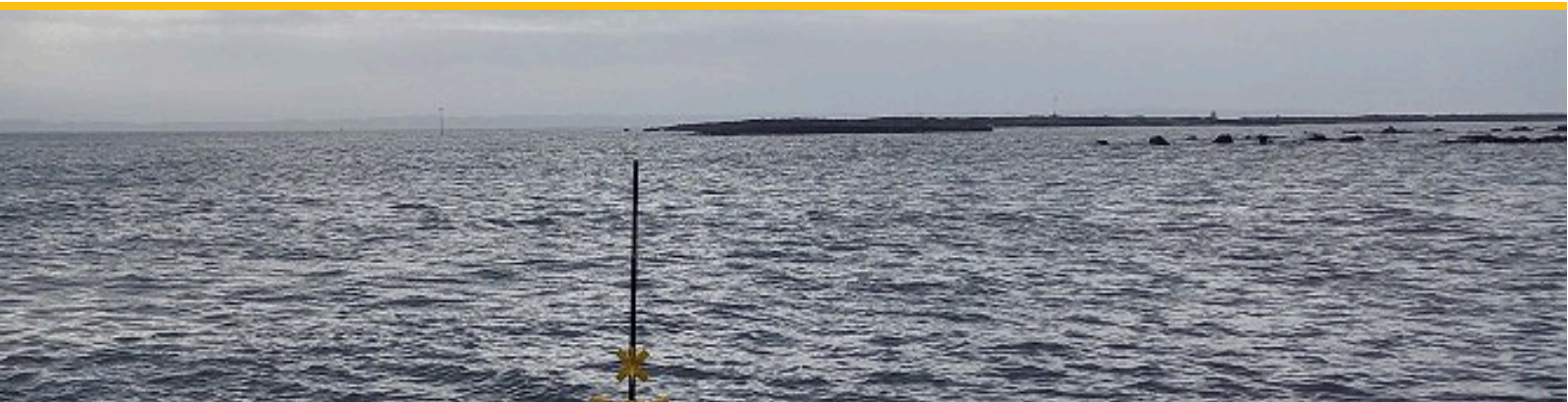




REAL-TIME PASSIVE ACOUSTIC MONITORING

MOBI acoustic monitoring buoy

MOBI is a buoy dedicated to the real-time monitoring of underwater sound. It offers high acoustic performance, with 24-bit raw data, 110 dB of dynamic range, listening up to 200 kHz and a self-noise below sea state zero. While recording, an embedded analysis computes acoustic levels in real time and transmits them, with alerts when a threshold is exceeded.

With a long data transmission range and no additional subscription costs, energy self-sufficiency and up to 16 TB of storage, MOBI suits coastal or deep-sea applications, from short missions to long-term passive acoustic monitoring (PAM).

KEY FEATURES

- Real-time embedded acoustic analysis
- Transmission of acoustic levels, alerts or raw data samples
- Data transmission range > 23 km without additional subscription fees
- Internal raw data storage up to 16 TB
- Energy self-sufficient for long-term deployments
- Lightweight but rugged
- User-friendly
- Easy to transport and to deploy from small boats
- Configuration and remote software updates over WiFi or radio link (offshore)

ALL INCLUDED

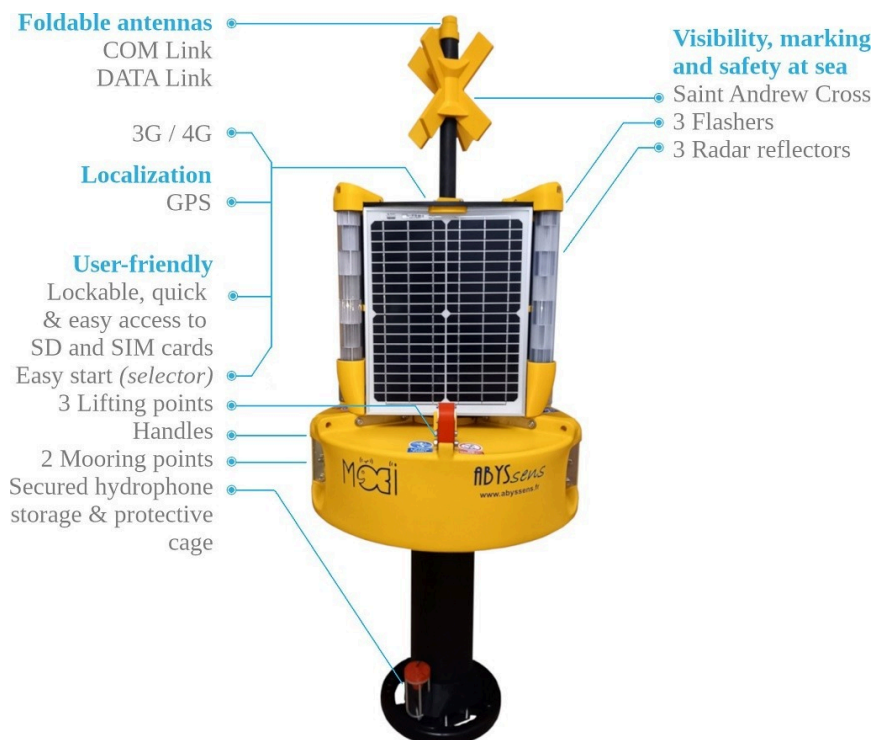
- 3 solar panels
- Saint Andrew cross
- 3 radar reflectors and 3 flashers
- GPS and 3G/4G module
- Hydrophone
- Rechargeable battery with charger
- Storage
- DaViS software
- Accessory kit



Monitor ambient noise, sea works, ship noise and marine mammals

MOBI ACOUSTIC MONITORING BUOY

Designed for the field



USER-FRIENDLY BUOY

No cables needed

MOBI shares all the user-friendly advantages of the DORI recorder: configure it at sea over WiFi from a smartphone or laptop, without opening it.

