

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

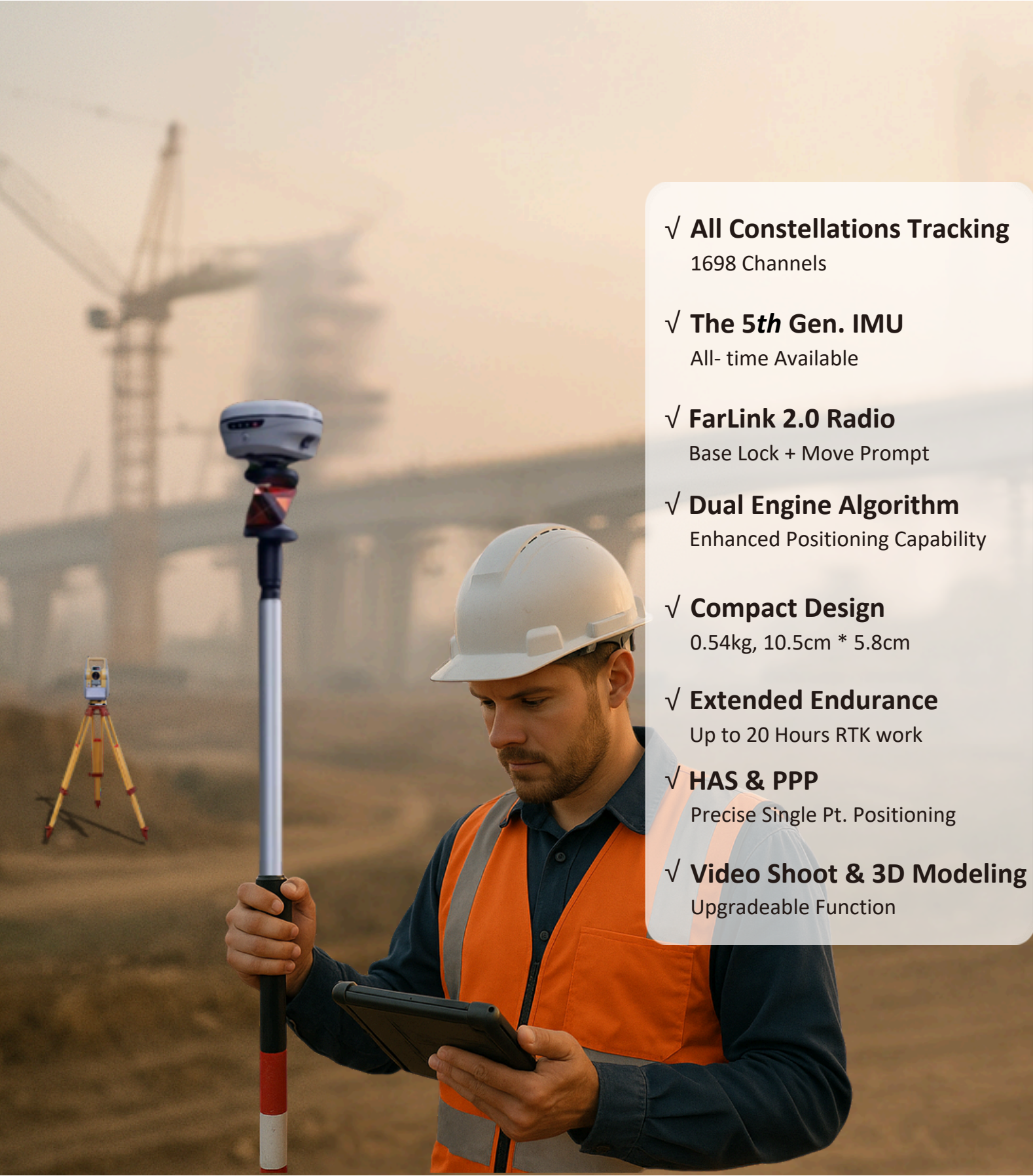
User Interaction	
Operating System.....	Linux
Buttons.....	Single button
Indicators.....	4, for showing Power, data, bluetooth, satellites
Web Interaction.....	With access to Web UI via WiFi or USB connection, users can monitor the receiver status and change the configurations
Voice Guidance.....	Chinese/English/Korean/Spanish/Arabic/Portuguese/Russian/Turkish/French/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

