



## Antenna Specification

Antenna Manufacturer Company Name: Wieson Technologies Co., LTD.

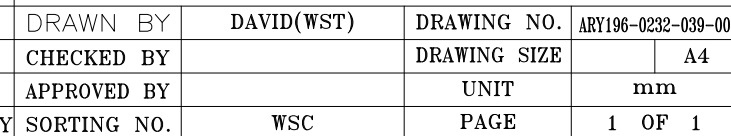
Antenna Manufacturer Company Address: 15F, No.237, Sec.1, Datong Rd., Xizhi Dist., New Taipei City 221006, Taiwan

Antenna Model: ARY196-0232-039-00

Antenna Type: PCB antenna

**RoHS Compliant**

| REV | DATE     | DESCRIPTION | ECN NO. | NAME  |
|-----|----------|-------------|---------|-------|
| A1  | 24.05.31 | PROPOSAL    |         | DAVID |





# WIESON TECHNOLOGIES CO.,LTD

## **BILL OF MATERIAL**

| Cust.    |                                                           | 永洋 | TITLE         | RF ANTENNA           |        |     |          |        |
|----------|-----------------------------------------------------------|----|---------------|----------------------|--------|-----|----------|--------|
| Cust.P/N |                                                           |    | WIESON<br>P/N | ARY196-0232-039-00   |        |     |          |        |
| NO.      | DESCRIPTION                                               |    | SUPPLIER      | SUPPLIER<br>PART NO. | UL NO. | AVL | QUANTITY | REMARK |
| 1        | FR-4 , SIZE: 151 X 24 X 0.8MM SOLDER MASK<br>COLOR :GREEN |    | /             | PCB                  | /      |     | 1PCS     |        |
| 2        | 1.37MM LOW LOSS COAXIAL CABLE , FEP BLACK<br>JACKET       |    | /             | /CABLE               | /      |     | MM       |        |
| 3        | MHF I PLUG FOR 1.37MM CABLE , GOLD<br>PLATED              |    | /             | Connector/           | /      |     | 1PCS     |        |
| 4        | G9000 , SIZE: 150.2 X 23.2MM                              |    | /             | TAPE/                |        |     | 1PCS     |        |
| 5        | COLOR : RED , L : 10mm                                    |    |               | H.S TUBE             |        |     | 1PCS     |        |
| 6        | ACETATE TAPE                                              |    |               | TAPE                 |        |     | 1PCS     |        |
| 7        |                                                           |    |               |                      |        |     |          |        |
| 8        |                                                           |    |               |                      |        |     |          |        |

