STONEX











PRODUCT CATALOG 2024

www.stonex.it

STONEX



ABOUT
THE COMPANY

EUROPE HQ

Stonex is an Italian company, based near Milan. With over 200 qualified distributors worldwide, it is one of the world's leading companies in measurement and survey.

Stonex products combine the most advanced technologies with a practical design to simplify your daily work. Everyone's needs are met thanks to a team that is able to handle any pre-and post-sales request.

AMERICA HQ

The Stonex Headquarters in America is located in the United States, in the city of Concord, New Hampshire. Since its opening in 2019 Stonex USA has grown more and more thanks to the vast network of distributors throughout the territory.

With USA Headquarters as a base, Stonex has the opportunity to be closer to the needs of its American customers through greater territorial coverage and strengthening of global business.



A worldwide Network of
Professional Dealers





FOLLOW US

ONE PLACE
ONE ACCOUNT
ALL STONEX WORLD
MY STONEX

2024

HIGH PRECISION TECHNOLOGY

www.stonex.it

OUR

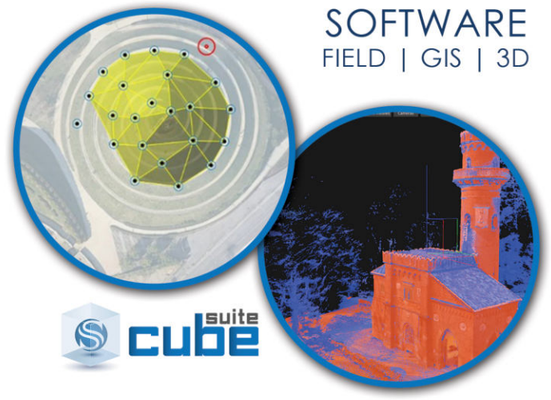
PRODUCTS

A Stonex Solution for each Geospatial need.

- GNSS SURVEYING
- OPTICAL SURVEYING
- 3D SCANNING
- SOFTWARE
- CUSTOM SOLUTIONS

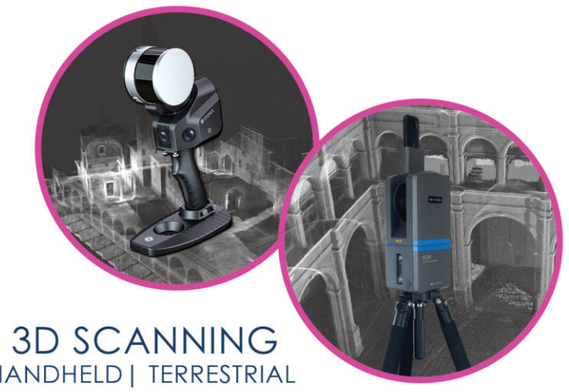


SURVEYING
GNSS | TS | GIS



SOFTWARE
FIELD | GIS | 3D

STONEX SOLUTIONS



3D SCANNING
HANDHELD | TERRESTRIAL



MACHINE CONTROL
Earthmoving | Drilling & Mining
Piling | Agriculture | Marine Systems









CONTENTS

GNSS SURVEYING

SURVEY GNSS

S850⁺ GNSS Receiver....10
S900⁺ GNSS Receiver....12
S980⁺ GNSS Receiver....14
S990⁺ GNSS Receiver....16
GNSS RECEIVERS: Product Comparison....18

Network & Monitoring

SC2200 - SC650 - SC600⁺....22
GNSS Antennas....23
Cube-nrkt Software....24

GIS, Mobile GNSS & Controllers

S580⁺ GNSS Receiver....28
S70G & S80GNSS....30
Rugged Tablets & Controllers....32
TABLETS & CONTROLLERS: Product Comparison....34

SOFTWARE

Cube Suite

Cube-a Software....38
Cube-manager Software....40
Cube-h^{24} Software....42

OPTICAL SURVEYING

Total Stations

R25LR Total Station....46
R20 - R60 Total Station....48
R120 - R180 Robotic Total Station....50
TOTAL STATIONS: Product Comparison....52
Radio - Theodolite & Auto levels....54

3D SOLUTION

3D Scanning

X100 Laser Scanner....58
XVS vSLAM 3D Scanner....60
XFLY Lidar Solution....62
X120^{GO} SLAM Handheld Scanner....64
X70^{GO} SLAM Handheld Scanner....66
SLAM Technology & Reconstructor 3D Software....68
Cube-3d Software....70
LASER SCANNERS: Product Comparison....72

CUSTOM SOLUTIONS

Custom Solutions

Machine Control - Earthmoving....76
Machine Control - Drilling / Mining....78
Machine Control - Piling....80
Agriculture....82
Marine Systems....84

PRODUCT CATALOG 2024 - FEBRUARY 2024 - VER.01 - REV.01
©2024, Stonex Srl. All rights reserved

Survey GNSS

Powerful Solutions for all Surveying jobs

STONEX offers a broad range of GNSS receivers to meet your needs. Stonex receivers combine the world's most advanced technology with practical, integrated designs to simplify your daily work.
Designed to meet the requirements of professional surveyors, Stonex's GNSS portfolio includes a full range of options, allowing users to choose the best solution for their individual needs.



S850+ Compact GNSS System

Equipped with an advanced 1408-channel GNSS board and capable of supporting various satellite constellations, including GPS, GLONASS, BeiDou, Galileo and QZSS.

The Stonex S850+ GNSS receiver is the ideal solution for any surveying work in the field. The receiver's advanced design gives the S850+ excellent signal tracking and interference resistance capabilities. The advantages of portability and speed of operation make the S850+ GNSS receiver particularly suitable for field work in areas with complex terrain.

Stonex S850+ is equipped with all the necessary connections, has built-in Bluetooth and internal Wi-Fi capabilities; has a built-in UHF radio and 4G GSM modem compatible worldwide. Stonex S850+ also integrates the IMU system that enables inclined measurement (TILT) up to 60°: quick initialization, fast and accurate surveying.



MULTIPLE CONSTELLATIONS
Stonex S850+ 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 (Optional)
On S850+ is available the IMU technology. Fast initialization, up to 60° inclination.

HIGH CAPACITY BATTERY AND USB TYPE-C
Stonex S850+ is delivered with a large capacity lithium battery and USB Type-C connector to recharge it easily.

RADIO (Optional)
An activation code can enable the integrated UHF on S850+, whose range can be up to 10 km under optimal conditions.

RUGGED RTK
With IP67 certification Stonex S850+ will ensure operations in various kinds of extremely tough environments.



S850+ IMU Technology

The S850+ GNSS receiver is equipped with an IMU system that enables inclined measurement (TILT). Thanks to IMU technology, house edges, difficult and inaccessible spots are no longer a problem.

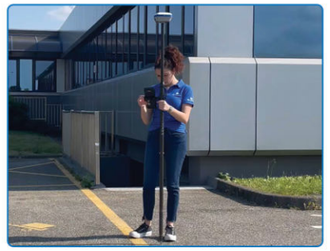
What is an Inertial Measurement Unit (IMU)?
An inertial measurement unit (IMU) is an autonomous system that measures linear and angular motion usually with a triad of gyroscopes and accelerometers. The Stonex S850+ system with IMU makes every measurement reliable, whether in surveying or staking work, and makes point acquisition extremely faster - you can save up to 40 percent of your fieldwork time!

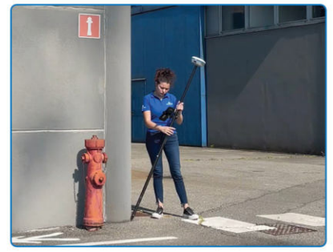
What are the performances of the S850+ with IMU?
- No problems with electromagnetic disturbances
- Fast initialization
- Tilt up to 60°
- Accuracy of 2 cm at 30°
- Accuracy of 5 cm at 60°
- Fast and accurate surveying

Why choose the S850+ ?

This instrument is ideal for those seeking a lightweight and compact solution. Weighing only 1.1 kg and measuring 14 x 14 cm, this GNSS is popular among professionals looking for a reliable instrument that strikes a balance between quality and price.

The option to enable additional features allows users to acquire an instrument with capabilities that can potentially rival those of top-of-the-line models.





S900+ Powerful Precision Performance

Stonex S900+ is equipped with a high-performance GNSS board with 1408 channels and can support multiple satellite constellations: GPS, GLONASS, BeiDou, Galileo and QZSS.

Through the 4G GSM modem, a fast Internet connection is guaranteed for receiving correction data and carry out precise and accurate surveys. In the incredibly compact design, Bluetooth and Wi-Fi modules allow for always reliable data flow to the controller, while the integrated UHF TX/RX radio makes the S900+ the perfect system for a GNSS Base + Rover.

The S900+ is also equipped with optional IMU technology. Quick initialization, tilt up to 60° and corrected coordinates of a point with a single click.



MULTIPLE CONSTELLATIONS

Stonex S900+ 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.

4G MODEM

S900+ has an internal 4G modem that operates with all world signals, a fast internet connection is guaranteed.

IMU (Optional)

IMU technology is available for this model, with quick initialization the operator can take advantage of all the precision and efficiency of this system.

SMART 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.

RADIO (Optional)

An activation code can enable the integrated UHF on the S900+, with a range of up to 10 km under optimal conditions.



S900+ IMU Technology

S900+ GNSS receivers have the IMU System that allows tilted measurement (TILT). Thanks to the IMU technology, the difficult and inaccessible points as the edges of the buildings, are no longer a problem.

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 of electromagnetic disturbances



Stonex S900+ 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!

Why choose the S900+ ?

If long-lasting field performance is what is needed, this GNSS is the right choice. Not only are the batteries extremely capacious, but they are also hot-swappable. The batteries in this model are lithium batteries, and their total charge can be up to 12 hours.







S980+

GNSS Receiver with UHF Radio

The color touch display and the ability to connect an external antenna make the S980+ an extremely effective receiver, capable of detecting GPS, GLONASS, BeiDou, Galileo and QZSS constellations, making it suitable for any job. With a 4G GSM modem, a fast Internet connection is guaranteed, while Bluetooth and Wi-Fi modules always enable reliable data flow to the controller. These features, combined with the built-in 2-5W radio, make the S980+ the perfect receiver as a base station.

The S980+ also features optional IMU technology with quick initialization and tilt up to 60°.

The S980+ 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.

S980+ is also available in a dual-antenna version. It features simultaneous management of 2 GNSS antennas, both integrated and external.



MULTIPLE CONSTELLATIONS

Stonex S980+ 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.

2-5 W RADIO

S980+ has integrated 2-5W UHF radio with 410-470MHz frequency. The receiver is equipped with an external radio antenna to work better.

IMU (Optional)

The IMU technology is also available, only a fast initialization is requested.

COLOR TOUCH DISPLAY

S980+ comes with a convenient color touch display for easy management of the most important functions.

EXTERNAL GNSS ANTENNA

The S980+ can be connected to an external GNSS antenna, transforming from an RTK receiver to a Continuously Operating Reference Station (CORS) in one version. In the other version, it can connect to an external antenna and, in combination with the integrated antenna, obtain two positions simultaneously.







EXTERNAL RADIO ANTENNA

BLUETOOTH | WI-FI | 4G

RADIO 5W

BATTERY 13.600mAh | USB TYPE-C

COLOR TOUCH DISPLAY

EXTERNAL GNSS ANTENNA | 1PPS PORT



S980+
IMU technology

Stonex S980+ GNSS receivers have the IMU System that allows tilted measurement (TILT).

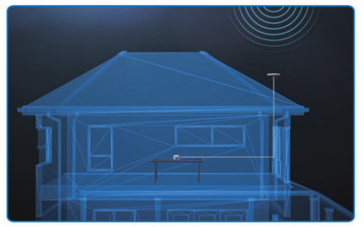
What are the performances of the S980+ with IMU?

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

The Stonex S980+ with IMU makes every measurement reliable, whether for surveying or staking, and makes point acquisition extremely faster, up to 40% faster than fieldwork time!

Why choose the S980+ ?

This model is very versatile, it manages to combine the functions of a high-quality GNSS RTK and a CORS instrument, all in one. The presence of a 5W radio enables it to cover a range of 10km making it suitable for becoming a base station; in addition, it has a 1PPS port that can be used in various applications.
Furthermore, this model has an alternative version that allows simultaneous management of two antennas, useful for tasks that require heading control.



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
RGB
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
- 2 cm accuracy 30°
- 5 cm accuracy 60°
- Fast and precise survey

Why choose the S990+ ?

This GNSS device is chosen for its precision and accuracy, attributed to its built-in high-gain antenna. This feature ensures that the results obtained in the field surpass those of similar-range products. The instrument's capabilities shine particularly in the measurement of RTK accuracy values. Additionally, it features a 1PPS port, which proves invaluable in applications requiring precise timing to ensure the synchronized operation of multiple instruments or the integration of systems based on precise timing parameters.







