

## Regulatory WWAN Antenna Information

|                  |                                                                                      |
|------------------|--------------------------------------------------------------------------------------|
| Platform         |                                                                                      |
| Platform Owner   | DELL                                                                                 |
| Brand Name       | DELL                                                                                 |
| Model Name       | P126F                                                                                |
| ODM              | Compal                                                                               |
|                  |                                                                                      |
|                  |                                                                                      |
| Antenna          |                                                                                      |
| Manufacturer     | Speed                                                                                |
| Part Number      | ■ Tx1/Rx1 <a href="#">Antenna</a> WWAN Main/AUX:<br>F-0G-FH-6156-002-00(DC33002RT1L) |
|                  | ■ MIMO2/3 Antenna WWAN:<br>F-0G-FH-6156-004-00(DC33002RT3L)                          |
|                  |                                                                                      |
|                  |                                                                                      |
|                  |                                                                                      |
| Module           |                                                                                      |
| With WWAN Module |                                                                                      |
| (Check Box)      | FM350-GL                                                                             |
|                  | L860-GL-16                                                                           |
|                  |                                                                                      |
|                  |                                                                                      |
|                  |                                                                                      |
|                  |                                                                                      |

## 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. <u>(S. Korea requires photographs of antennas for approval submission).</u><br><u>Taiwan requires pictures of each antenna type shown in the system.</u> | 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

| 1A<br>Antenna Part Number                                                                           | 1B<br>Manufacture | 1C<br>Antenna Type | 1D<br>Cable Assembly Part Number and Information                                                                     | 1E<br>*Peak Gain W/<br>Cable loss (dBi)     | 1F<br>Peak Gain w/o<br>Cable Loss (dBi)     | 1G<br>VSWR                                | 1H<br>Cable Loss (dBi)                      |
|-----------------------------------------------------------------------------------------------------|-------------------|--------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------------|---------------------------------------------|
| Tx/Rx1<br>Antenna<br><b>Speed P/N:</b><br>F-0G-FH-6156-002-00<br><b>Customer P/N</b><br>DC33002RT1L | speed             | PIFA               | Cable length: 346mm<br>diameter: 1.13mm<br>50 ohm SLL<br>Coaxial<br>MAIN<br><br>Connector: I-PEX<br>PN:20565-001R-13 | 617-698MHz<br><b>-8.63</b> dBi<br>(peak)    | 617-698MHz<br><b>-8.03</b> dBi<br>(peak)    | 617-698MHz<br><b>3.50</b> max             | 617-698MHz<br>dBi<br><b>0.6</b> (peak)      |
|                                                                                                     |                   |                    |                                                                                                                      | 698-821MHz<br><b>-0.91</b> dBi<br>(peak)    | 698-821MHz<br><b>-0.31</b> dBi<br>(peak)    | 698-821MHz<br><b>3.30</b> max             | 698-821MHz<br>dBi<br><b>0.6</b> (peak)      |
|                                                                                                     |                   |                    |                                                                                                                      | 824-960MHz<br><b>-2.79</b> dBi<br>(peak)    | 824-960MHz<br><b>-2.19</b> dBi<br>(peak)    | 824-960MHz<br><b>3.30</b> max             | 824-960MHz<br>dBi<br><b>0.6</b> (peak)      |
|                                                                                                     |                   |                    |                                                                                                                      | 1425-1515MHz<br><b>-2.61</b> dBi<br>(peak)  | 1425-1515MHz<br><b>-1.85</b> dBi<br>(peak)  | 1425-1515MHz<br><b>3.30</b> max           | 1425-1515MHz<br>dBi<br><b>0.76</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 1710-2200MHz<br><b>0.33</b> dBi<br>(peak)   | 1710-2200MHz<br><b>1.20</b> dBi<br>(peak)   | 1710-2200MHz<br><b>3.30</b> max           | 1710-2200MHz<br>dBi<br><b>0.87</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 2300-2690MHz<br><b>0.91</b> dBi<br>(peak)   | 2300-2690MHz<br><b>1.88</b> dBi<br>(peak)   | 2300-2690MHz<br><b>3.30</b> max           | 2300-2690MHz<br>dBi<br><b>0.97</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 3400-3800MHz<br><b>-0.36</b> dBi<br>(peak)  | 3400-3800MHz<br><b>0.78</b> dBi<br>(peak)   | 3400-3800MHz<br><b>3.30</b> max           | 3400-3800MHz<br>dBi<br><b>1.14</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 4200-4700MHz<br><b>-0.8</b> dBi<br>(peak)   | 4200-4700MHz<br><b>0.53</b> dBi<br>(peak)   | 4200-4700MHz<br>dBi<br><b>3.30</b> (peak) | 4200-4700MHz<br>dBi<br><b>1.33</b> (peak)   |
|                                                                                                     | speed             | PIFA               | Cable length: 588mm<br>diameter: 1.13mm<br>50 ohm SLL<br>Coaxial<br>AUX<br><br>Connector: I-PEX<br>PN:20565-001R-13  | 5150-5925MHz<br><b>-1.38</b> dBi<br>(peak)  | 5150-5925MHz<br><b>0.09</b> dBi<br>(peak)   | 5150-5925MHz<br><b>3.30</b> max           | 5150-5925MHz<br>dBi<br><b>1.47</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 617-698MHz<br>dBi<br><b>-8.02</b> (peak)    | 617-698MHz<br>dBi<br><b>-7.00</b> (peak)    | 617-698MHz<br><b>3.50</b> max             | 617-698MHz<br>dBi<br><b>1.02</b> (peak)     |
|                                                                                                     |                   |                    |                                                                                                                      | 698-821MHz<br><b>-1.65</b> dBi<br>(peak)    | 698-821MHz<br><b>-0.63</b> dBi<br>(peak)    | 698-821MHz<br><b>3.50</b> max             | 698-821MHz<br>dBi<br><b>1.02</b> (peak)     |
|                                                                                                     |                   |                    |                                                                                                                      | 824-960MHz<br><b>-5.04</b> dBi<br>(peak)    | 824-960MHz<br><b>-4.00</b> dBi<br>(peak)    | 824-960MHz<br><b>3.50</b> max             | 824-960MHz<br>dBi<br><b>1.04</b> (peak)     |
|                                                                                                     |                   |                    |                                                                                                                      | 1425-1515MHz<br><b>-2.21</b> dBi<br>(peak)  | 1425-1515MHz<br><b>-0.92</b> dBi<br>(peak)  | 1425-1515MHz<br><b>3.50</b> max           | 1425-1515MHz<br>dBi<br><b>1.29</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 1557-1610 MHz<br><b>-3.81</b> dBi<br>(peak) | 1557-1610 MHz<br><b>-2.50</b> dBi<br>(peak) | 1557-1610 MHz<br><b>3.50</b> max          | 1557-1610 MHz<br>dBi<br><b>1.31</b> (peak)  |
|                                                                                                     |                   |                    |                                                                                                                      | 1805-2200MHz<br><b>0.01</b> dBi<br>(peak)   | 1805-2200MHz<br><b>1.50</b> dBi<br>(peak)   | 1805-2200MHz<br><b>3.50</b> max           | 1805-2200MHz<br>dBi<br><b>1.49</b> (peak)   |
|                                                                                                     |                   |                    |                                                                                                                      | 2300-2690MHzzz<br><b>2.15</b> dBi<br>(peak) | 2300-2690MHzzz<br><b>3.8</b> dBi<br>(peak)  | 2300-2690MHzzz<br><b>3.50</b> max         | 2300-2690MHzzz<br>dBi<br><b>1.65</b> (peak) |

|  |  |  |  |                                         |                                         |                                        |                                        |
|--|--|--|--|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|
|  |  |  |  | 3400-3800MHz<br><b>-0.34</b> dBi (peak) | 3400-3800MHz<br><b>1.61</b> dBi (peak)  | 3400-3800MHz<br><b>3.50</b> max        | 3400-3800MHz<br><b>1.95</b> dBi (peak) |
|  |  |  |  | 4200-4700MHz<br><b>-4.82</b> dBi (peak) | 4200-4700MHz<br><b>-2.55</b> dBi (peak) | 4200-4700MHz<br><b>3.50</b> dBi (peak) | 4200-4700MHz<br><b>2.27</b> dBi (peak) |
|  |  |  |  | 5150-5925MHz<br><b>-3.12</b> dBi (peak) | 5150-5925MHz<br><b>-0.63</b> dBi (peak) | 5150-5925MHz<br><b>3.50</b> max        | 5150-5925MHz<br><b>2.49</b> dBi (peak) |

| 1A<br>Antenna Part Number                                                                  | 1B<br>Manufacture | 1C<br>Antenna Type | 1D<br>Cable Assembly Part Number and Information                      | 1E<br>*Peak Gain W/<br>Cable loss (dBi) | 1F<br>Peak Gain w/o<br>Cable Loss (dBi) | 1G<br>VSWR                      | 1H<br>Cable Loss (dBi)                 |
|--------------------------------------------------------------------------------------------|-------------------|--------------------|-----------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|---------------------------------|----------------------------------------|
| Antenna<br><b>Speed P/N:</b><br>F-0G-FH-6156-004-00<br><b>Customer P/N:</b><br>DC33002RT3L | <b>speed</b>      | <b>Coupled</b>     | <b>Cable length: 191mm<br/>diameter: 1.13mm<br/>50 ohm LL Coaxial</b> | 1425-1515MHz<br><b>-0.75</b> dBi (peak) | 1425-1515MHz<br><b>-0.27</b> dBi (peak) | 1425-1515MHz<br><b>3.50</b> max | 1425-1515MHz<br><b>0.48</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 1710-2200MHz<br><b>-1.92</b> dBi (peak) | 1710-2200MHz<br><b>-1.44</b> dBi (peak) | 1710-2200MHz<br><b>3.50</b> max | 1710-2200MHz<br><b>0.48</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 2300-2690MHz<br><b>-0.83</b> dBi (peak) | 2300-2690MHz<br><b>-0.29</b> dBi (peak) | 2300-2690MHz<br><b>3.50</b> max | 2300-2690MHz<br><b>0.54</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 3400-3800MHz<br><b>0.59</b> dBi (peak)  | 3400-3800MHz<br><b>1.22</b> dBi (peak)  | 3400-3800MHz<br><b>3.50</b> max | 3400-3800MHz<br><b>0.63</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 4200-5000MHz<br><b>-1.61</b> dBi (peak) | 4200-5000MHz<br><b>-0.87</b> dBi (peak) | 4200-5000MHz<br><b>3.50</b> max | 4200-5000MHz<br><b>0.74</b> dBi (peak) |
|                                                                                            | <b>speed</b>      | <b>Coupled</b>     | <b>Cable length: 261mm<br/>diameter: 1.13mm<br/>50 ohm LL Coaxial</b> | 1805-2200MHz<br><b>2.87</b> dBi (peak)  | 1805-2200MHz<br><b>3.52</b> dBi (peak)  | 1805-2200MHz<br><b>3.50</b> max | 1805-2200MHz<br><b>0.65</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 2300-2690MHz<br><b>2.28</b> dBi (peak)  | 2300-2690MHz<br><b>3.01</b> dBi (peak)  | 2300-2690MHz<br><b>3.50</b> max | 2300-2690MHz<br><b>0.73</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 3400-3800MHz<br><b>-2.79</b> dBi (peak) | 3400-3800MHz<br><b>-1.93</b> dBi (peak) | 3400-3800MHz<br><b>3.50</b> max | 3400-3800MHz<br><b>0.86</b> dBi (peak) |
|                                                                                            |                   |                    |                                                                       | 4200-5000MHz<br><b>-1.40</b> dBi (peak) | 4200-5000MHz<br><b>-0.38</b> dBi (peak) | 4200-5000MHz<br><b>3.50</b> max | 4200-5000MHz<br><b>1.02</b> dBi (peak) |

- 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

| Frequency<br>(MHz) | TPx antenna |          | DRx antenna |          |
|--------------------|-------------|----------|-------------|----------|
|                    | Horizontal  | Vertical | Horizontal  | Vertical |
|                    | (dBi)       | (dBi)    | (dBi)       | (dBi)    |
| 617                | -16.86      | -17.36   | -11.42      | -11.71   |
| 634.5              | -15.63      | -15.73   | -9.78       | -10.14   |
| 652                | -13.97      | -14.10   | -8.11       | -8.02    |
| 663                | -12.90      | -13.15   |             |          |
| 680.5              | -11.81      | -11.47   |             |          |
| 698                | -9.77       | -8.63    |             |          |
| 703                | -9.04       | -7.26    |             |          |
| 707.5              | -8.42       | -6.67    |             |          |
| 717                | -7.47       | -5.77    | -2.43       | -1.93    |
| 725.5              | -6.59       | -4.78    | -2.22       | -1.65    |
| 748                | -4.42       | -2.09    | -2.46       | -1.75    |
| 756                | -3.51       | -1.39    | -1.73       | -2.24    |
| 768                | -2.80       | -0.97    | -2.67       | -2.47    |
| 777                | -1.66       | -0.91    | -3.31       | -2.68    |
| 782                | -1.17       | -0.93    | -3.88       | -3.04    |
| 787                | -0.92       | -1.09    | -4.37       | -3.56    |
| 791                |             |          | -4.76       | -3.96    |
| 806                |             |          | -5.31       | -4.80    |
| 814                | -1.69       | -1.93    | -5.88       | -4.86    |
| 821                |             |          | -6.23       | -4.99    |
| 824                | -2.79       | -2.94    | -6.35       | -5.04    |
| 832                | -2.90       | -3.50    | -6.75       | -5.13    |
| 836.5              | -3.04       | -3.66    | -6.85       | -5.23    |
| 849                | -2.87       | -3.56    | -6.59       | -5.23    |
| 862                | -2.89       | -3.46    | -6.35       | -5.29    |
| 880                | -3.30       | -2.79    | -6.87       | -5.80    |
| 897.5              | -3.29       | -3.29    | -7.07       | -5.94    |
| 915                | -3.06       | -3.69    | -7.15       | -6.12    |
| 925                | -3.62       | -2.98    | -6.97       | -6.32    |
| 960                | -5.68       | -4.27    | -6.67       | -6.99    |
| 1427.9             | -5.05       | -3.62    | -4.46       | -3.33    |
| 1447.9             | -4.58       | -2.96    | -3.94       | -2.75    |
| 1455.4             | -4.44       | -2.88    | -3.78       | -2.71    |
| 1462.9             | -4.09       | -2.93    | -3.64       | -2.68    |
| 1496               | -3.42       | -2.69    | -3.44       | -2.44    |
| 1510.9             | -3.58       | -2.61    | -3.26       | -2.21    |
| 1557               |             |          | -4.46       | -4.57    |

|      |  |  |       |       |
|------|--|--|-------|-------|
| 1575 |  |  | -4.36 | -4.42 |
| 1610 |  |  | -4.36 | -3.81 |

**High band**

|                 | TPx antenna |          | DRx antenna |          |
|-----------------|-------------|----------|-------------|----------|
| Frequency (MHz) | Horizontal  | Vertical | Horizontal  | Vertical |
|                 | (dBi)       | (dBi)    | (dBi)       | (dBi)    |
| 1710            | -0.50       | -1.15    |             |          |
| 1732.5          | -0.60       | -1.85    |             |          |
| 1747.5          | -0.28       | -2.08    |             |          |
| 1755            | 0.13        | -2.16    |             |          |
| 1785            | 0.25        | 0.33     |             |          |
| 1805            | -0.35       | -2.24    | -3.20       | -1.12    |
| 1850            | -0.83       | -0.93    | -3.28       | -1.61    |
| 1880            | -1.03       | -0.39    | -3.27       | -2.15    |
| 1910            | -2.29       | -2.75    | -2.52       | -2.48    |
| 1920            | -2.97       | -3.42    | -2.73       | -2.76    |
| 1950            | -1.15       | -1.72    | -3.64       | -3.01    |
| 1980            | -0.06       | -0.48    | -3.62       | -2.85    |
| 2110            | -1.23       | -0.71    | -3.01       | -0.63    |
| 2200            | -2.21       | -1.45    | -0.32       | 0.01     |
| 2300            | 0.91        | 0.19     | 0.65        | 2.15     |
| 2305            | 0.70        | 0.13     | 0.68        | 0.21     |
| 2315            | 0.41        | 0.18     | 0.61        | 1.25     |
| 2350            | 0.06        | 0.36     | 0.34        | 0.92     |
| 2400            | 0.35        | 0.26     | 0.26        | 1.20     |
| 2500            | 0.01        | 0.11     | 0.97        | 0.89     |
| 2570            | 0.56        | 0.49     | 0.69        | 0.74     |
| 2595            | -0.05       | 0.15     | 0.32        | 0.33     |
| 2620            | -0.72       | -0.09    | 0.18        | 0.35     |
| 2690            | -0.76       | -0.10    | 0.40        | 0.48     |
| 3400            | -1.18       | -1.53    | -0.34       | -0.49    |
| 3500            | -2.17       | -2.70    | -0.89       | -1.85    |
| 3600            | -1.61       | -0.85    | -3.23       | -2.68    |
| 3700            | -1.21       | -0.52    | -2.86       | -2.31    |
| 3800            | -0.36       | -1.02    | -3.18       | -1.72    |
| 4200            | -1.68       | -1.82    | -4.82       | -4.94    |
| 4400            | -2.97       | -2.30    | -5.55       | -5.31    |
| 4700            | -0.80       | -1.02    | -5.26       | -5.45    |
| 5150            | -2.07       | -1.38    | -3.48       | -4.46    |
| 5537.5          | -4.34       | -3.48    | -3.52       | -3.12    |
| 5925            | -1.66       | -3.83    | -3.42       | -3.19    |

|                    | DRx2 antenna |          | DRx1 antenna |          |
|--------------------|--------------|----------|--------------|----------|
| Frequency<br>(MHz) | Horizontal   | Vertical | Horizontal   | Vertical |
|                    | (dBi)        | (dBi)    | (dBi)        | (dBi)    |
| 1452               | -1.05        | -1.40    |              |          |
| 1472               | -1.23        | -0.75    |              |          |
| 1496               | -0.83        | -1.54    |              |          |
| 1710               | -2.48        | -2.22    |              |          |
| 1732.5             | -2.68        | -2.48    |              |          |
| 1747.5             | -2.49        | -3.00    |              |          |
| 1755               | -2.24        | -2.63    |              |          |
| 1785               | -2.66        | -2.53    |              |          |
| 1805               | -2.53        | -2.23    | 0.50         | 0.00     |
| 1850               | -2.87        | -3.01    | 0.54         | 0.05     |
| 1880               | -1.92        | -2.49    | 2.09         | 0.86     |
| 1910               | -2.67        | -2.54    | 2.83         | 1.25     |
| 1920               | -2.28        | -2.51    | 2.87         | 1.29     |
| 1950               | -2.00        | -2.08    | 2.53         | 0.75     |
| 1980               | -2.39        | -2.10    | 1.50         | 0.79     |
| 2110               | -2.54        | -2.43    | 0.67         | -0.18    |
| 2200               | -2.81        | -2.24    | 1.67         | -0.03    |
| 2300               | -1.16        | -1.64    | 2.28         | 1.75     |
| 2305               | -1.81        | -1.94    | 2.23         | 1.87     |
| 2315               | -2.04        | -1.49    | 2.12         | 2.16     |
| 2350               | -1.20        | -2.14    | 2.28         | 1.76     |
| 2400               | -0.83        | -1.78    | 1.57         | 1.44     |
| 2500               | -1.76        | -1.46    | 2.03         | 2.10     |
| 2570               | -1.69        | -1.23    | 1.97         | 1.37     |
| 2595               | -1.05        | -1.47    | 1.41         | 1.25     |
| 2620               | -1.16        | -1.57    | 0.94         | 1.41     |
| 2690               | -1.55        | -1.41    | 1.78         | 2.16     |
| 3400               | 0.56         | -2.49    | -2.90        | -2.94    |
| 3500               | 0.59         | -0.22    | -3.18        | -2.99    |
| 3600               | 0.49         | -0.28    | -3.13        | -4.66    |
| 3700               | 0.21         | -0.71    | -4.34        | -6.15    |
| 3800               | -0.69        | -0.54    | -2.79        | -4.22    |
| 4200               | -1.61        | -2.18    | -1.40        | -1.76    |
| 4400               | -2.47        | -2.94    | -1.49        | -4.29    |
| 4700               | -2.77        | -3.46    | -2.18        | -3.28    |
| 5000               | -2.31        | -2.19    | -1.77        | -1.51    |

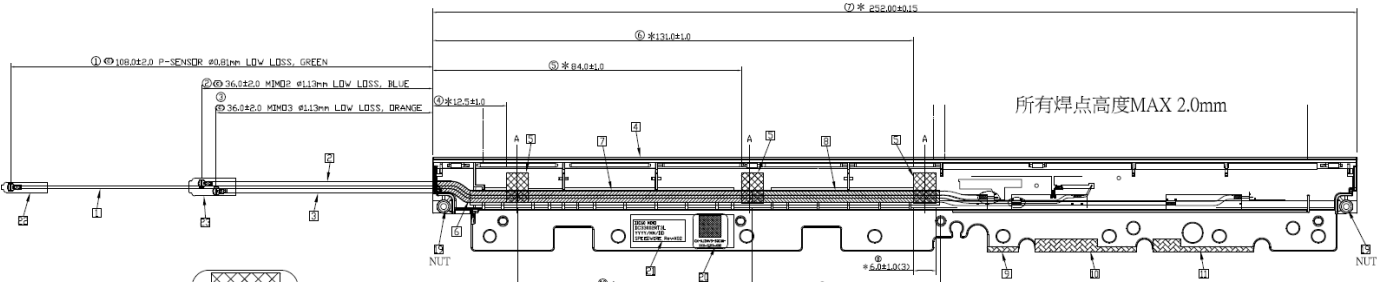
### TPx Antenna Dimensioned Drawing:





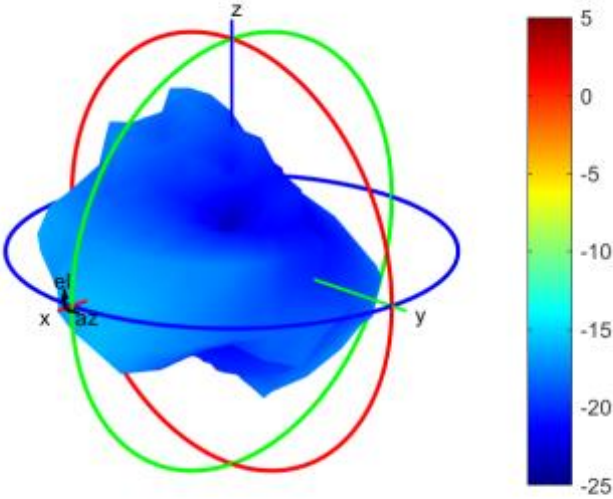
Include a dimensioned photo and dimensioned drawing of Aux antenna here.

DRx2 Antenna Dimensioned Drawing:



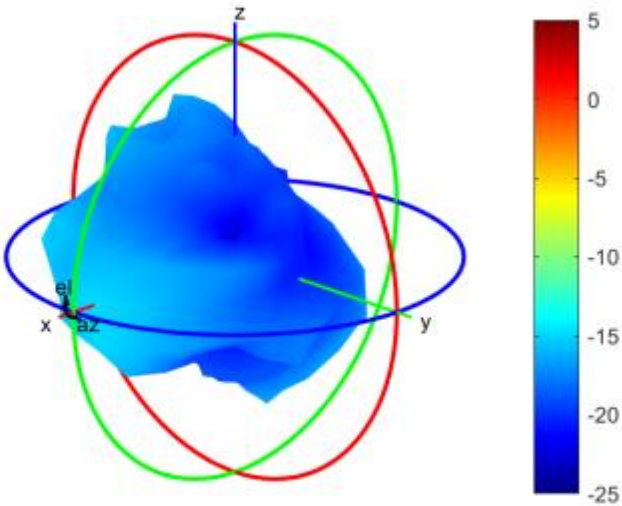
**Section 3. Radiation characteristics of antennae Loaded in Host Platform**  
**WWAN Main Antenna (TPx)**

**617MHz**



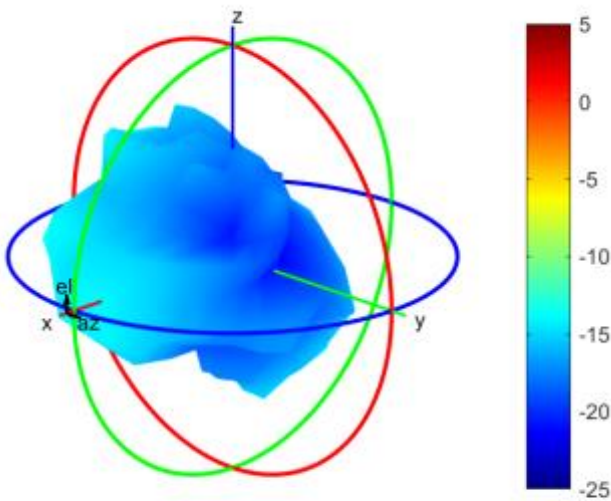
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>617 MHz</b> |
| Horizontal (dBi) peak | -16.86         |
| Vertical (dBi) peak   | -17.36         |

**634.5MHz**



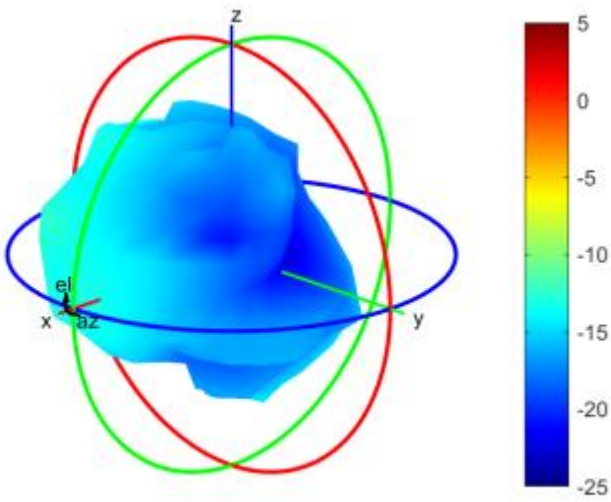
|                       |                 |
|-----------------------|-----------------|
| Center Frequency      | <b>634.5MHz</b> |
| Horizontal (dBi) peak | -15.63          |
| Vertical (dBi) peak   | -15.73          |

652MHz



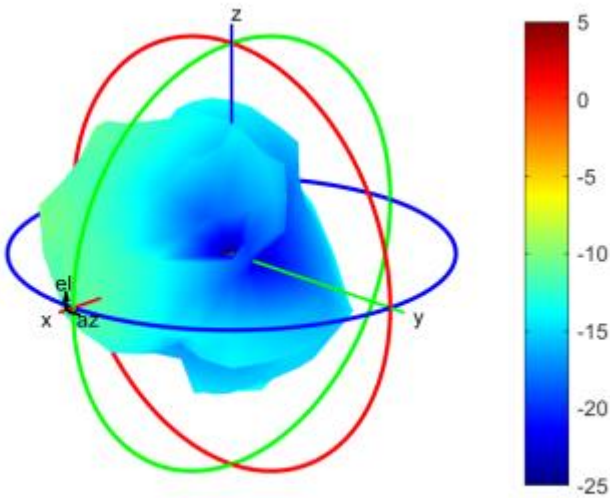
|                       |        |
|-----------------------|--------|
| Center Frequency      | 652MHz |
| Horizontal (dBi) peak | -13.97 |
| Vertical (dBi) peak   | -14.10 |

663MHz



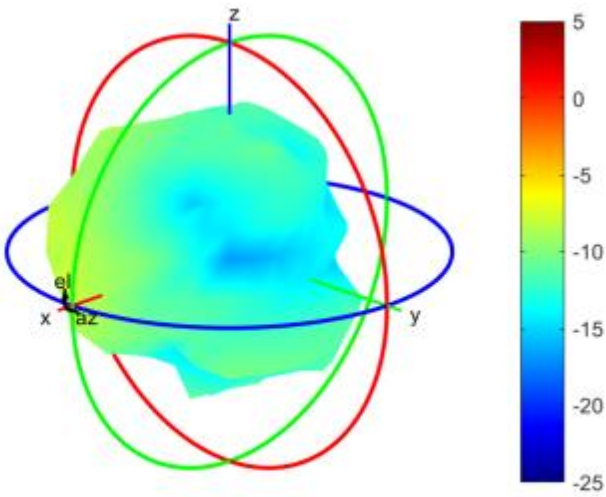
|                       |        |
|-----------------------|--------|
| Center Frequency      | 663MHz |
| Horizontal (dBi) peak | -12.90 |
| Vertical (dBi) peak   | 13.15  |

680.5MHz



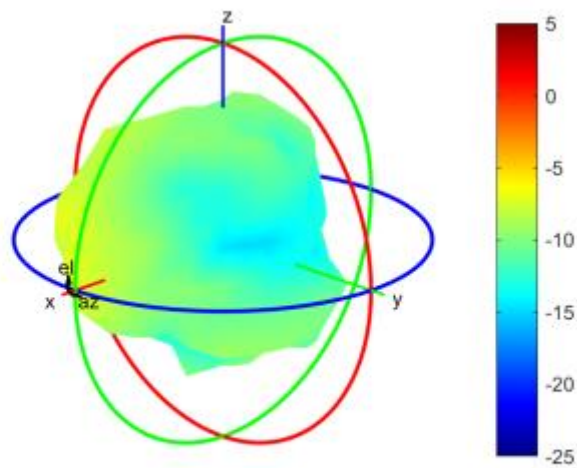
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 680.5 MHz |
| Horizontal (dBi) peak | -11.81    |
| Vertical (dBi) peak   | -11.47    |

698MHz



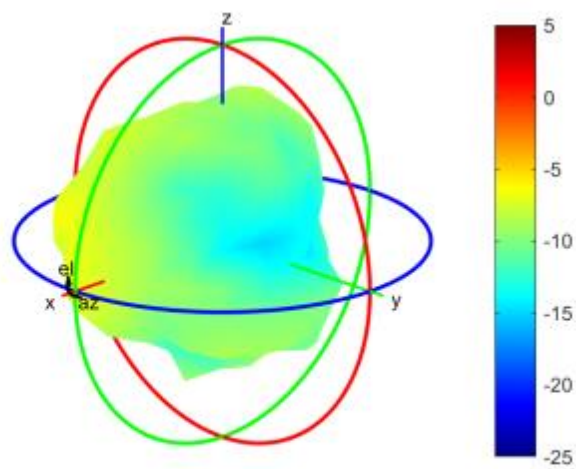
|                       |        |
|-----------------------|--------|
| Center Frequency      | 698MHz |
| Horizontal (dBi) peak | -9.77  |
| Vertical (dBi) peak   | -8.63  |

703MHz



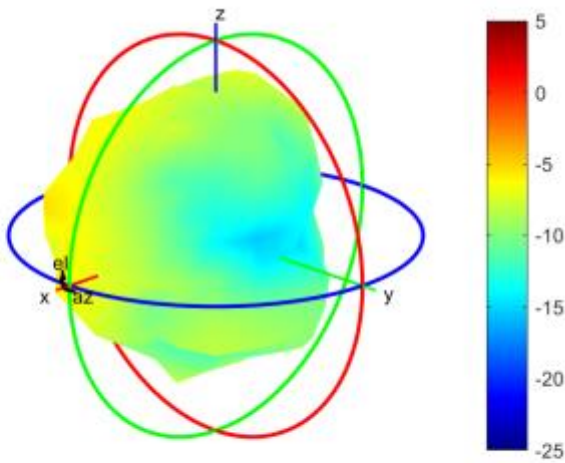
|                       |         |
|-----------------------|---------|
| Center Frequency      | 703 MHz |
| Horizontal (dBi) peak | -9.04   |
| Vertical (dBi) peak   | -7.26   |

