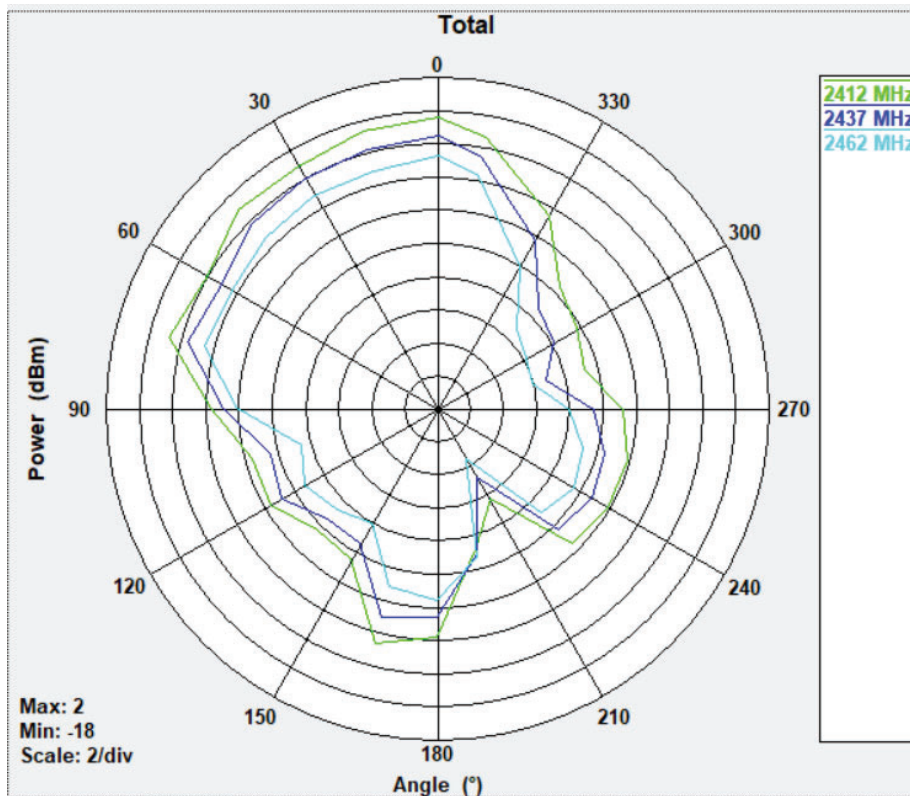


# Antenna Specification

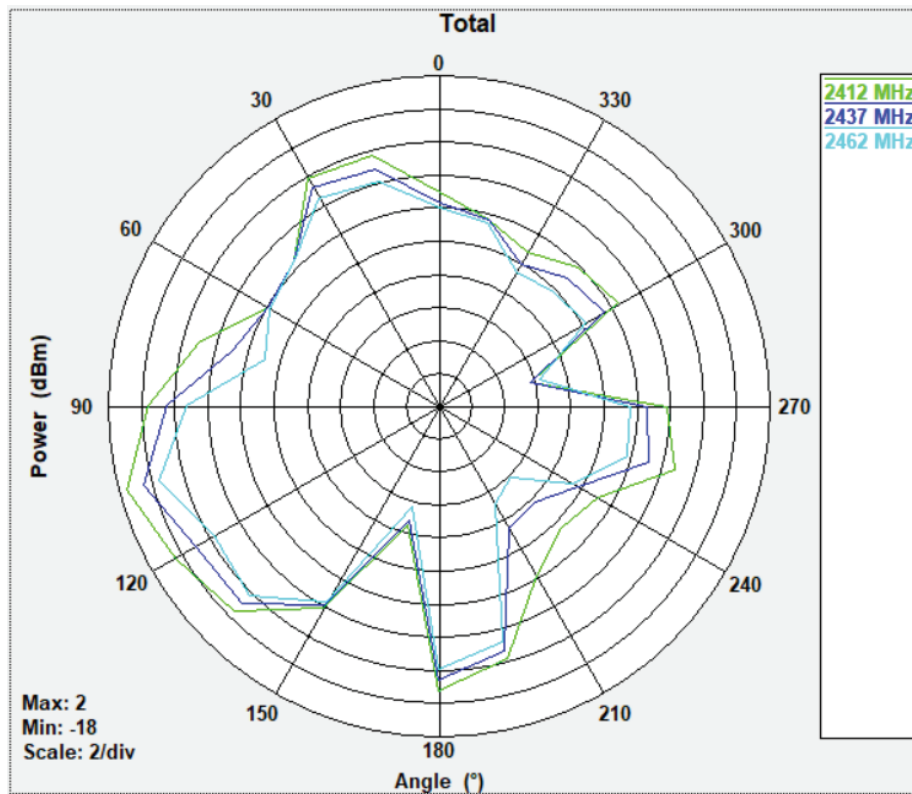
|                              |                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------|
| <b>Product Name</b>          | Display Assy-Meter & AV                                                           |
| <b>Supplier</b>              | Visteon                                                                           |
| <b>Display Type P/N</b>      | <b>VPPASF-10849-ZA</b>                                                            |
| <b>Antenna Manufacture</b>   | Harada Industry                                                                   |
| <b>Address</b>               | Omori Bellport B-4F, 6-26-2<br>Minami-Ohi, Shinagawa-ku,<br>Tokyo 140-0013, Japan |
| <b>Antenna P/N</b>           | -                                                                                 |
| <b>Antenna Type</b>          | <b>Metal Plate Antenna</b>                                                        |
| <b>WLAN cable</b>            | LVDS+WiFi (short)                                                                 |
| <b>Specification Version</b> | <b>V.3</b>                                                                        |

