GeoSwath 4

NEXT GENERATION WIDE SWATH BATHYMETRY AND SIDE SCAN

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GeoSwath 4 offers the industry's most efficient simultaneous swath bathymetry and side scan seabed map-ping system for shallow waters. Bathymetry data accuracies have been shown to exceed the IHO Standards for Hydrographic Surveys, while providing seafloor coverage of up to 12 times the water depth and data from nadir to the waterline. The side scan data can be calibrated for repeatable results to provide seabed classification and monitoring. The new hardware provides twice the data density and increased nadir performance compared to its predecessors in a new portable design. The specifically developed GS4 acquisition and processing software included with the system delivers automatically cleaned data in real time.

System Components

The GeoSwath 4 turn-key solution comprises a compact dual transducer head as standard with versatile mounting options. The newly developed deck unit contains the complete sonar electronics together with a high spec PC, running the new GS4 software. This provides full acquisition, calibration and data processing capabilities for producing the final bathymetry map and side scan mosaic. All customary ancillary sensors can be directly interfaced.

Dual Sonar Head

The transducers are available in a choice of three frequencies: 125, 250, 500 kHz, varying in depth performance and data resolution depending on the survey task. A wide range of motion reference units (MRU) and sound velocity sensors (SVS) can be mounted on the compact head. This has been designed for easy deployment on a supplied pole for over-the side or bow-mount options. Alternatively, the transducers can be deployed on bespoke boat hull installations as well as ROV, AUV and USV assemblies.

Deck Unit

The workstation contains the complete system electronics. It has been newly designed for increased performance in a more compact housing. It offers twice the data density compared to its previous versions and increased nadir performance. All peripheral sensors (position, motion, heading, transducer face sound velocity, sound velocity profiler and tide) are interfaced directly.

GS4 Software

The GS4 software is included with the system and provides a complete project-based solution; acquisition, storing and editing of sonar and ancillary data, grid-based patch test calibration, data processing, advanced bathymetry data gridding, side scan mosaicing and 3-D data visualisation. Filter algorithms provide real-time processed data with minimum user intervention even in difficult survey situations involving vertical structures, shipwrecks and steep seabed slopes.

FEATURES

- Ultra high-resolution wide swath bathymetry with increased data density
- IHO SP-44, special order 1a
- Up to 12 times water depth seabed coverage
- 240° field of view - up to the water line
- Twice the data density compared to previous versions and best nadir resolution ever
- Co-registered geo-referenced side scan
- Ability to collect calibrated side scan for analysis with 3rd party software
- Repeatable results for seabed classification and monitoring
- New GS4 software - included with the system
- Automated filter algorithm
- Real time results
- Frequency versions: 125, 250, 500 kHz

OPTIONS

- AUV, ROV and USV versions
- GeoSwath 4R - Rugged version
- Range of mounting options including underwater housing for peripheral sensors
- Range of peripheral sensors
- Special rates on third party software

TECHNICAL SPECIFICATIONS

GeoSwath 4	125 kHz	250 kHz	500 kHz
max Water Depth Below Transducers	200 m	100 m	50 m
max Swath Width	780 m	390 m	190 m
max Coverage	up to 12 x depth		
Depth Resolution	6 mm	3 mm	1.5 mm
Two Way Beam Width (Horizontal)	0.85°	0.75°	0.5°
max Swath Update Rate	30 per second (simultaneous port and starboard)		
Transducer Head Dimensions	550 x 250 x 190 mm	470 x 165 x 125 mm	330 x 109 x 75 mm
Transducer Head Weight, including peripherals, approx.	35 kg	20 kg	14 kg

GeoSwath 4 Deck Unit	
Dimensions	Height: 137 mm with feet, 131 mm rack mount (3U) Width: 427 mm, 490.5 mm including 19'' rack support Depth: 495 mm including handles, 700 mm including transducer cables
Weight	11.5 kg
Power	100 V to 240 V AC, 50/60 Hz, 250 W; DC outlet 24 VDC for peripheral sensors max. 55 W
Environment	Operation 0°C to 40°C, Storage -20° to 70°C, Ingress protection: IP50 front, IP20 back Humidity: operation 95% non-condensing, storage < 55%

Specifications subject to change without notice. E&OE