



# TAOGLAS®



# Datasheet

## Raptor Max

### Part No:

Black - MAX1016.A.001

White - MAX1016.W.001

### Description

16-in-1 Permanent Mount Antenna White with Multiband GNSS, 8x 5G/4G, 6x Wi-Fi & 1x LMR Whip with Staggered RG-174/TGC-1.5DS Cables

### Features:

Low-profile, IP67 rated Enclosure

8\* 5G/4G MIMO 617~6000 MHz

6\* WIFI MIMO 2.4/5.8/7.125 GHz

1\* GNSS L1/L5 Dual-band Antenna

Full P25 VHF/UHF/LMR 700-900 MHz

Compatible with Verizon, AT&T, and FirstNet

Supplied with Two Interchangeable Whips

- FW.79.M6.F - 700-900MHz Flexible Whip Antenna with M6 female connector
- FW.38.M6.F - 380-400MHz Flexible Whip Antenna with M6 female connector

Dimensions: 330mm x 75.5mm x 45.2 mm

RoHS & Reach Compliant

|           |                                       |            |
|-----------|---------------------------------------|------------|
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# 1. Introduction



The Taoglas® Raptor MAX series of concept combination antenna are designed to enhance the connectivity options available to you for your vehicle. With up to 16-in-1 connections available, in combinations of Multiband GNSS, 5G/4G MIMO, Wi-Fi MIMO, LMR/VHF/UHF/Tetra, this next generation, super low-profile vehicle roof mount antenna eliminates the need for multiple antenna installations.

The MAX1016 can be configured in any combination of multiband GNSS (L1/L5), up to 8 5G/4G antennas, up to 6 Wi-Fi antennas and LMR/Tetra. Each of the Cellular antennas covers all global 5G/4G bands from 600 to 6000MHz with great efficiency across all bands. The Wi-Fi antennas are designed for Wi-Fi 6e/7 coverage on bands 2.4, 5.8 and 7.125 GHz. The embedded multiband active GNSS antenna covers both the L1 and L5 bands, helping you achieve a much greater positional accuracy than from single GNSS. The interchangeable whip FW.79.M6.F and FW.38.M6.F allow you the add frequency bands specific to your requirements either in the LMR or TETRA ranges.

The antenna comes with low-loss TGC-1.5DS coaxial pigtail cables as standard, terminating in SMA(M) / RP-SMA(M), with custom configurations depending on your requirements. The super low profile, fully IP67 rated waterproof enclosure is manufactured from a robust, UV protected ABS material, ideal for use in any environment or weather condition.

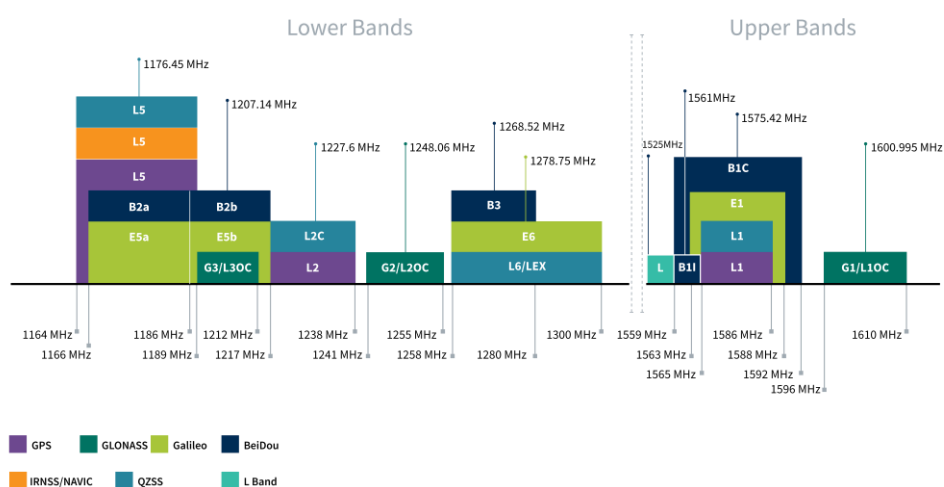
Several configurations in both black and white will be available as standard, see below, but other configurations are available upon request, contact your local Taoglas customer service team for more information.

Raptor Max SKU's and Configurations:

|                |                                           |
|----------------|-------------------------------------------|
| <b>MAX1008</b> | 8x 5G/4G                                  |
| <b>MAX1009</b> | 1x GNSS & 8x 5G/4G                        |
| <b>MAX1012</b> | 1x GNSS, 8x 5G/4G & 3x Wi-Fi              |
| <b>MAX1012</b> | 1x GNSS, 8x 5G/4G & 4x Wi-Fi              |
| <b>MAX1014</b> | 1x GNSS, 8x 5G/4G & 5x Wi-Fi              |
| <b>MAX1015</b> | 1x GNSS, 8x 5G/4G & 6x Wi-Fi              |
| <b>MAX1016</b> | 1x GNSS, 8x 5G/4G, 6x Wi-Fi & 1x LMR Whip |

## 2. Specification

| GNSS Frequency Bands |                         |                           |                    |                    |                   |
|----------------------|-------------------------|---------------------------|--------------------|--------------------|-------------------|
| GPS                  | L1<br>1575.42 MHz       | L2<br>1227.6 MHz          | L5<br>1176.45 MHz  |                    |                   |
|                      | ■                       | □                         | ■                  |                    |                   |
| GLONASS              | G1<br>1602 MHz          | G2<br>1248 MHz            | G3<br>1207 MHz     |                    |                   |
|                      | □                       | □                         | □                  |                    |                   |
| Galileo              | E1<br>1575.24 MHz       | E5a<br>1176.45 MHz        | E5b<br>1201.5 MHz  | E6<br>1278.75 MHz  |                   |
|                      | ■                       | ■                         | □                  | □                  |                   |
| BeiDou               | B1C<br>1575.42 MHz      | B1I<br>1561 MHz           | B2a<br>1176.45 MHz | B2b<br>1207.14 MHz | B3<br>1268.52 MHz |
|                      | ■                       | ■                         | ■                  | □                  | □                 |
| L-Band               | L-Band<br>1542 MHz      |                           |                    |                    |                   |
|                      | □                       |                           |                    |                    |                   |
| QZSS (Regional)      | L1<br>1575.42 MHz       | L2C<br>1227.6 MHz         | L5<br>1176.45 MHz  | L6<br>1278.75e6    |                   |
|                      | ■                       | □                         | ■                  | □                  |                   |
| IRNSS (Regional)     | L5<br>1176.45 MHz       |                           |                    |                    |                   |
|                      | ■                       |                           |                    |                    |                   |
| SBAS                 | L1/E1/B1<br>1575.42 MHz | L5/B2a/E5a<br>1176.45 MHz | G1<br>1602 MHz     | G2<br>1248 MHz     | G3<br>1207 MHz    |
|                      | ■                       | ■                         | □                  | □                  | □                 |



GNSS Bands and Constellations

| GNSS Electrical                      |             |       |         |
|--------------------------------------|-------------|-------|---------|
| Frequency (MHz)                      | 1176.45     | 1561  | 1575.42 |
| VSWR (max.)                          | 3:1         | 3:1   | 3:1     |
| Passive Antenna Efficiency (%)       | 37.77       | 33.44 | 40.65   |
| Passive Antenna Gain at Zenith (dBi) | 1.75        | 3.59  | 4.51    |
| Polarization                         | Linear      |       |         |
| Impedance                            | 50 $\Omega$ |       |         |

| LNA and Electrical Properties    |                                                |      |         |      |
|----------------------------------|------------------------------------------------|------|---------|------|
| Frequency (MHz)                  | 1176.45                                        | 1561 | 1575.42 | 1602 |
| Gain(dB)                         | 29.7                                           | 28.8 | 28.1    | 28.6 |
| Noise Figure (dB)                | 2.9                                            | 2.8  | 2.9     | 2.3  |
| Input Voltage (V)                | + 1.8 to 5.5                                   |      |         |      |
| Current consumption (mA)         | 5 $\pm$ 2                                      |      |         |      |
| IEC61000-4-2<br>(ESD protection) | $\pm$ 30 kV air / $\pm$ 20Kv contact discharge |      |         |      |

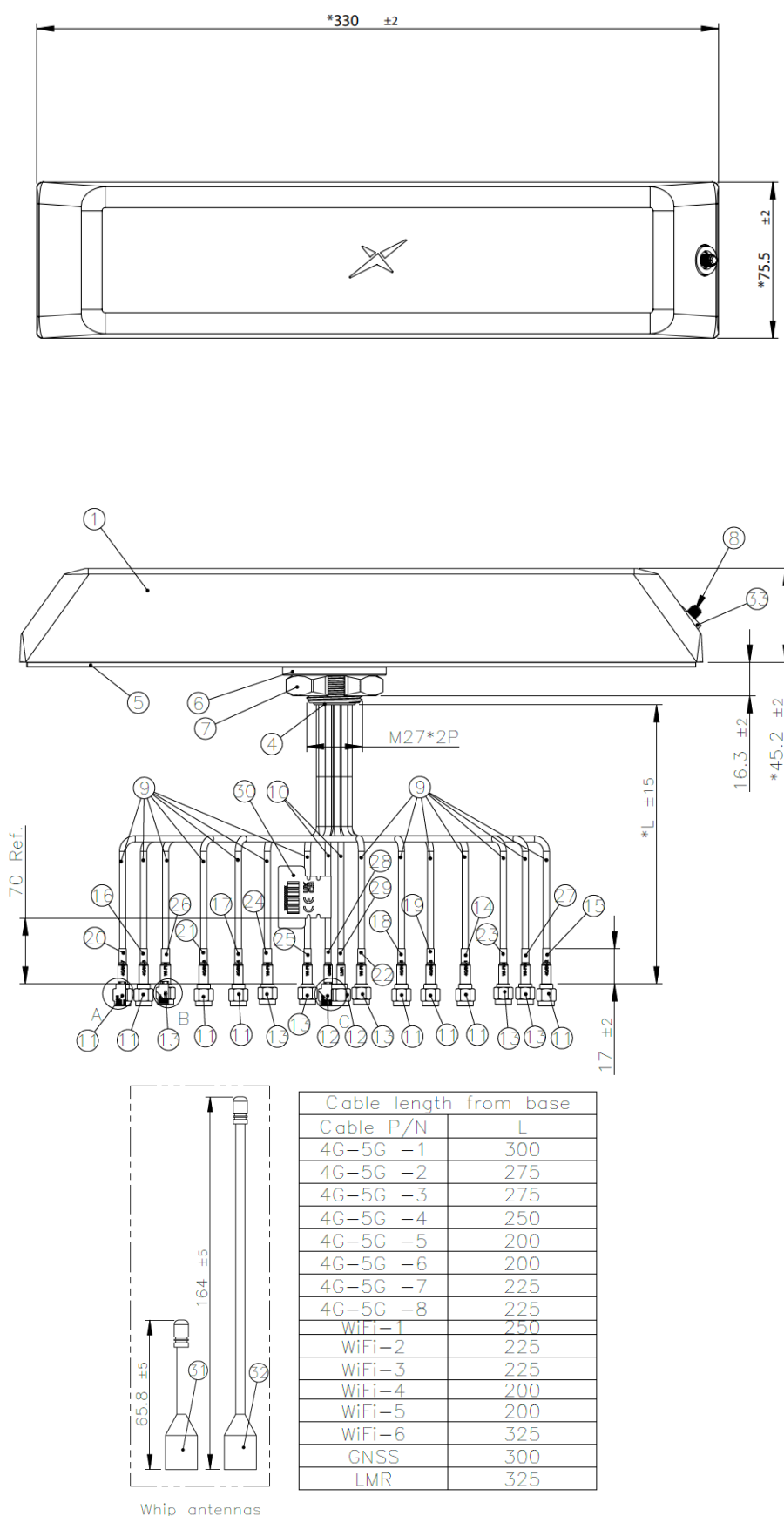
| Cellular Electrical                                         |                 |              |                |                   |                 |           |              |                   |                  |  |  |  |  |
|-------------------------------------------------------------|-----------------|--------------|----------------|-------------------|-----------------|-----------|--------------|-------------------|------------------|--|--|--|--|
| Band                                                        | Frequency (MHz) | Antenna MIMO | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |  |  |  |  |
| 5G NR/4G Band 71                                            | 617-698         | Cellular1    | 27.0           | -5.69             | 2.03            | 50 Ω      | Linear       | Omni directional  | 10W              |  |  |  |  |
|                                                             |                 | Cellular2    | 20.4           | -6.91             | -1.50           |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 25.6           | -5.92             | 0.17            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 44.1           | -3.56             | 3.54            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 24.9           | -6.04             | 2.68            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 24.5           | -6.11             | -0.41           |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 25.1           | -6.00             | -1.18           |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 29.9           | -5.24             | 0.85            |           |              |                   |                  |  |  |  |  |
| 4G/3G Band 12,13,14,17,28,29                                | 698-824         | Cellular1    | 34.1           | -4.67             | 2.63            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 32.0           | -4.95             | 1.92            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 35.7           | -4.48             | 2.67            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 42.9           | -3.67             | 2.75            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 32.0           | -4.95             | 1.77            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 26.4           | -5.79             | -0.11           |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 32.9           | -4.83             | 1.97            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 36.4           | -4.39             | 2.24            |           |              |                   |                  |  |  |  |  |
| 4G/3G/NB-IoT/Cat M Band 5,8,18,19,20,26,27                  | 824-960         | Cellular1    | 38.3           | -4.16             | 1.52            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 36.0           | -4.44             | 1.50            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 28.3           | -5.48             | 1.20            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 35.5           | -4.49             | 2.45            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 29.9           | -5.24             | 1.53            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 28.7           | -5.43             | -0.35           |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 36.3           | -4.40             | 2.66            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 40.1           | -3.97             | 2.58            |           |              |                   |                  |  |  |  |  |
| 5G NR/4G Band 21,32,74,75,76                                | 1427-1518       | Cellular1    | 37.4           | -4.27             | 2.73            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 41.9           | -3.78             | 3.32            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 33.1           | -4.81             | 2.78            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 32.9           | -4.82             | 2.33            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 31.2           | -5.06             | 2.10            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 31.5           | -5.01             | 1.43            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 39.7           | -4.02             | 2.25            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 25.7           | -5.91             | 0.94            |           |              |                   |                  |  |  |  |  |
| 4G/3G Band 1,2,3,4,9,23,25,35,39,66                         | 1710-2200       | Cellular1    | 46.4           | -3.34             | 4.93            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 47.2           | -3.26             | 4.61            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 51.5           | -2.88             | 5.48            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 48.7           | -3.13             | 5.34            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 51.5           | -2.88             | 6.07            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 49.3           | -3.07             | 6.07            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 29.8           | -5.26             | 4.22            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 31.3           | -5.04             | 2.93            |           |              |                   |                  |  |  |  |  |
| 4G/3G Band 7,30,38,40,41                                    | 2300-2690       | Cellular1    | 49.9           | -3.02             | 5.47            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 48.3           | -3.16             | 4.39            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 48.2           | -3.17             | 6.12            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 38.8           | -4.12             | 6.69            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 39.2           | -4.07             | 5.96            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 49.2           | -3.08             | 6.79            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 39.7           | -4.01             | 5.28            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 43.1           | -3.65             | 6.09            |           |              |                   |                  |  |  |  |  |
| 5G NR/4G Band 22,42,48,77,78,79                             | 3300-5000       | Cellular1    | 51.4           | -2.89             | 6.13            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 44.9           | -3.48             | 7.46            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 47.4           | -3.24             | 5.75            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 48.2           | -3.17             | 6.88            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 42.5           | -3.72             | 5.24            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 46.2           | -3.35             | 5.90            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 43.1           | -3.65             | 5.37            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 46.1           | -3.36             | 6.02            |           |              |                   |                  |  |  |  |  |
| LTE5200/Wi-Fi5800                                           | 5150-5925       | Cellular1    | 43.2           | -3.65             | 7.96            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular2    | 42.7           | -3.69             | 7.82            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular3    | 43.4           | -3.63             | 5.67            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular4    | 46.5           | -3.33             | 5.73            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular5    | 42.7           | -3.70             | 5.26            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular6    | 43.6           | -3.61             | 5.84            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular7    | 40.1           | -3.97             | 6.03            |           |              |                   |                  |  |  |  |  |
|                                                             |                 | Cellular8    | 44.6           | -3.50             | 6.14            |           |              |                   |                  |  |  |  |  |
| *Results shown obtained with Staggered RG-174 and TGC-1.5DS |                 |              |                |                   |                 |           |              |                   |                  |  |  |  |  |

| Wi-Fi Electrical                                            |                 |              |                |                   |                 |           |              |                   |                  |
|-------------------------------------------------------------|-----------------|--------------|----------------|-------------------|-----------------|-----------|--------------|-------------------|------------------|
| Band                                                        | Frequency (MHz) | Antenna MIMO | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |
| Wi-Fi - 2GHz                                                | 2400-2500       | Wi-Fi1       | 56.5           | -2.48             | 4.36            | 50 Ω      | Linear       | Omni directional  | 10W              |
|                                                             |                 | Wi-Fi2       | 58.2           | -2.35             | 6.55            |           |              |                   |                  |
|                                                             |                 | Wi-Fi3       | 56.1           | -2.51             | 5.68            |           |              |                   |                  |
|                                                             |                 | Wi-Fi4       | 58.1           | -2.36             | 4.19            |           |              |                   |                  |
|                                                             |                 | Wi-Fi5       | 53.3           | -2.73             | 7.60            |           |              |                   |                  |
|                                                             |                 | Wi-Fi6       | 52.7           | -2.78             | 6.98            |           |              |                   |                  |
| Wi-Fi - 5GHz                                                | 5150-5850       | Wi-Fi1       | 49.3           | -3.07             | 5.71            |           |              |                   |                  |
|                                                             |                 | Wi-Fi2       | 49.5           | -3.05             | 7.47            |           |              |                   |                  |
|                                                             |                 | Wi-Fi3       | 47.8           | -3.20             | 5.63            |           |              |                   |                  |
|                                                             |                 | Wi-Fi4       | 45.9           | -3.38             | 6.10            |           |              |                   |                  |
|                                                             |                 | Wi-Fi5       | 50.5           | -2.97             | 8.04            |           |              |                   |                  |
|                                                             |                 | Wi-Fi6       | 44.7           | -3.50             | 8.51            |           |              |                   |                  |
| Wi-Fi - 6GHz                                                | 5925-7125       | Wi-Fi1       | 47.1           | -3.27             | 6.33            |           |              |                   |                  |
|                                                             |                 | Wi-Fi2       | 49.9           | -3.02             | 7.47            |           |              |                   |                  |
|                                                             |                 | Wi-Fi3       | 48.4           | -3.15             | 6.28            |           |              |                   |                  |
|                                                             |                 | Wi-Fi4       | 43.1           | -3.66             | 5.96            |           |              |                   |                  |
|                                                             |                 | Wi-Fi5       | 46.2           | -3.36             | 7.31            |           |              |                   |                  |
|                                                             |                 | Wi-Fi6       | 43.7           | -3.60             | 7.22            |           |              |                   |                  |
| *Results shown obtained with Staggered RG-174 and TGC-1.5DS |                 |              |                |                   |                 |           |              |                   |                  |

| Mechanical         |                                                            |
|--------------------|------------------------------------------------------------|
| Dimensions         | 330 x 75.5 x 45.2mm                                        |
| Whip Length        | Long Whip(Wideband) – 430mm<br>Short Whip(LMR Only) – 65mm |
| Whip Coil Diameter | Ø6mm                                                       |
| Whip Base Diameter | Ø14mm                                                      |
| Material           | PC                                                         |
| Connector          | SMA(M) and RP-SMA(M) - See Page 8 for more details         |
| Cable              | RG-174 and TGC-1.5DS - See Page 8 for more details         |
| IK Impact Rating   | IK08 – 5 Joules / 1.7Kg dropped from 300mm                 |
| Weight             | 580g                                                       |

| Environmental          |                            |
|------------------------|----------------------------|
| Temperature Range      | -40 - +85°C                |
| Relative Humidity      | Non-condensing 65°C 95% RH |
| Ingress Protection     | IP67                       |
| RoHS & REACH Compliant | Yes                        |

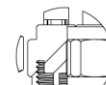
### 3. Mechanical Drawing



DETAIL A  
SCALE 1.5 : 1



DETAIL B  
SCALE 1.5 : 1



DETAIL C  
SCALE 1.5 : 1

|    | Name                                | Material                 | Finish                     | Qty |
|----|-------------------------------------|--------------------------|----------------------------|-----|
| 1  | Top housing                         | PC                       | White                      | 1   |
| 2  | Bottom housing                      | PC+10%GF/Sab<br>ic 505RU | MT9050, White              | 1   |
| 3  | Metal Stem                          | Zinc Alloy               | Ni Plated                  | 1   |
| 4  | Grommet                             | Silicone Rubber          | Black                      | 1   |
| 5  | Double Side Adhesive                | 3M 9448HK +<br>CR4305 2t | Black                      | 1   |
| 6  | washer(ID28*OD50<br>t4.0 )          | S45C                     | Ni-Zn Plated               | 1   |
| 7  | M27*P2.0mm steel Nut                | S45C                     | Ni-Zn Plated               | 1   |
| 8  | M6*0.75P screw                      | Brass                    | Ni Plated                  | 1   |
| 9  | TGC-1.5DS Coaxial<br>Cable          | PE                       | Black                      | 14  |
| 10 | RG174 Coaxial Cable                 | PE                       | Black                      | 2   |
| 11 | SMA(M)ST Plug for<br>low loss1.5DS  | Brass                    | Au Plated                  | 8   |
| 12 | SMA(M)ST Plug                       | Brass                    | Au Plated                  | 2   |
| 13 | SMA(M)ST_RP low<br>loss 1.5DS       | Brass                    | AU PLATING                 | 6   |
| 14 | Heat Shrink<br>Tube(4G/5G-1)        | PE                       | Red Tube/White Text        | 1   |
| 15 | Heat Shrink<br>Tube(4G/5G-2)        | PE                       | Red Tube/White Text        | 1   |
| 16 | Heat Shrink<br>Tube(4G/5G-3)        | PE                       | Red Tube/White Text        | 1   |
| 17 | Heat Shrink<br>Tube(4G/5G-4)        | PE                       | Red Tube/White Text        | 1   |
| 18 | Heat Shrink<br>Tube(4G/5G-5)        | PE                       | Red Tube/White Text        | 1   |
| 19 | Heat Shrink<br>Tube(4G/5G-6)        | PE                       | Red Tube/White Text        | 1   |
| 20 | Heat Shrink<br>Tube(4G/5G-7)        | PE                       | Red Tube/White Text        | 1   |
| 21 | Heat Shrink<br>Tube(4G/5G-8)        | PE                       | Red Tube/White Text        | 1   |
| 22 | Heat Shrink Tube<br>(WiFi-1)        | PE                       | Yellow tube/ Black text    | 1   |
| 23 | Heat Shrink Tube<br>(WiFi-2)        | PE                       | Yellow Tube/Black Text     | 1   |
| 24 | Heat Shrink Tube (Wi-<br>Fi-3)      | PE                       | Yellow Tube /Black<br>Text | 1   |
| 25 | Heat Shrink Tube (Wi-<br>Fi-4)      | PE                       | Yellow Tube /Black<br>Text | 1   |
| 26 | Heat Shrink Tube (Wi-<br>Fi-5)      | PE                       | Yellow Tube /Black<br>Text | 1   |
| 27 | Heat Shrink Tube (Wi-<br>Fi-6)      | PE                       | Yellow Tube /Black<br>Text | 1   |
| 28 | Heat Shrink<br>Tube(GNSS)           | PE                       | Blue Tube/White Text       | 1   |
| 29 | Heat Shrink<br>Tube(LMR)            | PE                       | Green Tube/White Text      | 1   |
| 30 | CE,WEEE and UKCA<br>mark logo Label | PEPA                     | White                      | 1   |
| 31 | Flexible Whip Antenna<br>700-900MHz | PVC                      | White                      | 1   |
| 32 | Flexible Whip Antenna<br>380-400MHz | PVC                      | White                      | 1   |
| 33 | Foam adhesive                       | Silicone Rubber          | White                      | 1   |

## 4. Packaging

1pc Small Whip per PE Bag



1pc Large Whip per PE Bag



1pc Antenna per Large PE Bag  
Bag Dimensions: 470x470mm  
Weight: 0.58Kg

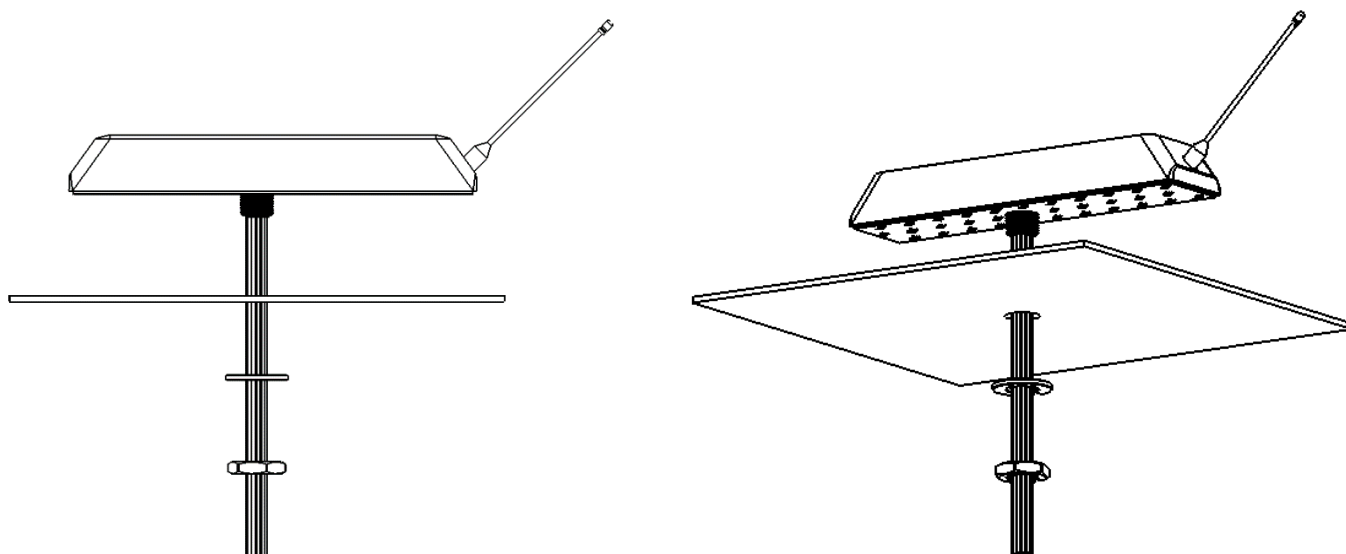


8pcs per Carton  
Carton Dimensions: 370x370x300mm  
Weight: 6.1Kg





## 5. Installation Recommendation



Correct installation of the Raptor Max is required to ensure that the waterproof integrity of the vehicle or enclosure is not compromised.

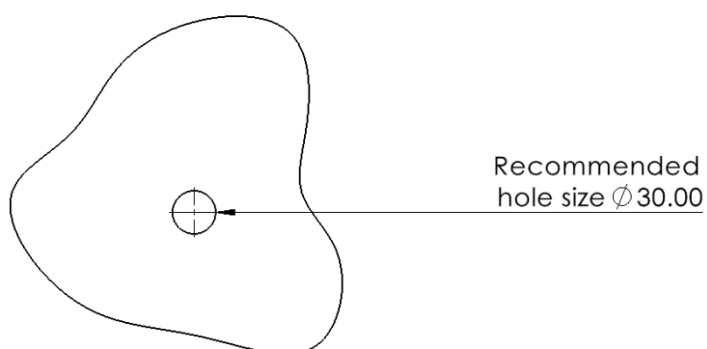
Step 1: Drill the recommended 30mm diameter hole as indicated below.

Step 2: Ensure that the surface you are mounting to is clean, dry and flat to receive the Raptor Max.

Step 3: Feed the cables through the hole and remove the 3m adhesive backing from the base.

Step 4: Position the Raptor Max into the correct orientation on the mounting surface and firmly press down to activate the 3M adhesive.

Step 5: To permanently mount the antenna, slide the washer and nut over the cable assembly and hand tighten to ensure a secure fit.



