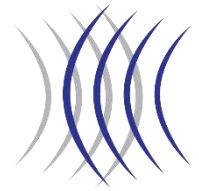


GeoSwath PHS

GeoSwath Portable Hydrographic System (PHS)



GeoAcoustics



Overview

The GeoSwath PHS offers the industry's most efficient simultaneous swath bathymetry and side scan seabed mapping system for shallow waters combined with all required external sensors in one complete package. The PHS comprises a GeoSwath 4R system combined with an Applanix POS MV SurfMaster and a Valeport miniSVS all powered from a single 24 V_{DC} power supply. The GeoSwath PHS system can be rapidly deployed on a range of vessels of opportunity including RIBS.

GeoSwath 4R

The GeoSwath system is available in 125 kHz, 250 kHz and 500 kHz frequencies, with each frequency determining the maximum depth of operation, depth resolution and maximum swath width. The GeoSwath 4R Deck Unit connects to the transducer head, the Applanix POS Computer System and the Valeport mini SVS.

Applanix POS MV SurfMaster

POS MV SurfMaster is a GNSS aided inertial navigation system consisting of three main components; the POS Computer System (PCS), the Inertial Measurement Unit (IMU) fitted to the GeoSwath transducer head and two GNSS antennas. The tightly integrated navigation allows for higher immunity to GNSS outages in areas of problematic satellite reception, such as ports, harbours, rivers, near-shore coastal waters and near offshore structures. Supplied with 6 months subscription to POSpac Go! PP-RTX.

Valeport Sound Velocity Sensors

Attached to the transducer head is a Valeport Sound Velocity Sensor (SVS) which is connected directly to the GeoSwath 4R. In addition, a Valeport Swift Sound Velocity

Profiler (SVP) is provided as part of the PHS system to enable SV dips to be conducted during the survey. This data is easily incorporated into the GeoSwath software package during processing.

Over the Side Mount

The GeoAcoustics OTS mount is a rugged, tried and tested design which is simple to operate and install. A sectional mounting pole is supplied allowing different freeboard to be accommodated. At the top of the pole 2 GNSS antennas are fixed with a 1.9 m baseline separation which are in turn connected to the PCS.

GS4 Software and PC

A Panasonic Toughbook is supplied as part of the PHS which includes a pre-configured installation of the GS4 software. It 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.



Technical Specifications

GeoSwath 4 Transducer	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		
Range Resolution	6 mm	3 mm	1.5 mm
Angular Resolution	0.04° (all frequencies)		
Two-Way Beam Width (Horizontal)	0.85°	0.75°	0.5°
Max Swath Update Rate	30 per second (simultaneous port and starboard)		
Transducer Dimensions	550 mm (L) x 250 mm (W) x 190 mm (H)	468 mm (L) x 165 mm (W) x 125 mm (H)	362 mm (L) x 109 mm (W) x 75 mm (H)
Transducer Head Weight, including peripherals, approx	35 kg	20 kg	14 kg
Over the Side Mount	Deck Mount Assembly: 1410 mm (L) x 152 mm (W) x 337 mm (H) (24 kg) Each Pole (x3): 1829 mm x 70 mm OD (11 kg)		

GeoSwath 4R Deck Unit

Dimensions	440 mm (D) (with connectors) x 342 mm (W) x 136 mm (H)
Weight	12.5 kg
Power Input	18-26 V _{DC} , 60 W peak power
Environment	0 °C to 40 °C, -20 °C to 70 °C (storage) < 95 % RH non-condensing (operation), < 55 % RH non-condensing (storage) IP66 rated ingress protection
Laptop	Minimum Spec: Panasonic Toughbook 55, 14" 8th gen. Intel Cor i5 8 GB DDR4-SDRAM 1 TB SSD Windows 10 Pro

POS MV SurfMaster

Dimensions PCS	167 mm (D) x 356 mm (W) x 68 mm (H)
Weight PCS	2.5 kg
Power	10-34 V _{DC} , 35 W peak power
Position Accuracy	DPGS 0.5-2 m depending on quality of differential corrections POSPac PPP Horizontal <0.1 m, Vertical <0.2 m
Heading Accuracy	0.08° with 2 m baseline
Heave	5 cm or 5 %. Whichever is greater, for periods of 14 s or less

Valeport SVS / SVP

Sound Velocity Sensor (SVS)	Range 1375-1900 m/s. Resolution 0.001 m
Swift Sound Velocity Profiler (SVP)	Range 1375-1900 m/s. Resolution 0.001 m, Accuracy +/- 0.02 m/s
Swift SVP Weight	2 kg (air), 0.9 kg (water)

Other models of POS MV are available as well as sensors from different manufacturers e.g., Hemisphere, SMC, Kongsberg Seatex and AML. Specifications subject to change without notice. E&OE.