Features

- ⚙ **GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2, Galileo E1/E5a/E5b, QZSS**
- ⚙ **DP-Filter Smooth Function[1]**
- ⚙ **Advanced Quantum™ Technology**
- ⚙ **Support Long Baseline E-RTK**
- ⚙ **Integrated 3.5G Cellular Modem Supporting Ntrip Protocol**
- ⚙ **Support Pulse Per Second (PPS) Output/Event Marker Input/UHF**

MULTI-CONSTELLATION GNSS

The M300 Mini GNSS receiver is designed to work with all existing GNSS constellations, which is also firmware upgradable to track satellite signals of upcoming constellations. With the advanced Quantum™ technology, it remarkably improves the stability and reliability of positioning accuracy in standalone and RTK modes. With the M300 Mini, your GNSS solution will never be outdated in the future.

PROVEN AND COMPACT DESIGN

Strong physical performance makes the M300 Mini an ideal choice for a wide range of high-accuracy positioning applications. The rugged aluminum alloy housing enables the M300 Mini work in any harsh environments from -40 °C to 75 °C. For the compact design, it well suits for applications where small volume is crucial.

EASY TO CUSTOMIZE

The M300 Mini is designed as a multi-functional GNSS receiver, which is customizable based on your requirements[2]. The datalink modem (UHF/GPRS) can be easily integrated to this enclosure receiver, especially the integrated 3.5G cellular modular. By supporting Ntrip protocol, customers benefit from convenient connections with local CORS network. Moreover, features including PPS, Event Marker are supported for your unique application needs.

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[3]
  - 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
Single Baseline RTK	8 mm + 1 ppm Horizontal 15mm + 1 ppm Vertical
Network RTK	8 mm + 0.5 ppm Horizontal 15 mm + 0.5 ppm Vertical
E-RTK (<100km)[4]	0.2 m + 1 ppm Horizontal 0.4 m + 1 ppm Vertical
DGPS SBAS	<0.4 m RMS 1 m 3D RMS
Standalone	1.5 m 3D RMS

Communications

- 1 TNC connector for GNSS antenna
- 1 SMA male connector for GPRS antenna
- Integrated 3.5G cellular modem supporting Ntrip protocol
- 2 DB9 male ports (Standard RS232 protocol)
- 2P-5.08 SFP fool-proofing connector
- 4 LED indicators (Power, Satellites tracking and differential data)
- 1 SIM card slot
- 1 Pulse per Second (PPS) output\Event Marker input\UHF[5]

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,GGK; PTNL,AVR; NAVPOS
  - ComNav Binary data: up 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[6]

Physical

- Size(L×W×H): 191 mm × 142 mm × 52 mm
- Weight: 0.8 kg
- Housing: Rugged aluminum alloy housing
- Shock and Vibration: Designed to survive a 1m drop onto concrete

Environmental

- Working temperature: -40 °C to + 75 °C
- Storage temperature: -45° C to + 85 °C
- Humidity: 95% no condensation

Electrical

- Input voltage: +6 V ~ +28 VDC
- Power consumption: <2.5 W

Software

- ComNav Compass Receiver Utility software

Optional accessories

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

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1. DP-Filter smooth function largely improves the pass to pass accuracy. Please refer to white paper for more information.

2. Compatible with all ComNav OEM boards, the M300 Mini is customizable as your requirement change. Please consult your local distributor when placing the order.

3. QZSS are reserved for future upgrade.

4. E-RTK: BeiDou B3 signal is used in RTK calculate engine. Currently, this mode only works in Asia Pacific (APAC) region.

5. PPS, Event Marker and UHF are optional. Please confirm with your local distributor when placing the order.

6. The maximum RTK position output rate is 20Hz and raw data output rate is 100 Hz.

ComNav Technology Ltd.
Building 2, No. 618 Chengliu Middle Road,
201801 Shanghai, China

Tel : +86 21 64056796
Fax: +86 21 54309582

Email: sales@comnavtech.com
www.comnavtech.com