GNSS RECEIVERS
Product Comparison

						
		S850+	S900+	S980+	S980+	S990+
Channels		1408	1408	1408	1408	1408
Signals Tracking	GPS	√	√	√	√	√
	GLONASS	√	√	√	√	√
	BEIDOU	√	√	√	√	√
	GALILEO	√	√	√	√	√
	QZSS	√	√	√	√	√
	IRNSS	√	√	√	√	√
	SBAS	√	√	√	√	√
Position Rate Hz		20	20	20	20	20
Memory		8GB	8GB	32GB	32GB	32GB
Bluetooth		√	√	√	√	√
Wi-Fi		√	√	√	√	√
Web User Interface		√	√	√	√	√
OS Linux		√	√	√	√	√
Display		NO	NO	√	√	√
Radio UHF 410 - 470 MHz		√	√	5Watt	5Watt	√
Radio UHF 902.4 - 928 MHz		NO	NO	NO	NO	√
GSM LTE		√	√	√	√	√
IMU		Optional	Optional	Optional	Optional	√
1PPS		NO	NO	√	√	√
External GNSS Antenna		NO	NO	√	√	NO
Heading (with second antenna)		NO	NO	NO	√	NO
Nr. Battery		1	2	1	1	1
Weight		1.10 Kg	1.30 Kg	1.50 Kg	1.50 Kg	1.40 Kg
Operating Temperature		-40°C +65°C	-40°C +65°C	-40°C +65°C	-40°C +65°C	-40°C +65°C
Protection Class		IP67	IP67	IP67	IP67	IP67

Network & Monitoring

High Quality and Performance GNSS Reference Receivers

STONEX technology for GNSS reference stations and networks continues to evolve and meet the rapidly changing demands of GNSS technology.

STONEX C.O.R.S. stations (Continuously Operating Reference Station) are flexible and adaptable, and offer multiple solutions.

STONEX C.O.R.S. stations meet the highest demands for reliability and work in the toughest environments. Professionals put them to work on any type of GNSS applications, from campaign and permanent single base stations to RTK networks, from structural monitoring to offshore positioning, or from atmospheric research to seismic studies.

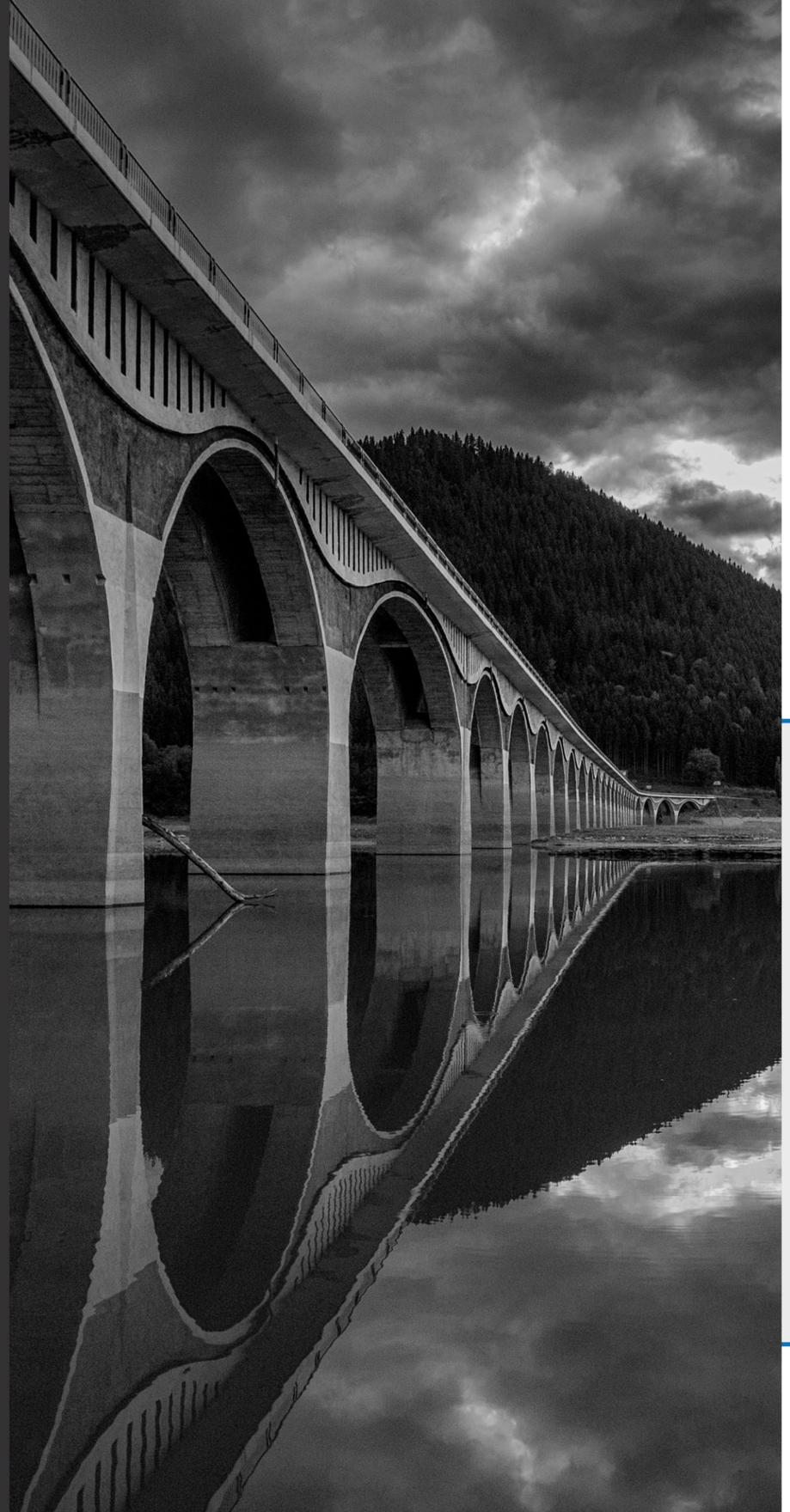
GNSS Reference Station

CORS stations can be used either for the start of a new infrastructure network or for an integration into existing networks. It is possible to use CORS stations as a Rover for special applications (agriculture, machine control, bathymetry, structure monitoring, etc...) and with several software solutions according to the customer's request.



SC2200







SC650



SC600+

The Stonex CORS stations are GNSS multi-frequency receivers designed to be used either as stand-alone Reference Stations or as part of a GNSS stations' infrastructure. Stonex CORS stations are typically used as NTRIP server and they are ultimate equipment for all those jobs that are based on GNSS correction data acquisition, processing, distribution and management; moreover, the stations support also the recording of raw data with a high frequency of acquisition.

GNSS Antennas

High Precision Antennas for all Survey works

Stonex family of GNSS antennas is designed to enhance and support the performance of Stonex precise positioning receivers. The antennas receive GNSS multi-constellation signals.

Each antenna is built to withstand various application and surveying needs. The Stonex antennas can be used in land survey, marine survey, channel survey, seismic monitoring, bridge survey, container operation and agriculture applications.

They have high gain and wide beam width to ensure the signal receiving performance of satellite at low elevation angle. The phase center of these antennas remains constant as the azimuth and elevation angle of the satellites change.

Signal reception is unaffected by the rotation of the antenna or satellite elevation, so placement and installation of the antenna can be completed with ease.



SA1800
3D Choke Ring



SA1500
2D Choke Ring



SA1100
Mini Choke Ring



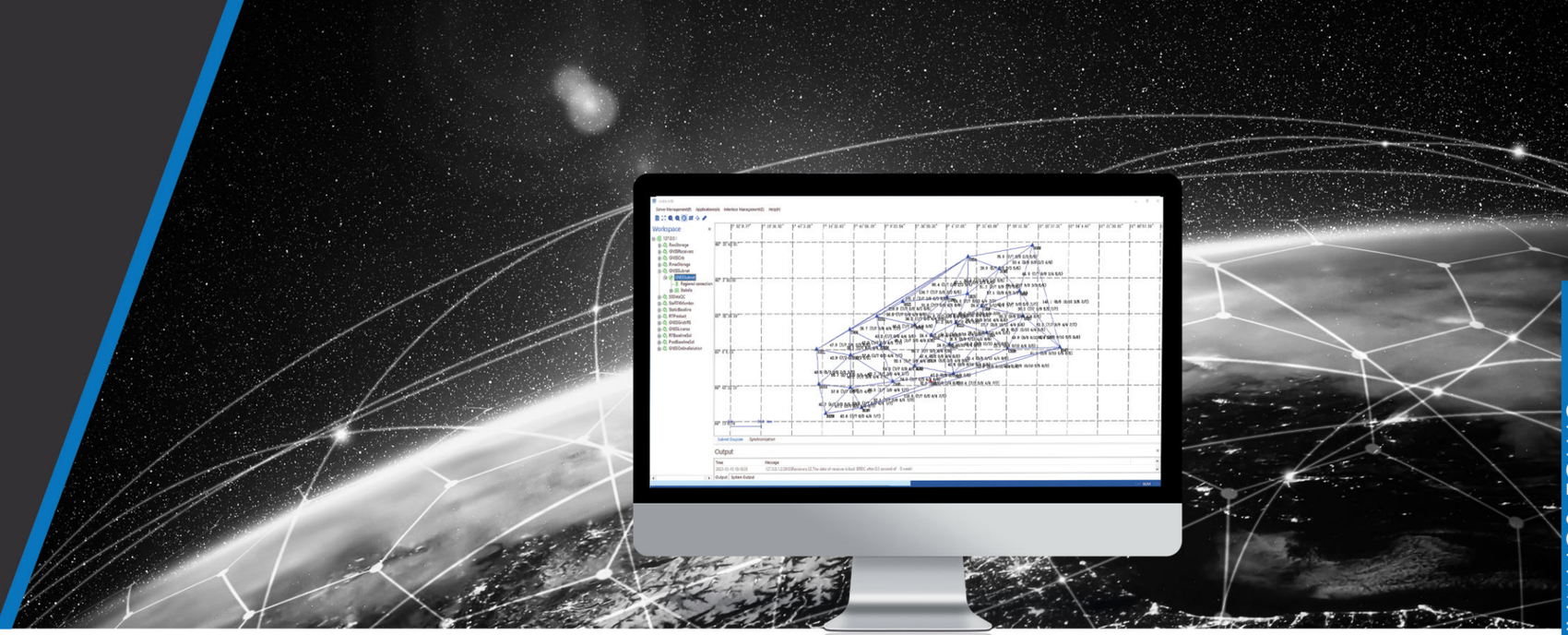


SA45 SA85 SA3G+C

cube·cors cube·caster

cube-nrtk

Cube-nrtk is a GNSS software for managing GNSS station networks. Data from reference stations are used in real-time to calculate a network solution for users to obtain an accurate position. The software allows monitoring of network performance and user activity in real-time through intuitive graphical interface. It manages the 4 major constellations GPS, GLONASS, Galileo and BeiDou in three frequencies and supports different network solutions such as Virtual Reference Station (VRS) and Master Auxiliary Concept (MAC).
The full version includes a web interface through which users can register and later request station RINEX or Virtual RINEX files. In addition to this the software includes an online post-processing service.
Cube-nrtk adopts a distributed architecture concept. It's based on different modules which can be installed on multiple server which guarantees high scalability and able to support very big networks and high numbers of concurrent users.
A solution integrity monitoring system is also included in the software. In particular, the ionospheric activity, station's data quality analysis, and baseline's real time results are shown. In addition to this, cube-nrtk also integrates high-precision data processing engine to automatically perform continuous daily solutions for reference station data, enabling continuous monitoring of the reference station framework.



cube-nrtk

Modules

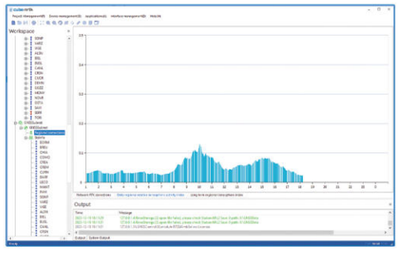
The Cube-nrtk Software, in its complete version, consists of many different modules. The most important ones are:
- **GNSSReceivers**: module that allows connection with all the receivers belonging to the network.
- **SSDataQC**: this module allows a quality check of the data coming from the stations. It shows some useful data such as the ration between the acquired observations against the possible observations, the cycle slips and the mean multipath on the difference frequencies acquired.
- **GNSSSubnet**: is the main component, it deals with the network definition (on the base of the GNSS receiver imported in the previous module) calculation.
- **RTProduct**: module for managing definition and distribution of the differential correction to the users.
- **StaRTKMonitor**: this module, exploiting data coming from the stations in real-time, computes stations' coordinates and give visual feedback of the difference with the reference coordinate set.

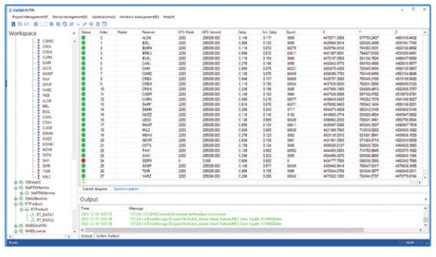
All those modules can be accessed by the system administrator both by a desktop interface and by a Web-UI.

Users can apply for registration and once obtained request the data of the physical or virtual stations. The manager can monitor the status of the network and user activity in real-time, publish information and view reports.

Software configuration and management

The software is configured through a graphic and intuitive interface in a few simple steps:
- System configuration: caster address and port, data storage, automatic start settings.
- Station configuration: connection setting, general information and antenna type, coordinates.
- Network configuration: composition of one or more sub net on the basis of the available stations.





GNSS technologies

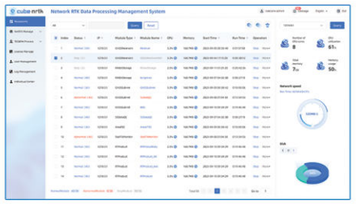
The software supports the following frequencies and signals:
- GPS: L1 C/A, L2W, L5
- GLONASS: L1C, L2P
- BEIDOU: B1I, B1C, B2a, B3I
- GALILEO: E1, E5a, E5b

The differential corrections provided by the software can be exploited by receivers of any type.

