



# TAOGLAS®



## Datasheet

### 5G/4G Terminal Mount Monopole Antenna

**Part No:**  
TG.55.8113

**Description:**

5G/4G Terminal Mount Monopole Antenna with 90° Hinged SMA (M)

**Features:**

Covering Sub 6GHz 5G NR Bands

Covering Worldwide 4G Bands

600MHz-6GHz Bandwidth

High Efficiency up to 80%

3G/2G Fallback

90° Hinged Right Angle SMA (M) Connector

Straight Dimensions: 172 x 23.9 x 13 mm

Right Angle Dimensions: 148 x 42.4 x 13 mm

RoHS & REACH Compliant

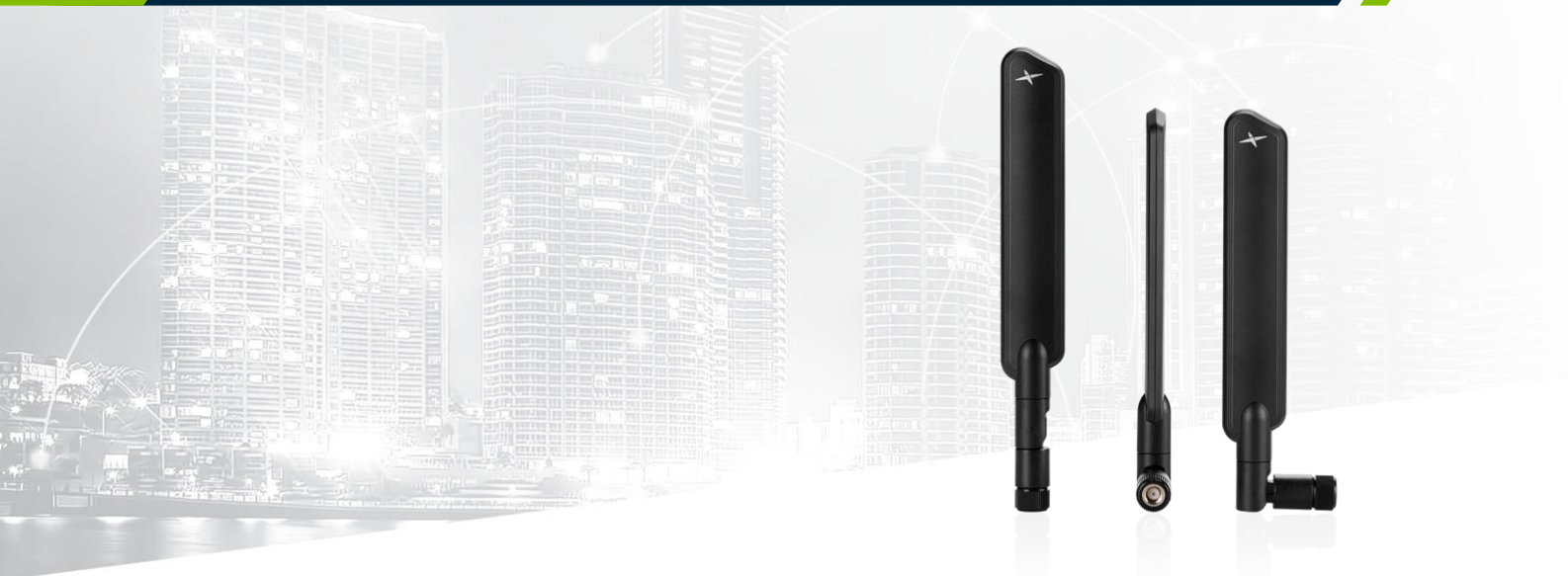
|                            |    |
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# 1. Introduction



The Taoglas TG.55 is a 5G/4G monopole antenna, designed primarily for use with 5G/4G modules and devices that require high efficiency and peak gain to deliver best in class throughput on all major cellular bands worldwide for access points, terminals, and routers. The TG.55 covers many 5G NR Sub 6GHz bands and the antenna including the new Extended LTE Band 71, many 5G NR Sub 6GHz bands and the antenna has an SMA (M) connector as standard, including the new 600MHz band 71.

Typical Applications include:

- Gateways & Routers
- Smart Metering
- Vending Machines
- Industrial IoT
- Smart Home
- Connected Enterprise

The TG.55 exhibits an efficiency of up to 80% across wideband 5G/4G bands and is backward compatible with 3G/2G cellular applications. It is an ideal solution for any device requiring high, reliable performance but in a slim form factor. It is also guaranteed to meet any type of approval or carrier certification requirements from an RF standpoint.

The TG.55 is a fully omnidirectional antenna as seen in the radiation patterns and is stable across all bands. The SMA (M) connector hinge mechanism allows the antenna to be rotated into the preferred orientation which helps to avoid other antennas or objects. This also helps with isolation by pointing the antennas in different directions when used in MIMO systems or when other antennas are present on the same device. The antenna blade can swivel 90 degrees from the connector accommodating different installation configurations.

Contact your regional Taoglas customer support team to request these services or additional support to integrate and test this antenna's performance in your device.

## 2. Specifications

| LTE Antenna                 |               |         |             |                       |           |           |           |           |            |             |                    |
|-----------------------------|---------------|---------|-------------|-----------------------|-----------|-----------|-----------|-----------|------------|-------------|--------------------|
| Frequency (MHz)             | 5G NR Band 71 | LTE700  | GSM 850/900 | 5G NR Band 74, 75, 76 | DCS       | PCS       | UMTS1     | LTE2600   | 5G NR Band | Japan 5G NR | LTE5200/Wi-Fi 5800 |
|                             | 617~698       | 698~824 | 824~960     | 1427~1518             | 1710~1880 | 1850~1990 | 1920~2170 | 2300~2690 | 3300~3500  | 3600~4600   | 5150~5925          |
| Efficiency (%)              |               |         |             |                       |           |           |           |           |            |             |                    |
| Bent with ground 9x15cm     | 44.01         | 52.07   | 69          | 57.07                 | 80.45     | 75.75     | 65.15     | 61.64     | 55.63      | 69.55       | 48.31              |
| Straight with ground 9x15cm | 43.09         | 59.36   | 73.50       | 56.36                 | 80.25     | 78.42     | 68.40     | 60.20     | 56.57      | 70.75       | 45.76              |
| Average Gain (dB)           |               |         |             |                       |           |           |           |           |            |             |                    |
| Bent with ground 9x15cm     | -3.56         | -2.83   | -1.61       | -2.44                 | -0.94     | -1.21     | -1.86     | -2.10     | -2.55      | -1.58       | -3.16              |
| Straight with ground 9x15cm | -3.66         | -2.27   | -1.34       | -2.49                 | -0.96     | -1.06     | -1.65     | -2.20     | -2.47      | -1.50       | -3.40              |
| Peak Gain (dBi)             |               |         |             |                       |           |           |           |           |            |             |                    |
| Bent with ground 9x15cm     | 0.62          | 1.68    | 2.66        | 1.51                  | 2.79      | 2.82      | 2.72      | 2.14      | 2.91       | 3.95        | 2.97               |
| Straight with ground 9x15cm | 1.26          | 2.51    | 3.20        | 4.05                  | 3.40      | 3.05      | 3.05      | 3.12      | 2.62       | 3.99        | 3.08               |
| Impedance                   | 50Ω           |         |             |                       |           |           |           |           |            |             |                    |
| Polarization                | Linear        |         |             |                       |           |           |           |           |            |             |                    |
| Radiation Pattern           | Omni          |         |             |                       |           |           |           |           |            |             |                    |
| Max. input power            | 2W            |         |             |                       |           |           |           |           |            |             |                    |

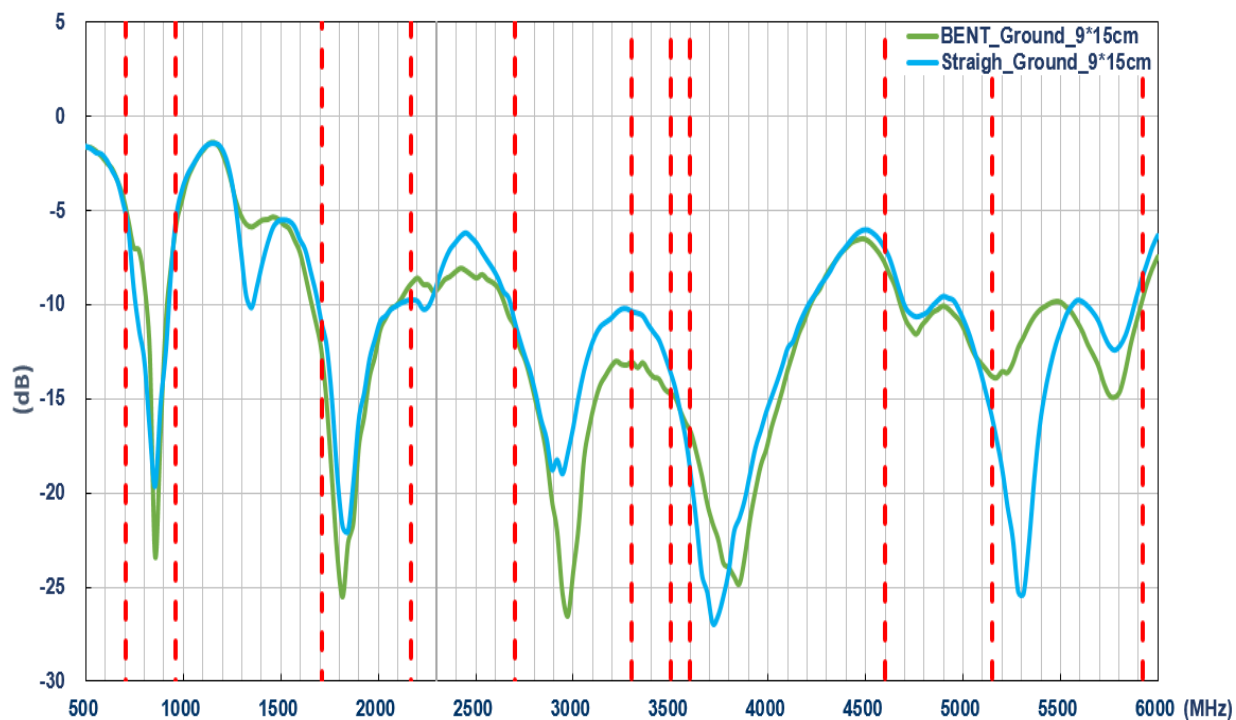
\*The test data is based on 9x15cm ground plane

| Mechanical             |                            |
|------------------------|----------------------------|
| SMA Connector Diameter | 13mm                       |
| Planner Dimension      | 172mm * 23.88mm            |
| Casing                 | ABS + PC                   |
| Connector              | SMA (M)                    |
| Weight                 | 24.3g                      |
| Environmental          |                            |
| Temperature Range      | -40°C to 85°C              |
| Humidity               | Non-condensing 65°C 95% RH |

| LTE Bands   |                                                      |                               |         |         |
|-------------|------------------------------------------------------|-------------------------------|---------|---------|
| Band Number | LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA |                               |         |         |
|             | Uplink                                               | Downlink                      | Covered | Covered |
| 1           | UL: 1920 to 1980                                     | DL: 2110 to 2170              | ✓       | ✓       |
| 2           | UL: 1850 to 1910                                     | DL: 1930 to 1990              | ✓       | ✓       |
| 3           | UL: 1710 to 1785                                     | DL: 1805 to 1880              | ✓       | ✓       |
| 4           | UL: 1710 to 1755                                     | DL: 2110 to 2155              | ✓       | ✓       |
| 5           | UL: 824 to 849                                       | DL: 869 to 894                | ✓       | ✓       |
| 7           | UL: 2500 to 2570                                     | DL: 2620 to 2690              | ✓       | ✓       |
| 8           | UL: 880 to 915                                       | DL: 925 to 960                | ✓       | ✓       |
| 9           | UL: 1749.9 to 1784.9                                 | DL: 1844.9 to 1879.9          | ✓       | ✓       |
| 11          | UL: 1427.9 to 1447.9                                 | DL: 1475.9 to 1495.9          | ✓       | ✓       |
| 12          | UL: 699 to 716                                       | DL: 729 to 746                | ✓       | ✓       |
| 13          | UL: 777 to 787                                       | DL: 746 to 756                | ✓       | ✓       |
| 14          | UL: 788 to 798                                       | DL: 758 to 768                | ✓       | ✓       |
| 17          | UL: 704 to 716                                       | DL: 734 to 746 (LTE only)     | ✓       | ✓       |
| 18          | UL: 815 to 830                                       | DL: 860 to 875 (LTE only)     | ✓       | ✓       |
| 19          | UL: 830 to 845                                       | DL: 875 to 890                | ✓       | ✓       |
| 20          | UL: 832 to 862                                       | DL: 791 to 821                | ✓       | ✓       |
| 21          | UL: 1447.9 to 1462.9                                 | DL: 1495.9 to 1510.9          | ✓       | ✓       |
| 22          | UL: 3410 to 3490                                     | DL: 3510 to 3590              | ✓       | ✓       |
| 23          | UL: 2000 to 2020                                     | DL: 2180 to 2200 (LTE only)   | ✓       | ✓       |
| 24          | UL: 1625.5 to 1660.5                                 | DL: 1525 to 1559 (LTE only)   | ✓       | ✓       |
| 25          | UL: 1850 to 1915                                     | DL: 1930 to 1995              | ✓       | ✓       |
| 26          | UL: 814 to 849                                       | DL: 859 to 894                | ✓       | ✓       |
| 27          | UL: 807 to 824                                       | DL: 852 to 869 (LTE only)     | ✓       | ✓       |
| 28          | UL: 703 to 748                                       | DL: 758 to 803 (LTE only)     | ✓       | ✓       |
| 29          | UL: -                                                | DL: 717 to 728 (LTE only)     |         | ✓       |
| 30          | UL: 2305 to 2315                                     | DL: 2350 to 2360 (LTE only)   | ✓       | ✓       |
| 31          | UL: 452.5 to 457.5                                   | DL: 462.5 to 467.5 (LTE only) | -       | -       |
| 32          | UL: -                                                | DL: 1452 - 1496               |         | ✓       |
| 35          |                                                      | 1850 to 1910                  | ✓       | ✓       |
| 38          |                                                      | 2570 to 2620                  | ✓       | ✓       |
| 39          |                                                      | 1880 to 1920                  | ✓       | ✓       |
| 40          |                                                      | 2300 to 2400                  | ✓       | ✓       |
| 41          |                                                      | 2496 to 2690                  | ✓       | ✓       |
| 42          |                                                      | 3400 to 3600                  | ✓       | ✓       |
| 43          |                                                      | 3600 to 3800                  | ✓       | ✓       |
| 71          |                                                      | 617-698MHz                    | ✓       | ✓       |

