

digitalHyd SR-1

USER-FRIENDLY RECORDING OF UNDERWATER SOUND

A compact autonomous acoustic recorder for a broad range of applications.

Underwater Noise Monitoring
Bioacoustics of Marine Mammals
Underwater Acoustics Research
Underwater Vehicle Payload



Small size

50mm x 323mm (DxL)

Data Storage

Removable memory
(up to 128 Gbyte)

Autonomy

12h of continuous
acquisition
Extended operation time
(optionally)

Programmable

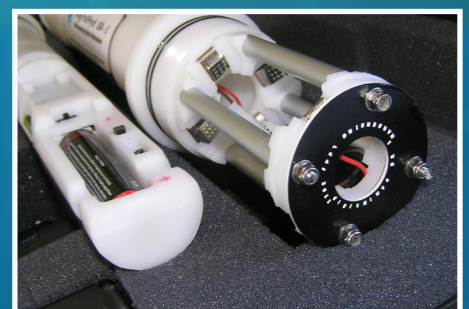
Acquisition scheduling

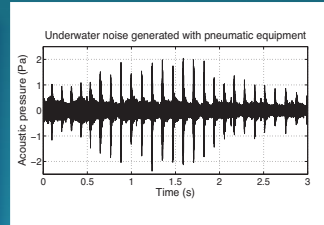
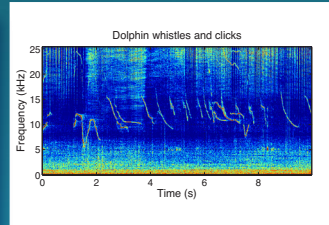
Compact autonomous underwater acoustic recording device.

User-friendly operation: easy programming, deployment, and recovery.

Versatile application: use in moored or tethered configurations.

Ideal for implementing **efficient** multi-position monitoring strategies.





DESCRIPTION

The digitalHyd SR-1 is a compact autonomous hydrophone designed for versatility and easy application. Its small size allows for easy use in moored or tethered configurations, or as a payload in underwater vehicles.

REFERENCES

READ P. Felisberto, S. M. Jesus, F. Zabel, et al. *Acoustic monitoring of O₂ production of a seagrass meadow*. Journal of Experimental Marine Biology and Ecology. Vol. 464, pages 75-87. March 2015.

READ A. Silva, A. Matos, C. Soares, J. Alves, J. Valente, F. Zabel, et al. *Measuring underwater noise with high endurance surface and underwater autonomous vehicles*. OCEANS'13 MTS/IEEE Conference, San Diego, USA. 23-27 September, 2013.

READ C. Soares, E. Cruz, F. Zabel and A Moura. *Environmental Inversion with an Autonomous Hydrophone in a Wave Energy Device Deployment Site*. In Proc. Underwater Acoustics Conferences 2014. Island of Rhodes, Greece. 22-27 June, 2014.

READ C. Soares, A. Pacheco, F. Zabel, et al. *Baseline assessment of underwater noise in the Ria Formosa*. Marine Pollution Bulletin. Volume 150. 2020.

FEATURES

This device features a wide range of configurations, including selectable sampling frequencies and amplitude resolution, programmable sensitivity, start-up times and file duration, among others. The received acoustic data is stored on a removable memory card, in WAV format, which stores also all configuration parameters for usage during data analysis. The acoustic data files can be open and processed with free open source software such as **PamGuard** and **Audacity**. The device is configured through a USB interface with access compatibility from various types of operating systems.

The digitalHyd SR-1 is powered by a rechargeable lithium-ion battery and is able to remain on for up to 12 hours of continuous acquisition, or various days in stand-by. Battery and memory card are field replaceable, to allow for quick redeployments of the hydrophone. Optional battery extension packs are available on demand, for expanding the SR-1 to the user required autonomy.

**rechargeable
Battery Extensions**
5PACK - 3.7VDC, 17Ah
10PACK - 3.7VDC, 34Ah
15PACK - 3.7VDC, 51Ah

SPECIFICATIONS

Sample Frequency

52.734 kHz / 105.469 kHz (selectable)

Sample Resolution

24 bits.

Usable Acoustic Band

1 Hz to 25.8 kHz / 1 Hz to 51.6 kHz

Receive sensitivity

-162.2 to -126.1 dB re 1 V/uPa

Programmable Gain Amplifier

1x, 2x, 4x, 8x, 16x, 32x, 64x

Input Sound Pressure Level Range

46.3 dB re 1 uPa to 172.5 dB re 1 uPa

Memory Card Capacity

up to 256GB (field replaceable)

Battery

3.7VDC, 3600mAh, Lithium-Ion 18650

Battery Life

- up to 20h in continuous acquisition;
- up to 750h in stand-by.
- expandable with larger battery packs.

Operation depth

Up to 100 m.

Case dimension

50 x 323 mm (diameter x length)

Case Material

Delrin

Weight

0.18 kg (in water), 0.77 kg (in air)

Real Time Clock

Precision of ± 64 seconds per year

Operation Temperature Range

0 °C to 40 °C



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