707.5MHz



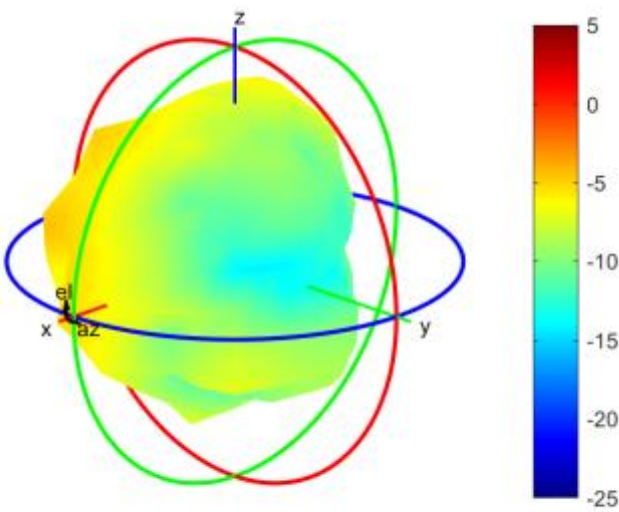
|                       |          |
|-----------------------|----------|
| Center Frequency      | 707.5MHz |
| Horizontal (dBi) peak | -8.42    |
| Vertical (dBi) peak   | -6.67    |

717 MHz



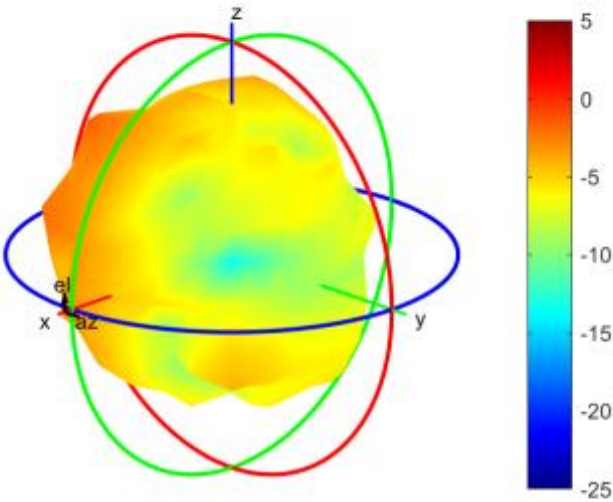
|                       |         |
|-----------------------|---------|
| Center Frequency      | 717 MHz |
| Horizontal (dBi) peak | -7.47   |
| Vertical (dBi) peak   | -5.77   |

725.5MHz



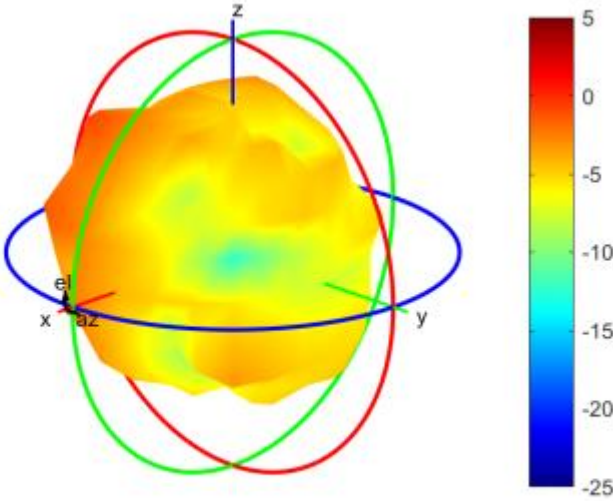
|                       |          |
|-----------------------|----------|
| Center Frequency      | 725.5MHz |
| Horizontal (dBi) peak | -6.59    |
| Vertical (dBi) peak   | -4.78    |

748MHz



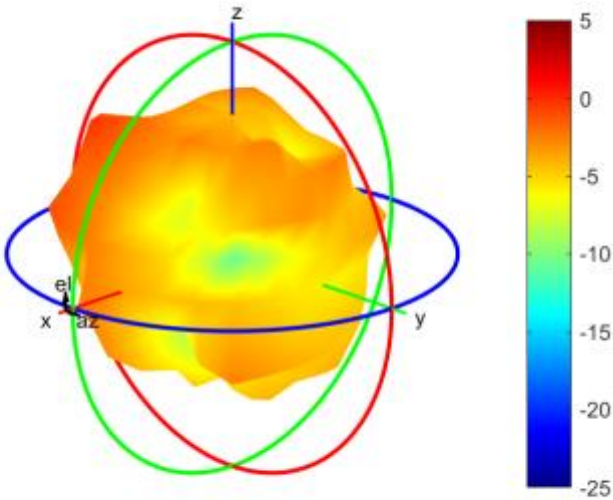
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>748MHz</b> |
| Horizontal (dBi) peak | -4.42         |
| Vertical (dBi) peak   | -2.09         |

756MHz



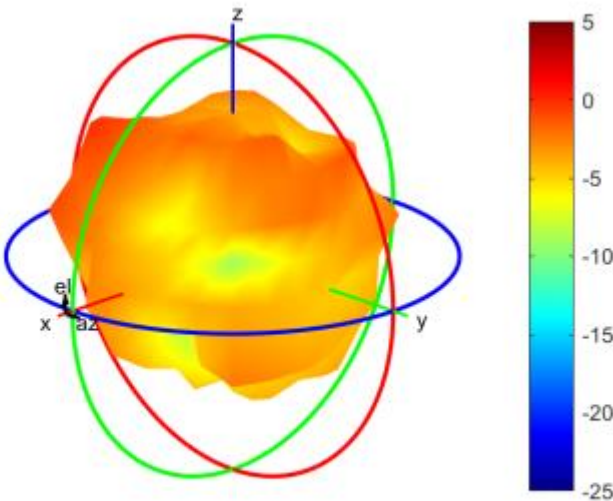
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>756MHz</b> |
| Horizontal (dBi) peak | -3.51         |
| Vertical (dBi) peak   | -1.39         |

768MHz



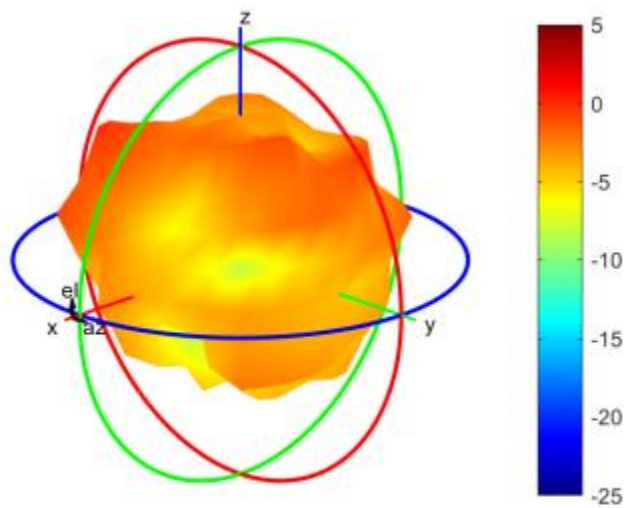
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>768MHz</b> |
| Horizontal (dBi) peak | -2.80         |
| Vertical (dBi) peak   | -0.97         |

777MHz



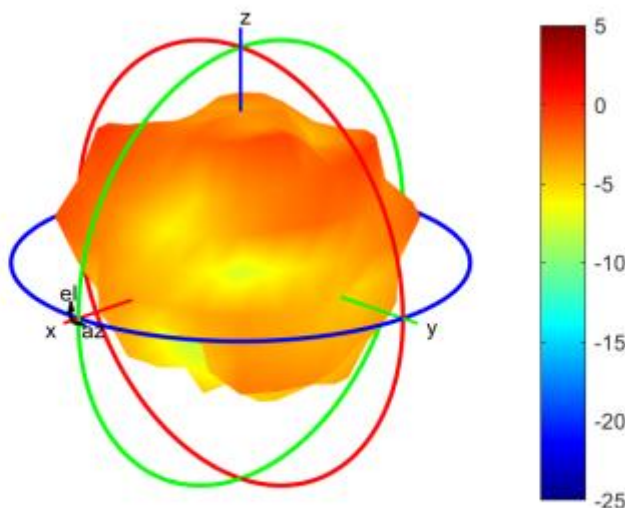
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>777MHz</b> |
| Horizontal (dBi) peak | -1.66         |
| Vertical (dBi) peak   | -0.91         |

782MHz



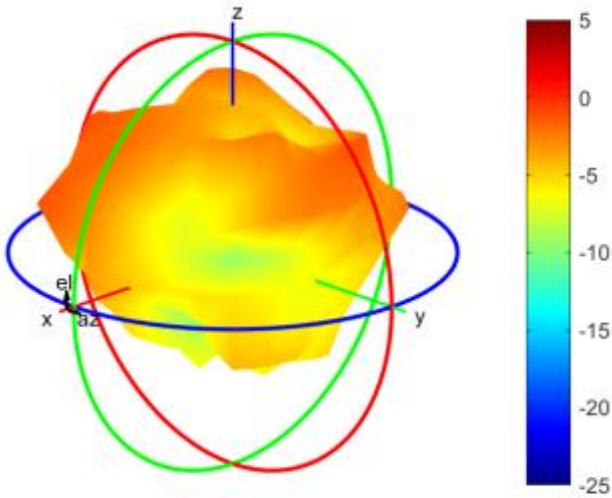
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>782MHz</b> |
| Horizontal (dBi) peak | -1.17         |
| Vertical (dBi) peak   | -0.93         |

787MHz



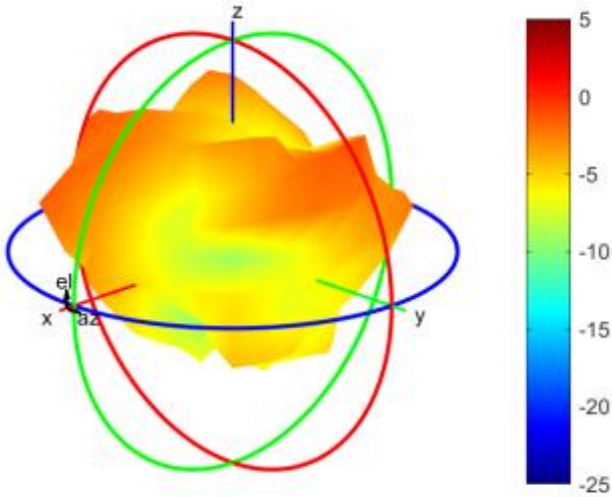
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>787MHz</b> |
| Horizontal (dBi) peak | -0.92         |
| Vertical (dBi) peak   | -1.09         |

814MHz



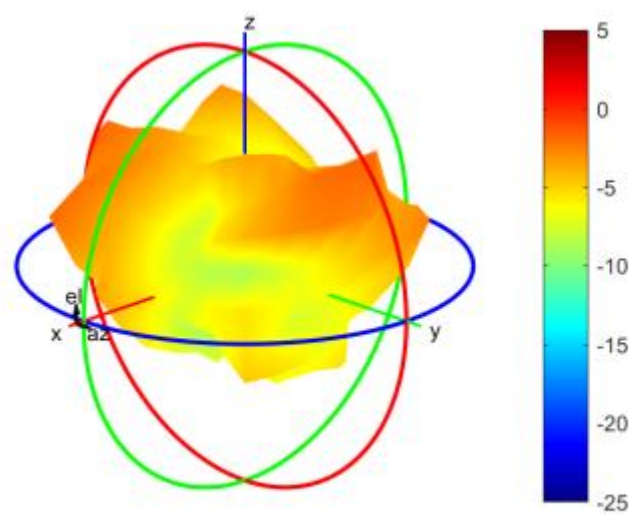
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>814MHz</b> |
| Horizontal (dBi) peak | -1.69         |
| Vertical (dBi) peak   | -1.93         |

824MHz



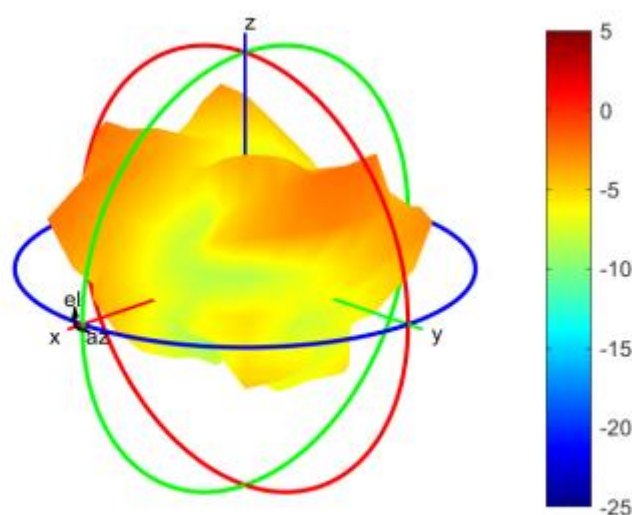
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>824MHz</b> |
| Horizontal (dBi) peak | -2.79         |
| Vertical (dBi) peak   | -2.94         |

832MHz



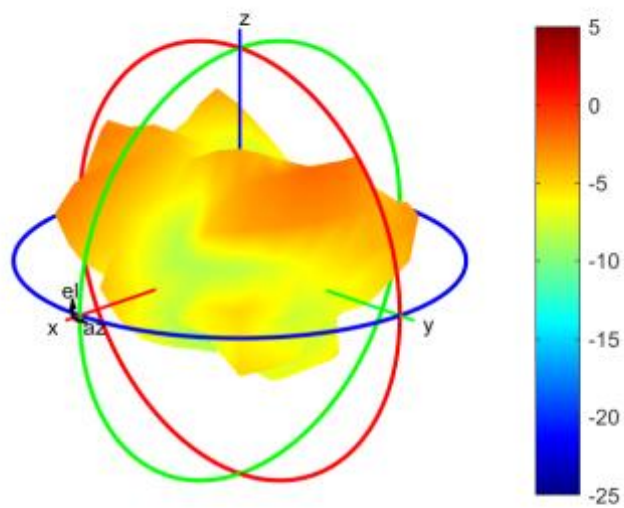
|                       |        |
|-----------------------|--------|
| Center Frequency      | 832MHz |
| Horizontal (dBi) peak | -2.90  |
| Vertical (dBi) peak   | -3.50  |

836.5MHz



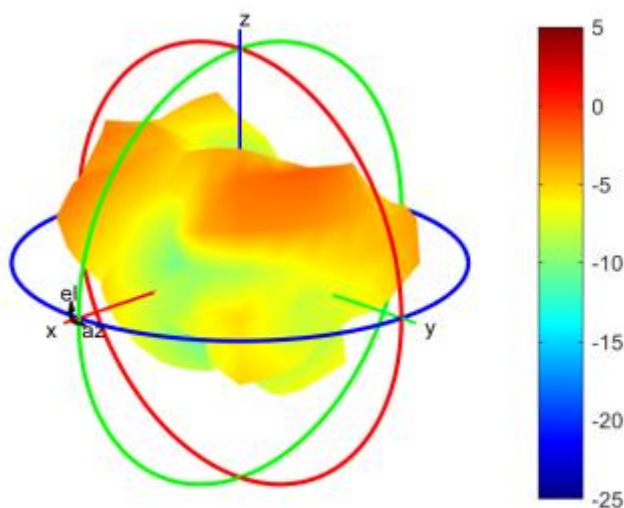
|                       |          |
|-----------------------|----------|
| Center Frequency      | 836.5MHz |
| Horizontal (dBi) peak | -3.04    |
| Vertical (dBi) peak   | -3.66    |

849MHz



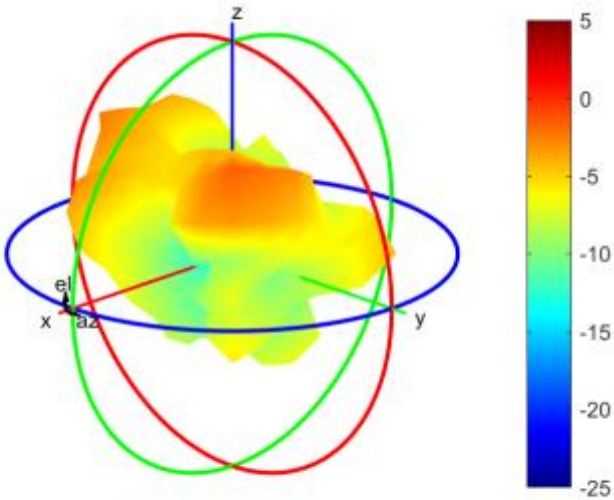
|                       |        |
|-----------------------|--------|
| Center Frequency      | 849MHz |
| Horizontal (dBi) peak | -2.87  |
| Vertical (dBi) peak   | -3.56  |

862MHz



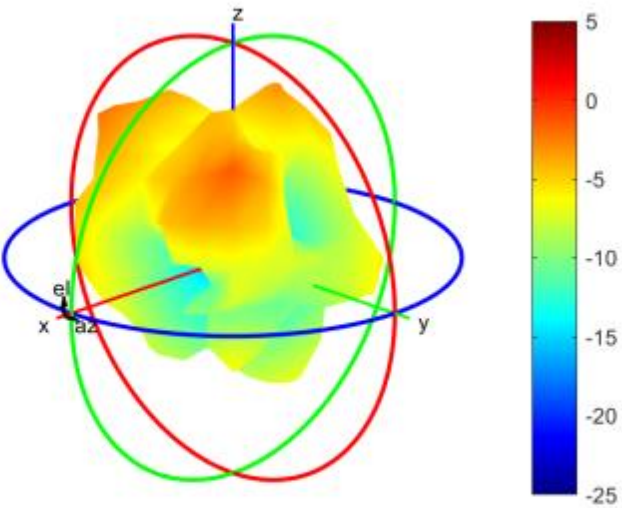
|                       |        |
|-----------------------|--------|
| Center Frequency      | 862MHz |
| Horizontal (dBi) peak | -2.89  |
| Vertical (dBi) peak   | -3.46  |

880MHz



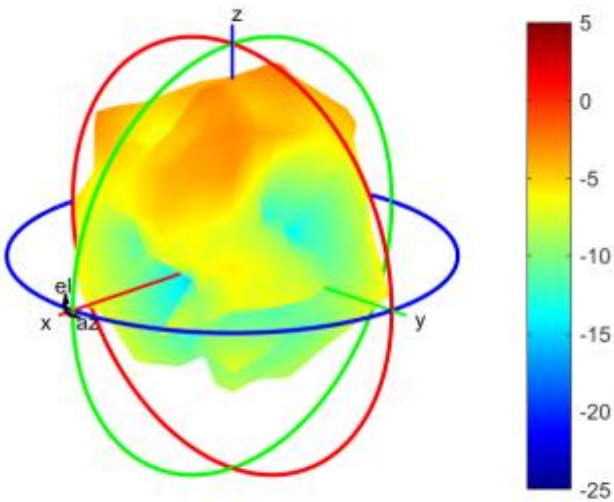
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>880MHz</b> |
| Horizontal (dBi) peak | -3.30         |
| Vertical (dBi) peak   | -2.79         |

897.5MHz



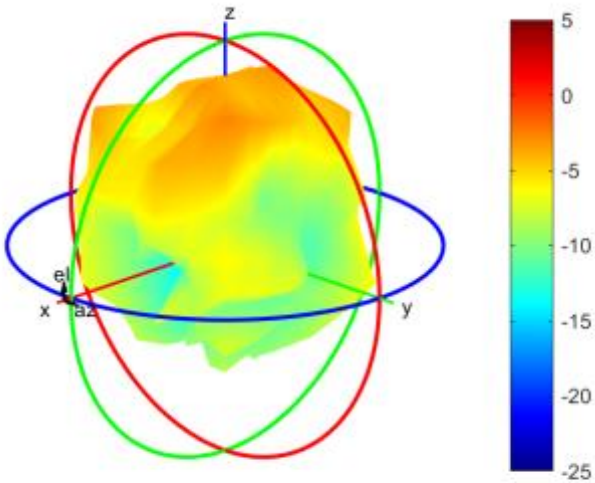
|                       |                 |
|-----------------------|-----------------|
| Center Frequency      | <b>897.5MHz</b> |
| Horizontal (dBi) peak | -3.29           |
| Vertical (dBi) peak   | -3.29           |

915MHz



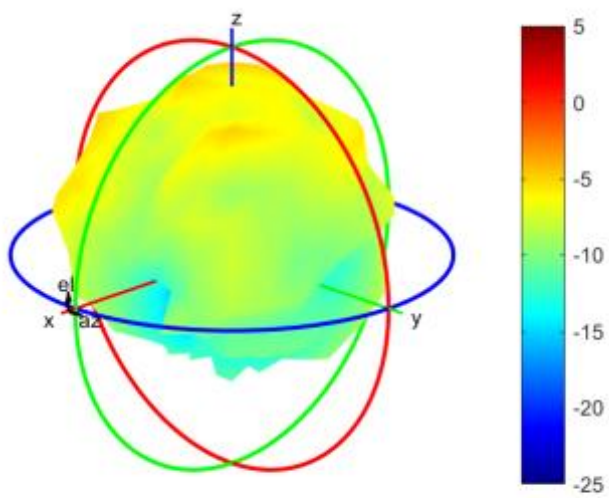
|                       |        |
|-----------------------|--------|
| Center Frequency      | 915MHz |
| Horizontal (dBi) peak | -3.06  |
| Vertical (dBi) peak   | -3.69  |

925MHz



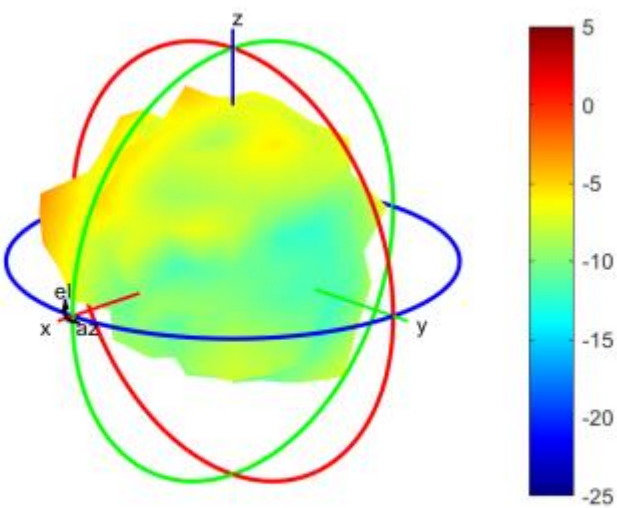
|                       |        |
|-----------------------|--------|
| Center Frequency      | 925MHz |
| Horizontal (dBi) peak | -3.62  |
| Vertical (dBi) peak   | -2.98  |

960MHz



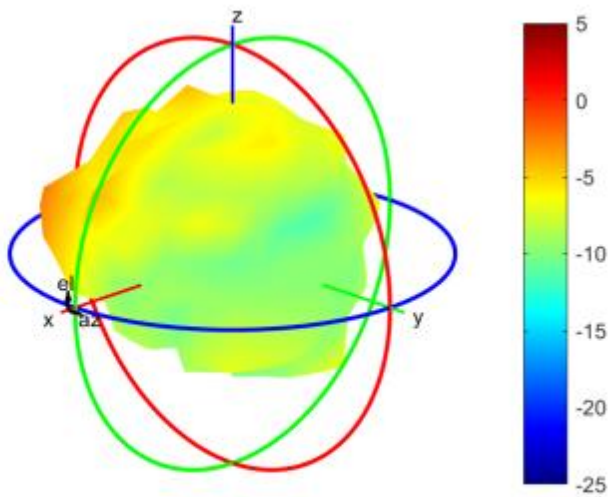
|                       |        |
|-----------------------|--------|
| Center Frequency      | 960MHz |
| Horizontal (dBi) peak | -5.68  |
| Vertical (dBi) peak   | -4.27  |

1427.9MHz



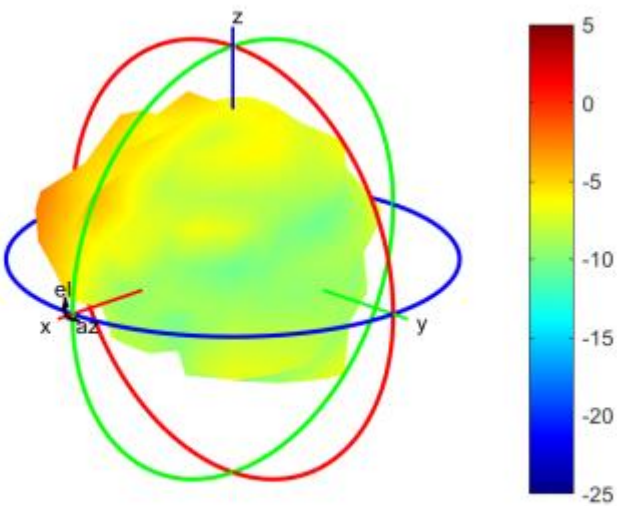
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1427.9MHz |
| Horizontal (dBi) peak | -5.05     |
| Vertical (dBi) peak   | -3.62     |

1447.9MHz



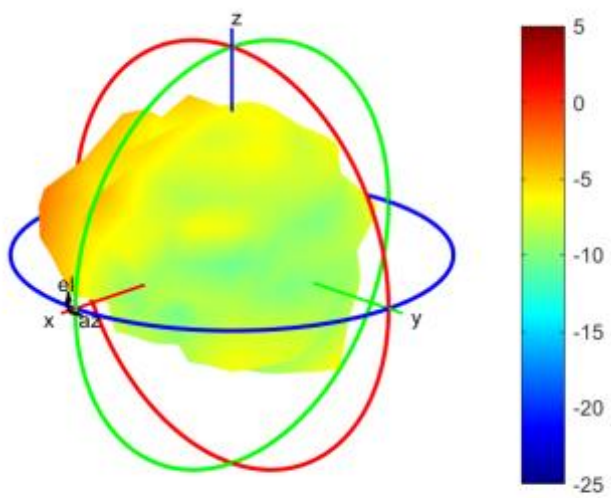
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1447.9MHz |
| Horizontal (dBi) peak | -4.58     |
| Vertical (dBi) peak   | -2.96     |

1455.4MHz



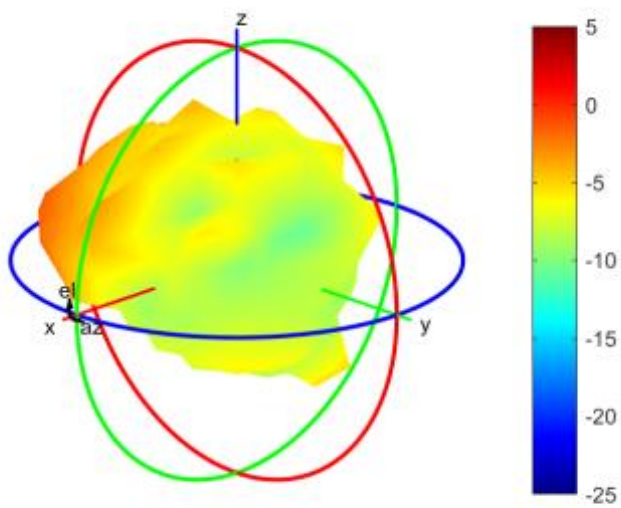
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1455.4MHz |
| Horizontal (dBi) peak | -4.44     |
| Vertical (dBi) peak   | -2.88     |

1462.9MHz



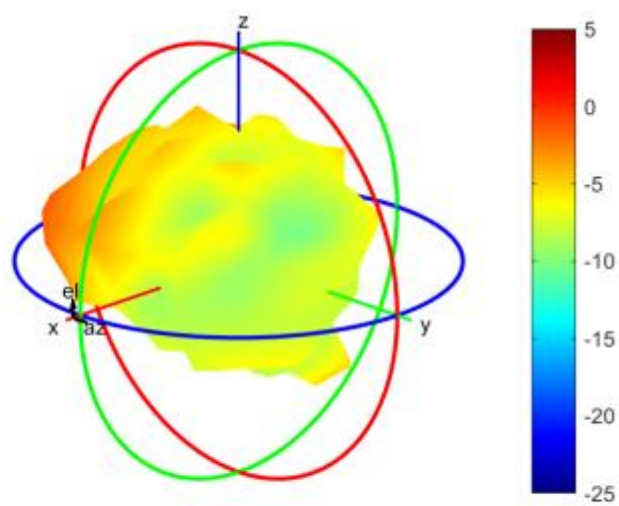
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1462.9MHz |
| Horizontal (dBi) peak | -4.09     |
| Vertical (dBi) peak   | -2.93     |

1496MHz



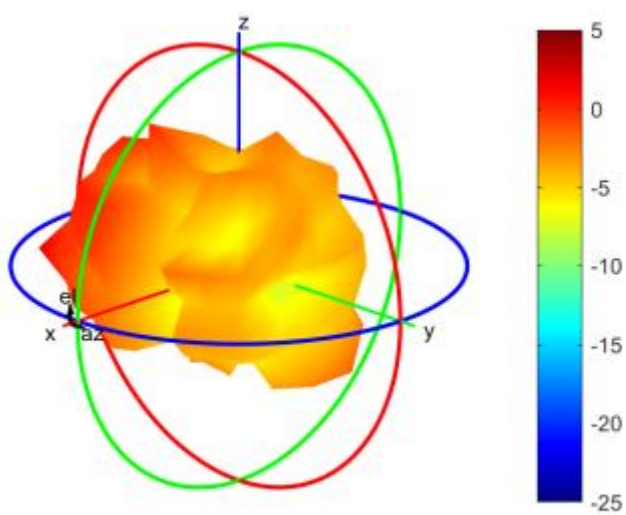
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1496MHz |
| Horizontal (dBi) peak | -3.42   |
| Vertical (dBi) peak   | -2.96   |

1510.9 MHz



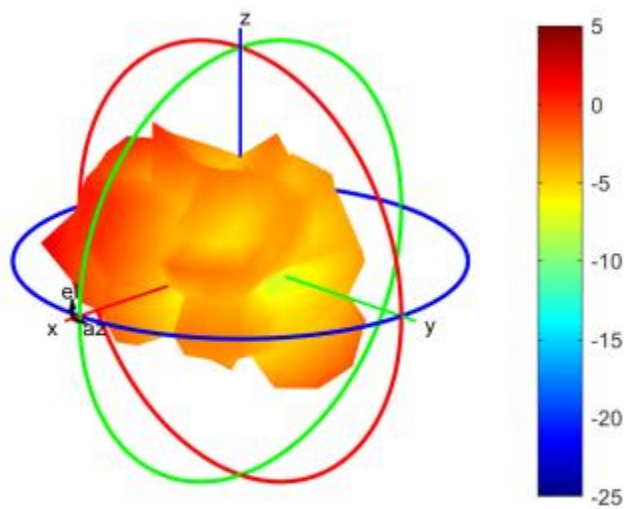
|                       |            |
|-----------------------|------------|
| Center Frequency      | 1510.9 MHz |
| Horizontal (dBi) peak | -3.58      |
| Vertical (dBi) peak   | -2.61      |

1710 MHz



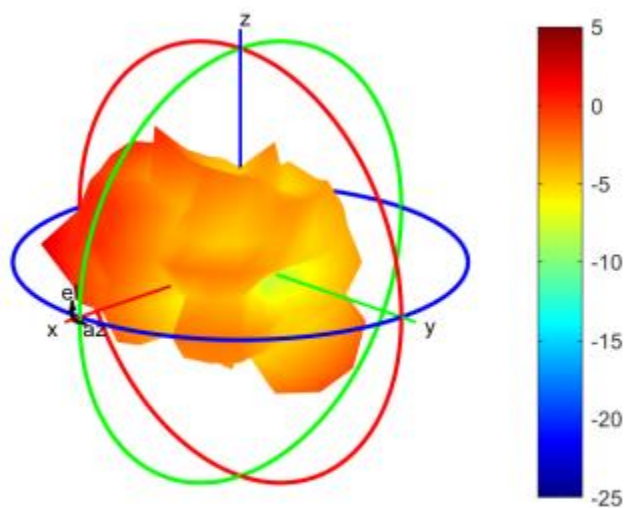
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1710 MHz |
| Horizontal (dBi) peak | -0.50    |
| Vertical (dBi) peak   | -1.15    |