## 3. Antenna Characteristics

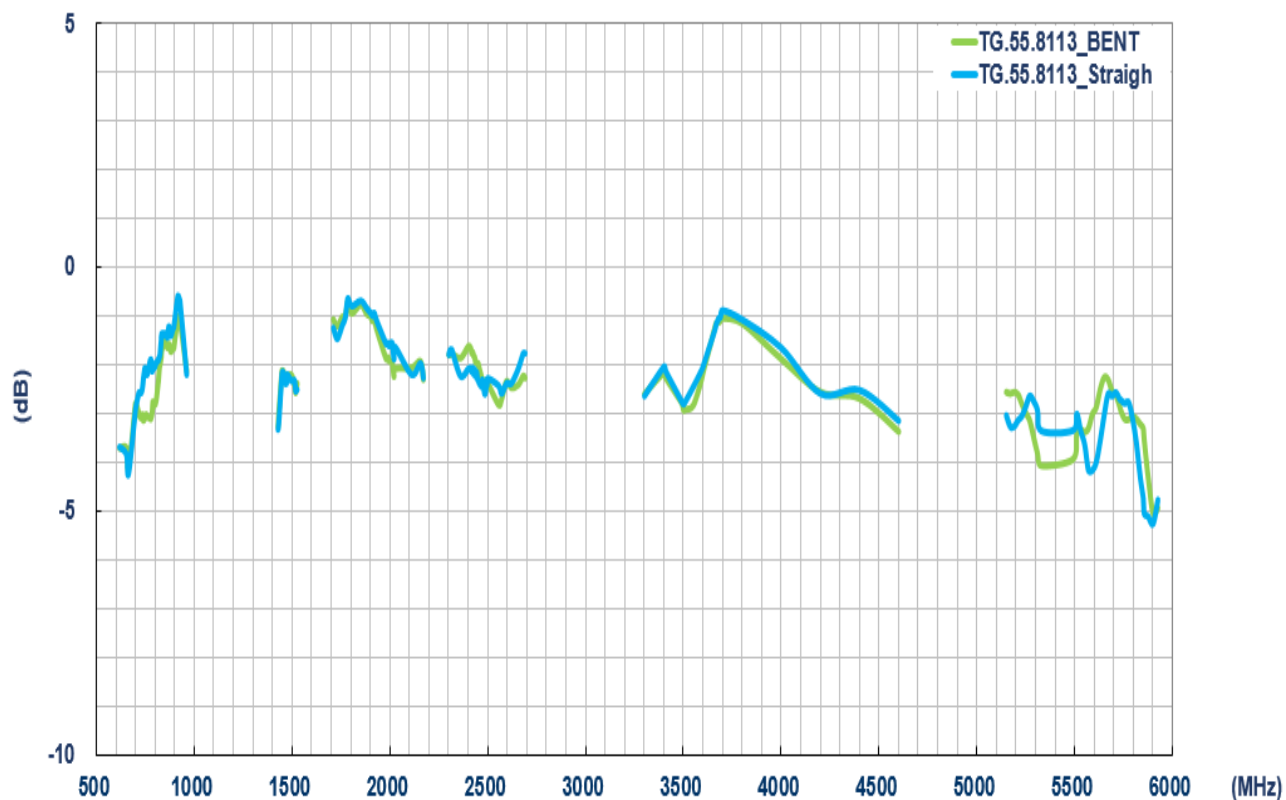
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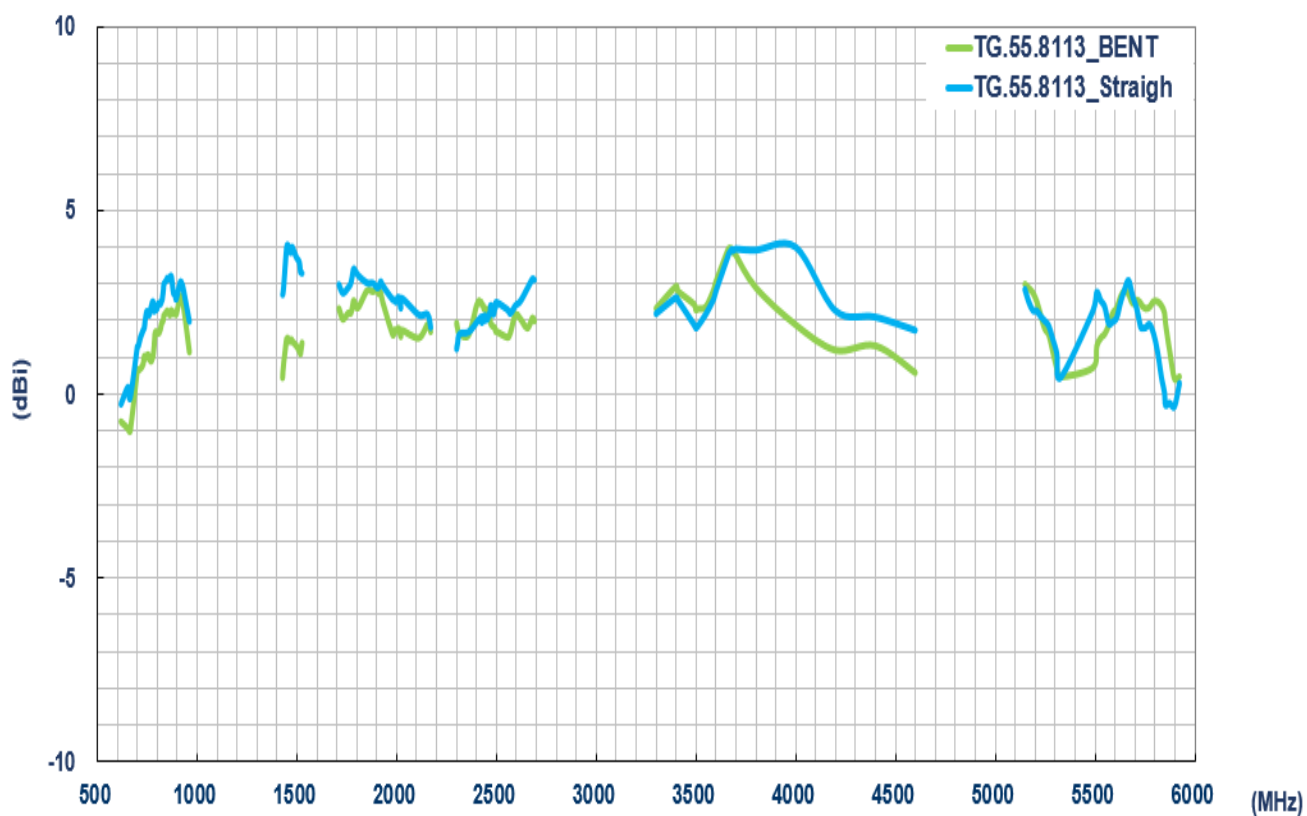
### 3.2 Efficiency



### 3.3 Average Gain



### 3.4 Peak Gain





## 4. Radiation Patterns

### 4.1 Test Setup



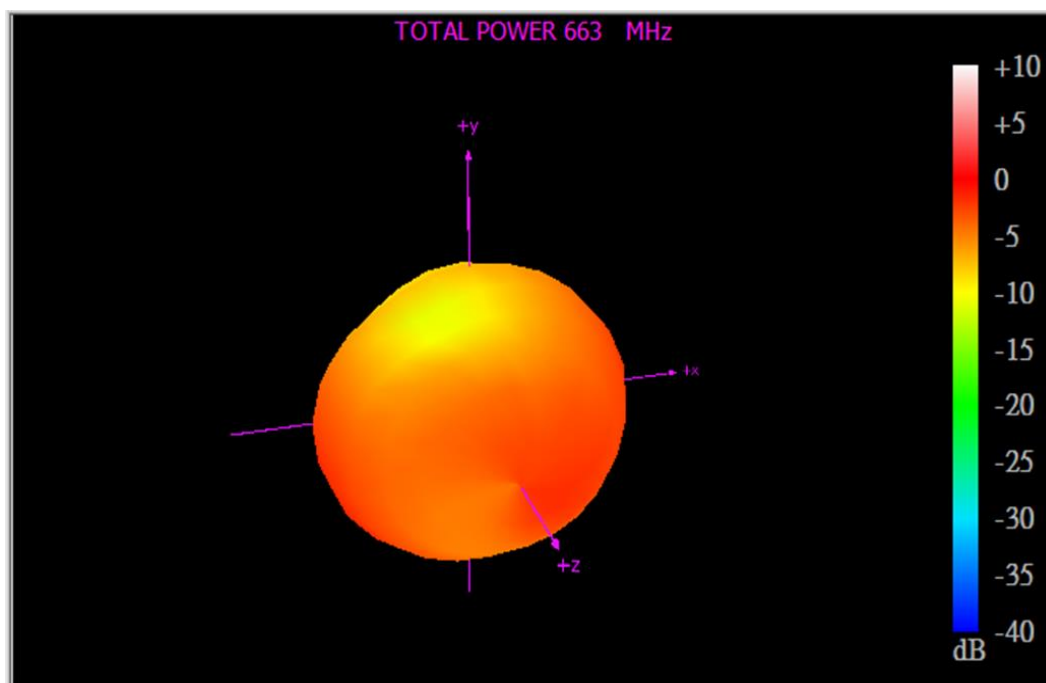
Straight With Ground\_9\*15cm



Bent With Ground\_9\*15cm

## 4.2 LTE Bent 2D & 3D Radiation Patterns

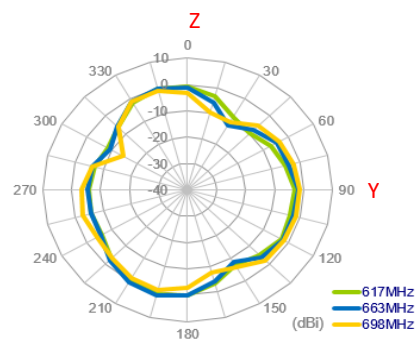
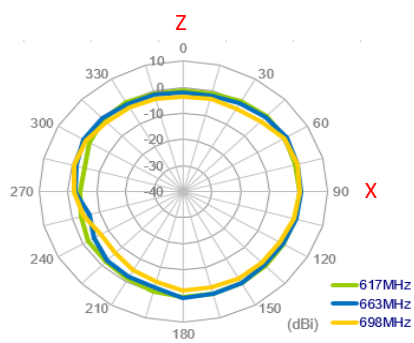
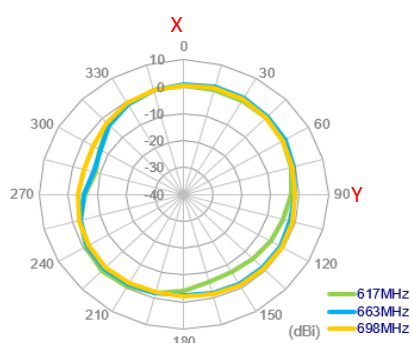
663MHz



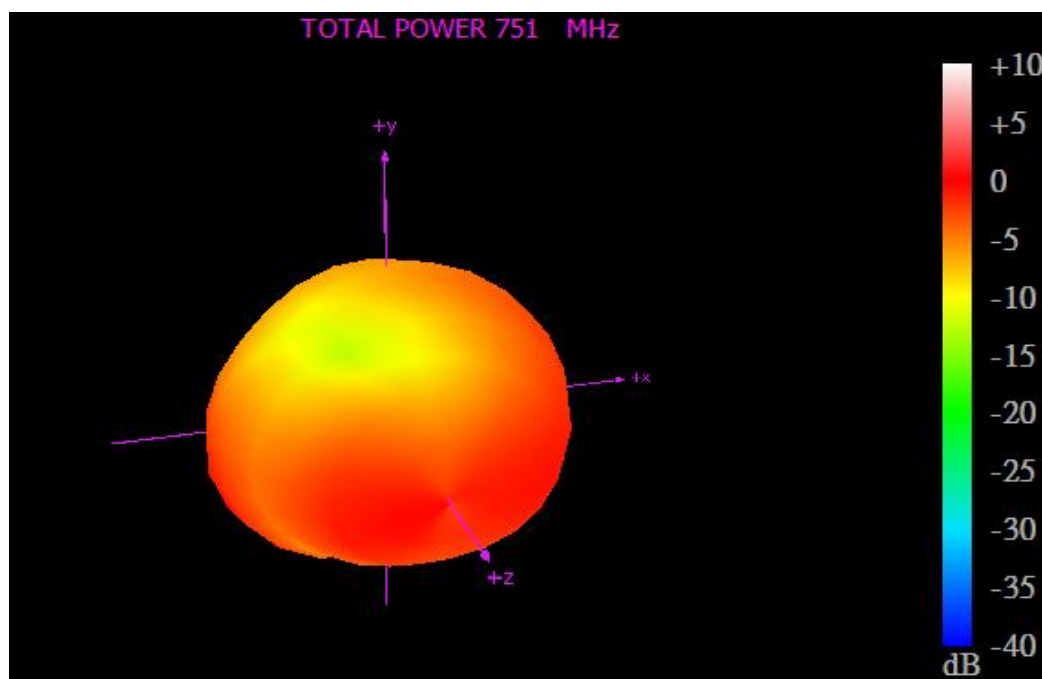
XY Plane

XZ Plane

YZ Plane



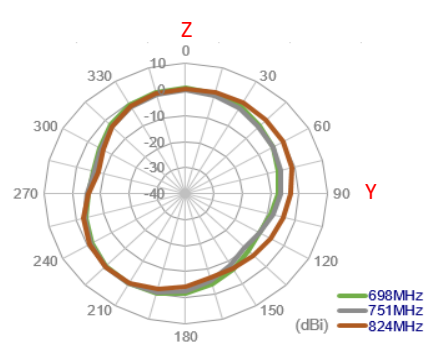
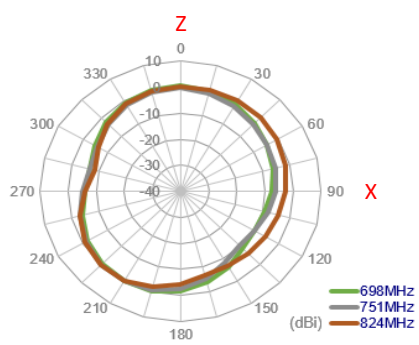
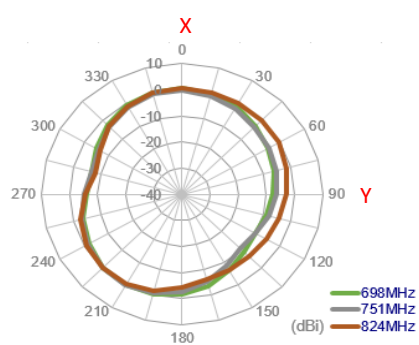
751MHz



