

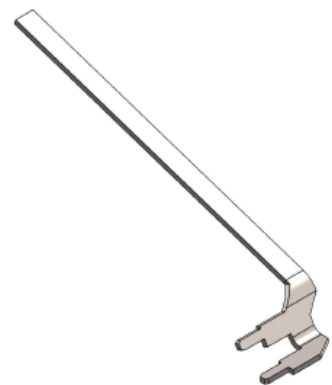
Product Specification

AC30036-01

GPS-GLONAS PIFA Stamped Metal Antenna

February 2023

Rev.4.0



Revision History

| Date | Rev. | Summary of Changes |
|------------------|-------------|--|
| 21 October 2022 | 1.0 | First version of Product Specification |
| 04 November 2022 | 2.0 | Document title and watermark changed |
| 25 November 2022 | 3.0 | Average gain value updated in table 1 |
| 09 February 2023 | 4.0 | Published year modified |

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1 AC30036-01 On-Board GNSS Antenna

1.1 Scope and purpose

This document describes the AC30036-01 GNSS L1 Antenna and its specifications. It is intended for antenna design engineers and OEM customers who wish to integrate this product into their design.

AC30036-01 is a quasi-omnidirectional antenna element operating in the GPS L1 (1.575GHz) and GLONASS G1 (1.601GHz) bands. This high-performance antenna features excellent efficiency and impedance matching characteristics, providing optimal quality of service for satellite vehicle tracking. Figure 1 shows the AC30036-01 on the device PCB and stand-alone.

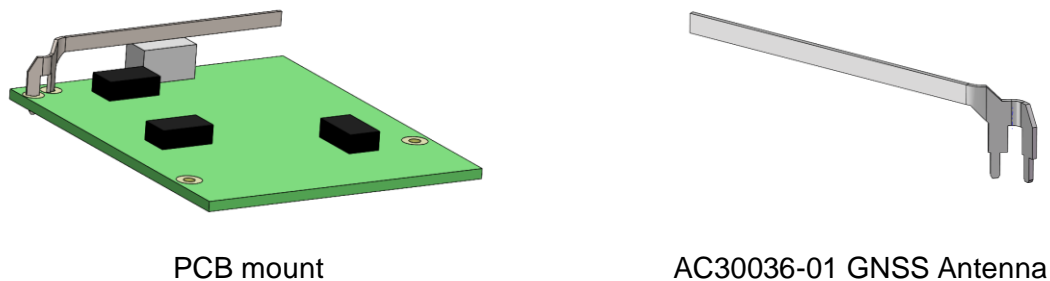


Figure 1: AC30036-01 on the device PCB (left) and standalone (right)

1.2 AC30036-01 GNSS Antenna Features

- Metal antenna structure
- Mounting by through-hole-technology soldering
- GPS and GLONASS operation
- Excellent embedded impedance matching and reduced coupling with cellular antenna
- Linear quasi omni-directional operation

1.3 GNSS Antenna specifications

Table 1: AC30036-01 GNSS Antenna specifications

| Parameter | GPS (L1) | | GLONASS (G1) | |
|---------------------------|------------|---------|--------------|---------|
| | Min | Max | Min | Max |
| Center Frequency | 1575.42MHz | | 1601.72MHz | |
| Frequency Band | 1563MHz | 1587MHz | 1593MHz | 1610MHz |
| VSWR | < 1.5:1 | | < 1.5:1 | |
| Peak Realized Gain [dBi] | ≤ 2.45 | | ≤ 2.73 | |
| Typical Efficiency | 68% | | 70% | |
| Typical Average Gain [dB] | -1.67 | | -1.55 | |
| Polarization | Linear | | Linear | |
| Direction (FS) | Quasi-Omni | | Quasi-Omni | |
| Impedance | 50 Ω | | 50 Ω | |

Table 2: AC30036-01 GNSS Antenna physical and environmental specifications

| Parameter | Description |
|-------------------------|--|
| Dimensions (W x L x H) | 39.6 mm x 3.1mm x 9.30 mm |
| Weight | 0.4g +/- 0.1g |
| Connector | Solder to PCB |
| Assembly style | On-board mounting with Through Hole Technology |
| Operational temperature | -40°C to +80°C |
| RoHS support | Yes |

