Specifications

GNSS Features	
Channels	1898
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	134mm(φ)×90mm(H)
Weight	977g (battery included)
Material	Magnesium aluminum alloy shell
Operating Temperature	-45℃~+75℃
Storage Temperature	-55℃~+85℃
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 6800mAh rechargeable Lithium-ion battery
Battery Life	25h (static) , 20h (rover mode optimal)
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	2W Radio receiver and transmitter
Frequency Range	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	16GB SSD internal storage,Automatic cycling (supports custom expansion up to 64GB)
	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	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	1.14' LED, 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



RAMA3

Total RTK

FEEL THE NEW POWER

VISUAL POSITIONING & 3D MODELING BY VIDEO SHOOTING

LASER MEASUREMENT & REMOTE STAKE OUT

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PURE PERFORMANCE

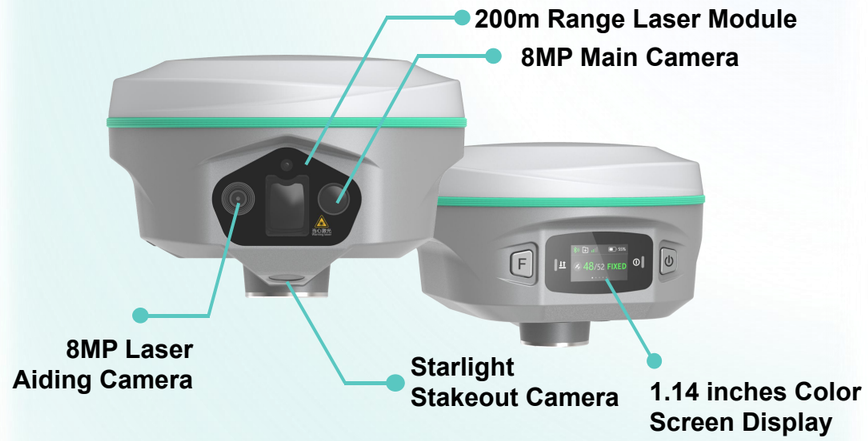


SEE FARTHER.

MEASURE SMARTER.

ENGINEERED FOR EXCELLENCE

Craftsmanship and Quality, Designed To Be Your Best.



S805 Pro, Improving Never Stop

More Satellites, Faster Fixed.

RUIDE S805 Pro has 1898 channels to track more satellites and weak signals for faster and more reliable RTK fixed.

Fixed solutions can be achieved within seconds, even in dense forests or urban environments.

PPP/HAS is supported, with centimeter-level single point positioning.

The 6th Gen. IMU

400 Hz / 0.05°/ 0.15°

The latest update of IMU features 400 Hz refresh rate, 0.05/ 0.15°accuracy, effectively eliminates the loss of Inertial-Measurement-Usable Status in the majority of scenarios, enhancing IMU availability and productivity.

During CAD AR stakeout, visual positioning and 3D modeling collection, you can walk at your own pace without worrying about losing IMU, making workflow smooth.

Enhanced Positioning

Backup for Better Accuracy

Unlike traditional GNSS receivers, RAMA3 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 **Strict Mode** in the **RTK GO 2026** app.)

8MP Laser Aiding Camera

Even Further!

Boasting a 25mm telephoto lens—more than 8 times the power of ordinary cameras—it allows you to aim with surgical precision at targets 10 to 20 meters away, maintaining a smooth 30 fps feed for real-time accuracy.

RAMA3
LASER RTK

EVOLUTION OF LASER MEASURING

INNOVATION-DRIVEN

01

Long-Range Targeting

200m range under optimal conditions, 5Hz high-speed measurement rate, highly visible 520nm green laser (Class 3R),
3 to 5mm ± 100 ppm for distances up to 100 meters.



02

Precision Edge Capture: Efficiency Meets Safety

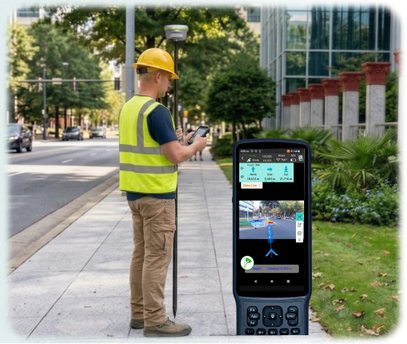
The RAMA3's high-precision ±3 to 5 mm + 100 ppm laser beam can capture extrema (minimum/maximum values) while scanning across an object. This capability dramatically boosts efficiency and ensures the surveyor's safety when working in complex or hazardous areas.

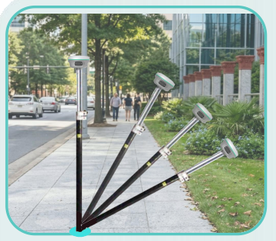


03

Seamless Laser & AR Integration / Enhanced Night Operations

The 5Hz high-frequency laser module works in perfect synchronization with the 8MP/ 30fps main camera.
The target aiming on the screen is smoothier than before.