XY Plane

XZ Plane

YZ Plane



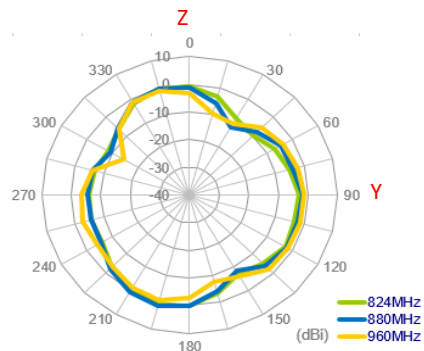
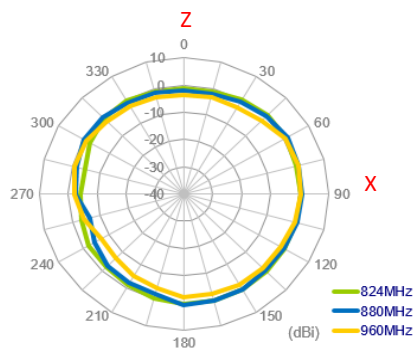
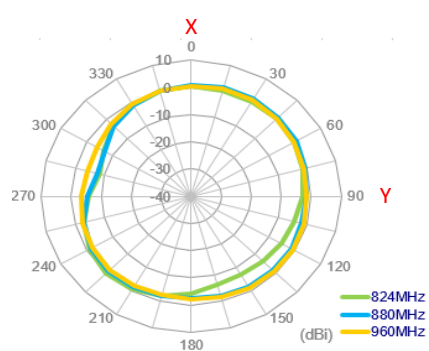
880MHz



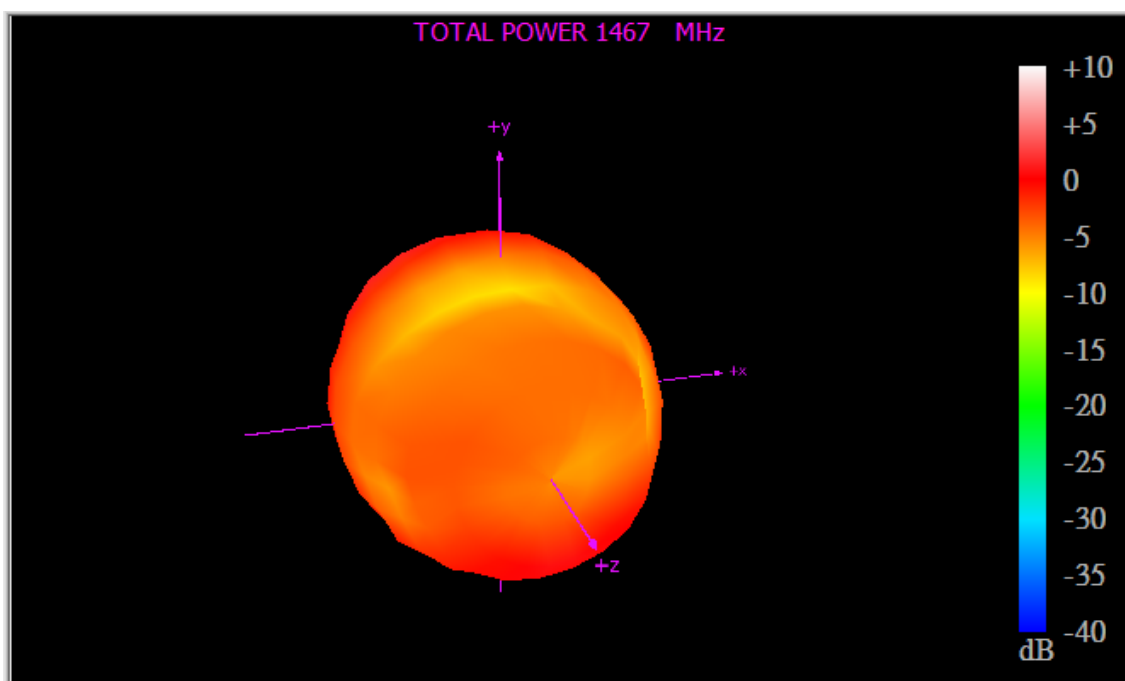
XY Plane

XZ Plane

YZ Plane



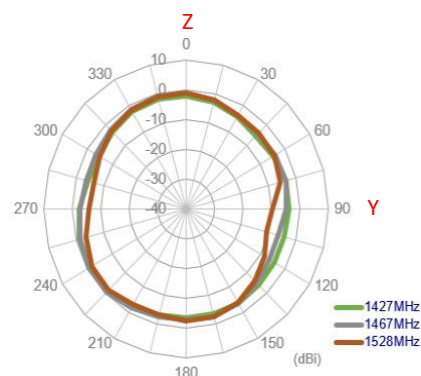
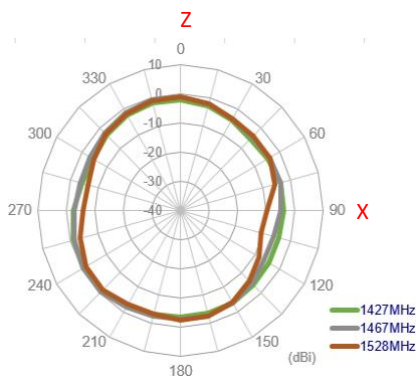
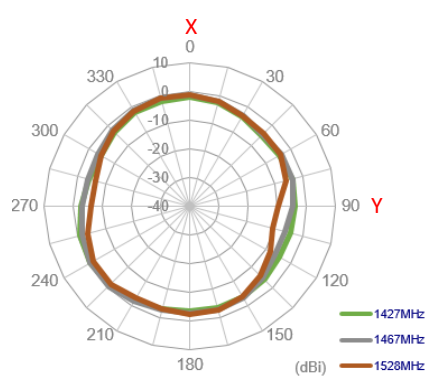
1467MHz



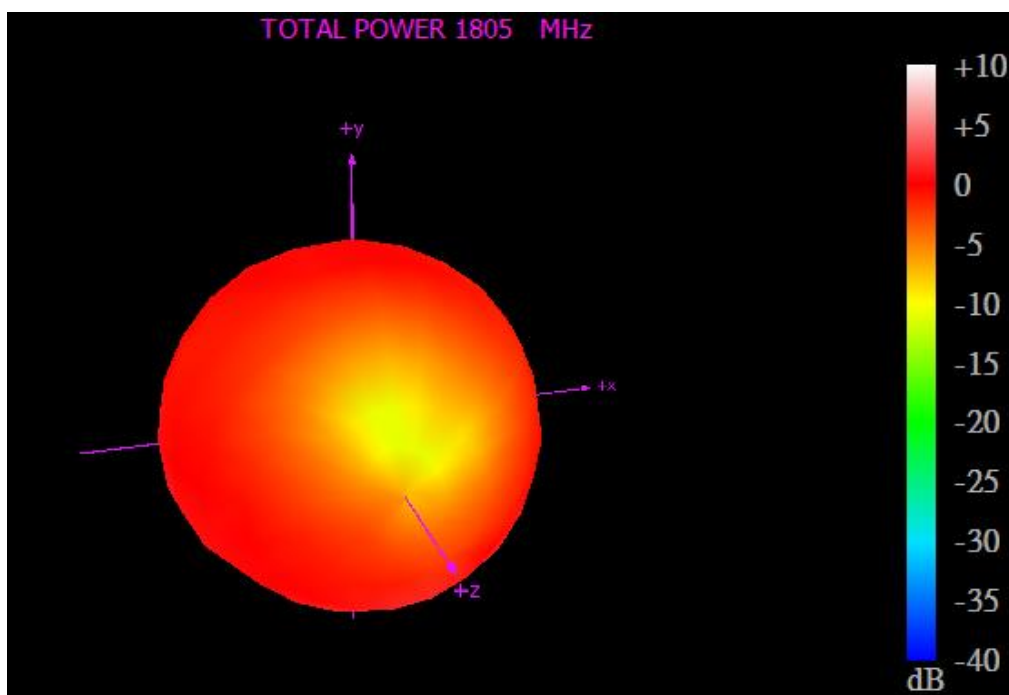
XY Plane

XZ Plane

YZ Plane



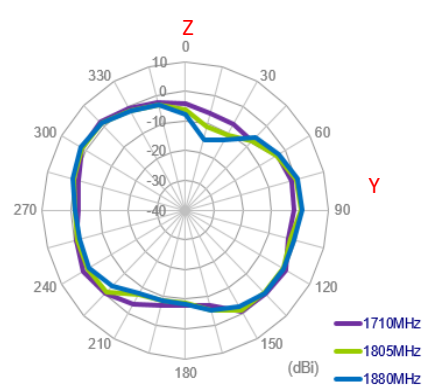
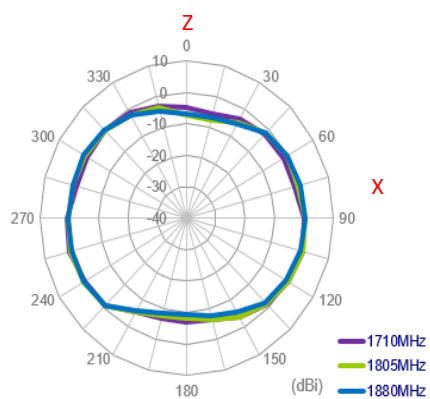
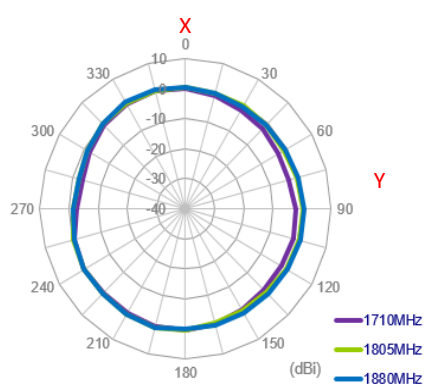
1805MHz



XY Plane

XZ Plane

YZ Plane



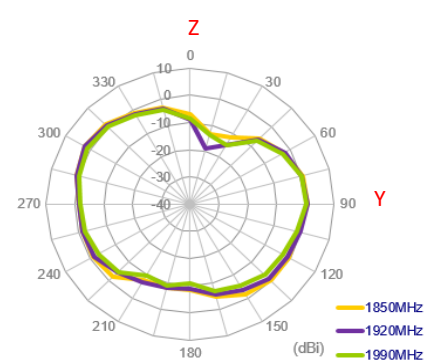
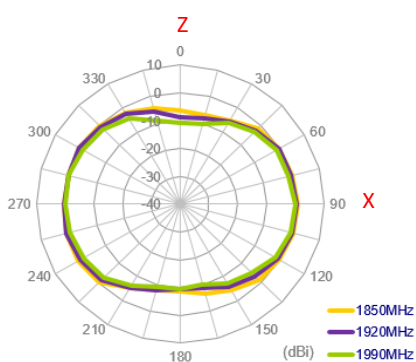
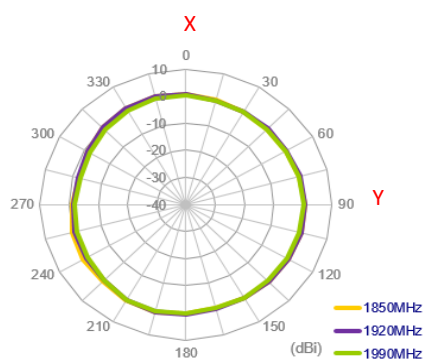
1920MHz



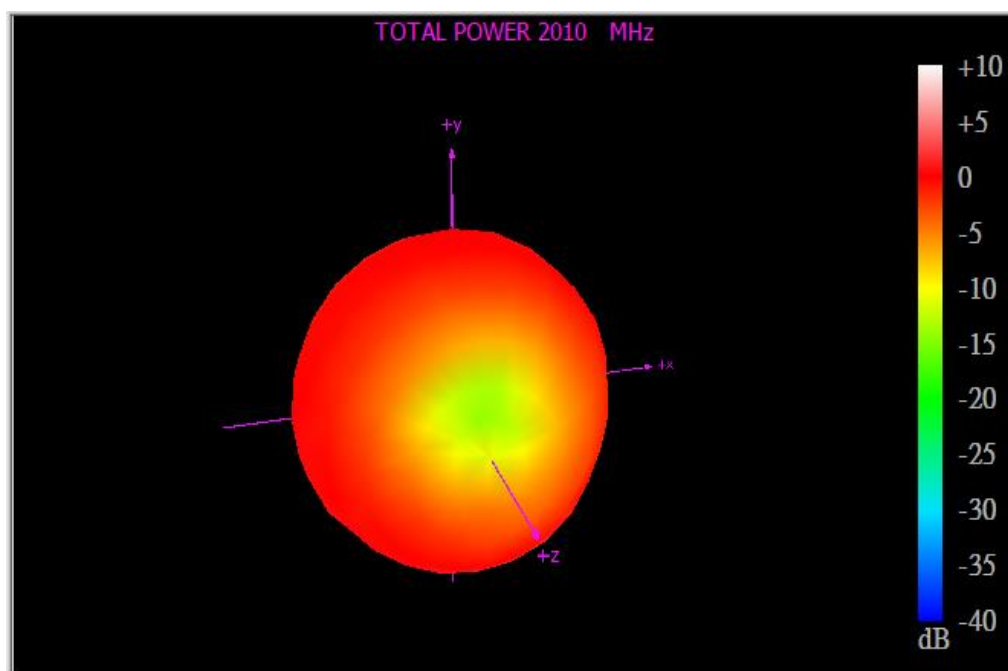
XY Plane

XZ Plane

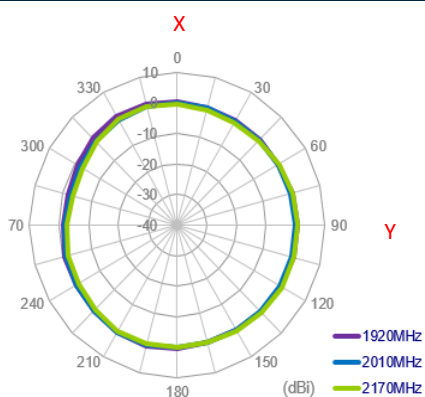
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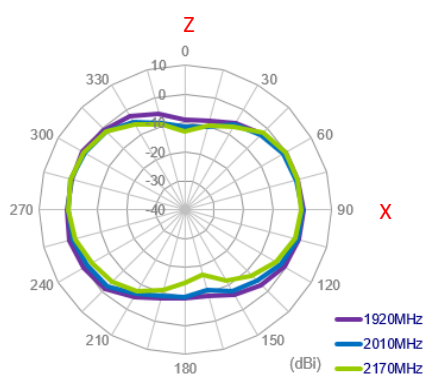
2010MHz



