

S580+ GNSS Receiver

June 2024



Main Features

S580+ – Main features

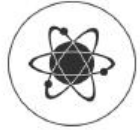
The S580+ with GNSS board featuring **1408 channels** delivers centimeter-level accuracy, ensuring reliable and precise positioning for your critical jobs.

The S580+ seamlessly integrates with GPS, GLONASS, BeiDou, Galileo, and QZSS, providing comprehensive coverage and enhanced positioning capabilities in any environment. **Equipped with IMU** technology supporting inclined measurements, the S580+ expands the range of applications and ensures accurate data collection even in challenging conditions.

The S580+ comes with a rubber protective cover that enhances device protection, provides a non-slip grip, and ensures durability in rugged environments. **With an IP67 rating** and the ability to withstand drops from 1.2 meters on hard surfaces, the S580+ is built to last.



S580+ - Main Features



MULTI-CONSTELLATION SYSTEM

GPS, GLONASS, BeiDou, Galileo, QZSS.



HIGH PRECISION

Achieve centimeter-accurate positioning with advanced technology, including support for IMU precision.



IMU TECHNOLOGY

IMU technology is available on S580+, it allows fast initialization and accurate measurements with an inclination up to 60°.



DATA TRANSMISSION

Wi-Fi, Bluetooth, and external radio.



RUGGED RTK

With IP67 certification S580+ will ensure operations in various kinds of extremely tough environments.



S580+ – From GIS to Topography



High precision positioning



Hands free design



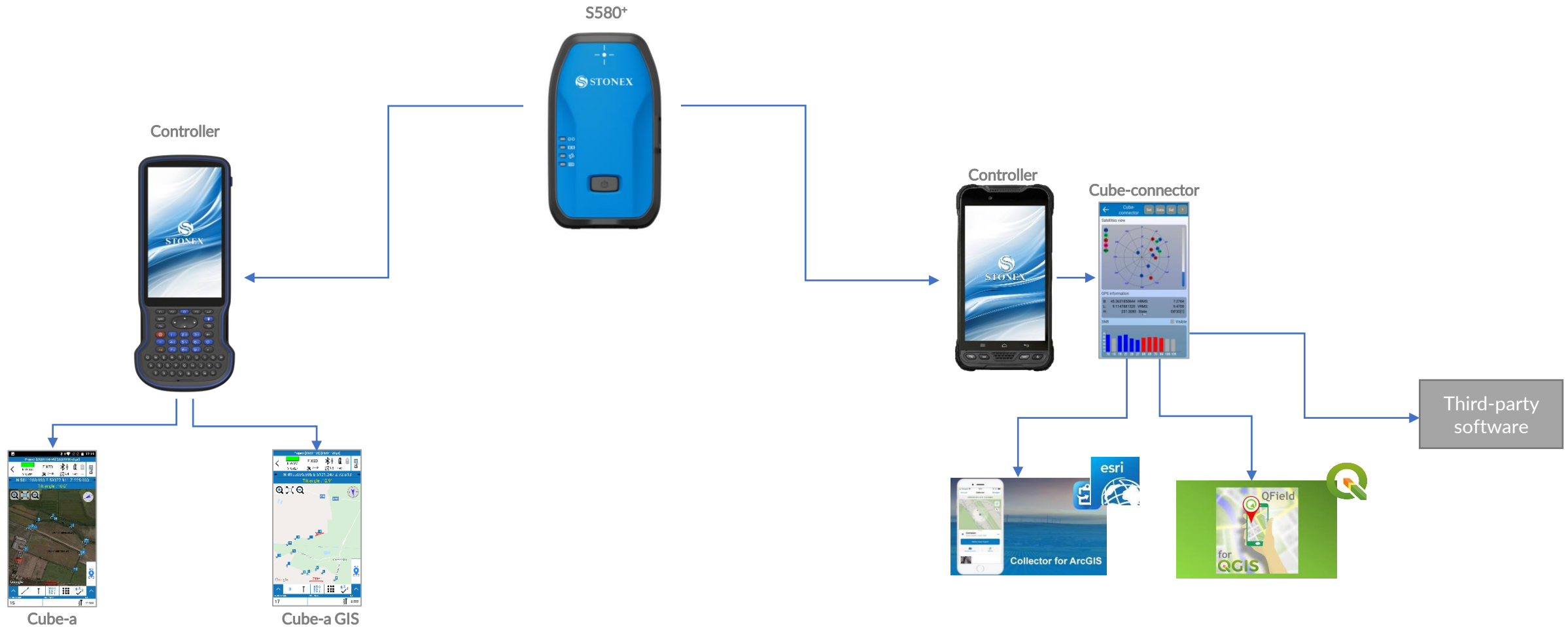
Belt case



Arm support



S580+ – From GIS to Topography



S580+ - IMU Technology

IMU is a sensor that utilizes a combination of accelerometers, gyroscopes, and magnetometers to accurately track movement and orientation.

These advanced sensors offer a valuable solution for surveying in difficult or inaccessible locations where traditional methods may not be practical.