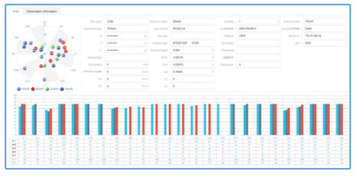


Supported input formats are:
- RTCM2
- RTCM3
- Raw data from Stonex receivers and major receiver manufacturers

The software supports the following ways of connecting the receivers:
- TCP Server
- TCP Client
- NTRIP Client
- Serial port



Real-time products are of two types:
- Network solution: the software supports the most common differential correction products such as Virtual Reference Station (VRS), Master Auxiliary Concept (MAC) and Flächen Korrektur Parameter (FKP).
- Real station: the software makes available the data of the real stations of the network, with the possibility of automatically receiving the data of the nearest station, chosen by the software based on the position of the rover.



Real-time products are distributed through an NTRIP Caster, so to connect to the software you need to use an NTRIP client. For users working in post-processing, the data of the real stations are made available in the standard RINEX format with sampling at 1 Hz. The possibility is also offered to create data for a virtual station (Virtual RINEX) located inside the network.

GIS, Mobile GNSS & Controllers

Solutions for accurate geographic data field collection

GIS solutions combine positioning, communications and software to equip the mobile workforce. GIS products greatly improve productivity in hundreds of industries by geo-enabling field workforces with precision, rugged and easy to use products.

Stonex provides a wide variety of applications to the GIS industry. All applications involve the use of innovative STONEX mobile solutions to allow organizations to integrate their field personnel into a bidirectional data flow.

Powerful tools for display, query, and selection ensure that field personnel receive the maximum advantage for both the data they already hold and the data they are collecting.



S580+ From GIS to Topography

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 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 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.



FULL CONSTELLATION SYSTEM
GPS, GLONASS, BeiDou, Galileo.

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.

RTK AND POST-PROCESSING
S580+ can work in real-time with RTK corrections and simultaneously record the raw data for post-processing.



S580+ GNSS Receiver

Base/Rover RTK with Radio

The S580+ was designed as an RTK rover receiver to receive differential corrections from the network. However, thanks to the external Stonex SR02 radio, the receiver 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 transmits them to the S580+ via Bluetooth. This feature allows the S580+ receiver to both receive and transmit RTK corrections. With this capability, the receiver can be used as both a base and a rover. This configuration provides an excellent and completely low-cost solution.



S70G

Android RTK Receiver

S70G is a 4-constellation dual frequency GNSS system (GPS, GLONASS, Galileo and BeiDou) that allows to collect data and photos in the field, in an easy and fast way.
It is supplied with an antenna connected directly to the tablet which guarantees centimetric accuracy, but if required, connecting an external antenna it gains even more precise data.

ANDROID ON BOARD

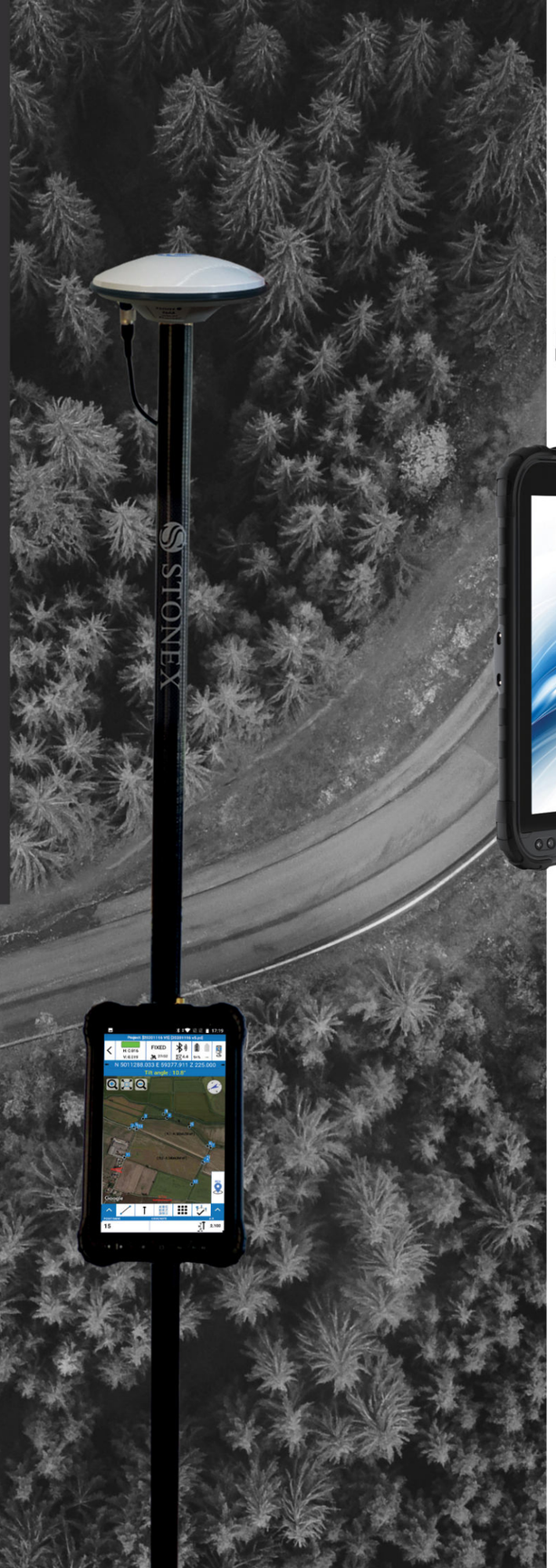
S70G is equipped with Android 10 operating system and has a highly detailed WUXGA resolution (1920x1200) display for greater detail quality.

HIGH-CAPACITY BATTERY

The 8000mAh battery allows the instrument to work over 8 hours and the IP67 protection makes the device suitable for any environment.

RTK AND POST-PROCESSING

S70G is able to work in real time through the reception of RTK corrections, transmitted by a network of GNSS Permanent Stations. Besides working in real time, it can also record raw data received from satellites for post-processing in the office. This allows the operator to achieve greater precision, enabling to work even in areas where there is not a good coverage of the GSM signal.



S80GNSS

Android RTK/GIS Receiver

S80GNSS is a multi-constellation GNSS system (GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS) that allows for precise data collection and field photos in an easy and fast manner. It comes with an antenna directly connected to the tablet, ensuring centimetric accuracy, but if needed, connecting an external antenna provides even more precise data.

ANDROID 13 & BRIGHT DISLAY

S80GNSS runs on the Android 13 operating system and features a display with a brightness of 800 nits, allowing for precise and sharp detail distinction.

RUGGED & HIGH-CAPACITY BATTERY

The 8000mAh battery enables the instrument to operate for several hours, and the IP67 protection makes the device suitable for any environment.

RTK AND POST-PROCESSING

S80GNSS can work in real-time by receiving RTK corrections from a network of permanent GNSS stations. In addition to real-time work, it can also record raw data received from satellites for post-processing in the office. This allows the operator to achieve greater precision, enabling work even in areas with poor GSM signal coverage.

MEMORY AND STORAGE

It is equipped with 6GB of RAM for smooth multitasking and efficient performance, also provides ample storage space with 128GB of ROM for your apps, files, and media.

cube·a

Cube-a, the surveying and mapping Stonex software designed for the Android platform, is crafted to enhance efficiency in the field. Leveraging the flexibility of the Android environment, we've created an uncomplicated and user-friendly interface, ensuring surveyors are well-prepared for any task, ultimately saving time and boosting productivity. Key features contributing to Cube-a's success include full support for touch gestures, compatibility with both smartphones and tablets, and the ability to install on various devices.

cube·connector

Cube-connector, an Android app, facilitates the connection between Android devices and Stonex GNSS receivers using Bluetooth technology.
With the Stonex S80GNSS, users can effortlessly utilize their GIS/Survey software on the Android operating system through Cube-connector.

Rugged Tablets

Android

S80, UT12P & UT56

The S80, UT12P, and UT56 stand as dependable Rugged Controllers, delivering high-performance standards. These Android mobile devices excel in field survey management, offering resilience against water, dust, and shocks (IP67), making them well-suited for operation in the most challenging environmental conditions.

S80, UT12P, and UT56 come equipped with a range of technologies, including Wi-Fi, Bluetooth, NFC, GSM modem, and GNSS receiver capabilities.

S80 | 8”



UT12P | 6”



UT56 | 10.1”





Windows

SRT10W

SRT10W is a reliable Rugged tablet with high performance.
This windows 10 mobile device is ideal for managing software applications for field survey and data collection. Resistant to water, dust and shocks (IP67) it is suitable for operating even in the most difficult environmental conditions.

SRT10W is equipped with Wi-Fi, Bluetooth and GNSS technologies.

SRT10W | 10.1”

Advanced Controller

SH5A

STONEX SH5A is a handy and light device, it is perfect in situations where you need to regularly use the alphanumeric keyboard.

It is an extremely light but reinforced and protected controller, suitable for working in uncomfortable environments. Its low weight makes it perfect for applications without the use of supports or with light and minimal supports. The perfectly visible but small size screen allows the device to be compact, comfortable and easy to use.

SH5A | 5”

TABLETS & CONTROLLERS
Product Comparison

		 SRT10W	 UT56	 S80	 UT12P	 SH5A
Processor		1.92 GHz	2.3 GHz	2.0 GHz	2.2 GHz	2.0 GHz
Operation System		Windows 10 IoT	Android 10.0	Android 13.0	Android 10.0	Android 9.0
RAM		4GB	4GB	6GB	4GB	3GB
Flash Memory		64GB	64GB	128GB	64GB	32GB
Display		10.1"	10.1"	8"	6"	5"
Display Resolution		1280x800	1920x1200	1280x800	1920x1080	1280x720
Camera		5 Megapixel	13 Megapixel	16 Megapixel	13 Megapixel	13 Megapixel
Data Communication	USB Type C	NO	√	√	√	√
	USB Standard	√	NO	NO	NO	NO
	Wi-Fi	√	√	√	√	√
	Bluetooth	√	√	√	√	√
	HDMI	√	NO	NO	NO	NO
	NFC	NO	√	√	√	NO
GNSS		√	√	√	√	√
Connector for GNSS External Antenna		NO	NO	√	√	NO
GSM		NO	√	√	√	√
Change Battery		NO	NO	√	√	√
Nr. Battery		1	1	1	1	1
Weight		750 g	750 g	656 g	360 g	350 g
Size		270x183x15.8mm	268x183x13.3mm	235x146x14.5mm	192x94x14mm	225x78x14.5mm
Operating Temperature		-20°C +55°C	-10°C +55°C	-20°C +60°C	-20°C +55°C	-20°C +55°C
Protection Class		IP67	IP67	IP67	IP67	IP67

Cube Suite

Stonex complete Field & Office Software Solution

Cube Suite is the complete software solution designed and developed by STONEX for in the field and in office use.

Work in the field with the software for GNSS RTK, GIS and Total Station surveying. Work in the office with software for data transfer, graphical visualization, analytical data processing and monitoring.





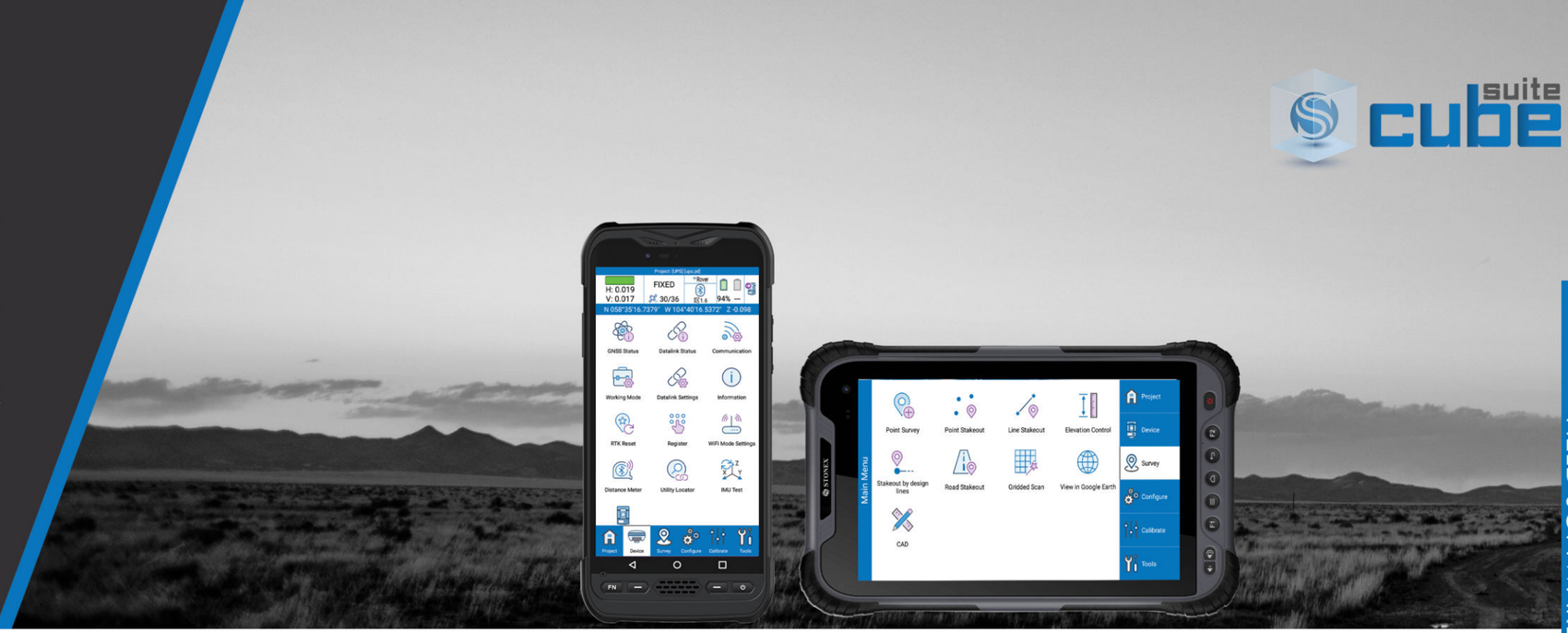
cube-a

Cube-a is Stonex's solution for professional surveying and GIS which has been designed and developed for the Android platform.

