CHCNAV

APACHE 3

Marine Survey

Make your work more efficient

Introduction

APACHE 3

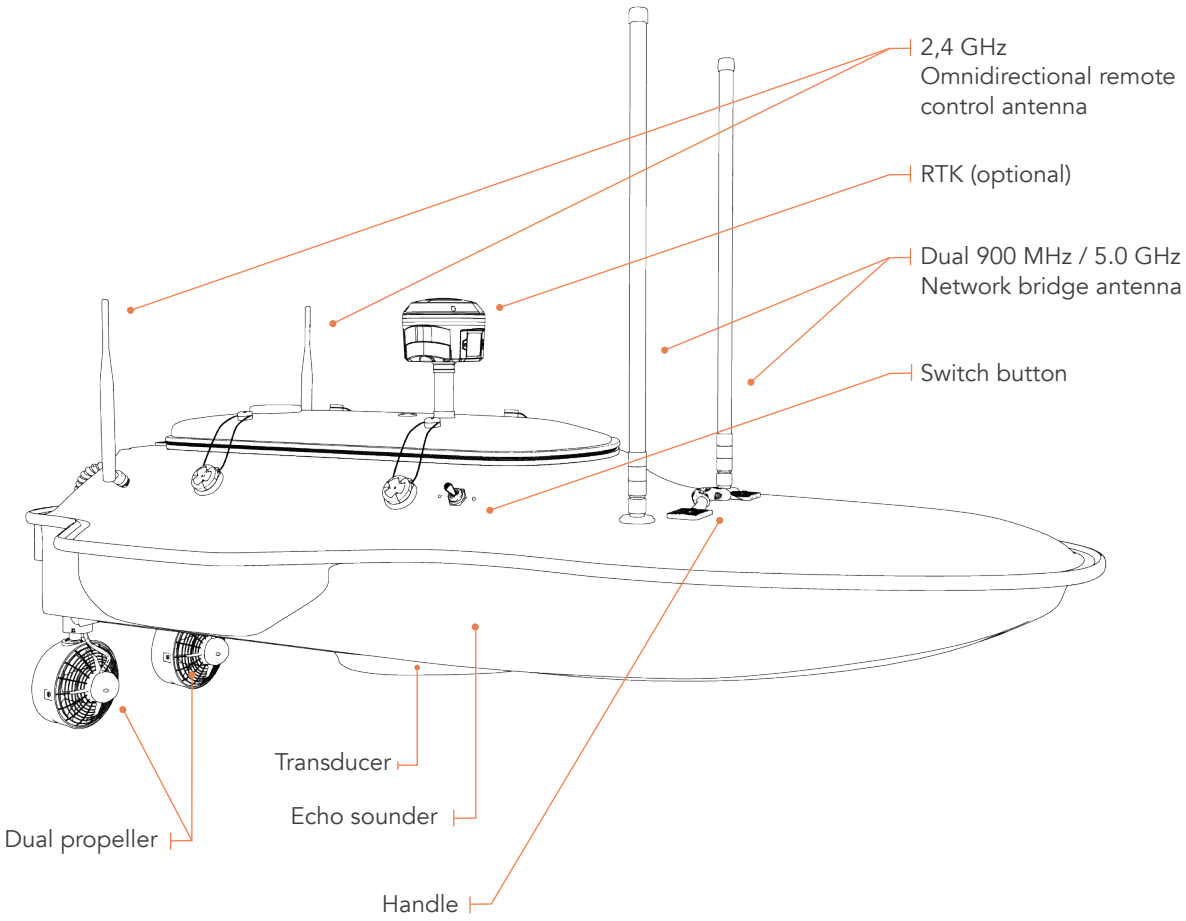
Lightweight portable Unmanned Surface Vessel

Portable USV solution for bathymetric survey

Featuring triple-hulled and shallow draught design, the APACHE 3 is a portable USV for bathymetric surveys of lakes, inland rivers and coastal areas. Its compact size and light weight (1-meter length and 7 kg without instrument) allow one person to operate the system easily.

The APACHE 3 USV solution embeds the CHCNAV absolute straight-line technology which enables a fully automatic pre-determined course in autonomous mode in adversed current and flow conditions. The survey projects can be completed in both manual and automatic cruise modes with the maximum speeds of 6 m/s and 3 m/s respectively.

Multiple data transfer options are available including the industry standard RS232 as well as TCP protocols with multi-channel and high bandwidth transmission. The APACHE 3 can carry a single beam echosounder, and GNSS RTK receiver to meet shallow water application requirements.

