

Alpha Mi

Alpha Mi Survey USV

Light and potable | Highly integrated | Extensive and high-precision surveying





Alpha Mi USV for surveying

Alpha Mi is exclusively designed for single-person measuring work of lakes and rivers. Trimaran design ensures stable sailing and is used in conjunction with dual pumpjet thruster, RTK, single beam, HD image, and intelligent ship control are integrated for more convenient and high precision underwater measurement.





Easy Work For Even One Person

The size of an alpha Mi is only $900 \times 500 \times 340$ mm, the whole set of which can be carried by one single person without difficulty. The hull can be easily put into a car trunk. A single worker is able to quickly conduct his hydrographic survey as soon as the battery and the antennas are installed











Convenient Operation

The boat is ready for measuring work from one site to another within minutes



Working Time

Customized working time, 4-5 hours for 1 battary



Dual Pumpjet Thrusters

Equipped with high-speed thruster, the top speed is up to 6m/s and is able to work in torrent.



4G For Remote Control

4G network brings unlimited control distance



Single beam Echosounder

Equipped with highly sensitive echosounder that enables it to work in shoal, the shallowest of which is 0.3 meter



Protection

Streamline slope design at the bottom of the boat plus blade-like filter and pump protect the vehicle from being entangled by aquatic plants

Integrated Software System

The alpha software system is a software solution used for route planning, parameter setting, hull control, data display, status display and data export, etc. Customized maps and satellite image maps can be imported or downloaded when the network is working. The software system is able to automatically generate routes, execute navigation tasks, continue navigation task after breakout and finally return to the place of departure.





Professional set



Hull	$\times 1$
Propeller	$\times 2$
Intelligent hull control	$\times 1$
Built-in RTK	$\times 1$
Built-in HD camera	$\times 1$
Built-in single-beam	
echo-sounder	$\times 1$
Dual rocker android	
remote controller	$\times 1$
High performance	
water-proof battery	$\times 1$
Charger	$\times 1$
Communication antenna	$\times 2$
GNSS antenna	$\times 2$
Network antenna	$\times 1$
Radio antenna	$\times 1$
Carrying Case	$\times 1$
Life jacket	$\times 1$
Tool kit	$\times 1$
Instruction manual	$\times 1$

