MINEWSEMI

# GNSS High-Precision Full Frequency Antenna

# AH612

Datasheet

V 1.0.0

# Version Note

| Version | Details | Contributor(s) | Date | Notes |
|---|---|---|---|---|
| 1.0.0 | First edit | Michelle | 2025.07.16 | |
| | | | | |
| | | | | |

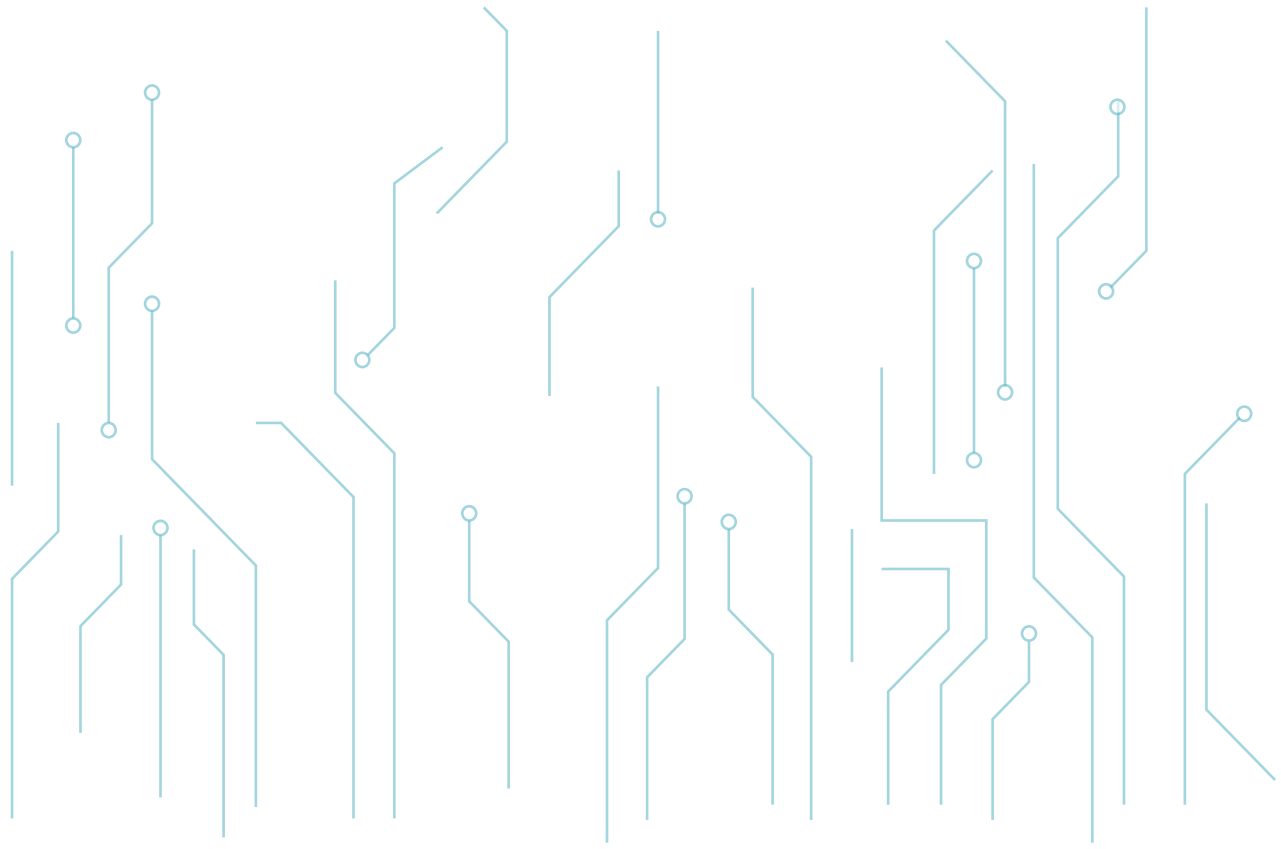
# Part Number

| Model | Hardware Code |
|---|---|
| AH612 | - |
| | |

Click the icon to view and download the latest product documents electronically.
https://en.minewsemi.com/file/AH612_Datasheet_EN.pdf

# INDEX





# 1 PRODUCT INTRODUCTION

## 1.1 Product Description

AH612 GNSS high-precision antenna adopts multi-feedpoint technology, supporting the reception of L1, L2/L5 and L-band satellite navigation signals of BeiDou, GPS, GLONASS and GALILEO systems, with built-in multi-stage filter and low-noise amplifier. Built-in multi-stage filters and low noise amplifiers, good out-of-band suppression, strong anti-interference ability, to ensure the normal operation in the harsh electromagnetic environment.It meets the requirements of multi-system compatibility and high-precision measurement.