APPROVED BY: ROX

CHECKD BY: JOSN

DESIGNED BY: REASON

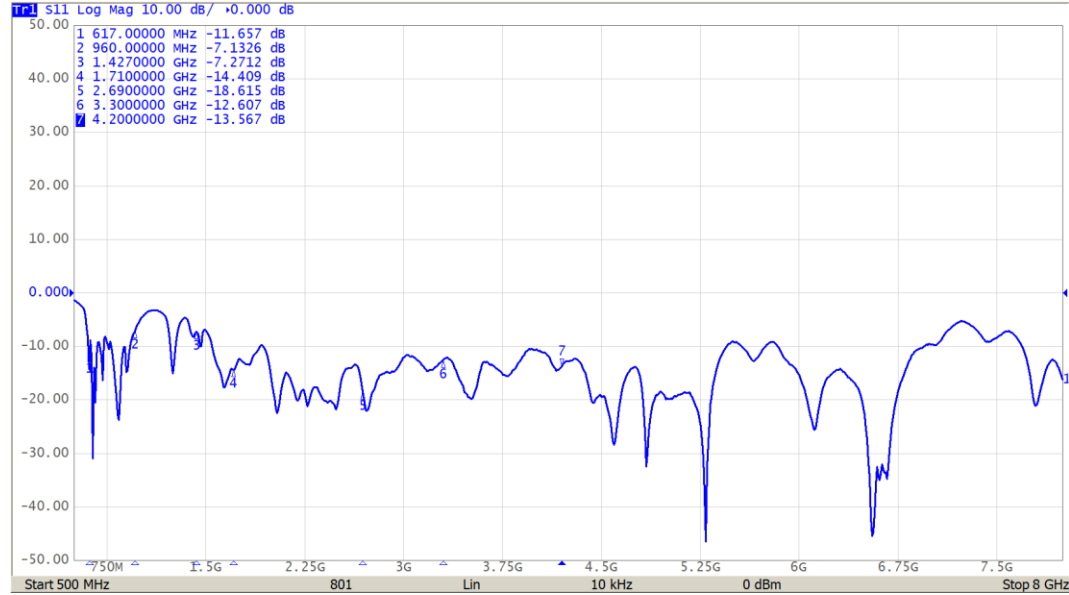
A2

# Antenna specification

| Item                     | Specification    | Item                     | Specification    | Item                     | Specification    |
|--------------------------|------------------|--------------------------|------------------|--------------------------|------------------|
| Operating Frequency(GHz) | 0.617-0.96       | Operating Frequency(GHz) | 1.427-2.69       | Operating Frequency(GHz) | 3.3-4.2          |
| Bandwidth                | 343 MHz (Min.)   | Bandwidth                | 1263 MHz (Min.)  | Bandwidth                | 900 MHz (Min.)   |
| Return Loss              | 7 dB (Min.)      | Return Loss              | 6 dB (Min.)      | Return Loss              | 10 dB (Min.)     |
| Polarization             | Linear           | Polarization             | Linear           | Polarization             | Linear           |
| Azimuth Bandwidth        | Omni-directional | Azimuth Bandwidth        | Omni-directional | Azimuth Bandwidth        | Omni-directional |
| Impedance                | 50Ω              | Impedance                | 50Ω              | Impedance                | 50Ω              |
| Material                 | PCB              | Material                 | PCB              | Material                 | PCB              |
| Connector                | MHF I            | Connector                | MHF I            | Connector                | MHF I            |
| Cable type               | O.D. 1.37 L/L    | Cable type               | O.D. 1.37 L/L    | Cable type               | O.D. 1.37 L/L    |
| Maximum Power            | 1W               | Maximum Power            | 1W               | Maximum Power            | 1W               |
| V.S.W.R                  | 2.5 : 1          | V.S.W.R                  | 3 : 1            | V.S.W.R                  | 2 : 1            |
| Radiation                | Omni directional | Radiation                | Omni directional | Radiation                | Omni directional |
| Efficiency               | 49%(Max.)        | Efficiency               | 57%(Max.)        | Efficiency               | 63%(Max.)        |
| Operating Temperature    | -10~60°C         | Operating Temperature    | -10~60°C         | Operating Temperature    | -10~60°C         |
| Storage temp             | -10~70°C         | Storage temp             | -10~70°C         | Storage temp             | -10~70°C         |

# S-Parameter

A2



| Freq(MHz) | 617   | 960  | 1427 | 1710  | 2690  | 3300  | 4200  |
|-----------|-------|------|------|-------|-------|-------|-------|
| S11(dB)   | -11.7 | -7.1 | -7.3 | -14.4 | -18.6 | -12.6 | -13.6 |

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# 3D Gain Total

| Freq(GHz)    | Peak Gain(dBi) | 3D-avg Gain(dBi) | Efficiency(%) |
|--------------|----------------|------------------|---------------|
| <b>0.617</b> | 1.9            | -3.9             | 41            |
| <b>0.658</b> | 1.7            | -3.7             | 43            |
| <b>0.698</b> | 2.2            | -4.0             | 40            |
| <b>0.703</b> | 2.6            | -4.0             | 40            |
| <b>0.74</b>  | 3.7            | -3.7             | 42            |
| <b>0.78</b>  | 2.7            | -3.6             | 44            |
| <b>0.84</b>  | 2.3            | -3.9             | 40            |
| <b>0.88</b>  | 3.6            | -3.8             | 41            |
| <b>0.894</b> | 3.4            | -3.9             | 41            |
| <b>0.92</b>  | 3.9            | -3.7             | 43            |
| <b>0.96</b>  | 4.7            | -3.1             | 49            |
| <b>1.427</b> | 2.4            | -4.0             | 40            |

| Freq(GHz)    | Peak Gain(dBi) | 3D-avg Gain(dBi) | Efficiency(%) |
|--------------|----------------|------------------|---------------|
| <b>1.452</b> | 3.1            | -3.9             | 41            |
| <b>1.47</b>  | 1.5            | -3.6             | 44            |
| <b>1.496</b> | 2.6            | -3.2             | 48            |
| <b>1.517</b> | 2.0            | -3.6             | 44            |
| <b>1.71</b>  | 2.8            | -2.9             | 52            |
| <b>1.76</b>  | 2.6            | -2.8             | 53            |
| <b>1.81</b>  | 2.3            | -3.0             | 50            |
| <b>1.88</b>  | 2.1            | -3.6             | 43            |
| <b>1.91</b>  | 2.2            | -4.0             | 40            |
| <b>1.96</b>  | 3.2            | -3.7             | 43            |
| <b>2.01</b>  | 3.3            | -3.2             | 48            |
| <b>2.06</b>  | 4.3            | -2.8             | 53            |

A2

# 3D Gain Total

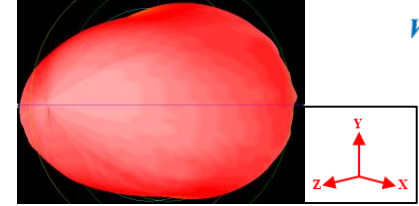
| Freq(GHz) | Peak Gain(dBi) | 3D-avg Gain(dBi) | Efficiency(%) |
|-----------|----------------|------------------|---------------|
| 2.11      | 3.2            | -3.4             | 45            |
| 2.17      | 2.8            | -2.8             | 52            |
| 2.3       | 1.1            | -2.6             | 55            |
| 2.35      | 1.0            | -2.6             | 55            |
| 2.4       | 0.9            | -2.9             | 51            |
| 2.45      | 0.2            | -2.6             | 55            |
| 2.5       | 0.1            | -2.7             | 54            |
| 2.55      | 0.1            | -2.5             | 57            |
| 2.6       | 0.2            | -3.0             | 50            |
| 2.65      | 0.0            | -2.6             | 55            |
| 2.69      | 0.1            | -2.9             | 52            |
| 3.3       | 2.2            | -2.7             | 53            |

