

# RTK GNSS L1/L2/L5 Active Antenna

**MODEL: MA-700D**



| Specifications                                           |                                                                   |
|----------------------------------------------------------|-------------------------------------------------------------------|
| Antenna Element                                          |                                                                   |
| Center Frequency                                         | 1582.5±23.5MHz(L1),1227±20MHz(L2)and1176±12MHz(L5)                |
| Polarization                                             | R.H.C.P. (Right Handed Circular Polarization)                     |
| Absolute Gain @ Zenith                                   | 2.5 dBic typical @ L1; -2 dBic typical @ L2; -1 dBic typical @ L5 |
| Gain @ 10o Elevation:                                    | 0dBic typical @ L1; -2dBic typical @ L2; -1dBic typical @ L5      |
| VSWR                                                     | ≤2.0                                                              |
| Output Impedance                                         | 50 ohm                                                            |
| Low Noise Amplifier                                      |                                                                   |
| Center Frequency                                         | 11582.5±23.5MHz(L1),1227±20MHz(L2)and1176±12MHz(L5)               |
| Power Gain                                               | 28±2 dB typical at 3V (L1,L2 and L5)                              |
|                                                          | 29±2 dB typical at 5V (L1,L2 and L5)                              |
| ESD (TVS)                                                | ±8kv (contact)                                                    |
| Noise Figure                                             | 1.5 dB typical at 3V (L1,L2 and L5)                               |
| Supply Voltages                                          | DC = 3~5V                                                         |
| Current Consumption                                      | DC = 10±2.5mA at 3V / 27±2.5mA at 5V                              |
| VSWR                                                     | 2.0 max.                                                          |
| Output Impedance                                         | 50 ohm                                                            |
| Overall Performance: (antenna element, LNA & coax cable) |                                                                   |
| Center Frequency                                         | 1582.5±23.5MHz(L1),1227±20MHz(L2) and 1176±12MHz(L5)              |
| Gain                                                     | 28±2 dB typical at 3V (L1,L2 and L5)                              |
|                                                          | 29±2 dB typical at 5V (L1,L2 and L5)                              |
| Noise Figure                                             | 2.0 max.                                                          |

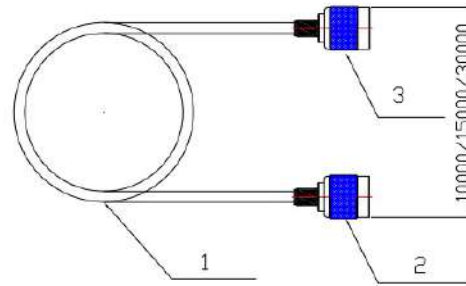
|                                 |                                                         |
|---------------------------------|---------------------------------------------------------|
| Bandwidth                       | ±23.5MHz(L1), ±20MHz(L2), ±12MHz(L5)                    |
| VSWR                            | 2.0                                                     |
| Output Impedance                | 50 ohm                                                  |
| <b>Environmental Conditions</b> |                                                         |
| Operating Temperature           | -40°C to +85°C                                          |
| Storage Temperature             | -40°C to +85°C                                          |
| Relative Humidity               | 40% to 95% non-condensing                               |
| Water Resistance                | 100% waterproof IP67                                    |
| <b>Physical Constructions</b>   |                                                         |
| Dimensions                      | Antenna : 90.8mm(Dia.) × 108.5mm(H)                     |
| Weight                          | 150 grams (without cable)                               |
| Standard Mounting               | Concinnity and Solid design                             |
| <b>Cable &amp; Connector</b>    |                                                         |
| RF                              | CFD200-40CM                                             |
| Cable Pulling strength          | 12Kg for 5sec.                                          |
| Connector available             | N(F) (standard), SMA(F) / TNC(F) other types (optional) |

\* This specification is subject to change without prior notice

Data Updated: MAY 26, 2025

**User selectable datum \*Pole mount to 1"-14 UNS threaded mast**



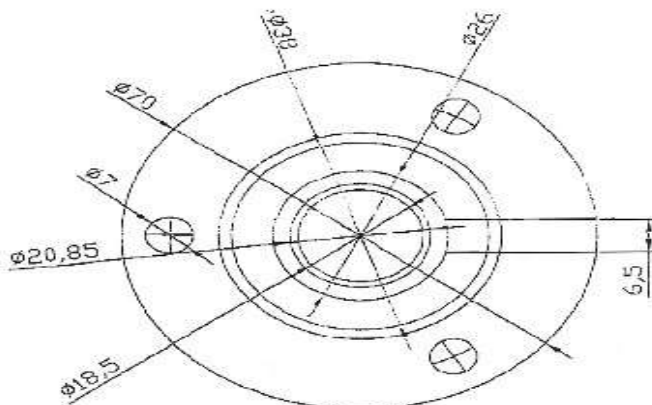
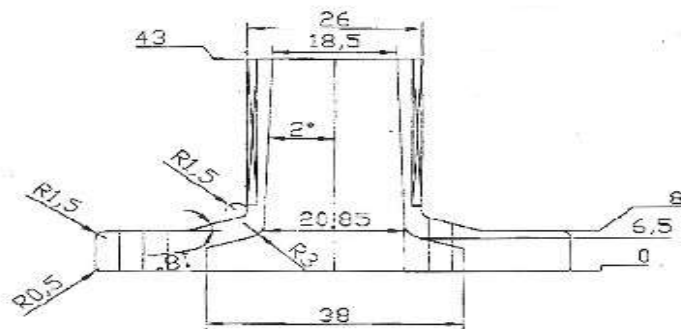


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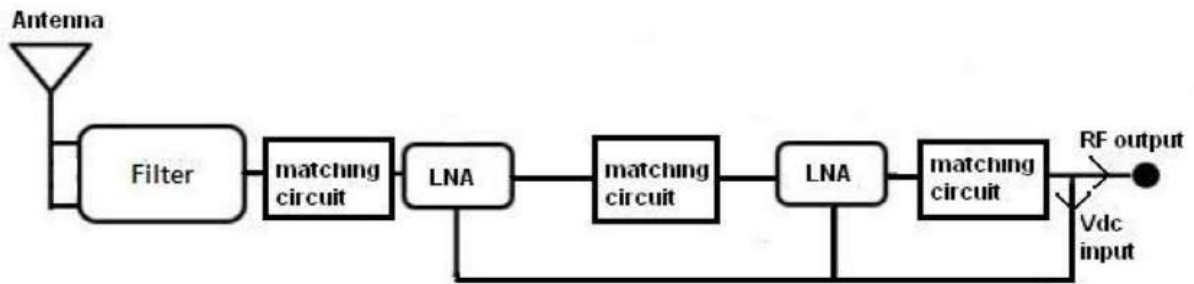
**TEL:+886-2-8672-0160**