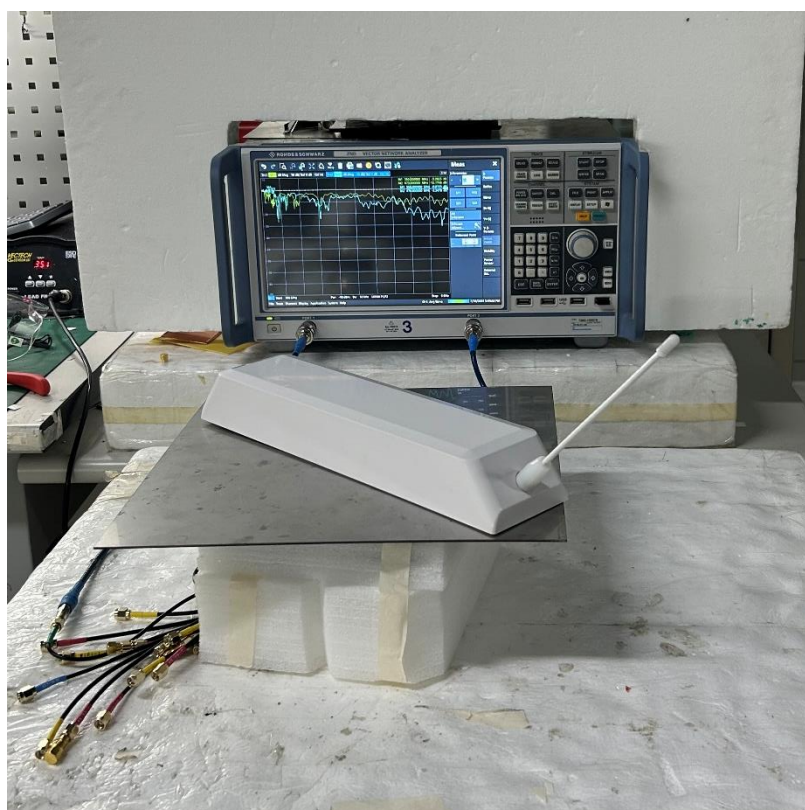
## 6. Antenna Characteristics

### 6.1 Test Setup

AUT

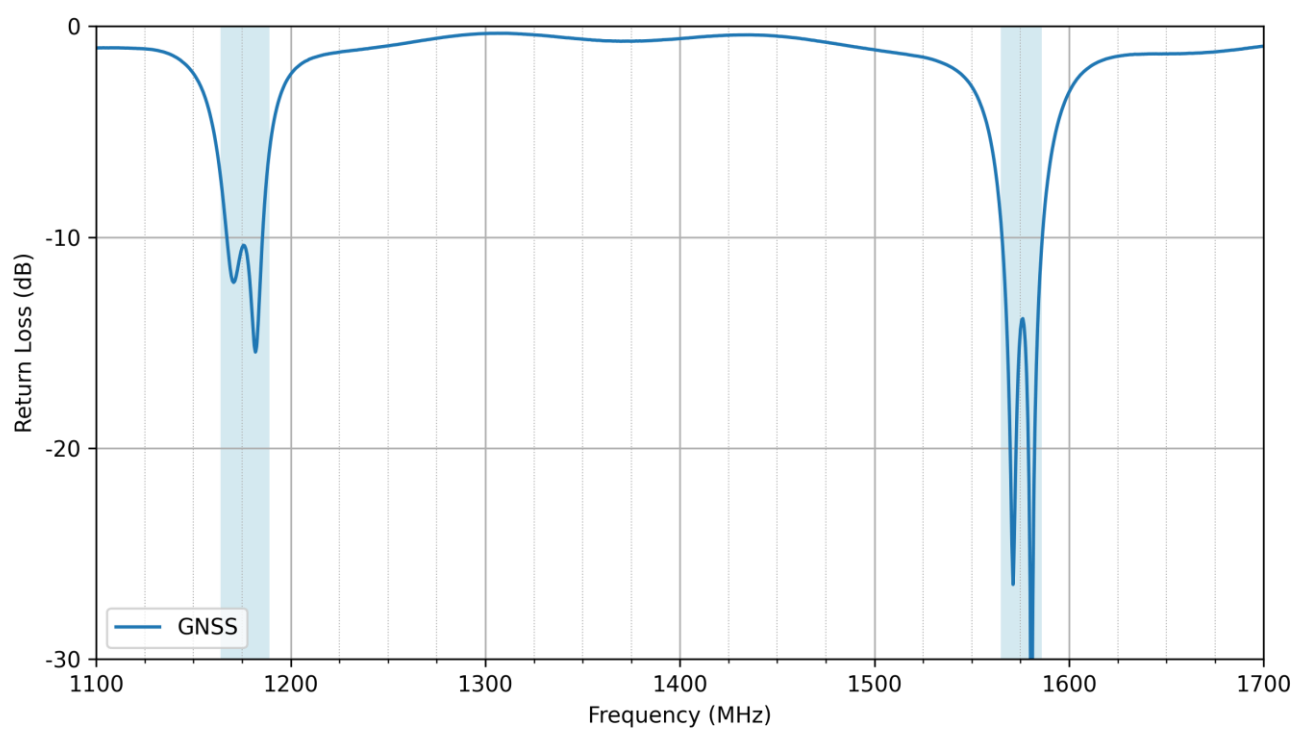


Vector Network Analyzer

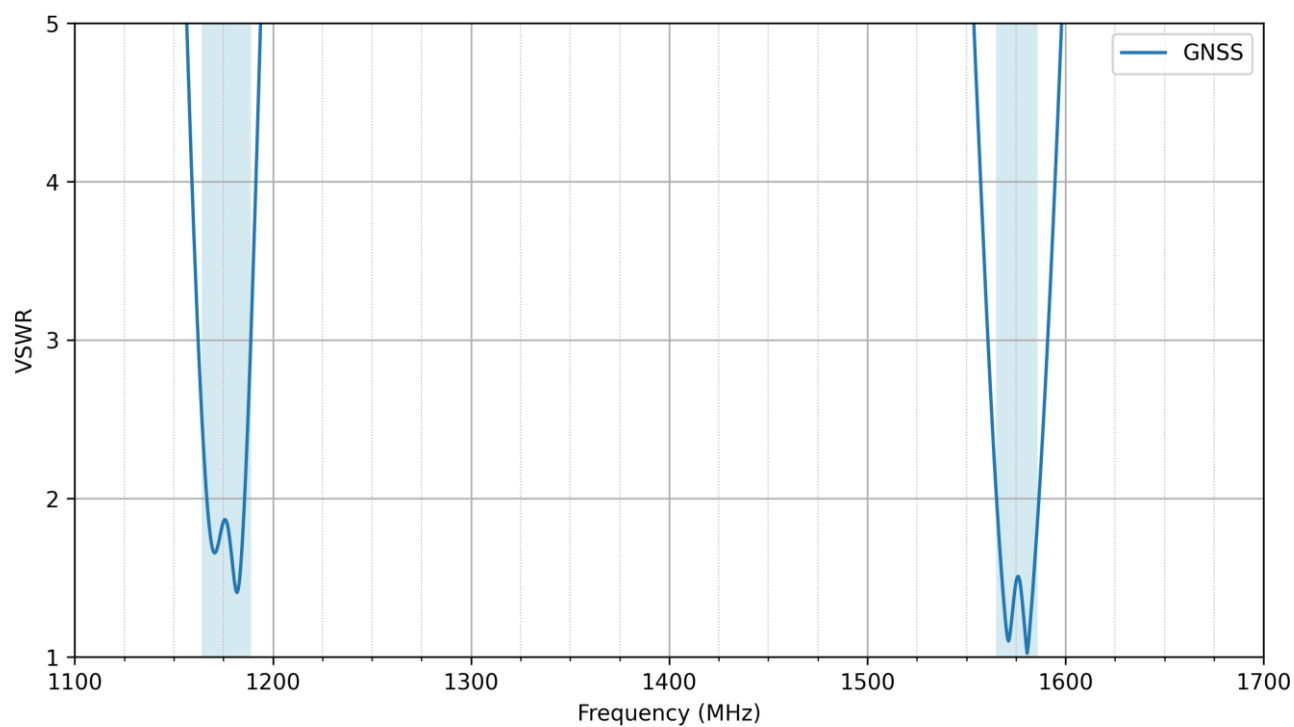


VNA Test Set-up

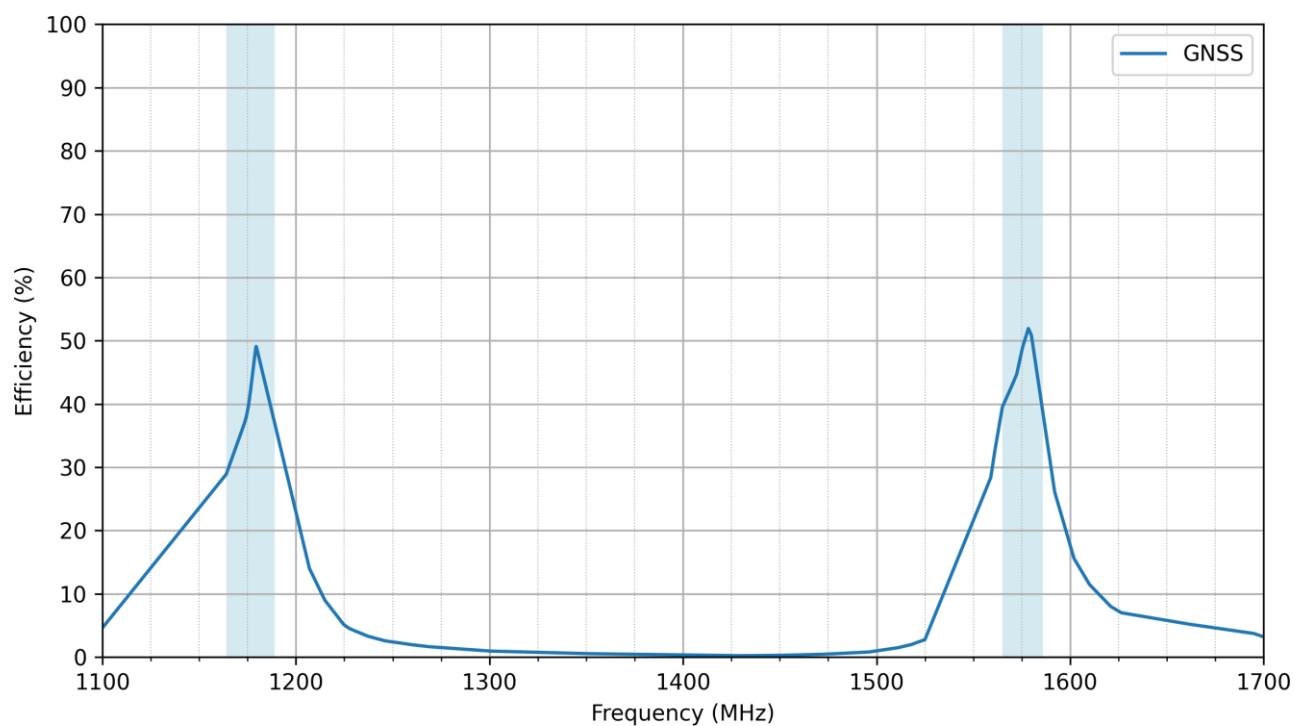
## 6.2 GNSS - Return Loss



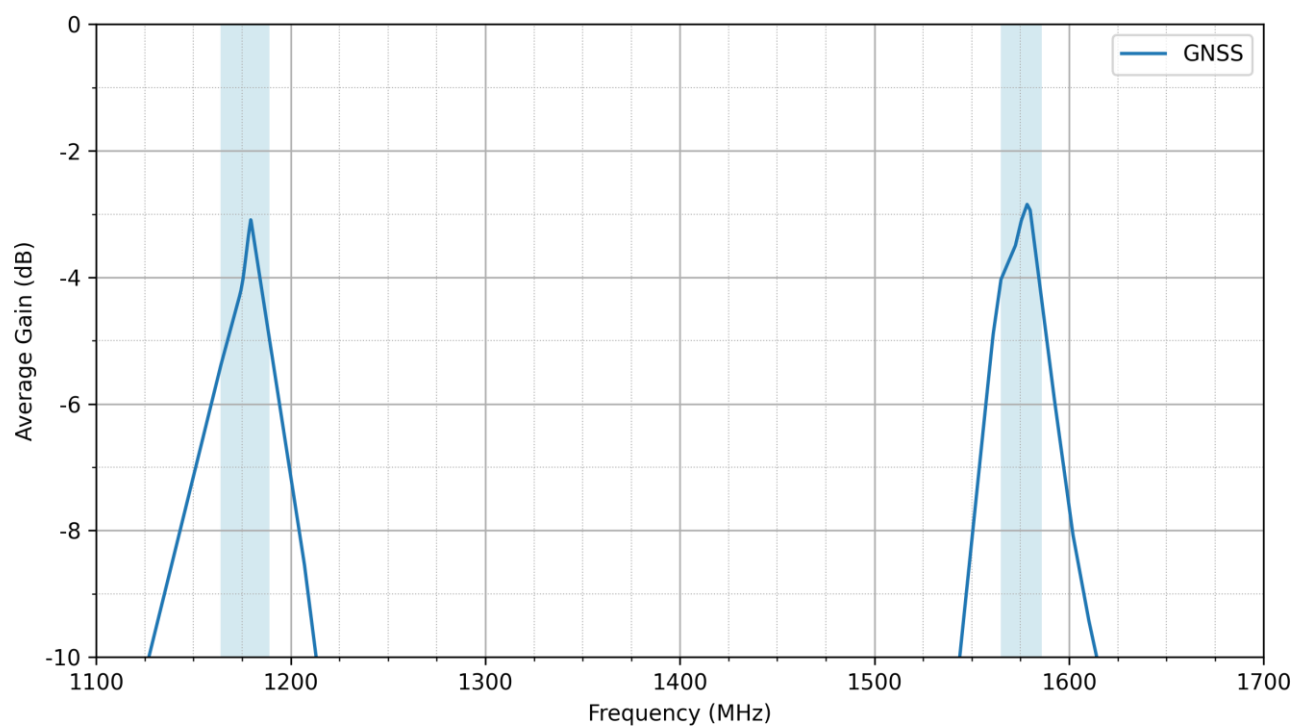
## 6.3 GNSS - VSWR



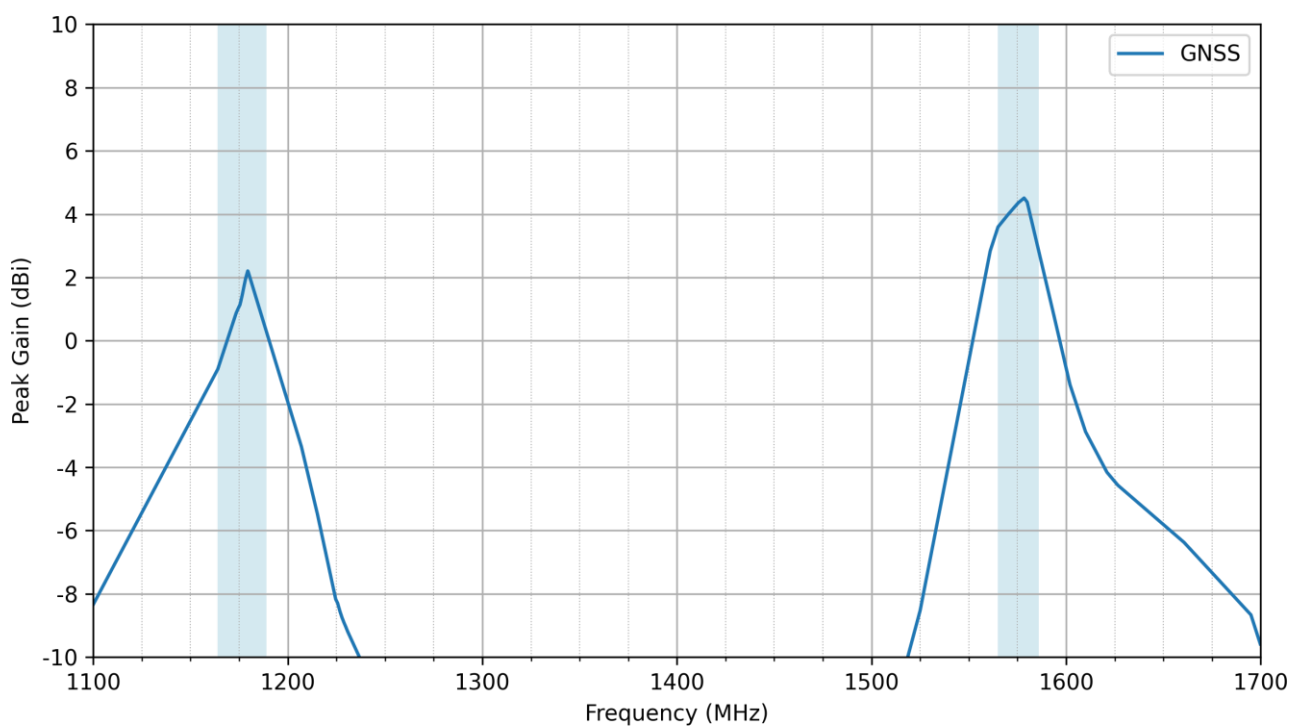
## 6.4 GNSS - Efficiency



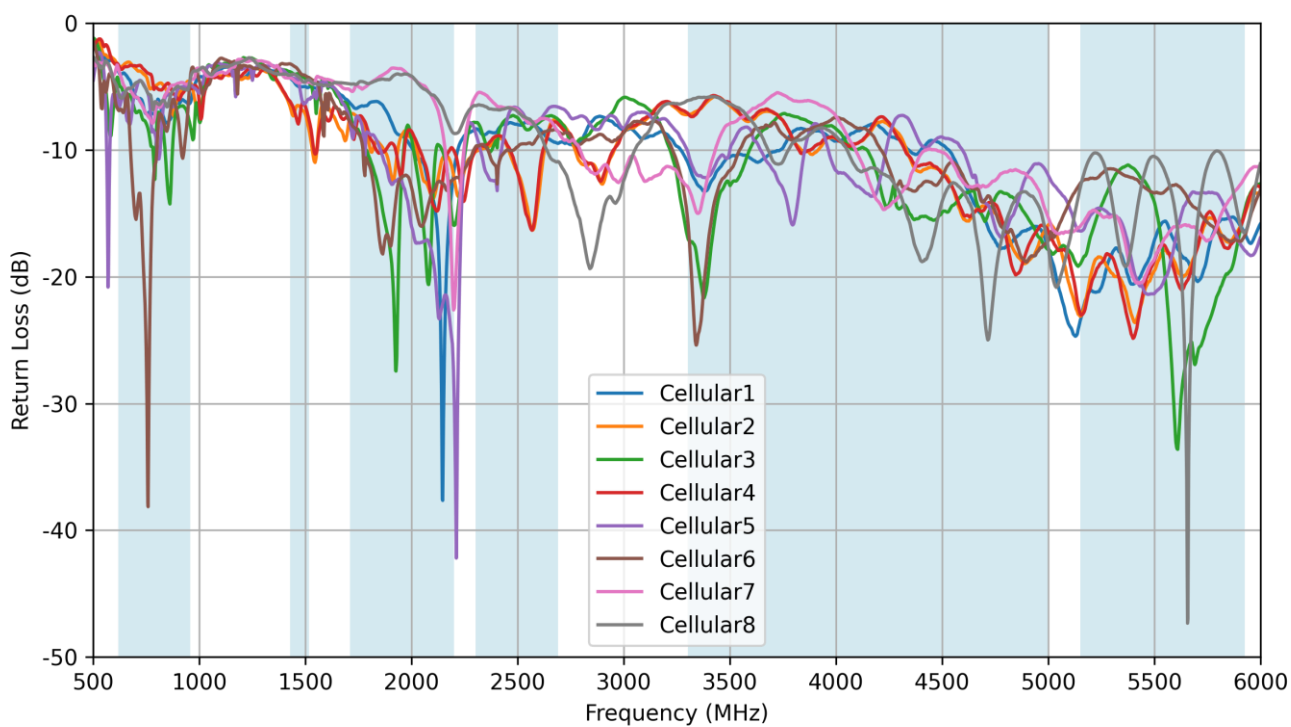
## 6.5 GNSS - Average Gain



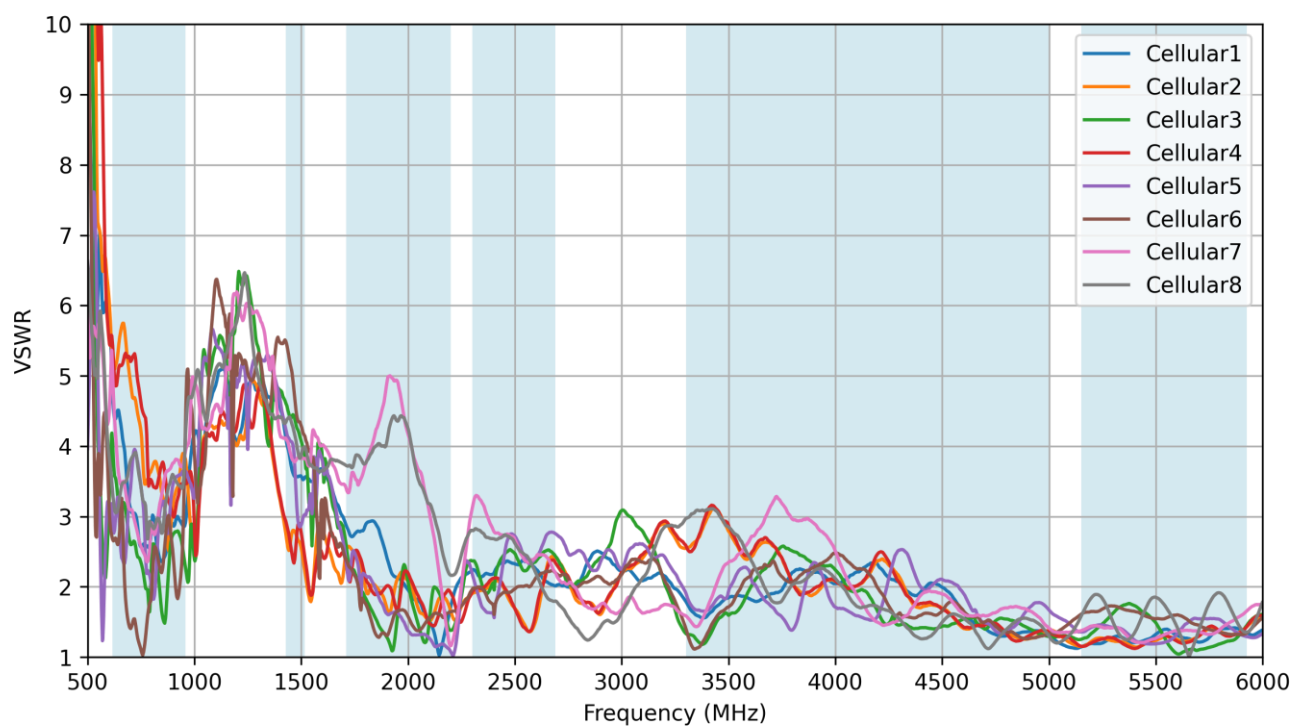
## 6.6 GNSS - Peak Gain



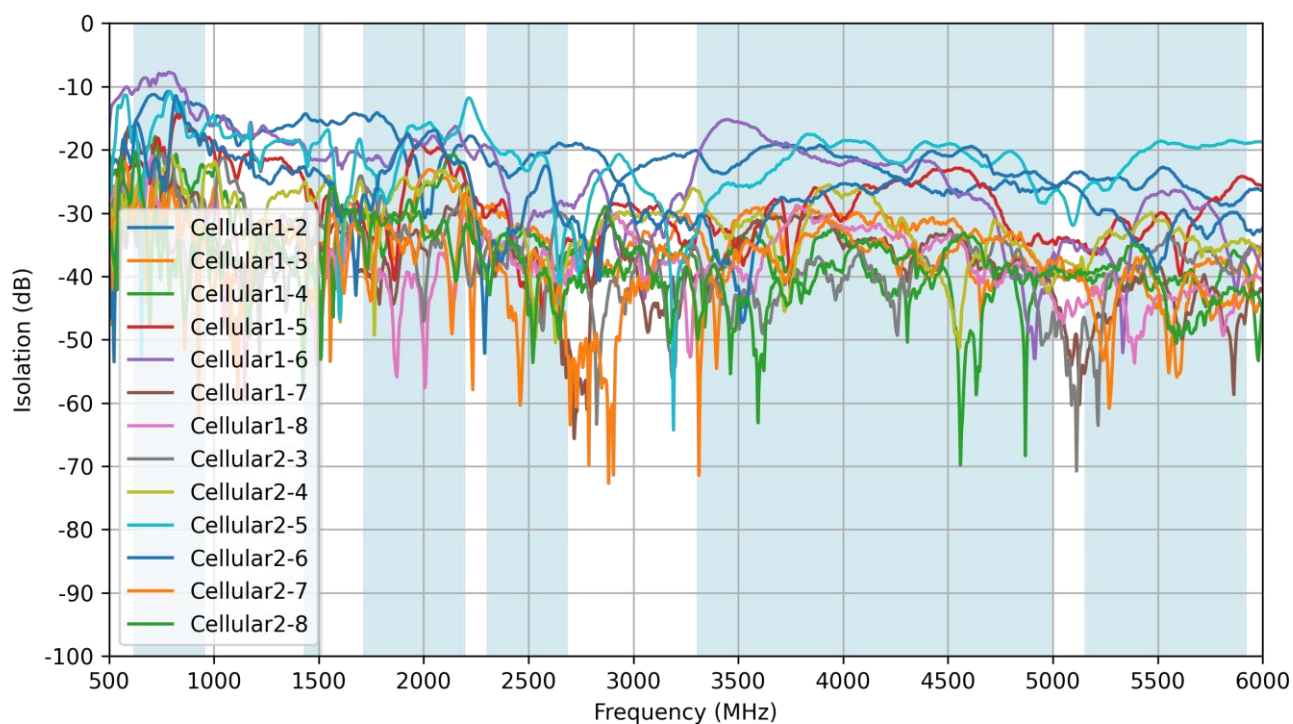
## 6.7 Cellular - Return Loss



## 6.8 Cellular - VSWR

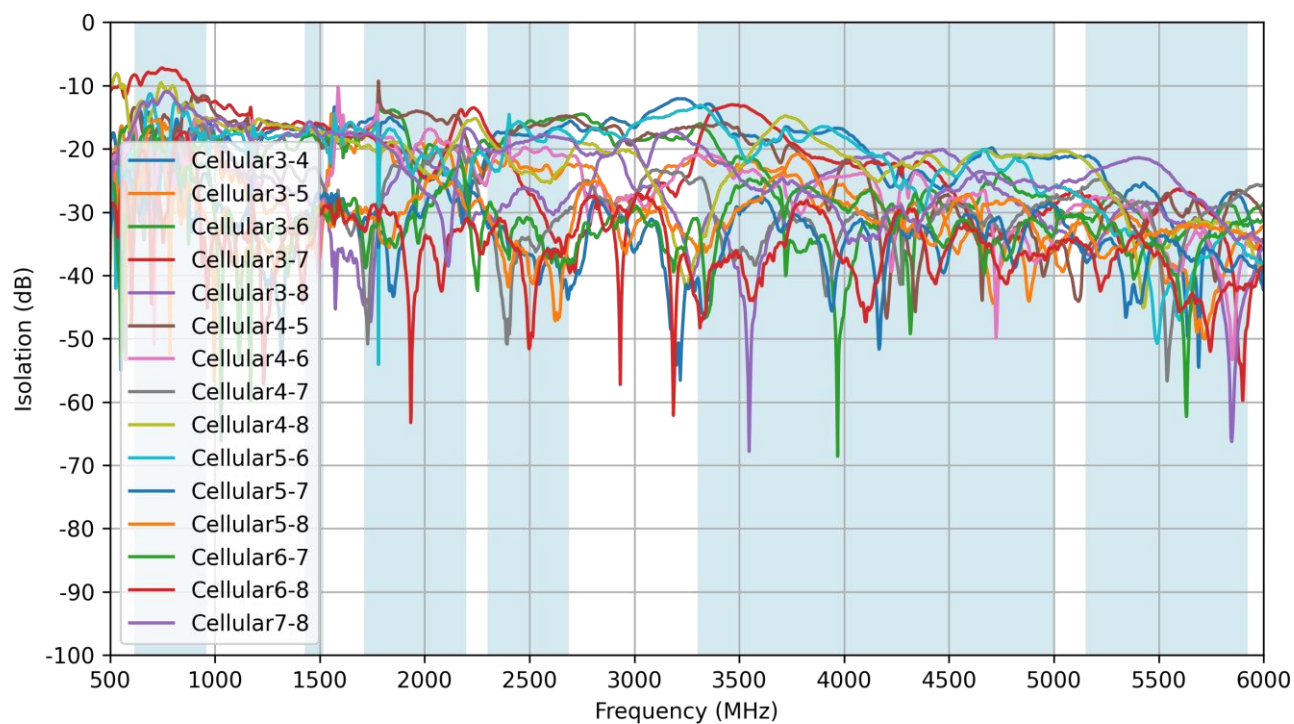


## 6.9 Isolation

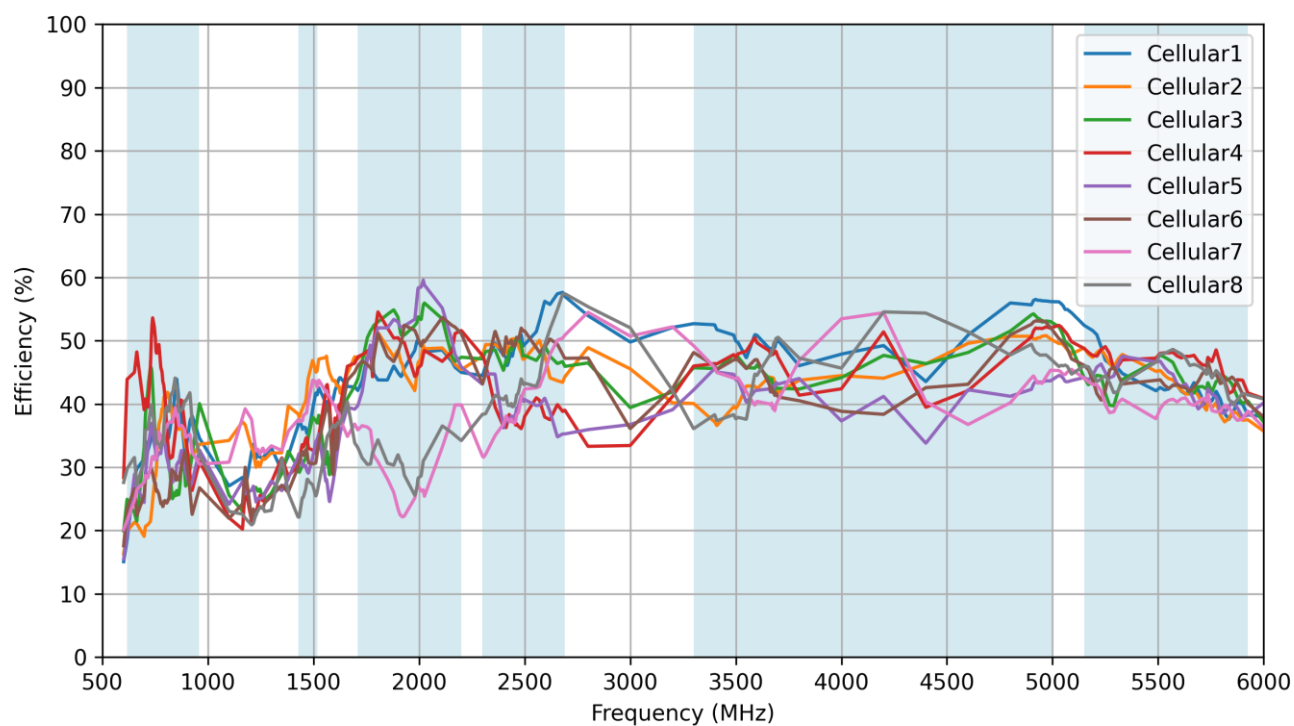




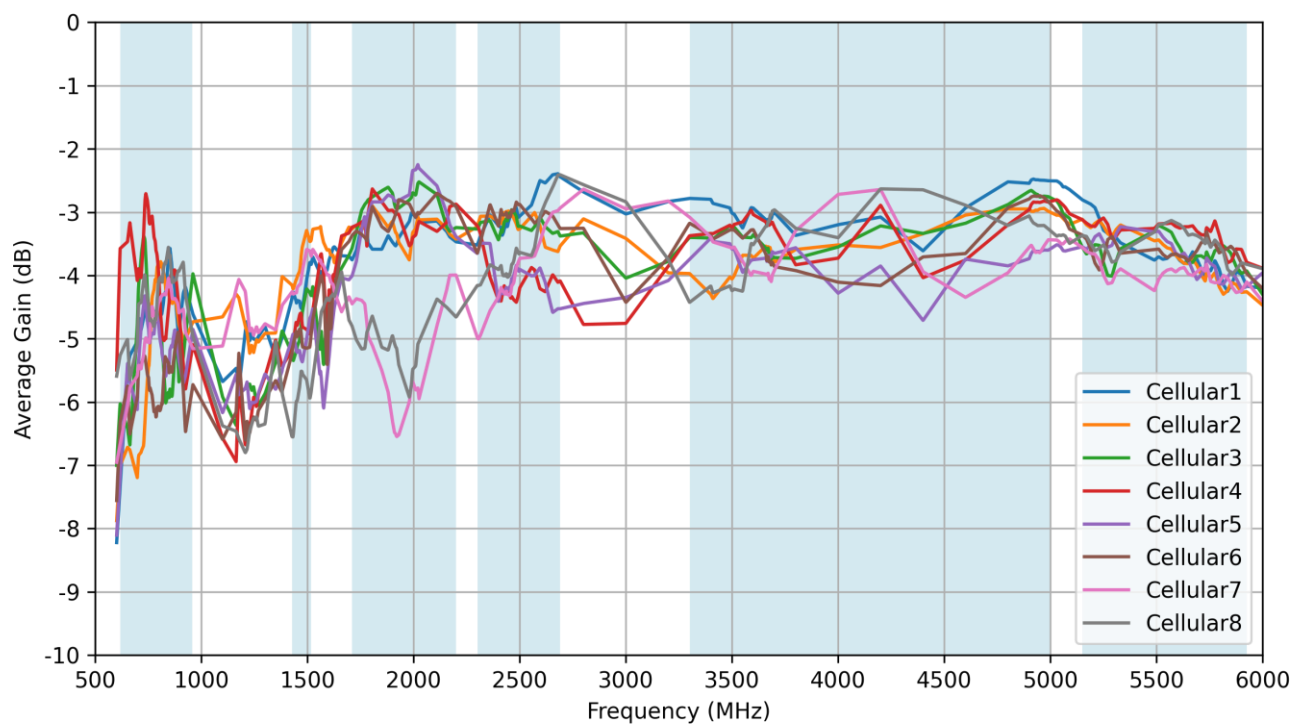
## 6.10 Isolation



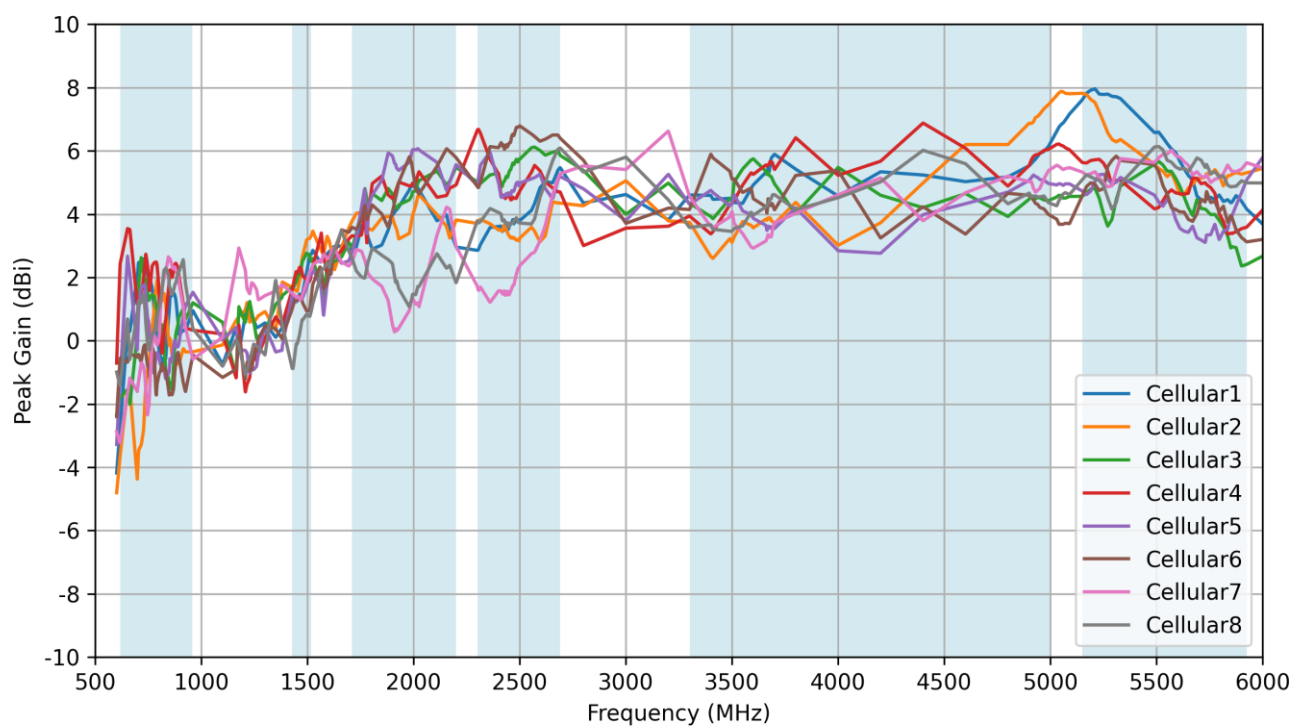
## 6.11 Cellular - Efficiency



## 6.12 Cellular - Average Gain

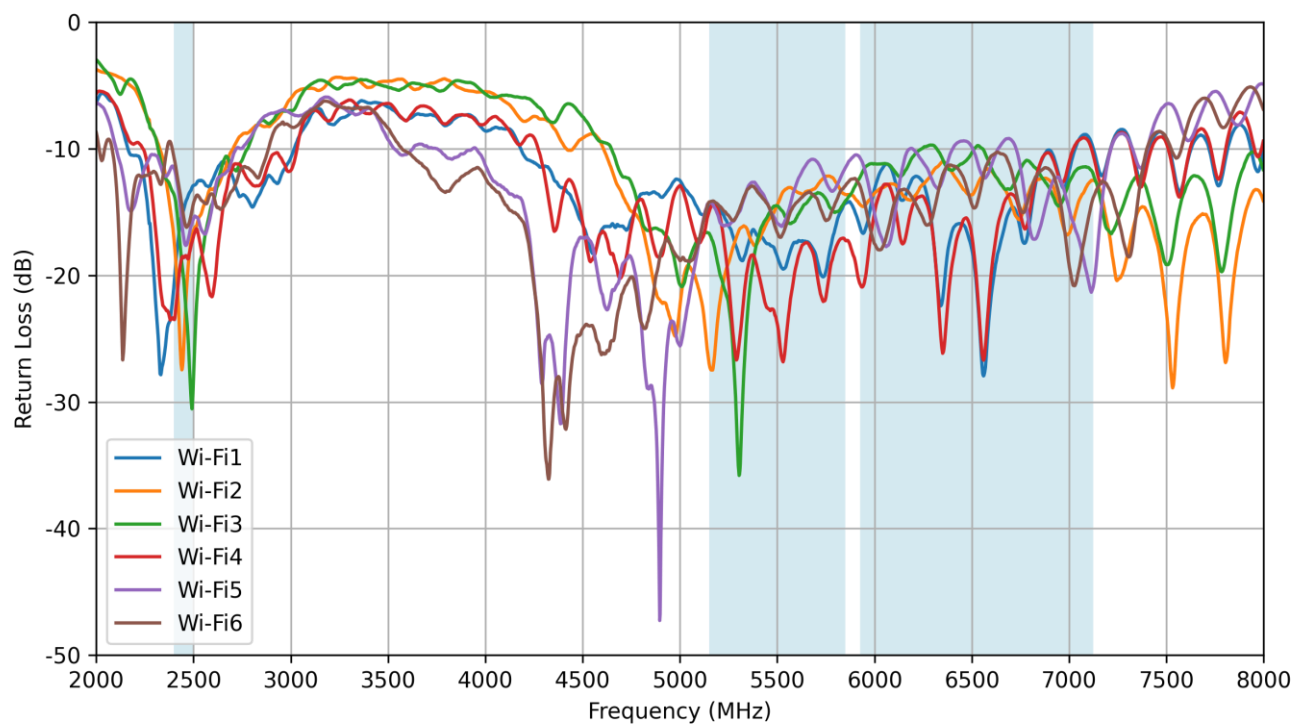


## 6.13 Cellular - Peak Gain

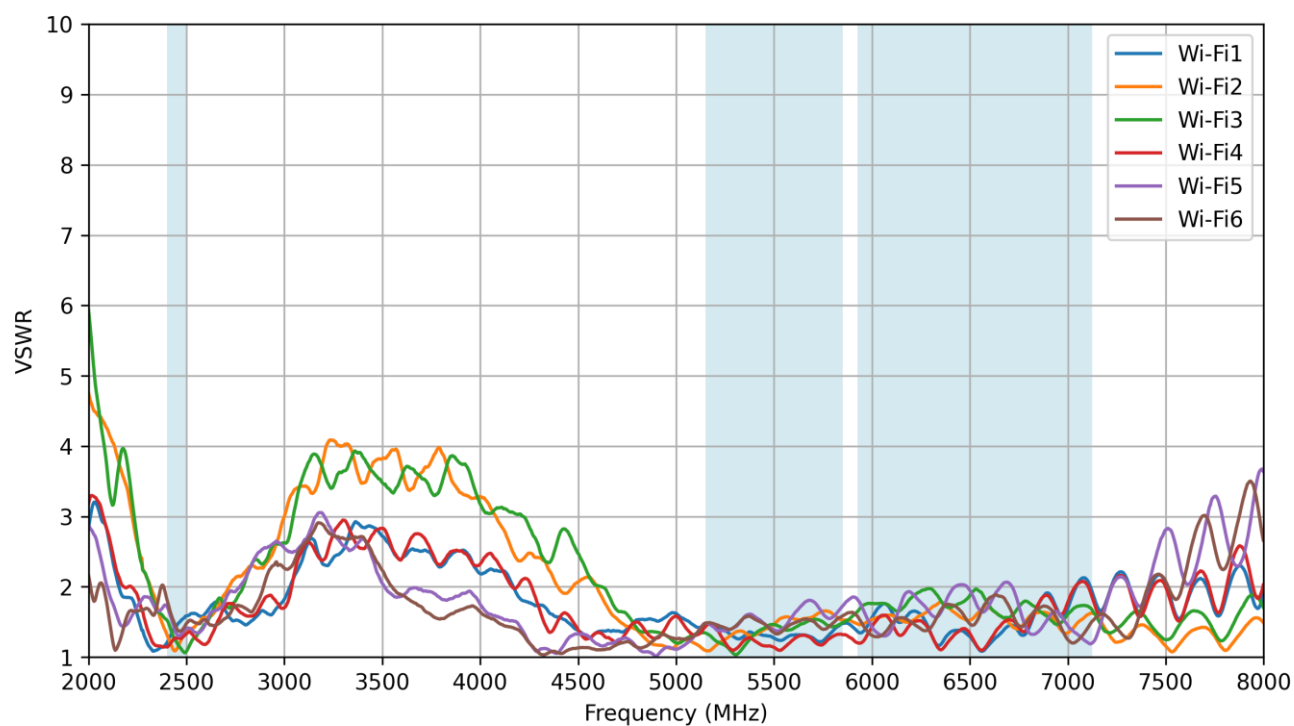




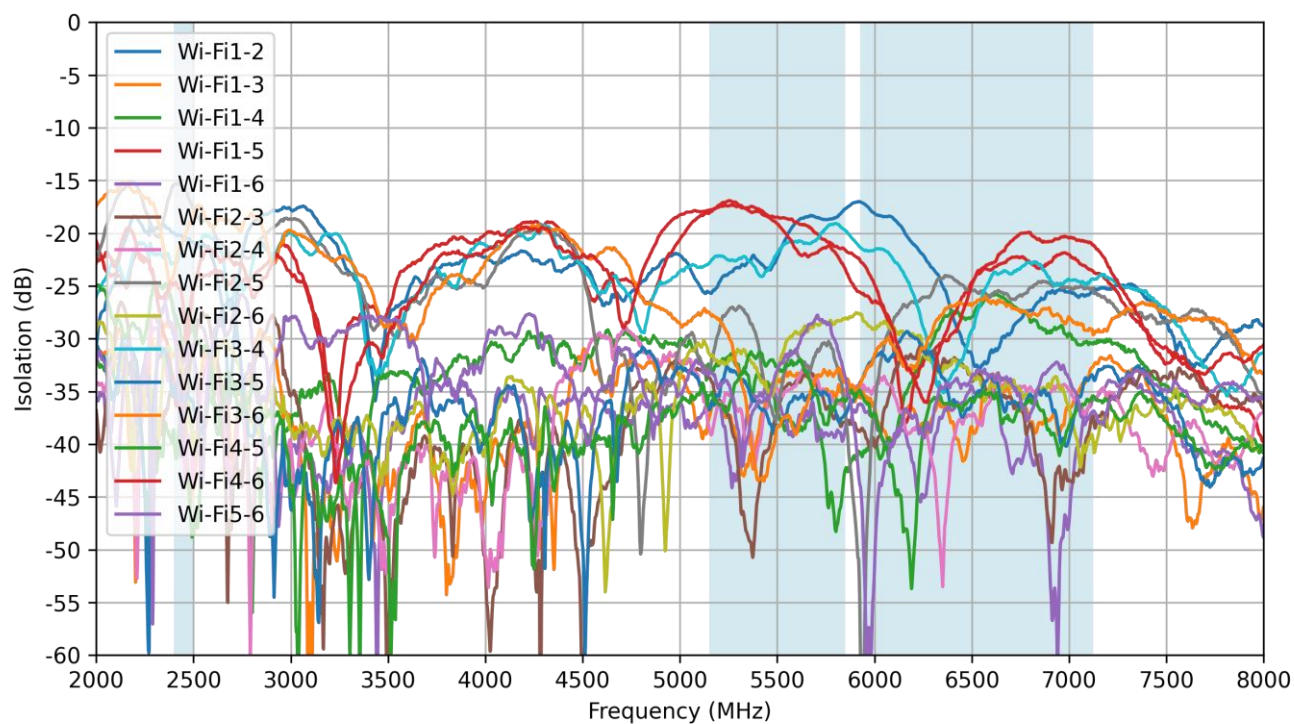
## 6.14 Wi-Fi - Return Loss



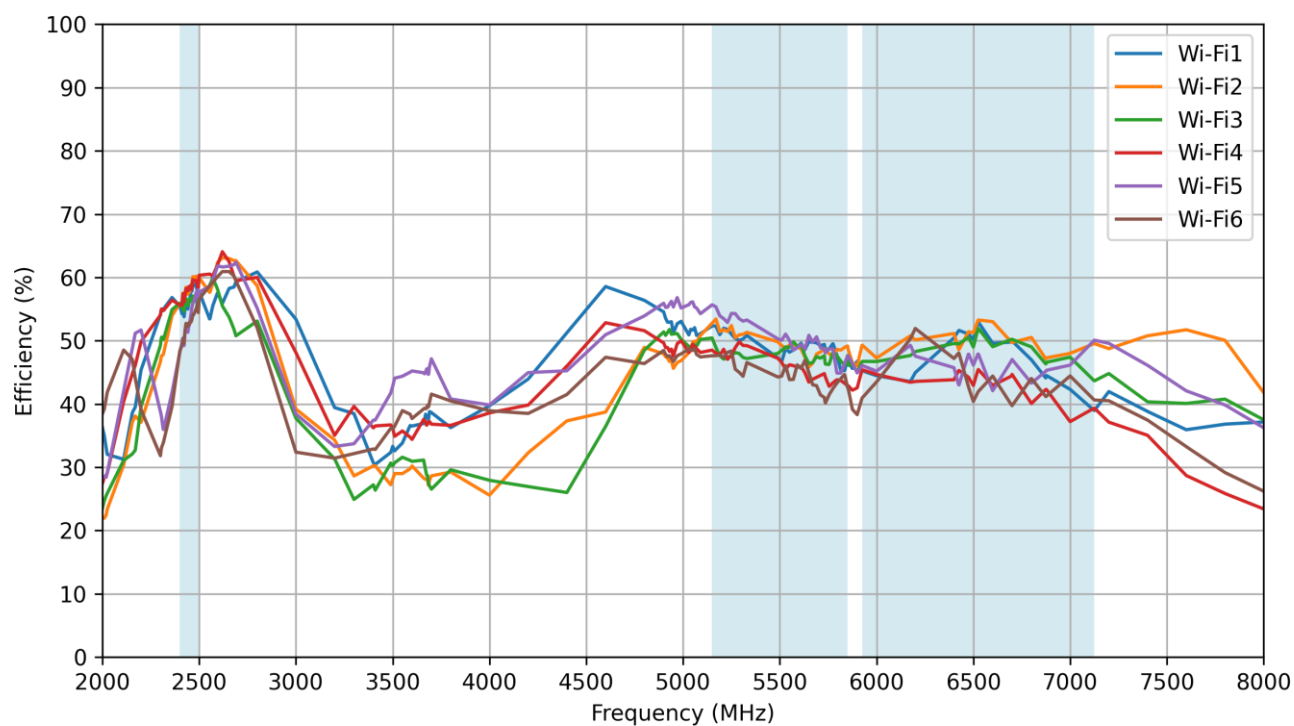
## 6.15 Wi-Fi - VSWR



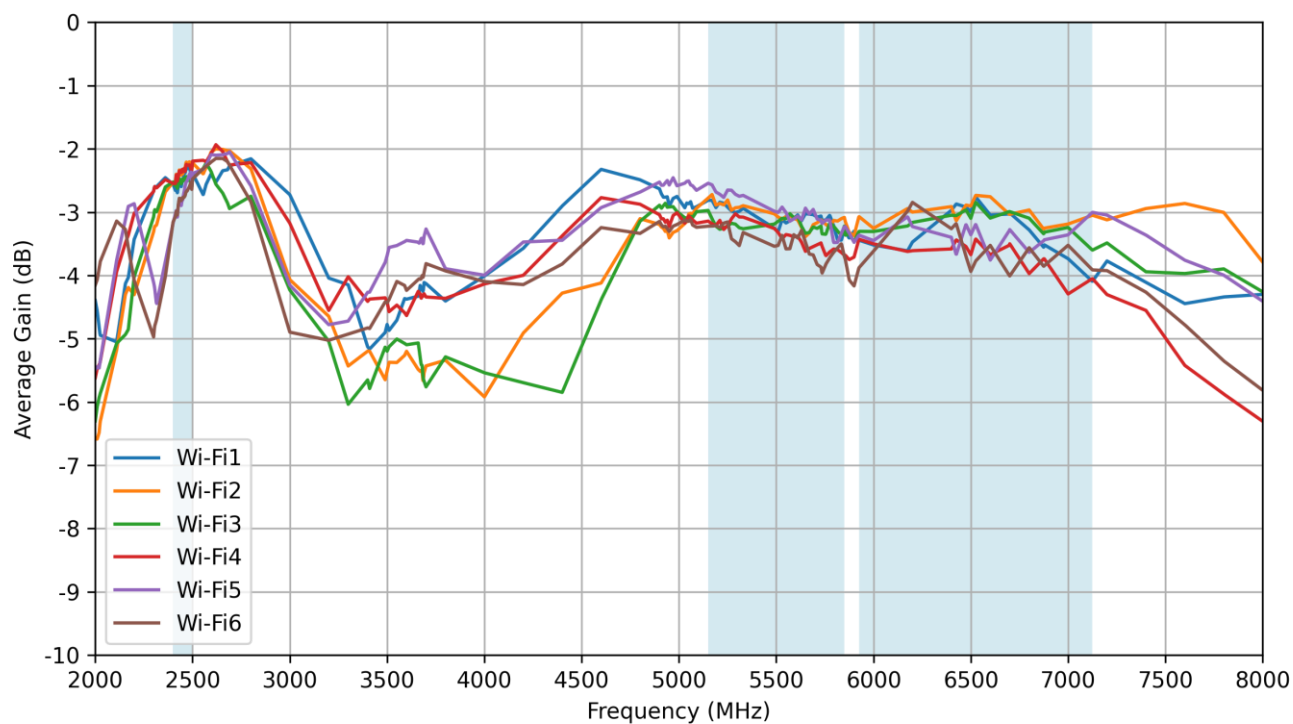
## 6.16 Wi-Fi - Isolation



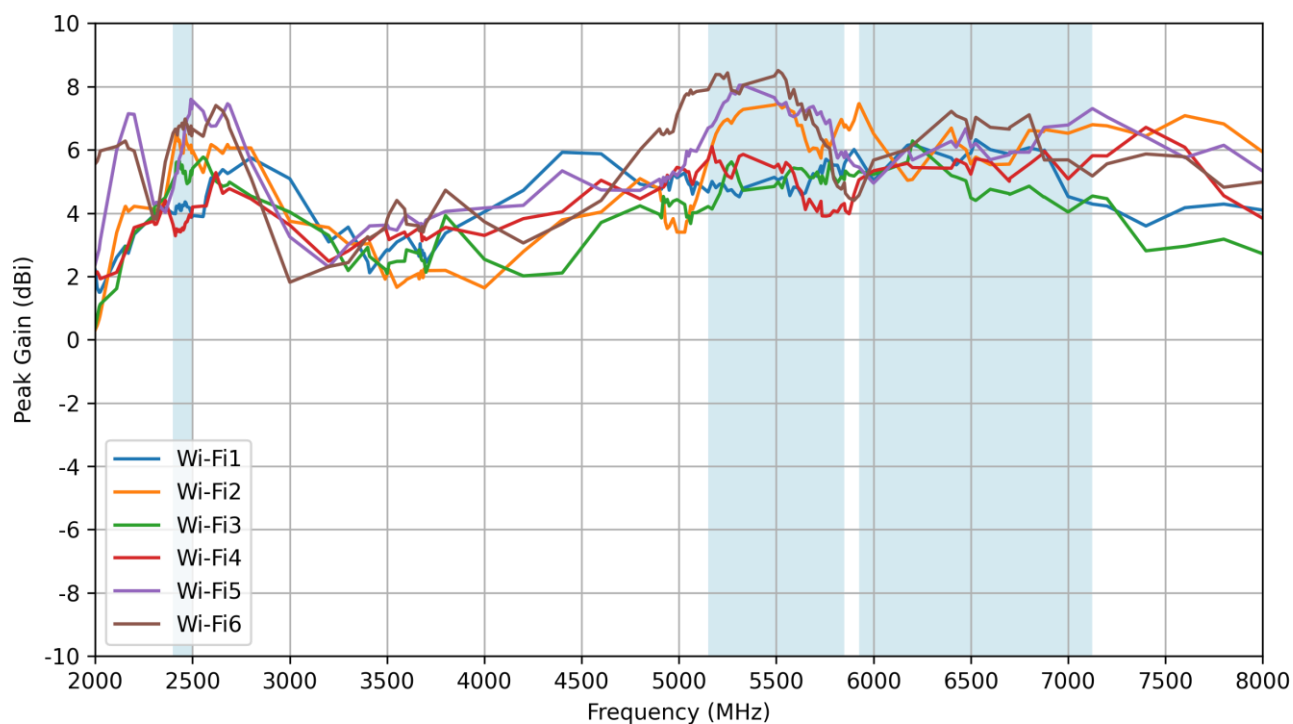
## 6.17 Wi-Fi - Efficiency



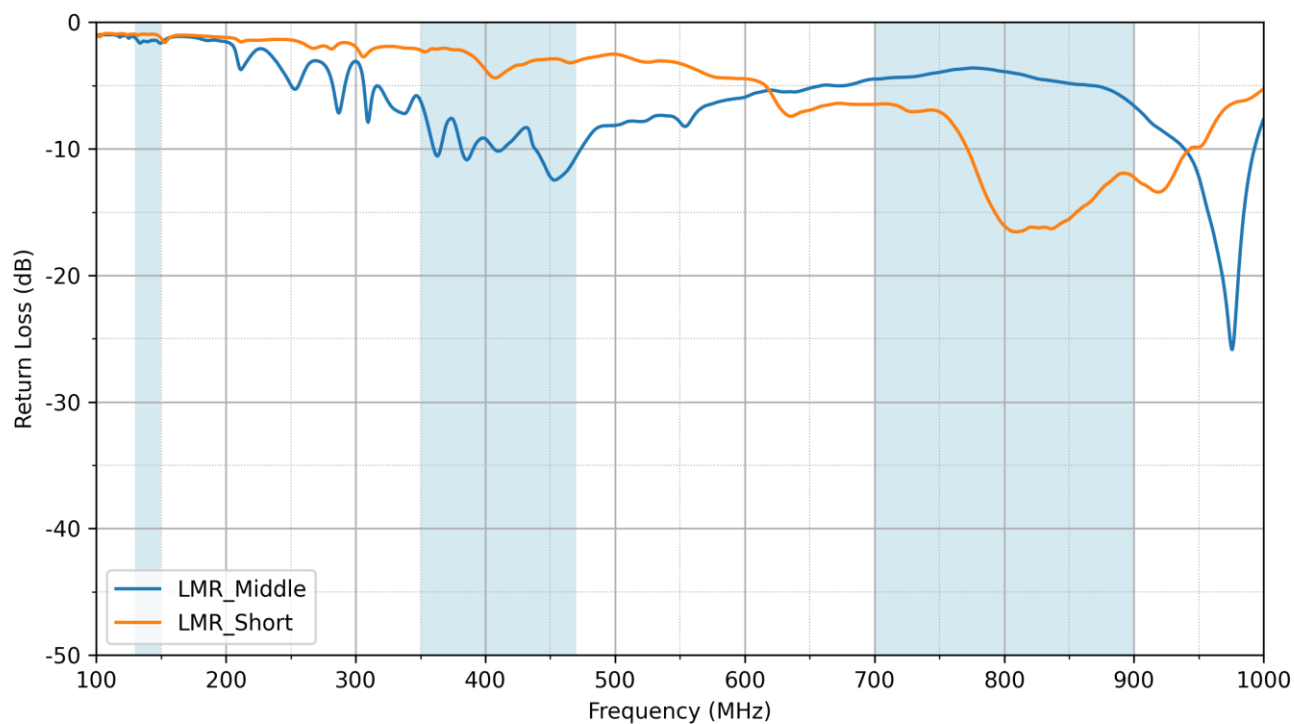
## 6.18 Wi-Fi - Average Gain



## 6.19 Wi-Fi - Peak Gain

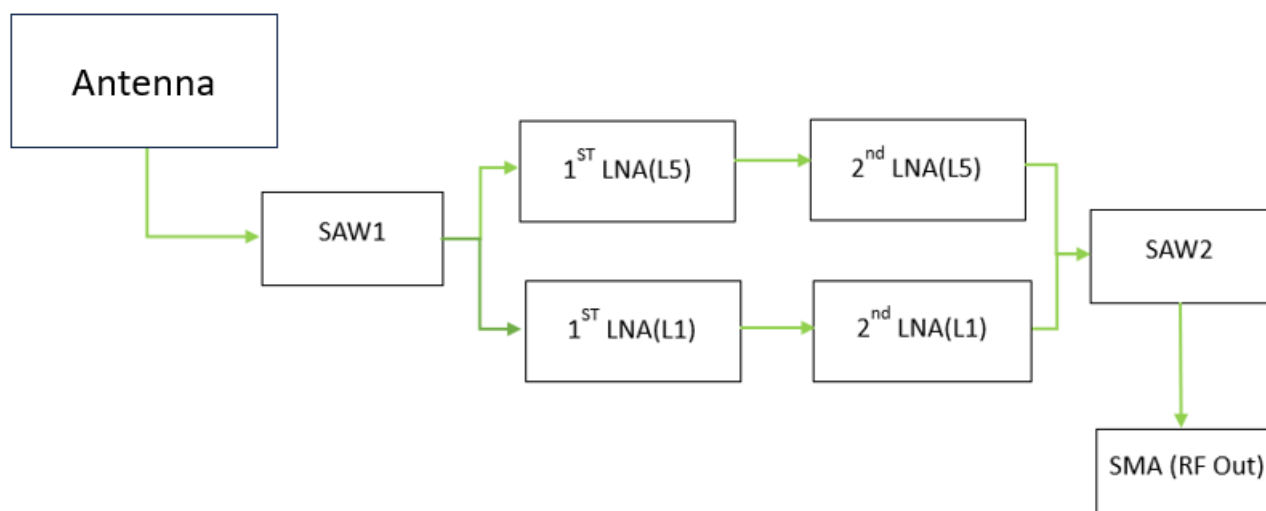


## 6.20 LMR

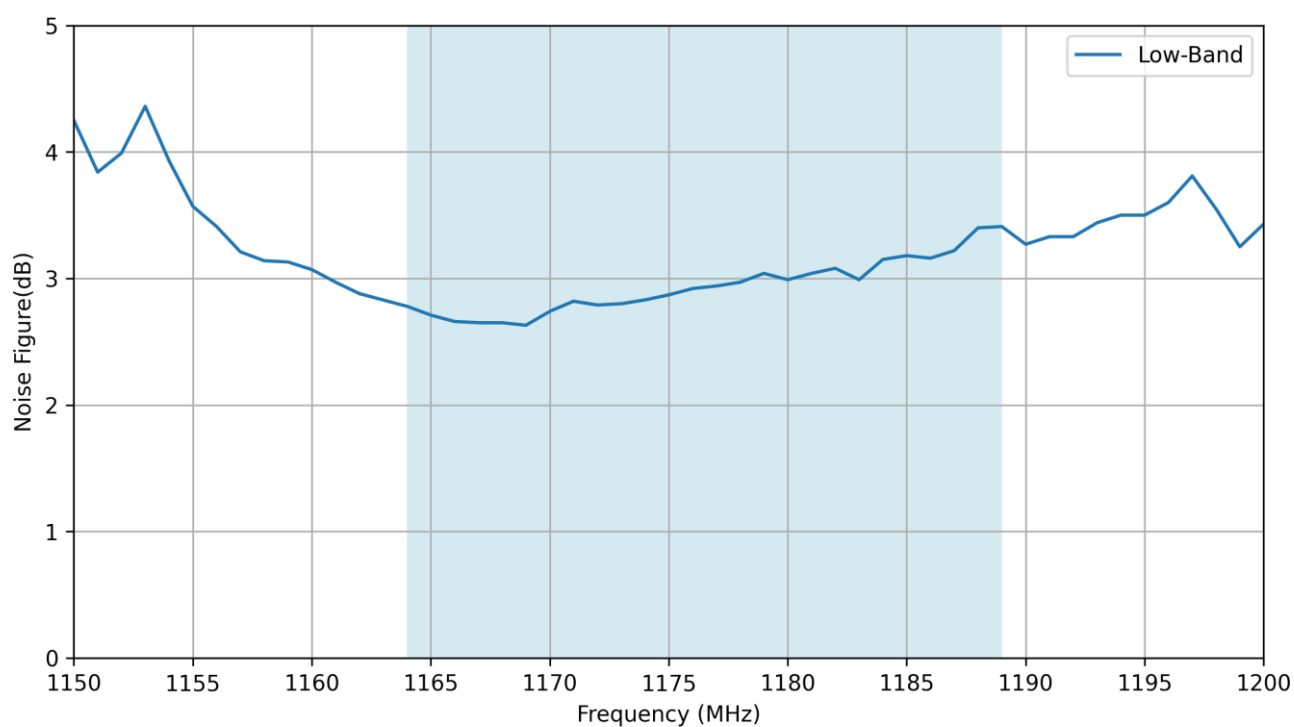


## 7. Active Antenna Characteristics

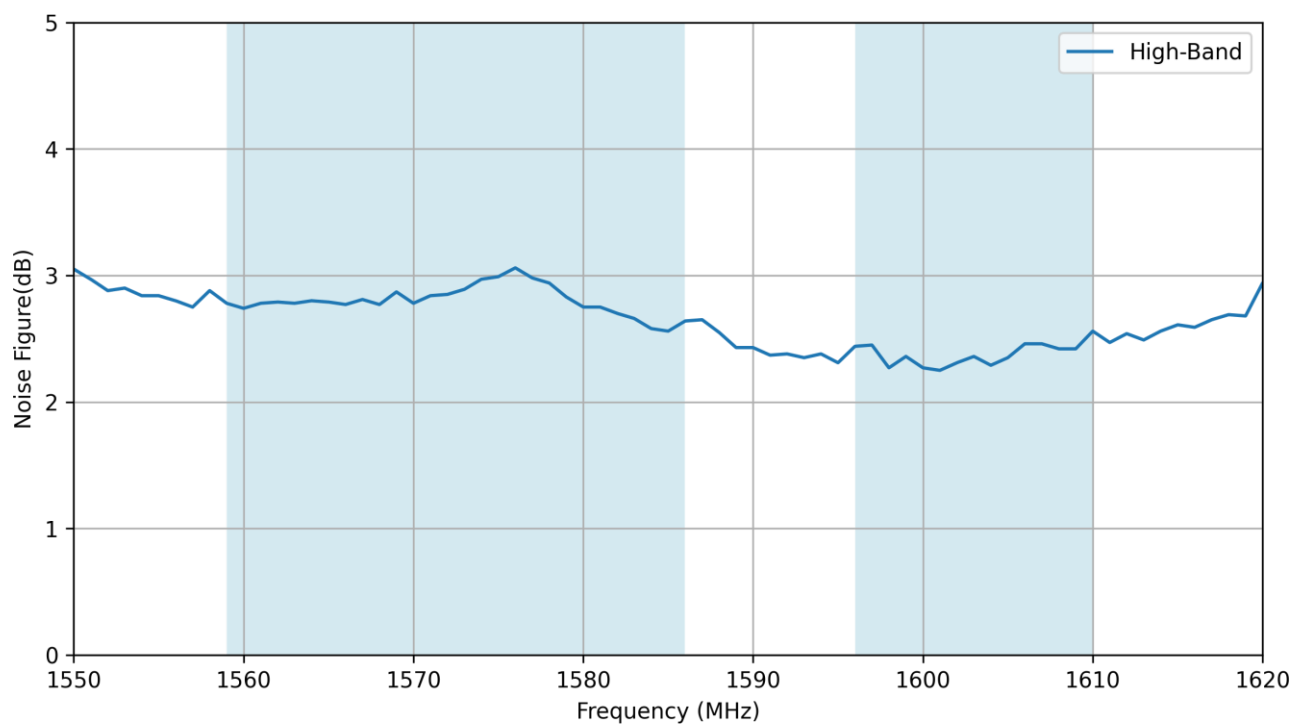
### 7.1 Block Diagram



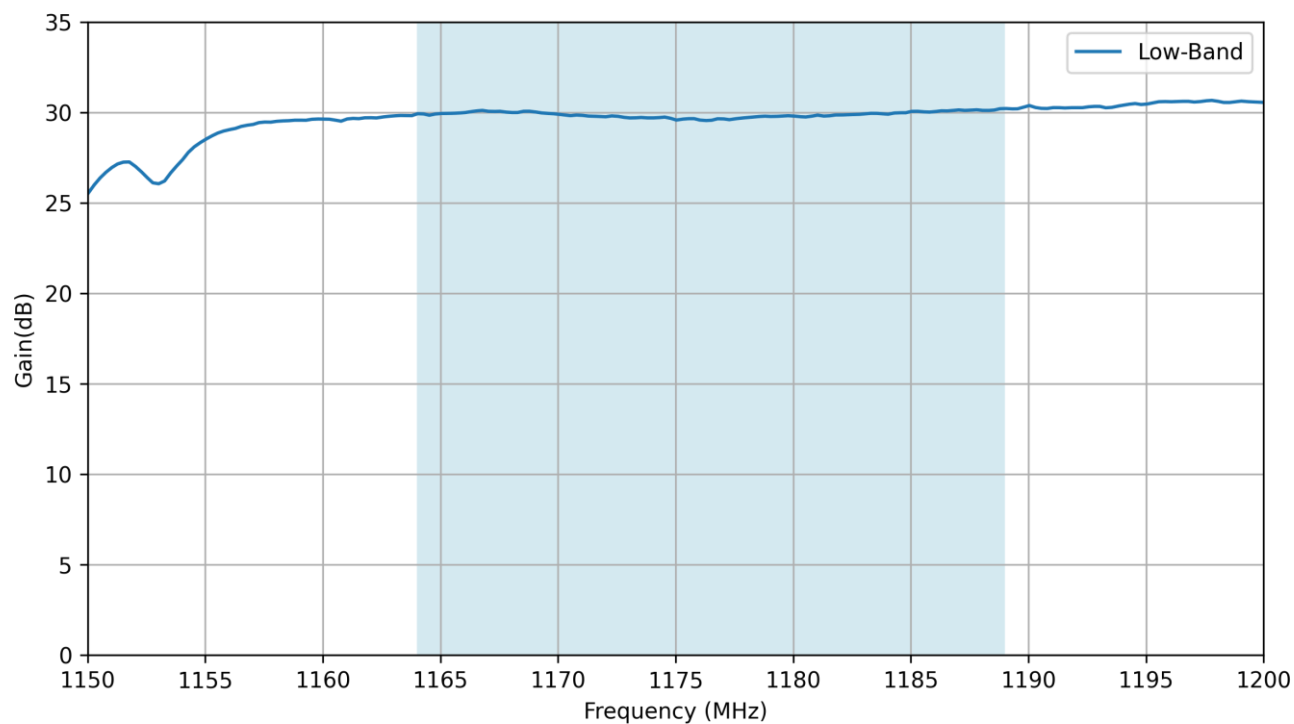
### 7.2 Noise Figure – Low-Band



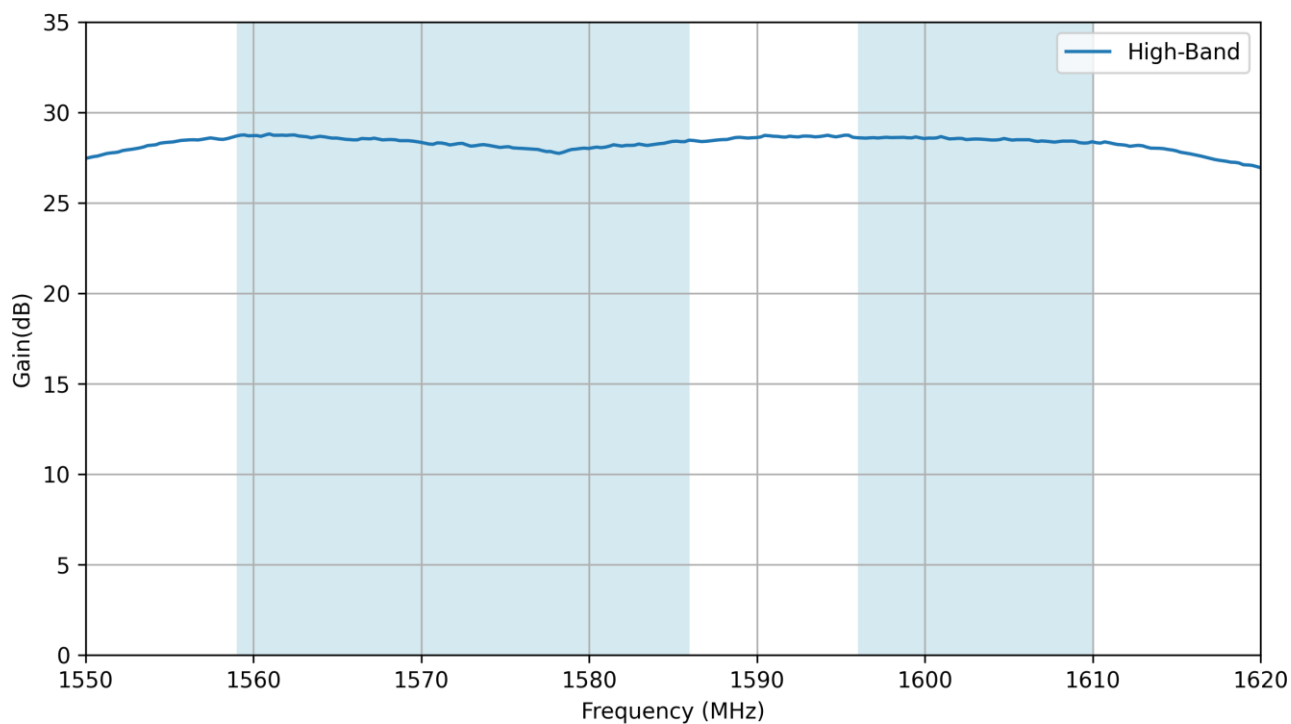
### 7.3 Noise Figure – High-Band



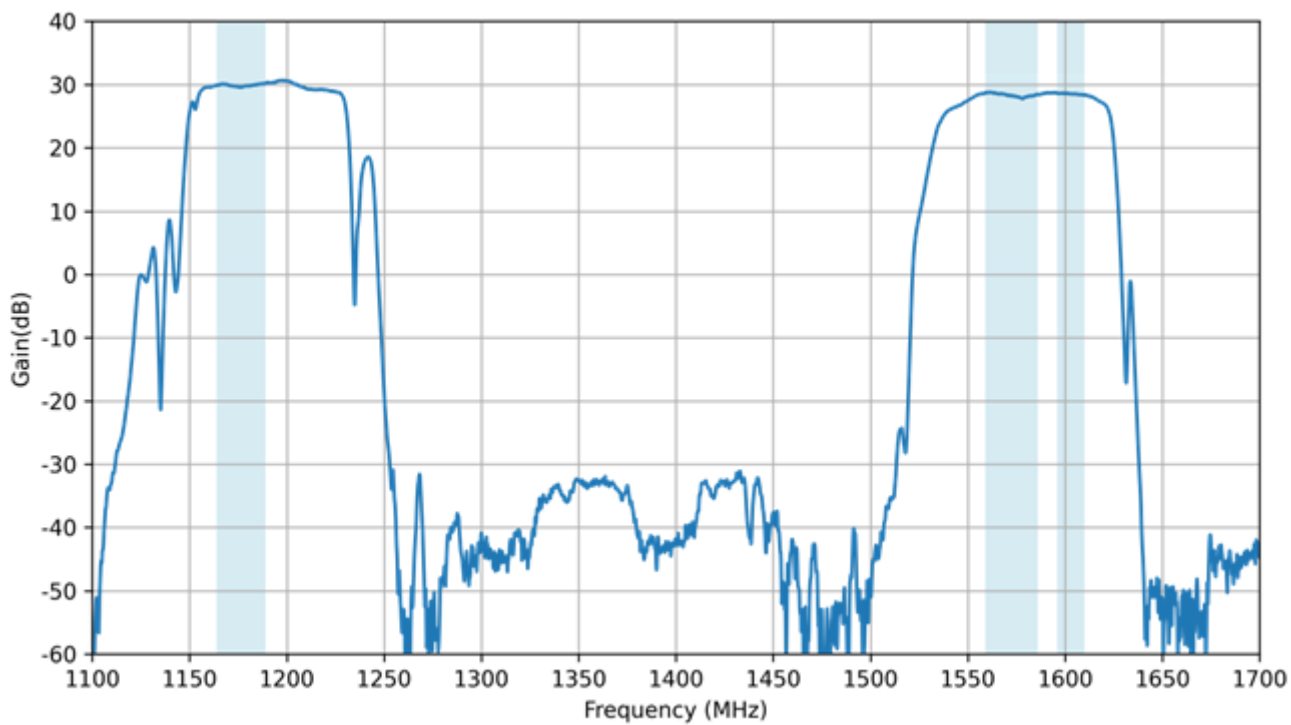
### 7.4 Gain – Low-Band



## 7.5 Gain – High-Band

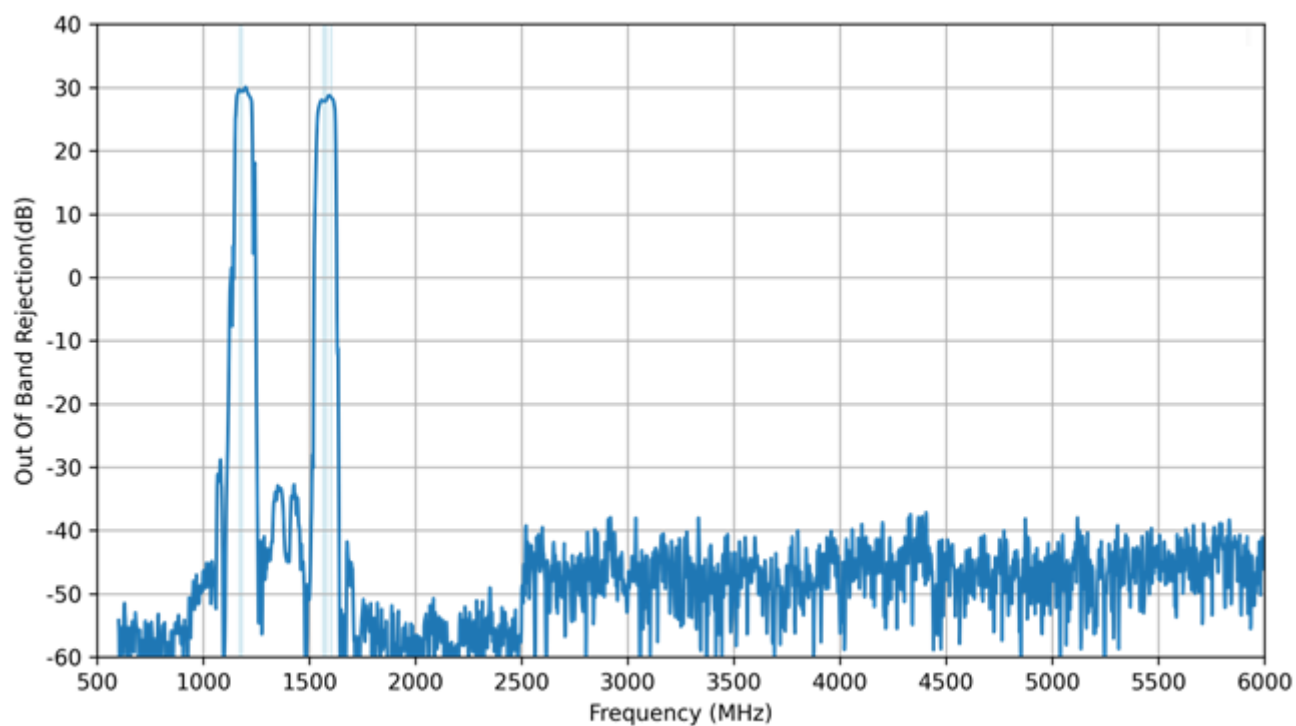


## 7.6 Gain – Wide-Band

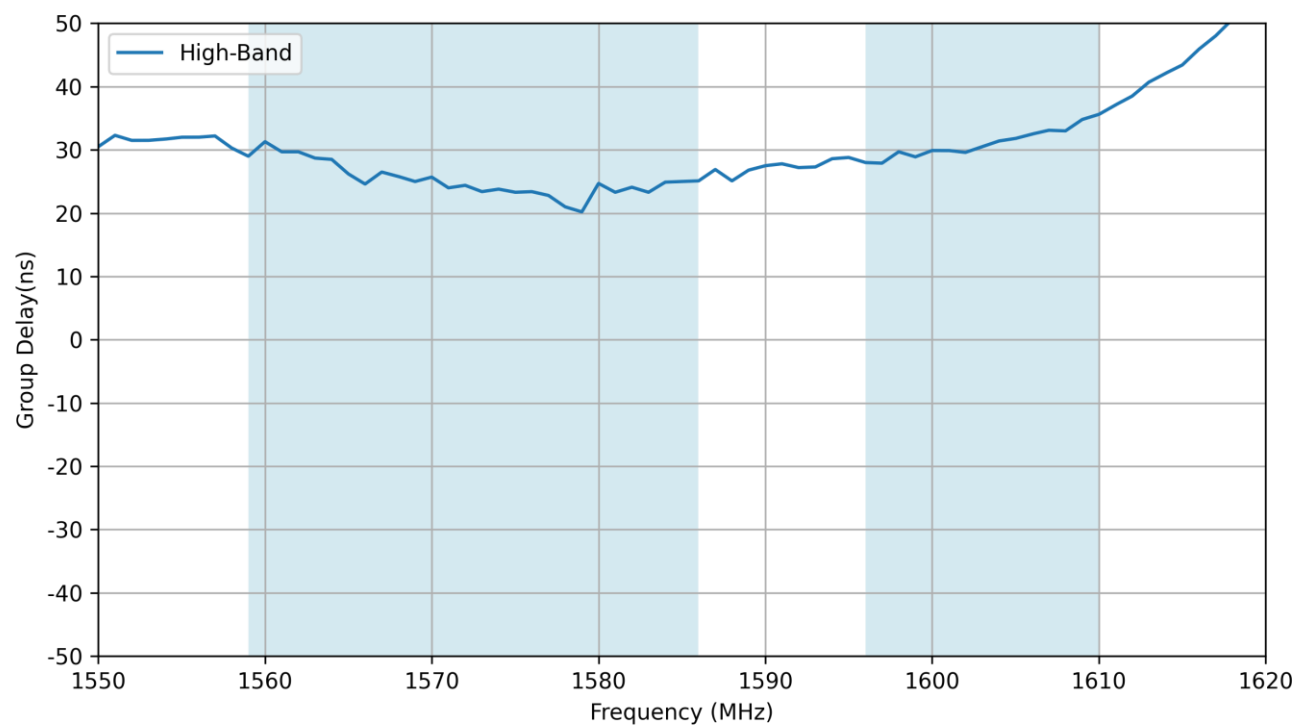




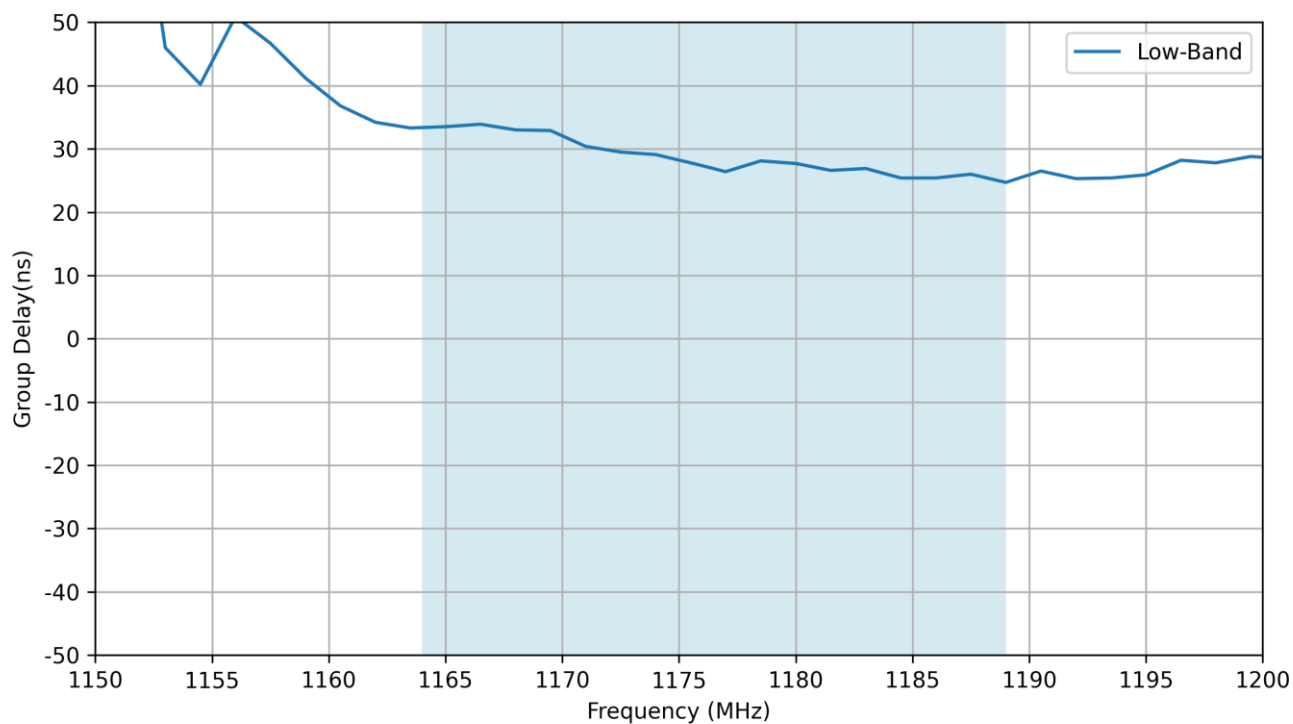
## 7.7 Out Of Band Rejection



## 7.8 Group Delay - High-Band

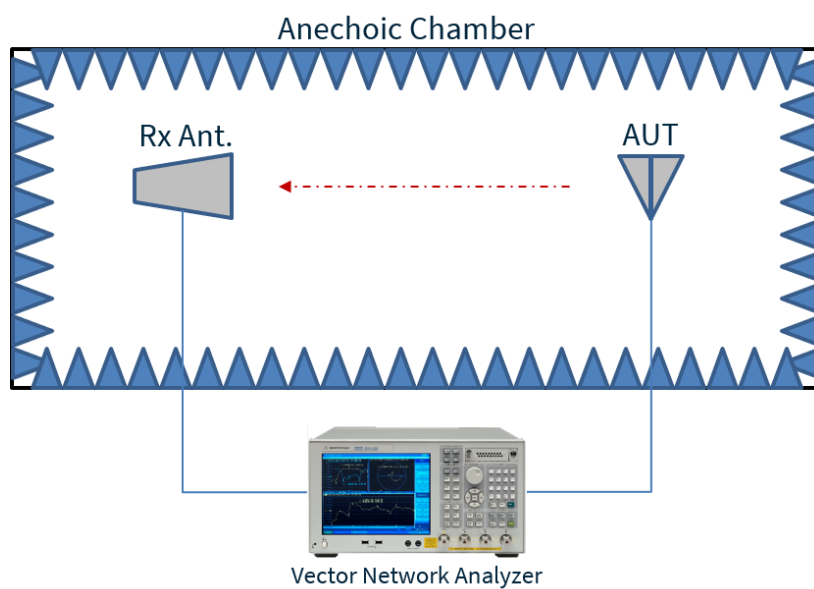


## 7.9 Group Delay - Low-Band



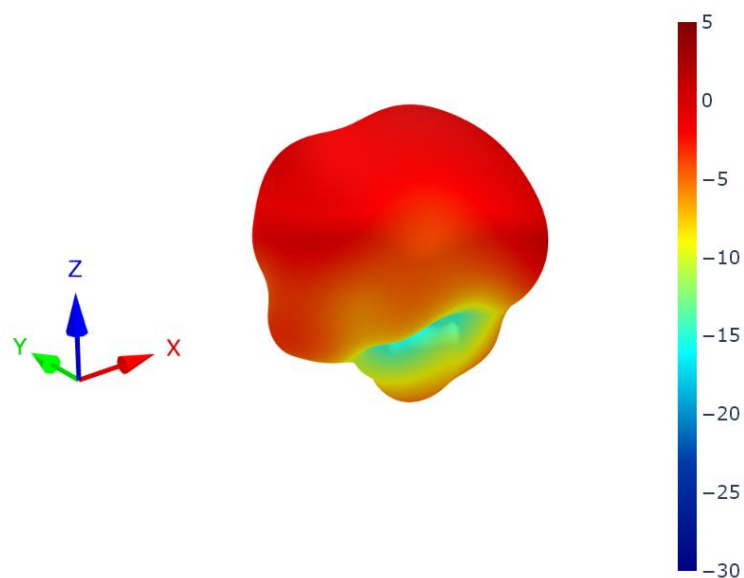
## 8. Radiation Patterns

### 8.1 Test Setup

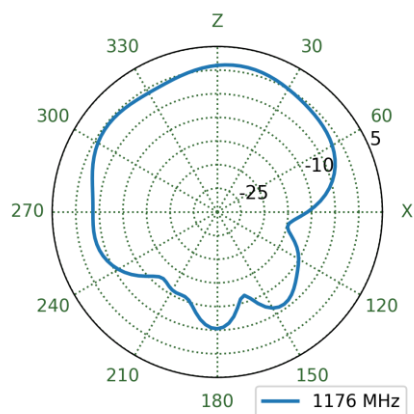


Chamber Test Set-up

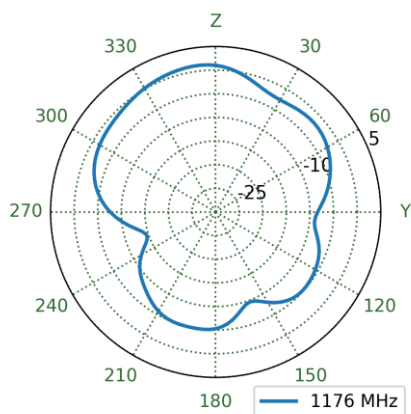
## 8.2 GNSS Patterns at 1176 MHz



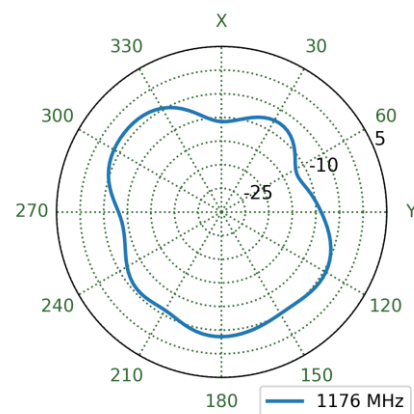
XZ Plane



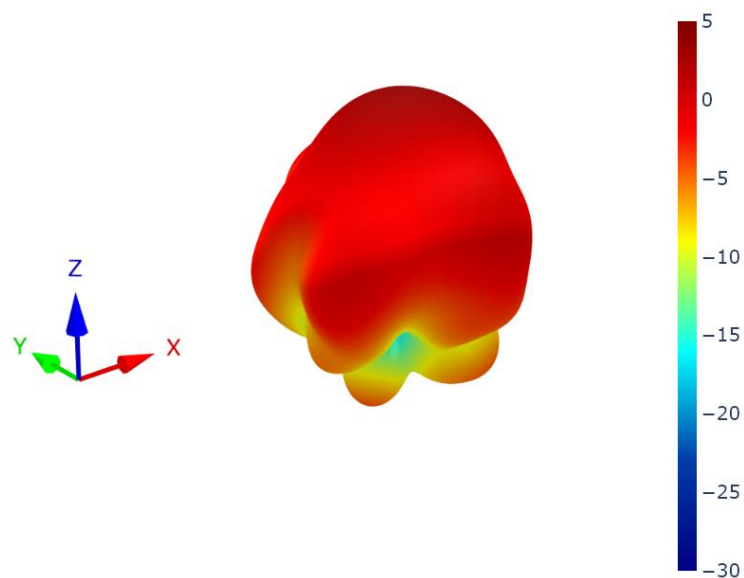
YZ Plane



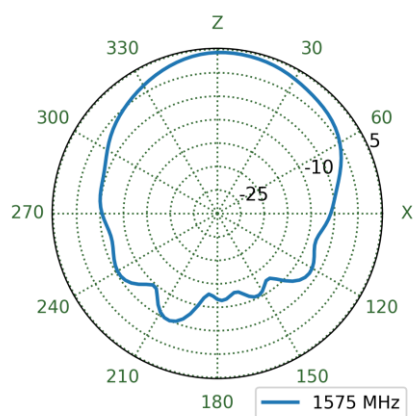
XY Plane



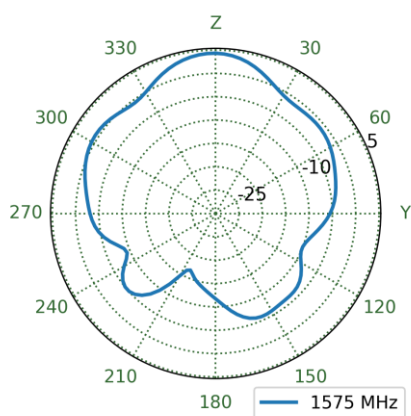
## 8.3 GNSS Patterns at 1575 MHz



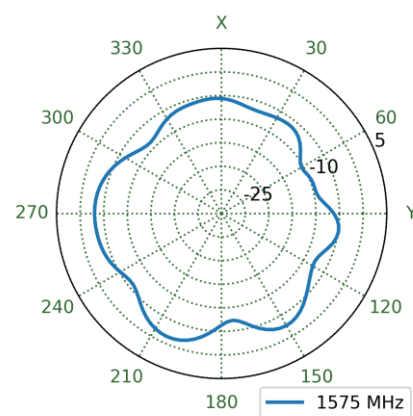
XZ Plane



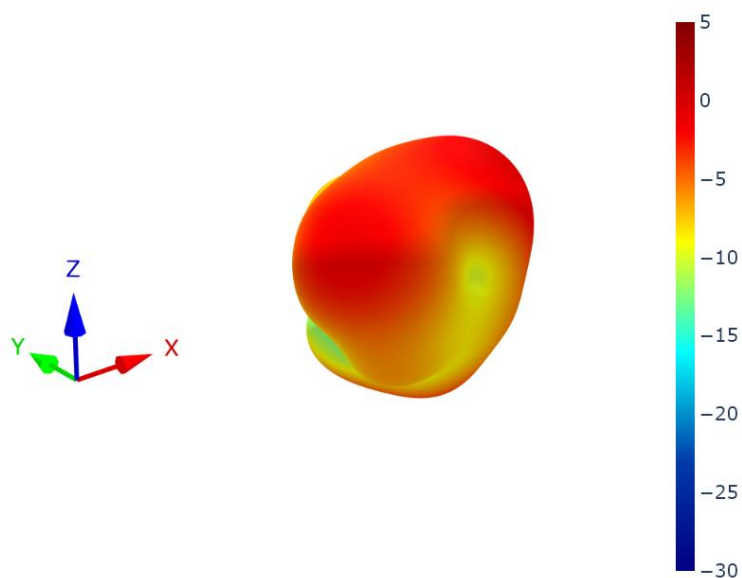
YZ Plane



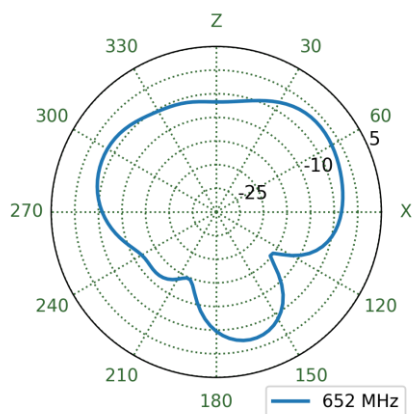
XY Plane



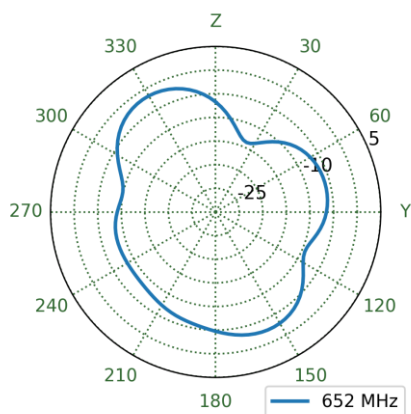
## 8.4 Cellular 1 Patterns at 652 MHz



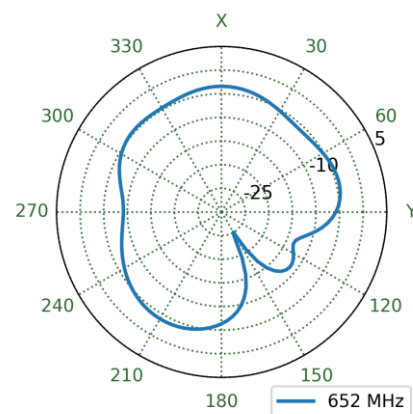
XZ Plane



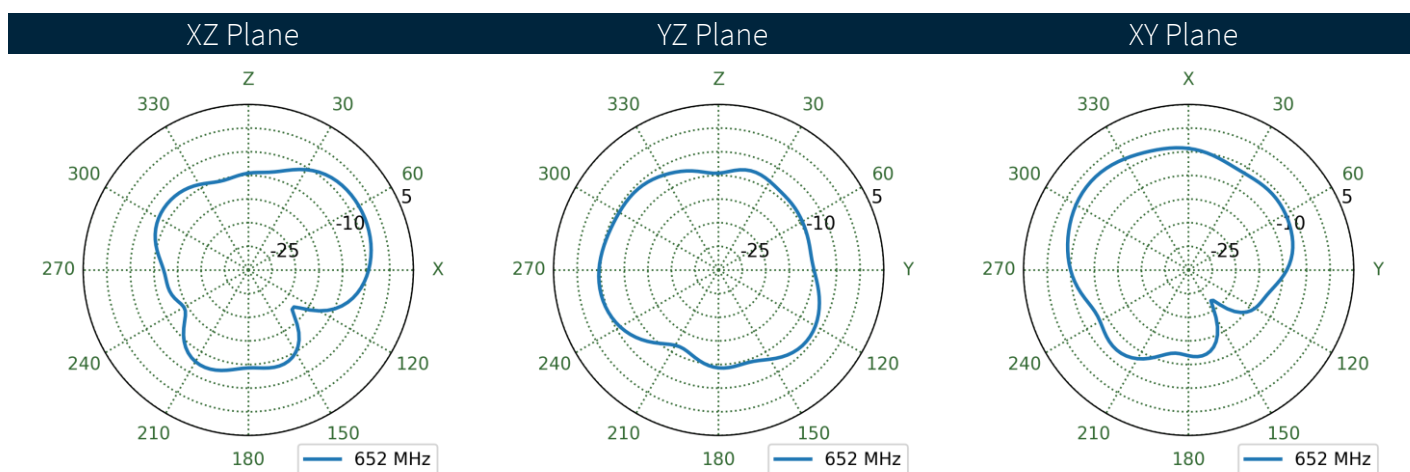
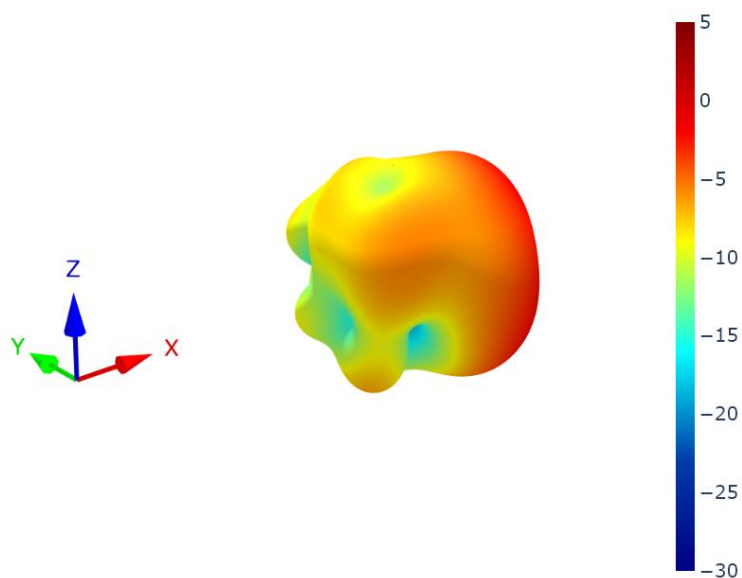
YZ Plane



