

Alpha Hi

Unmanned surface vehicle

Built-in RTK positioning and orientation system; catamaran brings stronger stability

Alpha Hi Unmanned Surface Vehicle

Alpha Hi is a multi-purpose intelligent USV specially designed for work tasks in rivers, lakes, reservoirs and offshore waters. The hull adopts a double-body modular design, which has the characteristics of corrosion resistance, fast sailing speed, wind and wave resistance, and anti-winding. Unique cabin design, can be equipped with professional measurement and hydrology equipment such as single beam, multi beam, side scan sonar, ADCP, water quality multi-parameter, etc., capable of various tasks

1080P HD images

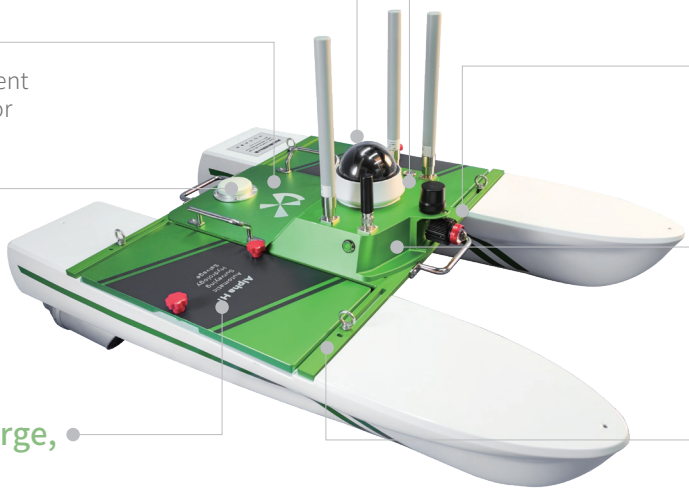
Main Control Center

Positioning, sonar, control, communication are included

Loading

Support various equipment to work simultaneously or independently.

150m Bright Searchlight



Built-in RTK

Millimeter-wave Radar (Optional)

1.5 hours fast charge, long battery life

Slide Rail For Adaptable Width

Convenient To Carry And Transport

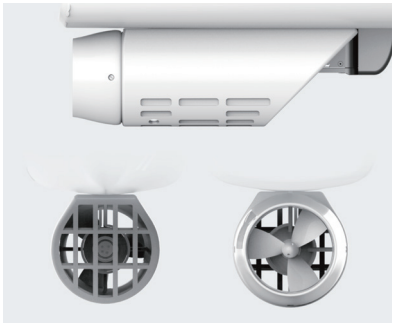
The size of the hull is 1120*760*480mm, which not only takes into account the stability of navigation, but also copes with large currents and rough waters; it is also easy to carry and can be easily put into the trunk of cars.



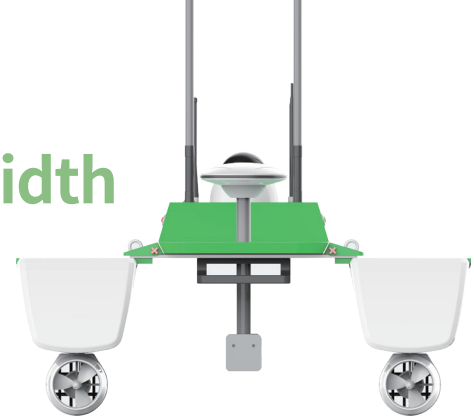


Anti-winding Thrusters

Aerospace-grade alloy blades, ceramic bearings, DC motor, bidirectional anti-weed, anti-winding design

