

# **APPROVAL SPECIFICATION**

**Product : Internal Antenna**

**Model Name : 24CY (LTE MAIN, LTE MIMO, GNSS, WIFI Antenna)**

**Date : 2023. 01. 03.**



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## 1. Manufacturer

- LS Mtron Co. Ltd.
- LS Mtron Part Number: LS01-I-22009-A1

## 2. Model Name

- Basic Model: 24CY
- Variation Model: -

## 3. Antenna Type

- PIFA : Planar Inverted F Antenna

## 4. Electric Performance Data

### 4.1 Specification Sheet

#### 4.1.1 LTE Antenna (LB+MB+HB)

### Electronic Specification

| Frequency Range (MHz) | LTE B5/8/12/14/17/18/19/20/26/28/71<br>WCDMA B5/8<br>GSM900 |       |       |       |       |       |       | LTE B1/2/3/4/9/25/34/38/39/40/66<br>WCDMA B1/3<br>GSM1800 |       |       |       |       |       |
|-----------------------|---|-------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|
|                       | 617   | 698   | 803   | 824   | 880   | 894   | 960   | 1710  | 1880  | 1920  | 2170  | 2300  | 2400  |
| Peak Gain(dBi)        | -1.81   | -0.2  | -0.94 | -0.84 | -2.62 | -0.17 | -1.31 | 1.63  | 3.36  | 2.33  | 0.51  | 1.39  | 1.73  |
| Average Gain(dBi)     | -4.52   | -4.08 | -3.43 | -3.29 | -3.11 | -3.75 | -4.5  | -3.52   | -2.12 | -3.07 | -3.46 | -2.89 | -3.22 |

| Frequency Range (MHz) | LTE B7/41 |       | SUB6 n77/78/79 MIMO |       |      |       |       |
|-----------------------|-----------|-------|---------------------|-------|------|-------|-------|
|                       | 2500      | 2690  | 3300                | 3800  | 4200 | 4400  | 5000  |
| Peak Gain(dBi)        | 2.77      | 2.81  | 3.23                | 2.68  | 3.26 | 3.08  | 2.69  |
| Average Gain(dBi)     | -3.73     | -2.78 | -3.86               | -2.24 | -3.1 | -2.54 | -3.71 |

#### 4.1.2 GNSS Antenna (L1, L5)

| Frequency Range   | GNSS(L1, L5) |         |         |         |
|-------------------|--------------|---------|---------|---------|
|                   | 1166MHz      | 1189MHz | 1559MHz | 1607MHz |
| Peak Gain(dBi)    | 1.56         | 1.66    | 1.77    | 2.14    |
| Average Gain(dBi) | -3.07        | -2.89   | -2.9    | -2.78   |

#### 4.1.3 LTE Antenna (LB+MB+HB MIMO)

### Electronic Specification

| Frequency Range (MHz) | LTE B5/8/12/14/17/18/19/20/26/28/71 MIMO<br>WCDMA B5/8 MIMO<br>GSM900 MIMO |       |       |       |       |       |       | LTE B1/2/3/4/9/25/34/38/39/40/66 MIMO<br>WCDMA B1/3 MIMO<br>GSM1800 MIMO |      |       |       |       |       |
|-----------------------|--|-------|-------|-------|-------|-------|-------|--|------|-------|-------|-------|-------|
|                       | 617  | 698   | 803   | 824   | 880   | 894   | 960   | 1710   | 1880 | 1920  | 2170  | 2300  | 2400  |
| Peak Gain(dBi)        | -1.9   | -0.35 | 0.57  | 1.11  | 0.78  | 0.7   | -1.62 | 1.06   | 1.86 | 0.26  | -1.17 | -1.49 | -0.72 |
| Average Gain(dBi)     | -5.02  | -4.01 | -3.83 | -4.01 | -4.86 | -5.09 | -5.81 | -4.25  | -3.4 | -3.71 | -2.42 | -3.3  | -4.56 |

| Frequency Range (MHz) | LTE B7/41 MIMO |       | SUB6 n77/78/79 |       |      |       |       |
|-----------------------|----------------|-------|----------------|-------|------|-------|-------|
|                       | 2500           | 2690  | 3300           | 3800  | 4200 | 4400  | 5000  |
| Peak Gain(dBi)        | -0.48          | 0.21  | 1.88           | 0.74  | 1.35 | 1.87  | 1.87  |
| Average Gain(dBi)     | -4.38          | -3.67 | -3.09          | -2.56 | -2.5 | -2.81 | -3.14 |

