KOLIDA
Professional's Choice

SPECIFICATIONS

GNSS Features

Channels	1698
GPS	L1C, L1C/A, L2C, L2P(Y), L5
GLONASS	G1, G2, G3
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GALILEOS	E1, E5a, E5b, E6, AltBOC*
SBAS	L1*
IRNSS	L5*
QZSS	L1, L2C, L5*
MSS L-Band	GalileoHAS & BDSPPP
Positioning Output Rate	1Hz~20Hz
Initialization Time	< 10s
Initialization Reliability	> 99.99%

Positioning Precision

Code differential GNSS positioning	Horizontal: 0.25 m + 1 ppm RMS Vertical: 0.50 m + 1 ppm RMS
GNSS Static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 3.5 mm + 0.5 ppm RMS
Static (Long Observation)	Horizontal: 2.5 mm + 0.1 ppm RMS Vertical: 3 mm + 0.4 ppm RMS
Rapid Static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
PPK	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
RTK(UHF)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS
RTK(NTRIP)	Horizontal: 8 mm + 0.5 ppm RMS Vertical: 15 mm + 0.5 ppm RMS
SBAS Positioning	Typically<5m 3DRMS
RTK Initialization Time	2~8s
IMU Accuracy	8mm+0.7 mm/°tilt
IMU Tilt Angle	Optimal accuracy within 60°

Hardware Performance

Dimension	105mm(φ)×58mm(H)
Weight	540g (battery included)
Material	Magnesium aluminum alloy shell
Operating Temperature	-45℃~+75℃
Storage Temperature	-55℃~+85℃
Humidity	100% Non-condensing
Waterproof/Dustproof	IP68 standard
Shock/Vibration	Withstand 2 meters pole drop onto the cement ground naturally
Power Supply	6-28V DC, overvoltage protection
Battery	Inbuilt 7.4v 5000mAh rechargeable Lithium-ion battery
Battery Life	25h (static) 25h (rover mode, optimal condition)

Communications

I/O Port	Type-C interface (charge+OTG+Ethernet) UHF antenna interface
Internal UHF	Radio Receiving
Frequency Range	410-470MHz
Communication Protocol	Farlink, Trimtalk, SOUTH, CHC, Hi-target, Satel
Communication Range	Typically 8-10km with Farlink protocol, (12-15km in optimal condition)
Bluetooth	Bluetooth 5.0, Bluetooth 3.0/4.2 standard, Bluetooth 2.1 + EDR
NFC Communication	Support
Wifi	802.11 b/g/n standard

Data Storage/Transmission

Storage	16GB SSD internal storage Support automatic cycling storage Support external USB storage (OTG) The customizable sample interval is up to 20Hz
Data Transmission	Plug and play mode of USB data transmission Supports FTP/HTTP data download
Data Format	Static data format: STH, Rinex2.01, Rinex3.02, etc. Differential data format: RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 GPS output data format: NMEA 0183, PJK plane coordinate, Binary code Support: VRS, FKP, MAC, fully support NTRIP protocol

Sensors

IMU	Built-in IMU, calibration-free, 60 Degrees
Camera	Front Camera: 8MP, for Video Shooting & Visual takeout Bottom Camera: 2MP, for Visual Stakeout
Electronic Bubble	Controller software can display electronic bubble, checking leveling status of the carbon pole in real-time
Thermometer	Built-in thermometer sensor, intelligent temperature control technology, monitoring and adjusting the receiver temperature

User Interaction

Operating System	Linux
Buttons	Single button
Indicators	4, for showing Power, data, bluetooth, satellites
Web Interaction	With access to Web UI via WiFi or USB connection, users can monitor the receiver status and change the configurations
Voice Guidance	Chinese/English/Korean/Spanish/Arabic/ Portuguese/Russian/Turkish/French/Italian/
Secondary Development	Provides secondary development package, and opens the OpenSIC observation data format and interaction interface definition
Cloud Service	The powerful cloud platform provides online services like remote management, firmware updates, online registers, etc.

*Reserve for future upgrade.

