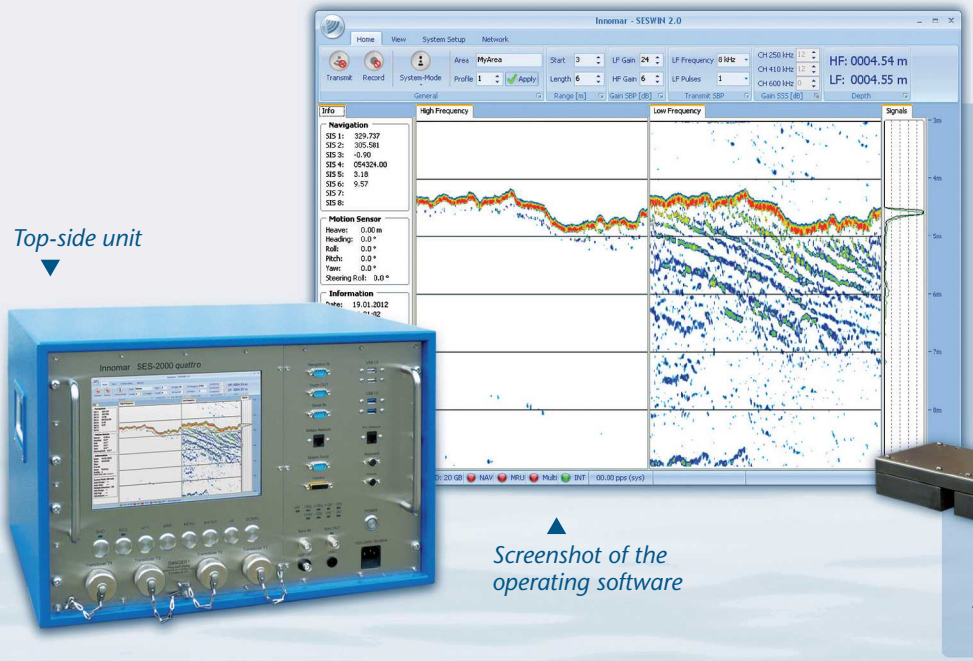


Top-side unit

Screenshot of the operating software

single beam mode (SBM)

dual beam mode (DBM)

quattro beam mode (QBM)

Transducer (QBM)

SES-2000 quattro

Parametric Sub-bottom Profiler

▶ Performance
- water depth range:
  SBM: 1 – 500 m
  QBM: 0.5 – 30 m
  (depends on array geometry)
- sediment penetration:
  SBM: up to 50 m
  QBM: up to 20 m
- layer resolution: up to 5 cm
- motion compensation: heave
- beam width @ 3 dB for all frequencies:
  SBM: ± 1.5° / footprint < 5.5 % of water depth
  QBM: ± 2.5° / footprint < 9.0 % of water depth

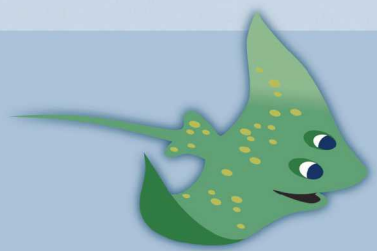
▶ Transmitter
- primary frequencies:
  approx. 100 kHz (band 85 – 115 kHz)
- secondary low frequencies:
  4, 5, 6, 8, 10, 12, 15 kHz (band 2 – 22 kHz)
- primary source level:
  SBM: > 245 dB//µPa re 1 m
  QBM: > 235 dB//µPa re 1 m
- pulse width: 0.07 – 1 ms
- pulse rate:
  SBM: up to 60/s
  QBM: up to 15/s per transducer
- multi-ping mode (SBM)
- pulse type: CW, Ricker

▶ Acquisition
- primary frequency
  (echo sounder, bottom track)
- secondary low frequency
  (sub-bottom data, multi-frequency mode)
- sample rate 96 kHz @ 24 bit

▶ System Components
- transceiver unit 19 inch / 6 U
  (WHD: 0.52 m x 0.30 m x 0.40 m; 32 kg)
- transducer excl. 15 m cable
  (WHD: 4 x [0.21 m x 0.06 m x 0.21 m];
  4 x 5 kg)
- system control: internal PC

▶ Software
- SESWIN data acquisition software
- SES Convert SEG-Y/XTF data export
- SES NetView remote display
- ISE post-processing software
- 3D volume renderer

