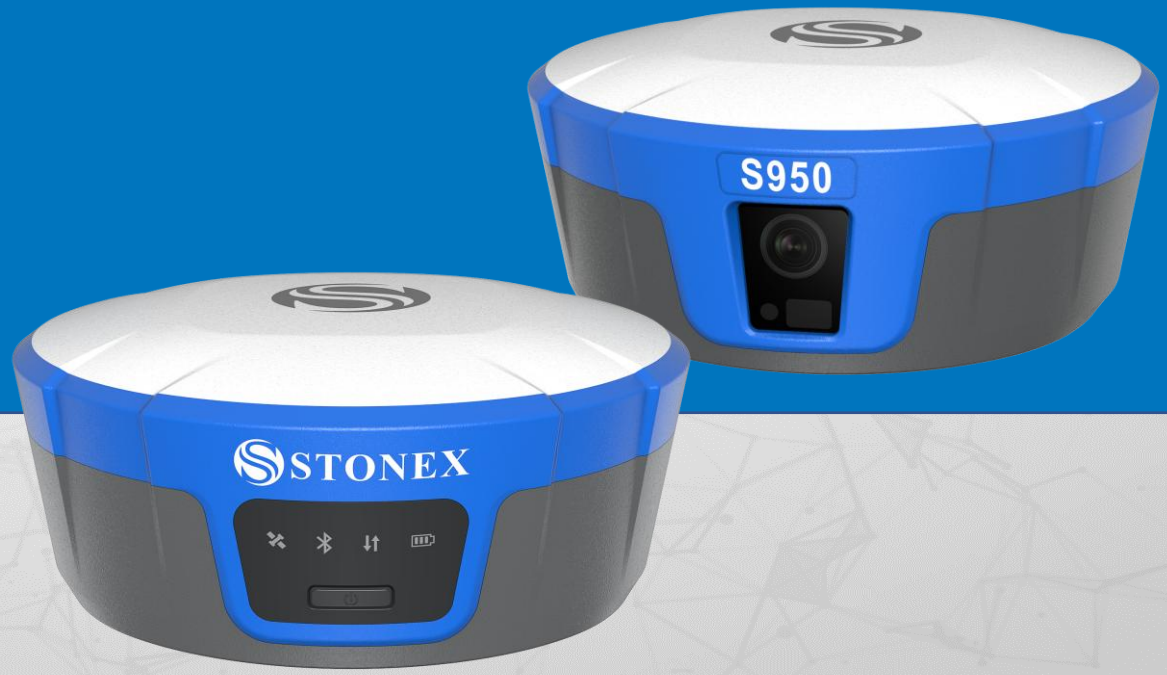
STONEX

# S950 GNSS Receiver *with* Laser Distance Meter




*July 2025*

# S950 – Main features

## Satellite tracking, positioning and connectivity

With **1408 channels**, the S950 ensures accurate positioning and reliable satellite tracking, even in challenging environments.

Stay connected in real-time with seamless **GSM 4G** connectivity for efficient data transfer and monitoring wherever your work takes you.

The built-in **2-watt radio** delivers strong communication capabilities over long distances, ensuring uninterrupted data transmission.

The S950 includes an integrated **Inertial Measurement Unit (IMU)** that enhances positioning accuracy in environments where GNSS signals may be weak or obstructed.

# S950 – Main features

## Laser Distance Meter and Dual-Camera Tech


The S950 features an integrated **green laser distance meter**, providing high-precision measurements with 2.5 cm accuracy up to 5 m and 4 cm accuracy up to 10 m.

The range extends **up to 30 m**, seamlessly combining distance measurements with GNSS data for real-time, georeferenced results.

With **dual cameras**, the S950 enables simultaneous stakeout from two different perspectives, boosting efficiency and accuracy in data capture and analysis.

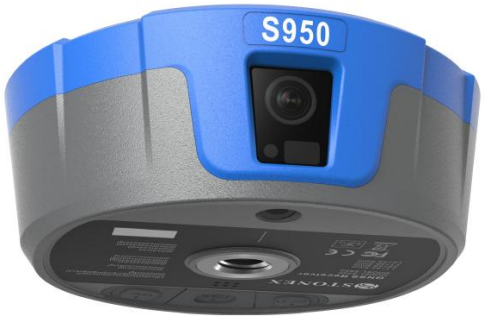
# S950 – Main features

## Long battery life and rugged durability

Weighing just **810 g** and with a battery life of over **10 hours,** the S950 is designed to keep you going for extended field operations without compromising on portability.