### 3. 2D Antenna Pattern

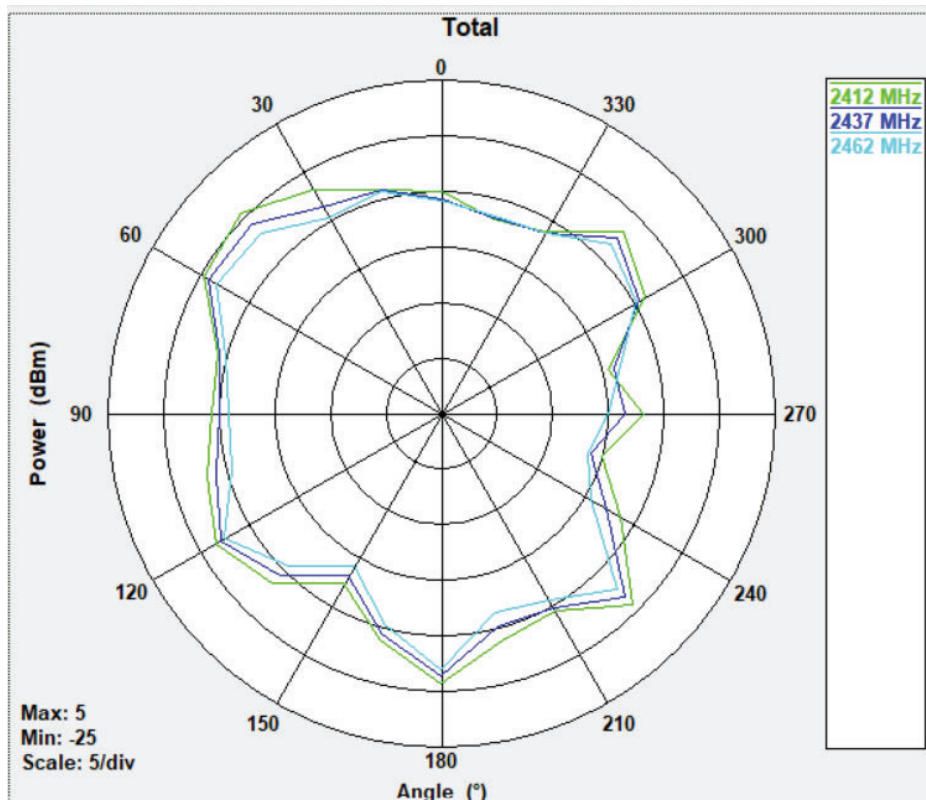
(1) X-Y : 2412MHz, 2437MHz, 2462MHz



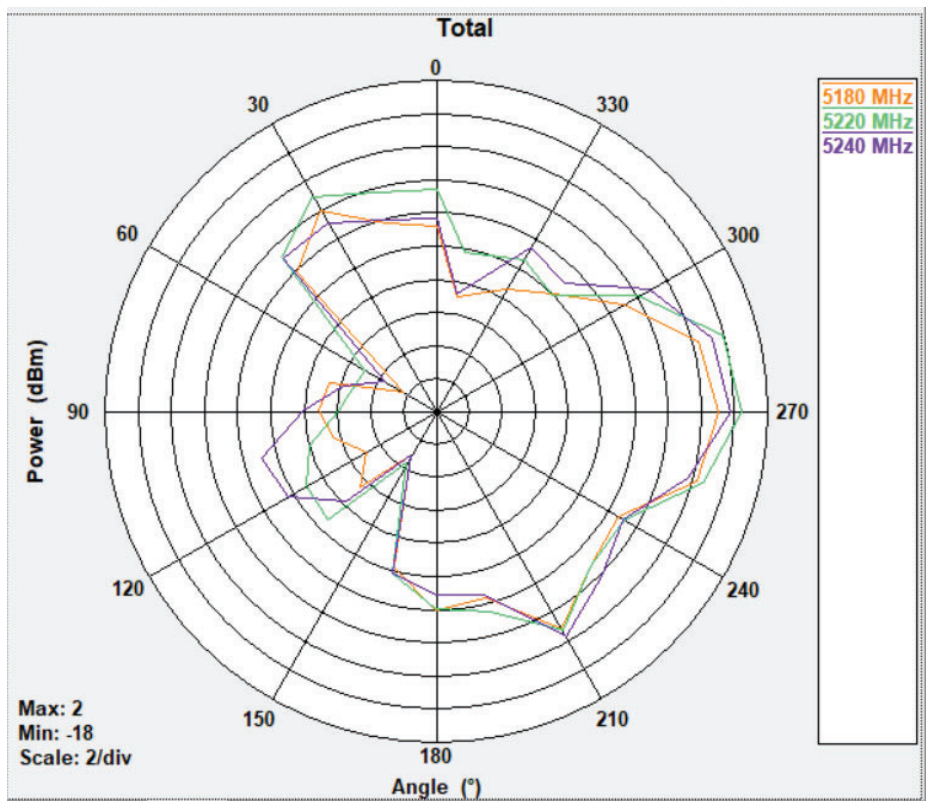
(2) X-Z : 2412MHz, 2437MHz, 2462MHz



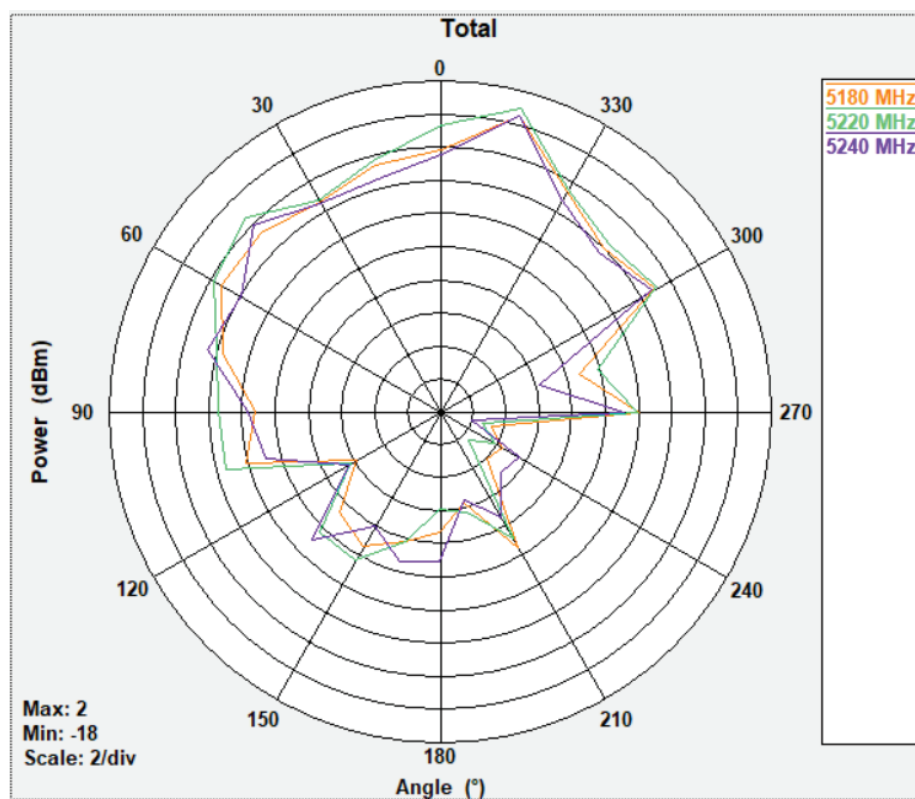
**(3) Y-Z : 2412MHz, 2437MHz, 2462MHz**



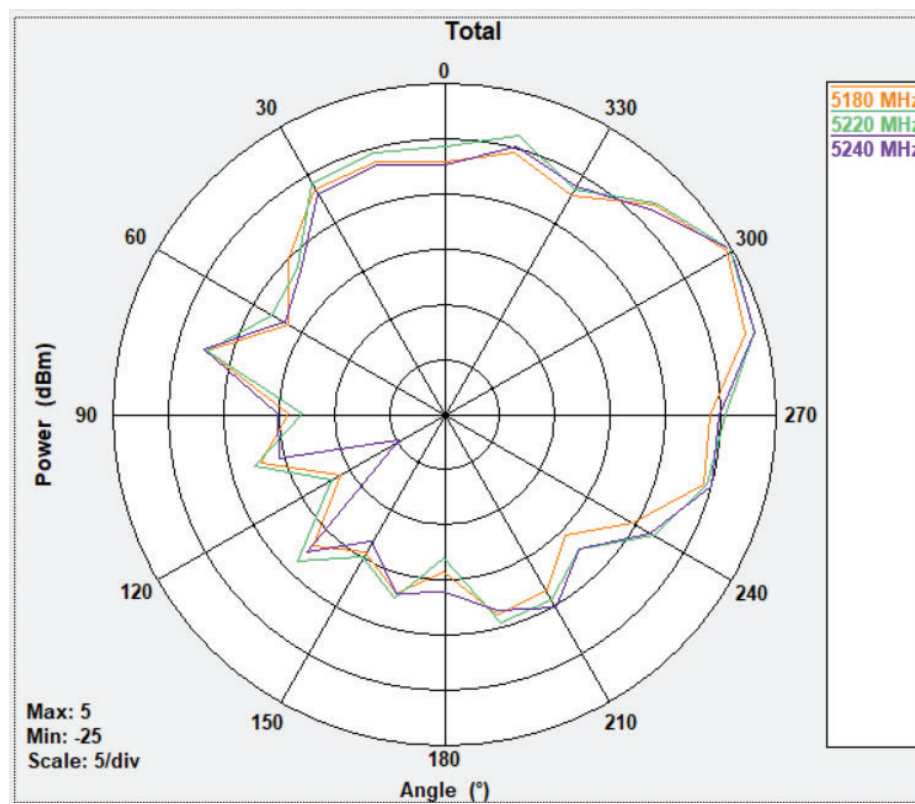
