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

---

### Technical Specifications

- **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**

---

#### Product Variants

<table>
<thead>
<tr>
<th>Variant</th>
<th>0.5 x 1</th>
<th>1 x 1</th>
<th>1 x 2</th>
<th>2 x 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX Beam Width</td>
<td>0.5°</td>
<td>1°</td>
<td>1°</td>
<td>2°</td>
</tr>
<tr>
<td>RX Beam Width</td>
<td>1°</td>
<td>2°</td>
<td>2°</td>
<td>2°</td>
</tr>
<tr>
<td>Transducer Array Dimensions</td>
<td>10373 x 299 x 155</td>
<td>5658 x 299 x 155</td>
<td>5658 x 299 x 155</td>
<td>2829 x 2829 x 155</td>
</tr>
<tr>
<td>Max. Depth Range</td>
<td>11,000 m</td>
<td>11,000 m</td>
<td>11,000 m</td>
<td>11,000 m</td>
</tr>
<tr>
<td>Transmission Power (TX)</td>
<td>120 kW</td>
<td>70 kW</td>
<td>70 kW</td>
<td>35 kW</td>
</tr>
</tbody>
</table>

* Along x across 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

---

Technical alterations reserved  • © by ATLAS HYDROGRAPHIC GmbH 2012, Version 2.6