

# Specifications

GNSS Performances	Signal Tracking(1598)	Signal Tracking(1698)	Signal Tracking(1760)			
	1598 channels GPS: L1, L1C, L2C, L2P, L5 GLONASS: L1C/A, L1P, L2C/A, L2P, L3 BDS: BDS-2: B1I, B2I, B3I, BDS-3: B1I, B3I, B1C, B2a, B2b* GALILEO: E1, E5A, E5B, E6C, AltBOC* SBAS(WAAS/MSAS/EGNOS/GAGAN): L1* IRNSS: L5* QZSS: L1, L2C, L5* MSS L-Band: BDS-PPP, Galileo HAS	1698 channels GPS: L1, L1C, L2C, L2P, L5 GLONASS: G1, G2, G3 BDS: B1I, B2I, B3L, B1C, B2A, B2B* GALILEO: E1, E5A, E5B, E6C* SBAS(WAAS/MSAS/EGNOS/GAGAN): L1C, L1A* Navic/IRNSS: L5* QZSS: L1, L2C, L5* MSS L-Band: Reserve	1760 channels GPS: L1C/A, L1C, L2C, L2P, L5 GLONASS: L1C/A, L2C/A, L2P, L3CDMA BDS: B1I, B1C, B2I, B2a, B3 GALILEO: E1, E5A, E5B, E5AltBOC, E6 SBAS: EGNOS, WAAS, GAGAN, MSAS, SDCM(L1,L5) Navic: L5 QZSS: L1C/A, L1C, L2C, L5, L6 MSS L-Band: BDS-PPP, Galileo HAS*			
Positioning Precision	Other Features					
	Initialization Time: <10s Initialization reliability: >99.99%					
	Code differential GNSS positioning	Static(long observations)	Static			
	H: 0.25m+1 ppm RMS V: 0.50m+1 ppm RMS	H: 2.5mm+0.1 ppm RMS V: 3mm+0.4 ppm RMS	H: 2.5 mm + 0.5 ppm RMS V: 3.5 mm + 0.5 ppm RMS			
	Rapid static	PPK	RTK(UHF)			
	H: 2.5 mm + 0.5 ppm RMS V: 5 mm + 0.5 ppm RMS	H: 3 mm + 1 ppm RMS V: 5 mm + 1 ppm RMS	H: 8 mm + 1 ppm RMS V: 15 mm + 1 ppm RMS			
	RTK(NTRIP)	RTK initialization time	SBAS positioning			
H: 8 mm + 0.5 ppm RMS V: 15 mm + 0.5 ppm RMS	2 ~ 8s	Typically<5m 3DRMS				
BDSPPP	Galileo HAS					
H:10cm V: 20cm	H: 20cm V: 40cm					
IMU	Update Rate	Tilt Angle	Initialization Way	Type		
	200Hz	0-60°	Shake or Walk	Calibration Free		
User Interface	Keys	Touch Screen	LED	WEB UI		
	Power Key	HD 1.39inches color circle touch screen	Power Indicator	Supported		
	Voice Guidance	Language Supported				
Supported	Chinese, English, Korean, Russian, Spanish, Portuguese, Turkish, French, Italian					
Hardware	Dimension	Weight	Material	Temperature	Humidity	Waterproof/Dustproof Shock/Vibration
	155mm(Φ) *98.5mm(H)	1.2kg	Magnesium aluminum alloy shell	Working: -45 C to +75 C Storage: -55 C to +85 C	100% Non-condensing	IP68 standard;  Withstand 2m pole drop onto the cement ground naturally
Power	Power Supply		Battery			
	6-18V DC, overvoltage protection		Built-in 7.4V 10000mAh, PD quick charge protocol; rover data collector internet mode>20h			
AR Stakeout Camera	Pixel	Visual Angle	Visual Positioning Camera		Pixel	
	2M	75°			8M	
Communication	I/O Ports		Radio		WIFI	
	Type C 5 PIN LEMO port		Frequency range: 410-470MHz Protocol: Farlink, SOUTH, TrimTalk, Hi-target, HUACE Radio router, Radio repeater		802.11b/g/n Support AP mode and Client mode	
	Cellular Network		NFC		BT	
4G LTE, 3G WCDMA, 2G GPRS, GSM		Automatic pair between receiver and controller (controller requires NFC wireless communication module)		Bluetooth 4.0 standard, Bluetooth 2.1+EDR		
Data Storage /Transmission	Storage		Data Formats			
	64GB SSD internal storage Automatic cycle storage Support external USB storage The customizable sample interval is up to 50Hz		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			

\*Reserve for future upgrade.

