



HydrObs : MULTICHANNEL ACOUSTICAL STATION

Long Term Deployment with
shuttles for data recovery

The Geophysical Station has been developed
for the French National Center for
Scientific Research - CNRS

APPLICATIONS

Long-term monitoring of low-frequency sounds in the ocean:

- Low-level seismic activity along mid-oceanic ridges (T-waves)
- Submarine volcanic activity
- Iceberg calving or dislocating
- Seasonal presence and migration patterns of large baleen whales

FEATURES

- Up to 4 years Autonomy
- Up to 2000m Depth
- 4 acoustic channels
- Up to 3 Shuttles for data recovery
- Shuttles released by mechanical acoustic releases
- Digital Inductive communication Station / Shuttles
- Station and Shuttles localization by GPS location transmission via proprietary VHF link and Strobe light
- Non corrosive material housing

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TECHNICAL SPECIFICATIONS

Dimension (LxD1xD2):	2.5m x 1m x 0.6m
Weight in Air:	400Kg (882 lb)
Maximum Operating depth:	2000m (6,562 ft)
Material:	Polyethylene, syntactic foam, glass and Titanium
Consumption* :	< 180mW
Autonomy*:	Up to 4 Years
<i>*Nominal configuration including: Accurate Clock, Pressure sensor, Temperature sensor and 1 Hydrophone@250S/s.</i>	

Shuttle recovery:	By acoustic release
Station and Shuttle Localization:	By GPS location transmission via proprietary VHF link and Strobe light. <i>Option: Station GPS location transmission via Iridium SBD for unexpected release</i>
State-of-health parameters:	By acoustic communication
Data Management:	4 Years of continuous recording on μ -SD card
Data Download:	Use a USB 2.0 link after recovery
Data format:	Wave 32bits PCM32
Data recovery Shuttles:	Up to 3 by acoustic release
Data transfer to Shuttles:	Digital Inductive communication
System Configuration:	By Web Server
Time Management:	<i>Accurate Clock, Drift 2.10^{-8} / Year</i> <i>Option: CSAC Atomic Clock, Drift 1.10^{-9} / Year</i>
Time Drift measurement:	Automatic when surfacing (Shuttle and Station)

INTERNAL SENSOR MONITORING: 3 axis accelerometer, voltage, humidity, Temperature and pressure

ABSOLUTE PRESSURE SENSOR: KELLER sensor
Accuracy / FS: 0.01 %FS / 300 bar
Sample rate: 1S/10mn

TEMPERATURE SENSOR: KELLER sensor
Accuracy / FS: $\pm 2^{\circ}\text{C}$
Sample rate: 1S/10mn

ACOUSTICS: Up to 4 Broadband hydrophones
Hydrophone ref.: HTI-90-U (*Option: HTI-04/ULF*)
Sensitivity: -164dB ref.1V/ μPa
Gain setting: -8 / +3dB
Self Noise: -128 / -136 dBVrms/ $\sqrt{\text{Hz}}$ @10Hz
Maximum Level: 175 dB / 164 dB ref.1 μPa
Bandwidth: 0.4Hz to Fs/2.5 (max 400Hz)
Resolution/ Sample rate: 32bits / 125, 250, 500, 1000 Sps

EXTRA SENSORS:
Digital: Up to 4 additional serial RS232 channels