**FAX: +886-2-8672-0161**

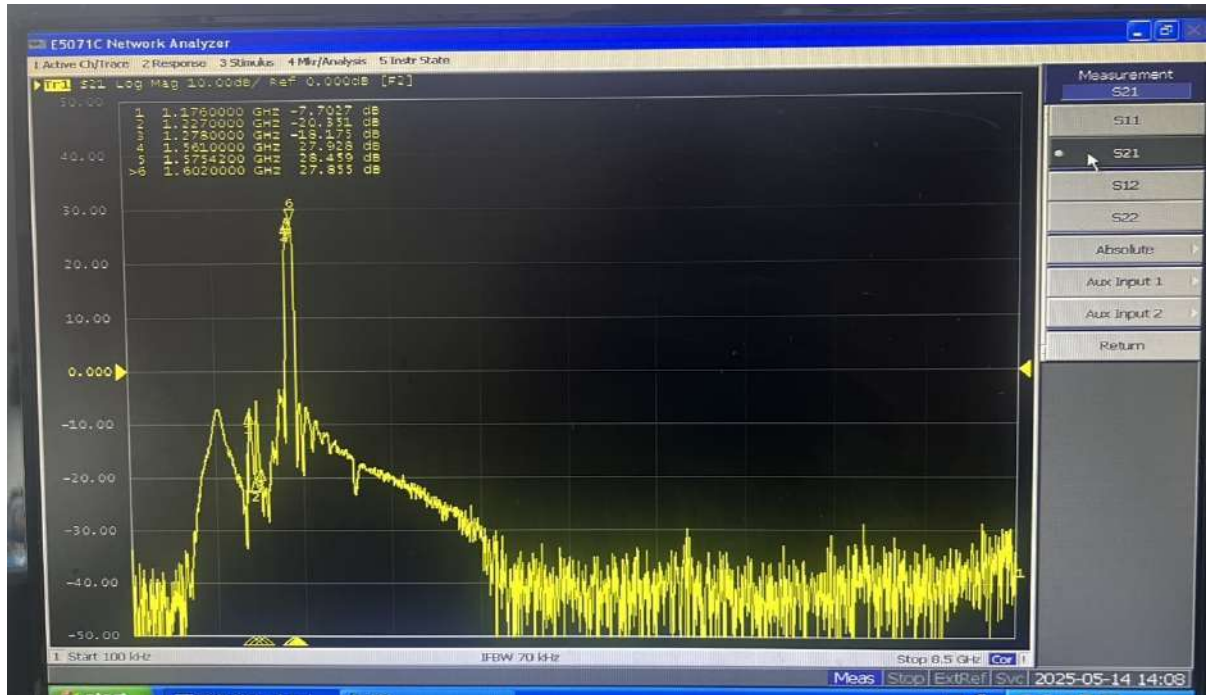
|                           |                   |                            |                |
|---------------------------|-------------------|----------------------------|----------------|
| TITLE: MARINE GPS ANTENNA |                   | DWG NO.: MA700D With cable |                |
| TOLERANCE: AS SPEC.       | FINISH: SEE TABLE | DATE: 2025.05.28           | UNIT: MM       |
| MATERIAL: SEE TABLE       | ISSUED: J.C       | DRAWN: BILL                | CHECKED: LOTUS |



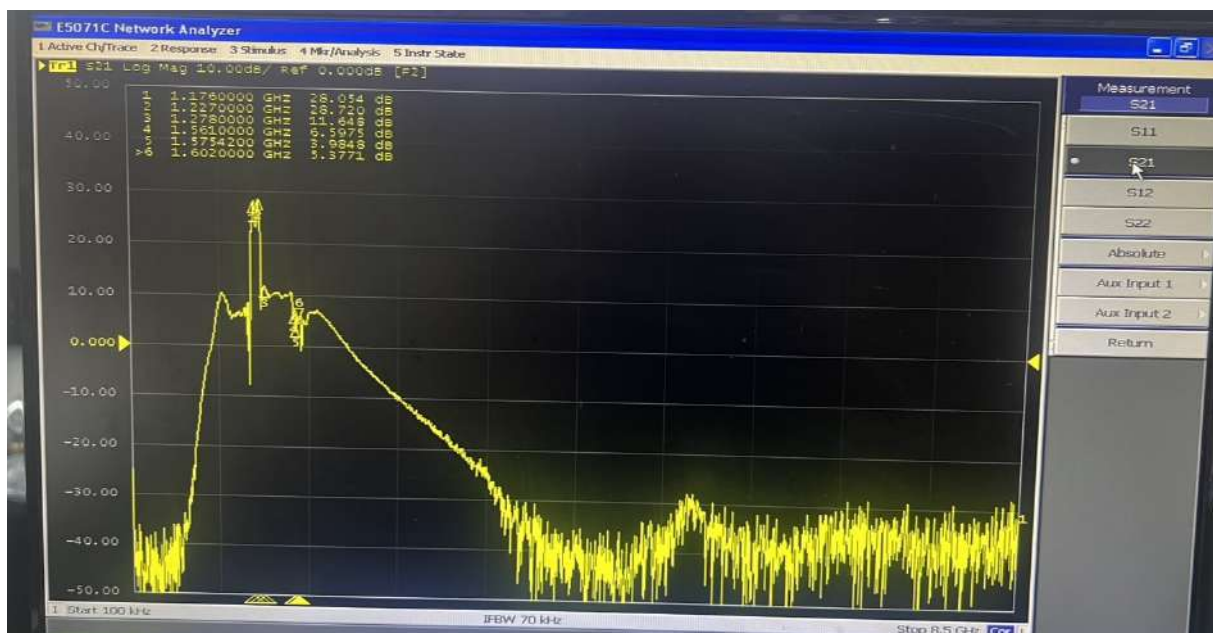
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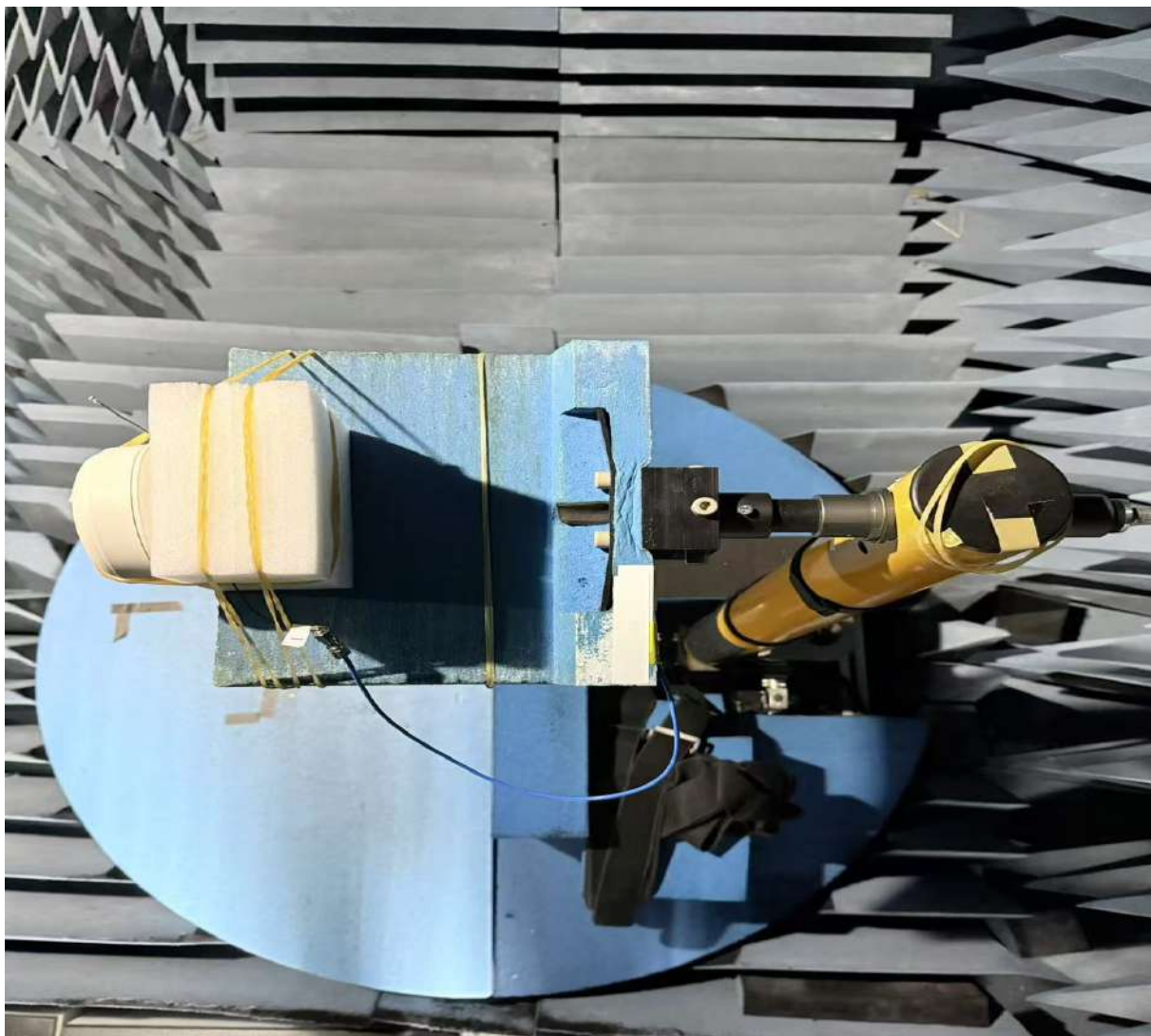


