Acoustic Recorder
& Signal Analyzer

Sono.Vault acoustic recorder & signal analyzer

Sono.Vault during deployment

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Sono.Vault

Acoustic Recorder and Signal Analyzer

Our Sono.Vault acoustic recorder and signal analyzer is designed for long-term recording and monitoring of marine acoustic emissions.

Driving design parameters during development were energy-efficiency, premium recording quality, application flexibility and ruggedness.

The system is able to record acoustic signals continuously with sampling rates up to 96kHz @24bit sample resolution and 196ksps @16bit. The system can also record according to programmable schedule. The total recording capacity is extendable up to 4.4TB

In order to support long-term monitoring with spectral frequencies up to 100 kHz, various triggering and sampling schemes are available.

Depending on the sampling rates, the Sono.Vault system is able to record acoustic data continuously for several years 1).

Applications include recording of marine mamals acoustic signatures, monitoring of acoustic emissions during offshore construction works and testing of marine acoustic systems.

Each recorder is individually calibrated.

Depending on the required deployment period, various battery and memory configurations are available. The most compact entry level system is hosted in one of our base housings (see housing brochure). For long term operations, housing solutions with battery capacities up to 9000Wh are available allowing deployment durations up to 5 years and more.

[1]E.g.2 years with 24ksps @ 24bit

Specification Sono.Vault

Sampling Rates

- 16 bits up to 196/220ksps (effective resolution14.4 bits @220ksps)
- 24 bit up to 96ksps (effective resolution 19.1 bit @48ksps1)

Hydrophone

Spherical, differential hydrophone, depth rated to 3,500m

Bandwidth

- 3Hz to 100kHz - depending on sampling parameters,
- Programmable input preamplifier 6dB to 48 dB)
- Programmable input attenuator (-20dB) for measuring high sound pressure

Specification Sono.Vault HF

Sampling Rates

- 16 bits up to 450kHz
- 24 bit up to 96kHz

Hydrophone

Fully differential hydrophone, depth rated to 2,000m

Bandwidth

- 3Hz (-3db) to 250kHz (-3db) - limited by sampling rate
- Programmable amplification 18dB, 24dB, 30dB 36dB

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Specification Housing / Power Supply / Options

Housing

- Corrosion proof DW.TH housing, depth rated to 6000m (Hydrophones: 3,500m/2,000m)
- Shallow water version with MCH housing rated to 750m
- High mass, vibration attenuating hydrophone mount

Dimensions (extended double length housing configuration)

- Outer diameter: 129.5 mm
- Outer length: 910 mm

(double length system)

Weight

- in air, no batteries: 11.9 kg

Storage

- Up to 5 modules, each with 7 SDHC/SDXC slots / storage module, supporting memory cards with currently up to 256GB capacity
- Recording Capacity: 1792GB per storage module, up to 5 modules

Internal Battery Capacity

Up to 9000Wh – Recording time up to 5 years and more (depending on configuration)

Signal Processing / Analysis Functions [3]

- Recording trigger based on energy threshold and frequency patterns
- Periodic spectral recording
- Digital filtering

Precision Time Base

- <0.035 ppm drift/year standard (ca. 1.1s /year)

Interfaces

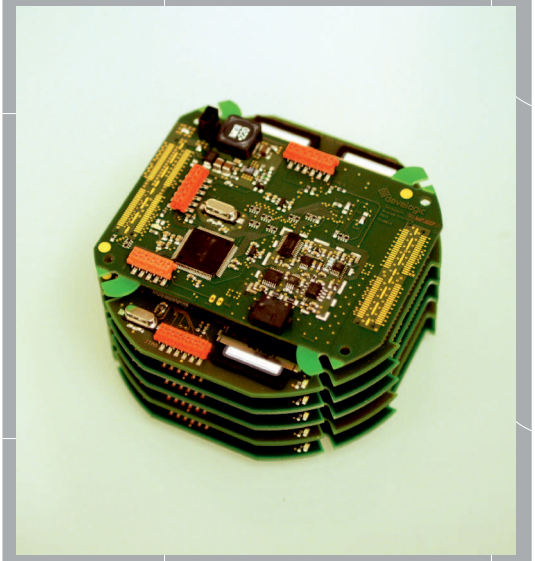
- 1x RS232 for configuration and interfacing to telemetry systems (HAM.Base, R.COM)
- Ethernet (upon request)
- USB

Options

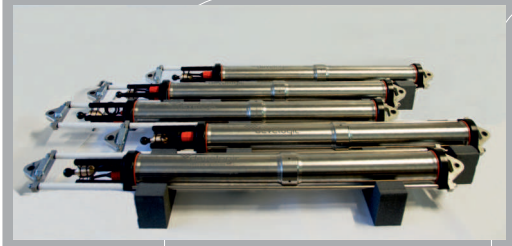
- Symmetricon CSAC for high precision time base (<0,0012 ppm, ca 0.04 s / year)

[3] Requires optional DSP module

Acoustic Recorder
& Signal Analyzer



Sono.Vault electronics stack, standard frontend with 5 storage modules



Sono.Vault with titanium double housing

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