Remarks: *Measurement accuracy and operation range might vary due to atmospheric conditions, signal multipath, obstructions, observation time, temperature, signal geometry and number of tracked satellites. Specifications subject to change without prior notice*

KOLIDA
Professional's Choice

GUANGDONG KOLIDA INSTRUMENT CO., LTD.

Add: 7/F, South Geo-information Industrial Park, No.39 Si Cheng Road, Tian He IBD, Guangzhou 510663, China
Tel: +86-20-22139033 Fax: +86-20-22139032
Email: export@kolidainstrument.com http://www.kolidainstrument.com

Dual Camera + AR + New IMU,
More Intelligence, Higher Efficiency!

Stakeout Intuitively with Live-view Video Display

This new feature combines real-time image display with RTK positioning. K6X captures real-time video through its built-in camera, and users can directly see the points to be setout on the collector screen, which is accurate and intuitive.

Guide-line Powered by AR

AR technology superimposes a virtual guide-line and distance numbers on the real-time video display. Users do not need to recognize the directions themselves, they only need to follow the guide-line to find the point to be setout, which saves time and effort.

Simpler and Easier-to-Use Inertial Tilt Measurement

In the past, surveyors would rotate the pole when changing the direction of travel or adjusting the attitude of the receiver, sometimes it disables IMU.

Now the 5th generation IMU eliminates the loss of IMU Status in most scenarios to improve the availability and productivity of IMU. The calibrate-free feature save the time of manually initializing IMU each time.

1698 Channels, Capture Satellites As Many As Possible

K6X with 1698 channels can track more satellites at the same time and capture weak signals under canopies hence better success rate and speed of obtaining a fixed solution.

It is possible to get fixed in a few seconds where previously under the dense forest or surrounded by buildings cannot.

Optimized for Use in Challenging Environments

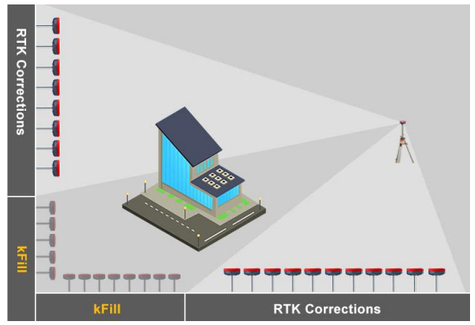
Galileo HAS and BDS PPP

By receiving corrections delivered directly from L-band satellites, K6X allows you to achieve 10 to 20 centimeter-level accuracy with only one rover on hand when base receiver or CORS service is not accessible in remote areas. (this function requires registration code, please apply from your dealers)

“kFill” Save RTK/ CORS Signal Loss

KOLIDA kFill technology is able to provide a 5 minutes sustainable high accuracy service during temporary RTK or CORS signal coverage outages.

After RTK and CORS signal recovers, receiver will switch to real-time corrections seamlessly.



Ultra Light, Comfortable Experience

K6X is an ultra light GNSS receiver that leaves the competition behind. Its total weight is only 0.54 kg including battery, 40% even 50% lighter than a traditional GNSS receiver. The light-weight design reduces surveyor’s fatigue, increase their mobility, is especially helpful to work in challenging environment.

Smaller but More Durable

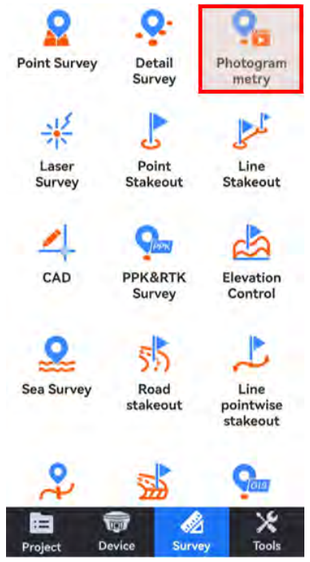
Thanks to the high-capacity battery and the intelligent power management plan, K6X can work up to 15-25 hours in RTK rover mode, up to 25 hours in static mode. The charging port is Type-C USB, users can choose KOLIDA quick charger or their own smartphone charger to recharge. Power bank also can be used as an external power supply.