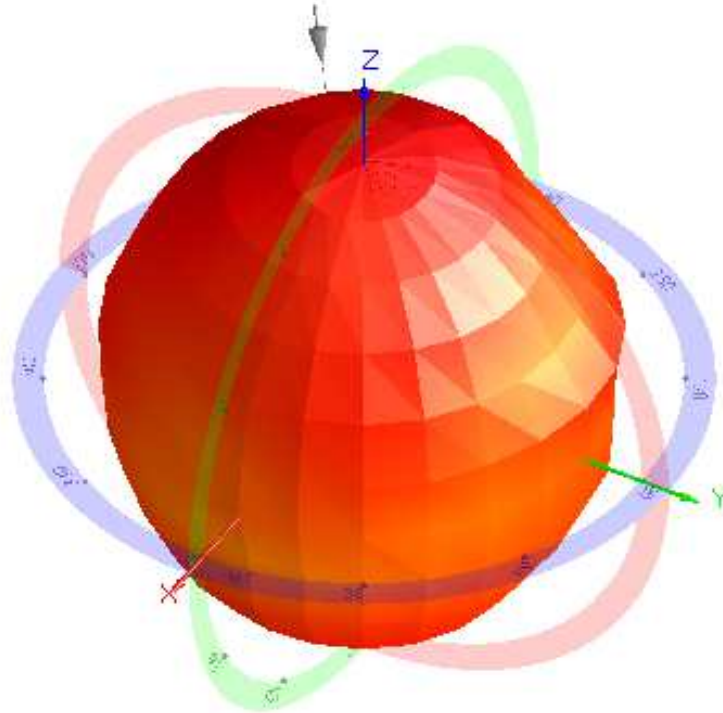
#### 4.1.4 WIFI Antenna (WIFI)

| Frequency Range   | BT/WiFi 2.4GHz |         | WiFi 5GHz |         |         |         |
|-------------------|----------------|---------|-----------|---------|---------|---------|
|                   | 2400MHz        | 2500MHz | 5150MHz   | 5300MHz | 5500MHz | 5825MHz |
| Peak Gain(dBi)    | 0.21           | 1.71    | 3.25      | 2.17    | 3.02    | 3.21    |
| Average Gain(dBi) | -3.48          | -1.98   | -2.65     | -2.59   | -2.24   | -3.47   |