### L1 S21:



### L2/L5 S21:



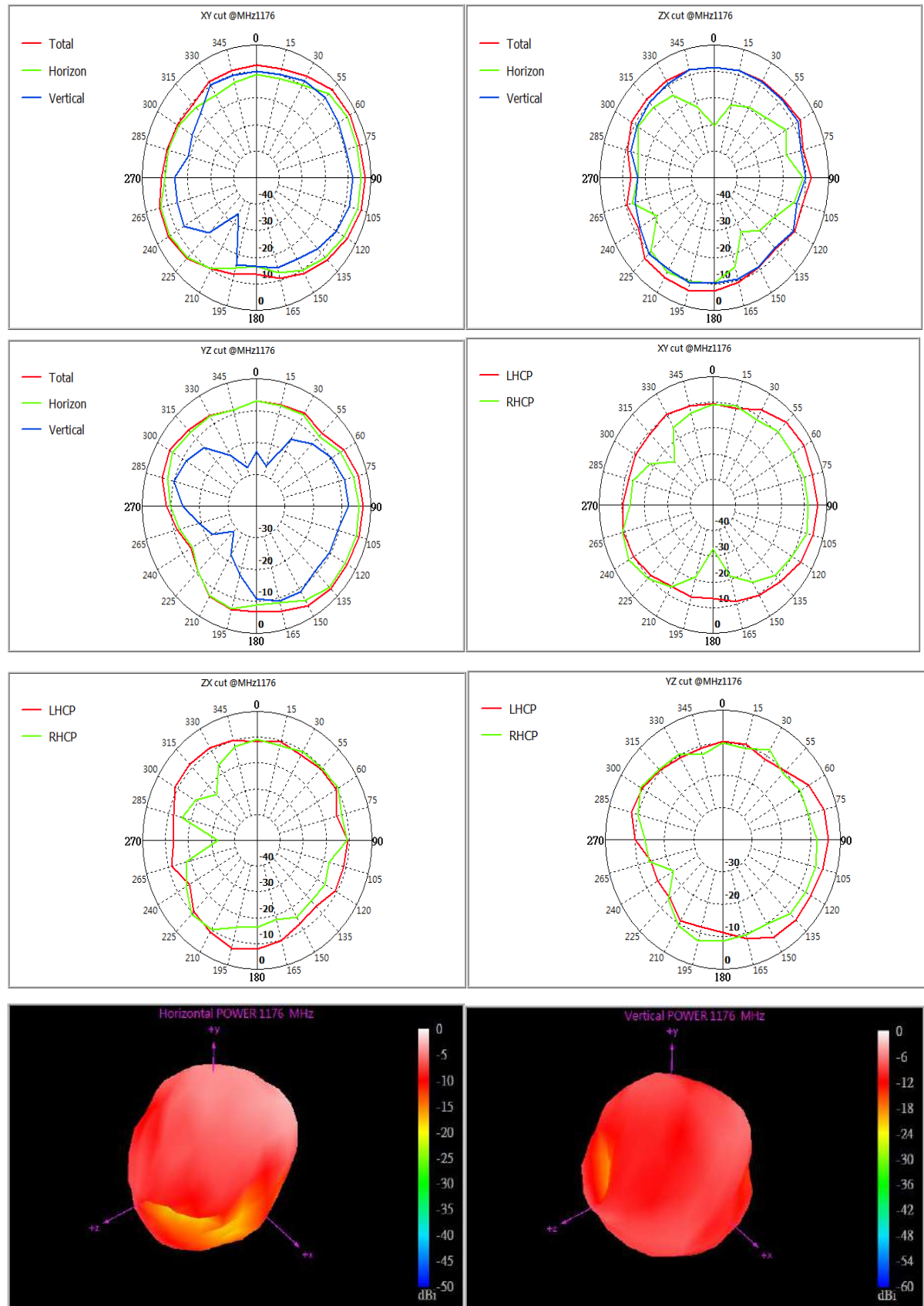


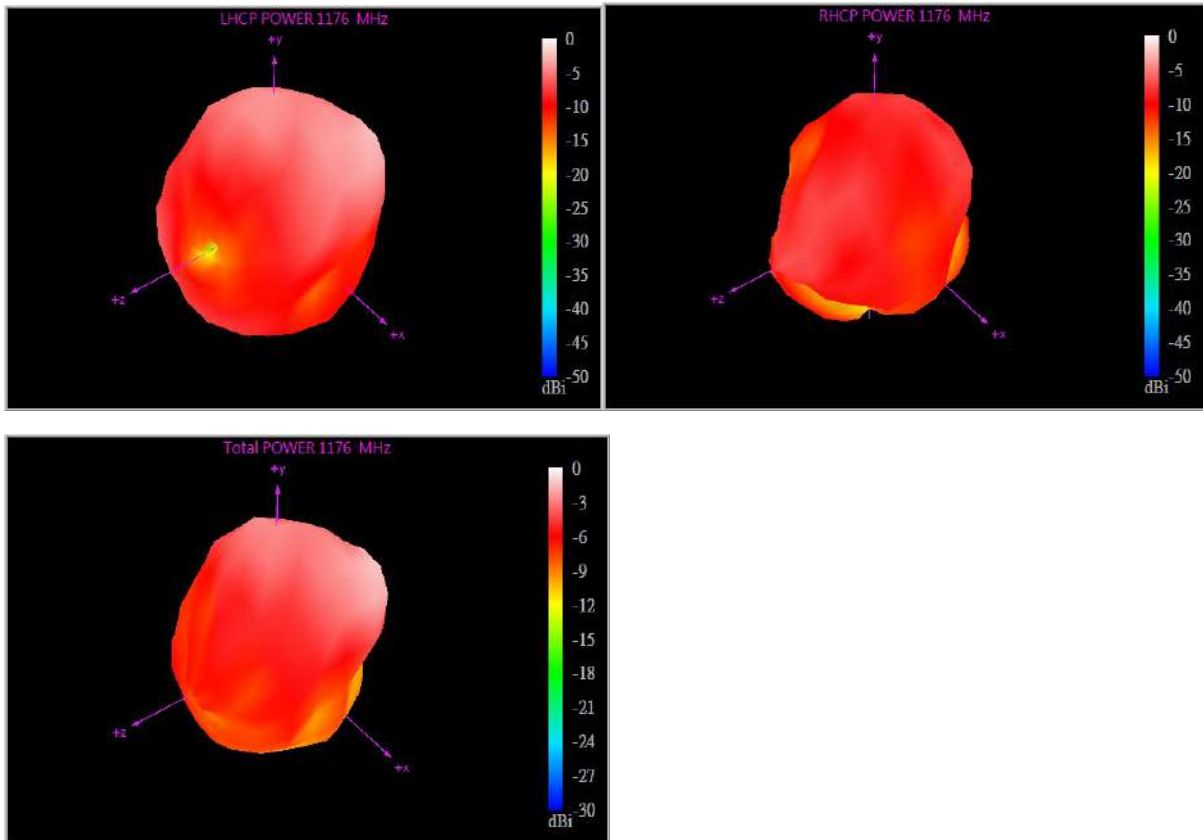
### 3D Total

| Frequency<br>(MHz) | Upper Hem.<br>PRP (dBm) | Lower HEM.<br>PRP (dBm) | Efficiency<br>(dB) | Efficiency<br>(%) | Gain (dBi) | Tot.<br>Rad.Pwr.<br>(dBm) |
|--------------------|-------------------------|-------------------------|--------------------|-------------------|------------|---------------------------|
| 1176 MHz           | -10.12                  | -9.82                   | -6.96              | 20.14             | -1.22      | -6.96                     |
| 1185 MHz           | -7.98                   | -7.55                   | -4.75              | 33.50             | 1.00       | -4.75                     |
| 1190 MHz           | -7.25                   | -6.78                   | -4.00              | 39.84             | 1.27       | -4.00                     |
| 1202 MHz           | -7.42                   | -6.73                   | -4.05              | 39.35             | 1.54       | -4.05                     |
| 1207 MHz           | -8.01                   | -7.15                   | -4.55              | 35.09             | 1.44       | -4.55                     |
| 1210 MHz           | -8.59                   | -7.69                   | -5.11              | 30.85             | 1.12       | -5.11                     |
| 1215 MHz           | -9.52                   | -8.62                   | -6.03              | 24.92             | -0.27      | -6.03                     |
| 1220 MHz           | -9.94                   | -8.96                   | -6.41              | 22.84             | -0.59      | -6.41                     |