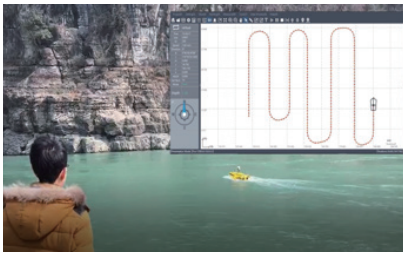


Lightweight design

APACHE 3 is made of macromolecule polyester carbon fiber and Kevlar fiber-glass (weighting 7 kg without sensors). It allows one operator to cope with most of remote deployment conditions.

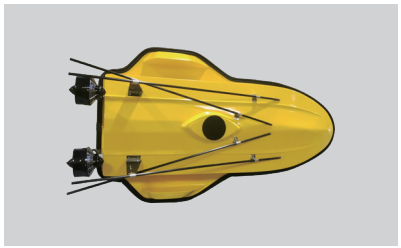
Pocket hull structure

With less than 1 m length and triple-hulled vessel design, the APACHE 3 keeps the hull balanced even in the rapid current situation. In the meantime, its unique structure supports operation in shoals, channels and shallow rivers for the bathymetric survey without run aground.



Absolute linear technology

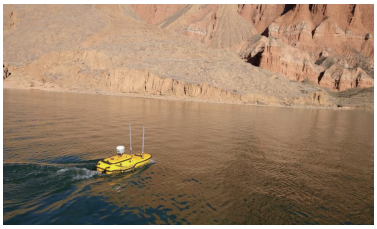
APACHE 3 integrates high precision positioning and heading technology to maintain a perfect straight sailing course even in complex current conditions.



Quad Pole Protective Design

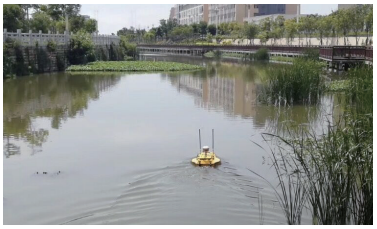
APACHE 3 is fitted with quad tough and rigid carbon fiber bars installed in the bottom of the hull to protect propellers to get rid of twined by fishing nets and aquatic plants in riverways and shallow water.

Applications

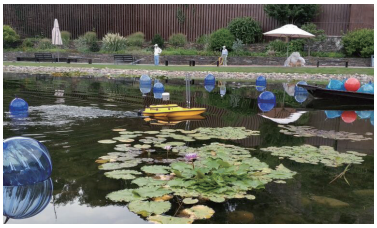


Bathymetric survey

River dredging

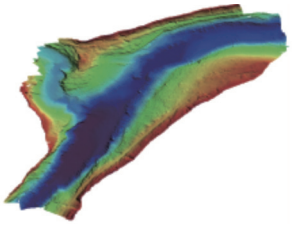


Channel survey



Inland river construction

Site selection of hydropower station



Scientific research

Specifications

Physical	
Size (L × W × H)	100 cm × 65 cm × 30 cm (3.3 ft x 2.1 ft x 1.0 ft)
Weight （w instrument and battery）	≤ 20 kg (44.0 lb)
Weight（w/o instrument and battery）	≤ 7 kg (15.4 lb)
Material	Macromolecule polyester carbon fiber
Type	Triple-hull vessel
Maximum speed	6 m/s
Draft	0.13 m
Maximum load	25 kg
Wave resistance	1 m
Electrical	
Power consumption	300 W
Li-ion battery capacity	40 000 mAh, 18.5 V 15 000 mAh, 18.5V
Navigation mode	Auto / Manual
Operating time(1)	2 h (operating time can be extended by adding batteries)
Communications	
Communication	UHF, TCP, network bridge
Network bridge frequency	900 MHz / 5.0 GHz
Communication distance	up to 2 km
Communication port	RS232 / Internet access

D230 Singlebeam Echo Sounder	
Size (L × W × H)	24 cm × 16 cm × 5 cm (0.8 ft x 0.5 ft x 0.2 ft)
Weight	0.9 kg (2.0 lb)
Measurement range	0.3 m to 200 m
Resolution	0.01 m
Beam angle	7°
Accuracy	±0.02 m + 0.1% x D (D is the depth of water)
Frequency	200 kHz
Sound velocity range	1300 m/s to 1700 m/s
Pulse power	300 W
External power	10 V DC to 30 V DC or 100 V AC to 240 V AC
Operating temperature	-30°C to +60°C (-22°F to +140°F)

Hydro Survey Software

CHC Hydro Survey 6 software features RAW data collection, base map import, mapping, positioning, displaying real-time track, data processing and various types of coordinate file export.

*Specifications are subject to change without notice.

(1) Operating time varies based on temperature. Specifications are subject to change without notice.

Shanghai Huace Navigation Technology Ltd.

599 Gaojing Road, Building D
Shanghai, 201702, China

+86 21 54260273 WWW.CHCNAV.COM