| Freq(GHz) | Peak Gain(dBi) | 3D-avg Gain(dBi) | Efficiency(%) |
|-----------|----------------|------------------|---------------|
| 3.4       | 0.6            | -2.7             | 54            |
| 3.5       | 0.0            | -2.8             | 53            |
| 3.6       | 0.1            | -2.7             | 54            |
| 3.7       | 0.5            | -2.8             | 53            |
| 3.8       | 0.7            | -2.4             | 57            |
| 3.9       | 0.9            | -2.0             | 63            |
| 4         | 0.5            | -2.3             | 59            |
| 4.1       | 0.0            | -2.2             | 60            |
| 4.2       | 0.5            | -2.4             | 58            |

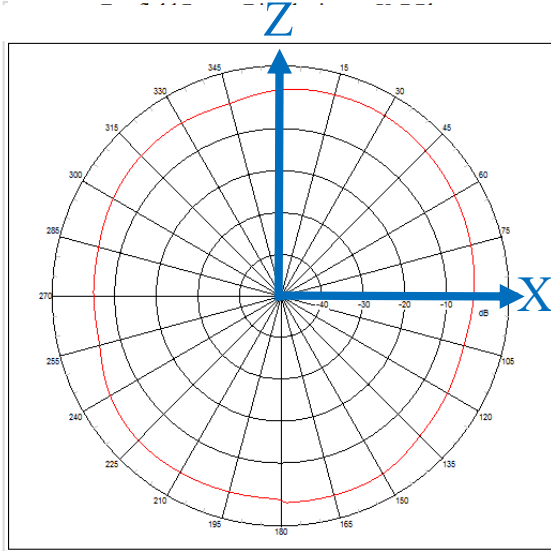
A2

Frequency : 617MHz

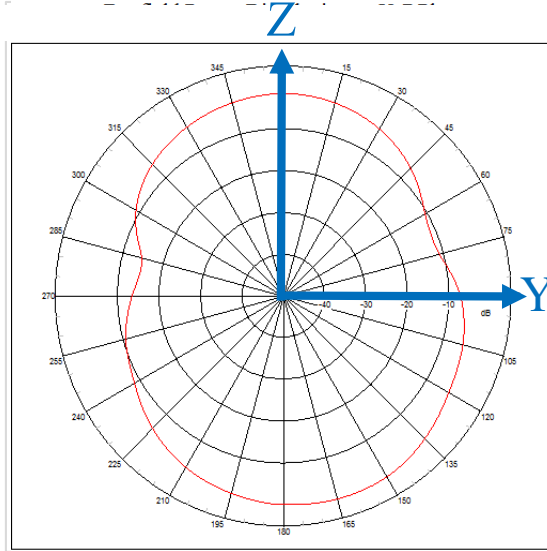
# Antenna Pattern



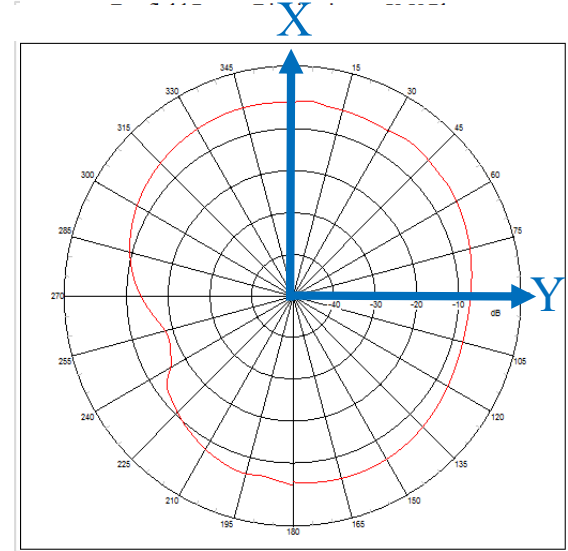
XZ-plane



YZ-plane



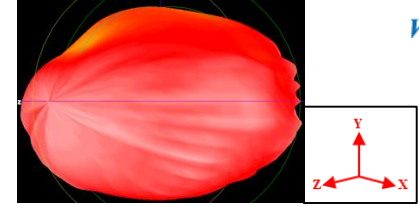
XY-plane



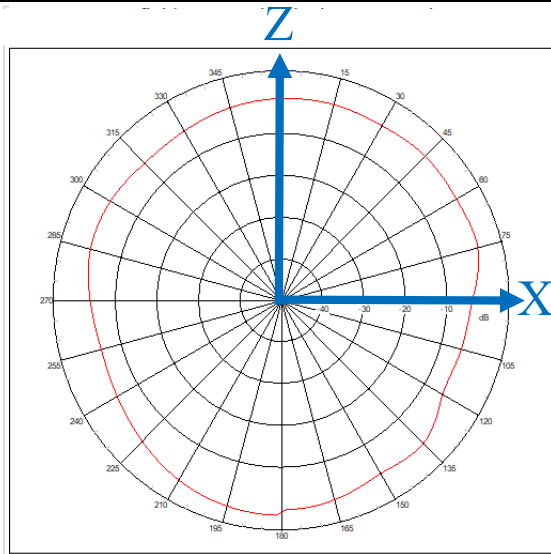
A2

Frequency : 840MHz

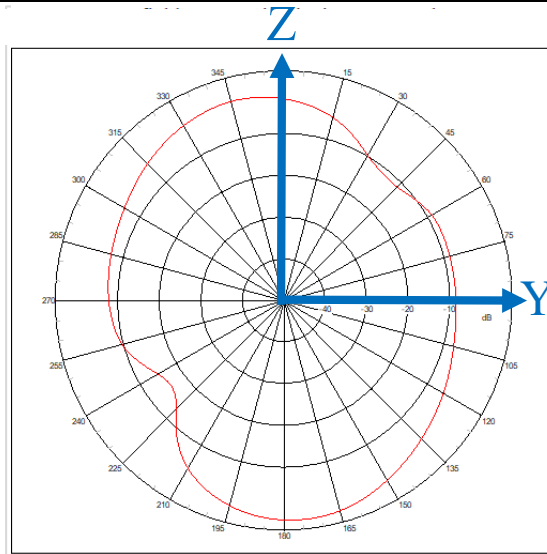
# Antenna Pattern



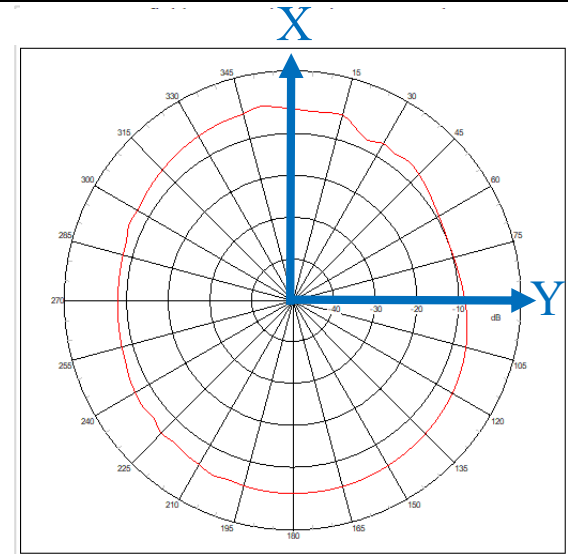
XZ-plane



YZ-plane



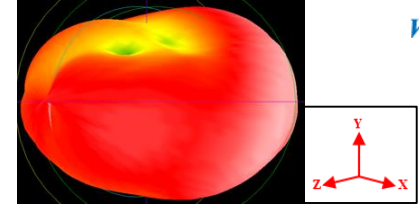
XY-plane



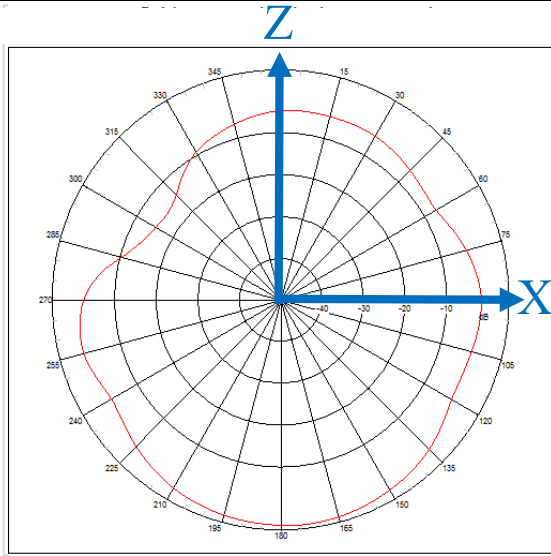
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# Antenna Pattern