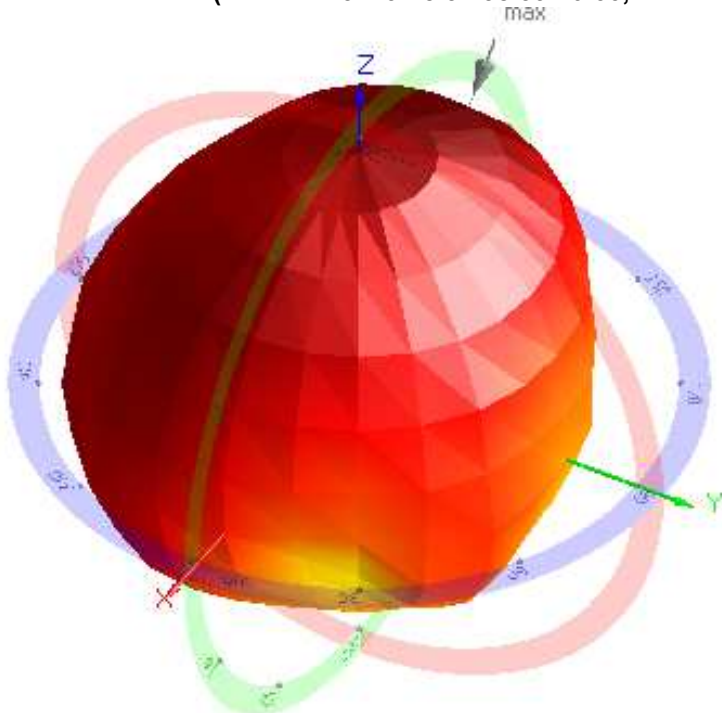
## 4.2 3D Radiation Pattern

### 4.2.1 LTE Antenna (LB+MB+HB)

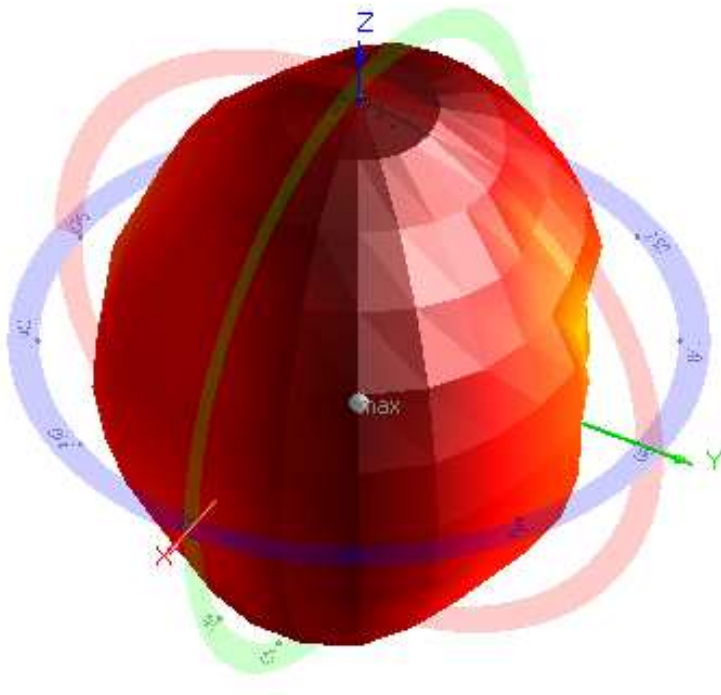
#### 4.2.1.1 LTE LB (LTE B5/8/12/14/17/18/19/20/26/28/71, WCDMA B5/8, GSM900)



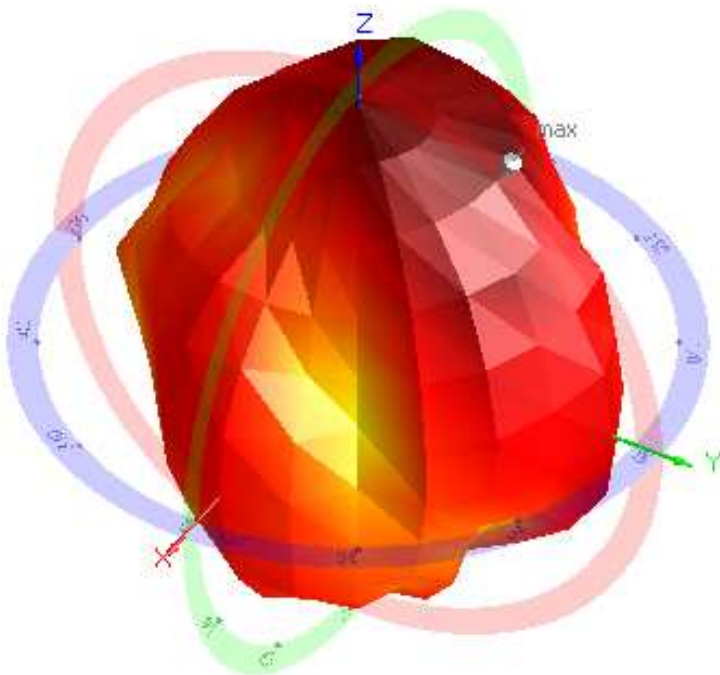
#### 4.2.1.2 LTE MB (LTE B1/2/3/4/9/25/34/38/39/40/66, WCDMA B1/3, GSM1800)