| 1227 MHz           | -11.51                  | -10.33                  | -7.87              | 16.34             | -2.05      | -7.87                     |
| 1230 MHz           | -12.16                  | -11.04                  | -8.55              | 13.96             | -2.34      | -8.55                     |
| 1240 MHz           | -13.51                  | -12.25                  | -9.82              | 10.41             | -3.67      | -9.82                     |
| 1242 MHz           | -13.44                  | -12.22                  | -9.78              | 10.53             | -3.81      | -9.78                     |
| 1245 MHz           | -13.45                  | -12.11                  | -9.72              | 10.67             | -3.46      | -9.72                     |
| 1248 MHz           | -13.82                  | -12.51                  | -10.11             | 9.76              | -3.84      | -10.11                    |
| 1545 MHz           | -7.83                   | -6.28                   | -3.97              | 40.04             | 2.57       | -3.97                     |

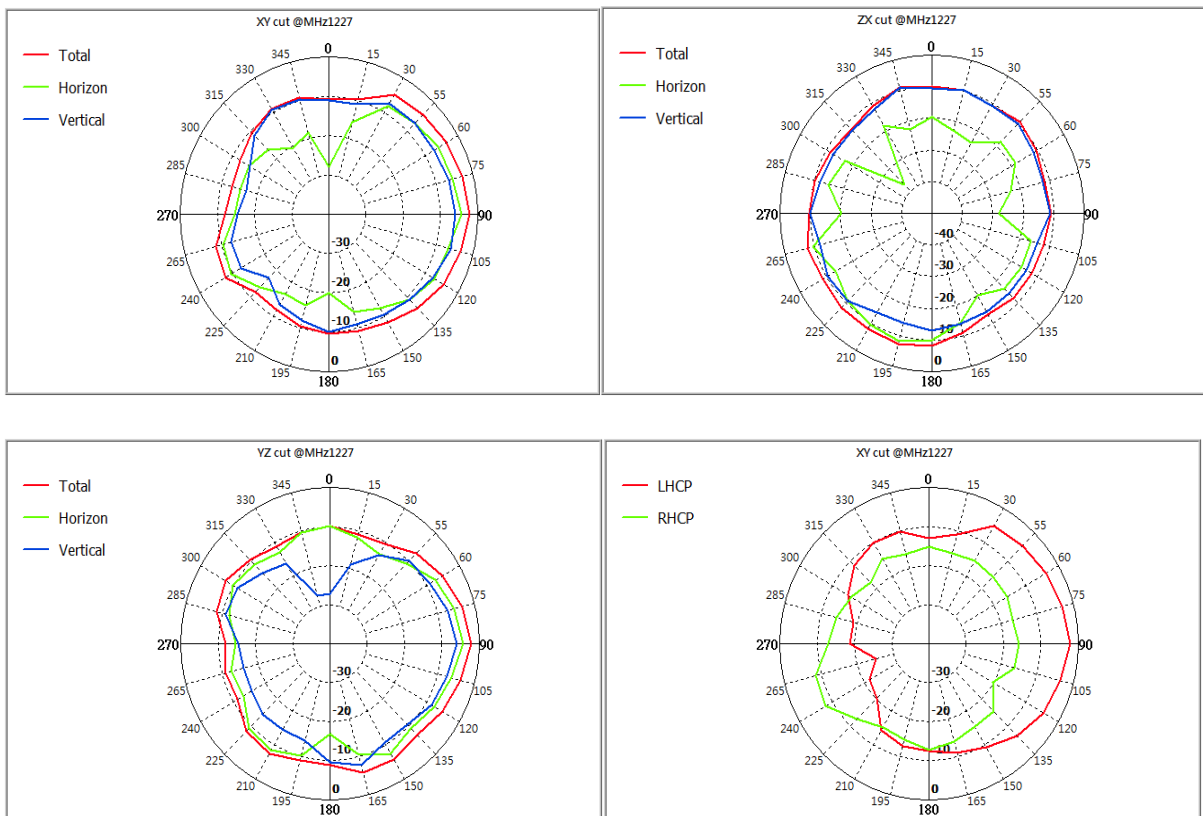
|          |       |       |       |       |      |       |
|----------|-------|-------|-------|-------|------|-------|
| 1559 MHz | -7.67 | -6.23 | -3.88 | 40.92 | 2.70 | -3.88 |
| 1561 MHz | -7.65 | -6.19 | -3.85 | 41.23 | 2.34 | -3.85 |
| 1575 MHz | -8.27 | -6.87 | -4.51 | 35.43 | 2.20 | -4.51 |
| 1602 MHz | -7.78 | -6.53 | -4.10 | 35.49 | 2.68 | -8.10 |
| 1610 MHz | -7.49 | -6.38 | -4.89 | 32.92 | 2.71 | -8.89 |

