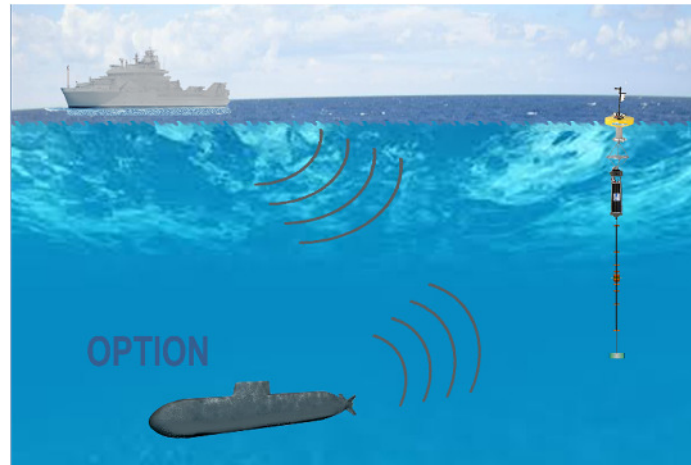


Vertical Line Array for Radiated Noise Measurement



Description

VERTHY is a ship acoustic signature measurement system. Easy-to-handle and to deploy, **VERTHY** allows rapid underwater acoustic acquisition.

VERTHY is designed in three functional subsystems:

- The Vertical line array 15 hydrophones
- The EA-SDA416 recorder, with GPS and secure radio transmission, moored to a surface buoy.
- The signal processing / display / real-time trajectography control laptop.

EA-SDA416 is a compact embedded recorder able to acquire high resolution hydrophone array.

The embedded processor enables efficient acquisition, filtering, and storage.

The recorder's battery provides up to 15 hours mission autonomy.

VERTHY is build rugged for marine environments.

Advantages

- Easy implementation
- Acoustic signature checking & control

Applications

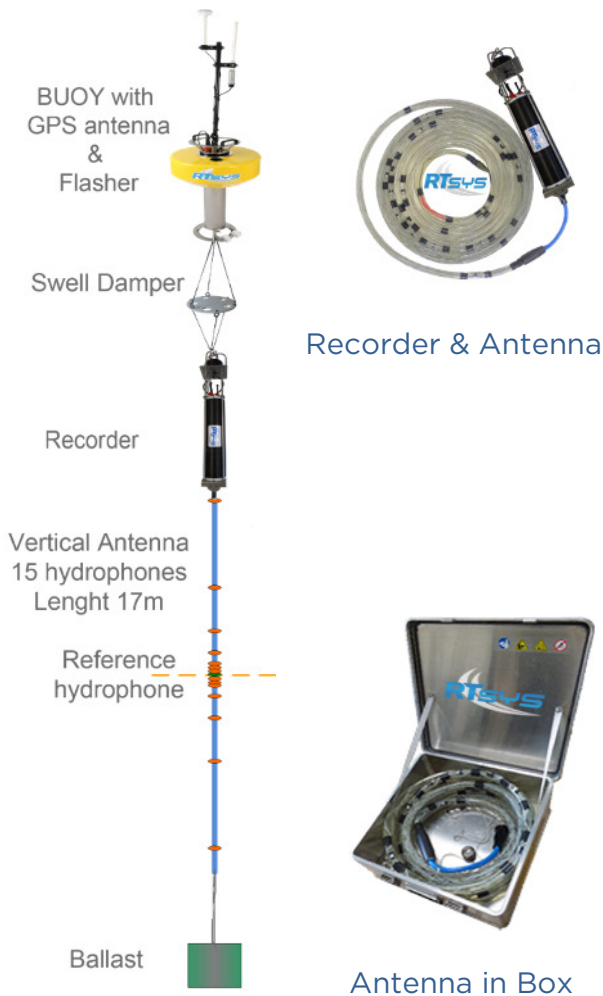
- Radiated noise measurement
- Acoustic signature monitoring
- Characterization of ship noise

Features

- Multichannel: up to 16 inputs
- Broadband: 1Hz to 10 kHz
- Wide dynamic: 32 bits recording
- Light weight acquisition system
- Easy to use: Embedded web application

Characteristics

- Recorder size: L 1050mm ø 120mm
- Antenna size: L 17m ø 31mm
- Weight(air): 12kg
- Power: Rechargeable battery pack
- Storage: 128 or 256 GB SD Card
1TB SSD, 2TB HDD



16 synchronized recording channels

VERTHY is designed with the new SDA416 card. An FPGA is coupled with an ARM Dual-Core Cortex A9 running on Linux for real-time data processing. The 16 channels are electronically synchronized and calibrated at +/-0.1dB.

The **VERTHY** can record frequencies from 1HZ to 10KHz with a fully configurable sampling frequency up to 120KHz. Each channel has two gain inputs. Gain values and high pass filter can be selected by the user before ordering. Sound data are collected in 32 bits guaranteeing great dynamic (>100dB). For security, data is encrypted.

The SDA416 board is optimized for low power consumption.

Acquisition in a low signal and noise environment

The hydrophone antenna and the processing of the beams allow a large gain and different listening directions. Thus, the gain (up to 6 dB) can improve acoustic acquisition in a noisy environment and increase the listening area.

Antenna

The size of the antenna is reduced to 31mm due to the size of the sensors and it is light enough, with a length less than 20 meters to be handled easily by one person.

The internal stainless steel cable and the Dyneema braided textile outer cable provides a very good combination of high strength and acoustic noise protection.

Beamforming

The beamforming appear in the center of antenna pivot hydrophone. The size of the beam depends of the working bandwidth.

Submarine Option

This option allows to measure the signature of a submarine in far field with acoustic trajectography. A trajectory calculation tool with a transducer emitting a power of 160 dB allows to measure the distance of the submarine up to 2.5 km.

The recorder and antenna can be immersed at a depth of 50 or 100 meters.

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Rtsys activities

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