FREYJA GNSS Receiver

Data Specifications

GNSS

Signal Tracking①	GPS (L1C/A, L1C, L2P(Y), L2C, L5) BDS (B1I, B2I, B3I, B1C, B2a, B2b) GLONASS (L1, L2, L3) Galileo (E1, E5a, E5b, E6) QZSS (L1, L2, L5, L6*) NavIC(L5) SBAS(L1, L2, L5) PPP(B2b-PPP, Galileo E6-HAS)
No. of Channels	1408

POSITIONING PERFORMANCE②

High-precision static GNSS Surveying	H:2.5mm + 0.1 ppm RMS / V:3.5mm + 0.4 ppm RMS
Static and Fast Static	H:2.5mm + 0.5 ppm RMS / V:5mm + 0.5 ppm RMS
Post Processing Kinematic (PPK / Stop & Go)	H:8mm + 1 ppm RMS / V:15mm + 1 ppm RMS Initialization time: Typically 10 min for base and 5 min for rover Initialization reliability: Typically>99.9%
PPP	H:10cm / V:20cm
Code Differential GNSS Positioning	H:±0.25m+1ppmRMS / V:±0.5m+1ppmRMS SBAS:0.5m(H), 0.85m(V)
Real Time Kinematic (RTK)	H:8mm+1ppm RMS / V:15mm+1 ppm RMS Initialization time: Typically <10 s Initialization reliability: Typically > 99.9%
Positioning rate	1Hz, 5Hz and 10Hz
Time to first Fix	Cold start:< 45s I Hot start:< 30s I Signal re-acquisition:< 2 s
Hi-Fix③	H:RTK+10mm / minute RMS / V:RTK+20mm / minute RMS
Tilt Survey Performance④	Additional horizontal pole-tilt uncertainty typically less than 5mm +0.5 mm / °tilt (0° ~ 60°)

COMMUNICATION

I/O Interface	1 × USB type C port; 1 × SMA antenna port
WiFi	Frequency 2.4GHz, Supports 802.11 b/g/n
Bluetooth	4.2 / 2.1+EDR, 2.4GHz
NFC	Near Field Communication for device touch pairing
Internal UHF Radio	Frequency: 410-470MHz I Channel: 116 (16 scalable) Transmitting power: 0.5W / 1W / 2W adjustable Working Range: Typically 3~5km, optimal 8~15km Supports multi-communication protocols: TRIMTALK450S, TRIMMARK III, TRANSEOT, SATEL-3AS, etc.

ELECTRICAL

Internal battery⑤	Internal 7.2V / 6900mAh lithium-ion rechargeable battery RTK Rover (UHF/Cellular): up to 24 hours*
External power	Charging:using standard smartphone chargers or external power banks.(Support 5V 2.8A Type-C USB external charging)

PHYSICAL

Weight	≤ 0.8kg(includes battery)
Dimensions (W x H)	132mm×67mm
Operation temperature	-30℃ to +70℃
Storage temperature	-40℃ to +80℃
Humidity	100% non-condensing
Water/dustproof	IP68 dustproof, protected from temporary immersion to depth of 1.0m (3.28ft)
Free fall	Designed to survive a 2m(6.56ft) natural fall onto concrete

CONTROL PANEL

LED Lamp	Satellite, Signal, Power
Physical button	1

SYSTEM CONFIGURATION

Storage	16GB ROM internal storage
Output rate	1Hz-20Hz
Output format	ASCII: NMEA-0183
Static data format	GNS, Rinex
Network Mode	VRS, FKP, MAC; supports NTRIP protocol
Real Time Kinematic (RTK)	CMR, RTCM 2.x, RTCM 3.x

***Description and Specifications are subject to change without notice.**

1.QZSS L6 can be provided by firmware upgrade.
2.The measurement accuracy, precision, reliability and initialization time depend on various factors, including tilt angle, number of satellites, geometric distribution, observation time, atmospheric conditions and multi-path validation, etc. The data are derived under normal conditions.
3.Accuracies are dependent on GNSS satellite availability. Hi-Fix Positioning ends after 5 minutes without differential data.Hi-Fix is not available in all regions, check with your local sales representative for more information.
4.Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.
5.The battery operating time is related to the operating environment, operating temperature and battery life.

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SATLAB GEOSOLUTIONS

FREYJA

GNSS Receiver

Made by Sweden

FREYJA GNSS Receiver

SatLab Freyja GNSS RTK is a progressive receiver that creates a new RTK experience for land surveyors. With its comprehensive features, it can perfectly handle the situations encountered in all kinds of surveying work, minimizing the burden from the physicality and extending the functionality of fieldwork. By increasing productivity by 25%, Freyja offers an accurate and efficient solution.

Key Features

- Advanced RTK Engine
- Multi-Constellation Tracking
- Built-in Radio
- Web UI
- Tilt Compensator
- NFC Module
- Long Battery Life (> 24 hours)
- Compatibility with third-party software

Applications

- Monitoring
- Land Survey
- Agriculture
- Mapping
- Landfill
- Sensor
- Topography and As-built
- Hydrographic
- UAV Base Station

Unlock your positioning mobility with Freyja

Handiness and Convenience

Refinement of design makes it rugged and compact with only 770g. A more durable battery ensures operating time reaches more than 24 hours. Durability and portability are optimized for surveyors who carry them around a lot in the fieldwork.

Accuracy and Precision

Matured RTK technology promises positioning reliability. New GNSS Antenna, full-constellation and all satellite signal tracking technology lay the solid foundation-precision of fieldwork.

Adaptability and Stability

Equipped with the latest tilt compensation algorithm and built-in high-performance 9-axis Inertial Measurement Unit (IMU), the measurement for hard-to-reach points is simple but precise with the high-performance tilt survey. Quality results are guaranteed even if you lose the signal while under extreme circumstances with great anti-interference ability.

- WebUI
- Tilt Survey
- Electronic bubble
- High-performance Built-in Radio
- Professional Support Network

TECHNICAL SUPPORT

Satlab offers online resources and a professional support network available worldwide.