RENO3

Palm-sized RTK with Dual Camera Stakeout



- ✓ **All Constellations Tracking**
1698 Channels
- ✓ **The 5th Gen. IMU**
All- time Available
- ✓ **FarLink 2.0 Radio**
Base Lock + Move Prompt
- ✓ **Dual Engine Algorithm**
Enhanced Positioning Capability
- ✓ **Compact Design**
0.54kg, 10.5cm * 5.8cm
- ✓ **Extended Endurance**
Up to 20 Hours RTK work
- ✓ **HAS & PPP**
Precise Single Pt. Positioning
- ✓ **Video Shoot & 3D Modeling**
Upgradeable Function

RENO3 Palm-sized Visual RTK: Creating a New Vision to Your Success

Smart & Versatile

RENO3 represents an ultra-light GNSS receiver surpassing its competitors. Weighing a mere 0.54 kg, inclusive of the battery, it stands as much as 40% to 50% lighter than conventional GNSS receivers.

This lightweight construction alleviates surveyors' fatigue while enhancing their maneuverability, making it particularly advantageous for operations in demanding environments.

Visual & AR Stakeout

Live-view AR Stakeout can integrate the content of CAD drawing with real-world scenes, helping you stakeout targets more quickly. The front camera helps surveyors in finding a general direction from a distance and understanding the distribution of surrounding features.

The bottom camera enables precise stakeout as you approach the target.

With dual camera live-view stakeout, your work will be easier and more intuitive.

Compatible with ROBOTIC TS

The RENO3 can be integrated with Robotic Total Station, creating a powerful PPP (Prism Plus Position) system. This means faster, more accurate prism tracking, obtain coordinates from both RTK and total station, ensuring broader application versatility.



The New 5th Gen.IMU

Multipath Effect Mitigation

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.

Galileo HAS & BDS PPP

Single Point Positioning

By receiving corrections delivered directly from L-band satellites, RENO3 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)

Multipath Effect Mitigation

Improve Accuracy in Special Scenario

Multipath effect is a traditional notorious factor that decrease the accuracy of GNSS receiver. RENO3 can disentangle direct signal from reflected ones, therefore it ensures the accurate result when you are measuring target points close to buildings or water area.

