

SOFTWARE



iSail is a display, control, and post-processing software. As the core control system of the unmanned vessel, it receives operational commands, processes sensor data, executes control algorithms, and drives the vessel to perform corresponding actions. Supporting multiple measurement modes, iSail enables the USV to carry out tasks automatically and adapt to various scenarios. It features autonomous perception, intelligent decision-making, and multi-level automatic control, ensuring safe and efficient operation of the vessel even in complex environments.

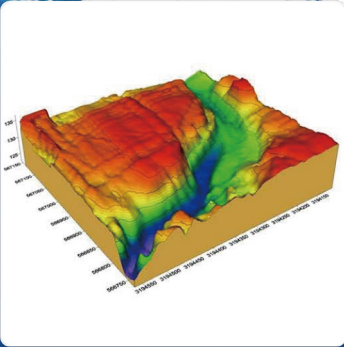
APPLICATION



Multi-parameter Water Quality Survey



Subsurface Pipeline Inspection



Hydrographic Mapping

SPECIFICATIONS

Vessel Specifications	
Hull Dimension	980 x 520 x 254mm
Material	High-Molecular Carbon Fiber, Kevlar Fabric
Hull Shape	Fully Curved M-Shaped Monohull
Draft	8.5cm
Weight	Empty 7 kg, Loaded 30 kg (Including Base Station, Controller, and Battery)
Maximum Payload	35 kg
Weather Rating	3-class Wind 2-class Wave
Water Proof & Dust Proof	IP67
Safety Protection Design	Automatic Return in Shallow Water; 360° Panoramic Camera, Automatic Obstacle Avoidance, Forward ±120° Field of View; Detection Range 0.1-20m (Optional 40m Module Available), Full-Body Bumper Strip, Reinforced Hull Structure, Dual Redundant Anti-Collision Design
Equipable Devices	Optical Cameras, Lidar, Echo Sounder, Water Quality Sensors, Meteorological Sensors, Multi-Parameter Probes, Automatic Water Sampler, Side-Scan Sonar, Etc. SDK Open for Secondary Development

Power	
Motor	Brushless DC Motor
Propeller	Brushless Direct Drive, Foldable Propeller
Rated Power	900 W
Rated Speed	5300 RPM
Motor Protection	Semi-Submersible Design; Waterproof Shaft Seal with Circulating Cooling; Anti-Entanglement Design; Debris-Resistant
Battery	33.6V 25Ah × 2 High-Energy-Density Lithium Batteries (Supports Rapid Battery Replacement Without Power Shutdown)
Endurance (Time)	One Battery Pack: 3h@2m/s, 7h@ 1.5m/s
Endurance (Distance)	Economical Cruise Range 38 km
Navigation Speed	7 m/s; Supports Safe Navigation at 4 m/s in Turbulent Waters

Remote Controller	
Dimensions	277 × 138 × 96 mm
Display	Industrial-Grade Display, Sunlight-Readable, 1920 × 1200
Memory	4 GB RAM, 64 GB ROM
Frequency Band	2.400-2.483 GHz
Communication Range	Effective Distance Up to 3 Km, Supports 4G Remote Control
Battery Capacity	20,000 mAh
Operating Time	8 h
Charging	18W Fast Charging, Standard Type-C Port

Unmanned Surface Vessel	
Interfaces	PPM, RJ45, USB, Type-C, SIM Card Slot, TF Card Slot
Control Functions	One-Button Power On/Off, Auto/Manual Sailing, Cruise/Patrol/Navigation, Route Planning, Security Monitoring, Vessel/Remote Control Information Synchronization, Video Display & Recording, Main Video Window Swap, One-Click Video Screenshot
System	Linux

Communication	
Basic Communication	Radio (Optional) & Network & CORS
Data Communication	4G & 2.4G & Radio (Optional)
Video Communication	4G & 2.4G
SIM Card Slot	Nano Card Slot
Interfaces	2×RJ45 Ethernet Ports, 2×RS232 Serial Ports, 2×RS485 Serial Ports
Control Mode	Manual & Automatic

