FREYJA FR20 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*) IRNSS (L5) SBAS (L1 / L2 / L5)
No. of Channels	1408

POSITIONING PERFORMANCE

High-precision static GNSS Surveying	H:2.5 mm + 0.1 ppm RMS / V:3.5 mm + 0.4 ppm RMS
Static and Fast Static	H:2.5 mm + 0.5 ppm RMS / V:5 mm + 0.5 ppm RMS
Post Processing Kinematic (PPK / Stop & Go)	H:8mm + 1 ppm RMS / V:15 mm + 1 ppm RMS Initialization time: Typically 10 min for base and 5 min for rover Initialization reliability: Typically>99.9%
Code Differential GNSS Positioning	H:±0.25m+1ppmRMS / V:±0.5m+1ppmRMS SBAS:0.5m(H), 0.85m(V)
Real Time Kinematic (RTK)	H:8 mm+1ppm RMS / V:15 mm+1 ppm RMS Initialization time: Typically <10 s Initialization reliability: Typically > 99.9%
Time to first Fix	Cold start:< 45 s I Hot start:< 30 s I Signal re-acquisition:< 2 s
Tilt Survey Performance	Additional horizontal pole-tilt uncertainty typically less than 8 mm +0.7 mm / °tilt (2.5 cm accuracy in the inclination of 60°)

COMMUNICATION

Communication	Bluetooth: BT 5.2, 2.4GHz Wi-Fi: frequency 2.4 GHz, Supports 802.11a / b / g / n
Internal UHF Radio	Frequency: 450-470 MHz I Channel: 116 (16 scalable) Transmitting power: 0.5 W / 1 W / 2 W adjustable Supports multi-communication protocols: HI-TARGET, TRIMTALK450S, TRIMMARK III, TRANSEOT, SATEL-3AS, etc.

PHYSICAL

Internal battery②	Internal 7.2 V / 6900 mAh lithium-ion rechargeable battery. RTK Rover (UHF/Cellular): up to 24 hours*
External power	Charging:using standard smartphone chargers or external power banks. Weight:770g (includes battery) Dimensions (W×H):132mm×67mm Data storage:16GB ROM internal storage

Control Panel

LED Lamp	Satellite, Signal, Power
Physical button	1

Environment

Water / Dustproof	IP68
Shock and vibration	Designed to survive a 2 m natural fall onto concrete
Humidity	100%, condensing
Operation temperature	-45℃~+75℃
Storage temperature	-55℃~+85℃

I / O Interface

1 × USB port, Type C
1 × SMA antenna connector

Data Formats

Output rate	1Hz-20Hz.
Static data format	GNS, Rinex
Network model	VRS, FKP, MAC; supports NTRIP protocol
CMR& RTCM	CMR, RTCM 2.x, RTCM 3.x
Navigation outputs ASCII	NMEA-0183

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. A remoção e substituição da bateria deve ser feita pela assistência técnica no revendedor autorizado.

***Description and Specifications are subject to change without notice.**
1.Compliant, but subject to availability of IRNSS and Galileo commercial service definition. QZSS L6 and GLONASS L3 will be provided through future product upgrade.
2.The battery operating time is related to the operating environment, operating temperature and battery life.

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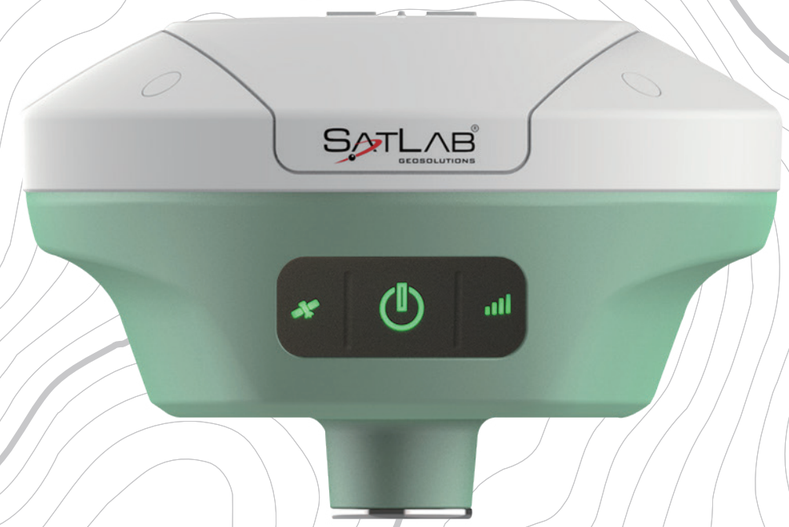