1732.5 MHz



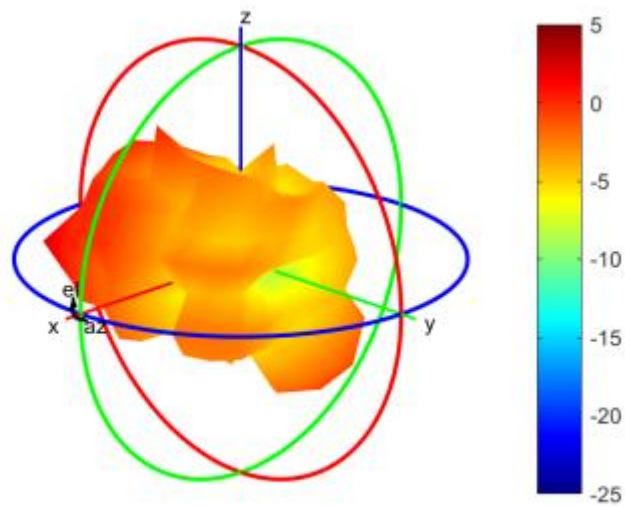
|                       |            |
|-----------------------|------------|
| Center Frequency      | 1732.5 MHz |
| Horizontal (dBi) peak | -0.60      |
| Vertical (dBi) peak   | -1.85      |

1747.5 MHz



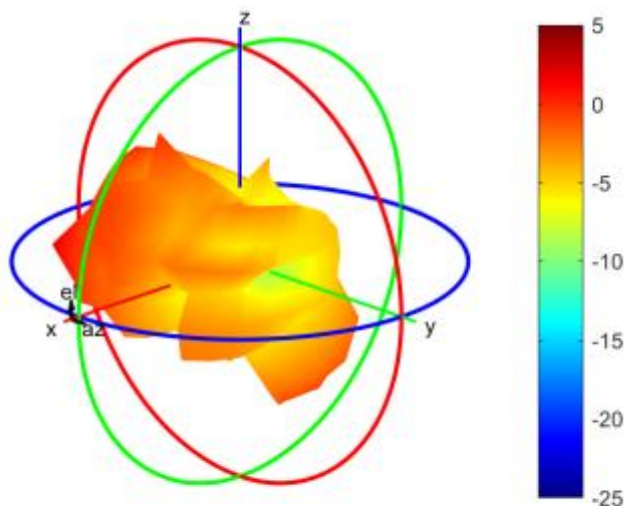
|                       |            |
|-----------------------|------------|
| Center Frequency      | 1747.5 MHz |
| Horizontal (dBi) peak | -0.28      |
| Vertical (dBi) peak   | -2.08      |

1755 MHz



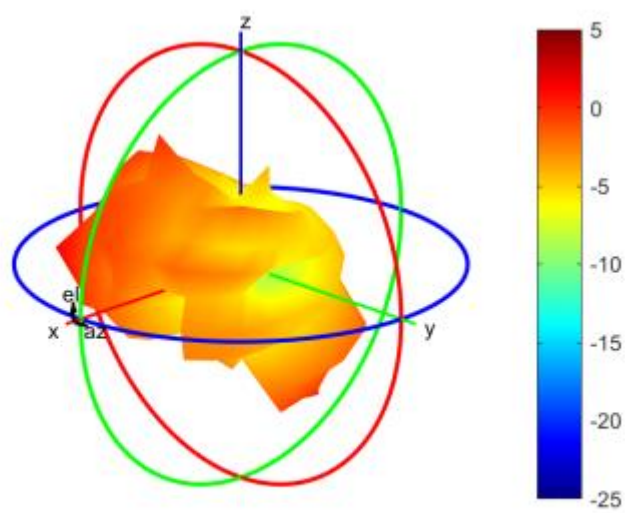
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1755 MHz |
| Horizontal (dBi) peak | 0.13     |
| Vertical (dBi) peak   | -2.16    |

1785 MHz



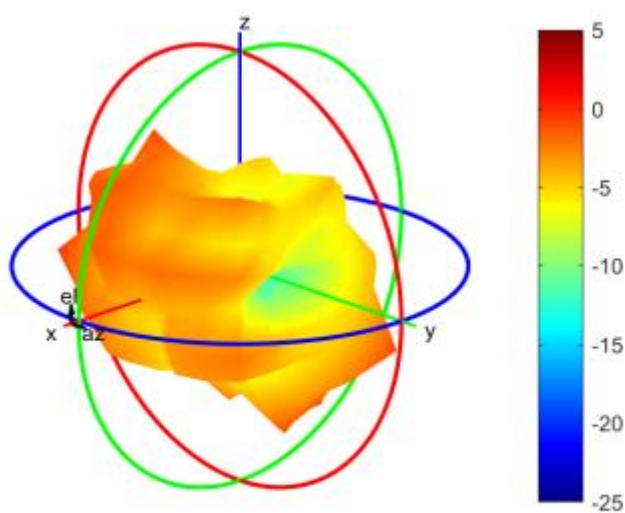
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1785 MHz |
| Horizontal (dBi) peak | 0.25     |
| Vertical (dBi) peak   | 0.33     |

1805 MHz



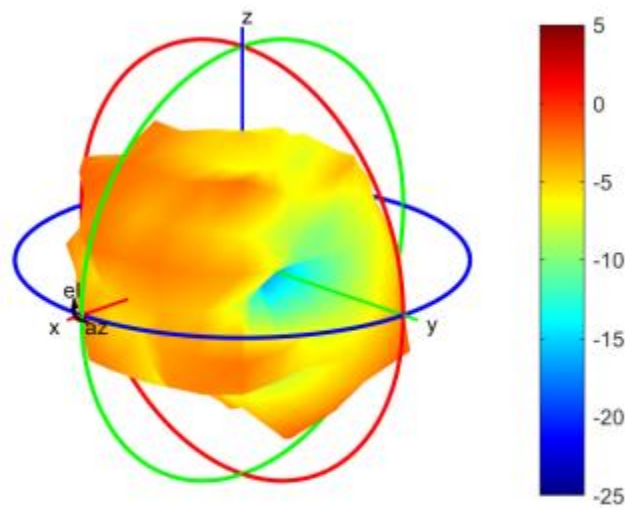
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1805 MHz |
| Horizontal (dBi) peak | -0.35    |
| Vertical (dBi) peak   | -2.24    |

1850 MHz



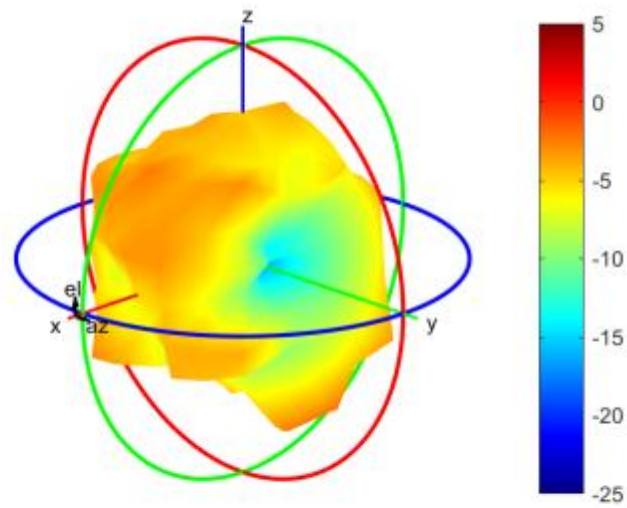
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1850 MHz |
| Horizontal (dBi) peak | -0.83    |
| Vertical (dBi) peak   | -0.93    |

1880 MHz



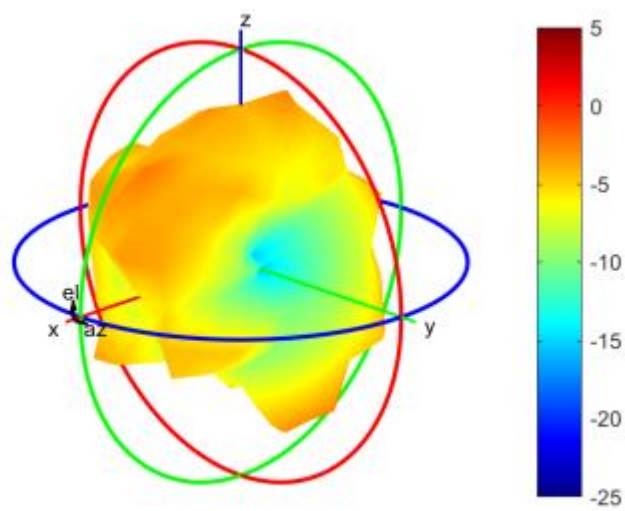
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1880 MHz |
| Horizontal (dBi) peak | -1.03    |
| Vertical (dBi) peak   | -0.39    |

1910MHz



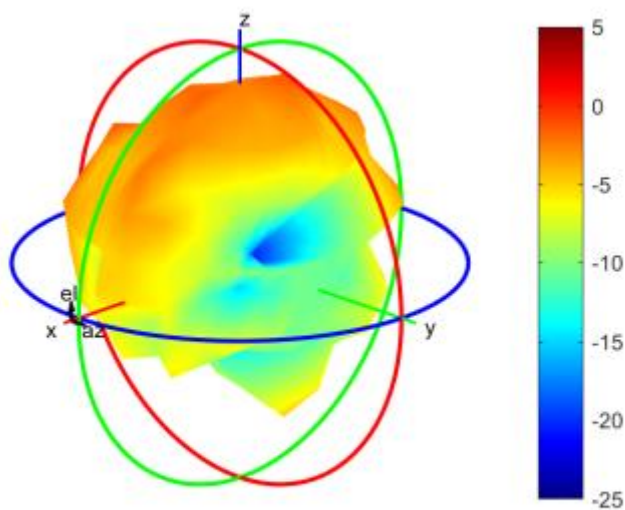
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1910MHz |
| Horizontal (dBi) peak | -2.29   |
| Vertical (dBi) peak   | -2.75   |

1920MHz



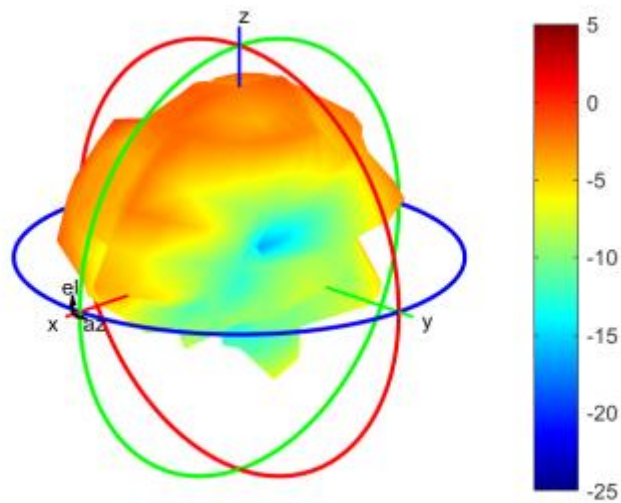
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1920MHz |
| Horizontal (dBi) peak | -2.97   |
| Vertical (dBi) peak   | -3.42   |

1950MHz



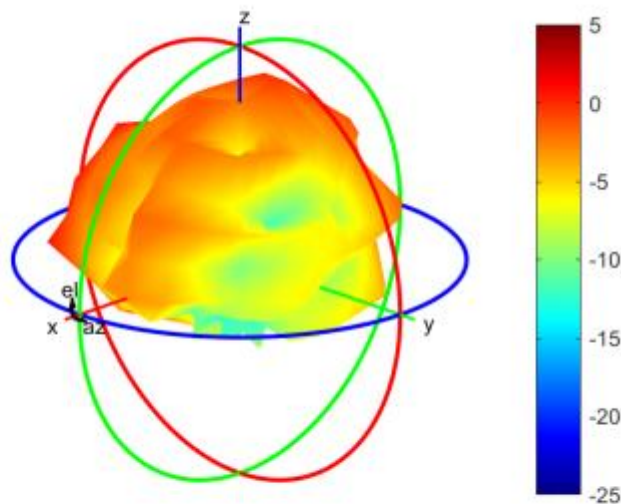
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1950MHz |
| Horizontal (dBi) peak | -1.15   |
| Vertical (dBi) peak   | -1.72   |

1980MHz



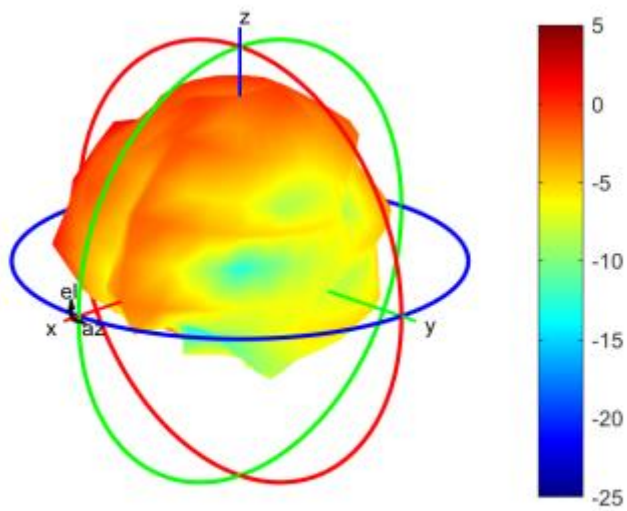
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1980MHz</b> |
| Horizontal (dBi) peak | -0.06          |
| Vertical (dBi) peak   | -0.48          |

2110MHz



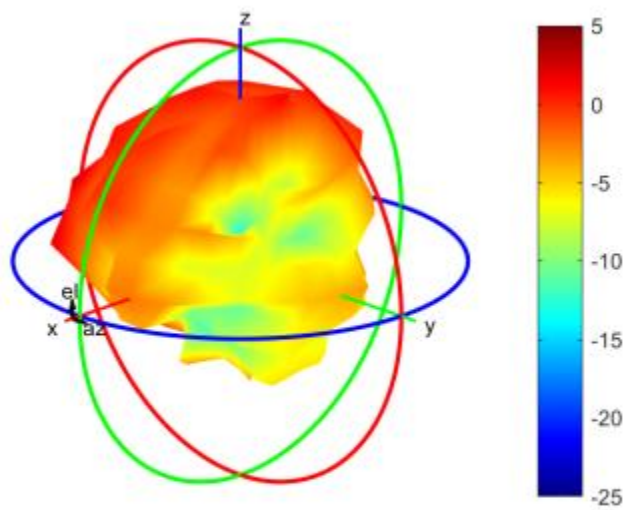
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2110MHz</b> |
| Horizontal (dBi) peak | -1.23          |
| Vertical (dBi) peak   | -0.71          |

2200MHz



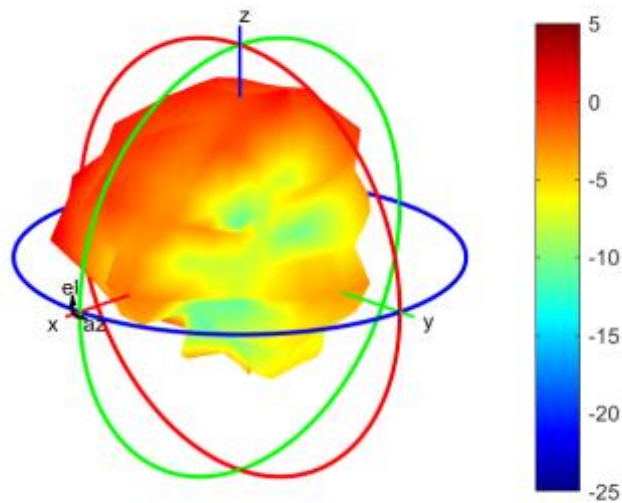
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2200MHz |
| Horizontal (dBi) peak | -2.21   |
| Vertical (dBi) peak   | -1.45   |

2300MHz



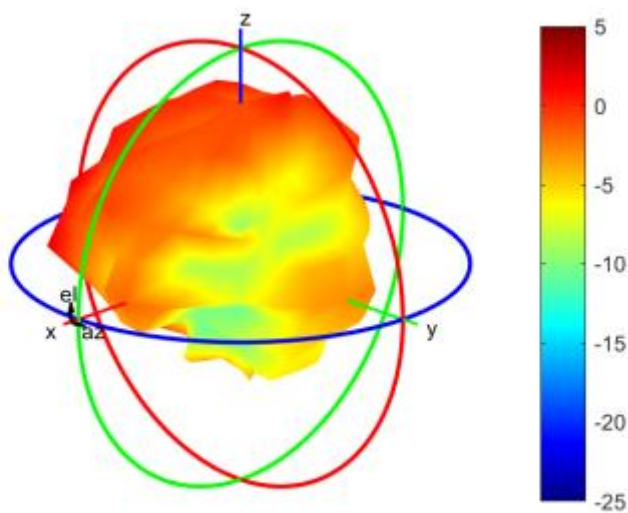
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2300MHz |
| Horizontal (dBi) peak | 0.91    |
| Vertical (dBi) peak   | 0.19    |

2305MHz



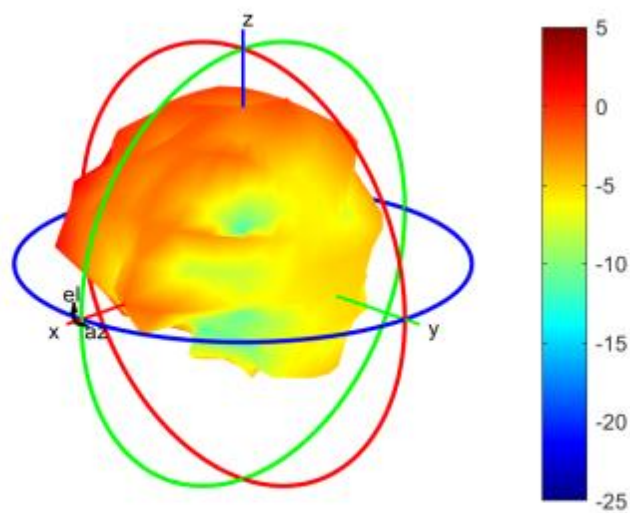
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2305MHz |
| Horizontal (dBi) peak | 0.70    |
| Vertical (dBi) peak   | 0.13    |

2315MHz



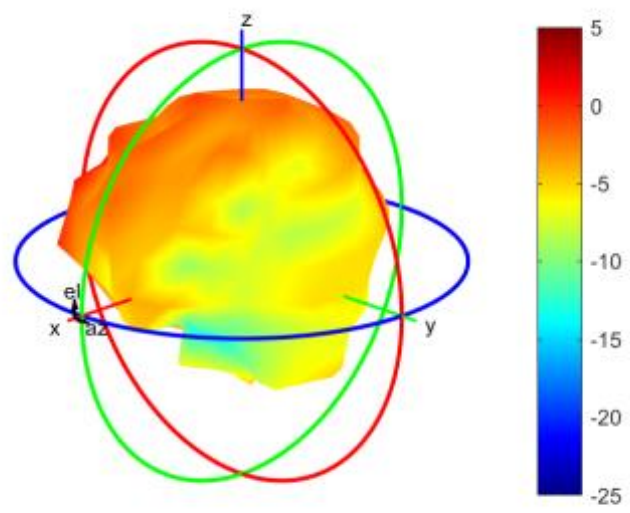
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2315MHz |
| Horizontal (dBi) peak | 0.41    |
| Vertical (dBi) peak   | 0.18    |

2350MHz



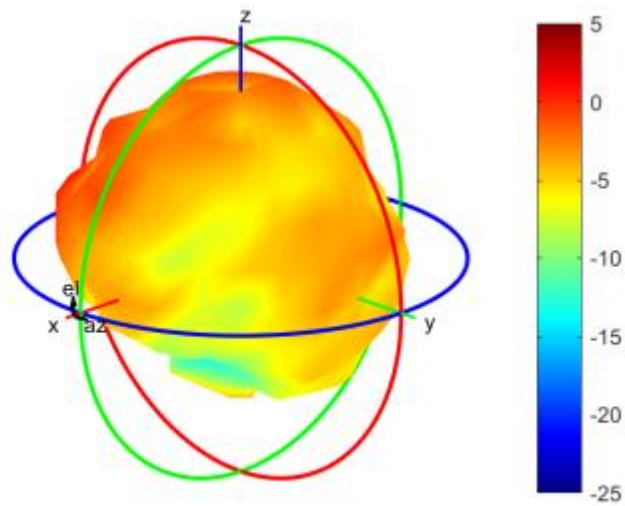
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2350MHz |
| Horizontal (dBi) peak | 0.06    |
| Vertical (dBi) peak   | 0.36    |

2400MHz



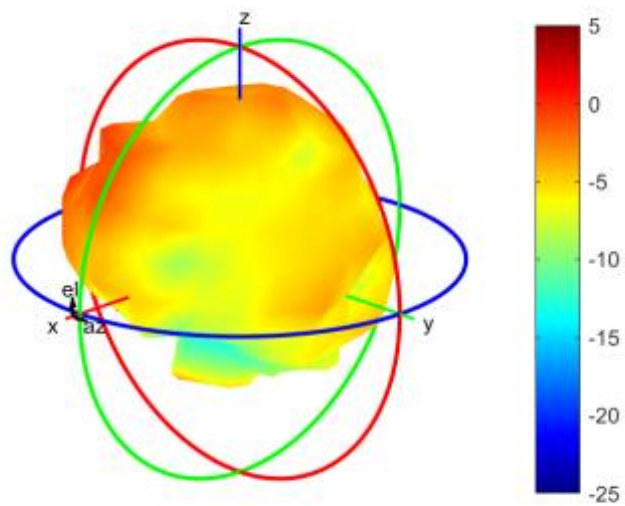
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2400MHz |
| Horizontal (dBi) peak | 0.35    |
| Vertical (dBi) peak   | 0.26    |

2500MHz



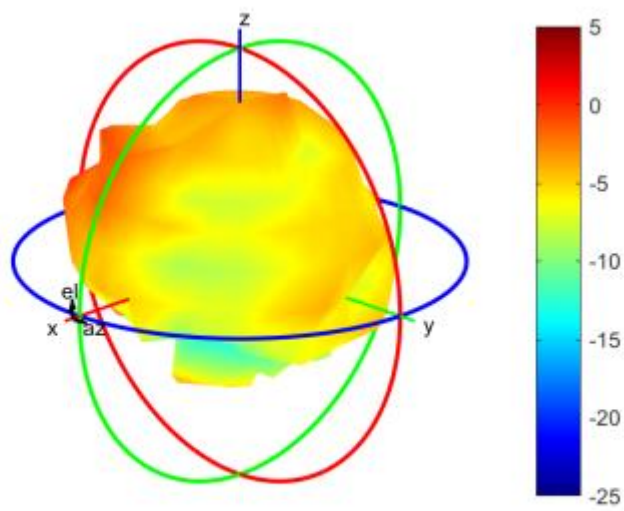
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2500MHz |
| Horizontal (dBi) peak | 0.01    |
| Vertical (dBi) peak   | 0.11    |

2570MHz



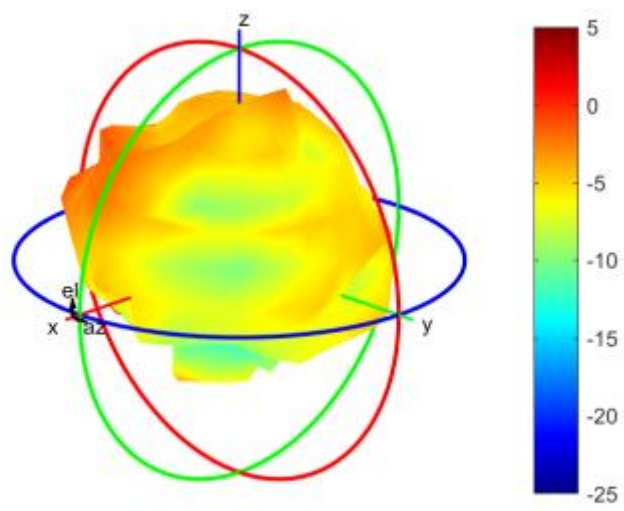
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2570MHz |
| Horizontal (dBi) peak | 0.56    |
| Vertical (dBi) peak   | 0.49    |

2595MHz



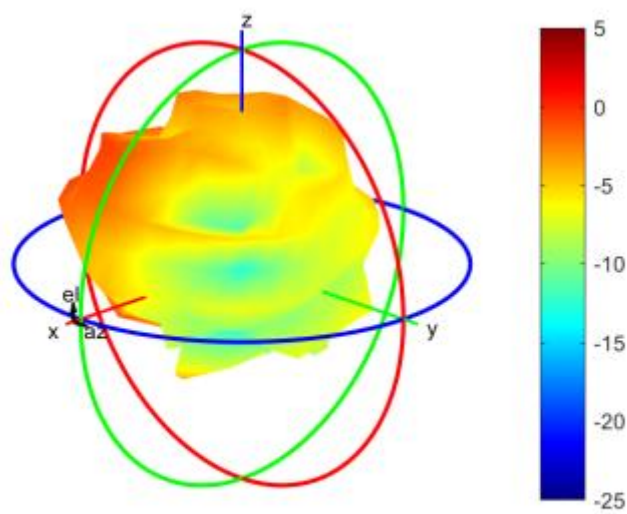
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2595MHz</b> |
| Horizontal (dBi) peak | -0.05          |
| Vertical (dBi) peak   | 0.15           |

2620MHz



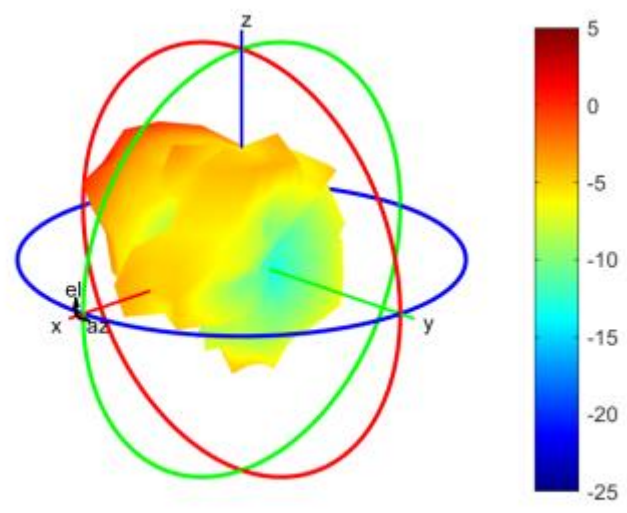
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2620MHz</b> |
| Horizontal (dBi) peak | -0.72          |
| Vertical (dBi) peak   | -0.09          |

2690MHz



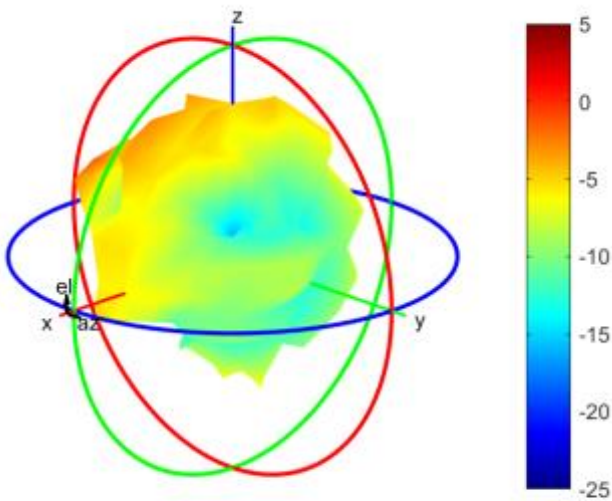
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2690MHz</b> |
| Horizontal (dBi) peak | -0.76          |
| Vertical (dBi) peak   | -0.10          |

3400MHz



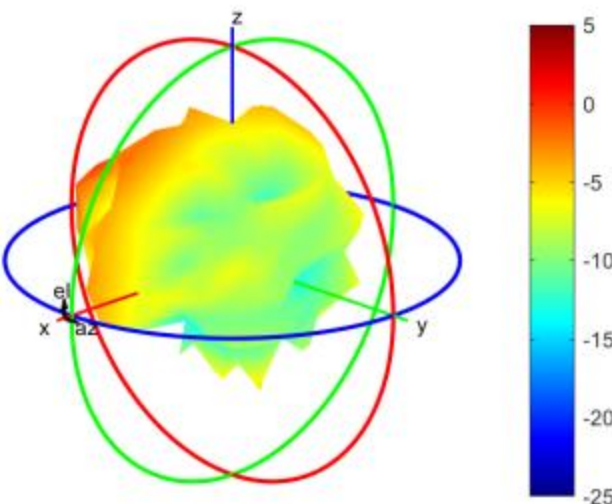
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>3400MHz</b> |
| Horizontal (dBi) peak | -1.18          |
| Vertical (dBi) peak   | -1.53          |

3500MHz



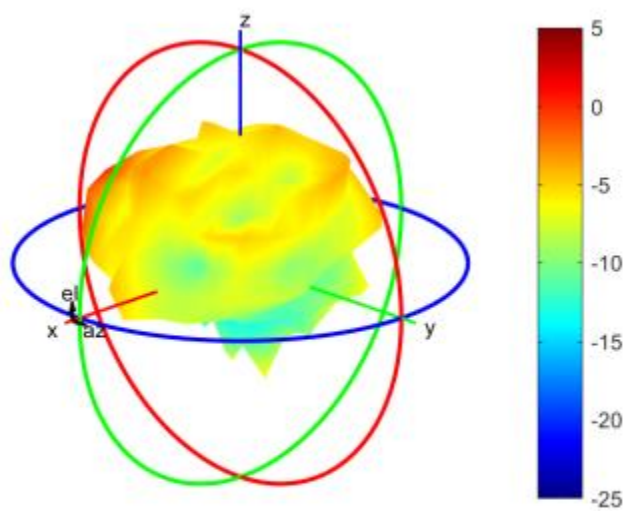
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3500MHz |
| Horizontal (dBi) peak | -2.17   |
| Vertical (dBi) peak   | -2.70   |

3600MHz



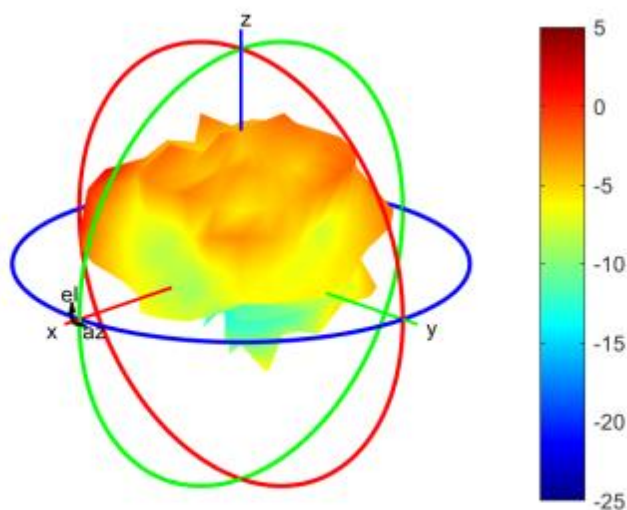
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3600MHz |
| Horizontal (dBi) peak | -1.61   |
| Vertical (dBi) peak   | -0.85   |