Thanks to the flexibility of the Android environment, we have been able to create a simple and intuitive user interface that makes surveyors ready for any work, saving time and increasing productivity.

Full support for touch gestures and the possibility to install it on Smartphones and Tablets are the keys to the success of Cube-a. It also includes support for many languages and adjusts its interface as from the current system language setting.

Cube-a is a modular application which can be customized as needed: GNSS, Robotic and Meccanical Total Stations, GIS and 3D Modelling modules can be enabled to fulfill any customer need.



cube suite

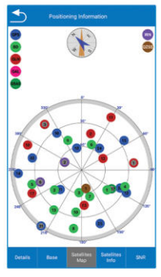
FIELD SOFTWARE

Cube-a | Stonex field software

Stonex field solutions for GNSS RTK and Total Station surveys will make operators' work quick and easy, ensuring high productivity in all jobs requiring precision and efficiency.

Main Modules





GPS

Cube-a is compatible with all Stonex GNSS Receivers.
Supports Rover, Rover Stop&Go, Base and Static modes. Various screens provide useful information on the status of the GNSS receiver including the position, the Sky Plot, SNR levels and the base position.

TOTAL STATION

Cube-a has been designed to fully support mixed surveys. A Cube-a survey supports GPS points and classical polar stations and measures at the same time. Polar stations can be set to occupy previously collected GPS points or on unknown positions calculated using the Free Stationing program. Likewise, the GPS reference system can be adjusted to match an existing polar survey in local coordinates. Cube-a supports all Stonex Total Stations via Bluetooth.



Add-on Modules

GIS

GIS functionalities are well integrated in the workflow of standard GPS surveying. Thanks to the Cube-a's ability to collect, not only single points but also to automatically draw vectors passing through the collected points, GIS surveying becomes fast and easy. The request to fill in the GIS data is automatic and automatically follows the point or vector acquisition. Data forms can be freely defined using the integrated Feature Set designer or automatically created by Cube-a starting from a sample DBF file.
Import and export of standard shapefiles ensures the compatibility and interoperability of Cube-a with virtually any other GIS software.
It is possible to visualise WMS layers in the background map.

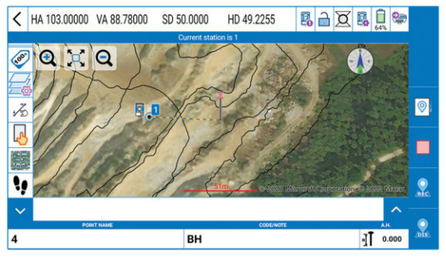
3D & ROADS

The 3D module adds a complete set of commands for performing real-time surface modeling. Base points and constraints are selected by layer. Optional constraints include a perimeter, break-lines and holes (closed non-triangulated areas). The surface display mode is selectable from wireframe, filled triangles with edges, shaded triangles with edges or external perimeter with triangulated points. Volume calculations can be easily defined between a model and a horizontal or inclined reference plane. Results, as well as surface data, can be exported to various file formats. Included in this module is the Roads function, which allows the stakeout of the centerlines/base road alignments, and cross sections. The staking modes available are: by continuous interpolation along the alignment and by station points, elevation can be derived from the elevation profile, the nearest cross section, or by interpolation using previous and next cross sections. The graph proposes two types of views: centerline/alignment and cross section.









Main Functionalities

SURVEY

A simple and intuitive survey interface with numerous indicators immediately helps the surveyor to understand what kind of work and in what conditions is taking place. Indicators show various information like solution status, position precision, battery levels, RTK correction delays and more. Intuitive screens allows for an easy change of settings, a view of the collected points, adding new CAD elements and drawings or proceed surveying.

STAKEOUT

A compact interface groups all the stakeout launching commands in one screen for an easier work in the field. Stakeout screens are enriched with both graphical and analytical indicators which guide the surveyor in order to reach the target point.
Thanks to this interface, you can read all the information necessary to complete the stakeout work, to select points or to add them and quickly change all settings.

INTEGRATED CAD

Cube-a includes a smart and easy to use CAD feature. The CAD has been designed to work with touch displays and it allows to easily draw points and other CAD entities by mean of a smart pointer which can be moved using one finger and which always transmits to the user a strong confidence of the result achieved. The help of object-snaps like point, mid-point, end-point, intersection and others makes it possible to integrate the survey with new elements directly in the field.

cube·manager

Cube-manager has been developed to work on desktop computers running Microsoft Windows and it implements the tools to download, to manage and to process the data acquired with one of the mobile solutions.

Using this software, you can integrate mixed GNSS RTK and Total Station data, process Raw GNSS data in different ways, import and export the data from and to the most popular known formats.

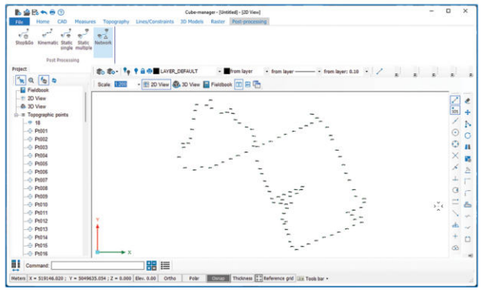
This software will help operators providing the best functions for data transferring, graphical visualization and analytical data processing.
The software is composed of various optional modules and a free version.



cube·manager

Cube-manager is a software for managing data from GNSS receivers and Total Stations, it is composed of 3 main modules (P, T, M), each one specialized in a series of functions. Among the functions shared by all the modules, you can have plano-altimetric elaborations, generate 3D models and calculate contour lines.

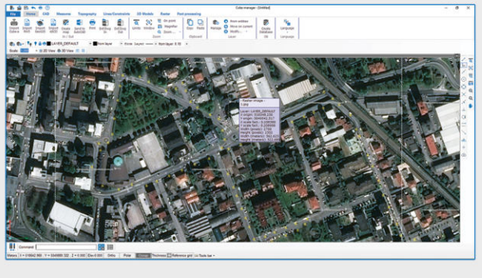
The measurements can be displayed in 2D, 3D and superimposed on raster, satellite or cadastral images. Through a sophisticated internal CAD, you can interact with the data using powerful and complete drawing tools and snap functions, even in 3D. Importing and exporting data are supported in various formats such as DXF, DWG, KML, CSV and others.



cube·link

Cube-link is a light and free version of the Cube-manager. The program performs many of the fundamental functions for professionals in the topographic sector.
Among the functions, it can manage TS surveys as well as GNSS surveys, with the possibility to edit the surveys by adding graphic elements.

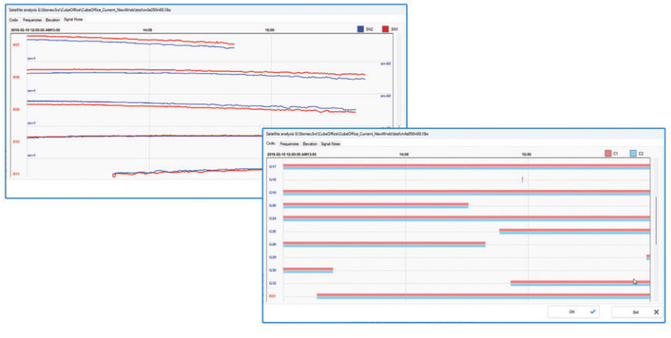
It supports numerous data formats when importing and exporting. It is constantly updated and users can take advantage of technical support.

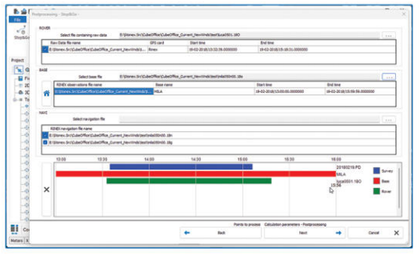


Cube-manager Modules

Cube-manager-p

The P is the Cube-manager's optional module dedicated to the post-processing. It offers the possibility to perform correction calculations with maximum accuracy.
In addition to the basic features of the software, this module provides functions for the calculation of Stop&Go post-processing, Static post-processing for single and multiple bases, Kinematic post-processing, and least-squares Network Adjustments. Cube-manager-p is constantly updated to improve its performance.





Cube-manager-m

The M is the Cube-manager's optional module dedicated to modeling. This is the module designed for professionals who will work on constraint triangulations, volume calculations, contour lines, height profiles etc. In this case, the users will have all the CAD commands, COGO commands and functions on the graphic entities provided in the basic software core but will also be able to perform even more specific functions such as those mentioned above.

Cube-manager-t

The T is the Cube-manager's optional module that enriches and completes the topographic functions of the software. This module provides sophisticated functions of roto-translation and coordinate conversions. It enhances the management of TS surveys by integrating the traverse calculations and the 2D network calculation. It allows the georeferencing of raster images. The aim of our developers, when implementing these functions, is always simplicity and intuitive use; in addition to that, users can always make use of technical support.

cube·h24

Cube-h24 is a monitoring software, it gathers information about a chosen site and allow surveyors and engineers to remotely evaluate the collected data.

This software is developed for Microsoft Windows OS, it offers the possibility to download, manage, and process the data collected thanks to the use of one or more sensors, in the monitoring site.

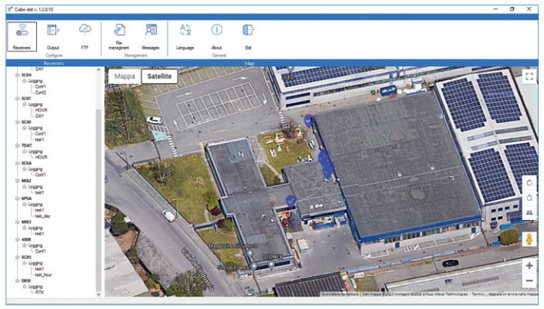
The presence of a Web interface enriches the functionality of Cube-h24, allowing the user to configure working parameters, check and publish the calculation results.

This software will help operators, providing the best functions for data transferring, graphical visualization, and alarm system management.

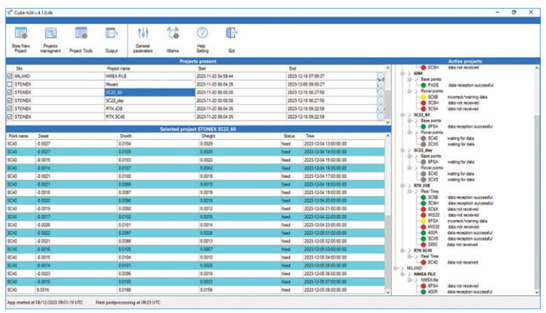


cube·h24

Cube-h24 has been designed to control the movements of points, in natural places or artificial structures, considered to be at risk of stability. The materialization of the points is made with appropriate solutions, to ensure the sensor stability, to reach maximum accuracy with low level noise.







Cube-h24 allows to perform all tasks necessary for monitoring jobs: from collecting the data to determinate the initial conditions, the software will be able to calculate the coordinates and variations on actual status. The program can manage multiple jobs for each site, and provide several outputs, files and charts. It manages an alarm system with a 3-level setup, and it can automatically send emails with all information from monitoring site, such as missing data or dangerous events.

Cube-h24 allows to:

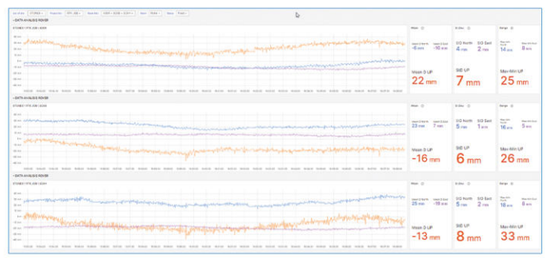
- Set up surveys and calculation procedures, to compare the coordinates of the points subject to control in subsequent interventions
- Check either in real time or in scheduled time the displacements of the points



Main features:

- Cube-h24 is a vertical solution for monitoring
- Communication management
- Project management
- Continuous or periodic acquisition
- Graphical reports of the results
- Alerts and alarms generated in a range of critical values defined by user
- Sending log files and alerts or alarms to office by FTP or email





Total Stations

High Technology and Quality

STONEX Total Stations are simple and durable, designed and built to meet all customers' needs, enabling ease of use for everyone in full autonomy.

Fast, intuitive, reliable, and precise, STONEX Total Stations are optical precision tools designed to support high-quality professionals in all types of topographic jobs, ensuring high performance for surveying and engineering.



R180



R120

R25LR



R20



R60

High Precision
Total Stations

R25LR

With Endless Drives and Trigger Key





High accuracy and an extensive reflectorless range are the perfect combination that makes Stonex R25LR the best friend of every professional surveyor. Whether it's cadastral, mapping, staking out, or high-precision monitoring works, within the R25LR series, you will find the solution that fits your needs.

The R25LR comes standard with integrated onboard field software, a complete suite of applications. External controllers can be linked to the Stonex R25LR through Bluetooth wireless connection—no limitation will impede your working process.

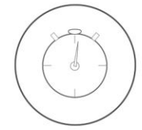
The Stonex R25LR features endless friction drives for continuous horizontal and vertical rotations, eliminating the need for knobs and clamps with limited movements. This ensures a more comfortable use of the station. The trigger key on the side of the instrument allows you to start measurements very easily.

