



**AEXQ0902GE**

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Ø90 x 27.5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

## Features

- Multiband Active GNSS
  - GPS: L1/L2/L5
  - GLONASS: G1/G2/G3
  - Galileo: E1/E5a/E5b/E6
  - Beidou: B1/B2/B3
  - QZSS: L1/L2/L5/L6
  - IRNSS: L5
  - SBAS: L1/L5
- Active GNSS patch with LNA max gain of 36 dB
- Centimeter phase center repeatability
- Pre-filtered LNA to minimize de-sensing
- Strong anti-interference performance
- Low profile, light weight, low power Consumption

## Applications

- Autonomous driving and UAVs
- Precision land survey positioning
- Surveying and mapping systems
- Precision agriculture
- Geofencing

## Product Image



# GNSS External Active Antenna



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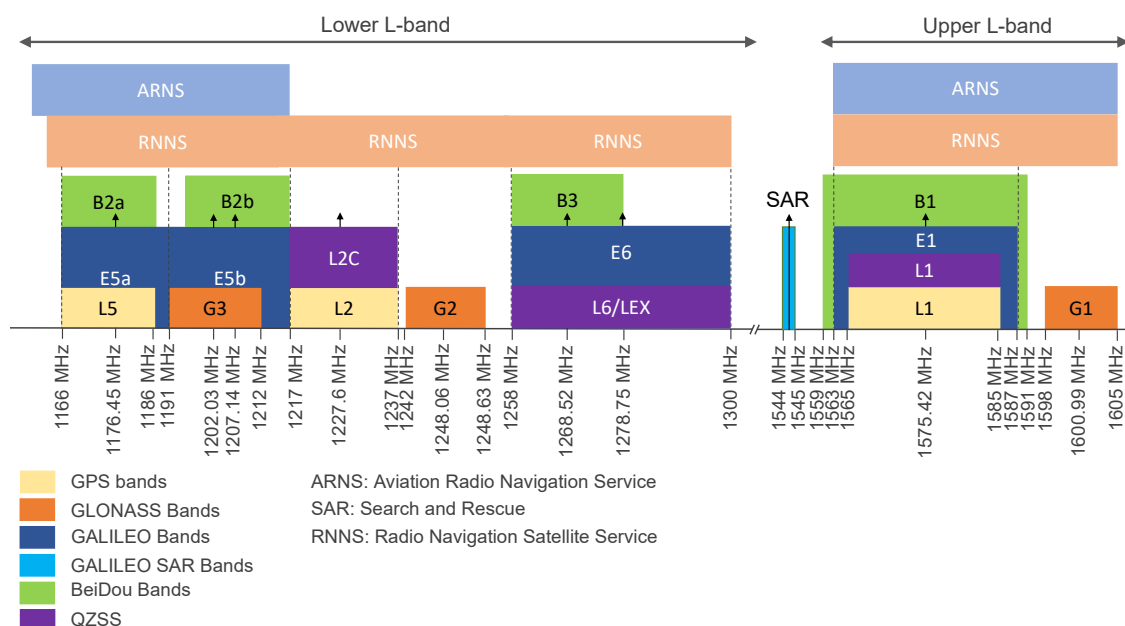
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## GNSS Frequency Bands Covered

|             |                          |                          |                          |                  |
|-------------|--------------------------|--------------------------|--------------------------|------------------|
| GPS         | L1<br>1575.42MHz         | L2<br>1227.6MHz          | L5<br>1176.45MHz         |                  |
|             | ■                        | ■                        | ■                        |                  |
| GLONASS     | G1<br>1598.06-1609.31MHz | G2<br>1242.93-1251.68MHz | G3<br>1202.025MHz        |                  |
|             | ■                        | ■                        | □                        |                  |
| Galileo     | E1<br>1575.42MHz         | E5a<br>1176.45MHz        | E5b<br>1201.5MHz         | E6<br>1278.75MHz |
|             | ■                        | □                        | ■                        | □                |
| BeiDou      | B1<br>1561MHz            | B2<br>1207.14MHz         | B3<br>1268.52MHz         |                  |
|             | ■                        | ■                        | ■                        |                  |
| QZSS        | L1<br>1575.42MHz         | L2<br>1227.6MHz          | L5<br>1176.45MHz         | L6<br>1278.75MHz |
|             | ■                        | ■                        | ■                        | □                |
| IRNSS/NAVIC |                          |                          | L5<br>1176.45MHz         |                  |
|             |                          |                          | ■                        |                  |
| SBAS        | L1/E1/B1<br>1575.42MHz   |                          | L5/B2a/E5a<br>1176.45MHz |                  |
|             | ■                        |                          | ■                        |                  |