3700MHz



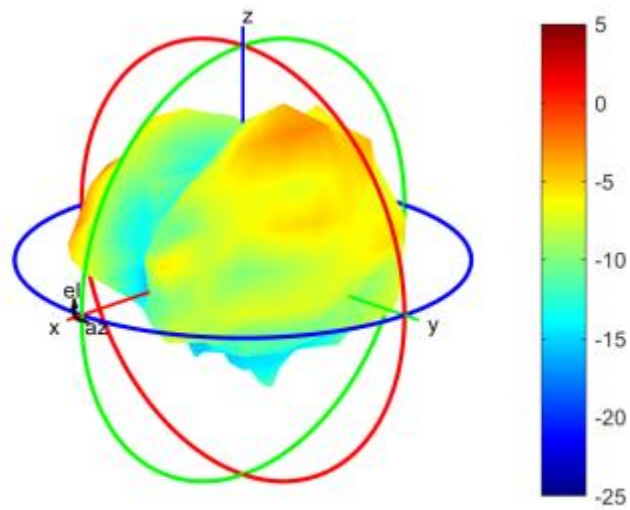
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3700MHz |
| Horizontal (dBi) peak | -1.21   |
| Vertical (dBi) peak   | -0.52   |

3800MHz



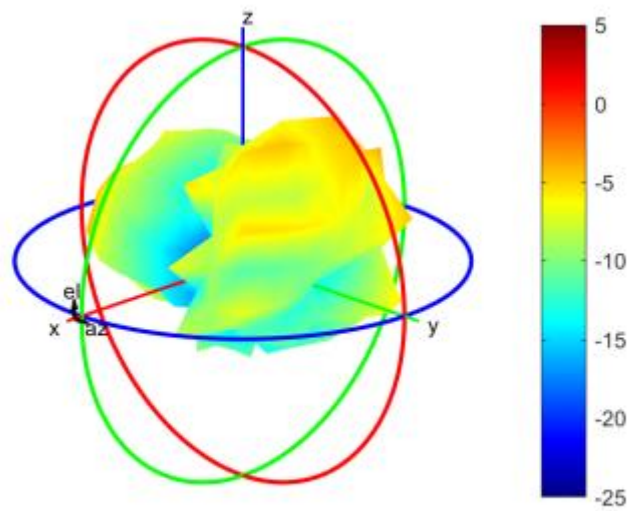
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3800MHz |
| Horizontal (dBi) peak | -0.36   |
| Vertical (dBi) peak   | -1.02   |

4200MHz



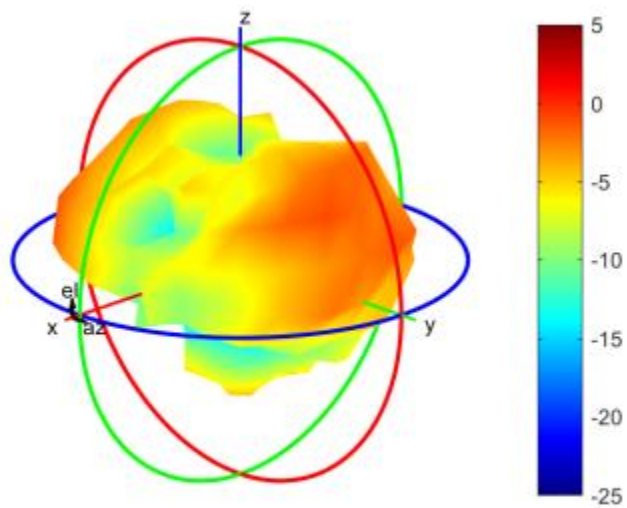
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4200MHz |
| Horizontal (dBi) peak | -1.68   |
| Vertical (dBi) peak   | -1.82   |

4400MHz



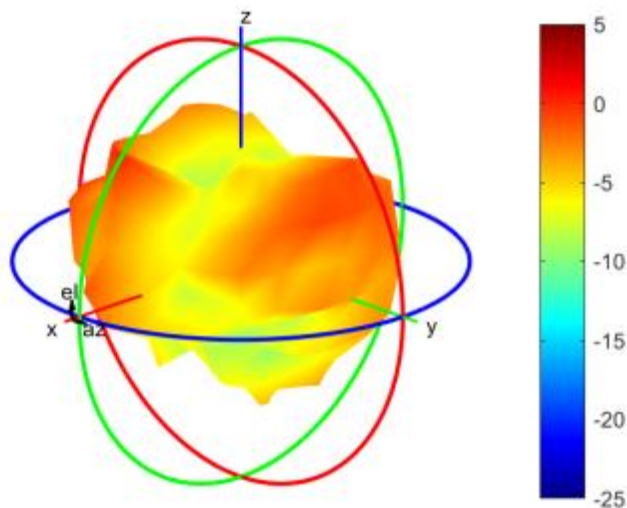
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4400MHz |
| Horizontal (dBi) peak | -2.97   |
| Vertical (dBi) peak   | -2.30   |

4700MHz



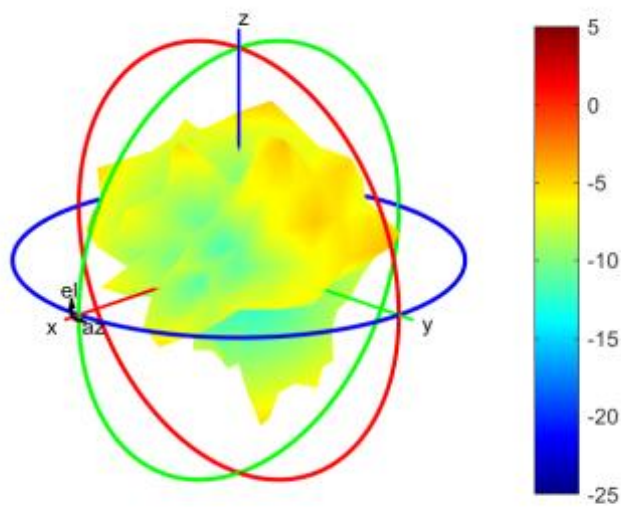
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>4700MHz</b> |
| Horizontal (dBi) peak | -0.80          |
| Vertical (dBi) peak   | -1.02          |

5150MHz



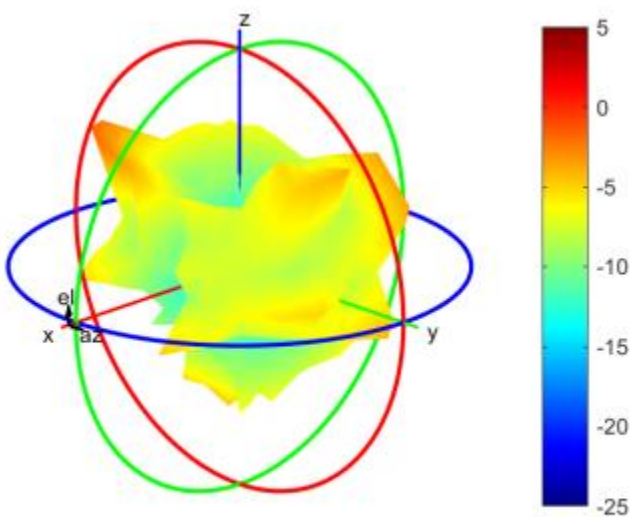
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>5150MHz</b> |
| Horizontal (dBi) peak | -2.07          |
| Vertical (dBi) peak   | -1.38          |

5537.5MHz



|                       |           |
|-----------------------|-----------|
| Center Frequency      | 5537.5MHz |
| Horizontal (dBi) peak | -4.34     |
| Vertical (dBi) peak   | -3.48     |

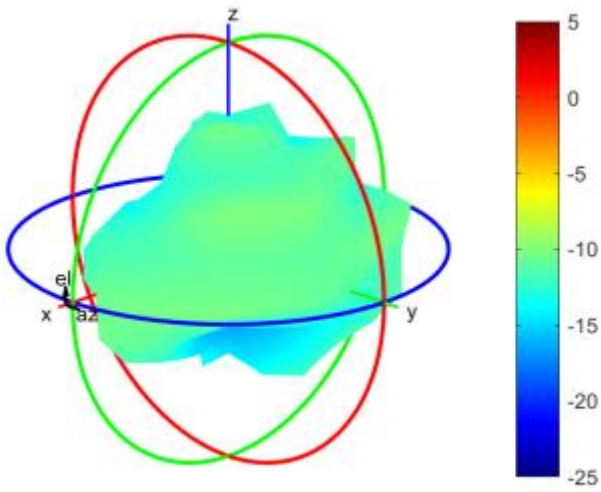
5925MHz



|                       |         |
|-----------------------|---------|
| Center Frequency      | 5925MHz |
| Horizontal (dBi) peak | -1.66   |
| Vertical (dBi) peak   | -3.83   |

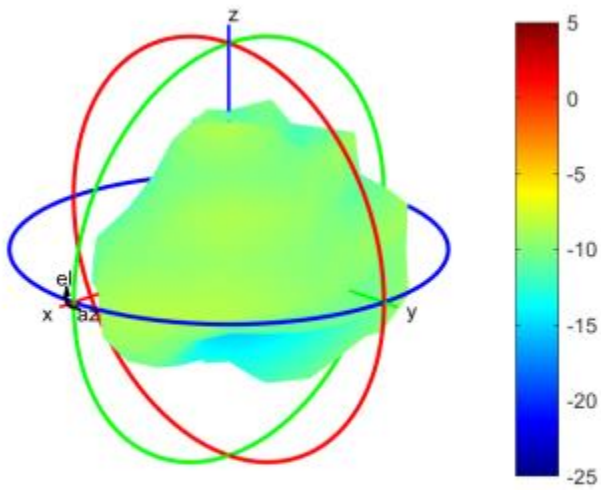
WWAN Aux Antenna (DRx)

617MHz



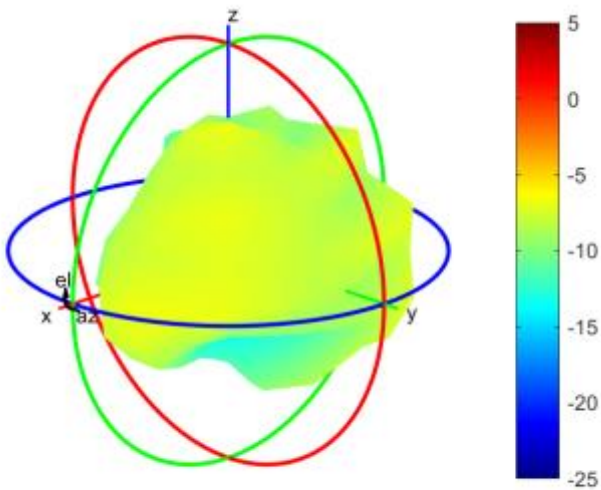
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>617MHz</b> |
| Horizontal (dBi) peak | -11.42        |
| Vertical (dBi) peak   | -11.71        |

634MHz



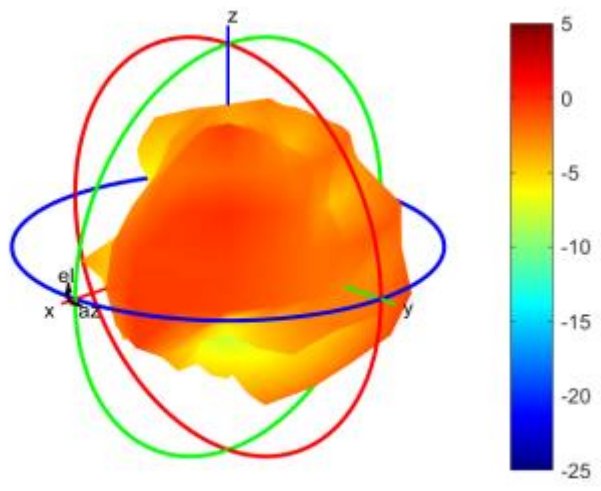
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>634MHz</b> |
| Horizontal (dBi) peak | -9.78         |
| Vertical (dBi) peak   | -10.14        |

652MHz



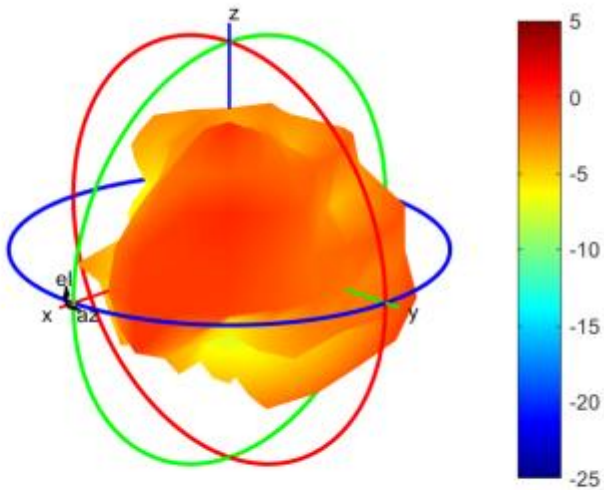
|                       |        |
|-----------------------|--------|
| Center Frequency      | 652MHz |
| Horizontal (dBi) peak | -8.11  |
| Vertical (dBi) peak   | -8.02  |

717MHz



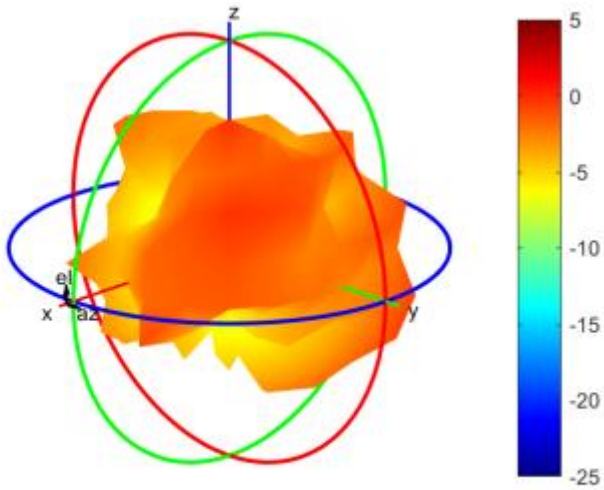
|                       |        |
|-----------------------|--------|
| Center Frequency      | 717MHz |
| Horizontal (dBi) peak | -2.43  |
| Vertical (dBi) peak   | -1.93  |

725.5MHz



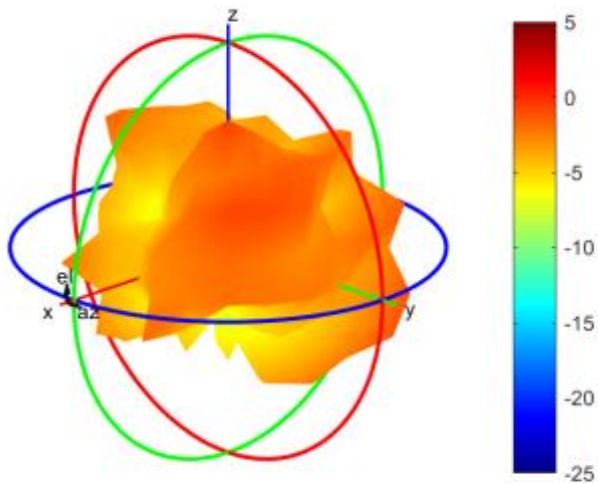
|                       |                 |
|-----------------------|-----------------|
| Center Frequency      | <b>725.5MHz</b> |
| Horizontal (dBi) peak | -2.22           |
| Vertical (dBi) peak   | -1.65           |

748MHz



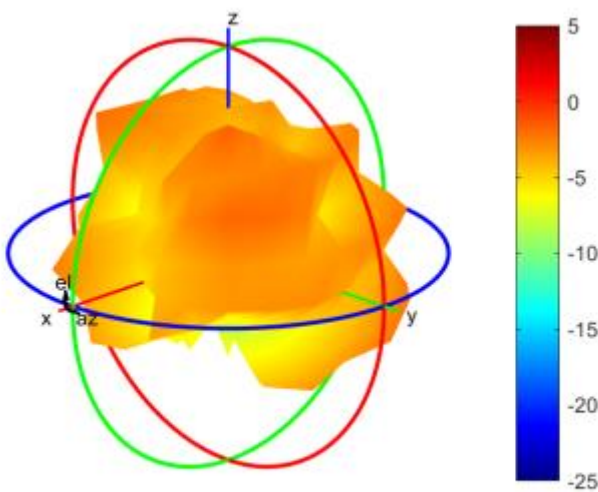
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>748MHz</b> |
| Horizontal (dBi) peak | -2.46         |
| Vertical (dBi) peak   | -1.75         |

756MHz



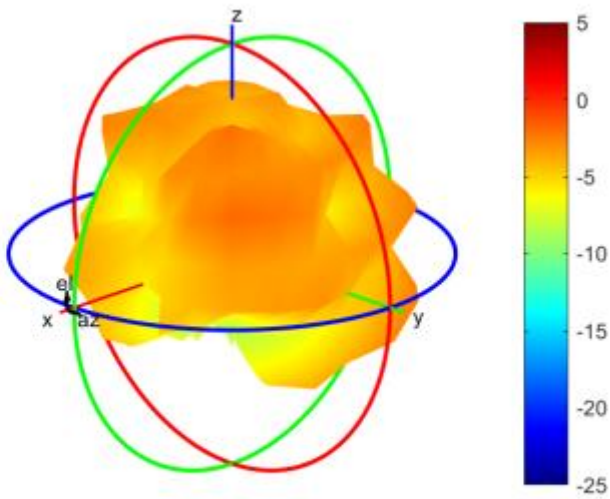
|                       |        |
|-----------------------|--------|
| Center Frequency      | 756MHz |
| Horizontal (dBi) peak | -1.73  |
| Vertical (dBi) peak   | -2.24  |

768MHz



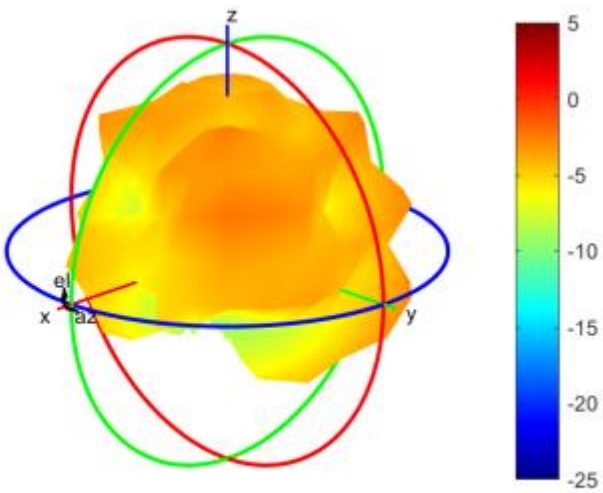
|                       |        |
|-----------------------|--------|
| Center Frequency      | 768MHz |
| Horizontal (dBi) peak | -2.67  |
| Vertical (dBi) peak   | -2.47  |

777MHz



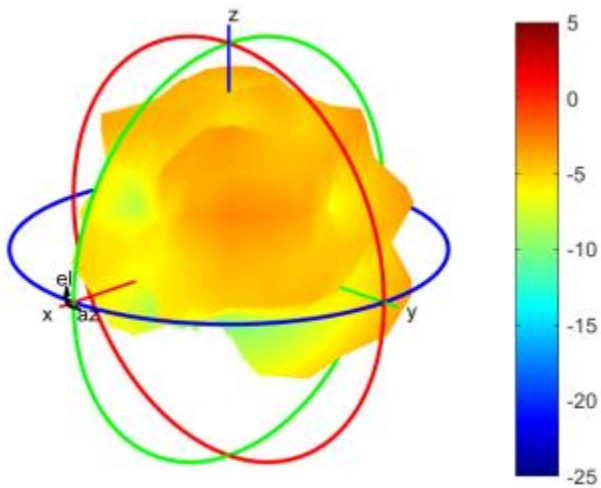
|                       |        |
|-----------------------|--------|
| Center Frequency      | 777MHz |
| Horizontal (dBi) peak | -3.31  |
| Vertical (dBi) peak   | -2.68  |

782MHz



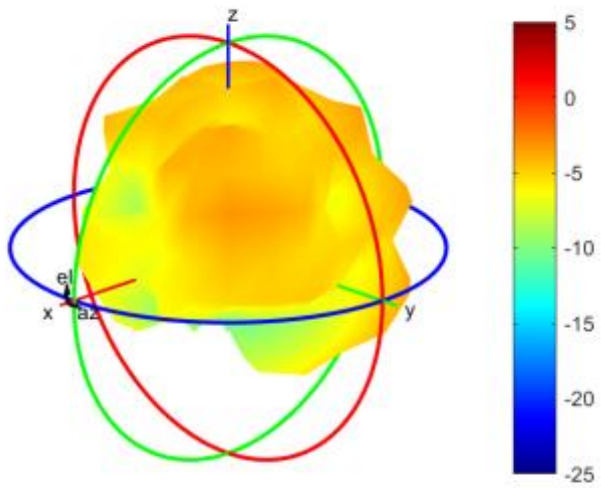
|                       |        |
|-----------------------|--------|
| Center Frequency      | 782MHz |
| Horizontal (dBi) peak | -3.88  |
| Vertical (dBi) peak   | -3.04  |

787MHz



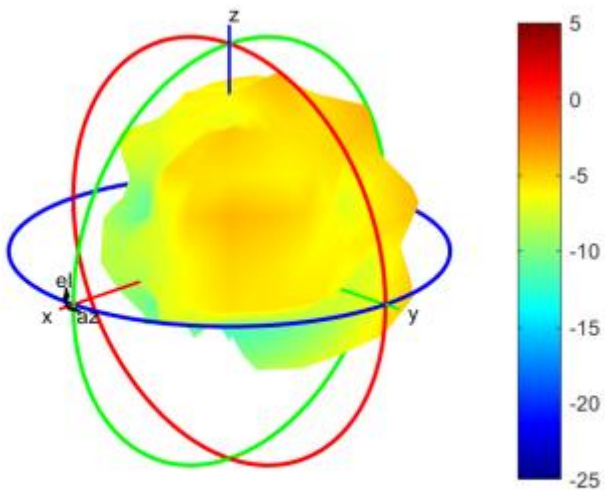
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>787MHz</b> |
| Horizontal (dBi) peak | -4.37         |
| Vertical (dBi) peak   | -3.56         |

791MHz



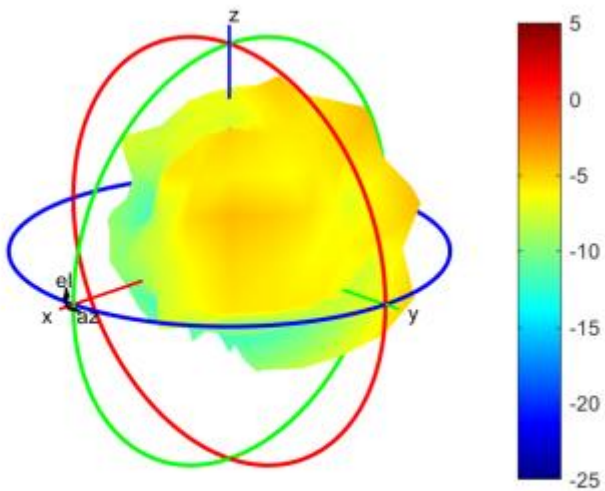
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>791MHz</b> |
| Horizontal (dBi) peak | -4.76         |
| Vertical (dBi) peak   | -3.96         |

806MHz



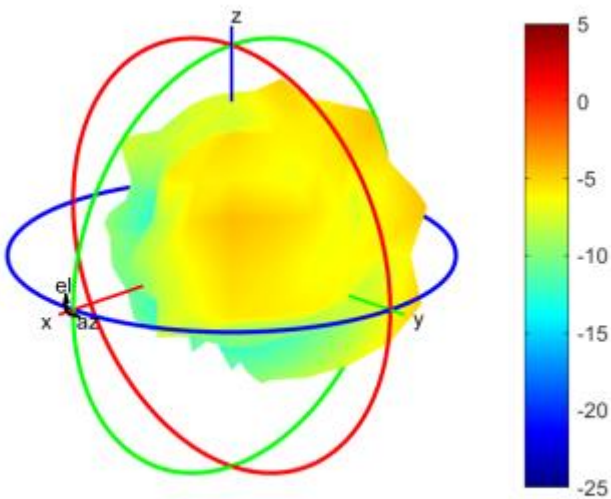
|                       |        |
|-----------------------|--------|
| Center Frequency      | 806MHz |
| Horizontal (dBi) peak | -5.31  |
| Vertical (dBi) peak   | -4.80  |

814MHz



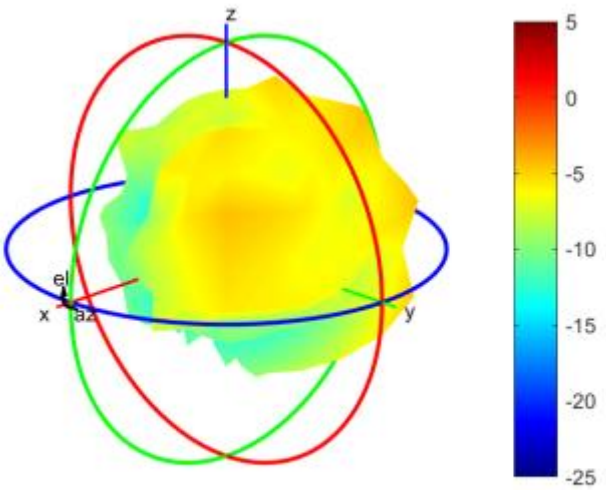
|                       |        |
|-----------------------|--------|
| Center Frequency      | 814MHz |
| Horizontal (dBi) peak | -5.88  |
| Vertical (dBi) peak   | -4.86  |

821MHz



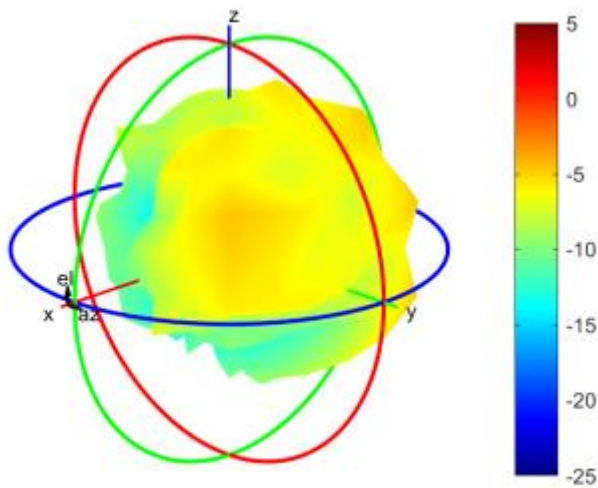
|                       |        |
|-----------------------|--------|
| Center Frequency      | 821MHz |
| Horizontal (dBi) peak | -6.23  |
| Vertical (dBi) peak   | -4.99  |

824MHz



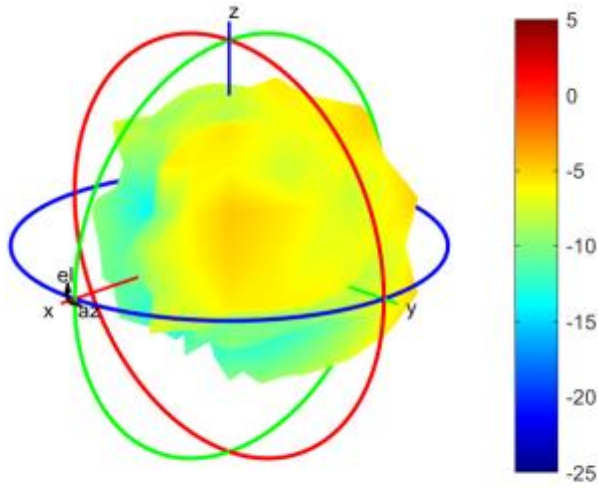
|                       |        |
|-----------------------|--------|
| Center Frequency      | 824MHz |
| Horizontal (dBi) peak | -6.35  |
| Vertical (dBi) peak   | -5.04  |

832MHz



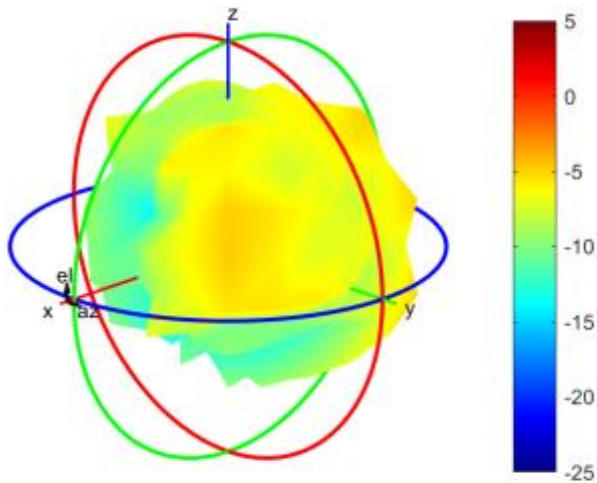
|                       |               |
|-----------------------|---------------|
| Center Frequency      | <b>832MHz</b> |
| Horizontal (dBi) peak | -6.75         |
| Vertical (dBi) peak   | -5.13         |

836.5MHz



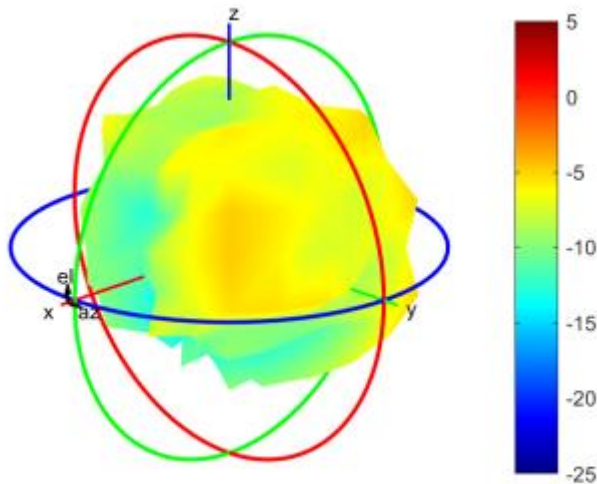
|                       |                 |
|-----------------------|-----------------|
| Center Frequency      | <b>836.5MHz</b> |
| Horizontal (dBi) peak | -6.85           |
| Vertical (dBi) peak   | -5.23           |

849MHz



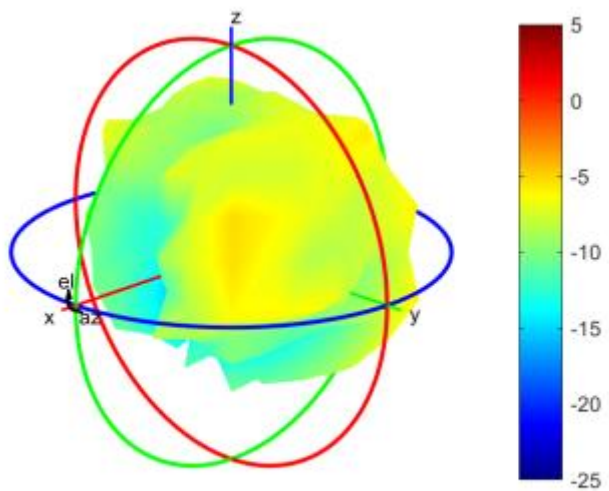
|                       |        |
|-----------------------|--------|
| Center Frequency      | 849MHz |
| Horizontal (dBi) peak | -6.59  |
| Vertical (dBi) peak   | -5.23  |