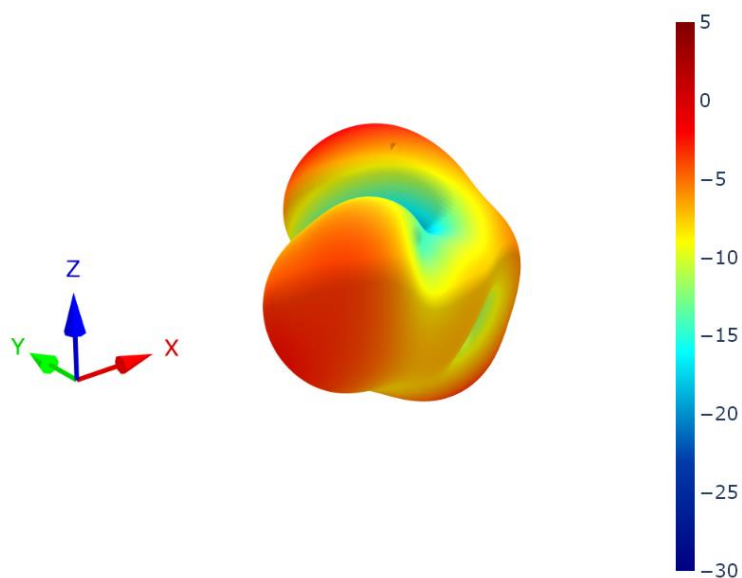
XY Plane



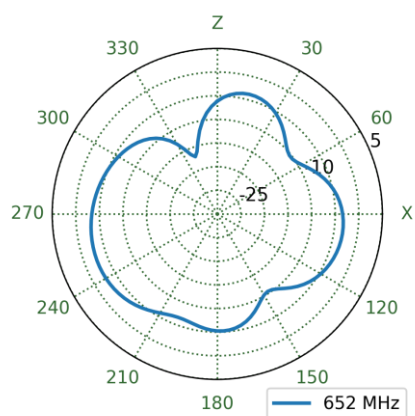
## 8.5 Cellular 2 Patterns at 652 MHz



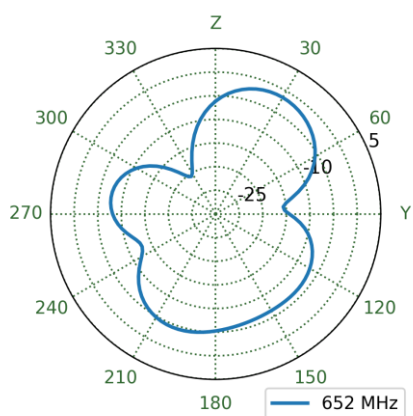
## 8.6 Cellular 3 Patterns at 652 MHz



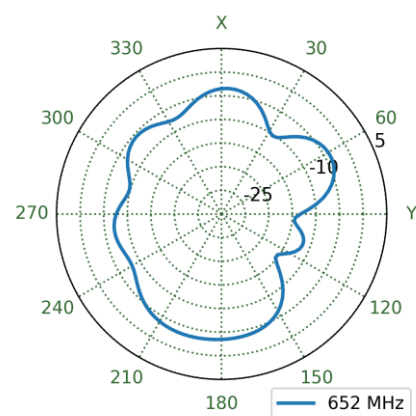
XZ Plane



YZ Plane

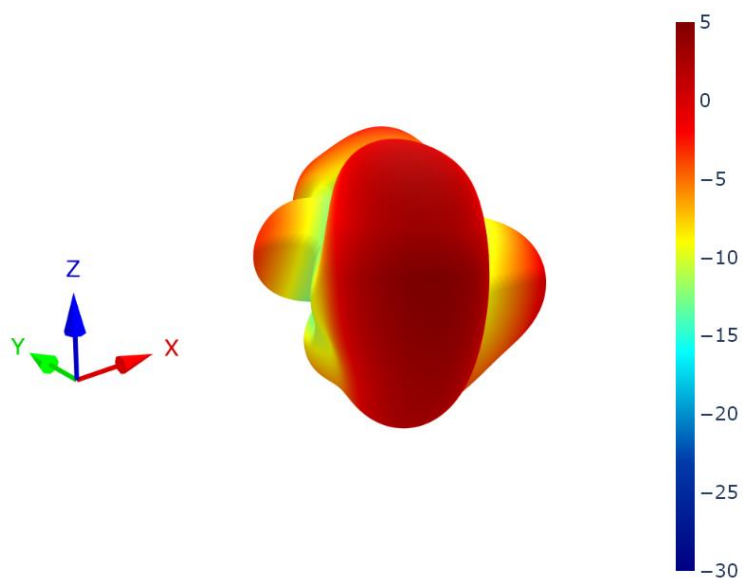


XY Plane

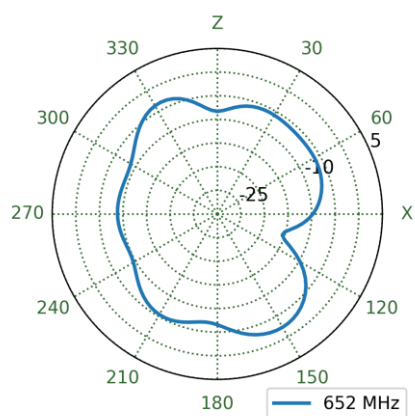




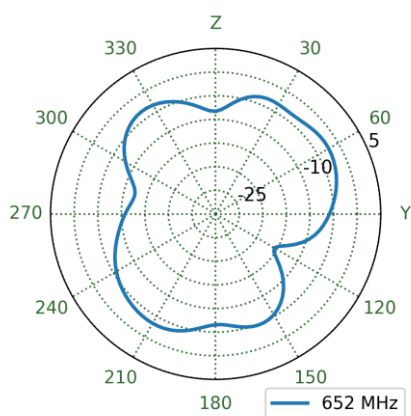
## 8.7 Cellular 4 Patterns at 652 MHz



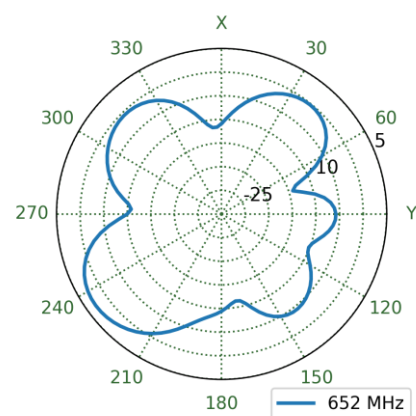
XZ Plane



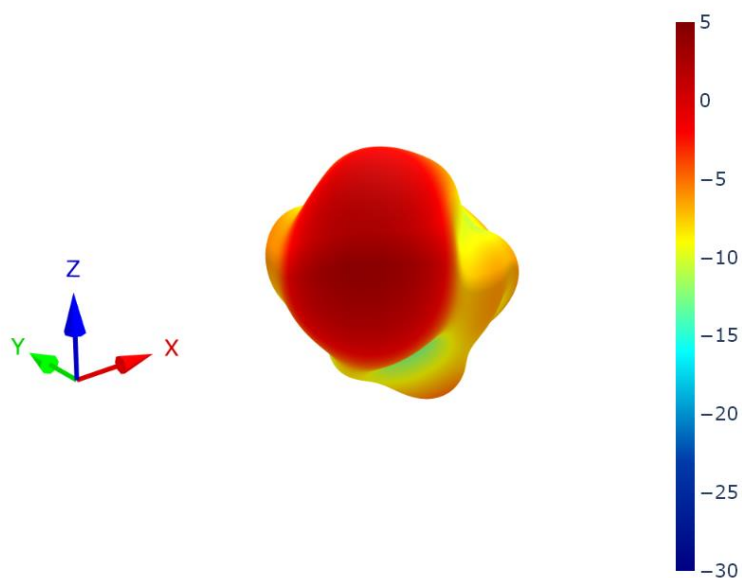
YZ Plane



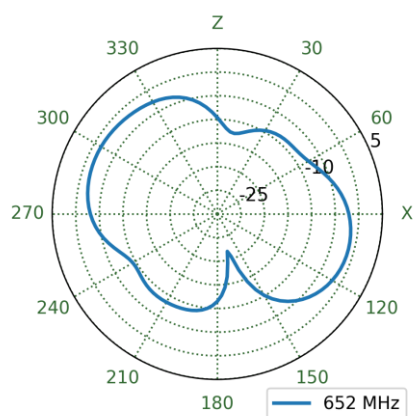
XY Plane



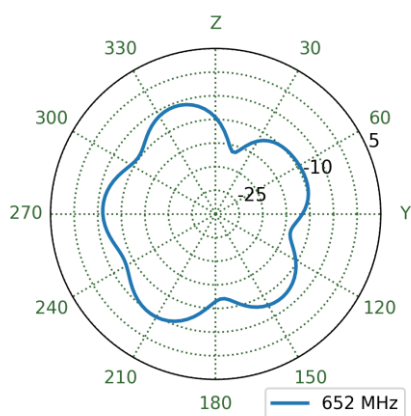
## 8.8 Cellular 5 Patterns at 652 MHz



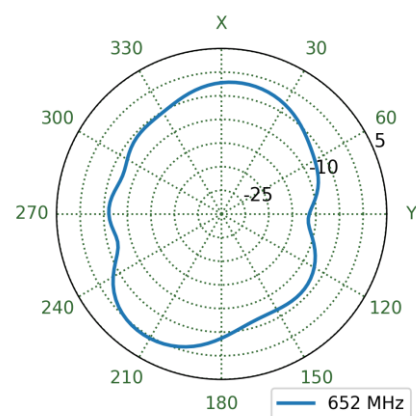
XZ Plane



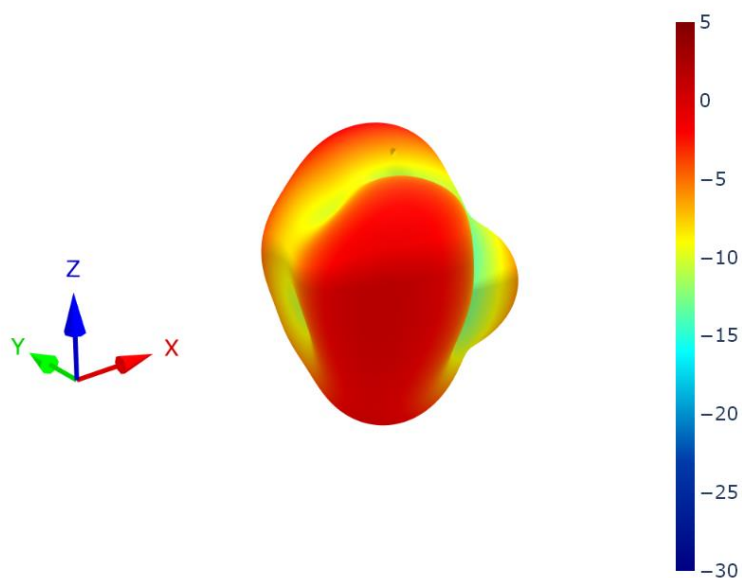
YZ Plane



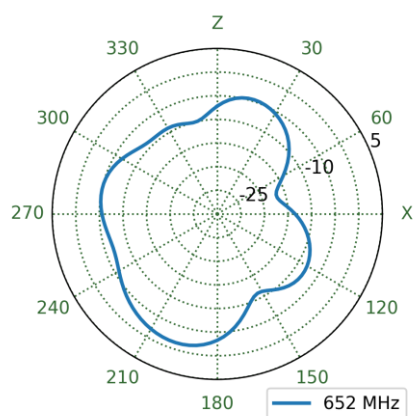
XY Plane



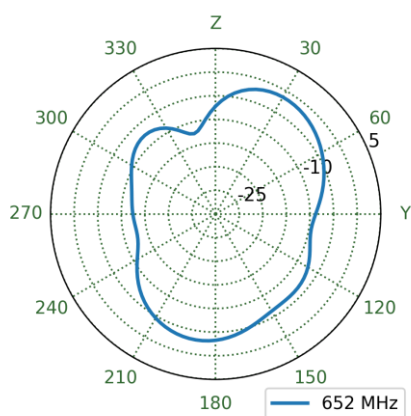
## 8.9 Cellular 6 Patterns at 652 MHz



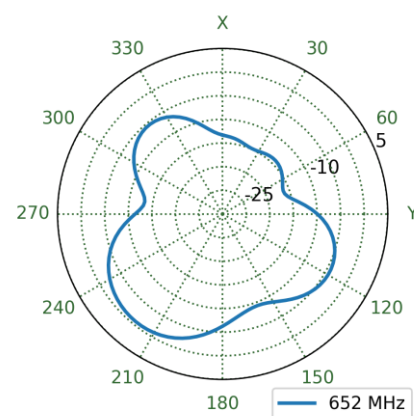
XZ Plane



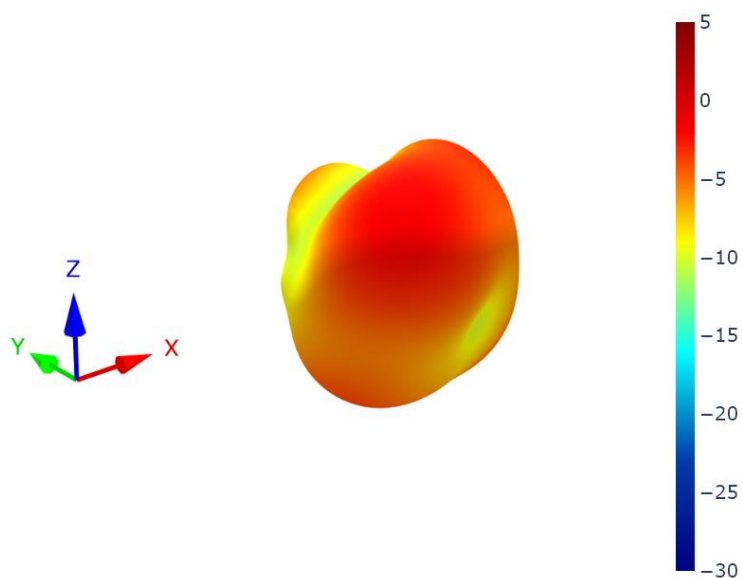
YZ Plane



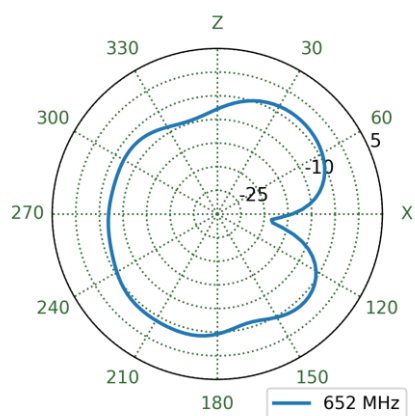
XY Plane



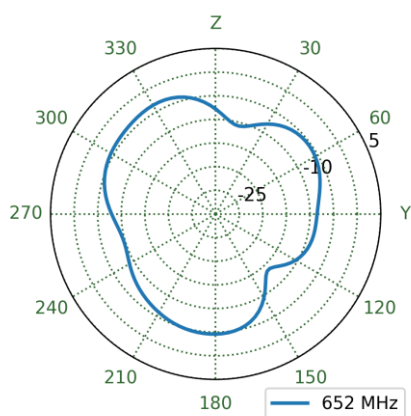
## 8.10 Cellular 7 Patterns at 652 MHz



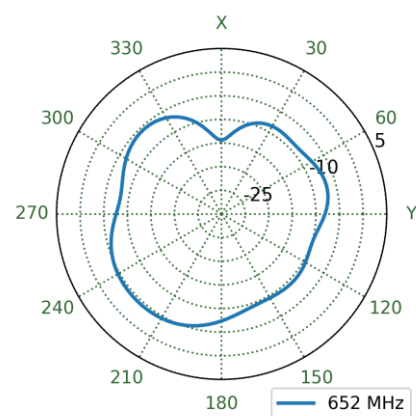
XZ Plane



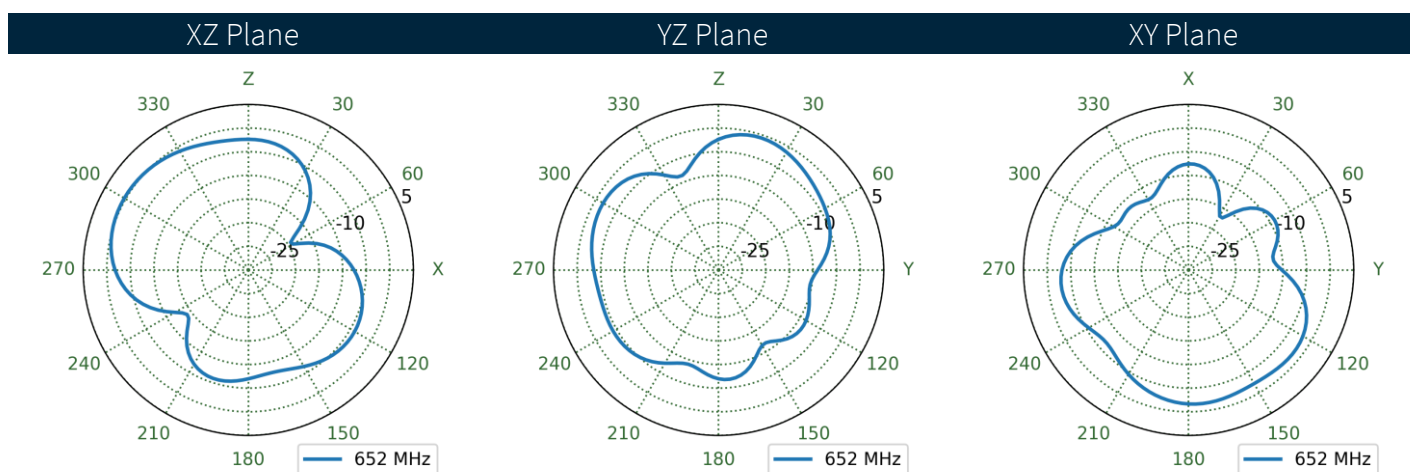
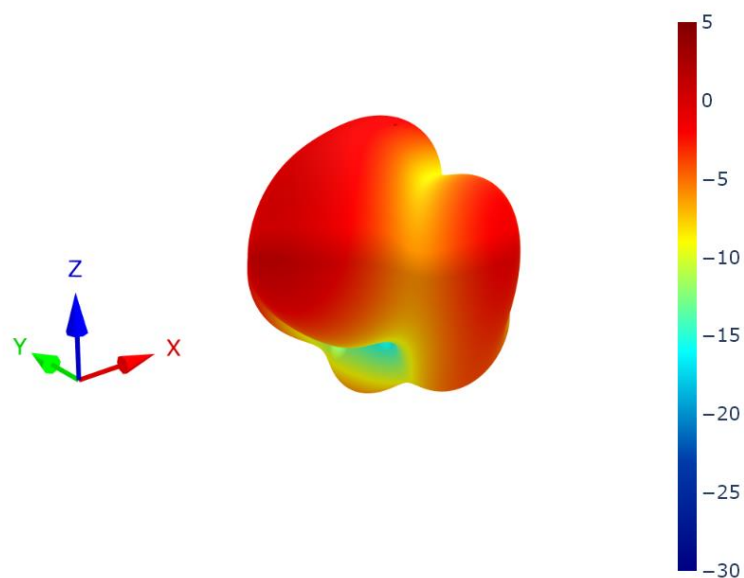
YZ Plane



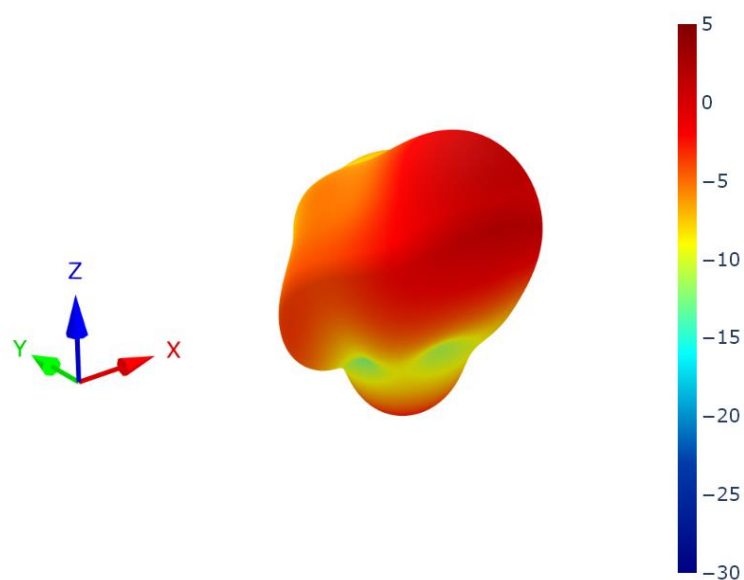
XY Plane



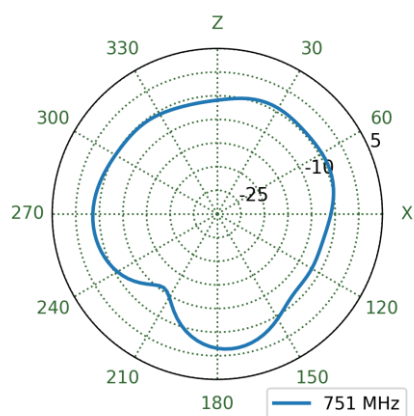
## 8.11 Cellular 8 Patterns at 652 MHz



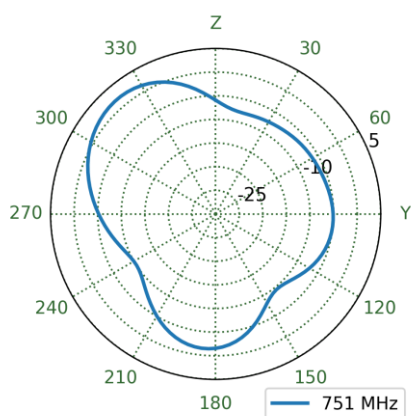
## 8.12 Cellular 1 Patterns at 751 MHz



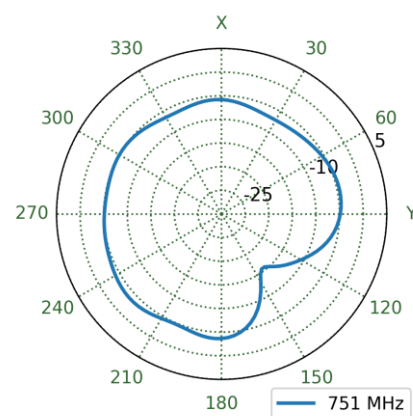
XZ Plane



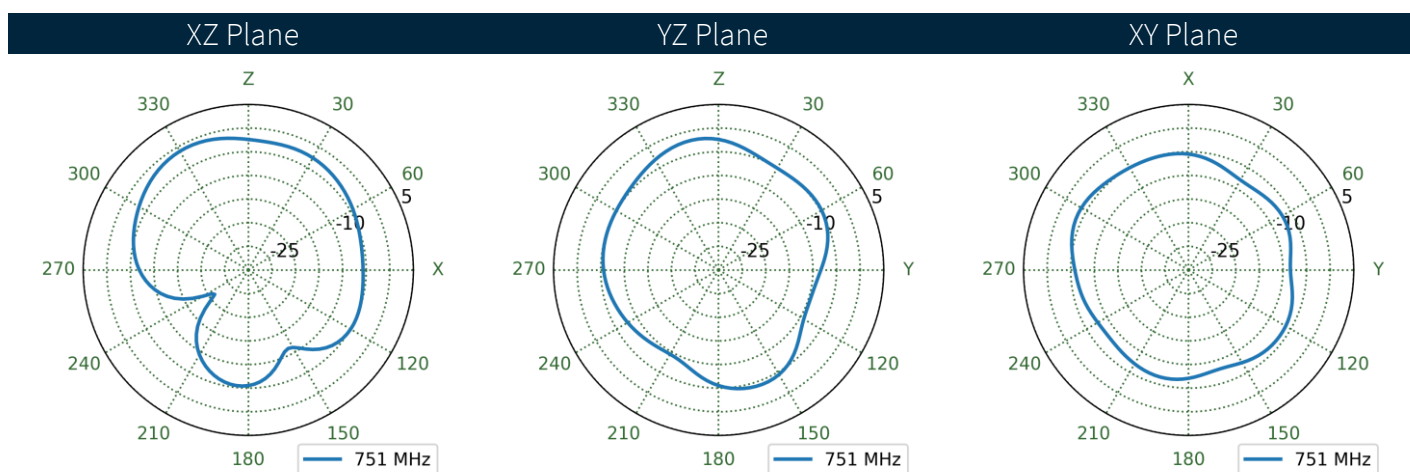
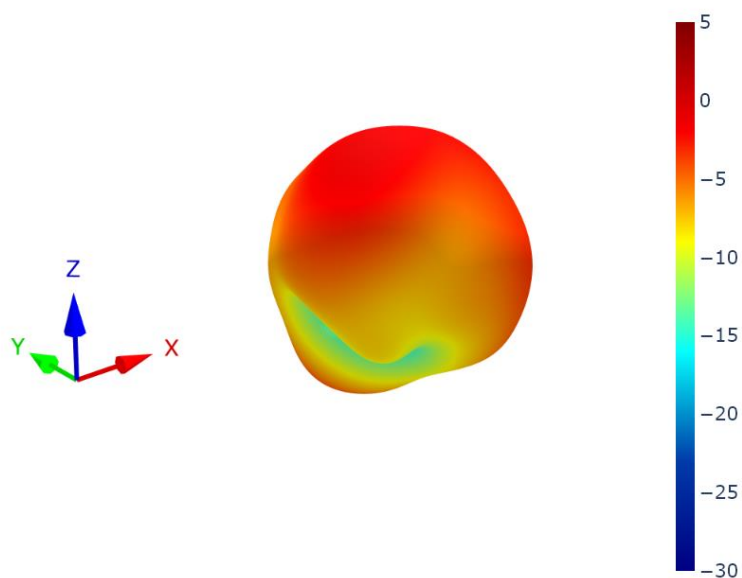
YZ Plane



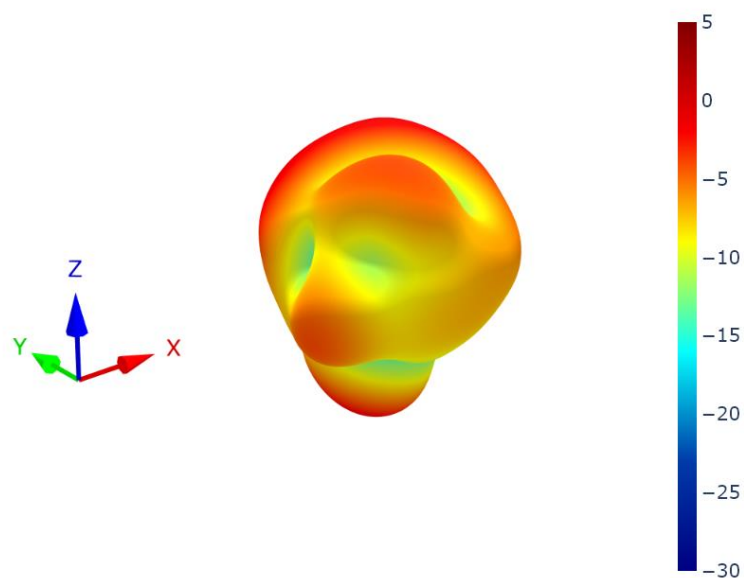
XY Plane



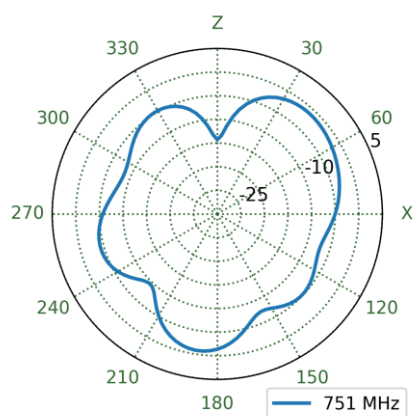
## 8.13 Cellular 2 Patterns at 751 MHz



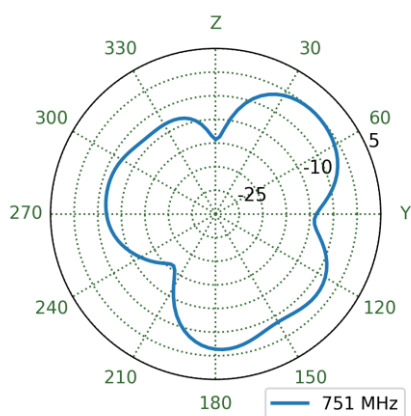
## 8.14 Cellular 3 Patterns at 751 MHz



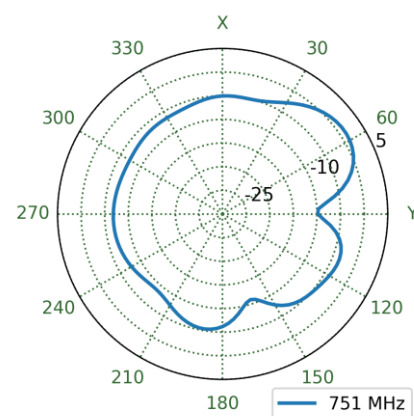
XZ Plane



YZ Plane

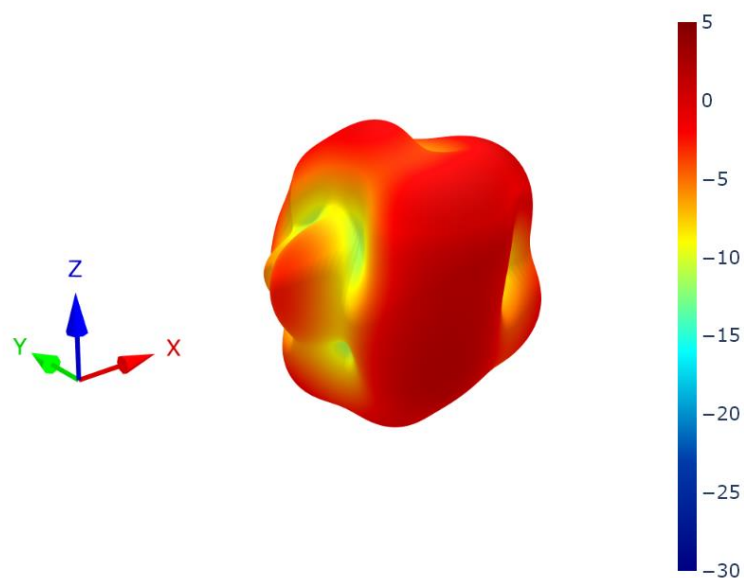


XY Plane

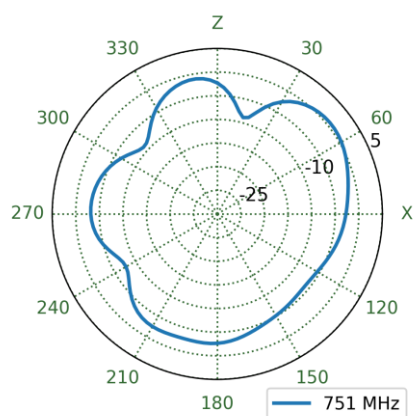




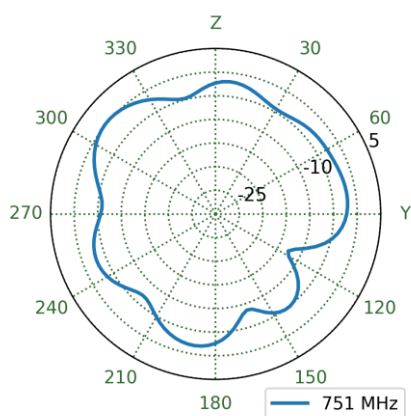
## 8.15 Cellular 4 Patterns at 751 MHz



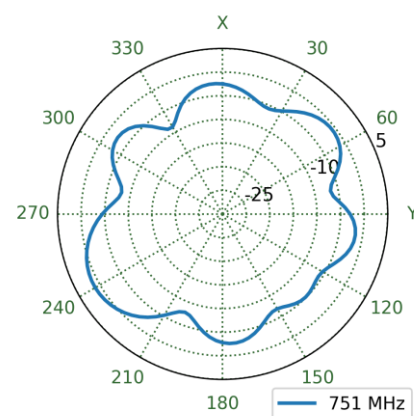
XZ Plane



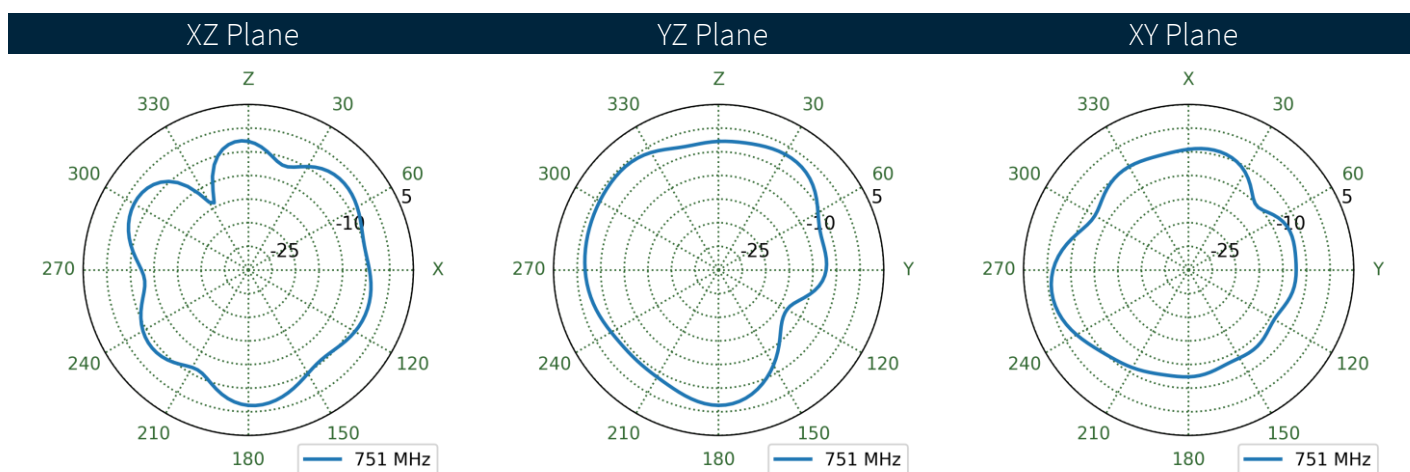
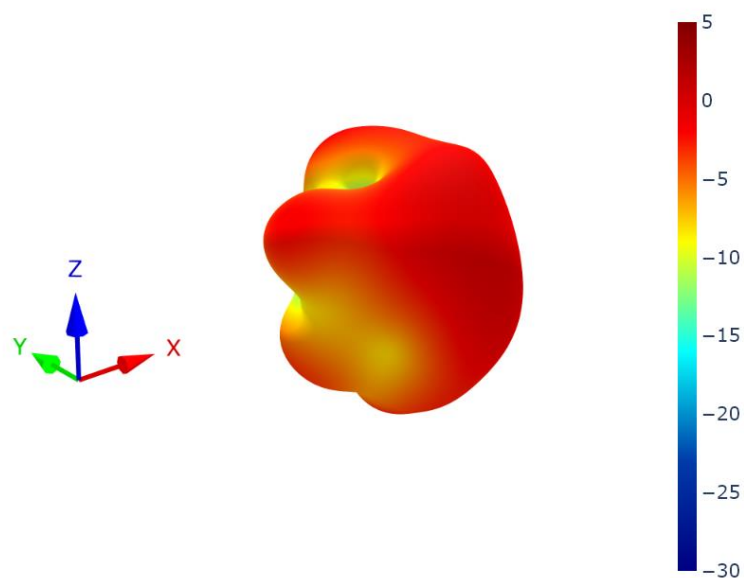
YZ Plane



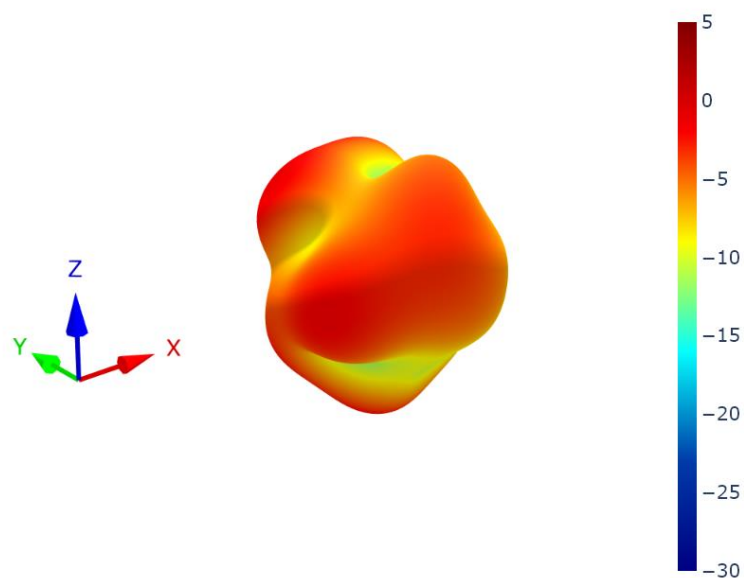
XY Plane



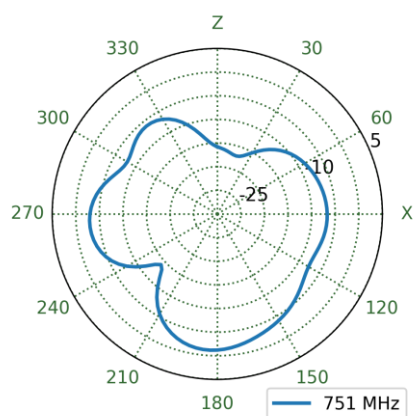
## 8.16 Cellular 5 Patterns at 751 MHz



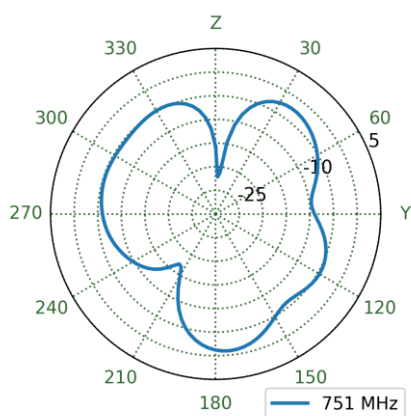
## 8.17 Cellular 6 Patterns at 751 MHz



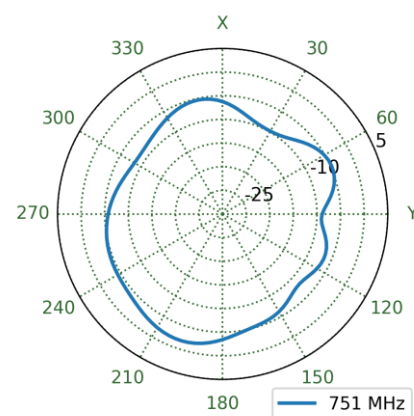
XZ Plane



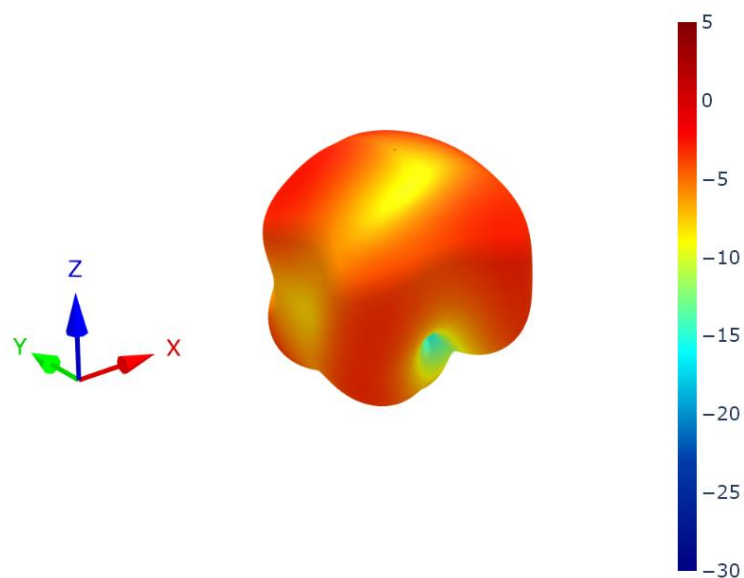
YZ Plane



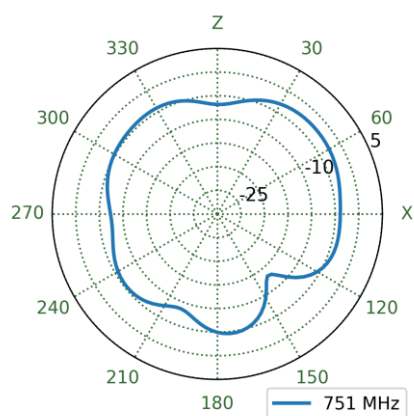
XY Plane



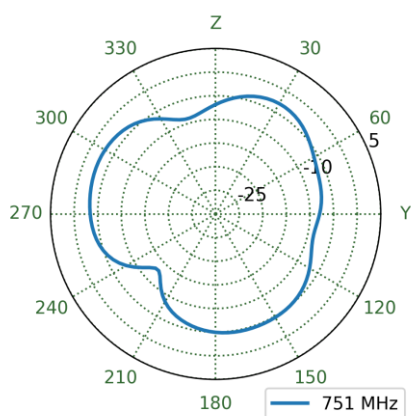
## 8.18 Cellular 7 Patterns at 751 MHz



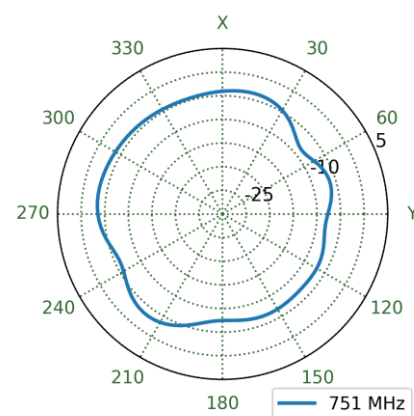
XZ Plane



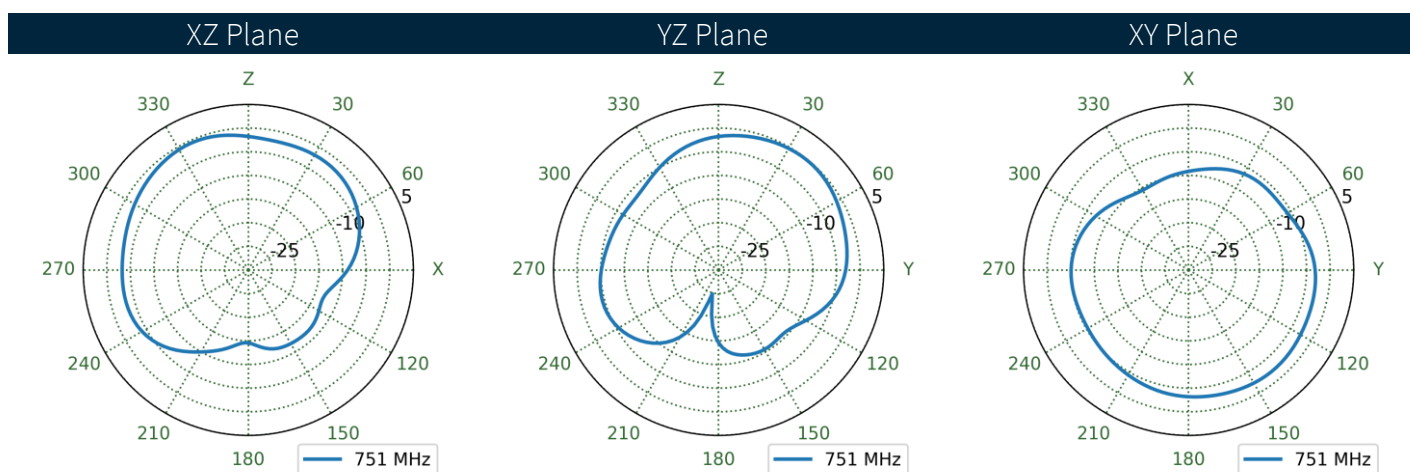
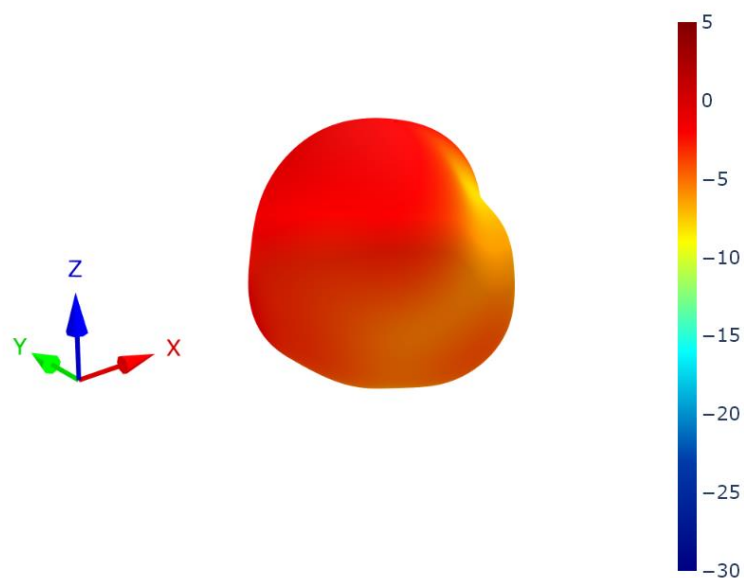
YZ Plane



