

SURVEY GNSS

Powerful solutions for all Surveying jobs

Stonex offers a broad range of GPS and GNSS receivers to meet your needs. Stonex receivers combine the world's most advanced technology with practical, integrated designs to simplify your daily work. Designed for the requirements of Professional Surveyors, GNSS Stonex portfolio includes a full range of options, allowing the users to choose the best solution for each one's needs.



S700A

S850A

S900

S900A

S980

S990A

S700A Modular GNSS system

Stonex S700A is a compact, high-performance GNSS receiver features a multiconstellation 700 channels GNSS board. The customer have the ability to purchase an entry level version, with just L1 GNSS and, at any time, it is possible to upgrade the receiver to the full version via activation code.

S700A supports GPS, GLONASS, BEIDOU, GALILEO, QZSS and IRNSS. S700A full version supports also L-Band correction. The unique internal antenna combines GNSS, Bluetooth and Wi-Fi integrated modules to optimize space and increase performance. This technology provides stronger and clearer signal monitoring, which means unprecedented results, designed for all day use in surveying applications. S700A includes several features: Linux Operating System, WEB UI interface, 4G Modem, high battery capacity, Type-C connector and IP67 certification.

Stonex S700A GNSS receiver full version, thanks to aRTK function and Atlas[®] correction service is an ideal solution for any surveying field work and in particular difficult areas. Atlas[®] delivers worldwide centimeter level correction data through L-band satellite communication.



MULTI CONSTELLATION

Stonex S700A, 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. The entry level version has only L1 and full version has L1, L2 and L3 frequencies.



WEB UI CONTROL

To initialize, manage, monitor the settings of the receiver and to download data using laptops or PCs, smartphones or tablets with Wi-Fi capability.



NEW BATTERY AND TYPE-C

Stonex S700A is delivered with a large capacity lithium battery that gives you up to 9 hours working. It is also equipped with Type-C connector.



4G MODEM

S700A has an internal 4G modem that operates with all world signals.



TWO VERSIONS

The ability to purchase an entry level version and then upgrade the receiver to the full version provides flexibility to all professionals in the field.



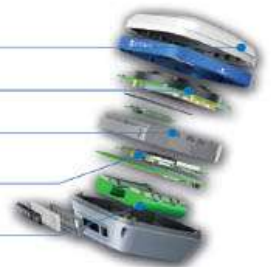
STRONG DESIGN | IP67

BLUETOOTH | WI-FI | GNSS ANTENNA

4G MODEM

LINUX OS | GNSS BOARD

NEW BATTERY | TYPE-C CONN.



S700A Full Version Atlas[®] Correction Service & aRTK

S700A full version is a Stonex GNSS Receiver capable to automatically select the best combination of GNSS signals with the possibility to receive Atlas[®] RTK 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's 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 S700A aimed to achieve 3 different levels of accuracy depending on the precision type that you need:

- BASIC, 50cm 95% (30cm RMS)
- H30, 30cm 95% (15cm RMS)
- H10, 8cm 95% (4cm RMS)

Atlas[®] provides a precise centimeter-level positioning around the world, perfect when working in difficult areas. aRTK is an innovative feature available in Stonex S700A GNSS Receiver that continues generating precise positions up to 20 minutes in case the receiver loses the land based RTK correction source.

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 932.4-928 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 8500mAh battery and Type-C connector to recharge it easily.



RADIO AND GSM

S850A has integrated UHF double frequency radio, 410-470MHz and 932.4-928MHz, through the 4G-GSM modem a fast internet connection is guaranteed.



RUGGED RTK

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



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



S900^{New} Powerful Precision Performance

S900 is the result of the continuous evolution of the Stonex GNSS integrated receivers. Featuring a high accuracy multi constellation antenna, a powerful UHF dual frequency transmitter and a GSM 4G modem, for a fully integrated multi-communication choice, all combined with a light and modern design.

Stonex S900 integrated GNSS receiver tracks all the present constellations and satellite signals: GPS, GLONASS, BEIDOU, GALILEO, QZSS, IRNSS and through the upgradable firmware offers the opportunity to be day by day updated with the latest available features.

On S900 it is possible to insert 2 smart hot swappable batteries at the same time, ensuring a maximum of 12 hours of operation without stopping. To initialize, manage, monitor the settings of the receiver and to download data is available a user friendly Web UI.