862MHz



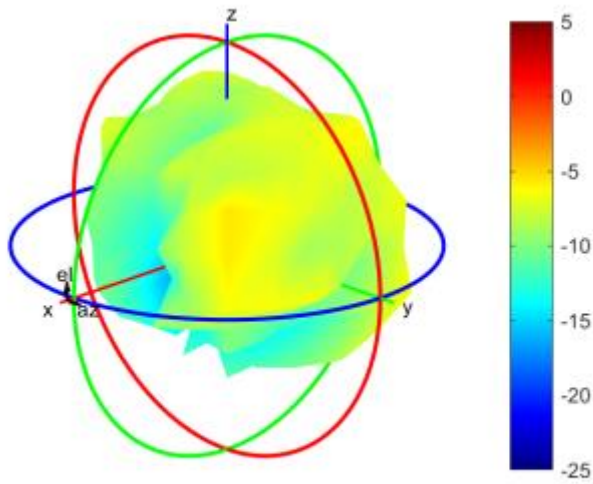
|                       |        |
|-----------------------|--------|
| Center Frequency      | 862MHz |
| Horizontal (dBi) peak | -6.35  |
| Vertical (dBi) peak   | -5.29  |

880MHz



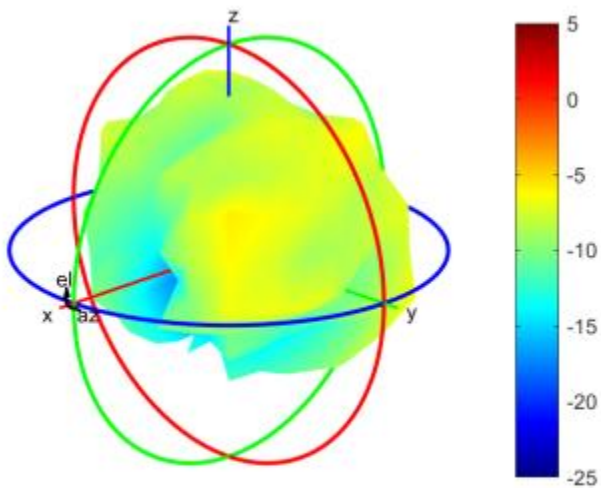
|                       |        |
|-----------------------|--------|
| Center Frequency      | 880MHz |
| Horizontal (dBi) peak | -6.87  |
| Vertical (dBi) peak   | -5.80  |

897.5MHz



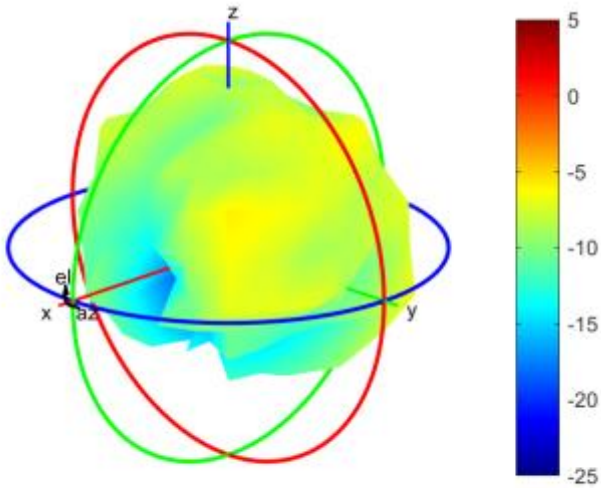
|                       |          |
|-----------------------|----------|
| Center Frequency      | 897.5MHz |
| Horizontal (dBi) peak | -7.07    |
| Vertical (dBi) peak   | -5.94    |

915MHz



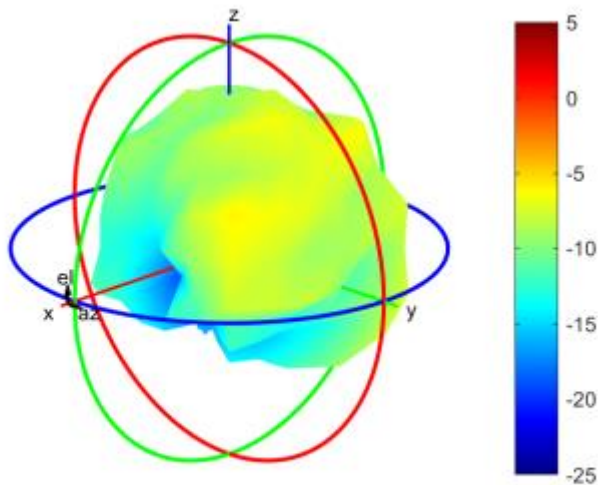
|                       |        |
|-----------------------|--------|
| Center Frequency      | 915MHz |
| Horizontal (dBi) peak | -7.15  |
| Vertical (dBi) peak   | -6.12  |

925MHz



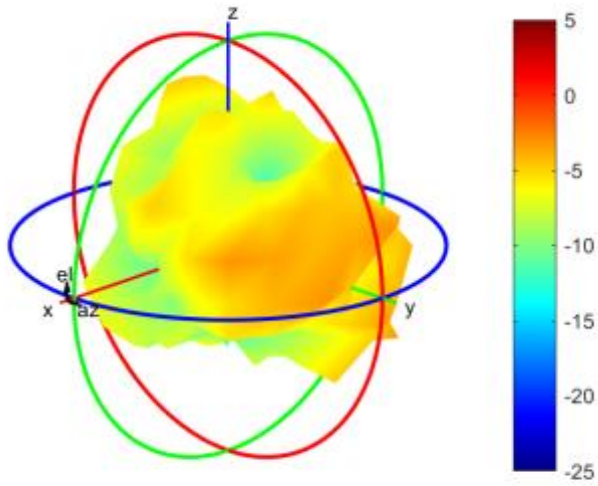
|                       |        |
|-----------------------|--------|
| Center Frequency      | 925MHz |
| Horizontal (dBi) peak | -6.97  |
| Vertical (dBi) peak   | -6.32  |

960MHz



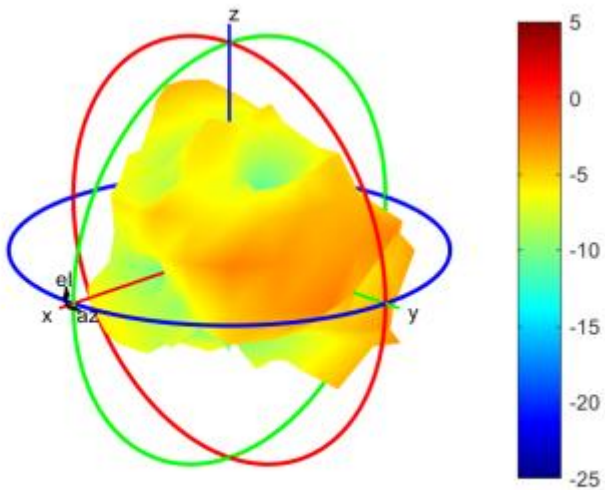
|                       |        |
|-----------------------|--------|
| Center Frequency      | 960MHz |
| Horizontal (dBi) peak | -6.67  |
| Vertical (dBi) peak   | -6.99  |

1427.9MHz



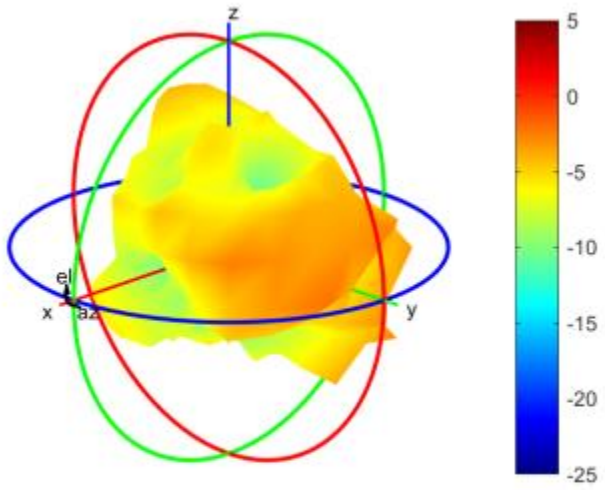
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1427.9MHz |
| Horizontal (dBi) peak | -4.46     |
| Vertical (dBi) peak   | -3.33     |

1447.9MHz



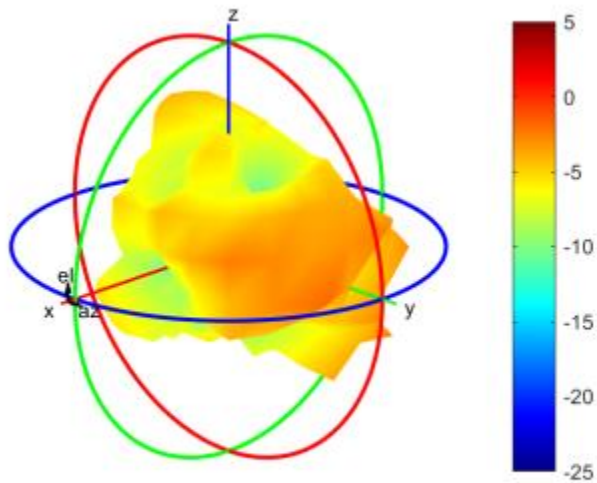
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1447.9MHz |
| Horizontal (dBi) peak | -3.94     |
| Vertical (dBi) peak   | -2.75     |

1455.4MHz



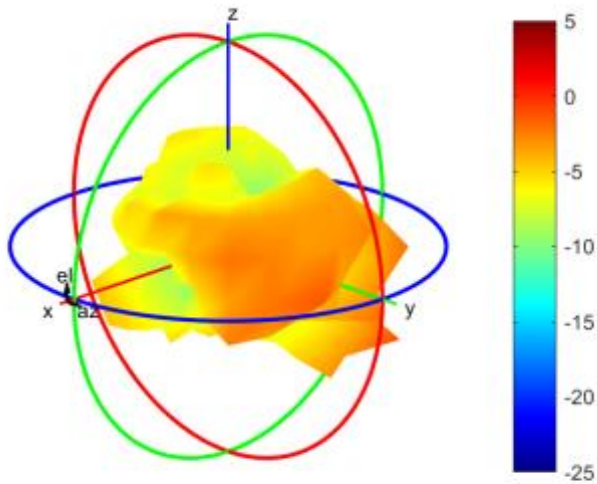
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1455.4MHz |
| Horizontal (dBi) peak | -3.78     |
| Vertical (dBi) peak   | -2.71     |

1462.9MHz



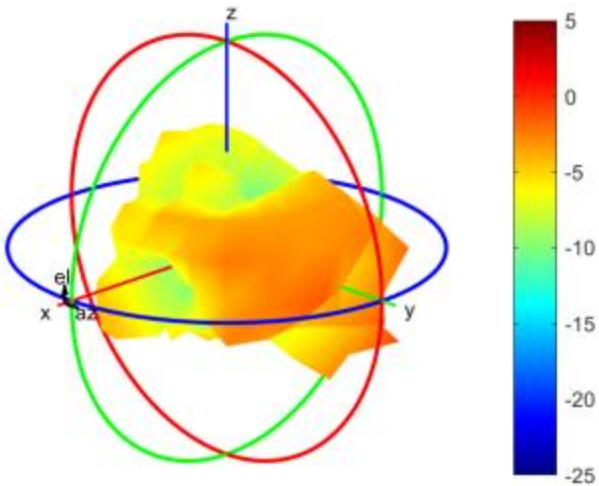
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1462.9MHz |
| Horizontal (dBi) peak | -3.64     |
| Vertical (dBi) peak   | -2.68     |

1496MHz



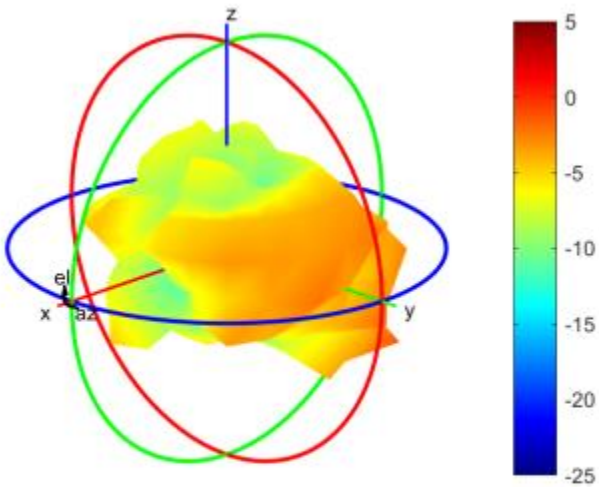
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1496MHz |
| Horizontal (dBi) peak | -3.44   |
| Vertical (dBi) peak   | -2.44   |

1510.9MHz



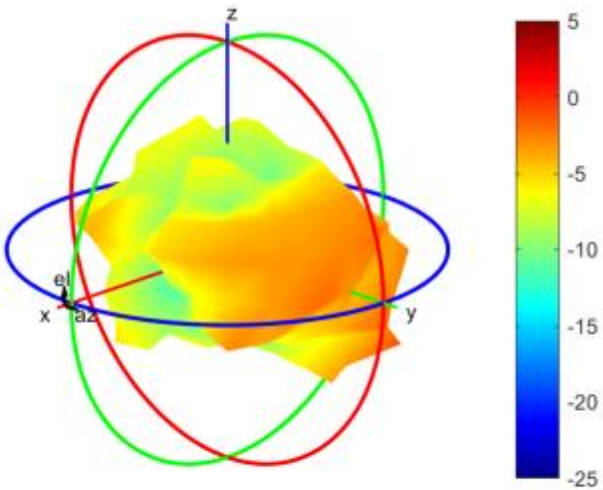
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 1510.9MHz |
| Horizontal (dBi) peak | -3.26     |
| Vertical (dBi) peak   | -2.21     |

1557MHz



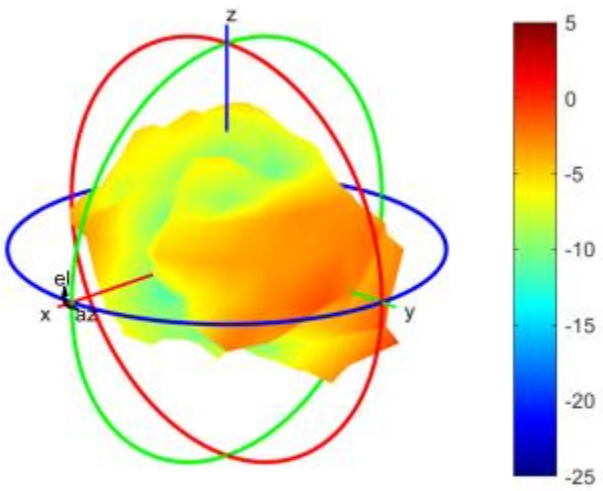
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1557MHz |
| Horizontal (dBi) peak | -4.46   |
| Vertical (dBi) peak   | -4.57   |

1575MHz



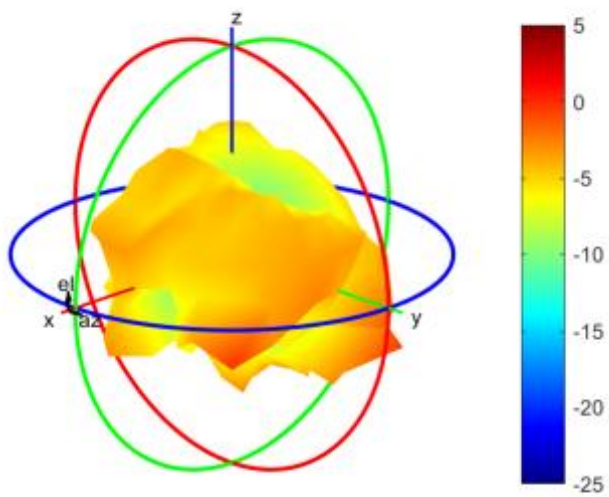
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1575MHz</b> |
| Horizontal (dBi) peak | -4.36          |
| Vertical (dBi) peak   | -4.42          |

1610MHz



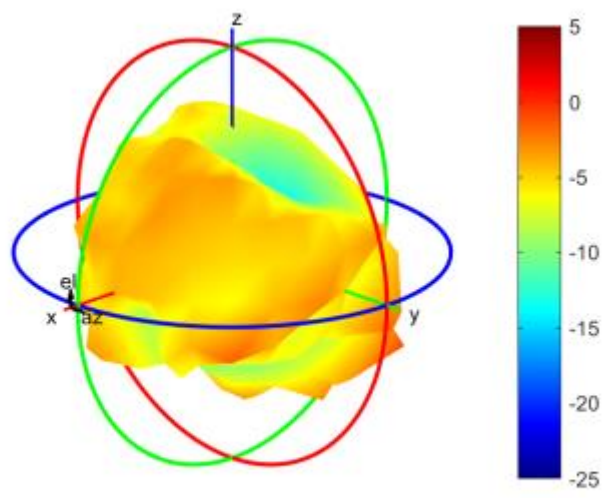
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1610MHz</b> |
| Horizontal (dBi) peak | -4.36          |
| Vertical (dBi) peak   | -3.81          |

1805 MHz



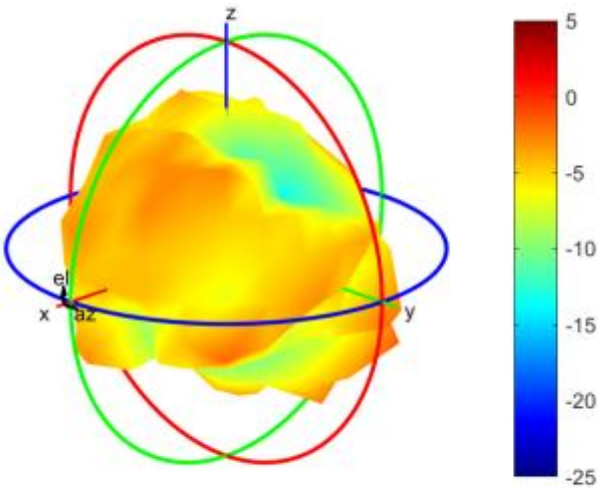
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1805 MHz |
| Horizontal (dBi) peak | -3.20    |
| Vertical (dBi) peak   | -1.12    |

1850 MHz



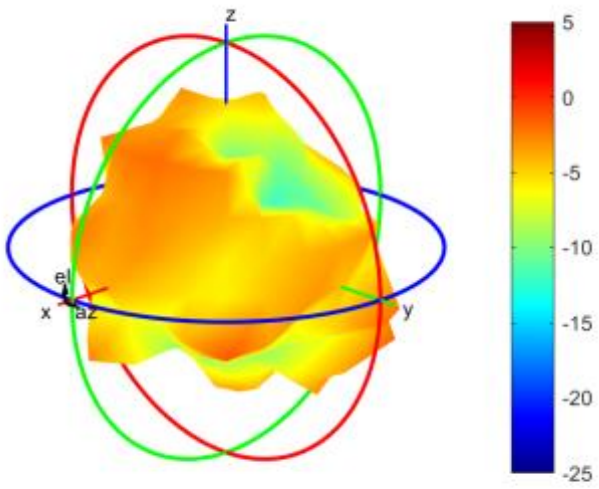
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1850 MHz |
| Horizontal (dBi) peak | -3.28    |
| Vertical (dBi) peak   | -1.61    |

1880 MHz



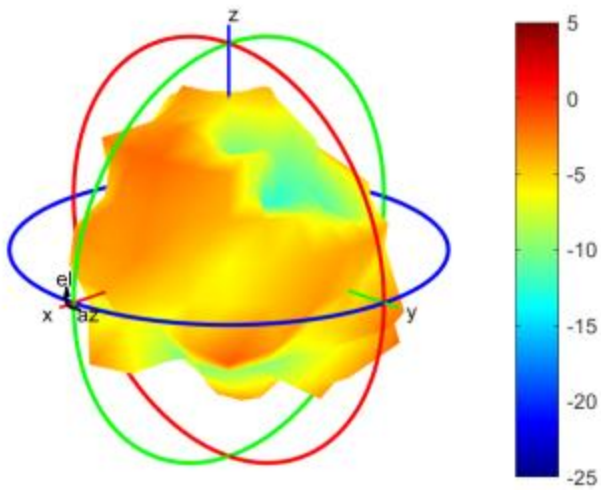
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1880 MHz |
| Horizontal (dBi) peak | -3.27    |
| Vertical (dBi) peak   | -2.15    |

1910MHz



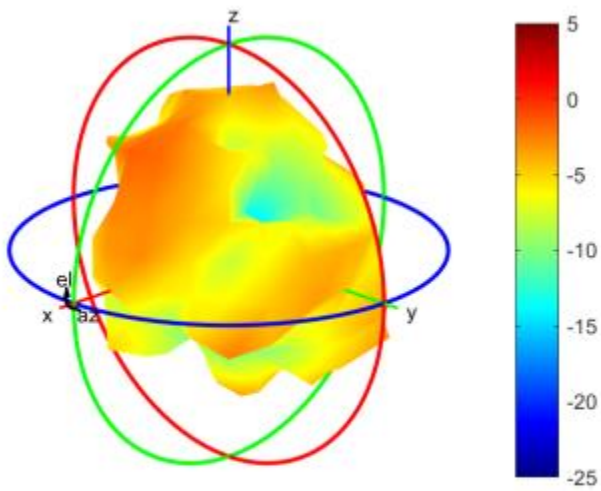
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1910MHz |
| Horizontal (dBi) peak | -2.52   |
| Vertical (dBi) peak   | -2.48   |

1920MHz



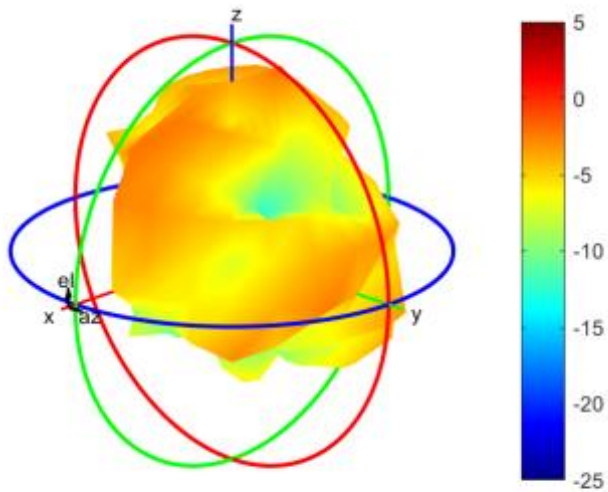
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1920MHz</b> |
| Horizontal (dBi) peak | -2.73          |
| Vertical (dBi) peak   | -2.76          |

1950MHz



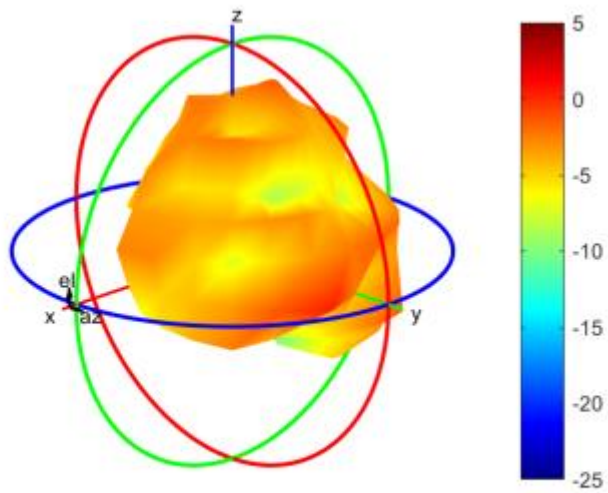
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1950MHz</b> |
| Horizontal (dBi) peak | -3.64          |
| Vertical (dBi) peak   | -3.01          |

1980MHz



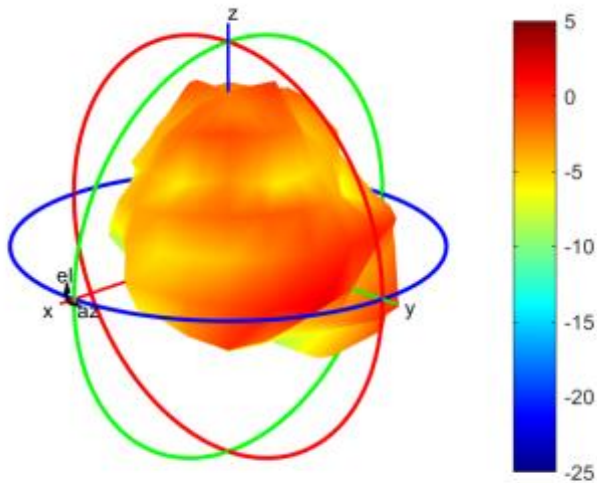
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1980MHz |
| Horizontal (dBi) peak | -3.62   |
| Vertical (dBi) peak   | -2.85   |

2110MHz



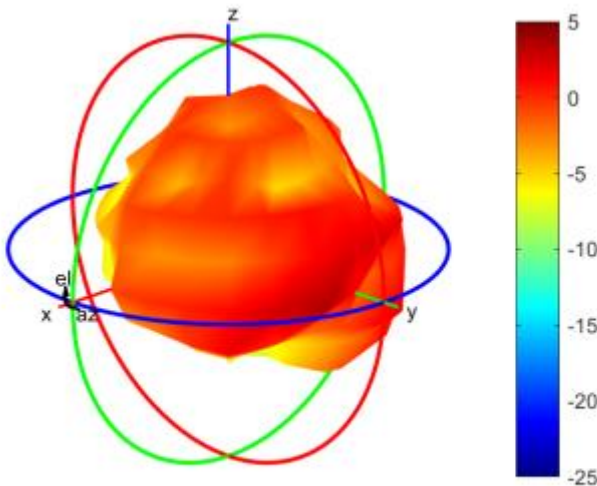
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2110MHz |
| Horizontal (dBi) peak | -3.01   |
| Vertical (dBi) peak   | -0.63   |

2200MHz



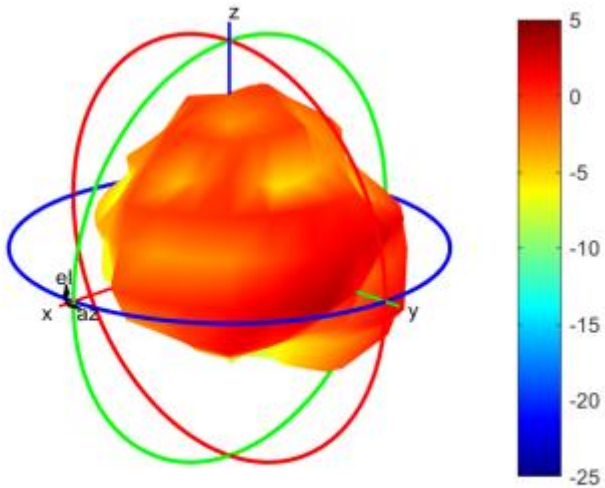
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2200MHz |
| Horizontal (dBi) peak | -0.32   |
| Vertical (dBi) peak   | 0.01    |

2300MHz



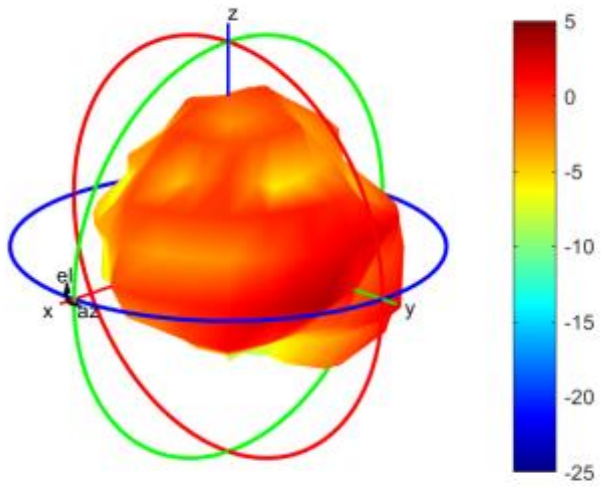
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2300MHz |
| Horizontal (dBi) peak | 0.65    |
| Vertical (dBi) peak   | 2.15    |

2305MHz



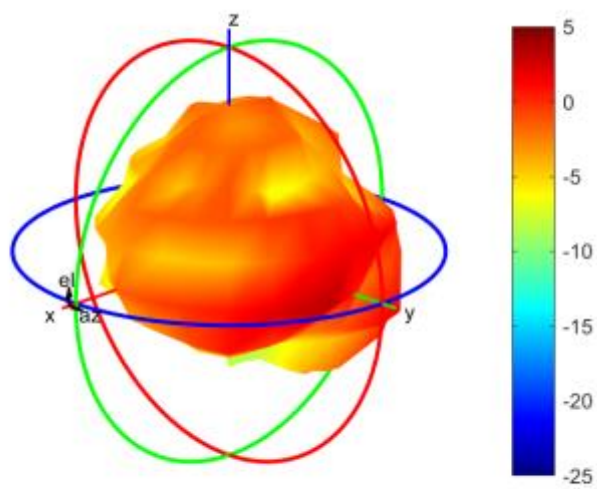
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2305MHz</b> |
| Horizontal (dBi) peak | 0.68           |
| Vertical (dBi) peak   | 0.21           |

2315MHz



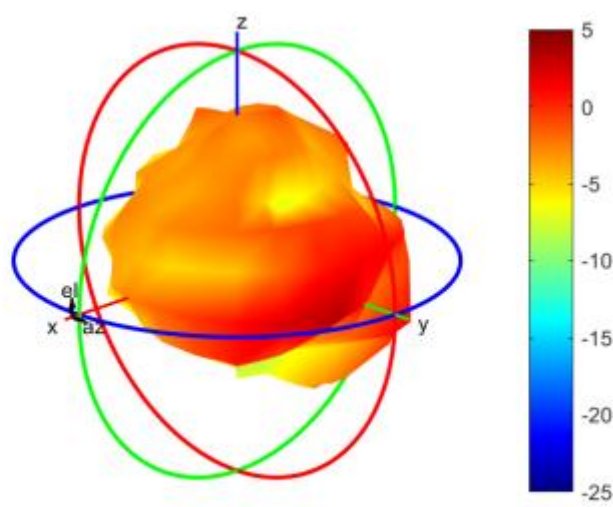
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2315MHz</b> |
| Horizontal (dBi) peak | 0.61           |
| Vertical (dBi) peak   | 1.25           |

2350MHz



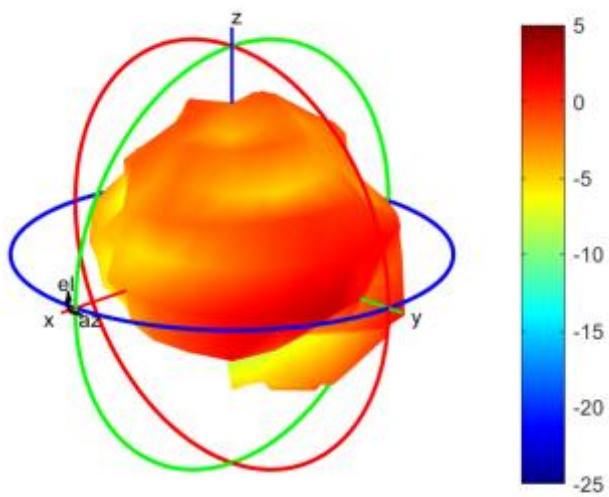
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2350MHz |
| Horizontal (dBi) peak | 0.34    |
| Vertical (dBi) peak   | 0.92    |

2400MHz



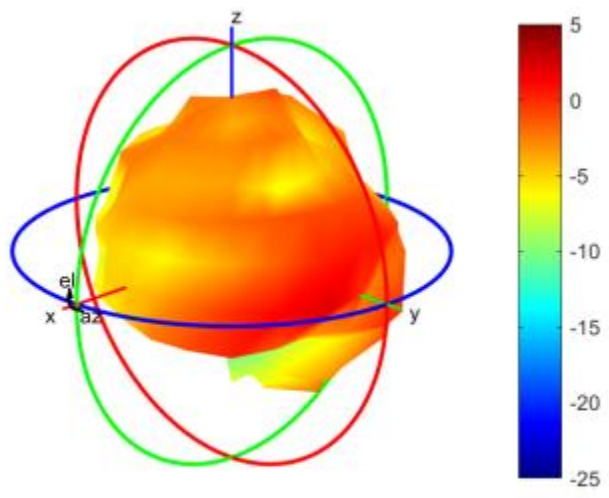
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2400MHz |
| Horizontal (dBi) peak | 0.26    |
| Vertical (dBi) peak   | 1.20    |

