

S850 GNSS Receiver

Compact GNSS
Receiver



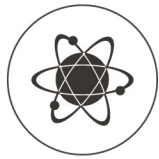
S850

Compact GNSS System

The Stonex S850 is a compact and advanced GNSS receiver designed for precision surveying in various environments. Supporting multiple satellite constellations including GPS, GLONASS, BeiDou, Galileo, QZSS, and IRNSS this device ensures optimal accuracy and reliability for all surveying needs.

Featuring an integrated Inertial Measurement Unit (IMU) that compensates for pole tilt up to 60 degrees, the S850 enhances surveying efficiency. It is powered by a robust 13400 mAh lithium battery for extended field use and includes a USB Type-C connection for quick recharging.

With a high-powered 2W radio for reliable long-distance data transmission, the S850 is ideal for remote and rugged applications.



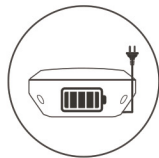
MULTIPLE CONSTELLATIONS

GPS, GLONASS, BEIDOU, GALILEO, QZSS, IRNSS and PPP correction services (HAS and B2b).



IMU TECHNOLOGY

The integrated IMU allows the receiver to automatically compensate for pole tilt up to 60 degrees, boosting surveying speed and efficiency.



HIGH BATTERY CAPACITY AND USB TYPE-C

S850 is delivered with a large capacity lithium battery 13400 mAh.



RADIO

The S850 GNSS receiver features a high-powered 2W radio that ensures reliable data transmission over long distances, making it an ideal choice for remote or rugged applications requiring robust wireless connectivity.



RUGGED RTK

S850 is a durable and waterproof high-precision positioning solution designed for challenging outdoor environments.





S850

Why Choose the S850 GNSS Receiver?

The S850 GNSS Receiver is the ideal choice for a variety of professionals and applications:



Cost-Conscious Professionals:

If you're looking for a high-performance GNSS solution that meets your specific needs without exceeding your budget, the S850 offers exceptional value without compromising on quality.



Base Station Users:

For those who require a reliable base station, the S850 ensures seamless radio connectivity to your rover, facilitating efficient data transmission and enhancing operational effectiveness.



Drone Integration:

The S850 is designed for easy integration with drones, making it perfect for users who want to enhance their aerial surveying and mapping capabilities.



Construction Teams:

Built to withstand tough conditions, the S850 is a durable GNSS system that maintains precise positioning accuracy, making it an excellent choice for construction teams operating in challenging environments.



S850 TECHNICAL FEATURES

RECEIVER

Satellite signals tracked	GPS: L1 C/A, L1C, L2P, L2C, L5
	GLONASS: L1, L2, L3
	BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b
	GALILEO: E1, E5a, E5b, E6
	QZSS: L1, L2, L5
	IRNSS: L5
	SBAS
PPP	B2b PPP, HAS
Channels	1408
Position Rate	Up to 20Hz
Signal Reacquisition	< 1 s
RTK Signal Initialization	< 5 s
Hot Start	Typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	8 GB
Tilt Sensor	IMU ±60°

POSITIONING¹

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 0.5 ppm RMS
Vertical	5 mm + 0.5 ppm RMS
REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK ²	
Fixed RTK Horizontal	8 mm + 1 ppm RMS
Fixed RTK Vertical	15 mm + 1 ppm RMS
PPP Accuracy	< 20 cm RMS
SBAS Accuracy ³	< 60 cm RMS

INTEGRATED GNSS ANTENNA

High accuracy multi-constellation antenna, zero phase center, with internal multipath suppressive board

INTERNAL RADIO

Type	Tx – Rx 0.5W / 2W
Frequency Range	410 - 470 MHz
Channel Spacing	12.5 KHz / 25 KHz
Range ⁴	4 Km in urban environment Up to 12 Km with optimal conditions

COMMUNICATION

I/O Connectors	➤ 5-pin Lemo, for external power supply and external radio
	➤ Type-C, for receiver power supply and data transfer
	➤ TNC, for antenna radio
Bluetooth	V2.1 + EDR / V5.0
Wi-Fi	802.11 g
Web UI	To upgrade the software, manage the status and settings, data download, etc. via smartphone, tablet or other electronic device with Wi-Fi capability
Reference outputs	RTCM 3.x
Navigation outputs	NMEA 0183

POWER SUPPLY

Battery	Built-in battery, 3.6V, 13400 mAh, 48.24Wh Support PD fast charge
Working Time	Up to 10 hours
Charge Time	4 hours

PHYSICAL SPECIFICATION

Dimensions	140 mm x 140 mm x 71 mm
Weight	980 g
Operating Temperature	-40°C to 65°C (-40°F to 149°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Waterproof/Dustproof	IP67
Shock Resistance	Designed to endure to a 2 m pole drop on hardwood floor with no damage
Humidity	100% non-condensing

1. Accuracy and reliability are generally subject to satellite geometry (PDOP), multipath, atmospheric conditions, and obstructions. In static mode, they are also subject to occupation times: the longer the baseline, the longer the occupation time must be.
2. Network RTK precision depends on the network's performance and is referenced to the closest physical base station.
3. It depends on the SBAS system's performance.
4. Varies with the operating environment and with electromagnetic pollution.



Illustrations, descriptions and technical specifications are not binding and may change

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