SPECIFICATIONS

GNSS Features	
Channels	1698
GPS	L1C, L1C/A, L2C, L2P(Y), L5
GLONASS	G1, G2, G3
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GALILEO	E1, E5a, E5b, E6, AltBOC*
SBAS	L1*
IRNSS	L5*
QZSS	L1, L2C, L5*
MSS L-Band*	Reserve
Positioning Output Rate	1Hz~20Hz
Initialization Time	< 10s
Initialization Reliability	>99.99%
Positioning Precision	
Code Differential 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 Tilt Angle	0°~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, protected from long time immersion to depth of 1m IP68 standard, fully protected against blowing dust
Shock/Vibration	Withstand 2 meters pole drop onto the cement ground naturally
Power Supply	6-28V DC, overvoltage protection
Battery	Inbuilt 5000mAh rechargeable Lithium-ion battery
Battery Life	20h (rover mode)
Communications	
I/O Port	Type-C interface (charge+OTG+Ethernet) UHF antenna interface
Internal UHF	Rx only
Frequency Range	410-470MHz
Communication Protocol	Farlink, Trimtalk, SOUTH, HUACE, Hi-target, Satel
Bluetooth	Bluetooth 3.0/4.1 standard, Bluetooth 2.1 + EDR
NFC Communication	Support
Modem	802.11 b/g/n standard
Data Storage/Transmission	
Storage	16GB SSD internal storage 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 and 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 Network model support: VRS, FKP, MAC, fully support NTRIP protocol
Sensors	
IMU	Built-in IMU module, calibration-free, 60°
Camera	Visual positioning camera: 8MP AR stakeout camera: 2MP
Electronic Bubble	Controller software can display electronic bubble, checking leveling status of the carbon pole in real-time
Thermometer	Built-in thermometer sensor, adopting intelligent temperature control technology, monitoring and adjusting the receiver temperature
User Interaction	
Operating System	Linux
Buttons	Single buttons
Indicators	Satellites, data and power indicators
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/Portuguese/Russian/Turkish/French/Italian
Secondary Development	Provides secondary development package, and opens the OpenSIC observation data format and interaction interface definition

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SANDING
EVERY POINT MATTERS

Aqua T8

- Pocket Dual Camara RTK -

- √ **All Constellations Tracking**
  1698 Channels
- √ **The 5thGen. 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

AQUA T8

4 Major Improvement To Simplify and Smooth Your Field Work

SANDING’s developers team understand the challenges faced by surveyors in their daily tasks, which is why we're proud to introduce our latest offering, AQUA T8.

Designed with meticulous attention to detail, AQUA T8 prioritizes the needs of surveyors, aiming to streamline their workflow and enhance their productivity.

Four indispensable features have been incorporated into AQUA T8. From IMU, radio and even to its size, each element is tailored to alleviate the burdens commonly encountered in the field, ensuring that surveyors can perform their duties with greater ease and efficiency.

We wish you a brand new experience in the job!

Pocket Sized RTK

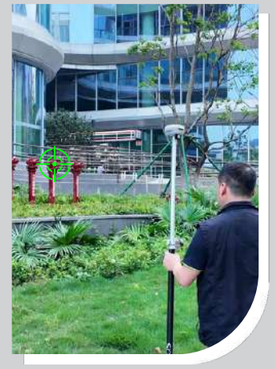
Easy to carry and All-terrain surveying

We can put Aqua T8 in our pocket due to its 540g weight and 105mm*58mm size , making it portable for surveying and mapping project.With a 650g, extensible from 70-180cm Telescopic pole, T8 becomes more convenient in RTK, PPK Survey, suitable for different measurement environment.

Visual Positioning （Optional）

Eficient,Less-blind spot,Safer

With the optional photogrammetry feature, users can use the T8 to perform non-contact measurement, processing a group of photos or a video in realtime, obtaining coordinates for hundreds of points within minutes.