Built for extreme conditions, the S950 operates in temperatures ranging from **-40℃ to +65℃** and features an **IP67** rating, ensuring full dustproof and waterproof protection for reliability in the harshest environments.

# S950 – Functions




Measuring points with the use of 4 satellite constellations

Point measurement using PPP corrections

Point measurement using an IMU for sloped or tilted points

AR staking using the two cameras

Measurement and staking with the laser distance meter

# S950 – Laser Distance Meter

The integrated Laser Distance Meter emits a beam to the target and calculates its distance.
Positioned aside the rear camera, the green laser enables precise point measurement without needing to physically reach the point.

## Versatility in Application

Laser measurement adapts to various environments, from confined areas to expansive outdoor spaces, making it ideal for complex or hard-to-reach locations.


## Speed of Execution

With fast, accurate readings and minimal setup, laser technology greatly reduces on-site time and accelerates project workflows.

## Safe Measurement

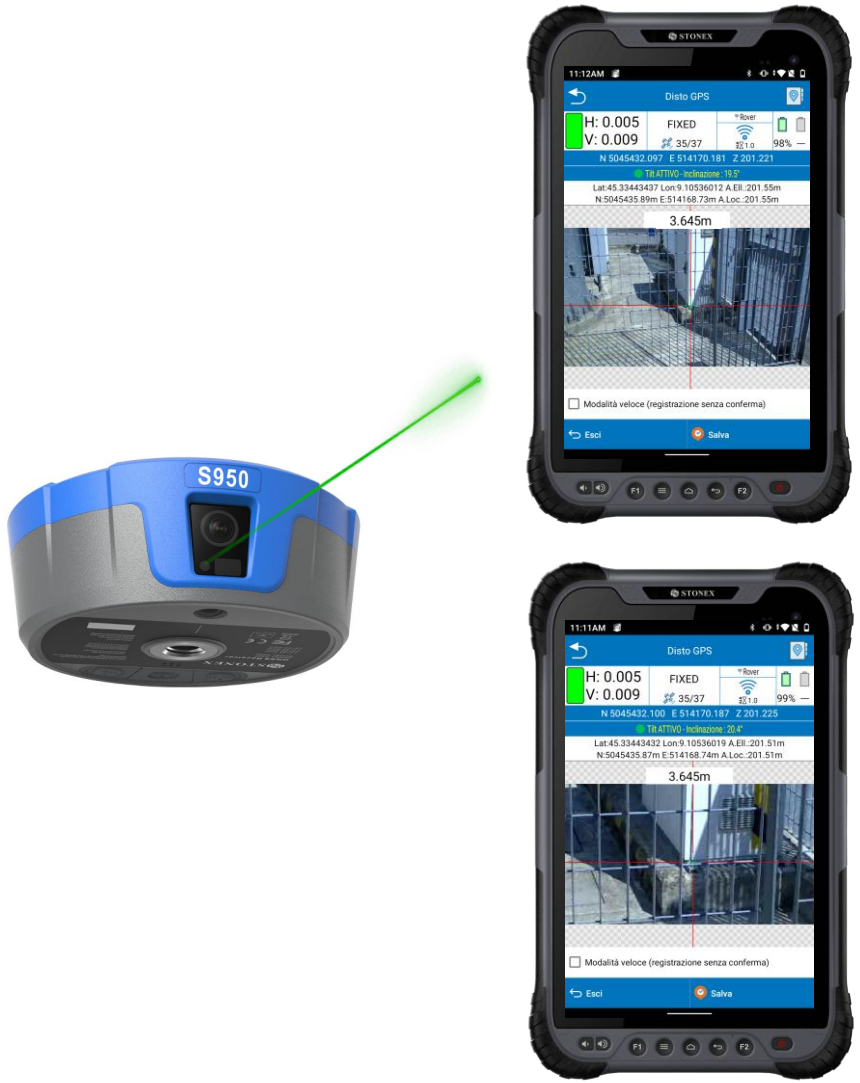
By allowing measurements from a distance, laser tools help avoid hazards in areas like busy roads or high-voltage zones.

# S950 – Laser Distance Meter and Cube-a

Targeting the point to be measured can also be facilitated by the integrated rear camera, which provides a visual aid during the measurement process.

The camera is equipped with a zoom function that is controlled via the Cube-a software interface, allowing the operator to magnify the field of view and accurately frame the point of interest.

