

# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna



AEARBD048014-SG3



48.5 x 47.0 x 14.0 mm  
 RoHS/RoHS II Compliant  
 MSL = N/A: Not Applicable

## Features

- External Multiband GNSS antenna
- GPS/GLONASS/BEIDOU support
- Active antenna with integrated LNA
- Low VSWR across bands
- SMA connector
- Magnetic mounting

## Applications

- GPS/GLONASS applications
- IoT
- M2M
- Surveillance
- Fleet management and asset tracking
- Autonomous driving
- Telematics
- Agriculture
- Instrumentation
- Survey

## Electrical Specifications

| Parameters          | BeiDou           | GPS              | GLONASS          | Units | Notes |
|---------------------|------------------|------------------|------------------|-------|-------|
| Operating Frequency | 1561.098 ± 2.046 | 1575.420 ± 1.023 | 1602.000 ± 8.000 | MHz   |       |
| VSWR                | 2.0              |                  |                  |       | Max.  |
| Peak Gain           | 5.78             | 4.27             | 5.65             | dBi   | Typ.  |
| Impedance           | 50               |                  |                  | Ω     |       |
| Polarization        | RHCP             |                  |                  |       |       |

## LNA

| Parameters          | BeiDou           | GPS              | GLONASS          | Units | Notes       |
|---------------------|------------------|------------------|------------------|-------|-------------|
| Operating Frequency | 1561.098 ± 2.046 | 1575.420 ± 1.023 | 1602.000 ± 8.000 | MHz   |             |
| VSWR                | 2.0              |                  |                  |       | Max.        |
| Gain                | 28               |                  |                  | dB    | Typ.        |
| Noise Figure        | 1.5              |                  |                  | dB    | Typ. @ 25°C |
|                     | 1.8              |                  |                  |       | Max. @ 85°C |
| Impedance           | 50               |                  |                  | Ω     |             |
| Input Voltage (DC)  | 1.8              |                  |                  | V     | Min.        |
|                     | 3.0              |                  |                  |       | Typ.        |
|                     | 5.5              |                  |                  |       | Max.        |

# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna

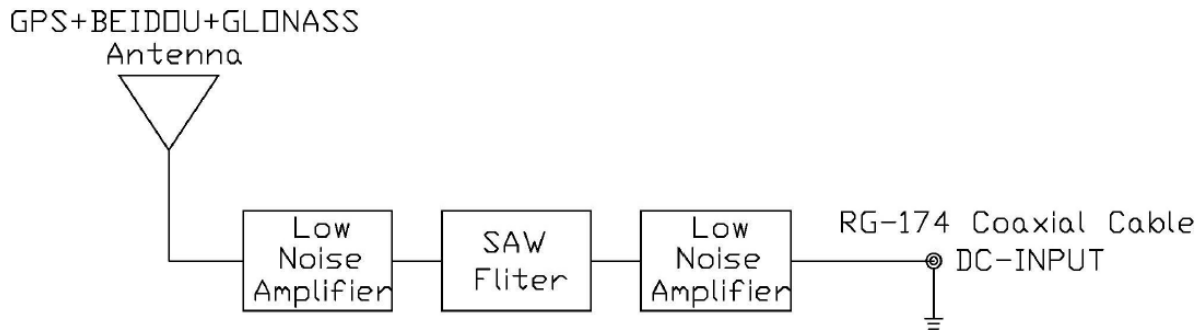


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## System Set-up



| Parameters          | BeiDou           | GPS              | GLONASS          | Units | Notes                                      |
|---------------------|------------------|------------------|------------------|-------|--|
| Operating Frequency | 1561.098 ± 2.046 | 1575.420 ± 1.023 | 1602.000 ± 8.000 | MHz   |  |
| VSWR                | 2.0              |                  |                  |       | Max.                                       |
| Gain                | 28               |                  |                  | dBic  | @Zenith - Cable Loss<br>(@ 3.0 V DC input) |
| Input Voltage (DC)  | 1.8              |                  |                  | V     | Min.                                       |
|                     | 3.0              |                  |                  |       | Typ.                                       |
|                     | 5.5              |                  |                  |       | Max.                                       |
| Impedance           | 50               |                  |                  | Ω     |  |
| Cable Loss          | -1.4             |                  |                  | dB/m  | Max.                                       |