LIMITLESS DISTANCE MEASUREMENTS



By using digital phase laser ranging technology, R25LR guarantees high accuracy long range measurements: 1000 m in reflectorless mode and up to 5000 m using a single prism, with millimeter accuracy.

FAST, ACCURATE, RELIABLE



Measuring distances in one second with 2 mm accuracy makes any job extremely cost-effective and reliable. The wide range of application software allows completing the surveyor's tasks directly in the field.

ONE DAY OF CONTINUOUS FIELD WORK



Thanks to the low power consumption circuit design and to the two high-capacity batteries R25LR gives the opportunity to continuously work for around 13 hours. No concern for data storage: the improved 4GB internal memory and the SD card up to 16GB store a huge amount of data.

R20 Highly Accurate and Efficient Total Stations

The R20 range is composed of 3 versions, the R20 1000 m model with 2" angular accuracy, the R20 1000 m model with 1" angular accuracy and the R20 600 m model with 2" angular accuracy. The three models offer optimum performance up to 5000 m with prism and 1000 m or 600 m reflectorless.

The entire R20 range is equipped with a high-performance, illuminated reticle telescope that provides the best quality of observation, whatever the environmental conditions.

The programs on board of these models of total stations make them suitable for any work in construction, cadastral, mapping and staking, through a user-friendly interface. Thanks to the presence of Bluetooth connection, it is possible to connect an external controller, giving the possibility to use a customized field software.







FAST, ACCURATE, RELIABLE

Measuring distances with high angular accuracy make any job extremely cost effective and reliable. The wide range of application software allows to complete the Surveyor's tasks directly in the field.

ONE DAY OF CONTINUOUS FIELD WORK

Thanks to the low power consumption circuit design R20 gives the opportunity to continuously work for more than 22 hours.

TEMPERATURE PRESSURE

Variations in temperature and pressure have a negative impact on the accuracy of distance measurements. R20 allows setting the values of temperature and pressure to ensure the precision of distance measurements.

R60 Android Total Station

R60 has a 5.5-inch touch screen and the Android operating system, making it like a smartphone in terms of ease of use and familiarity for users, enriching the available functions with web browsing and data exchange.

Thanks to the Cube-a software onboard, with the new horizontal view, the operator can use background maps, have integration with GNSS surveys, and without cables get exchange functions between the TSand GNSS, with the Bluetooth connection.

The R60 is available in two versions, with accuracy of 2" - endless drives, and with accuracy of 1" - lock drives, this instrument has an accuracy of 2 mm + 2 ppm when measuring with a prism and has a range of 1000 m reflectorless.



STONEX SURVEYING SYSTEMS

ANDROID 11 OS

The Android operating system multiplies the possibilities for operators, who can have easy management of jobs and work with convenient background maps.

UP TO 1000M REFLECTORLESS

R60 in both available versions, 1" and 2", manages to obtain very accurate long-range measurements, 1000 m without prism and 5000 m with prism, with millimeter precision.

CUBE-A ONBOARD SOFTWARE

This Stonex Total Station with Cube-a on board increases the possibilities of the software by enriching it with the functions of data exchange, and TS and GNSS management.

R120 Most Productive Total Station

R120 is a robotic Android total station that has a high precision of 1" / 2" and EDM accuracy of 1 mm + 1.5 ppm, its range is 1000 m reflectorless, and rotation speed is 60°/sec.

This instrument is great for having the functionality and convenience of a robotic station with good value for money. This TS is equipped with a 5.5-inch color touchscreen that, together with the Android operating system, makes it user-friendly, akin to a smartphone. It enhances the available functions with web browsing and data exchange.

With the Cube-a software onboard, the operator can integrate the work done with GNSS to the surveys done with the total station; communication and exchange of data between the station and the controller occurs thanks to Bluetooth connection.



HIGH CAPACITY MEMORY

The instrument is equipped with 64GB of internal memory, this allows it to store a large amount of data during long surveys.

LTE MODEM

This Total Station can take full advantage of having a SIM card port and an integrated modem. The operator can connect to Internet to send and receive topographic data.

ANDROID

The Android operating system multiplies the possibilities for operators who can have simple management of jobs and work with convenient background maps. Thanks to this operating system, it is possible to use the Total Station easily and intuitively, as if it were a smartphone.

R180 High Precision Robotic Total Stations

The R180 is a highly accurate and fast Android robotic station. It features a rotation speed of 180°/sec and an EDM accuracy of 1 mm + 1 ppm, with a range of up to 1000 m without a prism.

The R180 is available in three versions, 0.5" and 1" / 2" second. For all models, the quietness and smoothness in prism searches and rotations are among the most observed and appreciated features.

Equipped with the Android operating system, the R180 has Cube-a as onboard software. This enables users to navigate online and interact with the touch screen in an easy and familiar way. The Cube-a onboard software includes all the classic functions of the program, as well as the integration of jobs done with GNSS and surveys done with the total station. This allows operators to achieve complex and professional work in a short time and with high accuracy.

Additionally, the R180 has a camera and a light guide to further facilitate fieldwork.

HIGH ACCURACY AND PROFESSIONAL RESULT

This instrument is top-of-the-line. Its detailed engineering allows for exceptional performance, achieving an accuracy of 1 mm + 1 ppm with a prism, at a measurement speed of significantly less than one second.

LONG DISTANCE REFLECTORLESS

R180 guarantees high accuracy long range measurements: up to 800/1000 m in reflectorless mode and up to 6000 m using a single prism, with millimeter accuracy.

1000m

BUILT-IN CAMERA

The R180 is further enhanced by the addition of a built-in camera, which can be utilized thanks to the presence of two 6-inch screens. This camera allows you to view the points operator have surveyed on the large screens, or to use the image to help with collimation.

TOTAL STATIONS
Product Comparison



R20 600m - 1000m



R25LR



R60



R120



R180

	R20 600m - 1000m	R25LR	R60	R120	R180
Angle Accuracy	2" - 1" / 2"	2"	1" / 2"	1" / 2"	0.5" / 1" / 2"
Prism Measurement	5.000 m	5.000 m	5.000 m	3.500 m	6.000 m
Prism Accuracy	2 mm + 2 ppm	2 mm + 2 ppm	2 mm + 2 ppm	1 mm + 1.5 ppm	1 mm + 1 ppm
Reflectorless Measurement	600 m - 1000 m	1.000 m	1.000 m	800 m - 1.000 m	800 m - 1.000 m
Reflectorless Accuracy	3 mm + 2 ppm	3 mm + 2 ppm	3 mm + 2 ppm	3 mm + 2 ppm	2 mm + 2 ppm
Display	2 Color	2 LCD	1 Color touch	2 TFT touch	2 LCD touch
OS	Proprietary	Proprietary	Android	Android	Android
Bluetooth	√	√	√	Long Range	Long Range
USB	√	√	√	√	√
SD card	NO	√	NO	NO	NO
RS232	NO	√	√	√	√
Memory	> 80.000 points	4GB	32GB	64GB	32GB
Guide Light	NO	NO	√	NO	√
H-V Movements	Lock drives	Endless drives	Lock /Endless drives	Motorized	Motorized
Operation Time	22 hours	12 hours	9 hours	5 hours	6 hours
Weight	5.6 Kg	6.0 Kg	6.5 Kg	7 Kg	9.5 Kg
Operating Temperature	-20°C +50°C	-20°C +50°C	-20°C +50°C	-20°C +50°C	-20°C +50°C
Protection Class	IP65	IP55	IP55	IP55	IP65

Radio

RADIO MODEM 35W

- Power from 5 to 35W
- Frequency range 410-470MHz
- Bluetooth
- TX/RX/Transceiver
- GNSS integrated
- Bridge functionality
- Protocols Trimtalk/Trans EOT/Trimmark/Satel
- Modulation GMSK/4FSK
- Channel spacing 12.5KHz/25KHz
- Display screen
- Android APP for management
- Configuration Software
- Distance covered up to 50 Km



SR35



RADIO MODEM 2W

- Power from 0.5 to 2W
- Frequency range 410-470MHz
- Bluetooth
- TX/RX/Transceiver
- Protocols Trimtalk/Trans EOT/ Trimmark/Satel
- Modulation GMSK/4FSK
- Channel spacing 12.5KHz/25KHz
- Internal battery 6800mAh
- Operating time up to 8h
- Display screen
- Distance covered up to 10 Km
- Configuration Software

SR02



Theodolite & Auto levels



STT402L

STT402L offers the opportunity to challenge high precision monitoring and engineering works. Thanks to its absolute encoder, angle measurements are saved when STT402L is switched off.
Low power consumption gives more than 80 hours working time. Unlike other instruments that use only AA battery, STT402L offers the options to use the Li-Ion rechargeable battery or standard AA battery. The dual axis compensator with 1" accuracy ensures reliable measurements on every kind of terrain.



STAL 1000/1100

STAL 1000/1100 Series autolevels are immediate to set up and use.
The accuracy of up to 1 mm/Km (double stroke leveling) of the STAL series autolevels makes them perfect tools for monitoring and engineering work.
Horizontal knobs with an unlimited range ensure precise pointing while the circle, graduated in DEG or GON, gives angular measurements.



A30

Stonex brings the benefits of Auto Level to construction applications at an affordable price with the reliable, easy-to-use A30 Auto Level.
The Stonex A30 Auto Level minimizes human error and maximizes the ease of levelling work, allowing increased productivity and performance.
In few seconds height difference and distance can be measured.
A30 guarantees high accuracy with ±1.5 mm standard deviation of 1km round-trip leveling measurement.

3D Scanning

3D scanning everywhere

STONEX 3D Scanners are the best solution for any application, balancing economic efficiency and highly accurate outputs.

The sealed external case of all our scanners allows you to operate in dusty and humid environments, where others fail. Perform field surveys with our tools and process the data in an office with our software.

STONEX











X100 Light & Fast

X100 is a small and compact terrestrial laser scanner that is quick and easy to use.

Its multi-line lidar technology and ability to achieve complete coverage of the surrounding area enable it to calculate 3D models for a wide range of applications and scenarios, both outdoors and indoors.

The scanner comes with its own X100app field app, making it easy to control the device. Thanks to the scan converter, the data is compatible with Cube-3d and Stonex Reconstructor, as well as third-party software.

The X100 is the perfect tool for quick topographic surveys, scans of building facades and data collection for floor plans; a quick 360° scan takes as few as 45 seconds.
The built-in panoramic camera allows you to add true colour to your scans.



SMALL AND LIGHT
The scanner can be easily used by a single person thanks to its small size and weight of approximately 3kg.

WIRELESS CONTROL
Through the dedicated APP it is possible to control the device remotely. Scan with one click and check quality via real-time preview.

PANORAMIC HRD CAMERA
Add colour to your scan.

SELF CALIBRATING
± 5 degrees tilt supplement angle for precise leveling. Monitor scanner leveling via electronic bubble available on the app.

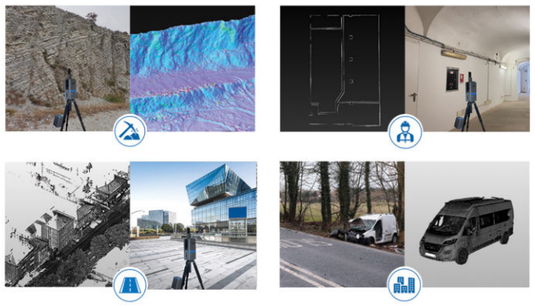
FAST SCAN & DOWNLOAD
A 360° one-stop scan requires only 45s. Data are saved on USB dongle directly. Post-processing begins after field work!



APPLICATIONS

X100 is the perfect instrument for efficient and precise work in a wide range of applications:

Land & Excavation
Terrain Elevation Models, Volume calculation, Tunnels, Profiles and Contours.
Architecture & Real Estate
Floor plans, Sections, facade scanning.
Emergency Management
Assestment and support of Emergency Response Planning.



BUNDLED SOFTWARE

X100*app*
X100 has a dedicated Android app for field data collection. Through the app it is possible to manage the survey quickly and easily.

X100 Manager
X100 Manager is a dedicated tool for X100 data converting.
Scans are coloured, filtered from noise and converted into the most popular formats, such as .las and structured .e57.



XVS

New Generation Photogrammetry

The system uses a technology based on the integration of high-resolution images, inertial systems and a complex algorithm: capturing a scenario with XVS, 3D model will be generated through photogrammetric techniques. Walking and capturing the scene in motion, a real-time interface will guide you in the data collection, suggesting the speed of your movement and if necessary returning to an area to have enough image overlapping.

Thanks to Visual SLAM system (Simultaneous localization and mapping), your trajectory is displayed in real-time on a tablet. The Inertial Measurement Unit (IMU) sensor helps the algorithm to generate a continuous image block. The best result will be obtained automatically.

Back in the office, the procedure to generate the 3D model is fully automatic, through a desktop PC. Data coming from XVS can be integrated with video from UAV drone or any camera for a complete reconstruction of the area.



ACCURATE

Smart algorithm makes it possible to choose the best images and increase the accuracy of the derived model. If the capture is very close to the element (around 1 m) and closing where you started-loop closure-the accuracy is 2-3 mm.

HD TEXTURES

Based on advanced high-resolution images, it allows reconstructing the texture of the scanned material with great clarity and realism.

SCALED AND LEVELLED RESULTS

Through the automatic detection of targets and the use of inertial systems, scaled and levelled results can be obtained.

EASY TO USE

Because of its practicality and ease of use, it can be used by multiple people within a company or institution, without the need for prior knowledge of 3D scanners.
The field application will guide in through the data collection.

