

SPECIFICATIONS

GNSS Performance	
Channels	1760
GPS	L1C/A, L1PY, L2C, L2P, L5
GLONASS	L1CA, L2CA, L2P, L3 CDMA
BeiDou	B1I, B1C, B2a, B2I, B3 ¹
Galileo	E1, E5a, E5b, E5 AltBoc
QZSS	L1C/A, L2C, L5
SBAS	Egnos, WAAS, GAGAN, MSAS, SDCM (L1, L5)
Navic	L5
L-Band	Reserve

Positioning Accuracy	
Code Differential	Horizontal: $\pm 0.25\text{m} + 1\text{ppm}$
GNSS Positioning	Vertical: $\pm 0.50 + 1\text{ppm}$
SBAS Positioning	Typically $< 5\text{m}$ 3DRMS
Fast Static and Static	Horizontal: $\pm 2.5\text{mm} + 0.5\text{ppm}$ Vertical: $\pm 5\text{mm} + 0.5\text{ppm}$
Post Processing	Horizontal: $\pm 8\text{mm} + 1\text{ppm}$
Kinematic (PPK)	Vertical: $\pm 15\text{mm} + 1\text{ppm}$
Real Time Kinematic (RTK)	Horizontal: $\pm 6\text{mm} + 0.5\text{ppm}$ Vertical: $\pm 10\text{mm} + 1\text{ppm}$
Network RTK (VRS, FKP, MAC)	Horizontal: $\pm 6\text{mm} + 0.5\text{ppm}$ Vertical: $\pm 10\text{mm} + 1\text{ppm}$
RTK Initialization Time	7s
Positioning Rate	1Hz-50Hz
Inertial Measurement	Tilt Angle: up to 60 degrees Accuracy: down to 2-5cm

Data Formats	
Positioning Data	NMEA 0183, PSIC, PJK, Binary Code RTCM 2.1, RTCM 2.3, RTCM 3.0,
Differential Correction	RTCM 3.1, RTCM 3.2, CMR, CMR+ Static
Static	STH, Rinex 2, Rinex 3
Network	Supported VRS, FKP, MAC, Ntrip

Operation Mode	
Base	Internal or External radio\ Wifi
Rover	Rover UHF\ Rover Bluetooth
Static	Static\ PPK

UHF Radio Characteristics	
TX/RX	2 Watt Transmitting & Receiving
Frequency Range	410-470MHz
Protocols	Farlink\Trimtalk\South(KOLIDA)
Channels	60 channels for Farlink protocol 120 channels for other protocols

Hardware	
Size	13cm*8cm
Weight	0.8kg
Data Storage	4GB SSD internal storage Support external USB storage (up to 32 GB) Automatic cycle storage Changeable record interval Up to 20Hz raw data collection
Communication	5 Indicator lights 1 Button 1 Type C USB port 1 5-PIN LEMO external power port 1 UHF antenna port Soc System WEB UI WIFI: 802.11 b/g/n standard Bluetooth 4.2 standard and Bluetooth 2.1+EDR NFC Supported USB, FTP, HTTP data communication
Voice Guide	Intelligent voice technology provides status indication and operation guide Chinese, English, Korean, Russian, Portuguese, Spanish, Turkish and user define
Environment	Operating: -30°C to $+70^{\circ}\text{C}$ Storage: -40°C to $+80^{\circ}\text{C}$
Humidity	100% condensation
Ingress Protection	IP68 waterproof, sealed against sand and dust
Shock	Survive 2m pole drop on concrete

Power	
Battery	7.4V, 6800mAh unremovable battery
Battery Life	Up to 12-15 hours in rover mode
Fast Charge	4 hours charge to full power
USB Charge	Type-c USB/Power Bank



K9X

Palm Size, Higher Efficiency!

Field Software



K Survey



Field Genius



Surv X

The Newly Developed **X**SERIES GNSS Engine Ensuring You Uncompromisable RTK performance



The X-Series GNSS Engine

The all new “X-Series” GNSS Engine and the advanced technologies inside improve your ability to measure in more place than ever before and allow you to carry on with the highest possible efficiency.



Multipath Effect Mitigation Technology

This feature is to disentangle direct signal and those reflected from nearby structures, it ensures the accurate result when you are measuring close to buildings or water area.



Anti-vibration Shock

This feature is for robust tracking during high vibrations and shocks. It increases the accuracy stability when you are working on the busy road or construction site or mining site where the heavy vehicles and machinery often pass by.