## Mechanical Specification

| Parameters       | Description   | Notes         |
|------------------|---------------|---------------|
| RF Cable         | Ø2.7 ± 0.2 mm | Color : Black |
| Cable Length (L) | 5 ± 0.05 m    |               |
| RF Connector     | SMA - M       |               |
| Mounting Type    | Magnet        |               |

## Environmental Specification

| Parameters            | Description     |
|-----------------------|-----------------|
| Operating Temperature | -40°C to +85°C  |
| Storage Temperature   | -40°C to +105°C |
| Relative Humidity     | 40% to 95%      |

# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna

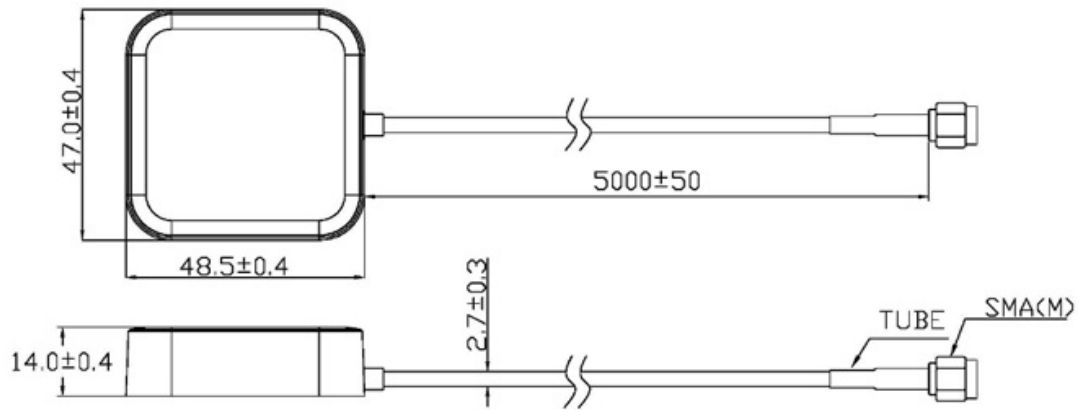


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## Product Dimensions



Unit : mm



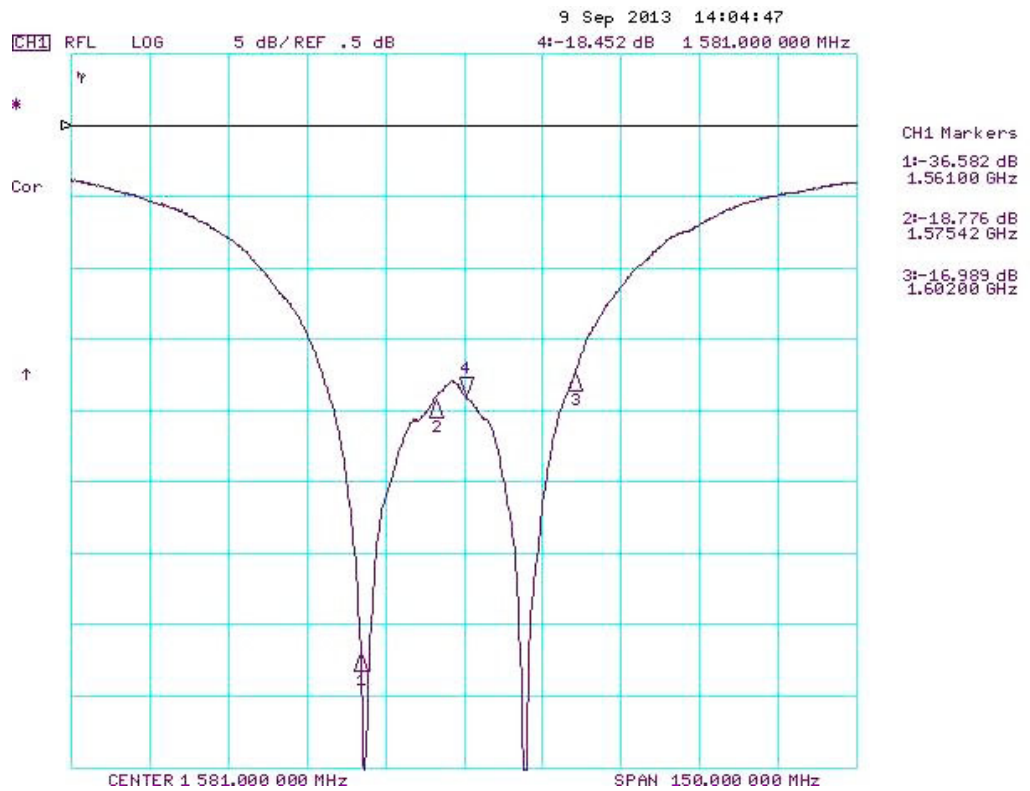
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## Return Loss and Impedance Characteristics