#### 4.2.1.3 LTE HB (B7/41)

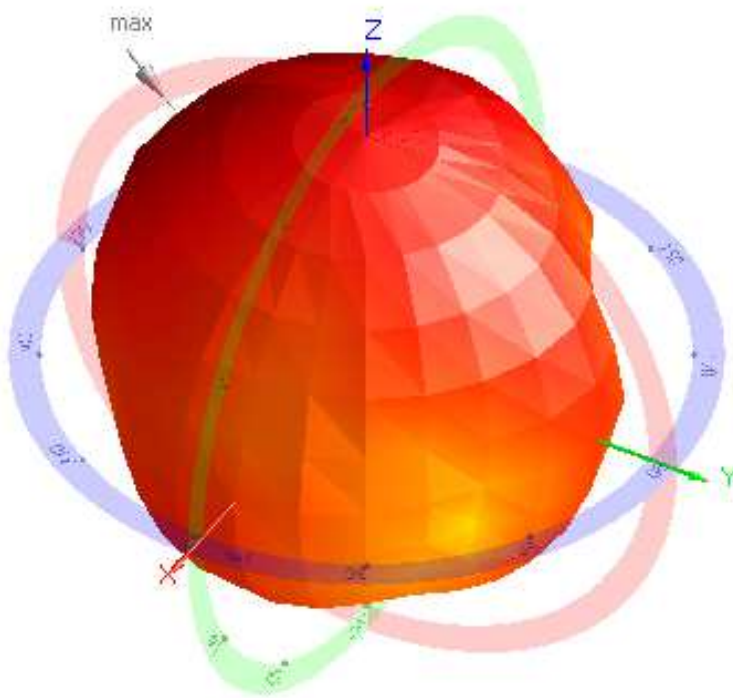


#### 4.2.1.4 LTE SUB6 (n77/78/79) MIMO

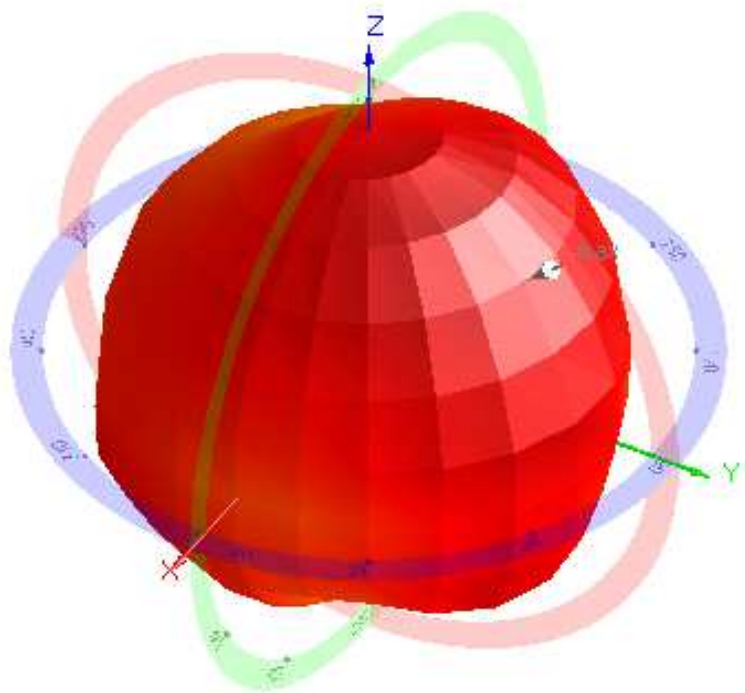


## 4.2.2 GNSS Antenna (L1, L5)

### 4.2.2.1 GPS Antenna (L5)

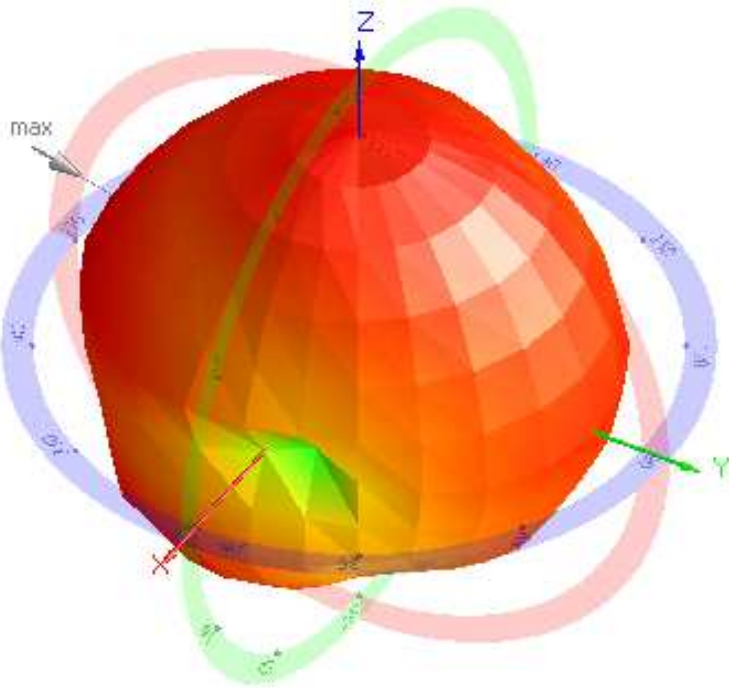