VERSATILE

A variety of urban scenarios can be documented using XVS scanner, as infrastructures, accident reconstructions, gas/water connection works, building faces and others.
The geometric accuracy and colour realism in the results, make it a companion also for archaeological, architectural and geological work.



Accessory



Telescopic Pole

VISUAL SLAM TECHNOLOGY

Visual simultaneous localization and mapping technology determines the position and orientation of a camera in relation to its surroundings, while mapping the environment around it. Through subsequent images, points are tracked to triangulate their 3D position; this information is simultaneously used to approximate the camera pose. The advantage, compared to standard photogrammetry, is that at the end of the survey you leave the site with the certainty that the frames have the correct overlap for building the point cloud.

BUNDLED SOFTWARE

XVSapp

The provided software has a simple interface and helps the user by indicating how to behave in critical steps and alarming in case the object is not captured correctly. Camera parameters are fully customizable, adapting them to the surrounding environment.
Suggested tablet is Microsoft® Surface PRO, not included in the bundle.

XVScloud

Data collected in the field can be sent to a server for advanced data processing. This service will return point cloud or mesh formats, which you can use in Cube-3d or any third-party software.



APPLICATIONS

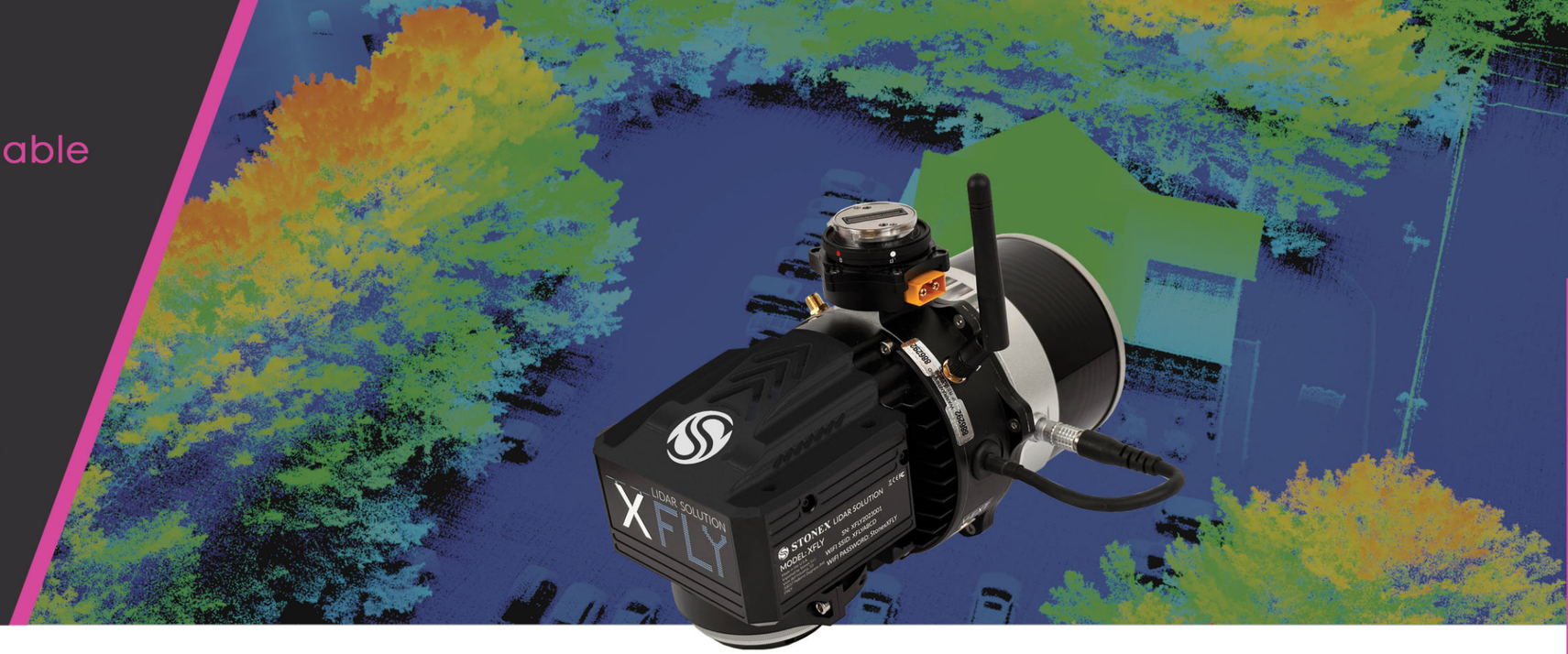


GEOLOGY URBANISM ARCHAELOLOGY RESTORATION INFRASTRUCTURE

XFLY

Accurate & Reliable

XFLY series integrates high performance Inertial Navigation System with camera and LiDAR for point cloud generation.
Different customer's need can be met by the choice of Hesai LiDAR XFLY^{120}, XFLY^{300} or other sensors.
The processing platform contains a Wi-Fi interface, an embedded cellular modem for RTCM corrections, data logging software and a gigabit Ethernet network.
Equipped with a high-performance INS, it delivers clean point clouds even at high AGL.
As a small, lightweight and low-power system, it allows the user to fly longer, adapting to the needs of any project.
The post-processing software provides fully automatic point cloud generation.



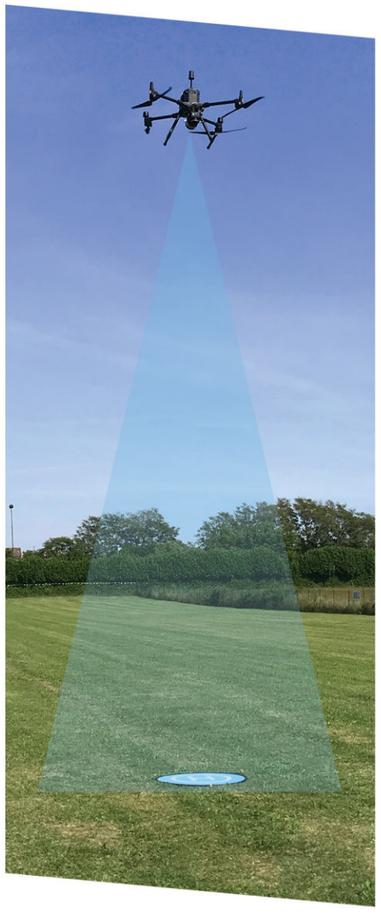
200M AGL
Fly up to 200 meter above ground level.

ACCURACY
Thanks to high performances GPS-Aided INS, 3-5 cm point cloud accuracy can be achieved.

CAMERA
24 MP camera adds RGB information to the data.
Camera comes to the customer already calibrated and with these boresighting values already saved onto the device.

FLY & DRIVE
Different mounts are offered to support the assembly onto well-known UAVs and other platforms, like cars.
Among the compatible UAVs: DJI M210 - M300 - M350 - M600, Inspired Flight IF1200 Hexacopter, Freefly Alta X, Freefly Astro, WISPR Ranger Pro 1100, Sony Airpeak S1

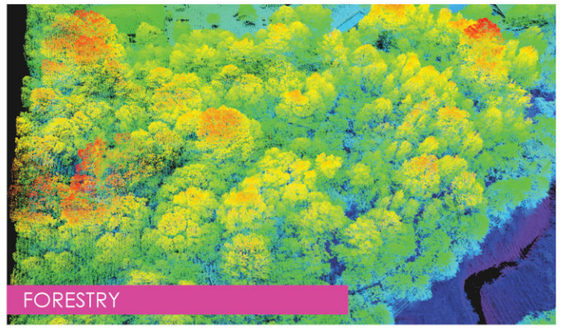
PPK/RTK DUAL/SINGLE GNSS
Depending on customer's application, choose whether you want single or dual GNSS antenna. For who wants to avoid post processing, Real Time Kinematic solution is also available.



FLY*post*

The software observes and corrects misalignments between the INS and LiDAR, and georeferences the data into a geographic coordinate system.
The post-processed INS trajectory, LiDAR scan files and camera images are converted to point clouds in LAS format for further processing.


CONSTRUCTION SITE


FORESTRY


RAILWAY


POWER LINES

X120^{GO}

Accurate & Versatile

The system has a 360° rotating head, which can generate a 360°x270° point cloud coverage. Combined with the industry-level SLAM algorithm, it can obtain high-precision three-dimensional point cloud data of the surrounding environment without light and GPS.

Equipped with three 5MP cameras to generate a 200°FOV horizontal and 100°FOV vertical, capable of synchronously obtaining texture information and producing colour point clouds and partial panoramic images.

X120^{GO} can use *GOapp* to check and manage projects which will be updated and displayed synchronously. Real-time SLAM mapping and preview can be achieved via *GOapp*. *GOpost* can perform post-processing of collected data, generate high-precision and high-definition color point clouds, produce partial panoramic images, display point cloud and perform optimization processing.

X120^{GO} has an integrated structure design with a built-in control and storage system and built-in replaceable lithium batteries.

Once pressed the start button, X120^{GO} can start operations immediately, making data acquisition more efficient and convenient.



RAPIDITY AND REDUCED WORKLOAD

No more multiple scan station, just move around the scene to collect the entire 3D point cloud, without time-consuming cloud to cloud alignment.

FLEXIBILITY

Combine indoor & outdoor data, even in the most demanding environments.

REAL TIME PREVIEW

See your scanning progress in real time using the dedicated Android App.

AUTOMATIC CONTROL POINT MEASUREMENT

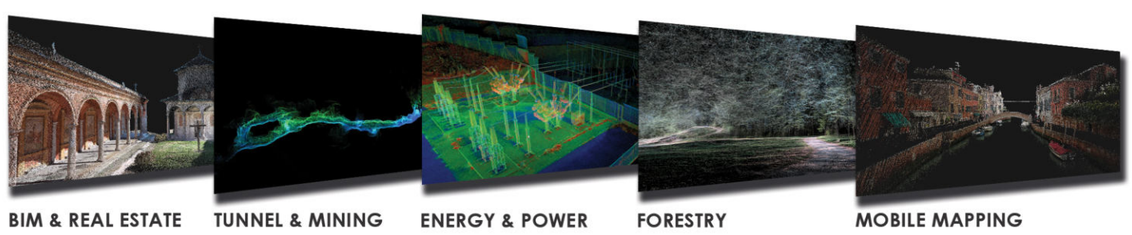
When capturing data, X120^{GO} is able to collect reference points too. They can be matched with known control points to georeference the scans.

INTEGRATED CAMERAS

Three integrated 5MP cameras are able to cover the wide field of view of the scanner, obtaining coloured point cloud and panoramic images.



APPLICATIONS



BIM & REAL ESTATE | TUNNEL & MINING | ENERGY & POWER | FORESTRY | MOBILE MAPPING

Accessories

BACKPACK

A solution to use X120^{GO} combined with a GNSS antenna.



VEHICLE MOUNT

Securely mount your X120^{GO} on a vehicle to collect data on urban enviroments.



RTK120^{GO}

Via the dedicated socket, it is possible to connect an RTK receiver.



TABLET HOLDER

You can use your tablet docked to X120^{GO} to have one hand free while surveying.



SHOULDERS HOOK

Distribute weight over both shoulders, free you hands.



X70^{GO} Smart & Lightweight

X70^{GO} is a real-time 3D model reconstruction device which integrates inertial navigation module, high performance computer and storage system.

It is equipped with a 360° rotating head, which, combined with the SLAM algorithm, generates high-precision point cloud data.

A 12 MP visible-light camera provides texture information, while a visual camera guarantees stronger real time preview with GO*app*.

Mapping results are generated immediately inside the scanner, right after scanning: choose if you want to color them and improve their accuracy, postprocessing with GO*post* software.



RAPIDITY AND REDUCED WORKLOAD

No more multiple scan station, just move around the scene to collect the entire 3D point cloud, without time-consuming cloud to cloud alignment.

REAL TIME RESULTS

The built-in visual camera makes the real time SLAM algorithm more stable, especially in weak structural textures environments. The data are ready to be used as soon as the survey is completed.

AUTOMATIC CONTROL POINT MEASUREMENT

When capturing data, X70^{GO} is able to collect reference points too. They can be matched with known control points to georeference the scans.

HIGH PERFORMANCE COMPUTATION

The system can directly output the mapping results after the acquisition is completed.
You can choose to post-process the data, in case you desire to improve its accuracy.

X-WHIZZ MODE

X70^{GO} combines mobile and stationary surveying.
To the advantageous SLAM solution that enables you to survey large areas in a very short time, it combines a stationary mode for collecting more detail and with greater accuracy. You can switch to the latter mode by simply clicking and standing still with X70^{GO} on a monopod while surveying.



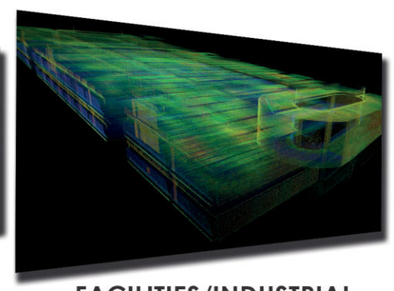
APPLICATIONS



BIM & REAL ESTATE



TUNNEL & MINING



FACILITIES/INDUSTRIAL

Accessories

RTK120^{GO}

A solution to use X70^{GO} combined with a GNSS antenna.
There are several reasons why the RTK module is worth using.
First, it places your point cloud in a global coordinate system, but it can also be useful in large surveys to improve the composition of the final 3D model.





