

APACHE 3

Cost-Effective Single Beam USV

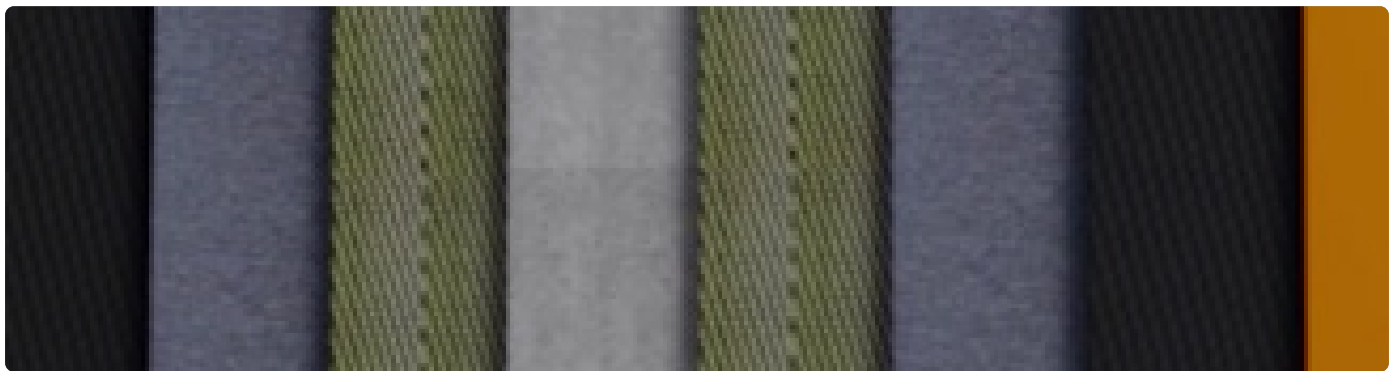


► Highlights

The APACHE 3 is a portable, shallow-draft marine drone equipped with a single-beam echo sounder for bathymetric surveys of lakes, inland rivers, and coastal areas. It features seamless 4G communication, dual GNSS for positioning and heading, an IMU sensor, and high-efficiency motors. The APACHE 3 autonomously follows pre-set routes, collecting accurate data even in challenging current and flow conditions.



► Rugged Hull Design



The APACHE 3 USV features a one-piece molded carbon fiber hull with 10 MPa strength and 60% improved impact resistance. A reinforced aluminum cover increases structural durability, while a 30% lighter design allows for easier single-person transport and deployment.

► One-man Operation



With a 7 kg hull and 1 m length, the compact and lightweight APACHE 3 is easy to transport by car to remote survey sites. It can be operated by one person, increasing measurement efficiency and reducing labor costs.

► Powerful Propulsion



The APACHE 3 is equipped with an 800 W motor capable of reaching 7200 RPM, enabling a top speed of 6 m/s. Its battery endurance allows up to 7 hours of continuous operation at a cruising speed of 1.5 m/s. Additionally, hot-swappable batteries support uninterrupted operation in the field.

► Highlights



Lightweight

Only 7 kg and 1 m length for easy transport and operation.



GNSS+INS Positioning

Precise positioning and heading for accurate surveys.



4G Communication

Reliable data, video, and RTCM corrections.



Android OS

Fully integrated with advanced features.

► High-accuracy Survey



Integrated GNSS and IMU sensors provide accurate position and attitude data, compensating for hull motion in survey results. Its next-generation bathymetric algorithms support adaptive parameter adjustments, ensuring reliable performance in dynamic riverbeds and diverse aquatic environments.

► Easy-to-use Android Software

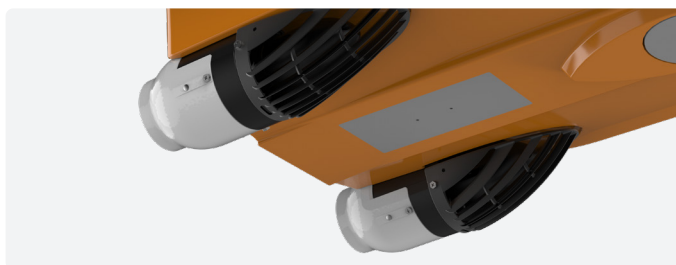


The APACHE 3's remote controller comes pre-installed with the Android-based EasySail software, removing the need for external computers. The software includes real-time video transmission, parameter monitoring, and an integrated suite for path planning, data logging, and processing.

