HydroBoat 990

Vehicle Specifications

Hull dimension (L × W × H)	1035mm*560mm*345mm
Material	Carbon fiber, Rubber Bumper
Anti-wave & Wind	3rd wind level & 2nd wave level
Waterproof	IP67
Indicator light	Two-color light
Camera	360° omnidirectional video
Anticollision sensor	Detection distance 5-30 meters
Propeller type	Brushless DC
Direction control	Veering without steering engine
Maximum speed	6m/s
Battery endurance	10 hours@1.5m/s(two batteries)

Controller

System	Android 7.0, storage 5GB; SD Card supported
Software	SLHydro USV, an Android software for bathymetric surveys
Display	7 inches
Waterproof	IP67
R/C communication	2.4 GHz
Transmission range	Bridge Mode: 1.3 km（RF point-to-point in real-time） 4G Mode：Unlimited Distance （4G network transmission）
Navigation mode	Manual or Auto-Pilot

GNSS Performance

Satellite system	BDS B1/B2/B3, GPS L1/L2/L5, GLONASS L1/L2, Galileo E1/E5
Channel	432
Single point position(RMS)	±0.5m + 1 ppm
DGNSS positioning accuracy	±0.25m + 1 ppm
RTK Positioning accuracy	H: ±8mm + 1 ppm RMS　V: ±15mm + 1 ppm RMS
Heading accuracy	0.2° @1 m baseline
Data formats	RTCM V3.0/3.2 input　NMEA 0183 output　NTRIP, TCP/IP

Single Beam Echo Sounder

Depth range	0.15m - 200m
Accuracy	±0.01m + 0.1% x D (D is the depth of water)
Frequency	200 kHz
Beam angle	5±0.5°

Software

SLHydro USV	Project management: support project creation, application etc. Coordinate system: built-in coordinate system worldwide, support coordinate transformation and grid Mission planning: planning waypoints/lines, setting boat speed etc. Auto-pilot: auto course and auto return Echogram: automatic tracking depth, echo real-time display Data acquisition: real-time acquisition of positioning and bathymetry data
SLHydro Sounder	Data post-processing software. Support import SLHydro USV project, analog signal superimposed digital bathymetry, feature point sampling, data correction, and output various of data formats

Headquarters:
Järnbrotts Prästväg, 2
421 47 Vastra Frolunda
Goteborg, Sweden
info@satlab.com.se

Regional Offices:
Warsaw, Poland
Jičín, Czech Republic
Ankara, Turkey
Scottsdale, USA
Singapore
Hong Kong, China
Dubai, UAE

www.satlab.com.se

SATLAB GEOSOLUTIONS

HydroBoat 990

An Android-powered USV system for bathymetric surveys

Made by Sweden

HydroBoat 990

USVs (Unmanned Surface Vehicles) are widely used in hydrographic surveys, environmental monitoring, and water search and rescue. Among them, hydrographic surveying is the most used and developed field. When a hydrological survey is facing many unknown waters, it usually takes a long time navigation and requires high accuracy, which poses great challenges to the safety and health of surveyors.

The hydrographic survey USV combines various complex systems to offer users the simple and efficient operation mode. With double hull design, HydroBoat 990 USV integrates the GNSS system, bathymetry system, communication system and autonomous navigation system, which ensures both efficient surveying and safe navigation.

Top 3 Challenges about USV

1

Usability

It is complicated and a waste of time repeating the unnecessary operational processes in many instances.

2

Functionality

It is applicable to various environments with abundant functions which makes the surveying more convenient.

3

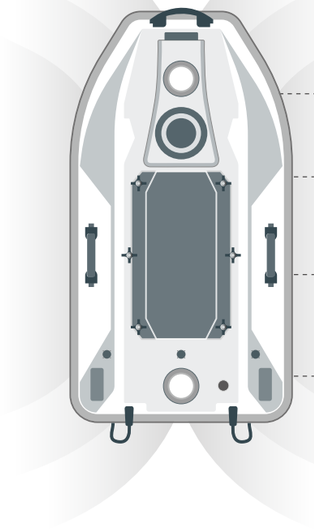
Reliability

It is important to avoid USV from sinking and wrecking. Besides, every part should be maintained in good quality for such a complex system.

An Android-powered USV system for bathymetric surveys

HydroBoat 990 bathymetric USV system

System of efficiency and reliability



1. Supported by auto and manual mode in the pilot system, safeguarded by radar's obstacle avoidance and hovering system.
2. Stable hull design for standing waves, IP67 waterproof, and rugged body with collision protection.
3. One-click connection with a powerful controller makes the USV a direct-to-go system, operating at ranges of 2km.
4. The pioneering Android app for hydrography and pilot control, makes surveying easier and faster with one intelligent controller.

Usability

- Operate in One Versatile app
- Time-saving Turn on and Survey
- Network without Base Station
- Integration with GNSS and SBES
- Connection with Indicator Lights

Functionality

- Stable Hovering Function
- Avoid Collision with Obstacles
- Real-time Video Patrol
- 4G Remote Control
- Auto-reverse in the Shallows

Reliability

- IP67 Double Hull
- Anti-Collision & Wear-Resisting
- IHO Standard & CE Certification
- Automotive Grade INS Integration
- Onboard Water Depth Logging