This feature is especially useful when working at a distance or in environments where visibility is limited, as it enhances precision and ease of use during data acquisition.



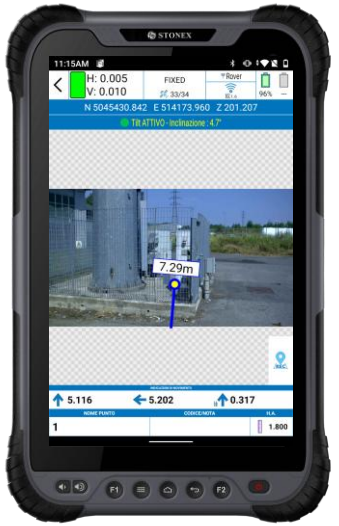
# S950 – Camera technology and Cube-a

Equipped with dual cameras (rear and bottom), the S950 provides real-time visual feedback from multiple angles. This enhances laser collimation and stakeout accuracy, streamlining field operations with greater precision.

## Visual stakeout

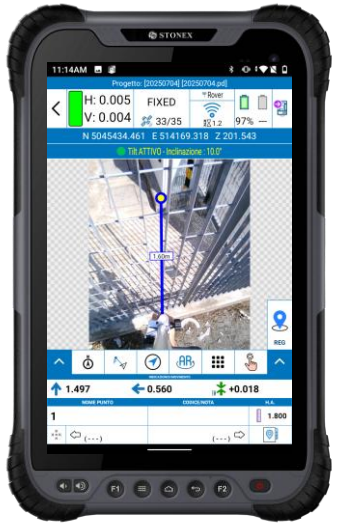
The stakeout of a point is made easier by using the front camera to locate the point's position. As you approach the area, you switch to the lower camera for more precise framing of the point to be staked out


Rear Camera





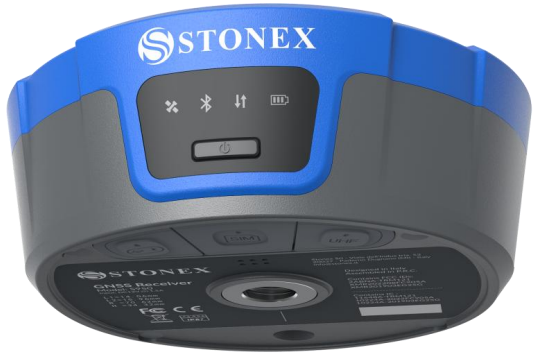
Bottom camera



# Technical Specification

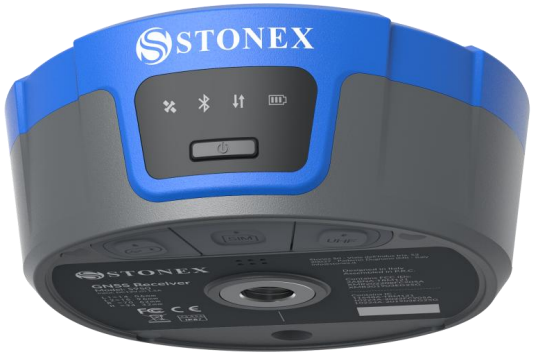
# S950 - Technical Specification

| Receiver | |
|---|---|
| Board | UM980 |
| Channels | 1408 |
| Tracking | GPS: L1 C/A, L1C, L2P, L2C, L5<br>GLONASS: L1, L2, L3<br>BeiDou: B1I, B2I, B3I, B1C, B2a, B2b<br>Galileo: E1, E5a, E5b, E6<br>QZSS: L1, L2, L5<br>IRNSS: L5<br>SBAS |
| PPP | B2b PPP, HAS |
| Update Rate | Up to 50Hz |
| Memory | 64 GB |



# S950 - Technical Specification

| Positioning | |
|---|---|
| High Precision Static Survey | H 2.5 mm + 0.5 ppm RMS<br>V 3.5 mm + 0.5 ppm RMS |
| RTK (< 30 Km) | H 8 mm + 1 ppm RMS<br>V 15 mm + 1 ppm RMS |
| PPP Accuracy | < 20 cm RMS |
| SBAS Accuracy | < 60 cm RMS |