Dual Camara AR Stakeout

Intutive and Precise

Aqua T8 allows you to use both of front camera and bottom camera to stakeout points, lines, curves.
The AR guideline on controller app will indicate you to go to the correct direction since you are tens of meters away from the target.

Seamless Integration for Robotic TS

Extra value added

The Aqua T8 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 Fusion Of Superior Speed & Stability

SANDING always devote to bring convenience to surveyors through innovations. Through years of research and development of multi-satellite positioning algorithms, we develop the T8 with the state-of-art POLESTAR GNSS engine.

T8 with 1698 channels can track more satellites and capture weak signals under canopies hence be er success rate and speed of obtaining a fixed solution. It is possible to get fixed where previously under the dense forest or surrounded by buildings cannot. Now with AQUA T8, you don’t need to wait for minutes but seconds in the field to get truly fixed.

Multipath Effect Mitigation

Multipath Effect Mitigation

Multipath effect is a traditional notorious factor that decrease the accuracy of GNSS receiver. AQUA T8 with 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.

New Posi oning Algorithm

Exploring & Improving Will Never End

Based on years of exploring on survey technology, SANDING have collect large amount of experience and source to improve our own unique GNSS Positioning Algorithm. Benefiting from the newly developed mainboard, AQUA T8 uses dual-engine algorithms to ensure more reliable accuracy and working efficiency in harsh environment.

Ionospheric Compensation

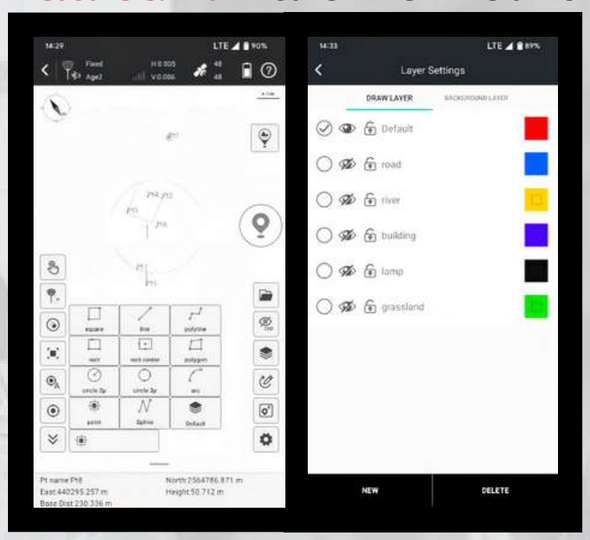
Be Capable at Anywhere, Any Time

AQUA T8 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.

ArcSurv APP

Field Data Collection & Mapping: The Most Advanced is Here

Measure & Draw : Save Time in Field work and Office



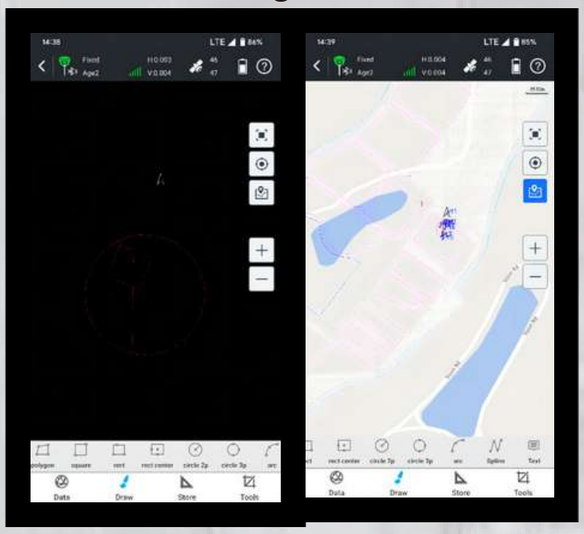
This feature allows you to draw the result map while completing point measurements.