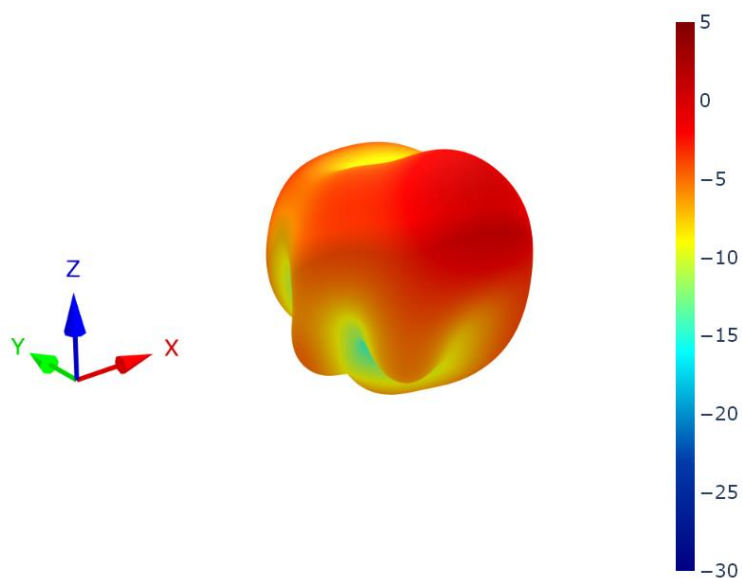
XY Plane



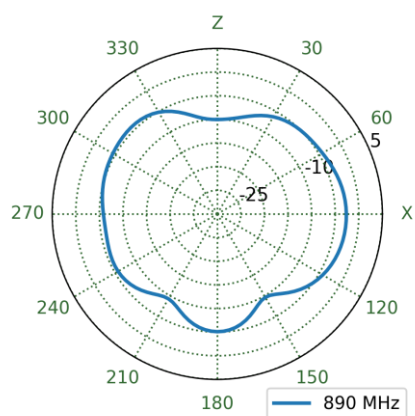
## 8.19 Cellular 8 Patterns at 751 MHz



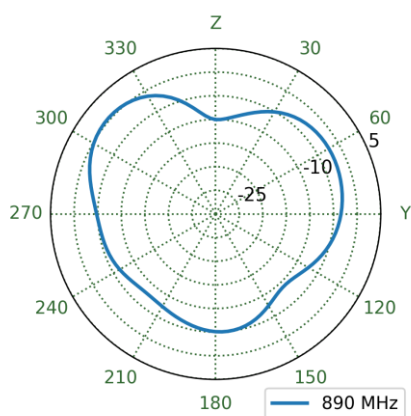
## 8.20 Cellular 1 Patterns at 890 MHz



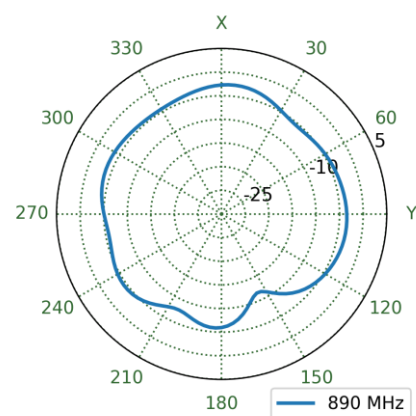
XZ Plane



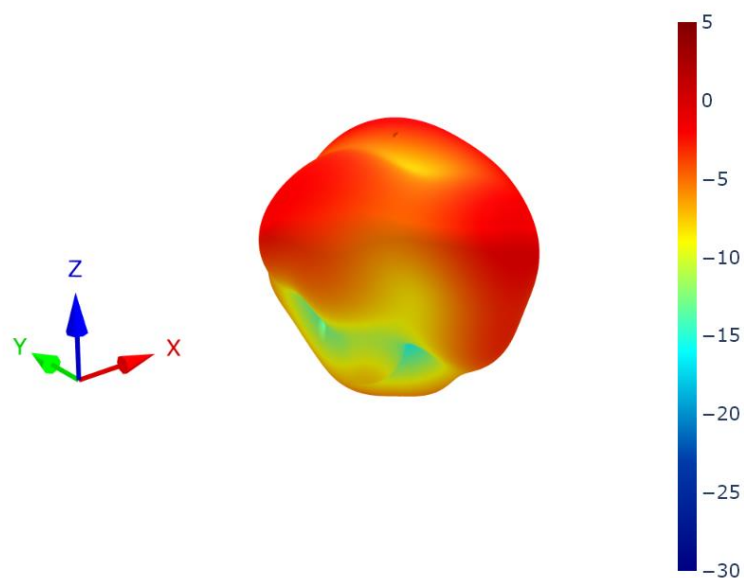
YZ Plane



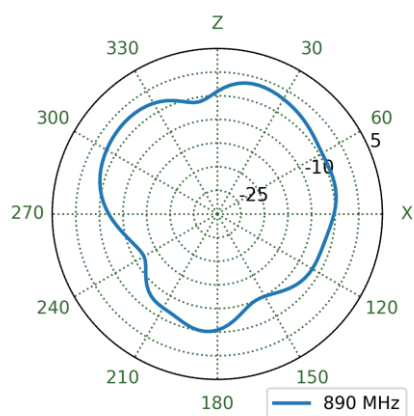
XY Plane



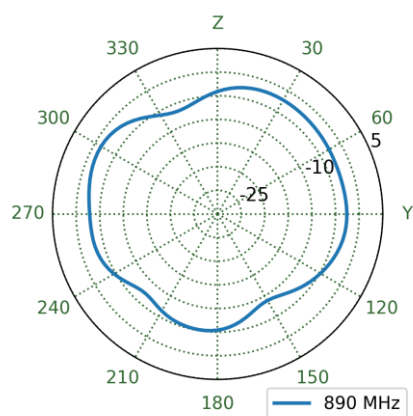
## 8.21 Cellular 2 Patterns at 890 MHz



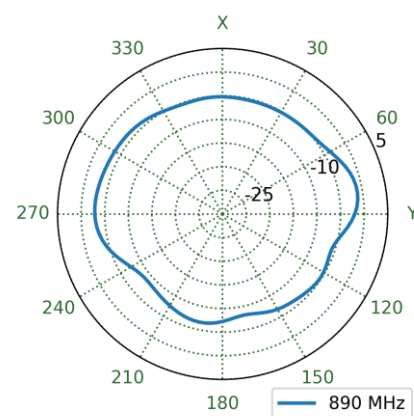
XZ Plane



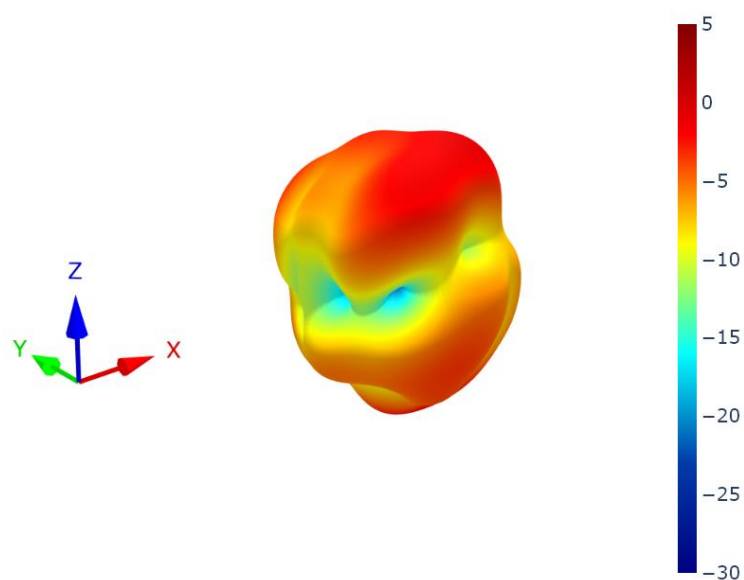
YZ Plane



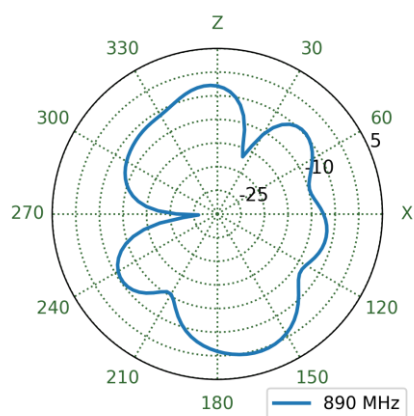
XY Plane



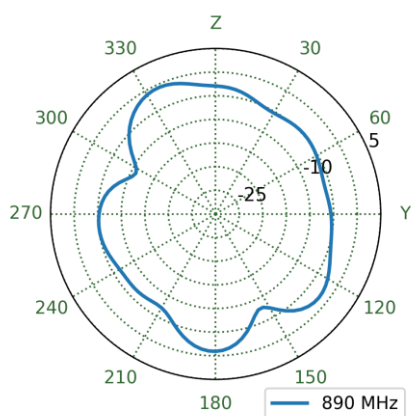
## 8.22 Cellular 3 Patterns at 890 MHz



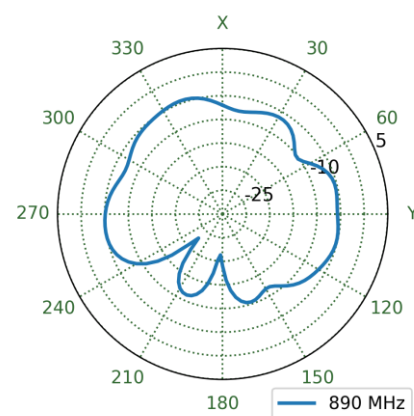
XZ Plane



YZ Plane

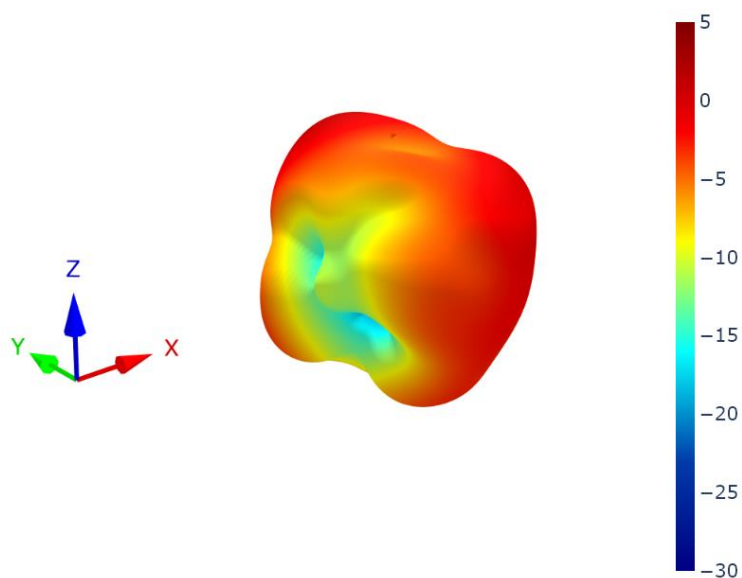


XY Plane

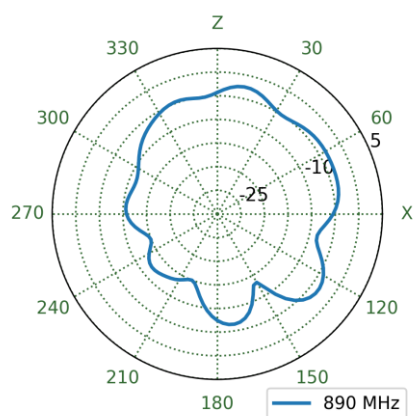




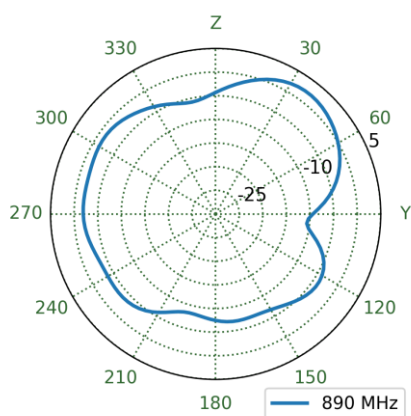
## 8.23 Cellular 4 Patterns at 890 MHz



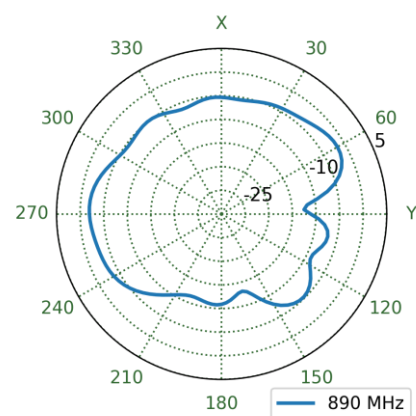
XZ Plane



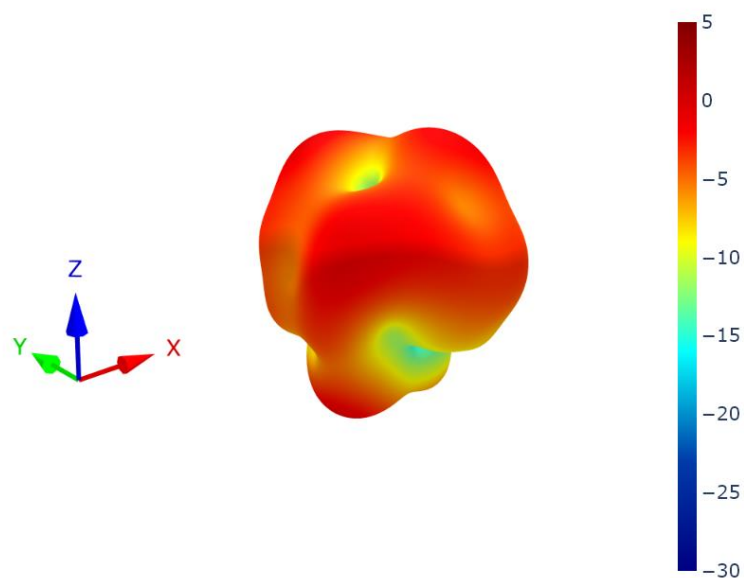
YZ Plane



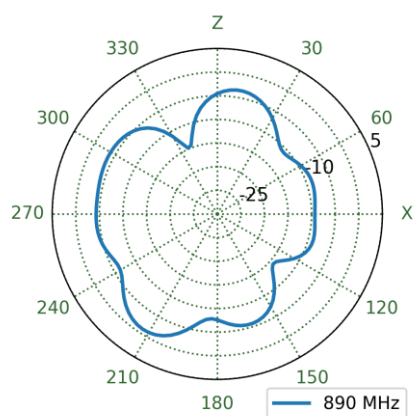
XY Plane



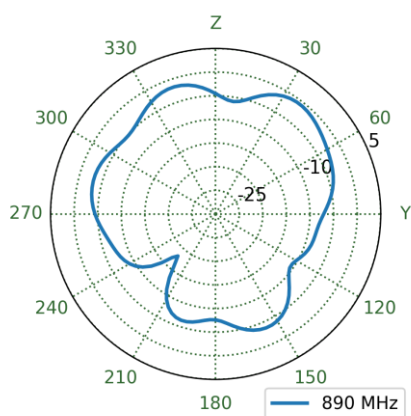
## 8.24 Cellular 5 Patterns at 890 MHz



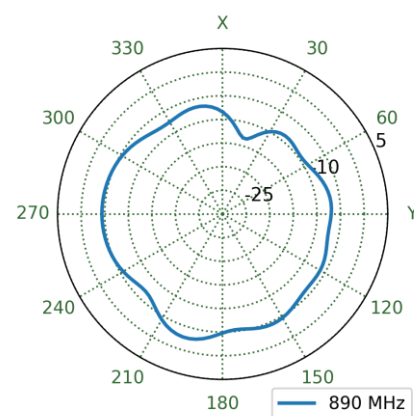
XZ Plane



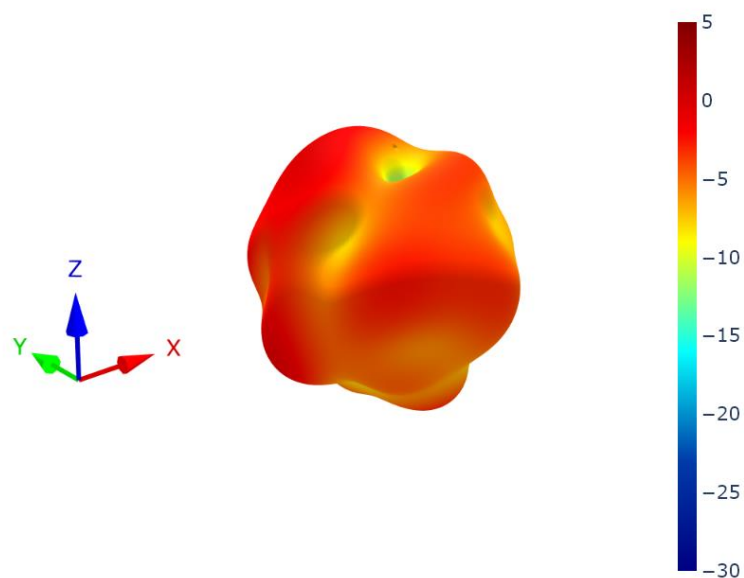
YZ Plane



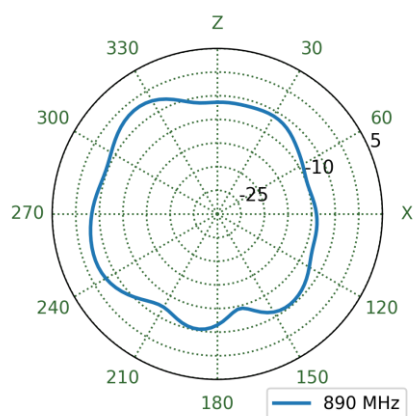
XY Plane



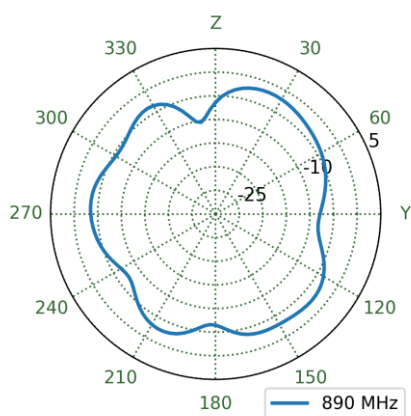
## 8.25 Cellular 6 Patterns at 890 MHz



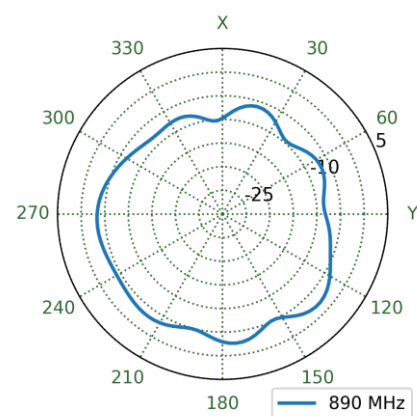
XZ Plane



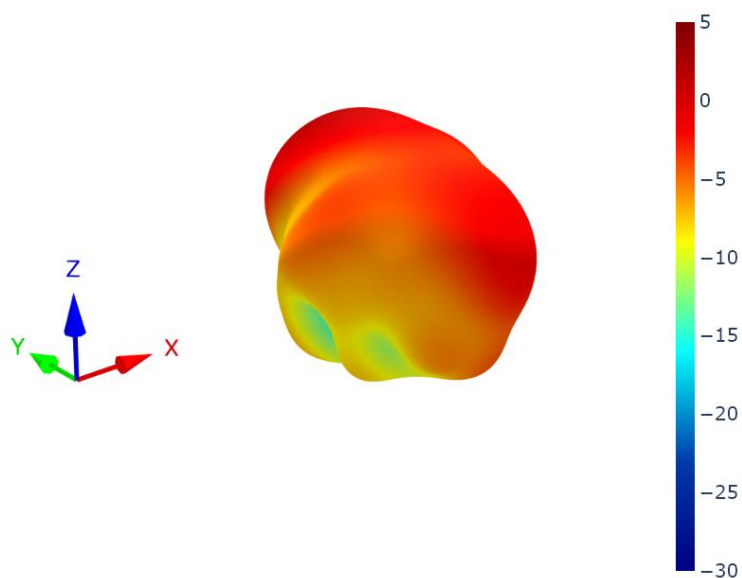
YZ Plane



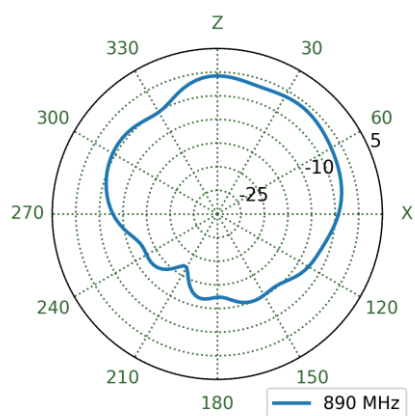
XY Plane



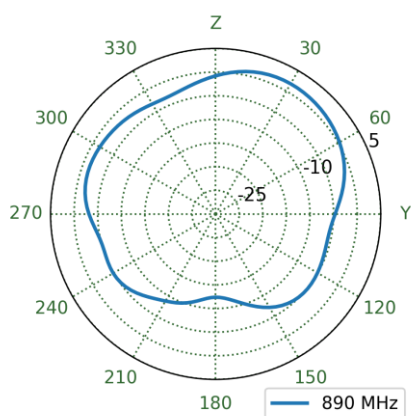
## 8.26 Cellular 7 Patterns at 890 MHz



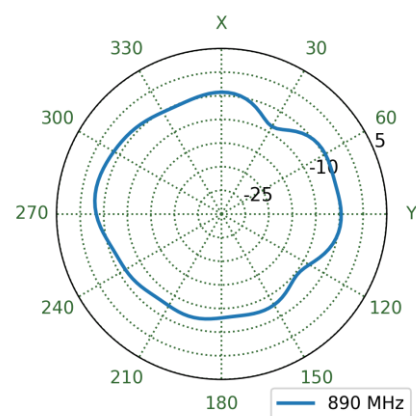
XZ Plane



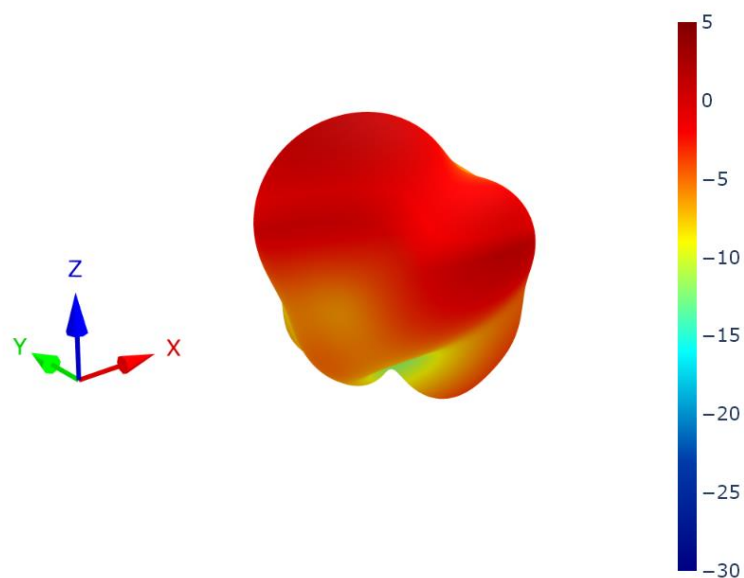
YZ Plane



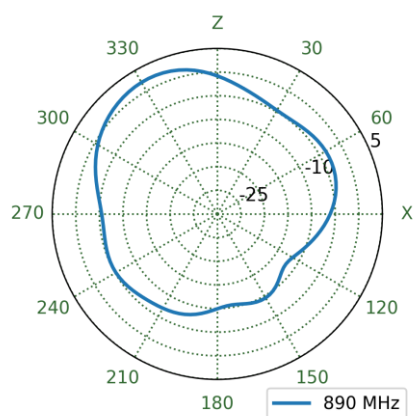
XY Plane



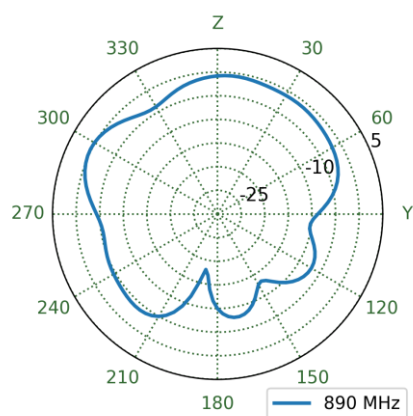
## 8.27 Cellular 8 Patterns at 890 MHz



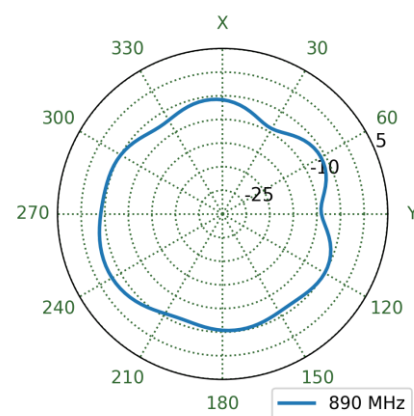
XZ Plane



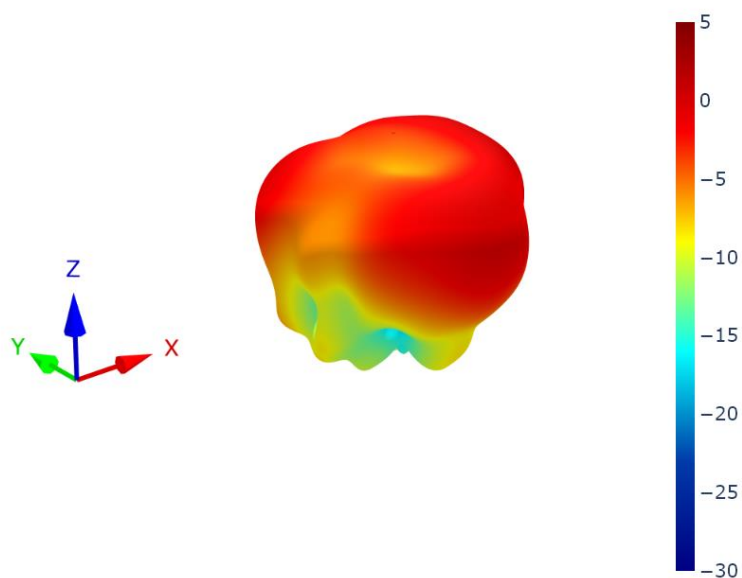
YZ Plane



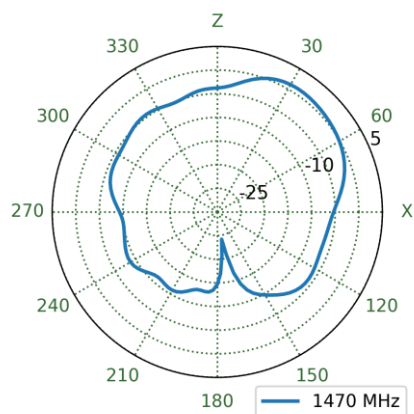
XY Plane



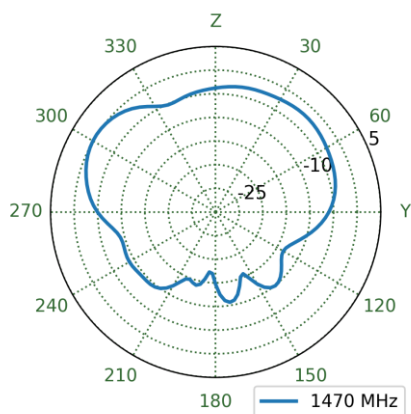
## 8.28 Cellular 1 Patterns at 1470 MHz



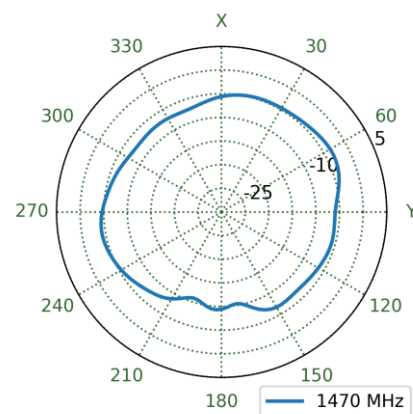
XZ Plane



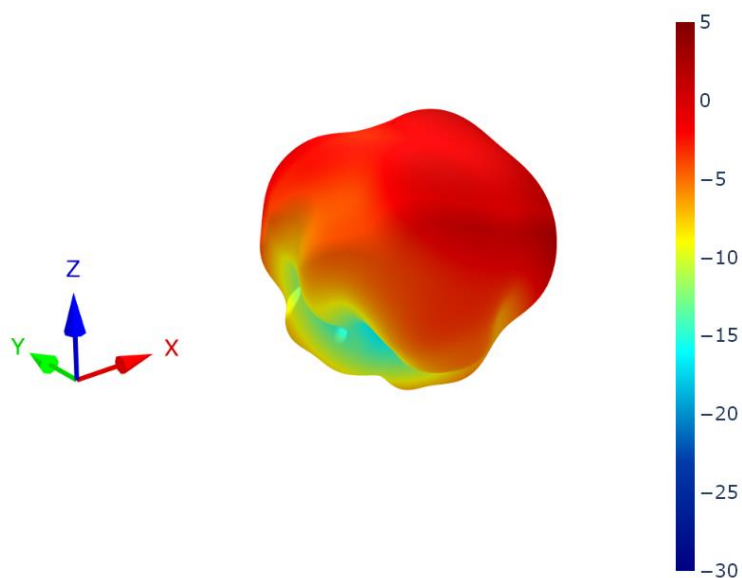
YZ Plane



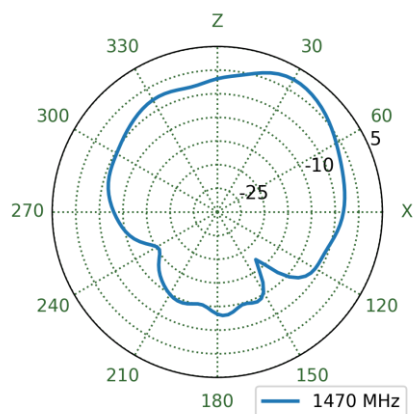
XY Plane



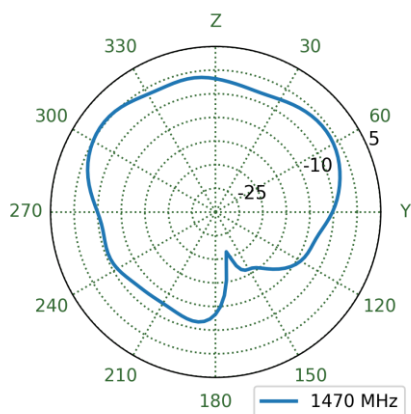
## 8.29 Cellular 2 Patterns at 1470 MHz



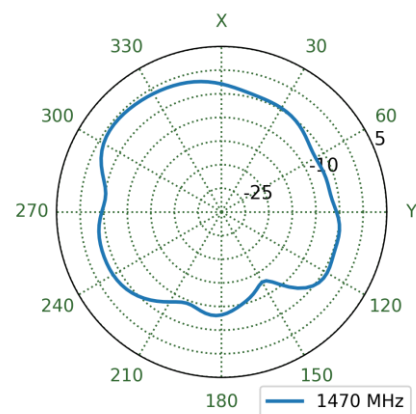
XZ Plane



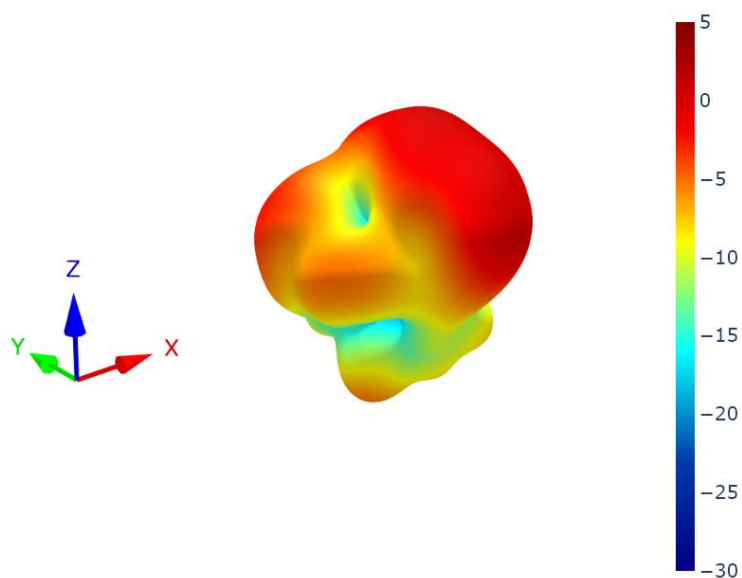
YZ Plane



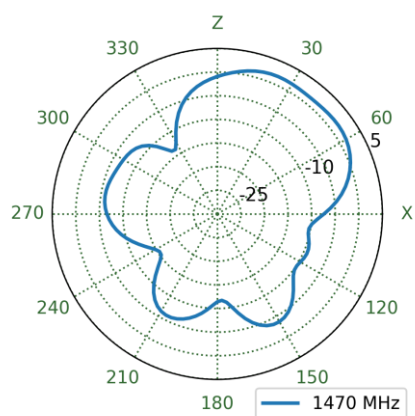
XY Plane



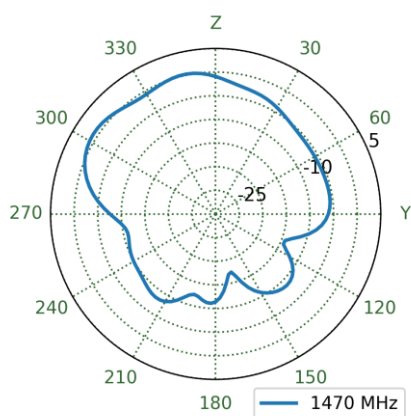
## 8.30 Cellular 3 Patterns at 1470 MHz



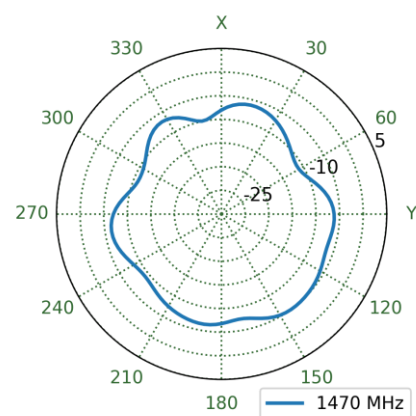
XZ Plane



YZ Plane

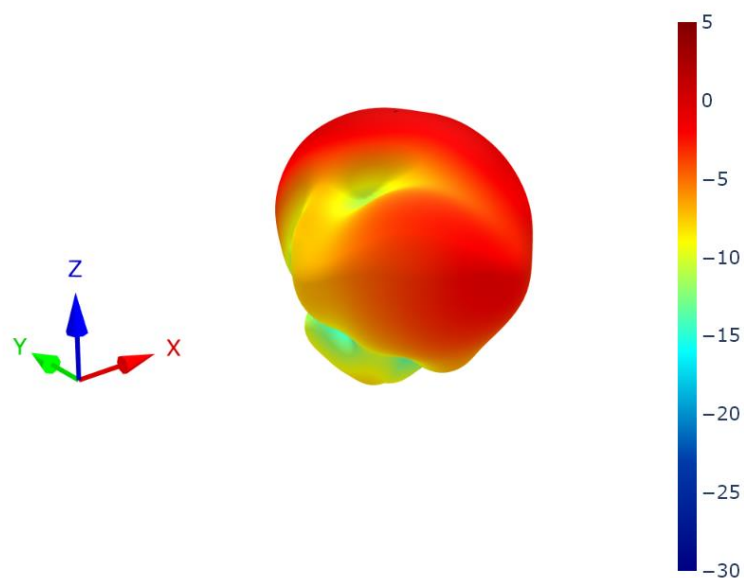


XY Plane

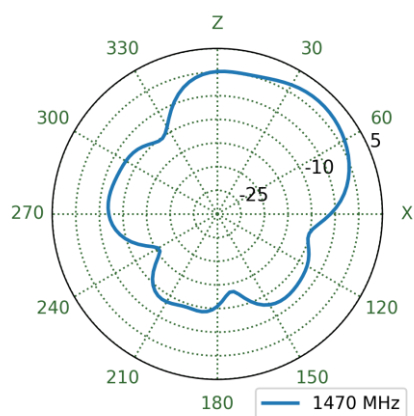




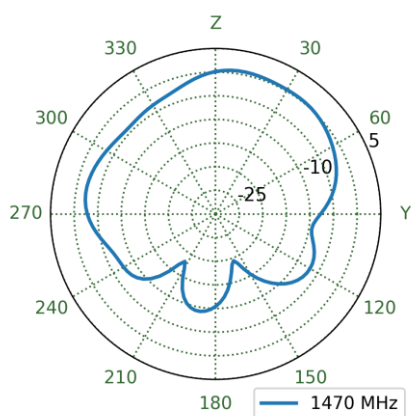
# 8.31 Cellular 4 Patterns at 1470 MHz



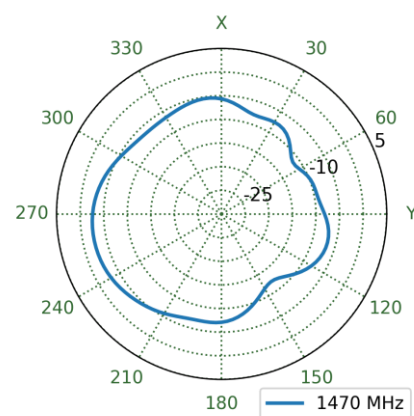
XZ Plane



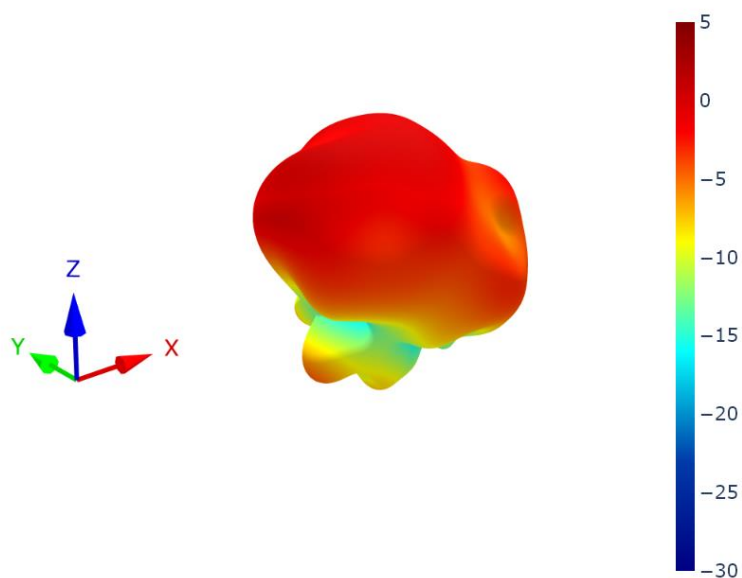
YZ Plane



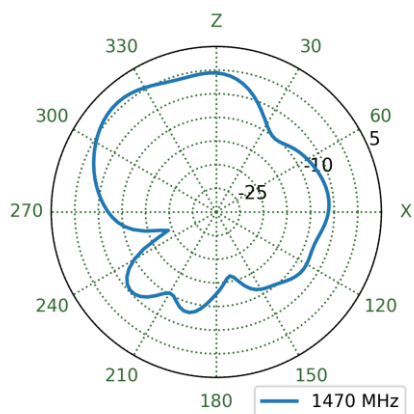
XY Plane



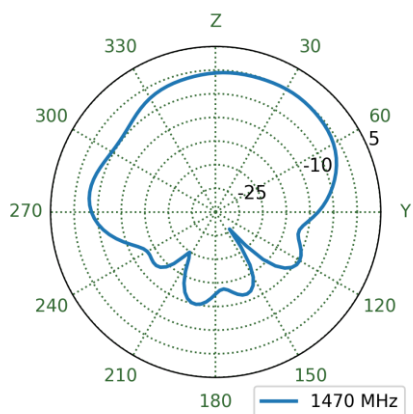
## 8.32 Cellular 5 Patterns at 1470 MHz



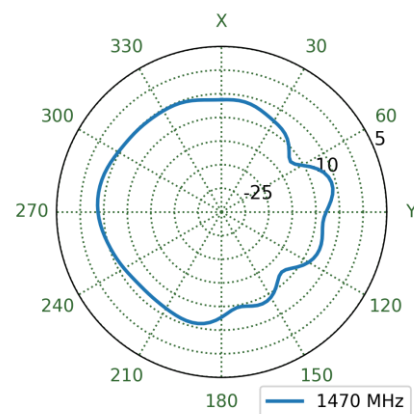
XZ Plane



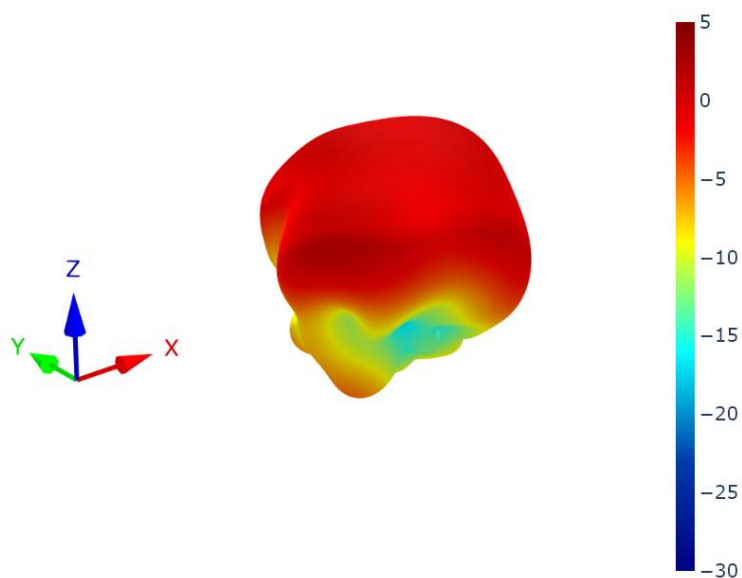
YZ Plane



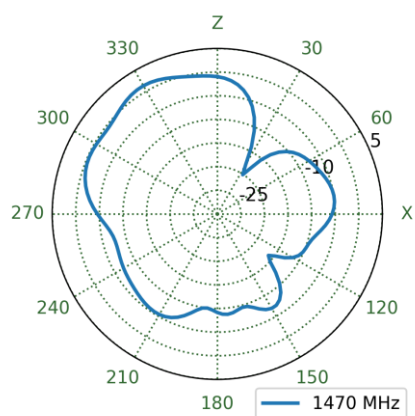
XY Plane



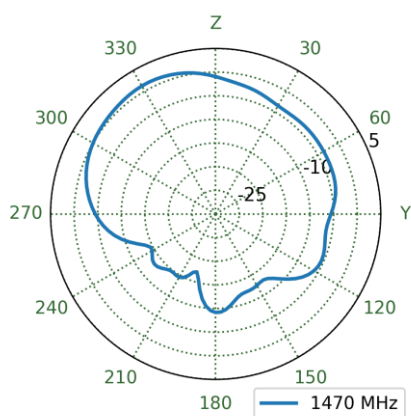
### 8.33 Cellular 6 Patterns at 1470 MHz



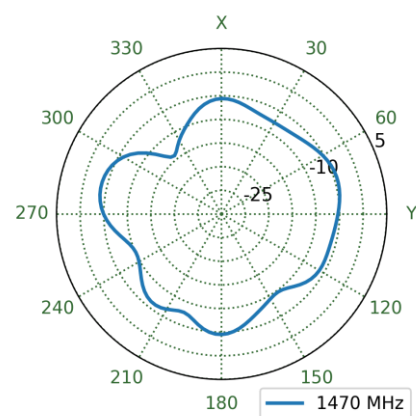
XZ Plane



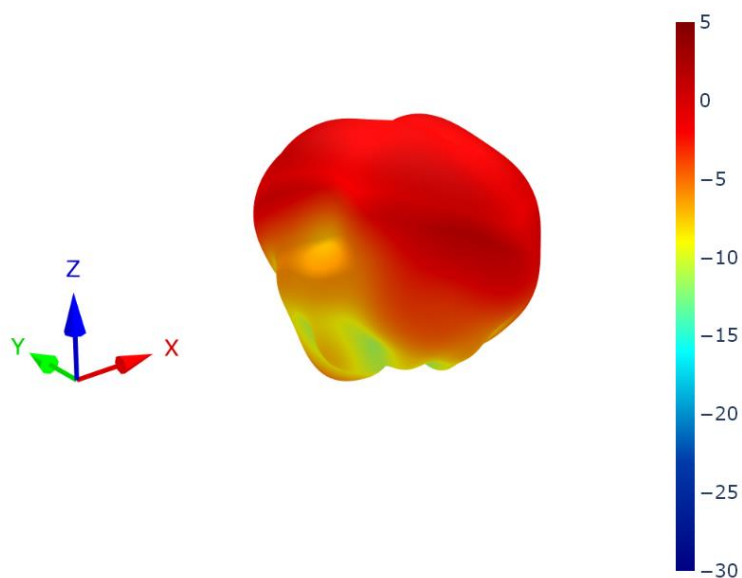
YZ Plane



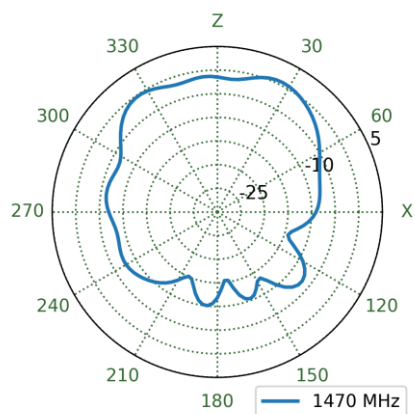
XY Plane



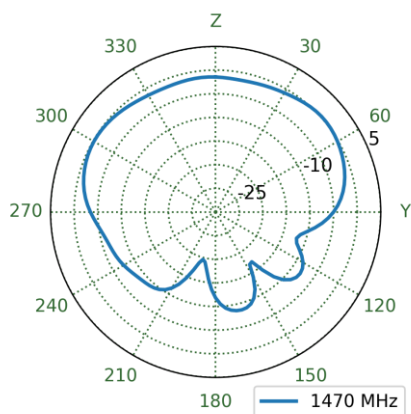
## 8.34 Cellular 7 Patterns at 1470 MHz



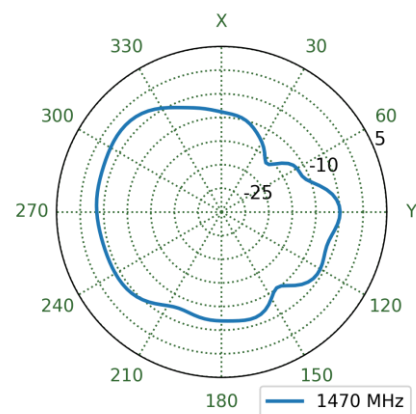
XZ Plane



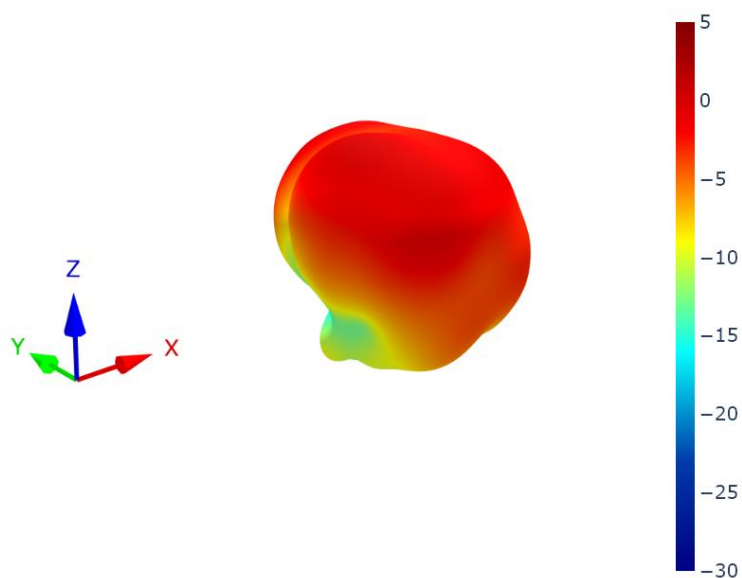
YZ Plane



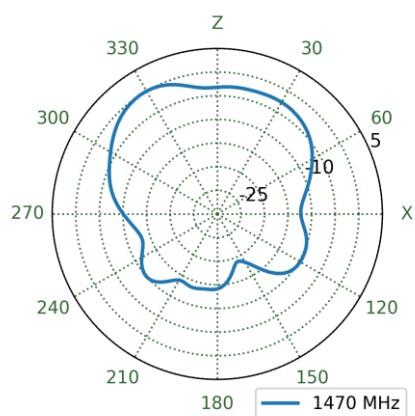
XY Plane



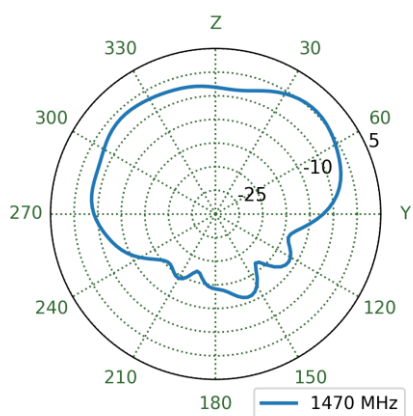
## 8.35 Cellular 8 Patterns at 1470 MHz



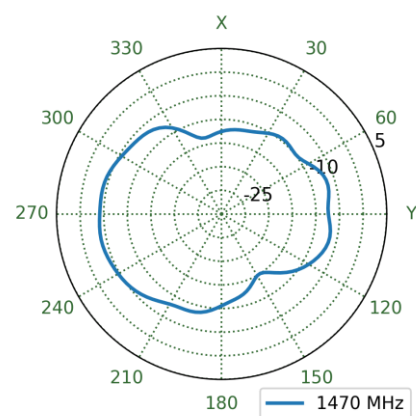
XZ Plane



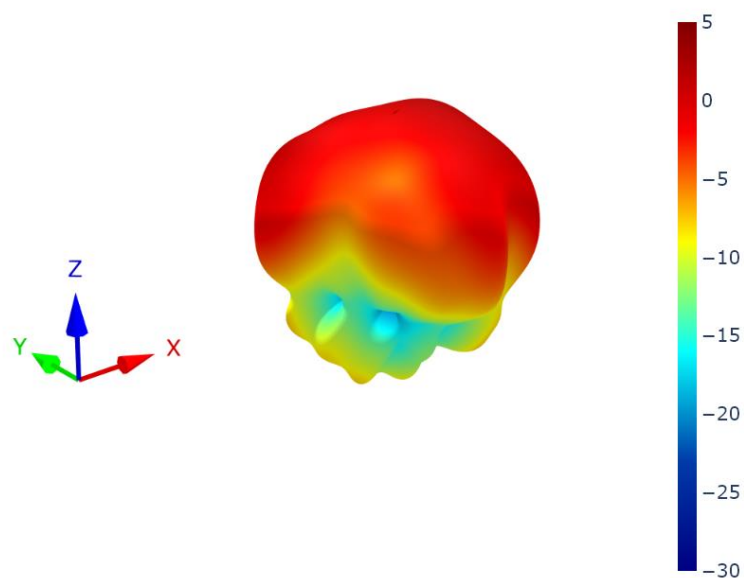
YZ Plane



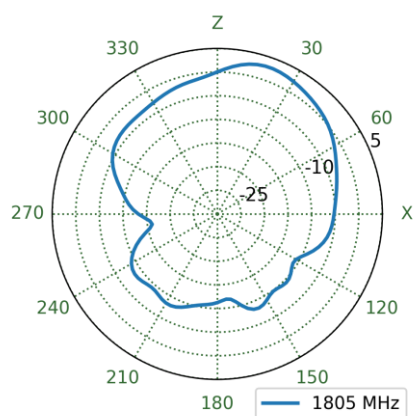
XY Plane



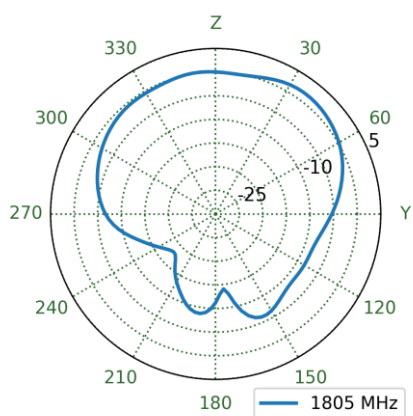
## 8.36 Cellular 1 Patterns at 1805 MHz



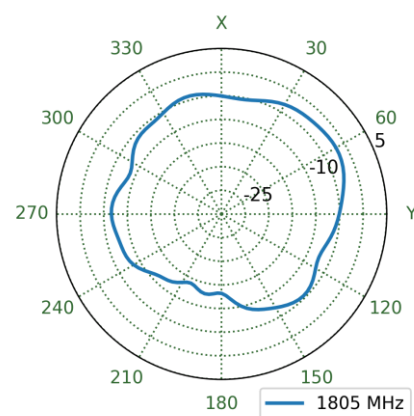
XZ Plane



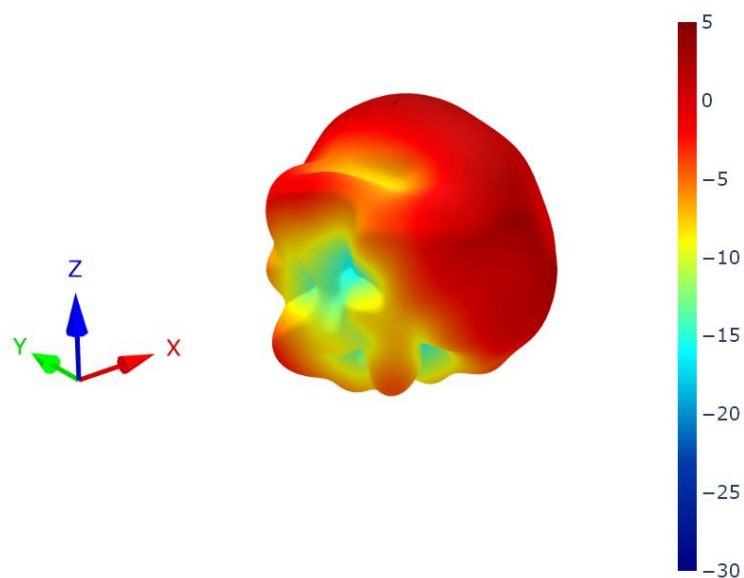
YZ Plane



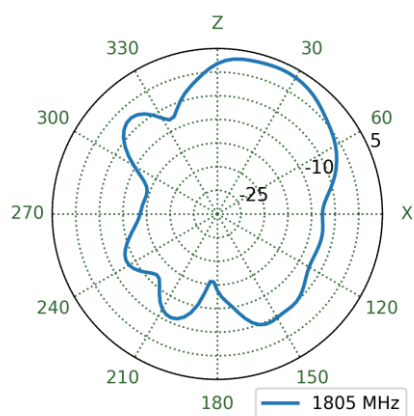
XY Plane



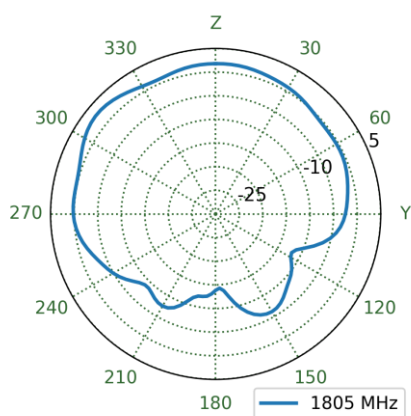
# 8.37 Cellular 2 Patterns at 1805 MHz



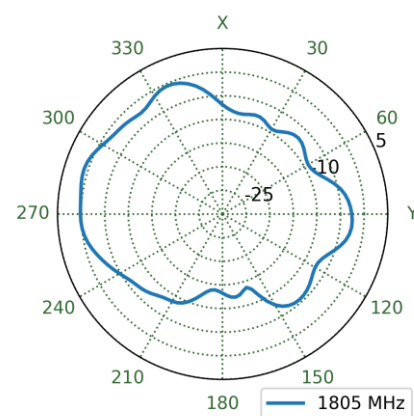
XZ Plane



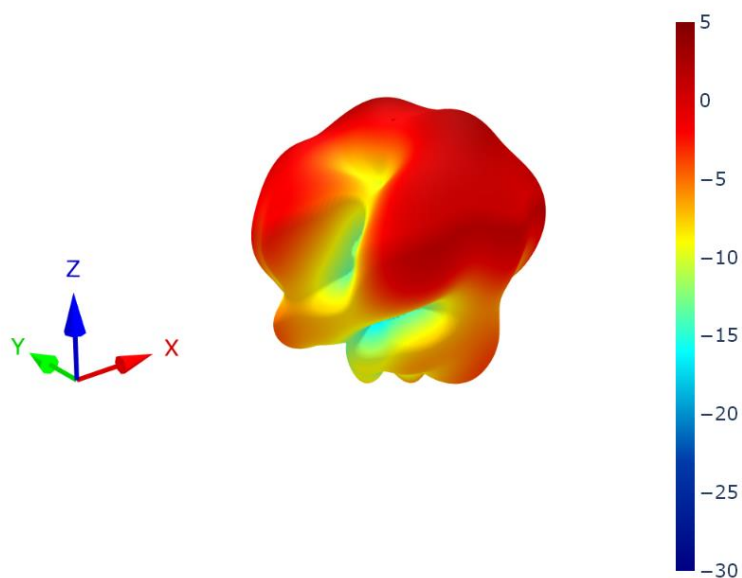
YZ Plane



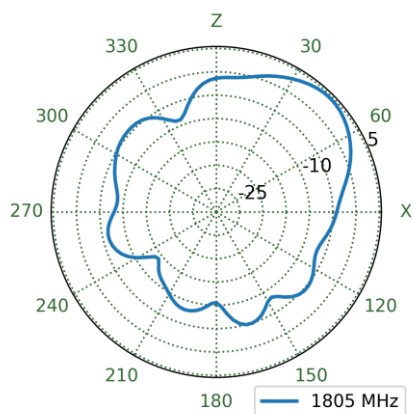
XY Plane



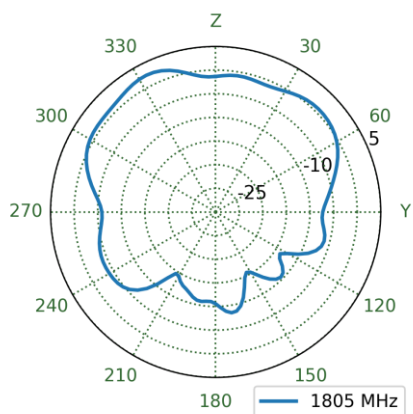
## 8.38 Cellular 3 Patterns at 1805 MHz



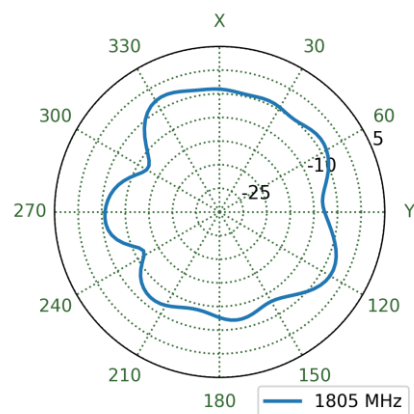
XZ Plane



YZ Plane

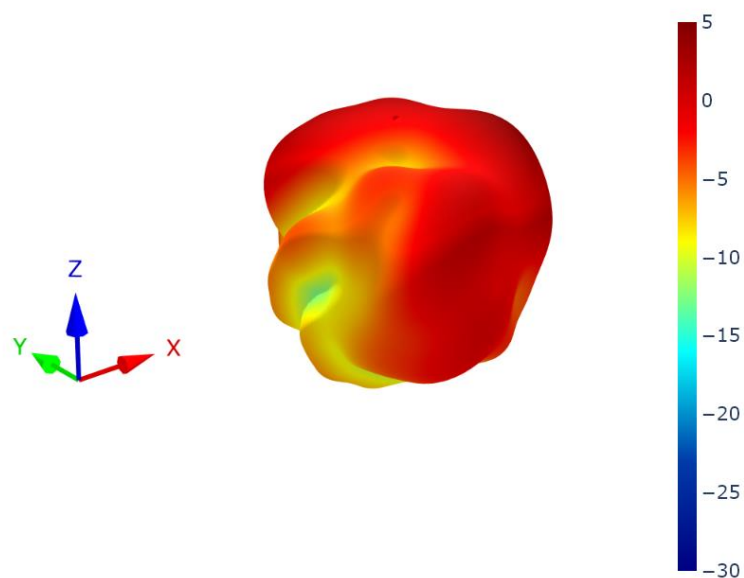


XY Plane

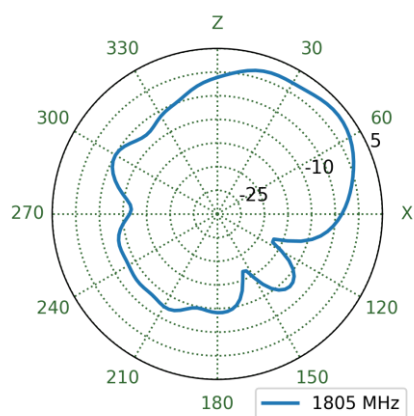




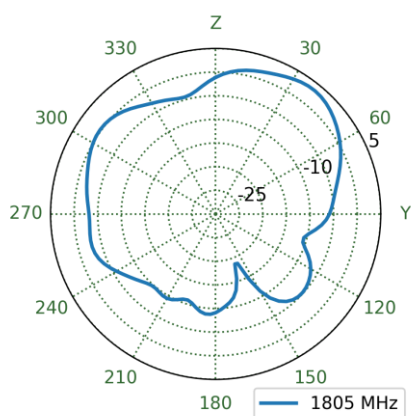
# 8.39 Cellular 4 Patterns at 1805 MHz



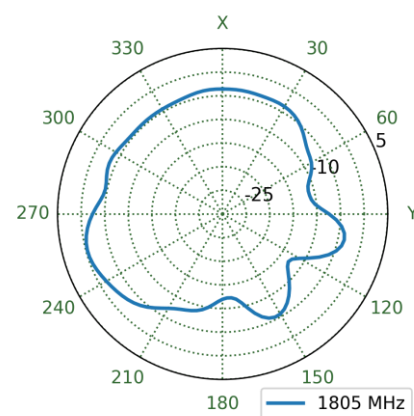
XZ Plane



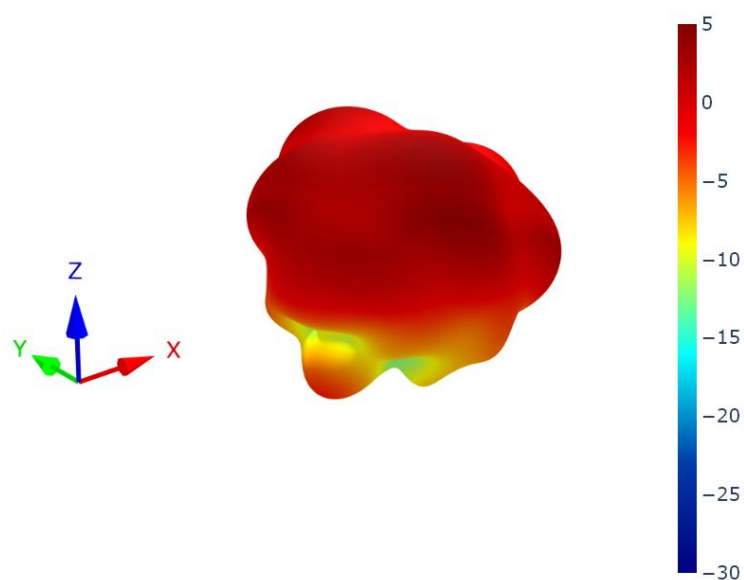
YZ Plane



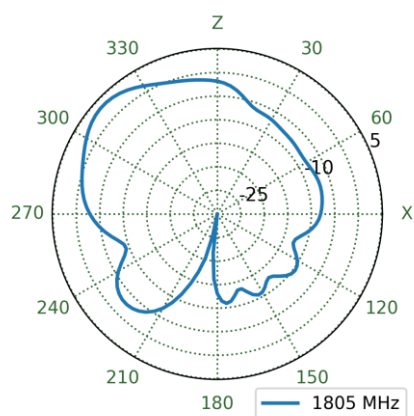
XY Plane



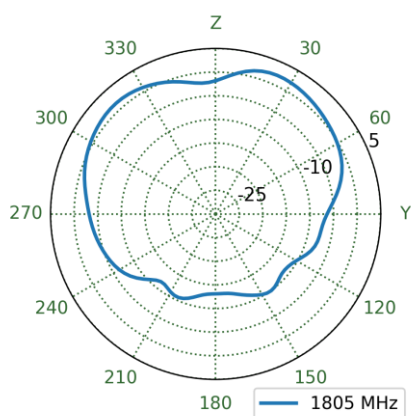
## 8.40 Cellular 5 Patterns at 1805 MHz



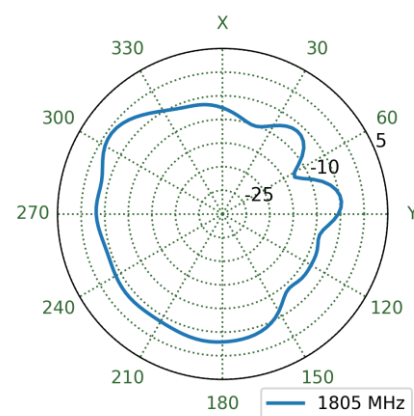
XZ Plane



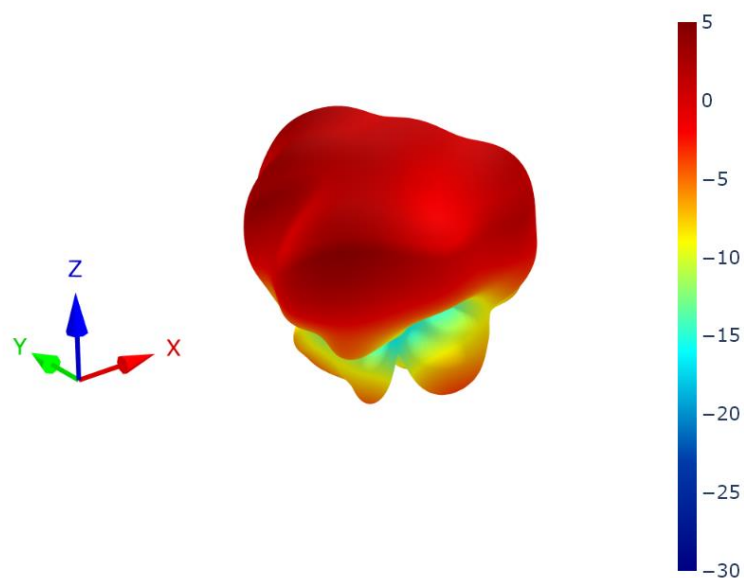
YZ Plane



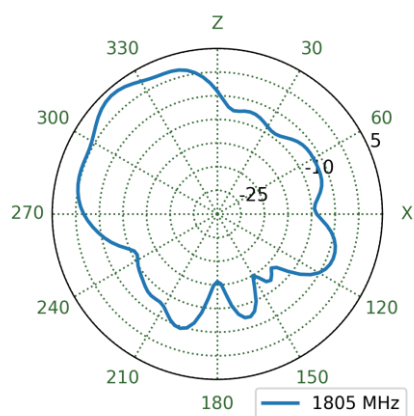
XY Plane



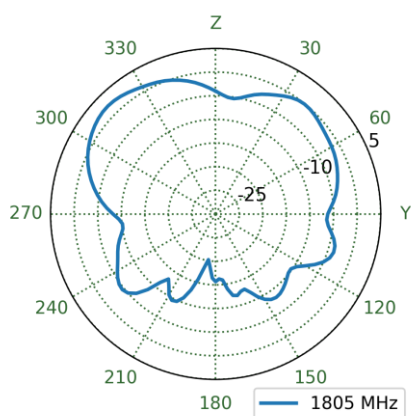
## 8.41 Cellular 6 Patterns at 1805 MHz



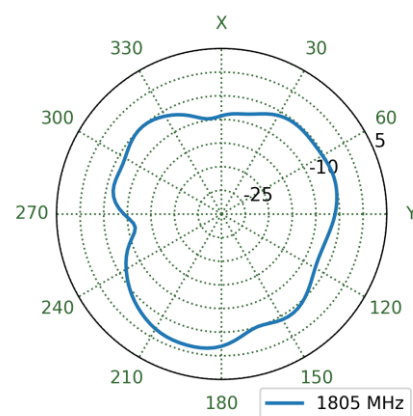
XZ Plane



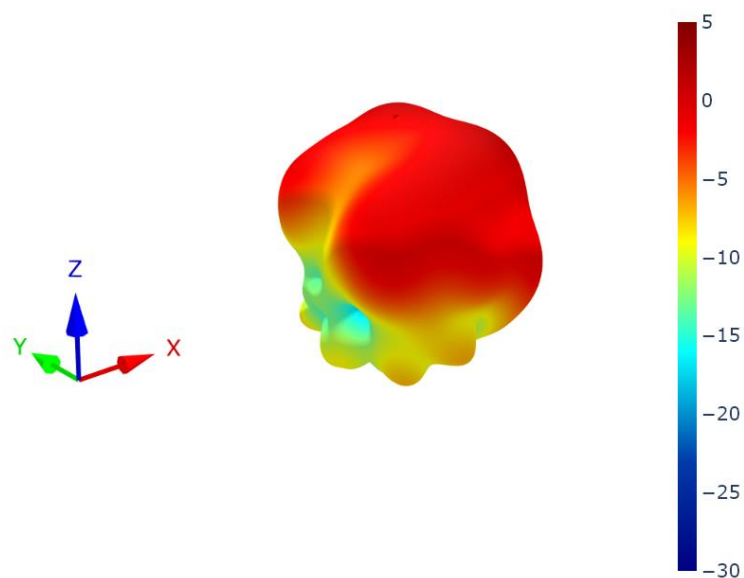
YZ Plane



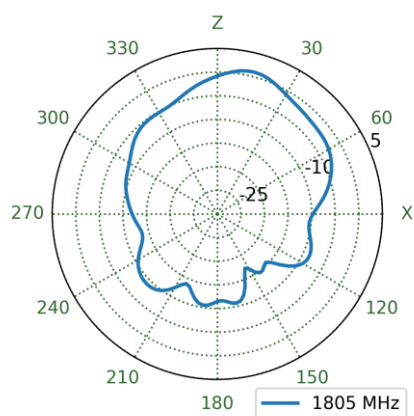
XY Plane



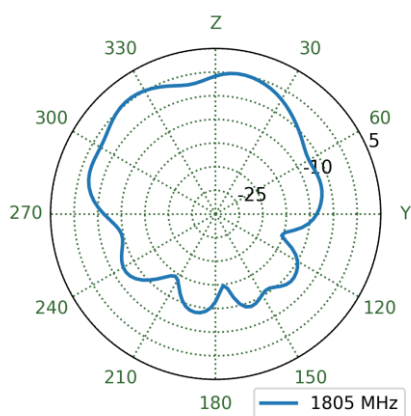
## 8.42 Cellular 7 Patterns at 1805 MHz



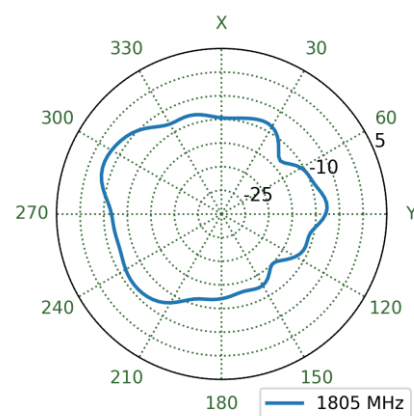
XZ Plane



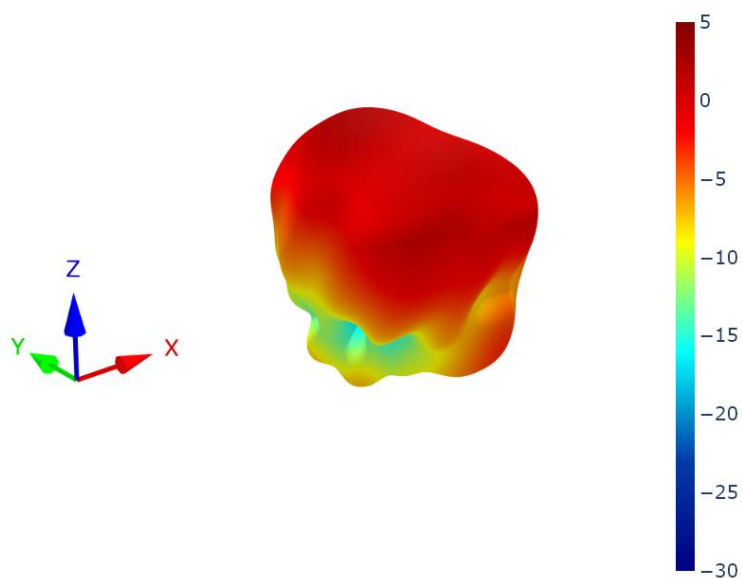
YZ Plane



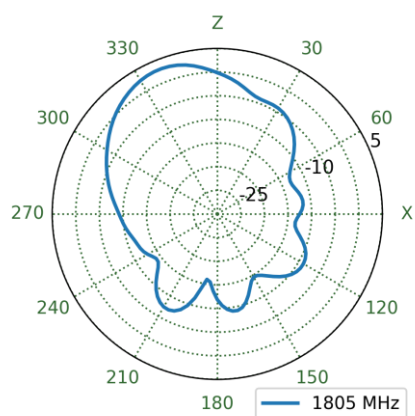
XY Plane



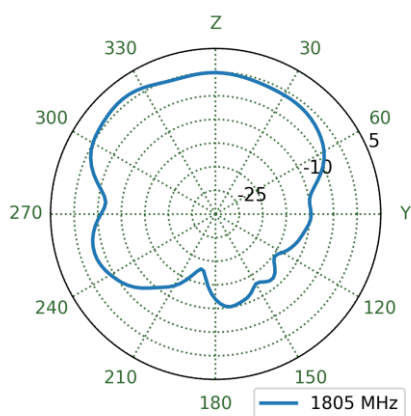
## 8.43 Cellular 8 Patterns at 1805 MHz



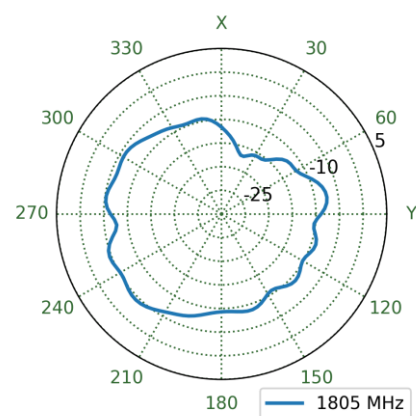
XZ Plane



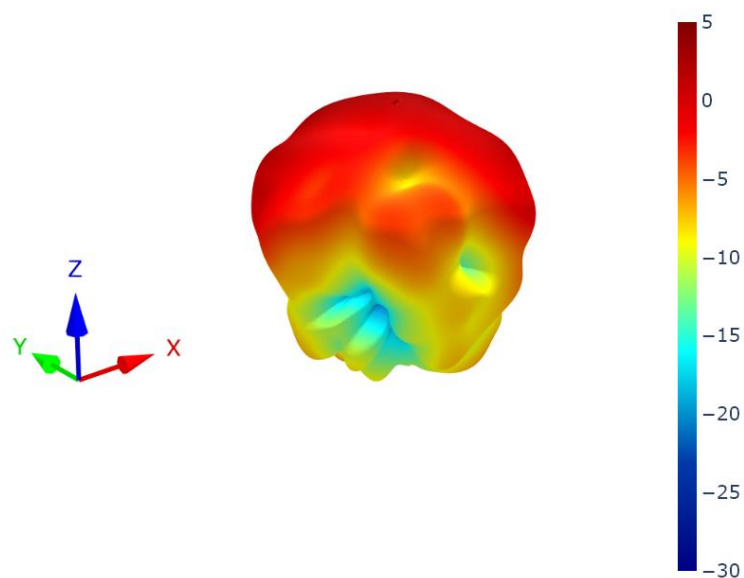
YZ Plane



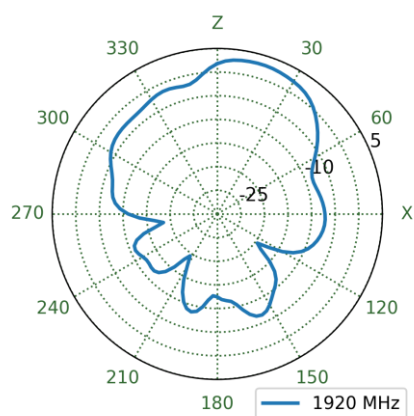
XY Plane



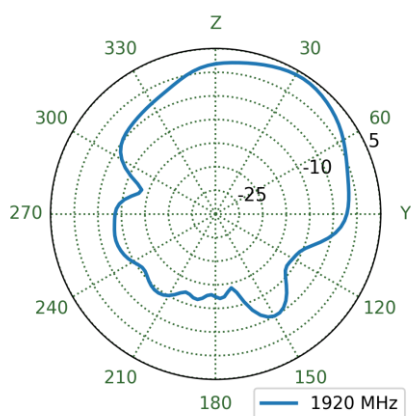
## 8.44 Cellular 1 Patterns at 1920 MHz



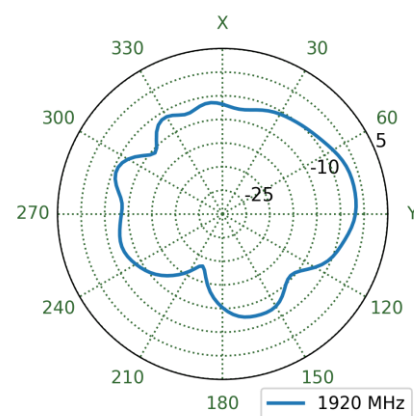
XZ Plane



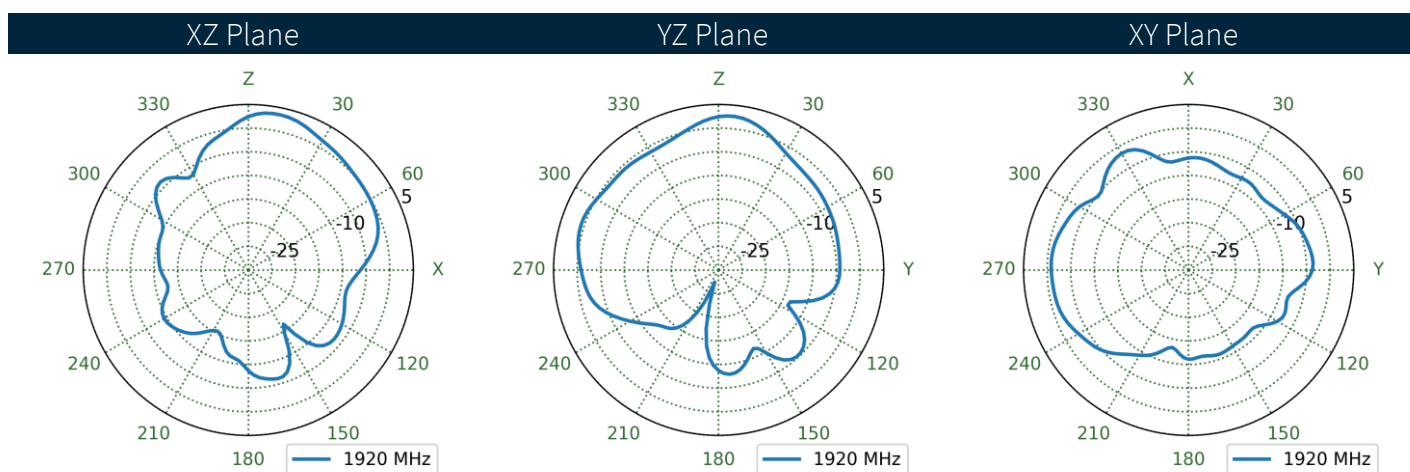
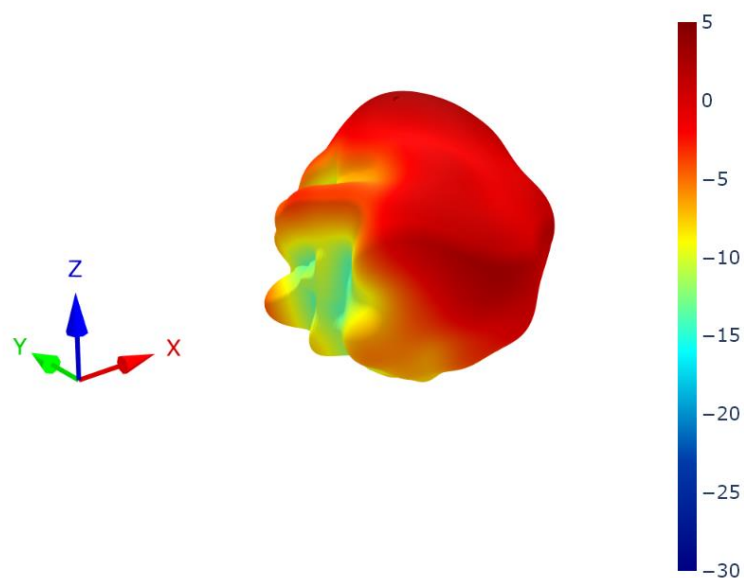
YZ Plane