**(4) X-Y : 5180MHz, 5220MHz, 5240MHz**



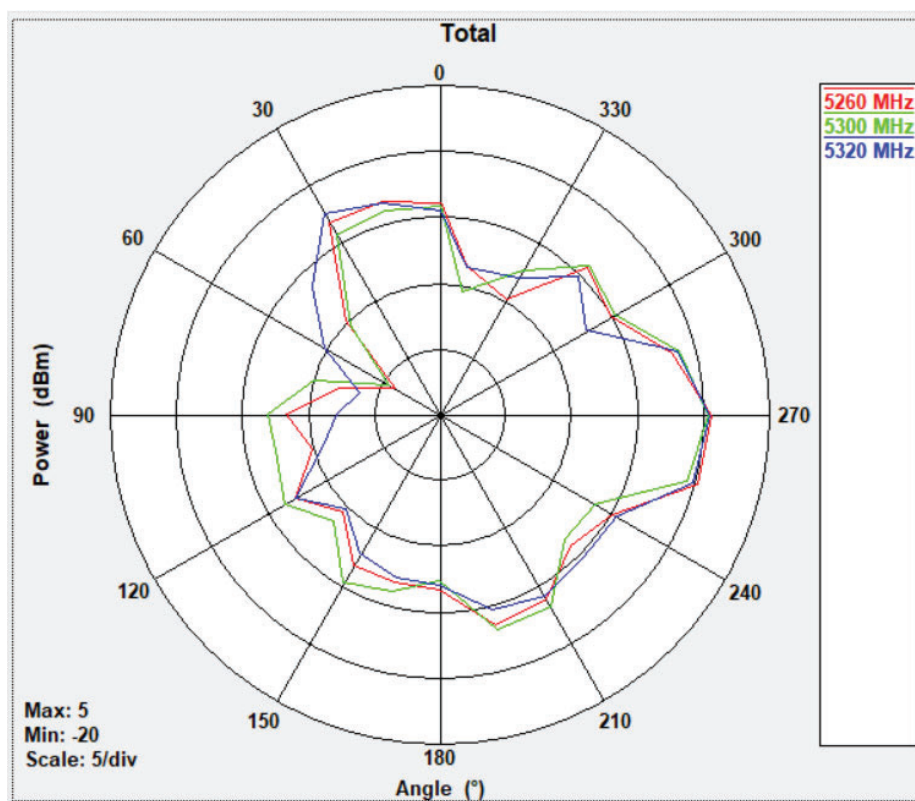
(5) X-Z : 5180MHz, 5220MHz, 5240MHz



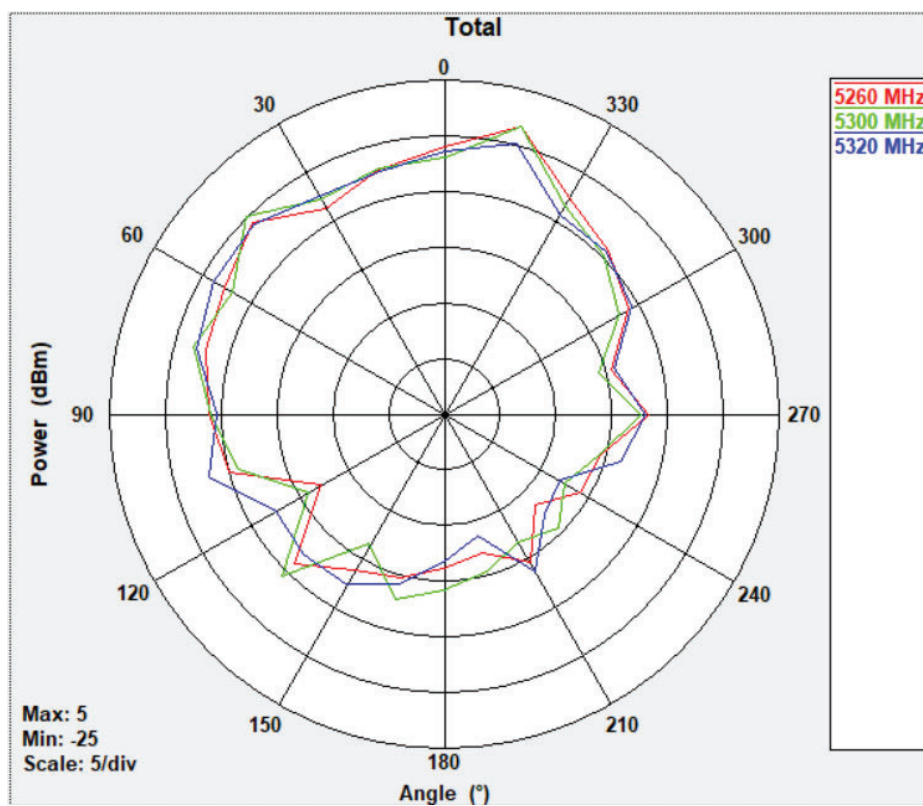
(6) Y-Z : 5180MHz, 5220MHz, 5240MHz



(7) X-Y : 5260MHz, 5300MHz,5320MHz

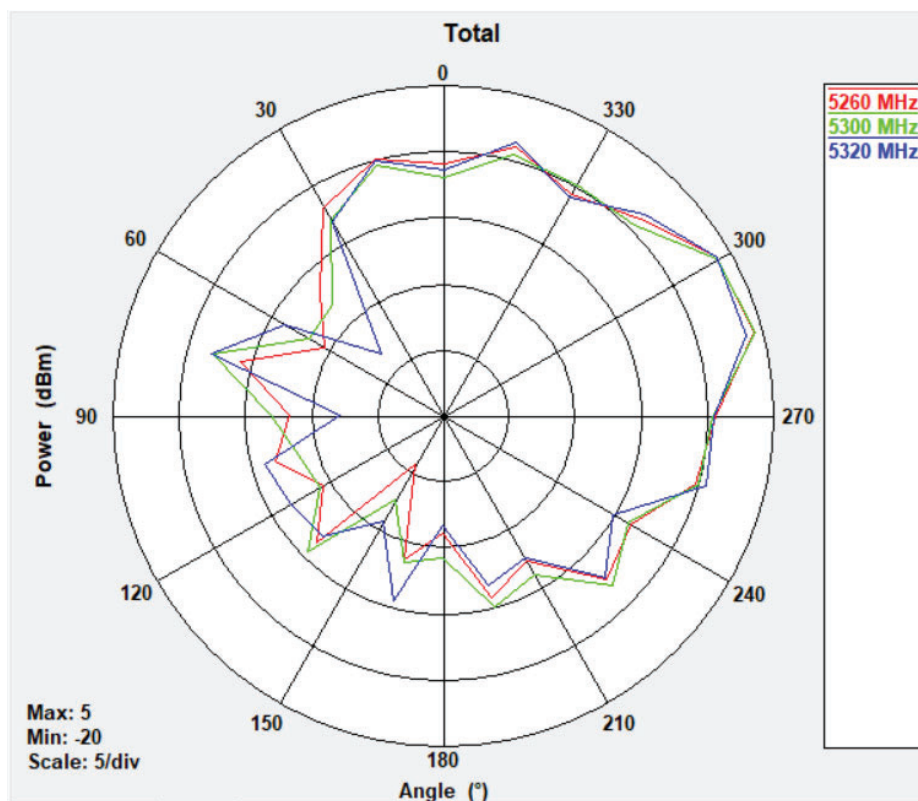