Ionospheric Compensation

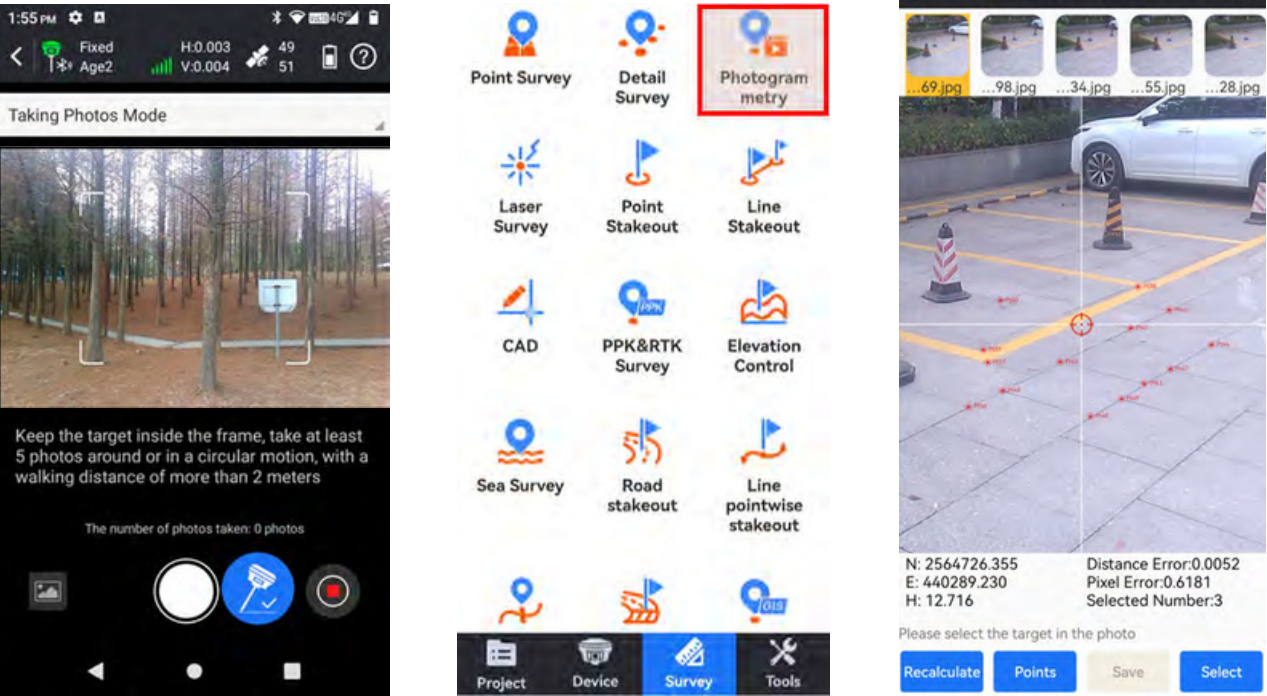
Be Capable at Anywhere, Any Time

RENO3 can compensate the error by ionospheric delay. No matter working on where ionosphere is active or doing network RTK positioning over a long distance (10-40 km), it can help you obtain better accuracy result.

Video Shooting Measurement: Redefine Your Perspectives

RENO3 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. RENO3 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.

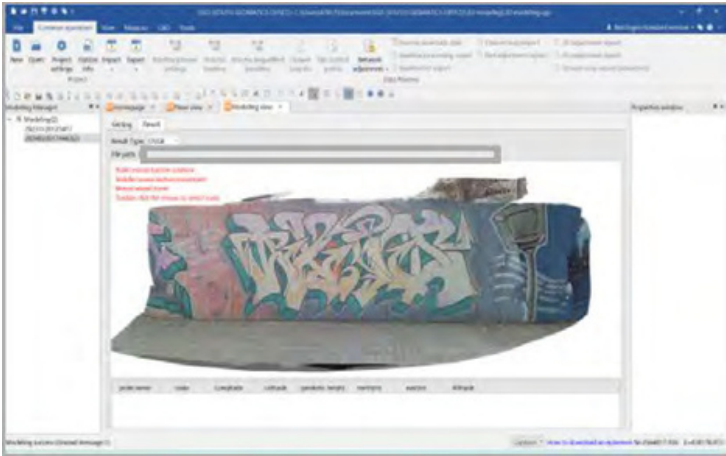
3D Modeling & Post Processing: Be Prepared for Future

RENO3 enables single-user 3D modeling, on the models visually displaying geographic information like coordinates, areas, and volumes. It supports transforming model data into different formats and customize coordinate parameters for diverse applications.

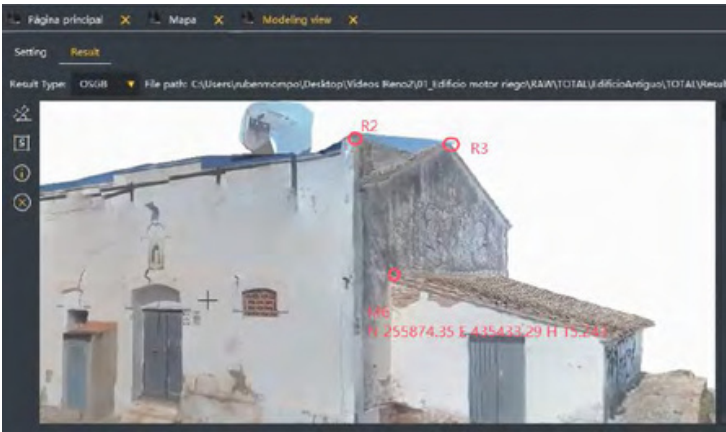
(this function is an optional upgradeable function, need to consult your local distributor)



Shooting a Video



Generating 3D Model



Measuring on 3D Model

Work in Your Preferred Way



Surveyors can import RENO3 data into RUIDE GEO DATA LAB (on PC) or third-party software for 3D modeling. Future updates to RTK GO (Android App) will also include 3D modeling functions, allowing users to select the most suitable software for optimal work efficiency based on scenario and task requirements.