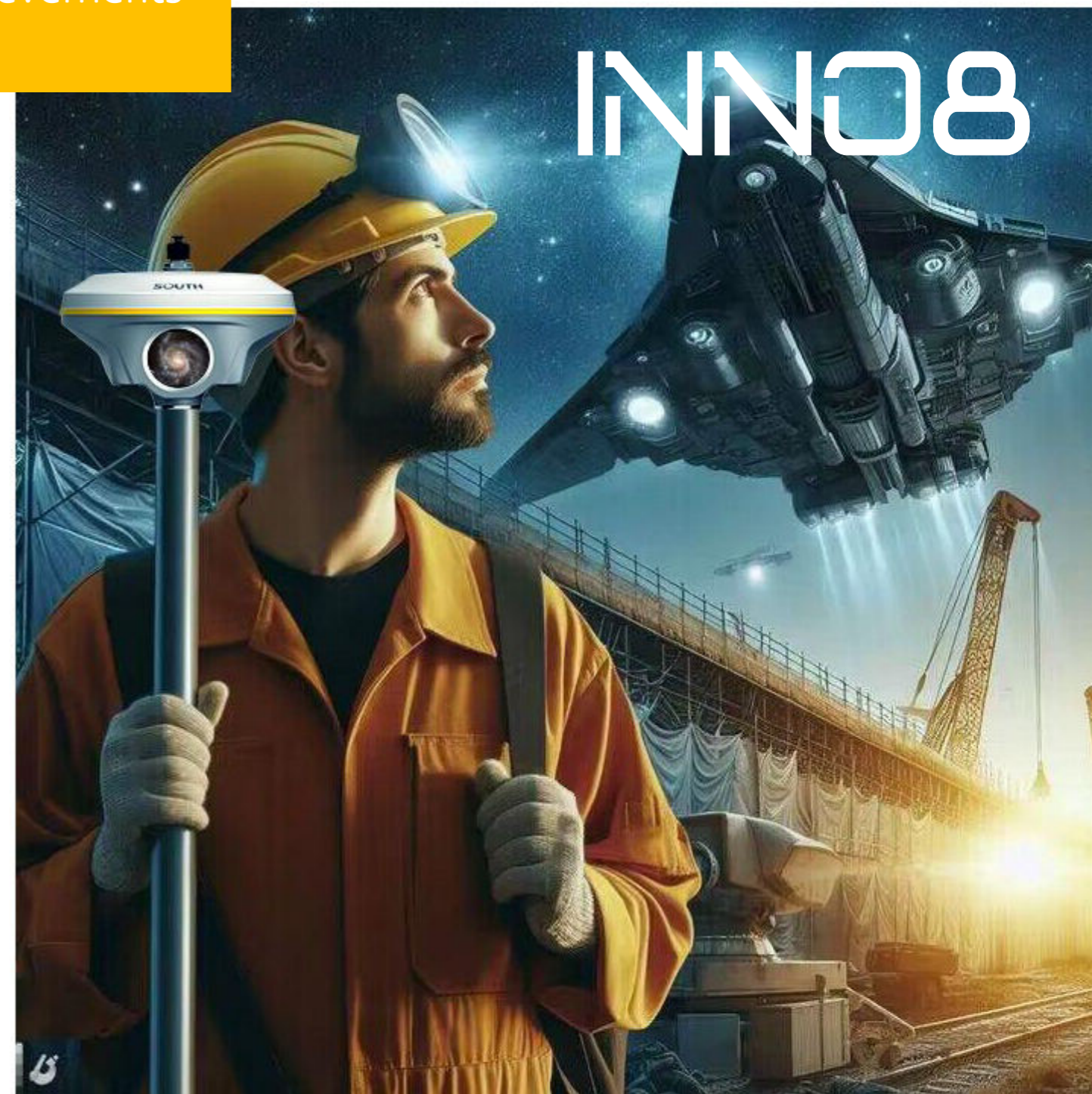
**Remarks:** Measurement accuracy and operation range might vary due to atmospheric conditions, signal multipath, obstructions, observation time, temperature, signal geometry and number of tracked satellites. Specifications subject to change without prior notice



