



Features

- ⚙️ **GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2, Galileo E1/E5a/E5b, QZSS¹**
- ⚙️ **DP-Filter Smooth Function²**
- ⚙️ **Advanced QUANTUM™ Technology**
- ⚙️ **Support PPS and Event Marker³**
- ⚙️ **8 GB Internal Memory**

MULTI-CONSTELLATION GNSS

The M300 GNSS receiver is capable of tracking GPS L1, L2, L5, BeiDou B1, B2, B3, GLONASS L1, L2, Galileo E1, E5a, E5b and SBAS, it is also firmware upgradable to track satellite signals of upcoming constellations. With advanced QUANTUM™ technology, it remarkably improves the position availability and reliability both in standalone and RTK modes.

EASY TO INTEGRATE

The interface board of M300 is compatible with all K-series OEM boards, providing you flexible choice for your specific application needs. With its T-type structure, you are flexible to integrate more modular based on your requirement, such as UHF or Ethernet. Moreover, its built-in 2000 V optoelectronic isolator protects it from lightning strike, and rugged housing ensures you complete survey tasks even in extremely harsh environments.

DESIGNED FOR DIVERSE APPLICATIONS

The M300 GNSS receiver is a multi-purpose device for high-precision GNSS applications ranging from single geodetic reference station to comprehensive solutions, such as deformation monitoring, land survey, harbor construction, machine guidance and more. Its optional PPS and Event Marker function extend the application of M300 to mobile photograph survey and Precision timing.

Signal Tracking

- 496 channels
 - GPS: L1 C/A, L2C, L2P, L5
 - BeiDou: B1, B2, B3
 - GLONASS: L1 C/A, L1P, L2 C/A, L2P
 - Galileo E1, E5a, E5b
 - QZSS
 - SBAS: WAAS, EGNOS, MSAS, GAGAN, SDCM

Performance Specifications

- Cold start: <50 s
- Warm start: <45 s
- Hot start: <15 s
- RTK Initialization time: <10 s
- Signal reacquisition: <1.5 s
- Initialization reliability: >99.9%
- Velocity accuracy: 0.03 m/s
- Acceleration: 4 g
- Overload: 15 g
- Time accuracy: 20 ns

Positioning Specifications

Mode	Accuracy
Post Processing	2.5 mm + 1 ppm Horizontal 5 mm + 1 ppm Vertical
Real Time Kinematic	8 mm + 1 ppm Horizontal 15 mm + 1 ppm Vertical
E-RTK(<100 km) ⁴	0.2m + 1 ppm Horizontal 0.4m + 1 ppm Vertical
DGPS	<0.4 m 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: 410-470 MHz⁵
 - External Tx UHF is available
- Optional Ethernet
- 1 Pulse Per Second output, Event Marker input
- 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)
- Position data output:
 - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST; PTNL, PJK; PTNL, AVR; PTNL, GGK
 - Extended NMEA-0183 BDGGA, GPNTR, GPCDT, GPHPR
 - ComNav Binary update to 100 Hz
 - BINEX Data: 0x00, 0x01-01, 0x01-02, 0x01-05, 0x7d-00, 0x7e-00, 0x7f-05
 - Position data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 50 Hz⁶

Physical

- Size(L × W × H): 200 mm × 145 mm × 80 mm
- Weight: 1 kg with internal UHF
- Housing: Rugged metal housing

Environmental

- Operating temperature: -40 °C to + 70 °C
- Storage temperature: -45 °C to + 80 °C
- Humidity: 95% no condensation
- Waterproof and dustproof: IP67
- Shock: Designed to Survive a 2 m drop onto concrete

Electrical

- Power consumption: 2.5 W
- External power input: 10.5-28 VDC
- Memory: 8 GB (Optional)

Optional accessories

- AT-series GNSS antenna
- 5 m/10 m RF Cables

Software

- ComNav Compass Receiver Utility software

1. QZSS is reserved for future upgrade.
2. DP-Filter smooth function largely improves the pass to pass accuracy, Please refer to white paper for more information on our official website.
3. PPS and Event Maker are optional, please clarify before ordering.
4. BeiDou B3 signal is used in RTK calculating engine to enlarge length of baseline, which is only available in Asia Pacific area.
5. 410-470 MHz, 3 frequency range, 410-430, 430-450, 450-470, need to clarify before ordering.
6. The maximum RTK position output rate is 50 Hz and raw data output rate is 100 Hz.

Specifications subject to change without notice.

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