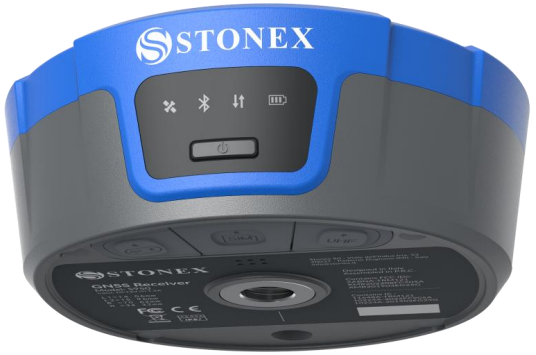
# S950 - Technical Specification

## Integrated Laser Distance Meter

| | |
|---|---|
| Color | Green |
| Precision | 2 mm |
| RTK + Laser accuracy | 2.5 cm - 5 m / 4 cm - 10 m |
| Range | 30 m |

## Power Supply

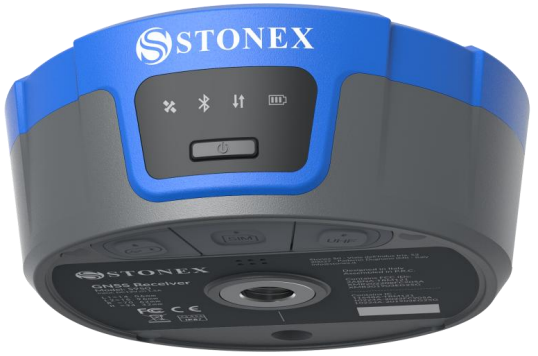
| | |
|---|---|
| Battery | Built-in battery, 7000mAh |
| Voltage | Type-C PD 12V |
| Working Time | Up to 10 hours |
| Charge Time | Typically 4 hours |



# S950 - Technical Specification

| Rear camera | |
|---|---|
| Resolution | 2MP |
| Image frame rate | 20 frame/s |
| Field of view | 52° |

| Bottom camera | |
|---|---|
| Resolution | 5MP |
| Image frame rate | 20 frame/s |
| Field of view | 76° |



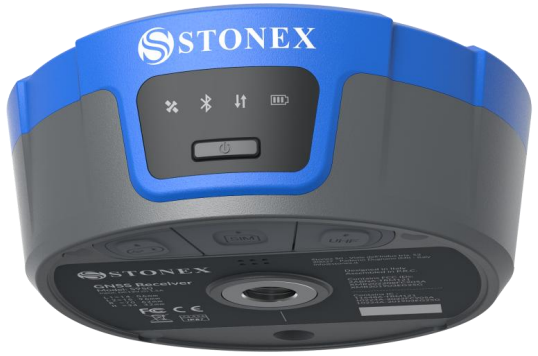
# S950 - Technical Specification

## Internal UHF Radio

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

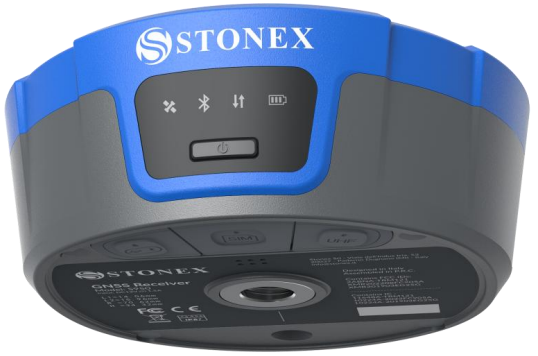
## Internal GSM Modem

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

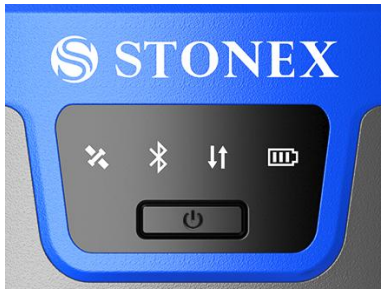


# S950 - Technical Specification

| Physical Specification | |
|---|---|
| Weight | 810 g |
| Dimensions | Ø 142 x 59 mm |
| Operating Temperature | -40°C to 65°C |
| Storage Temperature | -40°C to 80°C |
| Protection Class | IP67 |
| Drop | Designed to endure to a 2 m pole drop on hardwood floor with no damage |
| Humidity | 100% non-condensing |