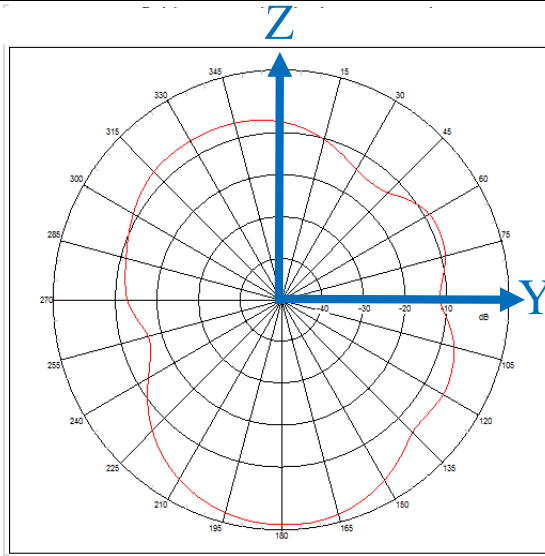
Frequency : 960MHz



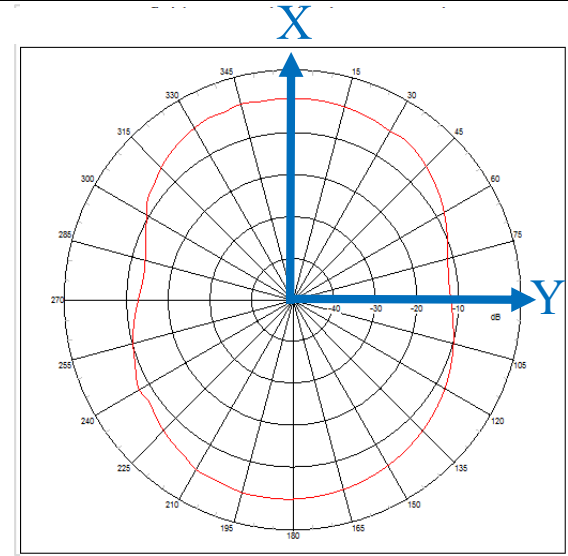
XZ-plane



YZ-plane



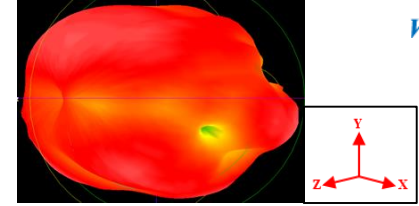
XY-plane



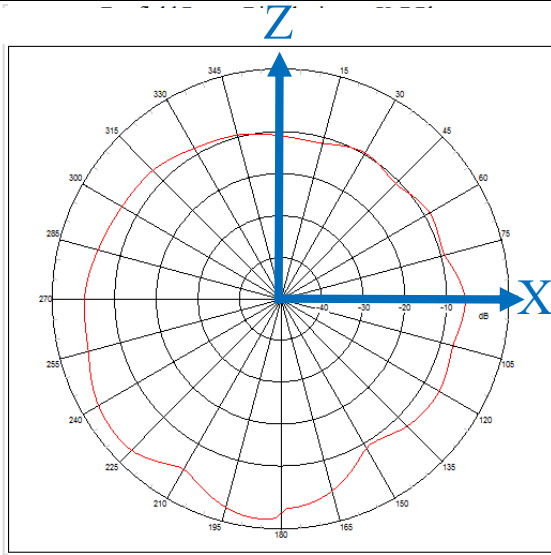
A2

Frequency : 1427MHz

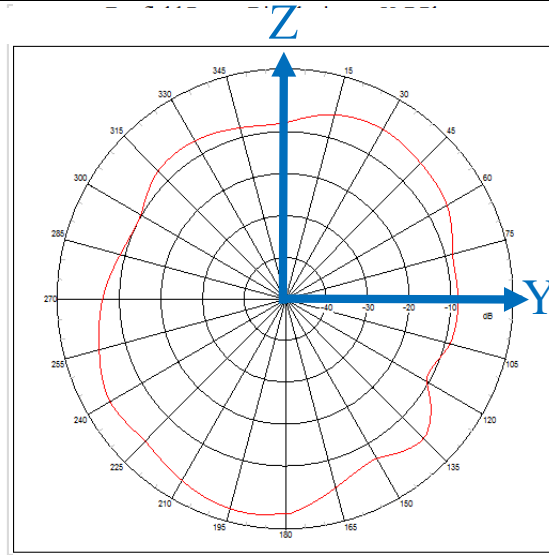
# Antenna Pattern



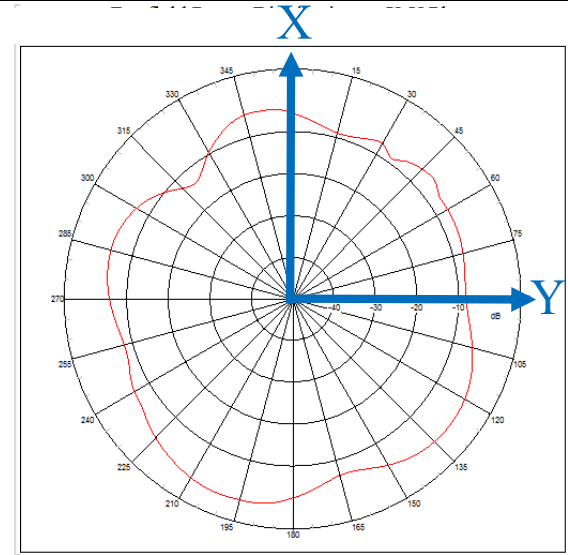
XZ-plane



YZ-plane