TELESCOPIC POLE

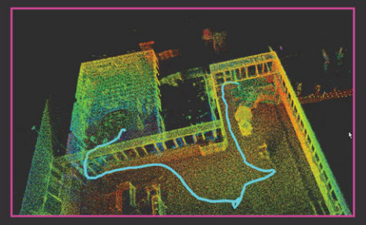
Hold the X70^{GO} on the monopod for a stationary survey in key areas with the X-Whizz mode.
The quick-lock swivel system makes the pole quick and easy to extend to different heights, up to a maximum of 1,60 meters.
Its handle ensures a firm, ergonomic grip during use: maximum efficiency and comfort are guaranteed.

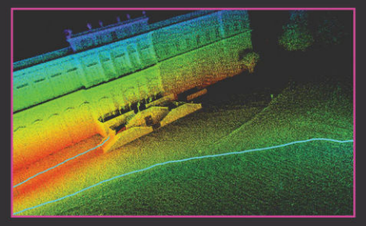


SLAM TECHNOLOGY

Simultaneous Localization And Mapping

STONEX SLAM technology delivers more range, more points per second and best in class on board processing algorithms to reach unmatched speed of capture and reliability even in the more demanding environments.







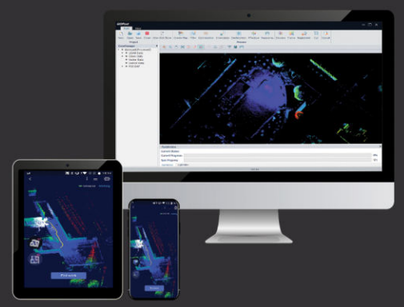
BUNDLED SOFTWARE

GOapp

GOapp is dedicate mobile application for X120^{GO}, to manage projects, real time point cloud display, image preview, firmware upgrade and other operations. The APP runs on Android operating system.

GOpost

Windows post processing software which performs optimization processing, colouring of point clouds and creation of panoramic images. You can also import control points to georeference the point cloud.



STONEX RECONSTRUCTOR

Powerful and usable 3D Software

The Stonex Reconstructor software allows you to manage and align point clouds acquired through laser scanners or other sensors, clouds produced by photogrammetry and in general any point cloud.

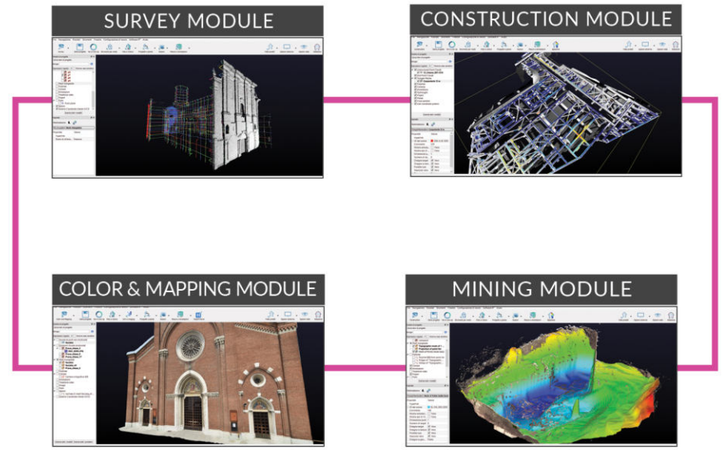
Complete and clear workflows will guide you during the processing and the expandable modules are able to meet different needs, covering many fields, such as: surveying, mining, construction, architecture, cultural heritage, BIM, galleries etc.



MAIN FEATURES

- POINT CLOUD ALIGNEMENT
- FILTERING
- MESH AND DTM
- COLOR MANAGEMENT
- COMPARISON OF 3D MODELS
- PLANARITY / VERTICALITY
- ORTHOPHOTO
- SECTIONS, CONTOURS AND PROFILES
- AREA AND VOLUME
- MEASUREMENT
- CAD EXPORT
- UAV INTEGRATION

MODULES



cube·3d

Cube-3d is a complete software for 3D data management, built by two modules for photogrammetry and for scanner data. The former processes images (or videos) to generate accurate digital maps and 3D models with extreme precision; the latter provides tools to align point clouds. It is compatible with cube-a surveys and with any third-party 3D model.

It is possible to draw on point clouds or meshes and merge data imported from traditional survey tools, all in a single software. The data can be then processed and enhanced thanks to the various CAD tools. Among the many features available, most appreciated are the automatic classification, orthophoto, cross-sections and profile lines, volume calculation, and more.

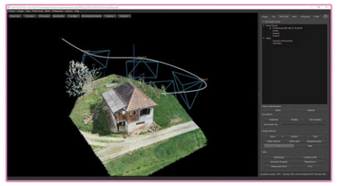
Licenses configuration is very flexible, from perpetual to temporary subscription, it adapts to the needs of many professionals.



suite cube

OFFICE SOFTWARE

Photogrammetry Module



3D POINT & DIGITAL SURFACE GENERATOR

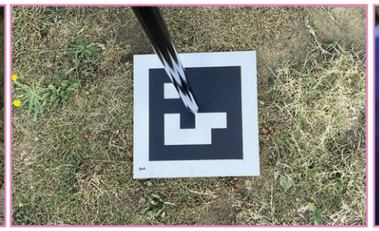
The program can process, in a single project, images captured by any handy camera, UAV drone, or multiple-camera and create extremely accurate and detailed high-definition 3D models.
It can generate a fully geo-referenced, spatially orientated, and complete overview of your site configuration.

NEVER-FAILING ORIENTATION

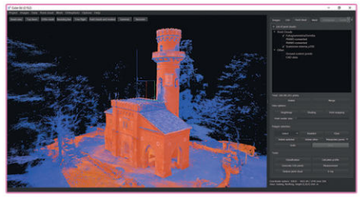
Cube-3d automatically detects both GCPs and detail points, allowing the operator to check the position of the detected targets, in the first step of the orientation.
With Stonex targets, the time needed will be even shorter, centering is immediate. Alternatively, coded targets are also supported for fully automatic orientation. Even working with RTK drones, it will be easy to achieve centimeter accuracy without GCP.











Scanner Module

Import clouds from Lidar, Laser Scanners, and without limitation from any tool capable of generating them. Full support for Stonex Scanners and a wide range of import formats.
Register point clouds in cube-3d and take advantage of all the excellent tools it provides.

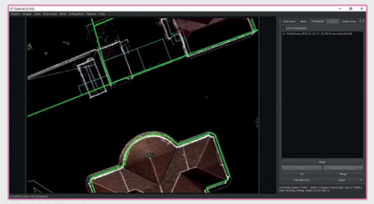
Main Functionalities

CLASSIFICATION

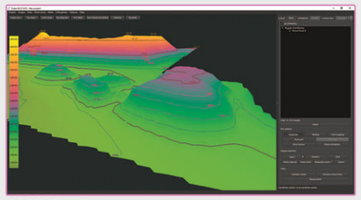
Benefits from an industry-leading classification engine with best-in-class point cloud customization tools that give users fast, easy-to-use, and simple data classification.

ORTHOPHOTO AND X-RAY

It allows to calculate high-resolution, traditional and true, digital orthophotos with cm-grade precision in perfect geo-referenced details.
The X-ray feature helps to see through the rooftops, so drawing building walls and similar features on a survey map will be much easier. From 2D X-ray views, generate layouts customising their dimension and position.



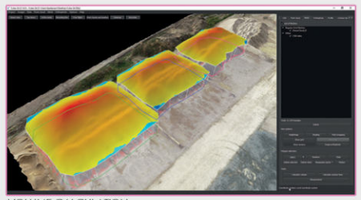
ORTHOPHOTO



CONTOUR LINES

CROSS SECTIONS, PROFILES AND CONTOUR LINES

From point cloud data, it will draw a definition line and calculate single vertical cross-sections or multiple transverse profiles with user-defined intervals.
Or it can instantly create topographic maps, and freely explore terrain elevation data in 2D or 3D, thanks to the automated contour lines calculation.



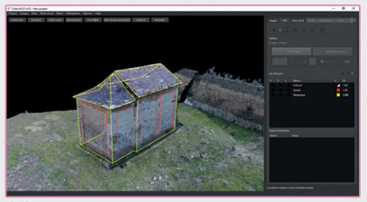
VOLUME CALCULATION

VOLUMES

Calculate volumes, comparing different models for cut&fill. Dedicated tools to move points, increase/decrease heights, flatten, etc... permit the prediction of future surfaces/results of the area.

CAD ENGINE

Integrated CAD functions give you the power to work on your project with a complete layer system, snapping tools, drawing options and measurements.
No need of any further third-party CAD software.

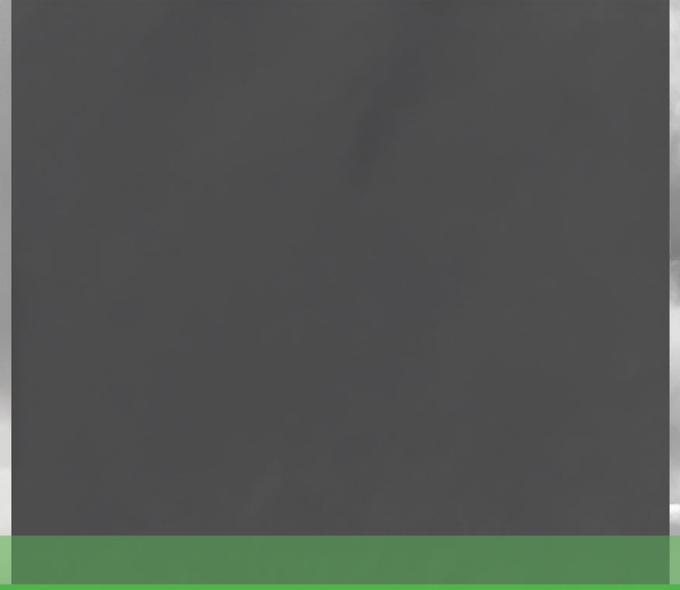


CAD

3D SCANNING
Product Comparison

	 X100	 X120GO	 X70GO	 XVS	 XFLY
Type	Tripod - Lidar	Handheld Lidar SLAM	Handheld Lidar SLAM	Handheld Visual SLAM	UAV Lidar
Range	0,5 – 120 m	0,5 – 120 m	0,1 – 70 m	0,4 – 40 m	XFLY120: 120m XFLY300: 120m
Accuracy	Up to 6 mm	Up to 6 mm	Up to 6 mm	Up to 3 mm	±3 cm
Pts/sec	320.000	320.000	200.000	-	640.000
FOV	268°x360°	270°x360°	59°x360°	65°	XFLY120: 31°x360° XFLY300: 40.3°x360°
Power Supply	Battery (2 replaceable)	Battery (1 set of 4) External port USB Type-C	Battery handle (2 pcs) External port USB Type-C	USB Type-C 3.0	Skyport
Wi-Fi	√	√	√	-	√
Data Transfer	USB	SD Card	USB Type-C	USB Type-C 3.0	256GB USB dongle
Dimensions	125x113x275 mm	372x163x106 mm	364.5x173.8x170 mm	151x120 mm	XFLY120: 20.8x14.2x17 mm XFLY300: 20.8x14.2x15.2 mm
Weight	3,2 Kg	1,6 Kg	925 g	740 g	XFLY120: 1.7kg XFLY300: 1.23kg
Operating Temperature	0°C +40°C	-10°C +45°C	-20°C +50°C	0°C +40°C	n\a
IP	IP54	IP54	IP54	n\a	n\a
Camera RGB	72MP	15MP	12MP	5MP	24MP
Output	LAS, E57	LAS	LAS	PLY, OBJ, LAS	PLY, E57, LAS





Custom Solutions

For high precision works

Machine Control - Agriculture - Mining - Solar - Marine

Our world demands technologies that are able to monitor and assure the correct workflow to get the job done quickly and correctly.

STONEX team has a deep knowledge in developing tailored solutions, in order to improve the jobsite productivity keeping in first place the operators' safety. With our Solutions the job site will be lived like a new comfort zone from all the actors: from the operators to the supervisors.









MACHINE CONTROL

EARTHMOVING

Stonex machine control solutions can be installed in most earthmoving machines quickly and easily.

The simple design of the solution allows you to be up and running in no time. Thanks to the Android software developed by Stonex, all the components can easily communicate with each other. As an option there is the possibility of having a bluetooth connection between the various components of the system.

The software allows you to manage all phases of excavation and machine movement. The system is scalable as needed. It is possible to install a 1D/2D solution and then easily transform it into 3Deasy.



STONEX MACHINE CONTROL

HIGH QUALITY COMMUNICATION
The information is sent to the Android tablet installed in the cabin (also via bluetooth as an optional).

ACCURATE POSITIONING
High precision positioning thanks to GNSS Antennas and high quality sensors.

EASY TO USE
Our sistem is plug & play. Fast to install, easy to use.

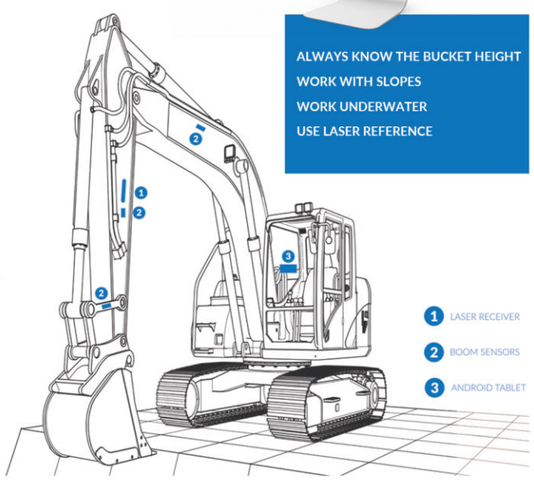
HIGH PRECISION SENSORS
The system is equipped with precision sensor that provide accurate data.