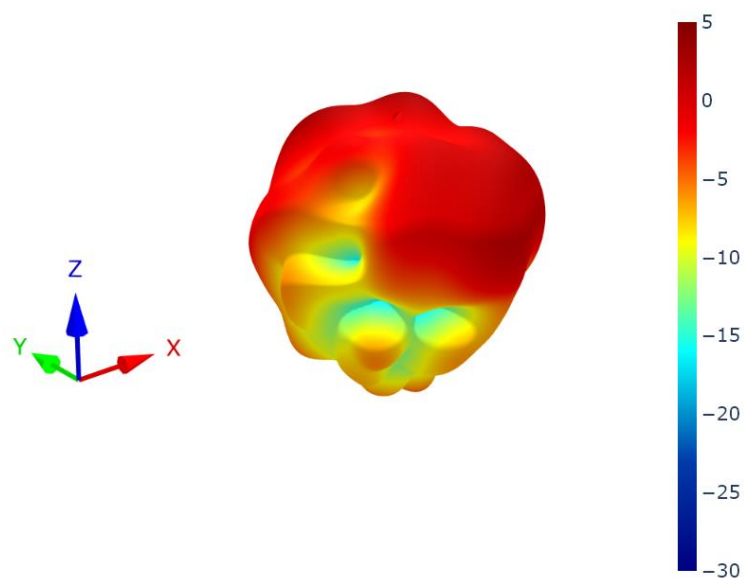
XY Plane



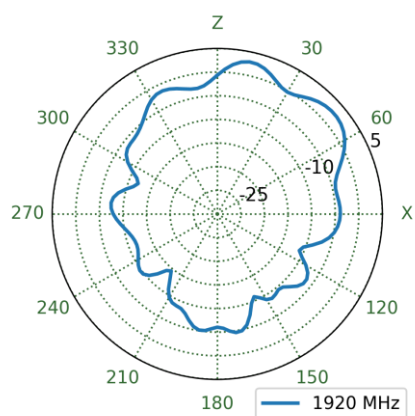
## 8.45 Cellular 2 Patterns at 1920 MHz



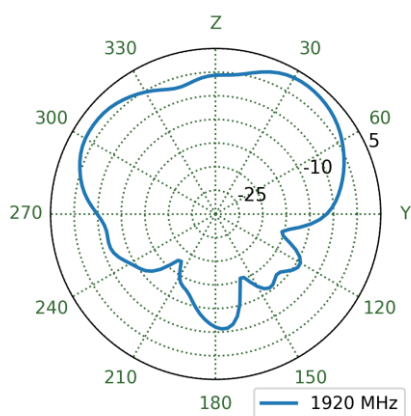
## 8.46 Cellular 3 Patterns at 1920 MHz



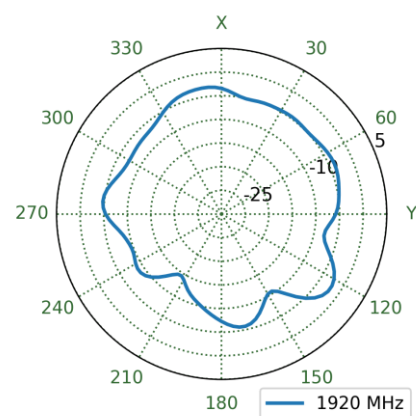
XZ Plane



YZ Plane

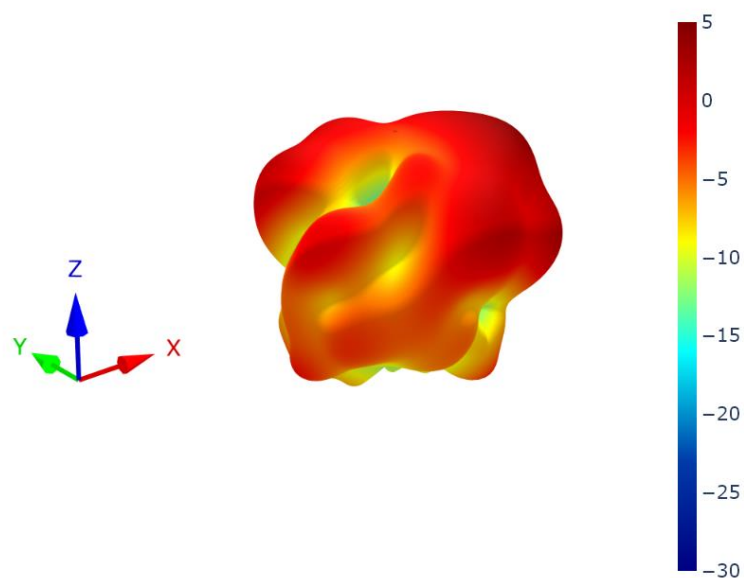


XY Plane

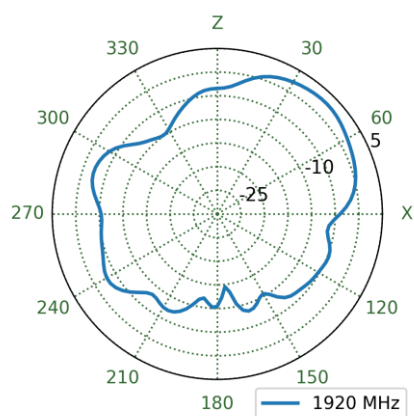




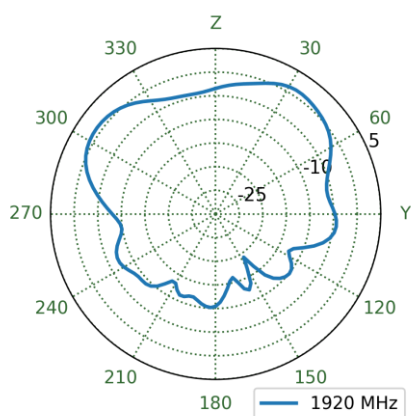
## 8.47 Cellular 4 Patterns at 1920 MHz



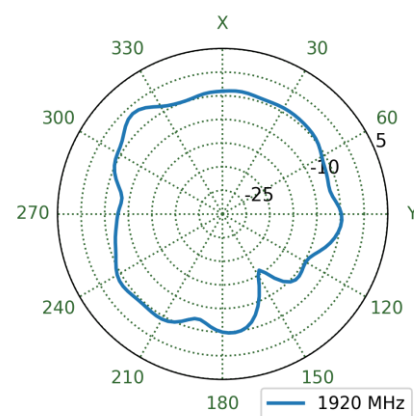
XZ Plane



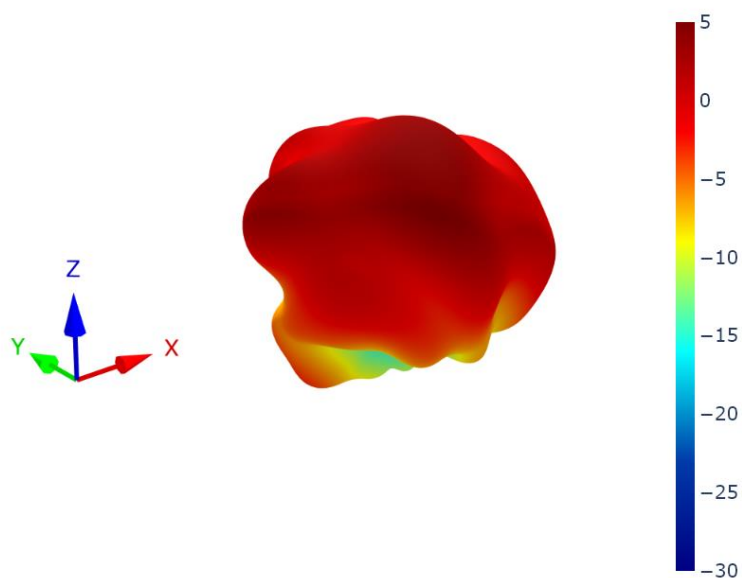
YZ Plane



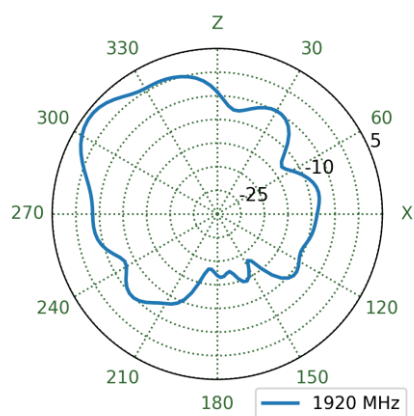
XY Plane



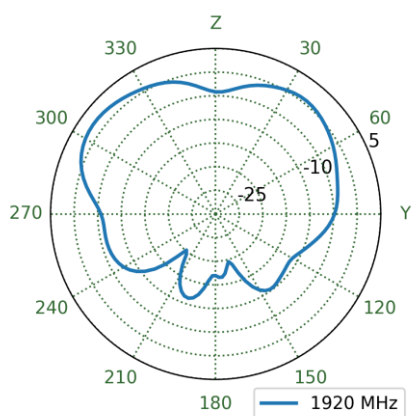
## 8.48 Cellular 5 Patterns at 1920 MHz



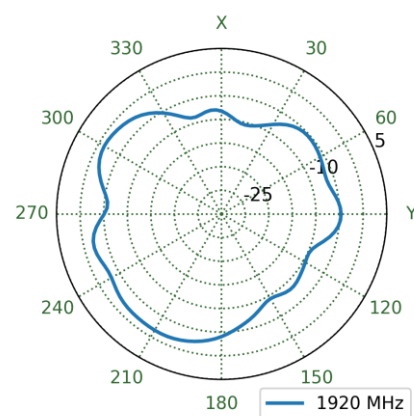
XZ Plane



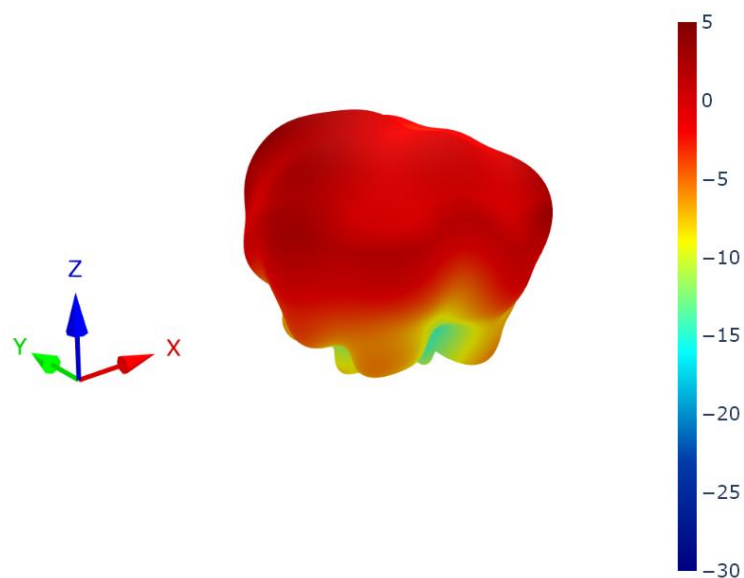
YZ Plane



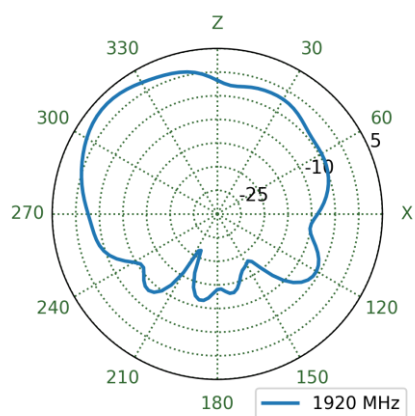
XY Plane



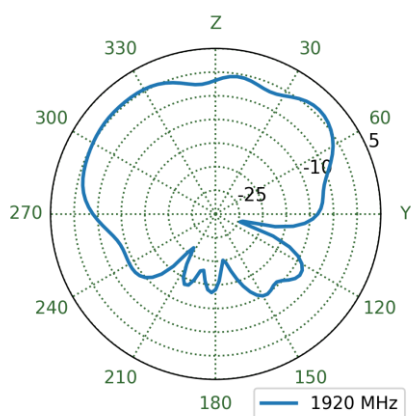
## 8.49 Cellular 6 Patterns at 1920 MHz



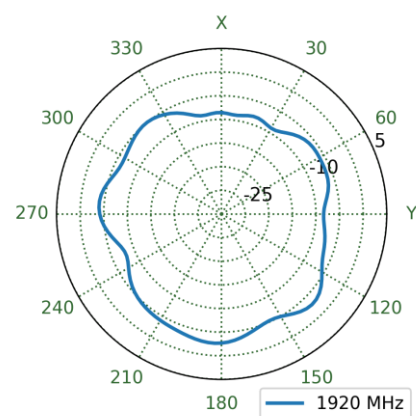
XZ Plane



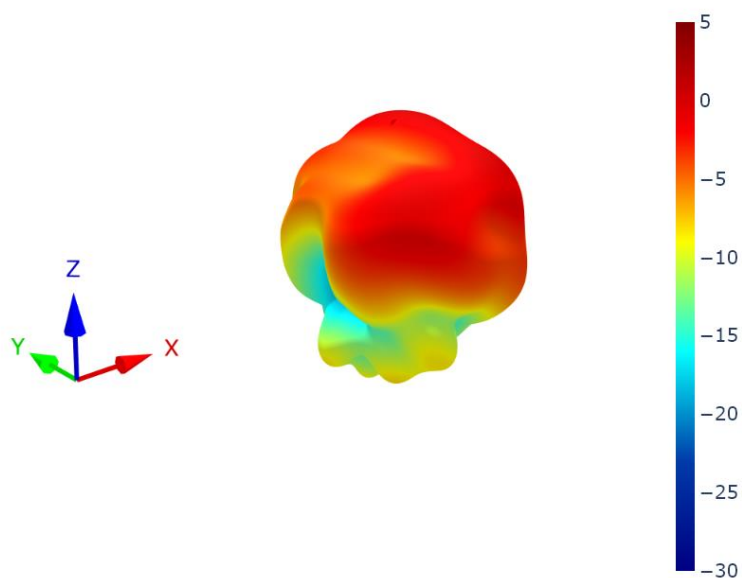
YZ Plane



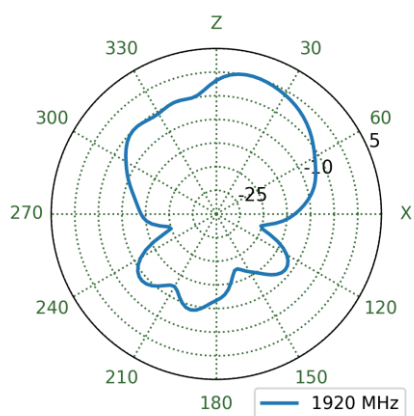
XY Plane



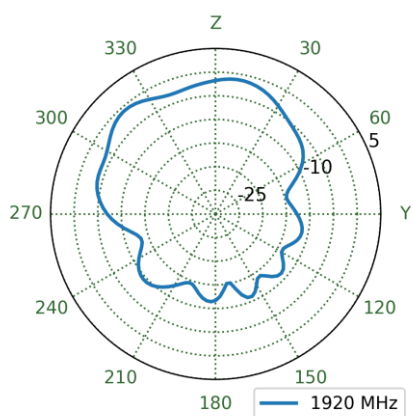
## 8.50 Cellular 7 Patterns at 1920 MHz



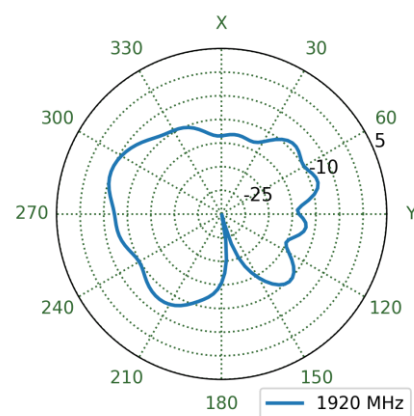
XZ Plane



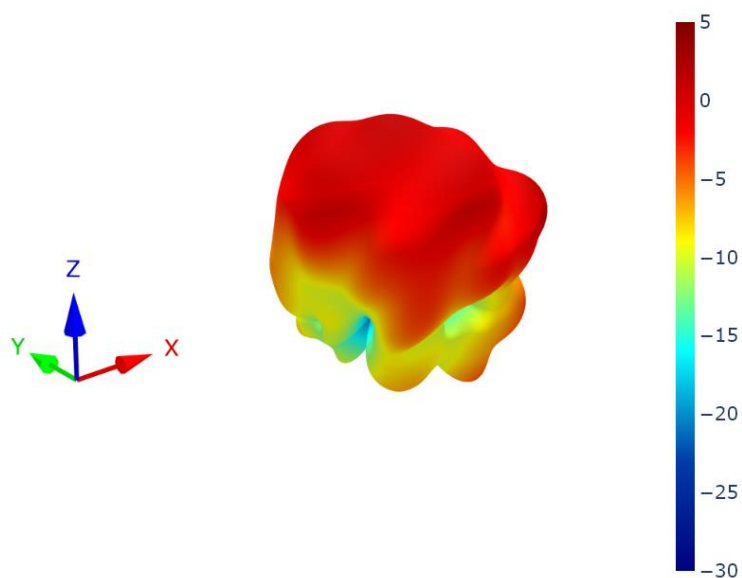
YZ Plane



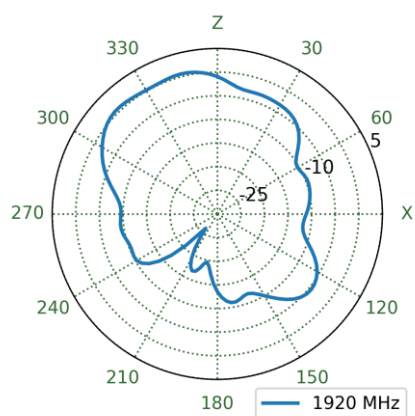
XY Plane



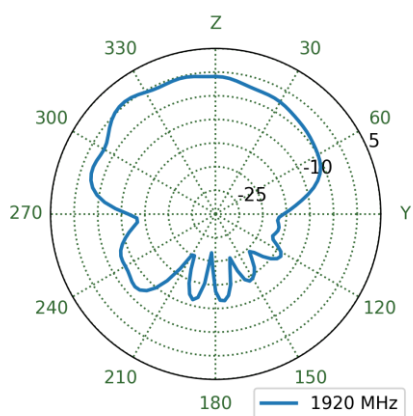
## 8.51 Cellular 8 Patterns at 1920 MHz



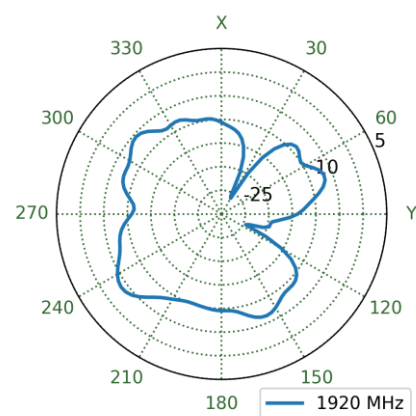
XZ Plane



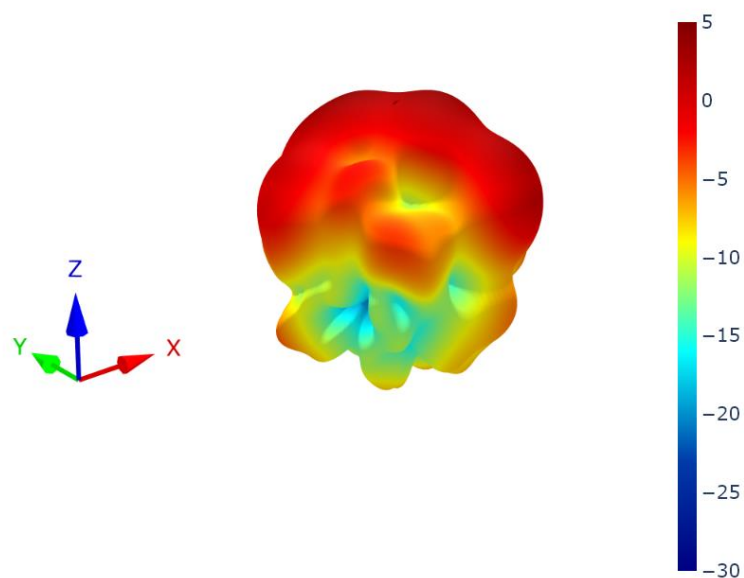
YZ Plane



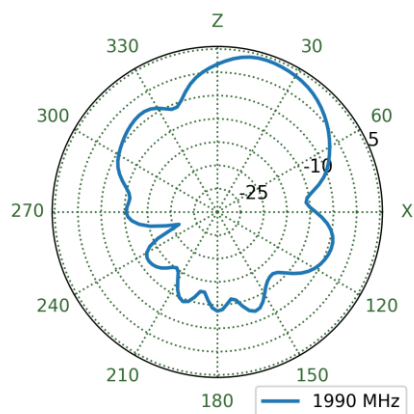
XY Plane



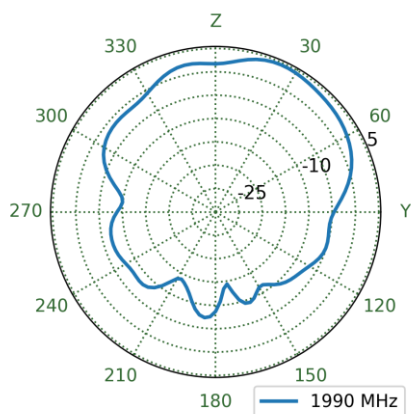
## 8.52 Cellular 1 Patterns at 1990 MHz



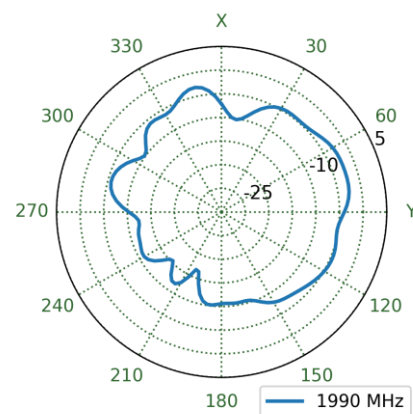
XZ Plane



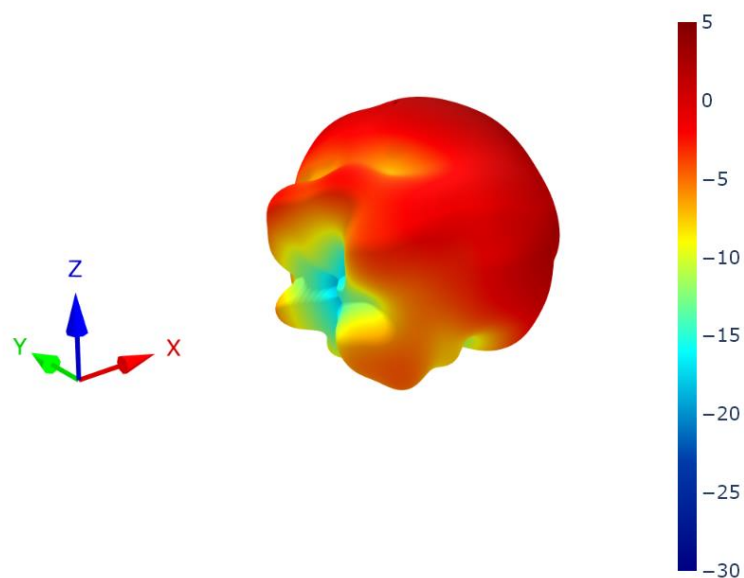
YZ Plane



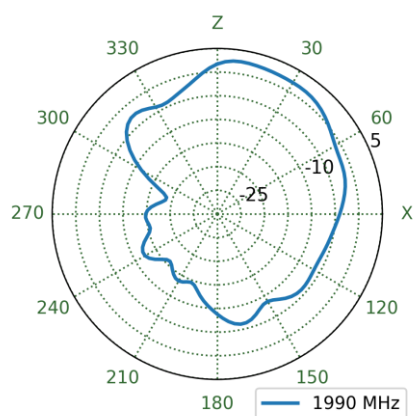
XY Plane



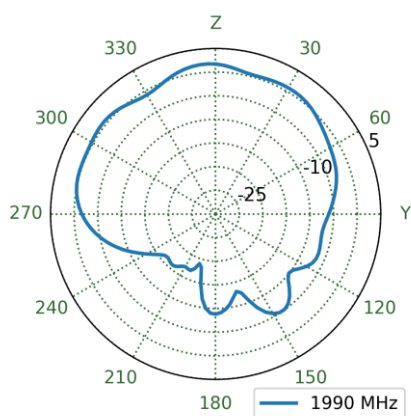
## 8.53 Cellular 2 Patterns at 1990 MHz



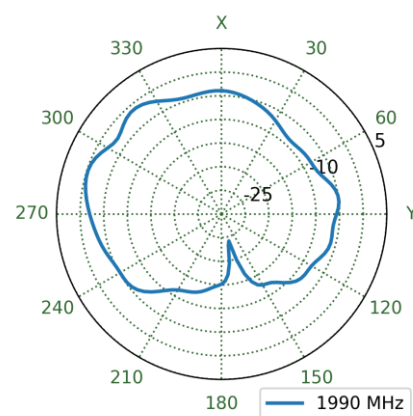
XZ Plane



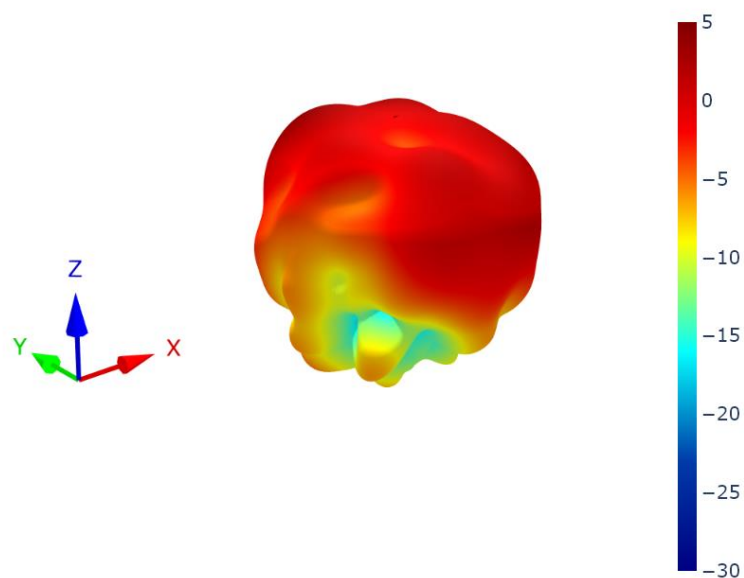
YZ Plane



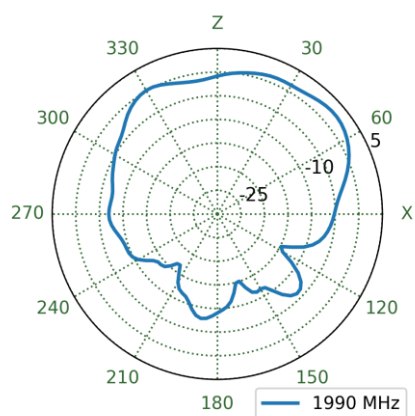
XY Plane



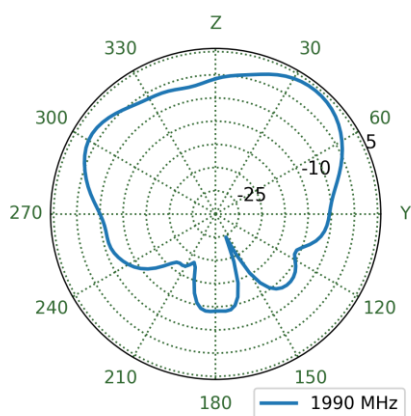
## 8.54 Cellular 3 Patterns at 1990 MHz



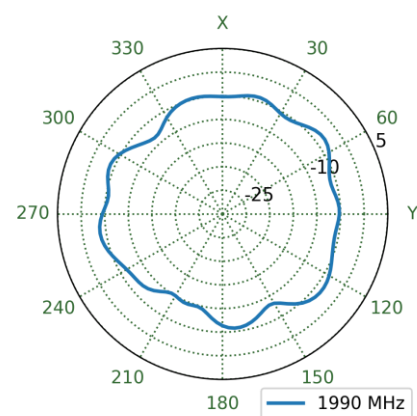
XZ Plane



YZ Plane

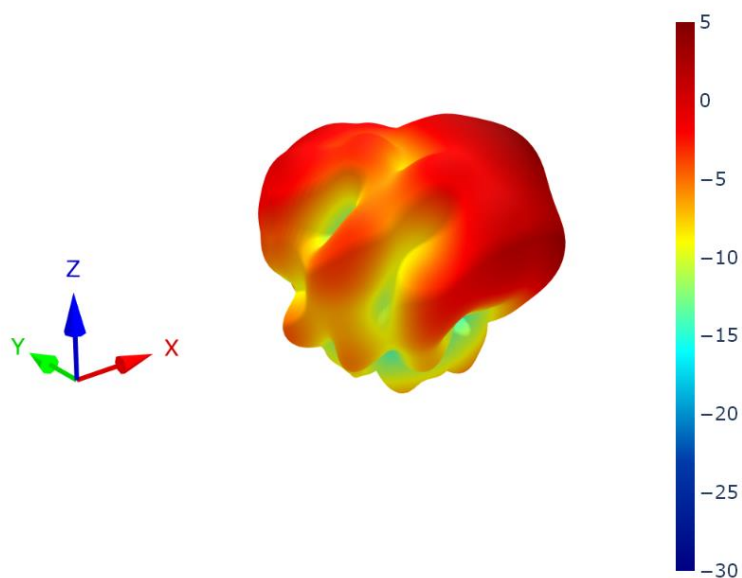


XY Plane

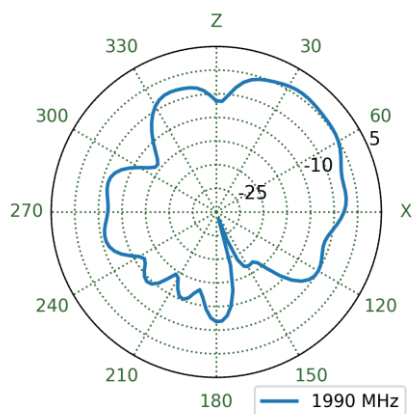




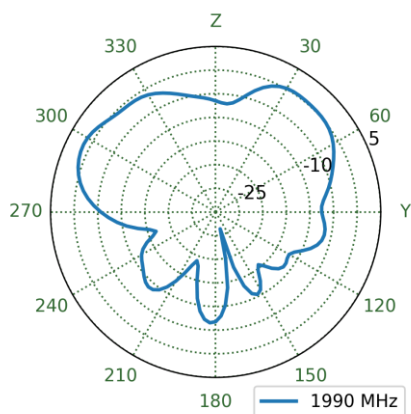
## 8.55 Cellular 4 Patterns at 1990 MHz



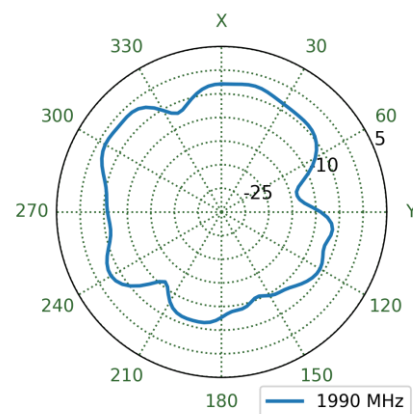
XZ Plane



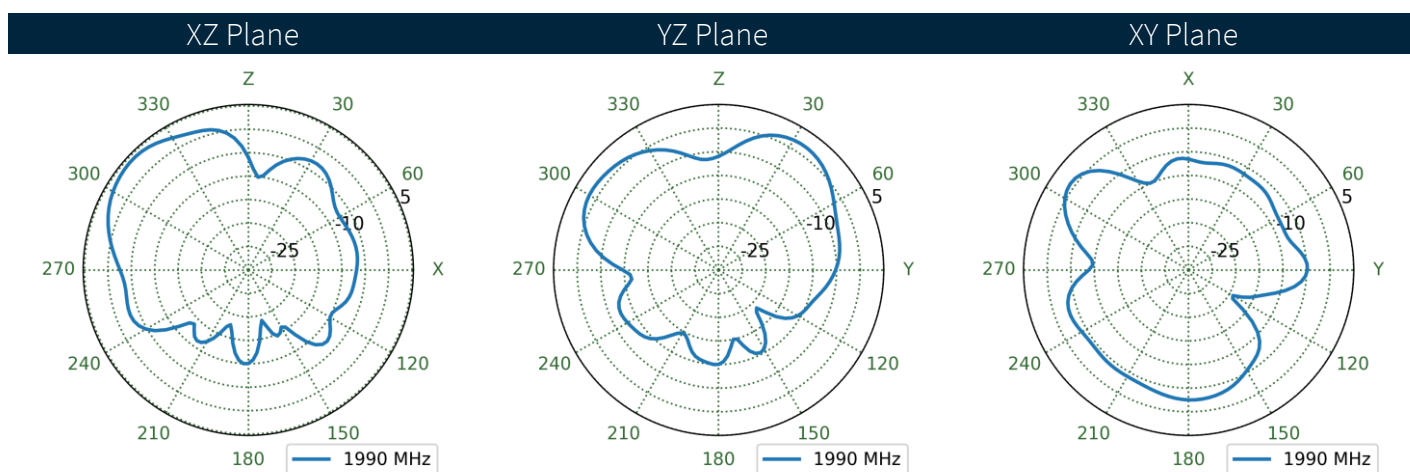
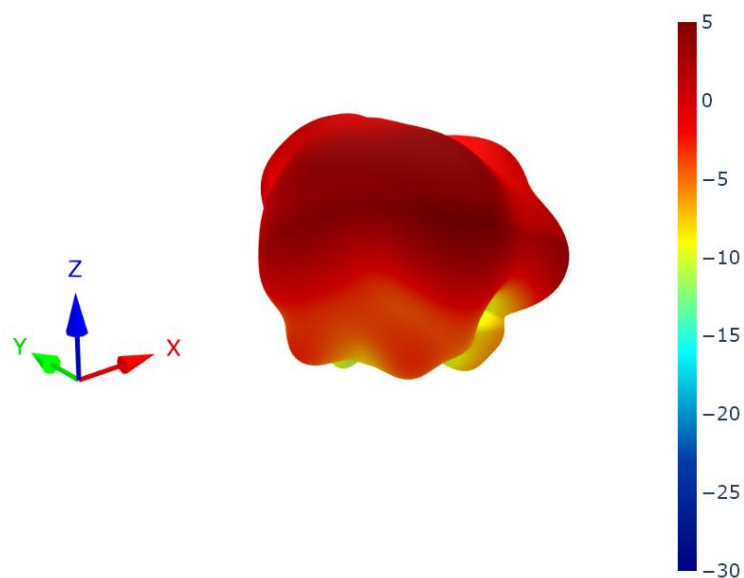
YZ Plane



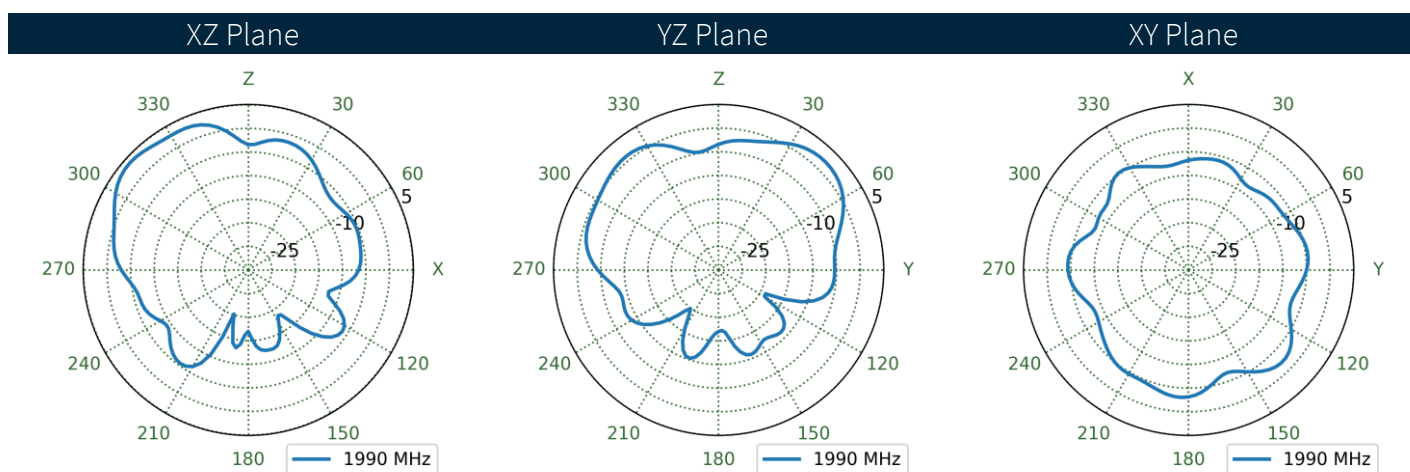
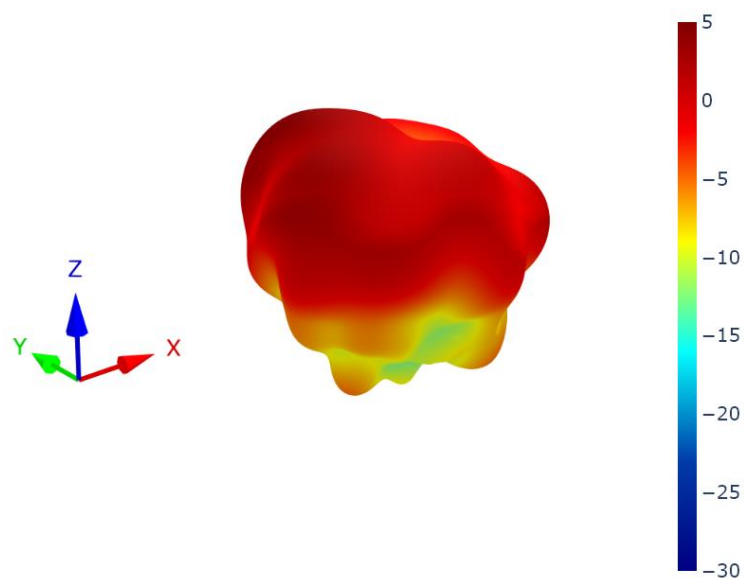
XY Plane



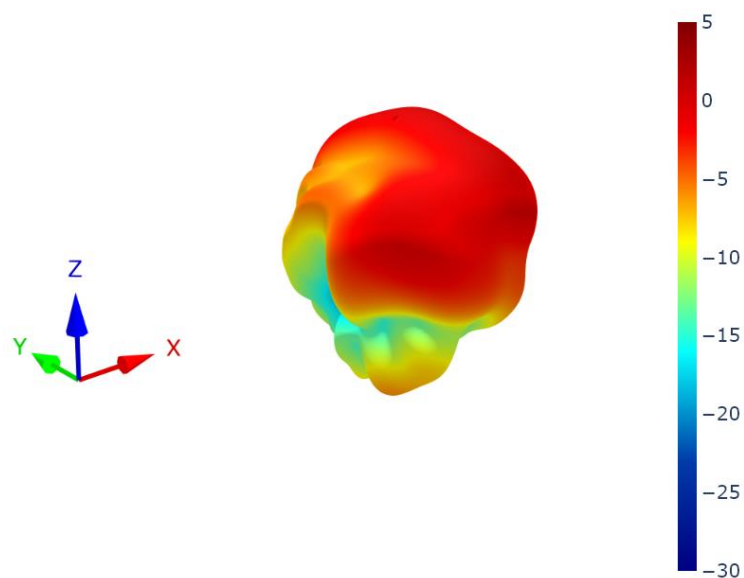
## 8.56 Cellular 5 Patterns at 1990 MHz



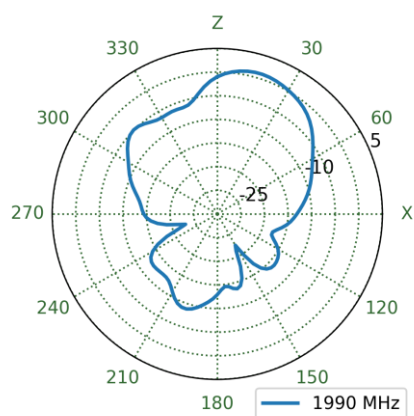
## 8.57 Cellular 6 Patterns at 1990 MHz



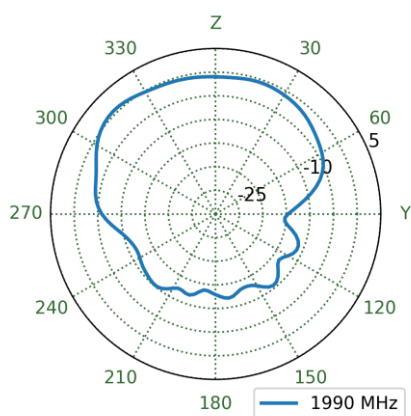
## 8.58 Cellular 7 Patterns at 1990 MHz



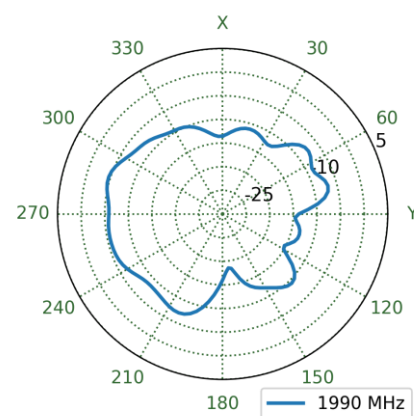
XZ Plane



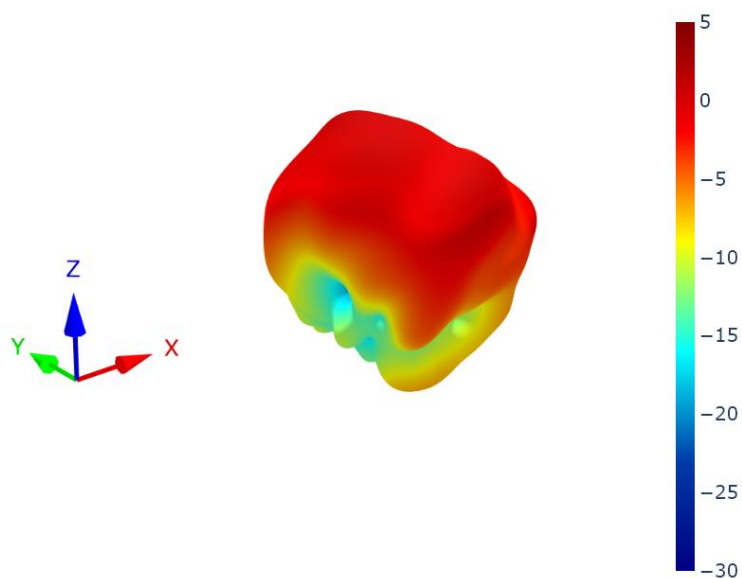
YZ Plane



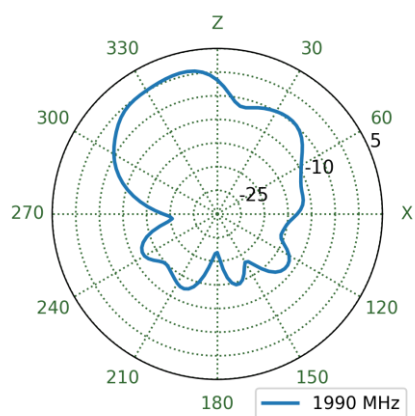
XY Plane



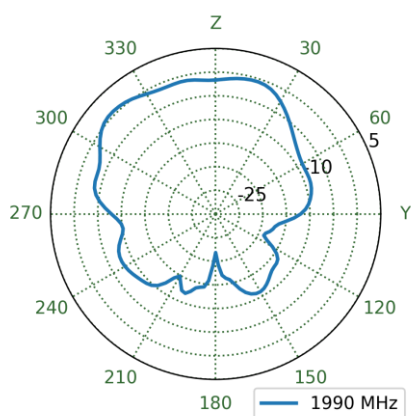
## 8.59 Cellular 8 Patterns at 1990 MHz



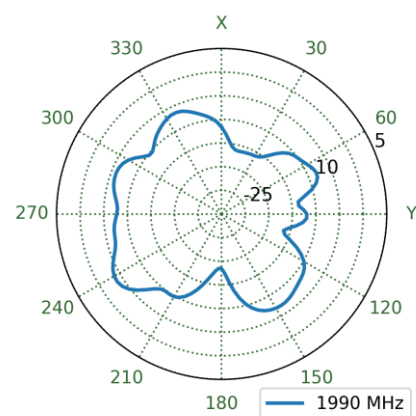
XZ Plane



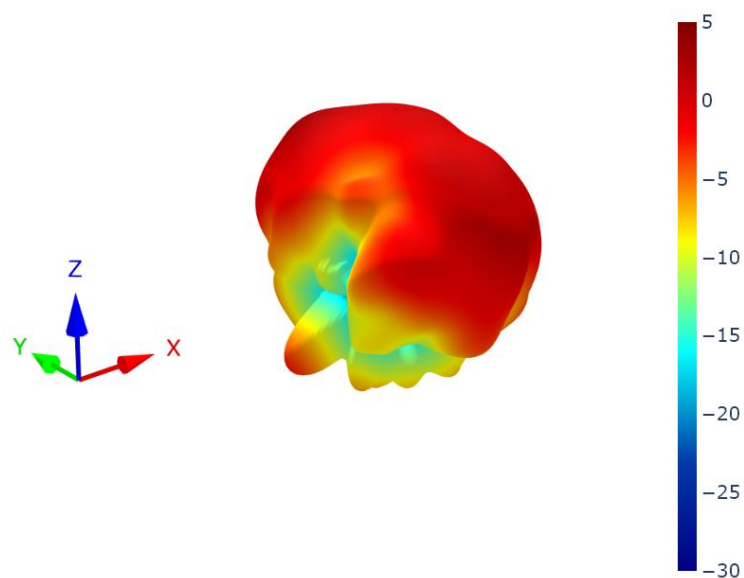
YZ Plane



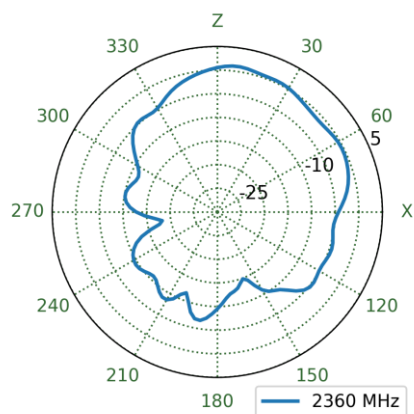
XY Plane



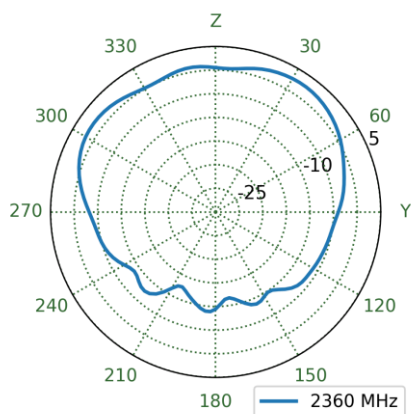
## 8.60 Cellular 1 Patterns at 2360 MHz



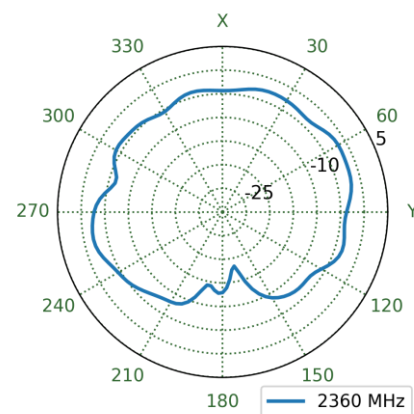
XZ Plane



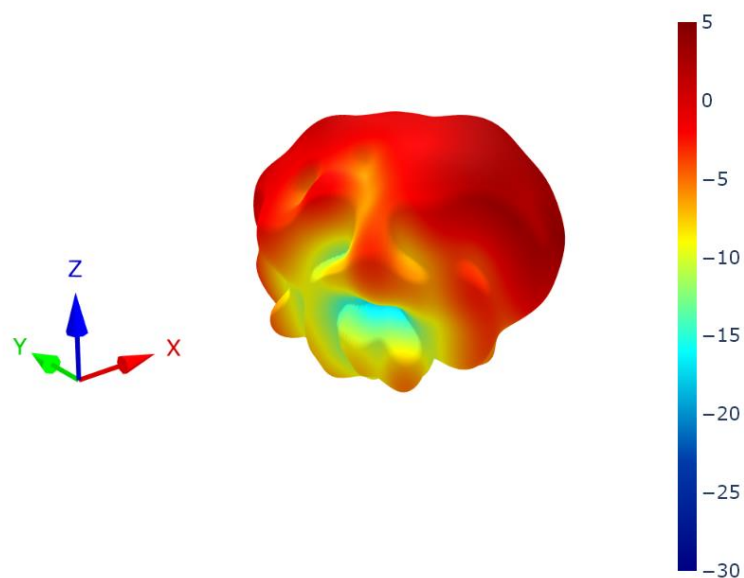
YZ Plane



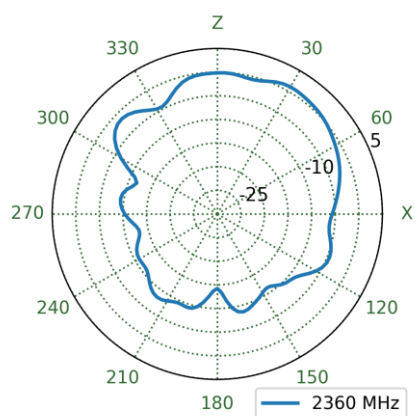
XY Plane



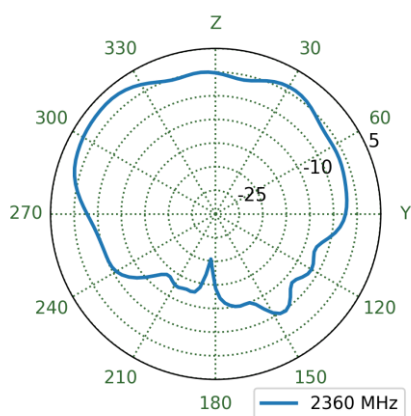
## 8.61 Cellular 2 Patterns at 2360 MHz



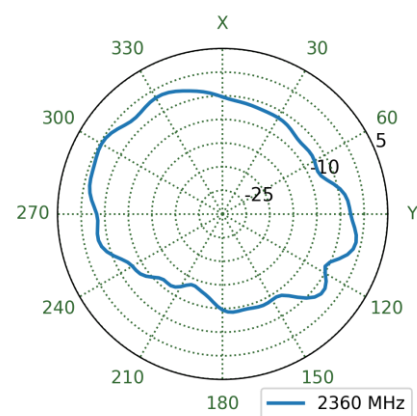
XZ Plane



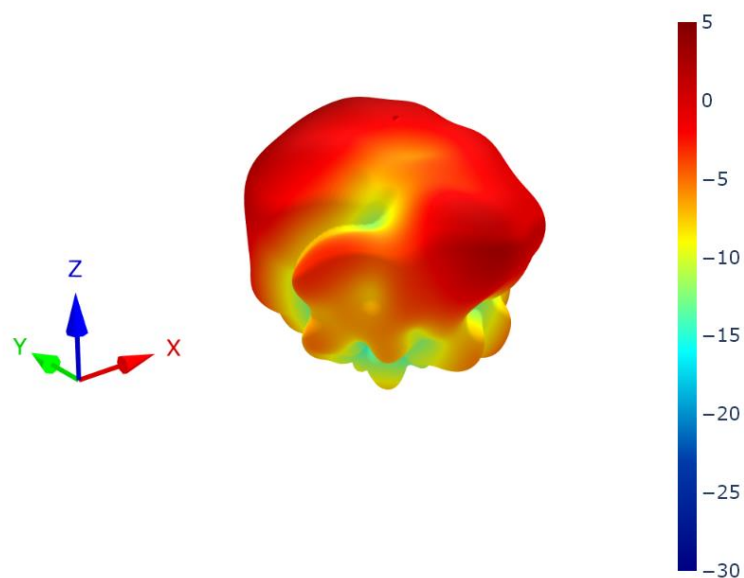
YZ Plane



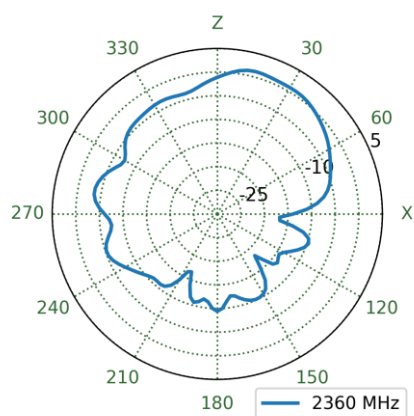
XY Plane



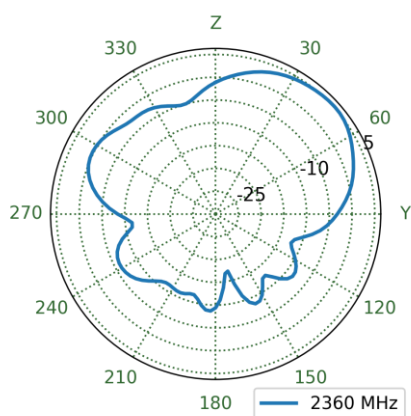
## 8.62 Cellular 3 Patterns at 2360 MHz



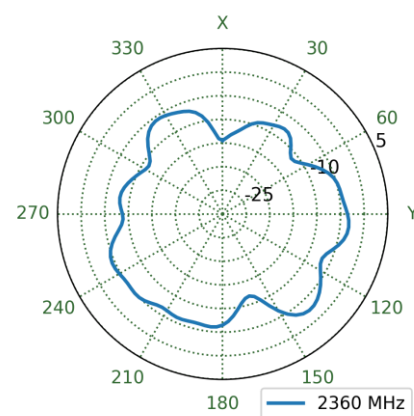
XZ Plane



YZ Plane

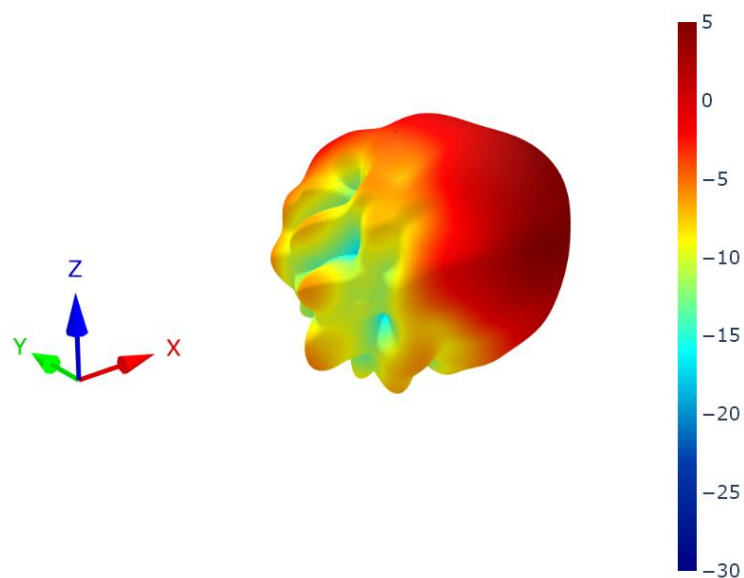


XY Plane

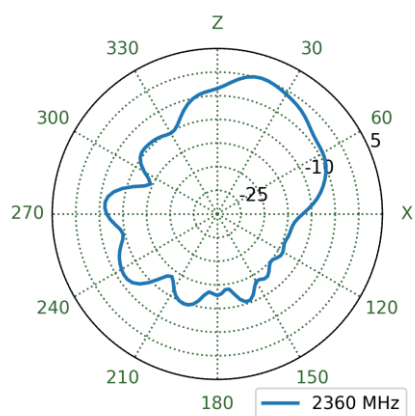




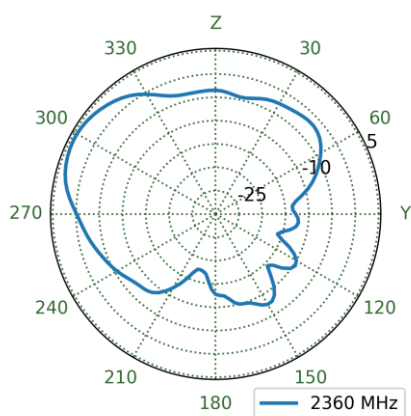
## 8.63 Cellular 4 Patterns at 2360 MHz



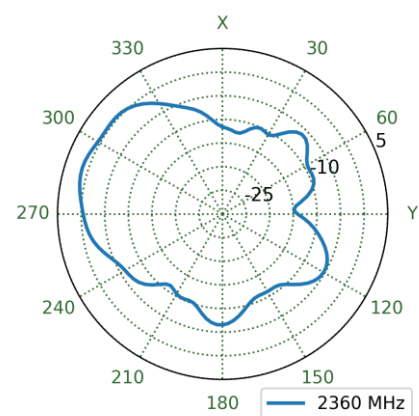
XZ Plane



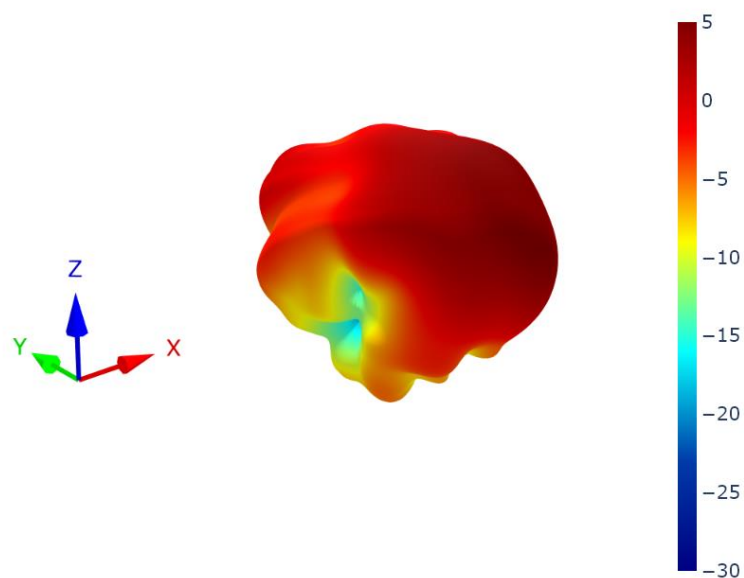
YZ Plane



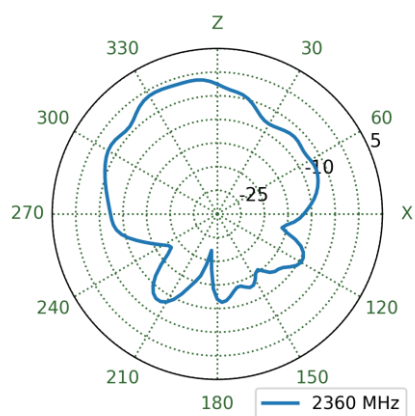
XY Plane



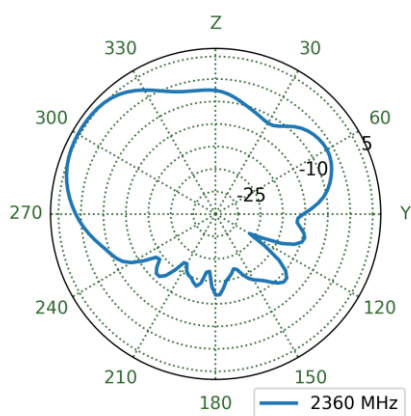
## 8.64 Cellular 5 Patterns at 2360 MHz



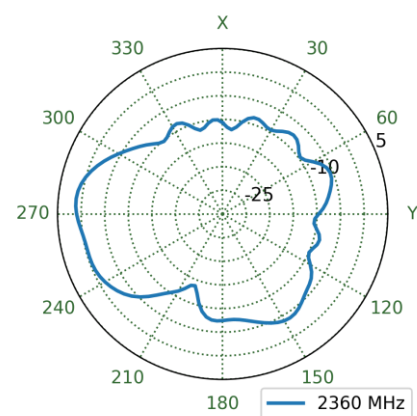
XZ Plane



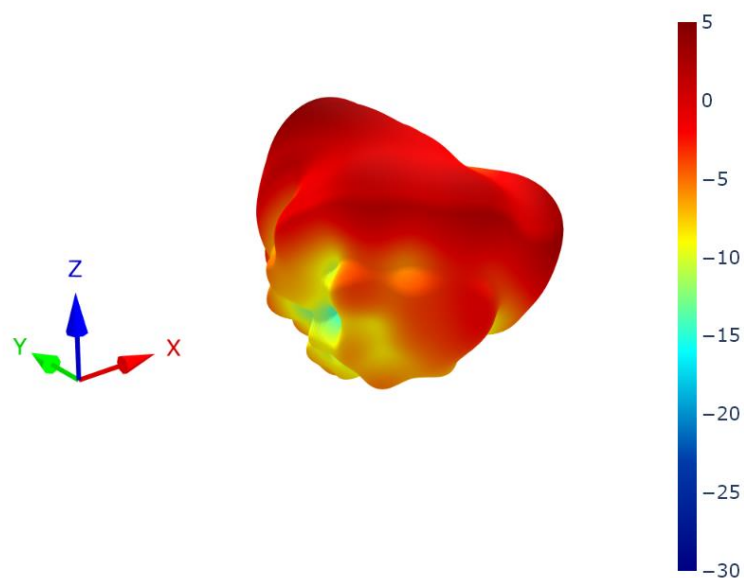
YZ Plane



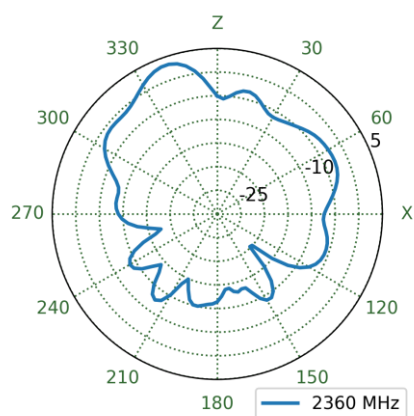
XY Plane



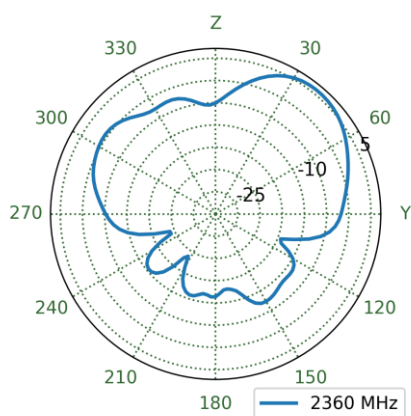
## 8.65 Cellular 6 Patterns at 2360 MHz



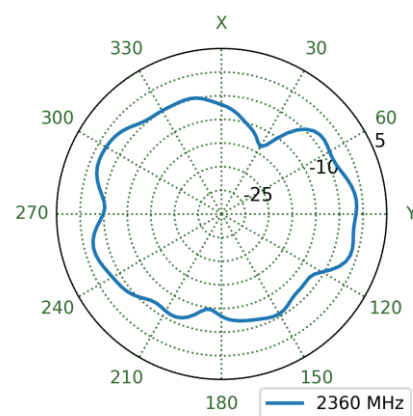
XZ Plane



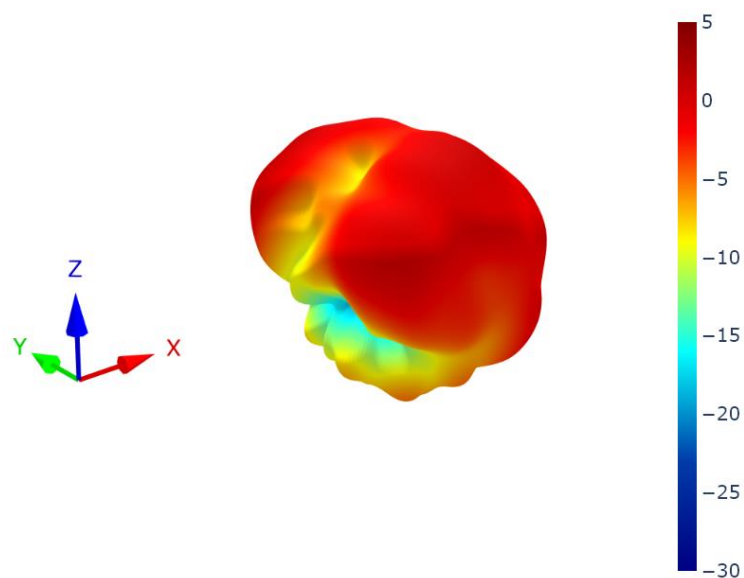
YZ Plane



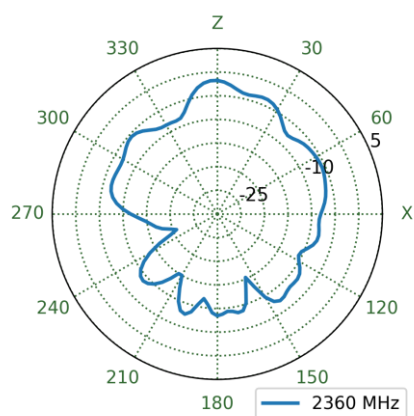
XY Plane



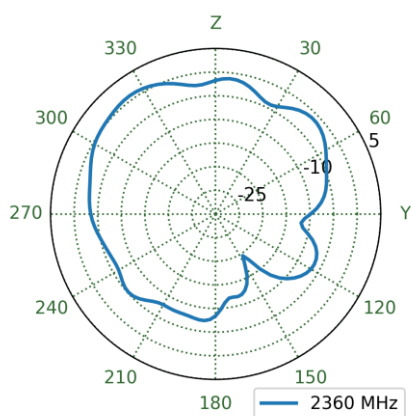
## 8.66 Cellular 7 Patterns at 2360 MHz



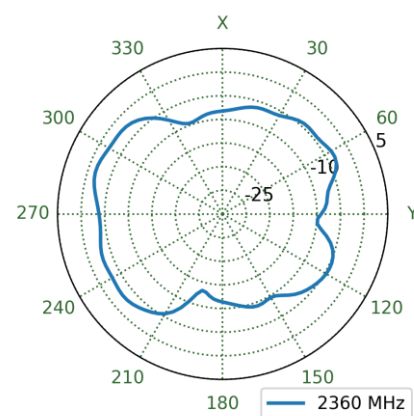
XZ Plane



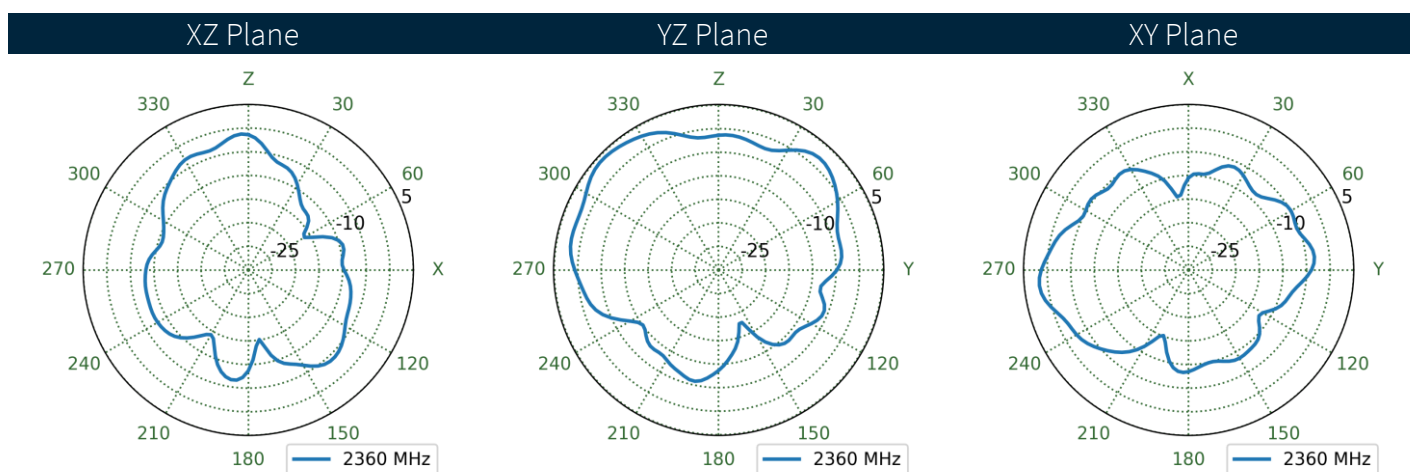
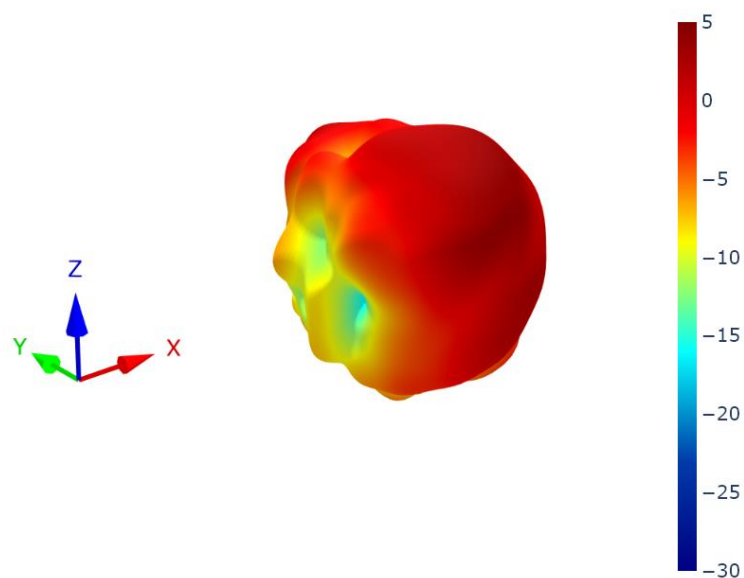
YZ Plane