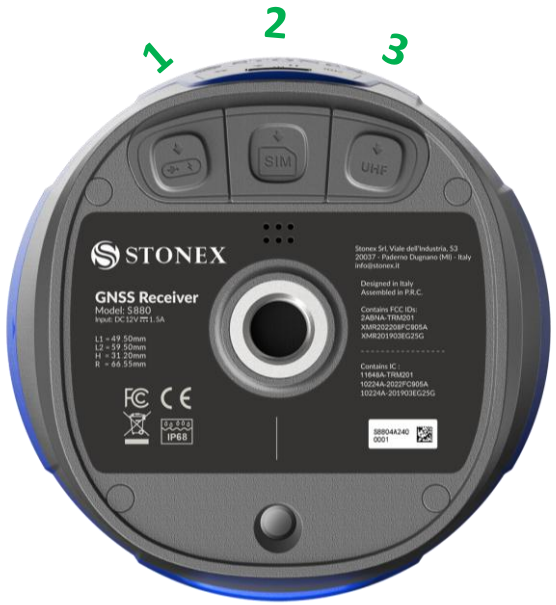


# S950 - Panel definition




| | |
|---|---|
| Power button | **Power on/off**: keep pressed until you hear a beep.<br>**Current working mode**: short press, if the speaker is enabled the device will describe the current working mode<br>**Self test:** keep pressing until all LED start to flash, release then long press until the LED stops flashing. The device will test the internal modules. If an error is found the device will start to beep, to stop it short press the power button |
| Satellite indicator | Blinks green according to the number of satellites used for positioning followed by a pause |
| Bluetooth indicator | **Green**: connected<br>**Off**: no Bluetooth connection |
| Datalink indicator | **Green**: the differential corrections are being received/transmitted |
| Charge indicator | **Green**: charge level between 30% and 100%<br>**Flashing green**: charge level lower than 30%<br>Device off while charging:<br>**Green**: charge completed<br>**Red**: in charge |

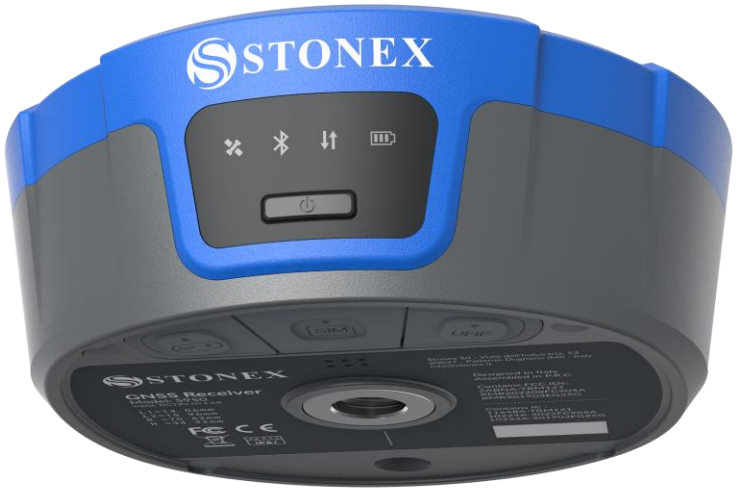
# S950 - Connector definition

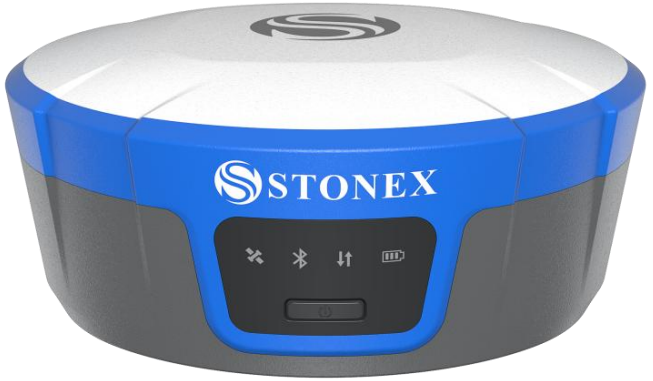


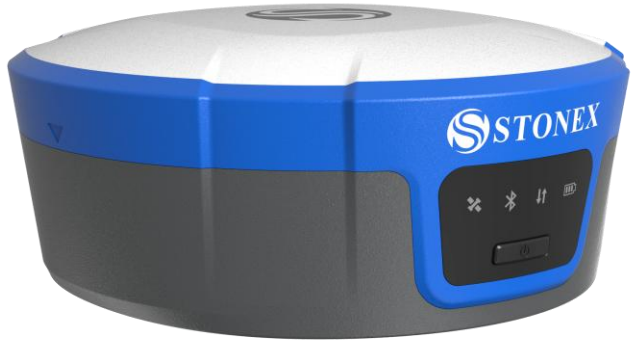

| N. | Name | Definition |
|---|---|---|
| 1 | Type-C slot | Receiver power supply and data transfer |
| 2 | SIM card slot | Nano SIM card interface |
| 3 | UHF slot | TNC port to connect radio antenna |