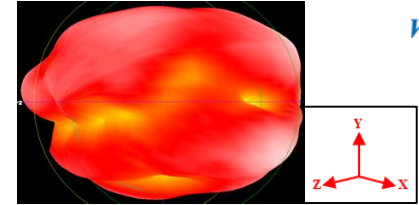
XY-plane



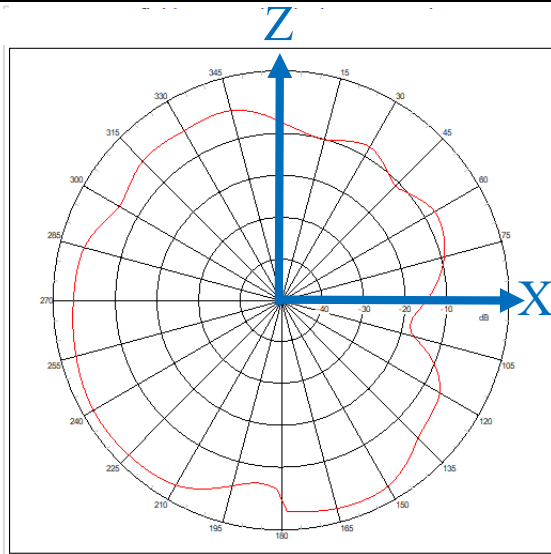
A2

# Antenna Pattern

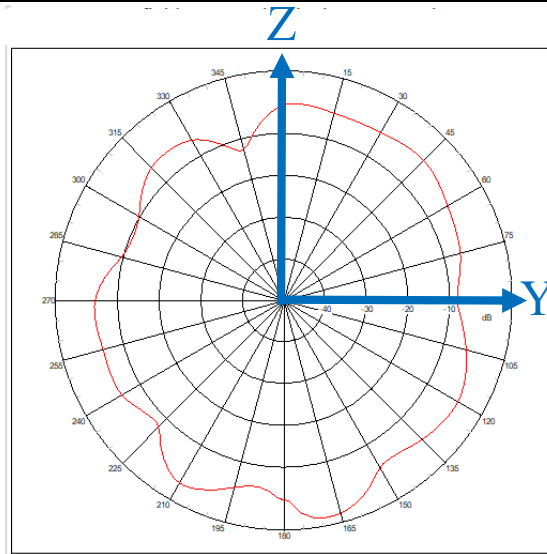
Frequency : 2170MHz



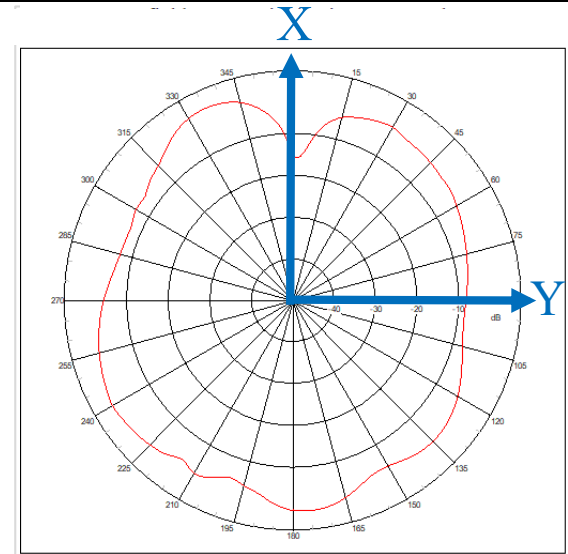
XZ-plane



YZ-plane



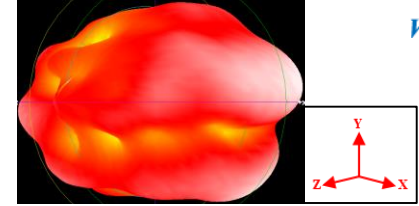
XY-plane



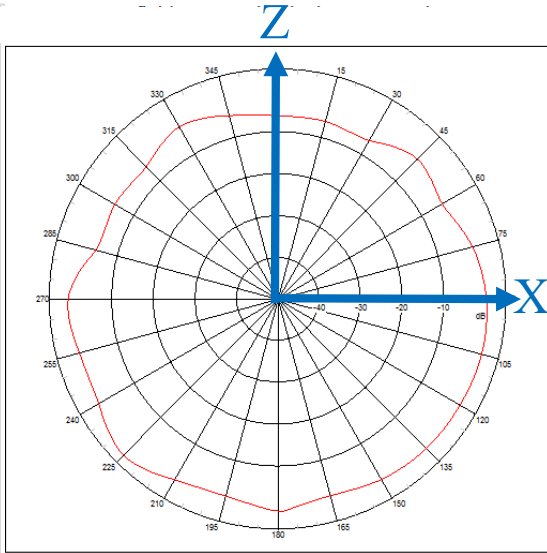
A2

Frequency : 2690MHz

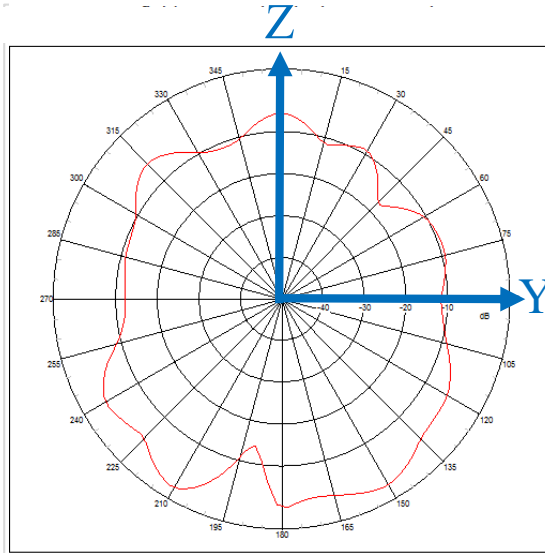