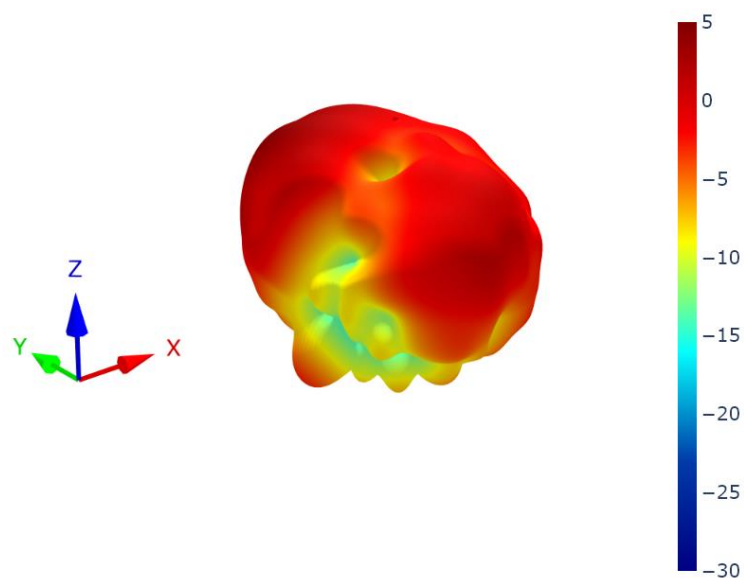
XY Plane



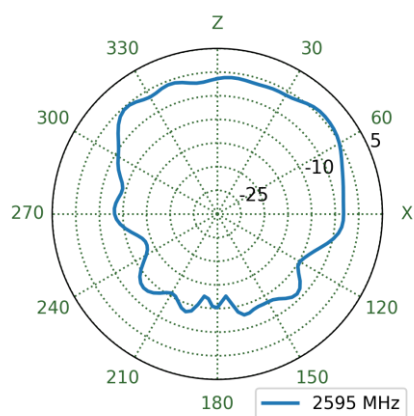
## 8.67 Cellular 8 Patterns at 2360 MHz



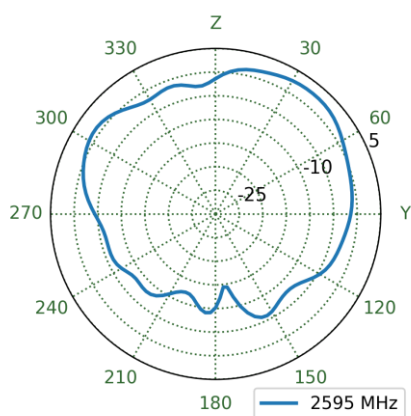
## 8.68 Cellular 1 Patterns at 2595 MHz



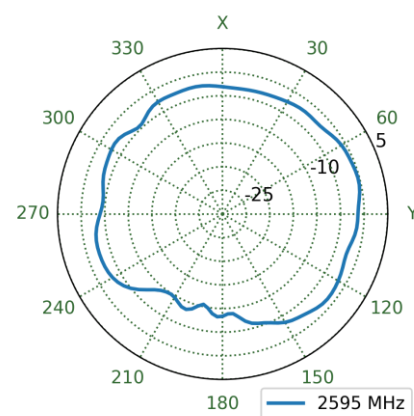
XZ Plane



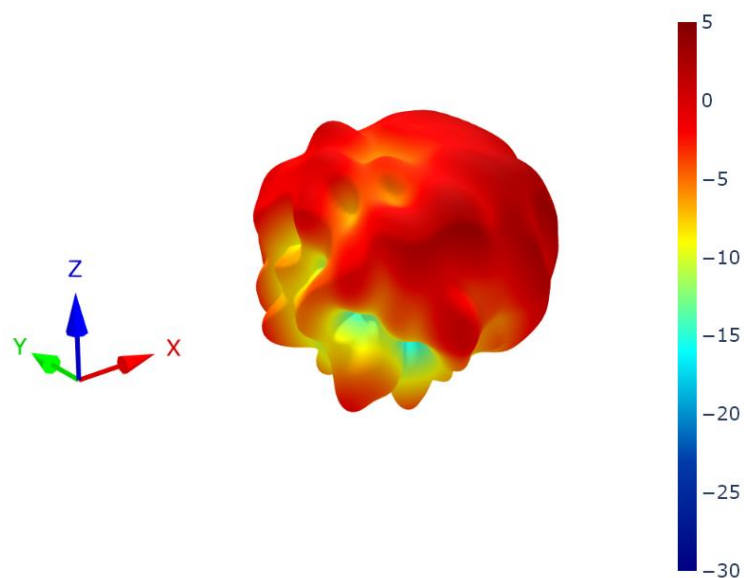
YZ Plane



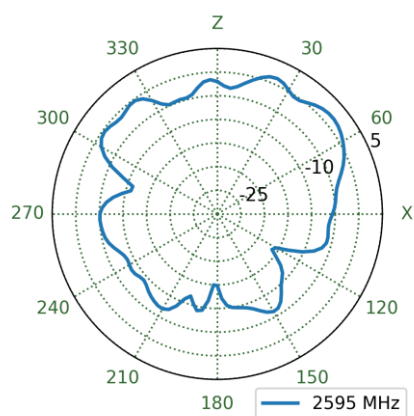
XY Plane



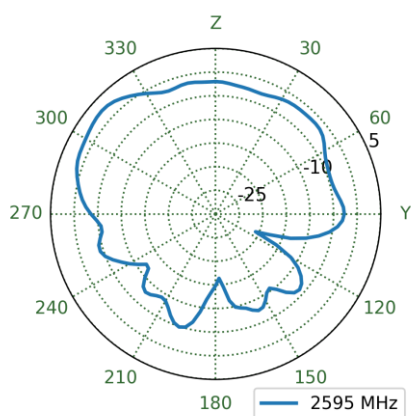
## 8.69 Cellular 2 Patterns at 2595 MHz



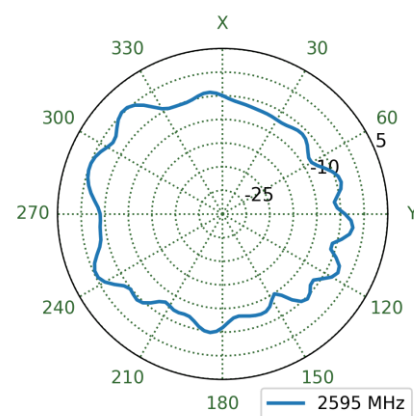
XZ Plane



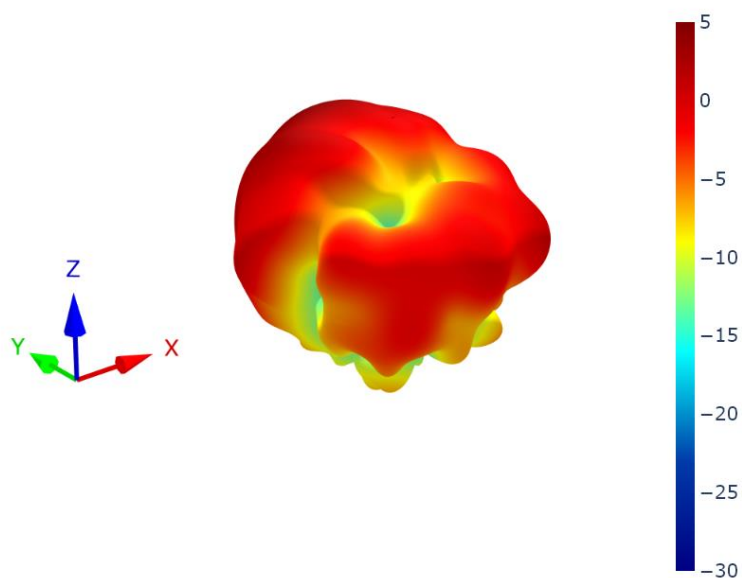
YZ Plane



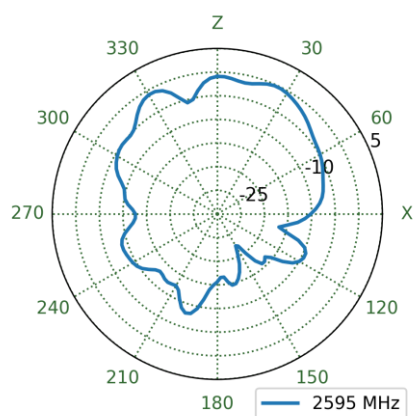
XY Plane



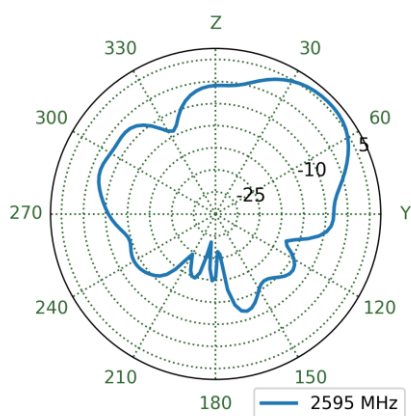
## 8.70 Cellular 3 Patterns at 2595 MHz



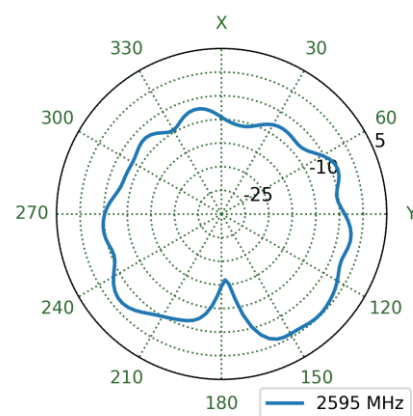
XZ Plane



YZ Plane

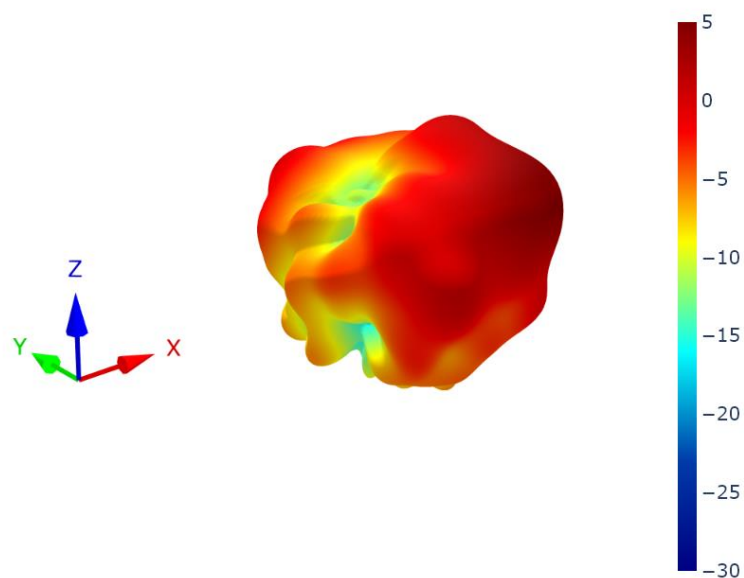


XY Plane

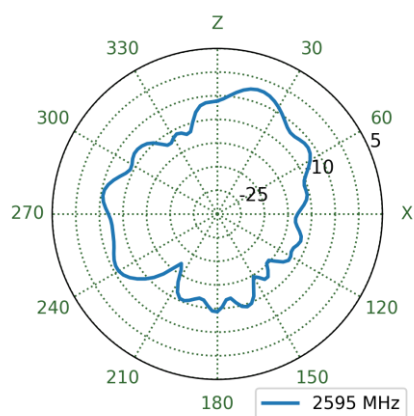




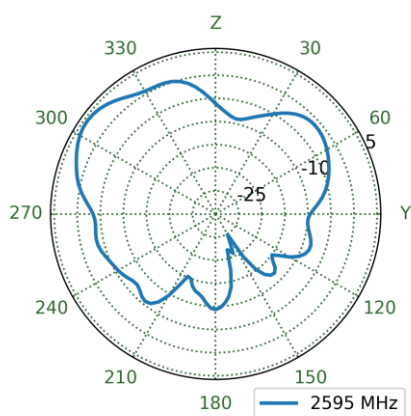
## 8.71 Cellular 4 Patterns at 2595 MHz



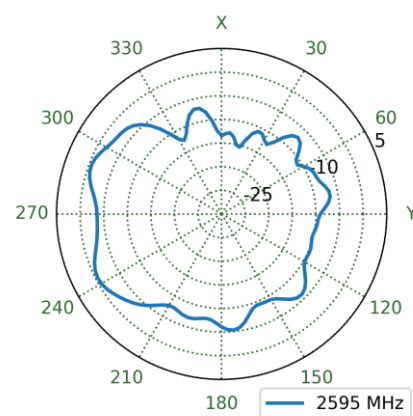
XZ Plane



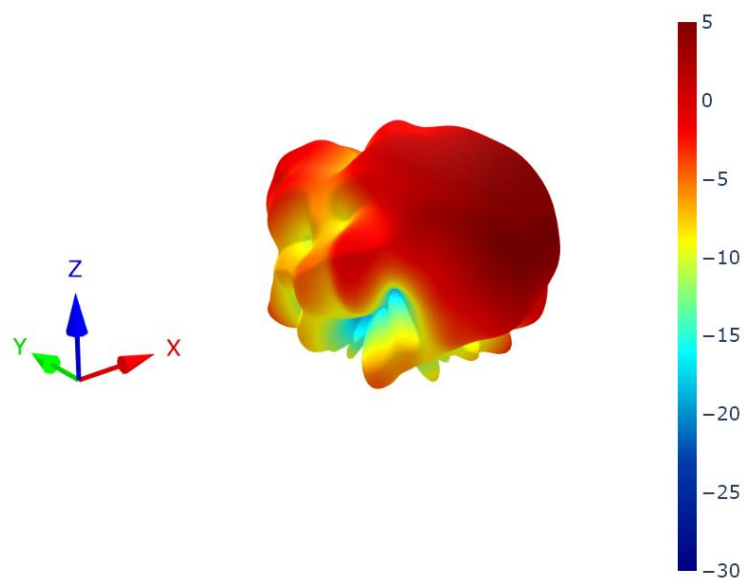
YZ Plane



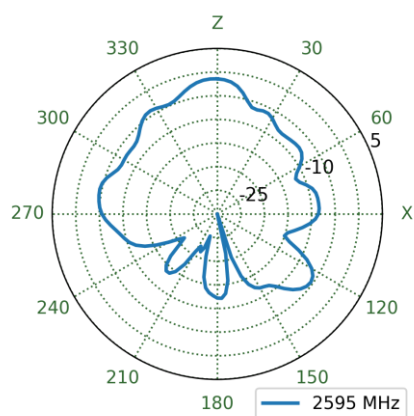
XY Plane



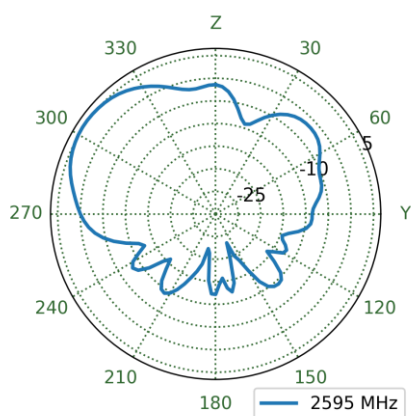
## 8.72 Cellular 5 Patterns at 2595 MHz



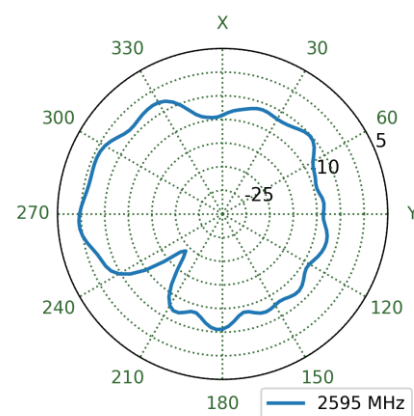
XZ Plane



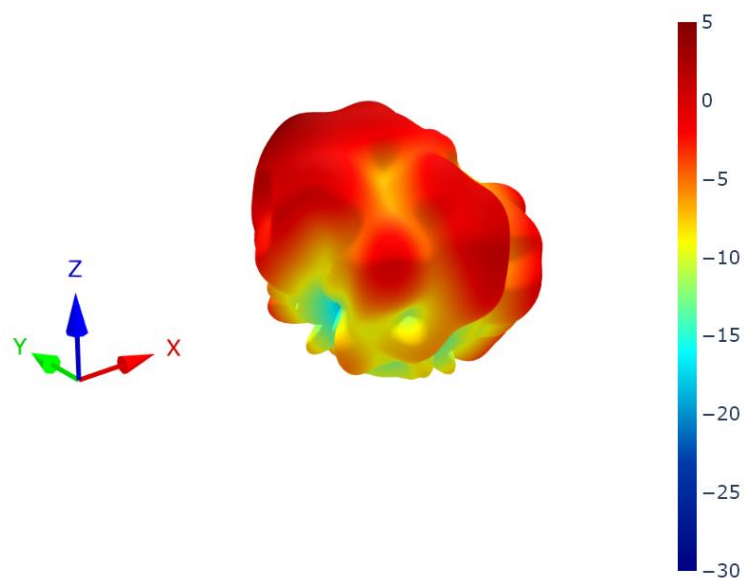
YZ Plane



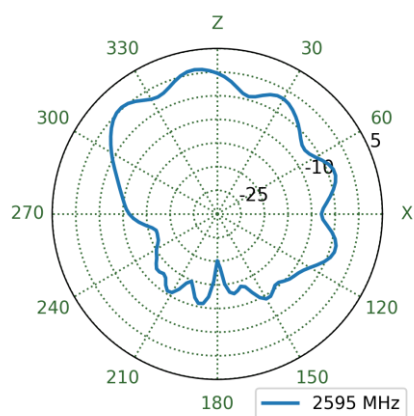
XY Plane



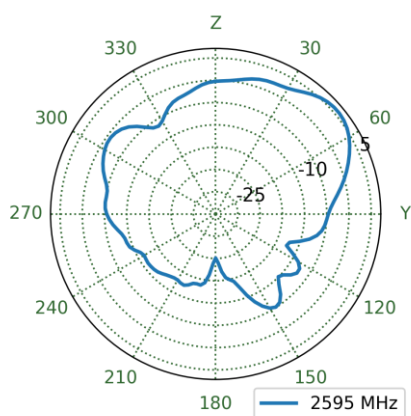
## 8.73 Cellular 6 Patterns at 2595 MHz



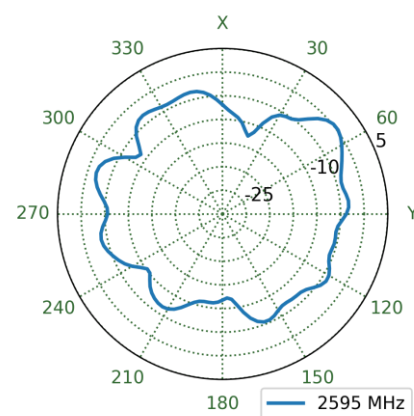
XZ Plane



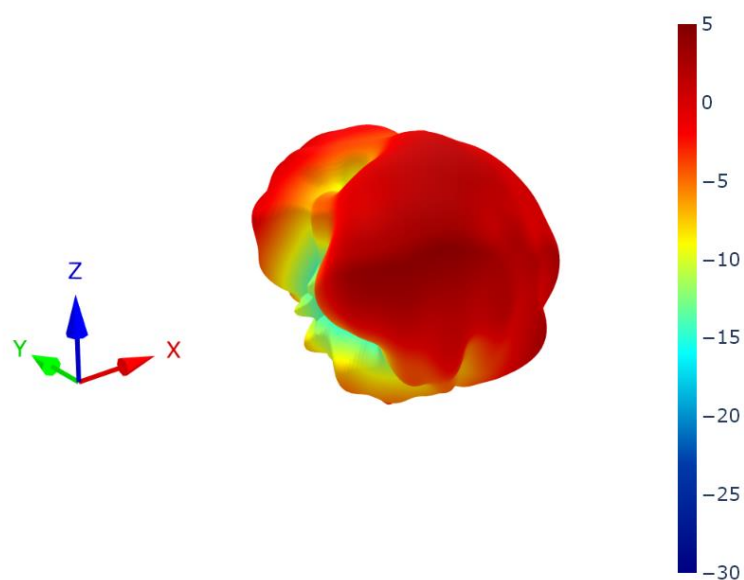
YZ Plane



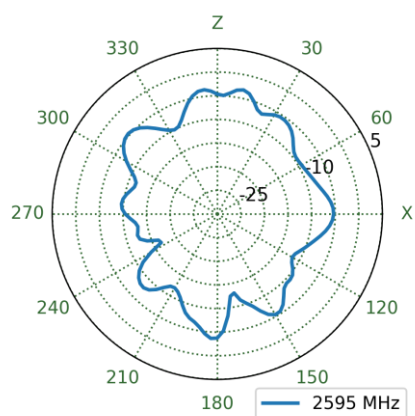
XY Plane



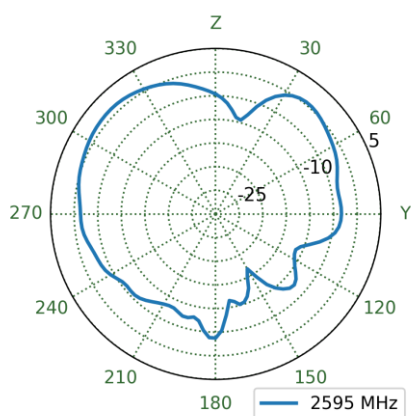
## 8.74 Cellular 7 Patterns at 2595 MHz



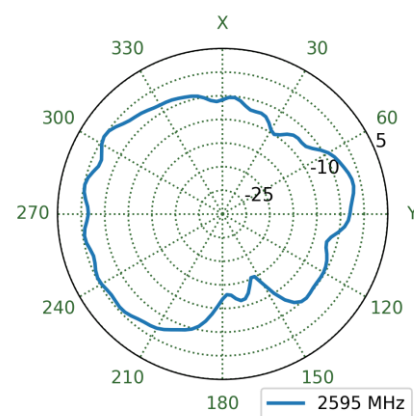
XZ Plane



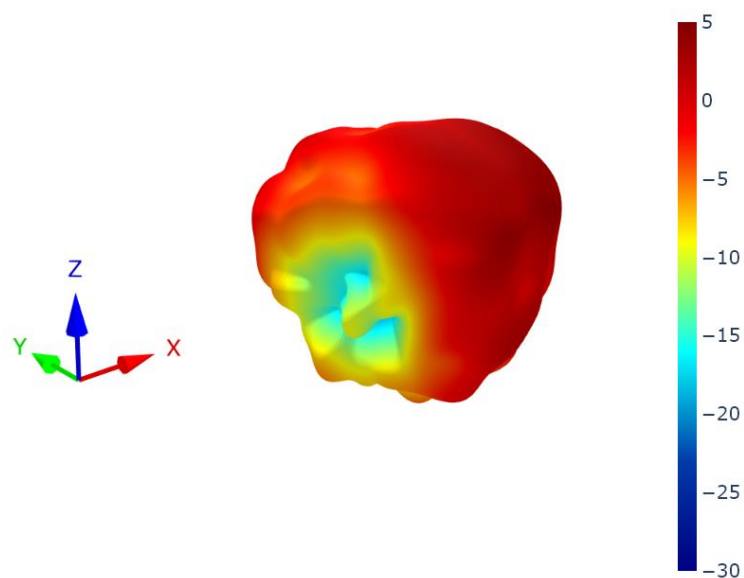
YZ Plane



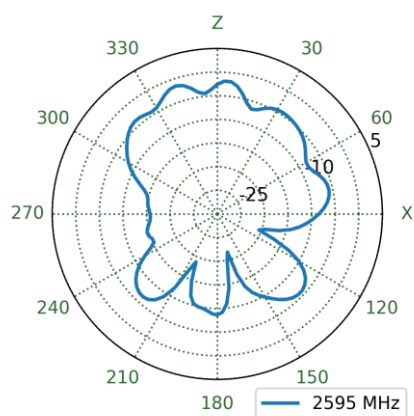
XY Plane



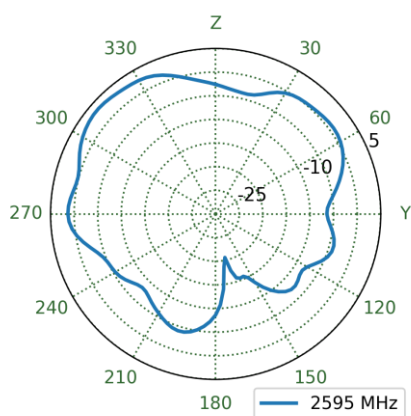
## 8.75 Cellular 8 Patterns at 2595 MHz



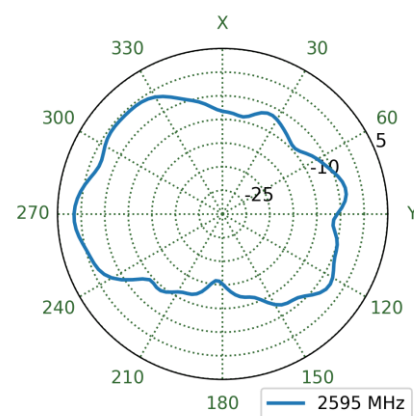
XZ Plane



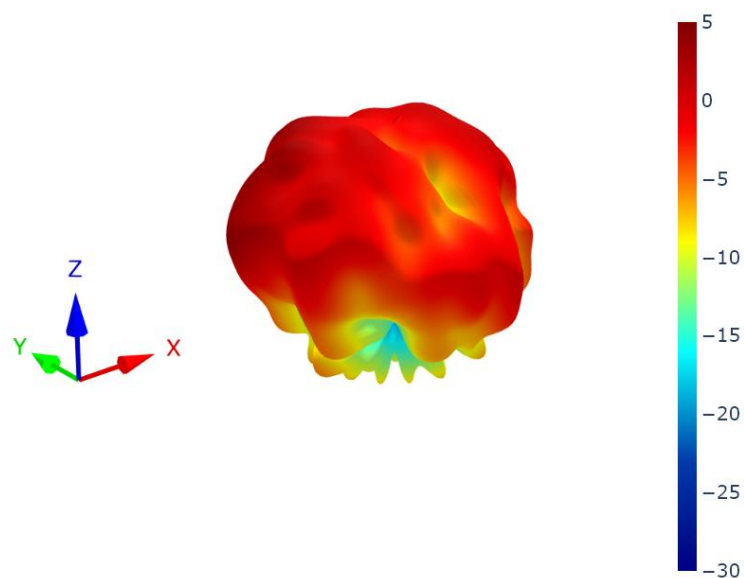
YZ Plane



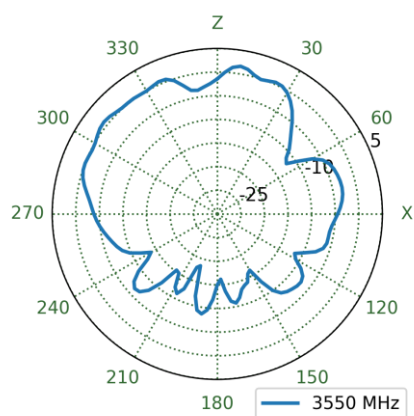
XY Plane



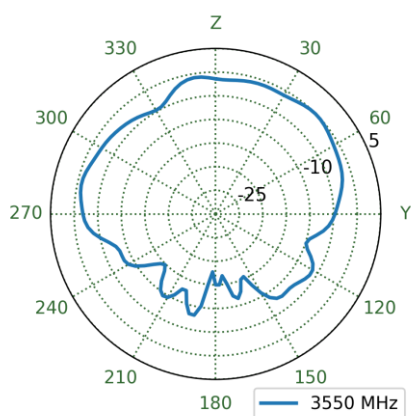
## 8.76 Cellular 1 Patterns at 3550 MHz



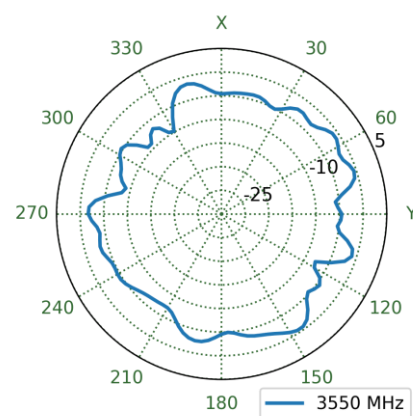
XZ Plane



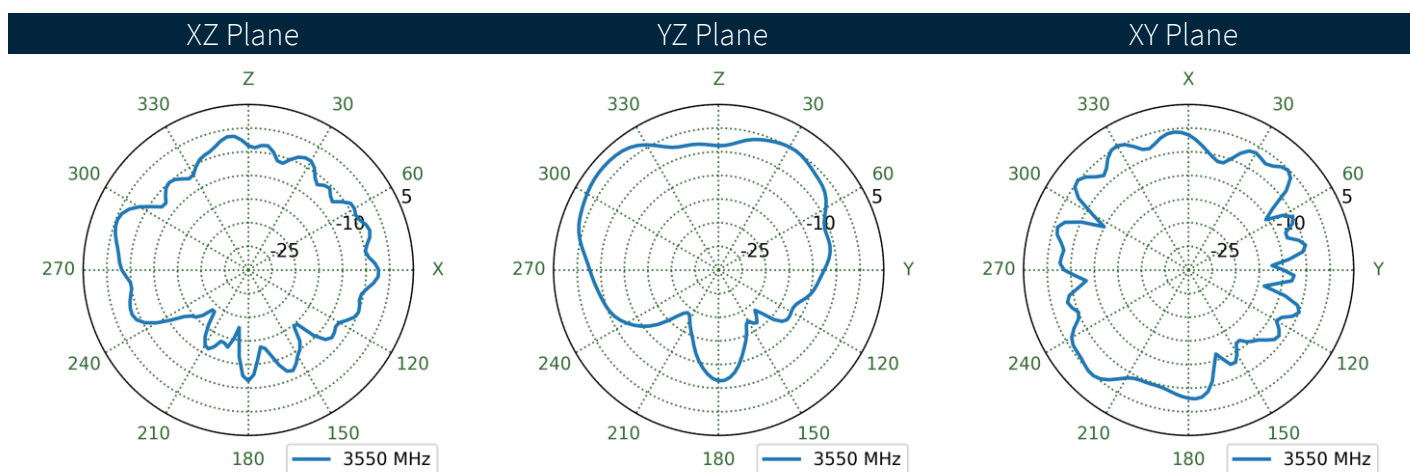
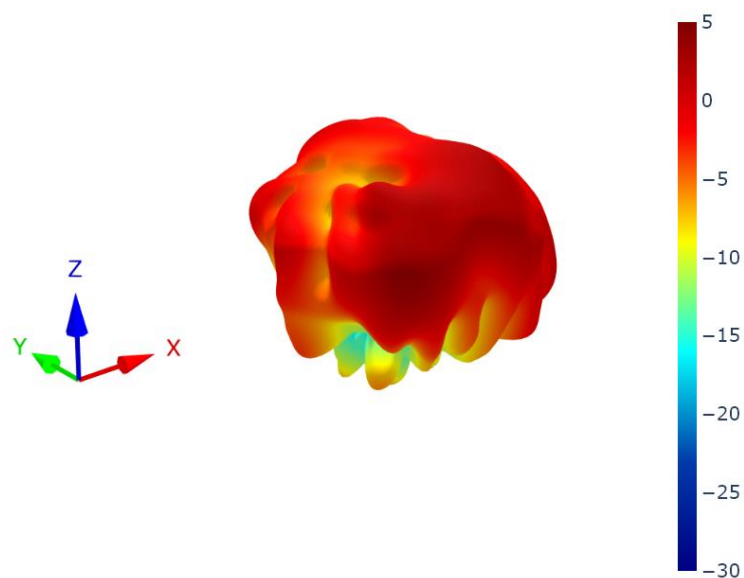
YZ Plane



