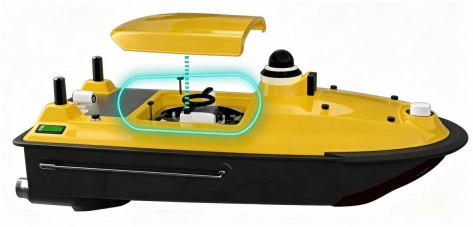
Uscan-USV-8

Professional-Grade & Full-Functional Platform

Payload Bay / L1.28m / 12kg(hull only)



Overview

Engineered to tackle challenges of capability and comprehensiveness, Uscan-USV-8 is serving as a high-performance aquatic platform for specialized projects that demand robust data fusion and extended operational endurance.

Featuring an optimized 1.3-meter M-shaped hull, the Uscan-USV-8 platform offers superior payload capacity and navigation stability, enabling the simultaneous integration of multiple sensors such as multibeam echosounders, Acoustic Doppler Current Profiler (ADCP), and sub-bottom profiler (SBP), side-scan sonar (SSS), functioning as a mobile laboratory on water surface.

Designed for nearshore operations within 200-meter water depths, Uscan-USV-8 possesses a high resistance rating of wind and wave, maintaining stable operation and safe navigation even under complex work conditions to ensure efficient mission completion. With its strong compatibility, all-weather operational capability, and high reliability, Uscan-USV-8 stands as the ideal solution for large-scale and complex surveying and monitoring tasks

Key Applications

- Hydrographic Surveying & 3D Bathymetry
- Underwater Infrastructure & Dam Inspection
- Hydrological Survey & Emergency Search
- Environmental & Water Quality Monitoring
- Underwater Asset & Pipeline Inspection

Safety & Automatic Return Functions

- Low-Battery Return
- Tracking Return
- Auto Backing
- Disconnected Return
- Obstacle Avoidance

CHINA SONAR
Where Sound Meets Oceans

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Technical Specifications

Hull	
Hull Dimension (L*W*H)	1.28*0.58*0.43 m
Material	Macromolecular Polyester Carbon Fiber&Kevlar
Shape	M-shape Monohull
Draft	10cm
Weight	12kg(hull only) 30.1kg(w/o battery) 37.5kg(w/ 2 batteries)
Maximum Payload	50kg
Anti-Wind&Wave	4th-Level Wind, 3rd-Level Wave
Waterproof	IP67
GNSS	Dual GNSS Antennas (positioning&Heading)
Indicators	Two Indicators: GNSS Positioning; Status&Controller Connection
Camera	360° Night-Visible Omnidirectional Camera &AI Camera(Optional)
Angle Range and Distance of Obstacle Avoidance	Horizontal & Vertical anger:120°*120°; Distance:0.1~20m (can be upgradedto 40m maximum)

Power	
Power type	Electric
Motor type	Brushless motor
Steering type	Differential Steering, Support Reversing
Maximum Motor Power	1100W
Motor speed	4000RPM
Motor Installation	Pluggable
Anti-Clogging Design	Semi-Embedded Ducted Thruster: Weed-Resistant & Easy-Clean
Battery Specification	33.6V 25Ah*2 Rechargeable Lithium Battery; 21700mAh per Battery
Power Supply	Single-Battery Operation; Dual-Battery Extended Runtime
Battery Replacement	Hot-swap, 2h Fully Charged
Battery Endurance	3h@2m/s ; 7h@1.5m/s
Maximum Speed	6m/s
Operating Range	38km

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Controller	
Screen Size	27.7*13.8*9.6cm
Screen Display	Touch-Sensitive Screen & Sunlight-Visible Display
Resolution Ratio	1920*1200
screen Luminance	1200nit
Internal Storage	4GB RAM + 64GB Storage
Controller System	Android
Communication Frequency	2.4 GHz
Communication Range	Data Transmission in 3km via 2.4G; Unlimited Distance via 4G Communication
Battery Capacity	20000mAh
Runtime	8h
Controller Charger	18W Type-C Fast Charging in 2h
External Interface	USB,Type-C,SIM Card Slot、TF Card Slot
Quick Operation	One-Click Switch: Manual, Auto, Hover, Return; Quick Buttons: Route Planning, Safety Settings, Parameters Managing, Status Checking; 360° Coverage: Full-Control Camera Dial