| Frequency (MHz) | Return Loss (dB) | Impedance ( $\Omega$ ) | VSWR |
|-----------------|------------------|------------------------|------|
| 1561            | -36.58           | 52.73 - j02.00         | 1.06 |
| 1575            | -18.77           | 44.64 + j06.58         | 1.24 |
| 1602            | -16.98           | 43.96 - j38.40         | 1.25 |



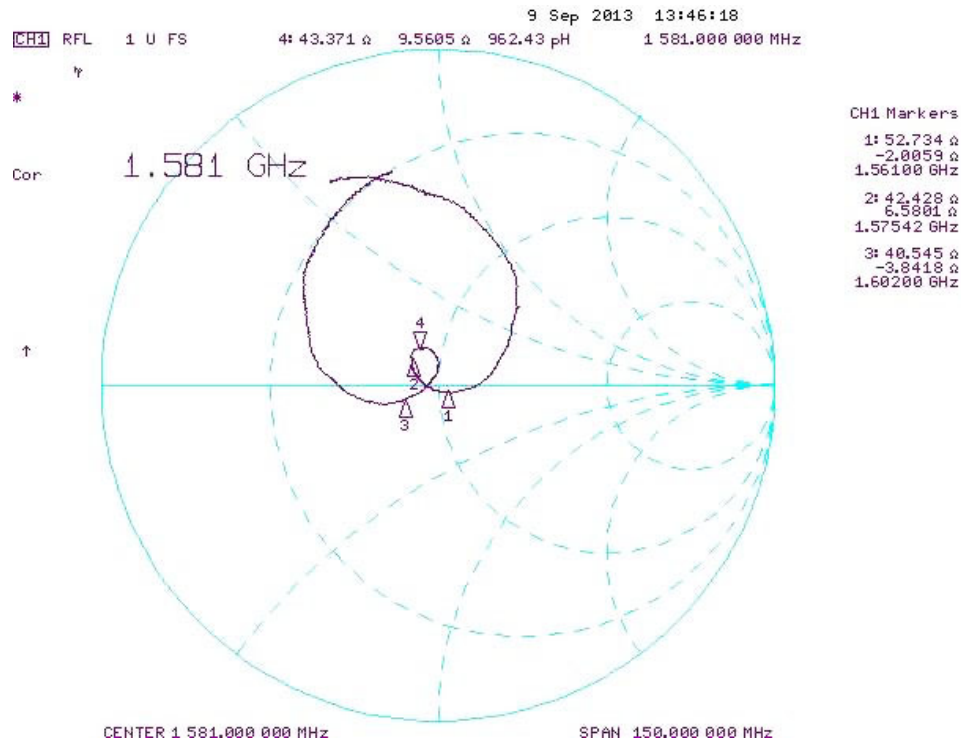


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## Return Loss and Impedance Characteristics