K6X

Regular RTK

Photogrammetry Measurement in Reail Time
— Working Easily by Video Shooting

K6X can process a set of photos or a video, acquiring coordinates for hundreds of points within minutes. It boasts a wider working range and fewer blind spots through remote measurements with the camera. Locations that were once challenging, such as spaces under rooftops and areas with obstacles, are now easily measurable. (this function is an optional upgradeable function, need to consult your local distributor)



Utilizing visual positioning, surveyors can collect field data in a short time. The data can preserve safely in the device and is reusable at any time. These capabilities are particularly well-suited for distinctive GNSS measurement tasks, including documenting accident scenes and excavation sites for urban public facilities

Too Much Details to Measure

In Short of Time

Risky Terrain

Designed for Urban Surveying
--Cloud Server Online Processing

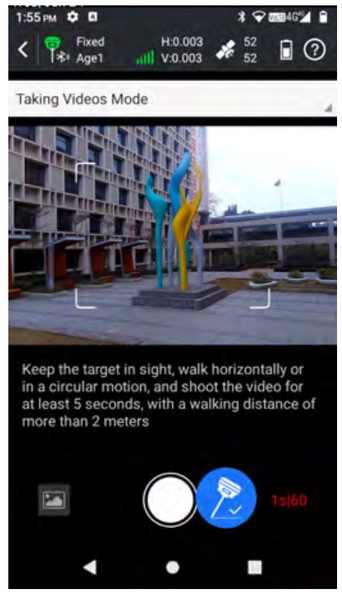
Surveyors, with a strong internet connection in urban areas, can process image data online using network and cloud servers. K6X achieves 2cm accurate coordinate data for image measurements within minutes, balancing precision and speed.

Designed for Field Surveying
--Data Controller Offline Processing

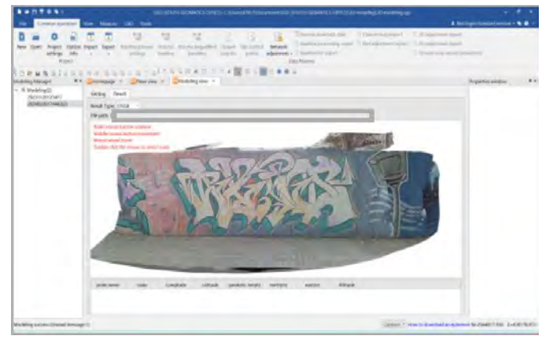
Without internet coverage, surveyors can perform offline image data processing using the data controller app. This mode offers the fastest processing speed, saving time on data uploads and delivering 2cm accuracy results within a few seconds.

3D Modeling & Post Processing
— Eyes On Now, Be Prepared for Future

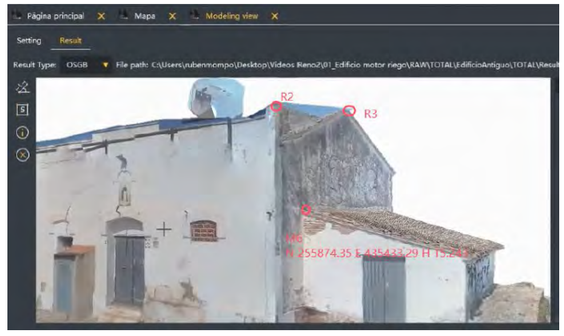
K6X enables single-user 3D modeling, on the models visually displaying geographic information like coordinates, areas, and volumes. It supports transforming model data into diffe rent formats and customize coordinate parameters for diverse applications. (this function is an optional upgradeable function, need to consult your local distributor)



Shooting a Video



Generating 3D Model



Measuring on 3D Model

Work in Your Preferred Way

Surveyors can import K6X data into KOLIDA GEO Office (on PC) or third-party software for 3D modeling. Future updates to KSurvey (Android App) will also include 3D modeling functions, allowing users to select the most suitable software for optimal work effic iency based on scenario and task requirements.