The S580+ model, for instance, can measure inclinations up to 60 degrees.



S580+ – Rover RTK with Radio

The S580+ has been designed as a RTK rover to receive differential corrections from the network. However, thanks to the Stonex SR02 external radio, the rover can also receive RTK corrections from a base that transmits them via UHF radio modem in the 410-470 MHz frequencies.

The SR02 external radio receives corrections from the base station and transfers them to the S580+ via Bluetooth thanks to Cube-a.



S580+ - Applications

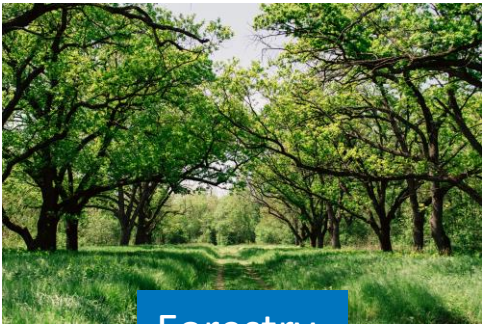
Data inventory and Cadastre



Utility location



Forestry



Construction



Ground control points



Georadar



Bathymetry



Technical Specification

S580+ - Technical Specification

Receiver	
Channels	1408
Tracking	GPS: L1 C/A, L2P, L2C, L5 GLONASS: L1, L2 BEIDOU: B1I, B2I, B3I, B1C, B2a GALILEO: E1, E5a, E5b QZSS: L1C, L2C, L5 SBAS: L1 C/A
Position Rate	Up to 10 Hz
Operating System	Linux
Processor	T113



S580+ - Technical Specification

Positioning	
RTK Network	2 cm
RTK Radio	2 cm
SBAS accuracy	< 60 cm



S580+ - Technical Specification

Communication	
I/O Connectors	TYPE-C connector support USB 2.0
Bluetooth	2.1+EDR / 3.0 / 4.1 LE
Wi-Fi	802.11 b/g/n



S580+ - Technical Specification

Physical Specification	
Dimensions	139 mm x 81 mm x 31mm
Weight	315 g
Operating Temperature	-30°C to +65°C (-22°F to 149°F)
Storage Temperature	-40°C to +80°C (-40°F to 176°F)
Protection Class	IP67
Drop	Designed to endure to a 1.2 m drop on concrete floor with no damage



S580+ - Panel definition



Button	The power button is used to turn the device on and off. Press and hold the power button for 3 seconds to turn the device on or off. Press and hold the power button for 12 seconds to reset the device.	
	Connection indicator	The LED indicator is always on when Bluetooth is connected, and flashes when Bluetooth is transmitting data.
	Data-link indicator (Green)	The LED indicator flashes when differential data is being transmitted.
	Satellite indicator (Green)	The LED indicator flashes according to the number of stars tracked.
	Power indicator (Red-Green)	Solid green: the battery is fully charged. Flashing red and warning beep: battery power <10%. Solid red when charging: battery is currently charging. Solid green when charging: charging process is complete.

S580+ - Connector



No.	Item	Definition
1	Type-C	Supports USB 2.0, used for direct charge and data transmission

S580+

Marketing

S580+ - Pictures



S580+ - Brochure

S580+ TECHNICAL FEATURES

RECEIVER	
GPS: L1 C/A, L2P, L2C, L5	
GLONASS: L1, L2	
Satellite signals tracked	BEIDOU: B1I, B2I, B3I, B1C, B2a
	Galileo: E1, E5a, E5b
	QZSS: L1C, L2C, L5
	SBAS: L1 C/A
Channels	1408
Position Rate	Up to 10 Hz
Signal reacquisition	< 2 sec
RTK Initialization	Typically < 10 sec
Hot Start	Typically < 15 sec
Initialization Reliability	> 99.9 %
POSITIONING ¹	
RTK Network ²	2 cm
RTK Radio	2 cm
SBAS accuracy	< 60 cm
INTEGRATED GNSS ANTENNA	
Multi-constellation GNSS antenna	
HARDWARE	
Processor	T113
Operating System	Linux
EXTERNAL RADIO (optional)	
Model	S802
Type	Tx + Rx - Transceiver (2 watt)
Frequency Range	410 - 470 MHz
Channel Spacing	12.5 kHz / 25 kHz
Maximum Range	3-4 km in urban environment Up to 10 km with optimal conditions ³
COMMUNICATION	
I/O Connectors	TYPE-C connector support USB 2.0
Bluetooth	2.1+EDR / 3.0 / 4.1 LE
Wi-Fi	802.11 b/g/n
Real time protocols	RTCM 3.x
POWER SUPPLY	
Battery	Rechargeable - 3.85V/6120mAh
Input	DC 5V 2A
Working Time	>10 hours
Charge Time	Typically 4 hours
PHYSICAL SPECIFICATION	
Dimensions	139 mm x 81 mm x 31 mm
Weight	315 g
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 a 1.2 m drop on concrete floor with no damage
STANDARD ACCESSORIES	
Power adapter, USB cable, Belt case, Pole mount	
OPTIONAL ACCESSORIES	
Carbon fiber pole, Telescopic pole, Soft bag	

1. Accuracy and reliability are generally subject to satellite geometry (DOP), 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. Network RTK precision depends on the network performance and are referenced to the closest reference station.
3. Varies with the operating environment and with electromagnetic pollution.