Tilt Measurement by Inertial Navigation

KOLIDA's 3rd generation Inertial Measurement Sensor “M8” is able to realize the real-time output of accurate tilt measurement data under high tilt angle and high dynamic attitude.



Electromagnetic Interference Mitigation

This feature is to help the receiver to keep obtaining correction data signal with high quality, even there is a interference source nearby.



Protection Against Ionospheric Disturbances

This feature is to make correction to Ionospheric delay error, and upgrade the positioning accuracy when you are doing network RTK positioning over a long distance (10-40 km).



Constantly Updated GNSS Positioning Engine

K9X enjoys a powerful 1760-channel GNSS Engine that delivers the more advanced satellite tracking algorithm.

This all-new Kolida “X-Series” GNSS Engine is able to track signal from 5 satellite constellations (GPS, Glonass, Beidou, Galileo, QZSS), process signal of more than 20 frequencies. When compared to traditional GNSS RTK, K9X is more capable to work in challenging environment and can provide more accurate result.

“Farlink” Radio Transmitting and Receiving

When GNSS receiver is using signal of bigger number of satellites, the data amount to send and receive by UHF radio increased greatly. Farlink technology is developed to send large number of data and avoid data loss.

Farlink technology improves the signal-catching sensitivity from -110db to -117db, so K9X can catch the very weak signal from a base station far way.



Smaller but More Durable

Thanks to the high-capacity battery and the intelligent power management plan, K9X can work up to 12 hours in RTK radio rover mode, up to 15 hours in static mode. The charging port is Type-C USB, users can choose KOLIDA quick charger or their own smartphone charger or power bank to recharge.



Ultra Light, Comfortable Experience

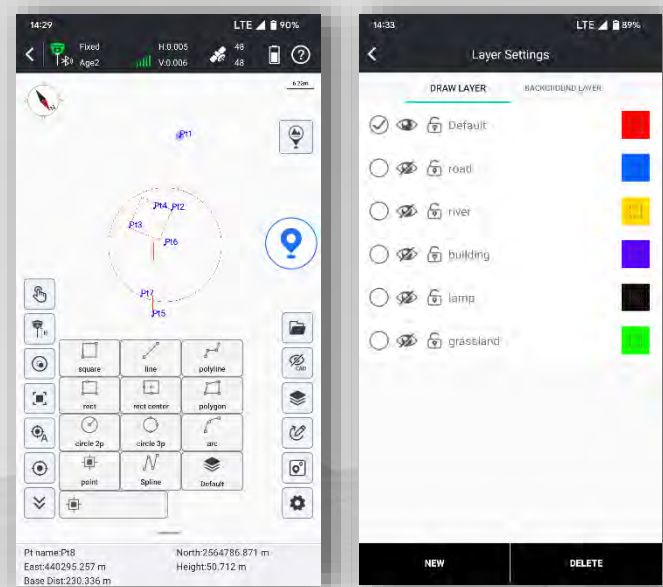
K9X is an ultra light GNSS receiver that leaves the competition behind. Its total weight is only 0.8 kg including battery, 40% even 50% lighter than a traditional GNSS receiver. The light-weight design reduces surveyor's fatigue, increase their mobility, is especially helpful to work in challenging environment.



Ksurvey APP

Field Data Collection & Mapping: The Most Advanced is Here

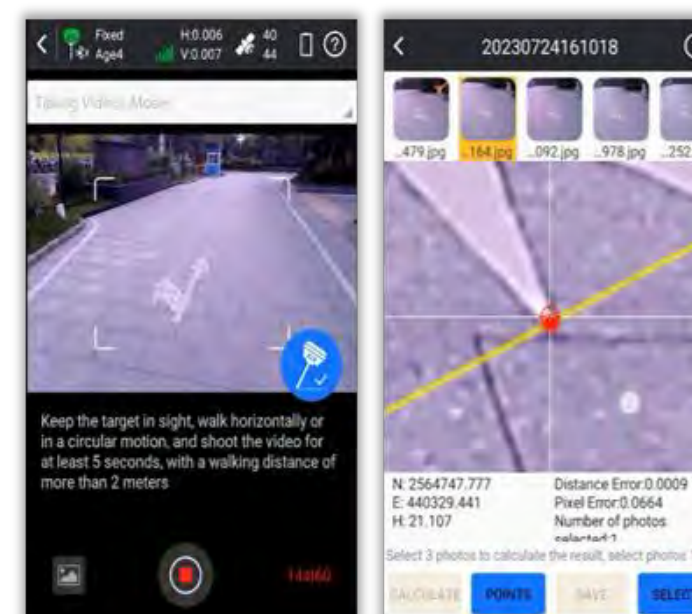
Measure & Draw : Save Time in Field work and Office



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.

