



东莞市卓信电子科技有限公司

Dongguan Zhuoxin Electronic Technology Co., Ltd

公司地址：东莞市塘厦镇蛟乙塘银园街5号厂房2楼

# *Antenna Specification*

## *Contents*

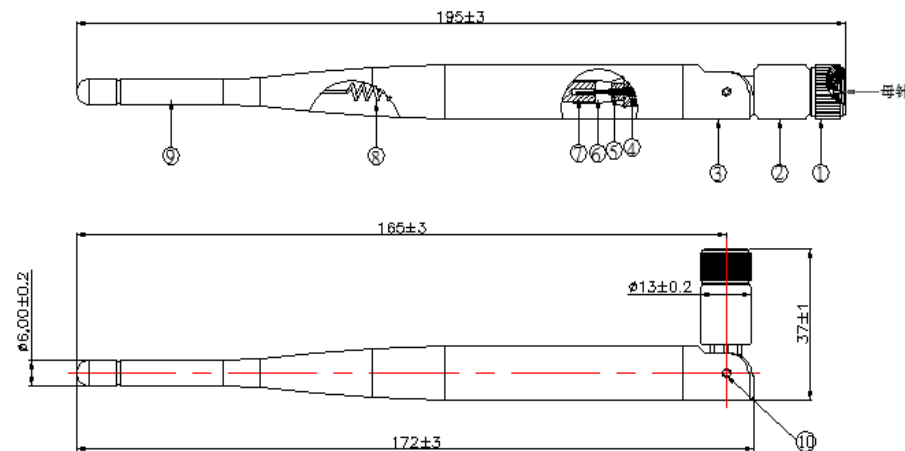
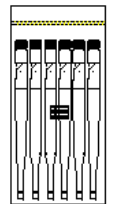

| <i>Item</i> | <i>Description</i>  |
|-------------|---------------------|
| 1.-----     | Specification table |
| 2.-----     | Finished picture    |
| 3.-----     | Test report         |

