



# **GeoSwath**

## **Low Cost Swath Bathymetry**

### **Reduced survey costs**

GeoSwath is a PC based, shallow water, wide swath bathymetry system offering state of the art performance at low cost. Design emphasis has been placed on minimising overall cost to the user, not only in terms of initial purchase price, but in terms of ease of deployment, ease of use, reducing survey time, and “time to chart”. The market requirements for a high quality swath bathymetry system with a low total cost of ownership have at last been met.



### **System capabilities**

GeoSwath has been designed to produce an accurate digital terrain map (DTM) of a survey area or route in water depths up to 200 metres. GeoSwath offers wide swath coverage of up to 12 times water depth, to a maximum swath width of 600 metres.

GeoSwath is available in two frequency versions, 125 kHz and 250 kHz. The system accuracy of both versions exceeds the International Hydrographic Organisation specifications, as set out in *IHO Standards for Hydrographic Surveys, Special Publication 44, 4<sup>th</sup> Edition, April 1998*.

### **Portable and easy to install**

GeoSwath is easily portable and can be deployed using an overside or bow mount on vessels of opportunity or a hull mount for more permanent installations. In common with other GeoAcoustics products GeoSwath is modular allowing users to utilise existing equipment such as motion sensors, gyros and positioning systems.

### **Fully integrated solution**

GeoAcoustics can offer a complete range of recommended sensors for tide, sound speed, heading, position and attitude, all of which can interface directly with GeoSwath, thus forming a complete integrated system. All data acquisition, real time processing, post processing, and chart generation can be accomplished on the same GeoSwath unit. A feature of GeoSwath, which is of particular benefit to users, is that it allows the majority of data processing tasks to occur in parallel with acquisition. This low ‘time to chart’ feature means that on most surveys draft charts are available within a short time of completion of the survey, before leaving the survey area. This allows users to fill in any gaps in survey coverage without having to meet expensive re-mobilisation costs.

## GeoSwath Specifications

GeoSwath is available in two frequency versions, 125 kHz and 250 kHz. The system accuracy of both versions exceed the latest IHO specifications, as set out in *IHO Standards for Hydrographic Surveys, Special Publication 44, 4<sup>th</sup> Edition, April 1998*.

### System performance

Sonar Frequency	125 kHz	250 kHz
Maximum Water Depth	200 metres	100 metres
Maximum Swath Width	600 metres	300 metres
Range	Up to 12 x depth	Up to 12 x depth
Resolution Across Track	1.5 cm	1.5 cm
Two Way Beam Width	0.9° Azimuth	0.5° Azimuth
Transmit Pulse Length	16 µS to 1mS	8 µS to 1mS
Swath Update Rate		
150m Swath Width	10 swaths per second	10 swaths per second
300m Swath Width	5 swaths per second	5 swaths per second
600m Swath Width	2.5 swaths per second	

### Technical Specification

Hardware	Processor with 512 MB RAM, 32MB 3-D Graphics Card, 80 GB hard drive, 1 CD Writer, 1 DVD Writer, 3.5" floppy drive.
Data Storage	1 DVD Writer/ Rewriter, 1 CD Writer/Rewriter
Ports	2 USB 1 Parallel Port (office printer) 6 RS232 Serial Ports (GPS, MRU, Gyro, Echo Sounder, mini SVS)
Display	18" LCD Monitor
Keyboard & Mouse	PS2 Keyboard & PS2 Mouse
DGPS, Motion Sensor (MRU) & Gyro Compass Inputs	GeoSwath accepts input from any GPS with standard NMEA output, and all standard motion sensors and gyro compasses
Sound Velocity Correction	Dynamically corrected for transducer face errors using miniSVS and fully corrected for refraction caused by sound velocity profile changes.
Software	Real-time acquisition for bathymetry & side scan Real-time swath generation & partial gridding Post processing software for generation of swath data (fully corrected) and gridding (for Digital Terrain Mapping) Calibration Software. Chart Production using Surfer.
Power Requirements	95 – 265 V AC, 40/60Hz, 400 VA
Processor Dimensions	43.0 cm (W) x 45.7 cm (D) x 26.6 cm (H), 22kg

*Specification sheet subject to change without notice (9-Swath-6900/A 08/2003)*



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