



Percsson Communication Equipment Co., Ltd

# Antenna OTA Test Report

For

ESP-ANT-A

|                     |                                                       |                   |                   |
|---------------------|-------------------------------------------------------|-------------------|-------------------|
| <b>Customer</b>     | ShenZhen Doctors of Intelligence & Technology Co.,Ltd | <b>Demo</b>       | <b>XT-BL10</b>    |
| <b>Band</b>         | <b>2.4G</b>                                           | <b>Color</b>      | <b>BLUE</b>       |
| <b>PRS PN</b>       |                                                       | <b>Version</b>    | <b>V1.0</b>       |
| <b>Issued by</b>    | <b>Jason</b>                                          | <b>Checked by</b> | <b>Mem</b>        |
| <b>Confirmed by</b> | <b>Zhang</b>                                          | <b>Date</b>       | <b>2022.03.18</b> |

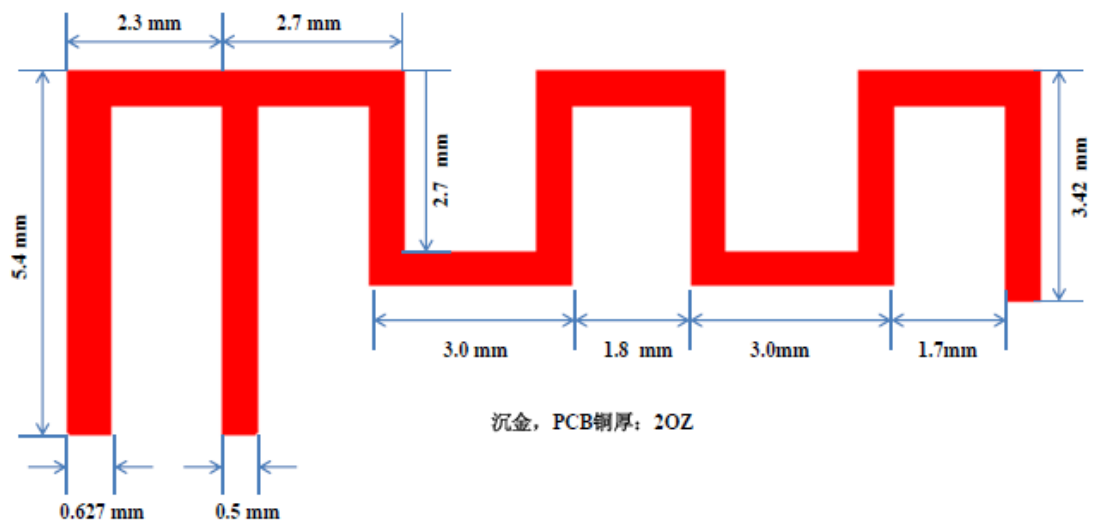
## 1. TEST INSTRUMENTATION

|                                     |                       |
|-------------------------------------|-----------------------|
| <b>CHAMBER</b>                      | <b>SATIMO Chamber</b> |
| <b>Wireless Networking Test Set</b> | <b>Agilent E5071C</b> |
| <b>NETWORK ANALYZER</b>             | <b>Agilent 8753D</b>  |
| <b>TEMPERATURE</b>                  | <b>20±3℃</b>          |
| <b>HUMIDITY</b>                     | <b>50±20%rh</b>       |
| <b>GROUND RESISTANCE</b>            | <b>&lt;0.5R</b>       |