(8) X-Z : 5260MHz, 5300MHz,5320MHz

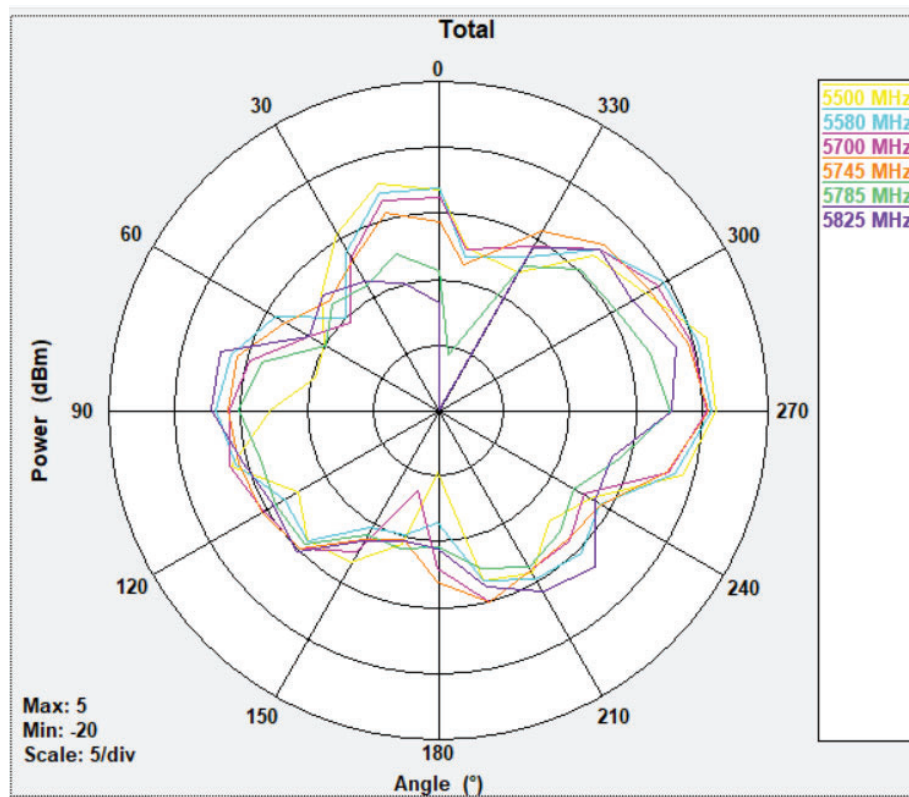




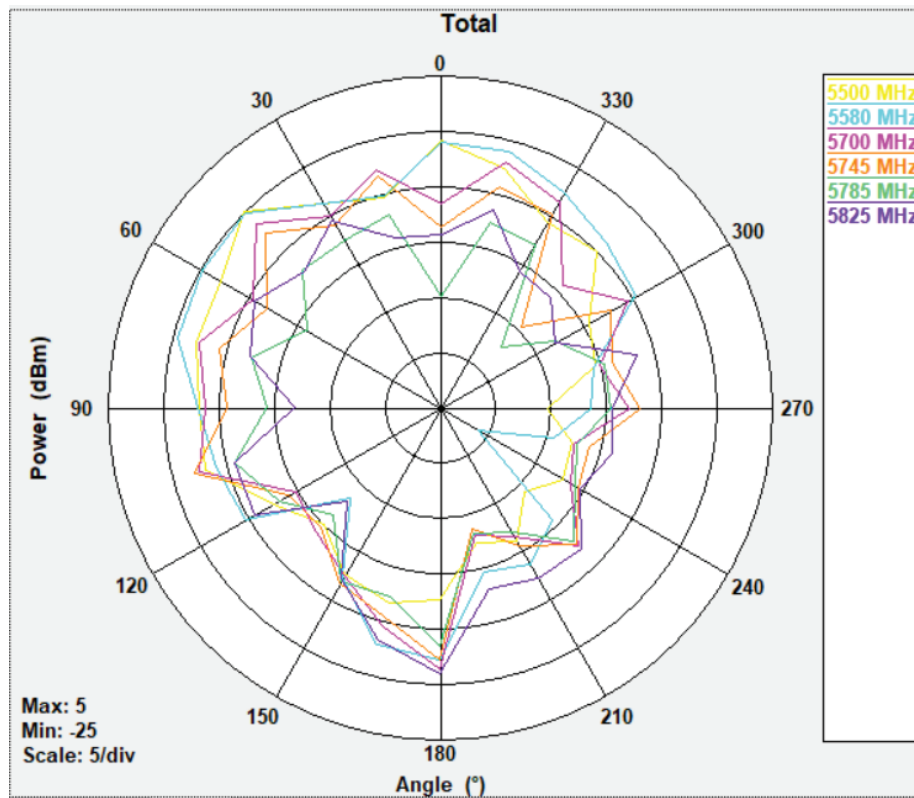
(9) Y-Z : 5260MHz, 5300MHz,5320MHz



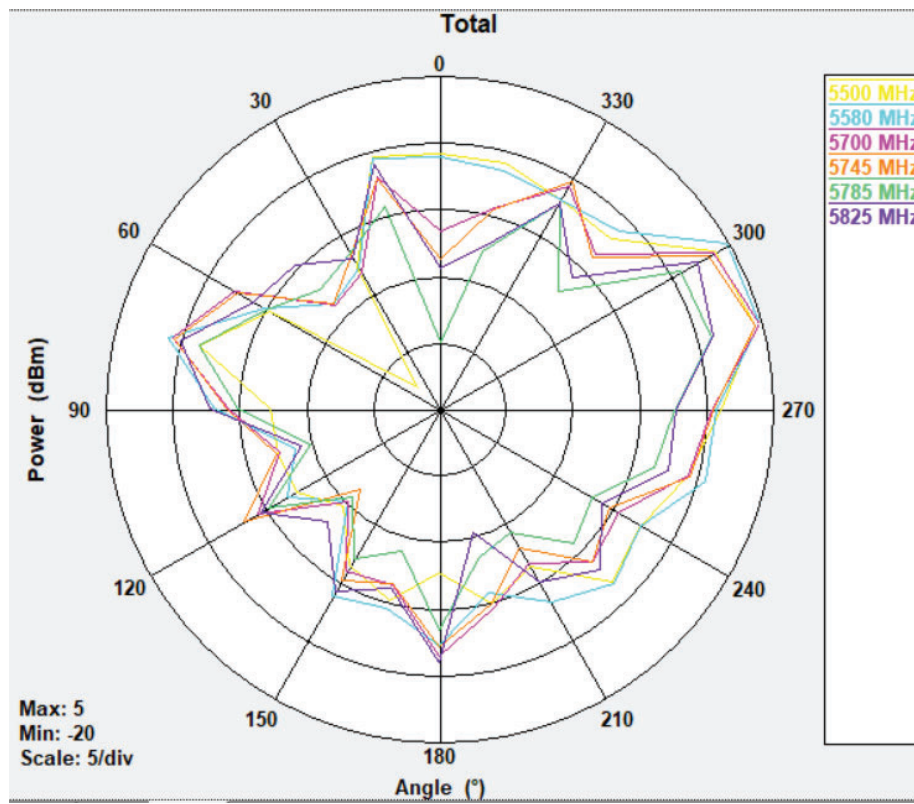
(10) X-Y: 500MHz, 5580MHz, 5700MHz, 5745MHz, 5785MHz, 5825MHz