2500MHz



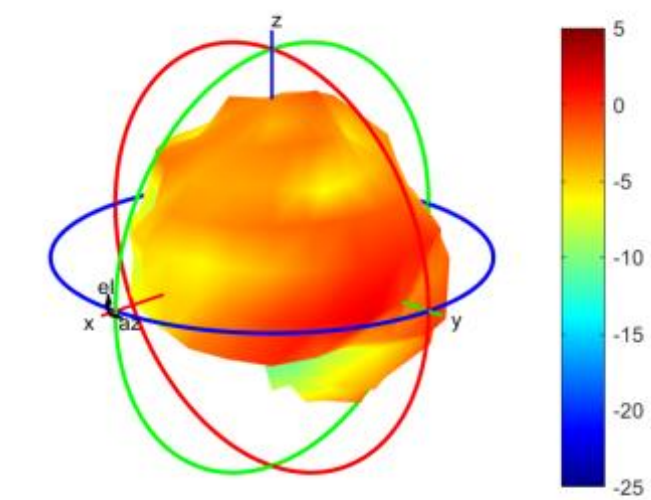
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2500MHz |
| Horizontal (dBi) peak | 0.97    |
| Vertical (dBi) peak   | 0.89    |

2570MHz



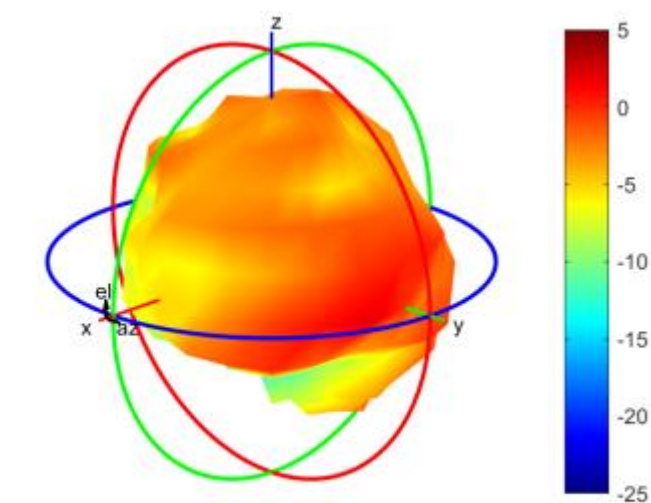
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2570MHz |
| Horizontal (dBi) peak | 0.69    |
| Vertical (dBi) peak   | 0.74    |

2595MHz



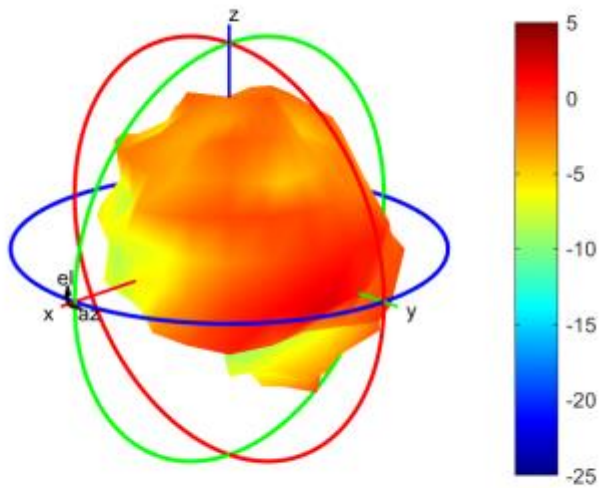
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2595MHz</b> |
| Horizontal (dBi) peak | 0.32           |
| Vertical (dBi) peak   | 0.33           |

2620MHz



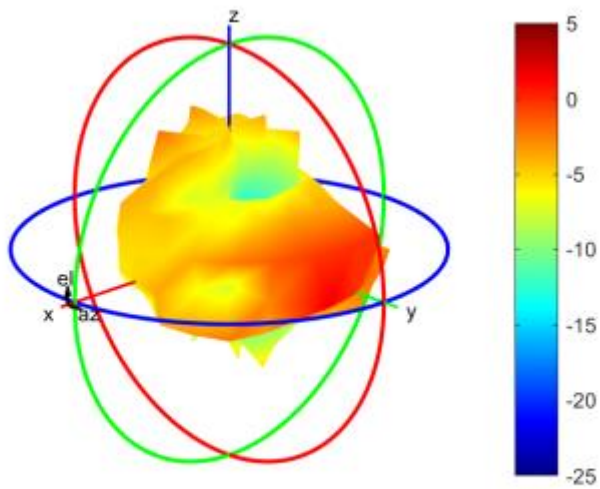
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2620MHz</b> |
| Horizontal (dBi) peak | 0.18           |
| Vertical (dBi) peak   | 0.35           |

2690MHz



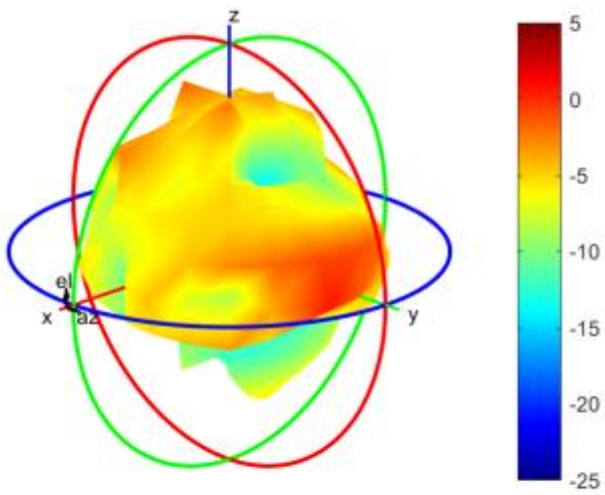
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2690MHz |
| Horizontal (dBi) peak | 0.40    |
| Vertical (dBi) peak   | 0.48    |

3400MHz



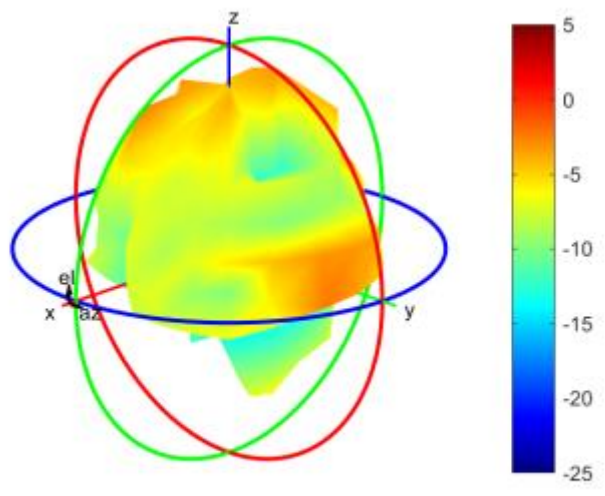
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3400MHz |
| Horizontal (dBi) peak | -0.34   |
| Vertical (dBi) peak   | -0.49   |

3500MHz



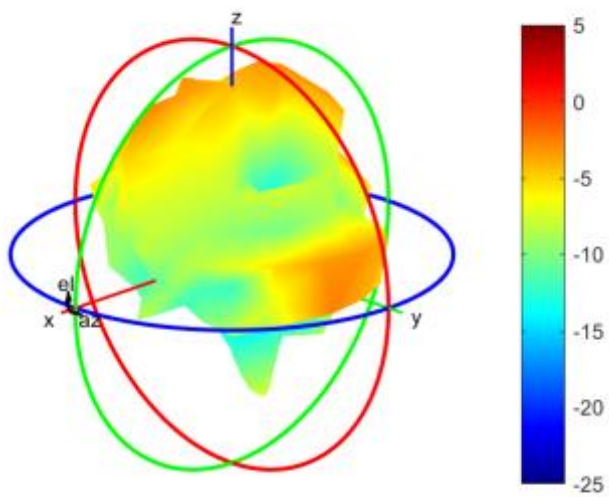
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3500MHz |
| Horizontal (dBi) peak | -0.89   |
| Vertical (dBi) peak   | -1.85   |

3600MHz



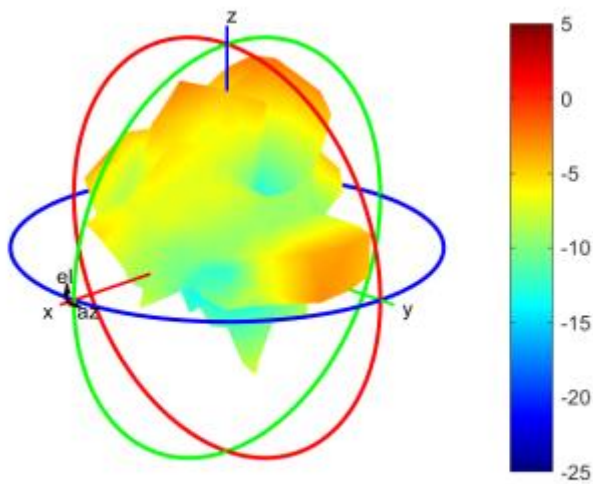
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3600MHz |
| Horizontal (dBi) peak | -3.23   |
| Vertical (dBi) peak   | -2.68   |

3700MHz



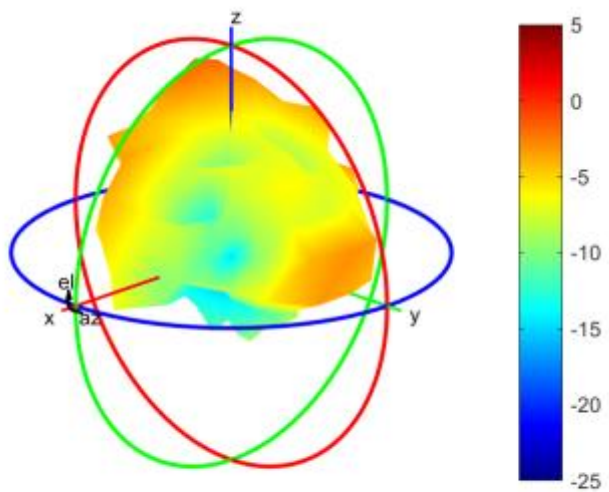
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3700MHz |
| Horizontal (dBi) peak | -2.86   |
| Vertical (dBi) peak   | -2.31   |

3800MHz



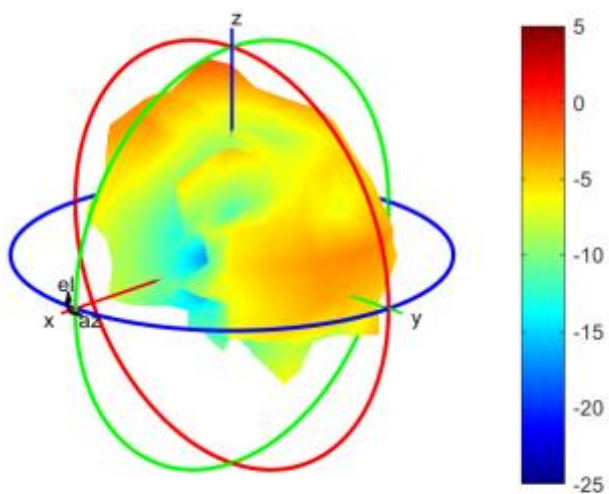
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3800MHz |
| Horizontal (dBi) peak | -3.18   |
| Vertical (dBi) peak   | -1.72   |

4200MHz



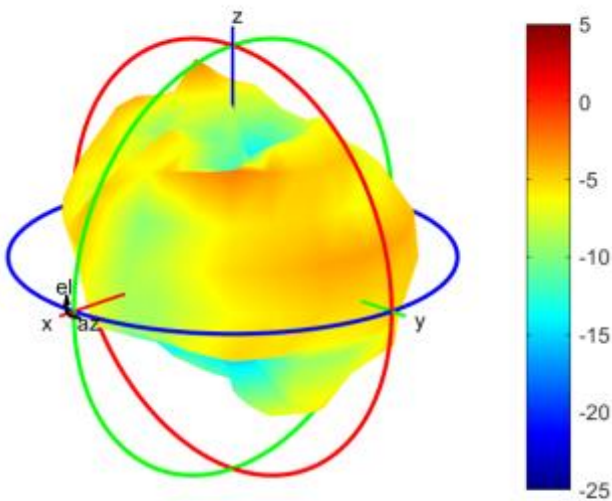
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4200MHz |
| Horizontal (dBi) peak | -4.82   |
| Vertical (dBi) peak   | -4.94   |

4400MHz



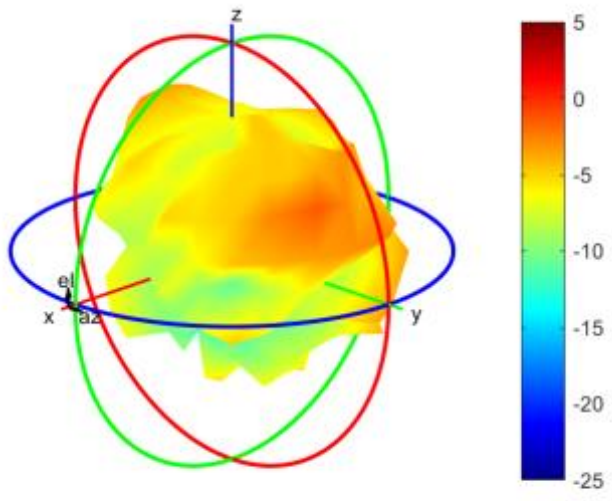
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4400MHz |
| Horizontal (dBi) peak | -5.55   |
| Vertical (dBi) peak   | -5.31   |

4700MHz



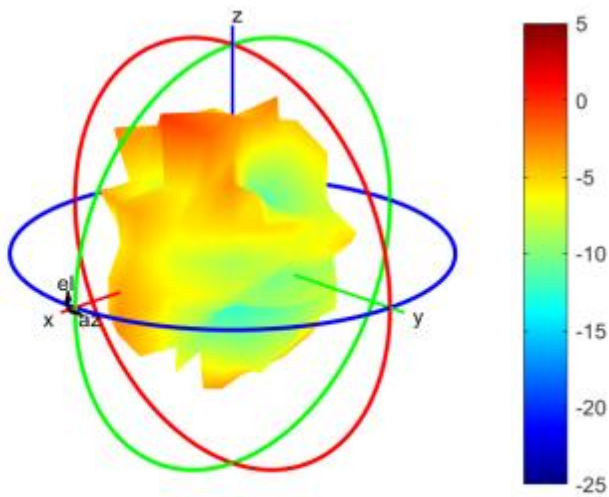
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>4700MHz</b> |
| Horizontal (dBi) peak | -5.26          |
| Vertical (dBi) peak   | -5.45          |

5150MHz



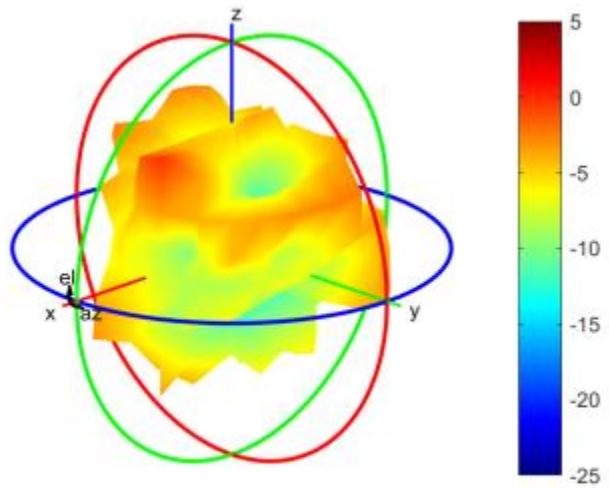
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>5150MHz</b> |
| Horizontal (dBi) peak | -3.48          |
| Vertical (dBi) peak   | -4.46          |

5537.5MHz



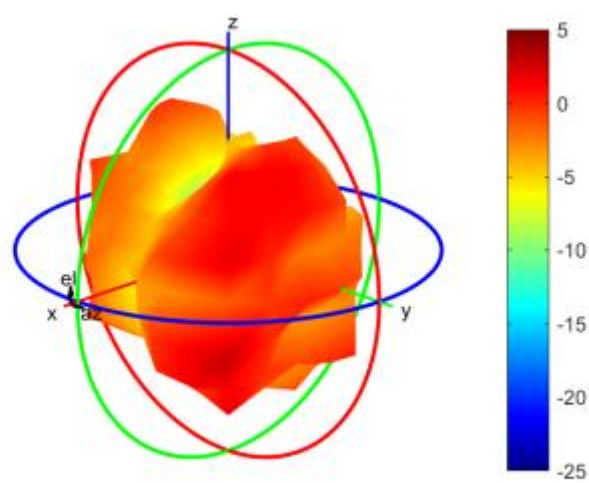
|                       |           |
|-----------------------|-----------|
| Center Frequency      | 5537.5MHz |
| Horizontal (dBi) peak | -3.52     |
| Vertical (dBi) peak   | -3.12     |

5925MHz



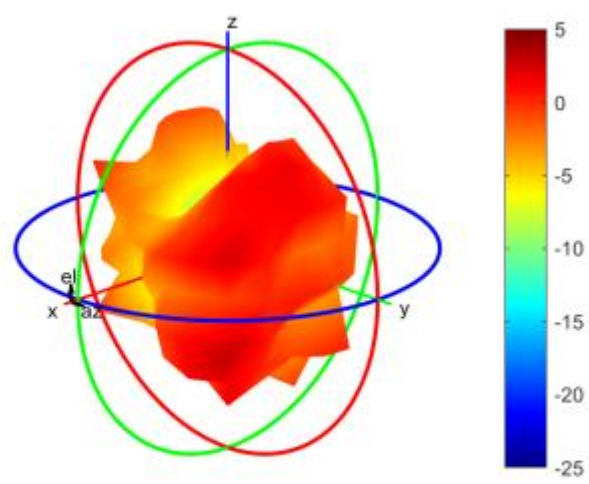
|                       |         |
|-----------------------|---------|
| Center Frequency      | 5925MHz |
| Horizontal (dBi) peak | -3.42   |
| Vertical (dBi) peak   | -3.19   |

1452 MHz



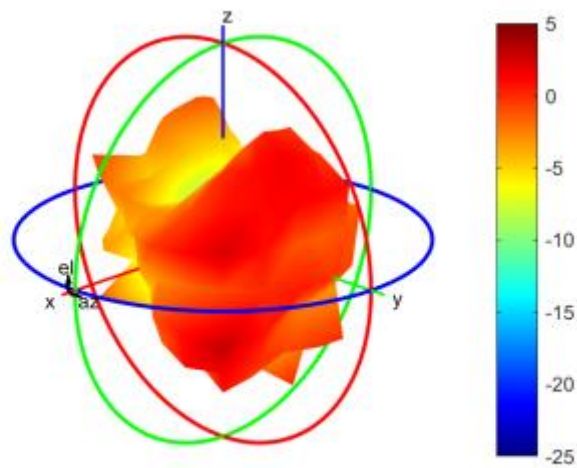
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1452 MHz |
| Horizontal (dBi) peak | -1.05    |
| Vertical (dBi) peak   | -1.40    |

1474 MHz



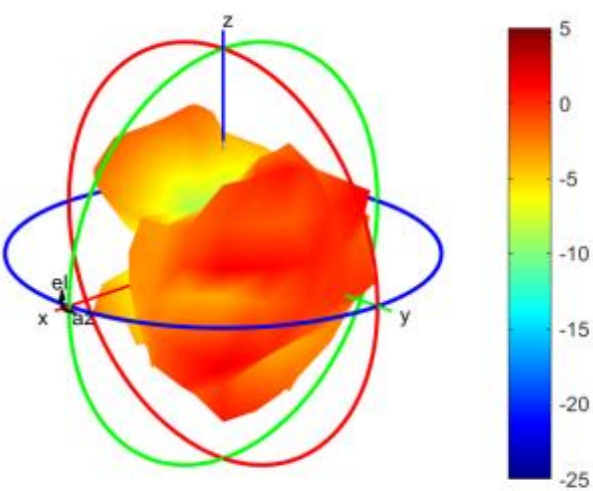
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1472 MHz |
| Horizontal (dBi) peak | -1.23    |
| Vertical (dBi) peak   | -0.75    |

1496 MHz



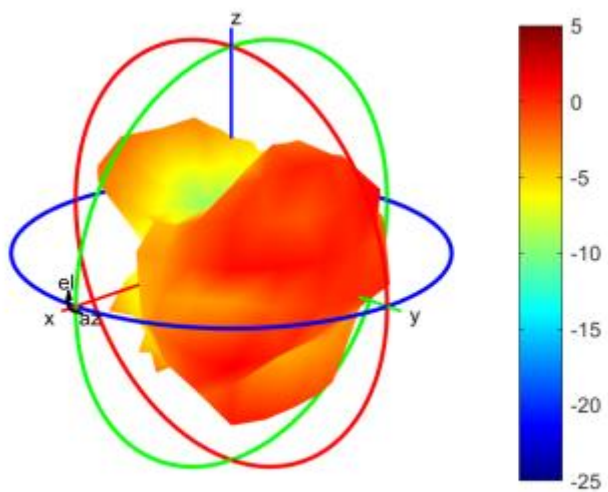
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1496 MHz |
| Horizontal (dBi) peak | -0.83    |
| Vertical (dBi) peak   | -1.54    |

1710 MHz



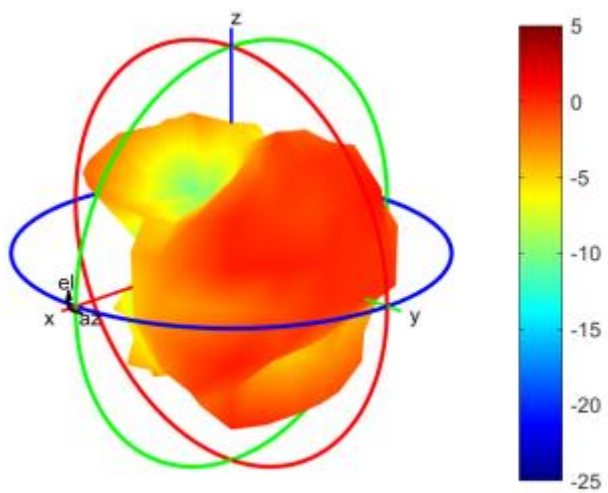
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1710 MHz |
| Horizontal (dBi) peak | -2.48    |
| Vertical (dBi) peak   | -2.22    |

1732.5 MHz



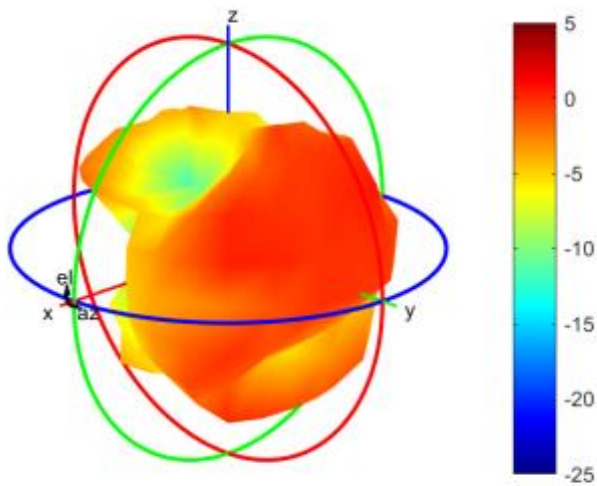
|                       |            |
|-----------------------|------------|
| Center Frequency      | 1732.5 MHz |
| Horizontal (dBi) peak | -2.68      |
| Vertical (dBi) peak   | -2.48      |

1747.5 MHz



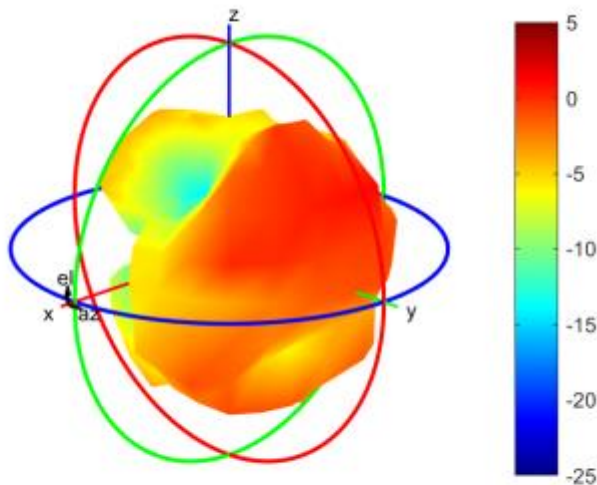
|                       |            |
|-----------------------|------------|
| Center Frequency      | 1747.5 MHz |
| Horizontal (dBi) peak | -2.49      |
| Vertical (dBi) peak   | -3.00      |

1755 MHz



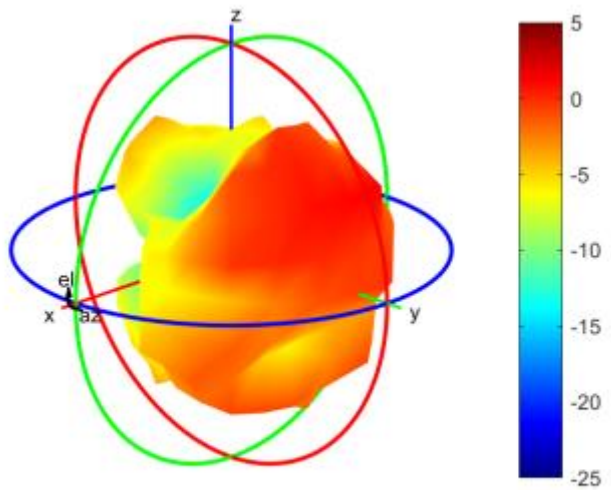
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1755 MHz |
| Horizontal (dBi) peak | -2.24    |
| Vertical (dBi) peak   | -2.63    |

1785 MHz



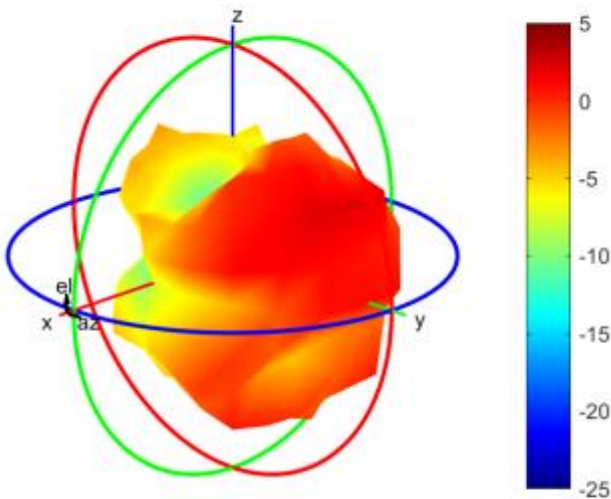
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1785 MHz |
| Horizontal (dBi) peak | -2.66    |
| Vertical (dBi) peak   | -2.53    |

1805 MHz



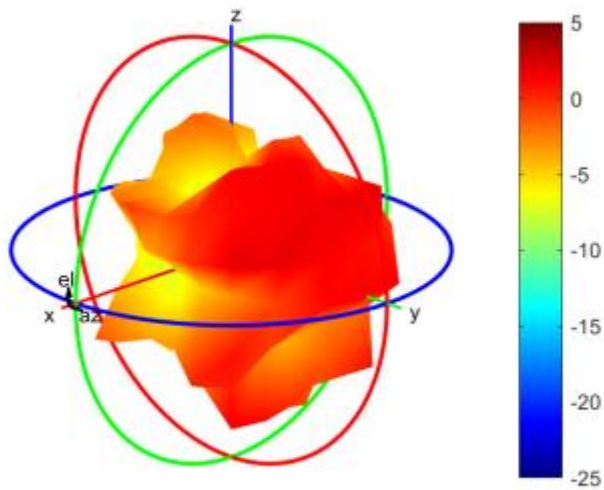
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1805 MHz |
| Horizontal (dBi) peak | -2.53    |
| Vertical (dBi) peak   | -2.23    |

1850 MHz



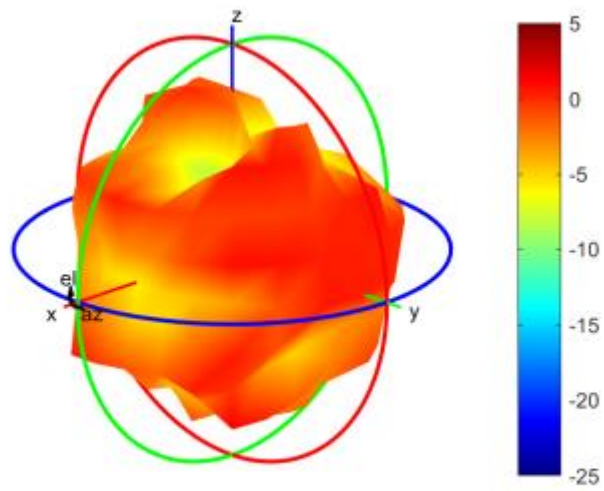
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1850 MHz |
| Horizontal (dBi) peak | -2.87    |
| Vertical (dBi) peak   | -3.01    |

1880 MHz



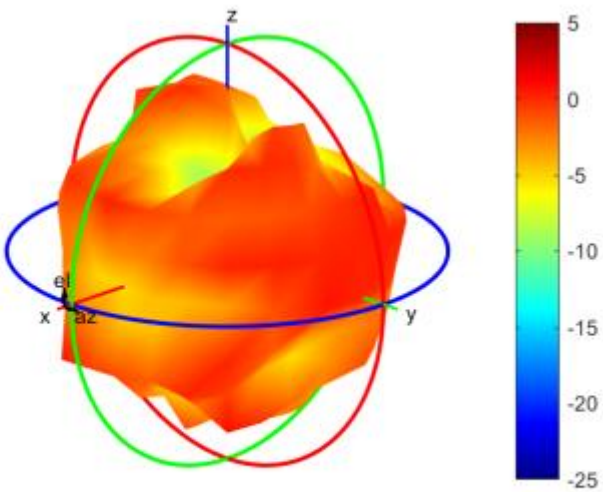
|                       |                 |
|-----------------------|-----------------|
| Center Frequency      | <b>1880 MHz</b> |
| Horizontal (dBi) peak | -1.92           |
| Vertical (dBi) peak   | -2.49           |

1910MHz



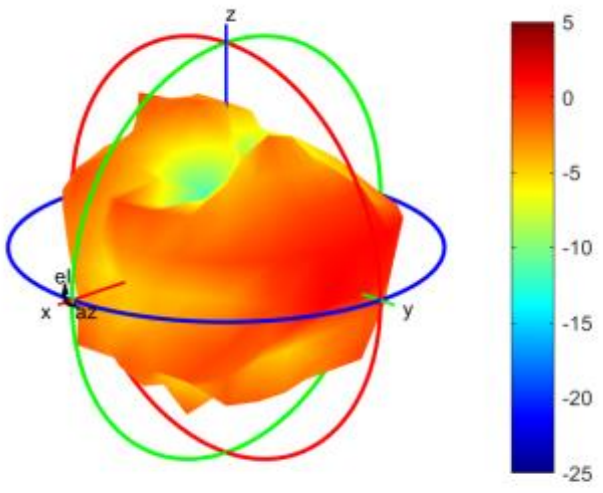
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1910MHz</b> |
| Horizontal (dBi) peak | -2.67          |
| Vertical (dBi) peak   | -2.54          |