### 4.2.2.2 GPS Antenna (L1)

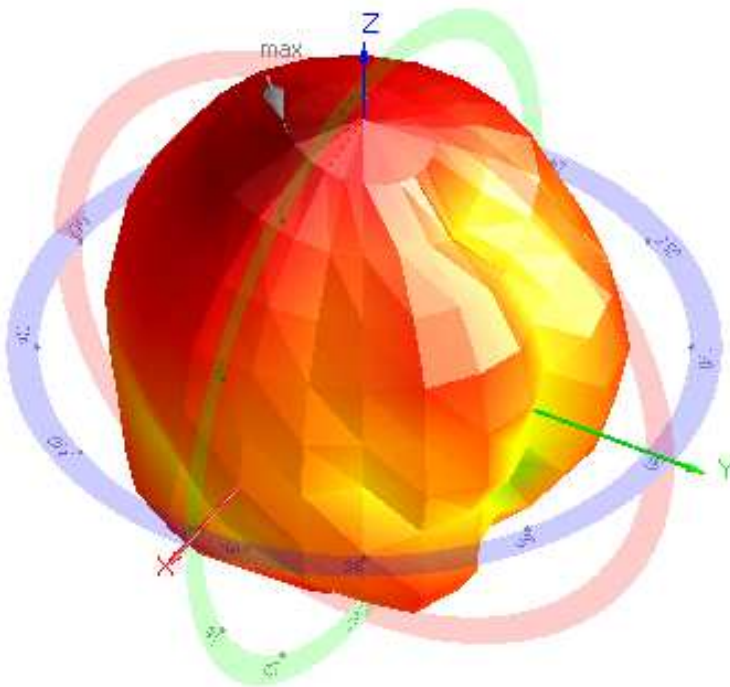


### 4.2.3 LTE Antenna (LB+MB+HB) MIMO

#### 4.2.3.1 LTE LB (LTE B5/8/12/14/17/18/19/20/26/28/71, WCDMA B5/8, GSM900) MIMO

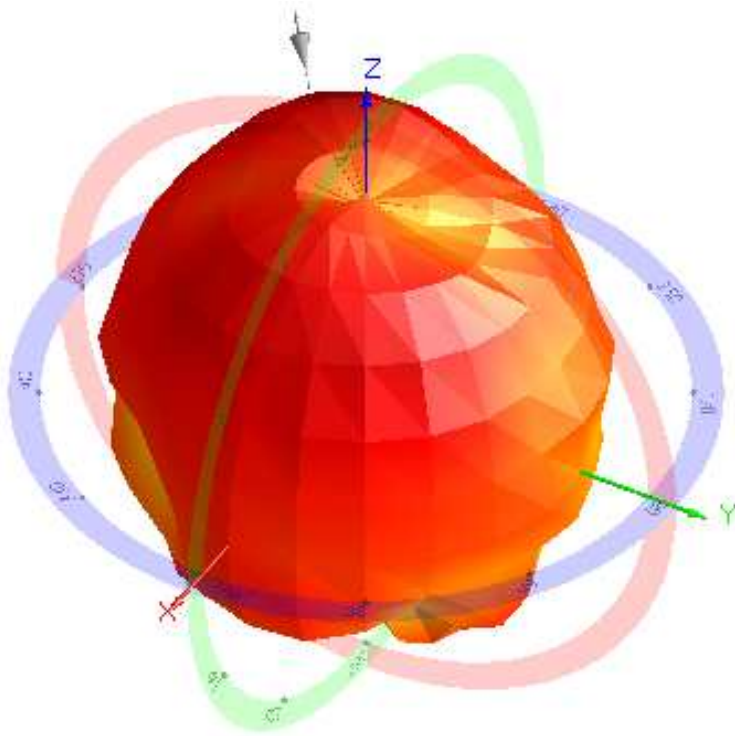