(11)X-Z: 500MHz, 5580MHz, 5700MHz, 5745MHz, 5785MHz, 5825MHz

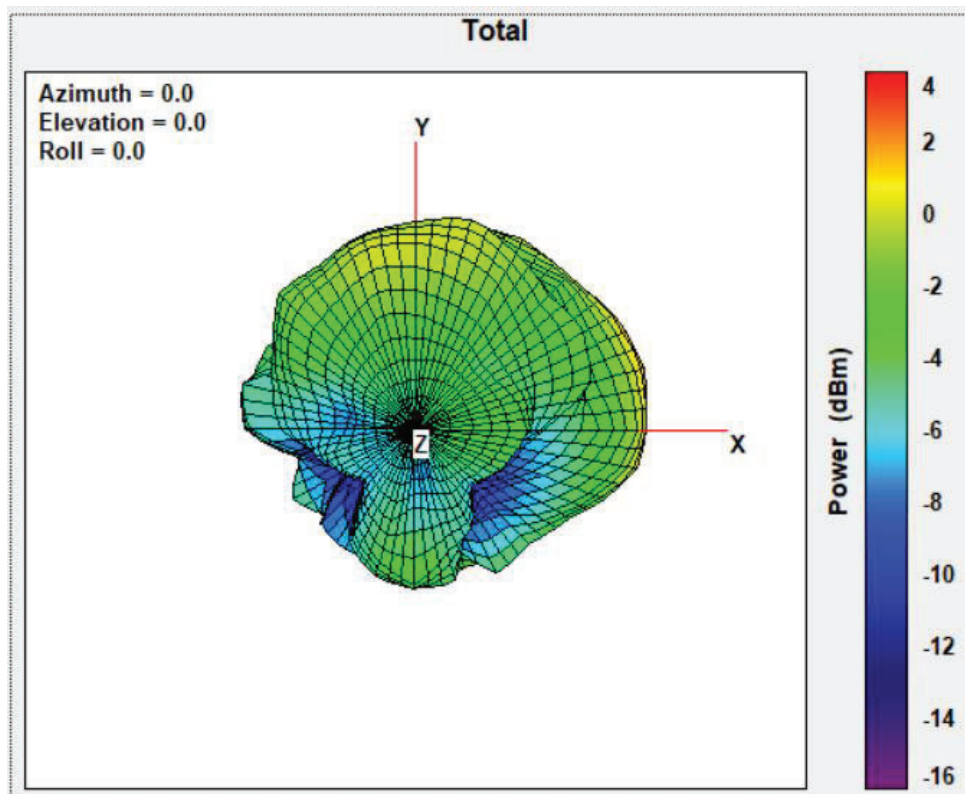


(12)Y-Z: 500MHz, 5580MHz, 5700MHz, 5745MHz, 5785MHz, 5825MHz

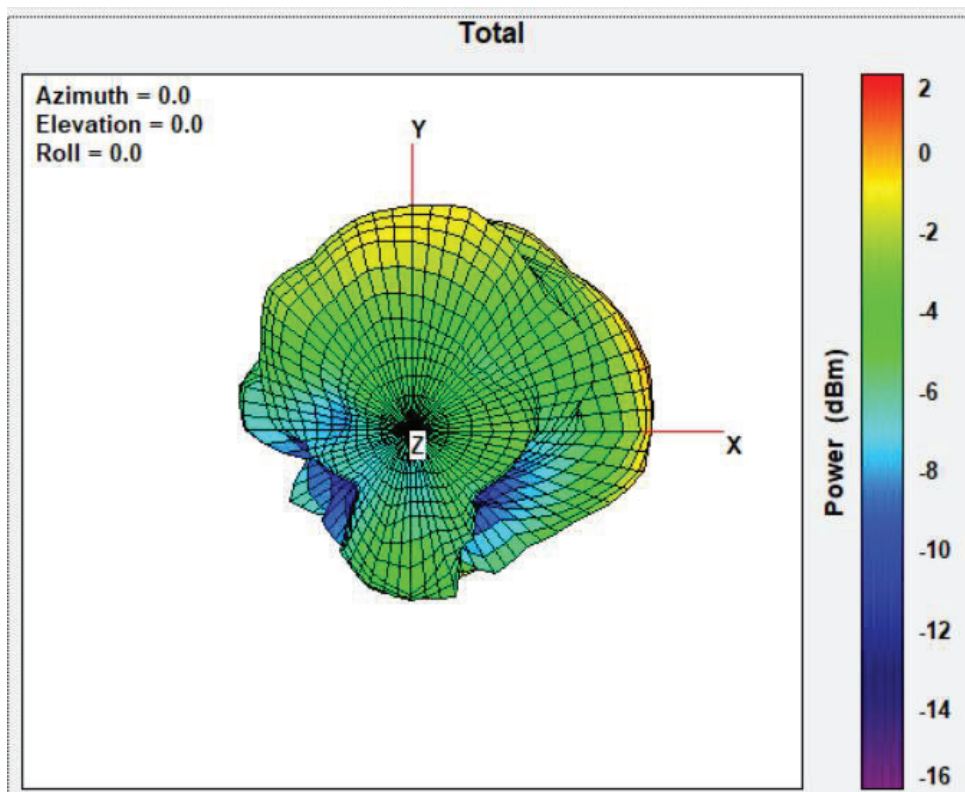


#### 4. 3D Antenna Pattern

##### (1) 2412MHz

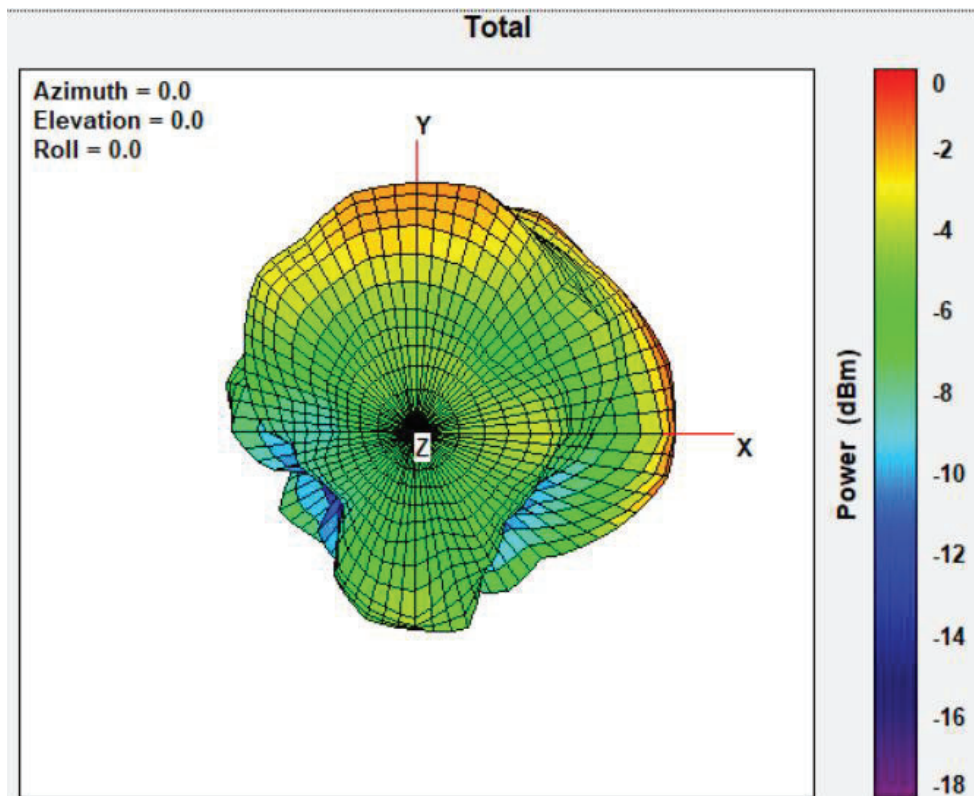


##### (2) 2437MHz

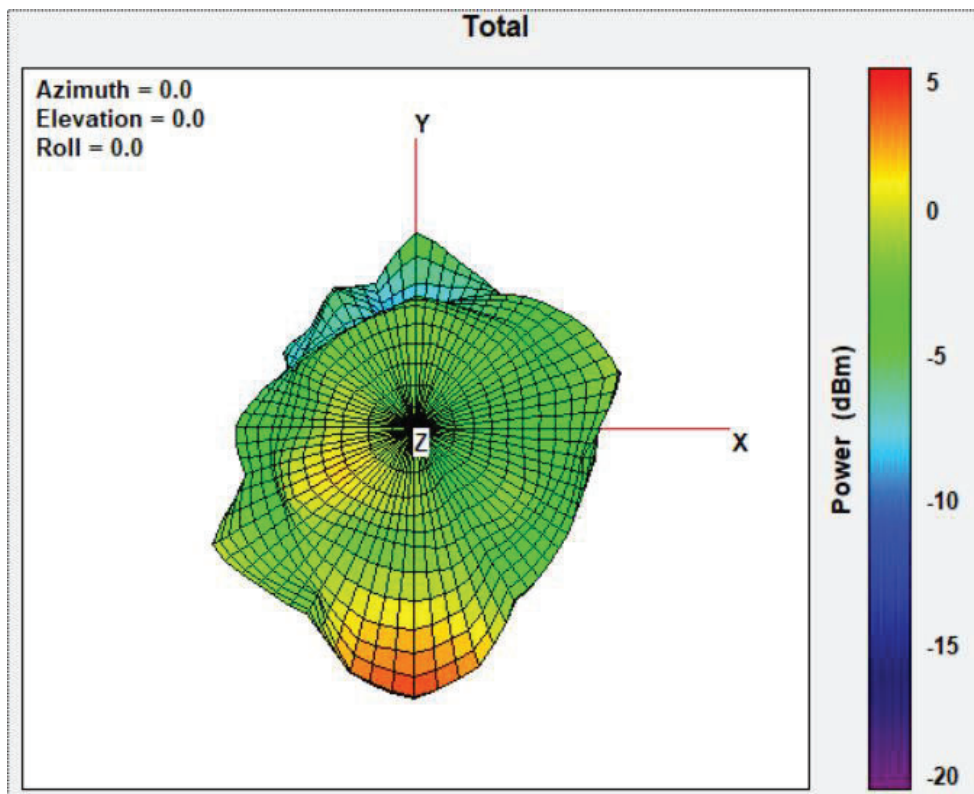




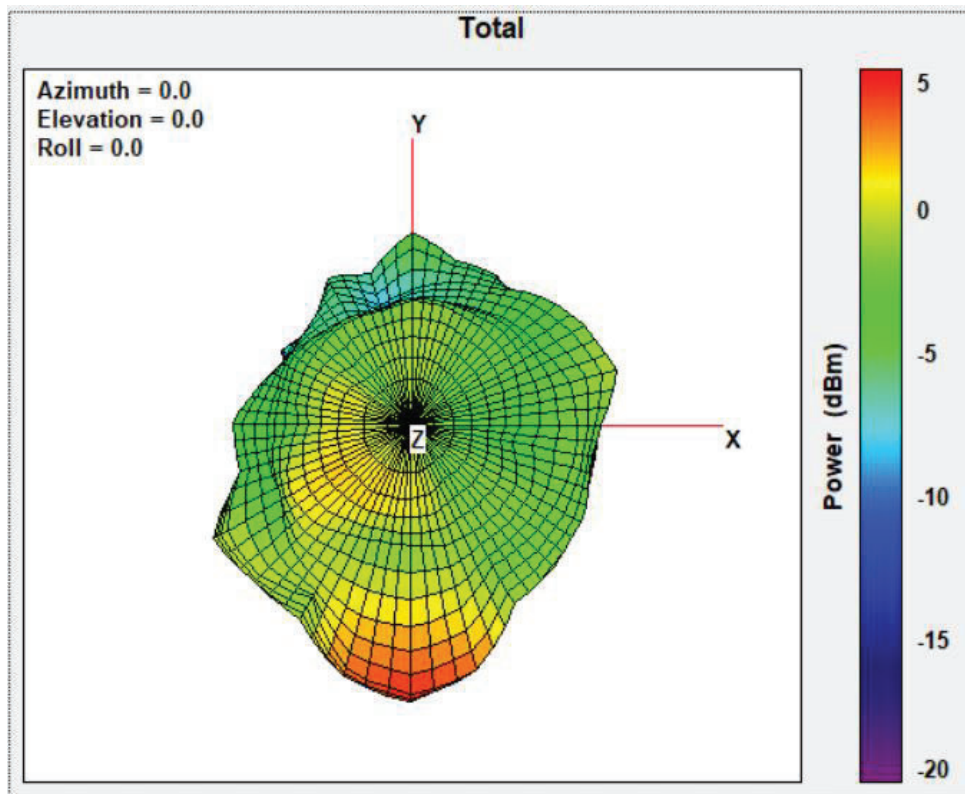
### (3) 2462MHz



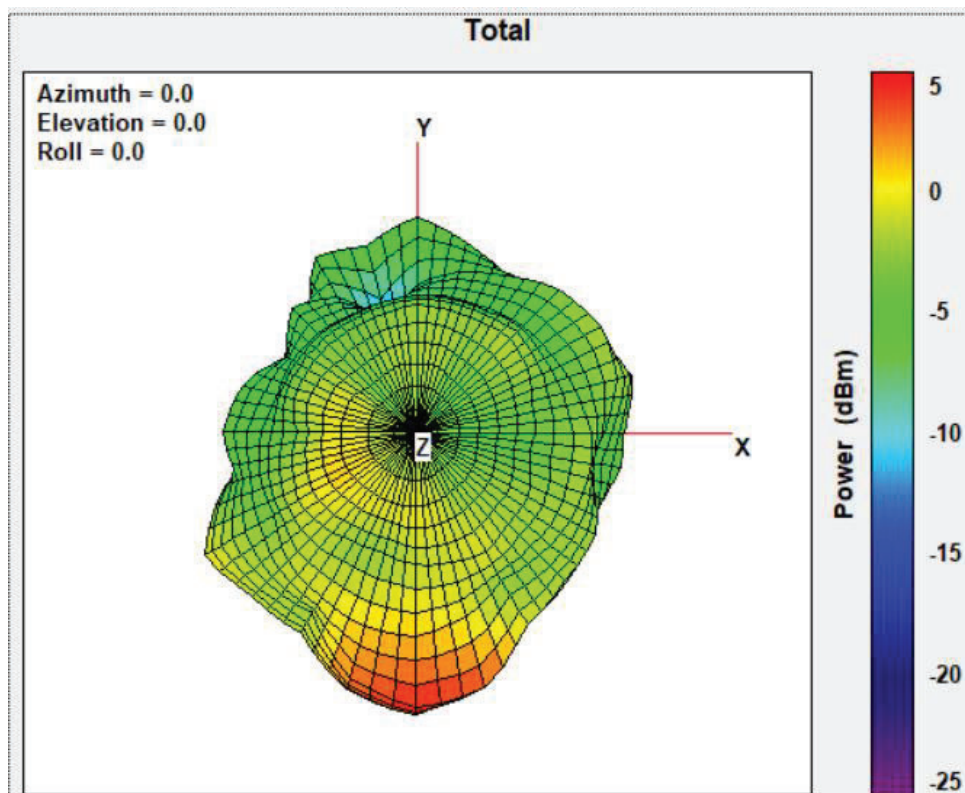
### (4) 5180MHz



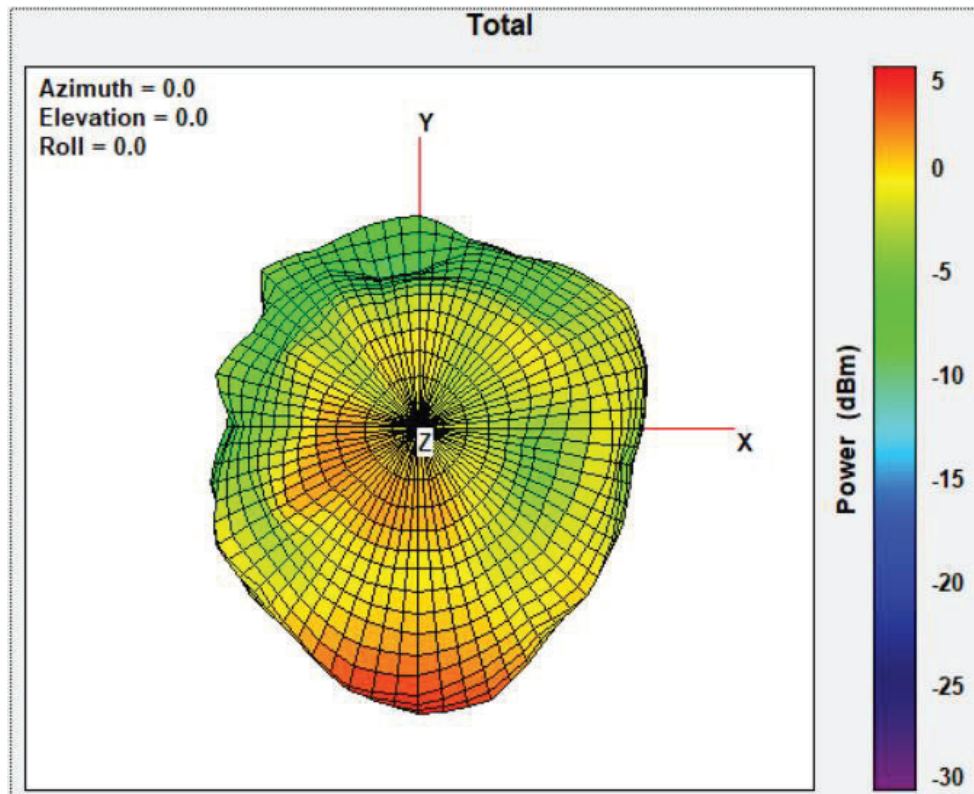
(5) 5220MHz



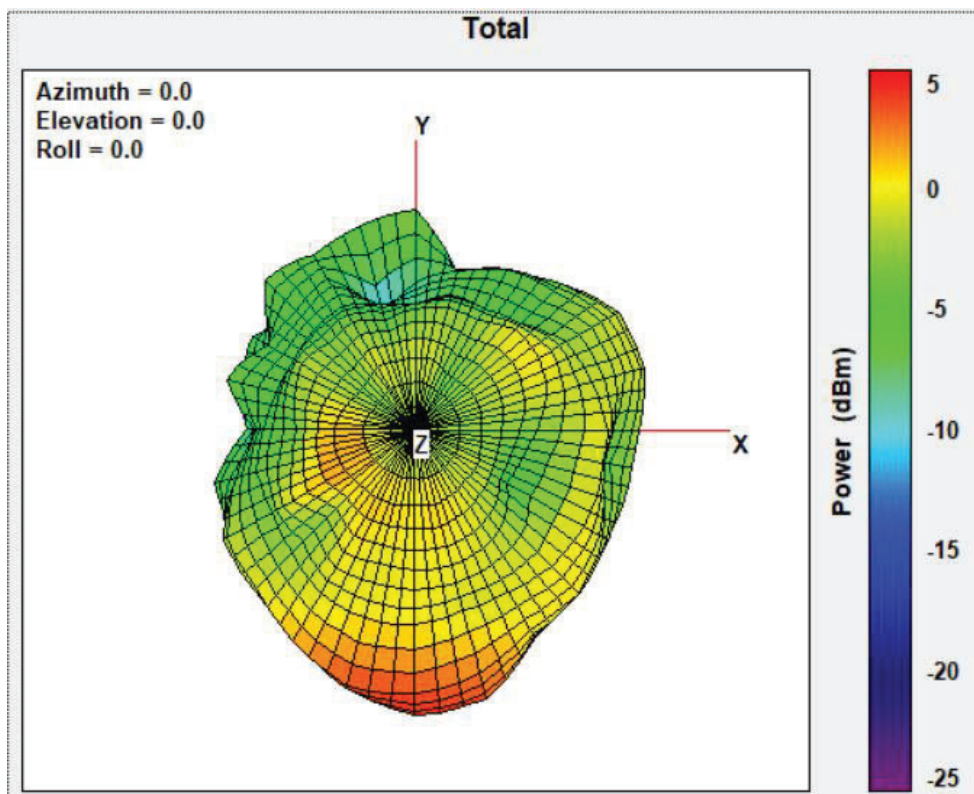
