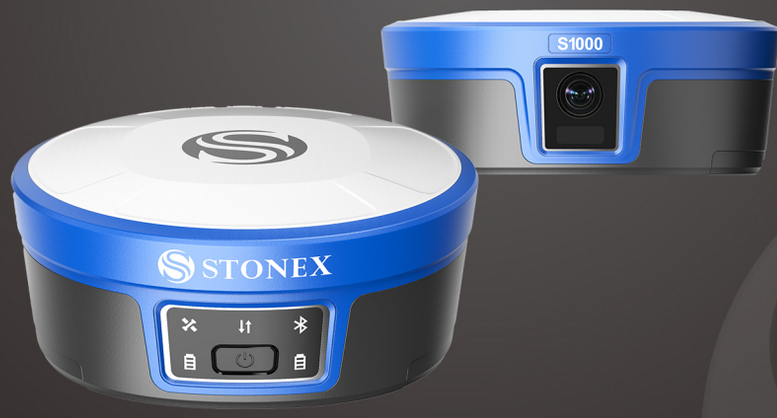
STONEX

# S1000 GNSS Receiver

Photogrammetry &
Laser distance meter




suite cube

# S1000

## *Photogrammetry & Laser distance meter*

The **S1000** delivers **outstanding performance** in demanding field environments, combining advanced positioning technology with a powerful suite of integrated tools designed to improve **efficiency** and **accuracy**.

Its versatile **dual-camera system** includes a downward-facing camera for **intuitive AR stakeout**, simplifying field operations, and the other camera optimized for **high-quality photogrammetry**, enabling detailed image capture and precise 3D coordinate points.

An **integrated laser distance meter** allows accurate measurements in hard-to-reach or obstructed locations where traditional methods may be impractical.

The S1000 also features an upgraded long-range **LoRa radio** for stable, extended communication, along with **two hot-swappable batteries** that ensure maximum productivity with minimal downtime.

### MULTIPLE CONSTELLATIONS

The S1000 features a powerful GNSS board with 1408 channels, capable of tracking all available signals across every satellite constellation.

### AR STAKEOUT

The S1000 features a high-quality camera for user activated AR stakeout, displaying real time navigation and distance to target points. Visual guides ensure precise and efficient staking, simplifying fieldwork with intuitive direction and distance indicators.

### LASER DISTANCE METER

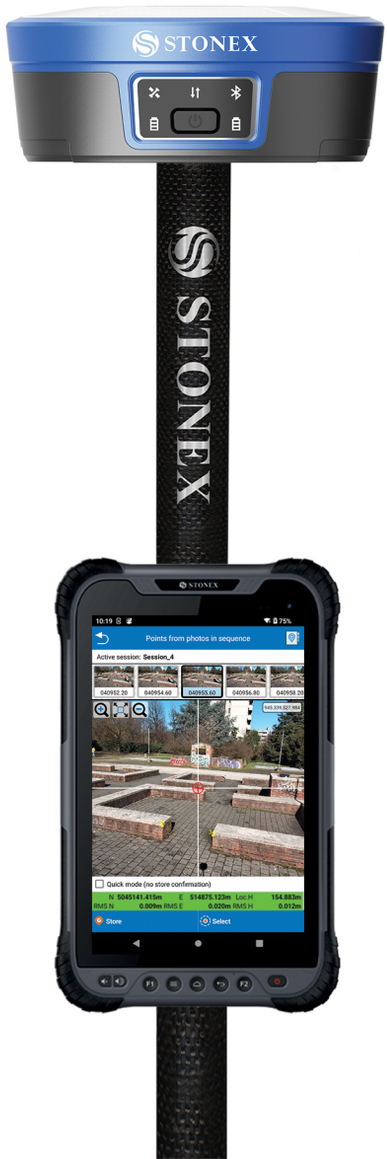
The S1000 is equipped with an integrated laser distance meter, enabling accurate measurements in hard-to-reach or obstructed areas. This advanced technology enhances field efficiency by allowing surveyors to quickly collimate and capture precise point coordinates with just one click.