• 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



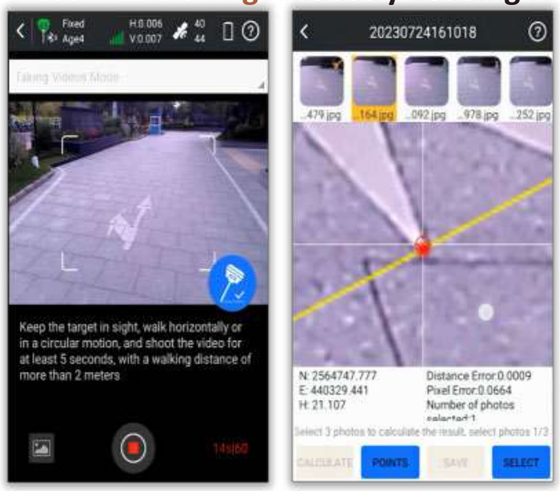
Select points to form a polygon, and directly identify the area division points for the surveyor to stake out. There is no more need for the user to guess a position to measure, and then to adjust.

• 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)

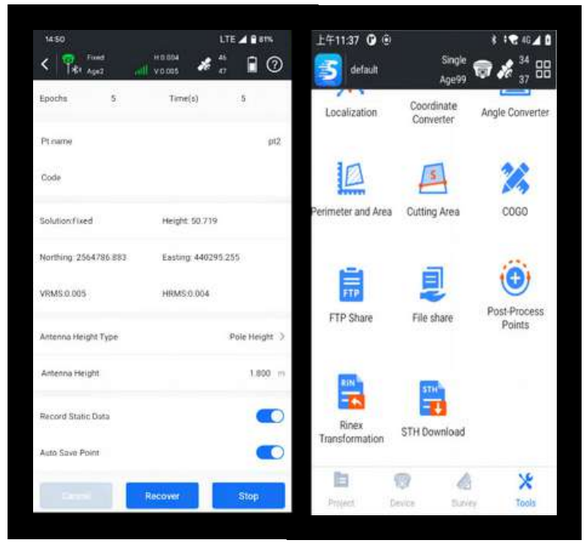
Photogrammetry Measurements can be conducted by taking pictures or videos. Coordinates of all points in the photos can be acquired.

• 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.

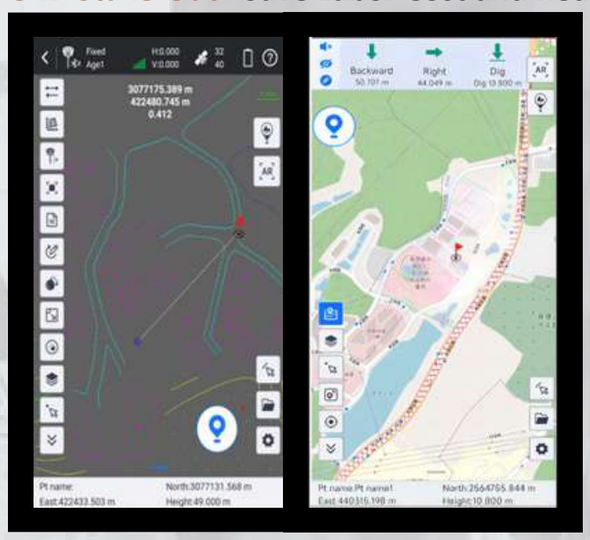
• Data can be shared with others through mobile Internet.

