

S990+ GNSS Receiver

High Performance
with IMU

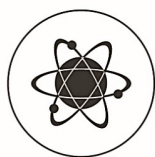


S990+ High Performance with IMU

Stonex S990+ is a 1408-channel GNSS receiver featuring characteristics that improve survey performance in the field. The S990+ receiver is equipped with all major connectivity features: Bluetooth, Wi-Fi, UHF radio and 4G modem.

The internal 10.200mAh battery allows 9 hours of operation and can be recharged via a USB Type-C connector. The IMU system supports tilted measurement (TILT) with quick initialization, so the operator can get a fast and accurate surveys.

The color touch display and Web UI are a quick and easy way to get complete control of the receiver. The 1PPS port is an additional advantage available on this GNSS because it can be applied to scenarios that require precise timing to ensure that multiple facilities work together, or to scenarios that use the same parameters for integration of systems based on precise timing.



MULTIPLE CONSTELLATIONS

Stonex S990+ with its 1408 channels provides an excellent on-board real-time navigation solution with high accuracy. All GNSS signals (GPS, GLONASS, BEIDOU, GALILEO and QZSS) are included, no additional cost.



IMU TECHNOLOGY

IMU technology is available on S990+, it allows fast initialization and accurate measurements with an inclination up to 60°.



DOUBLE FREQUENCY RADIO (Optional)

S990+ has integrated UHF double frequency radio, 410-470MHz and 902.4-928MHz. The needs of each country are supported.



4G MODEM

S990+ has an internal 4G modem that operates with all world signals, a fast internet connection is guaranteed.



COLOR TOUCH DISPLAY

S990+ comes with a convenient color touch display for an easy management of the most important functions.





S990+ IMU Technology



S990+ GNSS receiver has the IMU System that allows tilted measurement (TILT). Thanks to the IMU technology, the difficult and inaccessible points, as the edges of the houses, 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

Stonex S990+ with IMU system makes every measurement reliable, in both survey and stakeout jobs, and makes the acquisition of points extremely faster, up to 40% of the field work time can be saved!

What are the performances of the S990+ with IMU?

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

Why to choose S990+?

This GNSS is chosen for its precision and accuracy, it has a built-in antenna with high gain, this makes the results obtained in the field, to be the best among similar-range products. The capabilities of this instrument are mainly observed in the performance measurement of RTK accuracy values. It also has a 1PPS port that can be used in applications requiring precise timing to ensure joint operation of multiple instruments or using the same parameters for integration of systems based on precise timing.



S990+ TECHNICAL FEATURES

RECEIVER

	GPS: L1 C/A, L1C ¹ , L2P, L2C, L5
	GLONASS: L1, L2
Signal Tracking	BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b ¹
	GALILEO: E1, E5a, E5b, E6
	QZSS: L1, L2, L5
	SBAS
PPP	B2b PPP ¹ , HAS ¹
Channels	1408
Position Rate	20 Hz
Signal Reacquisition	< 1 s
RTK Signal Initialization ²	Typically < 10 s
Hot Start	Typically < 15 s
Initialization Reliability	> 99.9 %
Internal Memory	32 GB
Tilt Sensor	IMU and E-bubble

POSITIONING³

STATIC SURVEYING	
High Precision Static Horizontal	2.5 mm + 0.1 ppm RMS
High Precision Static Vertical	3.5 mm + 0.4 ppm RMS
Static and Fast Static Horizontal	3 mm + 0.5 ppm RMS
Static and Fast Static Vertical	5 mm + 0.5 ppm RMS
CODE DIFFERENTIAL POSITIONING	
Horizontal	0.25 m + 1 ppm RMS
Vertical	0.50 m + 1 ppm RMS
SBAS POSITIONING ⁴	
Accuracy	0.60 m RMS
REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK ⁵	
Fixed RTK Horizontal	5 mm + 0.5 ppm RMS
Fixed RTK Vertical	10 mm + 0.5 ppm RMS

INTEGRATED GNSS ANTENNA

High accuracy four constellation antenna, zero phase center, with internal multipath suppression

INTERNAL RADIO (optional)⁶

Type	Tx – Rx
Frequency Range	410 - 470 MHz 902.4 – 928 MHz
Channel Spacing	12.5 KHz / 25 KHz
Range	3-4 Km in urban environment Up to 10 Km with optimal conditions ²

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
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COMMUNICATION

I/O Connectors	5-pin Lemo connects the external power supply and external radio Type-C, for receiver power supply and data transfer 1PPS port
Bluetooth	2.1 + EDR, V5.0
Wi-Fi	802.11 b/g/n
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	Internal rechargeable 7.2 V – 10200 mAh
Voltage	9 to 28 V DC external power input with over-voltage protection (5-pin Lemo)
Working Time	Up to 10 hours
Charge Time	Typically 4 hours

PHYSICAL SPECIFICATION

Dimensions	Ø 151 mm x 94.5 mm
Weight	1.3 Kg
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
Vibration	Vibration resistant

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

1. Available with future firmware update.
2. Varies with the operating environment and with electromagnetic pollution.
3. 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.
4. Depends on SBAS system performance.
5. Network RTK precision depends on the network performances and are referenced to the closest physical base station.
6. Optional, activated via activation code.

STONEX AUTHORIZED DEALER



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