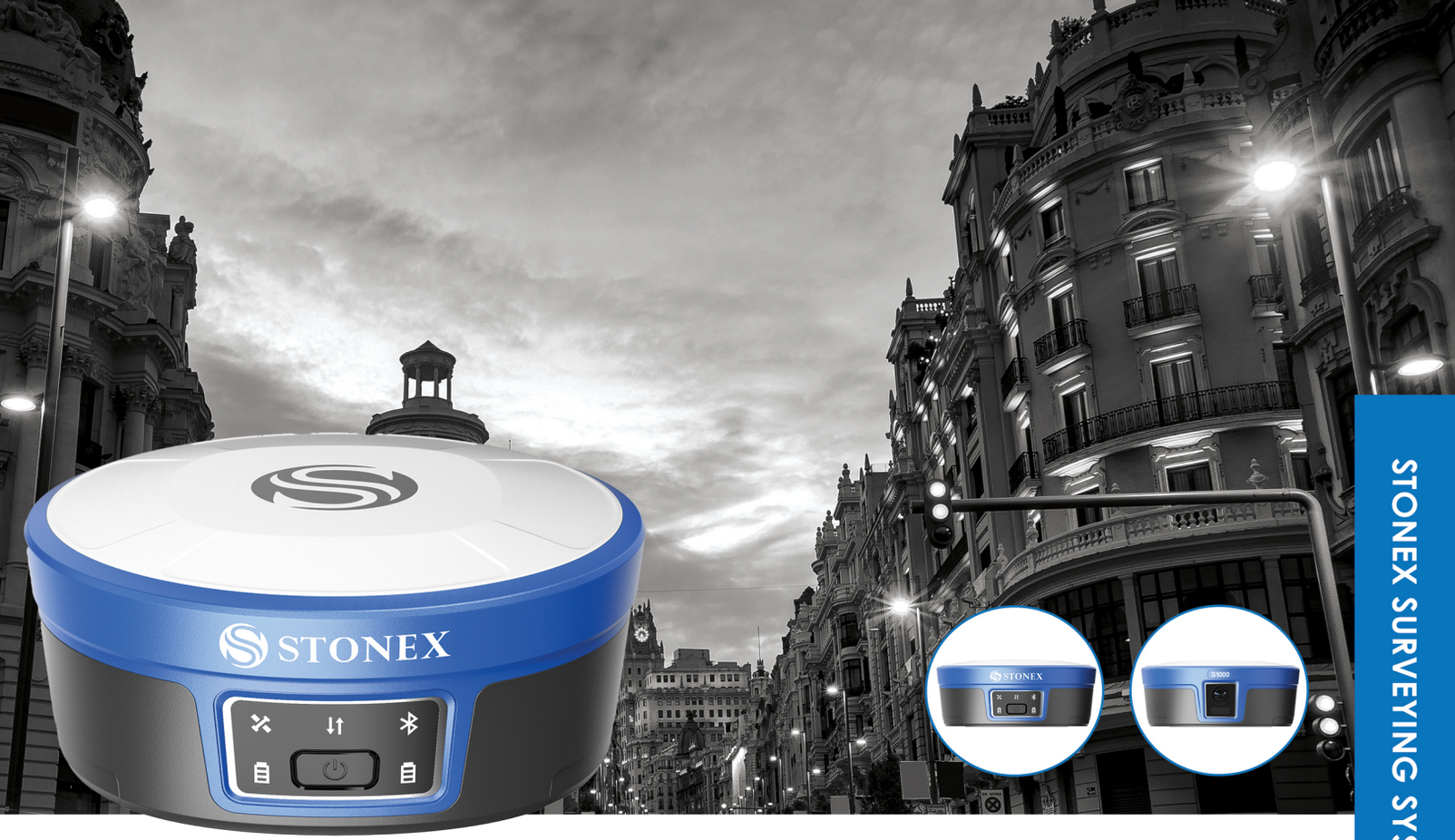
### PHOTOGRAMMETRY

The S1000 features a rear camera optimized for photogrammetry, allowing users to capture detailed, high-quality images essential for precise three-dimensional coordinate points.

### REMOVABLE BATTERIES

The S1000 is equipped with two rechargeable batteries that are removable and hot swappable, allowing surveyors to replace one battery without powering down the device.

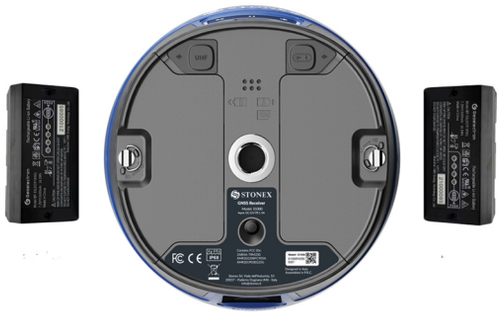


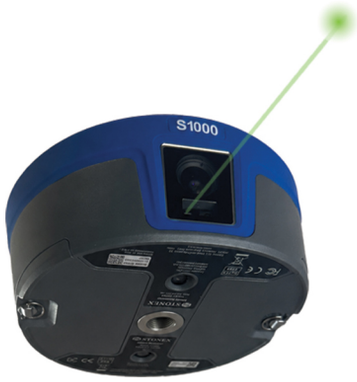



STONEX SURVEYING SYSTEMS

# All technologies, one receiver
## *Unlimited ways to MEASURE*

The S1000 transforms stakeout and photogrammetry workflows with advanced dual-camera technology and real-time AR guidance. Visual overlays, dynamic offset indicators, and automatic close-range camera switching deliver faster, more intuitive staking with exceptional precision. Designed for high-performance photogrammetry, the system captures accurately georeferenced images and video for accurate 3D coordinate points, remote measurements, and reliable spatial analysis in even the most challenging environments.






