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Data Specifications

GNSS	
Signal Tracking^①	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) B2b-PPP/Galileo E6-HAS
PPP	
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% Horizontal: 10cm Vertical:20cm H:±0.25m+1ppmRMS / V:±0.5m+1ppmRMS SBAS:0.5m(H), 0.85m(V)
PPP	
Code Differential GNSS Positioning	H:8 mm+1ppm RMS / V:15 mm+1 ppm RMS Initialization time: Typically <10 s Initialization reliability: Typically > 99.9%
Real Time Kinematic (RTK)	1 Hz, 5 Hz and 10 Hz Cold start:< 45 s Hot start:< 30 s Signal re-acquisition:< 2 s Horizontal:RTK+10mm/minute RMS Vertical:RTK+20mm/ minute RMS
Positioning rate	
Time to first Fix	
Hi-Fix	
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 Frequency: 450-470 MHz Channel: 116 (16 scalable) Transmitting power: 0.5 W / 1 W / 2 W adjustable Supports multi-communication protocols: TRIMTALK450S, TRIMMARK III, TRANSEOT, SATEL-3AS, etc.
Internal UHF Radio	
PHYSICAL	
Internal battery^②	Internal 7.2 V / 6900 mAh lithium-ion rechargeable battery. RTK Rover (UHF/Cellular): up to 24 hours* Charging:using standard smartphone chargers or external power banks. Weight:770g (includes battery) Dimensions (W×H):132mm×67mm Data storage:16GB ROM internal storage
External power	
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 C ~+75 C
Storage temperature	-55 C ~+85 C
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



FREYJA FR20


GNSS Receiver




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.

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



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.