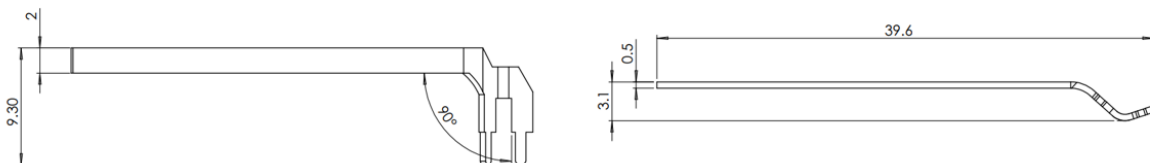


Figure 2: Visuals of the antenna with dimensions (mm)

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1.4 Radiation pattern

Table 3 shows the embedded antenna radiation patterns at GPS L1 band [1.575GHz] and GLONASS G1 band [1.601 GHz]. Figure 3 shows the measurement set-up and orientation.

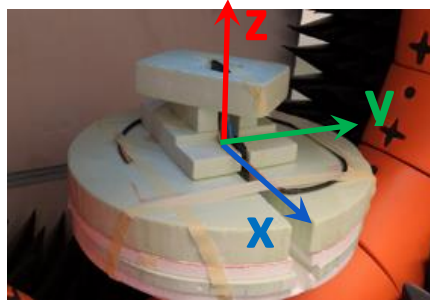
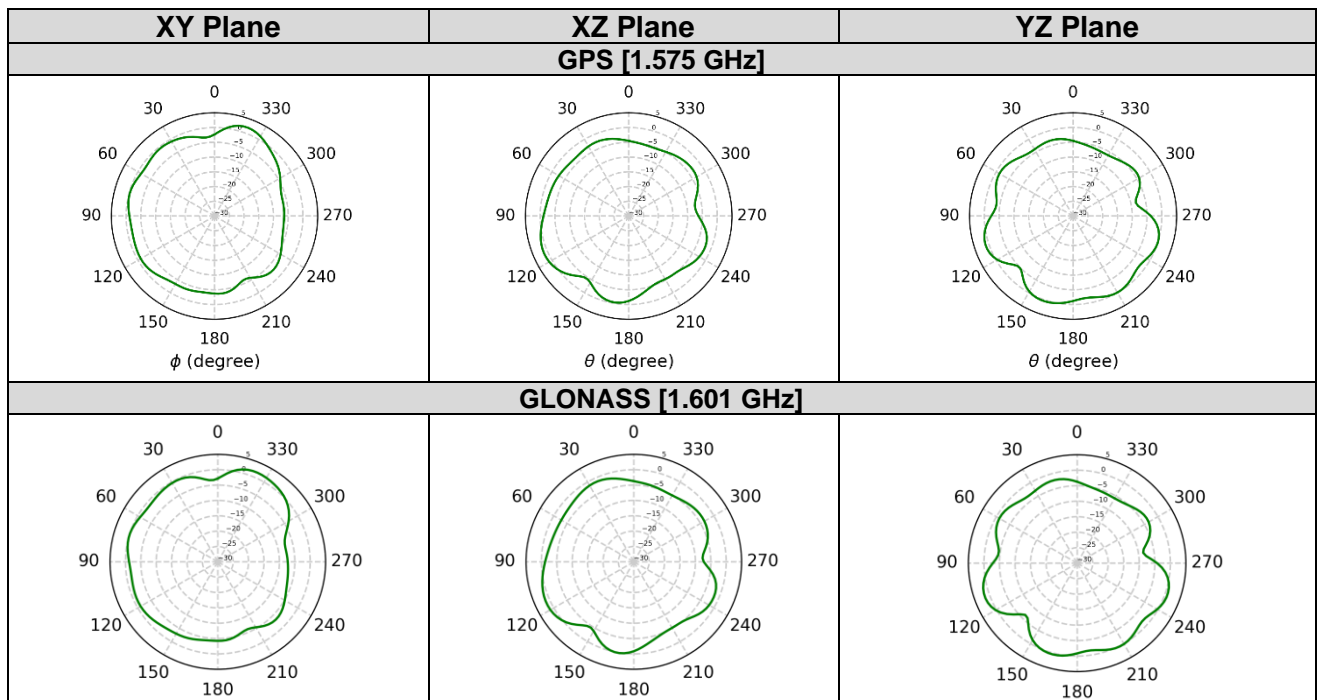


Figure 3 Radiation Pattern Measurement Set-Up

Table 3: AC30036-01 GNSS Antenna radiation patterns



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2 Product Handling & Ordering Information

2.1 Assembly Recommendation

Figure 4a shows the Top view of the main PCB and antenna with recommended distance from PCB edge. Figure 4b shows the side view of the main PCB with the required height from the top PCBA surface. The antenna needs to be parallel to the PCBA.