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XT-BL10WiFi Module

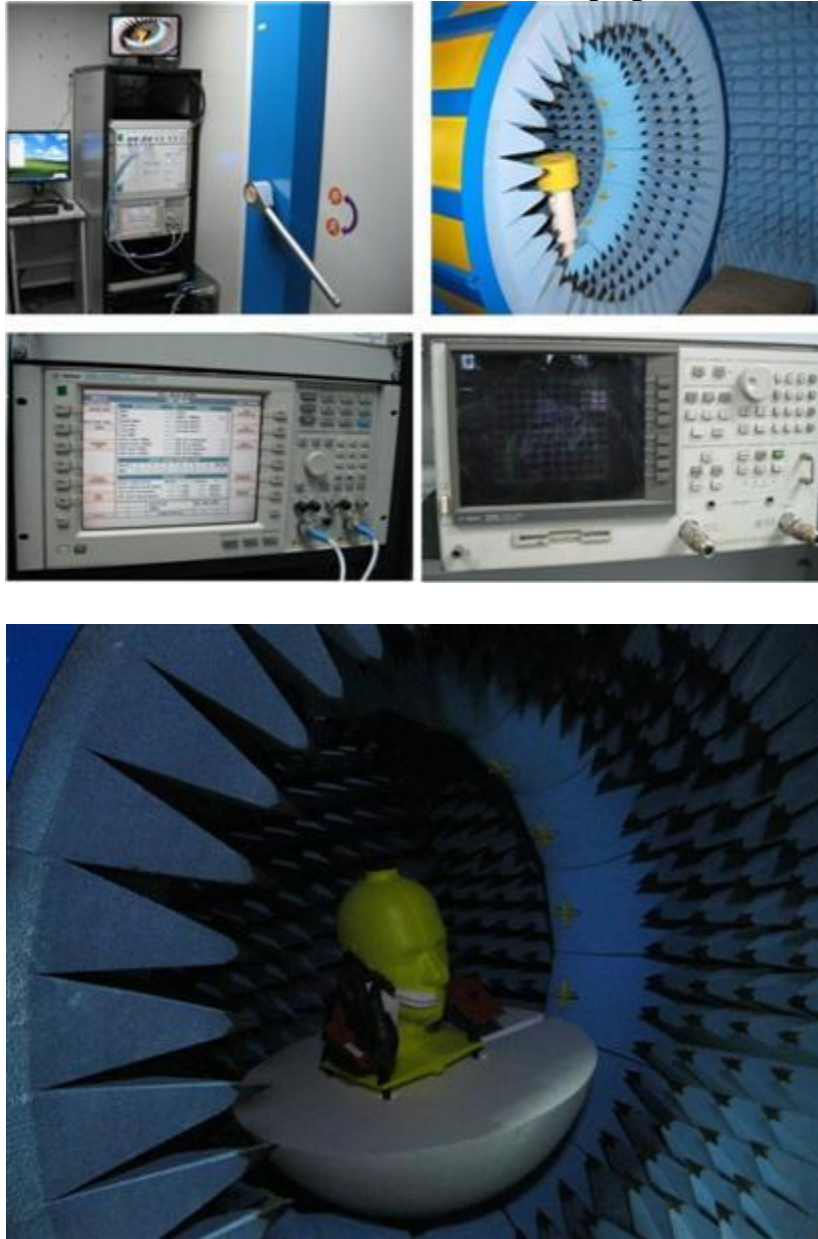


Antenna Dimension for XT-BL10

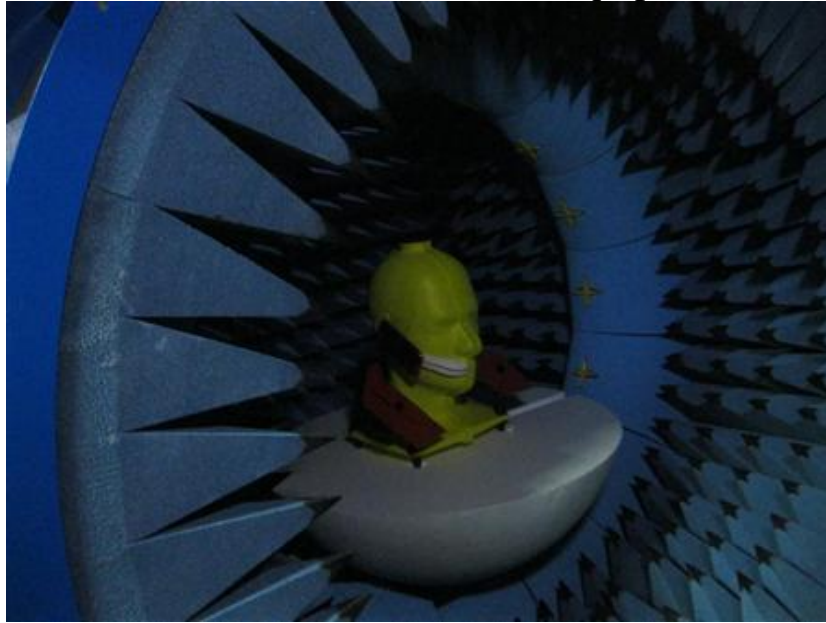
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