

Specifications

GNSS Features	
Channels	1698 (1808 is optional)
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 [*]	BDS PPP/ Galileo HAS
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°~ 120°
Hardware performance	
Dimension	155mm(φ)×93.6mm(H)
Weight	1280g (battery included)
Material	Magnesium aluminum alloy shell
Operating Temperature	-45°C~+75°C
Storage Temperature	-55°C~+85°C
Humidity	100% Non-condensing

Waterproof/ Dustproof	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 7.4v 10,000mAh rechargeable Lithium-ion battery
Battery Life	30h

Communications	
I/O Port	5-PIN LEMO interface (external power port + RS232)
I/O Port	Type-C interface (Charge+OTG+Ethernet)
Internal UHF	UHF antenna interface
Frequency Range	SIM card slot (Micro SIM)
Communication Protocol	3W Radio receiver and transmitter
Communication Protocol	410-470MHz
Communication Protocol	Farlink, Trimtalk, SOUTH, HUACE, Hi-target

Communication Range	Typically 8-10km with Farlink protocol (12-15km in optimal condition)
Cellular Mobile Network	4G
Bluetooth	Bluetooth 5.0, 3.0/4.2 standard, Bluetooth 2.1 + EDR
NFC Communication	Support
Modem	802.11 b/g/n standard

Data Storage/Transmission	
Storage	64GB SSD internal storage
	Automatic cycling storage
	Support external USB storage (OTG)
Data Transmission	The customizable sample interval is up to 20Hz
	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	calibration-free, up to 120°, refresh rate 400 Hz, pitch & roll accuracy 0.05°, heading accuracy 0.15°
Camera	Video shooting camera: 8MP Laser aiding telephoto camera: 8MP AR stakeout camera: 2MP
Laser	3R green laser, 150m range (200m in optimal condition)
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	Dual buttons
Indicators	Satellites, data and power indicators
Display	1.39' circular LED touchscreen, 454*454 pixel
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
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

INNO8 PRO
Ultra-Long-Range Laser RTK
Measure Beyond Limits



200m
Measurement



Triple
Camera



Super
IMU



Smart
Measurement

Engineered for Performance

INNO8 Pro combines advanced sensing, intelligent perception, and precision engineering into a single platform. It delivers the performance needed for demanding surveying tasks while providing a more efficient and confident field experience.



Extended Measurement Reach

Expands distance measurement range up to 200 m across all environments.

200m



Multi-view Imaging System

Telephoto, Wide-Angle, Starlight Camera for Improved Laser and AR Measurement



3 Cameras

Instant-Ready Tilt Survey

6th-Generation IMU Engine with Fast Initialization & Stable Accuracy



Enhanced UHF Connectivity

Top-Mounted Antenna with Farlink Pro Protocol for Stable Communication



Shock-Resistant Reliability

Reinforced Internal Structure for Field Durability



30h Battery Life



Touch Screen



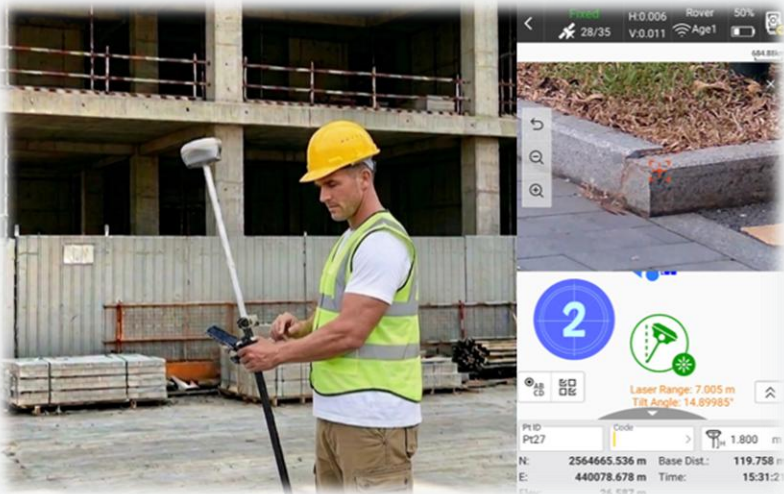
SDAS Service Network-Free Positioning



Intelligent SurvStar Experience

Capture Points Automatically

Automatically captures and saves point coordinates once the pole is stable, enabling fully hands-free operation and improved focus on aiming and stability.



Always the Optimal View

Automatically adjusts camera zoom based on target distance during Laser AR measurement, ensuring clear target visibility and faster, more intuitive long-range aiming.



Smart Field Interaction

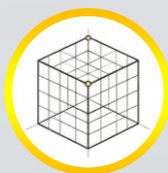
Enables hands-free operation through voice commands and provides real-time AI assistance for workflow guidance, troubleshooting, and field support, with full multilingual support to ensure seamless operation across global users.



100m CAD AR Stakeout



Photogrammetry



3D Modeling

The Unique UAV Photogrammetry Algorithms from SOUTH

is Adding 10 Advantages to Traditional GNSS RTK

More Efficient than Traditional RTK

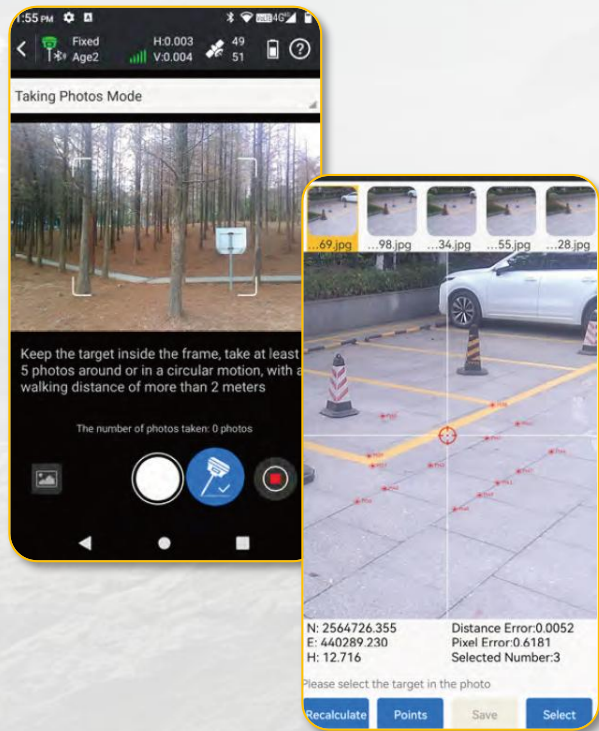
More Points Collected in Less Time, With Less Blind Spots

- ✓ 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 Pro. This allows INNO8 Pro 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 Pro'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 Pro 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 blindspots or places with severe multipath effects like dense tree areas or construction sites with multiple obstacles, are now easier to measure.



More User-friendly than Traditional RTK

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



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 Pro, 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.

More Versatile than Traditional RTK

Wide Applications, Abundant Output, Satisfying Return in Investment

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 Pro 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 Pro stands out as a more cost-effective and versatile option for surveying tasks, compared to other measurement equipment such as laser scanners.



Measuring on Model Taking Video

Safer than Traditional RTK

Your Safety, We Care



During measurements along the edges and central areas of busy roads, safety risks are present for surveyors. To minimize the risks, surveyors can utilize INNO8 Pro 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.