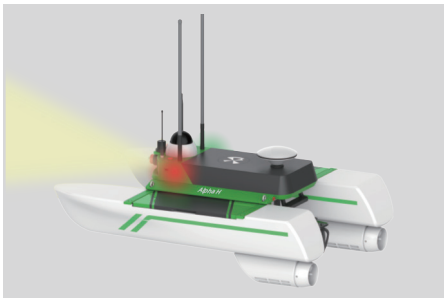


Slide Rail For Adaptable Width Across Lakes And Rivers



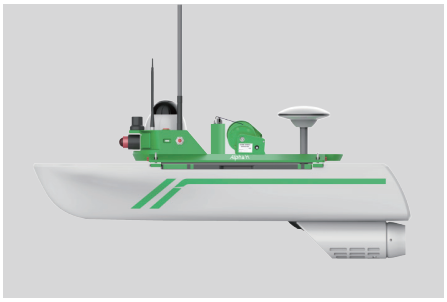
Could Work By Day And By Night

The hull is equipped with xenon navigation lights for safer navigation



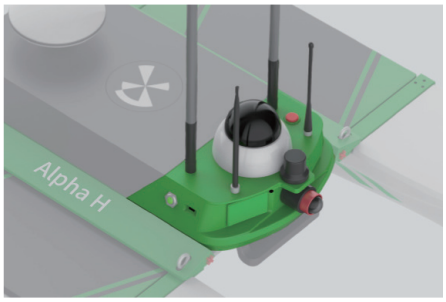
Acoustic Profile Recovery System (Customized)

Sonic profiler recovery system customized for Alpha Hi, remote control, automatic retraction



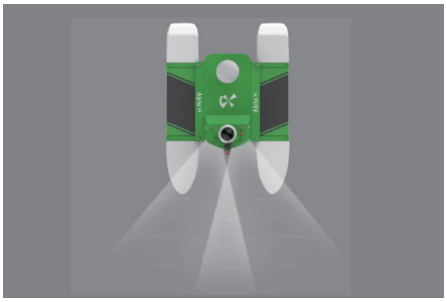
Highly Integrated Center

Airframe integrated RTK, attitude sensor, multi-load control and mechanical control system



Autonomous navigation, intelligent obstacle avoidance (Optional)

Equipped with millimeter-wave radar and vision system, it has omnidirectional environmental perception ability, and can avoid obstacles through active and passive combination



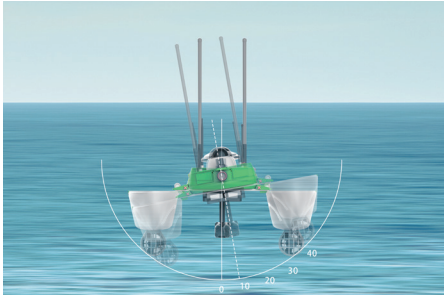
High-performance Remote Control

Over 2km digital image transmission, dual-channel high-definition video, PD fast charging, 15 hours of battery life



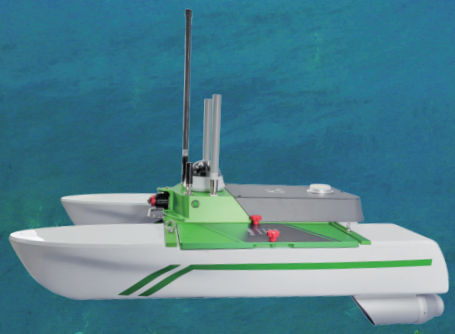
Catamaran provide high stability and ruggedness

Catamaran is highly stable even when encountering strong wind and waves. It has small angle of roll and is adaptable to various waters.



Outstanding loading system

Alpha Hi is the smallest multi-beam load unmanned vehicle on the market so far, the load system of which meet the loading requirements of single beam, multi-beam, side-scan, SVP, ADCP, Multi-parameter water analyzer, integrated water and underwater operations and other tasks. Alpha Hi is widely used in port, waterway engineering, river, water conservancy and water affairs as well as law enforcement inspection.



Single beam echosounder



- Calculation of reservoir capacity
- Underwater topographic mapping
- River cross-section mapping

Typical Depth	0.3~100m/200m
Depth Resolution	1cm
Accuracy	±1cm+0.1%×H

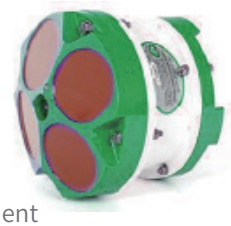
Multi-beam echosounder



- Underwater Monitoring
- Underwater resources surveying
- Underwater 3D topographic surveying

Number of beams	512
Swath coverage	143°
Typical Depth	0.2~150m
Depth resolution	0.75m

ADCP (Acoustics Doppler current profile)