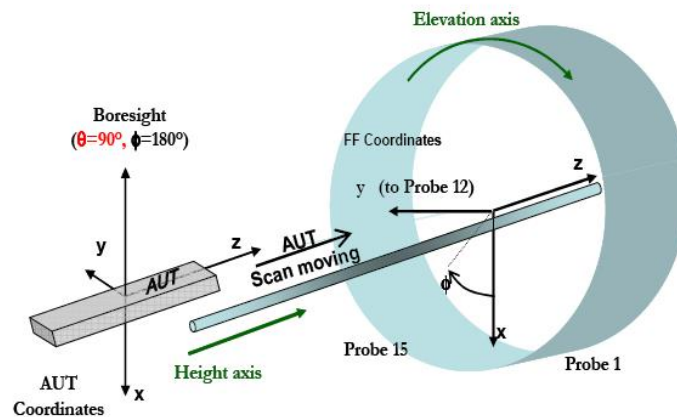
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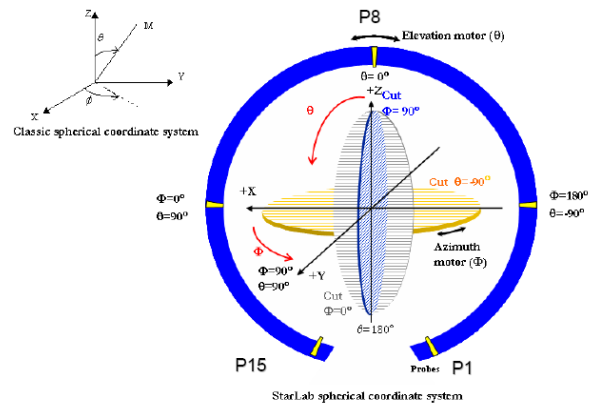
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## Coordinate system – Cylindrical geometry