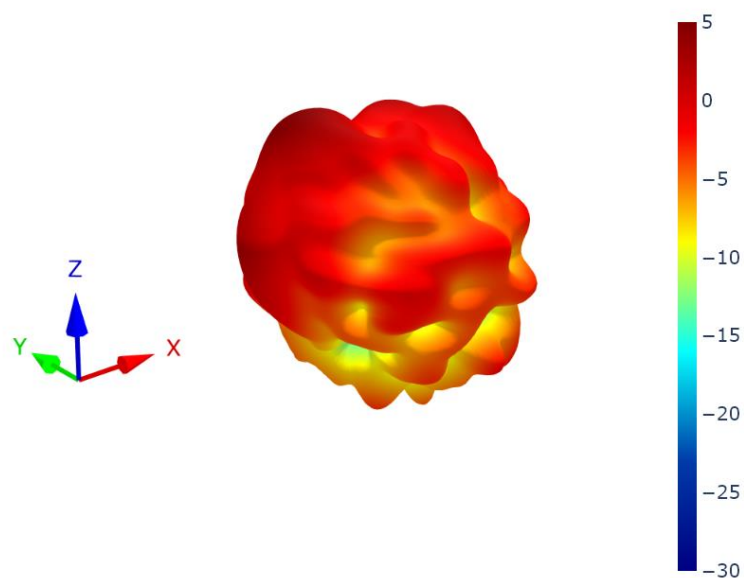
XY Plane



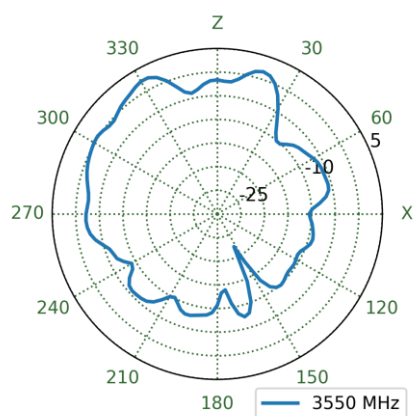
## 8.77 Cellular 2 Patterns at 3550 MHz



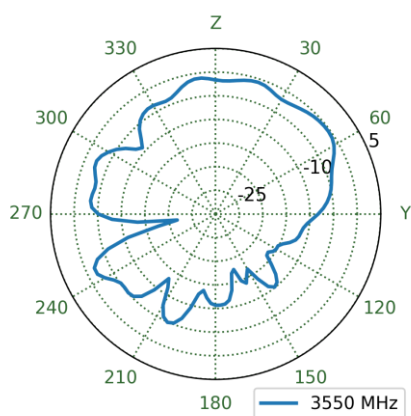
## 8.78 Cellular 3 Patterns at 3550 MHz



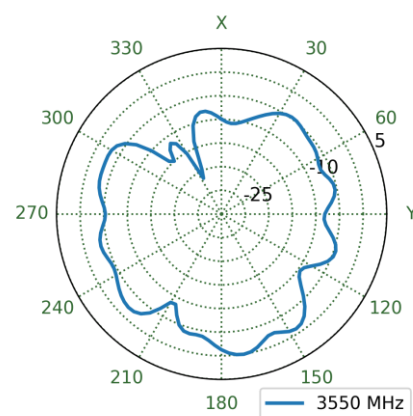
XZ Plane



YZ Plane

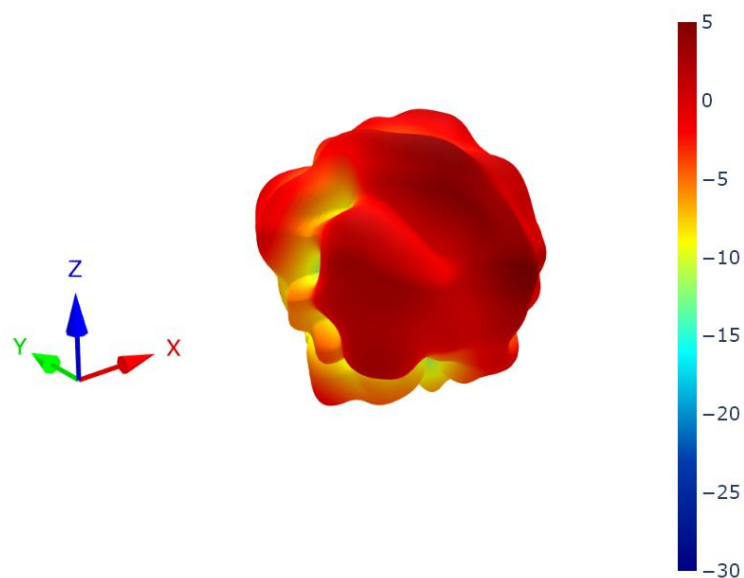


XY Plane

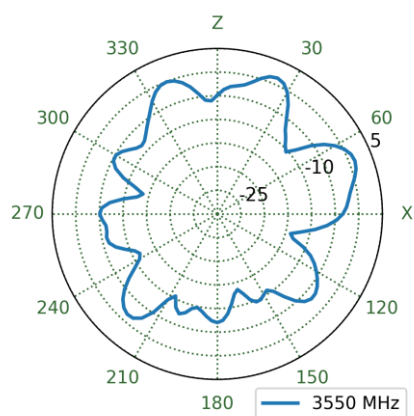




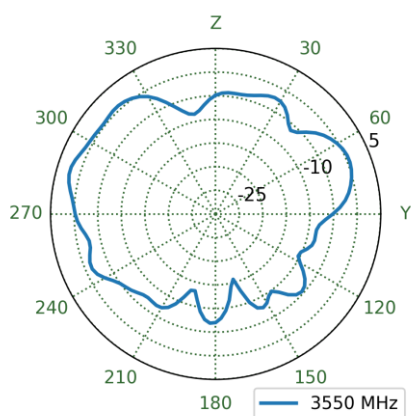
## 8.79 Cellular 4 Patterns at 3550 MHz



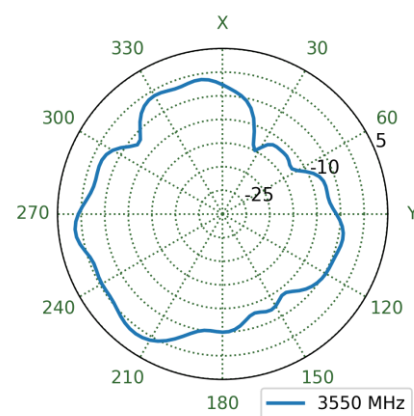
XZ Plane



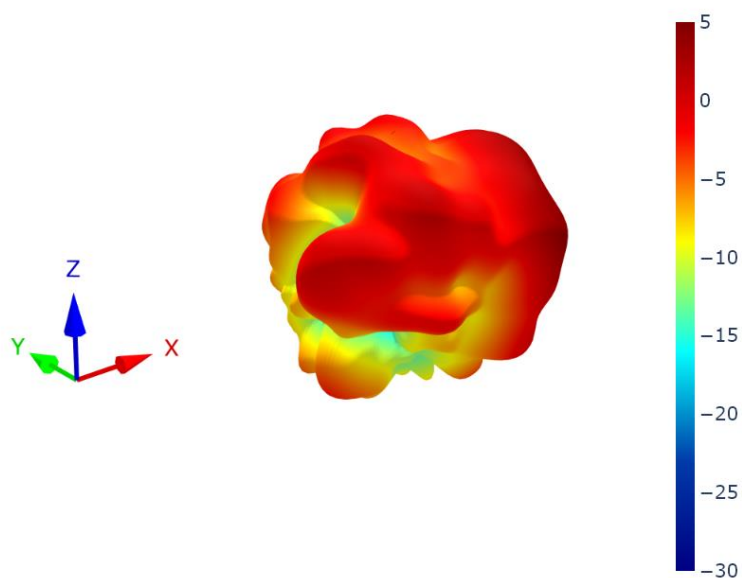
YZ Plane



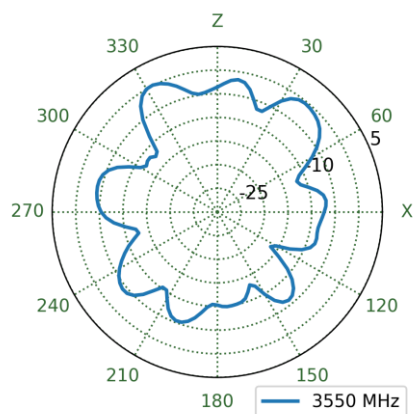
XY Plane



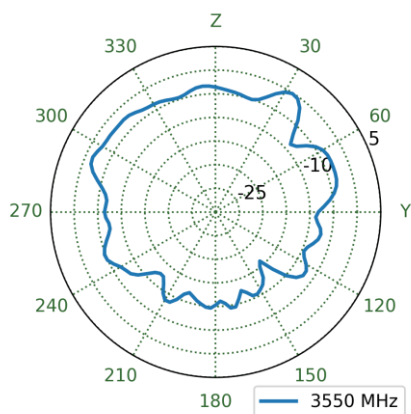
## 8.80 Cellular 5 Patterns at 3550 MHz



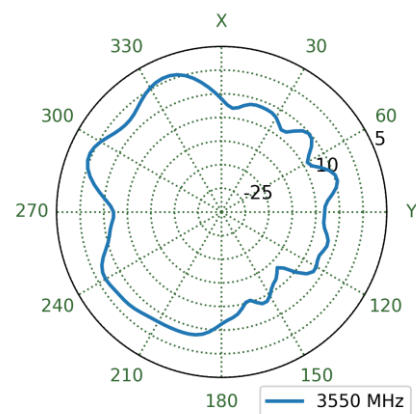
XZ Plane



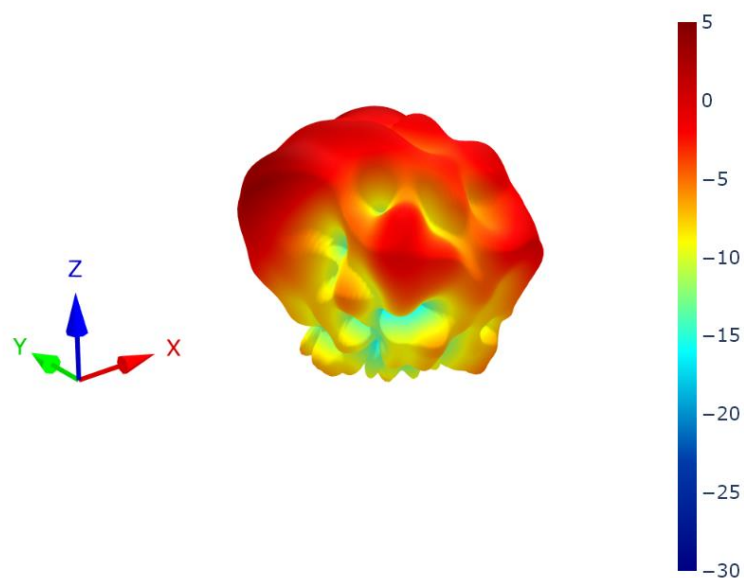
YZ Plane



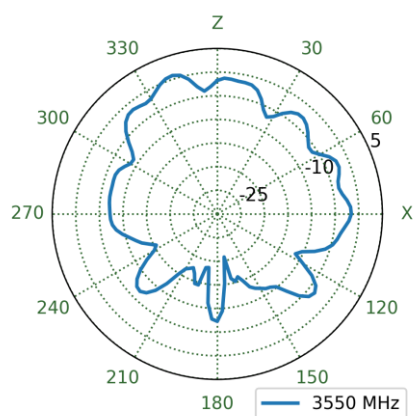
XY Plane



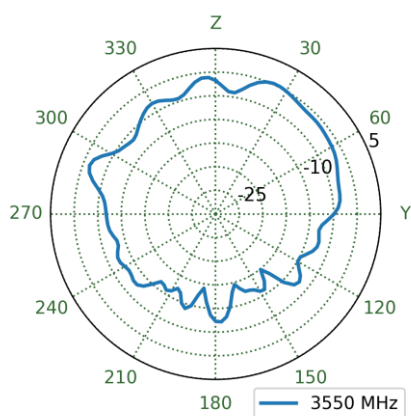
## 8.81 Cellular 6 Patterns at 3550 MHz



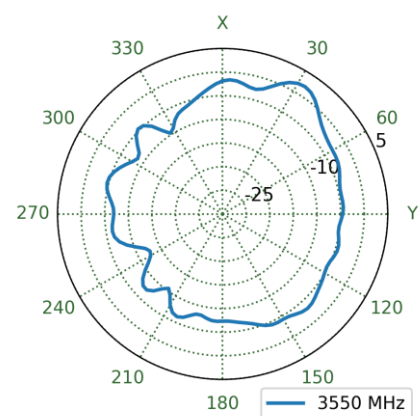
XZ Plane



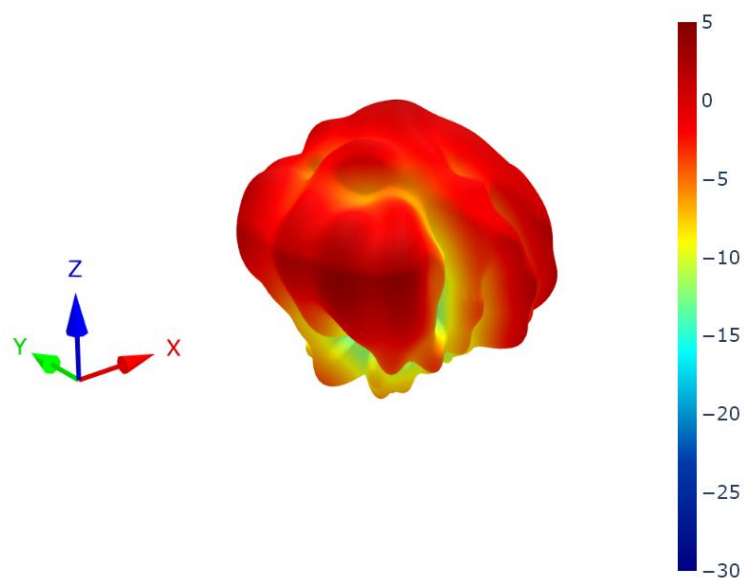
YZ Plane



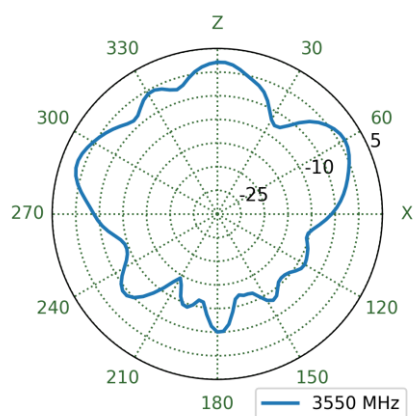
XY Plane



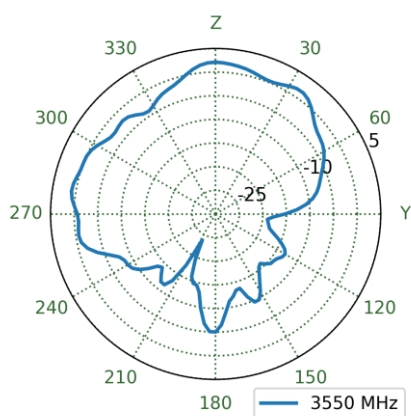
## 8.82 Cellular 7 Patterns at 3550 MHz



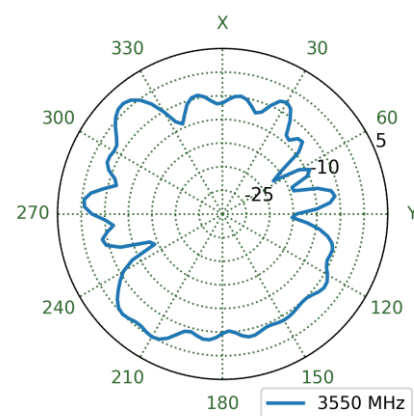
XZ Plane



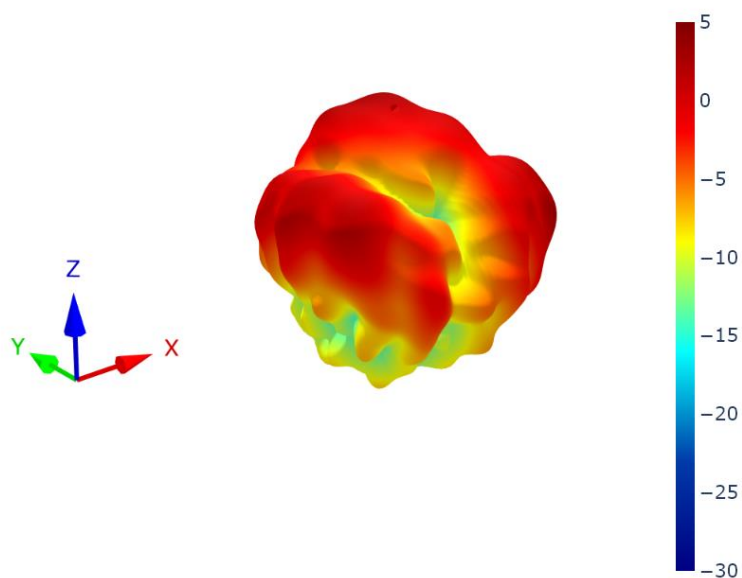
YZ Plane



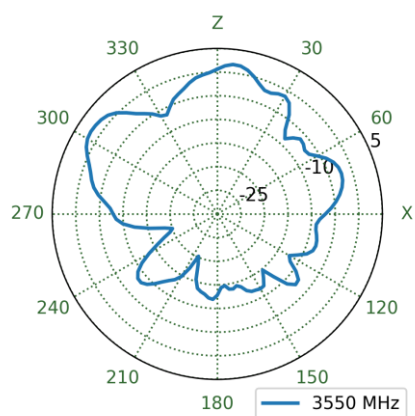
XY Plane



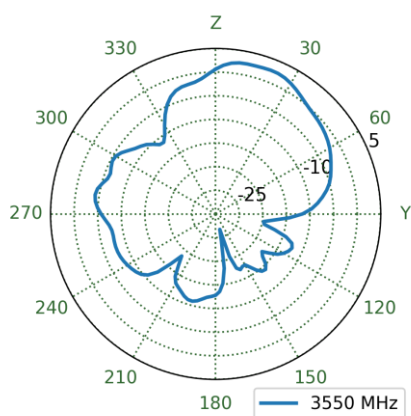
## 8.83 Cellular 8 Patterns at 3550 MHz



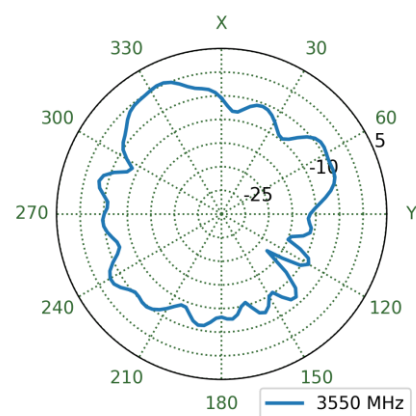
XZ Plane



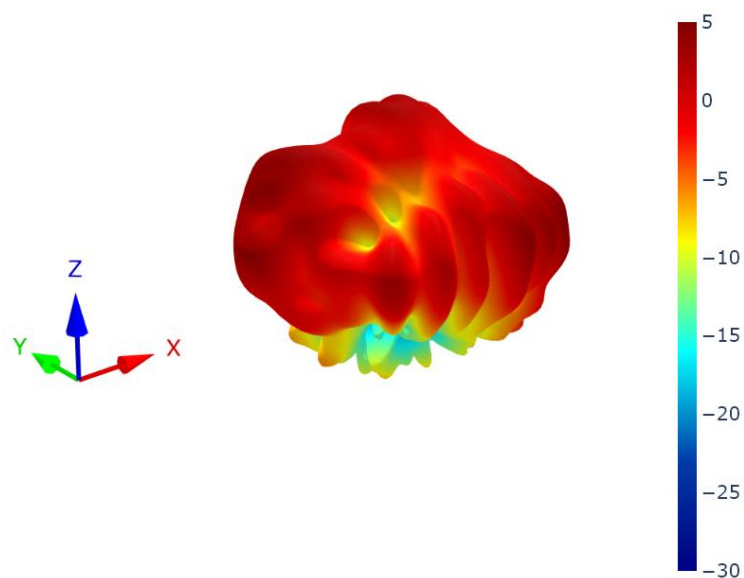
YZ Plane



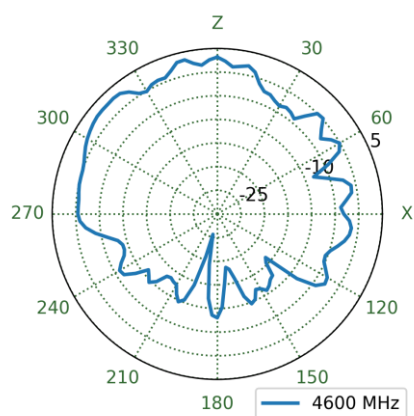
XY Plane



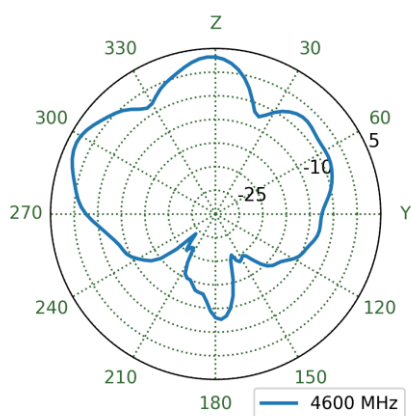
## 8.84 Cellular 1 Patterns at 4600 MHz



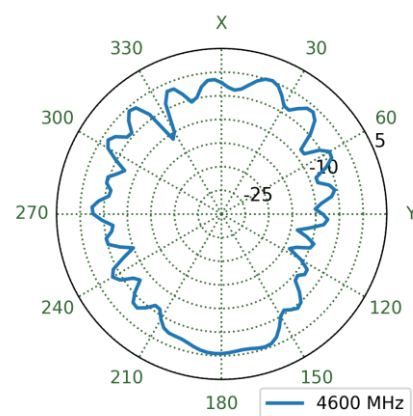
XZ Plane



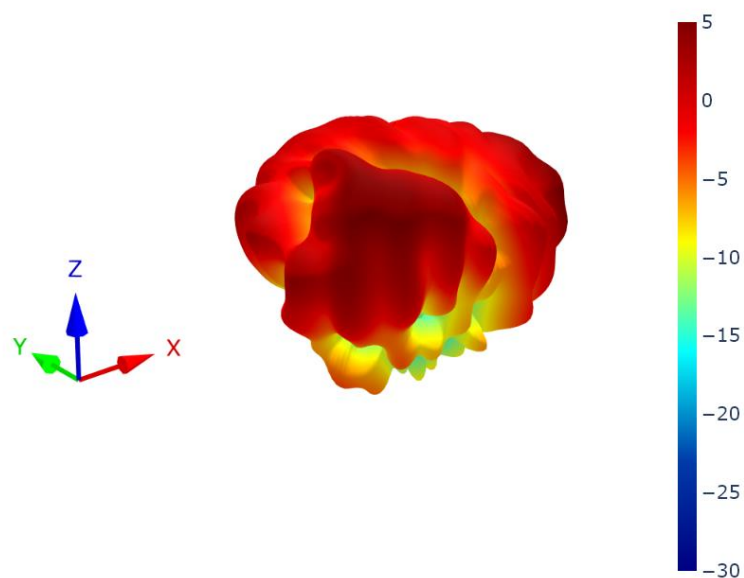
YZ Plane



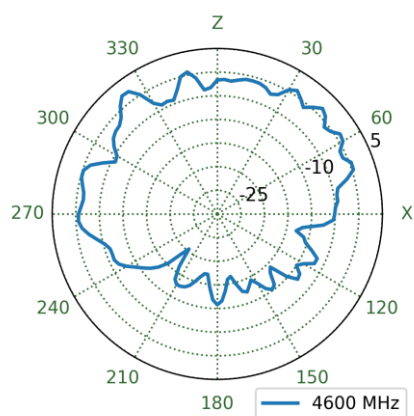
XY Plane



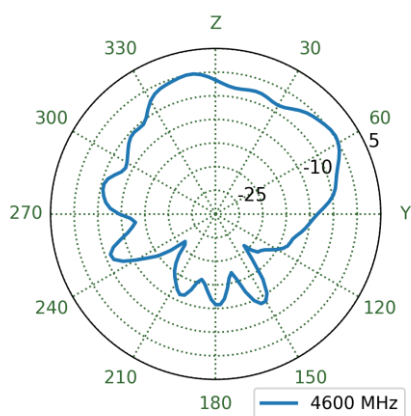
## 8.85 Cellular 2 Patterns at 4600 MHz



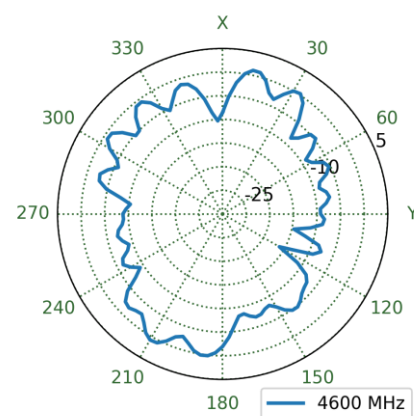
XZ Plane



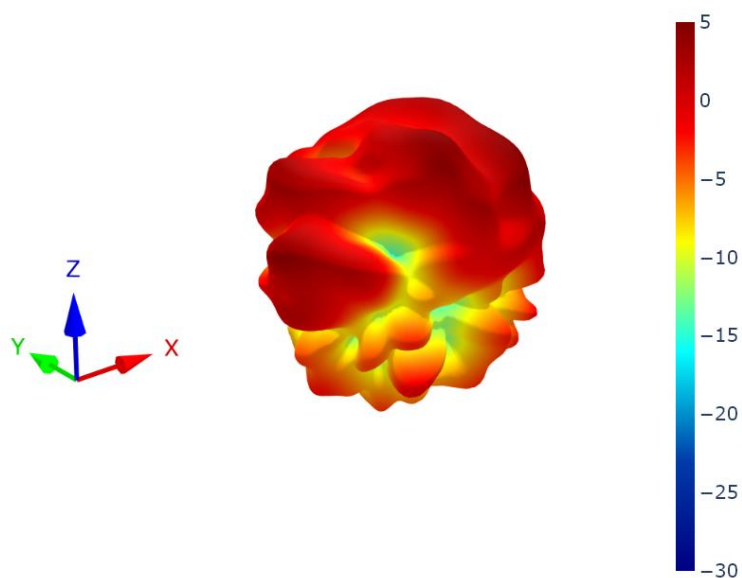
YZ Plane



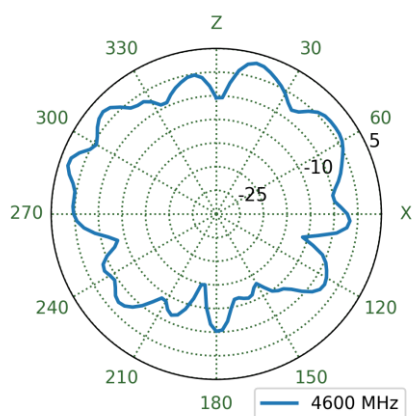
XY Plane



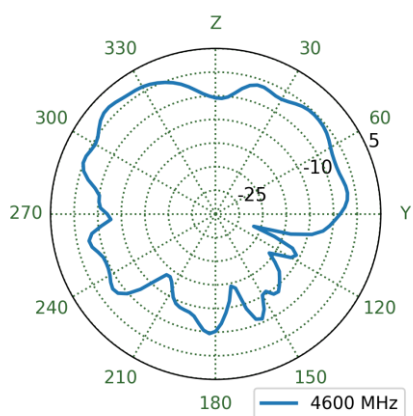
## 8.86 Cellular 3 Patterns at 4600 MHz



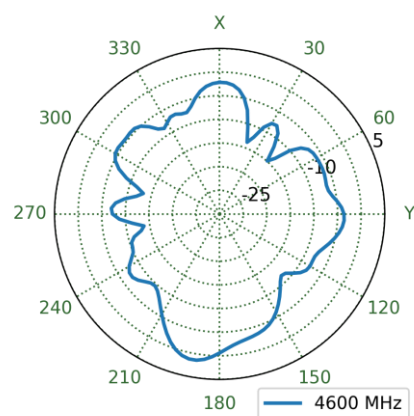
XZ Plane



YZ Plane

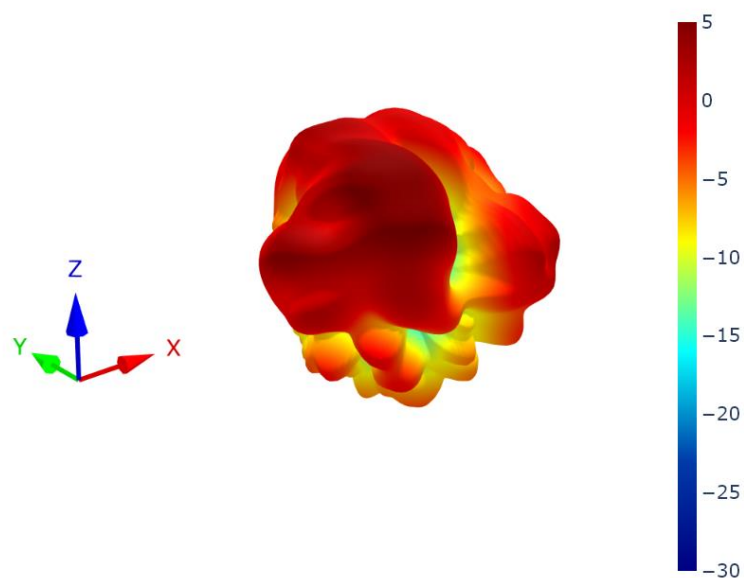


XY Plane

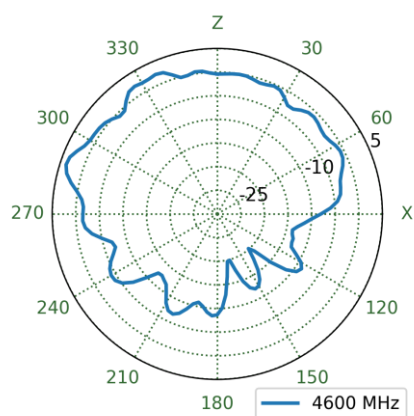




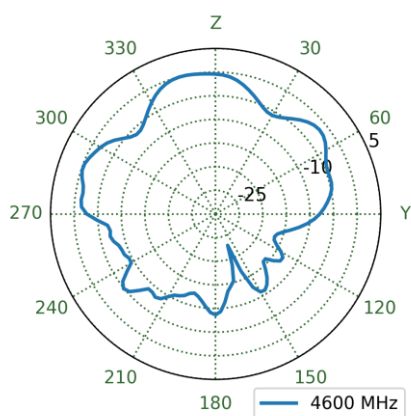
## 8.87 Cellular 4 Patterns at 4600 MHz



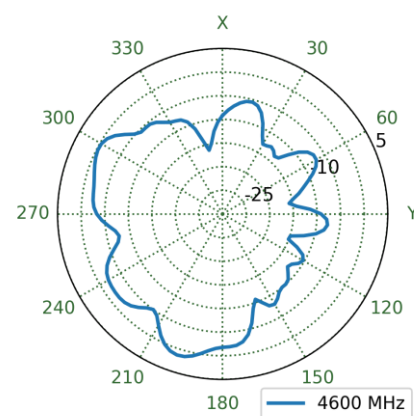
XZ Plane



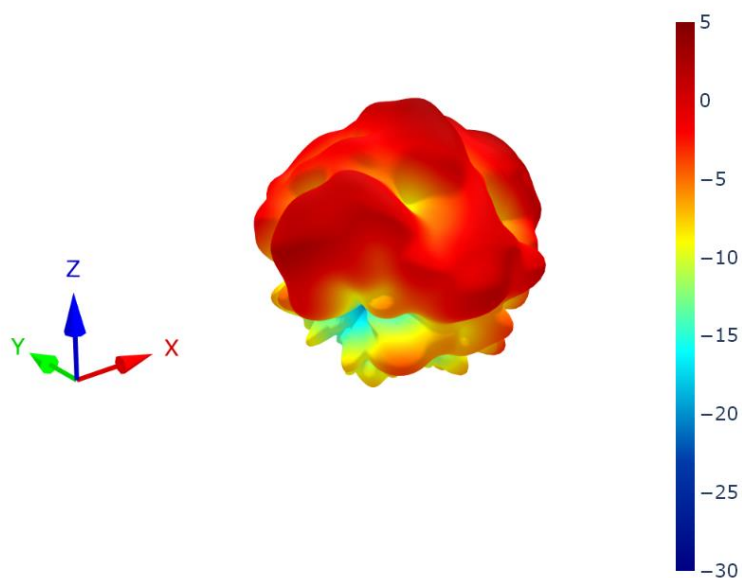
YZ Plane



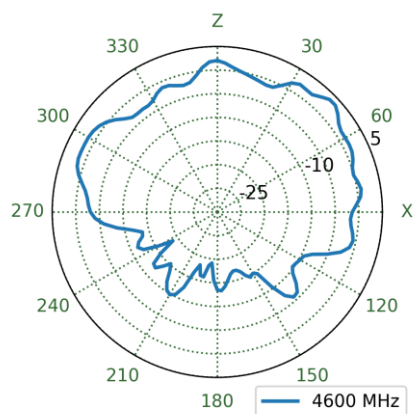
XY Plane



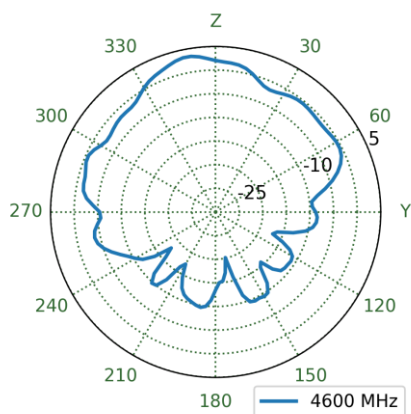
## 8.88 Cellular 5 Patterns at 4600 MHz



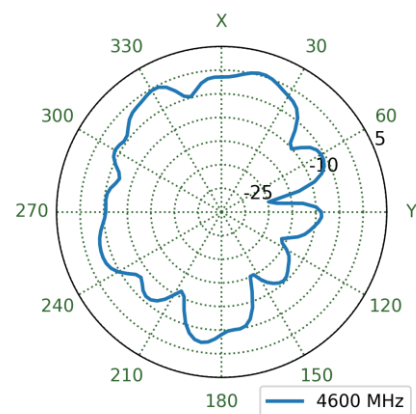
XZ Plane



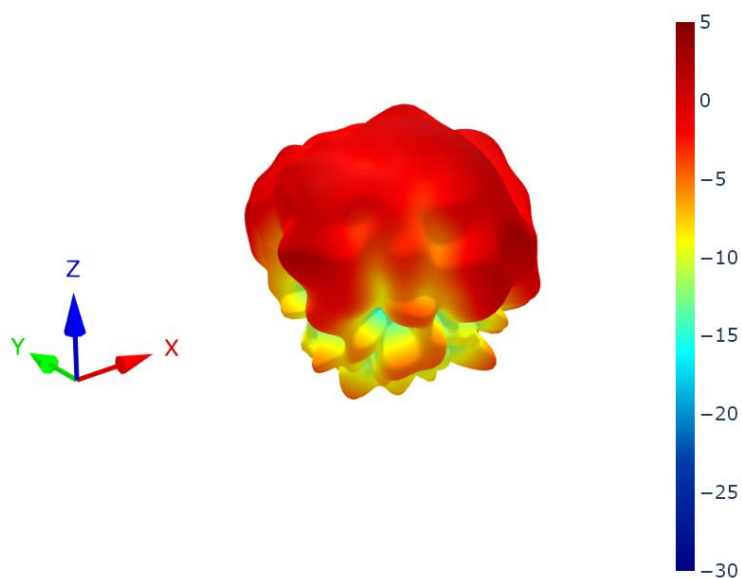
YZ Plane



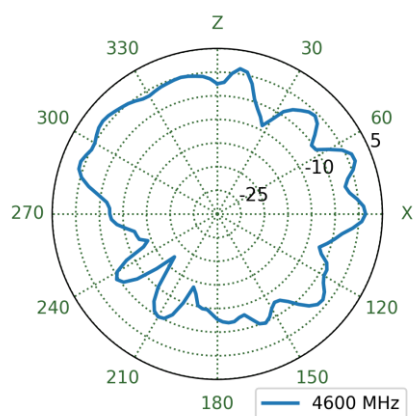
XY Plane



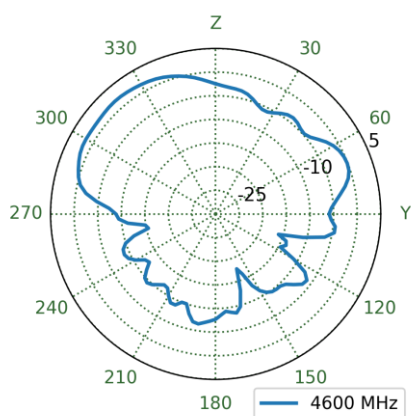
## 8.89 Cellular 6 Patterns at 4600 MHz



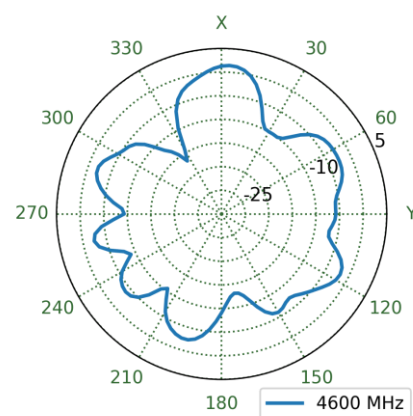
XZ Plane



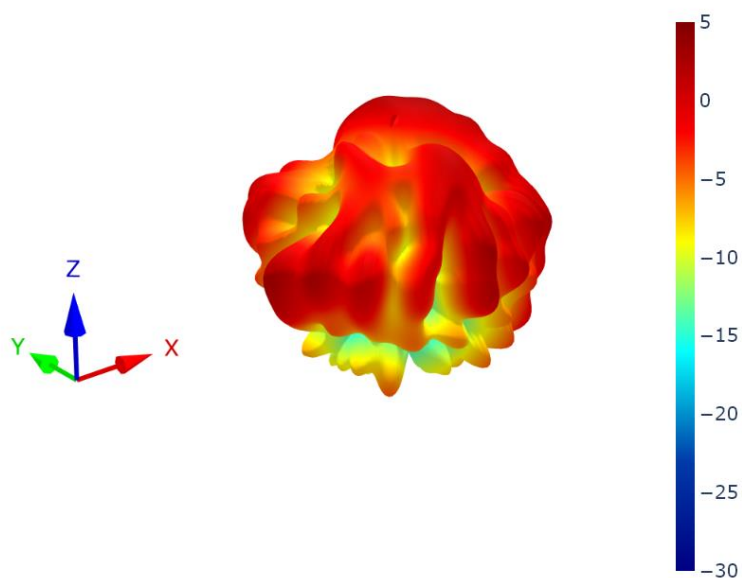
YZ Plane



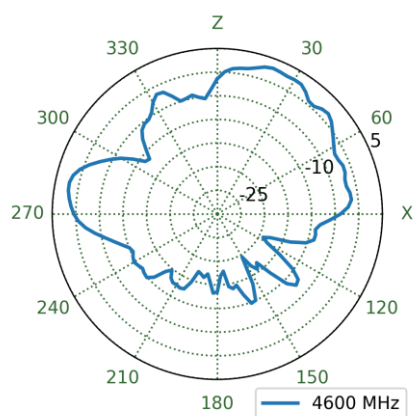
XY Plane



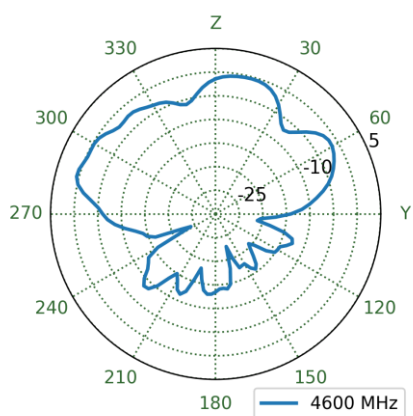
## 8.90 Cellular 7 Patterns at 4600 MHz



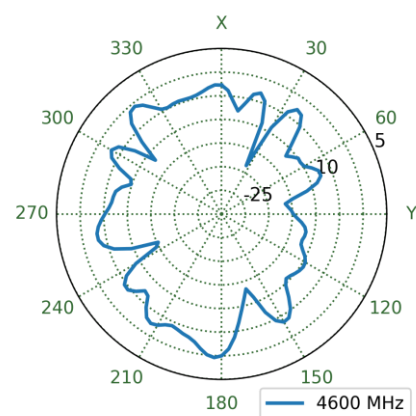
XZ Plane



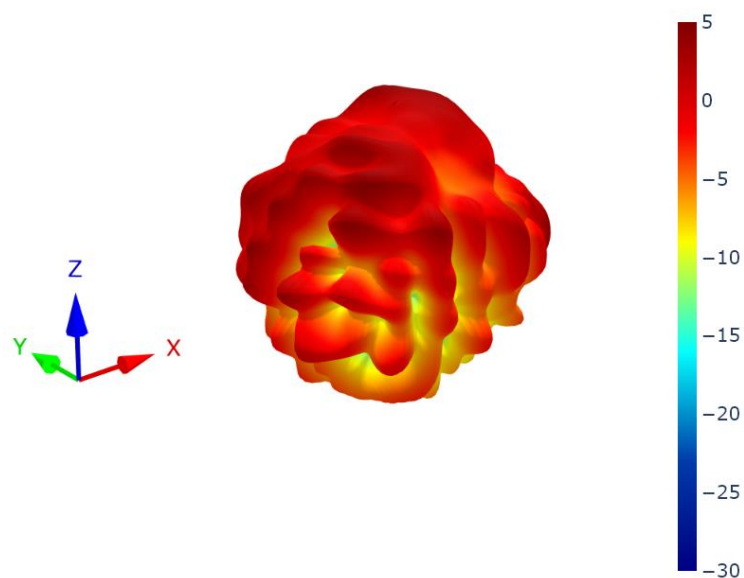
YZ Plane



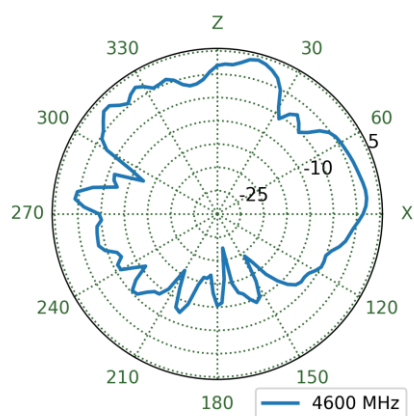
XY Plane



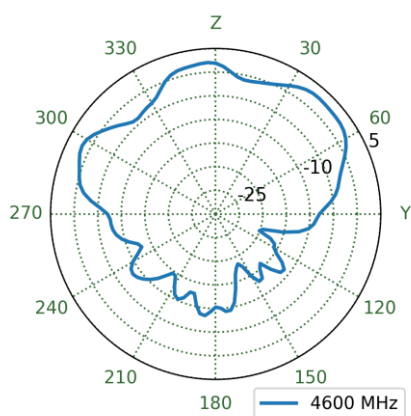
## 8.91 Cellular 8 Patterns at 4600 MHz



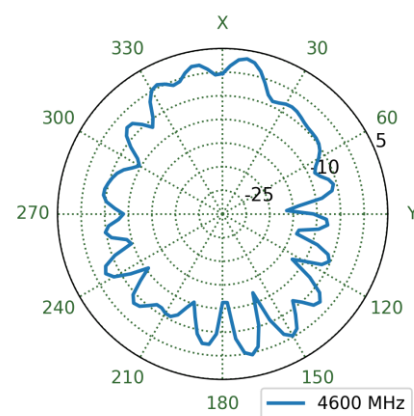
XZ Plane



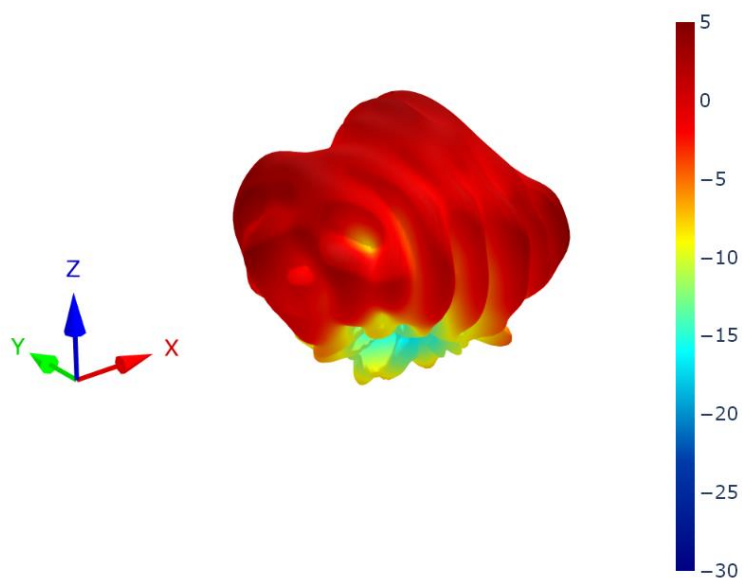
YZ Plane



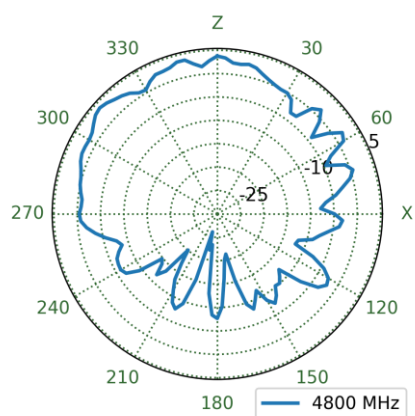
XY Plane



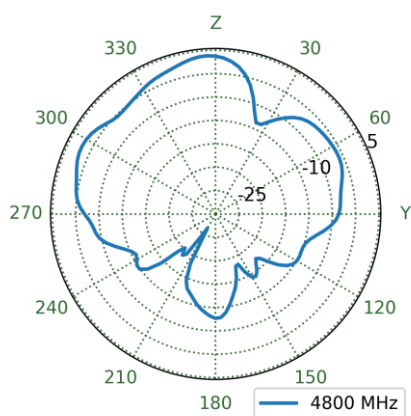
## 8.92 Cellular 1 Patterns at 4800 MHz



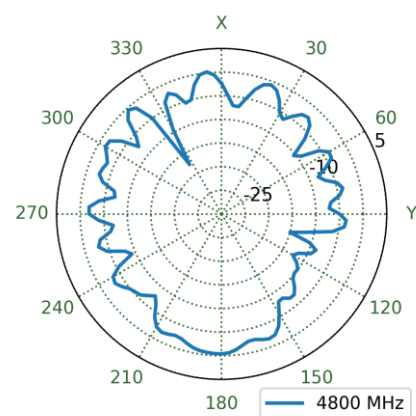
XZ Plane



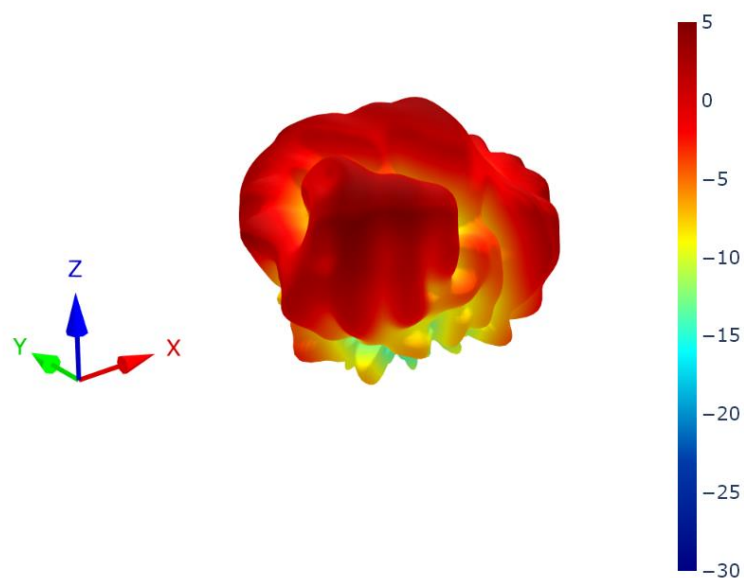
YZ Plane



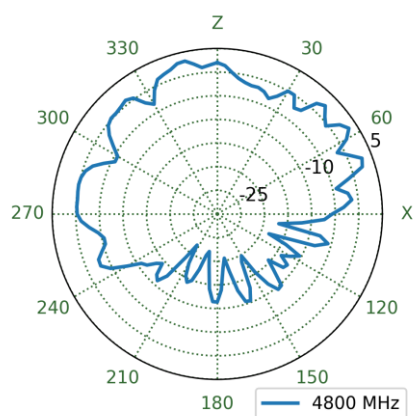
XY Plane



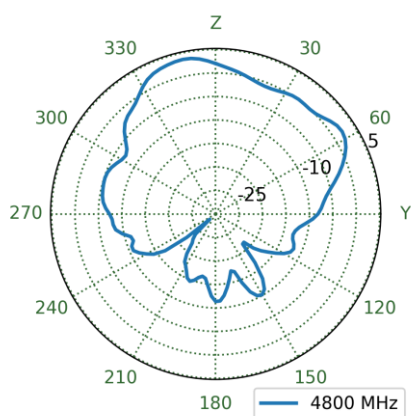
## 8.93 Cellular 2 Patterns at 4800 MHz



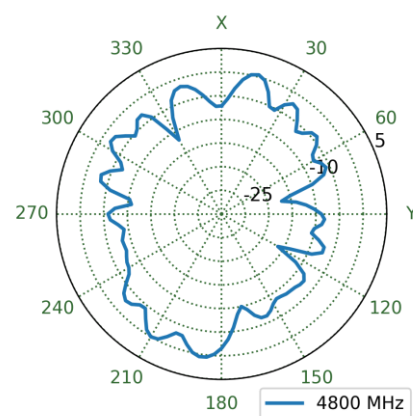
XZ Plane



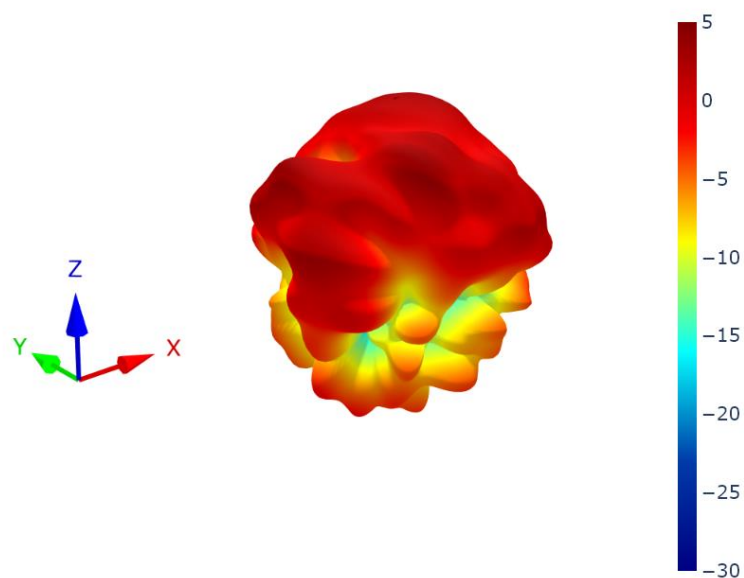
YZ Plane



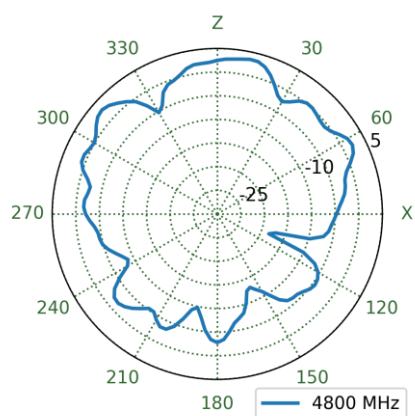
XY Plane



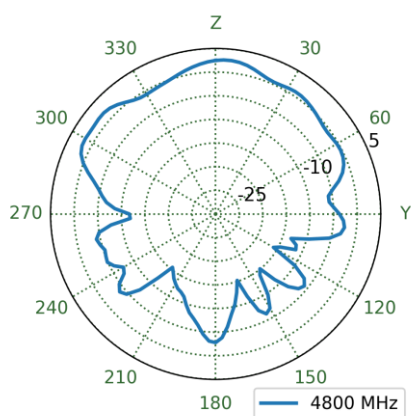
# 8.94 Cellular 3 Patterns at 4800 MHz



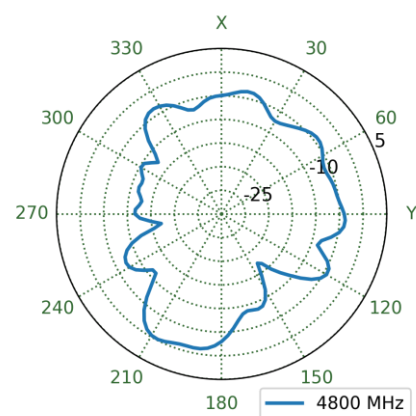
XZ Plane



YZ Plane

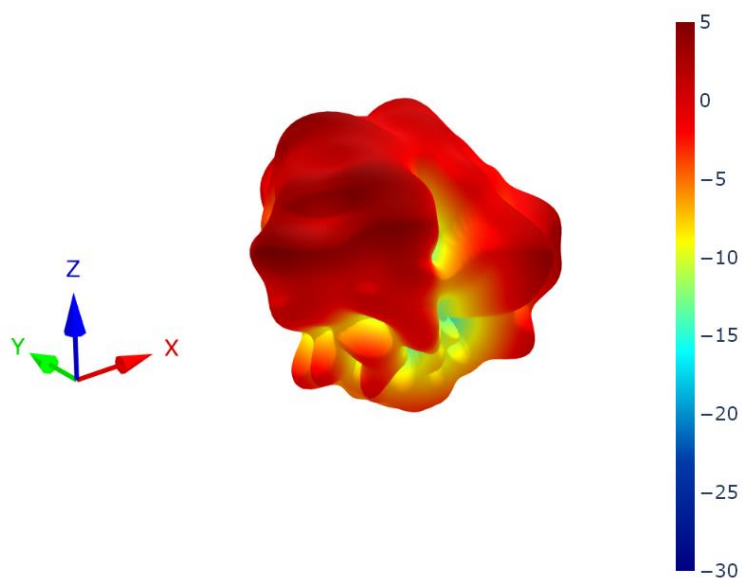


XY Plane

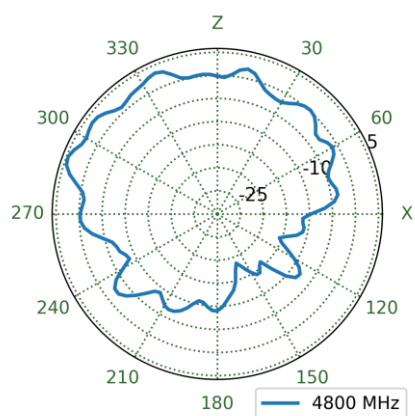




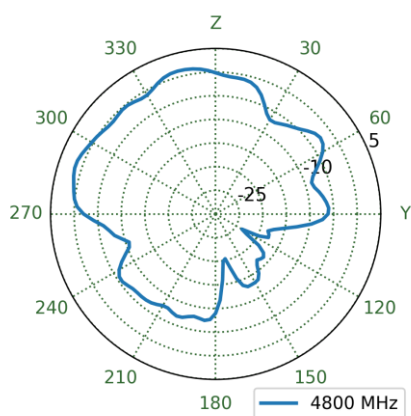
## 8.95 Cellular 4 Patterns at 4800 MHz



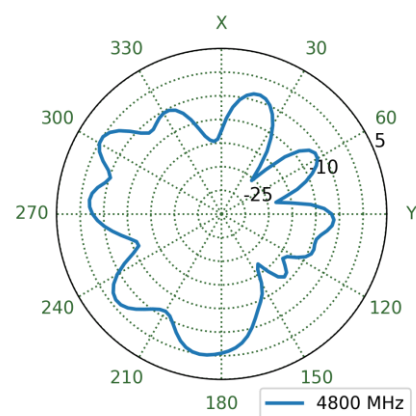
XZ Plane



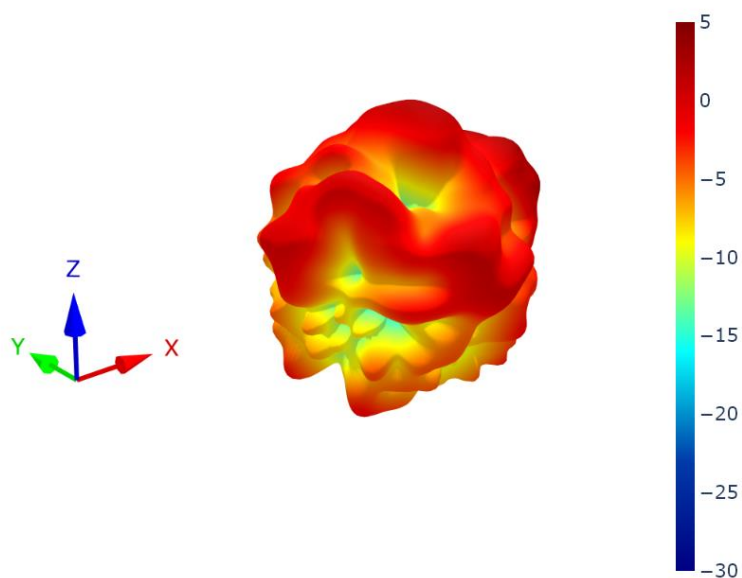
YZ Plane



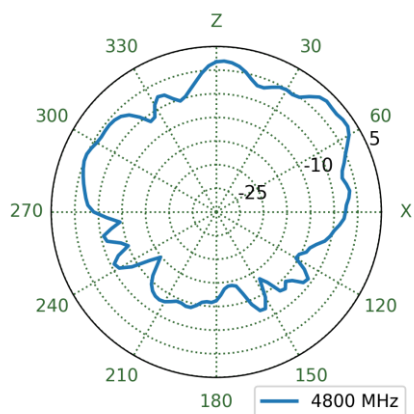
XY Plane



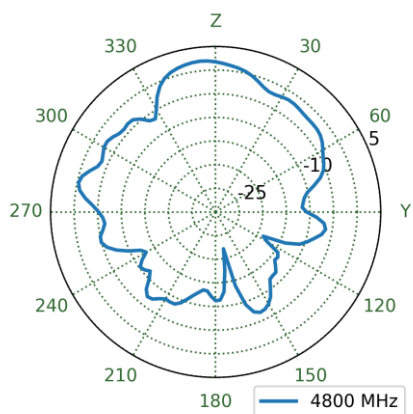
## 8.96 Cellular 5 Patterns at 4800 MHz



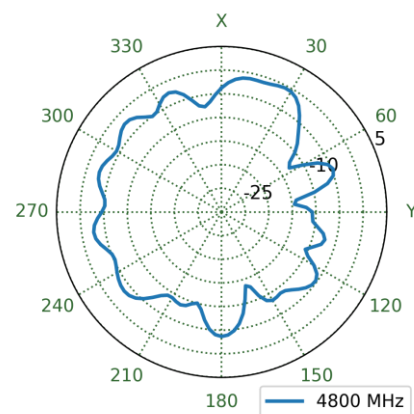
XZ Plane



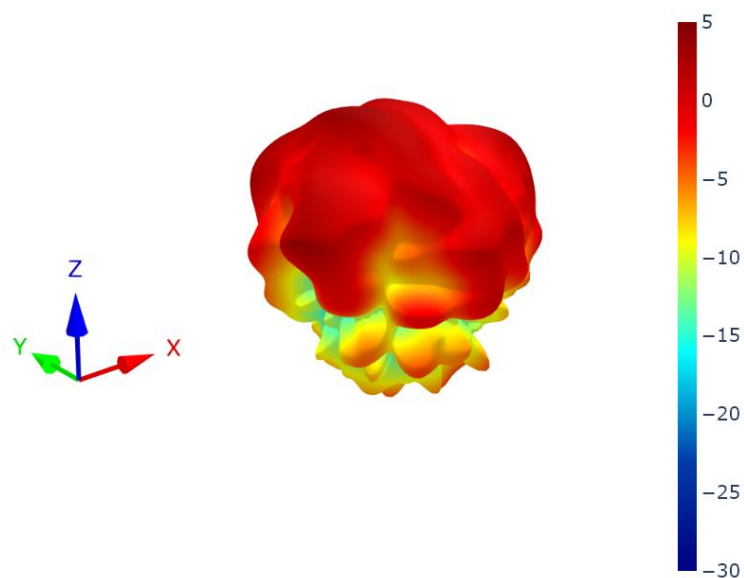
YZ Plane



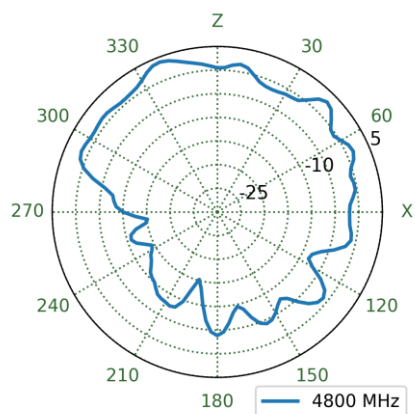
XY Plane



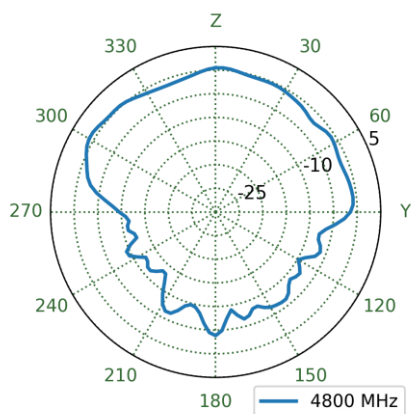
## 8.97 Cellular 6 Patterns at 4800 MHz



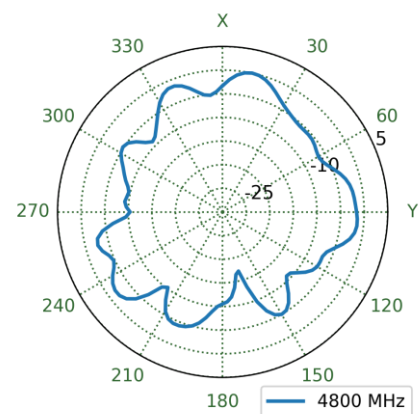
XZ Plane



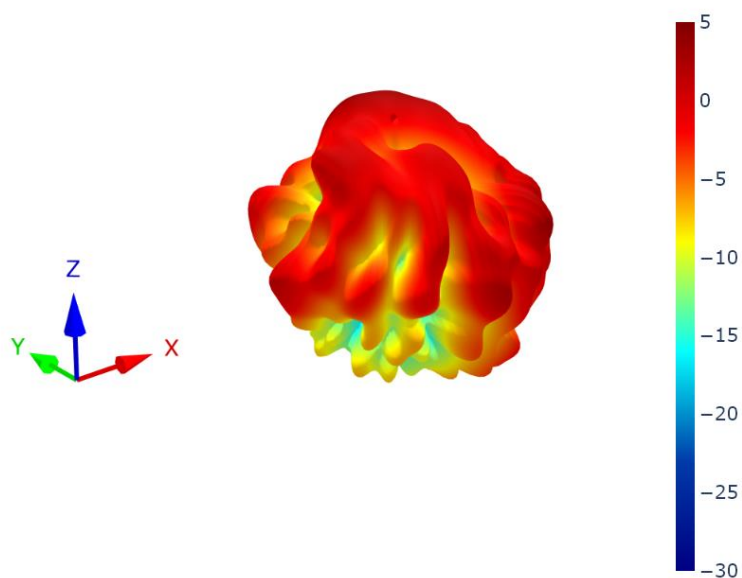
YZ Plane



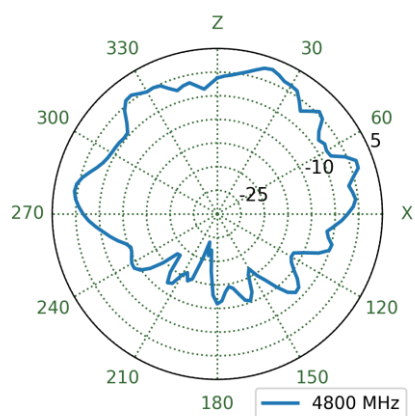
XY Plane



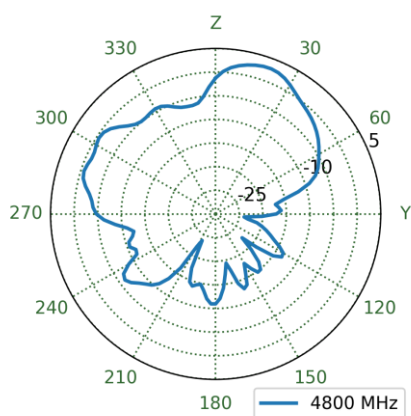
## 8.98 Cellular 7 Patterns at 4800 MHz



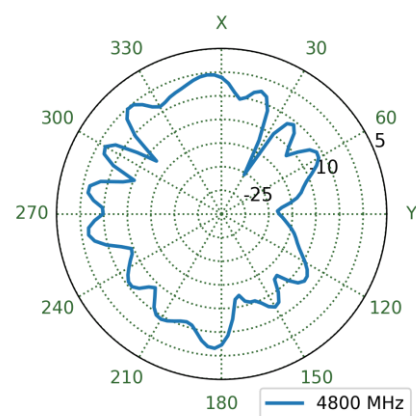
XZ Plane



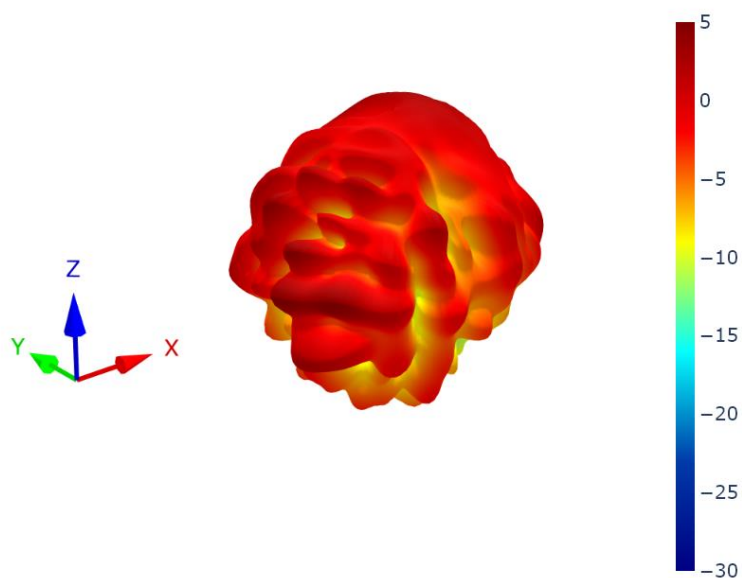
YZ Plane



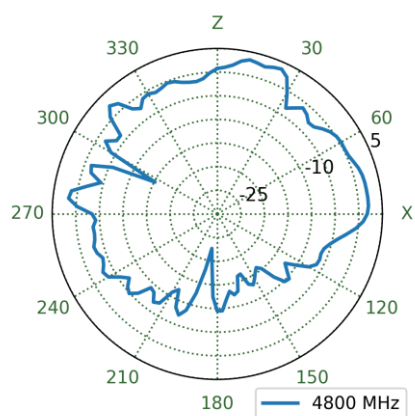
XY Plane



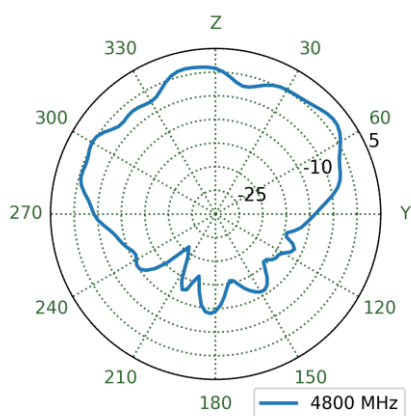
## 8.99 Cellular 8 Patterns at 4800 MHz



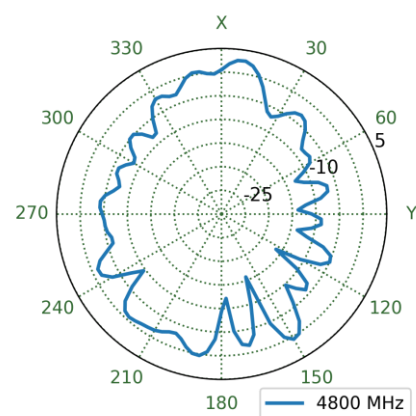
XZ Plane



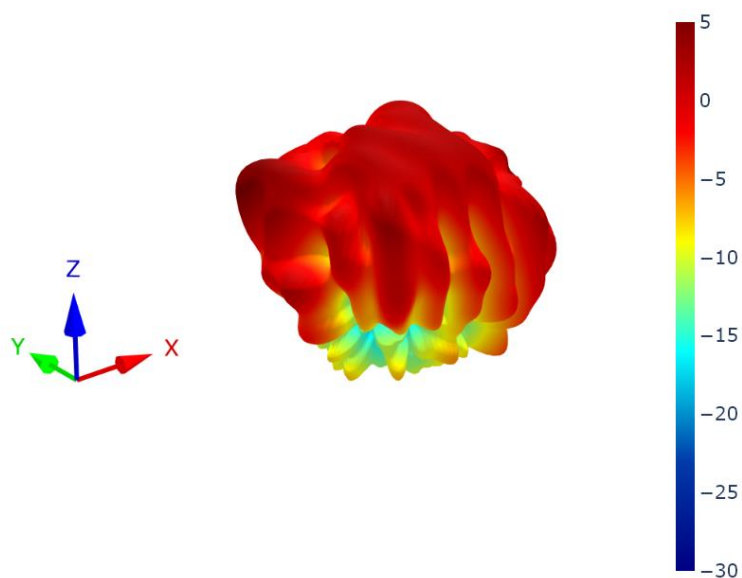
YZ Plane



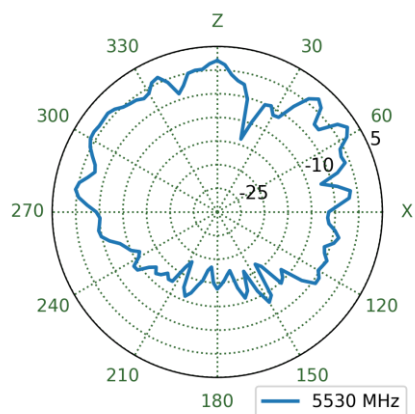
XY Plane



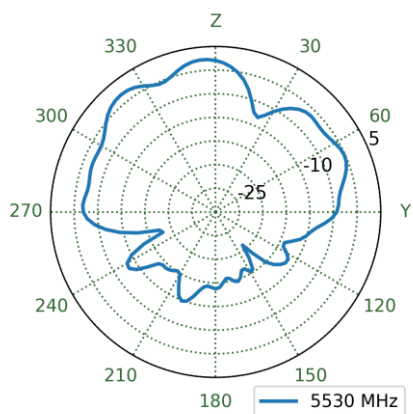
## 8.100 Cellular 1 Patterns at 5530 MHz



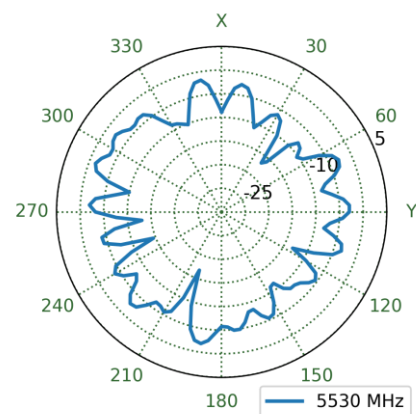
XZ Plane



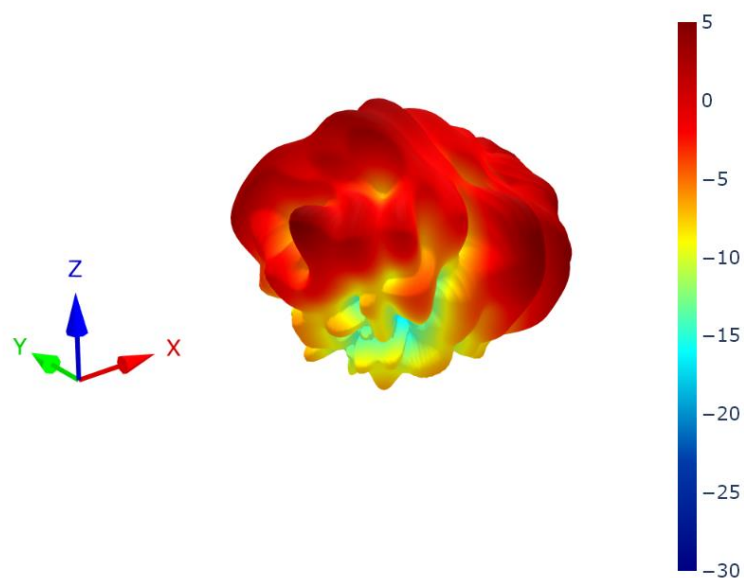
YZ Plane



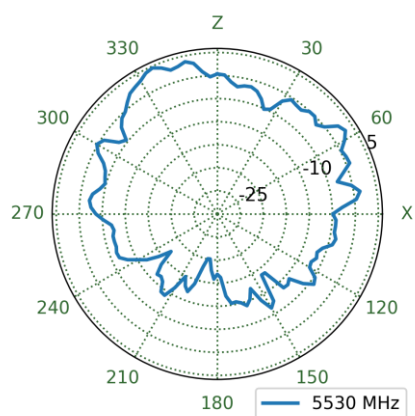
XY Plane



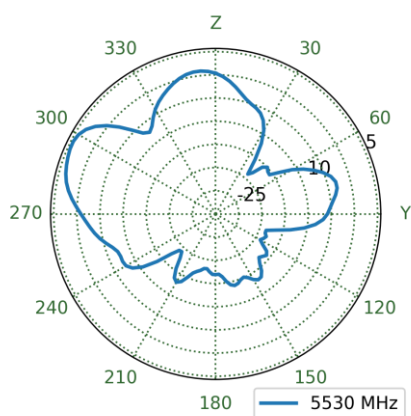
## 8.101 Cellular 2 Patterns at 5530 MHz



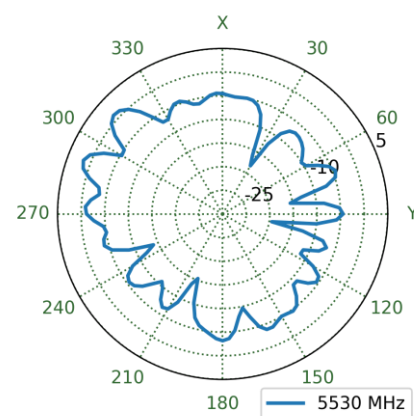
XZ Plane



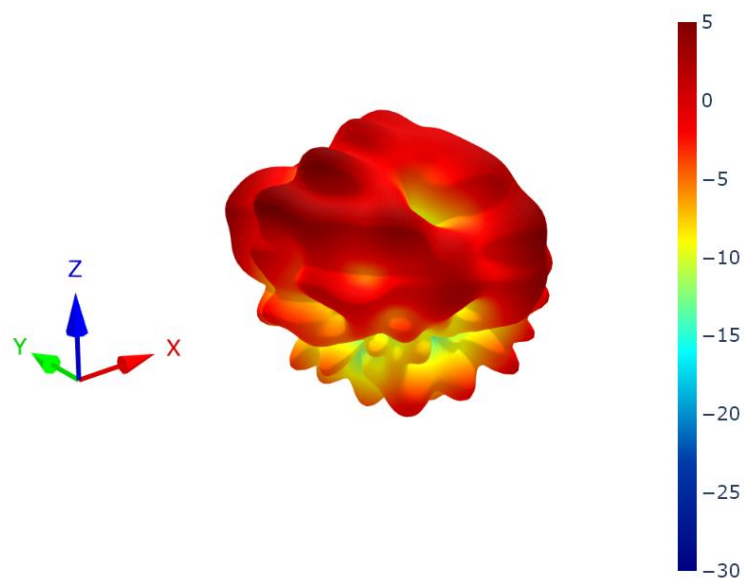
YZ Plane



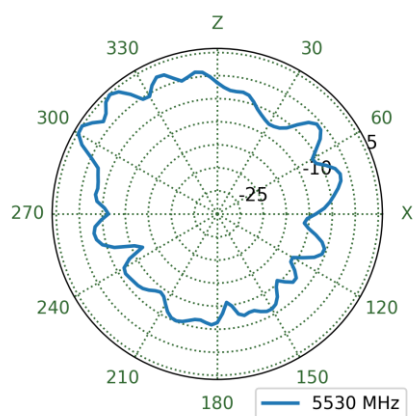
XY Plane



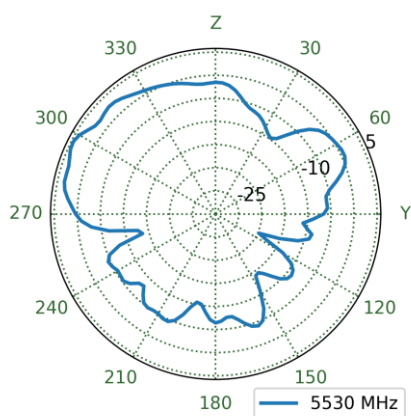
## 8.102 Cellular 3 Patterns at 5530 MHz



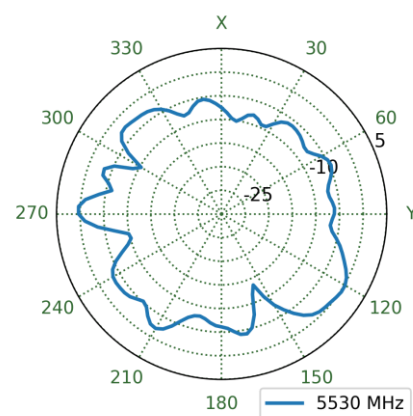
XZ Plane



YZ Plane

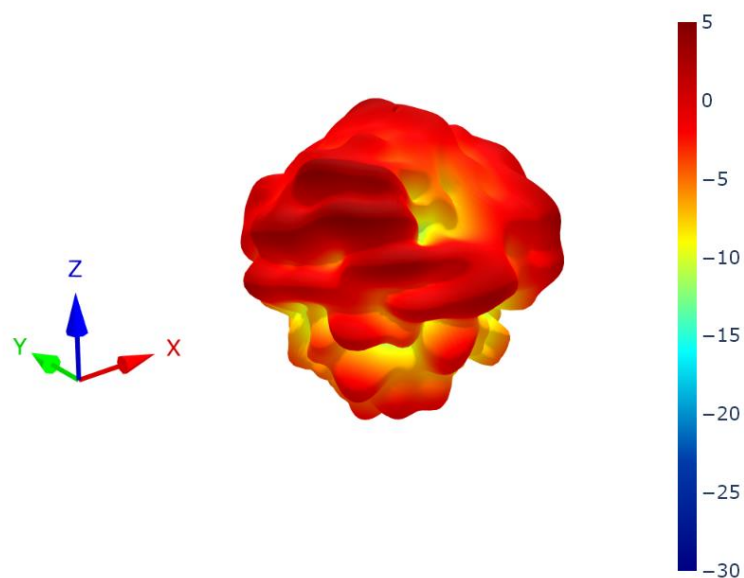


XY Plane

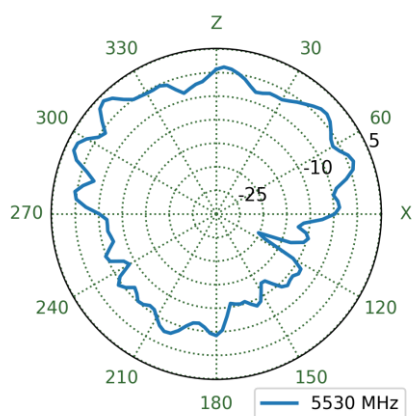




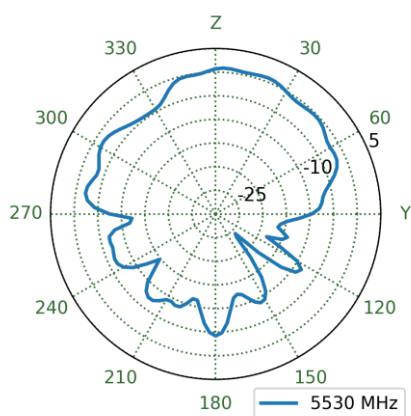
# 8.103 Cellular 4 Patterns at 5530 MHz



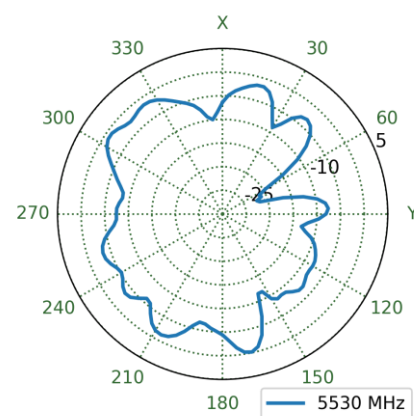
XZ Plane



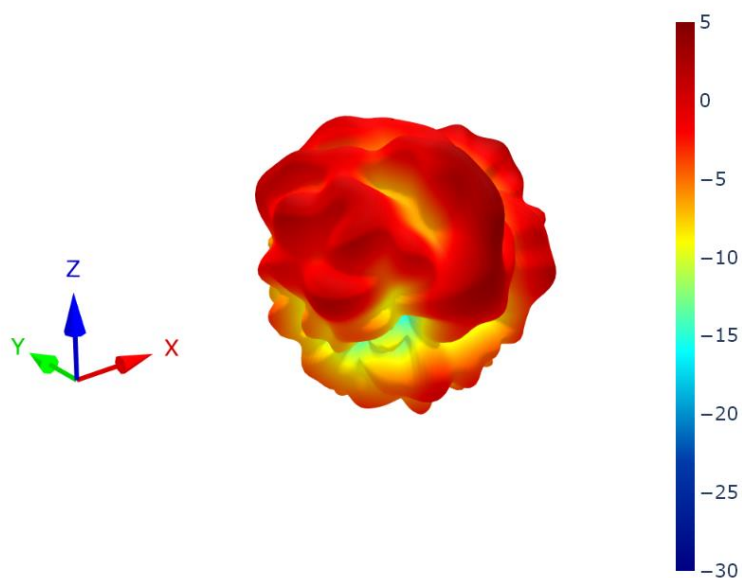
YZ Plane



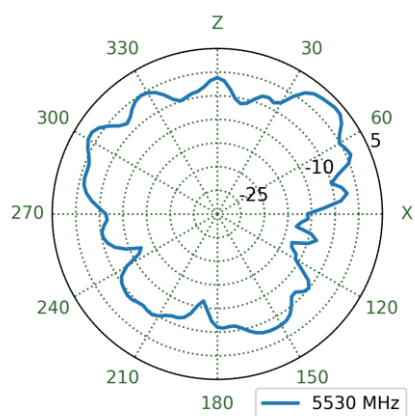
XY Plane



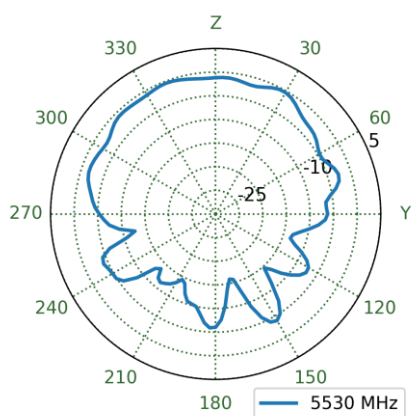
# 8.104 Cellular 5 Patterns at 5530 MHz



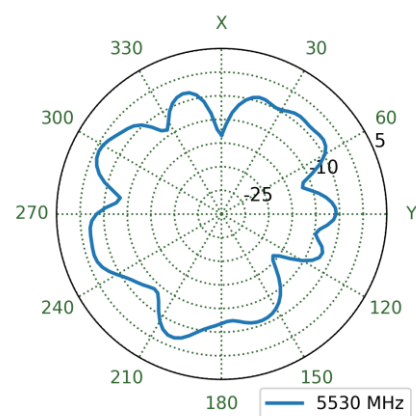
XZ Plane



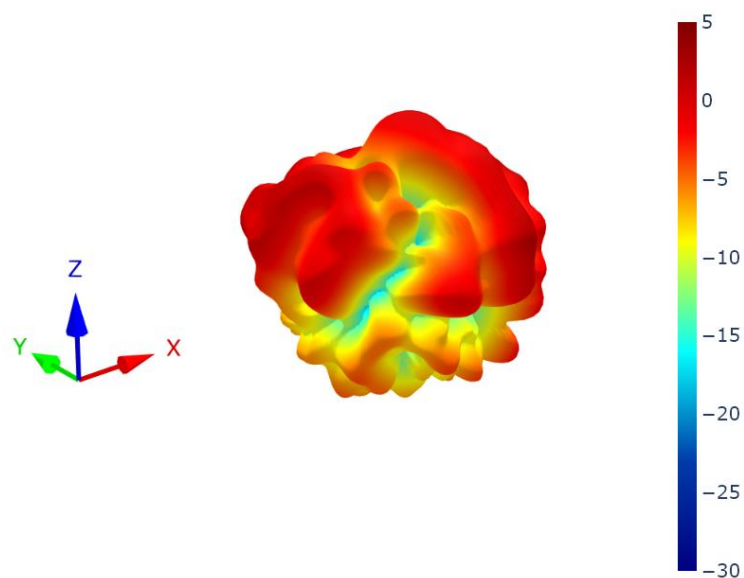
YZ Plane



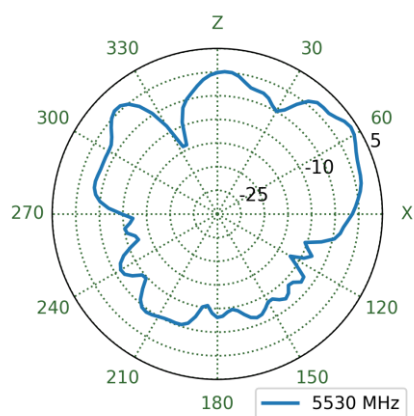
XY Plane



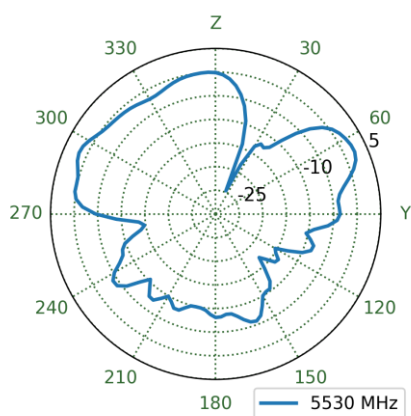
# 8.105 Cellular 6 Patterns at 5530 MHz



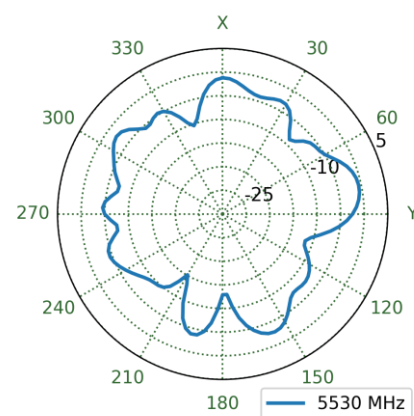
XZ Plane



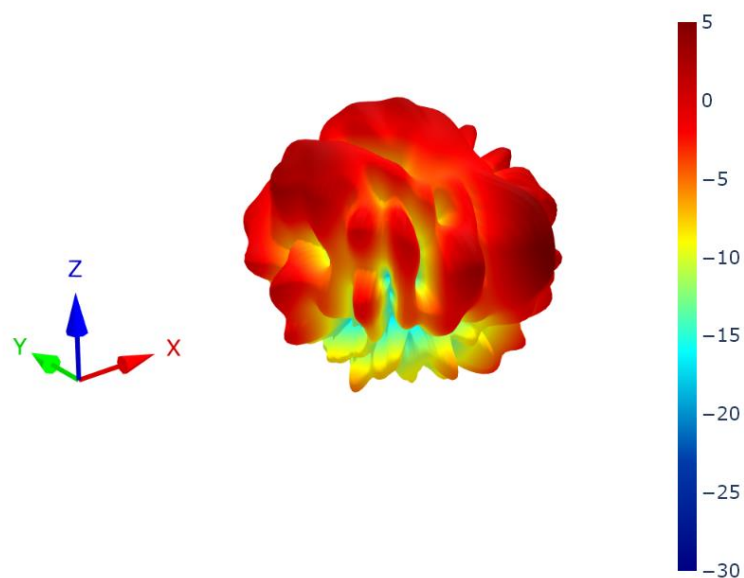
YZ Plane



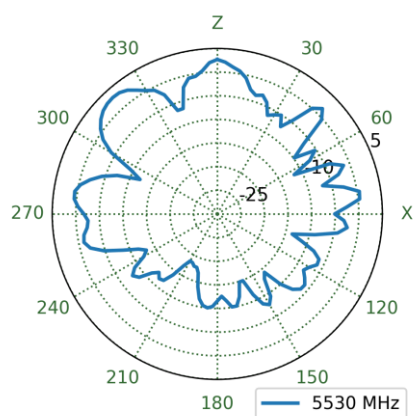
XY Plane



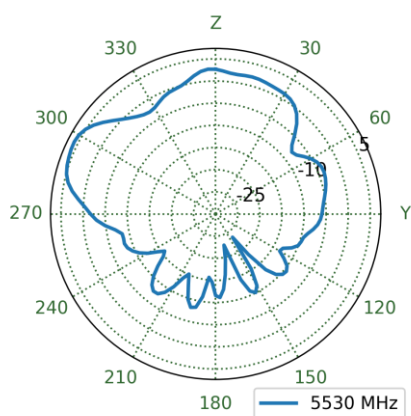
## 8.106 Cellular 7 Patterns at 5530 MHz



