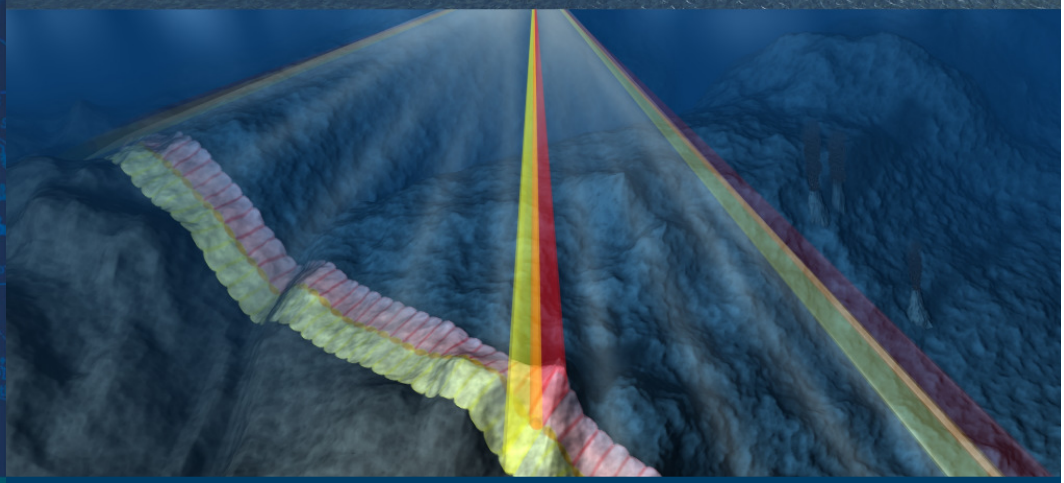
ATLAS HYDROGRAPHIC
A company of the ATLAS ELEKTRONIK Group

...a sound decision

- Full Ocean Depth
- 2x Multi-Ping
- Beam Resolution down to 0.5°
- 320 Receive Beams per Ping
  960 Soundings per Ping
- 10,000 Sidescan and Backscatter Samples per Ping
- Sub-bottom Profiling Option
- Water Column Resolution down to 6 cm



ATLAS HYDROSWEEP DS

DEEP-SEA MULTIBEAM ECHOSOUNDER

The ATLAS HYDROSWEEP DS is a high resolution multibeam echosounder ideally suited for seabed mapping in deep water up to full ocean depth based on a sonar frequency between 14 kHz to 16 kHz. Beside bathymetric depth information from 10 m to more than 11,000 m, sidescan data and backscatter data for seabed classification are acquired. The ATLAS HYDROSWEEP DS does not only gather sea floor information, but also uses adaptive bottom tracking windows to identify sonar targets in the water column and can be operated as a parametric sub-bottom profiler without additional transducers and electronics.

The ATLAS HYDROSWEEP DS is available with 0.5°x1°, 1°x1°, 1°x2° and 2°x2° beam resolution. All transducers are planar arrays designed to be flush mounted, within a fairing or in a gondola construction whereas approx. 25% less mounting space is required compared with multibeam echosounders working at lower frequencies such as 12 kHz.

Effects of severe ship motion to survey data are compensated by active beam steering as well as additional multi-ping ensonification. Dynamic beam focusing is applied to all receive beams.

Acoustic footprints can be arranged in either "equal-angle" or "equal-distant" pattern.

A High Order Beamforming bottom detection algorithm is used to achieve up to 960 soundings per ping with the best possible accuracy in order to meet IHO SP44 accuracy standards.

The ATLAS HYDROSWEEP DS applies 2x multi-pings, which means that two swaths are transmitted simultaneously per ping slightly tilted along track. This results in gapless surveying at higher ship's speed.

FEATURES

- Depth range 11,000 m
- 2x multi-ping operation
- 320 receive beams per ping
- 960 soundings per ping
- 10,000 sidescan and backscatter samples per ping
- Water column analysis
- Sub-bottom profiling option

ATLAS HYDROSWEEP DS

DEEP-SEA MULTIBEAM ECHOSOUNDER

The Echosounder at a Glance …

- Full Ocean Depth
- 2x Multi-Ping
- Beam Resolution down to 0.5°
- 320 Receive Beams per Ping
  960 Soundings per Ping
- 10,000 Sidescan and Backscatter Samples per Ping
- Sub-bottom Profiling Option