Visual Positioning : Industry-Leading Non-Contact Measurement Technology

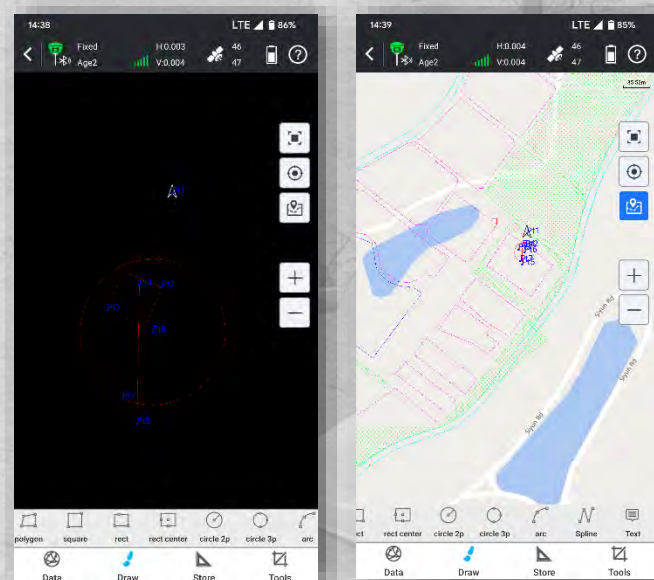


Photogrammetry Measurements can be conducted by taking pictures or videos. Coordinates of all points in the photos can be acquired.

- 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.

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

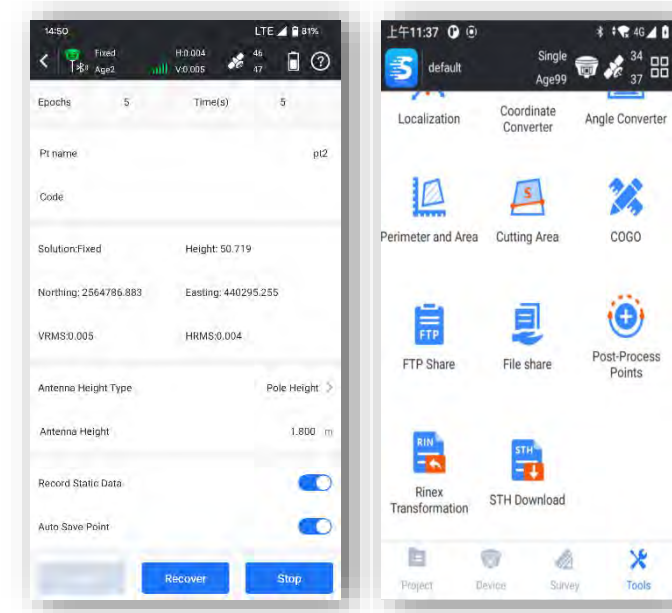
CAD Draw : Drafting without a PC



This feature enables CAD drawing capabilities, which were previously only possible on a PC. Now surveyors can edit CAD map on RTK controller or tablet or phones.

- 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.

Static & PPK Measurement : More Assistance Now is Available



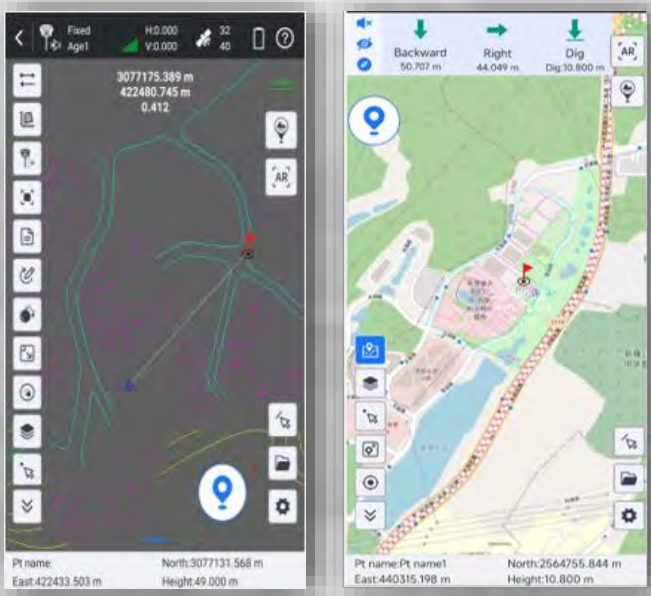
The software provides both static and PPK data collection capabilities.

