GEOMATE

Super Base, Performance Fighter

GEOMATE MODEL 6

MULTI-PURPOSE SURVEY USV

Multibeam Bathymetric Survey USV

The Model 6 is an autonomous USV optimized for high-resolution 3D bathymetric surveys, underwater object localization, and offshore construction. Featuring a dual propeller system, it ensures stable automatic cruising and high operational efficiency. With the ability to operate in Android remote control, the Model 6 provides flexibility and accuracy for complex marine survey projects.

TECHNICAL SPECIFICATIONS

Physical

Hull Dimension (L x W x H)	Without floats: 1670 mm x 610 mm x 510 mm With floats: 1670 mm x 1000 mm x 510 mm
Material	High strength, high modulus carbon fiber
Weight (w/o instrument and battery)	15 kg
Maximum Payload	60 kg
Anti-Wave & Wind	6rd wind level and 4nd wave level
Hull Design	Detachable triple-hull vessel
GNSS	Internal GNSS dual antenna
Waterproof	IP66
Draft	7.5 cm (unladen)
Camera	360° omnidirectional video
ADCP Mounting Hole	240 mm
Obstacle Avoidance Distance & Range	0.2–40 m (H: 112°, V: 14°)

Propulsion

Propeller Type	Brushless DC
Direction Control	Supports both differential steering and servo steering modes
Rated Motor Power	800 W
Maximum Motor Speed	7200 ± 5% RPM
Li-ion Battery Capacity	32.4 V, 23.1 Ah
Battery Endurance	6 h @2 m/s (2 battery sets, expandable)
Battery Replacement	Hot swap supported
Charging Time	3 h
Maximum Speed	6.5 m/s

Remote control

Resolution Ratio	1920 x 1200
Battery Endurance	5 h
Communication Frequency	2.4 GHz

Communications

Data Communication	Standard 4G and Remote control
Remote Control Range	1 km (Remote); Unlimited (4G)
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. 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. Single beam mode: Data acquisition and post-processing. Hydrological mode: Flow test results output. Multibeam mode: Real-time parameter adjustment.

Positioning

Satellite System	BDS B1I/B2I /B3I, GPS L1C/A/L2P(Y)/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)
Heading Accuracy	0.1 ° @ 1 m baseline
Inertial Navigation Stability	6 °/ h (accuracy attenuation 1 m after 20 s)
IMU Update Rate	200 Hz

Single Beam Echo Sounder

Sounding Range	0.1 m to 200 m
Sounding Accuracy	±0.01 m + 0.1% x D (D is the depth of water)
Resolution	3 mm
Maximum Sampling Rate	30 Hz
Frequency	200 kHz
Beam Angle	6.2° ± 1°
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.

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SG DESIGNED IN SINGAPORE

Geomate Positioning Pte. Ltd.
38 BEACH ROAD #29-11
SOUTH BEACH TOWER, SINGAPORE 189767
+65 8944 9901
sales@geomate.sg
www.geomate.sg

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