I-Sail	
Software System	Android
Update	Over-the-Air (OTA) Push&Update

Echosounder	
Frequency	200KHz
Beam Angle	8°
Sounding Range	0.15-200m(Optional Longer)
Resolution Ratio	8mm
Sounding Accuracy	±1cm+0.1%D (D is depth value of water)
Supply Voltage	9V-28V
Sound Velocity Adjustment	0m/s~1700m/s
Power Consumption	5~10W
Waterproof&Dustproof	IP67

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System	
Operating System	Linux
Base Station	UHF&Ntrip
Data Transmission	4G&2.4G&UHF
Controller Communication	4G&2.4G
SIM Card Slot	Nano Card Slot
Interface	2*RJ45 port；2*RS232 serial port；2*RS485 serial port
Storage	64GB Storage
Waterproof&Dustproof	IP67
Operating Mode	Manual&Auto
USV control	Multiple Route Planning； Automatic Navigation； Breakpoint Continuation； Real-time Trajectory Display； Automatic Obstacle Avoidance； Remaining Mileage Display； 360° Gimbal Camera； Dual Joysticks(Physical and Virtual)
Data Collection	Coordinate Conversion； Real-time Depth Value/Echo Signal/Water Quality Data/Sonar Imagery Display； Recording Points Control; Sonar parameter Management
Safety System	System Self-check & Anomaly Alert, Abnormal Cruising Speed Alert, Low-Battery and Signal-Loss Alert, Payload-Malfunction Alert, Near-Obstacle Alert, Near-Shallow Alert, One Button Auto Return
Data Post-Processing	Bathymetric Echo Stacking for High-Accuracy Data, Attitude correction, Targeted Feature Point Extraction, Point Modification and Addition, Multi-Format Data Import(dxf. kml.) & Export(txt. csv. dat. dxf.)

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Positioning	
Satellite System	BDS: B1I, B2I, B3I GPS: L1C/A, L2P(Y), L2 Galileo: E1, E5b GLONASS: L1, L2 QZSS: L1C/A, L2 SBAS: L1C/A
Cold Start	<30s
Initialization	<5s(D<10km)
Single-point Positioning (RMS)	Horizontal:1.5m; Vertical:2.5 m
DGNSS Positioning (RMS)	Horizontal: 0.4m + 1 ppm; Vertical: 0.8m + 1 ppm
RTK Positioning (RMS)	Horizontal: ±8mm + 1 ppm; Vertical: ±15mm + 1 ppm
Ntrip Protocol	Support CORS, NTRIP Client
Radio Protocol	TT450, Transparent
Heading Accuracy	0.1°@1m Baselin
Inertial Navigation Accuracy	6 °/h ,<1m/20s
IMU Update Rate/Frequency	200Hz

Expansibility	
Expandable Payload	Multi-beam echosounder, Acoustic Doppler Current Profiler(ADCP), Sub-bottom Profiler, Side-scan Sonar, Dual-frequency Single-beam echosounder, Multi-parameter Water Quality Meter, Water Quality Sampler, Total Phosphorus and Total Nitrogen (TP&TN) Analyzer, Gas Detector, Laser Radar, Optical Camera, (Open SDK to Extend and Customize)

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USV Structure & Component Diagram

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iSail Software & U- Controller Handheld Terminal

iSail: Intelligent Control for USV Operations

iSail is an advanced Android-based software for controlling our USV and post-processing data. It processes operational commands and sensor data, executes control algorithms, and drives the USV to perform corresponding actions.

U-Controller: Professional USV Controller

- Sunlight-Readable 12" Touchscreen
- 2h Fast Charge for 8h Work Hours
- Quick Buttons for Key Functions