S900 is also equipped with E-Bubble functionality and the optional IMU technology. Fast initialization, up to 60° inclination.



MULTI CONSTELLATION

Stonex S900 with its 555 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.



DOUBLE FREQUENCY RADIO

S900 has an integrated UHF double frequency radio: 410-470MHz and 902.4-928MHz. The needs of each country are supported.



E-BUBBLE + IMU

S900 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. The IMU technology is also available as optional, only a fast initialization is requested.



INTELLIGENT BATTERIES

The dual slot for two smart hot swappable batteries gives you up to 12 hours of battery life. The power level can be checked and seen on the controller or directly on a led bar on the battery.



4G MODEM

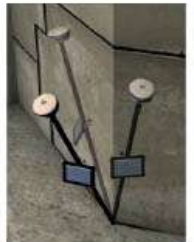
S900 has an internal 4G modem that operates with all world signals, a fast internet connection is guaranteed.



S900^{New} E-Bubble functionality

Stonex S900 integrates an E-Bubble that allows the measurement of difficult points with the pole not levelled. It is possible to measure points with an inclination of the pole over 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. Thanks to measurement routine integrated into the field software, the management of tilt function is simple and intuitive.



IMU Technology

S900 GNSS receivers have as optional feature the new IMU System that allows tilted measurement (TIL). Thanks to the new IMU technology, the edges of the buildings, the difficult and inaccessible points are no longer a problem.

What is an Inertial Measurement Unit (IMU)?

An Inertial Measurement Unit (IMU) is a self-contained system that measures linear and angular motion usually with a triad of gyroscopes and accelerometers.

What do Inertial Sensors Measure?

- Gyroscope measures angular velocity
- Accelerometer measures linear acceleration
- Magnetometer measures magnetic field strength

What are the performances of the S900 with IMU?

- Fast initialization
- Up to 60° inclination
- 2 cm accuracy 30°
- 5 cm accuracy 60°
- Fast and precise survey
- No problem with electromagnetic disturbances



Stonex S900 with IMU System makes reliable every measurement, for both surveys and the stake-out jobs, and makes extremely fast the acquisition of points: up to 40% of the field work time can be saved.

S900A^{NEW} Powerful precision with Atlas®

Stonex S900A is equipped with a high performance GNSS board with 800 channels and capable of supporting multiple satellite constellations: GPS, GLONASS, BEIDOU, GALILEO, QZSS and IRNSS. Including L-Band correction.

Through the 4G-GSM modem a fast internet connection is guaranteed for the reception of correction data and the management of the maps in the background. In the amazingly compact structure of the receiver the Bluetooth and Wi-Fi modules allow always reliable data flow to the controller, and the integrated TX/RX UHF radio with selectable frequencies, make S900A the perfect system for a GNSS Base + Rover.

Stonex S900A integrates an E-Bubble functionality that allows the measurement of difficult points with the pole not levelled. 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.

S900A is also equipped with the optional IMU technology. Fast Initialization, up to 60° inclination.



MULTI CONSTELLATION

Stonex S900A with its 800 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.



4G MODEM

S900A has an internal 4G modem that operates with all world signals, a fast internet connection is guaranteed.



E-BUBBLE + IMU

S900A 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. The IMU technology is also available as optional, only a fast initialization is requested.



INTELLIGENT BATTERIES

The dual slot for two smart hot swappable batteries gives you up to 12 hours of battery life. The power level can be checked and seen on the controller or directly on a led bar on the battery.



DOUBLE FREQUENCY RADIO

S900A has integrated UHF double frequency radio: 410-470MHz and 902.4-928MHz. The needs of each country are supported.



S900A^{NEW} Atlas® Correction Service & aRTK



S900A is a Stonex GNSS Receiver capable to automatically select the best combination of GNSS signals with the possibility to receive Atlas® RTK 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 S900A aimed to achieve 3 different levels of accuracy depending on precision type that you needs:

- BASIC, 50cm 95% (20cm RMS)
- H30, 30cm 95% (15cm RMS)
- R10, 8cm 95% (4cm RMS)

Atlas® provides a precise centimeter-level positioning around the world, perfect when working in difficult areas. aRTK is an innovative feature available in Stonex S900A GNSS Receiver that continue generating precise positions up to 20 minutes in case the receiver loses the land based RTK correction source.