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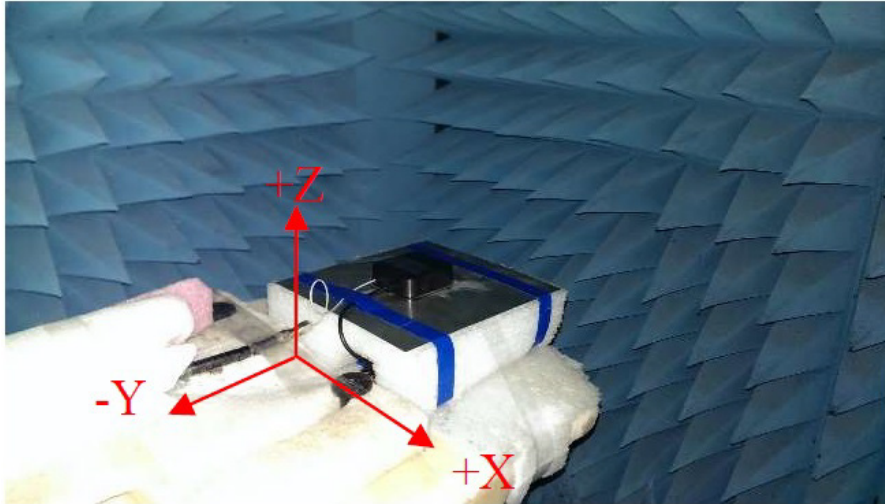
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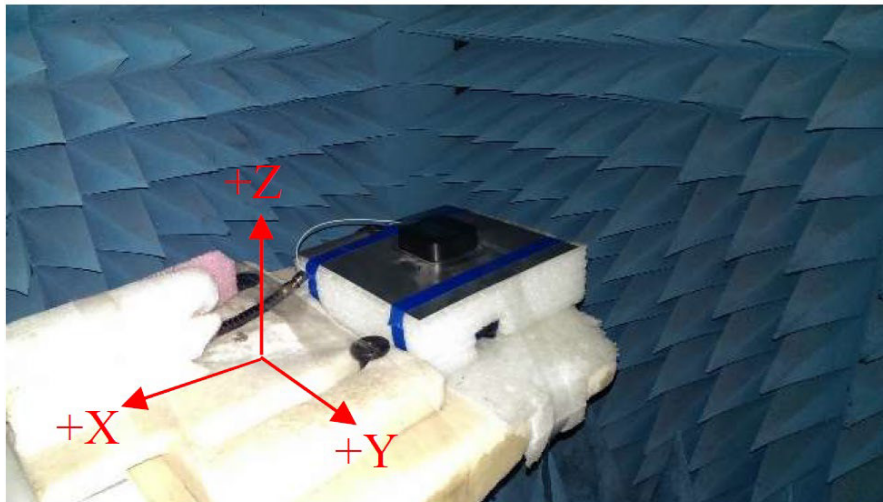
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## Radiation Pattern

XZ - Plane



YZ - Plane



# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna



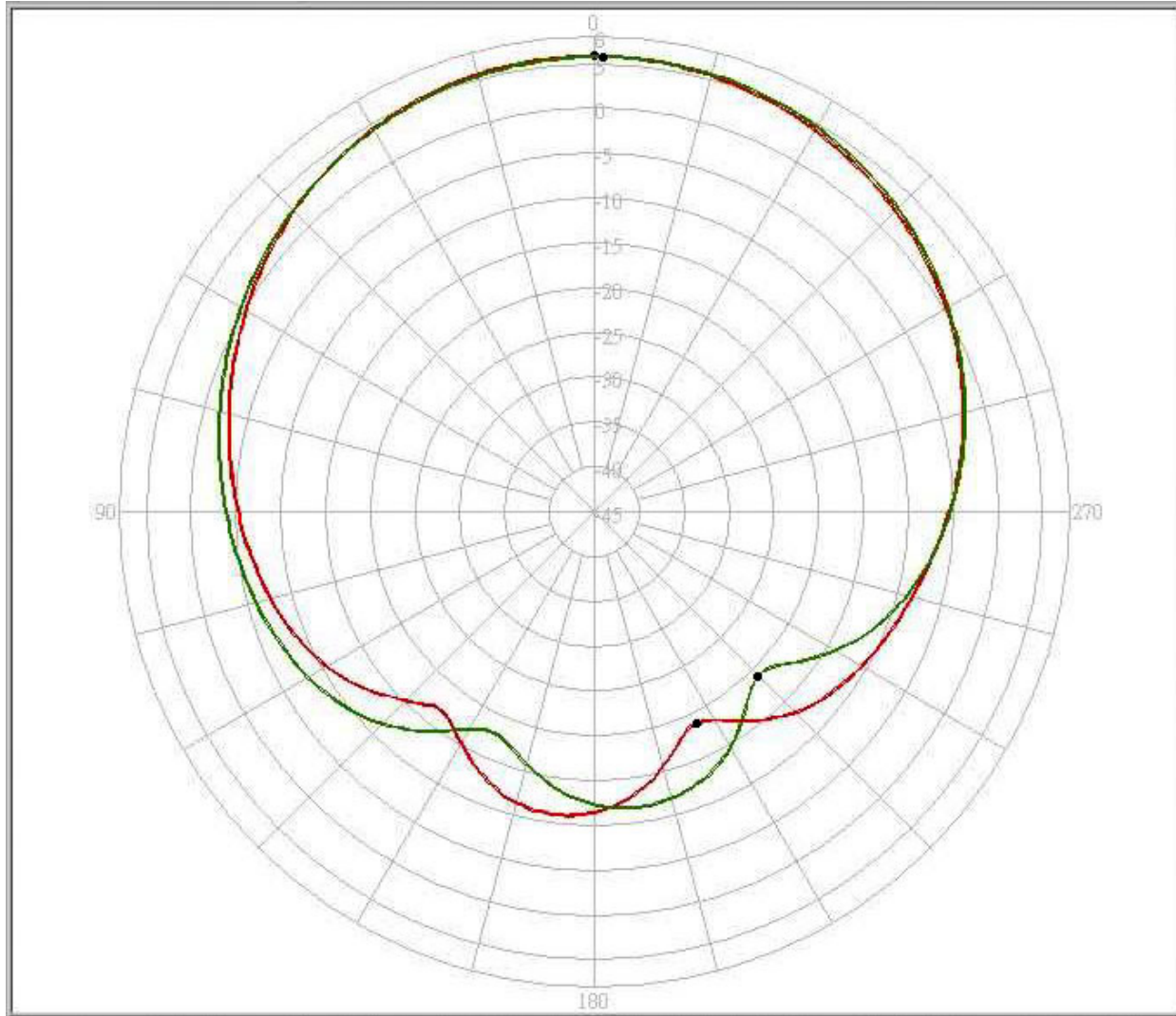
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## Radiation Pattern