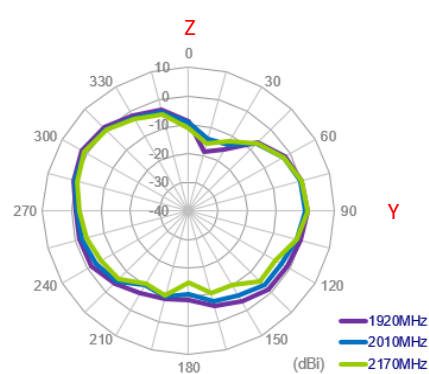
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XZ Plane

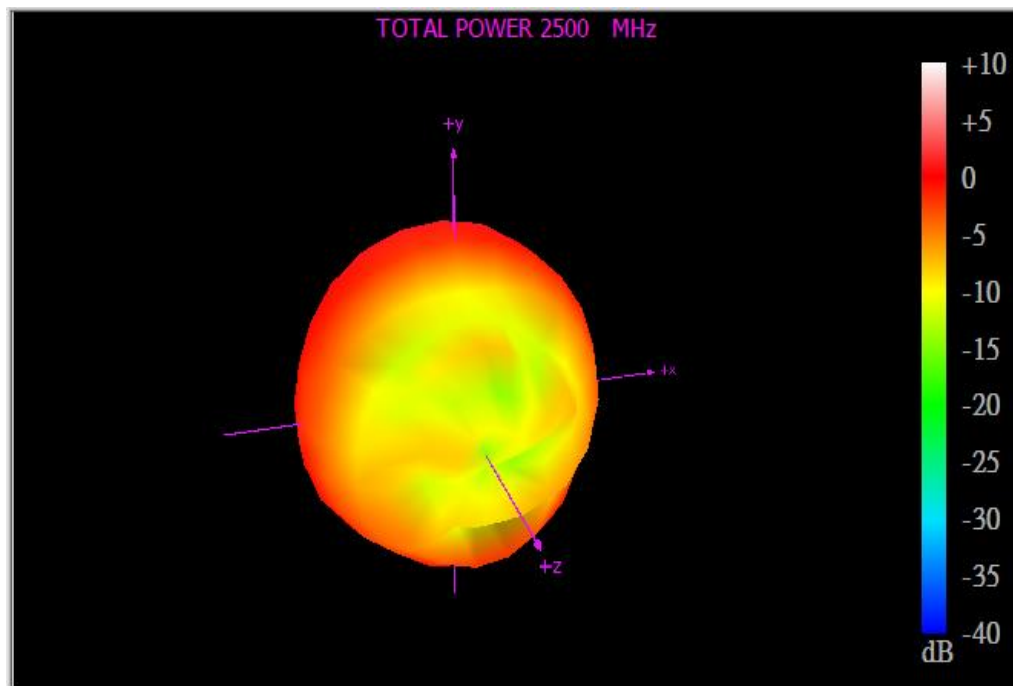


YZ Plane

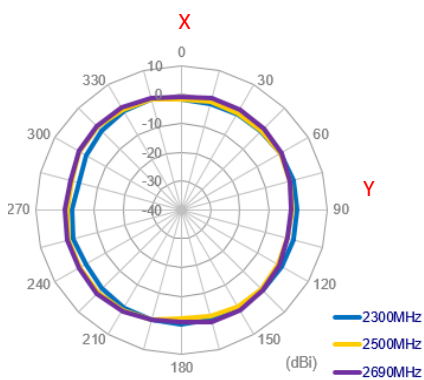




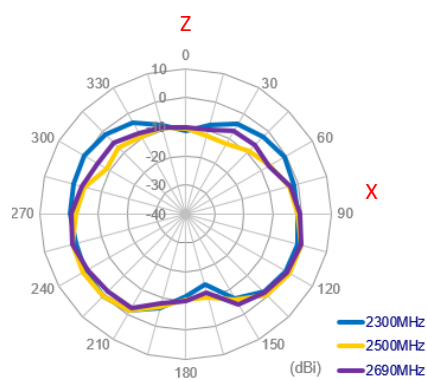
2500MHz



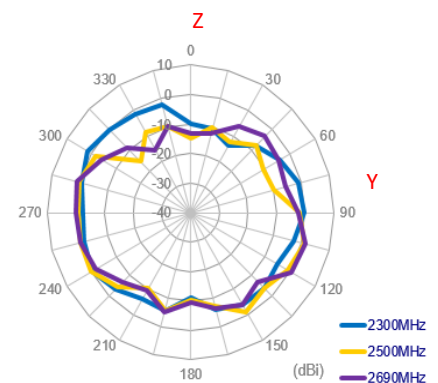
XY Plane



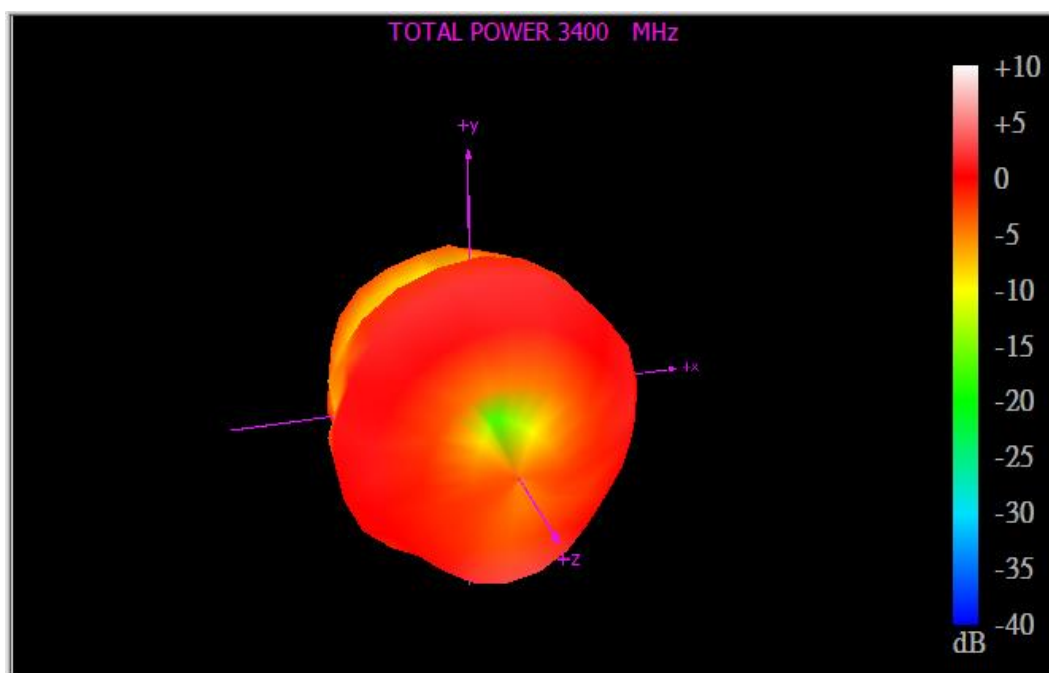
XZ Plane



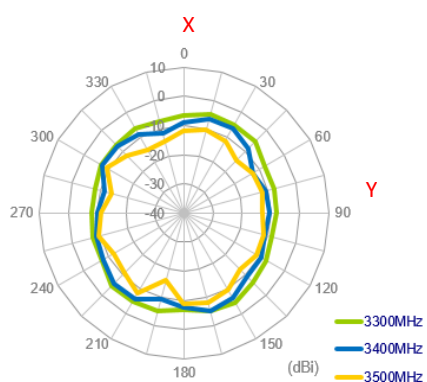
YZ Plane



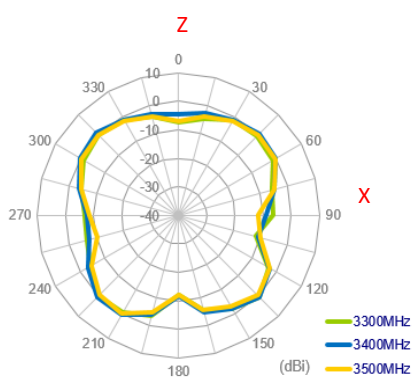
3400MHz



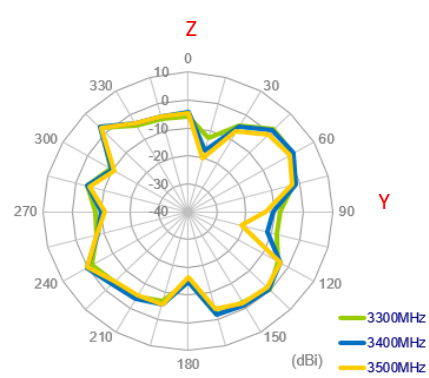
XY Plane



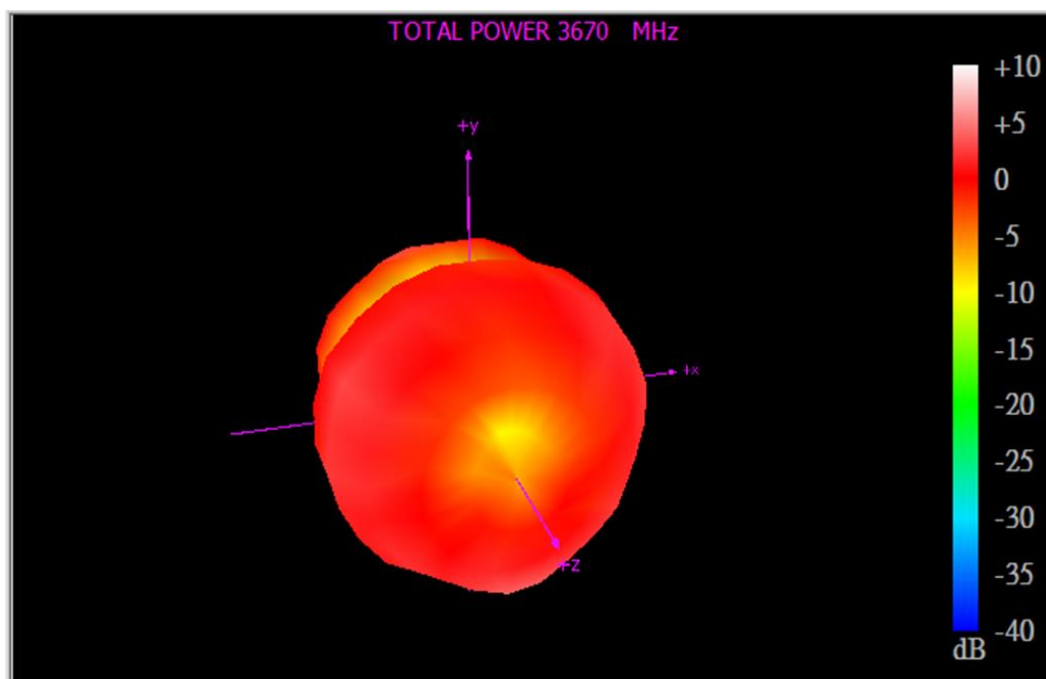
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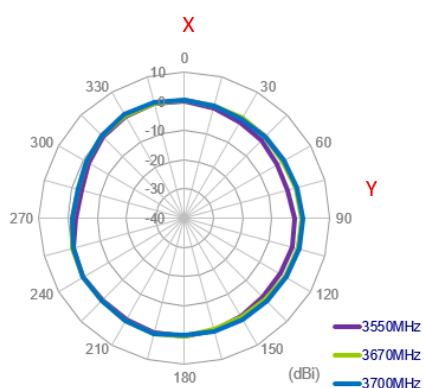
YZ Plane



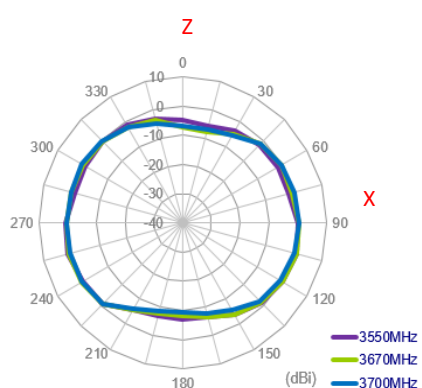
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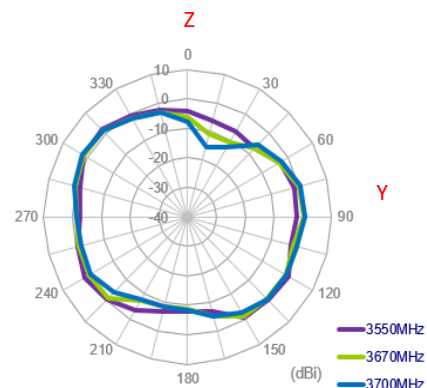
XY Plane



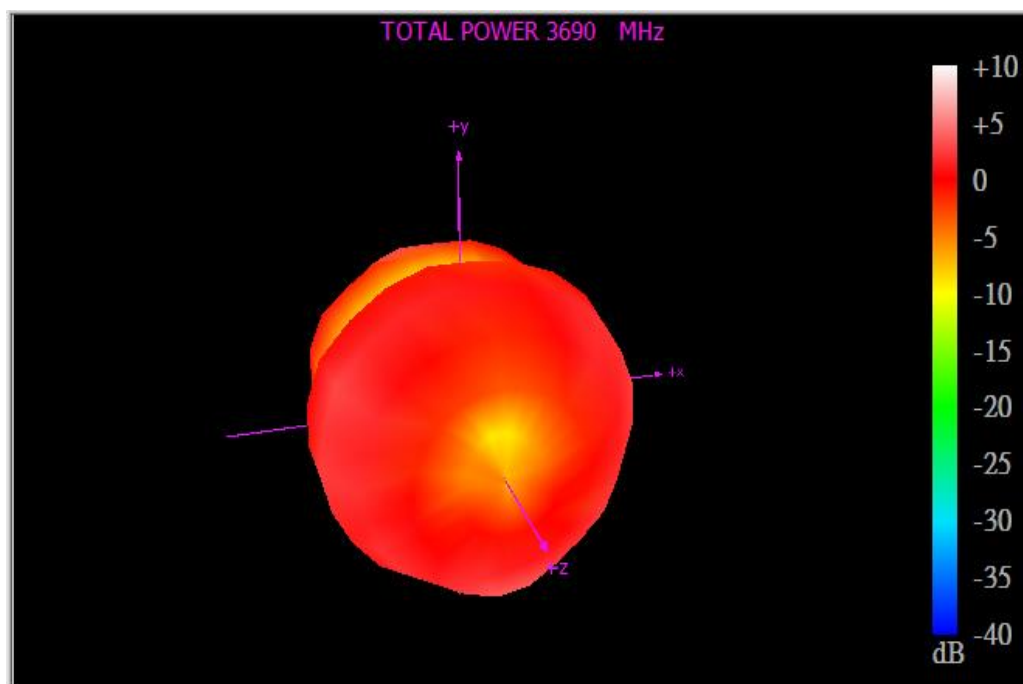
XZ Plane



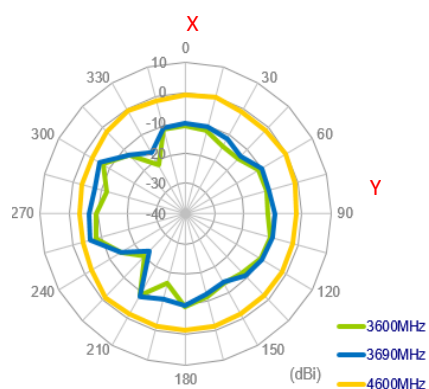
YZ Plane



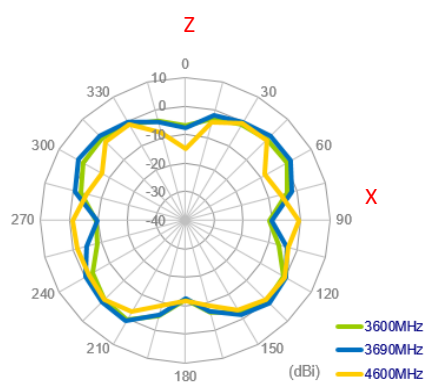
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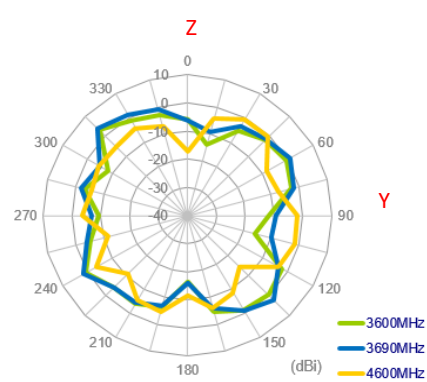
XY Plane



