

## PORTABLE UNDERWATER CALIBRATION SYSTEM



### Description

SIERA offers a solution for the characterization and calibration of underwater acoustic systems (hull-mounted sonars, dipping sonars, variable depth sonars, buoys...).

SIERA also allows radiated noise measurements in the far field.

SIERA is an autonomous system towed from a dedicated boat.

SIERA is composed of 4 subsets :

- a processing and visualizing unit
- a light towed body
- two winches for towline storage
- two 250 m electrical cables equipped with waterproof plugs and associated extension cables

Products are subject to export control restrictions.

### Applications

- Sea Acceptance Tests
- Transmission level measurements
- Calibrated sound-effects engineering for training in an operational environment
- Radiated noise measurements in the far field

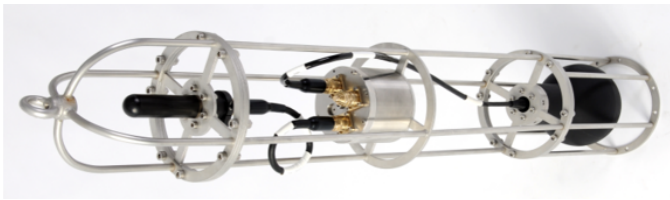
### Features

- Frequency and level measurement
- Noise maker
- Repeater
- Answerer
- GPS positioning
- Visualization of received and emitted signals
- Immersion measurement of towed body

### Characteristics

- **Reception sensibility:** sea state 0 up to 180 dB/ $\mu$ Pa
- **Emission level:** 185 dB from 3 to 20 kHz, 150 to 185 dB from 200 Hz to 3 kHz
- **Frequency band (E/R):** 200 Hz to 20 kHz
- **Measures in ref:** dB/ $\mu$ Pa related at 1 m

- **Towed body size:** D: 205 mm  
L: 1312 mm
- **Towed body weight:** 19 kg
- **Max operating depth:** 500 m
- **Max towing speed:** 10 kn



## Towed body

- Welded and screwed mechanical parts in 316 L stainless steel
- B&K 8106 Hydrophone
- Neptune Sonar D/11/BB Transducer
- Watertight enclosure:
  - 3 waterproof plugs
  - Pressure sensor
  - Protecting and filtering electronics
- Removable storage plug

Two 250 m towed electrical cables equipped with two waterproof connecting sockets.

Two aluminum winches equipped with a retractable handle, a locking system and mounting brackets on the deck.



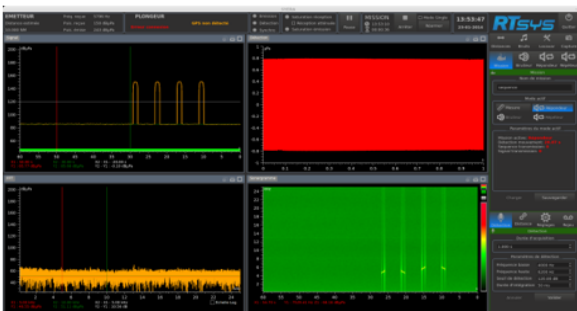
## Acquisition and CAG generation box

The acquisition and CAG generation box is composed of the following elements:

- 19-inch 6U enclosure with removable front panels, wheels and retractable handle
- 1U acquisition unit and application software
- 2 class D amplifiers, each in 1U format
- 3U impedance matching unit
- Wiring and connecting tools

The configuration and processing unit is composed of:

- Connecting unit and laptop
- Operating system
- Software application
- Removable data storage unit



## Contact

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## RTsys Activities

- Underwater acoustics
- Embedded electronics
- Underwater drones
- Sonar solutions
- Systems integration
- Customized R&D