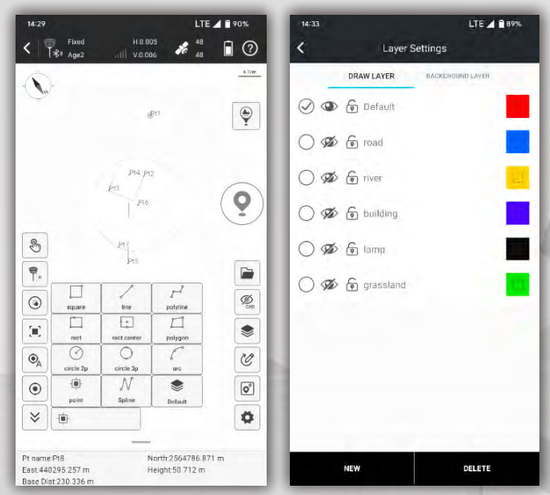
Ensuring a Smooth Journey

K6X harnesses KOLIDA's 3D modeling tech, seamlessly integrating image measurements with UAV data, including DJI and other brands. Overcoming data gaps in UAV surveys, K6X supplements incomplete models by collecting ground image data, improving overall survey outcomes.

Ksurvey APP

Field Data Collection & Mapping: The Most Advanced is Here

Measure & Draw : Save Time in Field work and Office



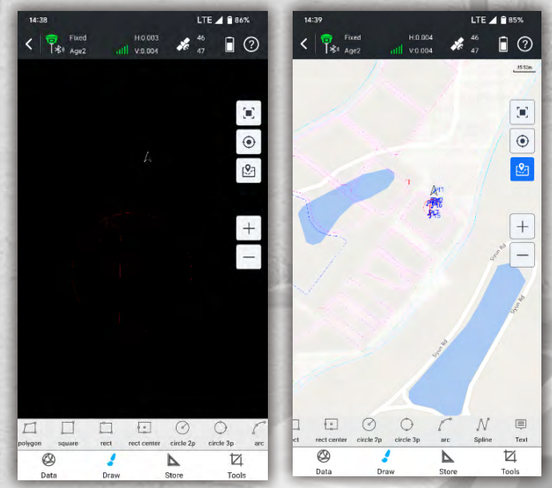
This feature allows you to draw the result map while completing point measurements.

• Before measuring points, users can choose the shape of the target object to be measured from 11 preset figures. The software will guide you to measure points in an order and automatically connect lines and complete the drawing of the figure.

• The .dxf or .dwg maps created on-site can be used directly in office work.

• Users can assign measured objects with different attributes, to different layers for measurement and management, making no mistakes.

CAD Draw : Drafting without a PC



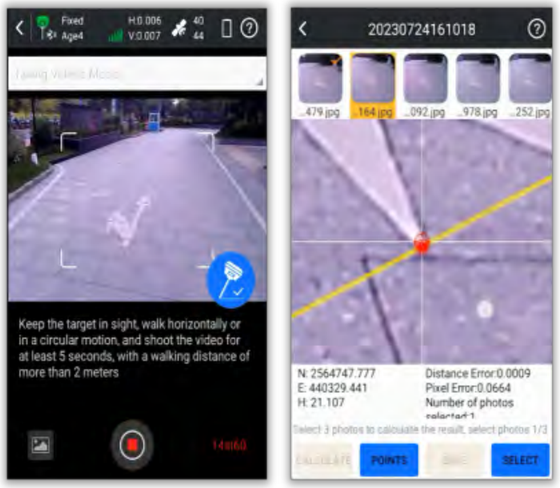
Select points to form a polygon, and directly identify the area division points for the surveyor to stake out. There is no more need for the user to guess a position to measure, and then to adjust.

• CAD drawing does not require a computer.

• CAD files prepared on office PCs can be edited and managed by users on RTK data collection terminals.

• Drawing tools include up to 11 types of figures and one type of text.