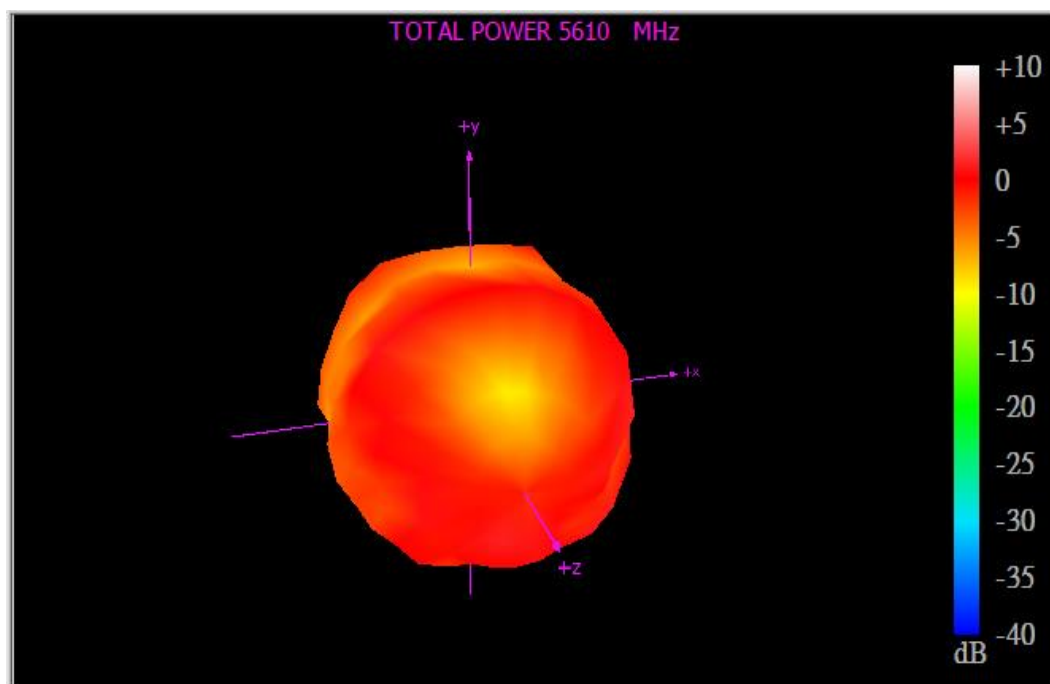
XZ Plane



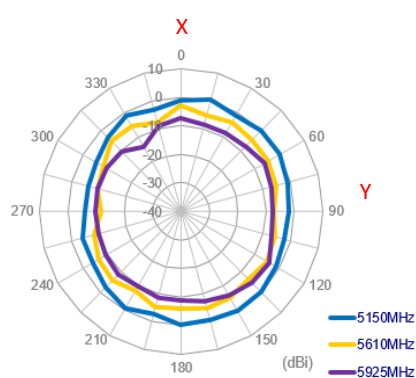
YZ Plane



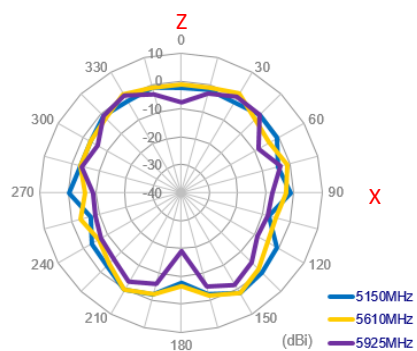
5610MHz



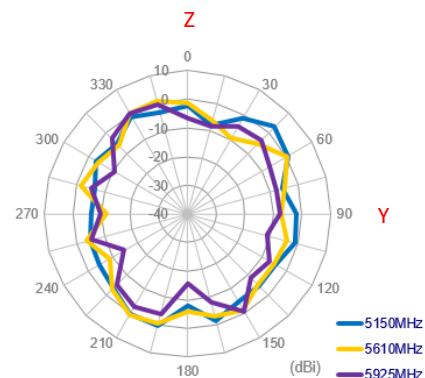
XY Plane



XZ Plane

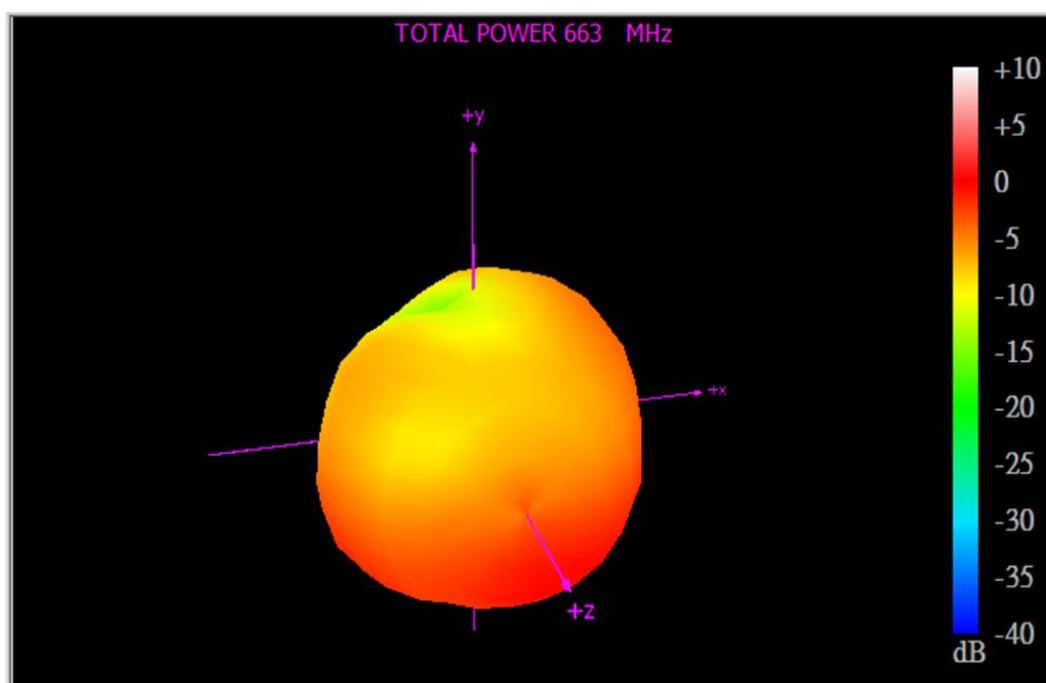


YZ Plane



## 4.3 LTE Straight 2D & 3D Radiation Pattern

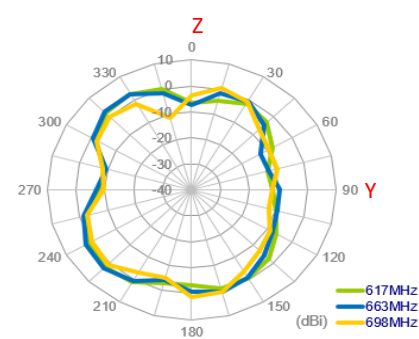
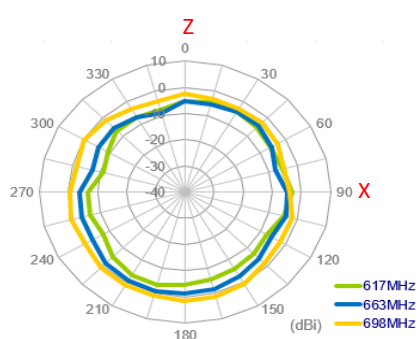
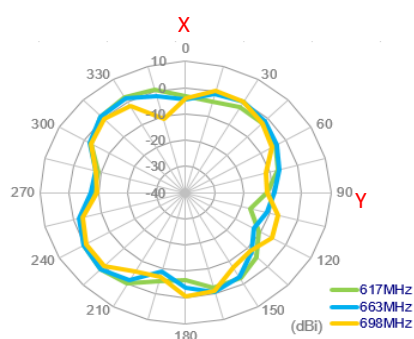
663 MHz



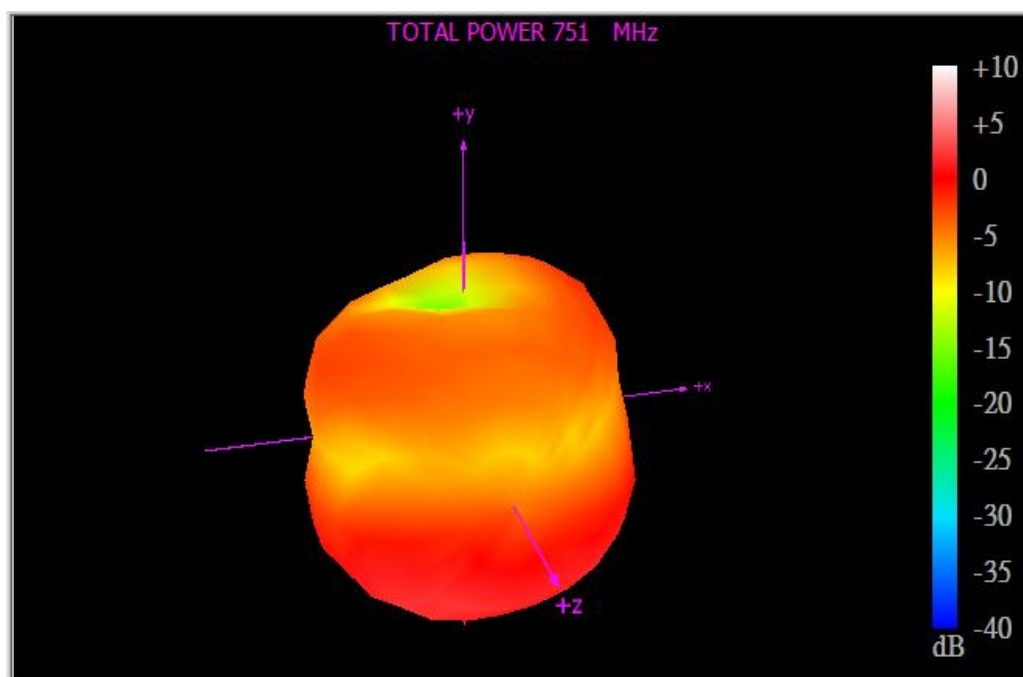
XY Plane

XZ Plane

YZ Plane



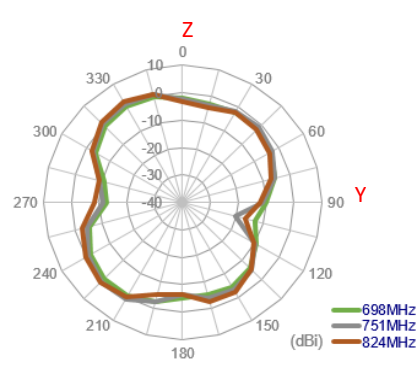
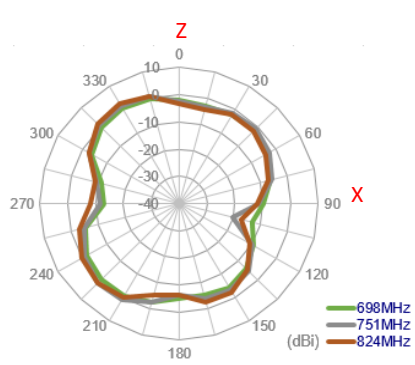
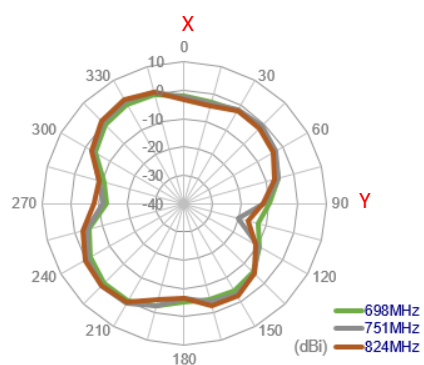
751 MHz



