SPECIFICATIONS

M10	
Performance	
Motor Engine	High-efficiency ducted long-life brushless motor (three-level waterproof protection)
Steering Mode	Steering engine free, differential steering, reversible
Cruise Speed	7m/s（Maximum Adaptable Flow Velocity: 3m/s）
Battery	Portable, intelligent management, hot-swappable ternary lithium battery, 28. 8V/45Ah
Controller	
System	Android System
Display	9.2-inch HD Display
Communication Range	2.5km for smart remote control, unlimited range for 4G
Function	Supports various storage capacities, capable of vessel control, data collection, video viewing, and working mode switching
GNSS Performance	
GNSS Antenna	Dual antenna, supporting CORS and radio modes
Radio Protocol	SOUTH, TRIMTALK450S, TRIMMARKI, TRANSEOT, HI-TARGET, CHC, SATEL
Velocity Measurement Accuracy	0.02m/s
RTK Accuracy	H:±(8+106 xD)mm V:±(15+106xD)mm D-Baseline length (Unit: mm)
Orientation Accuracy	Heading accuracy: 0.15°@1m baseline; Attitude accuracy: 0.25°@1m baseline
INS Performance	Supports integrated navigation and 1PPS; Attitude accuracy: 0.25°; 6°/h (accuracy decays by 1m in 20s); Maximum IMU update rate: 200Hz
Built-in Single Beam Echo Sounder	
Operating frequency	200 kHZ
Beam angle	5°
Depth range	0.15~100m
Accuracy	±0.01 m + 0.1% x D (D is the Depth of Water)
Software	
GeoSailor(Control & Acquisition)	Survey planning, navigation, vessel control, Real-time trajectory/data/videos
	Multi-storage, auto-RTH/hovering; adjusts sound velocity via temperature sensor
HySurvey（Data Post-Processing）	Processes data: re-sampling, depth calibration, tide correction, coordinate conversion
	Enables custom result output, PPK post-processing, and undo/rollback for flexible operation
Protection	
Anti-wave & Wind	3rd Wind Level & 2nd Wave Level
Waterproof	IP67
Safety Protection Design	360°infrared night vision camera, Millimeter-wave radar, two indicate lights, Dual Ducted Propeller
	Double-hull anti-sinking design, anti-collision strips, temperature and humidity detection
Physical	
Dimensions(LxWxH)	950mm x 500mm x 350mm
Material	Nano-carbon fiber polymer composite,
	new composite material
Hull Design	Trimaran
Weight	6KG(Without Battery), 27.2kg(With Battery)
Draft Depth	9cm
Payload	mini Single-frequency Echo Sounder
ELECTRICAL	
Endurance	7 hrs @2m/s (single), long-life option available
Motor Power	Typical 850W each

SANDING
EVERY POINT MATTERS

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SANDING
EVERY POINT MATTERS

AQUA M10

Single Beam USV

For High Efficiency Bathymetric Survey

Fully New Design, Improving Your Productivity

The SANDING M10 is a compact unmanned surveying vessel equipped with a single-beam echo sounder. It features a centimeter-level high-precision dual GNSS positioning and heading system, an inertial measurement system with attitude accuracy up to 0.25°, and intelligent navigation and measurement software based on the Android platform. It can autonomously navigate accurately along a preset route, collecting precise data even in complex water flow environments.

Compared to other unmanned surveying vessels in the industry, the M10 is more portable (950mm in length), has better obstacle avoidance performance (40m), a higher maximum speed (7m/s), longer endurance (6 hours on one battery with a cruise speed of 2m/s), a wider operating range (2km on 2.4GHz), and better environmental suitability (only 9cm draft).

This newly designed unmanned surveying system is the ideal choice for bathymetric surveys in lakes, inland rivers, and coastal areas..

