

S900<sup>New</sup> GNSS Receiver

Powerful Precision  
Performance



# S900<sup>New</sup>

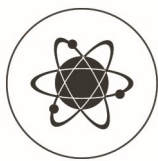
## Powerful Precision Performance

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 and the correct coordinates of a point with a simple click.



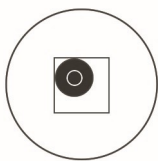
### MULTI CONSTELLATION

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.



STONEX



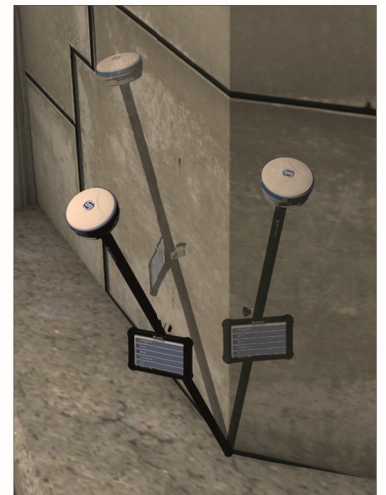


# S900<sup>New</sup>

## E-Bubble functionality

Stonex S900 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 60°, 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. 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 (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 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!

# S900<sup>New</sup> TECHNICAL FEATURES

## RECEIVER

Satellite Tracked	GPS: L1 C/A, L1C, L2C, L2P, L5 GLONASS: L1 C/A, L2C, L2P, L3, L5 BEIDOU: B1, B2, B3 GALILEO: E1, E5a, E5b, E5 ALTBOC, E6 QZSS: L1 C/A, L1C, L2C, L5, L6 IRNSS: L5 SBAS: L1, L5
Channels	555
Position Rate	5 Hz
Signal Reacquisition	< 1 sec
RTK Signal Initialization	Typically < 10 sec
Hot Start	Typically < 15 sec
Initialization Reliability	> 99.9 %
Internal Memory	8 GB
Micro SD Card	Expansion slot up to 32 GB
Tilt sensor	E-Bubble levelling IMU (optional) <sup>5</sup>

## POSITIONING<sup>1</sup>

HIGH PRECISION STATIC SURVEYING	
Horizontal	3 mm + 0.1 ppm RMS
Vertical	3.5 mm + 0.4 ppm RMS
CODE DIFFERENTIAL POSITIONING	
Horizontal	0.25 m RMS
Vertical	0.45 m RMS
SBAS POSITIONING <sup>2</sup>	
Horizontal	0.30 m RMS
Vertical	0.60 m RMS
REAL TIME KINEMATIC (< 30 Km) - NETWORK SURVEYING <sup>3</sup>	
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)<sup>5</sup>

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 <sup>4</sup>

## 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	7-pins Lemo and 5-pins Lemo interfaces. Multifunction cable with USB interface for PC connection
Bluetooth	2.1 + EDR, V4.1
Wi-Fi	802.11 b/g/n
Web UI	To upgrade the software, manage the status and settings, data download, etc. via smart phone, tablet or other internet enabled electronic device
Reference outputs	RTCM 2.3, 3.2 CMR, CMR+, RTCA
Navigation outputs	NMEA 0183

## POWER SUPPLY

Battery	2 rechargeable and replaceable 7.2 V - 3.400 mAh Intelligent lithium batteries
Voltage	9 to 28 V DC external power input with over-voltage protection (5 pins Lemo)
Working Time	Up to 12 hours (2 batteries hot swap)
Charge Time	Typically 4 hours

## PHYSICAL SPECIFICATION

Dimensions	φ 157 mm x 76 mm
Weight	1.19 Kg (with one battery) 1.30 Kg (with two batteries)
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
MIL- STD	MIL-STD-810F
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

- 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.
- Depends on SBAS system performance.
- Network RTK precision depends on the network performances and are referenced to the closest physical base station.
- Varies with the operating environment and with electromagnetic pollution.
- Optional, it can be activated via firmware.



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