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°
IMU update rate	200Hz
Hardware performance	
Dimension	134mm(φ)×79.1mm(H)
Weight	800g
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 MIL-STD-810G
Power Supply	6-28V DC, overvoltage protection
Battery	Inbuilt 6800mAh rechargeable Lithium-ion battery
Battery Life	25h (rover mode)
Communications	
I/O Port	5-PIN LEMO interface (external power port + RS232) Type-C interface (charge+OTG+Ethernet) UHF antenna interface SIM card slot (Micro SIM)
Internal UHF	Radio receiver and transmitter
Frequency Range	410-470MHz
Communication Protocol	Farlink, Trimtalk, SOUTH, HUACE, Hi-target, Satel
Communication Range	Typically 8km with Farlink protocol
Cellular Mobile Network	4G
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, CMR 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 (can be used in AR stakeout) 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	Dual buttons
Indicators	Satellites, data and power indicators
Display	1.14', 135*240 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

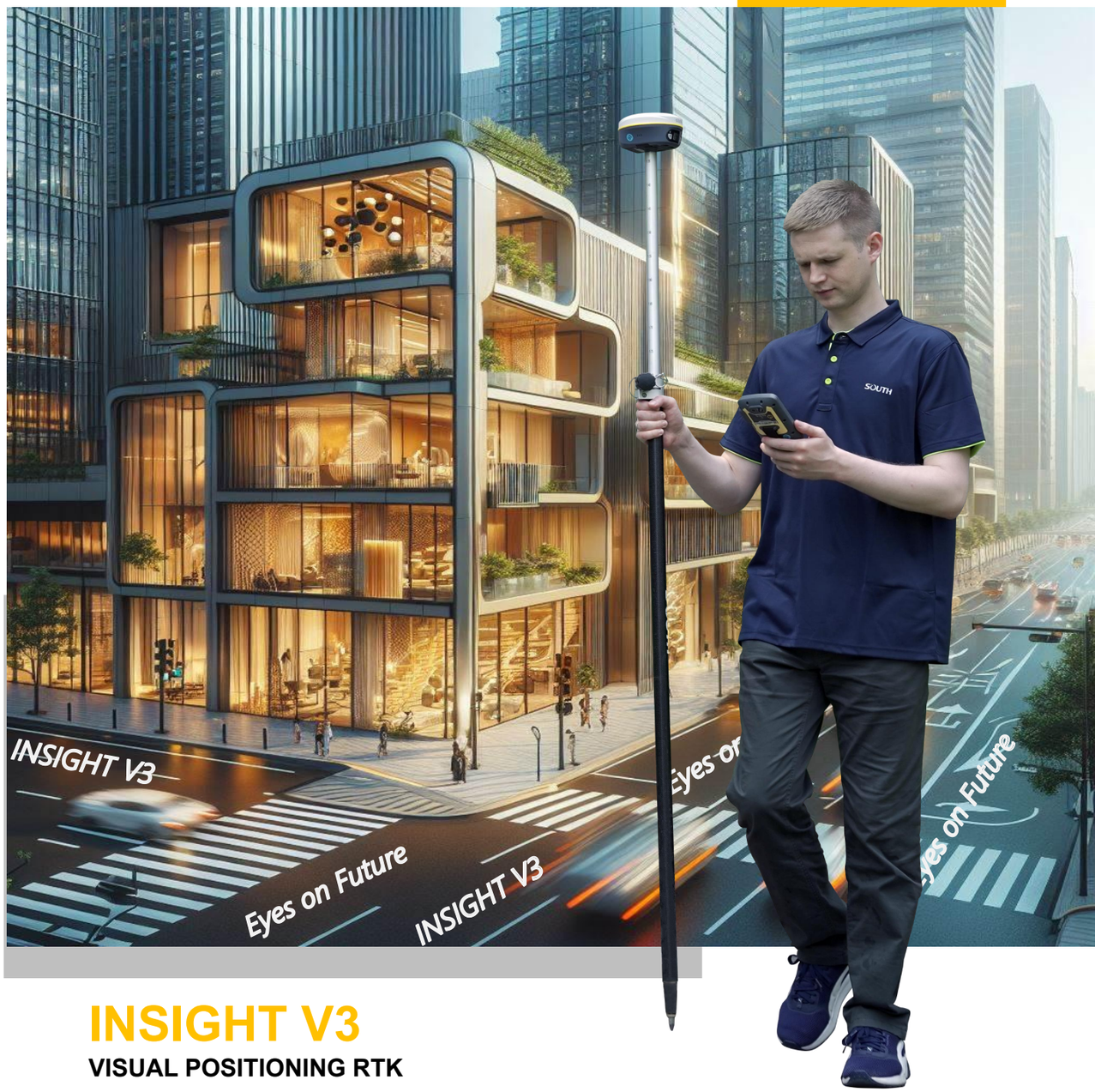
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SOUTH

Target your success

Powered By S805



INSIGHT V3

VISUAL POSITIONING RTK

- ☑ Dual Camera Visual Positioning
- ☑ Dual Camera AR Stakeout
- ☑ 3D Modeling by Video Shooting
- ☑ A Few of Ways for Data Processing
- ☑ 1698 channels S805 Inside
- ☑ Dual-Engine Algorithm
- ☑ Farlink 2.0 Radio
- ☑ 5th generation IMU

Five New Features
— To Give You More Productivity

S805, the New Pop Star
Save Weak Signal

SOUTH S805 has 1698 channels to track more satellites and weak signals.