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We Wish You Great Achievements



# INN08

- ✓ Visual Positioning & Stakeout
- ✓ 3D Modeling
- ✓ 3 Ways of Processing
- ✓ Up to 1760 channels
- ✓ Farlink 2.0
- ✓ 4th generation IMU

# The Unique UAV Photogrammetry Algorithms from SOUTH is Adding **10 Advantages** to Traditional GNSS RTK

More Points Collected in Less Time, With Less Blind Spots

## More **Efficient** than Traditional RTK

- ✓ SOUTH Group has accumulated a decade of experience in the development of UAV photogrammetry solutions. This has led to the creation of a unique and efficient photogrammetry algorithm for INNO8. This allows INNO8 to directly collect both image and coordinate data. Users can capture still photos or shoot videos while walking. With just one group of photos or a video, users can obtain coordinates for all target points within the measurable range, measuring hundreds of points in few minutes.
- ✓ Compared to traditional photogrammetry equipment, INNO8's data acquisition speed is faster. After collecting photos or videos, users can perform real-time automatic processing by using data collection App on controller. This allows users to obtain coordinates without the need for PC post-processing software, especially in time-sensitive situations.
- ✓ Compared to traditional RTK, INNO8 has a broader working range and fewer blind spots. By photogrammetry function, surveyors can remotely measure points that are without GNSS signal or poor signal quality, from a well-signaled position. Points without satellite signals, such as spaces under rooftops, can now be measured. Previously challenging blind spots or places with severe multipath effects like dense tree areas or construction sites with multiple obstacles, are now easier to measure.



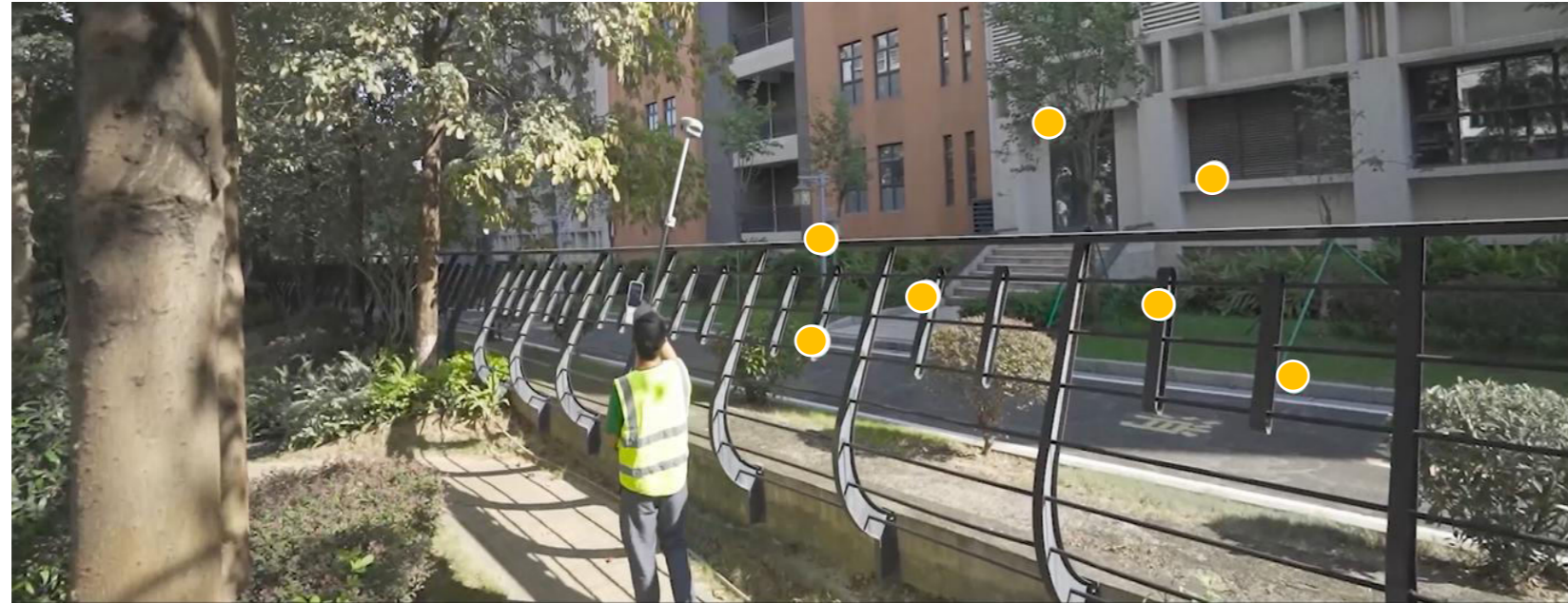
Easy to Learn, Effortless to Use,  
and Uncomplicated for Re-measurement

