STONEX

S850A GNSS Receiver

GNSS Receiver with Atlas® and E-Bubble

suite cube

S850A With Atlas® and E-Bubble

Equipped with an advanced 700 channels GNSS board and capable of supporting multiple satellite constellations, including GPS, GLONASS, BEIDOU, GALILEO, QZSS and IRNSS. Stonex S850A GNSS receiver is an ideal solution for any surveying field work. S850A has also L-Band correction.

The advanced receiver design gives to the S850A an excellent signal tracking ability and interference resistant capacity. Advantages of portability and speed of operation make S850A GNSS receiver particularly suitable for fieldwork in areas of complex terrain.

Stonex S850A is equipped with all the necessary connections, has integrated Bluetooth and internal Wi-Fi functionality; has a built-in dual frequency UHF radio, 410-470 MHz and 902.4-928 MHz and the worldwide compatible 4G GSM modem.

Stonex S850A integrates also the E-Bubble functionality that allows the measurement of difficult points with the pole not levelled.

MULTI CONSTELLATION

Stonex S850A with its 700 channels, provides an excellent on board real time navigation solution with high accuracy. All GNSS signals (GPS, GLONASS, BEIDOU, GALILEO, QZSS and IRNSS) are included, no additional cost.

E-BUBBLE

S850A thanks to the E-Bubble can display directly on the software if the pole is vertical and the point will be recorded automatically when the pole is levelled. It is possible to measure points with an inclination of the pole up to 30°.

HIGH BATTERY CAPACITY AND TYPE-C

Stonex S850A is delivered with a large capacity lithium battery and Type-C connector to recharge it easily.

RADIO AND GSM

S850A has integrated UHF double frequency radio, 410-470MHz and 902.4-928MHz. Through the 4G GSM modem a fast internet connection is guaranteed.

RUGGED RTK

With IP67 Certification Stonex S850A will ensure operations in various kinds of extremely tough environments.

STONEX SURVEYING SYSTEMS

S850A

E-Bubble functionality

Stonex S850A integrates an E-Bubble that allows the measurement of difficult points with the pole not levelled. You can calculate the correct coordinate of a point by measuring from 3 different positions. It is possible to measure points with an inclination of the pole up to 30°, even in harsh environments and in the presence of magnetic fields.

In addition, you can view the instrument bubble directly within the survey software without worrying about checking the bubble of the pole. This makes the acquisition of points extremely fast.

Atlas® Correction Service & aRTK atlas

S850A is a new Stonex GNSS Receiver capable to automatically select the best combination of GNSS signals with the possibility to receive Atlas® RTK by L-band. ATLAS is an exclusive PPP technology that provides real-time, centimeter-level positions. PPP (Precise Point Positioning) is a positioning technique that removes or models GNSS system errors to provide a high level of position accuracy from a single receiver.

A PPP solution depends on GNSS satellite clock and orbit corrections, generated from a network of global reference stations. Once the corrections are calculated, they are delivered to the end user via satellite through L-Band signal.

Atlas® is a subscription for S850A aimed to achieve 3 different levels of accuracy depending on precision type that you need: Atlas® provides a precise centimeter-level positioning around the world, perfect when working in difficult areas.

Main features

- No RTK base station or RTK network required
- Correction data is continuously transmitted by satellite L-Band, delivering global coverage
- Bridging RTK outages for uninterrupted accurate positioning
- Autonomous remote position within centimeter accuracy
- Retain position accuracy during RTK data stream losses
- Keep position accuracy as long as needed

S850A TECHNICAL FEATURES

RECEIVER

Signal Tracking	GPS: L1 C/A, L1C, L1P, L2C, L2P, L5
	GLONASS: L1 C/A, L1P, L2 C/A, L2P, L3
	BEIDOU: B1, B2, B3, ACEBOC
	GALILEO: E1, E5a, E5b, ALTBOC, E6
	QZSS: L1 C/A, L1C, L2C, L5, L6
	IRNSS: L5
	SBAS: L1, L5
L-Band	Atlas H10 / H30 / Basic (optional)[5]
Bridging of RTK outages	aRTK - Works up to 20 minutes
Channels	700
Position Rate	5 Hz (optional 20Hz)[5]
Signal Reacquisition	< 1 s
RTK Signal Initialization	Typically < 10 s
Hot Start	Typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	8 GB
Tilt Sensor	E-Bubble

POSITIONING[1]

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 1 ppm RMS
Vertical	5.0 mm + 1 ppm RMS
CODE DIFFERENTIAL POSITIONING	
Horizontal	<0.5 m RMS
Vertical	<1.0 m RMS
SBAS POSITIONING	
Horizontal	<0.6 m RMS[2]
Vertical	<1.2 m RMS[2]
REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK[3]	
Fixed RTK Horizontal	8 mm + 1 ppm RMS
Fixed RTK Vertical	15 mm + 1 ppm RMS

INTEGRATED GNSS ANTENNA

High accuracy four constellation micro-strip antenna, zero phase center, with internal multipath suppressive board

INTERNAL RADIO (optional)[5]

Type	Tx - Rx
Frequency Range	410 - 470 MHz 902.4 – 928 MHz
Channel Spacing	12.5 KHz / 25 KHz
Maximum Range	3-4 Km in urban environment Up to 10 Km with optimal conditions[4]

INTERNAL MODEM

Band	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/ B13/B18/B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 UMTS: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8 Nano SIM card

COMMUNICATION

I/O Connectors	5 pins Lemo, connect the external power supply and external radio Type-C, for receiver power supply and data transfer
Bluetooth	V2.1 + EDR /4.0 LE
Wi-Fi	802.11 b/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 2.3, 3.2 CMR, CMR+, ROX
Navigation outputs	NMEA 0183

POWER SUPPLY

Battery	Internal rechargeable 7.2 V – 6.900 mAh
Voltage	9 to 28 V DC external power input with over-voltage protection (5 pins Lemo)
Working Time	Up to 10 hours
Charge Time	Typically 4 hours

PHYSICAL SPECIFICATION

Dimensions	140 mm x 140 mm x 71 mm
Weight	1.10 Kg
Operating Temperature	-30°C to 65°C (-22°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 concrete floor with no damage
Vibration	Vibration resistant

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

1. Accuracy and reliability are generally subject to satellite geometry (DOPs), multipath, atmospheric conditions and obstructions. In static mode they are subject even to occupation times: the longer is the Baseline, the longer must be the occupation time.
2. Depends on SBAS system performance.
3. Network RTK precision depends on the network performances and are referenced to the closest physical base station.
4. Varies with the operating environment and with electromagnetic pollution.
5. Optional, it can be activated via activation code.

STONEX AUTHORIZED DEALER

STONEX®
Part of **UniStrong**

Viale dell'Industria 53 - 20037 Paderno Dugnano (MI) - Italy
Phone +39 02 78619201
www.stonex.it | info@stonex.it

UNI EN ISO 9001:2015 - S850A - FEBRUARY 2020 - VER03 - REV-02