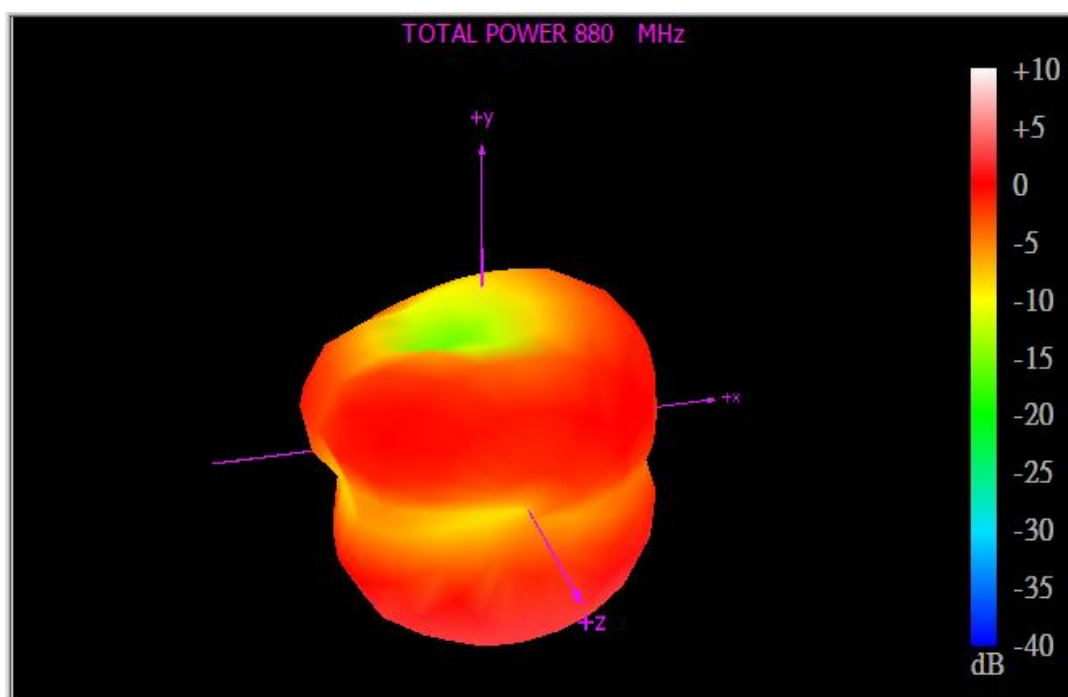
XY Plane

XZ Plane

YZ Plane



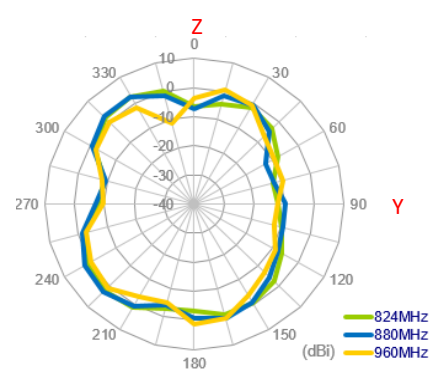
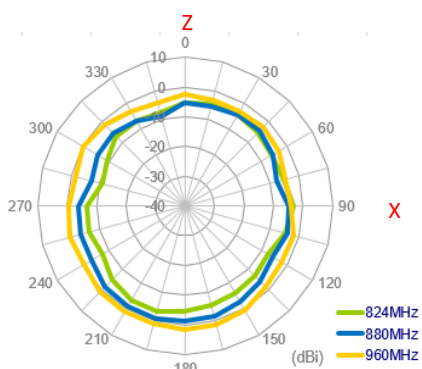
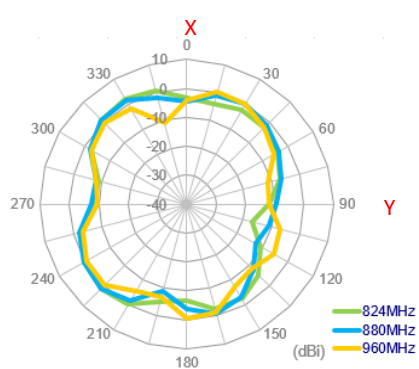
880MHz



XY Plane

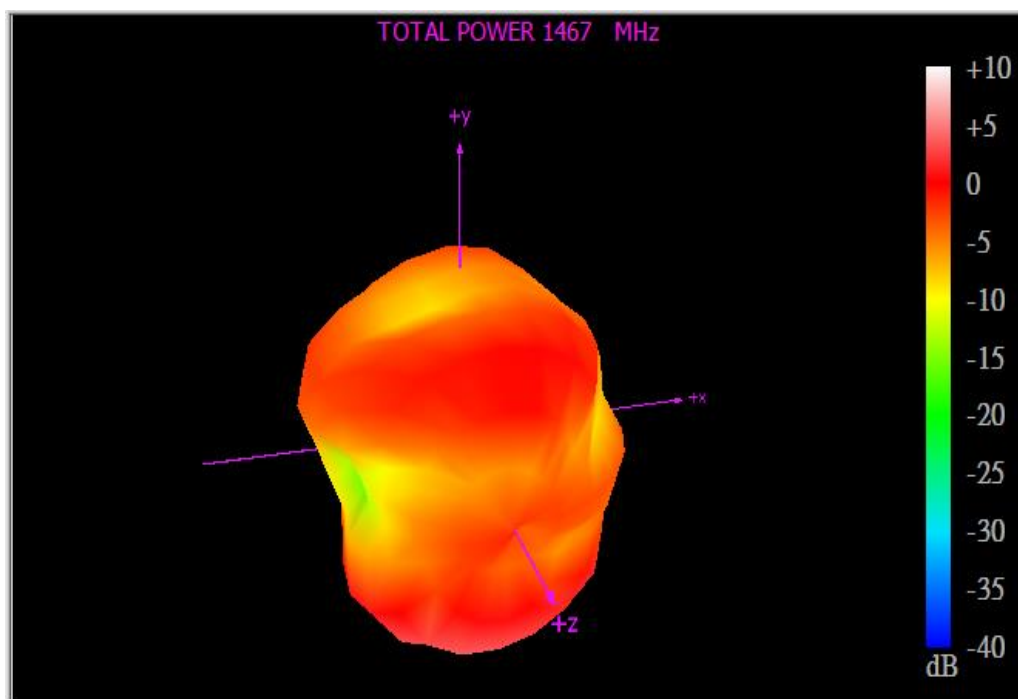
XZ Plane

YZ Plane





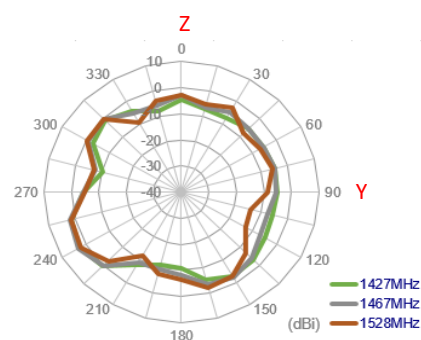
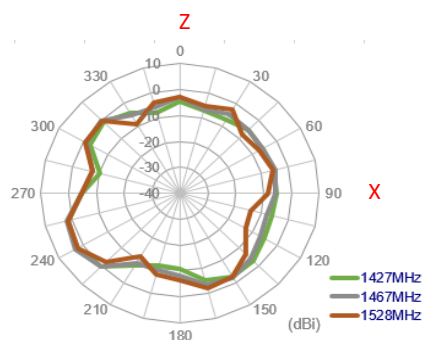
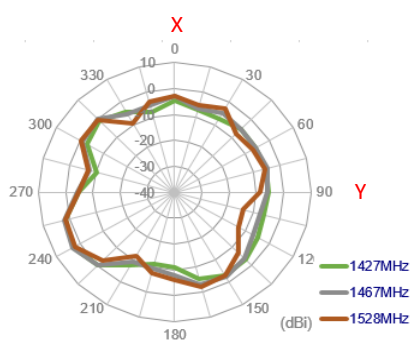
1467MHz



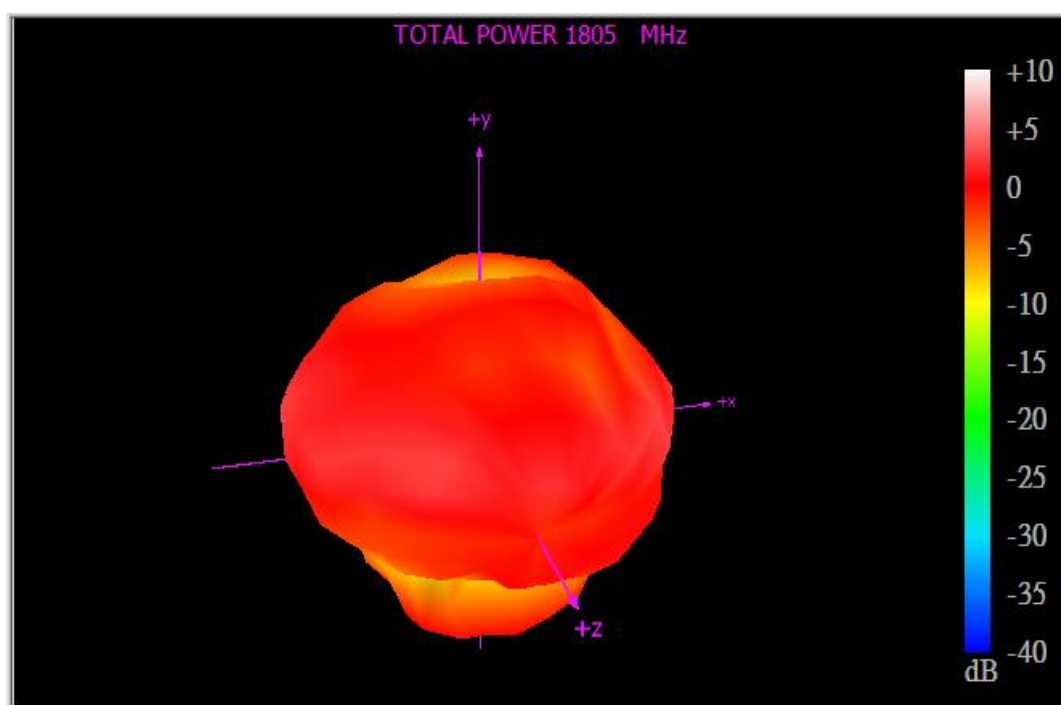
XY Plane

XZ Plane

YZ Plane



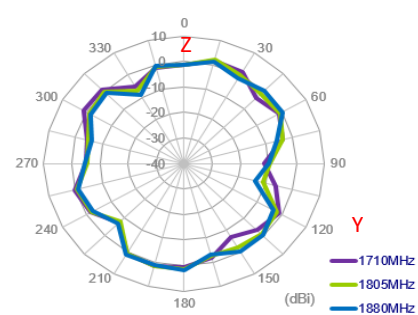
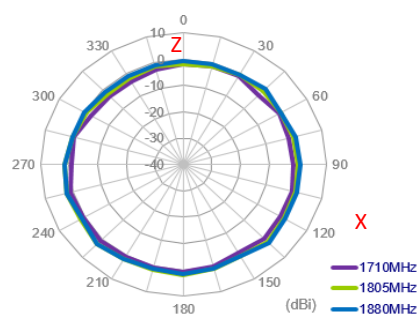
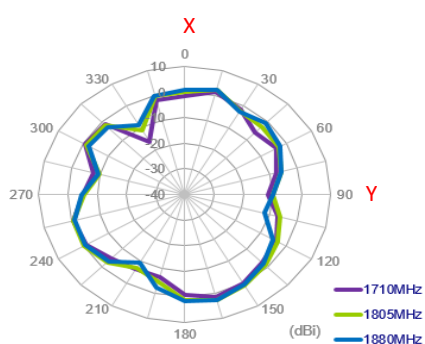
1805MHz