## More **User-friendly** than Traditional RTK

- ✓ When surveyors process photos in the controller App, they simply need to click on the same point in just three photos to calculate the coordinates. This operation is quite easy to learn.
- ✓ A notable feature of photogrammetry is labor-saving. When using INNO8, surveyors can achieve remote measurements at distances of up to 10 meters or even more (in ideal condition), eliminating the need to physically approach each measurement point. This working method significantly saves the surveyor's physical effort, reducing the labor involved in fieldwork.
- ✓ In cases some data needs to be remeasured, surveyors do not have to return to the field. They can simply click on the saved photos to obtain coordinates, making re-measurement a hassle-free process.

**SOUTH**  
Target your success

# The Unique UAV Photogrammetry Algorithms from SOUTH is Adding **10 Advantages** to Traditional GNSS RTK



Wide Applications, Abundant Output,  
Satisfying Return in Investment

## More **Versatile** than Traditional RTK

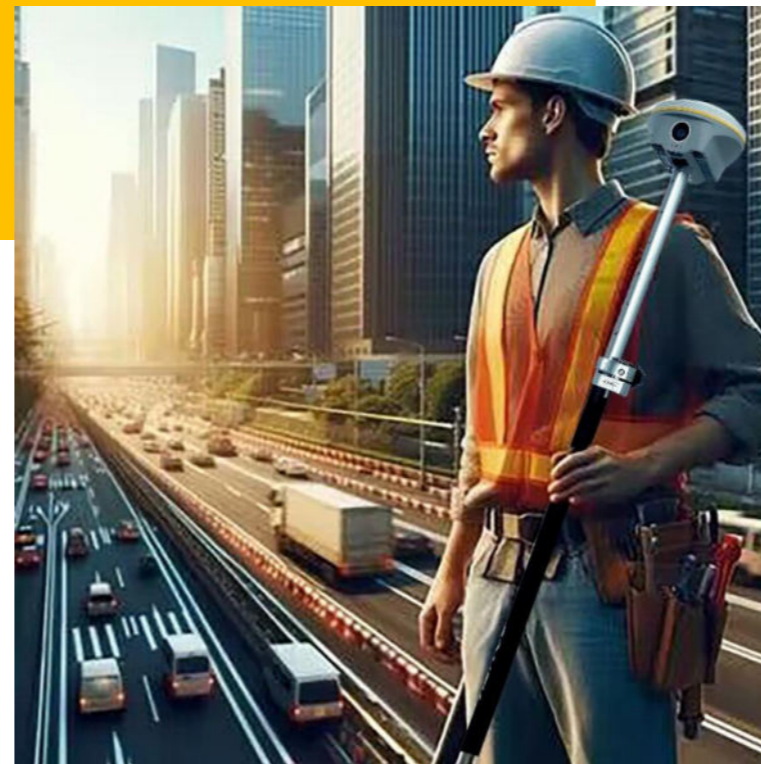
- ✓ Utilizing visual positioning, surveyors can work at a rapid pace in the field. Image data can be stored for a long period and reused at any time. These features are particularly suitable for unconventional GNSS measurement tasks such as recording accident scenes and excavation sites for urban public facilities.
- ✓ When using in conjunction with SOUTH UAV, SGO, or other third-party post-processing software, INNO8 not only outputs coordinates but also various types of data such as images, 3D models, point clouds, and supports multiple coordinate systems. This feature meets your diverse application needs for various types of data and provides a richer output of results.
- ✓ Considering the investment perspective, INNO8 stands out as a more cost-effective and versatile option for surveying tasks, compared to other measurement equipment such as laser scanners.