Frequency allocation: GNSS systems, upper L bands and lower L bands



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**Electrical Specification**

| Parameter             | Specification                                                                                                                     | Unit |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|------|
| Operating Frequency   | GPS: L1/L2/L5<br>GLONASS: G1/G2/G3<br>Galileo: E1/E5a/E5b/E6<br>Beidou: B1/B2/B3<br>QZSS: L1/L2/L5/L6<br>IRNSS: L5<br>SBAS: L1/L5 | MHz  |
| VSWR                  | ≤ 2.0                                                                                                                             |      |
| Polarization          | RHCP                                                                                                                              | -    |
| Axial Ratio           | ≤ 3                                                                                                                               | dB   |
| Group delay variation | ≤ 5                                                                                                                               | ns   |
| Impedance             | 50                                                                                                                                | Ω    |

**Electrical Specification – LNA**

| Parameter    | Specification | Unit |
|--------------|---------------|------|
| Output VSWR  | ≤ 2.0         | dB   |
| Noise Figure | ≤ 2           | dB   |
| Gain         | 36            | dB   |
| DC Current   | ≤ 45          | mA   |
| DC Voltage   | +3.3 to +12   | V    |

**Mechanical Specification**

| Parameter         | Specification |
|-------------------|---------------|
| Antenna Dimension | Ø90 x 27.5 mm |
| Weight            | ≤ 150g        |
| Mounting Type     | 4 M4 screws   |
| RF Connector      | TNC female    |

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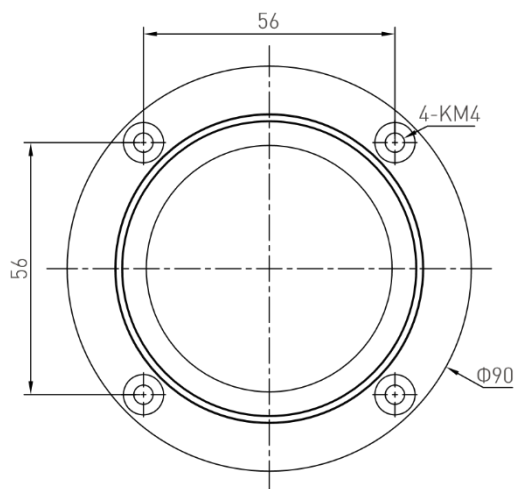
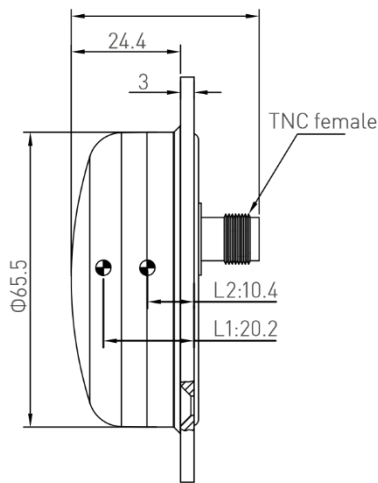
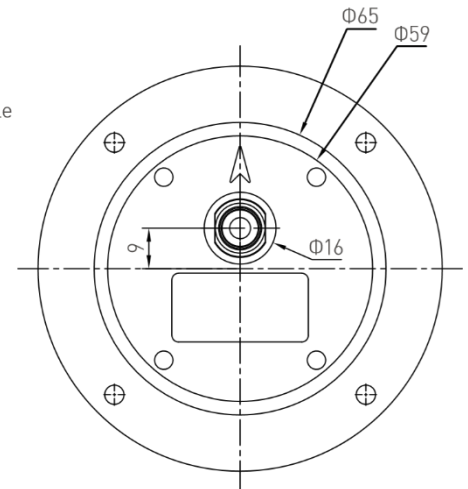
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**Ø90 x 27.5 mm****RoHS/RoHS II Compliant****MSL Level = N/A**

## Environment Specification

| Parameter             | Specification  |
|-----------------------|----------------|
| Operating Temperature | -40°C to +85°C |
| Storage Temperature   | -55°C to +85°C |
| RoHS Compliance       | Yes            |
| Relative Humidity     | Up to 95%      |
| Water/Dust Resistance | IP67           |

