

...a sound decision

Echosounders for more than 100 Years

Worldwide Customer Base due to Superb Accuracy and Outstanding Reliability

ATLAS HYDROMAP CONTROL Software

Shallow to Medium Depth

High Resolution Depth, Sidescan, Backscatter, Water Column

ATLAS IS³ Integrated Survey Sensor Solutions



ATLAS HYDROSWEEP MD/50

SHALLOW TO MEDIUM DEPTH MULTIBEAM ECHOSOUNDER

The ATLAS HYDROSWEEP MD/50 is a very high resolution multibeam echosounder ideally suited for seabed mapping in mid and shallow water based on a sonar frequency range between 52 kHz to 62 kHz. Beside bathymetric depth information from approx. 5 m to more than 2500 m, side scan data and backscatter data for seabed classification can be acquired. But the ATLAS HYDROSWEEP MD/50 does not only determine the sea floor, it also uses adaptive bottom tracking windows to identify sonar targets (objects) in the water column.

The beam width for ATLAS HYDROSWEEP MD/50 versions with planar arrays can be a combination of 0.5° or 1° along track and 0.75° or 1.5° across track.

All beams are stabilised for roll and pitch. Soundings are fully motion corrected also for heave and yaw. Dynamic beam focusing is applied for all receive beams.

The across track coverage is 6 times water depth and a maximum coverage of more than 3600 m can be achieved. 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 single ping with the best possible accuracy in order to meet IHO SP44 accuracy standards.

The ATLAS HYDROSWEEP MD/50 applies 4x multi-ping, which means that four swaths are transmitted simultaneously per ping slightly tilted along track. This results in a maximum number of 3840 soundings and gapless surveying at higher ship's speed.

The ATLAS HYDROSWEEP MD/50 is operated by a commercial off the shelf computer along with ATLAS HYDROMAP CONTROL software under MS Windows™. This software shows relevant information such as depth, swath width as well as calibration etc. and offers all necessary control settings.

FEATURES

- Depth range more than 2500 m
- Coverage up to 6 times water depth
- 4x multi-ping operation
- 3840 soundings at 4x multi-ping
- Exceptional resolution HOB
- Sidescan and backscatter data
- Water column analysis
- Sub-bottom profiling option



THE ECHOSOUNDER AT A GLANCE ...

Depth Range >2500 m

Superb Coverage of
6x Water Depth
Absolute >3600 m

Beam Resolution
down to 0.5°

Water Column Resolution
down to 6 cm

High Order Beamforming



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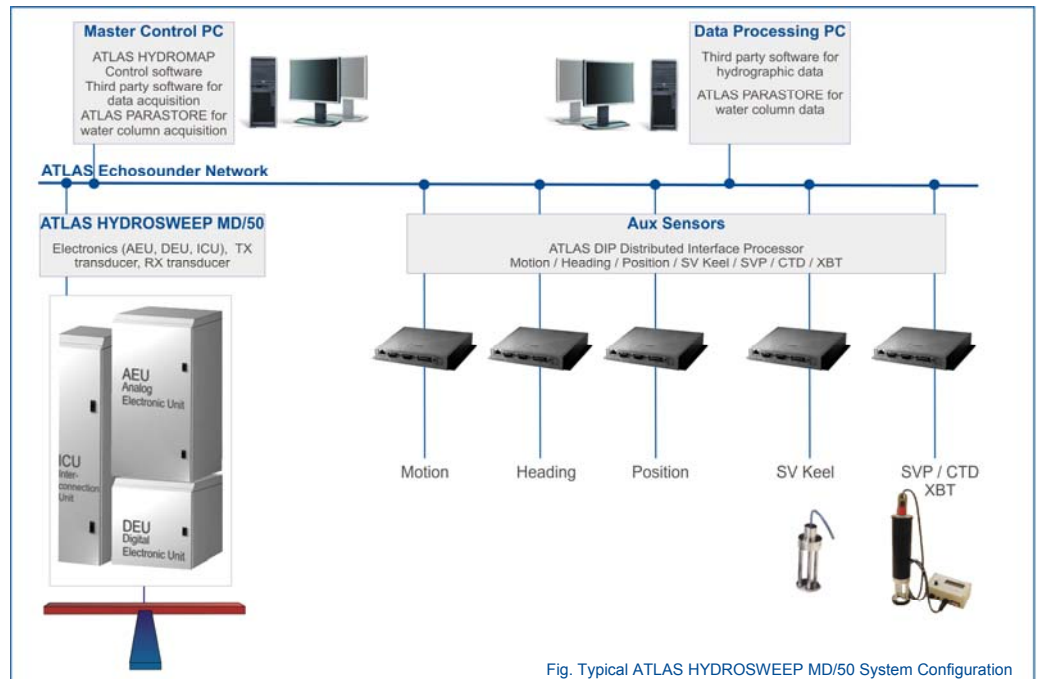


Fig. Typical ATLAS HYDROSWEEP MD/50 System Configuration

Product Variants	0.5 x 0.75	0.5 x 1.5	1 x 0.75	1 x 1.5
Transmission beam width TX	0.5°	0.5°	1°	1°
TX transducer array dimensions *	2400 x 153 x 193	2400 x 153 x 193	1200 x 153 x 193	1200 x 153 x 193
Reception beam width RX	0.75°	1.5°	0.75°	1.5°
RX transducer array dimensions *	193 x 2100 x 193	193 x 1050 x 193	193 x 2100 x 193	193 x 1050 x 193
Max. depth range	2500 m	2500 m	2200 m	2200 m
Maximum coverage absolute **	3600 m	3600 m	3200 m	3200 m
Transmission power (TX)	16 kW	16 kW	8 kW	8 kW

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

** Depending on local bottom and environmental conditions

DEPTH RANGE

- 5 – 2500 m

MAXIMUM COVERAGE**

- 6 times water depth (143°)
- More than 3600 m absolute

OPERATING FREQUENCY

- 52 to 62 kHz
- Frequency modulation (Chirp)

MULTI-PING AND PING RATE

- 4x multi-ping
- Max. 40 Hz ping rate (at 4x multi-ping)

BATHYMETRIC RESOLUTION

- 0.5° or 1° along track
- 0.75° or 1.5° across track

NUMBER OF BEAMS

- 3840 soundings at 4x multi-ping
- 960 soundings per single ping via High Order Beamforming
- 320 hard beams per single ping

RESOLUTION AND ACCURACY

- Max. range resolution 6 cm
- Max. output sample rate 12 kHz
- Better than max [0.3 m, 0.2% of water depth] (2σ)

SIDECAN 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

MOTION CORRECTION

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

Fig. Reception Transducer of ATLAS HYDROSWEEP MD/50 (1° x 1.5°)



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