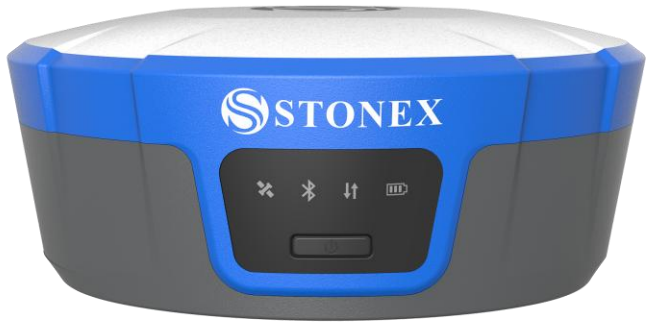
# Marketing

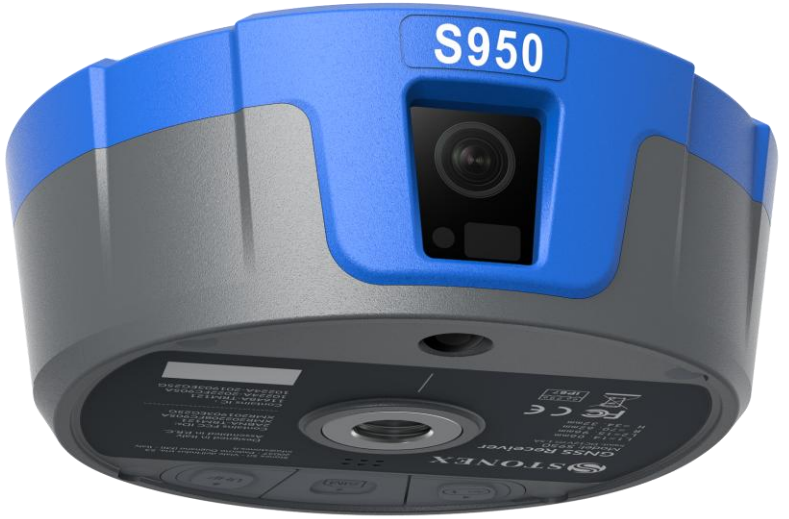
# S950 - Product pictures

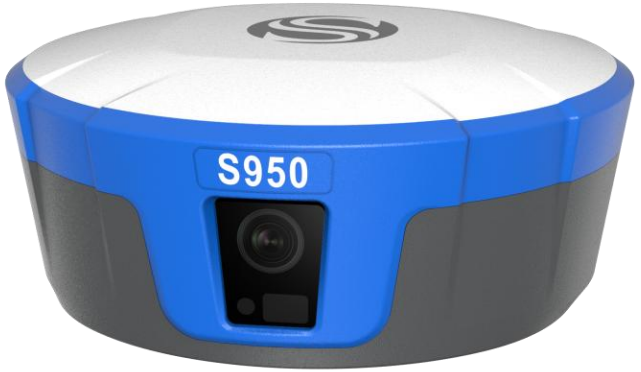


# S950 - Brochure

## S950 TECHNICAL FEATURES

### RECEIVER

| | |
|---|---|
| Satellite signals tracked | GPS: L1 C/A, L2P, L2C, L5<br>GLONASS: L1, L2, L3<br>BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b<br>GALILEO: E1, E5a, E5b, E6<br>QZSS: L1, L2, L5, L6<br>IRNSS: L5<br>SBAS |
| PPP | B2b PPP, HAS |
| Channels | 1408 |
| Position Rate | Up to 50 Hz |
| Signal Reacquisition | < 1 s |
| RTK Signal Initialization | < 5 seconds |
| Hot Start | Typically < 15 s |
| Initialization Reliability | > 99.9 % |
| Internal Memory | 64 GB |
| IMU rate | 200 MHz |
| Tilt range | IMU ±60° |
| RTK + IMU | 5 mm + 0.3 mm/° |