Made by Sweden

FREYJA FR20 GNSS Receiver

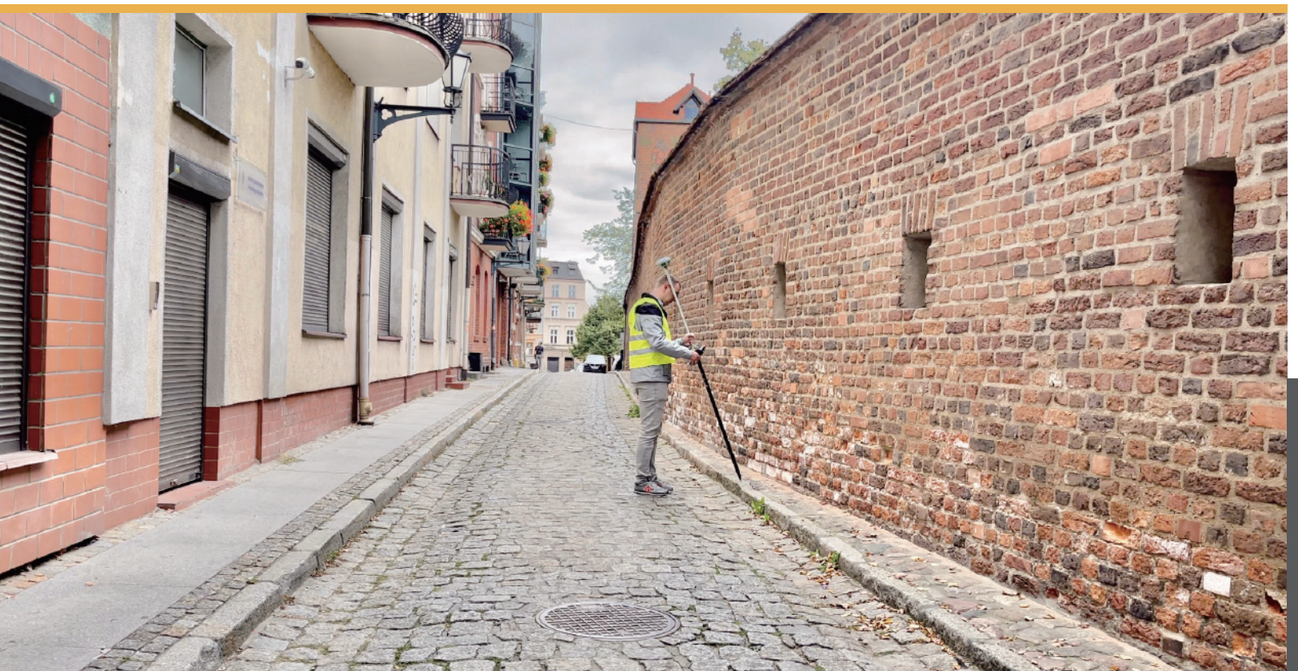
SatLab Freyja FR20 GNSS RTK is a progressive receiver that creates a new RTK experience for land surveyors. With its comprehensive features, it can perfectly handle the situations encountered in all kinds of surveying work, minimizing the burden from the physicality and extending the functionality of fieldwork. By increasing productivity by 25%, Freyja FR20 offers an accurate and efficient solution.

Key Features

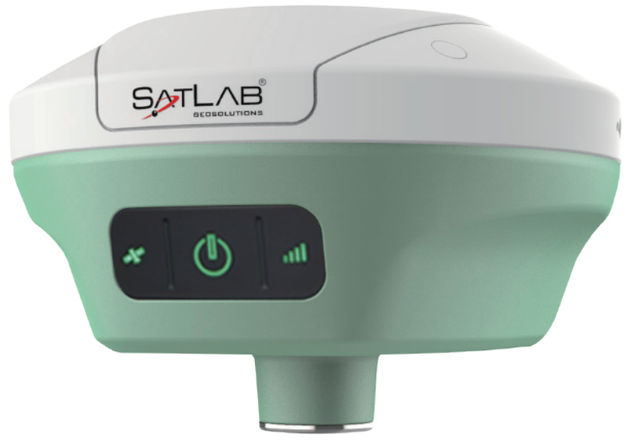
- Advanced RTK Engine
- Multi-Constellation Tracking
- Built-in Radio
- Web UI
- Tilt Compensator
- NFC Module
- Long Battery Life (> 24 hours)
- Compatibility with third-party software

Applications

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



Unlock your positioning mobility with Freyja FR20



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.