(6) 5240MHz



(7) 5260MHz

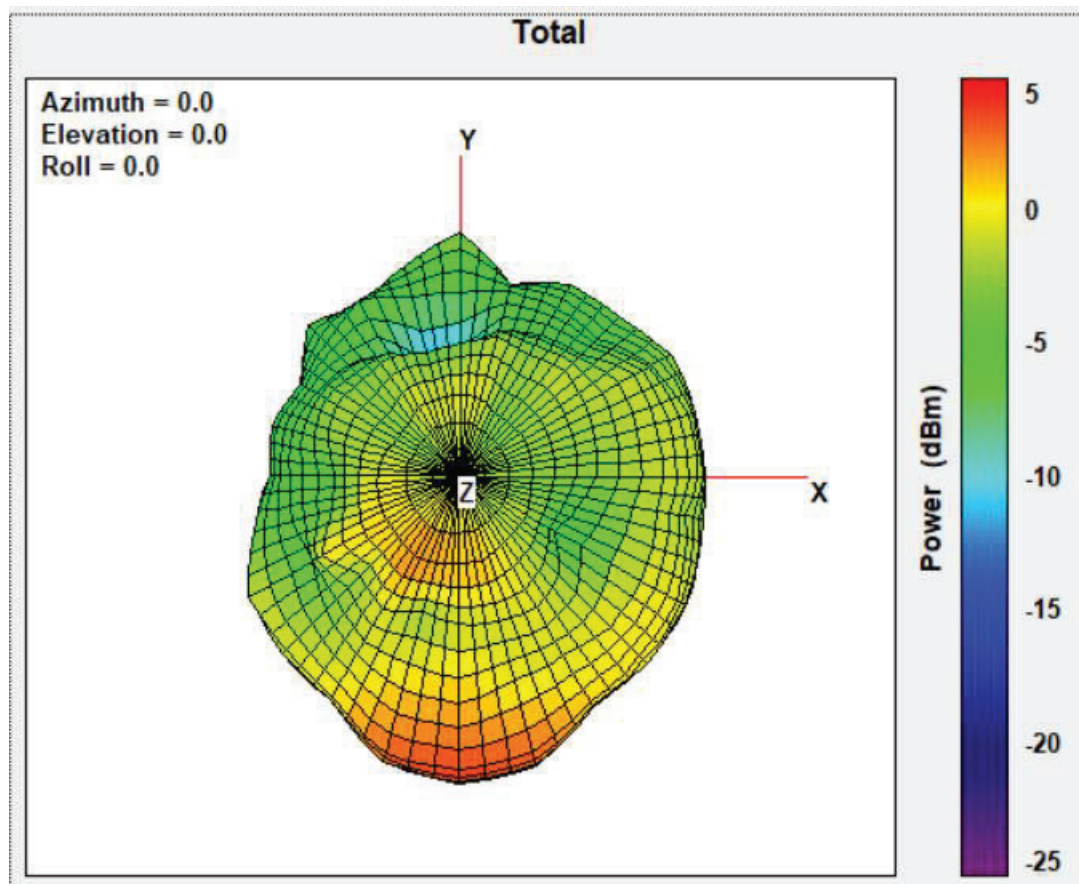


(8) 5300MHz

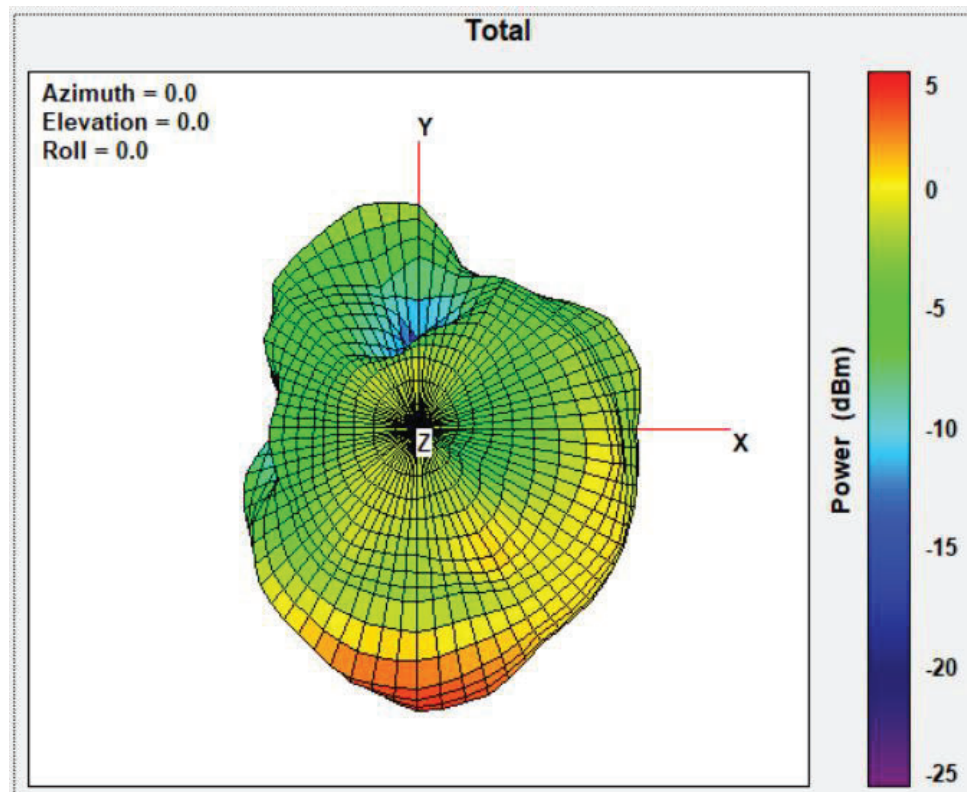




(9) 5320MHz

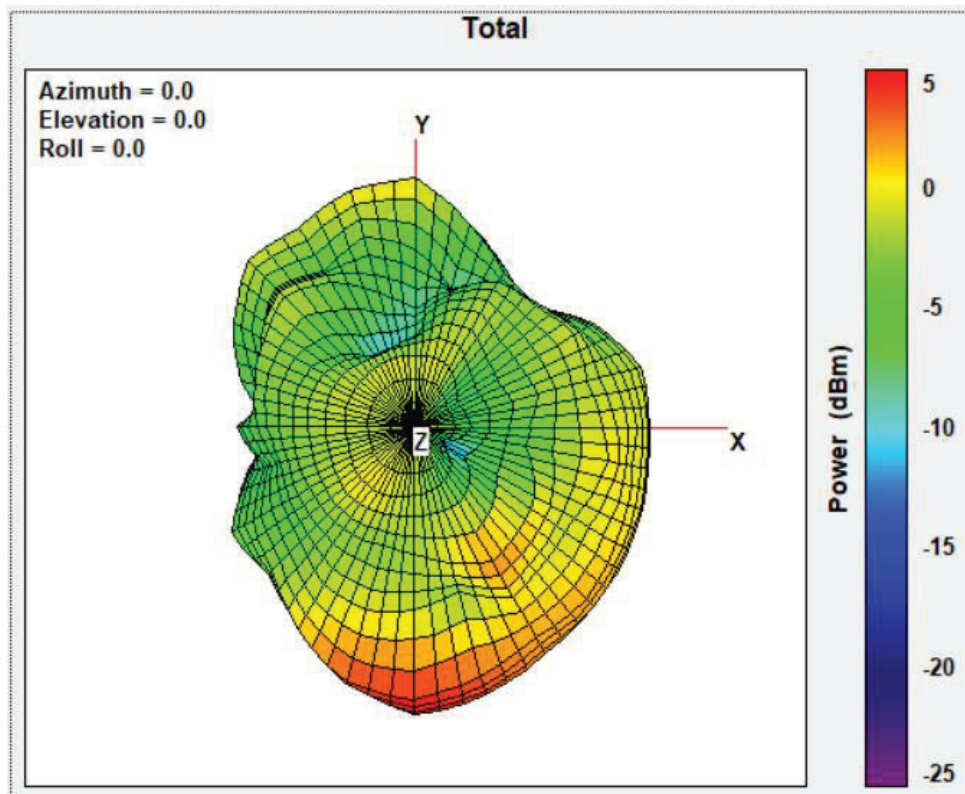


(10) 5500MHz

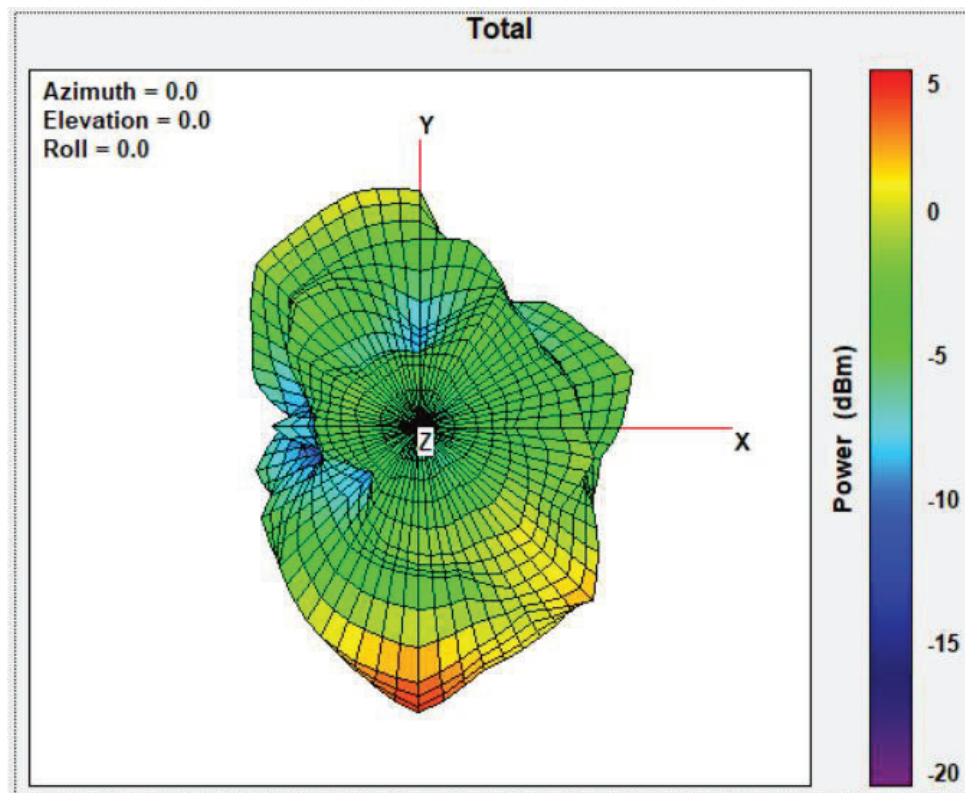




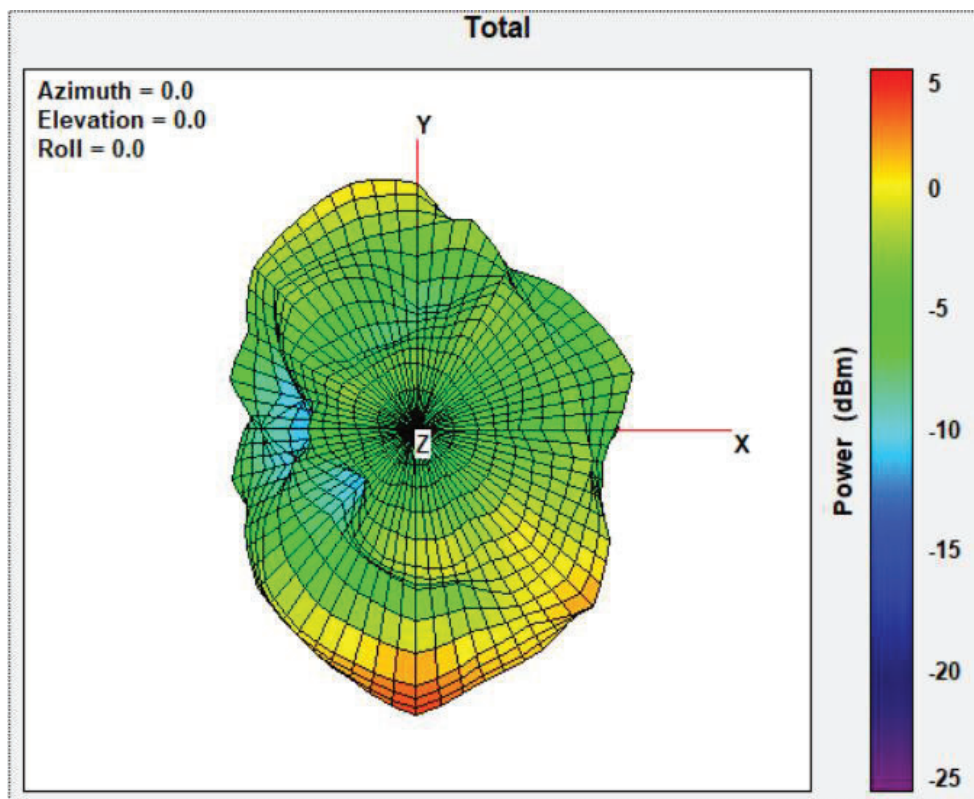
(11) 5580MHz



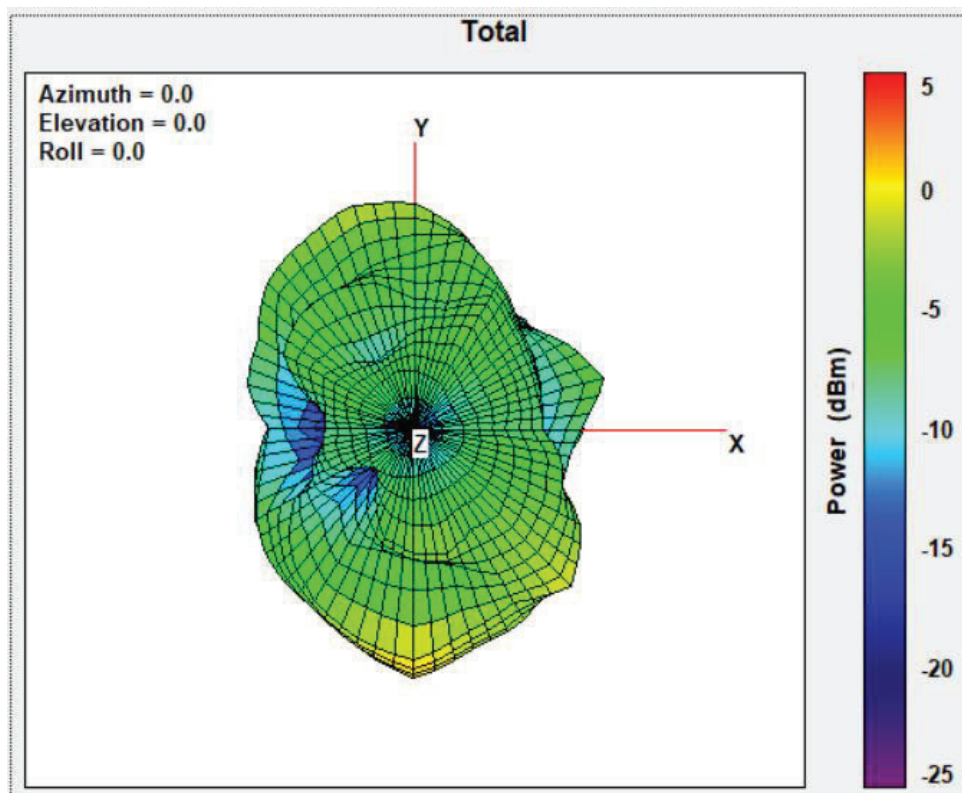
(12) 5700MHz



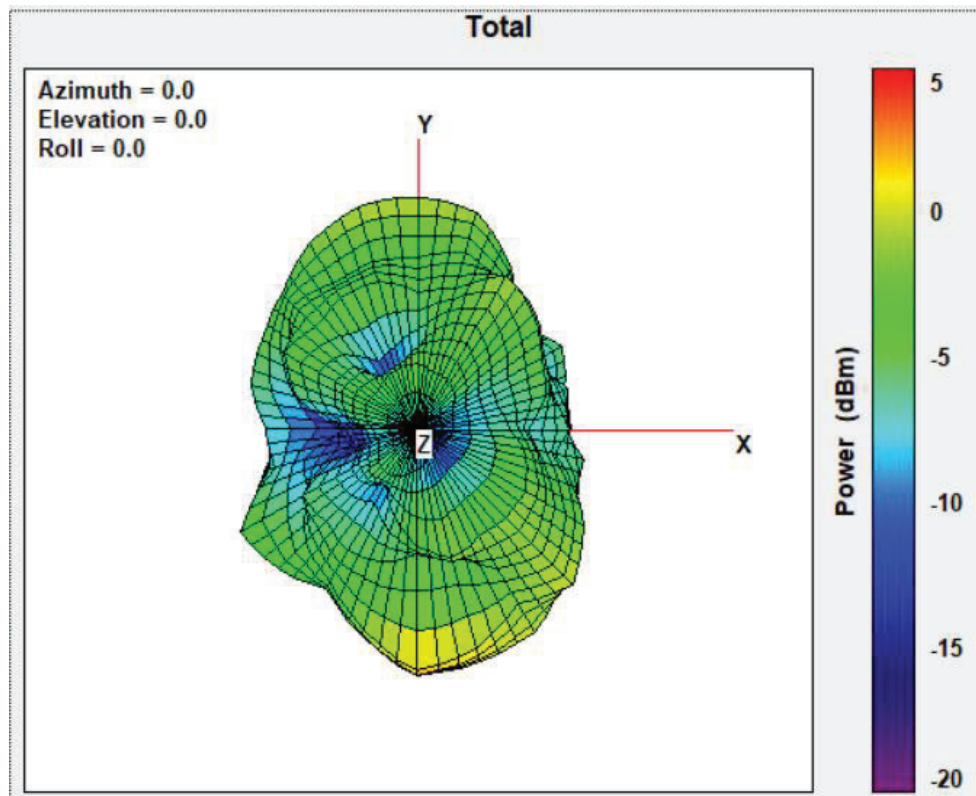
(13) 5745MHz



(14) 5785MHz



(15) 5825MHz



## 5. Test result

### With WLAN Cable LVDS+WiFi (short)

#### (1) 2.4GHz band

| Frequency (MHz)                 | 2412 | 2437  | 2462  |