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Your Safety, We Care

## **Safer** than Traditional RTK

- ✓ During measurements along the edges and central areas of busy roads, safety risks are present for surveyors. To minimize these risks, surveyors can utilize INNO8 visual positioning to maintain a safe distance from hazardous locations while completing their work, ensuring maximum safety.
- ✓ During measurements, the potential hazards of conducting surveys near water bodies, like rivers and lakes, should not be underestimated. Visual positioning aids users in mitigating risks in comparable scenarios, ensuring their safety. Ensuring a secure working approach is not just a personal requirement but also a necessity for the well-being of your family.



# Three Types of Image Data Processing Modes

## -- Carefully Designed for Your Challenging Work Requirements



Cloud Server Online Processing, Balancing Performance and Efficiency

### Designed for **Urban Surveying**

When surveyors have a high-quality internet connection, they can process image data online through the network and cloud servers. INNO8 can obtain coordinate data for image measurements with 2cm accuracy in just a few minutes. This processing mode balances high accuracy and fast processing speed.



Desktop Software Processing,  
Leave More Time for Fieldwork

### Designed for Users with **Tight Fieldwork Schedules**

Sometimes, surveyors have limited time for fieldwork and need to collect the maximum amount of data in the shortest possible time. In such cases, they can choose not to process data on-site but instead use desktop data post-processing software to process image data after returning to the office.

This working mode offers richer measurement and calculation functionalities, comprehensive data applications, allowing users to focus on data collection outdoors, achieving the highest point acquisition speed, and making the most of their time.

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Target your success

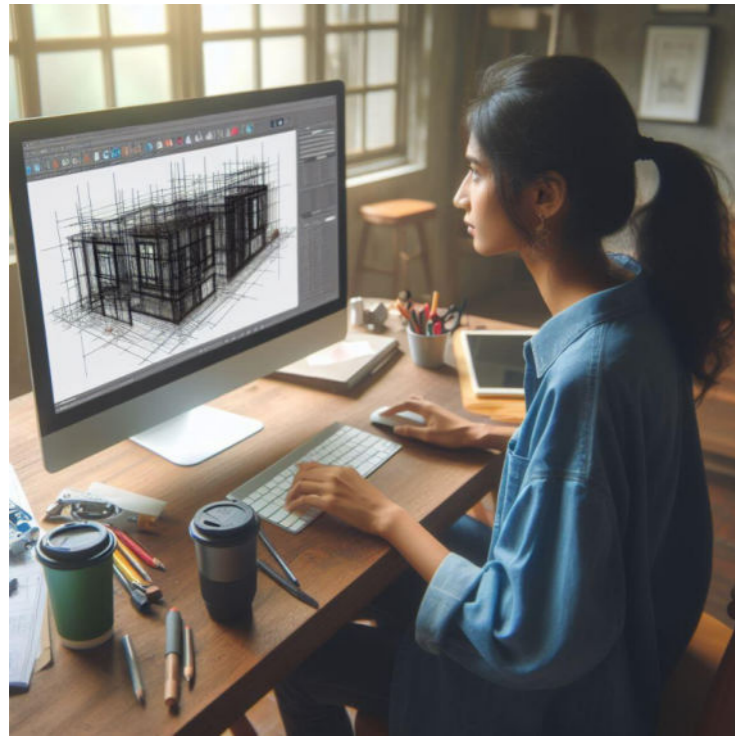


Data Controller Offline Processing,  
What You See is What You Get

### Designed for **Field Surveying**

When outside the coverage area of internet, surveyors can achieve offline processing of image data through the data controller app. This processing mode boosts the fastest processing speed by saving time of uploading image data, providing 4cm accuracy results within 30 seconds.