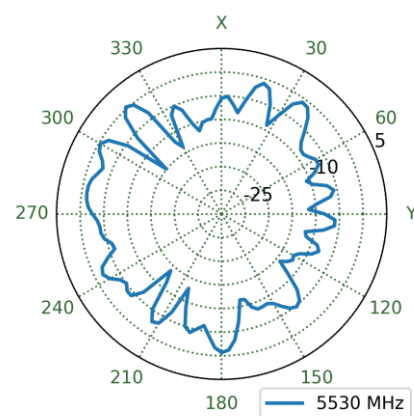
XZ Plane



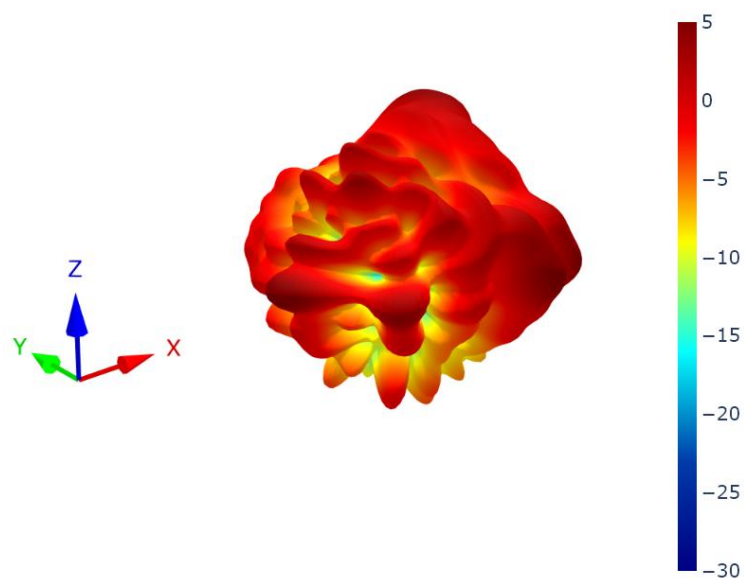
YZ Plane



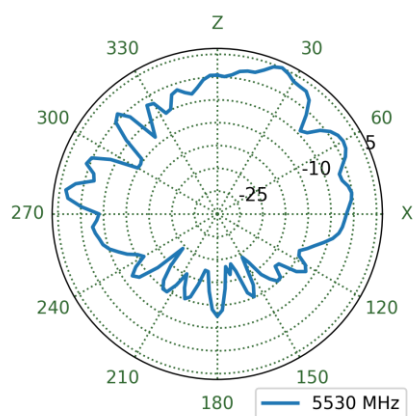
XY Plane



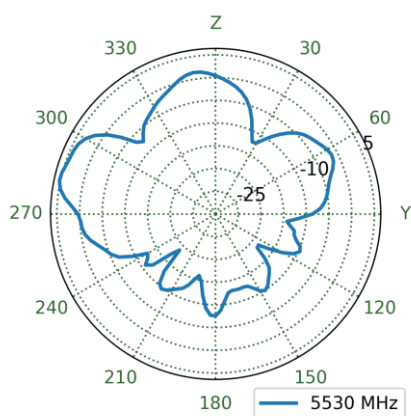
# 8.107 Cellular 8 Patterns at 5530 MHz



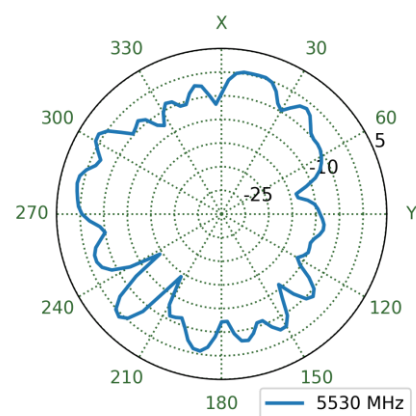
XZ Plane



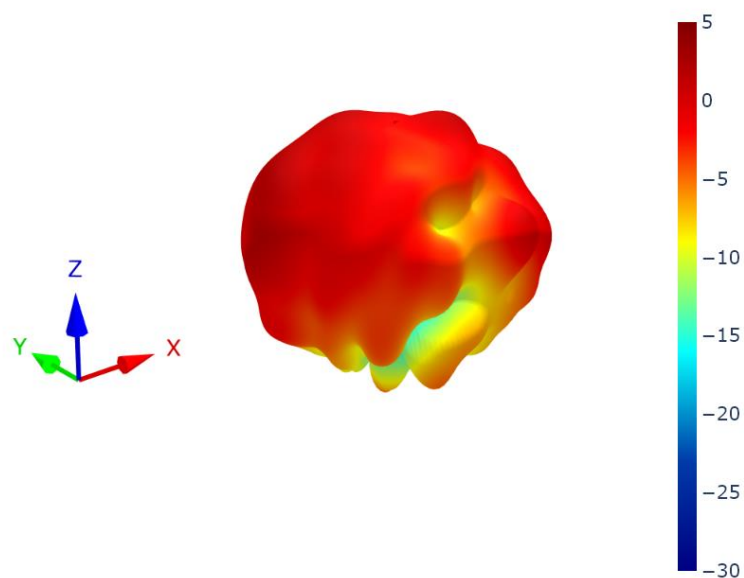
YZ Plane



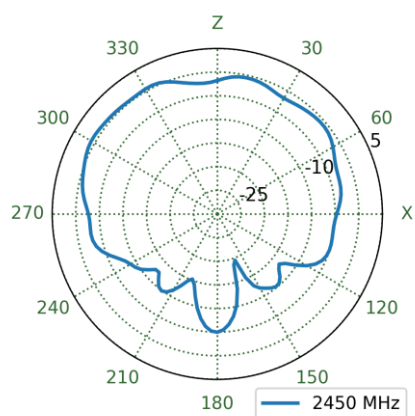
XY Plane



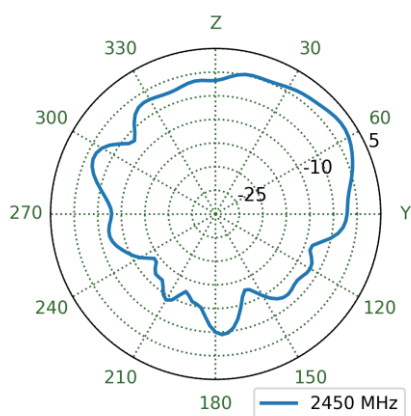
## 8.108 Wi-Fi1 Patterns at 2450 MHz



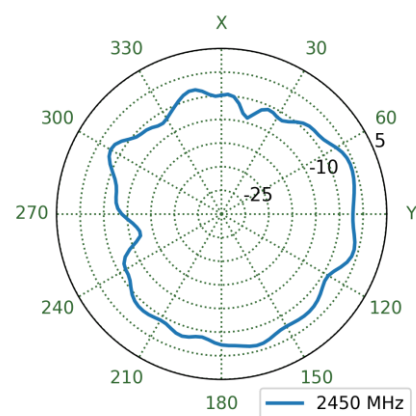
XZ Plane



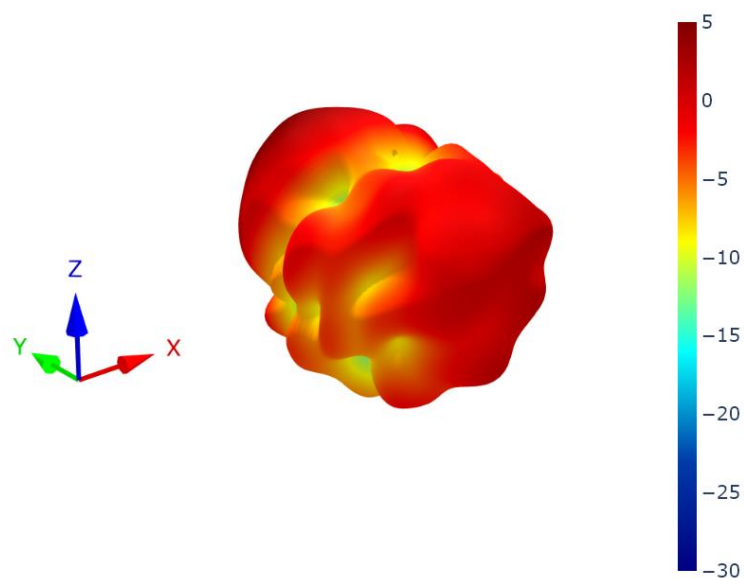
YZ Plane



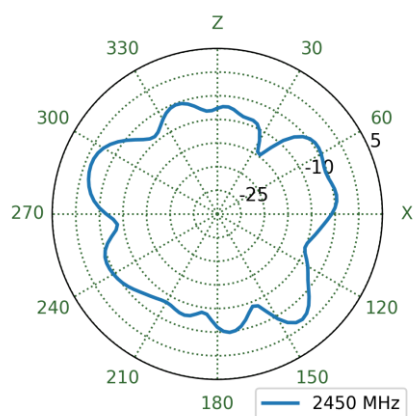
XY Plane



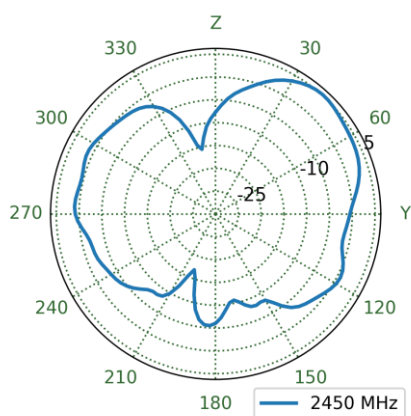
## 8.109 Wi-Fi2 Patterns at 2450 MHz



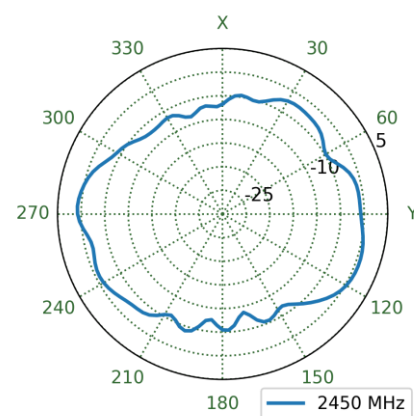
XZ Plane



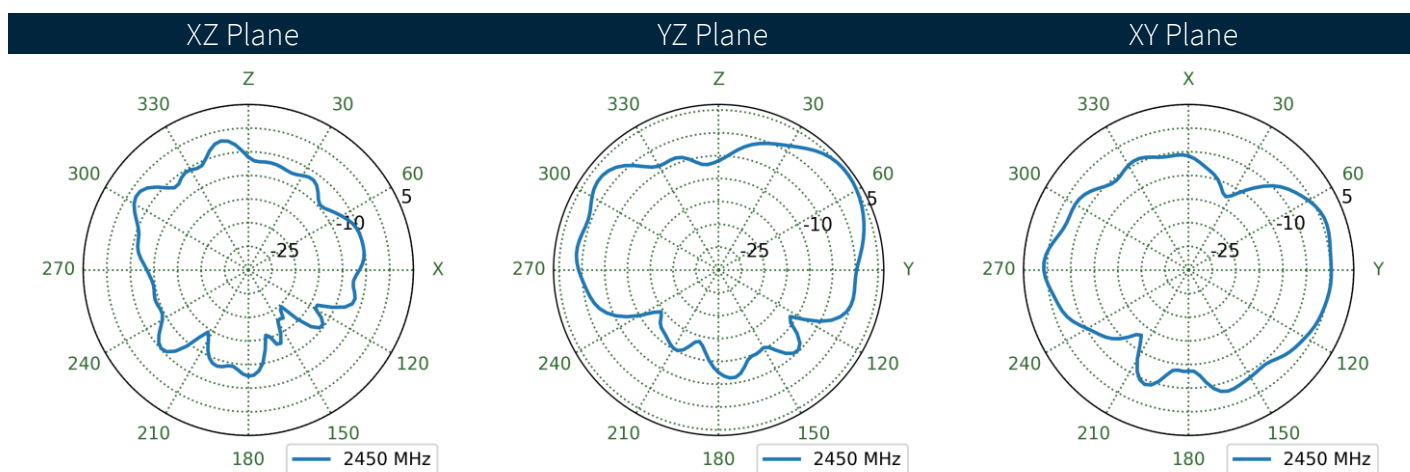
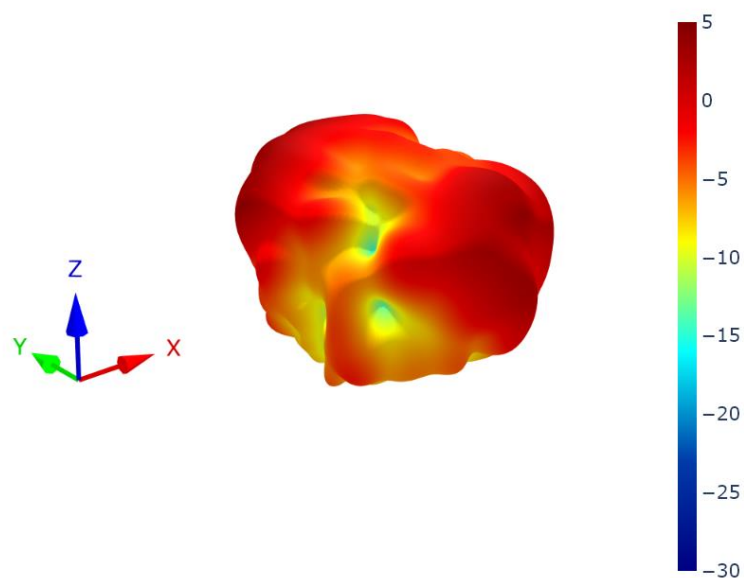
YZ Plane



XY Plane

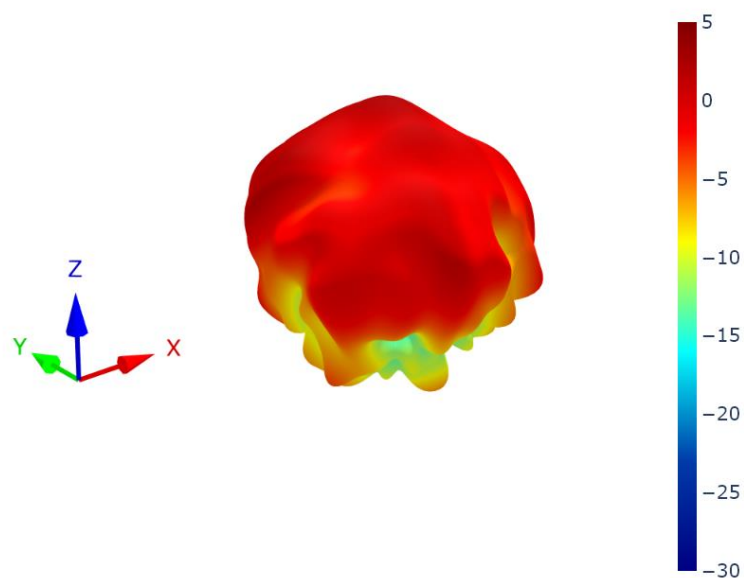


## 8.110 Wi-Fi3 Patterns at 2450 MHz

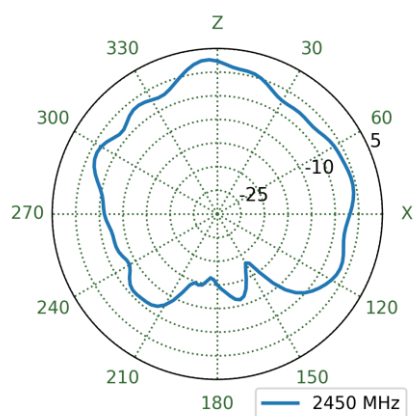




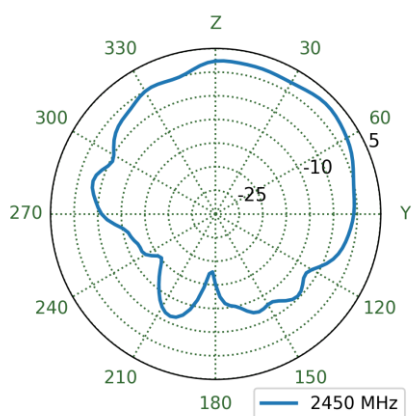
## 8.111 Wi-Fi4 Patterns at 2450 MHz



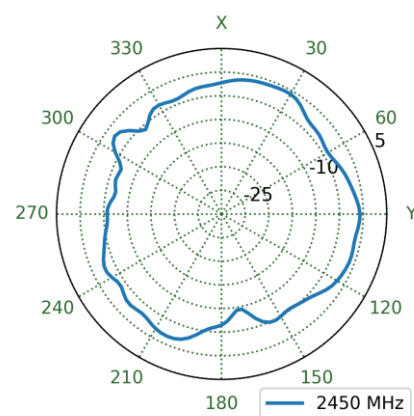
XZ Plane



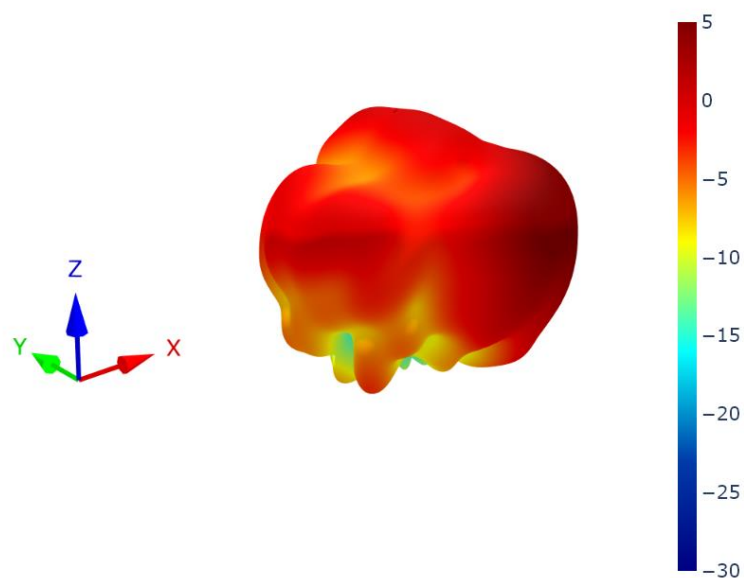
YZ Plane



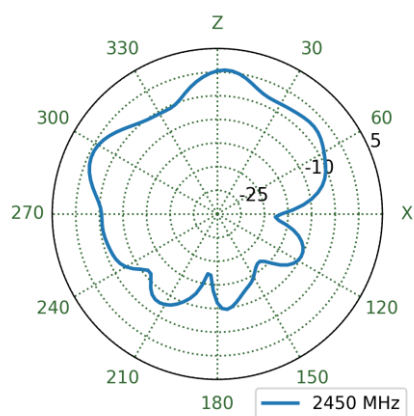
XY Plane



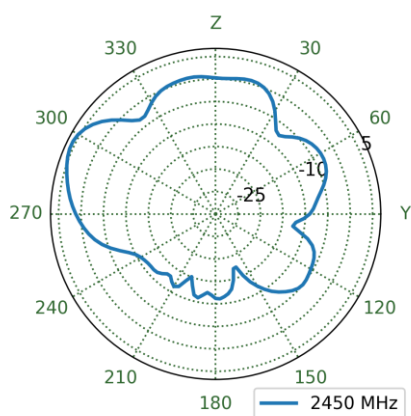
## 8.112 Wi-Fi5 Patterns at 2450 MHz



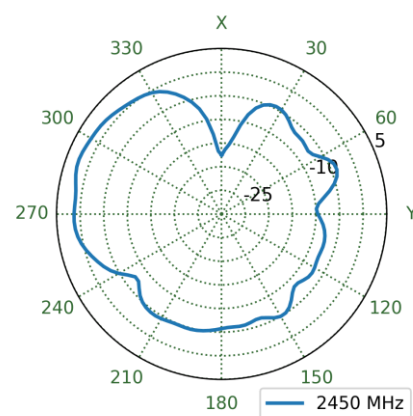
XZ Plane



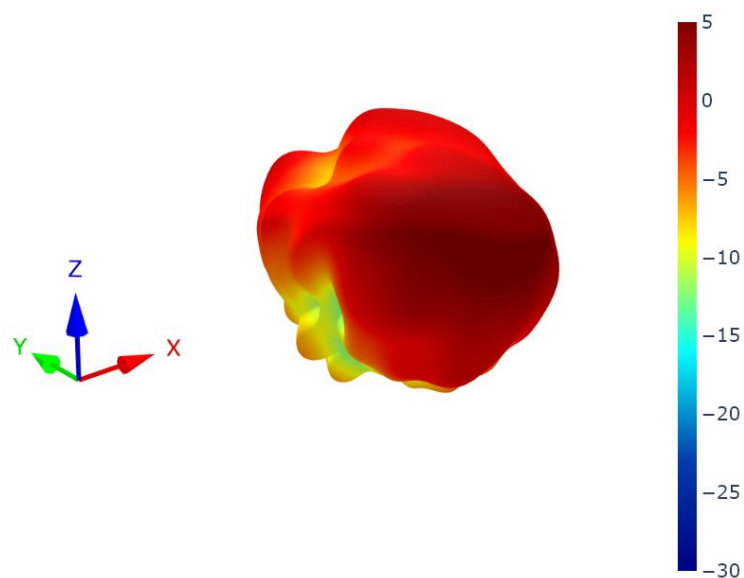
YZ Plane



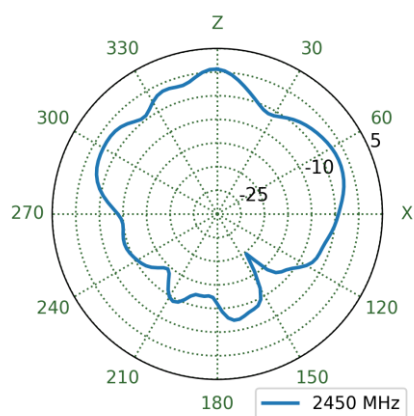
XY Plane



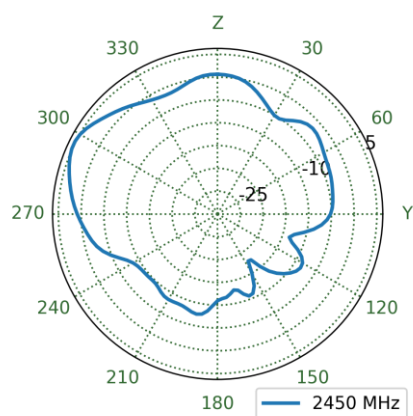
# 8.113 Wi-Fi6 Patterns at 2450 MHz



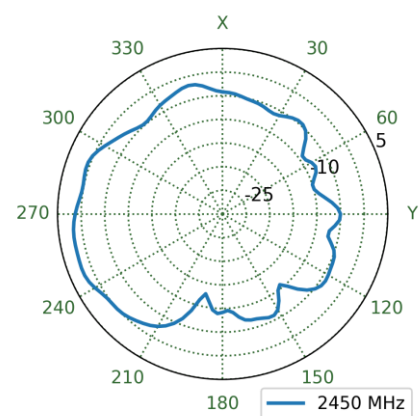
XZ Plane



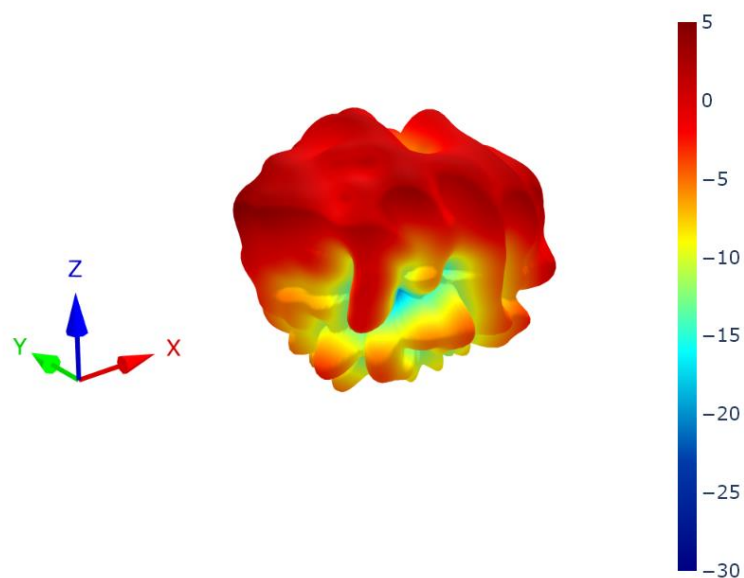
YZ Plane



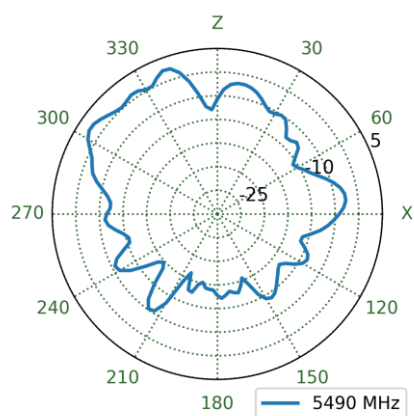
XY Plane



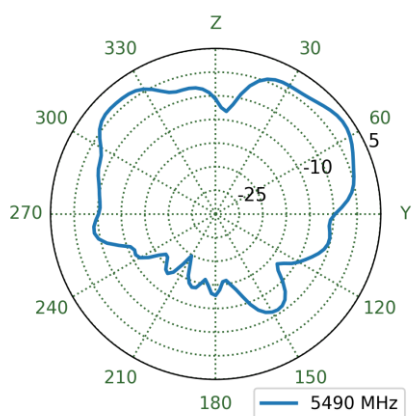
# 8.114 Wi-Fi1 Patterns at 5490 MHz



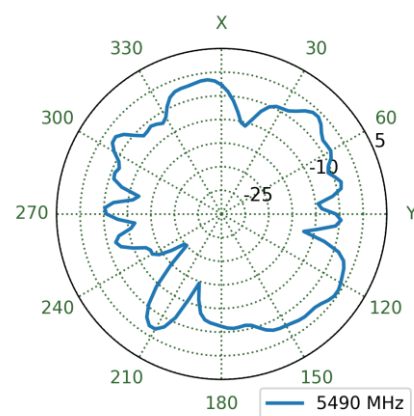
XZ Plane



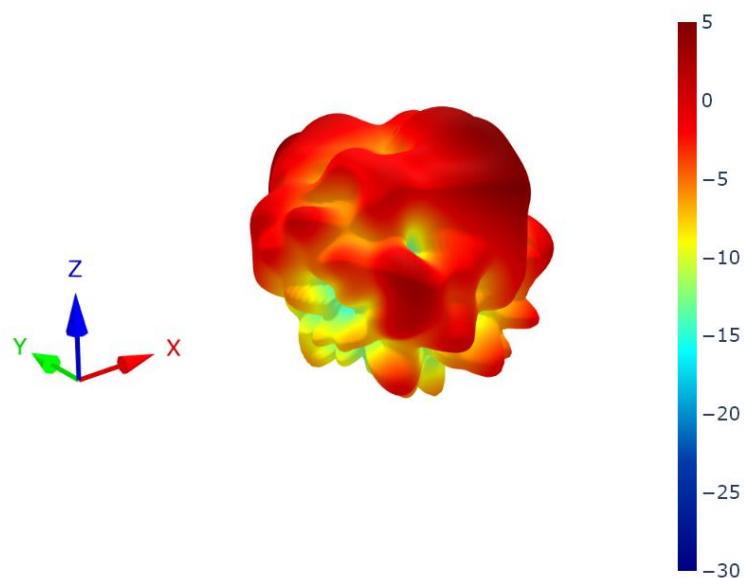
YZ Plane



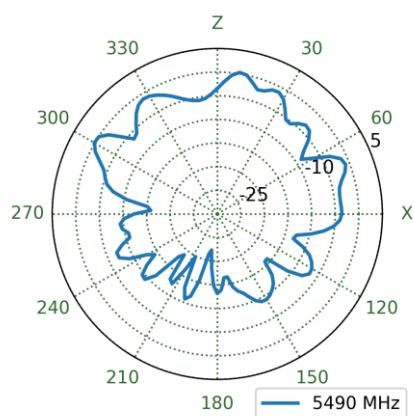
XY Plane



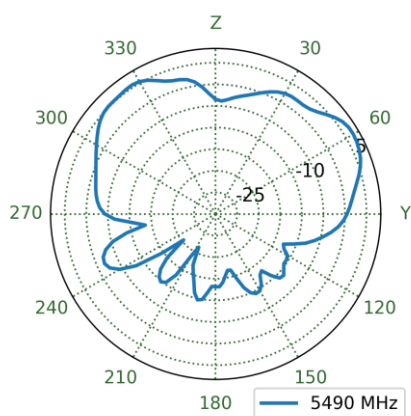
## 8.115 Wi-Fi2 Patterns at 5490 MHz



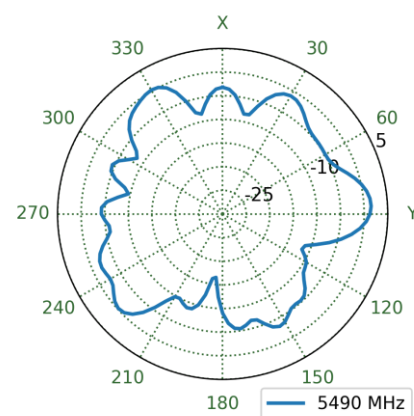
XZ Plane



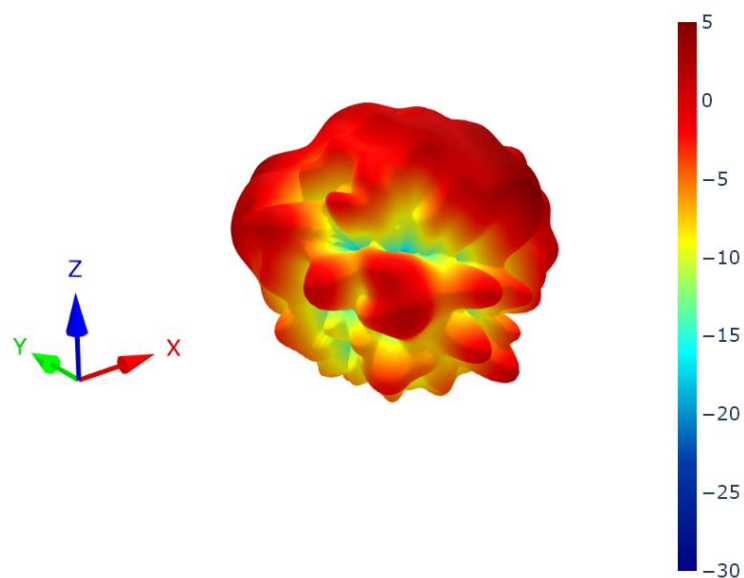
YZ Plane



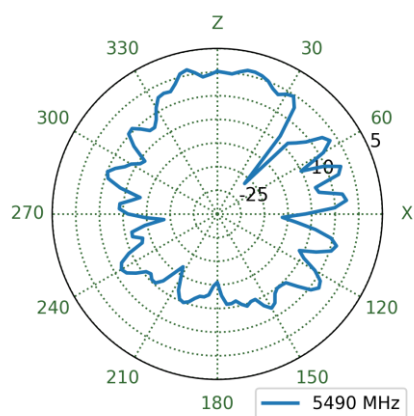
XY Plane



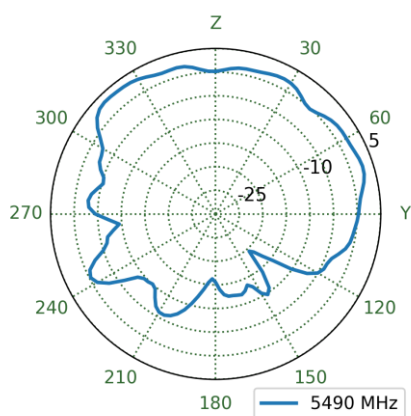
## 8.116 Wi-Fi3 Patterns at 5490 MHz



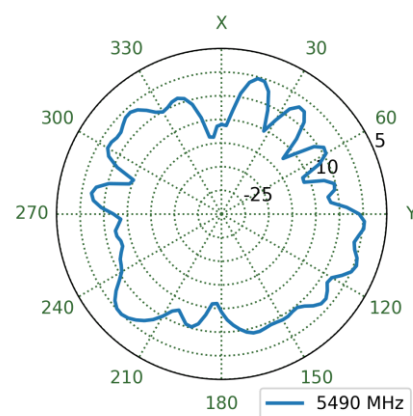
XZ Plane



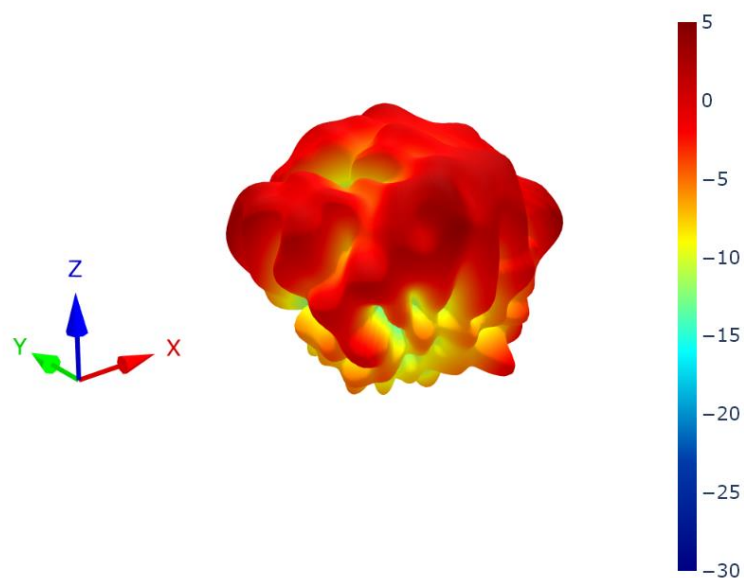
YZ Plane



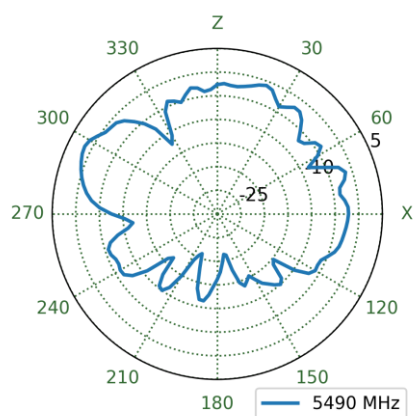
XY Plane



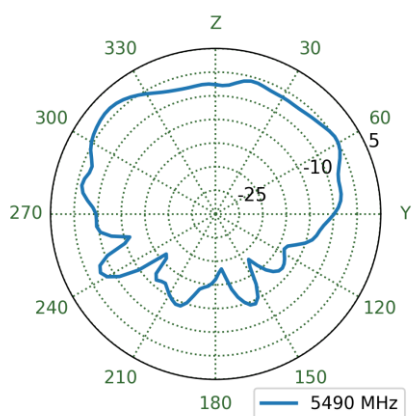
# 8.117 Wi-Fi4 Patterns at 5490 MHz



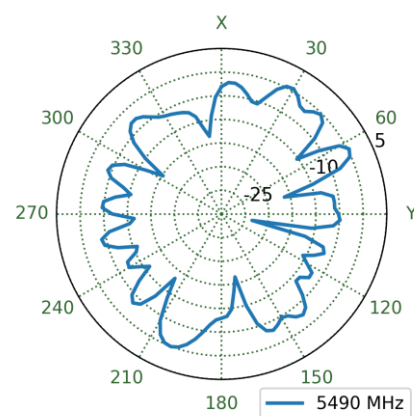
XZ Plane



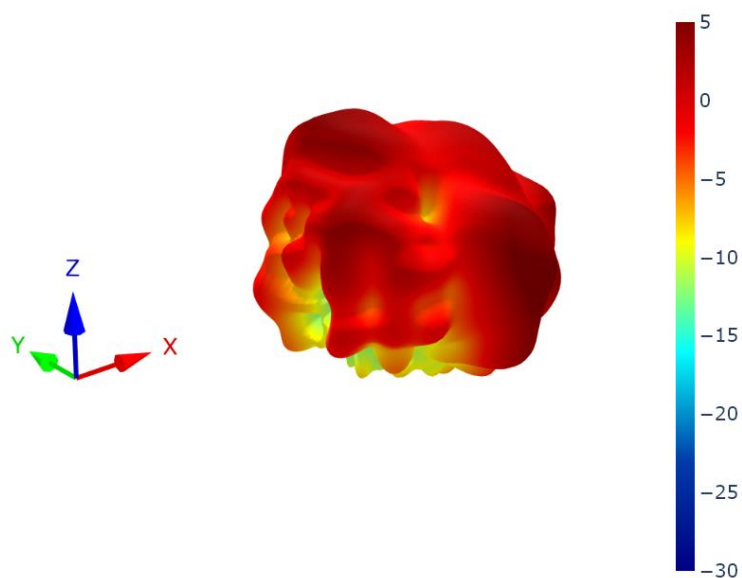
YZ Plane



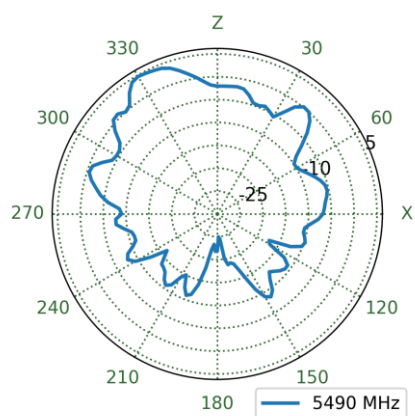
XY Plane



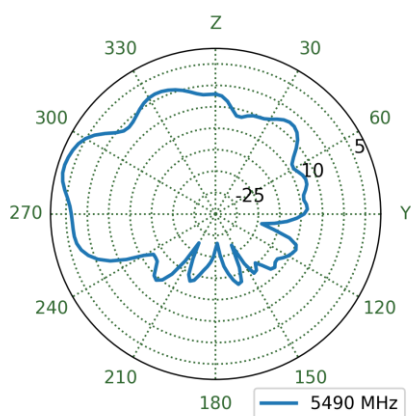
## 8.118 Wi-Fi5 Patterns at 5490 MHz



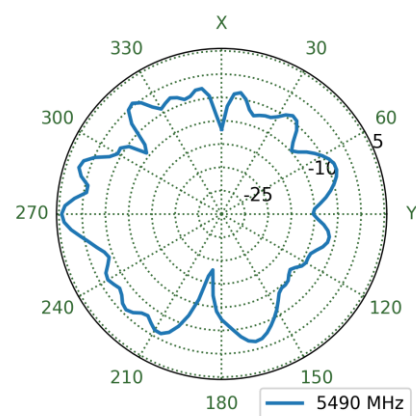
XZ Plane



YZ Plane

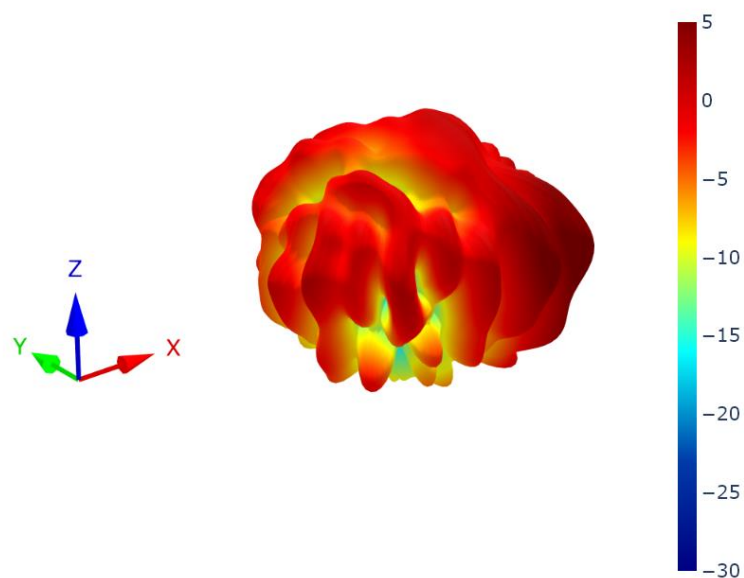


XY Plane

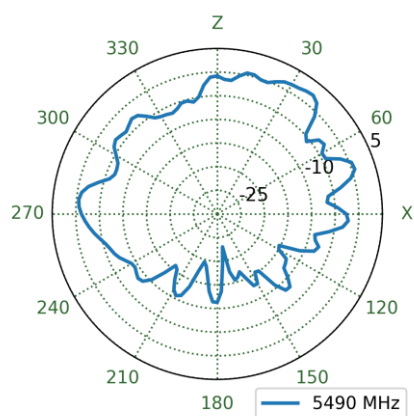




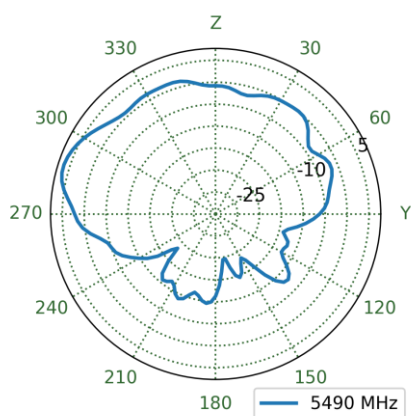
## 8.119 Wi-Fi6 Patterns at 5490 MHz



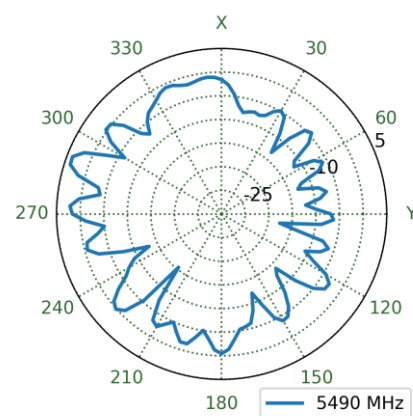
XZ Plane



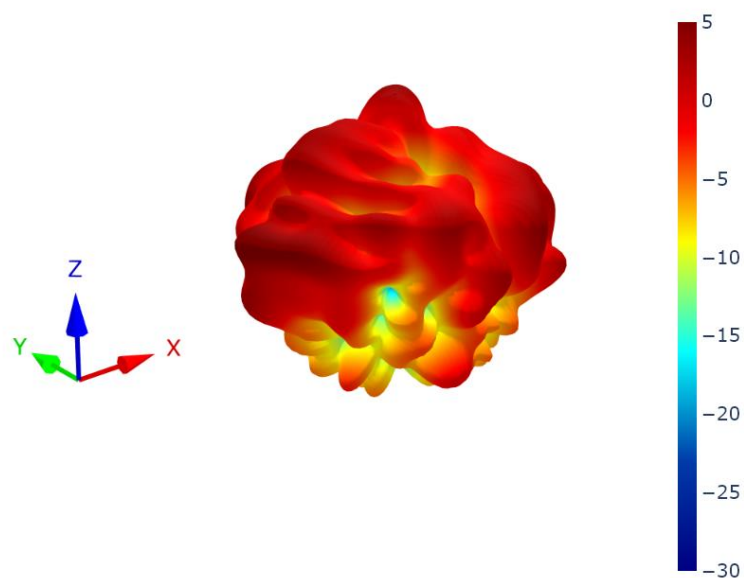
YZ Plane



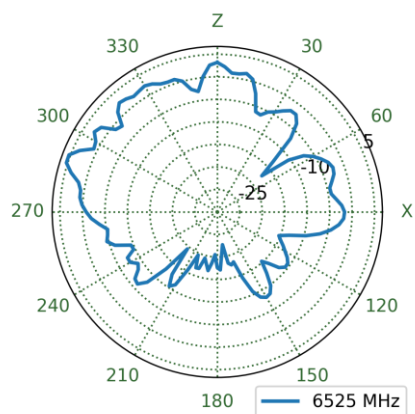
XY Plane



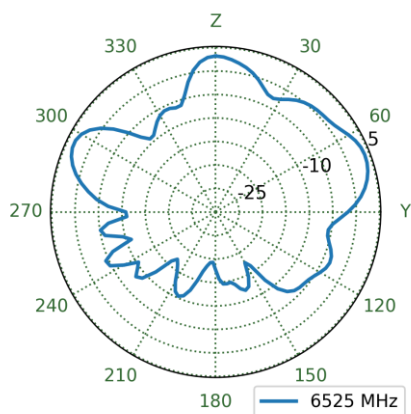
## 8.120 Wi-Fi1 Patterns at 6525 MHz



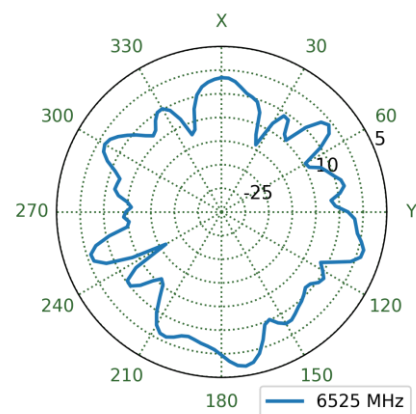
XZ Plane



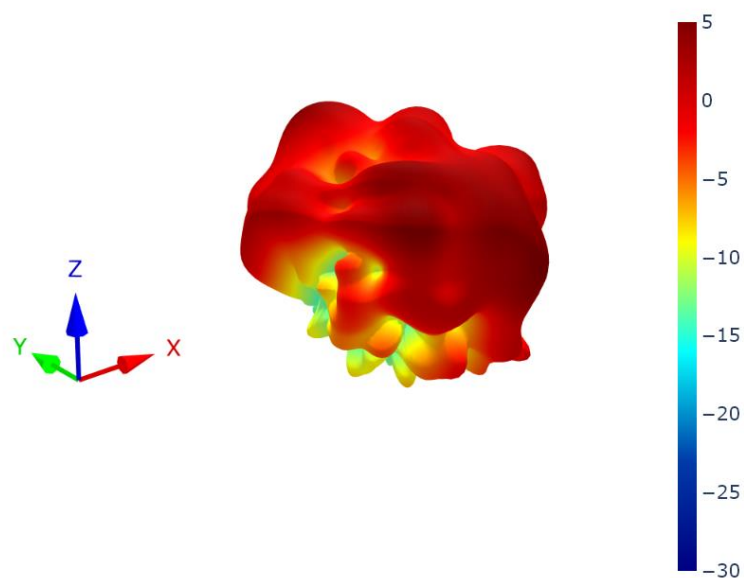
YZ Plane



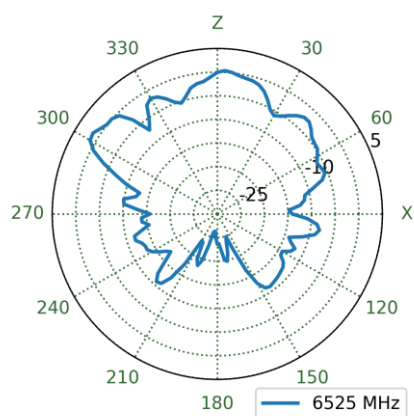
XY Plane



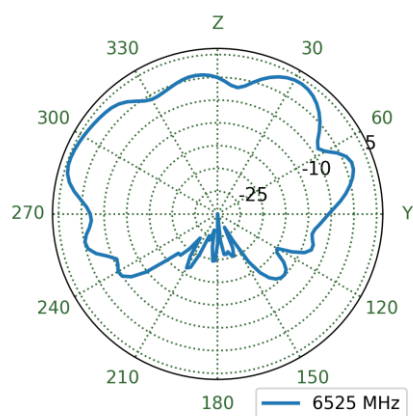
## 8.121 Wi-Fi2 Patterns at 6525 MHz



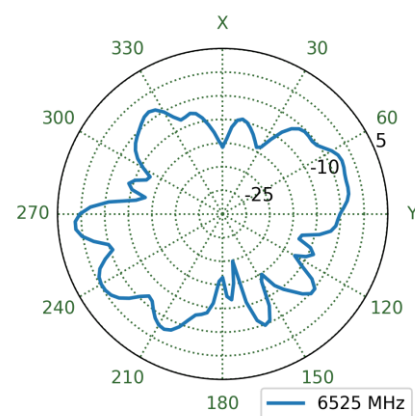
XZ Plane



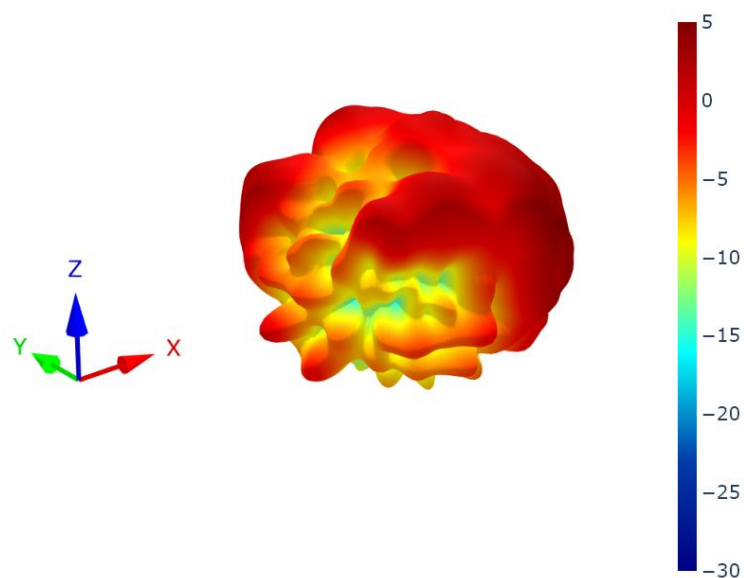
YZ Plane



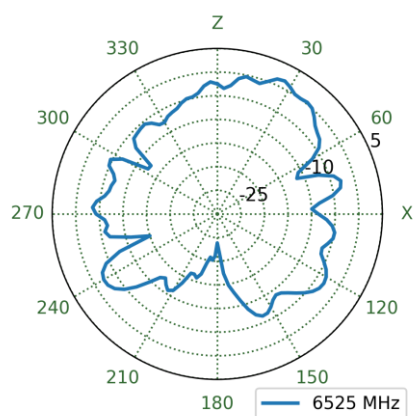
XY Plane



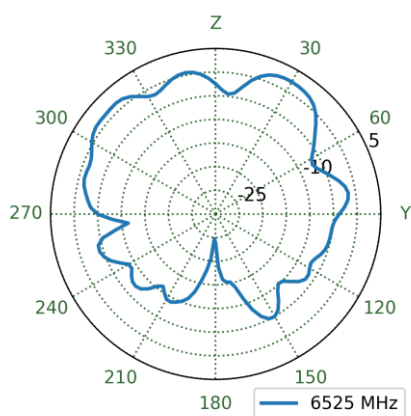
## 8.122 Wi-Fi3 Patterns at 6525 MHz



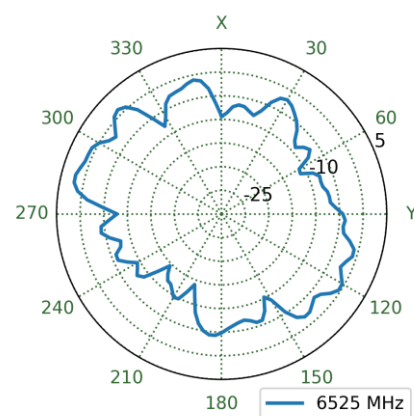
XZ Plane



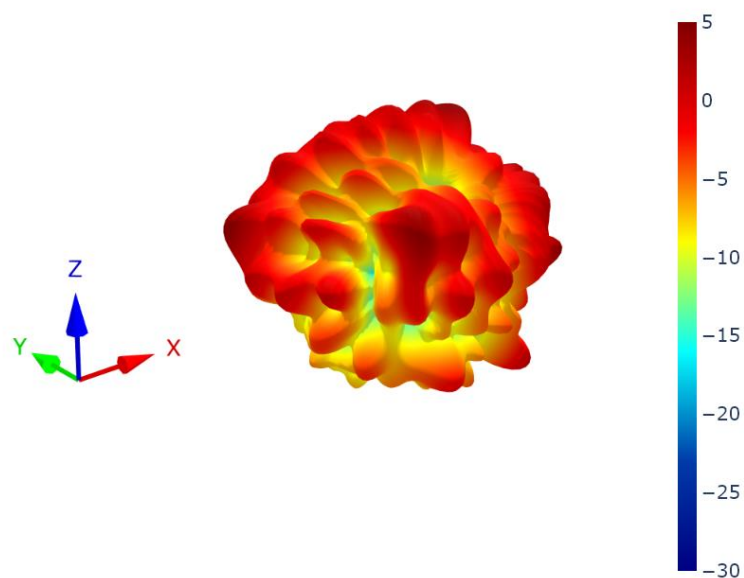
YZ Plane



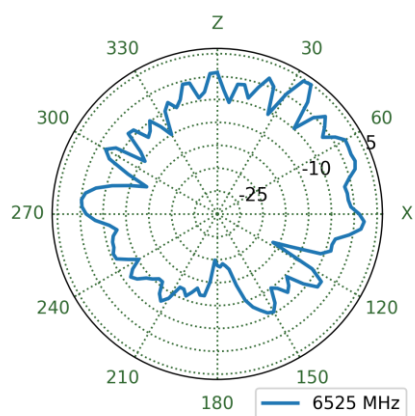
XY Plane



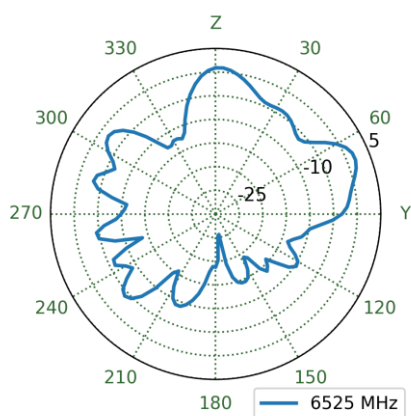
## 8.123 Wi-Fi4 Patterns at 6525 MHz



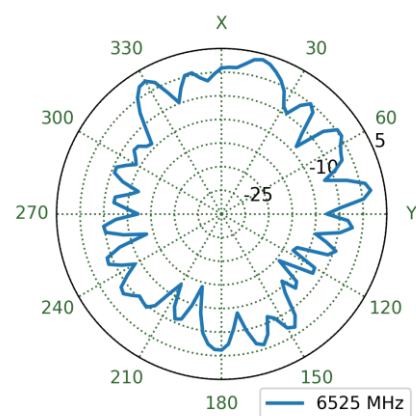
XZ Plane



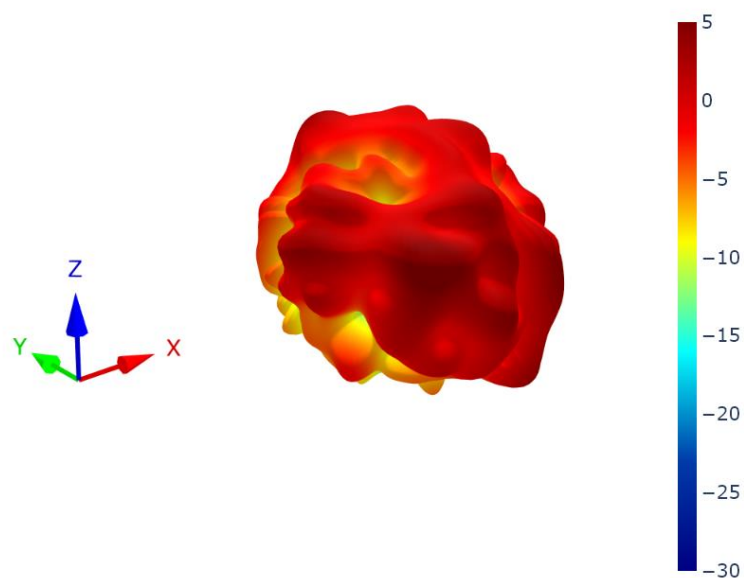
YZ Plane



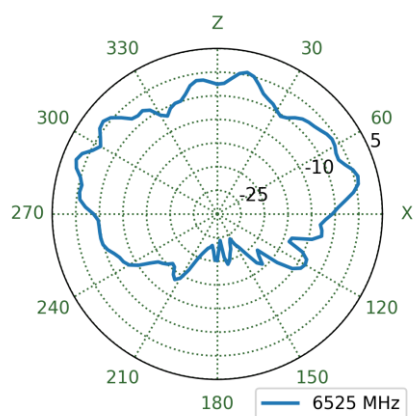
XY Plane



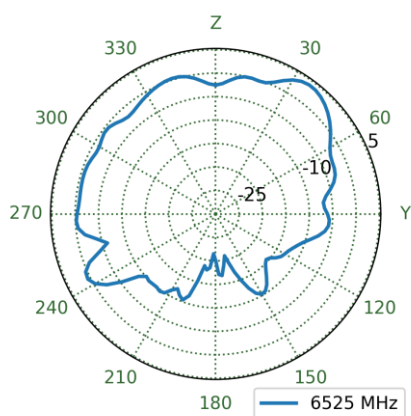
## 8.124 Wi-Fi5 Patterns at 6525 MHz



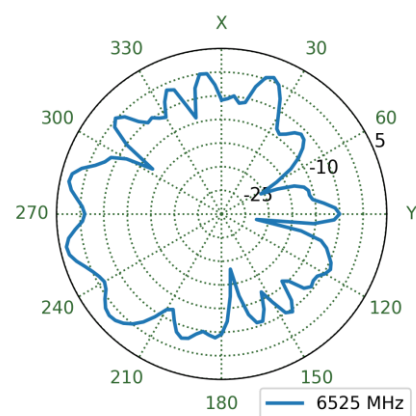
XZ Plane



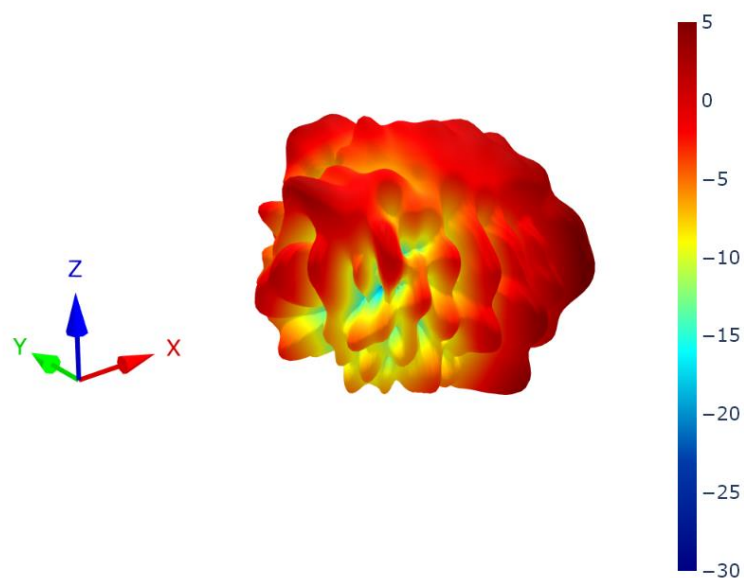
YZ Plane



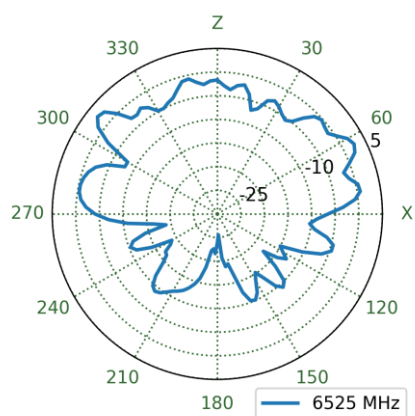
XY Plane



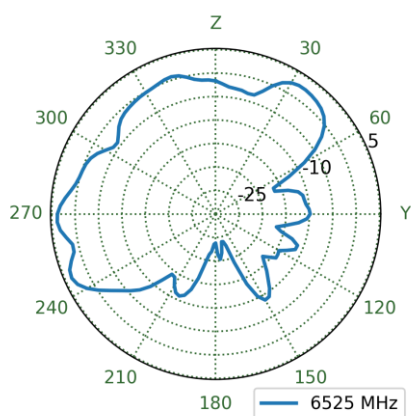
## 8.125 Wi-Fi6 Patterns at 6525 MHz



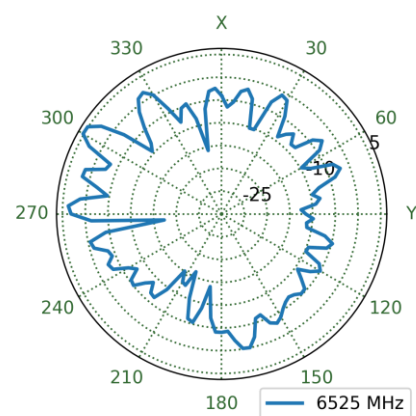
XZ Plane



YZ Plane



XY Plane



Changelog for the datasheet

SPE-24-8-195 - MAX1016.A.001\_MAX1016.W.001

Revision: A (Original First Release)

|         |                 |
|---------|-----------------|
| Date:   | 2024-08-19      |
| Notes:  | Initial Release |
| Author: | Gary West       |

Previous Revisions

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