- measurement of waves
- measurement of current
- current monitoring
- Water Resources Management
- Measurement of river flow

Unit	1-128
accuracy	±0.5% ±0.2cm/s
resolution	1mm/s
current measurement range(m/s)	±5(default) ±20(maximum)

Side-scan sonar



- Concealed pipe examination
- Engineering Testing
- Environmental preservation
- Marine Ranch Survey
- Underwater rescue searching
- Underwater pier and structure

Resolution (along track)	0.07m@20m 0.17m@50m 0.26m@75m
Resolution across track	1cm@900kHz
Maximum operating range	75m@900kHz



High-quality navigation provides high-precision measurement.

The excellent navigation control platform and highly stable hull provide high-precision tracks that lead to high-quality measurement results.

Route planning

Route planning by computer or import the navigation file for the unmanned vehicle to complete the task.

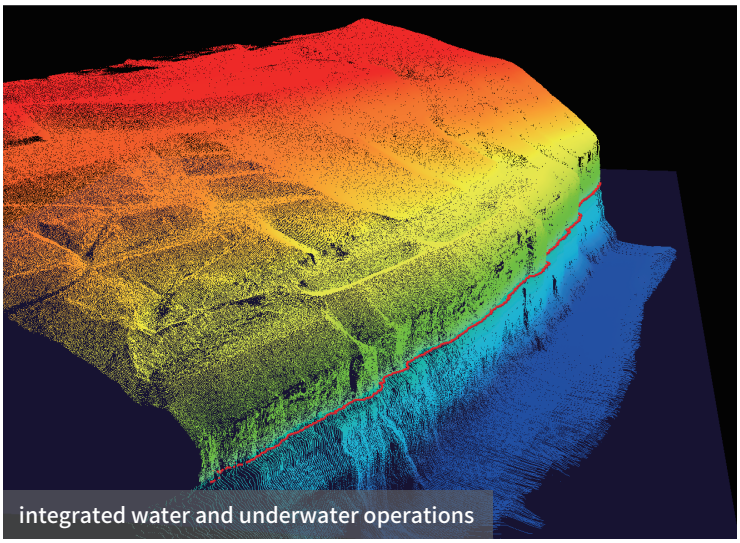
Automatic Measuring

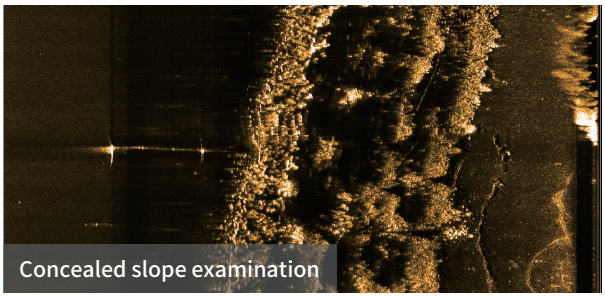
The unmanned ship can work automatically under the guidance of a setting route from the survey coordinate data imported by the central system.

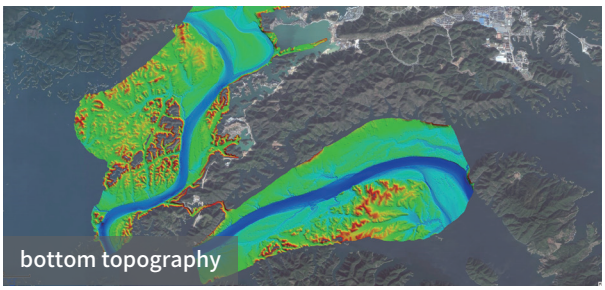
Safe navigation

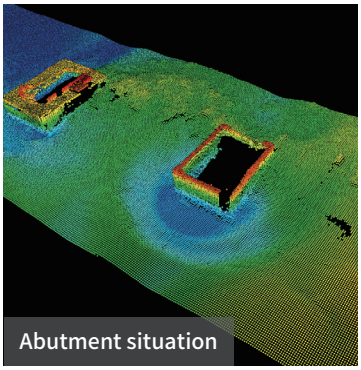
Automatically avoid obstacle;
The ship will return automatically if its main control system work abnormally.Or the operator can call back the ship at once by one press.