## Coordinate system – Spherical geometry



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## 2. Test Results

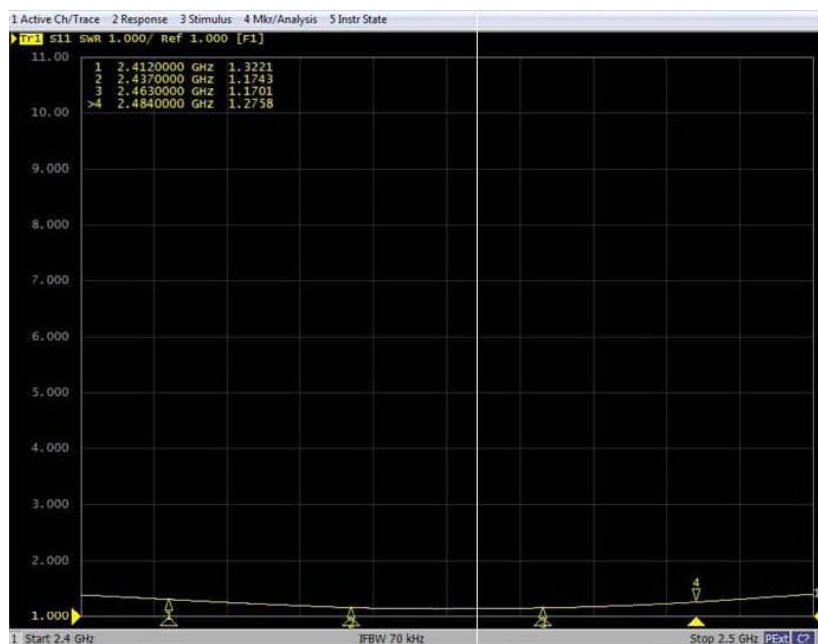
### 2.1 Gain and Efficiency

| Test Item | Freq (MHz) | Efficiency (%) | Gain (dBi) | Note         |
|-----------|------------|----------------|------------|--------------|
| Gain      | 2400       | 71.32          | 2.72       | Vertical 30° |
|           | 2412       | 70.68          | 3.21       |              |
|           | 2417       | 76.51          | 2.88       |              |
|           | 2422       | 77.78          | 2.67       |              |
|           | 2427       | 80.76          | 2.89       |              |
|           | 2432       | 80.11          | 2.80       |              |
|           | 2437       | 75.32          | 2.64       |              |
|           | 2442       | 75.23          | 2.93       |              |
|           | 2447       | 72.99          | 2.78       |              |
|           | 2452       | 70.01          | 3.12       |              |
|           | 2457       | 72.34          | 3.13       |              |
|           | 2462       | 71.32          | 3.28       |              |
|           | 2467       | 72.33          | 3.24       |              |
|           | 2472       | 75.67          | 3.33       |              |
|           | 2477       | 72.12          | 3.42       |              |
|           | 2482       | 80.23          | 3.57       |              |
|           | 2500       | 79.65          | 3.22       |              |

### 2.2 VSWR (Voltage Standing Wave Ration)

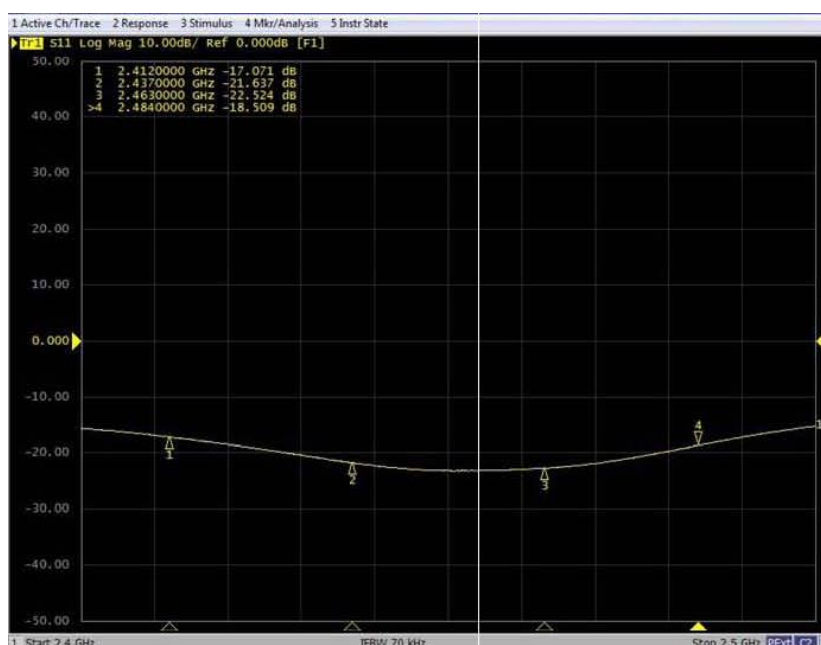


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|                |      |      |      |      |
|----------------|------|------|------|------|
| Frequency(MHz) | 2412 | 2437 | 2463 | 2484 |
| VSWR           | 1.31 | 1.17 | 1.16 | 1.29 |

### 2.3 Antenna S11



|                |        |        |        |        |
|----------------|--------|--------|--------|--------|
| Frequency(MHz) | 2412   | 2437   | 2463   | 2484   |
| S11 (dB)       | -17.01 | -21.65 | -22.52 | -18.51 |