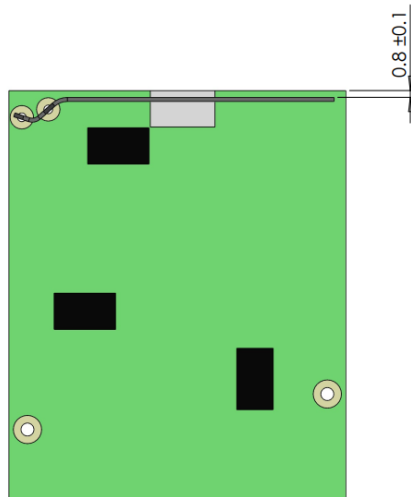


Fig 4a: Top view of main PCBA with recommended distance from PCB edge

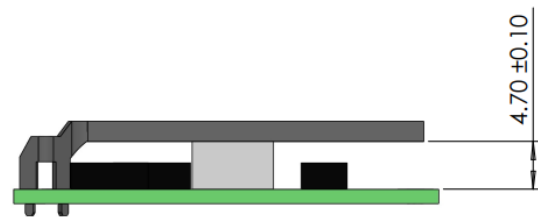


Fig 4b: side view of main PCB with required height from PCBA. The antenna needs to be parallel to PCBA.

Figure 4: Top view PCB with antenna and Side view of PCB with soldering holes

Figure 5 shows the locations and the dimensions of the soldering holes in the PCBA for the through hole soldering of the AC30036-01. The holes for soldering the AC30036-01 should have a diameter of 1.2 mm. The holes should not be placed in one line next to each other. Please see figure 5 for details.

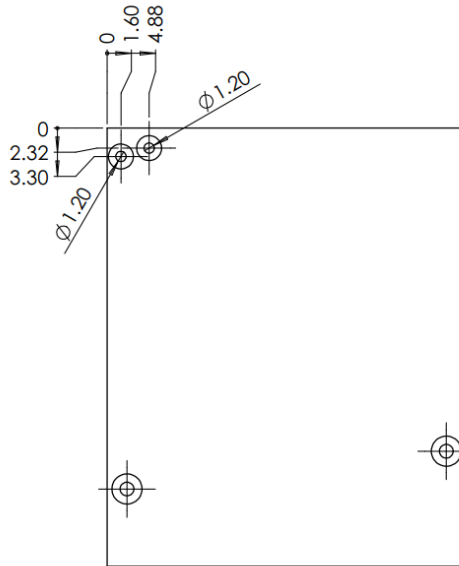


Figure 5: PCBA with required holes and dimensions

Figure 6 shows the detailed view of the foam placement and the antenna mounting on the main PCBA.

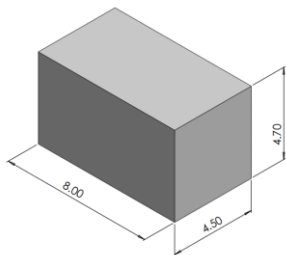


Fig 6a: Foam block with dimensions

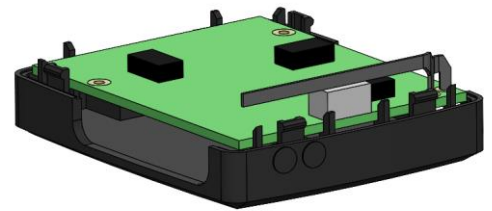


Fig 6b: Foam block should be glued on top of the PCB.

Figure 6: Foam placement and antenna mounting on the main PCB

2.2 Product Marking

There will be no product marking on the AC30036-01.

2.3 Packaging

The AC30036-01 will be delivered stacked in PVC trays. There will be 30 trays in one box and 4 boxes in a large over box. The packing quantity is 2,500 pcs.

2.4 Ordering Information

Orders should be placed at orders@antennacompany.com.

For purchase orders please state: part number, description, quantity, and price.

Table 4: AC30036-01 ordering information

| Part number | Description | Minimum Order Quantity [pcs] | Packing Quantity / Order multiple [pcs] |
|-------------|-----------------------|------------------------------|---|
| AC30036-01 | On-board GNSS antenna | 10,000 | 2,500 |

For sample quantities, please contact sales@antennacompany.com.

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