# Antenna Pattern



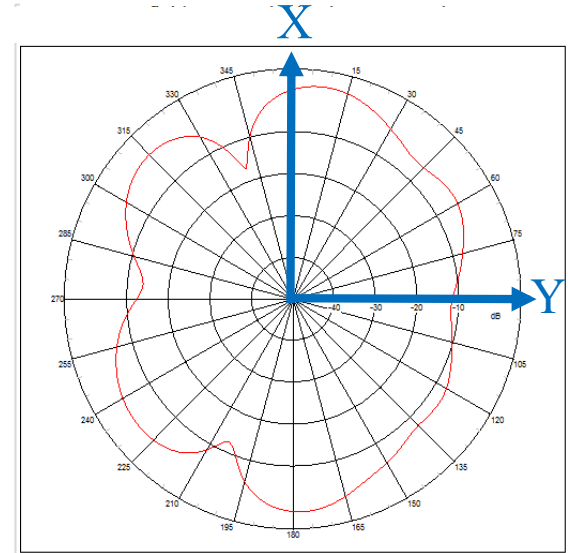
XZ-plane



YZ-plane



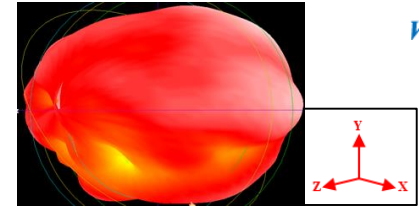
XY-plane



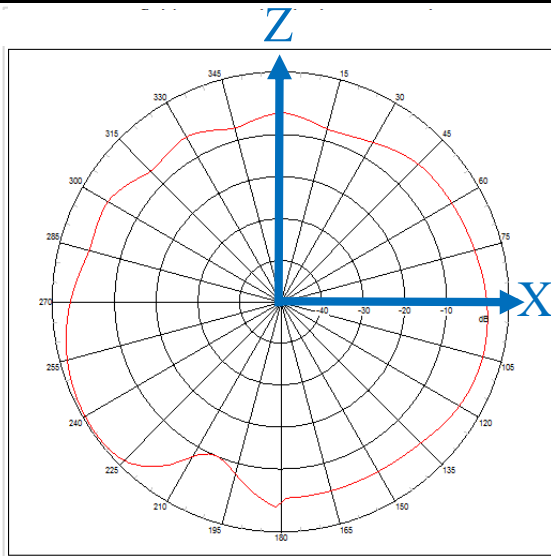
A2

Frequency : 3300MHz

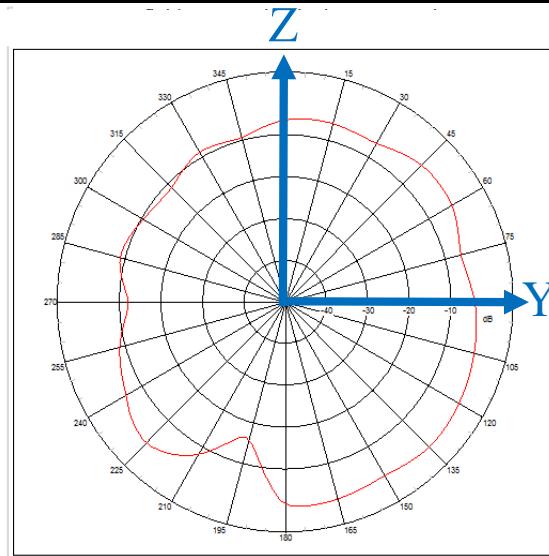
# Antenna Pattern



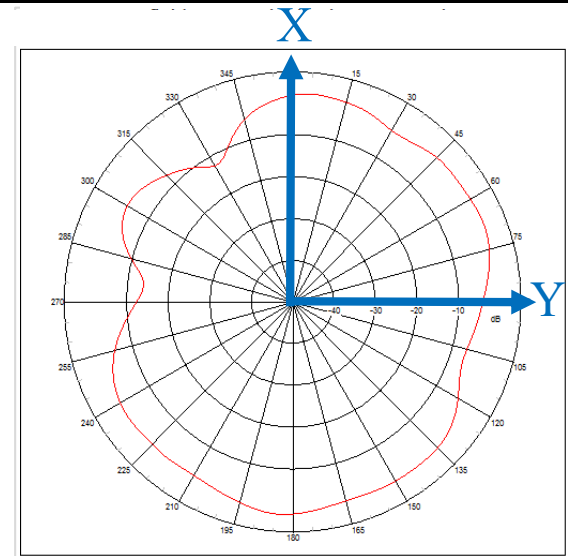
XZ-plane



YZ-plane



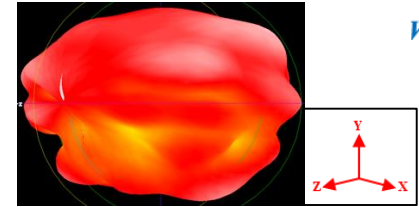
XY-plane