The success rate and speed of obtaining a fixed solution has been greatly improved. Under the dense forest and surrounded by buildings, it just takes tens of seconds to get a fixed solution.

Farlink 2.0 Radio
More Performance

When compared with the last generation Farlink, V3's Farlink 2.0 radio can undertake larger data and provide more stable transmission, working range is as far as 10-12 km in ideal condition.

With the "lock-base" function, V3 can keep receiving data from one specific base. Even though several bases are transmitting with the same frequency

Dual Camera AR Stakeout
Extra Convenience

V3 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.

The 5th Gen. IMU
New Experience

The latest update of IMU 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 at your own pace without worrying about losing IMU, making workflow smooth.

Dual-Engine GNSS
Positioning Algorithm

Unlike traditional GNSS receivers, the INSIGHT V3 is equipped with two different positioning algorithms.

When users encounter inaccurate VRS RTK positioning due to unusually active ionospheric conditions, they can enable the second set of algorithms in the software to correct errors in real-time and improve measurement accuracy. (by selecting Enhanced Positioning Mode in the SurvStar app.)

SOUTH
Target your success

Insight V3



SOUTH
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Visual Positioning
—Do What Traditional RTK Cannot Do

More Efficient than Traditional RTK

Insight V3 processes a group of photos or a video in real-time, obtaining coordinates for hundreds of points within minutes. It outpaces traditional RTK in data acquisition speed. Insight V3 also has a broader working range and fewer blind spots, enabling remote measurements in areas with poor GNSS signal quality. Previously challenging spots, like spaces under rooftops and areas with obstacles, are now easily measurable.



More Versatile than Traditional RTK

Leveraging visual positioning, surveyors can efficiently operate in the field. Image data, stored for an extended period, is reusable at any time. These capabilities are especially well-suited for unique GNSS measurement tasks, such as documenting accident scenes and excavation sites for urban public facilities.



SOUTH
Target your success



More Friendly than Traditional RTK

Insight V3 visual positioning allows surveyors to remotely measure points up to 10 meters or more (in ideal conditions), eliminating the need to physically approach each point. This method significantly reduces physical effort in fieldwork.



Safer than Traditional RTK

Visual positioning helps users mitigate risks when surveying near hazardous areas, such as busy roads and lakes, ensuring surveyors' safety. A secure working approach is not only a personal requirement but also essential for the well-being of your family.

3D Modeling
—Broadening Your Working Power

Insight V3 utilizes SOUTH's 3D modeling technology, integrating image measurements seamlessly with UAV data from DJI and other brands. Addressing data gaps in UAV surveys,

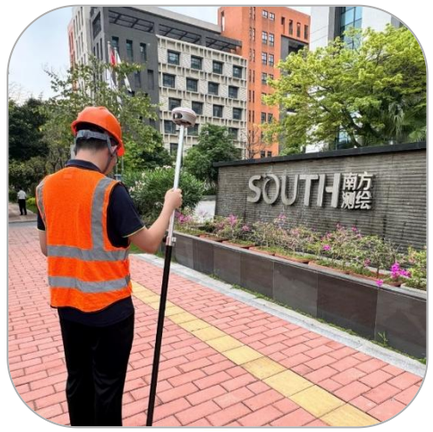
Insight V3 enhances survey outcomes by supplementing incomplete models with ground image data collection.

Insight V3 facilitates streamlined single-user 3D modeling, visually presenting geographic information such as coordinates, areas, and volumes. Effortlessly convert model data into various formats and tailor coordinate parameters to meet the needs of different applications.

Surveyors can integrate Insight V3 data into SOUTH software and third-party modeling software for efficient 3D modeling.

Upcoming versions of SGO (PC) and SurvStar (Android App) will incorporate 3D modeling functions, enabling users to choose the most suitable software for optimal work efficiency based on their specific scenarios and task requirements.









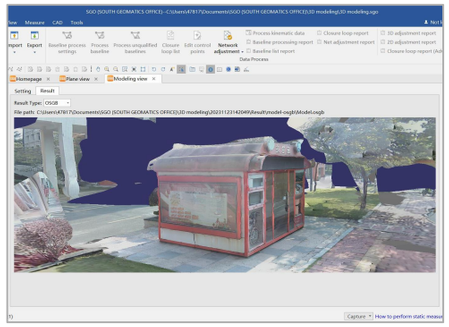
A Few Ways to Process Images
—Tailored for Your Work Needs

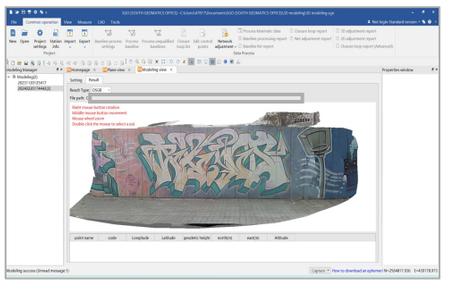


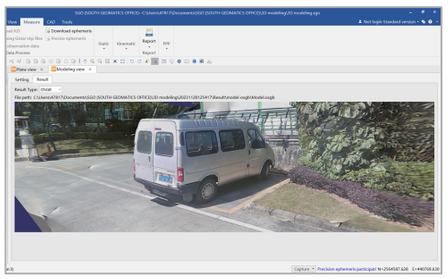


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