Easy start

No cables or magnets: just turn the switch to the REC position; the last recording configuration is used automatically.

Quick card access

Lockable, quick and easy access to the SD and SIM cards without any contact with the electronics, allowing memory swapping directly at sea.

ACOUSTICS

MOBI benefits from the acoustic performance of the DORI recorder range: 24-bit recording, 110 dB of dynamic range and a maximum hearing frequency of 200 kHz, with raw data stored on internal micro SD cards (up to 16 TB). Two frequency versions are available: LF with an HTI-96-MIN low-noise hydrophone (2 Hz – 30 kHz), and HF with an HTI-99-UHF low-noise hydrophone (2 Hz – 250 kHz), allowing click detection from marine mammals including the harbour porpoise.

It captures biological sounds, from snapping shrimps and fish to marine mammal vocalisations and clicks, as well as human sounds, from ship noise to offshore works. With a self-noise below sea state zero, ambient and weather noise can be monitored together with high-level sources.

FIELD ADVANTAGES

Easy to transport

The foldable mast makes a compact buoy, 1.66 m high for transport. A secured storage location in the buoy protects the hydrophone from shocks, and the hydrophone has its own protective cage.

Easy to deploy

At 54 kg, with handles, MOBI can be deployed by 2 people from a small boat; 3 lifting points allow easy recovery with a crane.

Maintenance in minutes

First-level maintenance can be done by the customer, even at sea: flashers, solar panels, radar reflectors, batteries and mast can be replaced in a few minutes.

ACOUSTIC ANALYSIS

Several analyses are available on pulsed events and their cumulative noise, or on continuous sounds: Sound Pressure Level (SPL) or Sound Exposure Level (SEL) estimates following ISO 2017 standards, third-octave band levels following ANSI/ASA S1.11-2014, and M-weighting levels (Southall et al. 2019). Acoustic features and normative threshold exceedances are evaluated in accordance with regulations, in particular European (MSFD), French, American (NMFS) and German recommendations.

MOBI ACOUSTIC MONITORING BUOY

Technical specifications

FUNCTIONALITIES

Configuration	WiFi or COM link (offshore)
Recording mode	Continuous or duty cycling
Scheduled mode	Immediate or scheduled start
Storage	Acoustic data: raw data (.wav) with selectable file duration
Real-time embedded analysis	Pulse, continuous and cumulative analysis: SPL, third-octave band levels, M-weighting levels Normative threshold exceedance Marine mammal detection (future option)
Software update	Remote update over WiFi or DATA link (offshore)
Localisation	GPS included, mooring failure alerts

ACOUSTICS

ADC	24 bits
Dynamic range	110 dB
Analog gain	0 dB or 12 dB (software configurable)
Analog high-pass filter	10 Hz or 370 Hz (software configurable)
Sampling rates	LF: 31.25 / 62.5 / 125 kSps HF: 31.25 / 62.5 / 125 / 250 / 360.36 / 400 kSps
RTC accuracy	1 ppm

MEMORY (INTERNAL MICRO SD CARDS)

Maximum storage	16 TB
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POWER & AUTONOMY

Battery	Rechargeable lead battery
Battery charger	Included
External sources	3 solar panels
Autonomy with solar panels	Infinite, even in low-light conditions
Autonomy in complete darkness	About 10 days

HYDROPHONE

Low frequency [LF]	HTI-96-MIN low noise, analog bandwidth 2 Hz – 30 kHz
High frequency [HF]	HTI-99-UHF low noise, analog bandwidth 2 Hz – 250 kHz
Sensitivity (LF & HF)	Standard: –185 dB re 1 V/μPa, other on request
Connection	Remote, with SubConn connector

MOBI ACOUSTIC MONITORING BUOY

Technical specifications (continued)

DATA TRANSMISSION	COM	DATA	3G / 4G
Frequency	868 / 915 MHz	2.4 GHz	–
ACOUSTIC DATA TRANSMITTED			
Acoustic features	✓	⊗	✓
Alerts	✓	⊗	✓
Raw data samples	⊗	✓	✓
RANGE TO STATION			
Buoy to shore (alt. 6 m)	> 23 km	> 23 km	Depends on location
Buoy to boat (alt. 6 m)	11 km	5 km	Depends on location
Buoy to buoy (relay buoys)	8 km	3.5 km	⊗

MECHANICAL	
Full volume	100 L
Diameter	650 mm
Folded height	1.66 m
Unfolded height	2.84 m
Height above water	2.17 m
Weight	54 kg



Deployment from a small boat

RUGGED BUOY	
Float	HDPE UV15, foam filled
Waterproof level	IP68, extended up to 2.5 m depth
Marking, visibility and safety at sea	Saint Andrew cross, 3 radar reflectors and 3 flashers meeting the IALA standard, visible at 2 NM
Maintenance	Easy, by the customer, in less than 5 min (flashers, solar panels, radar reflectors) or 20 min (batteries and mast with antennas)

Buoy designed and manufactured by Abyssens. Specifications may change; contact EquipOcean for the configuration suited to your project.