|---------------------------------|------|-------|-------|
| Cable loss (dB)                 | -1.1 | -1.1  | -1.1  |
| Antenna Gain (dBi)              | 2.01 | 0.91  | -0.26 |
| Peak Gain with cable loss (dBi) | 0.91 | -0.19 | -1.36 |

#### (2) 5GHz band

| Frequency (MHz)                 | 5180 | 5220  | 5240  | 5260  | 5300  | 5320  |
|---------------------------------|------|-------|-------|-------|-------|-------|
| Cable loss (dB)                 | -3.3 | -2.67 | -2.49 | -2.45 | -2.81 | -3.14 |
| Antenna Gain (dBi)              | 4.41 | 4.70  | 4.77  | 4.20  | 4.34  | 3.83  |
| Peak Gain with cable loss (dBi) | 1.11 | 2.03  | 2.28  | 1.75  | 1.53  | 0.69  |

| Frequency (MHz)                 | 5500  | 5580  | 5700  | 5745  | 5785  | 5825  |
|---------------------------------|-------|-------|-------|-------|-------|-------|
| Cable loss (dB)                 | -3.73 | -2.58 | -3.78 | -4.19 | -4.25 | -3.92 |
| Antenna Gain (dBi)              | 4.35  | 4.76  | 4.70  | 4.31  | 0.93  | 2.16  |
| Peak Gain with cable loss (dBi) | 0.62  | 2.18  | 0.92  | 0.12  | -3.32 | -1.76 |

\*Peak Gain=cable loss + Antenna Gain