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



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S580+ GIS & RTK Applications

The S580+ is a compact and lightweight GNSS receiver with exceptional performance and centimeter precision. Thanks to the GNSS board with 1408 channels, the S580+ works with GPS, GLONASS, BeiDou, Galileo, and QZSS satellite systems and it is equipped with IMU technology that supports inclined measurements.

Compared to traditional GIS products, the S580+ is a high-precision, intelligent data acquisition receiver that can be worn or attached to a pole, offering greater freedom of movement and flexibility. The S580+ can communicate with an external device such as a tablet, smartphone, or PC via Bluetooth and Wi-Fi; the receiver can be configured via the internal web interface or the Cube-connector app to receive RTK differential corrections and connect seamlessly to survey or GIS third-party software.

The rubber protective cover increases device protection, is non-slip and non-damaging; the overall device protection reaches IP67 and withstands drops from 1.2 meters on hard surfaces.



- MULTI-CONSTELLATION SYSTEM**
GPS, GLONASS, BeiDou, Galileo, QZSS.
- HIGH PRECISION**
Achieve centimeter-accurate positioning with advanced technology, including support for IMU precision.
- IMU TECHNOLOGY**
IMU technology is available on S580+, it allows fast initialization and accurate measurements with an inclination up to 60°.
- DATA TRANSMISSION**
Wi-Fi, Bluetooth, and external radio.
- RUGGED RTK**
With IP67 certification S580+ will ensure operations in various kinds of extremely tough environments.



S580+ GNSS Receiver

IMU Technology

IMU are sensors that utilize a combination of accelerometers, gyroscopes, and magnetometers to accurately track movement and orientation. These advanced sensors offer a valuable solution for surveying in difficult or inaccessible locations where traditional methods may not be practical. Furthermore, IMUs significantly enhance the accuracy of GNSS positioning by providing inertial measurements that can be used to correct for GNSS signal errors and provide more precise positioning, particularly in areas with limited satellite coverage. The S580+ model, for instance, can measure inclinations up to 60 degrees.



Portable device

The S580+ is a portable GIS device that is meticulously crafted to elevate the geospatial data collection experience. The ability to be worn provides unparalleled convenience and mobility for fieldwork.

Rover RTK with Radio

The S580+ RTK rover receiver can receive RTK corrections from a network via its external Stonex S802 radio, which operates in the 410-470 MHz UHF frequencies. The radio receives corrections from a base station, then transmits them to the S580+ through Bluetooth.



Configuration

S580+ - Standard Configuration

PRODUCT CODE	DESCRIPTION
B10-150515	S580+, GNSS, 1408Ch, IMU
	S580+ - Pole mount
	Power Adaptor with 4 plugs (US, UK, EU and AU)
	Type C-Type C, 1.5m
	Type C-Type A, 1.5m
	Belt case for S580+, black
	Carton box



S580+ – Suggested Optional Accessories and Software

PRODUCT CODE	DESCRIPTION
40-450661	Software Stonex Cube-a GPS v6.x
40-450662	Software Stonex Cube-a GIS v6.x
30-350089	SB-100, Soft bag for GNSS and controller
30-350746	PG-180, Pole for GNSS, 1,80m, 4-section, Allum, Telescopic
30-350603	PG-220, Pole for GNSS, 2,20m, 2-section, Carbon fiber, Telescopic
50-550740	S55, Controller, 5.5", 4G, Android
30-350734	S55, Bracket
50-550731	UT12P, Controller, 6", 4G, Android
30-350391	UT12P, Bracket
B45-460217	SR02, UHF 2W
30-350412	SR02, Bracket for pole

S580+ - Suggested pole configuration

The following accessories are required to transform the S580+ into a pole-mounted RTK receiver:

PRODUCT CODE	DESCRIPTION
40-450661	Software Stonex Cube-a GPS v6.x 1
40-450662	Software Stonex Cube-a GIS v6.x
30-350089	SB-100, Soft bag for GNSS and controller 2
30-350746	PG-180, Pole for GNSS, 1,80m, 4-section, Allum, Telescopic
50-550740	S55, Controller, 5.5", 4G, Android 3
30-350734	S55, Bracket



S580+ - Suggested external radio configuration

The following accessories are required to transform the S580+ into a pole-mounted RTK receiver with external radio:

PRODUCT CODE	DESCRIPTION
40-450661	Software Stonex Cube-a GPS v6.x 1
40-450662	Software Stonex Cube-a GIS v6.x
30-350089	SB-100, Soft bag for GNSS and controller 2
30-350603	PG-220, Pole for GNSS, 2,20m, 2-section, Carbon fiber, Telescopic
50-550740	S55, Controller, 5.5", 4G, Android 3
30-350734	S55, Bracket
B45-460217	SR02, UHF 2W 4
30-350412	SR02, Bracket for pole





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