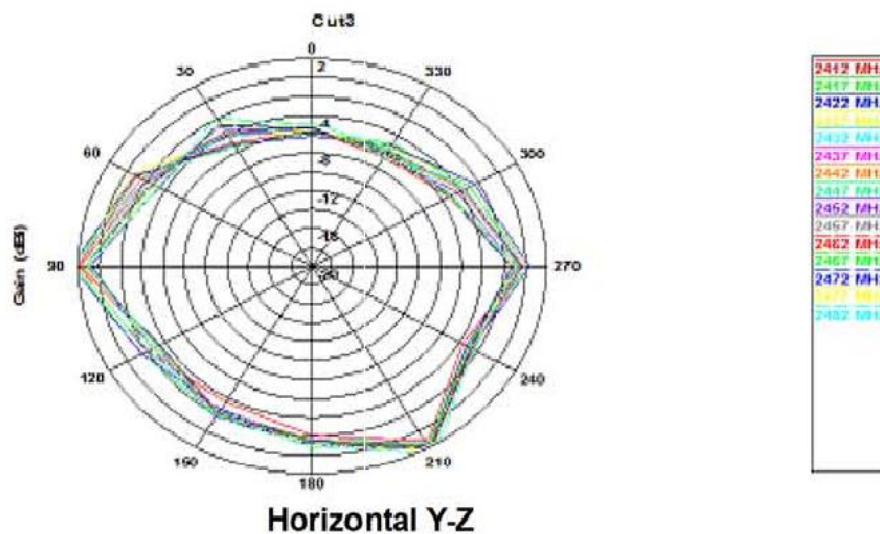
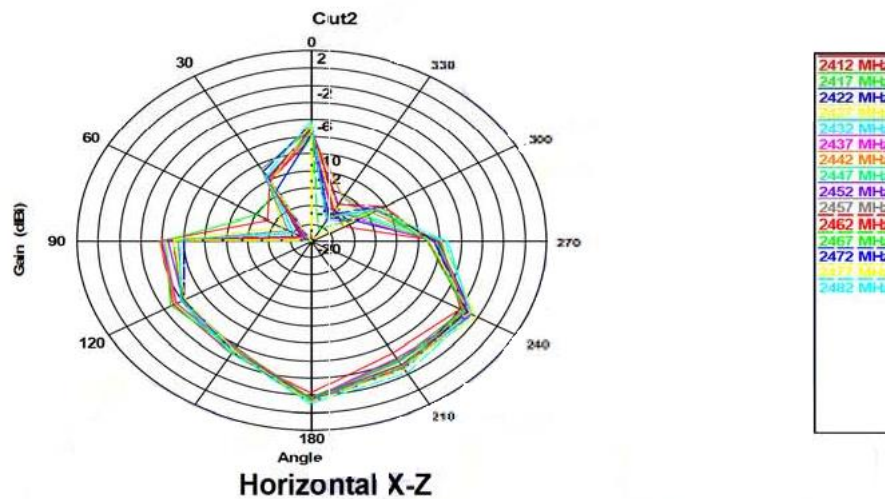
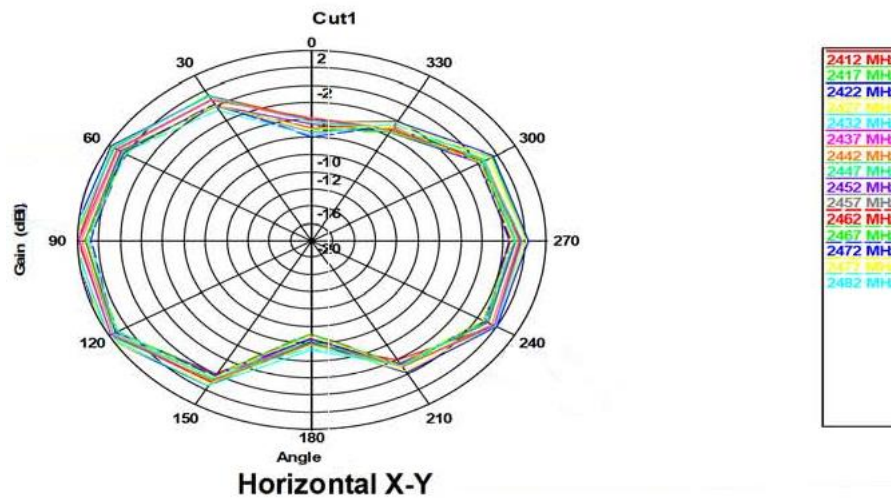
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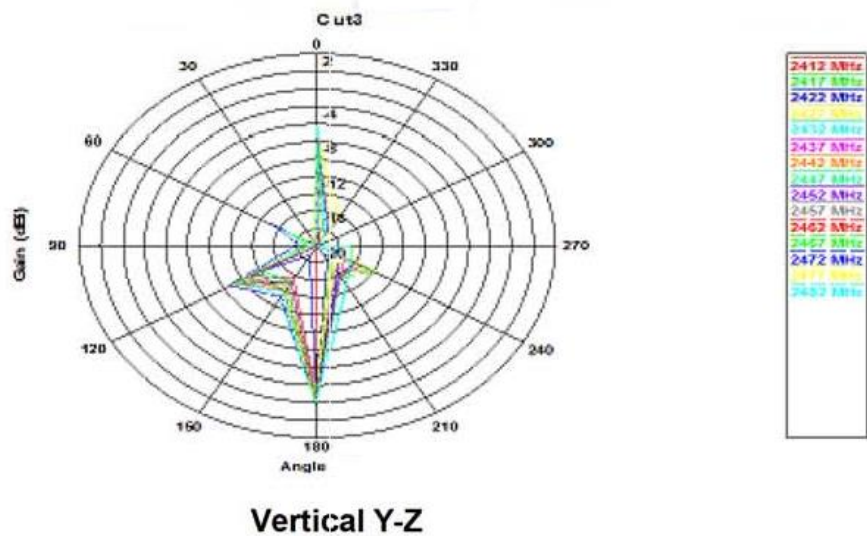