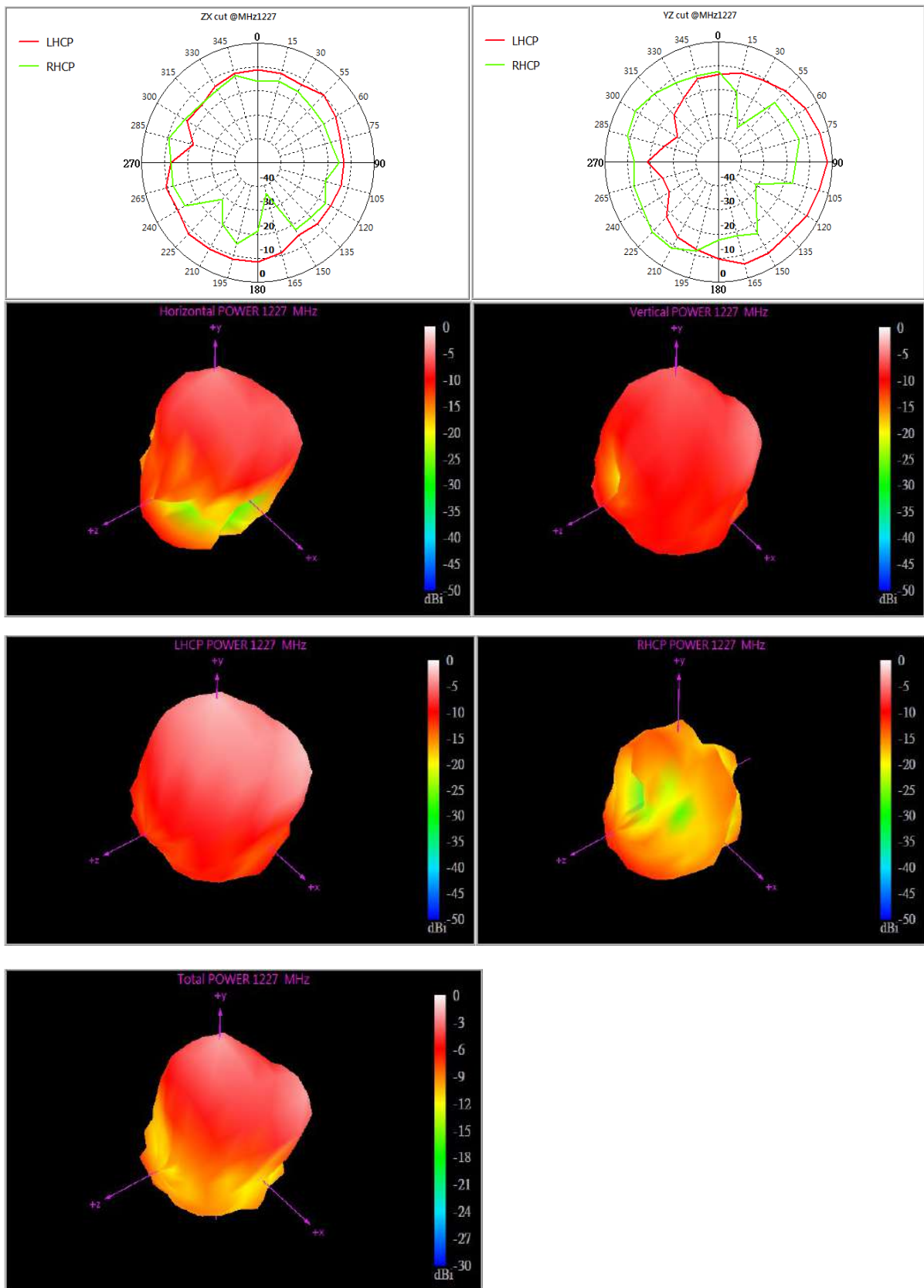
1176MHz :



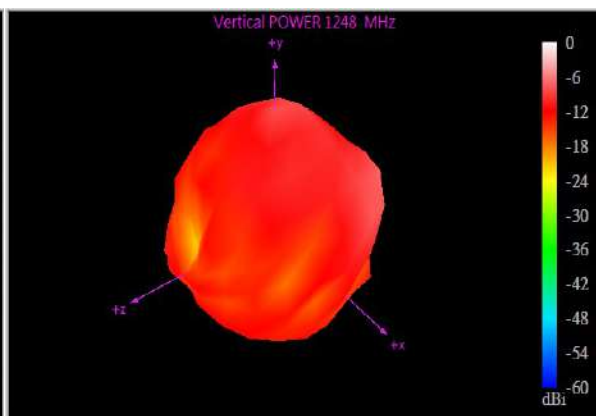
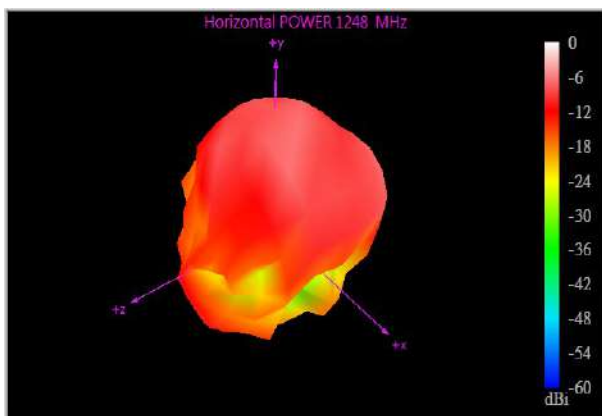
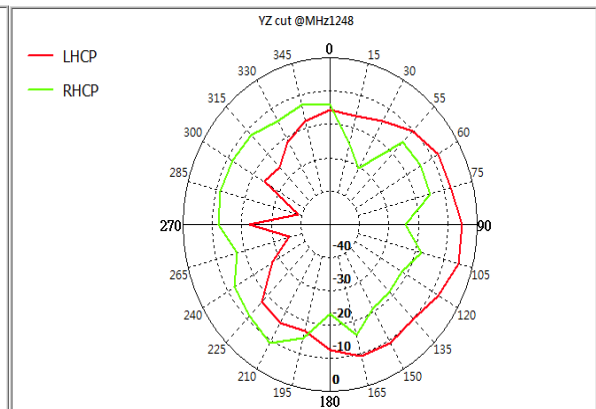
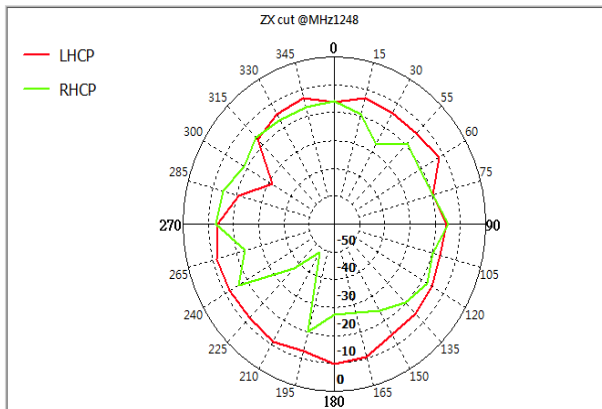
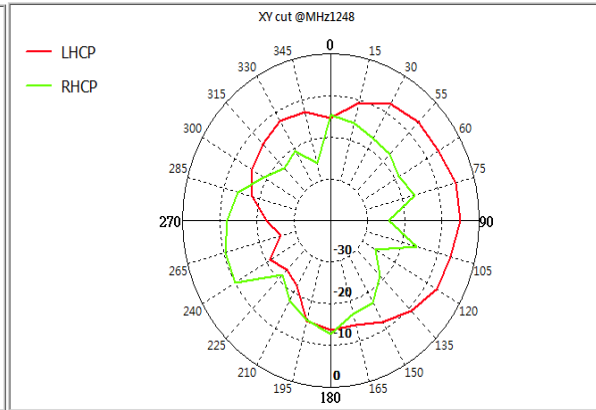
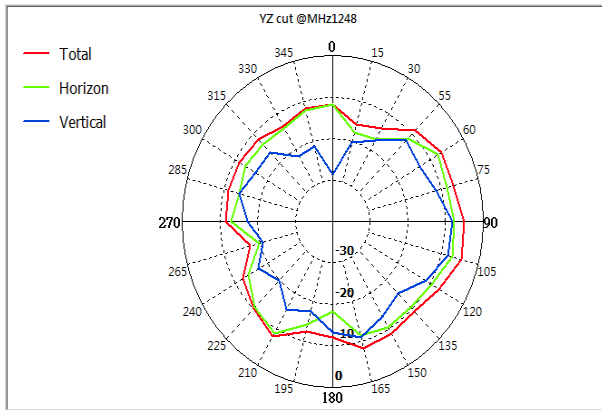
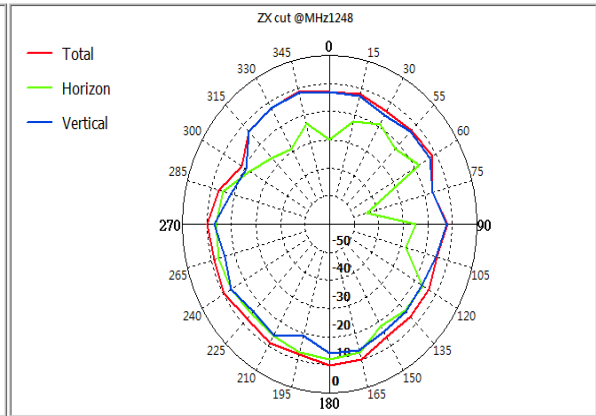
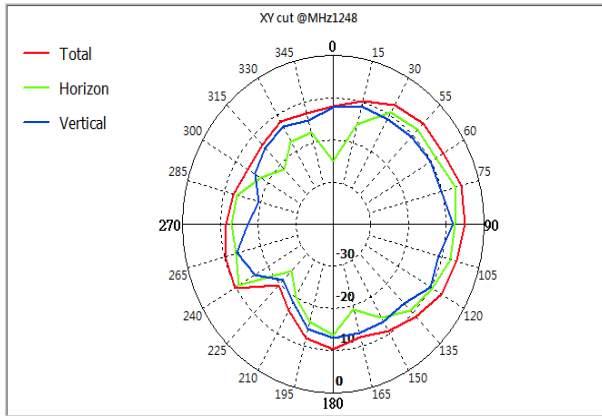