Ensuring a Smooth Journey

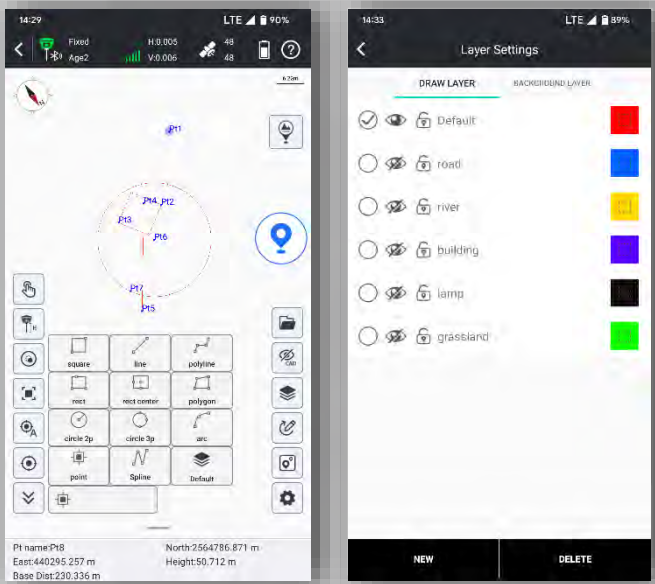


RENO3 harnesses RUIDE 's 3D modeling tech, seamlessly integrating image measurements with UAV data, including DJI and other brands. Overcoming data gaps in UAV surveys, RENO3 supplements incomplete models by collecting ground image data, improving overall survey outcomes.

RTK GO APP

Field Data Collection & Mapping: The Most Advanced is Here

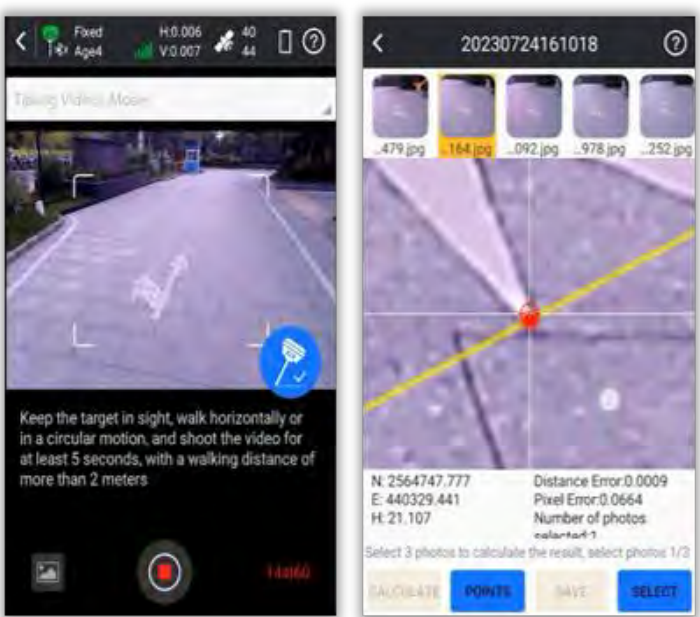
Measure & Draw : Save Time in Field work and Office



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

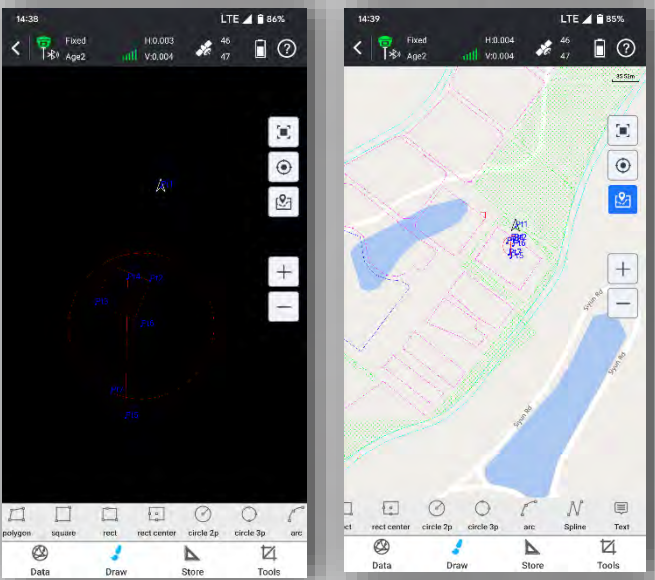


Photogrammetry Measurements can be conducted by taking pictures or videos. Coordinates of all points in the photos can be acquired.