## Product Dimension

**TOP VIEW****SIDE VIEW****BOTTOM VIEW***Unit : mm*



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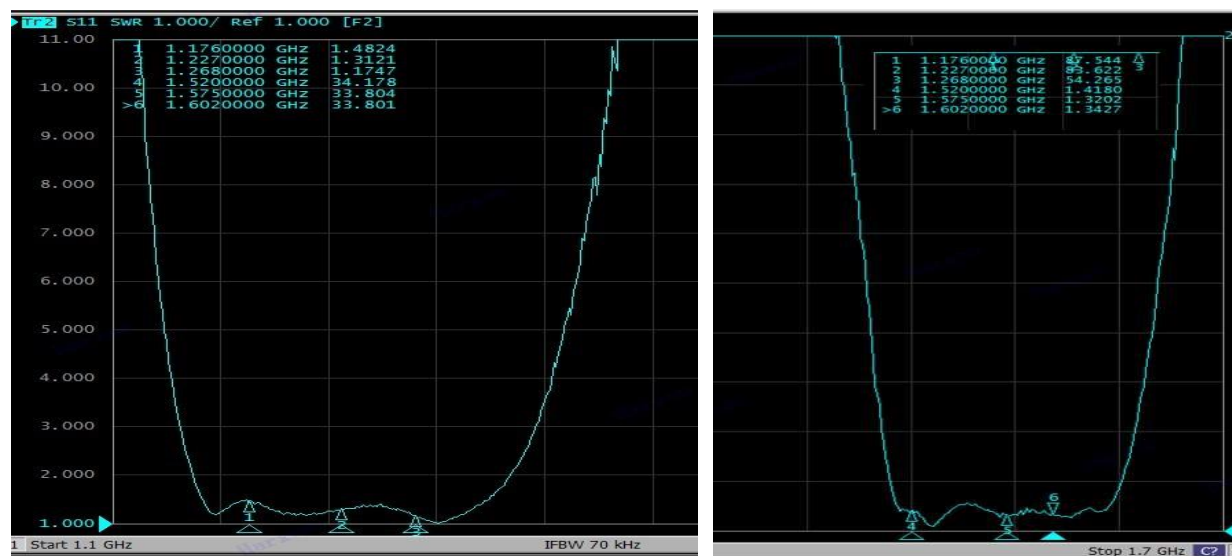
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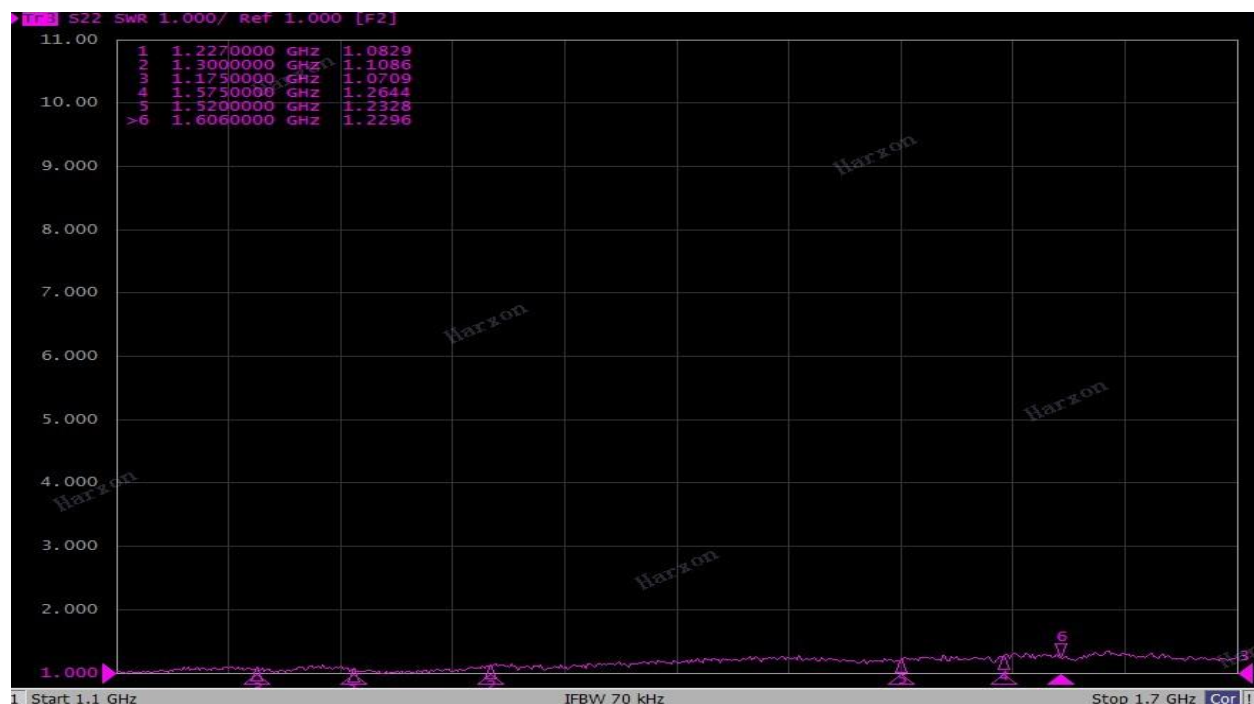
## Reflection Characteristics – VSWR