Technical Specification

Physical Dimension Material Polymer pol	•		
PhysicalDesignM-type trimaranWeight16kgMax Payload20kgAnti Wind&WaveLevel 4Range0.3m-120mAccuracy1cm±0.1%heightResolution1cmBeam angle7.5°±0.5°Obstacle AvoidanceVideo1080HDPropeller3-piece aviation aluminum alloy paddlePropeller3-piece aviation aluminum alloy paddleProtectionDouble protection from aquatic plantsSpeedTop speed 6m/ sBattery22.2V 30AhWorking time4-5h(1.5m/s), customized 8-10hGPS: L1C/A, L1C, L1P, L2C, L2P, L5, BDS: B1I, B2I, B3I, B1C, B2a, G10NASS: G1, G2, G3, Galileo: E1, E5a, E5b, Q2SS: L1C/A, L1C, L1C, L1P, L2C, L2P, L5Position And OrientationRTKBuilt-in GNSS receiverAnd Orientation432Three-dimensional electronic compass Dual GNSS antennaRTKBuilt-in radio and 4G networkVideo5.8GHzCommunicationRemote5.8GHzContract DistanceUnlimited by network, 2Km by radio		Dimension	900×500×340mm
Physical Weight 16kg Max Payload 20kg Anti Wind&Wave Level 4 Range 0.3m-120m Accuracy 1cm±0.1%height Resolution 1cm Beam angle 7.5°±0.5° Obstacle Avoidance Thruster DC pumpjet thruster Propeller 3-piece aviation aluminum alloy paddle Protection Double protection from aquatic plants Speed Top speed 6m/ s Battery 22.2V 30Ah Working time 4-5h(1.5m/s), customized 8-10h Working time 4-5h(1.5m/s), customized 8-10h Fostion And Orientation RTK Built-in GNSS receiver And Orientation Channel 432 Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G network Video 5.8GHz Remote 5.8GHz Control Distance Unlimited by network, 2Km by radio		Material	Polymer material
Weight16kgMax Payload20kgAnti Wind&WaveLevel 4Range0.3m-120mAccuracy1cm±0.1%heightResolution1cmBeam angle7.5°±0.5°Obstacle AvoidanceVideo1080HDPowerThrusterDC pumpjet thrusterPropeller3-piece aviation aluminum alloy paddlePropeller3-piece aviation aluminum alloy paddleProtectionDouble protection from aquatic plantsSpeedTop speed 6m/ sBattery22.2V 30AhWorking time4-5h(1.5m/s), customized 8-10hGPS: L1C/A, L1C, L1P, L2C, L2P, L5, BDS: B1I, B2I, B3I, B1C, B2a, G10NASS: G1, G2, G3, Galileo: E1, E5a, E5b, Q2SS: L1C/A, L1C, L1P, L2C, L2P, L5, BDS: B1I, B2I, B3I, B1C, B2a, G10NASS: G1, G2, G3, Galileo: E1, E5a, E5b, Q2SS: L1C/A, L1C, L1C, L5Position And OrientationRTKBuilt-in GNSS receiverAnd OrientationHorizontal: ± (8+1×10·8D) mm, Vertical: ± (15+1×10·8D) mmChannel432Three-dimensional electronic compassDual GNSS antennaRTKBuilt-in radio and 4G networkVideo5.8GHzCommunicationRemote5.8GHzCommunicationRemote5.8GHz	Physical	Design	M-type trimaran
Anti Wind&Wave Level 4 Range 0.3m-120m Accuracy 1cm±0.1%height Resolution 1cm Beam angle 7.5°±0.5° Obstacle Avoidance Propeller 3-piece aviation aluminum alloy paddle Protection Double protection from aquatic plants Speed Top speed 6m/s Battery 22.2V 30Ah Working time 4-5h(1.5m/s), customized 8-10h Position And Orientation RTK Built-in GNSS receiver Accuracy Horizontal: ± (8+1×10°6D) mm Channel 432 Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G network Video 5.8GHz Communication RTK Built-in radio and 4G network, 2Km by radio		Weight	16kg
Range 0.3m-120m		Max Payload	20kg
Resolution 1cm ± 0.1%height		Anti Wind&Wave	Level 4
Resolution 1cm Beam angle 7.5°±0.5° Obstacle Avoidance		Range	0.3m-120m
Resolution 1cm Beam angle 7.5°±0.5° Obstacle Avoidance Video 1080HD Propeller 3-piece aviation aluminum alloy paddle Propeller 1-piece aviation aluminum alloy paddle Propeller 1-piece aviation al	Echosounder	Accuracy	1 cm $\pm0.1\%$ height
Obstacle AvoidanceVideo1080HDPowerThruster Propeller 3-piece aviation aluminum alloy paddle Protection Double protection from aquatic plantsSpeed Top speed 6m/s Battery 22.2V 30Ah Working time 4-5h(1.5m/s), customized 8-10hVariable Protection Provided Battery 22.2V 30Ah Working time 4-5h(1.5m/s), customized 8-10hVariable Protection Provided Battery 22.2V 30Ah Working time 4-5h(1.5m/s), customized 8-10hVariable Protection Provided Battery Protection Provided Battery 22.2V 30Ah Provided Battery 32.2V 30Ah Provided Battery 32.	Echosounder	Resolution	1cm