## 1. Specification table:

### Main technical parameters of the product

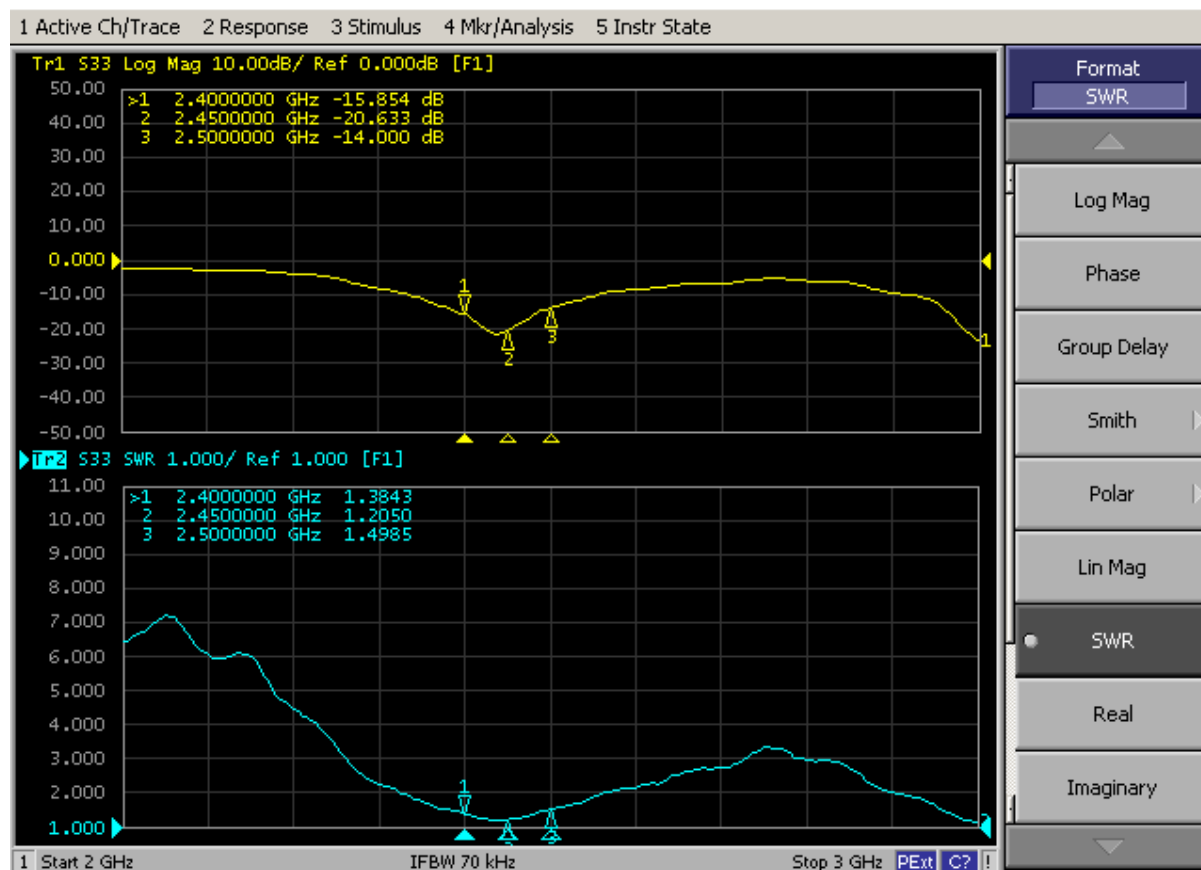
| 主要技术指标           |             | Main technical specifications |             |
|------------------|-------------|-------------------------------|-------------|
| 频率范围<br>(MHZ)    | 2400~2500   | Frequency Range<br>(MHZ)      | 2400~2500   |
| 特性阻抗( $\Omega$ ) | 50          | Impedance( $\Omega$ )         | 50          |
| 峰值增益(dBi)        | 4.83        | Peak Gain(dBi)                | 4.83        |
| 输出电压<br>驻波比      | $\leq 1.92$ | VSWR                          | $\leq 1.92$ |
| 极化方式             | 线极化         | Polarization                  | Linel       |
| 连接方式             | SMA         | Connector Type                | SMA         |
| 物理性能             |             | Physical Properties           |             |
| 天线本体材料           | TPEE        | Antenna Base                  | TPEE        |
| 工作温度             | -20℃~+50℃   | Operating Temp                | -20℃~+50℃   |
| 保存温度             | -20℃~+50℃   | Storage Temp                  | -20℃~+50℃   |

