

...a sound decision

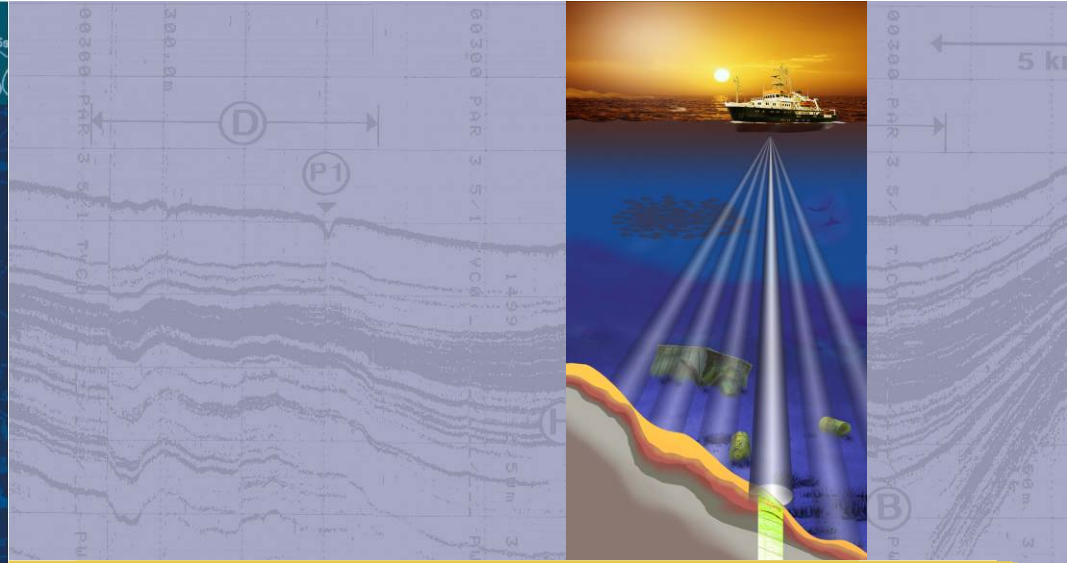
Echounders for more than 100 Years

Ideal Instrument for Science and UNCLOS Mapping

High Resolution Sediment Information at Full Ocean Depth Capability

Acoustic Measurements for Water Column, Bathymetry and Sidescan

ATLAS PARASTORE Acquisition and Processing Software



ATLAS PARASOUND

DEEP-SEA PARAMETRIC SUB-BOTTOM PROFILER



Scientists at Southampton Oceanography Centre calculated that the mineral wealth lying around on or under the ocean floor within extended legal continental shelf (ELCS) areas were worth trillions of dollars. The parametric sub-bottom profiler ATLAS PARASOUND is the ideal oceanographic instrument to define ELCS areas according to the United Nations Convention on the Law of the Sea (UNCLOS) and for measuring sedimentary thickness to more than 200 m at full ocean depth.

Additional hydroacoustic measurements provided by the ATLAS PARASOUND such as single beam or multibeam depth data, backscatter amplitudes and high resolution water column profiles are of great benefit to the following fields of application:

- Offshore construction and site survey for oil platforms, pipelines, cables, wind farms
- Identification of marine resources e.g. gas hydrates, sand, gravel, oil and gas
- Detection of buried objects e.g. pipelines, archaeological spots
- Pre-investigations for drilling activities and ROV/AUV missions
- Hydrographic surveying
- Scientific research to identify geological structures and seabed characteristics

Since the ATLAS PARASOUND is a hull-mounted sub-bottom profiler, it offers very narrow transmission angle and greater positioning accuracy as well as higher operational speed and availability compared with traditional towed systems.

The ATLAS PARASOUND utilises the parametric effect to generate a low frequency secondary signal by emitting two primary signals of higher frequencies.

Due to ATLAS HYDROGRAPHIC's responsibility to nature conservation and in particular to marine mammal protection the ATLAS PARASOUND includes automatic transmission source level control, whale warning mode and reduced transmission source levels by means of chirped pulses.

The ATLAS PARASOUND is operated by a commercial off the shelf computer along with ATLAS PARASTORE software under MS Windows™. ATLAS PARASTORE combines under an intuitive graphical user interface the control of the acquisition process, online visualisation and data recording. Raw data are stored as ATLAS Sounding Data (ASD) or can be converted into SEG-Y or PS3 for further processing.

The ATLAS PARASOUND is available in two versions (P35, P70) which have different transmission power for maximum sediment penetration.

FEATURES

- Depth range 11000 m
- Max. bottom penetration >200 m
- Parametric signal:
 - 0.5 – 6.0 kHz
 - 4.5° x 5.0° beam width
- Multi-pulse operation
- Multibeam capability
- Watch-free operation
- Water column analysis
- Barker, chirp or user-defined pulses

THE ECHOSOUNDER AT A GLANCE ...