- 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.

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.

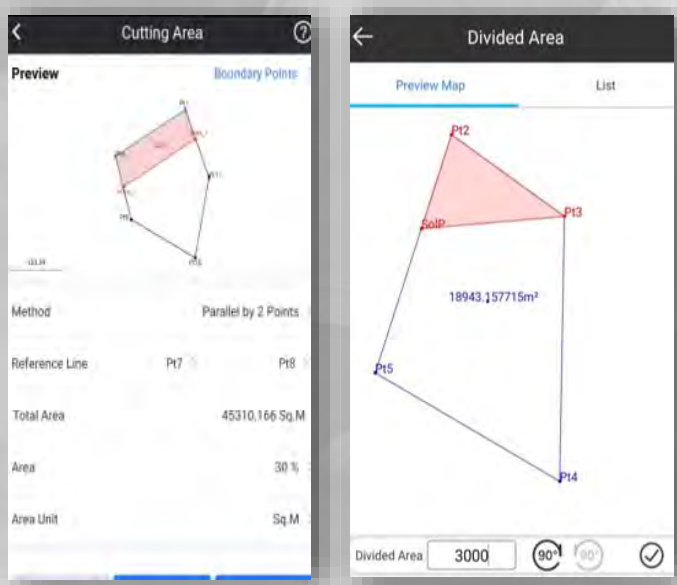
Additional Features

Compatible with 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.

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.

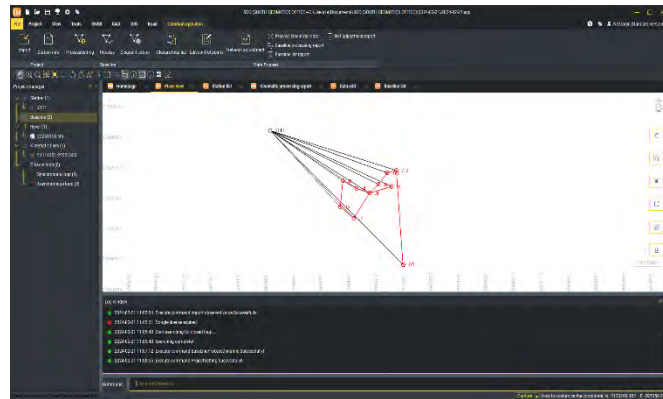
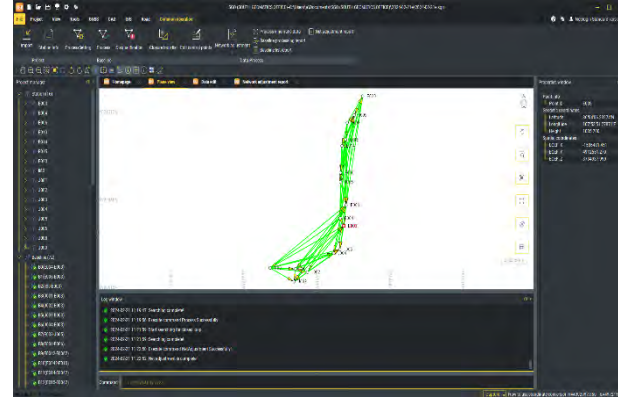
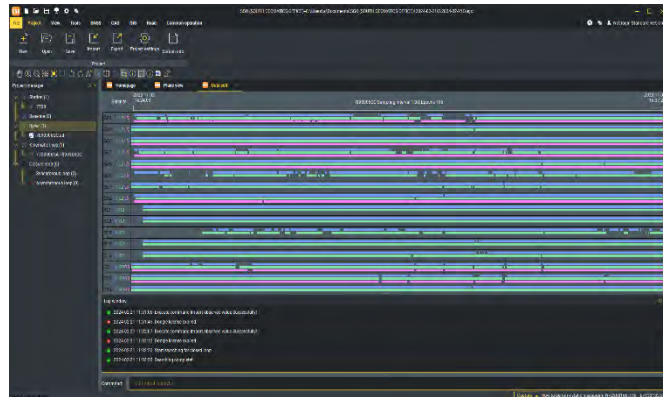
- Six methods of division to determine the area division points. The methods are flexible and suitable to different user needs.
- The graphic display is intuitive and understandable.

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.

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.

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.

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.

