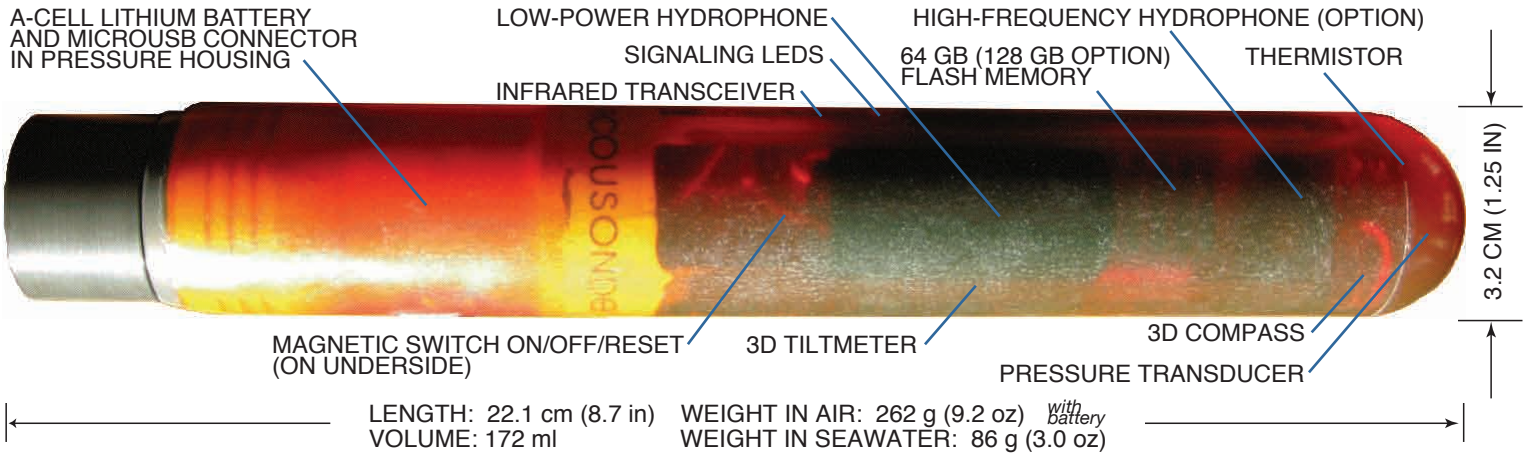


# ACOUSONDE™



The *Acousonde*™ is a self-contained underwater acoustic recorder comprising one or, optionally, two hydrophones, sensors for attitude, orientation, depth and temperature, a digital recorder, and a field-replaceable battery. Attached to a subject with suction cups or other means, the *Acousonde* measures the subject's sound environment as well as potentially associated behavior.



Lori Mazzuca



Ward Testa

In addition to its primary mission as a tool for assessing the impact of noise on marine wildlife, the *Acousonde* can be used to study vocalization behavior of the tagged subject. The instrument may also be applied as an autonomous recorder suspended from a cable, placed on the seafloor, or housed in a robotic or remotely-operated vehicle.



Lori Mazzuca

## SPECIFICATIONS, ACOUSONDE 3A UNDERWATER ACOUSTIC RECORDER

|   |  |
|---|--|
| Maximum operating depth (fixed build option)          | 500 m (-500m suffix) / 1000 m (-1km) / 2000 m (-2km) / 3000 m (-3km) |
| Maximum continuous acoustic sampling rate             | 232 kHz  |
| Anti-alias filter, low-power (LP) channel             | 8-pole elliptic, adjustable (automatic) up to 9.2 kHz maximum        |
| Anti-alias filter, high-frequency (HF) channel        | 6-pole linear phase, fixed   |
| 3-dB anti-alias cutoff                                | 9.2 kHz (LP chan max); 42 kHz (HF chan)                              |
| 22-dB anti-alias cutoff                               | 11.1 kHz (LP chan max); 100 kHz (HF chan)                            |
| 3-dB high-pass cutoff                                 | 22 Hz (LP chan); 20 Hz/1 kHz/10 kHz (HF chan, fixed, customer spec)  |
| Unamplified raw ceramic sensitivity, re 1 V/ $\mu$ Pa | -201 dB (LP chan hydrophone) & -204 dB (HF chan hydrophone)          |
| Saturation at 0-dB gain, re 1 $\mu$ Pa zero-peak      | 187 dB (LP chan) & 176 dB (HF chan)                                  |
| Acoustic gains, selectable at deployment              | 0 or +20 dB  |
| Acoustic sampling resolution                          | 16 bits  |
| Auxiliary sampling rate                               | Up to 800 Hz (3D tilt), 40 Hz (3D compass), 10 Hz (depth, temp)      |
| Auxiliary sampling resolution                         | 16 bits (except 10 bits for tilt)                                    |
| Auxiliary sampling channels                           | Depth (pressure), internal temperature, 3D tilt, 3D compass          |
| Total storage capacity (primary & spare)              | 64 GB, 128 GB max (at sample rates < 26 kHz, battery limits storage) |
| Maximum duration if sampling < 26 kHz                 | 6-14 days depending on temperature and if aux sampling also active   |
| Maximum measured data download rate                   | 3.3 GB/hour via MicroUSB connector                                   |

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Firmware support for some specifications, performance and/or functionality may be pending; see current release notes. Data subject to change without notice.

HOME PAGE <http://www.acousonde.com>  
 TECH QUESTIONS [tech@acousonde.com](mailto:tech@acousonde.com)  
 SALES [acousonde@cetaceanresearch.com](mailto:acousonde@cetaceanresearch.com)