



FROG GNSS

The FROG family

The FROG III is a lightweight and compact GNSS system, developed for topographic and hydrographic survey purposes. The FROG III system thanks its unique name to its amphibian capabilities.

The basic concept for the FROG III GNSS encompasses top quality components. It is flexible, easy to use and has multiple applications.

The FROG III GNSS features colored LEDs which indicate the receiver status (satellite, communication and modem status) at a glance. The beating heart of the FROG III GNSS consists of a NovAtel 72 channel, triple frequency receiver that is capable of using the positioning signals from both GPS and GLONASS constellations for maximum flexibility and enhanced positioning in challenging environments.

The FROG III GNSS is equipped with an internal GPRS modem which enables it to receive NMEA RTK correction signals. The FROG III GNSS supports GPS L2C. Future firmware upgrades will enable the system to track the upcoming GPS L5 signal as soon as it becomes available, which means your investment will have long-lasting results. The receiver can operate with SBAS, DGPS and OmniSTAR L-band correction signals.

Utilisation

- Hydrographic and topographic surveying
- Positioning of vessels, cranes and other objects
- NovAtel ALIGN heading solutions

Benefits / Features

- Lightweight, compact aluminum housing;
- Usable as a static base as well as a roving unit;
- Easy access to SIM card holder;
- Solid and reliable RTK performance;
- Improved positioning in challenging environments;
- Offers superior multipath detection, thus eliminating close-in multipath and to flag poor signal quality;
- Windows©-based configuration software.





FROG GNSS system specifications

Performance¹

Channel Configuration

- 14 L1, 14 L2, 6 L5 GPS
- 12 L1, 12 L2 GLONASS
- 2 SBAS
- 1 L-band

Horizontal Position Accuracy (RMS)²

- Single Point L1 1.8 m
- Single Point L1/L2 1.5 m
- SBAS² 0.6 m
- CDGPS² 0.6 m
- DGPS 0.45 m
- OmniSTAR VBS² 0.7 m
- OmniSTAR XP² 0.15 m
- OmniSTAR HP² 0.1 m
- RT-20^{TM 3} 0.2 m
- RT-2[®] 1 cm+1ppm

Measurement Precision

- L1 C/A Code 4 cm RMS
- L1 Carrier Phase 0.50 mm RMS (differential channel)
- L2 P(Y) Code 8 cm RMS
- L2 Carrier Phase 1 mm RMS (differential channel)

Data Rate⁴

- Measurements 1 - 50 Hz
- Position 1 - 50 Hz
- OmniSTAR HP 1 - 20 Hz

Time to First Fix

- Cold Start⁵ 60 s
- Hot Start⁶ 35 s

Tracking

20 Channel Dual Constellation (DC) GPS/GLONASS L1/L2

- Cold start: < 60 seconds
- Warm start: < 10 seconds
- Reacquisition: < 1 second

Signal Reacquisition

- L1 0.5 s (typical)
- L2 1.0 s (typical)

Time Accuracy⁷ 20 ns RMS

Velocity Accuracy 0.03 m/s RMS

Dynamics Velocity 515 m/s

Physical & Electrical

Size 240 x 180 x 60 mm

Weight 1400 gr

Power: Input Voltage: 9 to 30 V

Antenna LNA Power Output

- Output Voltage +5 VDC
- Maximum Current 100 mA

Communication Ports

- 2 RS-232

Input/output connectors

- Power 4pin LEMO
- Antenna Input TNC female
- External Oscillator BNC female
- COM1 DB-9 male
- COM2 DB-9 male

Environmental

- Temperature
- Operating -40°C to + 75°C
- Storage -45°C to + 95°C

Interface front

- On/Off Button
- GPS status
- GPS error status
- Modem status
- Status: COM 1, COM 2, COM 3
- Satellite status
- Power status

Includes Accessories

- VDC Power cable
- GPRS modem
- Mounting bracket
- Null-modem serial cable

Optional Accessories

- GPS-700 series antennas
- ANT-500 series antennas
- RF Cables - 5,100 and 30 m lengths
- AC adapters - International and North American
- Heading, pitch and roll application

1 Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.

2 GPS only

3 Expected accuracy after static convergence.

4 Slower data rates are expected for API customers. The maximum data rate is dependent on the size of the application.

5 Typical value. No almanac or ephemerides and no approximate position or time.

6 Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

7 Time accuracy does not include biases due to RF or antenna delay.

8 Export licensing restricts operation to a maximum of 514 metres per second

9 While operation without an external IMU, the FROG can accept an input voltage between +9 and +30 V.

10 When running a GPS-only model.

All specifications are subject to change without prior notification.

Contact us

For more information please call +31(0)206368443 or visit our website, www.seabed.eu

