

# Echoes 3500 T7

High-resolution sub-bottom profiler  
for full ocean depths



Echoes 3500 T7 is a high-performance sub-bottom profiler offering high-resolution seismic reflection data. Its 7 transducers provide unique quality data from shallow to deep sea environments regardless of the seabed topography.

## HIGH QUALITY SEISMIC DATA

- True flat bandwidth ultimate resolution capacity and power efficiency
- Chirp spectrum coverage of 1.7 to 6kHz
- Vertical resolution 20 cm
- Penetration up to 150 m in clays (@ 1,000m water depth)
- Penetration up to 40 m in sand (@ 1,000m water depth)

## DELPH SEISMIC SOFTWARE

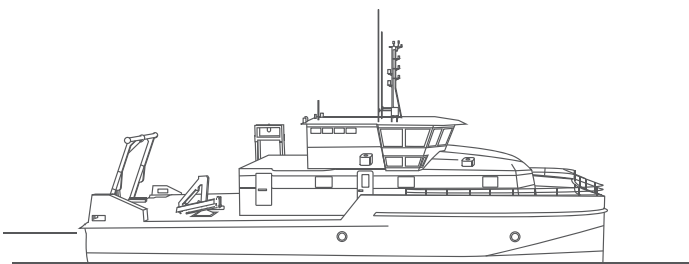
- All-in-one optimized geophysical processing and interpretation
- Easy access to all data collected for geologists and geophysicists
- Compatible with leading industry sensors and formats
- Best possible 2D/3D QC
- Visualization and reporting capabilities

## FULLY OPERATIONAL

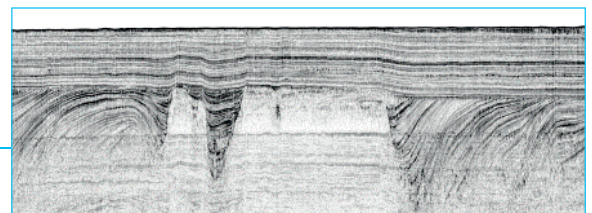
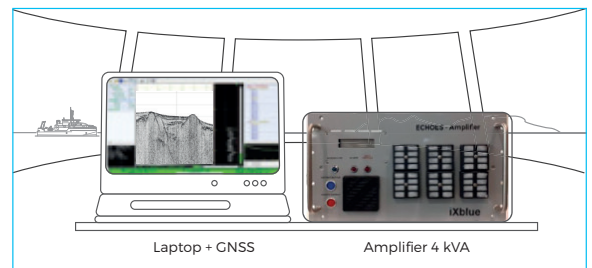
- Perfect positioning and heave compensation
- Compatible with any bathymetric echosounder
- Hull-mounted systems
- Modular configuration

## APPLICATIONS

- Deep water oceanography
- Sedimentology and paleoseismology
- Marine platforms implantation
- Route/boulder clearance
- Pockmark detection
- Seabed roughness
- Bedrock depth



**Echoes 3500 T7**  
Full ocean depth  
Hull-mounted configuration



## Technical specifications

Acoustic technology

<b>Array configuration</b>	7 Tonpizl transducers mounted on a plate
<b>Operational frequency range (Hz)</b>	1,700 - 6,000
<b>Mean acoustic level</b>	208 dB (ref 1 $\mu$ Pa@1m) @ 4 kVA
<b>RVS (Receiving Voltage Sensitivity) (ref. 1<math>\mu</math>Pa)</b>	Chirp processing gain (100ms pulse) +22dB
<b>Beam aperture @ 3.5 kHz</b>	20°
<b>Vertical resolution (c = 1,500 m/s)</b>	20 cm

Echoes 3 500 T7 Array

<b>Recommendation for water depth below transducers (m)</b>	1 to 6,000
<b>Height (mm)</b>	384
<b>Diameter (mm)</b>	980
<b>Weight in air / water (kg)</b>	325 / 237

Echoes 3 500 T7 Topside Unit

<b>Signal emission power / Echoes mean power</b>	4 kVA / 850 W
<b>Length / width / height (mm)</b>	598 (incl. back panel socket) / 483 (19") / 266 (6U)
<b>Weight (kg)</b>	30
<b>Mounting</b>	Rack-mounted
<b>Deck cable length (m)</b>	50

## Case Study

### Reconstructing millennial-scale Anatolian earthquakes history from Marmara deep sea sediments

This high-resolution seismic profile was acquired at about 2500m water depth in the Marmara Central Basin with an Echoes 3500 T7 onboard of the R/V Le Suroit Ifremer/Genavir in 2009.

a) Earthquake-derived deposit (homogenite) is indicated by black arrows.

b) Map of the Sea of Marmara showing the location of the area given in c).

Tary Jean-Baptiste (2011). Case studies on fluids and seismicity in submarine environments based on Ocean Bottom Seismometers (OBS) recordings from the Sea of Marmara and application to the Niger Delta. PhD Thesis, Université de Bretagne Occidentale.  
<https://archimer.ifremer.fr/doc/00034/14557/>