Accuracy
High-quality outcomes

Speed
Efficient runtime

Efficiency
High cost-efficiency

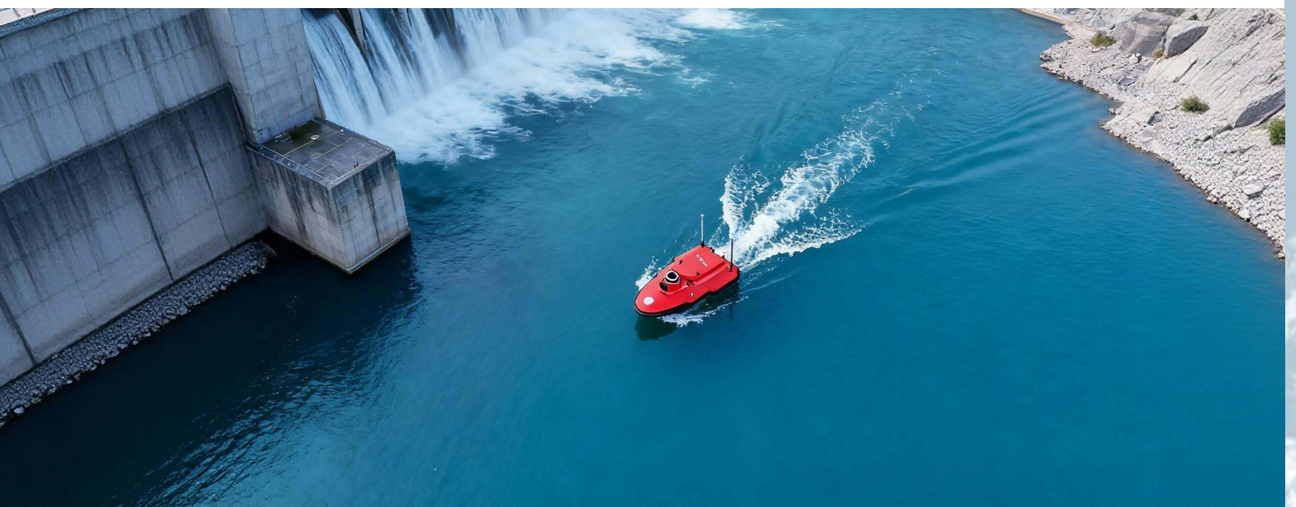
Intelligence
Tech-driven ease

Safety
Surveyor protection

Reliability
Damage prevention

Durability
Durable construction

Usability
Multi-mission adaptability



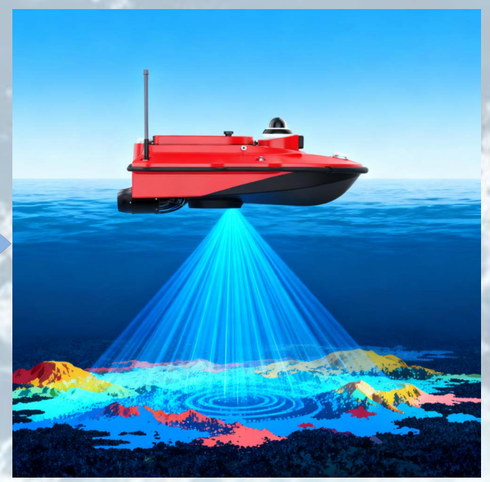
Hydrometry Evolution: From Troublesome Manual Operations to Efficient Unmanned Systems

Hydrometryis the most widely applied field for unmanned surface vessels (USV). It demands high precision, typically involves long field work hours, and often requires surveyors to work in unknown water areas. For surveyors, this work is highly challenging, posing severe risks to their physical strength, health, and life safety.

Before:Surveyors measured via kayak or motorboat, with many equipment parts and complex setup. In many cases, repeating redundant workflows was cumbersome and time-consuming. Manned surveys couldn't access specific shallow-water areas, resulting in incomplete high-precision underwater topographic data. To collect data, surveyors sometimes waded into water with RTK, posing significant risks. Both manned vessels and manual wading had relatively low data collection efficiency, with accuracy often failing to meet requirements.

