

HydroBoat 990

Android-powered USV system for bathymetric surveys



USVs (Unmanned Surface Vehicles) are widely used in hydrographic surveys, environmental monitoring, and water search and rescue. Hydrographic surveying is the most demanding of these applications: it requires long navigation times in often unknown waters and high positioning accuracy, posing significant challenges to the safety and health of field operators.

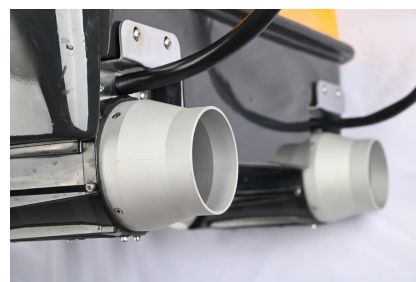
HydroBoat 990 integrates a GNSS/RTK positioning system, a 200 kHz single-beam echo sounder, a communication system and an autonomous navigation system into a single compact double-hull platform, ensuring both efficient data acquisition and safe, reliable navigation.



Front view — dual waterjet thrusters



Brushless waterjet propulsion unit



Dual propulsion assembly

Applications

Typical survey environments include rivers, lakes, reservoirs, hydroelectric basins, coastal areas, ports and canals. The system is also suited to environmental monitoring, sub-bottom profiling support and search-and-recovery operations in hazardous or inaccessible water bodies.

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Advantages

One versatile app	A single Android application covers mission planning, bathymetric data acquisition, vessel monitoring and coordinate conversion.
Turn on and survey	One-click connection between controller and vessel; the system is ready to operate within seconds, minimising setup time in the field.
Stable hovering function	The USV can hold a fixed position autonomously, enabling accurate point measurements and safe operations in confined areas.
Obstacle avoidance	Radar-based anti-collision sensor with 10–30 m detection range; auto-reverse when entering shallow water to prevent grounding.
IP67 double hull	Carbon-fibre hull with rubber bumper; rated for wind force 3 and wave force 2, with IHO Standard and CE certification.
Automotive-grade INS	Heading accuracy 0.2° at 1 m baseline; INS accuracy 2.1°/h, <1 m/20 s.

Technical Specifications

Hull dimensions (L × W × H)	1035 × 560 × 345 mm
Weight (excl. batteries)	20 kg
Material	Carbon fibre, rubber bumper
Weather resistance	Wind force 3 / Wave force 2
Waterproofing	IP67
Indicator light	Two-colour
Camera	360° omnidirectional video
Anti-collision sensor	Detection distance 10–30 m
Propulsion	2 × brushless waterjet (no rudder)
Direction control	Differential thrust
Maximum speed	6 m/s
Battery endurance	5 h at 1.5 m/s per battery — 2 batteries included
Batteries	28.8 V / 34.3 Ah (each)
Control system	Android — SLHydro USV software
Control range	1.3 km on 2.4 GHz / Unlimited on 4G
GNSS constellations	GPS, BDS, GLONASS, Galileo

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RTK accuracy (H)	±8 mm + 1 ppm RMS
RTK accuracy (V)	±15 mm + 1 ppm RMS
Heading accuracy	0.2° @ 1 m baseline
INS accuracy	2.1°/h, <1 m/20 s
GNSS update rate	200 Hz
Echo sounder frequency	200 kHz
Depth range	0.15 – 200 m
Depth accuracy	±0.01 m + 0.1% × D
Beam angle	5° ± 0.5°
Certifications	IHO Standard, CE

Accessories

HydroBoat 990 unit	Main USV with built-in single-beam echo sounder.
2.4 GHz antenna	RC-NJ-2425-417 mm.
4G antenna	LTE-NJ-0827-320 mm.
UHF antenna	UHF-460-TNC-300 mm.
Battery charger	Universal charger, input 100–240 V, European plug.
Batteries	2 × 28.8 V / 34.3 Ah with individual transport cases.
Android controller box	Controller with Type-C charger and shoulder strap.
Propeller protection grids	2 × metal grid to prevent vegetation entanglement.
Tool kit	Pliers, hex keys M1.5–M10, forceps.
Transport case	Hard-shell rigid case, 124 × 68 × 53 cm.
SLHydro USV software	Android boat control software (pre-installed).
SLHydro Sounder software	Windows post-processing software (download).

Product sheet prepared by Novatest S.r.l. Data subject to change without notice.

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