



## Features

- ⚙️ **Support 1 PPS and Event Marker**
- ⚙️ **Configurable GPS/BeiDou/GLONASS system positioning**
- ⚙️ **Built in 2000 V optoelectronic isolator, protect the receiver from lighting strike**
- ⚙️ **Optional installation for multiple applications**

### More than a receiver

With its powerful integrative ability, the M300 GNSS receiver is designed as a multi-purpose sensor for projects requiring high-accuracy, which ranges from single geodetic reference stations to comprehensive solutions, such as deformation monitoring, land survey, harbor construction and machine guidance.

### Market tailored design

There are two primary factors - stability and extensibility, we concerns most when it comes to industrial electronic products. Nevertheless, these two points are definitely where the M300's advantages are. The robust metal cover makes it can work in extremely hard condition in field; Then the internal T-type structure design provides enough space to integrate some related sensors, such as UHF and MENS (reserved for option); In addition, the interface of board can be compatible with all K series OEM board, which means M300 is pretty flexible to provide different level of positioning accuracy; Moreover, the optional PPS and Event Marker function extend the application of M300 to mobile photograph survey and precising timing. Relying on all above, the M300 can no doubt meet the high industrial qualification of PVT sensors.

### Multi-constellation tracking: GPS+BeiDou+GLONASS

Combining strong satellite tracking capability and the high-accuracy carrier phase algorithm, M300 GNSS receiver is able to improve the reliability and consistency of surveying, even in challenging environment.

## Signal Tracking

- 198 Channels
  - GPS: L1, L2, L2C, L5
  - BeiDou: B1, B2, B3
  - GLONASS: L1, L2
  - SBAS: WAAS, EGNOS, MSAS, GAGAN
- Advanced multi-path mitigation technology
- Low noise carrier phase measurement <1 mm precision in a 1 Hz bandwidth

## Performance Specifications

- Cold start: <50 s
- Warm start: <45 s
- Initialization time: typically <10 s
- Signal re-acquisition: <2 s
- Initialization reliability: typically >99.9%

## Time Precision

- GPS + BeiDou + GLONASS: 20 ns

## Positioning Specifications

- Post Processing Static
  - Horizontal: 2.5 mm + 1 ppm RMS
  - Vertical: 5 mm + 1 ppm RMS
- Real Time Kinematic (RTK)
  - Horizontal: 10 mm + 1 ppm RMS
  - Vertical: 20 mm + 1 ppm RMS
- E-RTK<sup>1</sup> (baseline<100 km)
  - Horizontal: 0.2 m + 1 ppm RMS
  - Vertical: 0.4 m + 1 ppm RMS
- DGPS : < 0.5 m 3D RMS
- SBAS : < 1 m 3D RMS
- Standalone: <1.5 m 3D RMS

## Communications

- 2 serial ports (7 pin Lemo), 2 TNC Connectors.
- Optional UHF:
  - Internal Rx: 450-470 MHz
  - External Tx UHF is available
- Positioning data outputs: 1 Hz, 5 Hz, 10 Hz
- 1 Pulse Per Second output, Event Marker input<sup>2</sup>
- 3 LEDs (indicating Power, Satellite Tracking and Differential Data)

## Data Format

- Correction data I/O:
  - RTCM 2.X, 3.X, CMR (GPS only), CMR+ (GPS only)
- Positioning data outputs:
  - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST; PTNL, PJK
  - Extended NMEA-0183 BDGGA, GPNTR, GPCDT, GPHPR
  - ComNav Binary (compatible with major brands)

## Physical

- Size(LxWxH): 200 mm x 145 mm x 80 mm
- Weight: 1 kg (include Internal UHF)
- Case: rugged and light high performance metal

## Environmental

- Operating temperature: -40 °C to + 70 °C
- Storage temperature: -45 °C to + 80 °C
- Humidity: 95% no condensation
- Water-proof and dust-proof: IP67, can float on the water
- Shock: survive after 2 meters' drop on to concrete

## Electrical

- Power consumption: 2.5 W
- External power input: 10.5-28 VDC
- Memory: 100 MB

## Antenna

- AT300 GNSS Geodetic Antenna, or AT500 GNSS Choke Ring Antenna depending on the applications

## Software

- ComNav Compass Receiver Utility software

<sup>1</sup> E-RTK, BeiDou B3 signal used in RTK calculate engine; concern the current situation, this mode can be used in APAC.

<sup>2</sup> For PPS and Event Marker, they are optional. Need to clarify when placing the order.

Specifications subject to change without notice.

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