Bottom Penetration
>200 m at Full Ocean Depth

Parametric Frequency
0.5 to 6.0 kHz

Beam Width 4.5° x 5.0°

Barker, Chirp, CW or
User-Defined Pulses

Watch-Free Operation

Multi-Ping Capability



ATLAS PARASOUND

DEEP-SEA PARAMETRIC SUB-BOTTOM PROFILER

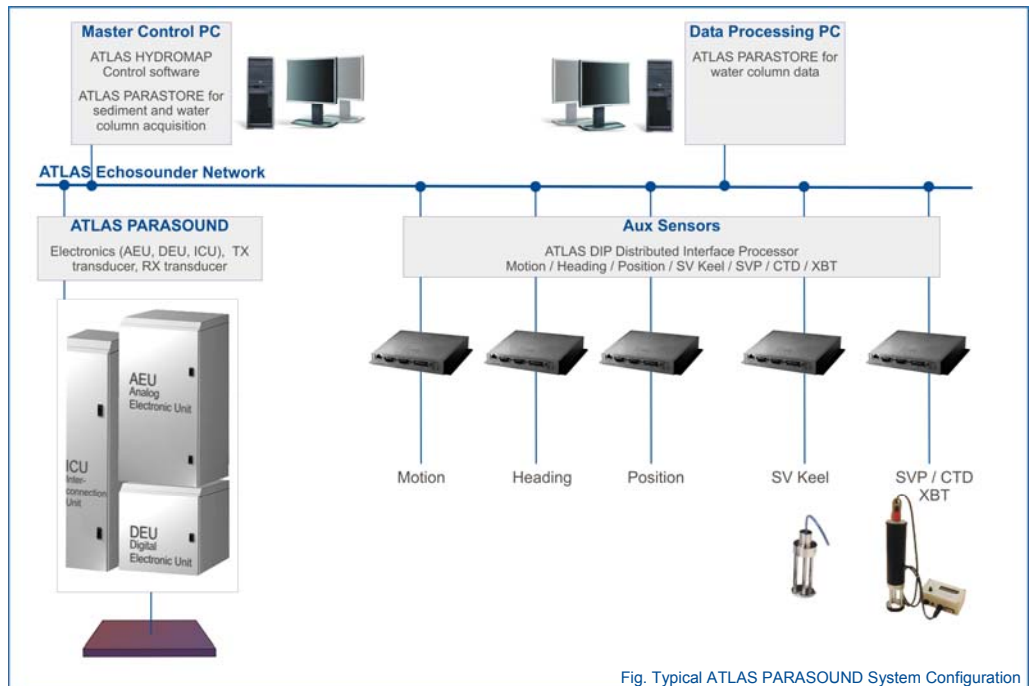


Fig. Typical ATLAS PARASOUND System Configuration

SEDIMENT PENETRATION / DEPTH RANGE*

- Penetration P70 >200 m
- Penetration P35 >150 m
- Depth range 10 – 11000 m

* Depending on local bottom and environmental conditions

FREQUENCY BANDS

- High frequency: 18 – 33 kHz
- Parametric low frequency: 0.5 – 6.0 kHz

MULTI-PING AND PING RATE

- Up to 16 simultaneous pings
- Equal-distant mode
- Max. 20 Hz ping rate

PULSE MODULATION

- 0.17 – 25 ms pulse lengths
- Barker, chirp, CW and user-defined pulse shapes

TRANSMISSION POWER

- P70: 70 kW
- P35: 35 kW

TRANSMISSION SOURCE LEVEL

- P70: 245 dB / 206 dB (primary / parametric)
- P35: 242 dB / 200 dB (primary / parametric)

BEAM RESOLUTION

- 4.5° @ 0.5 to 6.0 kHz along track
- 5.0° @ 0.5 to 6.0 kHz across track

BEAM STEERING ANGLE

- Across ship up to ±25°
- Along ship up to ±10°

RESOLUTION AND ACCURACY

- Max. range resolution 6 cm
- Max. output sample rate 12 kHz
- Sediment layer resolution: down to <15 cm
- Better than max [0.2 m, 0.2% of water depth] (1σ)

WATER COLUMN RECORDING

- Max. 6 cm vertical resolution
- 32 bit dynamic range

OPERATION MODES

- Parametric and conventional sub-bottom profiling as single beam and multibeam
- Multibeam, single beam echosounding
- Whale Warning Mode (WWM)

MOTION CORRECTION

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

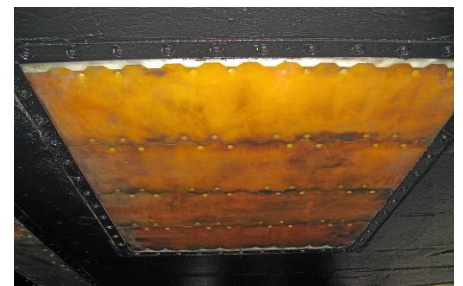


Fig. Transducer array of ATLAS PARASOUND P70 with special moulding for ice-protection

Contact

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

www.atlashydro.com
sales-hydro@atlas-elektronik.com