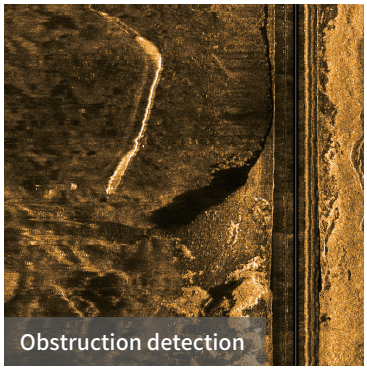
Application

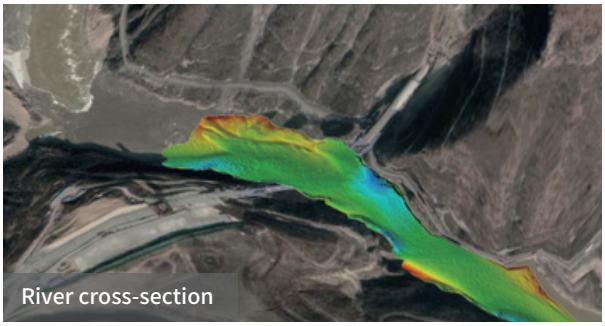

integrated water and underwater operations


Concealed slope examination

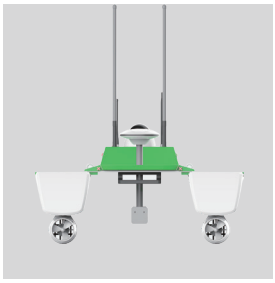

bottom topography


Abutment situation


Obstruction detection


River cross-section

Package includes



- hull
- built-in propeller
- Telescopic unmanned Surface Vessel platform
- automatic driving system
- built-in RTK
- built-in HD camera
- built-in single-beam echosounder
- Dual rocker Android LCD remote control
- high quality water-proof Lithium-ion power supply
- Charger
- communication antenna
- GNSS antenna
- Motor cable
- Carrying Case
- Life jacket
- Tool kit
- Instruction manual

Technical Specification

Hull	Folded	1120×520×480mm (length × width × height)
	Unfolded	1120×760×480mm(length × width × height)
	Material	UV resistance , wear-resistant hull; Aluminum alloy telescopic pole
	Hull form	500-820mm extendable catamaran
	Net weight	18kg
	Maximum load	30kg
	wind and wave-resistant	wind(level 5)、Wave(level 4, wave height2.5m)
Working Mode	Single beam	Support
	Side scan sonar	Support
	ADCP	Support
Obstacle avoidance	Video	All heading
Power	Motor	Brushless DC motor
	propeller	3-piece aviation aluminum alloy paddle
	protection	double protection from aquatic plants and fishing
	speed	net cruise 2m/s, top speed 4m/s
	Power	standard: 2×22.2V 666Wh Intelligent Lithium-ion battery
	working time	3 hours for 1 battery
	Battery installation	Removable
Position and Orientation System	Satellite system	GPS: L1C/A, L1C, L1P, L2C, L2P, L5、 BDS: B1I, B2I, B3I, B1C, B2a、 GLONASS: G1, G2, G3、 Galileo: E1, E5a, E5b、 QZSS: L1C/A, L1C, L2C, L5
	RTK	Built-in GNSS Receiver
	Positioning accuracy	horizontal:±(8+1×10^{-6}D) mm, vertical:±(15+1×10^{-6}D) mm
	orientation accuracy	0.15°(Optional 0.08°)
	Orientation System	High-precision three-dimensional electronic compass
		Two GNSS Antenna Orientation
Communication	RTK communication	built-in radio, 4G network
	video	5.8GHz
	Remote	5.8GHz
	communication distance	remote distance up to1KM (typical environment)

*The above technical parameters are for your reference.
The company reserves the right to change the design and planning of the product based on the actual product

Guangzhou Alpha Surveying Technology Co.,Ltd.

NO.203 Kezhu Road,Science City Huangpu District, Guangzhou
www.alpha-surveying.com
info@alpha-surveying.com
+86-20-82108930

alpha surveying