Multibeam Echo Sounder (Hydrosweep DS3)

> ⚠️ **Attention:**
>
> Please note that operations of the Multibeam Echo Sounder Hydrosweep DS3 requires experienced scientific staff on board and can be only operated upon request. The system is <u>not</u> operated by the ship's crew. Request operations with the Multibeam Echo Sounder Hydrosweep DS3 to AWI-Bathymetry and AWI-Logistics in sufficient time prior to the cruise and clarify the data transfer after the cruise.

Summary

The Multibeam Echo Sounder uses several frequencies to map the topography of the seafloor. It also provides information about the texture of the seafloor as well as the structure of the water body.

Manufacturer	Teledyne RESON (ATLAS Hydrographic before takeover)
Model	Hydrosweep DS3
Serial No.	n/a
Type	multi-beam echosounder
REGISTRY-Link	REGISTRY (1393)
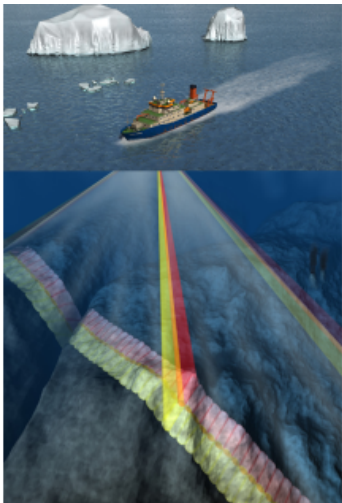
Hydrosweep electronics

Position of Devices in Polarsterns box keel
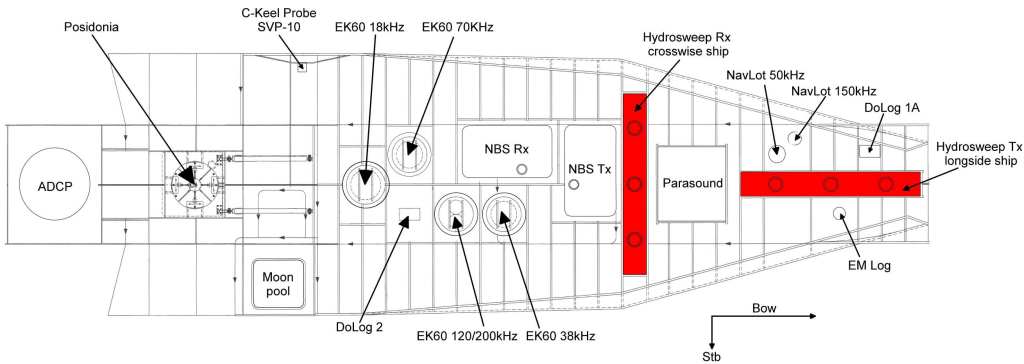
Transducer Frequency

Contacts

Name	Institution	Role
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Alfred Wegener Institute for Polar and Marine Research	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research	Owner
Simon Dreutter	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research	Engineer In Charge, Data Scientist, Editor

Components

Subdevices

Name	Model	Serial Number	REGISTRY-Link
Hydrosweep RX transducer array	Hydrosweep DS3	n/a	REGISTRY (1515)
Hydrosweep TX transducer array	Hydrosweep DS	n/a	REGISTRY (1514)

Position

Info	xyz-position calculated from Alignment Survey Report (2016) to be center between Tx and Rx transducer. Transducer arrays located in box keel, electronics located in E525A, operating computers located in E550 (HSPS-room)
X	77.162 m (X-0 is at the center of der rudder (ref. design drawing of the vessel), positive X-axis is forward and along vessel centerline)
Y	0.001 m (Y-0 at centerline, positive Y-axis is portside)
Z	0.017 m (Z-0 is set to the lowest point of the keel, positive Z-axis is upwards)

Data logging, storage and archiving

Logged parameters

Parameter	O2ARegistry Output Type	Unit
depth	depth	m
Hydroacoustic backscatter	backscatter strength	V

Central geographical ship's position and time standard

Rawdata storage on board

Dship

Data archiving on land

Documentation

Internal Documentation Survival Guide to use the new Hydrosweep DS3 on FS-Polarstern

- Kalibrierung und Genauigkeitsuntersuchungen zur neuen Hydrosweep DS-3 Anlage auf FS Polarstern (Article)
  Bachelor Thesis 2011
- HydroSweep DS (Factsheet, 978 kB)

- Polarstern Hydrosweep Vessel File (ASD) (Calibration Certificate)
  Caris Vessel File Calibration Values

- [Polarstern Hydrosweep Vessel File (S7K) (Calibration Certificate)](#)