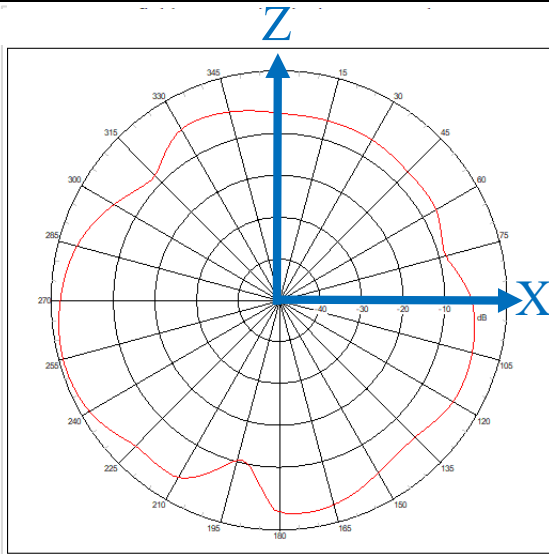
A2

# Antenna Pattern

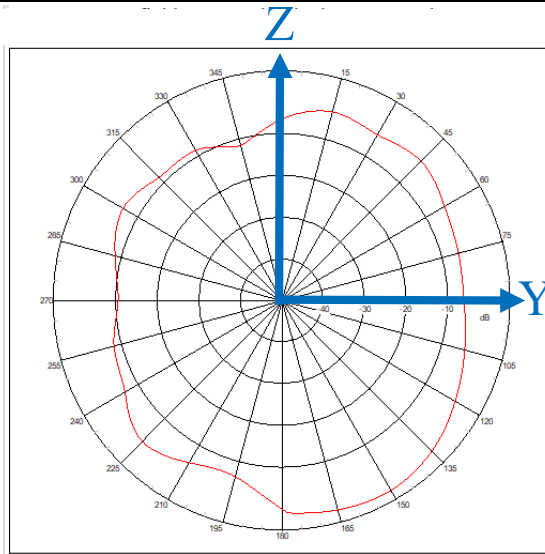
Frequency : 3800MHz



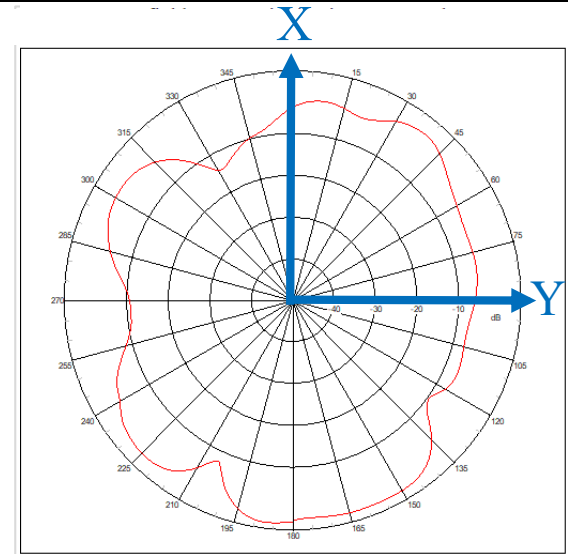
XZ-plane



YZ-plane



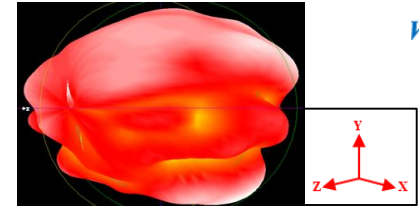
XY-plane



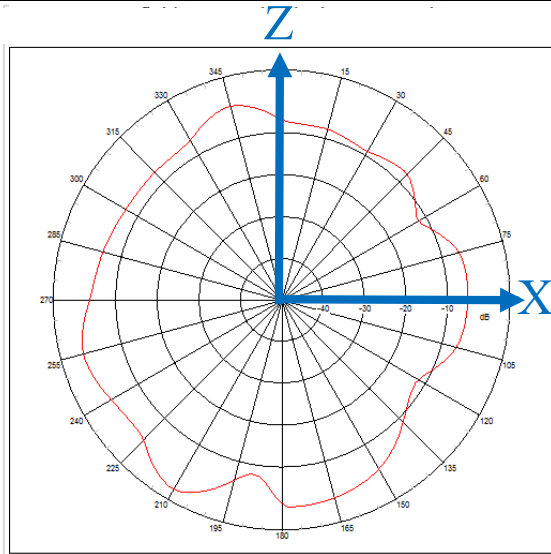
A2

Frequency : 4200MHz

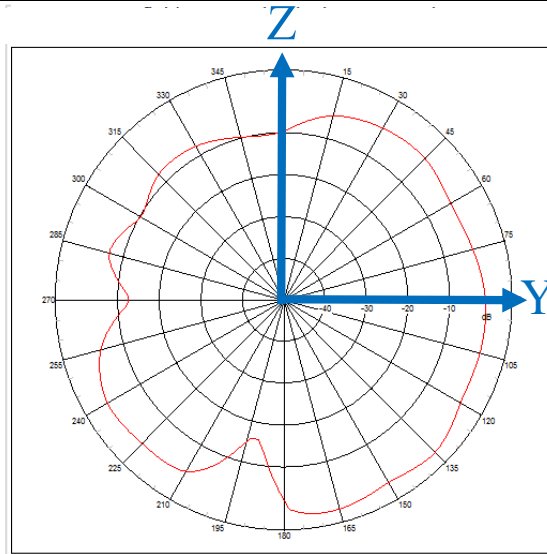
# Antenna Pattern



XZ-plane



YZ-plane



XY-plane