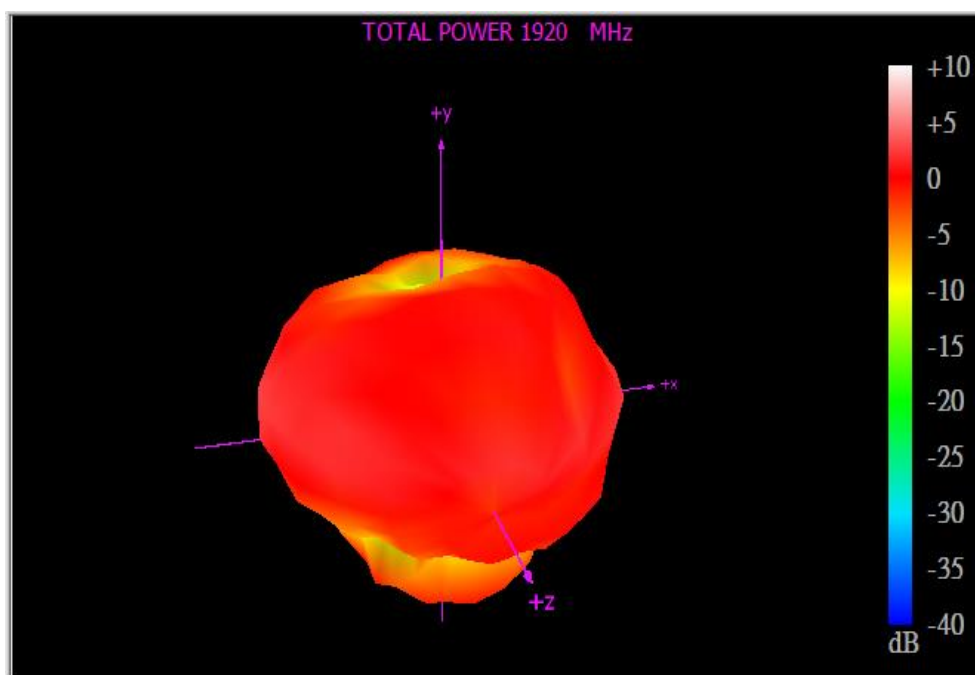
XY Plane

XZ Plane

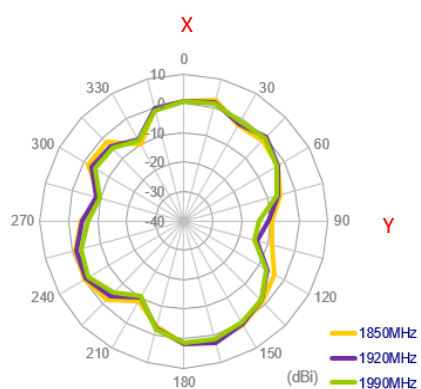
YZ Plane



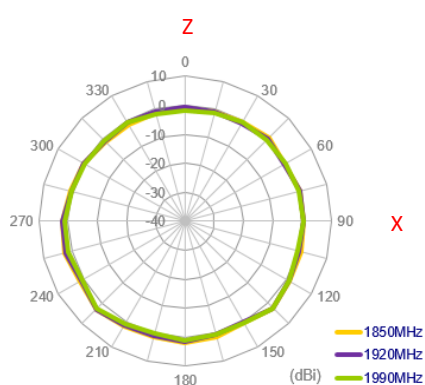
1920MHz



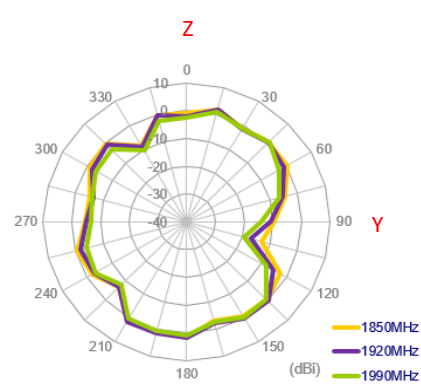
XY Plane



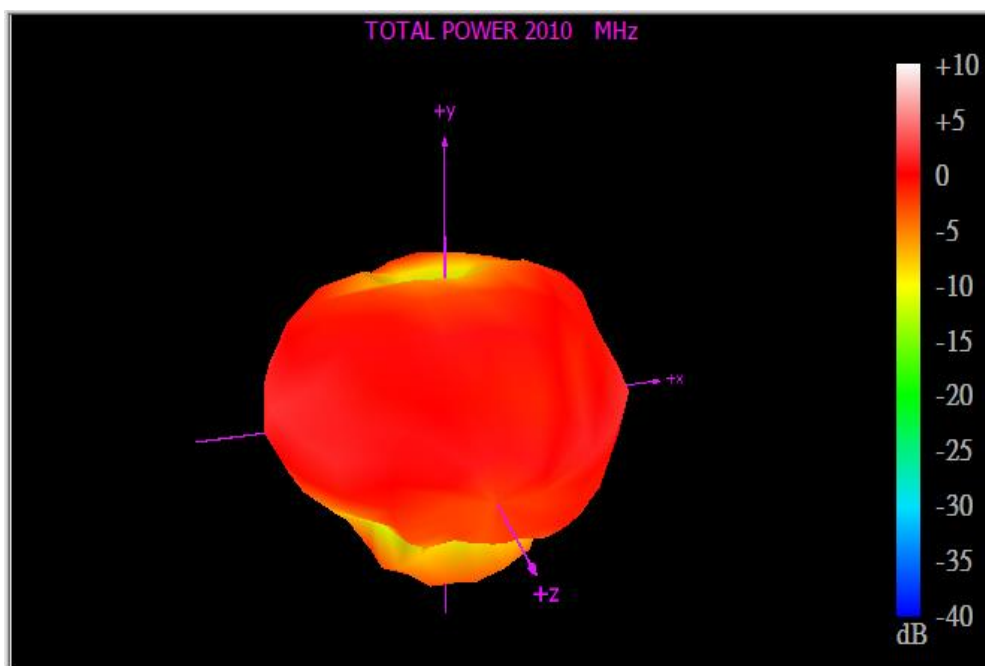
XZ Plane



YZ Plane



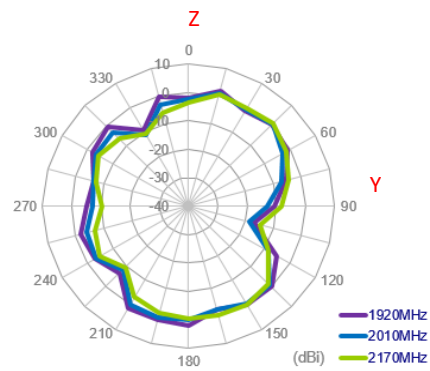
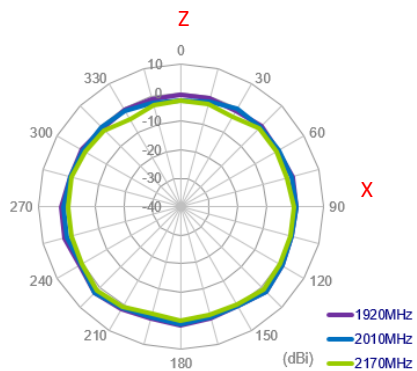
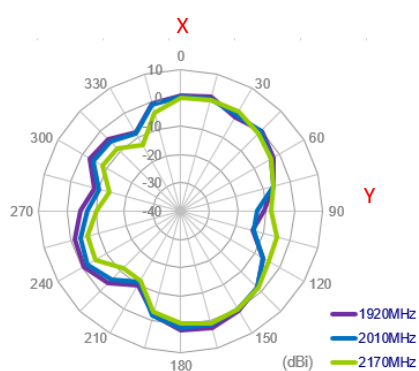
2010MHz



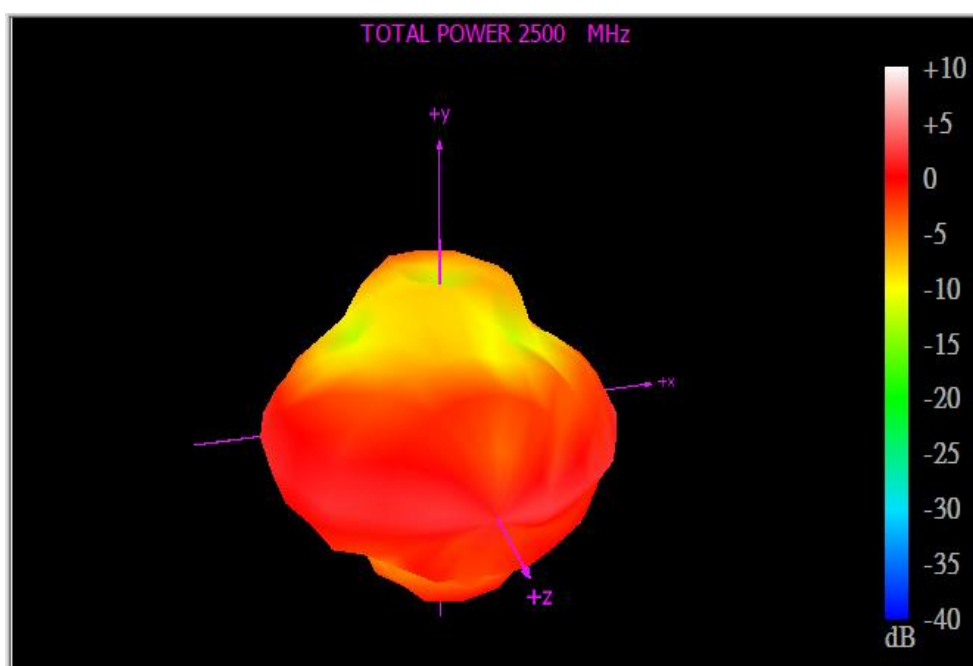
XY Plane

XZ Plane

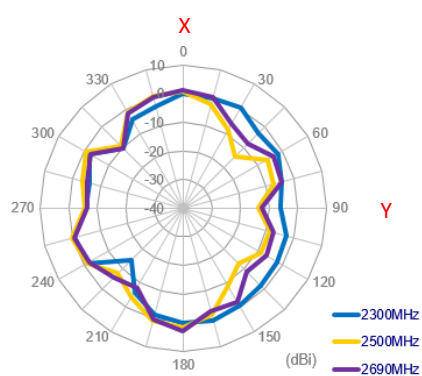
YZ Plane



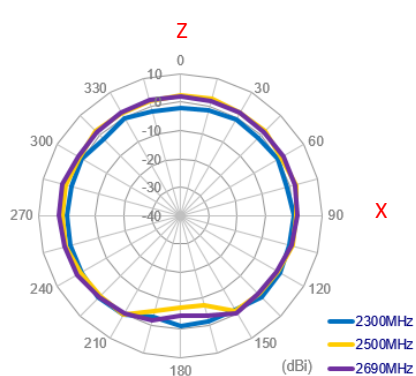
2500MHz



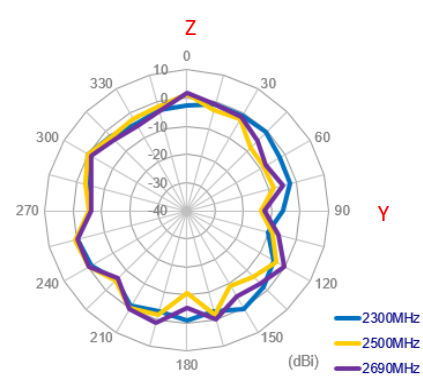
XY Plane



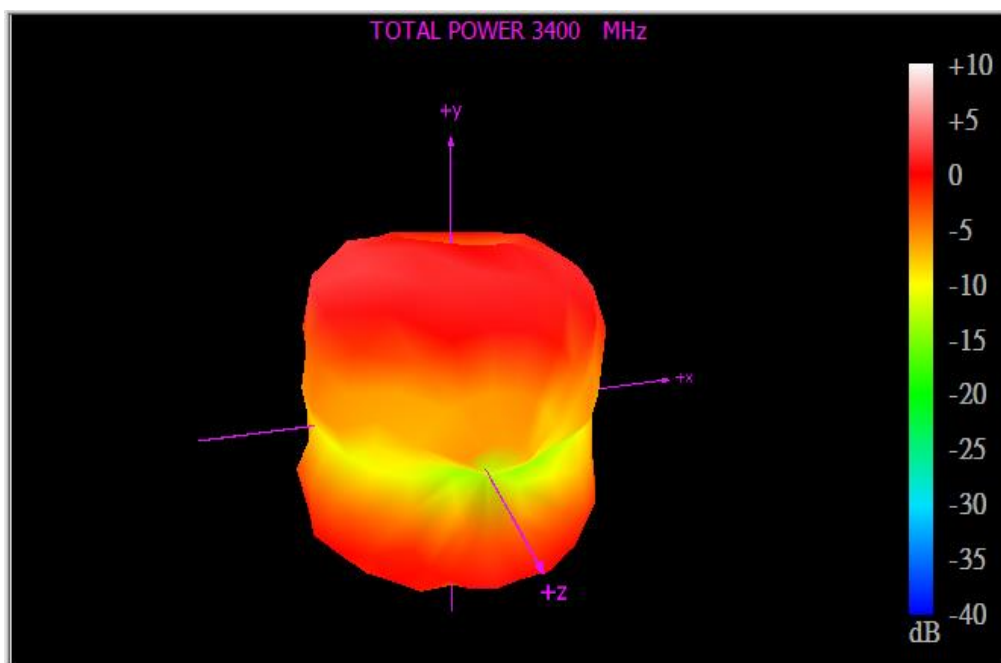
XZ Plane



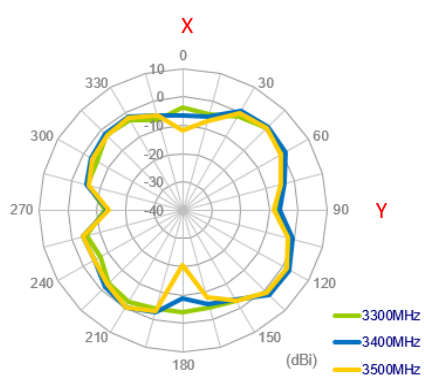
YZ Plane



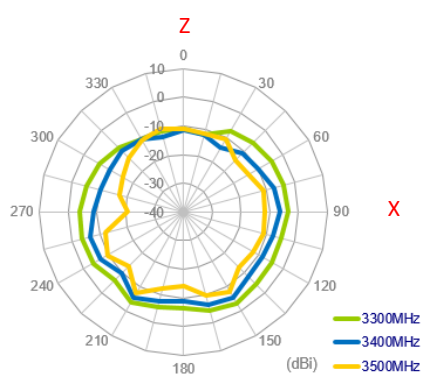
3400MHz



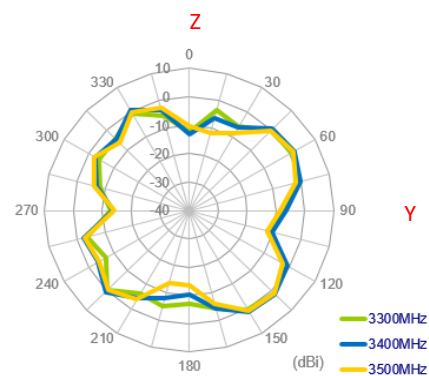
XY Plane



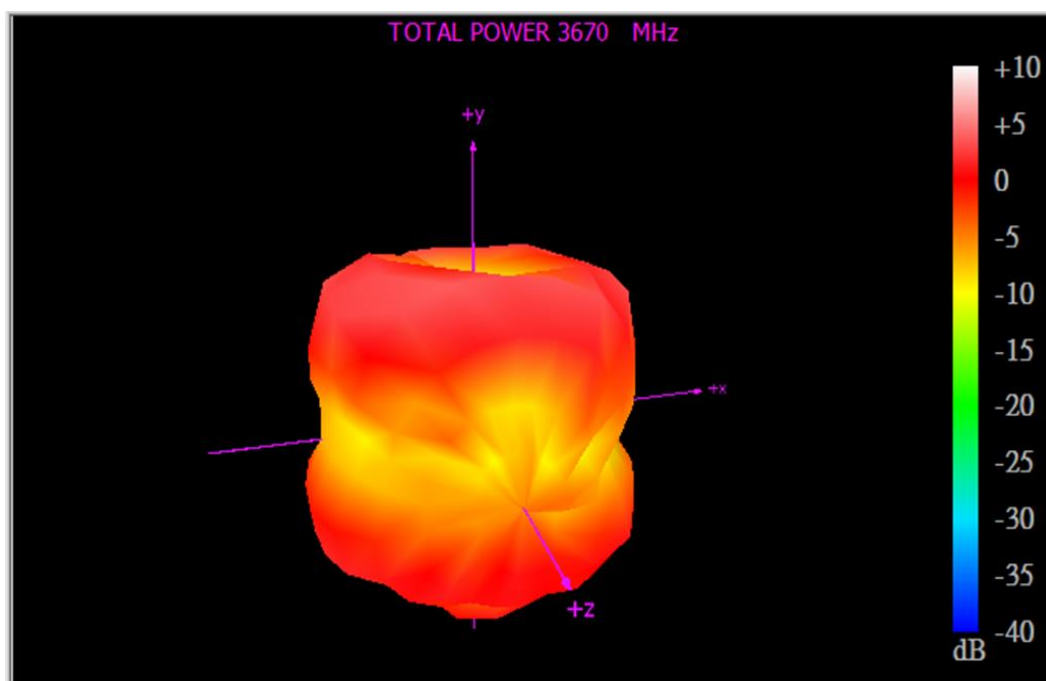
XZ Plane



YZ Plane



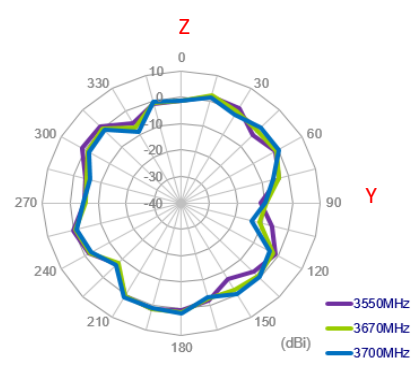
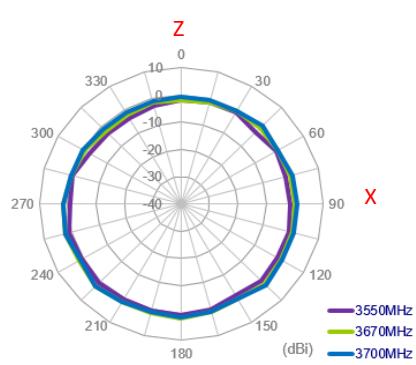
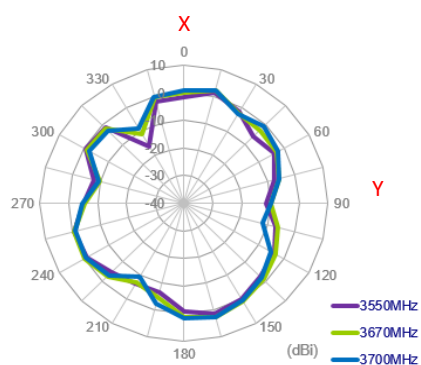
3670MHz