04

Unrivaled Tilt Reliability

This provides ultimate reliability in challenging environments like wall corners, tree canopies, or deep pits where vertical leveling is impossible.

05

Anti-Shake Algorithm Filtering

This effectively filters out instantaneous deviations caused by breathing or hand tremors, significantly enhancing measurement precision.



VIDEO SHOOTING

COLLECT MASS DATA IN REAL TIME

RAMA3 can process a set of photos or a video, acquiring coordinates for hundreds of points within minutes. It boasts a wider working range and fewer blind spots through remote measurements with the camera. Locations that were once challenging, such as spaces under rooftops and areas with obstacles, are now easily measurable.

(* This function is optional.)




Obstacle Areas


Emergency Survey


Risky Terrain


Fragile Heritage Sites



Utilizing visual positioning, surveyors can collect field data with image very quickly. The data can preserve safely in the device and is reusable at any time. These capabilities are particularly well-suited for distinctive GNSS measurement tasks, including documenting accident scenes and excavation sites for urban public facilities

3D MODELING

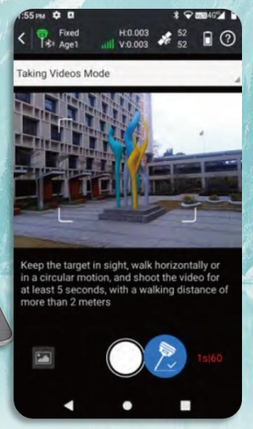
FOR PROFESSIONALS' NEED

RAMA3 enables single-user 3D modeling, on the models visually displaying geographic information like coordinates, areas, and volumes. It supports transforming model data into different formats and customize coordinate parameters for diverse applications.

(* This function is optional.)



Measuring on Model



Taking Video

Work in Your Preferred Way

Surveyors can import RAMA3 data into RUIDE GEO Office (on PC) or third-party software for 3D modeling. Future updates to RTK GO (Android App) will also include 3D modeling functions, allowing users to select the most suitable software for optimal work efficiency based on scenario and task requirements.

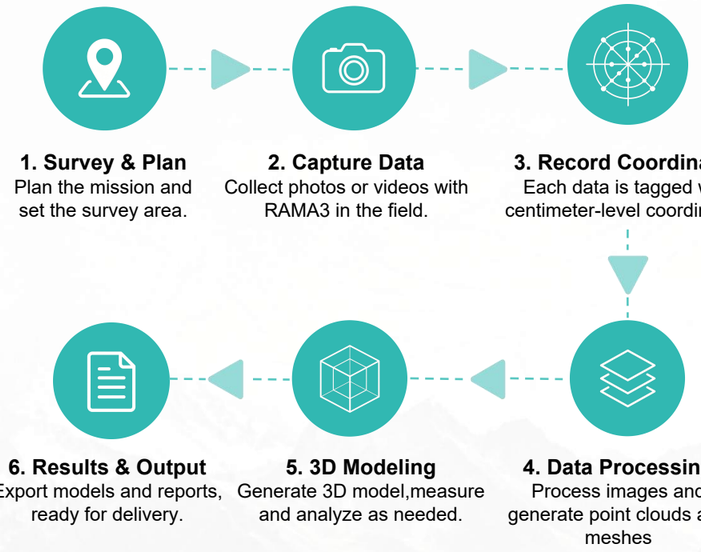
Ensuring a Smooth Journey

RAMA3 harnesses RUIDE 's 3D modeling tech, seamlessly integrating image measurements with UAV data, including DJI and other brands. Overcoming data gaps in UAV surveys, RAMA3 supplements incomplete models by collecting ground image data, improving overall survey outcomes.

Efficient Workflow

CAPTURE. PROCESS. DELIVER.

A complete workflow from field data capture to processing and final deliverables, designed for fast, accurate, and efficient surveying.



1. Survey & Plan
Plan the mission and set the survey area.

2. Capture Data
Collect photos or videos with RAMA3 in the field.

3. Record Coordinates
Each data is tagged with centimeter-level coordinates.

4. Data Processing
Process images and generate point clouds and meshes

5. 3D Modeling
Generate 3D model,measure and analyze as needed.

6. Results & Output
Export models and reports, ready for delivery.

- **Field Data Collection**

Capture high-resolution images or videos while recording precise GNSS coordinates and laser measurements simultaneously. This integrated workflow reduces manual operations and ensures every dataset is accurately referenced from the very beginning.

- **Efficient Office Processing**

Import collected data into your preferred photogrammetry software for image alignment, coordinate processing, and model generation. The standardized workflow minimizes processing time while maintaining reliable results.

- **Reliable Project Delivery**

Export photos, point clouds, vector maps, measurement reports, and other deliverables to support engineering surveys, construction, asset management, and inspection projects.

RAMA3

Performance Beyond Limits