AvoidanceThrusterDC pumpjet thrusterPropeller3-piece aviation aluminum alloy paddlePropeller3-piece aviation aluminum alloy paddlePropeller3-piece aviation aluminum alloy paddlePropeller3-piece aviation aluminum alloy paddleSpeedTop speed 6m/ sBattery22.2V 30AhWorking time4-5h(1.5m/s), customized 8-10hGPS: L1C/A, L1C, L1P, L2C, L2P, L5, BDS: BII, B2I, B3I, B1C, B2a, Galileo: E1, E5a, E5b, QZSS: L1C/A, L1C, L2C, L5PositionAndAccuracyHorizontal: ± (8+1 × 10-6D) mm, Vertical: ± (15+1 × 10-6D) mmChannel432Three-dimensional electronic compassDual GNSS antennaRTKBuilt-in radio and 4G networkVideo5.8GHzCommunicationCantel DictanceUnlimited by network, 2Km by radio		Beam angle	7.5°±0.5°
Prower3-piece aviation aluminum alloy paddle ProtectionSpeedTop speed 6m/ s BatteryBattery22.2V 30AhWorking time4-5h(1.5m/s), customized 8-10hPosition And OrientationRTKBUS: B1I, B2I, B3I, B1C, B2a, G2, G3, Galileo: E1, E5a, E5b, QZSS: L1C/A, L1C, L2C, L5Position And OrientationRTKBuilt-in GNSS receiver Horizontal: ± (8+1×10-6D) mm, Vertical: ± (15+1×10-6D) mmChannel432Three-dimensional electronic compass Dual GNSS antennaRTKBuilt-in radio and 4G networkVideo5.8GHzCommunicationRemote5.8GHz		Video	1080HD
Power Protection Double protection from aquatic plants	Power	Thruster	DC pumpjet thruster
Speed Top speed 6m/ s		Propeller	3-piece aviation aluminum alloy paddle
Speed Top speed 6m/ s		Protection	Double protection from aquatic plants
Working time 4-5h(1.5m/s), customized 8-10h GPS: L1C/A, L1C, L1P, L2C, L2P, L5, BDS: B1I, B2I, B3I, B1C, B2a, GLONASS: G1, G2, G3, Galileo: E1, E5a, E5b, QZSS: L1C/A, L1C, L2C, L5 Position And Orientation RTK Built-in GNSS receiver Horizontal: ± (8+1×10-6D) mm, Vertical: ± (15+1×10-6D) mm Channel 432 Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G netwotk Video 5.8GHz Communication Remote 5.8GHz Unlimited by network, 2Km by radio		Speed	Top speed 6m/s
Satellite Satellite		Battery	22.2V 30Ah
Position And Orientation RTK Built-in GNSS receiver Horizontal: ± (8+1×10-6D) mm, Vertical: ± (15+1×10-6D) mm Channel 432 Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G netwotk Video 5.8GHz Communication RTK Unlimited by network, 2Km by radio		Working time	4-5h(1.5m/s), customized 8-10h
And OrientationAccuracyHorizontal: \pm (8+1×10-6D) mm, Vertical: \pm (15+1×10-6D) mmChannel432Three-dimensional electronic compassDual GNSS antennaRTKBuilt-in radio and 4G networkVideo5.8GHzCommunicationRemote5.8GHzUnlimited by network, 2Km by radio		Satellite	BDS: B1I, B2I, B3I, B1C, B2a、 GLONASS: G1, G2, G3、 Galileo: E1, E5a, E5b、
Orientation Accuracy Horizontal: ± (8+1 × 10-6D) mm, Vertical: ± (15+1 × 10-6D) mm Channel 432 Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G network Video 5.8GHz Remote 5.8GHz Unlimited by network, 2Km by radio	Position	RTK	Built-in GNSS receiver
Orientation Three-dimensional electronic compass Dual GNSS antenna RTK Built-in radio and 4G network Video 5.8GHz Remote 5.8GHz Unlimited by network, 2Km by radio		Accuracy	
Orientation Dual GNSS antenna RTK Built-in radio and 4G network Video 5.8GHz Remote 5.8GHz Unlimited by network, 2Km by radio		Channel	432
Dual GNSS antenna RTK Built-in radio and 4G netwotk Video 5.8GHz Remote 5.8GHz Unlimited by network, 2Km by radio		Orientation –	Three-dimensional electronic compass
Communication Video 5.8GHz Remote 5.8GHz Unlimited by network, 2Km by radio			Dual GNSS antenna
Communication Remote 5.8GHz Control Distance Unlimited by network, 2Km by radio	Communication	RTK	Built-in radio and 4G netwotk
Control Dictance Unlimited by network, 2Km by radio		Video	5.8GHz
Control Distance Unlimited by network, 2Km by radio (Typical Environment)		Remote	5.8GHz
		Control Distance	Unlimited by network, 2Km by radio (Typical Environment)

^{*}The above technical parameters are for your reference. The company reserves the right to change the design and planning of the product based on the actual product.

Guangzhou Alpha Surveying Technology Co.,Ltd.

NO.9 Caipin Road, Science City Huangpu District, Guangzhou

**** +86-20-82108930

www.alpha-surveying.com