1920MHz



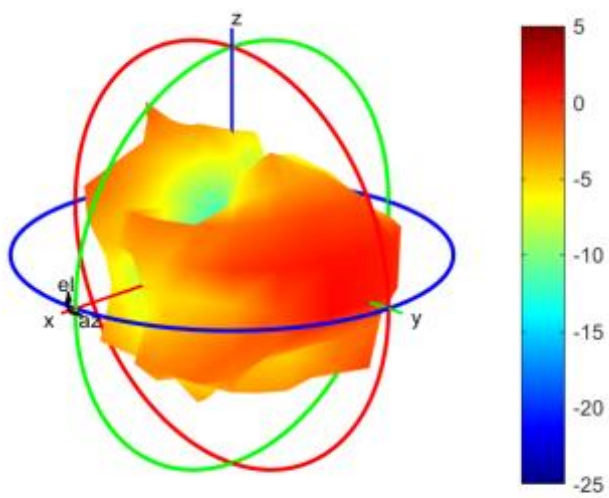
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1920MHz |
| Horizontal (dBi) peak | -2.28   |
| Vertical (dBi) peak   | -2.51   |

1950MHz



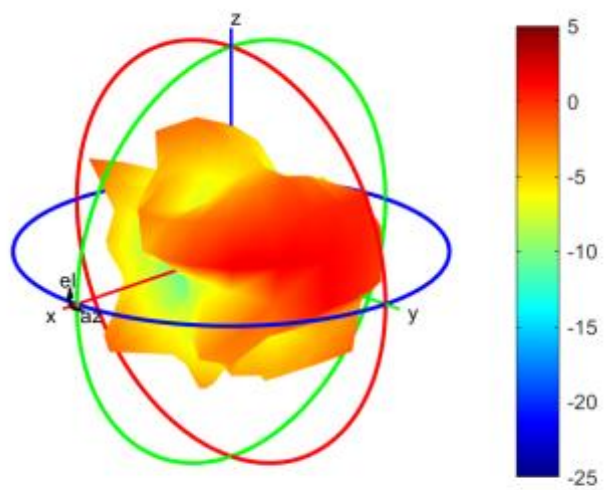
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1950MHz |
| Horizontal (dBi) peak | -2.00   |
| Vertical (dBi) peak   | -2.08   |

1980MHz



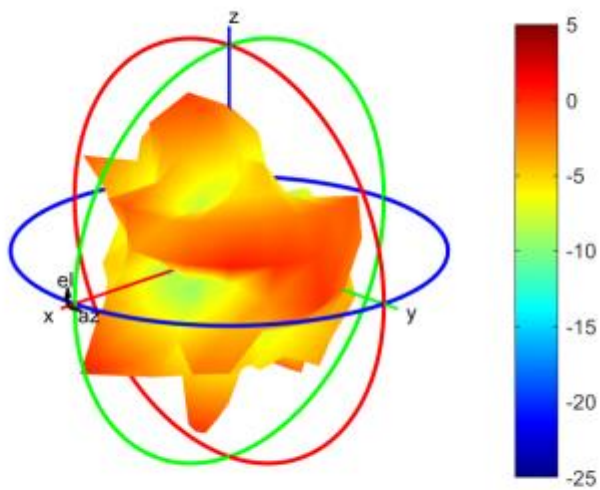
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>1980MHz</b> |
| Horizontal (dBi) peak | -2.39          |
| Vertical (dBi) peak   | -2.10          |

2110MHz



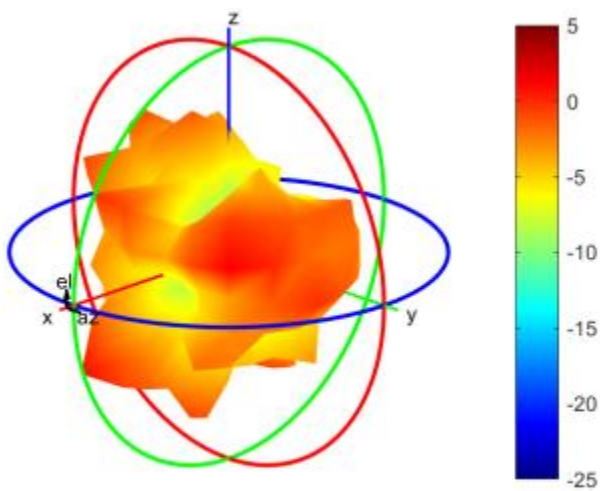
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2110MHz</b> |
| Horizontal (dBi) peak | -2.54          |
| Vertical (dBi) peak   | -2.43          |

2200MHz



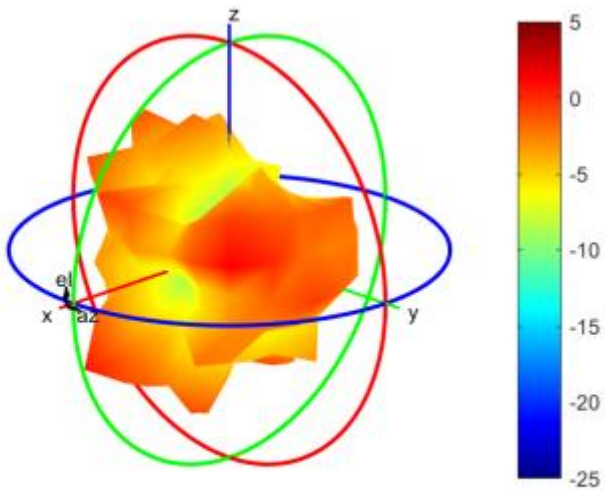
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2200MHz</b> |
| Horizontal (dBi) peak | -2.81          |
| Vertical (dBi) peak   | -2.24          |

2300MHz



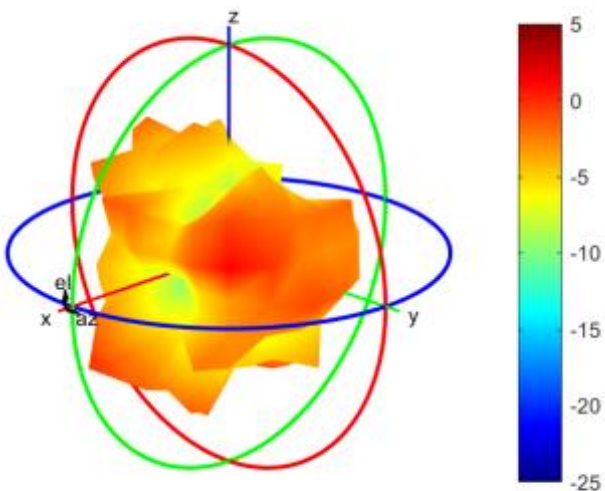
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2300MHz</b> |
| Horizontal (dBi) peak | -1.16          |
| Vertical (dBi) peak   | -1.64          |

2305MHz



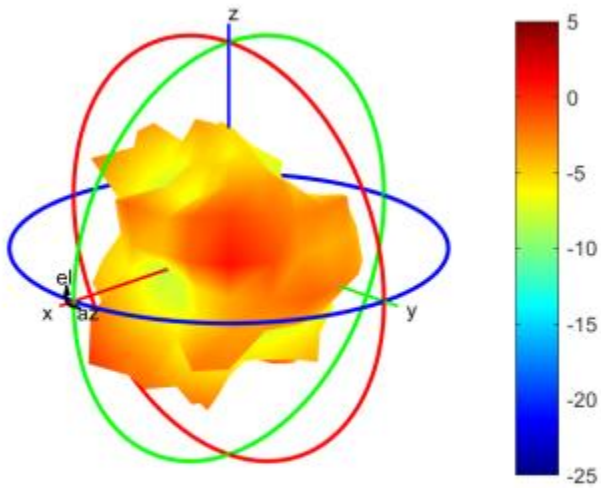
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2305MHz</b> |
| Horizontal (dBi) peak | -1.81          |
| Vertical (dBi) peak   | -1.94          |

2315MHz



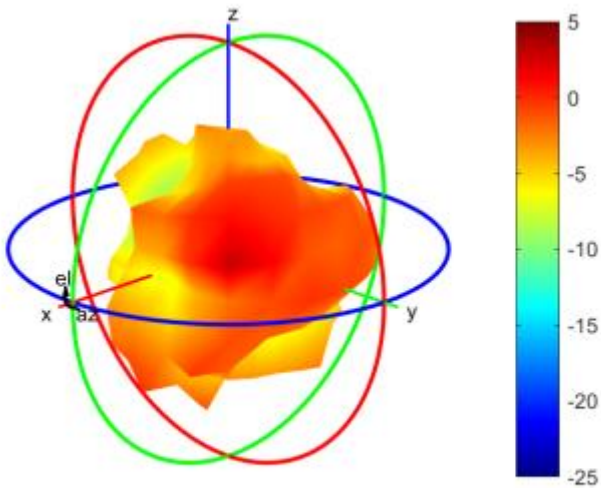
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2315MHz</b> |
| Horizontal (dBi) peak | -2.04          |
| Vertical (dBi) peak   | -1.49          |

2350MHz



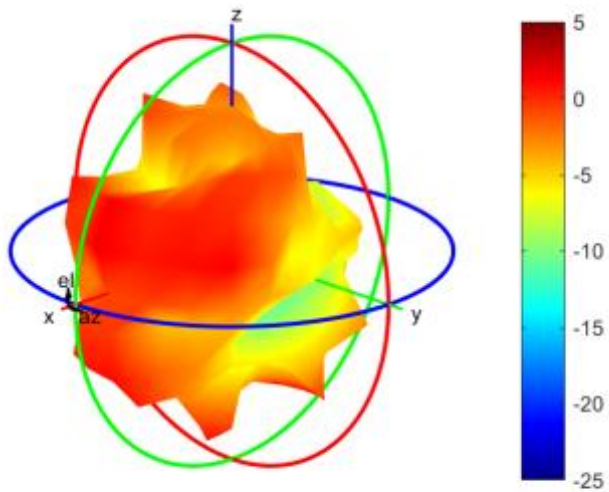
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2350MHz |
| Horizontal (dBi) peak | -1.20   |
| Vertical (dBi) peak   | -2.14   |

2400MHz



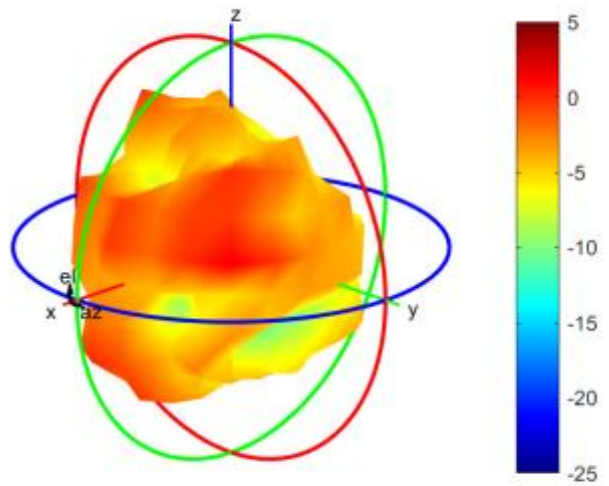
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2400MHz |
| Horizontal (dBi) peak | -0.83   |
| Vertical (dBi) peak   | -1.78   |

2500MHz



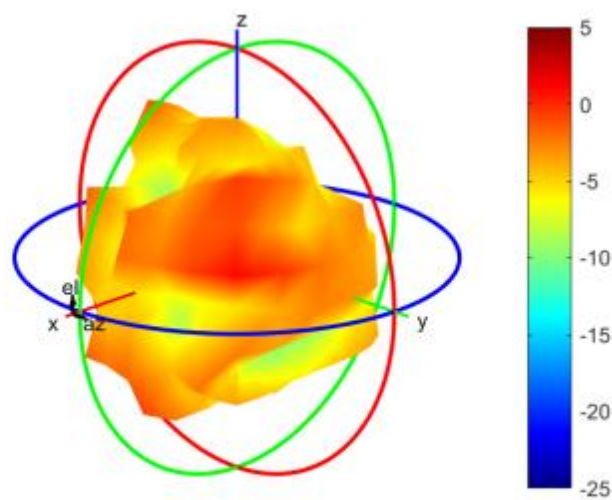
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2500MHz |
| Horizontal (dBi) peak | -1.76   |
| Vertical (dBi) peak   | -1.46   |

2570MHz



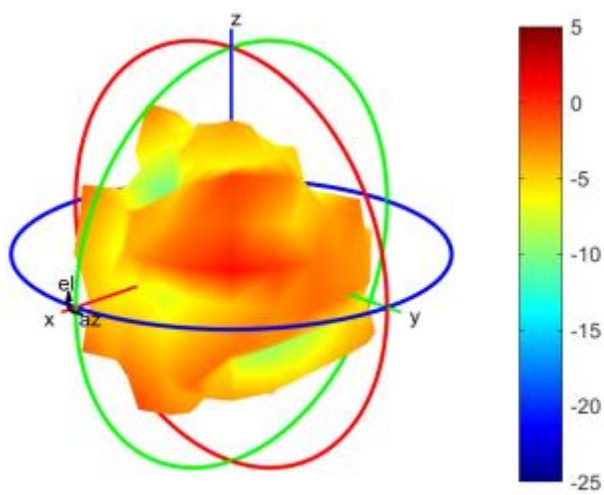
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2570MHz |
| Horizontal (dBi) peak | -1.69   |
| Vertical (dBi) peak   | -1.23   |

2595MHz



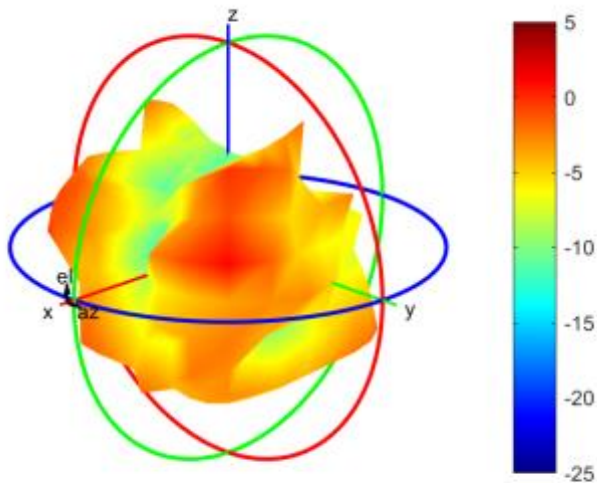
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2595MHz |
| Horizontal (dBi) peak | -1.05   |
| Vertical (dBi) peak   | -1.47   |

2620MHz



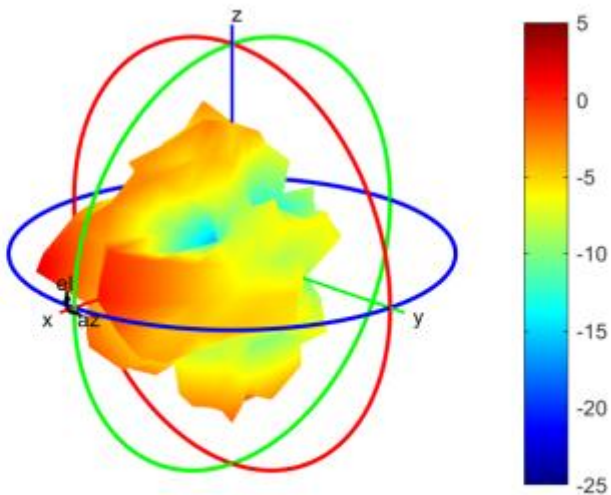
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2620MHz |
| Horizontal (dBi) peak | -1.16   |
| Vertical (dBi) peak   | -1.57   |

2690MHz



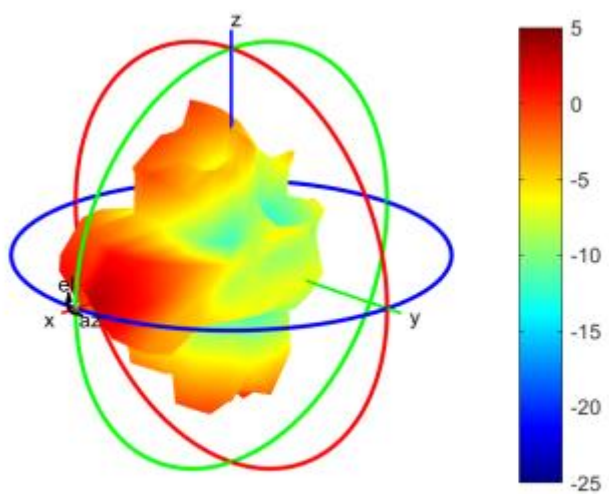
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2690MHz</b> |
| Horizontal (dBi) peak | -1.55          |
| Vertical (dBi) peak   | -1.41          |

3400MHz



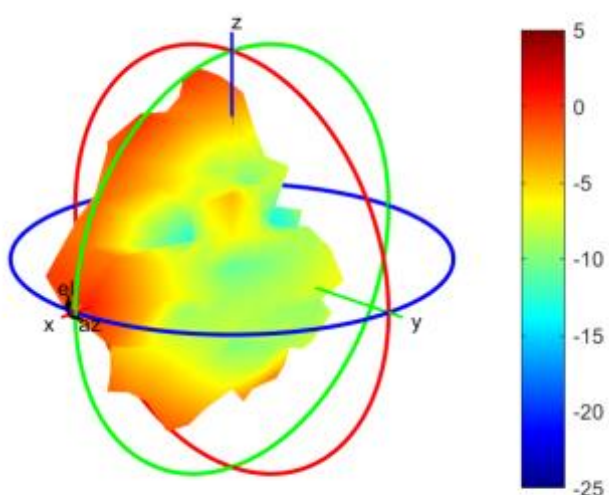
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>3400MHz</b> |
| Horizontal (dBi) peak | 0.56           |
| Vertical (dBi) peak   | -2.49          |

3500MHz



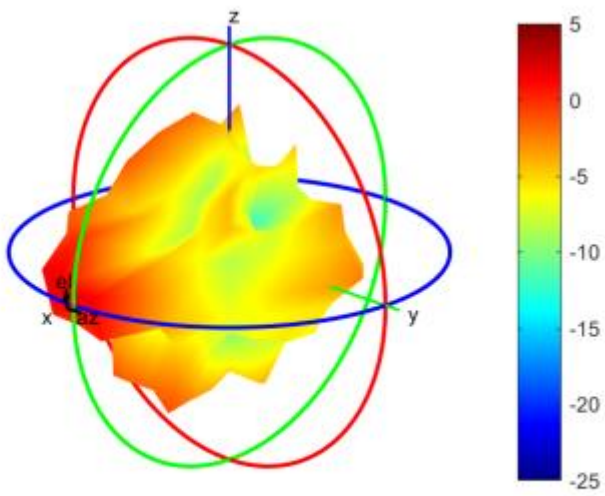
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3500MHz |
| Horizontal (dBi) peak | 0.59    |
| Vertical (dBi) peak   | -0.22   |

3600MHz



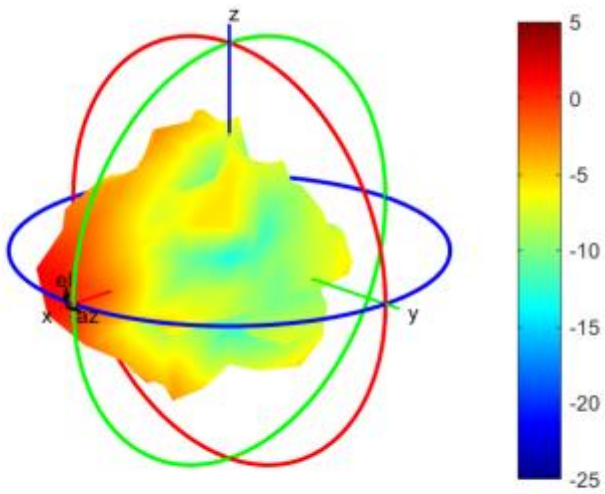
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3600MHz |
| Horizontal (dBi) peak | 0.49    |
| Vertical (dBi) peak   | -0.28   |

3700MHz



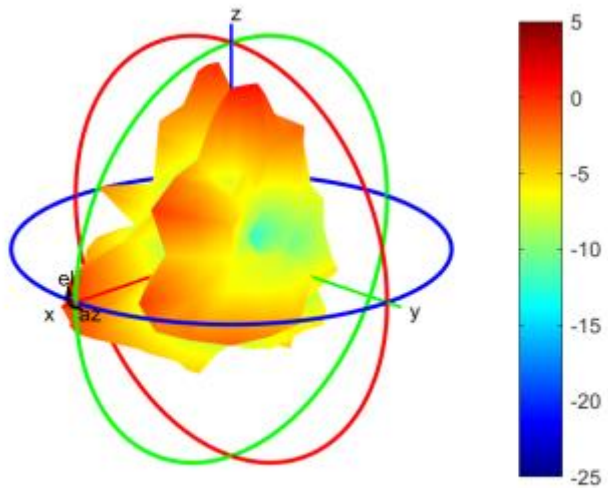
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3700MHz |
| Horizontal (dBi) peak | 0.21    |
| Vertical (dBi) peak   | -0.71   |

3800MHz



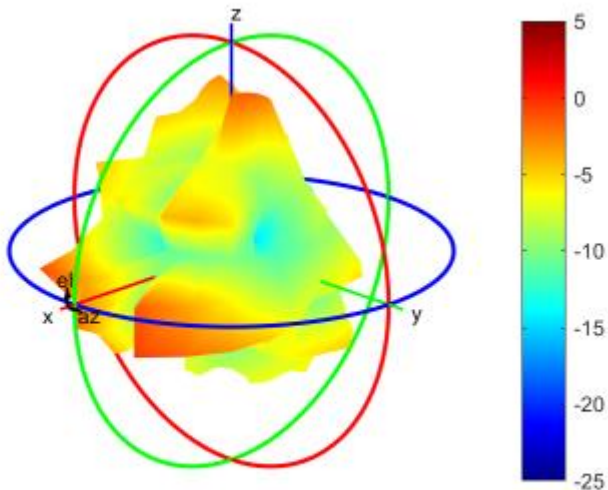
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3800MHz |
| Horizontal (dBi) peak | -0.69   |
| Vertical (dBi) peak   | -0.54   |

4200MHz



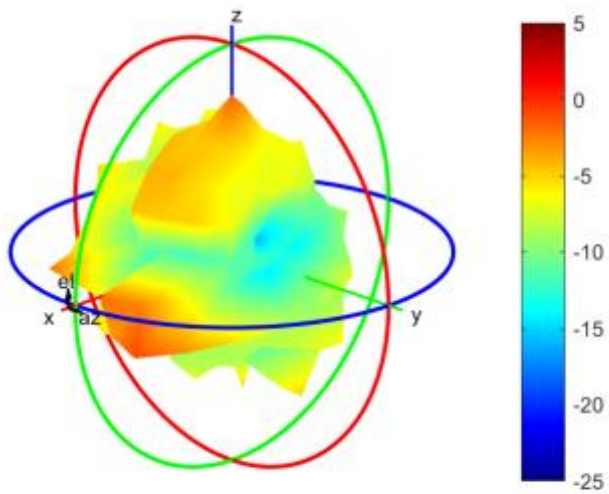
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4200MHz |
| Horizontal (dBi) peak | -1.61   |
| Vertical (dBi) peak   | -2.18   |

4400MHz



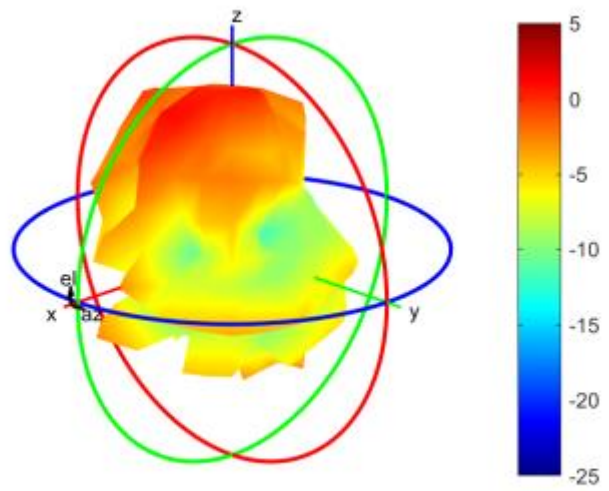
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4400MHz |
| Horizontal (dBi) peak | -2.47   |
| Vertical (dBi) peak   | -2.94   |

4700MHz



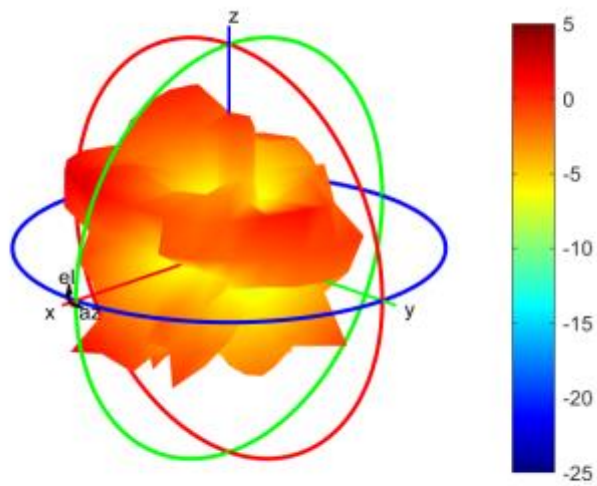
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4700MHz |
| Horizontal (dBi) peak | -2.77   |
| Vertical (dBi) peak   | -3.46   |

5000MHz



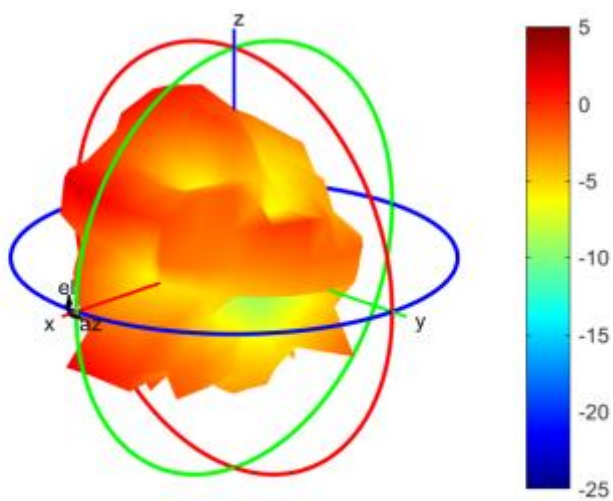
|                       |         |
|-----------------------|---------|
| Center Frequency      | 5000MHz |
| Horizontal (dBi) peak | -2.31   |
| Vertical (dBi) peak   | -2.19   |

1805 MHz



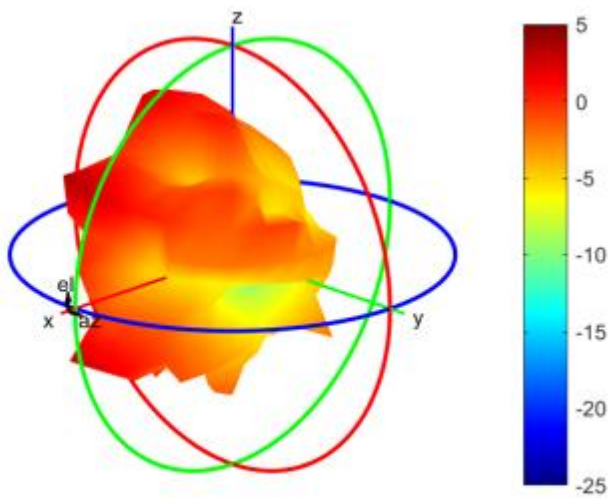
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1805 MHz |
| Horizontal (dBi) peak | 0.50     |
| Vertical (dBi) peak   | 0.00     |

1850 MHz



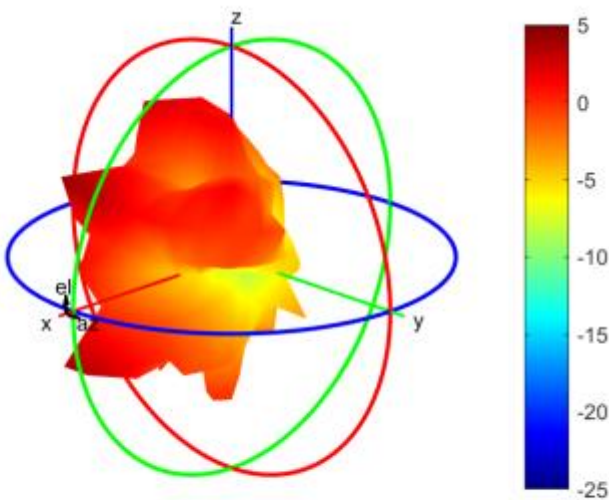
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1850 MHz |
| Horizontal (dBi) peak | 0.54     |
| Vertical (dBi) peak   | 0.05     |

1880 MHz



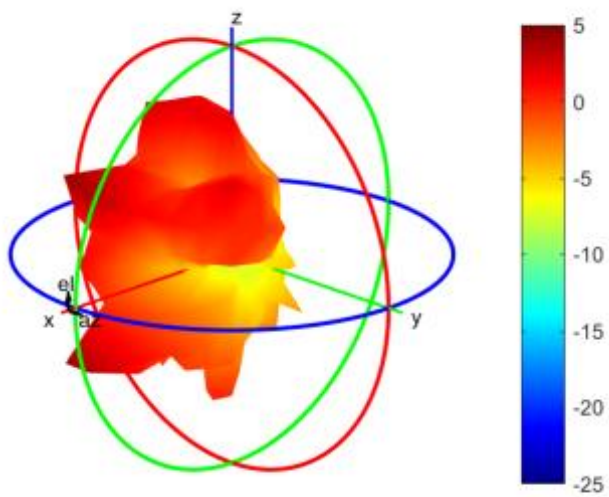
|                       |          |
|-----------------------|----------|
| Center Frequency      | 1880 MHz |
| Horizontal (dBi) peak | 2.09     |
| Vertical (dBi) peak   | 0.86     |

1910MHz



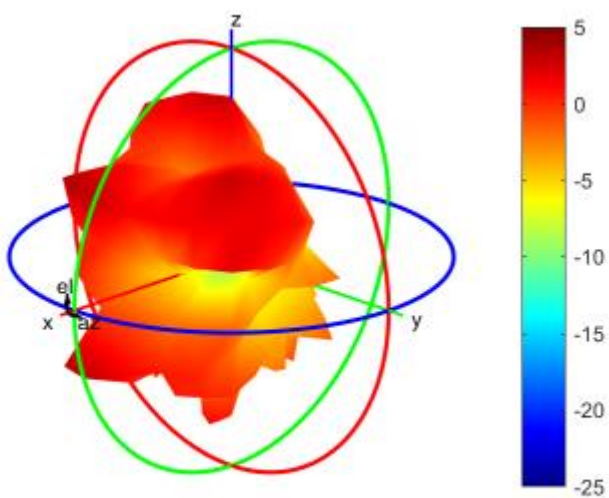
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1910MHz |
| Horizontal (dBi) peak | 2.83    |
| Vertical (dBi) peak   | 1.25    |

1920MHz



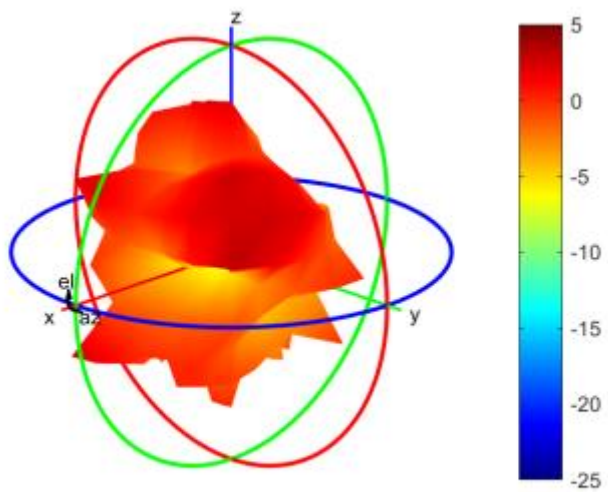
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1920MHz |
| Horizontal (dBi) peak | 2.87    |
| Vertical (dBi) peak   | 1.29    |