BeiDou : 1561 MHz



| 1561 MHz | Peak Gain (dBi) | Zenith Gain (dBi) |
|----------|-----------------|-------------------|
| XZ       | 5.81            | 5.81              |
| YZ       | 5.78            | 5.78              |



# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna



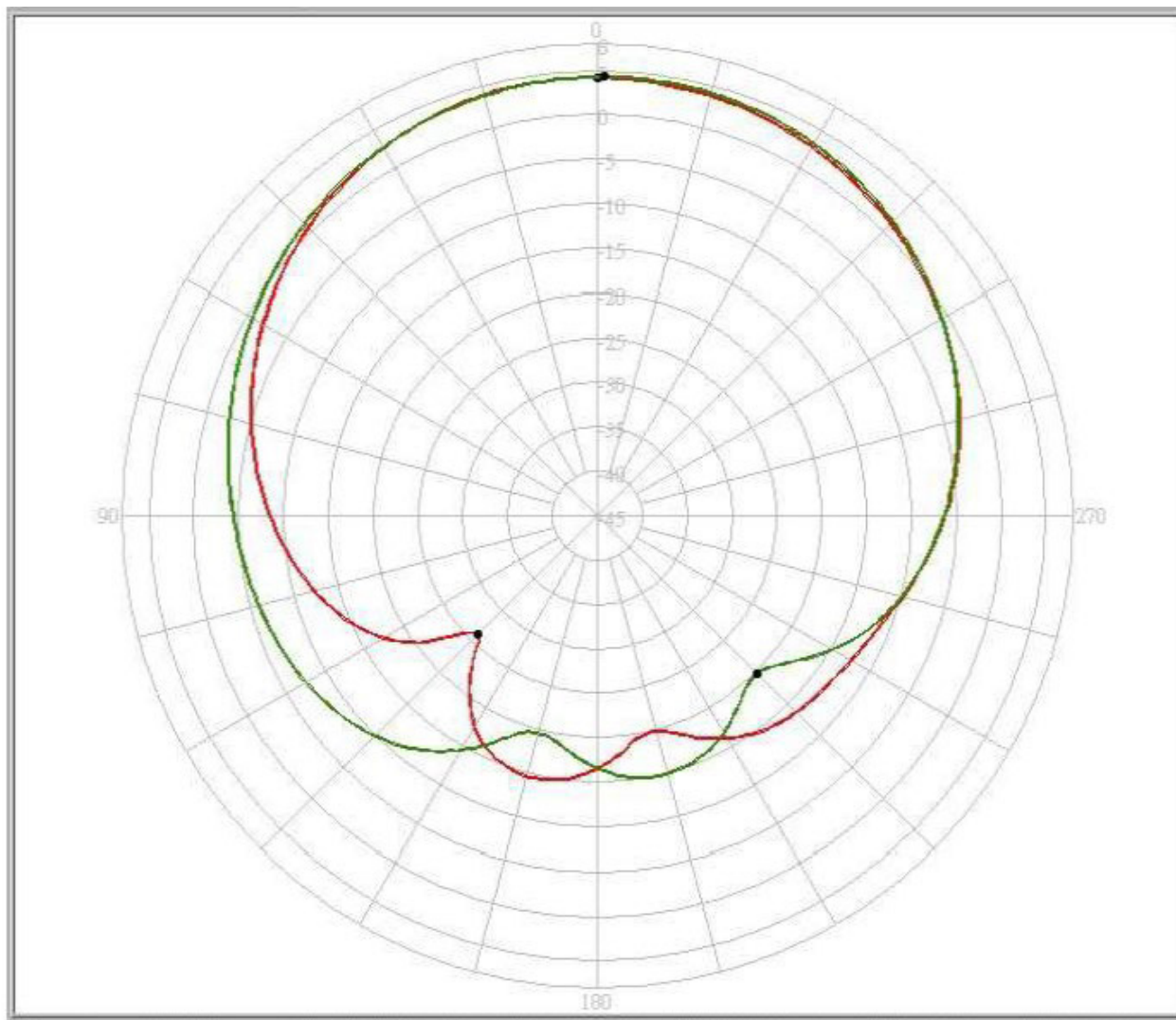
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## Radiation Pattern

