

SL900 GNSS Receiver

Data Specifications

GNSS

Signal Tracking¹

GPS (L1C/A, L1C, L1PY, L2C, L2P, L5)
BDS (B1I, B1C, B2a, B2I, B3*)
GLONASS (L1CA, L2CA, L2P, L3 CDMA*)
Galileo (E1, E5a, E5b, E5 AltBoc, E6*)
SBAS (Egnos, WAAS, GAGAN, MSAS, SDCM (L1, L5))
QZSS (L1C/A, L1C, L2C, L5, L6)
NavIC (L5)

Additional Technologies

AIM+ unique anti-jamming and monitoring system against narrow and wideband interference
IONO+ advanced scintillation mitigation
APME+ a posteriori multipath estimator for code and phase multipath mitigation
LOCK+ superior tracking robustness under heavy mechanical shocks or vibrations

No. of Channels

1760

POSITION PERFORMANCE²

High-Precision Static Static and Fast Static Post Processing Kinematic (PPK / Stop & Go)

H: 2.5mm + 0.1 ppm RMS / V: 3.5mm + 0.4 ppm RMS
H: 2.5mm + 0.5 ppm RMS / V: 5mm + 0.5 ppm RMS
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%

Code Differential GNSS Positioning

H: ±0.25m+1ppm RMS / V: ±0.5m+1ppm RMS
SBAS: 0.5m (H), 0.85m (V)

Real Time Kinematic (RTK)

H: 6mm+0.5ppm RMS / V: 10mm+1ppm RMS
Initialization time: Typically <10s
Initialization reliability: Typically > 99.9%

Time to first Fix Tilt Survey Performance³

Cold start:< 45s | Hot start:< 30s | Signal re-acquisition:< 2s
Additional horizontal pole-tilt uncertainty typically less than 8mm+0.7mm/°tilt(0° ~ 60°)

COMMUNICATIONS

I/O Interface

Mini USB, TNC antenna port, DC power input(5-pin)
SIM card slot, TF card slot

Network Communication

Full band support for cellular mobile network (LTE, WCDMA, GPRS, GSM)
GSM 900MHz&1800MHz, WCDMA 2100MHz/900MHz,
LTE Band 1,3,7,8,20

WiFi Bluetooth

Frequency 2.4GHz, Supports 802.11 b/g/n
V2.1+EDR, 2.4GHz

NFC

Near Field Communication for device touch pairing

Internal UHF Radio⁴

Power: 1W/2W/5W Adjustable
Frequency: 410MHz~470MHz | Channel: 116 (16 scalable)
Protocol: HI-TARGET, TRIMTALK450S, TRIMMARK III,
SATEL-3AS, TRANSEOT, etc.
Working Range: Typically 3~5km, optimal 8~15km

PHYSICAL

Dimensions (W x H)

170mm × 95mm

Weight

1.2kg including battery

Operation temperature

-40 C to +65 C

Storage temperature

-40 C to +85 C

Humidity

100% non-condensing

Water/dustproof

IP67 dustproof, protected from temporary immersion to depth of 1.0m (3.28ft)

Free fall

MIL-STD-810G, 516.6,
designed to survive a 2m(6.56ft) natural fall onto concrete

ELECTRICAL

Internal Battery⁵

Internal 7.4V / 5000mAh lithium-ion rechargeable and removable battery
RTK rover(UHF/Cellular): up to 18 hours
6V to 28V DC external power input(5-pin port)

External power

CONTROL PANEL

Physical button

1

LED Lights

Satellite, Signal, Power

SYSTEM CONFIGURATION

Storage

8GB ROM internal storage

Output format

ASCII: NMEA-0183

Output rate

1Hz~20Hz

Static data format

GNS, Rinx

Real Time Kinematic (RTK)

CMR, CMR+, RTCM 2.X, RTCM3.0, RTCM3.2

Network Mode

VRS, FKP, MAC, Support NTRIP protocol

Note

[1]Hardware ready.

[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]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.

[4]Support TX/RX function, 5W radio is base version, without IMU module.

[5]The battery operating time is related to the operating environment, operating temperature and battery life.

Descriptions and Specifications are subject to change without notice



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The SL900 is a high-precision GNSS receiver that performs even under the most demanding conditions. With its features, the SL900 is capable of delivering highly accurate data in real-time to any devices via a Bluetooth connection. Compact and lightweight, this GNSS receiver is one of the most flexible solutions that promises positioning reliability.



Tilt compensation solution

With surveyors in mind, Satlab designed a solution to increase efficiency in your workflow by cutting down time wasted from offsetting slanted measurements. With the tilt compensator, the SL900 can save up to 20 percent of time compared to conventional surveying practices. This solution allows you to focus on your surroundings conveniently while ensuring your safety and comfort.



Applications

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

Efficient and dependable

Powered by advanced GNSS engine, this receiver offers precise positioning and advanced interference mitigation which performs even in the most remote or challenging environments. Using its 1760 channel tracking capabilities, it can track all current and upcoming signals, offering sub-metre to centimetre precise positioning with different modes (RTK, PPK, Static).

Advanced Technologies Inside

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.

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