LNA input VSWR:



Band L1+L2+L5

LNA output VSWR



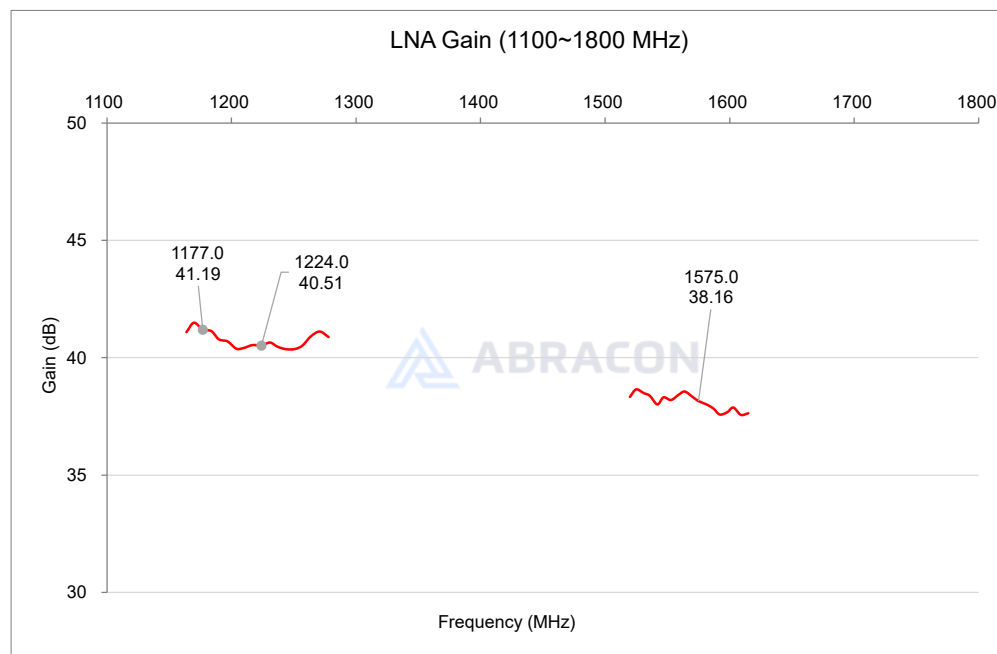
Band L1+L2+L5

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**Ø90 x 27.5 mm****RoHS/RoHS II Compliant****MSL Level = N/A****Radiation Characteristics – LNA Gain and Noise Figure**

Band L1:

| Frequency, MHz | Noise Figure, dB | Gain, dB |
|----------------|------------------|----------|
| 1559           | 1.40             | 38.42    |
| 1564           | 1.42             | 38.57    |
| 1570           | 1.42             | 38.35    |
| 1575           | 1.44             | 38.16    |
| 1581           | 1.42             | 38.03    |
| 1587           | 1.44             | 37.84    |
| 1592           | 1.46             | 37.58    |
| 1598           | 1.50             | 37.68    |
| 1603           | 1.56             | 37.88    |
| 1609           | 1.60             | 37.57    |

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Band L2 + L5:

| Frequency, MHz | Noise Figure, dB | Gain, dB |
|----------------|------------------|----------|
| 1164           | 1.60             | 41.09    |
| 1170           | 1.56             | 41.49    |
| 1177           | 1.59             | 41.19    |
| 1184           | 1.54             | 41.13    |
| 1190           | 1.42             | 40.78    |
| 1197           | 1.51             | 40.69    |
| 1204           | 1.47             | 40.38    |
| 1210           | 1.44             | 40.41    |
| 1217           | 1.45             | 40.53    |
| 1224           | 1.44             | 40.51    |
| 1231           | 1.49             | 40.64    |
| 1237           | 1.48             | 40.46    |
| 1244           | 1.51             | 40.36    |
| 1251           | 1.48             | 40.36    |

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## Packaging

18 pcs AEXQ0902GE antennas / carton

Carton Dimensions L x W x H: 330 x 290 x 170 mm

Weight: 3.24 kg

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