Visual Positioning : Industry-Leading Non-Contact Measurement Technology



(This function only works with the receiver models that have front-facing camera or dual-cameras)

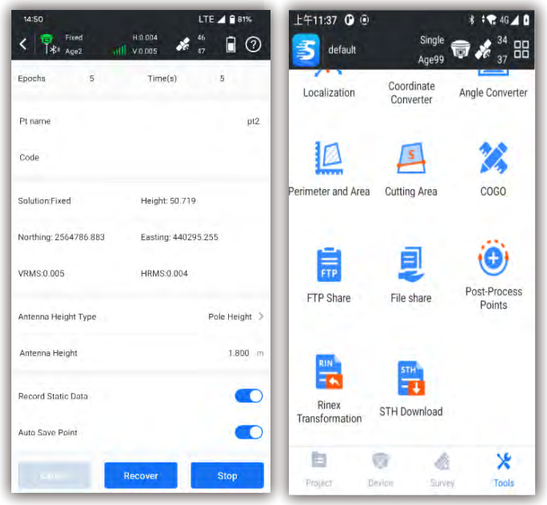
Photogrammetry Measurements can be conducted by taking pictures or videos. Coordinates of all points in the photos can be acquired.

• Now, target points that are inaccessible due to dangerous environments, poor satellite signals, or impassable terrain can be measured remotely.

• The captured image data can also be used with software like SGO, Pixel4D, DJI Terra, and CC for 3D modeling.

• Image measurement data can also be combined with drone measurement data to address issues of blurriness and deformation in ground data models collected by drones.

Static & PPK Measurement : More Assistance Now is Available



The software provides both static and PPK data collection capabilities.

• Data can be downloaded wirelessly, no need for a PC and cables.

• It is possible to convert .sth files into RINEX files right on the data collector or tablet or your phone, no need of PC.

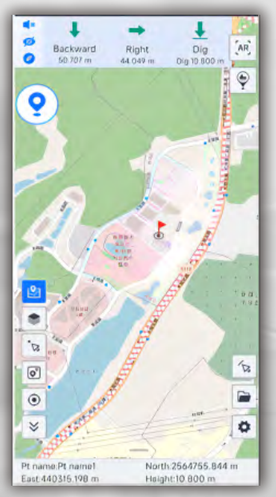
• Data can be shared with others through mobile Internet.

• The accuracy of PPK data collection is as high as Trimble equipment, the result can be directly imported for use in TBC.

Ksurvey APP

Stakeout: Lighten Your Load, Increase Your Output

CAD Stake-Out : Save Labor Cost and Reduce Errors



Traditional data collection software requires users to import points or lines to be setout from .csv or .txt files, users need to spend quite a lot of time to edit point and line libraries.

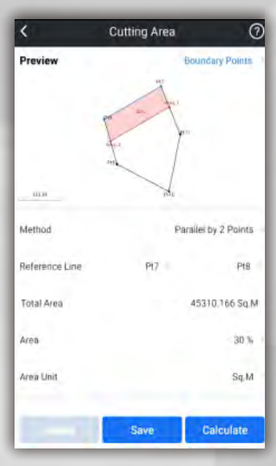
Moreover, for complex shapes such as curves, circles, and polygons, the traditional stake-out process is complicated. Now, our new CAD stake-out program offers a superior solution for surveyors.

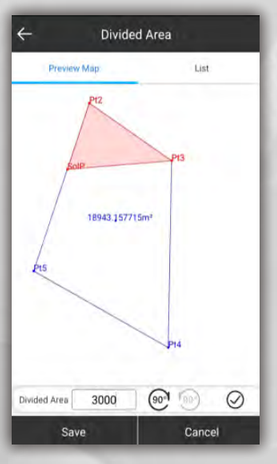
• No need for manual editing of point libraries.
• Staking-out geometric shape is faster and easier.

• No need for obtaining coordinate files before work. Staking-out can be done with just a CAD drawing.
• Online maps and CAD drawings can be displayed simultaneously, improving accuracy.

• AR guide lines make staking-out more intuitive.

Area Division : Developed for Professional Cadastral Survey and Stake Out





Select points to form a polygon, and directly identify the area division points for the surveyor to stake out. There is no more need for the user to guess a position to measure, and then to adjust.