▶ Power Supply Requirements
- 100 – 240 V AC / 50 – 60 Hz
- power consumption: < 300 W



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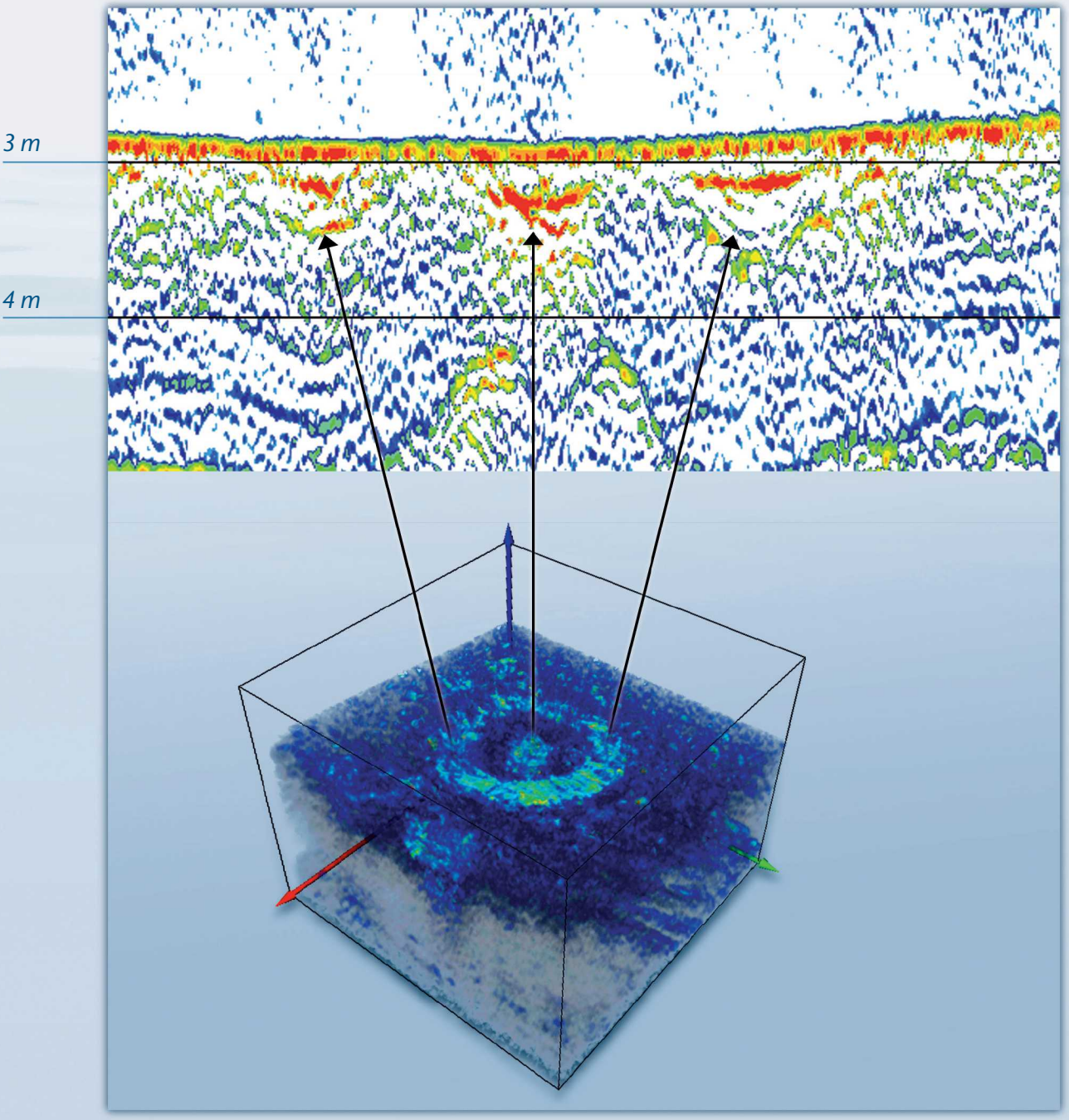
Survey example of SES-2000 quattro



Wismar Bay echo plot example and 3D volume rendered area with embedded circular structure
Frequency 10 kHz, pulse length 100 µs, profile length 40 m (3D volume: 40 m x 40 m x 3 m)

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