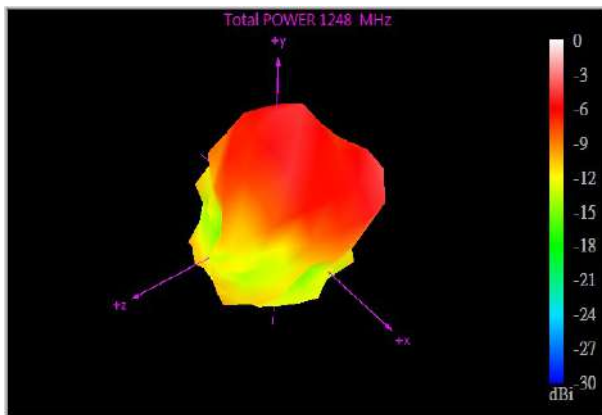
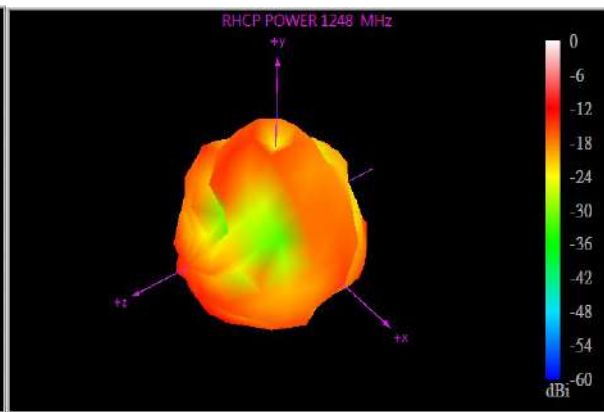
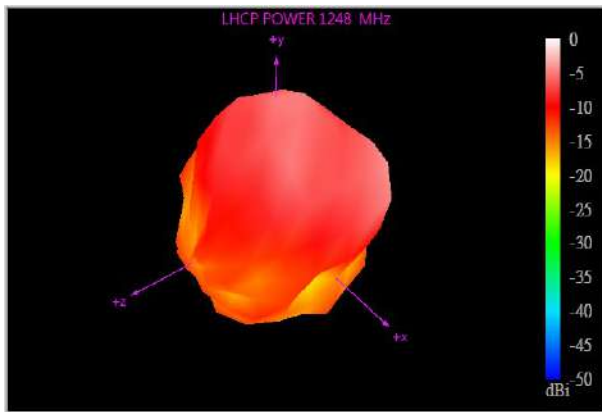
1227Mhz:



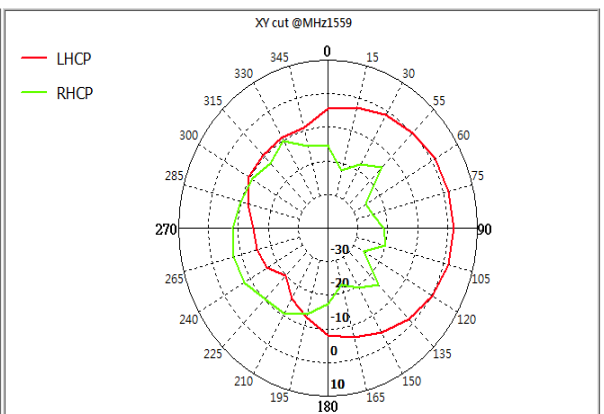
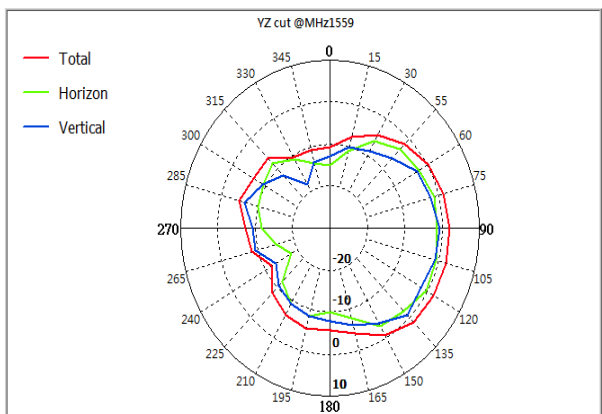
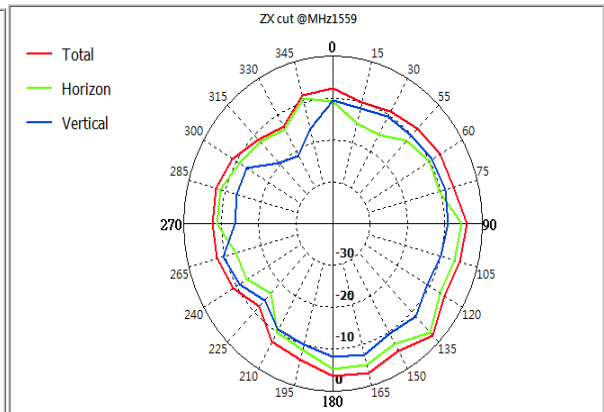
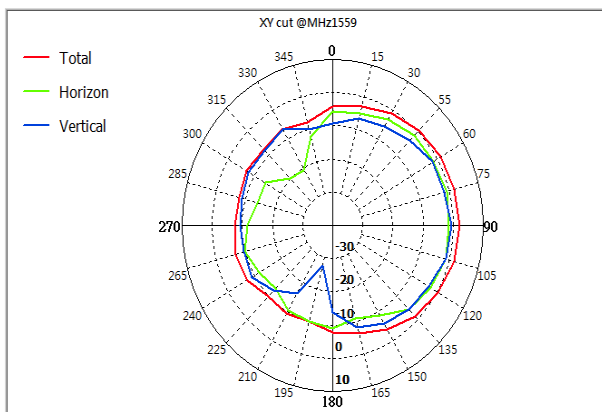