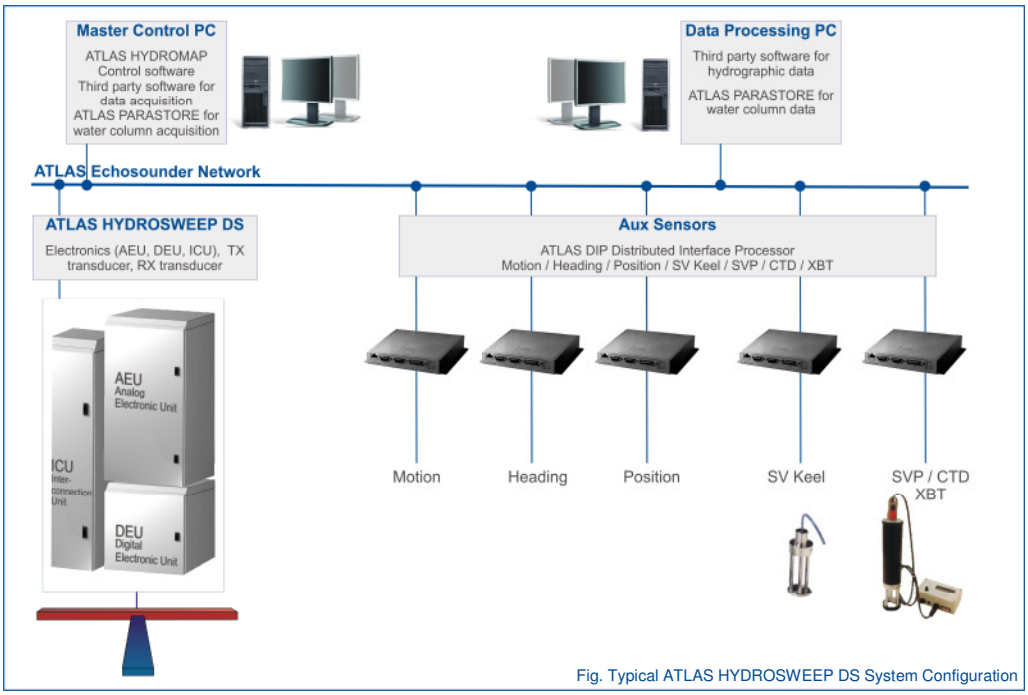


Fig. Typical ATLAS HYDROSWEEP DS System Configuration

Product Variants	0.5 x 1	1 x 1	1 x 2	2 x 2
Transmission beam width TX	0.5°	1°	1°	2°
TX transducer array dimensions*	10373 x 299 x 155	5658 x 299 x 155	5658 x 299 x 155	2829 x 299 x 155
Reception beam width RX	1°	1°	2°	2°
RX transducer array dimensions*	299 x 5658 x 155	299 x 5658 x 155	299 x 2829 x 155	299 x 2829 x 155
Max. depth range	11,000 m	11,000 m	11,000 m	11,000 m
Transmission power (TX)	120 kW	70 kW	70 kW	35 kW

* Along x across x height, relative to ship's direction, in mm

** Depending on product variant and local bottom & environmental conditions

Depth Range

- 10 – 11,000 m

Operating Frequency

- 14 to 16 kHz
- Frequency modulation (Chirp)

Multi-Ping and Ping Rate

- 2x multi-ping
- Max. 10 Hz ping rate

Bathymetric Resolution

- 0.5°, 1° or 2° along track
- 1° or 2° across track

Number of Beams

- 960 soundings per single ping via High Order Beamforming
- 320 receive beams per single ping

Motion Correction

- Roll ±15° stabilised
- Pitch ±10° stabilised
- Yaw ±5° stabilised

Resolution and Accuracy

- Max. range resolution 6 cm
- Max. output sample rate 12 kHz
- [0.5 m, 0.2% of water depth] (2σ) for 0° to 45°
- [0.5 m, 0.3% of water depth] (2σ) for 45° to 60°
- [0.5 m, 0.6% of water depth] (2σ) for 60° to 70°

Sidescan and Backscatter

- 10,000 sidescan values per single ping
- 10,000 backscatter values per single ping

Water Column Recording

- Max. 6 cm vertical resolution
- For up to 320 beams

Sub-Bottom Profiler

- Parametric sub-bottom profiling option without additional transducers and electronics

Contact

ATLAS HYDROGRAPHIC GmbH
Kurfürstenallee 130
28211 Bremen, Germany
Tel +49 421 457-2259
Fax +49 421 457-3449

www.atlashydro.com
sales@atlashydro.com