ROI
Adopting Stonex solutions means reducing production costs.
Less operators with high productivity.

ANDROID SOFTWARE
Software developped by Stonex for Android system, optimized for machine control operations.



ALWAYS KNOW THE BUCKET HEIGHT
WORK WITH SLOPES
WORK UNDERWATER
USE LASER REFERENCE



Machine Control for the Construction world

STX-DIG

The control of an excavator is a very delicate operation in all phases of work. In order to operate quickly and effectively, it is necessary to monitor all the movements of the machine in a precise manner.

The system developed by Stonex is equipped with high-precision motion sensors that provide real-time information on the status of the machine.

The information is sent to the Android tablet installed in the cabin. The tablet is equipped with Stonex software developed specifically for the world of machine control.
The system is scalable as needed. It is possible to install a 1D solution and then easily transform it into 2D or 3Deasy.





DIG
SET DEPTH
SET TILT

SET SLOPE
SET PROFILES

HEIGHT ALERT

STX-GRADE



The dozers and graders are routinely used in the material distribution process and grading.
A precision control system allows you to avoid excessive digging and to keep the use of materials under control. The Stonex system for leveling control is equipped with an inclination sensor to measure the status of the blade and one or two laser receivers as needed.
The Android tablet mounted in the cabin, via the dedicated app, shows the inclination and elevation in real time and automatically sends the corrections to the machine system.
The system is available in different configurations, with laser/s or GNSS receivers.

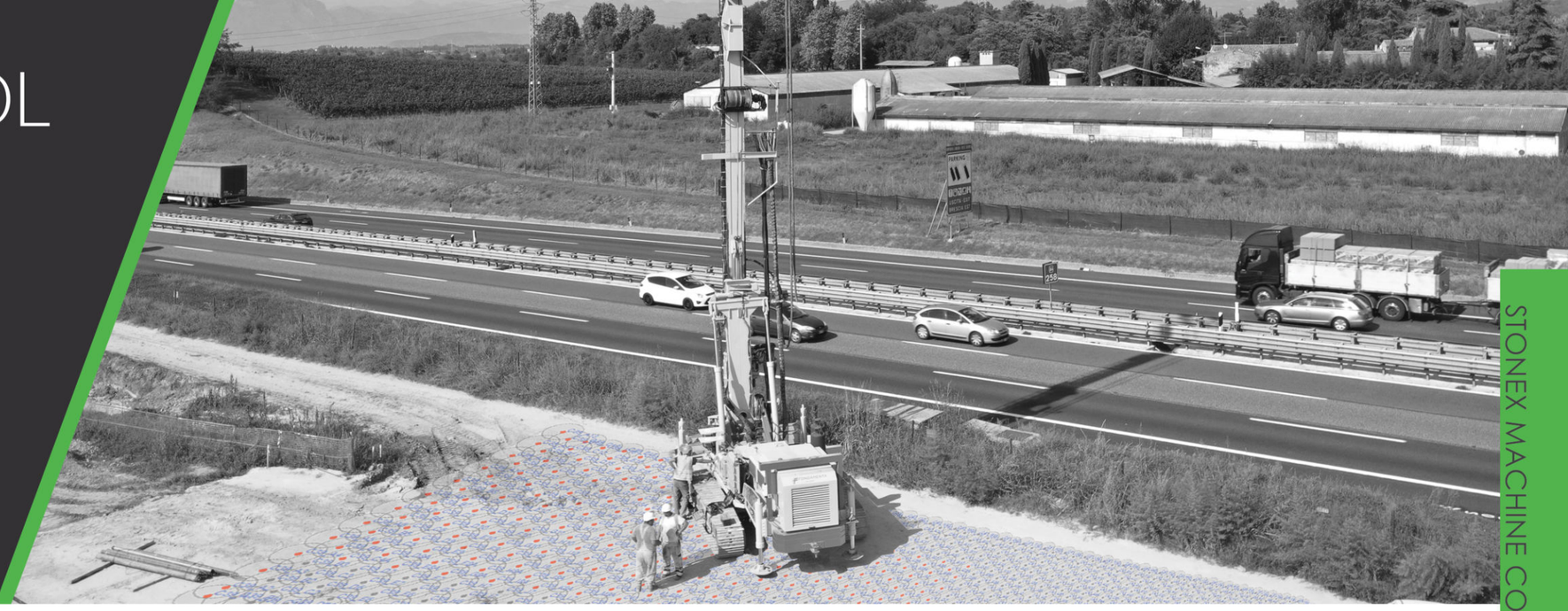
MACHINE CONTROL

DRILLING & MINING

Stonex has developed simple and intuitive solutions for the correct positioning of the machines on site.
In addition to the components installed directly on the machines, our software also handles the traditional staking part if needed.

To facilitate the exchange of information between operators, the solutions consist of a part dedicated to the office and a part dedicated to field work.

Office and field can communicate thanks to the use of a Cloud platform where they can easily share data, projects and information.



PROJECT AND DESIGN
The Project can be generated, importing the local coordinates from different formats (DXF, TXT). A TARGET POINT file will be produced for the GPS navigation purpose. The Project coordinates include the depth and the tilt information.

MONITORING ACTIVITY
Thanks to a remote connection it is possible to monitor the progress of the work and update the projects in real-time.

MACHINE GUIDANCE
Manual positioning of the probe on the post is no longer required, the operator is guided directly to the designated drilling spot in a precise, easy and faulty-free way.

VISUALIZATION AND STORAGE
Thanks to our solutions it is possible to assess and store the position of the drilling point.

ROI
Adopting Stonex solutions means reducing production costs. Less operators with high productivity.

ANDROID SOFTWARE
Software solutions that work with Android system.



Satellite technology for High Precision Mining Operations

Stonex machine control division has designed three solutions for the mining world:

- A GPS guidance system for jet grouting capable to determine the correct planimetric position of the columns, the verticality of the drilling tower and the deviations from the designed coordinates.
- A system for guiding and positioning digwheel machines for the construction of quarries or tunnels.
- A system for guiding and positioning drills for the construction of quarries or tunnels with the support of a robotic total station.







MACHINE CONTROL

PILING

Stonex positioning technology provides excellent performance in piling operations, supplying a solid solution to operators.

The main solution (GPS + tablet + software) is able to process large surveys and create projects quickly; the quality of the work is ensured by the correct interaction between the sensors and the software.

Our solutions offer differents degree of automation for the pile driving process, to meet the customer's needs and reducing working time.



PROJECT AND DESIGN
The Project can be generated, importing the local coordinates from different form ats (DXF, TXT). A TARGET POINT file will be produced for the GPS navigation purpose.

SURVEY STAKE-OUT
Quick and smart stakeout GPS solution made for any kind of operator. A clear guidance layout aids the operator to find the post position with centimetres accuracy.

MACHINE GUIDANCE
Our solutions fit on any kind of piling machines and drive the operator on the target point (post coordinates) in manual and automatic mode.

AUTO LEVELLING
A slope sensor with an hydraulic interface can be installed on any machine in order to assure always the best levelling accuracy of the mast along two axis.

ROI
Adopting Stonex solutions means reducing production costs. Less operators with high productivity.

ANDROID SOFTWARE
Software solutions that work with Android system.

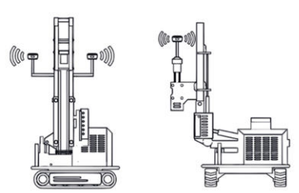


GPS satellite technology for Pile drivers

Stonex machine control division has designed different solutions for pile drivers machines.

SOLAR FIELDS - ROADS - AGRICULTURE

Our solutions can be used to create photovoltaic fields, to set up the rows of a vineyard or to facilitate the construction of guard rails.
Thanks to GNSS technology and precision sensors, every operation is easy and fast.
We also provide a solution for testing the strength of the posts with a push and pull validation test.





AGRICULTURE

PRECISION FARMING

Stonex offers numerous solutions to meet the needs of the agricultural world.

Our solutions for smar farming provide the ability to easily plan, schedule and manage jobs. Our receivers reach high levels of precision, becoming largely usable for jobs related to precision agriculture.

The solutions consist of hardware and software; moreover, they adapt to different types of machines becoming easily adaptable to the client's needs.

The goal is to improve the quality of work and reduce the stress of workers, supporting them in all those activities that require great precision.



PROJECT AND DESIGN ON THE FIELD
Design the plant layout directly in the field thanks to the powerful software.

SURVEY STAKE-OUT
Adapt the plant layout to the elevation profile of the field. Smart stake-out with auto-lock.

MACHINE GUIDANCE
Easy driving of the tractor on the designated spots following the direction given by the display.

HIGH ACCURACY
High accuracy positioning of the plant shoot.

ROI
Adopting Stonex solutions means reducing production costs. Less operators with high productivity.

ANDROID SOFTWARE
Software solutions that work with Android system.



GPS technology for Smart Farming

Stonex Agruculture division has designed several solutions for smart farming:

GUIDANCE SOLUTION
The Stonex kit allows you to use the precision positioning given by the GNSS antennas to efficiently guide agricultural machinery in the field. You can set straight, curved, concentric lines and much more.

PILING SOLUTION FOR FIELDS AND VINEYARD
A solution for the design and driving of poles in a field /vineyard that allows to reduce time and work stress, as well as to increase the accuracy.

PLANTING SOLUTION
Our solution allows you to plant the cuttings in a precise point thanks to precision positioning, following a project defined in the management software.





MARINE SYSTEMS

NAVIGATION & DREDGING

Stonex offers flexible, high-performance positioning systems to meet the unique needs of marine world on both simple and complex projects.

Our solutions include both hardware and software, and can be easily integrated into third-party systems. Improve productivity and efficiency in underwater applications thanks to our systems.

Our solutions are suitable for dredging operations, canal/port development, reclamation, breakwaters, navigation systems and hydrographic surveys.



REAL TIME VISUALIZATION

You can keep an eye on each stage of operations in real time and correct/modify what you need based on the job you are doing.



ACCURATE PROJECTS

Thanks to our software you can create the project you need quickly and easily.

HIGHLY CONFIGURABLE

Highly configurable to suit endless vessels and dredges. Wide room for different applications including navigation, excavation, dredging, piling and mapping.

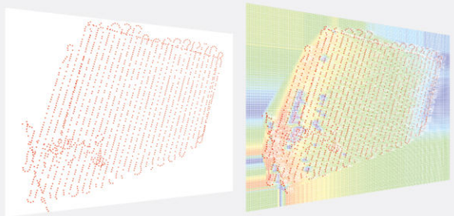
MAPPING

For those who need to map the seabed, Stonex is able to provide the appropriate equipment for the purpose.

PORTABLE ECHOSOUNDER



- Android App
- Bluetooth connection
- 200kHz frequency
- - 0.2 to -120m Range



Precision positioning for Marine operations



NAVIGATION

Stonex has developed a precision navigation system that uses RTK GNSS receivers, GNSS antennas and dedicated software to facilitate complex operations such as navigation in difficult zones.



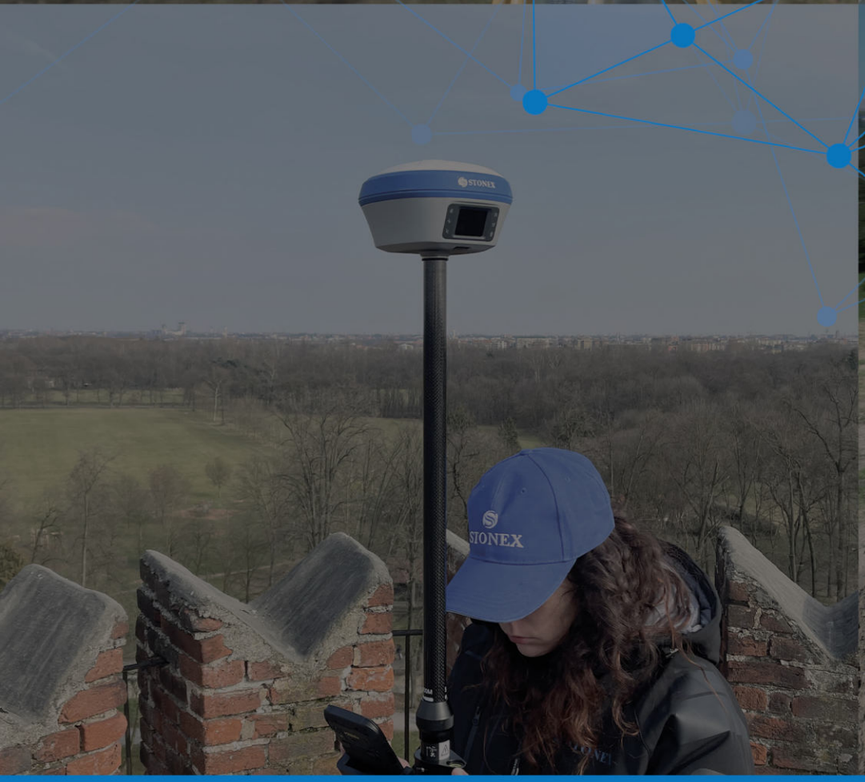
DREDGING

For all operations regarding dredging and dredger control, Stonex has developed a specific system that facilitates operations. The system adapts to various types of dredgers even of different sizes.













Everything is Possible with STONEX

STONEX

EUROPE HQ
Viale dell'Industria 53
20037 - Paderno Dugnano (MI)
ITALY

USA HQ
54 Regional Drive
Concord - NH - 03301
USA

FOLLOW US

STONEX
Phone +39 02 78619201
www.stonex.it | info@stonex.it