GPS : 1575.42 MHz



| 1561 MHz | Peak Gain (dBi) | Zenith Gain (dBi) |
|----------|-----------------|-------------------|
| XZ       | 4.18            | 4.18              |
| YZ       | 4.27            | 4.18              |



# Multiband Active GNSS (GPS/GLONASS/BEIDOU) External Antenna



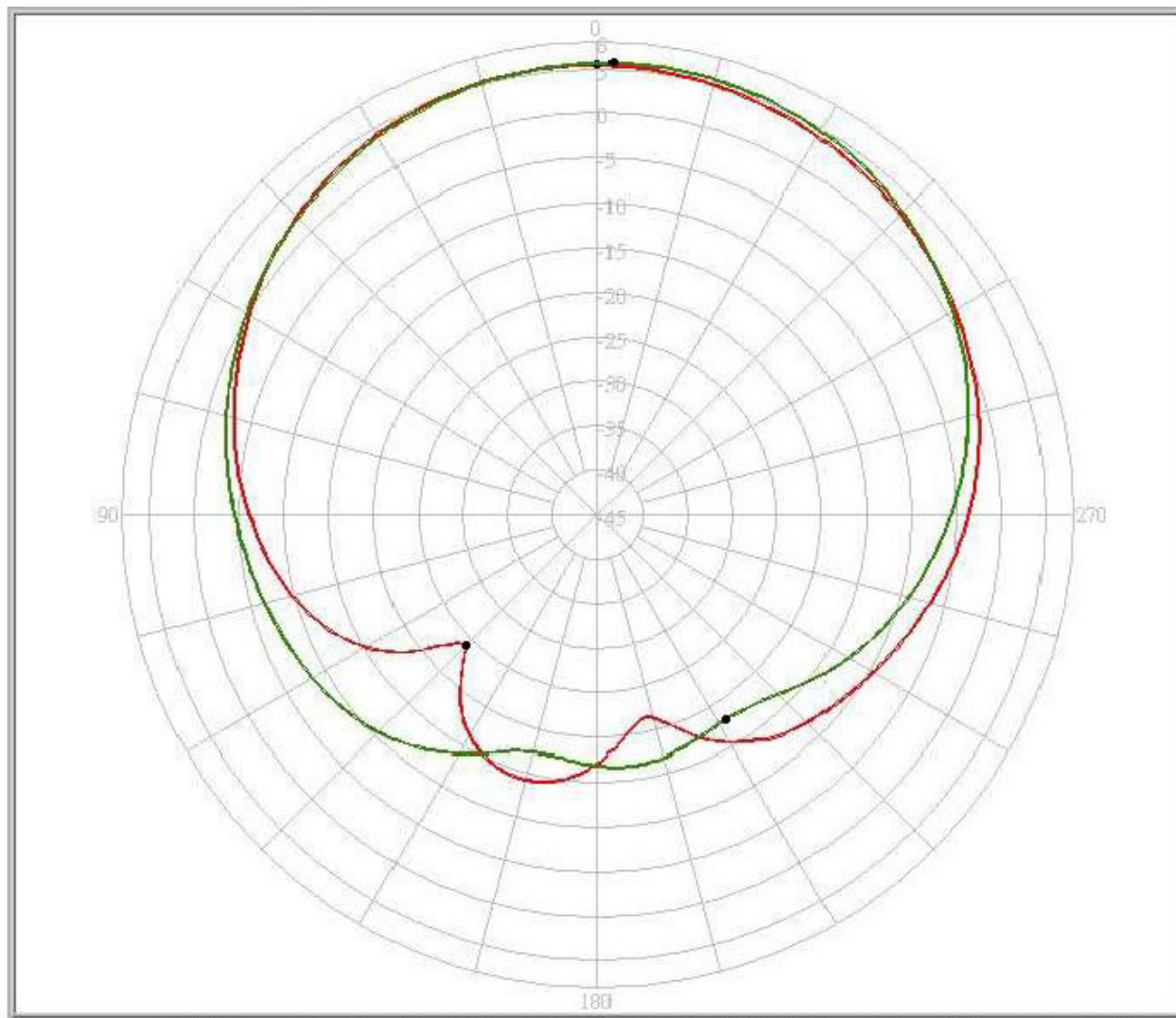
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## Radiation Pattern