## 2. Finished picture:

| A  | B          | C   | D          | E   | F  | G  |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
|--|------------|-----|------------|-----|----|----|------|------|------------|---------|--|----|---|---------|-----|----|---|----------|-----|-------|---|----|---|-----|-------|-----|----|------|---|---------|-----|-----|-----|-----|----|----|----|-----------|----|------|----|--------|----|------|---|------------|---|---------|---|----------|
| <div style="float: left; width: 15%;"> <b>ROHS</b> </div> <div style="float: right; width: 85%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>版本</th> <th>日期</th> <th>变更内容</th> </tr> <tr> <td>A</td> <td>2021-12-19</td> <td>新发行</td> </tr> </table> </div>   |            |     |            |     | 版本 | 日期 | 变更内容 | A    | 2021-12-19 | 新发行     |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
|  |            |     |            |     | 版本 | 日期 | 变更内容 |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| A  | 2021-12-19 | 新发行 |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
|  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
|    |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>1. 包装数量：25pcs/PE袋<br/>2. 须贴上1pcs标签在袋子中间位置。</p> </div> <div style="text-align: center;">  <p>1. 外箱顶部上1pcsROHS环保标签至外箱标签上；<br/>2. 外箱顶部上1pcs外箱标签至外箱左上角。<br/>(注: 和原标签客户有要求则按客户要求贴；否则按我司标签贴)。</p> </div> <div> <p><b>Specification:</b><br/>Frequency Range: 2400~2500MHz<br/>Return loss: -10dB or less</p> </div> </div>  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>11</td> <td>滤棉</td> <td>1</td> <td>EVA; 黑色</td> </tr> <tr> <td>10</td> <td>铆钉</td> <td>2</td> <td>POM; 黑色</td> </tr> <tr> <td>9</td> <td>杆套</td> <td>1</td> <td>TPPE; 黑色</td> </tr> <tr> <td>8</td> <td>螺旋杆</td> <td>1</td> <td>黄铜</td> </tr> <tr> <td>7</td> <td>实心柱</td> <td>1</td> <td>锌合金</td> </tr> <tr> <td>6</td> <td>热缩套管</td> <td>1</td> <td>PVC; 黑色</td> </tr> <tr> <td>5</td> <td>接地管</td> <td>1</td> <td>锌合金</td> </tr> <tr> <td>4</td> <td>线材</td> <td>1</td> <td>RG178; 棕色</td> </tr> <tr> <td>3</td> <td>上固定座</td> <td>1</td> <td>PC; 黑色</td> </tr> <tr> <td>2</td> <td>下固定座</td> <td>1</td> <td>PC/PBT; 黑色</td> </tr> <tr> <td>1</td> <td>SMA公头母针</td> <td>1</td> <td>大SMA; 黑色</td> </tr> </table> |            |     |            |     |    |    | 11   | 滤棉   | 1          | EVA; 黑色 | 10   | 铆钉 | 2 | POM; 黑色 | 9   | 杆套 | 1 | TPPE; 黑色 | 8   | 螺旋杆   | 1 | 黄铜 | 7 | 实心柱 | 1     | 锌合金 | 6  | 热缩套管 | 1 | PVC; 黑色 | 5   | 接地管 | 1   | 锌合金 | 4  | 线材 | 1  | RG178; 棕色 | 3  | 上固定座 | 1  | PC; 黑色 | 2  | 下固定座 | 1 | PC/PBT; 黑色 | 1 | SMA公头母针 | 1 | 大SMA; 黑色 |
| 11   | 滤棉         | 1   | EVA; 黑色    |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 10   | 铆钉         | 2   | POM; 黑色    |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 9  | 杆套         | 1   | TPPE; 黑色   |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 8  | 螺旋杆        | 1   | 黄铜         |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 7  | 实心柱        | 1   | 锌合金        |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 6  | 热缩套管       | 1   | PVC; 黑色    |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 5  | 接地管        | 1   | 锌合金        |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 4  | 线材         | 1   | RG178; 棕色  |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 3  | 上固定座       | 1   | PC; 黑色     |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 2  | 下固定座       | 1   | PC/PBT; 黑色 |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 1  | SMA公头母针    | 1   | 大SMA; 黑色   |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>序号</td> <td>产品名称</td> <td>数量</td> <td>产品规格</td> </tr> <tr> <td colspan="4"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="5">客户：</td> </tr> <tr> <td colspan="5">客户料号：</td> </tr> <tr> <td colspan="5">产品名称：</td> </tr> <tr> <td colspan="5">料号：</td> </tr> <tr> <td>版本</td> <td>单位</td> <td>比例</td> <td>大小</td> <td>页码</td> </tr> <tr> <td>A</td> <td>mm</td> <td>1:1</td> <td>A4</td> <td>1/1</td> </tr> </table> </td> </tr> </table>  |            |     |            |     |    |    | 序号   | 产品名称 | 数量         | 产品规格    | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="5">客户：</td> </tr> <tr> <td colspan="5">客户料号：</td> </tr> <tr> <td colspan="5">产品名称：</td> </tr> <tr> <td colspan="5">料号：</td> </tr> <tr> <td>版本</td> <td>单位</td> <td>比例</td> <td>大小</td> <td>页码</td> </tr> <tr> <td>A</td> <td>mm</td> <td>1:1</td> <td>A4</td> <td>1/1</td> </tr> </table> |    |   |         | 客户： |    |   |          |     | 客户料号： |   |    |   |     | 产品名称： |     |    |      |   | 料号：     |     |     |     |     | 版本 | 单位 | 比例 | 大小        | 页码 | A    | mm | 1:1    | A4 | 1/1  |   |            |   |         |   |          |
| 序号   | 产品名称       | 数量  | 产品规格       |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="5">客户：</td> </tr> <tr> <td colspan="5">客户料号：</td> </tr> <tr> <td colspan="5">产品名称：</td> </tr> <tr> <td colspan="5">料号：</td> </tr> <tr> <td>版本</td> <td>单位</td> <td>比例</td> <td>大小</td> <td>页码</td> </tr> <tr> <td>A</td> <td>mm</td> <td>1:1</td> <td>A4</td> <td>1/1</td> </tr> </table>   |            |     |            | 客户： |    |    |      |      | 客户料号：      |         |  |    |   | 产品名称：   |     |    |   |          | 料号： |       |   |    |   | 版本  | 单位    | 比例  | 大小 | 页码   | A | mm      | 1:1 | A4  | 1/1 |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 客户：  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 客户料号：  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 产品名称：  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 料号：  |            |     |            |     |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| 版本   | 单位         | 比例  | 大小         | 页码  |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |
| A  | mm         | 1:1 | A4         | 1/1 |    |    |      |      |            |         |  |    |   |         |     |    |   |          |     |       |   |    |   |     |       |     |    |      |   |         |     |     |     |     |    |    |    |           |    |      |    |        |    |      |   |            |   |         |   |          |

