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Apache 3 Pro

Sean Cleveland

Apache 3 Pro

Overview

The Apache 3 Pro is a compact, USV designed for autonomous bathymetric survey in shallow water. The hull is double-layered carbon fiber. The IP67 rating guarantees dust and water protection for the on-board components. The semi-recessed motor reduce water resistance, improves endurance, and allows speeds up to 6m/s (13mph). The Apache3 Pro GNSS RTK + Inertial navigation system ensures highly accurate measurements even when the GNSS signal is temporarily interrupted. The built-in CHCNAV D270 echosounder provides the most reliable and accurate depth measurements at all times.

GNSS and INS Sensors

The Apache 3 Pro ensures consistent accuracy even when navigating under bridges. If the GNSS signal is lost, the USV maintains its course by automatically navigating under bridges and continuously providing high-precision position data. Accurate position and attitude data also compensate for the effects of hull sway on survey results. Tight integration of GNSS and INS sensors eliminates data outliers and ensures the reliability of the information collected.

GNSS and INS Sensors Specifications

- Satellite System: BDS B1/B2, GPS L1/L2, GLONASS L1/ L2, Galileo E1/E5, QZSS
- Channel: 432
- RTK Positioning: Horizontal: ±8 mm + 1 ppm / Vertical: ±15 mm + 1 ppm
- Heading Accuracy: 0.2 º @ 1 m baseline
- Inertial Navigation Stability: 6 º/ h (Accuracy attenuation 1 m after 20 s)
- IMU Update Rate: 200Hz

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REAL-TIME DATA FOR GREATER PRODUCTIVITY

A combination of SIM, and network bridge with automatic switching capabilities ensures reliable communications. In addition, cloud-based remote monitoring is seamlessly integrated to provide real-time information on the status of the Apache 3 Pro, enhancing its control and security. The use of 4G and 2.4G networks bridge eliminates distance limitations and enables efficient data exchange in a variety of operating environments.

SINGLE-BEAM ECHOSOUNDER

APACHE 3 Pro comes standard with D270 single beam echo sounder. It is portable and integrates a built-in water temperature sensor to enable realtime correction of sound velocity in response to temperature changes, resulting in superior depth measurement accuracy.

- Data Type: NMEA, SDDPT/SDDBT
- Sounding Range: 0.49'-656.17'
- Beam Angle: 6.5° ± 1°
- Waterproof: IP67
- Water Temp Sensor: -67F to 212F

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Motor

The semi-recessed motor and innovative internal rotor motor design provide the APACHE 3 Pro with a shallower draft, improving the USV's ability to navigate in different water depths. The motor design provides enhanced protection, reducing the risk of damage and ultimately extending the motor's service life.

- Battery Endurance: 2 - 3 h @ 2.2mph (running on a 2 battery sets)
- Replacement: Support Hot Swap
- Maximum Speed: 13.4mph
- Auto-return while low battery or loss of signal
- Draft: 0.29'

Obstacle Avoidance & 360° Camera

The APACHE 3 Pro comes standard with a millimeter-wave obstacle avoidance system to detect obstacles within a wide 110° angle ahead. When it encounters an obstacle, the USV autonomously charts a detour course to navigate around the obstacle, effectively minimizing the potential risk of collision damage during operation.

- Millimeter Wave Automatic Obstacle Avoidance
- Avoidance Range: 0.75' ~ 131'
  Horizontally & vertical angle: 112° x 14°
- 360° Omnidirectional Video

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Lightweight Design

The APACHE 3 Pro is constructed from macromolecular polyester carbon fiber and Kevlar glass fiber, resulting in a remarkably light weight of only 22lb (excluding sensors). This design allows a single operator to effortlessly manage a variety of remote deployment scenarios, ensuring versatility and ease of use in a wide range of operating conditions.

- Hull Dimension(L✕W✕H): 3.4' x 1.8' x 1.3'
- Hull Design: Triple-Hull Macromolecule Polyester
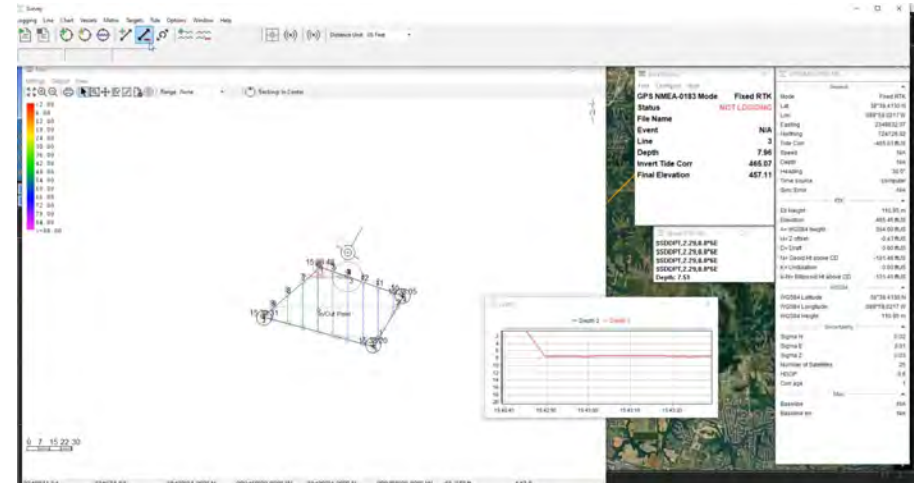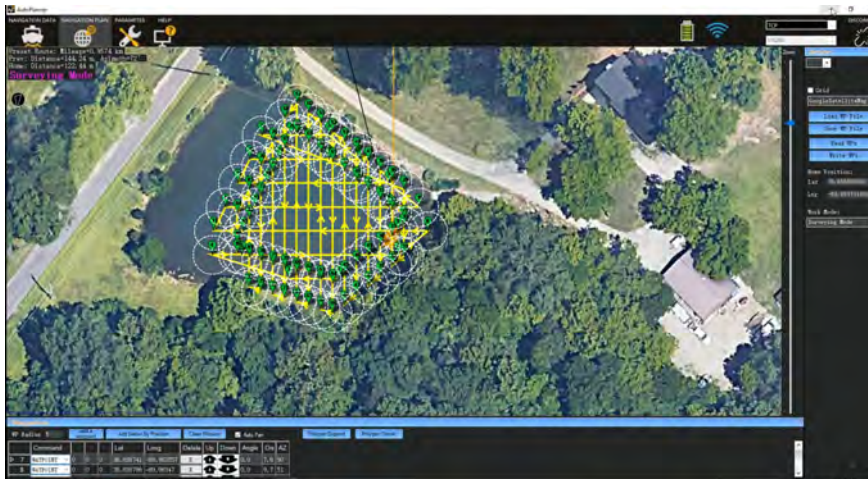Carbon Fiber
- Waterproof: IP67
- Max Payload: 66lb

AutoPlanner and HYPACK Echo

AutoPlanner

- Onboard navigation software
- Navigation data
- USV parameters

HYPACK Echo

- Collection and data processing software
- Single beam echosounder (SBES) technologies
- Supports mining operators and military surveyors
- Built on the same core as HYPACK®

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HYPACK Echo Data Processing

Apache 3 Pro Kit

- USV
- Batteries and Chargers
- Network Bridge
- Tool Kit
- Remote Controller

- USV Hard Case
- AutoPlanner
- HYPACK Echo
- Backpack
- 12 month warranty on haul. 6 month warranty on cables, motors and batteries

Thank You