► Use Cases



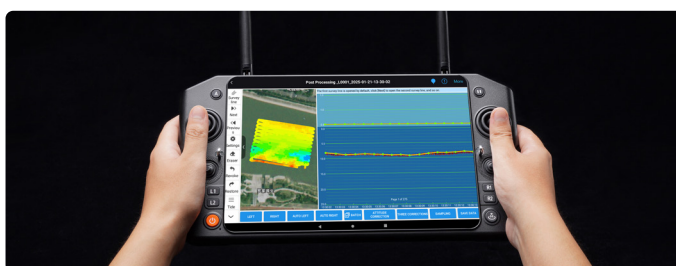
Motor



Reinforced Aluminum Alloy Cover



360° Camera



Android Remote Controller

SPECIFICATIONS

► Physical

Hull Dimension (L x W x H)	1080 mm x 555 mm x 380 mm
Material	High strength, high modulus carbon fiber
Process	HPT one-piece molding
Weight (w/o battery and antenna)	20 kg
Maximum Payload	35 kg
Anti-Wave & Wind	3 rd wind level and 2 nd wave level
Hull Design	M-type triple-hull
Waterproof	IP67
Quick Transport	Removable land-assist transport wheels
Static Draft	10 cm
Indicator Light	Two-color (positioning and differential signal)
Camera	360° omnidirectional video
Obstacle Avoidance Distance & Range	0.2–40 m (H: 112°, V: 14°)

► Propulsion

Propeller Type	Brushless DC
Direction Control	Veering without steering engine
Rated Motor Power	1000 W
Maximum Motor Speed	7200 ± 5% RPM
Motor Installation	Pluggable
Li-ion Battery Capacity	32.4 V, 23.1 Ah
Battery Endurance	7 h @1.5 m/s (1 battery set, expandable)
Power Supply	Single/dual balanced battery support
Battery Replacement	Hot swap supported
Charging Time	3 h
Maximum Speed	6 m/s

► Remote Control

Dimension (L x W x H)	350 mm x 195 mm x 101 mm
Display Screen	10-inch
Resolution Ratio	1920 x 1200
Internal Storage	RAM: 4 GB, Storage: 64 GB
Battery Endurance	5 h
Communication Frequency	2.4 GHz
Peripheral Interface	USB, Nano SIM, TF card (up to 128 GB), Type-C

► Communications

Data Communication	Standard 4G and Remote control
Remote Control Range	1.5 km (Remote) ⁽¹⁾ ; Unlimited (4G)
SIM Card Slot	Nano SIM
Reserved Interface	2x RJ45 ports, 2x RS232 serial ports
Navigation Mode	Manual or Auto-Pilot
Data Storage	Local (multi-channel) & Remote

► Software

EasySail	Route planning and autonomous navigation. Total mileage statistics, remaining mileage reminder, multi-angle video and online map display. Hull parameter control, physical & virtual joysticks, system self-check at power-on. Data collection and post-processing. Waveform overlay and attitude correction. Coordinate conversion, trajectory, water depth, waveform and hull parameter real-time display. Online software/firmware updates. Export via USB/Type-C.
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► Positioning

Satellite System	BDS B1I/B2I/B3I, GPS L1C/A/L2C/L5, Galileo E1/E5a/E5b, GLONASS L1/L2, QZSS L1/L2/L5
Single Point Position (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
DGNSS Positioning Accuracy	Horizontal: ±(0.4 m + 1 ppm) Vertical: ±(0.8 m + 1 ppm)
RTK Positioning Accuracy	Horizontal: ±(8 mm + 1 ppm) Vertical: ±(15 mm + 1 ppm)
Radio Protocols	Satel 3AS, CHC ⁽²⁾ , TT450, Transparent
Heading Accuracy	0.1 ° @ 1 m baseline
Inertial Navigation Stability	6 °/h (accuracy attenuation 1 m after 20 s)
IMU Update Rate	200 Hz

► D270 Single Beam Echo Sounder

Data Type	CHCGD ⁽²⁾ , NMEA SDDPT/SDDBT, original waveform
Sounding Range	0.1 m to 200 m
Sounding Accuracy	±0.01 m + 0.1% x D (D is the depth of water)
Resolution	0.01 m
Maximum Sampling Rate	30 Hz
Frequency	200 kHz
Beam Angle	5°
Sound Velocity Adjustment Range	1400–1700 m/s
Integrated Water Temperature Sensor	-55°C~+100°C, real-time correction of the sound speed

***Specifications are subject to change without notice.**
(1) For best communication, keep the remote controller at least 1.5 m above water level. Actual range may be affected by weather, swells, electromagnetic interference, and other environmental conditions.
(2) CHCGD & CHC protocol is CHCNAV format.

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