IMU Technology

S900A GNSS receivers have as optional feature the new IMU System that allows tilted measurement (TILT). Thanks to the new IMU technology, the edges of the buildings, the difficult and inaccessible points are no longer a problem.

What are the performances of the S900A with IMU?

- Fast initialization
- Up to 60° inclination
- 2 cm accuracy 30°
- 5 cm accuracy 60°
- Fast and precise survey
- No problem with electromagnetic disturbances

Stonex S900A with IMU System makes reliable every measurement, for both surveys and the stake-out jobs, and makes extremely fast the acquisition of points: up to 40% of the field work time can be saved!



S980 The perfect base GNSS receiver

Stonex S980 integrated GNSS receiver tracks all the present constellations and satellite signals: GPS, GLONASS, BEIDOU, GALILEO, QZSS and IRNSS.

Through the 4G GSM modem a fast internet connection is guaranteed and the Bluetooth and Wi-Fi modules allow always reliable data flow to the controller. These features combined with the integrated 5 Watt radio make S980 the perfect base station receiver.

The color touch display and the possibility of connecting an external antenna make S980 an extremely effective receiver for every type of job.

S980 is also equipped with E-Bubble functionality and the optional IMU technology: fast initialization, up to 60° inclination.

S980 1PPS port can be used in applications that require precise synchronization time to ensure that multiple instruments work together or that use the same parameters for system integration based on precise time.



STONEX SURVEIVING SYSTEMS

MULTI CONSTELLATION
Stonex S980 with its 555 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.

5W RADIO
S980 has integrated 5W JHF radio with 410-470MHz frequency. Our receiver is equipped with an external radio antenna to work better.

E-BUBBLE + IMU
S980 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. The IMU technology is also available as optional, only a fast initialization is requested.

COLOR TOUCH DISPLAY
S980 comes with a convenient color touch display for an easy management of the most important functions.

EXTERNAL GNSS ANTENNA
S980, through the appropriate connector, can be connected to an external GNSS antenna therefore it is transformed from an RTK receiver to CCRS.



- EXTERNAL RADIO ANTENNA
- BLUETOOTH | WI-FI | 4G | GNSS ANTENNA
- RADIO 5W
- BATTERY 13.600mAh | TYPE-C CONN.
- COLOR TOUCH DISPLAY
- EXTERNAL GNSS ANTENNA | 1PPS PORT



E-Bubble functionality & IMU technology

Stonex S980 integrates an E-Bubble that allows the measurement of difficult points with the pole not levelled. It is possible to measure points with an inclination of the pole over 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. Thanks to measurement routine integrated into the field software, the management of 3D function is simple and intuitive.

S980 GNSS receivers have as optional feature the new IMU System that allows tilted measurement (TILT). Thanks to the new IMU technology, the edges of the buildings, the difficult and inaccessible points are no longer a problem.

What are the performances of the S980 with IMU?

- Fast initialization
- Up to 60° inclination
- 2 cm accuracy 30°
- 5 cm accuracy 60°
- Fast and precise survey
- No problem with electromagnetic disturbances

Stonex S980 with IMU System makes reliable every measurement, for both survey and the stake-out jobs, and makes extremely fast the acquisition of points: up to 40% of the field work time can be saved!



S990A High Performance with Atlas® and IMU

Stonex S990A is a 800 Channels GNSS receiver characterized by a new feature that enhance the performances of field surveys. The new IMU System allows tilted measurement (TILT); quick initialization, fast and precise survey.

S990A Receiver is equipped with all important connectivity capabilities: Bluetooth, Wi-Fi, UHF radio and 4G modem. The internal battery of 10.220mAh allows to work for 9 hours and can be recharged via a type-C connector. The color touch display and the WebUI are an easy and fast way to have the complete control of the receiver.

Thanks to aRTK function and Atlas® correction service, Stonex S990A is also able to work in particularly difficult areas. Atlas® delivers world wide centimeter-level correction data through L-band satellite communication and Internet.

IPPS can be applied to scenarios that require precise synchronization time to ensure that multiple facilities work together or that use the same parameters for system integration based on precise time.