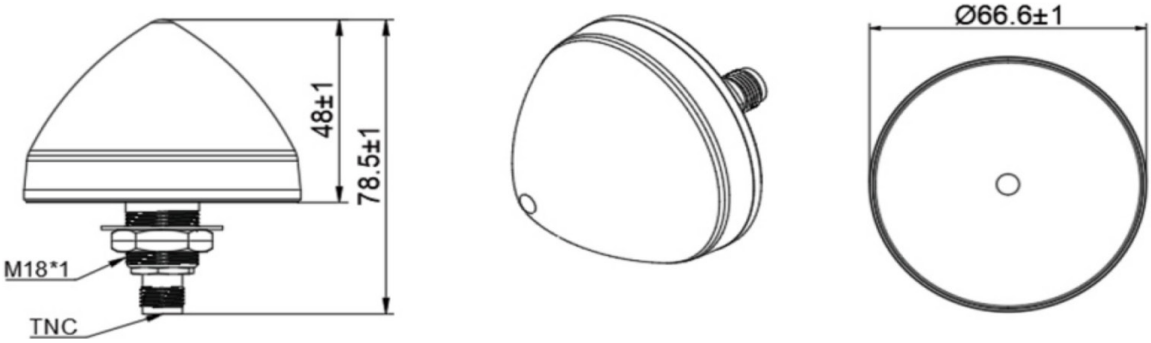
## 1.2 Product Applications

Suitable for applications where size and weight are important, such as UAVs, micro RTKs, and other portable devices.

## 1.3 Technical Characteristics

· Right-Hand Circular Polarization (RHCP)is used to ensure phase centre performance and reduce the effect of measurement errors.;
· The antenna unit has high gain and small gain roll-off, which is good for low elevation satellite signal reception.;
· Sophisticated low noise, high gain amplification and excellent out-of-band rejection;
· Small size and light weight, easy to carry and install.

# 2 STRUCTURAL DIMENSIONS




tolerance±0.3mm

# 3 KEY TECHNICAL INDICATORS

| Antenna | |
|---|---|
| Supported positioning signal bands | GPS: L1/L2/L5<br>GLONASS: L1/L2/L3<br>BDS: B1/B2/B3<br>Galileo: E1/E5/E6<br>L-band |
| Peak Gain* | ≥2.5 dBi |
| Polarization | right circular polarisation（RHCP） |
| Axial Ratio@zenith | ≤1.5dB |
| Azimuth Coverage | 360° |
| Impedance | 50 ohm |
| **LNA** | |
| Frequency Range | 1164MHz~1278MHz 1525MHz~1615MHz |
| LNA Gain* | 35±3.0dB （Typ. @25°C） |
| Group Delay variation | ≤5ns |
| Noise Figure* | ≤1.5 dB@25°C , Typ. |
| Output VSWR | ≤1.8:1 typ. 2.0:1max |
| Operation Voltage | 3.0~12V DC,testimonials 3.3V or 5.0V |
| Operation Current | ≤45mA |
| **Mechanicals & Environmental** | |
| Dimension | ø66.6*78.5 |
| Connector | TNC-K(External threaded bore) |
| Radome | ASA+Aluminum housing |
| Weight | ≤400g |
| Attachment Method | Threaded screwing |
| Operating Temp | -40℃~+85℃ |
| Storage Temp | -45℃~+85℃ |
| Humidity | 95% No-condensing |
| Waterproof | IP67 |

Note: The seal needs to be well pressed against the antenna support plane, which is the first requirement for IP67 protection.

# 4 STORAGE CONDITIONS

- **Please use this product within 6 months after signing up for it.**
  - This product should be stored without opening the package at an ambient temperature of 5~35°C and a humidity of 20~70%RH.
  - This product will be stored for more than 6 months after receipt. They must be confirmed before use.
  - Products must be stored in non-corrosive gases (Cl2, NH3, SO2, NOx, etc.).
  - To avoid damage to the packaging materials, no excessive mechanical impact shall be applied, including but not limited to sharp objects adhering to the packaging materials and products falling.

- **When exposed to (≥168h@30℃/60%RH) conditions, the recommended baking conditions:**
  1. 120 +5/-5℃, 8 hours, 1 time
  Products must be baked individually on heat-resistant trays because the materials (base tape, roll tape and cover tape) are not heat-resistant and the packaging materials may deform when the temperature is 120°C;
  2. 90℃ +8/-0℃, 24 hours, once
  The base tape can be baked together with the product at this temperature, Please pay attention to even heating.

# 5 HANDLING CONDITIONS

- Be careful in handling or transporting products because excessive stress or mechanical shock may break products.
- Handle with care if products may have cracks or damages on their terminals. If there is any such damage, the characteristics of products may change. Do not touch products with bare hands that may result in poor solder ability and destroy by static electrical charge.

# 6 QUALITY

Cognizant of our commitment to quality, we operate our own factory equipped with state-of-the-art production facilities and a meticulous quality management system. We hold certifications for ISO9001, ISO14001, ISO27001, OHSA18001, BSCI.

Every product undergoes stringent testing, including transmit power, sensitivity, power consumption, stability, and aging tests. Our fully automated module production line is now in full operation, boasting a production capacity in the millions, capable of meeting high-volume production demands.

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# 8 RELATED DOCUMENTS

- MinewSemi_Product_Naming_Reference_Manual
  https://en.minewsemi.com/file/MinewSemi_Product_Naming_Reference_Manual_EN.pdf
- MinewSemi_Connectivity_Module_Catalogue
  https://en.minewsemi.com/file/MinewSemi_Connectivity_Module_Catalogue_EN.pdf

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