GLONASS : 1602 MHz



| 1561 MHz | Peak Gain (dBi) | Zenith Gain (dBi) |
|----------|-----------------|-------------------|
| XZ       | 5.40            | 5.40              |
| YZ       | 5.65            | 5.40              |



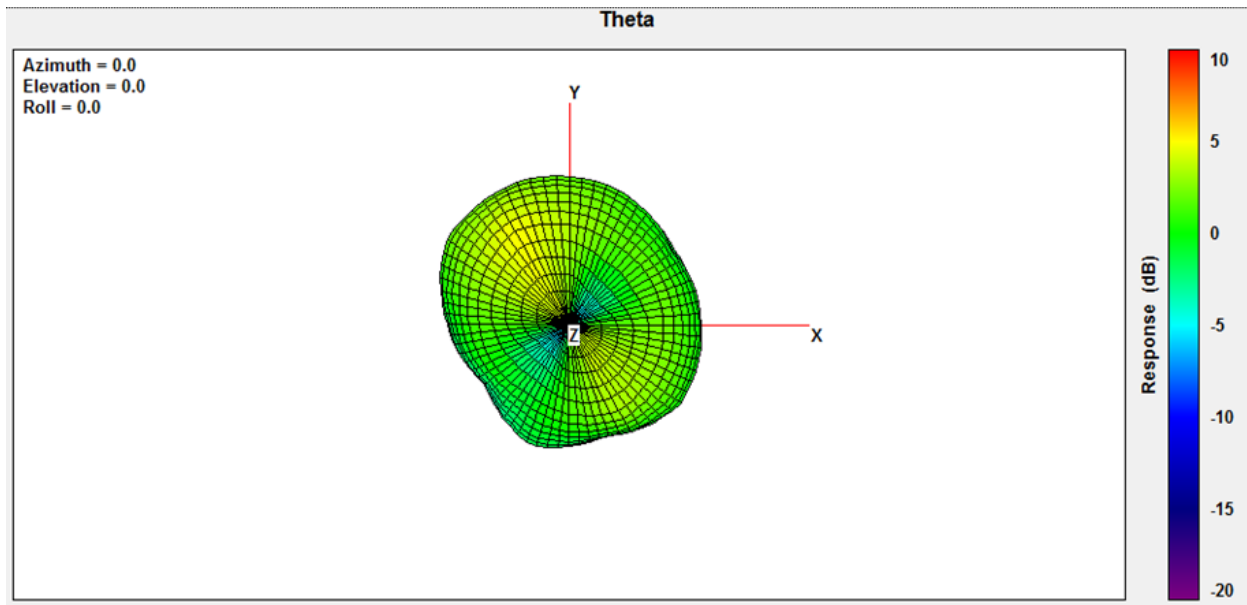
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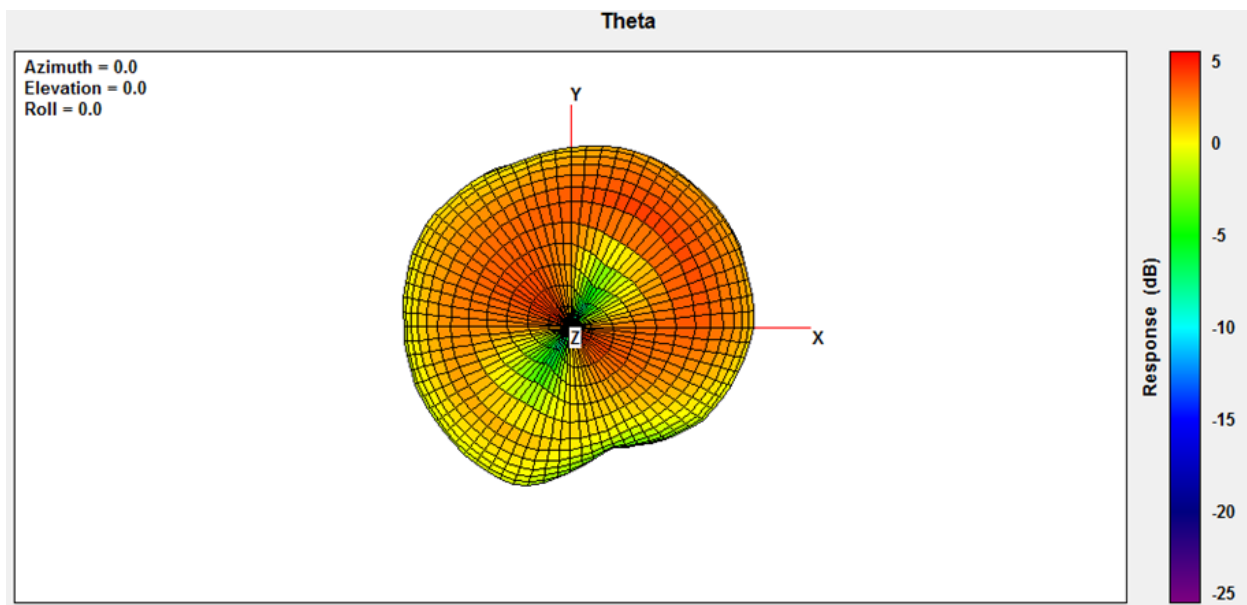
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## Radiation Pattern - 3D Pattern