### LASER DISTANCE METER & PHOTOGRAMMETRY

The S1000 GNSS receiver combines advanced long-range green laser technology with high-precision photogrammetry, delivering unmatched versatility for all your measurement needs.
By integrating these two powerful technologies into a single device, the S1000 empowers you to measure accurately in every application and under any field condition.
Whether capturing detailed images for coordinate points or taking precise distance measurements in challenging environments, the S1000 ensures reliable performance and exceptional results every time.

### UHF AND LORA RADIO

The S1000 GNSS receiver features an advanced dual communication system that combines UHF radio in the 410 to 470 MHz band with innovative LoRa technology.
The LoRa solution allows for flexible and reliable RTK correction transmission in base rover setups, extending operational range up to 12 kilometers or more in optimal conditions.

# S1000 TECHNICAL FEATURES

## RECEIVER

| | |
|---|---|
| Satellite signals tracked | GPS: L1 C/A, L2P, L2C, L5 |
| | GLONASS: L1, L2, L3 |
| | BEIDOU: B1, B2, B3 (B1I, B2I, B3I, B1C, B2a, B2b) |
| | GALILEO: E1, E5a, E5b, E6 |
| | QZSS: L1, L2, L5, L6 |
| | IRNSS: L5 |
| | SBAS |
| PPP | B2b PPP, Galileo HAS |
| Channels | 1408 |
| Position Rate | Up to 50 Hz |
| OS | Linux |
| Signal Reacquisition | < 1 s |
| RTK Signal Initialization | < 5 s |
| Hot Start | < 15 s |
| Initialization Reliability | > 99.9 % |
| Internal Memory | 32 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 + 0.1 ppm RMS |
| Vertical | 3.5 mm + 0.4 ppm RMS |
| REAL TIME KINEMATIC (< 30 Km) – NETWORK RTK[2] | |
| Fixed RTK Horizontal | 5 mm + 0.5 ppm RMS |
| Fixed RTK Vertical | 10 mm + 0.5 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 2W, LoRa |
| Frequency Range | 410 – 470 MHz |
| Channel Spacing | 12.5 KHz / 25 KHz |
| Range[4] | 3-4 Km in urban environment<br>Up to 12 Km with optimal conditions |

## INTERNAL MODEM

| | |
|---|---|
| Band | LTE FDD:<br>B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/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 |

## BELOW CAMERA

| | |
|---|---|
| Resolution | 2 MP |
| Image frame rate | 30 frame/s |
| Field of view | 72° |

## REAR CAMERA

| | |
|---|---|
| Resolution | 2 MP |
| Frame rate | Video: 30 frame/s<br>Image: 5 frame/s |
| Field of view | 88° |

## PHOTOGRAMMETRY

| | |
|---|---|
| Precision | 2 mm |
| RTK + Photo accuracy | 5 mm + 2 mm/m |
| Range | 20 m |

## LASER

| | |
|---|---|
| Color | 635nm, Green |
| Precision | 2 mm |
| RTK + Laser accuracy | 1 cm + 5 mm/m |
| Range | 30 m |

## COMMUNICATION

| | |
|---|---|
| I/O Connectors | • Supports NMEA output and RTCM input/output (for external radio connection)<br>• 1PPS (Pulse Per Second) output<br>• Power input compatible with PD protocol (power bank) and independent external power supplies (EB-9000)<br>• Enables data access from internal memory |
| Bluetooth | 2.1 + EDR, V5.0 |
| 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[5] | Hot-swappable (x 2), 3400 mAh |
| Power | 7.2V |
| Working Time | Up to 12 hours[5] |
| Charge Time | Typically 4 hours[5] |

## PHYSICAL SPECIFICATION

| | |
|---|---|
| Dimensions | Ø 156 x 68 mm |
| Weight | 870 g (no batteries)<br>1100 g (with 2 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 | IP68 |
| Shock Resistance | Designed to endure to a 1.5 m pole drop on hardwood floor with no damage |
| Humidity | 100% non-condensing |
| Certification | MIL-STD-810H |

1. 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 the baseline, the longer the occupation time must be.
2. Network RTK precision depends on the network performances and are referenced to the closest physical base station.
3. Depends on SBASJU system performance.
4. Varies with the operating environment and with electromagnetic pollution.
5. Actual battery life may vary depending on usage conditions, device settings, and environmental factors. Stated durations are based on typical usage scenarios and may differ in real-world applications.

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

STONEX AUTHORIZED DEALER

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