# 3D Modeling—Broadening Your Working Power is Our Duty and Privilege

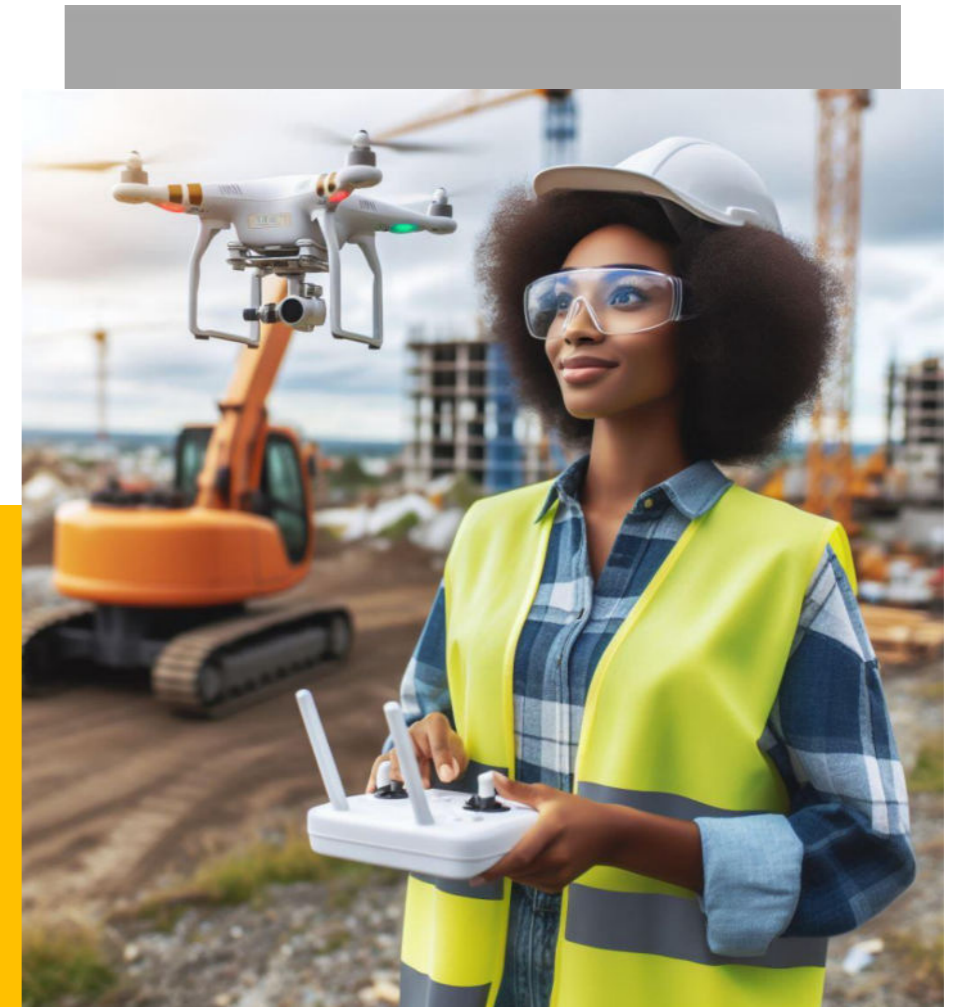


## One-Man 3D Modeling

### Eyes on **Now**, Be Prepared for **Future**

With INNO8, single-user standalone operation is sufficient 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.

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Target your success



## One Data, Multiple Uses

### Work in **Your Preferred Way**

Surveyors can import the data outcomes from INNO8 into SOUTH UAV and other third-party modeling software for 3D modeling.

SGO (PC version) and SurvStar (Android App) will also support 3D modeling function in the future. Users can choose the software that best suits the current scenario and task requirements to achieve the highest work efficiency.



## Complement for UAV Survey Data

### Ensuring a Smooth Journey for **Your Success**

SOUTH's 3D modeling technology are fully utilized and transformed in INNO8. The results of image measurements by INNO8, can be seamlessly integrated with data outcomes from DJI and other brand UAV.

UAV surveys often face challenges of data gaps, leading to incomplete model outcomes. In such cases, surveyors can use INNO8 to collect image data on the ground and incorporate it into aerial survey data as a supplement, thereby enhancing the overall model outcome.