BeiDou : 1561 MHz



GPS : 1575.42 MHz





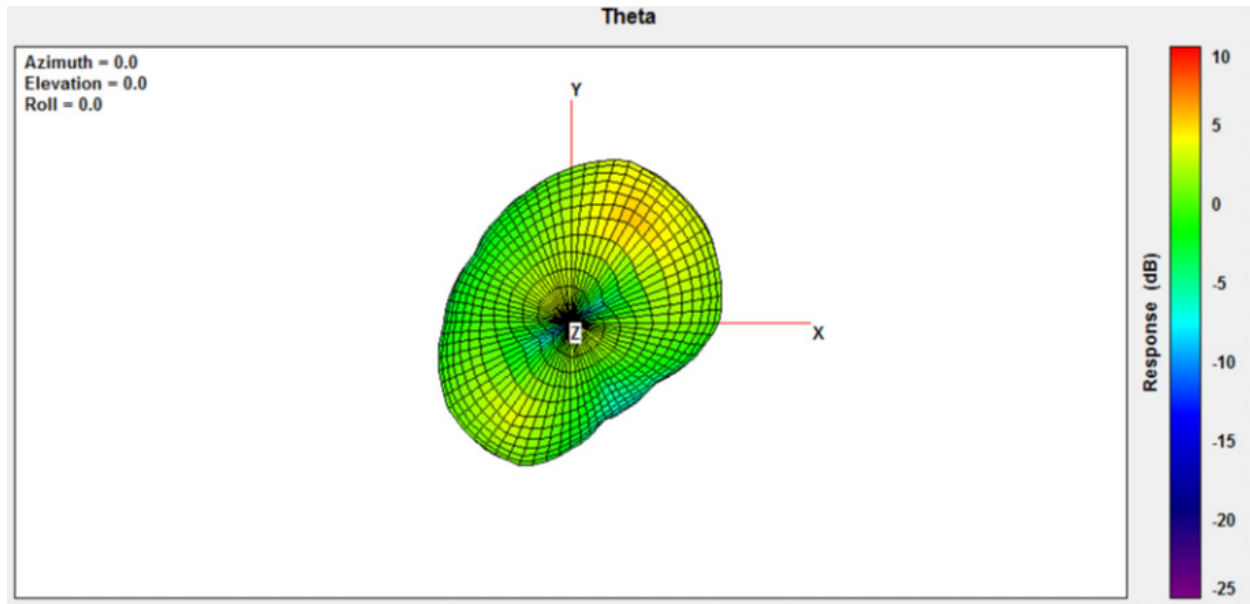
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## Radiation Pattern - 3D Pattern

GLONASS : 1602 MHz



## Packaging

Each carton is of dimension 370 x 370 x 300 mm with 100 units.