- 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)

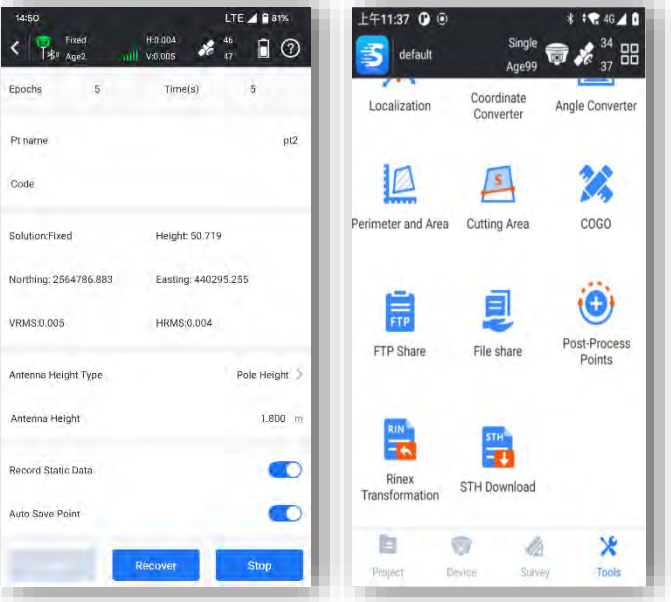
CAD Draw : Drafting without a PC



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



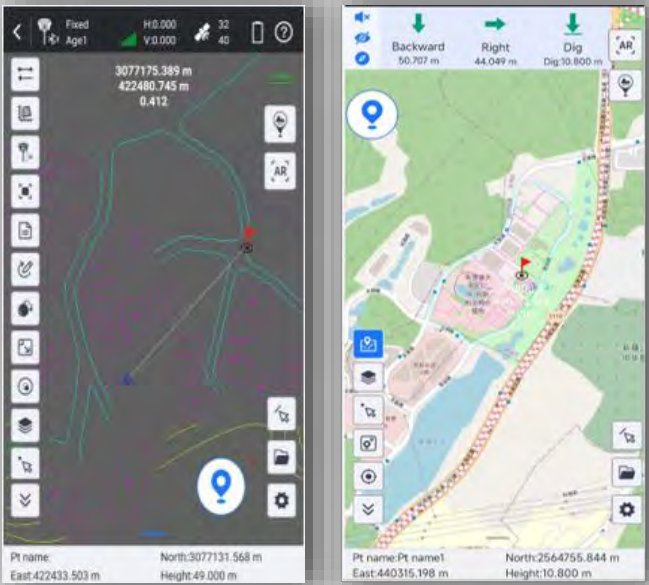
The software provides both static and PPK data collection capabilities.

- 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.

RTK GO APP

Stakeout: Lighten Your Load, Increase Your Output

CAD Stake-Out : Save Labor Cost and Reduce Errors

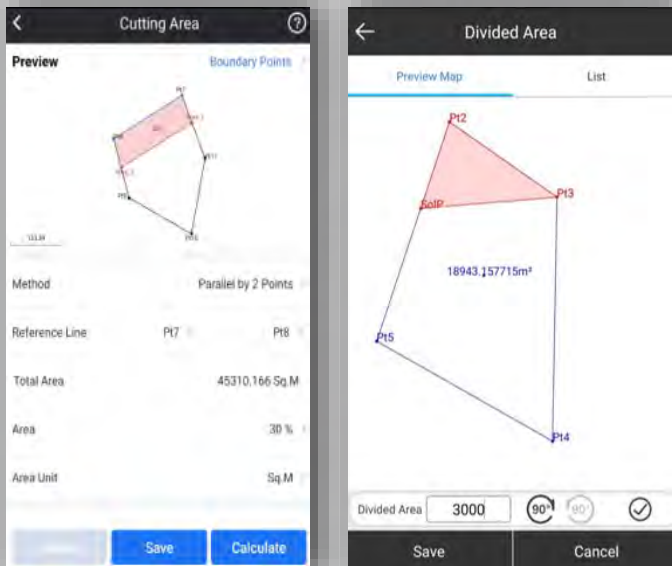


Traditional data collection software requires users to import points or lines to be setout from .csv or .txt files, users need to spend quite a lot of time to edit point and line libraries.

