

CHCNAV

APACHE 6

MULTIBEAM BATHYMETRIC SURVEY USV



MARINE
SURVEYING

ADVANCED USV WITH NORBIT MULTIBEAM ECHOSOUNDER

The APACHE 6 is a integrate USV for 3D bathymetric surveys, underwater object positioning, offshore construction, underwater archaeology, and wreck salvage. Its triple-hull design, optimized for the NORBIT™ multibeam echo sounder series, delivers stable, accurate performance in challenging marine environments. The fully autonomous survey mode, powered by CHCNAV's straight-line navigation technology, maintains precise path tracking, even in strong currents. By minimizing survey time and producing high-resolution data, the APACHE 6 meets the demands of complex marine survey operations.

OPTIMIZED FOR NORBIT MULTIBEAM ECHOSOUNDERS

Turnkey multibeam USV for high-resolution bathymetry

The APACHE 6 is engineered for seamless integration with the NORBIT iWBMS and WINGHEAD series, delivering consistent performance for demanding hydrographic survey applications.

LIGHTWEIGHT FOR EASY DEPLOYMENT

Efficient to transport and quick to set up

Constructed from high-strength, high-modulus carbon fiber, the APACHE 6 weighs only 15 kg (excluding sensors). Its lightweight and durable design simplifies handling by two operators, supports versatile transport, and enables fast deployment in various survey environments.

INTELLIGENT ANDROID REMOTE CONTROLLER

Portable, reliable, and easy to operate

The APACHE 6 Android-based remote controller provides real-time monitoring of vessel status and survey data without requiring a computer. Its user-friendly interface supports efficient survey execution, while multi-link communication ensures long-range control and data transmission.

HIGH-PERFORMANCE TRIPLE-HULLED VESSEL DESIGN

Stable and adaptable for varied water conditions

The APACHE 6 features dual detachable floats that provide enhanced stability in strong currents. When removed, the vessel operates safely in shallow waters, channels, and rivers, minimizing the risk of running aground.

OPTIONAL TERRESTRIAL MAPPING LASER SENSOR

Integrated 3D survey for marine and terrestrial features

The optional NORBIT iLiDAR sensor captures up to 300,000 points per second with 30×360° coverage. It enables precise 3D mapping of both marine and terrestrial environments in a single survey pass, supporting height clearance assessments for bridges, power lines, and other overhead structures.



HIGH
PERFORMANCE
MARINE DRONE



Android remote control



multibeam echosounder



360° Camera

SPECIFICATIONS

Physical		Software	
Hull Dimension (L x W x H)	1800 mm x 500 mm x 250 mm		Route planning and autonomous navigation. Total mileage statistics, remaining mileage reminder, multi-angle video and online map display.
Material	High strength, high modulus carbon fiber		Hull parameter control, physical & virtual joysticks, system self-check at power-on. Data collection and post-processing.
Weight (w/o instrument and battery)	15 kg		Waveform overlay and attitude correction. Coordinate conversion, trajectory, water depth, waveform and hull parameter real-time display.
Maximum Payload	60 kg		Online software/firmware updates. Export via USB/Type-C.
Hull Design	Detachable triple-hull vessel	Positioning	
GNSS	Internal GNSS dual antenna	Satellite System	BDS B1I/B2I /B3I, GPS L1C/A/L2P(Y)/L2C/L5, Galileo E1/E5a/E5b, GLONASS L1/L2, QZSS L1/L2/L5
Waterproof	IP65	Single Point Position (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
Draft	8.6 cm (unladen)	DGNSS Positioning Accuracy	Horizontal: 0.4 m + 1 ppm Vertical: 0.8 m + 1 ppm
Indicator Light	Two-color (positioning and differential signal)	RTK Positioning Accuracy	Horizontal: ±8 mm + 1 ppm Vertical: ±15 mm + 1 ppm
Camera	360° omnidirectional video	Radio Protocols	Satel 3AS, CHC ⁽¹⁾ , TT450, Transparent
Obstacle Avoidance Distance & Range	0.2–40 m (H: 112°, V: 14°)	Heading Accuracy	0.1 ° @ 1 m baseline
Propulsion		Inertial Navigation Stability	6 % h (accuracy attenuation 1 m after 20 s)
Propeller Type	Brushless DC	IMU Update Rate	200 Hz
Direction Control	Veering without steering engine	D270 Single beam Echo Sounder	
Rated Motor Power	800 W	Data Type	CHCGD ⁽¹⁾ , NMEA SDDPT/SDDBT, original waveform
Maximum Motor Speed	7200 ± 5% RPM	Sounding Range	0.1 m to 200 m
Motor Installation	Pluggable	Sounding Accuracy	±0.01 m + 0.1% x D (D is the depth of water)
Li-ion Battery Capacity	32.4 V, 23.1 Ah	Resolution	0.01 m
Battery Endurance	6 h @2 m/s (2 battery sets, expandable)	Maximum Sampling Rate	30 Hz
Power Supply	Single/dual balanced battery support	Frequency	200 kHz
Battery Replacement	Hot swap supported	Beam Angle	6.2° ± 1°
Charging Time	3 h	Sound Velocity Adjustment Range	1400–1700 m/s
Maximum Speed	5 m/s	Integrated Water Temperature Sensor	-55°C~+100°C, real-time correction of the sound speed
Remote control			
Dimension (L x W x H)	346 mm x 196.5 mm x 89.4mm	*Specifications are subject to change without notice. (1) CHCGD & CHC protocol is CHCNAV format.	
Display Screen	10-inch	©2025 Shanghai Huace Navigation Technology Ltd. All rights reserved. The CHCNAV and CHCNAV logo are trademarks of Shanghai Huace Navigation Technology Limited. All other trademarks are the property of their respective owners. Revision July 2025.	
Resolution Ratio	1920*1200		
Internal Storage	RAM: 4 GB, Storage: 64 GB		
Battery Endurance	5 h		
Communications			
Data Communication	Standard 4G and Remote control		
Remote Control Range	1 km (Remote); Unlimited (4G)		
SIM Card Slot	Nano SIM		
Navigation Mode	Manual or Auto-Pilot		
Data Storage	Local (multi-channel) & Remote		



*Specifications are subject to change without notice.
(1) CHCGD & CHC protocol is CHCNAV format.

©2025 Shanghai Huace Navigation Technology Ltd. All rights reserved. The CHCNAV and CHCNAV logo are trademarks of Shanghai Huace Navigation Technology Limited. All other trademarks are the property of their respective owners. Revision July 2025.

WWW.CHCNAV.COM | MARKETING@CHCNAV.COM

CHC Navigation Headquarter
Shanghai Huace Navigation Technology Ltd.
577 Songying Road, Qingpu,
201703 Shanghai, China
+86 21 54260273

CHC Navigation Europe
Office Campus, Building A,
Gubacsi út 6, 1097
Budapest, HUNGARY
+36 20 421 6430
Europe_office@chcnav.com

CHC Navigation USA LLC
6380 S. Valley View Blvd, Suite 246,
Las Vegas, NV 89118, USA
+1 702 405 6578

CHC Navigation India
409 Trade Center, Khokhra Circle,
Maninagar East, Ahmedabad,
Gujarat, India
+91 90 99 98 08 02