#### 4.2.3.2 LTE MB (LTE B1/2/3/4/9/25/34/38/39/40/66, WCDMA B1/3, GSM1800) MIMO

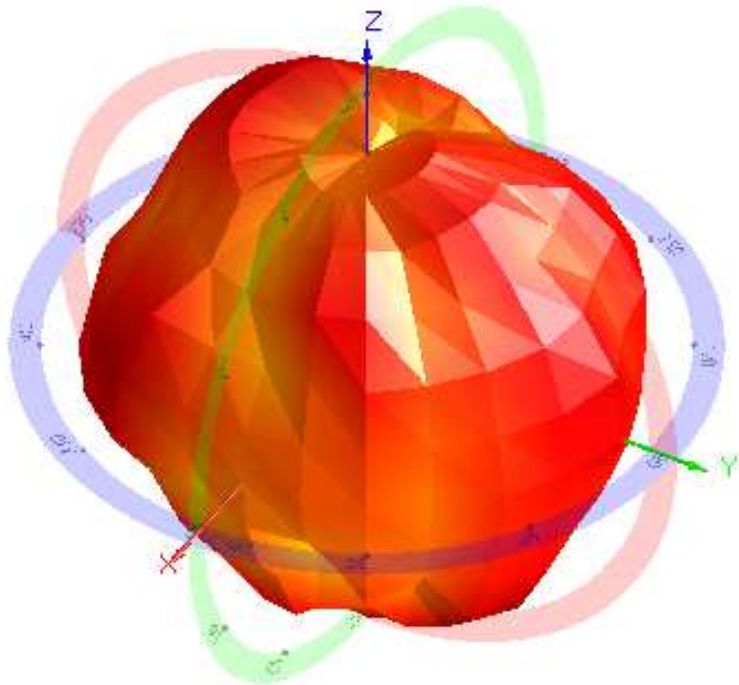




#### 4.2.3.3 LTE HB (B7/41) MIMO

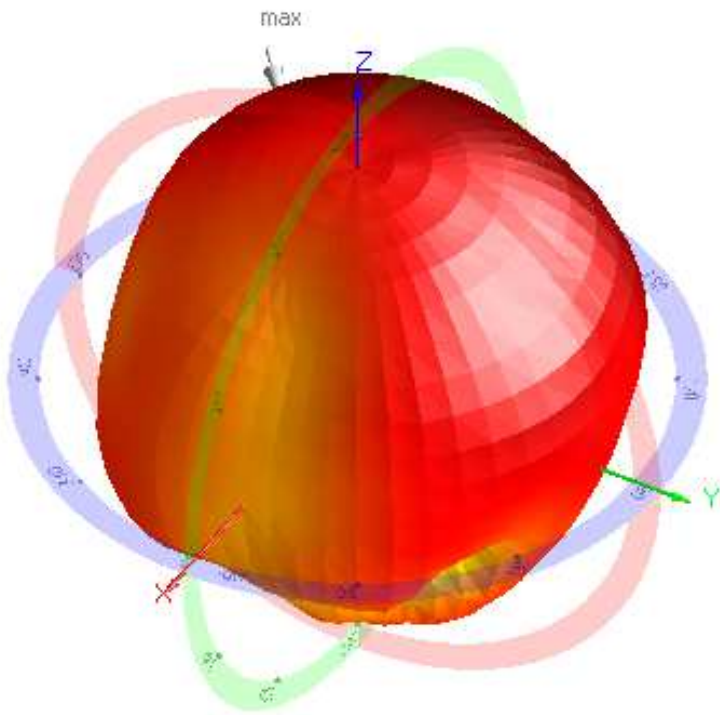


#### 4.2.3.3 LTE SUB6 (n77/78/79)

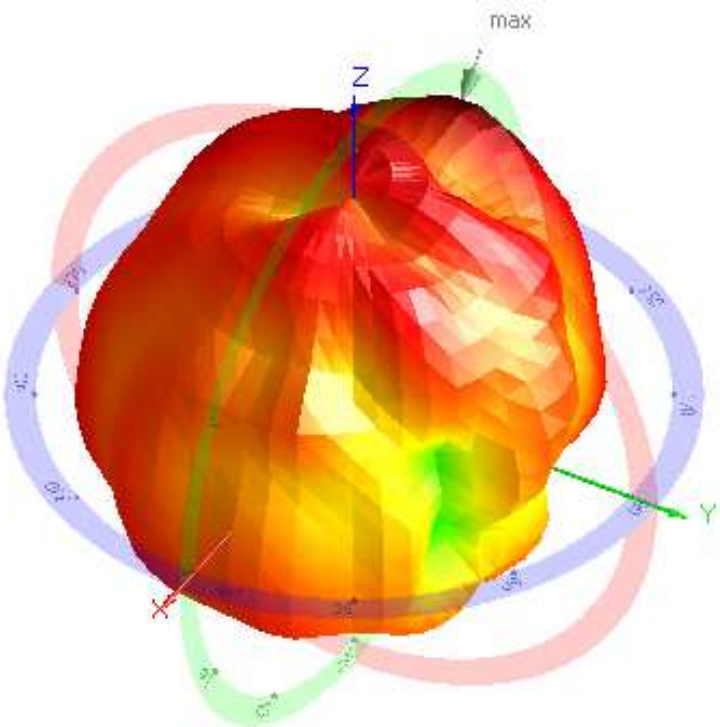