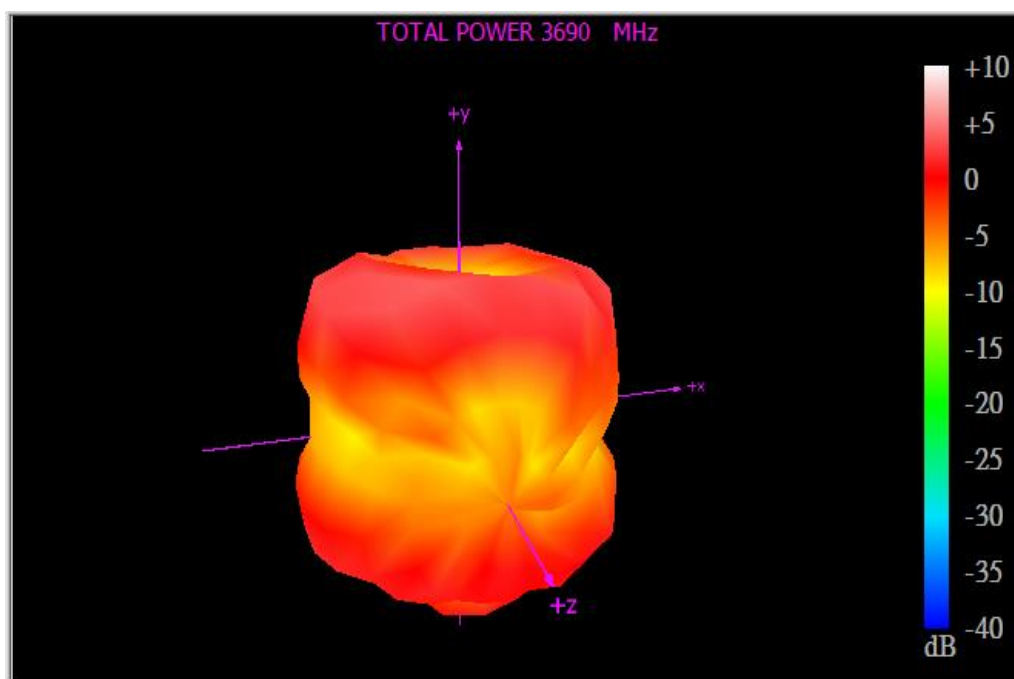
XY Plane

XZ Plane

YZ Plane



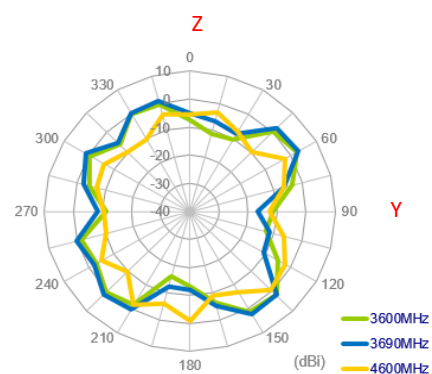
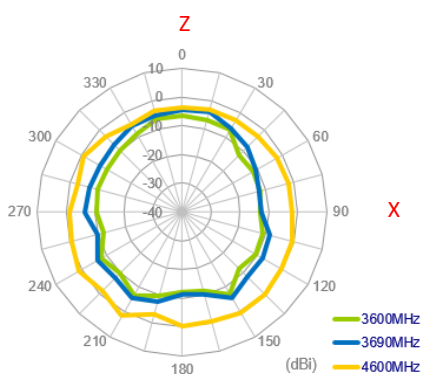
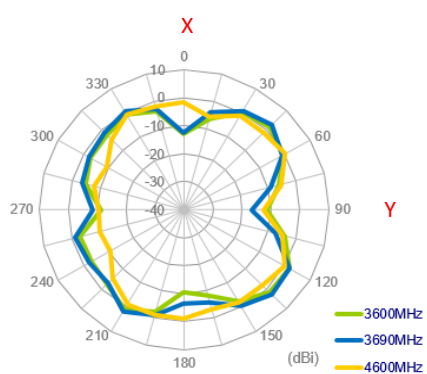
3690MHz



XY Plane

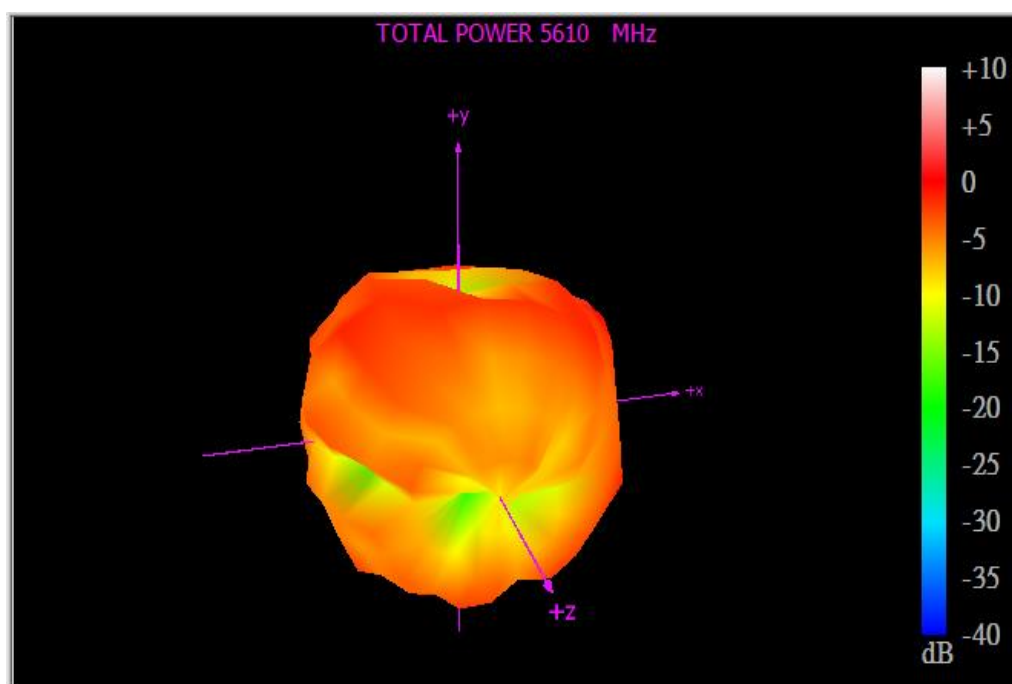
XZ Plane

YZ Plane

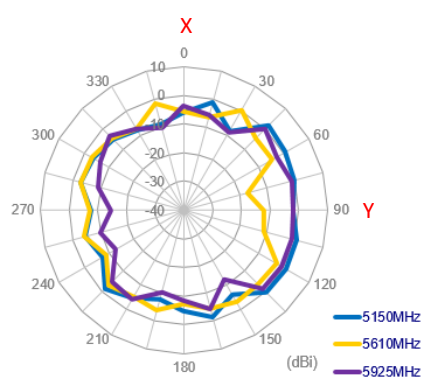




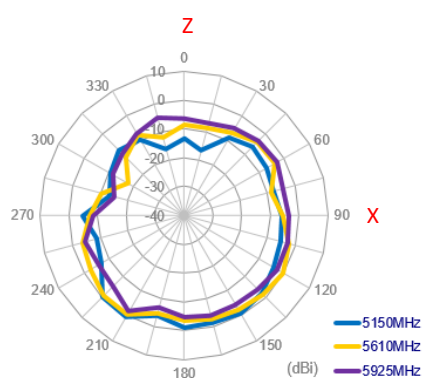
5610MHz



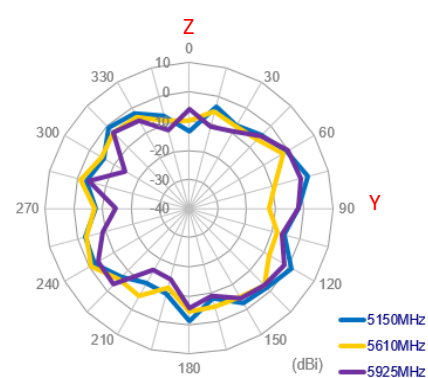
XY Plane



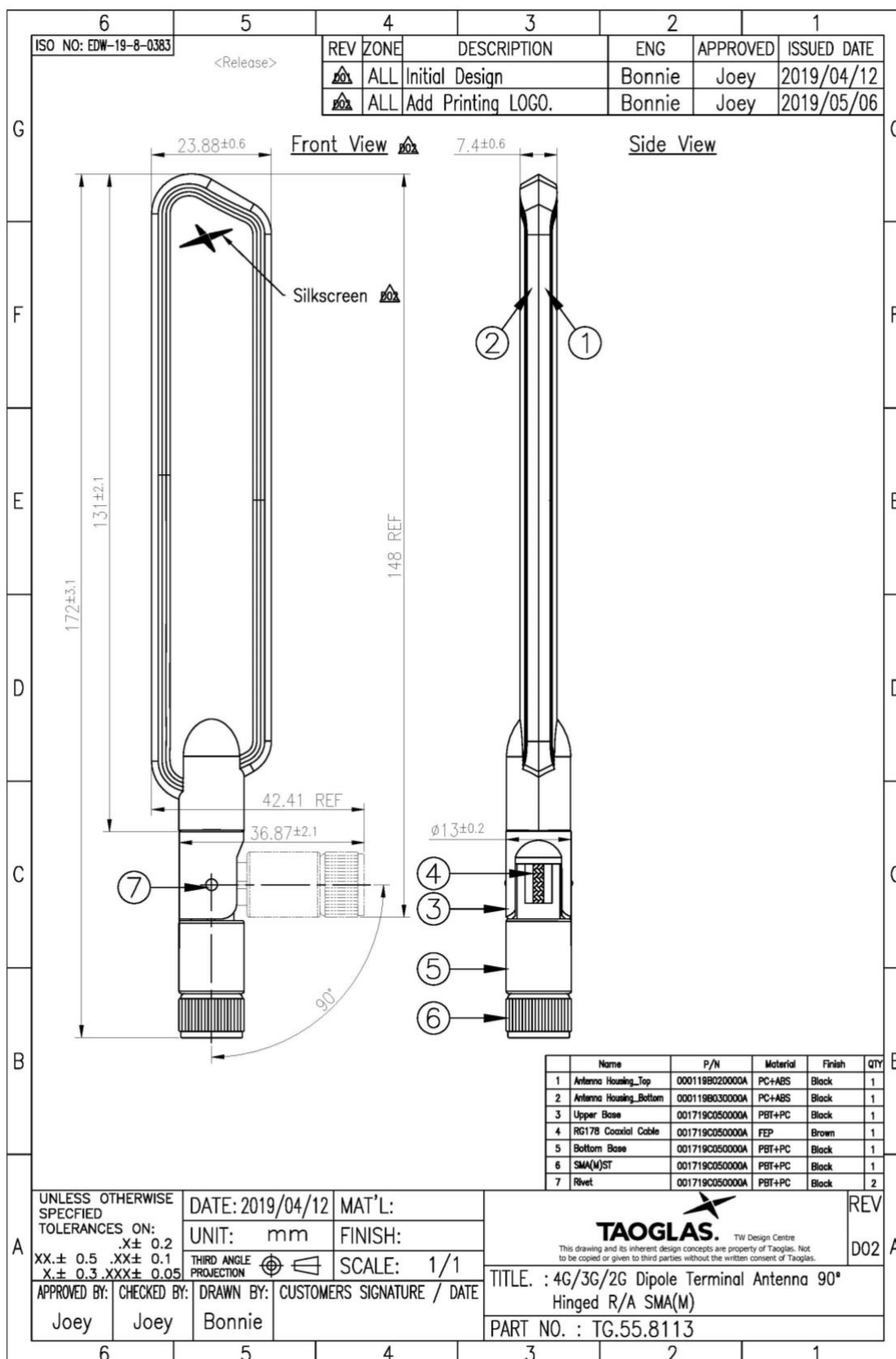
XZ Plane



YZ Plane

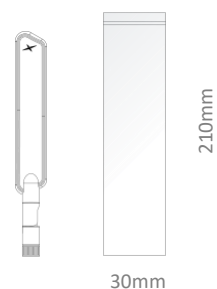


## 5. Mechanical Drawing (Units: mm)

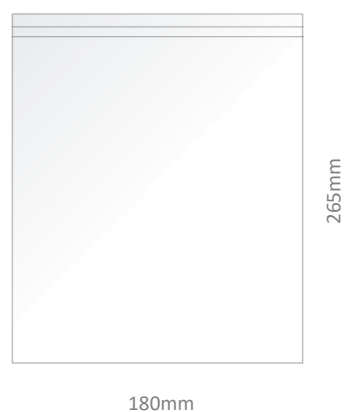


## 6. Packaging

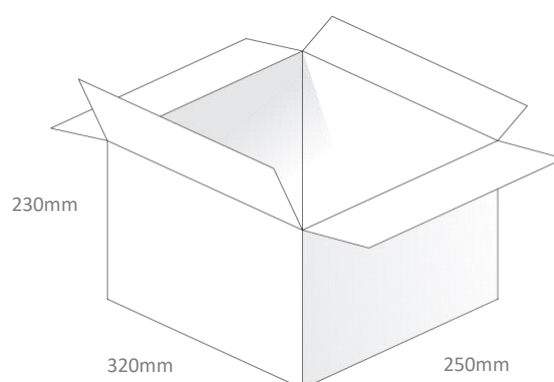
1pc TG.55.8113 per Small PE Bag  
Dimensions: 30\*210mm  
Weight: 31g



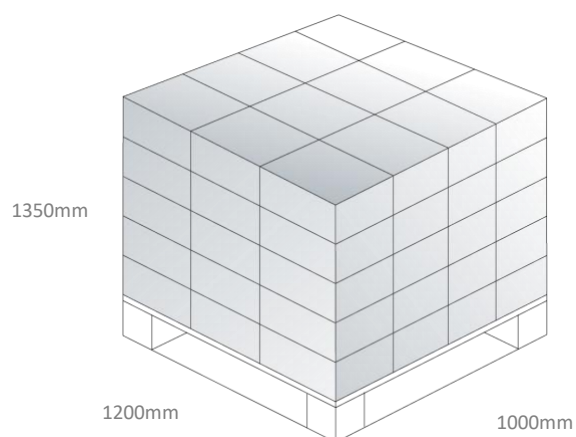
20pcs per Large PE Bag  
Dimensions: 180\*265mm  
Weight: 62g



400pcs TG.55.8113 per Carton  
Carton Dimensions: 320\*250\*230mm  
Weight: 13Kg



Pallet Dimensions:  
1200\*1000\*1350mm  
60 Cartons per Pallet  
12 Cartons per layer, 5 Layers



Changelog for the datasheet

SPE-19-8-061 – TG.55.8113

| Revision: A (Initial Launch) |                               |
|------------------------------|-------------------------------|
| Date:                        | 2019-05-22                    |
| Changes:                     | Initial Specification Release |
| Changes Made by:             | Jack Conroy                   |

Previous Revisions

|  |  |
|--|--|
|  |  |
|  |  |
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