



## Features

- ⚙️ **Multi-constellation Tracking, Upgradable for QZSS**
- ⚙️ **Compact Housing with Flexible Interfaces for External Devices**
- ⚙️ **User-friendly Front Panel Display and Configuration**
- ⚙️ **Full Remote Control with Powerful Built-in Web Server**
- ⚙️ **Large Capacity Internal Memory and Expandable Memory**
- ⚙️ **Integrated Battery Serves as Primary Power or an UPS Backup**

### ALL GNSS CONSTELLATIONS ON TRACK

The M300 Pro is able to track all existing and future GNSS constellations including GPS, GLONASS, BEIDOU, Galileo and QZSS. There is no doubt that the M300 Pro is always keeping pace with GNSS development, which provides a robust and future-proof GNSS solution for CORS.

### PROVEN DESIGNED

The M300 Pro is designed as a multi-purpose GNSS receiver for a wide range of high-accuracy positioning applications. The user-friendly front panel makes it easier to configure and check receiver's status. Customers also benefit from its flexible interfaces that support Ethernet, serial and USB connections, allowing users to combine with external sensors to meet the unique application demand.

### IDEAL FOR REFERENCE STATION

The integrated lithium-ion battery works as a primary power or an Uninterrupted Power Supply (UPS) backup, combined with raw data loop recording function, M300 Pro can achieve continuous long-term recording. These proven designs make M300 Pro an optimal choice for the reference station, deformation monitoring, harbor construction and any applications where positioning accuracy and reliability matter the most.

### POWERFUL REMOTE CONTROL

The powerful built-in WebServer provides a full remote control of receiver configuration, status checking, firmware update, data download and user management. The M300 Pro supports five independent data transfer through TCP protocol in RTCM, ComNav binary, NMEA, and BINEX data formats, combined with Email Alert and FTP push, which truly improves the effectivity and profitability of your business.

## Signal Tracking

- 496 channels with simultaneously tracked satellite signals
  - GPS: L1 C/A, L1P, L2C, L2P, L5
  - BeiDou: B1, B2, B3
  - GLONASS: L1 C/A, L1P, L2 C/A, L2P
  - Galileo: E1, E5a, E5b
  - QZSS<sup>1</sup>
  - SBAS: WAAS, EGNOS, MSAS, GAGAN
- Advanced multipath mitigation technology
- Low noise carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- High precision multiple correlators for GNSS pseudorange measurements
- Signal Noise Ratios reported in dB-Hz

## Time Precision

- GPS+Glonass+Beidou 20 ns

## Positioning Specifications

| Mode                | Accuracy  |
|---------------------|---|
| Post Processing     | 2 mm + 0.5 ppm Horizontal<br>4 mm + 0.5 ppm Vertical  |
| Single Baseline RTK | 8 mm + 1 ppm Horizontal<br>15 mm + 1 ppm Vertical     |
| Network RTK         | 8 mm + 0.5 ppm Horizontal<br>15 mm + 0.5 ppm Vertical |
| E-RTK <sup>2</sup>  | 0.2 m + 1 ppm Horizontal<br>0.4 m + 1 ppm Vertical    |
| DGPS                | <0.4 m RMS  |
| SBAS                | 1 m 3D RMS  |
| Standalone          | 1.5 m 3D RMS  |

## Communications

- 3 Lemo Ports
  - One 2-pin Lemo port for power supply and battery charging
  - One 7-pin Lemo port (USB UART port) for system debugging and static data downloading
  - One 7-pin Lemo port (RS485 Protocol) for meteorological sensor /barograph /inclinometer connection
- 1 DB9 male port: Standard RS232 protocol
- 1 Standard USB port: Connect with external storage card
- 1 RJ45 LAN Ethernet port (10/100M Bit) supports protocols HTTP, TCP/IP, FTP, NTRIP
- 3 SMA male connectors
  - 1 PPS output
  - Event input
  - Reserve for WLAN and Bluetooth
- 2 TNC connectors
  - GNSS Antenna connector
  - Frequency-marker oscillator input connector

## Data Format

- Correction data I/O:
  - RTCM 2.X, 3.X, RTCM3.2, CMR (GPS only), CMR+(GPS only)

- Positioning data outputs:
  - ASCII: NMEA-0183: GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST, PJK, PTNL
  - Extended NMEA-0183: BDGGA, GPNTN, GPCDT, GPHPR
- Observations:
  - ComNav binary, BINEX, RTCM, RINEX, compatible with major CORS software (VRS, FKP and iMax)

## Data logging

- Loop recording function supporting long-term recording
- Support five simultaneously raw data recording
- Maximum 50 Hz data logging rate
- Storage capacity
  - 32 GB internal memory
  - Maximum 1TB external memory
- File format
  - RINEX 3.X, 2.X and ComNav binary format
- File log session
  - 5/10/15/20/30 min and 1/2/4/24 hour
- Data retrieval and transfer
  - FTP and USB

## Physical

- Size (L × W × H): 202 mm × 163 mm × 75 mm
- Weight: 2.4 kg
- Housing: Rugged aluminum housing

## Environmental

- Operating temperature: -40 °C to + 80 °C
- Storage temperature: -45 °C to + 85 °C
- Humidity: 100% no condensation
- Water proof and dust proof: IP67, survives the temporary immersion to a 1 m depth
- Shock: rugged aluminum case with rubber ring seal, designed to survive a 1m drop onto concrete

## Electrical

- Power consumption: 3.5 W
- External power input: 9.5-28 VDC, with over-voltage protection
- Integrated internal battery 7.4 V, 17600 mAh, Li-ion; more than 30-hour continuously working

## Recommend Antenna

- AT340 GNSS Geodetic Antenna
- AT500 GNSS Choke Ring Antenna

## User Interface

- Front Panel Display
  - 4 arrow keys and data entry
  - Power button, Reset button and Esc button
  - LCD display showing receiver's status
- ComNav M300 Pro Web Server
- CRU software

1 QZSS are reserved for future upgrade.

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

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## 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