STONEX SURVEYING SYSTEMS

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MULTI CONSTELLATION
 Stonex S990A with its 800 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.
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IMU TECHNOLOGY
 On S990A is available the IMU technology. Fast initialization, up to 60° inclination.
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DOUBLE FREQUENCY RADIO
 S990A has integrated UHF double frequency radio: 410-470MHz and 902.4-928MHz. The needs of each country are supported.
- 
4G MODEM
 S990A has an internal 4G modem that operates with all world signals, a fast internet connection is guaranteed.
- 
COLOR TOUCH DISPLAY
 S990A comes with a convenient color touch display for an easy management of the most important functions.



S990A IMU Technology

S990A GNSS receiver has the new IMU System that allows tilted measurement (TILT). Thanks to the new IMU technology, the edges of the buildings, the difficult and inaccessible points are no longer a problem.



What is an Inertial Measurement Unit (IMU)?

An Inertial Measurement Unit (IMU) is a self-contained system that measures linear and angular motion usually with a triad of gyroscopes and accelerometers.

What do Inertial Sensors Measure?

- Gyroscope measures angular velocity
- Accelerometer measures linear acceleration
- Magnetometer measures magnetic field strength

What are the performances of the S990A with IMU?

- No problem with electromagnetic disturbances
- Fast initialization
- Up to 60° inclination
- 2 cm accuracy 30°
- 5 cm accuracy 60°
- Fast and precise survey

Stonex S990A with IMU System makes reliable every measurement, for both surveys and the stake-out jobs, and makes extremely fast the acquisition of points: up to 40% of the field work time can be saved!

Atlas® Correction Service & aRTK atlas






S990A is a Stonex GNSS Receiver capable to automatically select the best combination of GNSS signals with the possibility to receive Atlas® RTK 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.

- Atlas® is a subscription for S990A aimed to achieve 3 different levels of accuracy depending on precision type that you need:
- BASIC, 50cm 95% (30cm RMS)
 - H30, 30cm 95% (15cm RMS)
 - H10, 8cm 95% (4cm RMS)

Atlas® provides a precise centimeter-level positioning around the world, perfect when working in difficult areas, aRTK is an innovative feature available in Stonex S990A GNSS Receiver that continue generating precise positions up to 20 minutes in case the receiver loses the land based RTK correction source.

GNSS RECEIVERS

Product Comparison

						
	S700A	S850A	S900	S900A	S980	S990A
Channels	700	700	555	800	555	800
Signals Tracking	GPS	✓	✓	✓	✓	✓
	GLONASS	✓	✓	✓	✓	✓
	BEIDOU	✓	✓	✓	✓	✓
	GALILEO	✓	✓	✓	✓	✓
	QZSS	✓	✓	✓	✓	✓
	IRNSS	✓	✓	NO	✓	NO
	L-BAND	Atlas	Atlas	NO	Atlas	NO
SBAS	✓	✓	✓	✓	✓	✓
ak1K	✓	✓	NO	✓	NO	✓
Rate Hz	5-20	5-20	5	10-50	5	10-50
Memory	8 Gb	8 Gb	8 Gb	8 Gb	32 Gb	32 Gb
Bluetooth	✓	✓	✓	✓	✓	✓
WiFi	✓	✓	✓	✓	✓	✓
Web User Interface	✓	✓	✓	✓	✓	✓
OS Linux	✓	✓	✓	✓	✓	✓
Display	NO	NO	NO	NO	✓	✓
Radio UHF 410-470MHz	NO	✓	✓	✓	5Watt	✓
Radio UHF 902.4-928MHz	NO	✓	✓	✓	NO	✓
GSM 4G	✓	✓	✓	✓	✓	✓
E-Bubble	NO	✓	✓	✓	✓	✓
IMU	NO	NO	✓	✓	✓	✓
1PPS	NO	NO	NO	NO	✓	✓
External GNSS antenna	NO	NO	NO	NO	✓	NO
Nr. Battery	1	1	2	2	1	1
Weight	1.10 Kg	1.10 Kg	1.30 Kg	1.30 Kg	1.50 Kg	1.40 Kg
Operating Temperature	-30° + 65°	-30° + 65°	-40° + 65°	-40° + 65°	-40° + 65°	-40° + 65°
Protection class	IP67	IP67	IP67	IP67	IP67	IP67