### POSITIONING[1]

| | |
|---|---|
| HIGH PRECISION STATIC SURVEYING | |
| Horizontal | 2.5 mm + 0.5 ppm RMS |
| Vertical | 3.5 mm + 0.5 ppm RMS |
| REAL TIME KINEMATIC (< 30 Km) - NETWORK RTK[2] | |
| Fixed RTK Horizontal | 8 mm + 1 ppm RMS |
| Fixed RTK Vertical | 15 mm + 1 ppm RMS |
| PPP Accuracy | < 20 cm RMS |
| SBAS Accuracy[3] | < 60 cm RMS |

### INTEGRATED GNSS ANTENNA

High accuracy multi-constellation antenna, zero phase center, with internal multipath suppressive board

### INTERNAL RADIO

| | |
|---|---|
| Type | Tx – Rx 2 W |
| Frequency Range | 410 - 470 MHz |
| Channel Spacing | 12.5 KHz / 25 KHz |
| Range[4] | 3-4 Km in urban environment<br>Up to 10 Km with optimal conditions |

### INTERNAL MODEM

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

1. Accuracy and reliability are generally subject to satellite geometry (DOPs), multipath, atmospheric conditions, and obstructions. In static mode, they are also subject to occupation times: the longer the baseline, the longer the occupation time must be.
2. Network RTK precision depends on the network's performance and is referenced to the closest physical base station.
3. Depends on SBAS system performance.
4. Varies with the operating environment and with electromagnetic pollution.

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

STONEX AUTHORIZED DEALER

### BELOW CAMERA

| | |
|---|---|
| Resolution | 5 MP |
| Image frame rate | 20 frame/s |
| Field of view | 76° |

### REAR CAMERA

| | |
|---|---|
| Resolution | 2 MP |
| Image frame rate | 20 frame/s |
| Field of view | 52° |

### LASER

| | |
|---|---|
| Color | Green |
| Precision | 2 mm |
| RTK + Laser accuracy | 2.5 cm -5 m / 4 cm -10 m |
| Range | 30 m |

### COMMUNICATION

| | |
|---|---|
| I/O Connectors | Type-C for charging and data transfer |
| Bluetooth | 2.1 + EDR, V5.2 |
| Wi-Fi | 802.11 a/ac/b/g/n |
| Web UI | To upgrade the software, manage the status and settings, and download data. Smartphone, tablet, or other electronic device with Wi-Fi capability can be used. |
| Reference outputs | RTCM 3.x |
| Navigation outputs | NMEA 0183 |

### POWER SUPPLY

| | |
|---|---|
| Battery | Built-in battery, 7000 mAh |
| Power | 12V DC |
| Working Time | Up to 10 hours |
| Charge Time | Typically 4 hours |

### PHYSICAL SPECIFICATION

| | |
|---|---|
| Dimensions | Ø 142 x 59 mm |
| Weight | 810 g |
| 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 |
| Humidity | 100% non-condensing |


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


MKT.L1 - REV.02 - S950 - JULY 2023 - VER.01

STONEX

## S950 GNSS Receiver

Dual camera and
Laser distance meter


cube suite

## S950 Dual camera and Laser distance meter

The S950 GNSS receiver offers superior positioning and satellite tracking with 1408 channels, ensuring precision in challenging environments. Equipped 4G connectivity, it supports real-time data transfer, while its 2-watt radio ensures long-distance communication.

IMU enhances accuracy in areas with weak GNSS signals. Its laser distance meter offers a range of up to 30 meters.

ra technology boosts efficiency and precision by enabling us stakeout from two perspectives. Weighing only 810g and er 10 hours of battery life, the S950 is portable and durable, with ting and the ability to withstand temperatures from -40°C to


STONEX SURVEYING SYSTEMS

### MULTIPLE CONSTELLATIONS

With 1408 channels, the S950 ensures accurate positioning and reliable satellite tracking, even in limited signal environments.

### IMU TECHNOLOGY

The S950 includes an integrated Inertial Measurement Unit (IMU) that enhances positioning accuracy in environments where GNSS signals may be weak or obstructed.

### ADVANCED LASER DISTANCE METER

The S950 features an integrated green laser distance meter that provides high-precision measurements. The range extends up to 30 meters, seamlessly combining distance measurements with GNSS data for real-time, georeferenced results.

### DUAL-CAMERA TECHNOLOGY

With dual cameras, the S950 enables simultaneous stakeout from two different perspectives, boosting efficiency and accuracy in data capture and analysis.

### 2-WATT RADIO

The built-in 2-watt radio delivers strong communication capabilities over long distances, ensuring uninterrupted data transmission.