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

ArcSurv APP

Stakeout: Lighten Your Load, Increase Your Output

CAD Stake-Out : Save Labor Cost and Reduce Errors



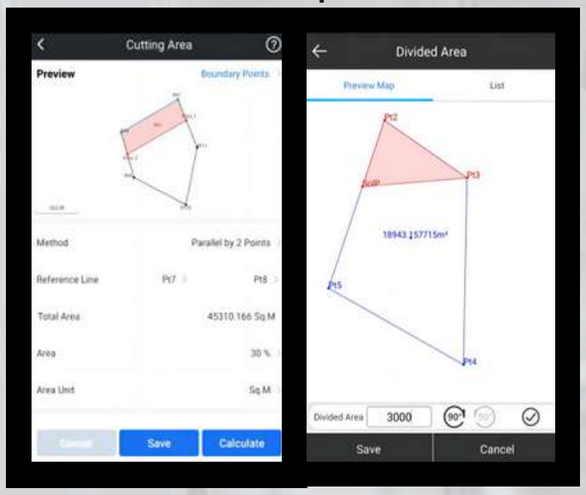
Traditional data collection software requires users to import points or lines to be setout from .csv or .txt files, users need to spend quite a lot of time to edit point and line libraries.

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)

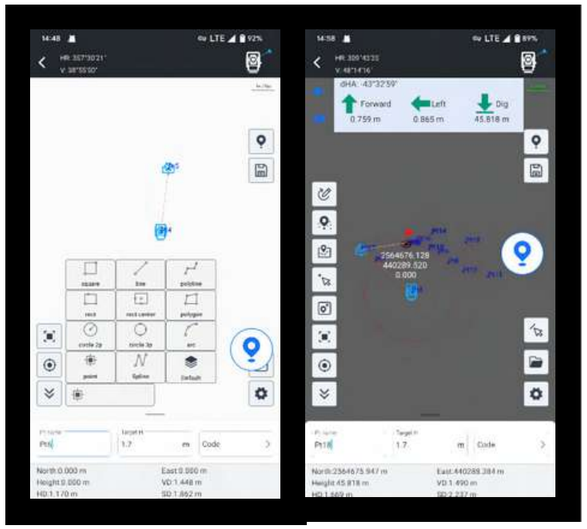
Users utilize the real-time imagery captured by the camera at the bottom of the receiver and the AR guide lines displayed by the software, to locate the target points.

• 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.

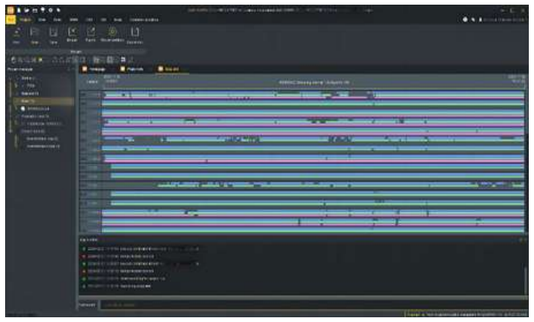
Innovations for Better User Experience

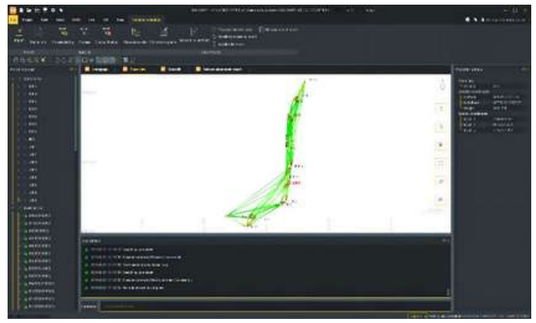
- RTK Data Backup
- QR Code Share
- Multiple Basemap Support
- Basemap
- Adjustment
- Network Mount Point Sorting
- NMEA Output Setting

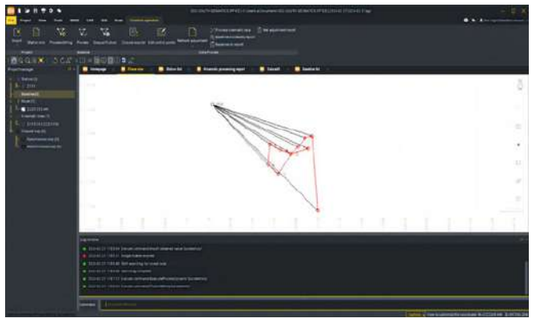
… …

SANDING Geo Office (SGO)

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.