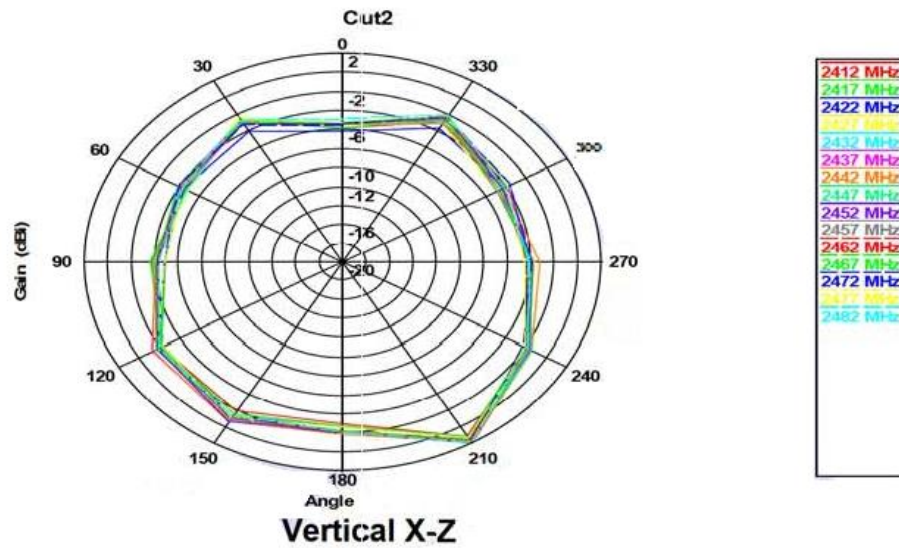
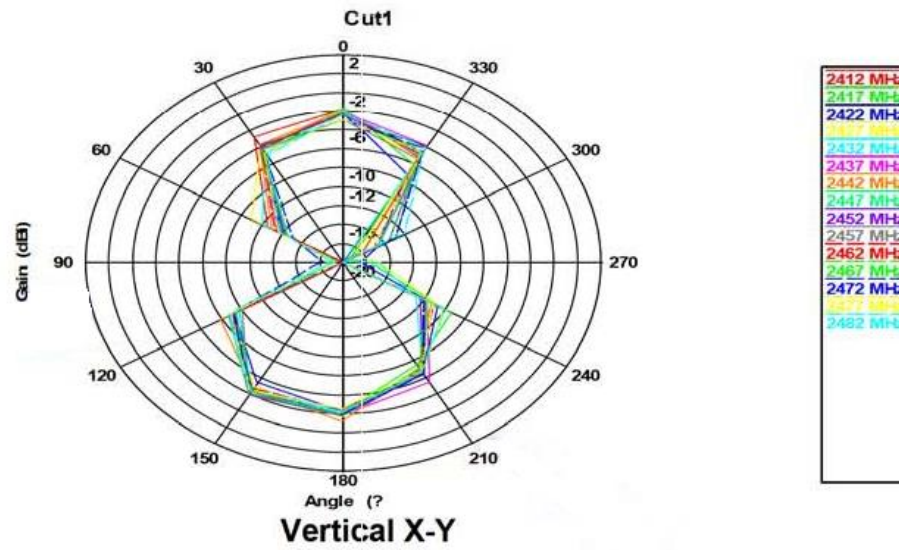
### 3. 2-D pattern Plots



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