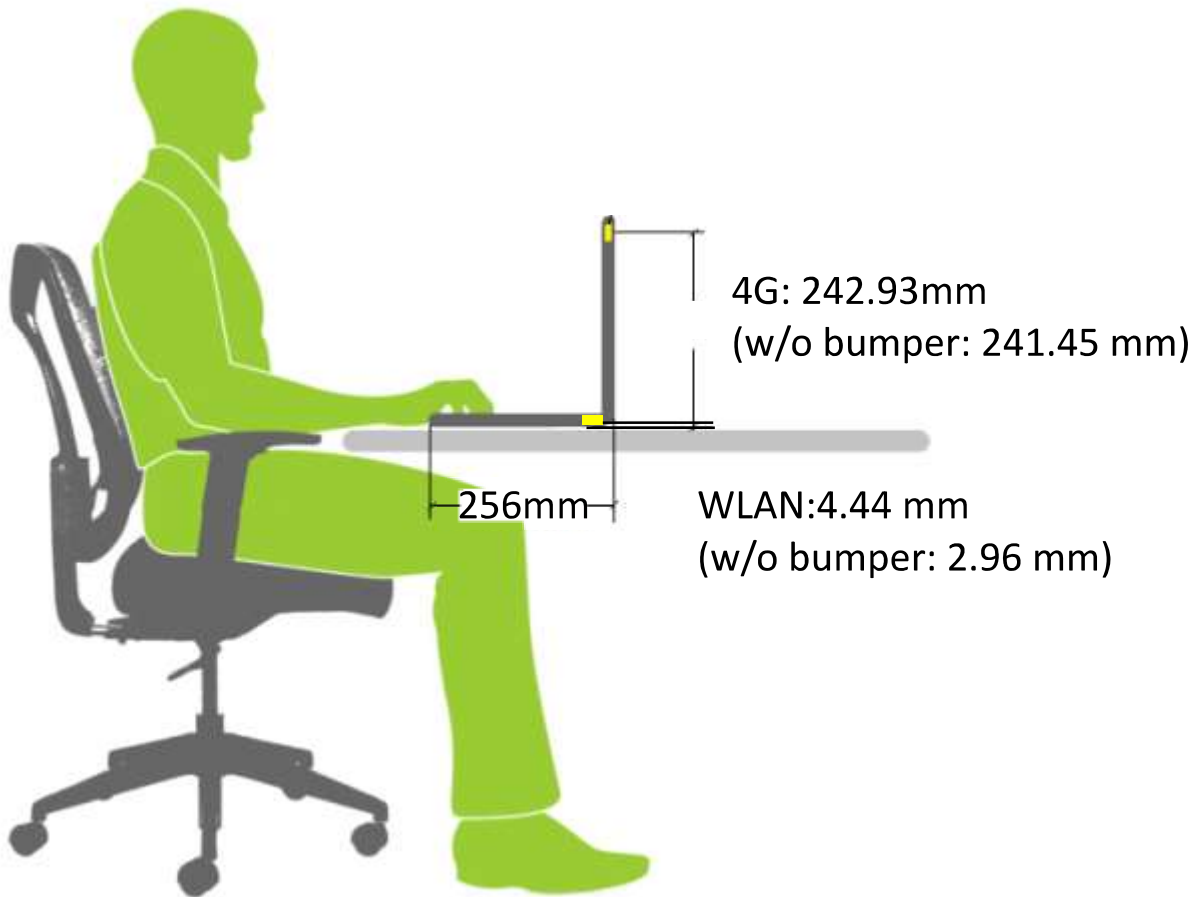
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.

<NB mode>



Section 5. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.



Section 6. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between **all WLAN transmit antennas** and other co-located radiator transmit antenna such as Bluetooth, WWAN,..

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)