1950MHz



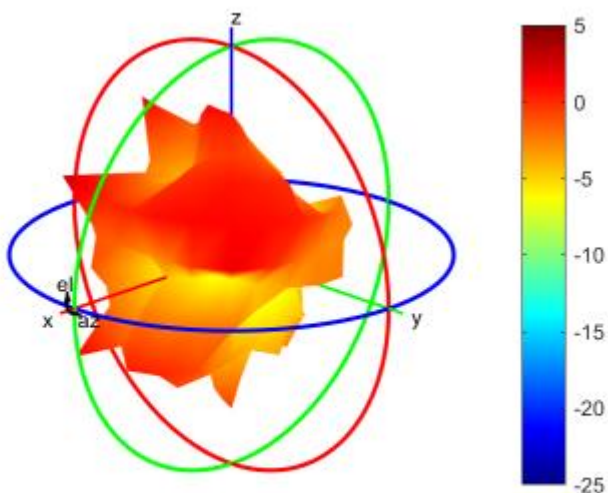
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1950MHz |
| Horizontal (dBi) peak | 2.53    |
| Vertical (dBi) peak   | 0.75    |

1980MHz



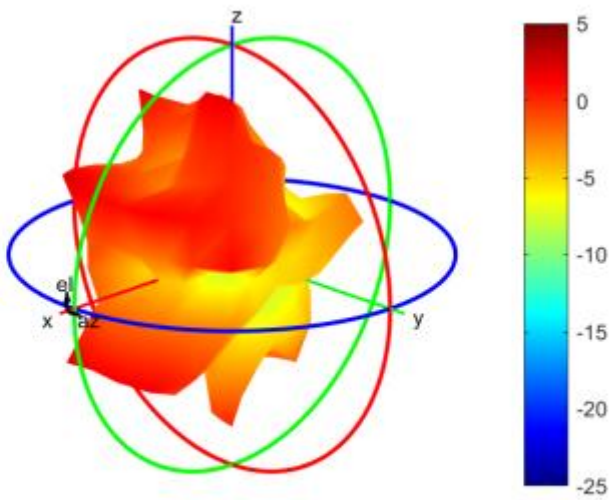
|                       |         |
|-----------------------|---------|
| Center Frequency      | 1980MHz |
| Horizontal (dBi) peak | 1.50    |
| Vertical (dBi) peak   | 0.79    |

2110MHz



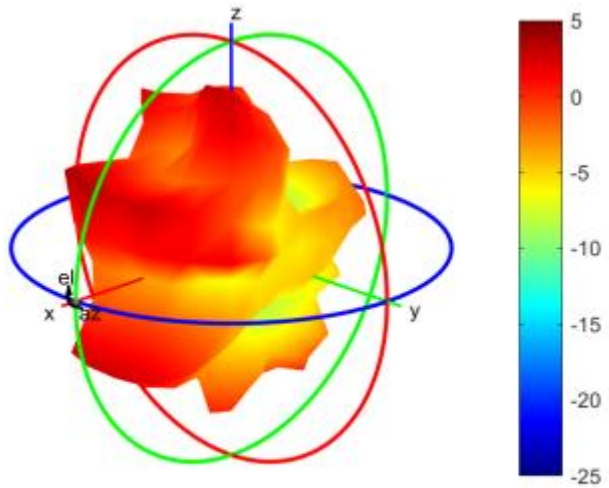
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2110MHz |
| Horizontal (dBi) peak | 0.67    |
| Vertical (dBi) peak   | -0.18   |

2200MHz



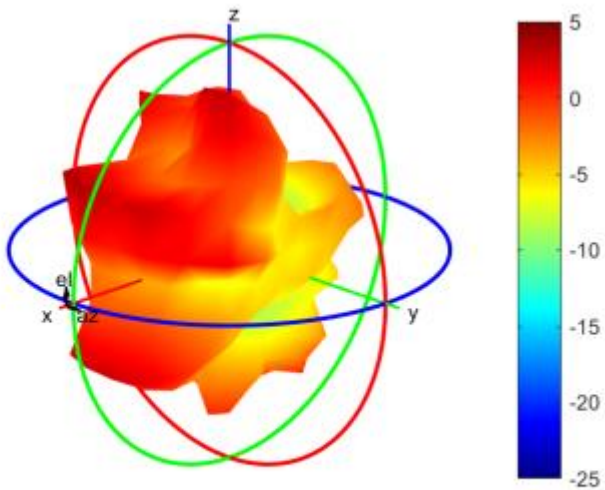
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2200MHz |
| Horizontal (dBi) peak | 1.67    |
| Vertical (dBi) peak   | -0.03   |

2300MHz



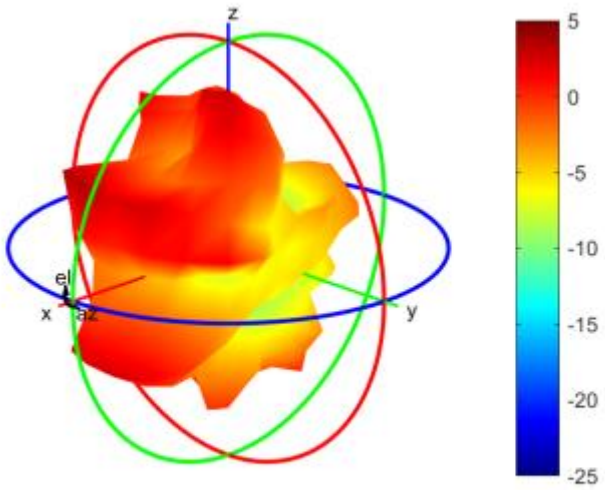
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2300MHz |
| Horizontal (dBi) peak | 2.28    |
| Vertical (dBi) peak   | 1.75    |

2305MHz



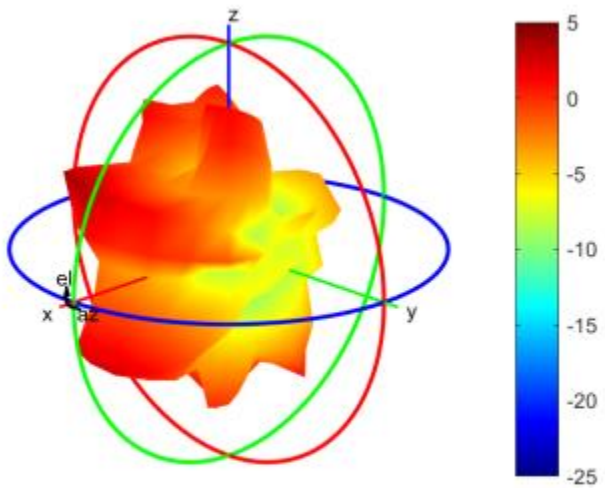
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2305MHz |
| Horizontal (dBi) peak | 2.23    |
| Vertical (dBi) peak   | 1.87    |

2315MHz



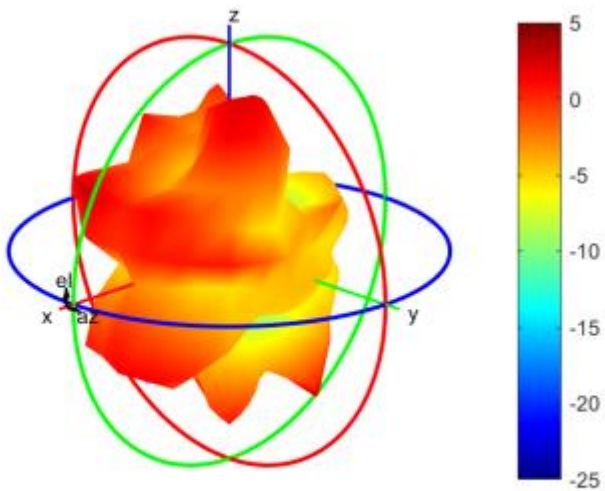
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2315MHz |
| Horizontal (dBi) peak | 2.12    |
| Vertical (dBi) peak   | 2.16    |

2350MHz



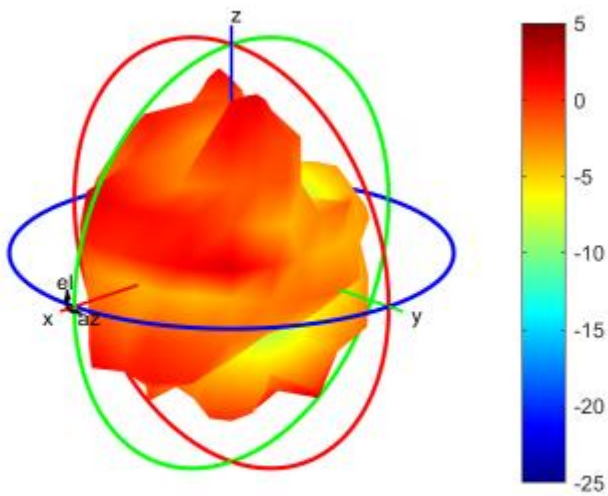
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2350MHz |
| Horizontal (dBi) peak | 2.28    |
| Vertical (dBi) peak   | 1.76    |

2400MHz



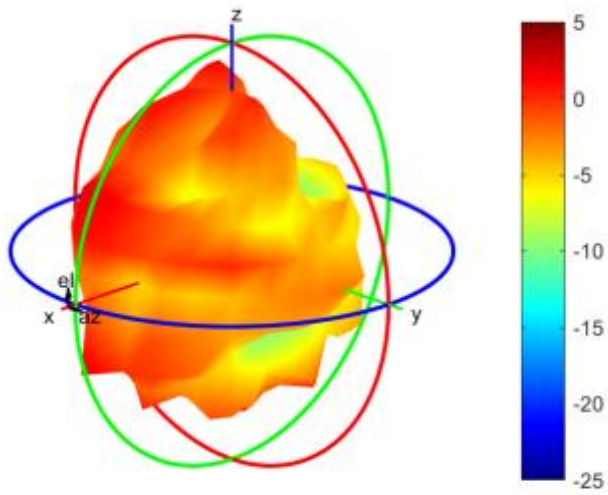
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2400MHz |
| Horizontal (dBi) peak | 1.57    |
| Vertical (dBi) peak   | 1.44    |

2500MHz



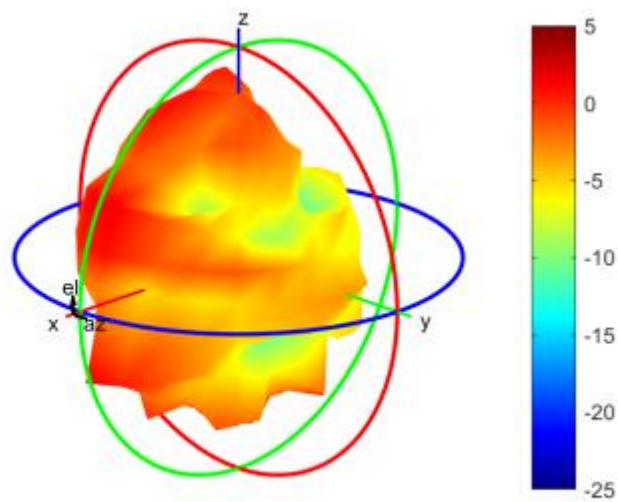
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2500MHz |
| Horizontal (dBi) peak | 2.03    |
| Vertical (dBi) peak   | 2.10    |

2570MHz



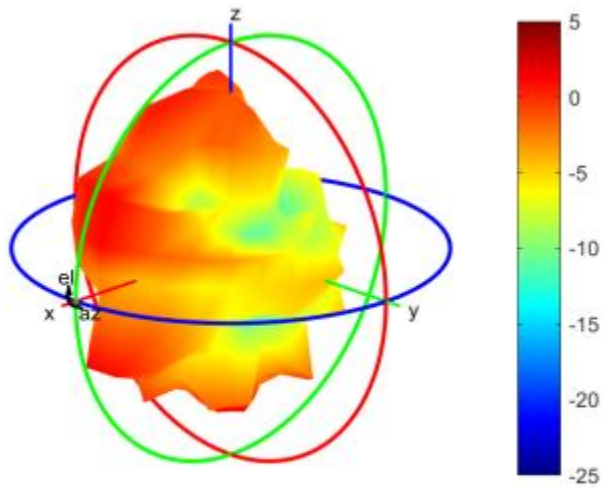
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2570MHz |
| Horizontal (dBi) peak | 1.97    |
| Vertical (dBi) peak   | 1.37    |

2595MHz



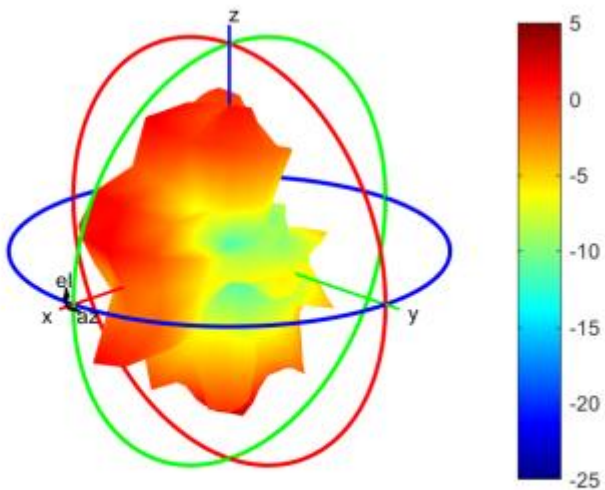
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2595MHz |
| Horizontal (dBi) peak | 1.41    |
| Vertical (dBi) peak   | 1.25    |

2620MHz



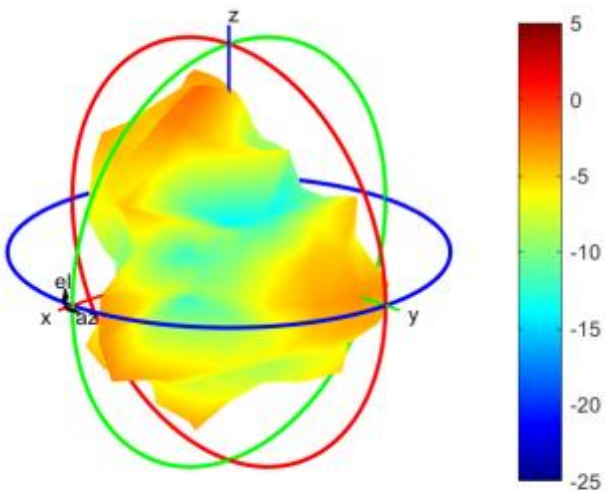
|                       |         |
|-----------------------|---------|
| Center Frequency      | 2620MHz |
| Horizontal (dBi) peak | 0.94    |
| Vertical (dBi) peak   | 1.41    |

2690MHz



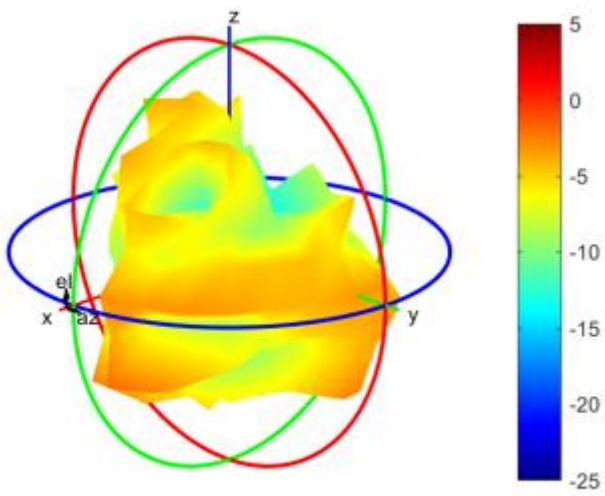
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>2690MHz</b> |
| Horizontal (dBi) peak | 1.78           |
| Vertical (dBi) peak   | 2.16           |

3400MHz



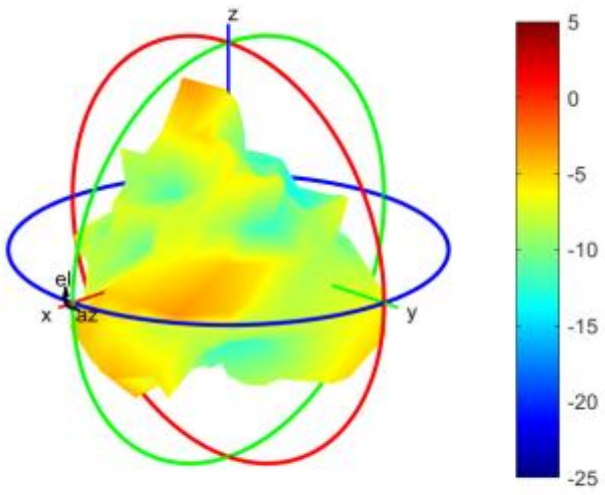
|                       |                |
|-----------------------|----------------|
| Center Frequency      | <b>3400MHz</b> |
| Horizontal (dBi) peak | -2.90          |
| Vertical (dBi) peak   | -2.94          |

3500MHz



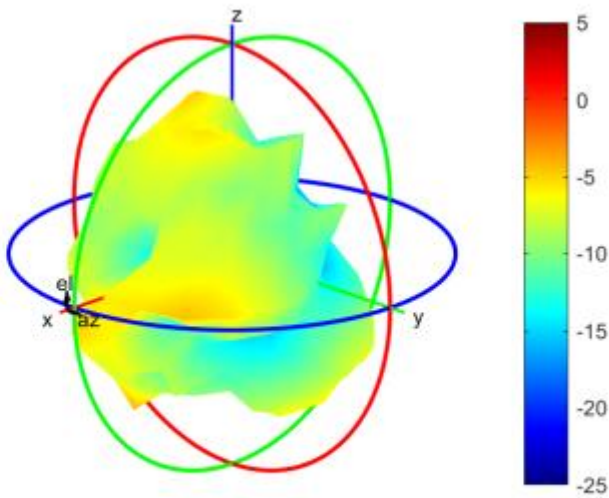
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3500MHz |
| Horizontal (dBi) peak | -3.18   |
| Vertical (dBi) peak   | -2.99   |

3600MHz



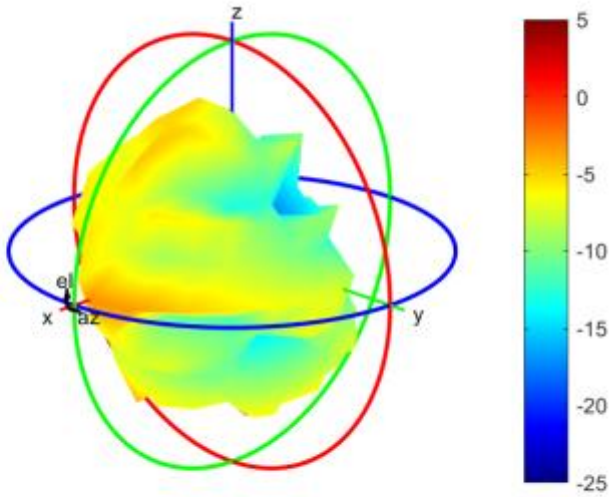
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3600MHz |
| Horizontal (dBi) peak | -3.13   |
| Vertical (dBi) peak   | -4.66   |

3700MHz



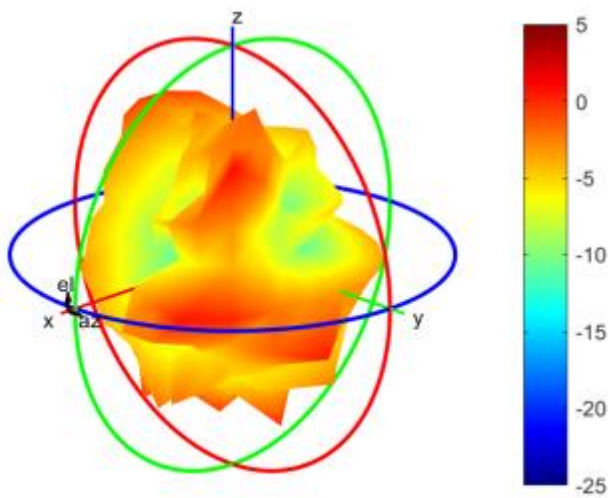
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3700MHz |
| Horizontal (dBi) peak | -4.34   |
| Vertical (dBi) peak   | -6.15   |

3800MHz



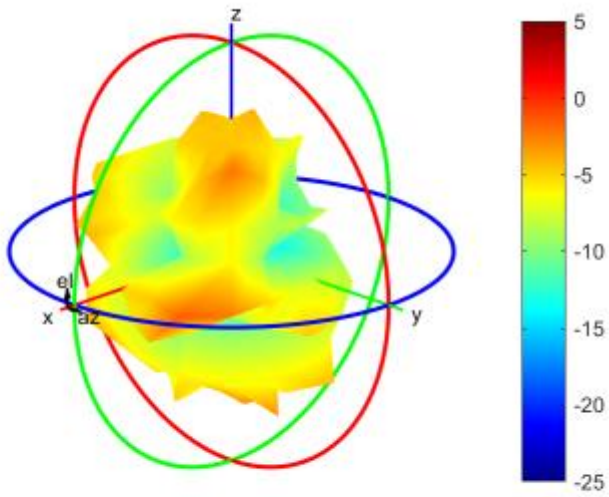
|                       |         |
|-----------------------|---------|
| Center Frequency      | 3800MHz |
| Horizontal (dBi) peak | -2.79   |
| Vertical (dBi) peak   | -4.22   |

4200MHz



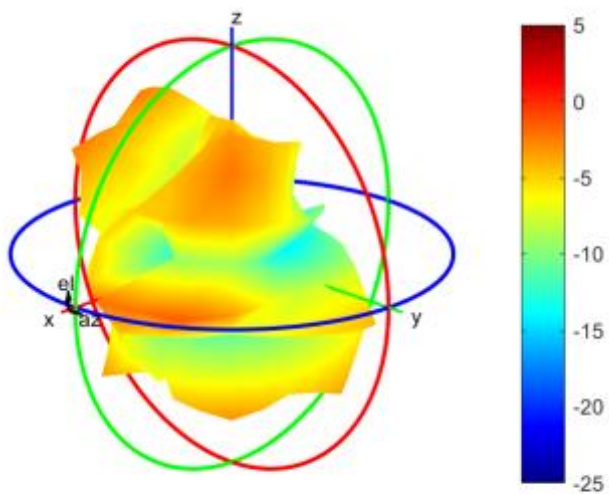
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4200MHz |
| Horizontal (dBi) peak | -1.40   |
| Vertical (dBi) peak   | -1.76   |

4400MHz



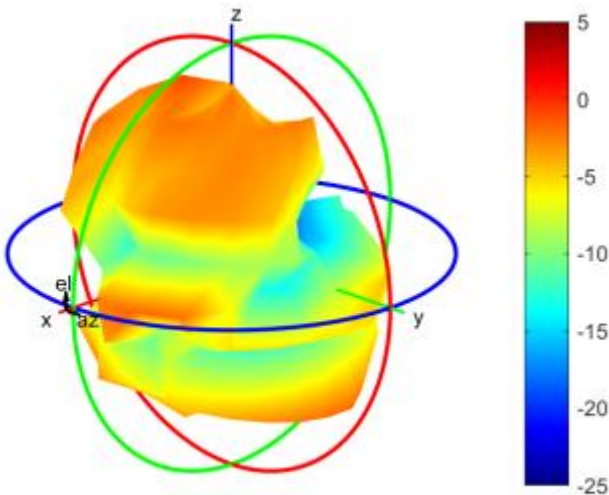
|                       |         |
|-----------------------|---------|
| Center Frequency      | 4400MHz |
| Horizontal (dBi) peak | -1.49   |
| Vertical (dBi) peak   | -4.29   |

4700MHz



|                       |         |
|-----------------------|---------|
| Center Frequency      | 4700MHz |
| Horizontal (dBi) peak | -2.18   |
| Vertical (dBi) peak   | -3.28   |

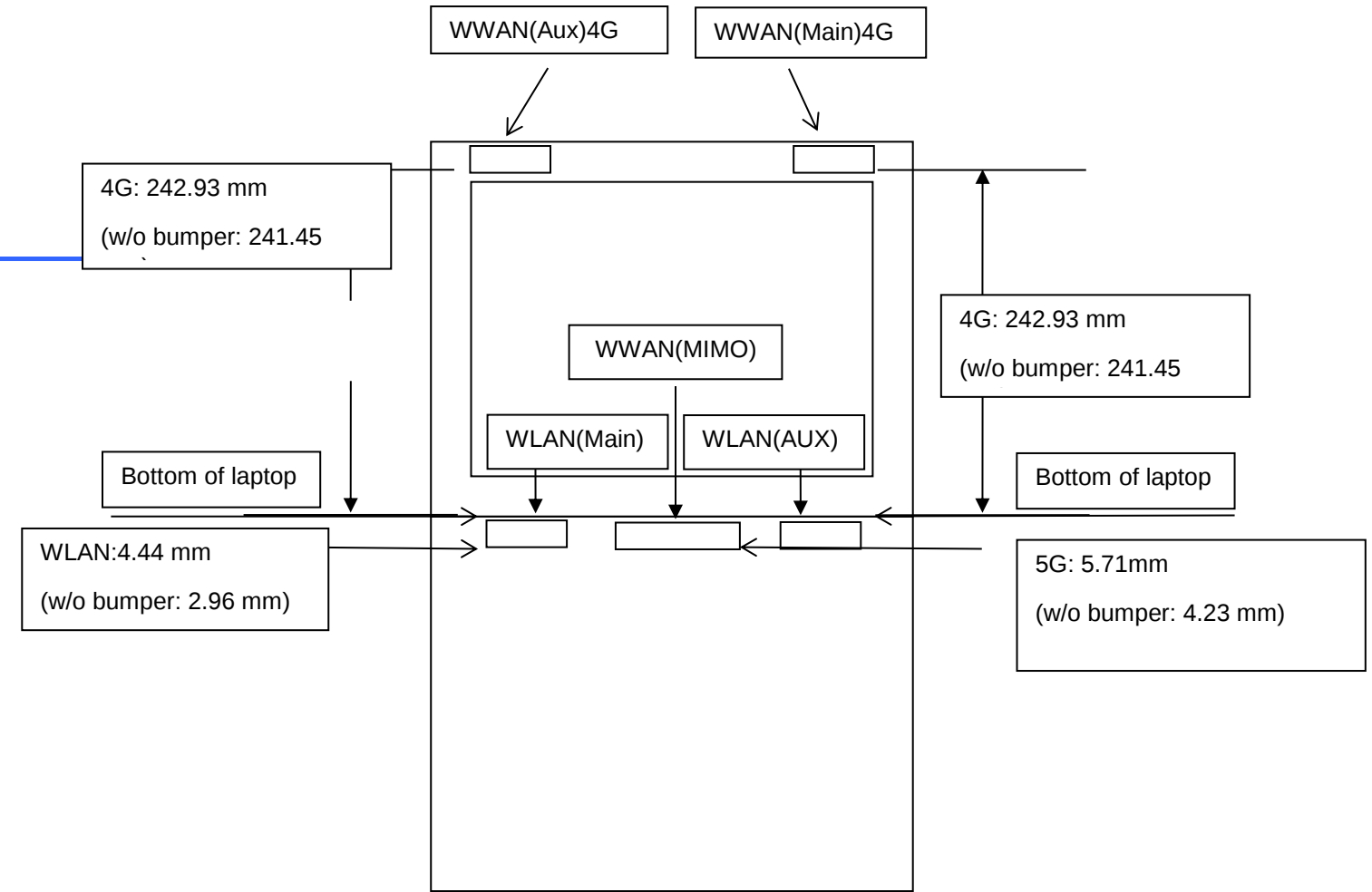
5000MHz



|                       |         |
|-----------------------|---------|
| Center Frequency      | 5000MHz |
| Horizontal (dBi) peak | -1.77   |
| Vertical (dBi) peak   | -1.51   |

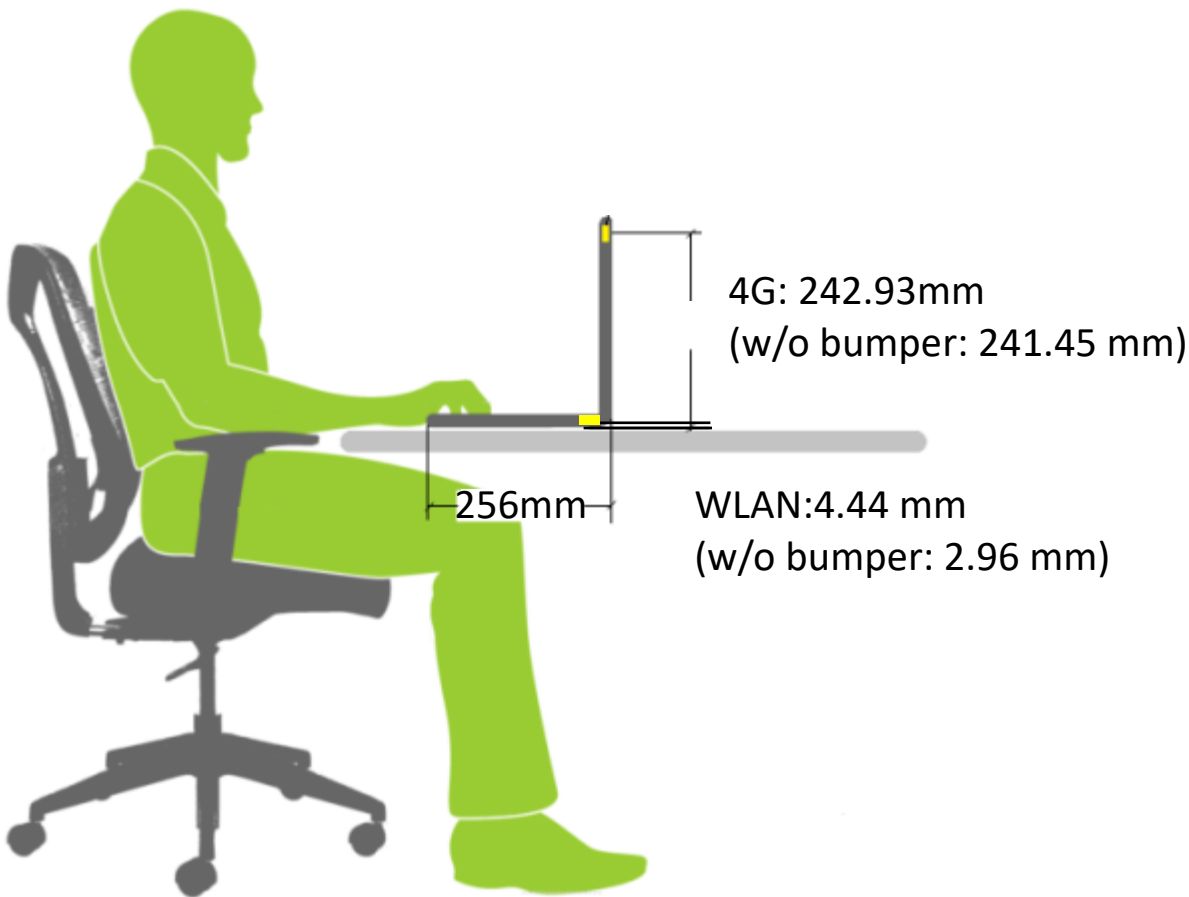
Section 4. Antenna Host Platform Location Information

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.



**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)

