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
Communication Range	Typically 8km with Farlink protocol
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
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

Explore more features:

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INSIGHT V4

POCKET SIZE RTK

- ☑ Dual Camera AR Stakeout
- ☑ Visual Positioning（optional）
- ☑ 3D Modeling （optional）
- ☑ 1698 channels S805 Inside
- ☑ Dual-Engine Algorithm
- ☑ 5th generation IMU

Four New Features
— To Give You More Productivity

INSIGHT V4

Pocket Sized RTK

Easy to carry

We can put Insight V4 in our pocket due to its 540g weight and 105mm*58mm size , making it portable for surveying and mapping project.

All-terrain surveying

With a 650g, extensible from 70-180cm Telescopic pole, Insight V4 becomes more convenient in RTK, PPK Survey, suitable for different measurement environment.

Dual Camera AR Stakeout

Intuitive and Precise

Insight V4 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 Insight V4 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.

Visual Positioning (Optional)

Efficient, Less-blind spot, Safer

With the optional photogrammetry feature, users can use the V4 to perform non-contact measurement, processing a group of photos or a video in realtime, obtaining coordinates for hundreds of points within minutes.