## AR Stakeout

# Stakeout **Intuitively** with Live-view Video Display

Experience INNO8 AR stakeout by following the real-time, real-scene guidance on the data controller display without continuously watching on the compass or leveling the pole.

In addition to points, INNO8 can handle staking out lines and curves with AR, which broaden its applications and is suitable for more complex work demands. With AR stakeout, you can now achieve quick and precise stakeouts with ease.



## Smart LCD Touchscreen

# Make Workflow **Simpler** and **Smoother**

INNO8 is thoughtfully designed with a user-friendly interface featuring a large touchscreen to:

- ✓ Quickly touch screen to switch working mode and datalink, without data controller or mobile devices
- ✓ Quickly check system information on receiver screen, no need of other device
- ✓ Quickly launch PPK measurement program, without handheld controller
- ✓ Precisely display self-check status on receiver screen, saving time, never miss information



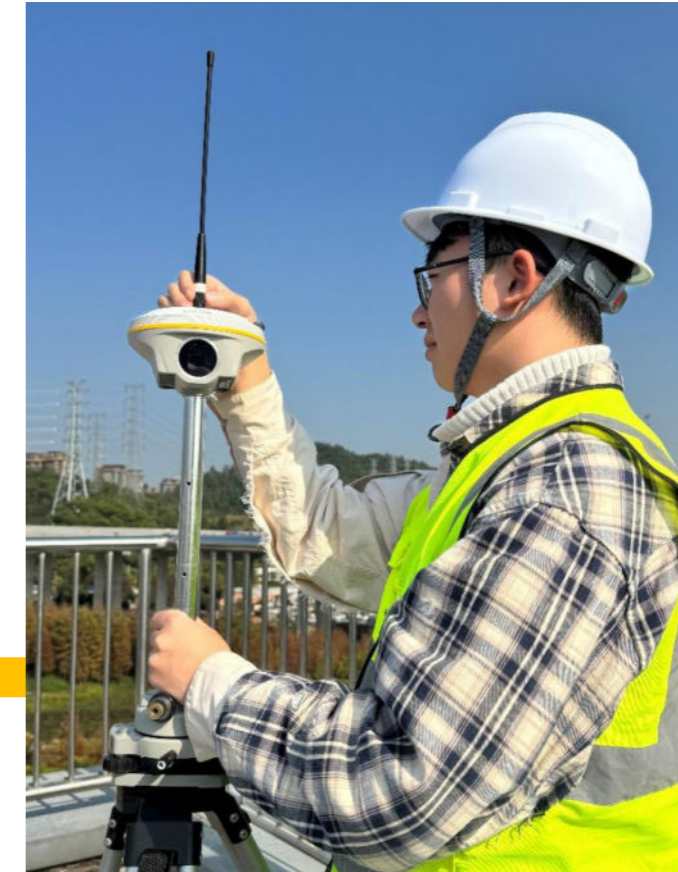
Farlink 2.0

## Less Limitation Better Performance

Here comes the Farlink 2.0. After years of hardware and firmware updates, Farlink 2.0 can undertake larger data and provide more stable transmission. Its communication range reach up to 15-20km, being a base can easily cover the working area without moving it frequently.

In addition, Farlink 2.0 can receive data from one specific base. Even though there are several bases transmitting with the same frequency, your rover will receive data from the correct base.

Each radio had extreme temperature-changing testing from -20°C to 60°C to protect your device from changing temperature.



The 4th Generation IMU

## Almost All-time Usable

In 2023, we introduced two significant updates: Calibrate-free Initialization and Stability Improvement. Moving into 2024, another noteworthy update has been implemented: the IMU sensor now maintains usability when the pole is rotated.

Traditionally, surveyors encountered issues where rotating the pole during changes in travel direction or adjusting receiver attitude would occasionally disable the IMU. The latest update effectively eliminates the loss of Inertial-Measurement-Usable Status in the majority of scenarios, enhancing IMU availability and productivity. During AR stakeout, visual positioning and 3D modeling collection, you can walk with your own pace without worry about losing IMU, making workflow smooth.