## Measure where you can't go

The S950 is equipped with an integrated laser distance meter that emits a beam toward the target and calculates its distance. Positioned next to the rear camera, the green laser allows precise measurement of the desired point without the need for physical access, ensuring extremely accurate results in any environmental condition. The laser measurement system adapts perfectly to a variety of environments, from confined spaces to large outdoor areas, making it ideal for complex or hard-to-reach locations. Thanks to fast and accurate readings, the S950 GNSS receiver streamlines workflows, reducing field operation times without compromising precision.


### AR STAKEOUT

The S950 GNSS receiver, equipped with dual cameras (rear and bottom), provides real-time visual feedback from different angles, leveraging laser collimation to enhance stakeout accuracy. This advanced feature simplifies field operations, reducing the time required to complete measurements while significantly improving result quality.
Visual stakeout is supported by the rear camera, which allows users to locate the point to stake out from a distance. As the operator approaches the area of interest, the view switches to the bottom camera for a more precise visualization of the point to measure (this feature is available in the Cube-a software).
The dual-camera system ensures full visibility, enabling high-precision and uninterrupted stakeout.

# Configuration

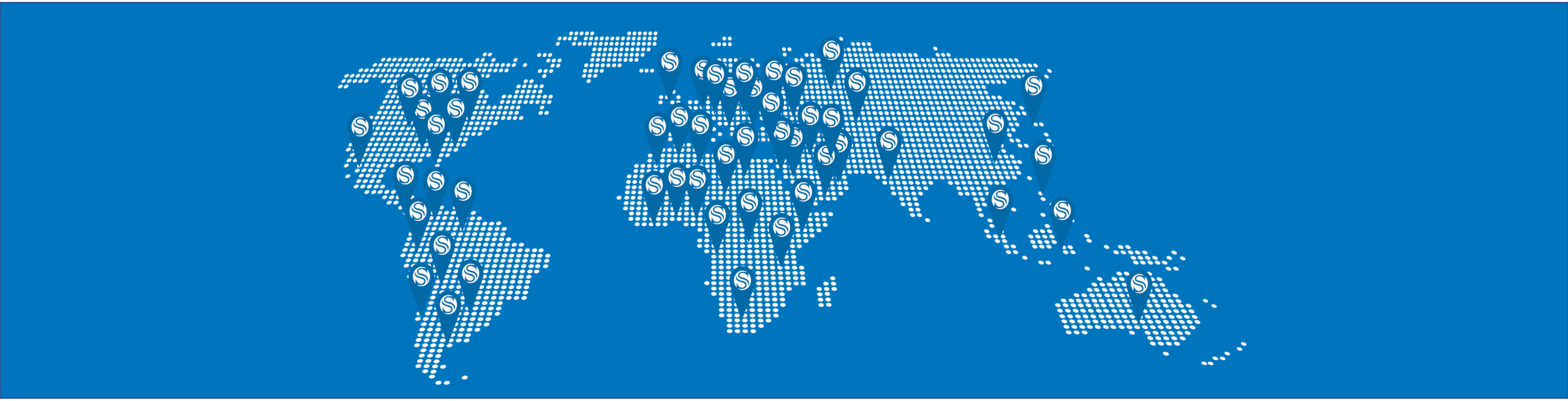
# S950 - Standard Configuration

| PRODUCT CODE | DESCRIPTION |
|---|---|
| **B10+150224** | **S950, GNSS, 1408Ch, IMU, 4G, UHF, Laser** |
| | Power Adaptor with 4 plugs (US, UK, EU, AU) |
| | Charging cable, TypeC-TypeC cable, 1.5m |
| | Carrying case |
| | AR-100, UHF antenna, 430-470MHz, TNC, 10cm |

# S950 - Suggested Optional Accessories and Software

| PRODUCT CODE | DESCRIPTION |
|---|---|
| **40-450941** | **Software Stonex Cube-a GPS v7.x** |
| 30-350607 | PG-260, Pole for GNSS, 2,60m, 2-section, Carbon fiber/allum, Telescopic |
| 50-550739 | S80 Android Rugged Tablet 8“ |
| 30-350844 | S80, Bracket, horizontal vertical with ball mount |
| 30-350089 | SB-100, Soft bag for GNSS and controller |

STONEX



**VISIT OUR WEBSITE**
www.stonex.it

**WE ARE HERE**
Paderno Dugnano (Milano) - Italy