### 3. Test report

#### 3.1: network analyzer test report

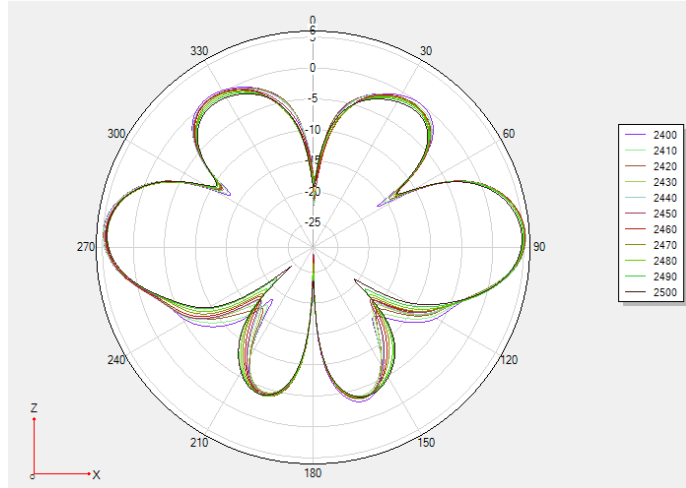


#### 3.2: 2D、3DRaditation Pattern

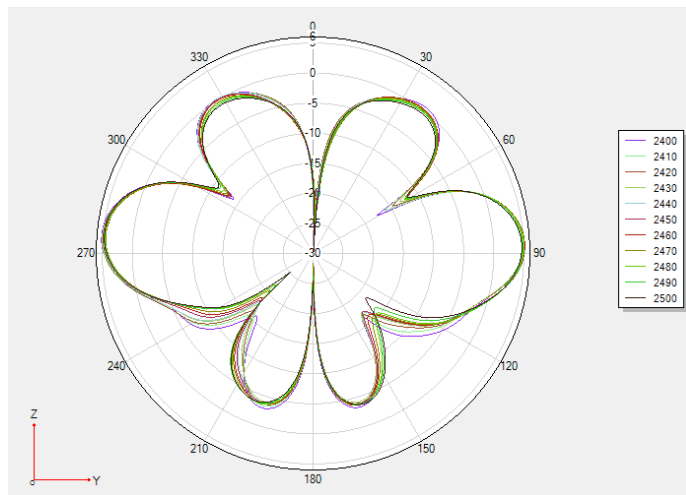
##### 3.2-1 Efficiency&Gain

| Frequency (MHz) | Efficiency (%) | Peak Gain / dB |
|-----------------|----------------|----------------|
| 2400            | 76.21          | 4.81           |
| 2450            | 76.91          | 4.83           |
| 2500            | 74.64          | 4.72           |