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



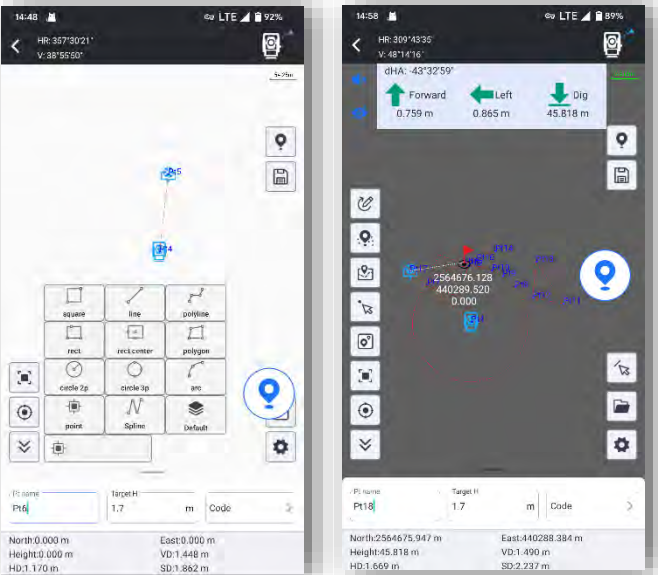
(This function only works with the receiver models that have downward-facing camera or dual-cameras)

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

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.

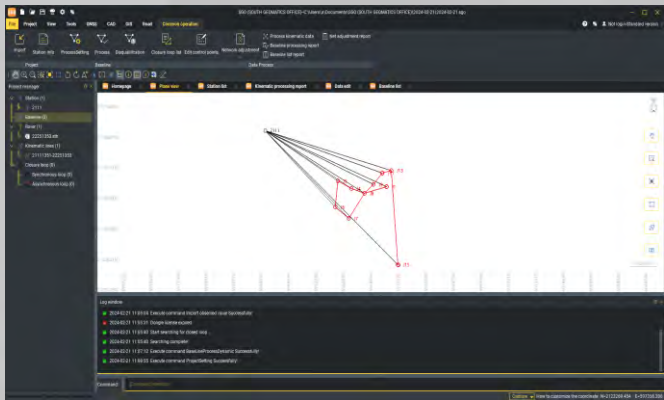
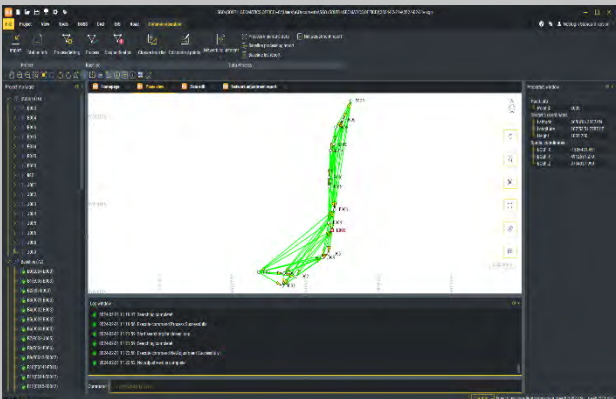
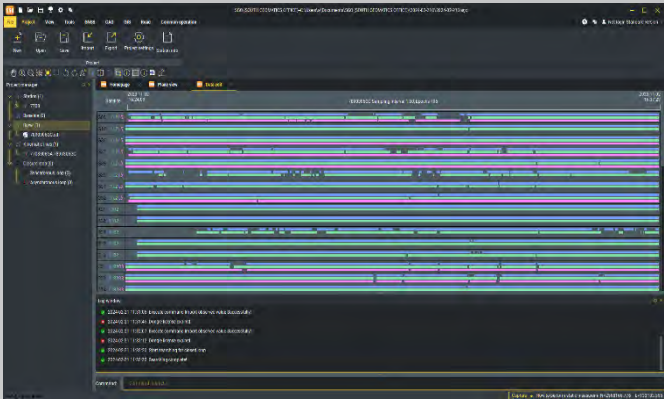
Innovations for Better User Experience

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

.....

GEO DATA LAB

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.