Top 5 Benefits of Using Unmanned Survey Systems Today

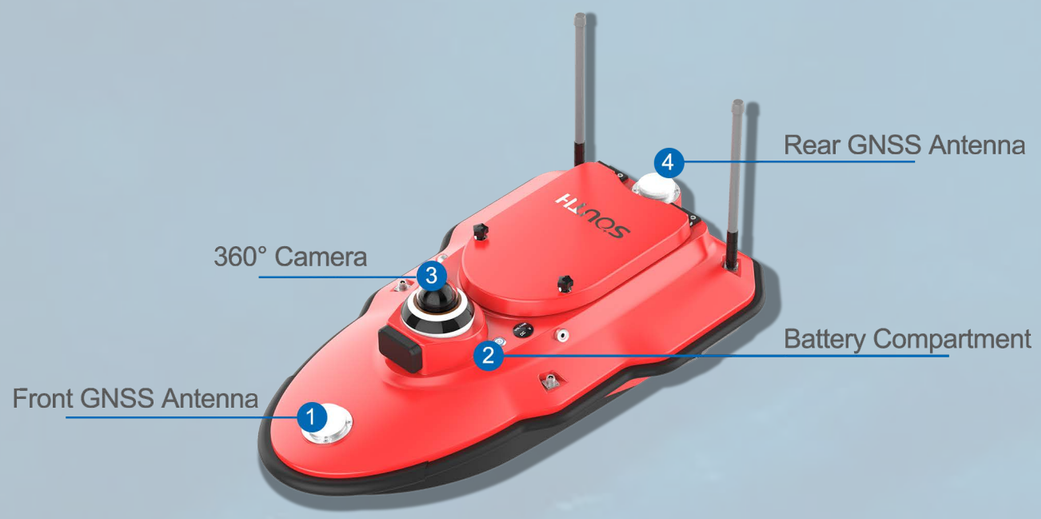
- Compact integrated design with fewer components, enabling easy installation.
- Automated workflow reduces redundant steps, cutting down working hours and intensity.
- USV draft only 9cm, accessing shallow waters unreachable by manned vessels for comprehensive data.
- Remote control eliminates personnel wading risks, ideal for surveys in hazardous or toxic waters.
- GNSS + autonomous navigation ensures consistent accuracy, meeting professional standards.



Efficient and Accurate Operation

Equipped with an 850W x 2 dual propulsion system, it is more conducive to high-speed cruising in high-resistance waters such as fast-flowing and shallow waters, improving operational efficiency...

Integrated GNSS& IMU sensors deliver precise position and attitude data, compensating for hull movement impact. Positioning data available via IMU even with GNSS signal blocked.



Ultra Durable

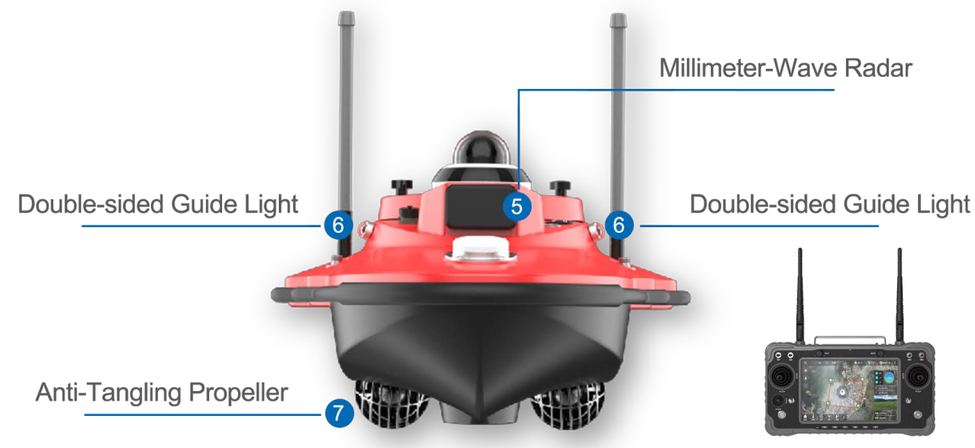
The M10's hull is made of nano-carbon fiber polymer composite material. It withstands impacts from fallen trees and rocks in water, resists cracking even after friction in shallow areas, and maintains high durability in highly corrosive mine pit waters.

Equipped with an automotive-grade lithium battery system, delivering safe, stable, and long-lasting power output for users' field work. A single battery can drive the vessel at 2m/s for 5.5 hours.

Safety First

The M10's propulsors are specially designed for water areas with heavy debris such as mine pits and inland river basins. They prevent entanglement with aquatic plants, mine slag and branches, ensuring the vessel's smooth operation.

Features 40m max-range millimeter-wave radar, it can detects 128 obstacles simultaneously, issues timely collision warnings, automatic obstacle avoidance. Ensures navigation safety in low visibility. Additionally, red and green navigation safety lights on hull sides reduce collision risks with other vessels.



Meets Various Shallow Water Operation Needs

Features a highly compact and lightweight hull with no assembly required. One person can easily carry and load it, access remote survey sites, and it's ready for immediate use upon unpacking.

The M10 has a draft of only 0.09m, suitable for operations in narrow inland waterways, shallow rivers, and coastal shallows inaccessible to traditional vessels.

Dual control modes supporting both autonomous navigation and task execution as well as precise manual remote control (2.5km range, real-time control, mode setting, 360° camera forward-view).

Manual control is more precise in complex scenarios, and autonomous navigation is used in large-area surveys (such as shallow lake terrain), saving more labor and time.