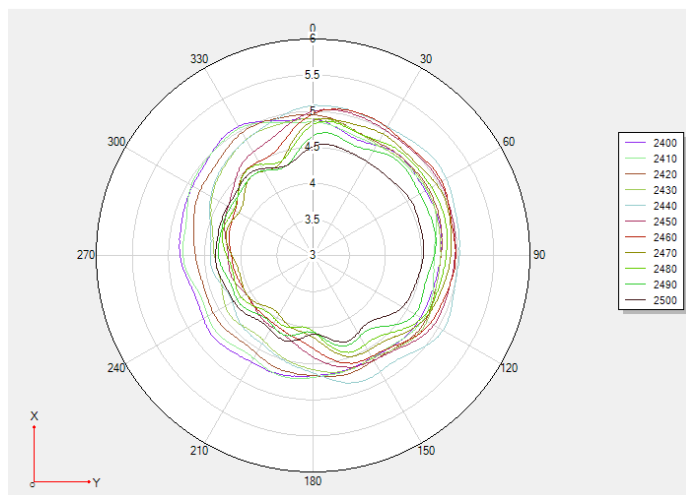
##### 3.2.2 2D/3D radiation pattern



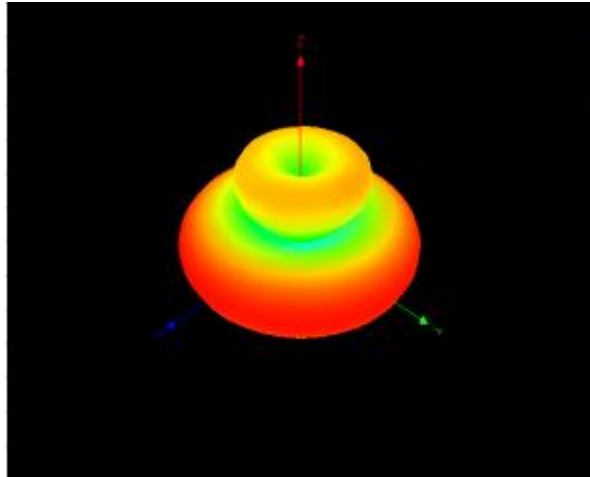
Phi 0 2D Picture



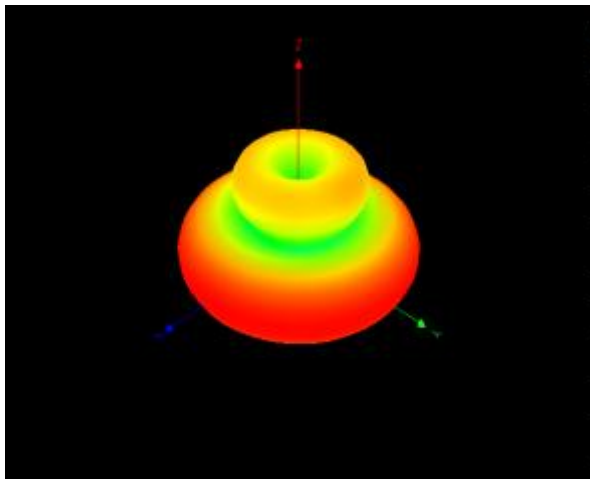
Phi 90 2D Picture



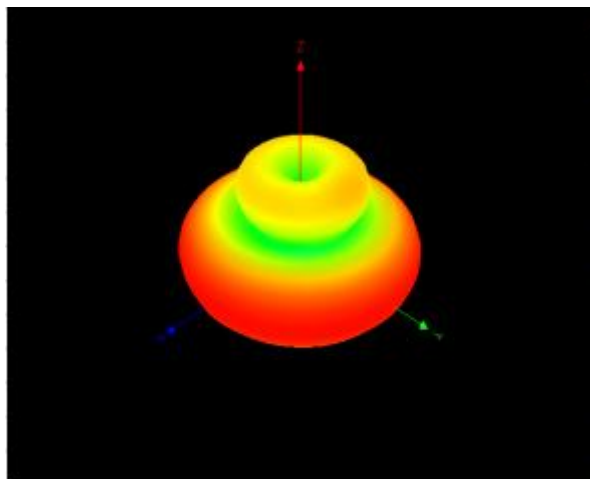
Theta 90 2D Picture



2400MHz



2450MHz



2500MHz