#### 4.2.4 WIFI Antenna (BT/WiFi 2.4GHz/5GHz)

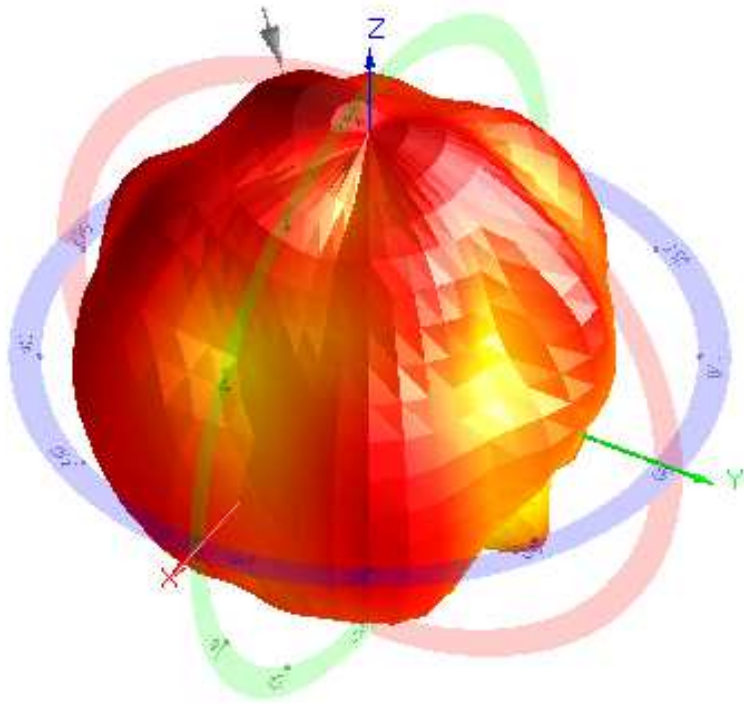
##### 4.2.4.1 BT/WIFI 2.4G



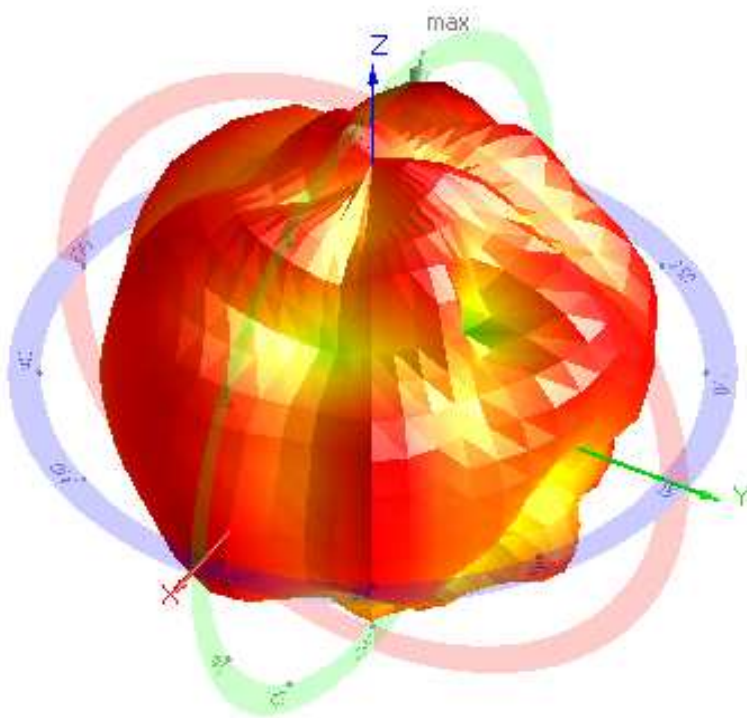
##### 4.2.4.2 WIFI 5G (5150MHz)



#### 4.2.4.3 WIFI 5G (5300MHz)



#### 4.2.4.4 WIFI 5G (5500MHz)



# 5. External Drawing