Positioning	
Signal Tracking	GPS: L1C/A, L2C, L2P BDS: B1I, B2I, B3I GLONASS: G1, G2 Galileo: E1, E5b QZSS*: L1C/A, L2C SBAS*: L1C/A
Cold Start	<30s
Initialization Time	<5s (D<10km)
Single Point Positioning (RMS)	≤ 1.5m (Horizontal) ≤ 2.5m (Vertical)
DGNSS Positioning Accuracy	40cm+1ppm (Horizontal) 80cm+1ppm (Vertical)
RTK Positioning Accuracy	±8mm+1ppm (Horizontal) ±15mm+1ppm (Vertical)
CORS Correction Source	Supported CORS Network
Radio Differential	Supports TT450 protocol / Transparent Transmission Protocol (TTP)
Heading Accuracy	±0.1° (1m at 1m Baseline)
Roll / Pitch Accuracy	6°/h, 20s Rotation Time, Supports Dynamic Self-guided Positioning
IMU Update Rate	200Hz

Depth Measurement	
Frequency	200KHz
Waveform	8°
Measuring Range	0.15-200m (Adjusted for Range)
Resolution	8mm
Stability	±2cm (CEP.95@10m)
Measurement Rate	±1cm+0.1% D (D=Water Depth)
Power Supply	9V~28V
Speed	0m/s~1700m/s
Power Consumption	5~10W

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ComNavTech



SV300

Unmanned Surface Vessel

INTRODUCTION

SV300 Unmanned Survey Vessel adopts a highly integrated main control design, featuring a built-in high-precision GNSS positioning system, depth sounder, and vessel control software, streamlining your surveying operations. Equipped with intelligent vessel control system, it offers a high level of automation, strong disturbance resistance, and excellent hull expandability. It can be fitted with echo sounders, side-scan sonar, water quality sensors, and other instruments, enabling efficient and accurate automatic collection, processing, and analysis of underwater terrain, multi-parameter water quality, and specific target information.



Vessel Battery Status

Integrate GNSS Antenna

Integrated Master Control Design

Obstacle Avoidance Radar System

IP67

IP67 Dustproof & Waterproof

Quick Installation

High-speed Propeller with Long Life

Auto Measurement of Cross Section & Line

FEATURES

Uninterrupted Positioning with GNSS+IMU

The SV300 is outfitted with ComNavTech's dual-antenna GNSS module, featuring full-constellation multi-frequency tracking. This enables precise positioning and navigation. With an integrated IMU, it ensures continuous availability of position data, even during temporary GNSS signal loss.



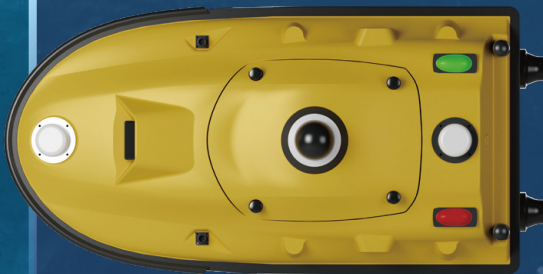
360° Night Camera

With 360° real-time camera technology, you can immerse yourself in the environment, enhancing navigation safety.



Streamlined Design, Effortless Deployment

SV300 features streamlined design that makes transportation simple and efficient. With no assembly required, it is ready to operate straight out of the box, ensuring fast and hassle-free deployment in the field.



Millimeter-wave Radar Automatic Obstacle Avoidance

With its advanced radar technology, the obstacle avoidance radar system ensures safe operations by detecting obstacles and providing timely alerts to users, allowing for quick and effective navigation even in low-visibility conditions.



Automotive-grade Dual Lithium Battery Pack

Equipped with a balanced, automotive-grade dual lithium battery system, SV300 delivers reliable, long-lasting power. Its robust endurance ensures stable performance, making it perfectly suited for extended field operations.



Versatile Equipment Compatibility

SV300 supports an expandable payload platform that allows integration of various sensors and instruments.