• Six methods of division to determine the area division points. The methods are flexible and suitable to different user needs.

• The graphic display is intuitive and understandable.

Live-View Stake-Out : Faster, More Accurate, More Intelligent

(This function only works with the receiver models that have downward-facing camera or dual-cameras)

Users utilize the real-time imagery captured by the camera at the bottom of the receiver and the AR guide lines displayed by the software, to locate the target points.

• When users perform stake-out with a dual-camera GNSS receiver, the software can call upon both cameras to work together. At medium to long distances, the software uses the front-facing camera to indicate the direction of travel, and at close range, it uses the downward-facing camera to find the specific location. This further increases the speed of staking out.

• AR guide lines can be displayed in point staking out, line staking out, and CAD staking out programs.

Additional Features

Compatiblewith Multiple Devices

The App Now works with GNSS, Total Station, Echo Sounder, GIS Tablet, in future it will work with SLAM Scanner, Terrestrial Lidar Scanner.

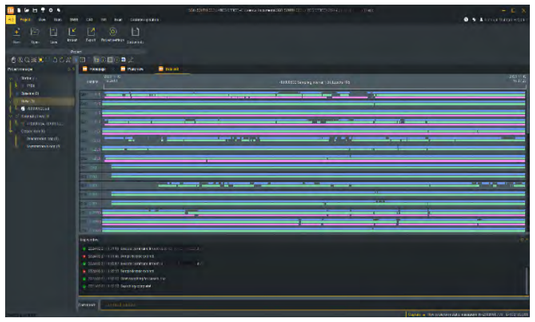
Innovations for Better User Experience

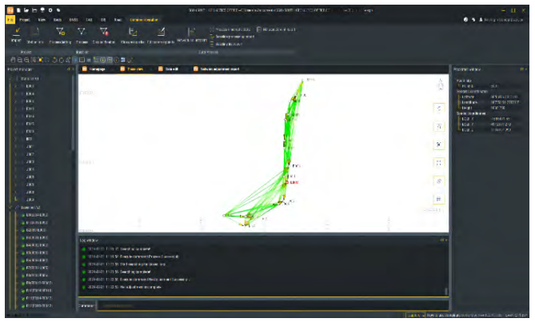
- RTK Data Backup
- QR Code Share
- Multiple Basemap Support
- Basemap
- Adjustment
- Network Mount Point Sorting
- NMEA Output Setting

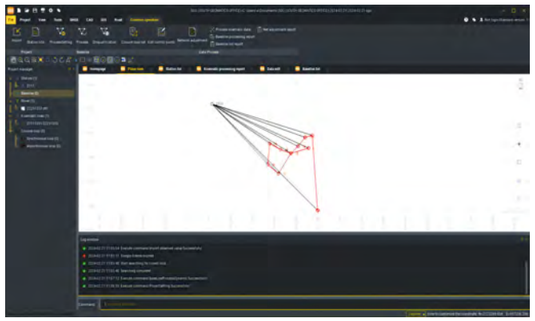
.....

KOLIDA Geo Office (KGO)

Ideal GNSS Data Processor, Help You To Keep Advancing







Data Processing & Reporting

When surveyors need to do post-processing of GNSS data, our software always can provide state-of-the-art technology to help you to produce optimal results. User just need to import field data, the software will automatically process GNSS baselines. Once results come out, the software can generate reports.

RINEX Import and Export

This feature enables users to import the third party GNSS receiver data into our software and post-process it, by using the industry standard RINEX format.

High Accuracy Guaranteed

RTK check, the unique function in our software, can compare RTK and PPK results to automatically acquire the most accurate coordinates for each target point.

It fills up the gap of poor corrections in RTK or hindered observations in PPK.

This improvement is to provide guarantee for your every survey.

3D Modelling

User can import photogrammetry image data into the software, to achieve 3D modeling, visually presenting geographic information data such as coordinates, areas, and volumes.

Model data can be transformed into different formats and applied with various coordinate parameters based on actual needs, making it adaptable to a wider range of application scenarios.