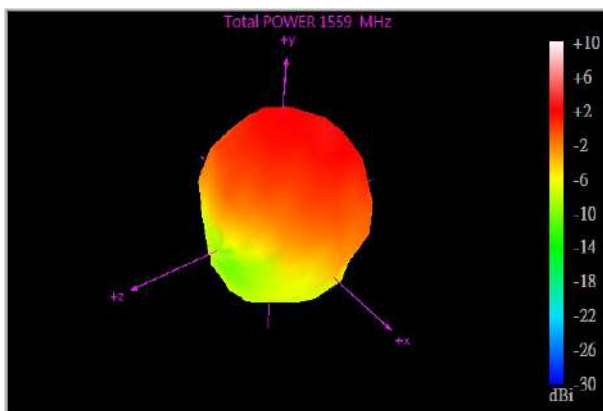
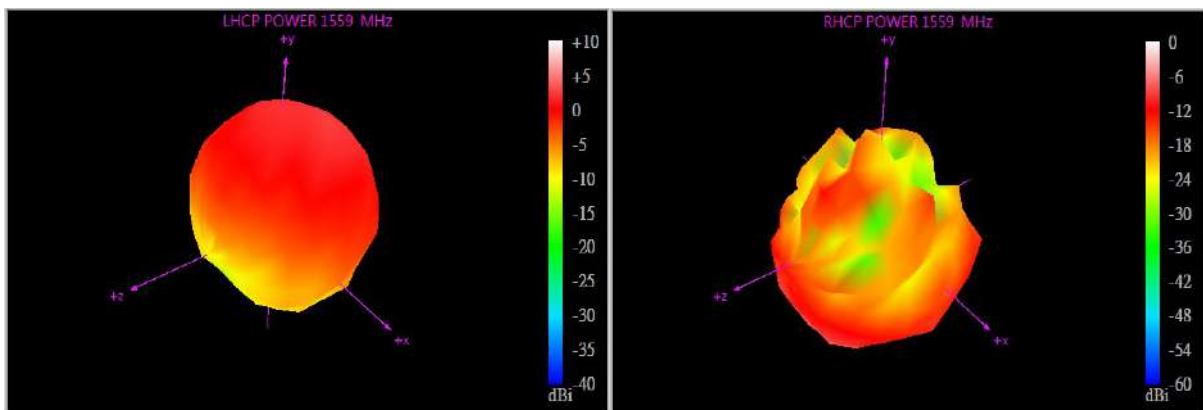
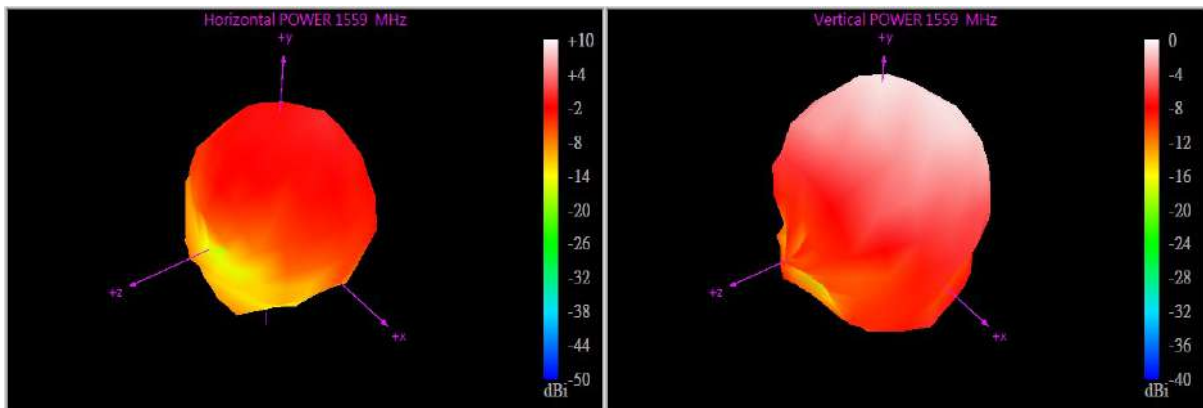
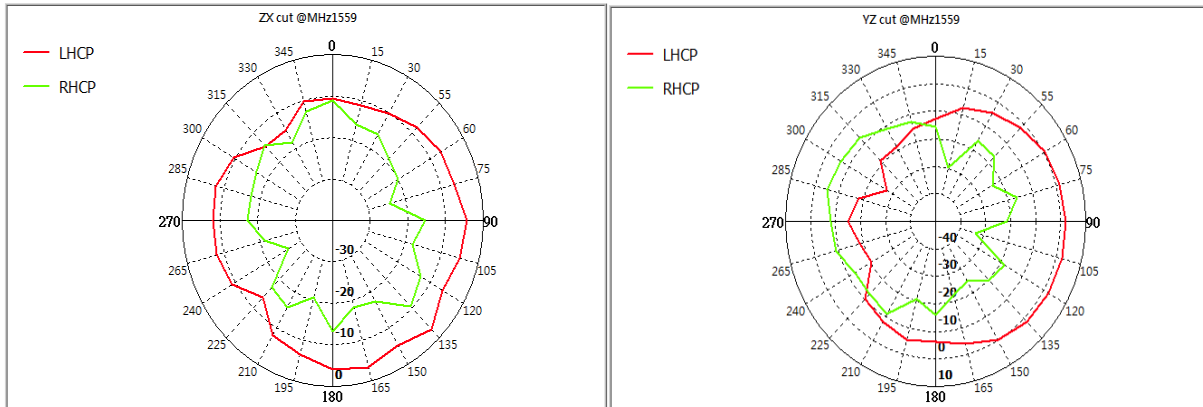
1248Mhz:



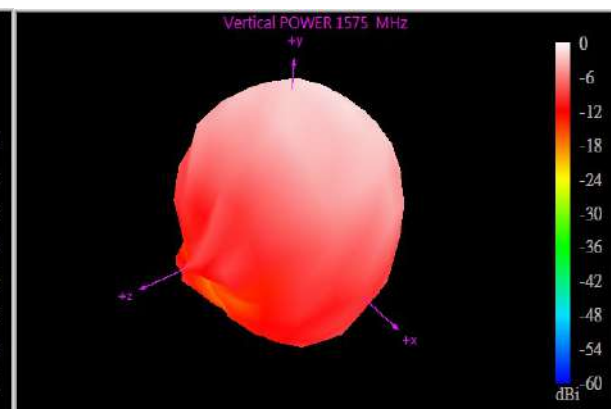
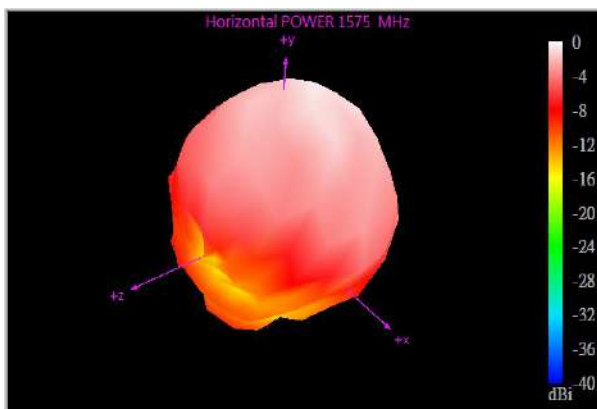
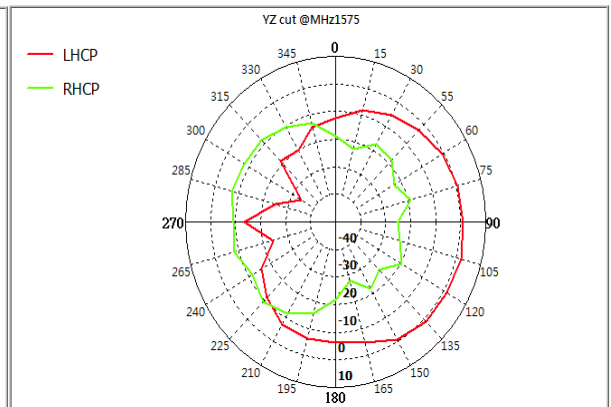
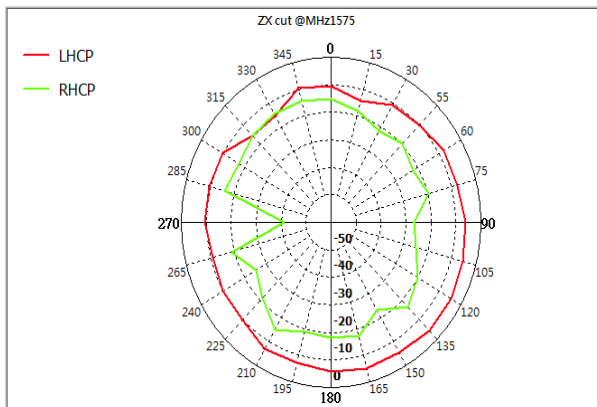
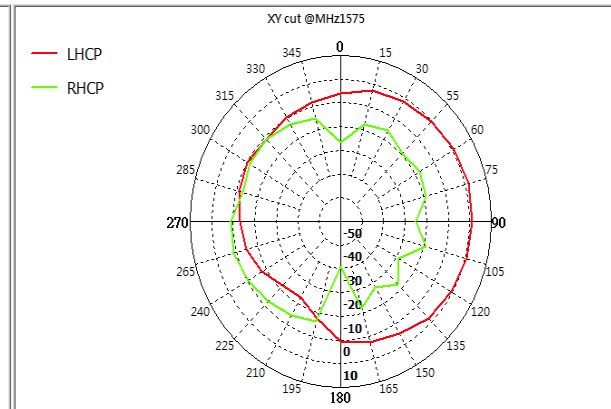
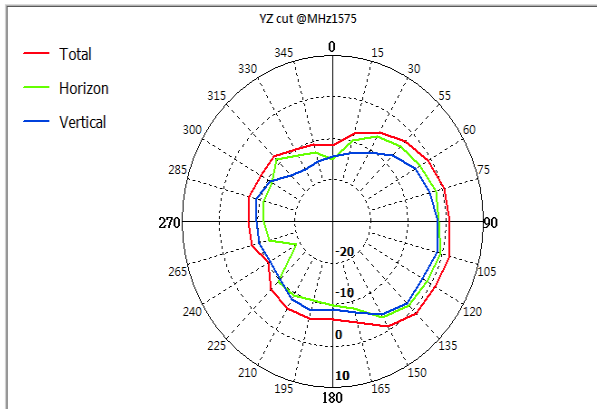
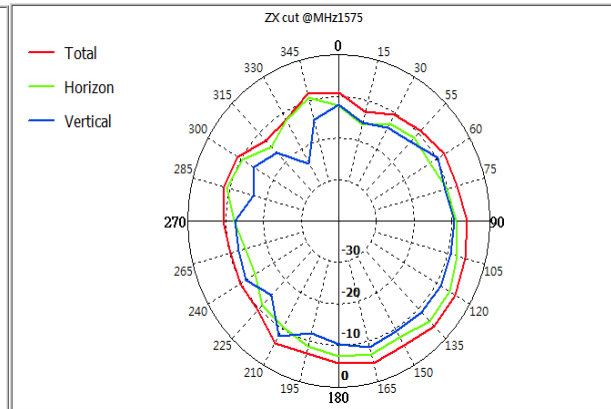
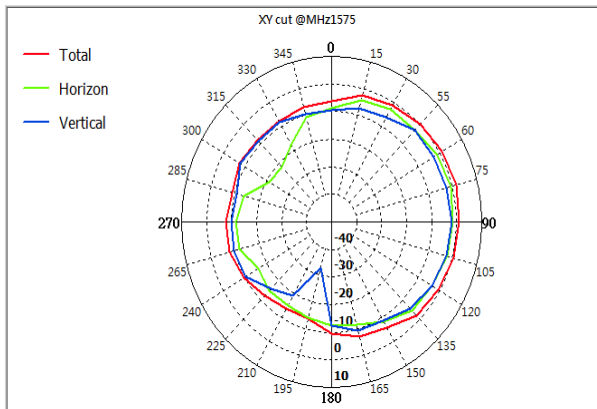


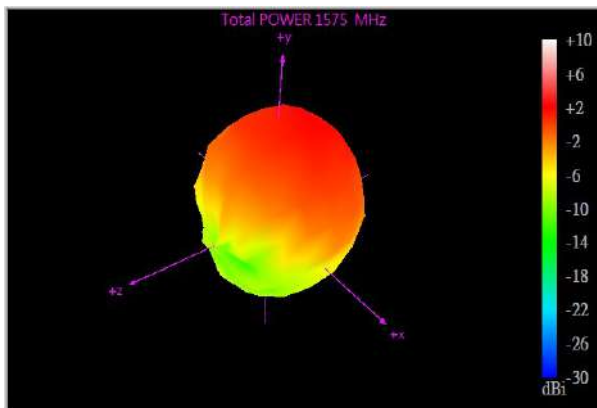
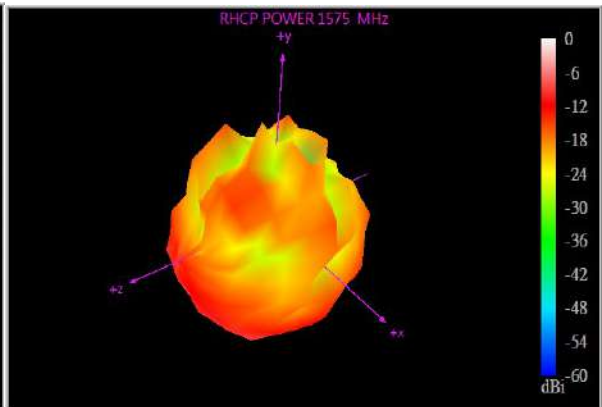
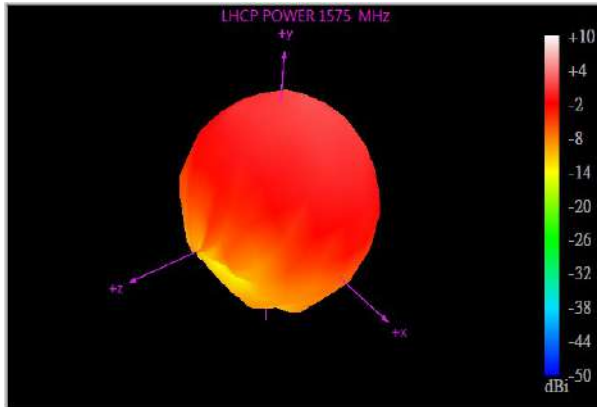
1559Mhz:





1575Mhz:





1602Mhz:

