



Planet Ocean Ltd



The surest measure of a changing world

# ACOUSTIBUOY PASSIVE ACOUSTIC MONITORING (PAM) SYSTEM



Acoustibuoy is designed for sheltered water operations to typically to 50m depth and can be either permanent or temporary platforms.

The system is designed to utilise the features of the ic-Listen range of "Smart Hydrophones" and monitor record and display acoustic data in support of acoustic monitoring projects; These may be ship noise monitoring, environmental impact noise studies, marine mammal monitoring, diver detection etc. The system comprises a data buoy hull with solar power supply, DBT-3 telemetry module to telemeter measurements using GPRS (preferred), Satellite or UHF radio telemetry, and most importantly, either an ic-Listen-LF or HF Smart Hydrophone.

Acoustibuoy is most often deployed as a surface buoy using any of our data buoy platforms but can equally be installed on fixed structures, piles, piers and jetties.

The system acquires and sends data directly from the point of measurement to our own password protected data portal on the internet via GPRS where data may be viewed monitored and controlled via a simple web interface. This means that expensive infrastructure and hardware ashore is eliminated and data can be viewed from any where in the world with internet access including smart phones etc. Data may be sent by email automatically each day or on demand for offline processing and alarms can be sent by both email and SMS text. Position is monitored using on board GPS and watch circle radius can be set by the user.

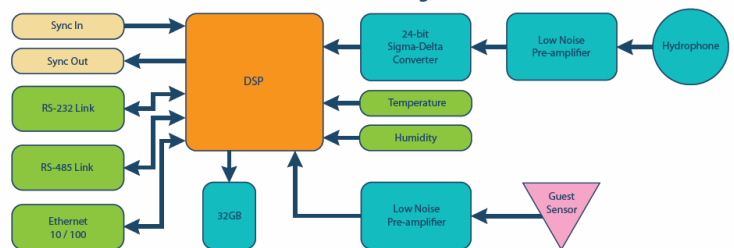


As standard the system uses the ic-Listen-LF Smart Hydrophone. This instrument, incorporates a very low noise, hydrophone, pre-amplifier, 24 bit DSP module, Data storage and power supply within a single housing. The instrument provides calibrated data directly from within, in a ready to use format. Data can be sent as raw .wav files, and as FFT files. The LF device, covers the range 1 to 1600 Hz, whilst the HF version has an extended range to 20 KHz

## Specifications (LF):

Sample Rate	Up to 16.000 Samples/sec
WAV Output	Time-series 24-bit data in WAV format.
Spectral Output	Power spectrum in dB re $\mu$ Pa. Resolution is user settable
Storage	FAT32 filing system, 32 GB
Water Depth	200 m (Ultan)
Instant Analysis	Powerful processor transforms acoustic signals into calibrated waveforms, spectral, or event data in a standard format.
Synchronization	Accuracy < 2 $\mu$ Sec. Ethernet IEE 1588, or GPS PPS. Closure or relay type signal
Power	125 mW
Internal Sensors	Temperature $\pm 1.0$ C, and humidity for seal fault detection.

icListen Block Diagram



Acoustibuoy can be deployed in any of our databuoy hulls from the smallest 0.6m diameter Minibuoy platform to the largest 3.6m diameter ODAS buoy.

## SPECIFICATIONS:

### Minibuoy

Buoy diameter/height:	610mm/305mm
Total mass (with 5W, DBT-3, ballast & battery):	~50kg
Reserve buoyancy	~ 30kg
Draft (ballasted):	<1m
Measurement depth:	To user's specification
Interfaces:	1 serial, 3 analogue and 1 digital
Communications:	GPRS as standard, with Iridium or VHF as options Direct data output to a password protected, user web site as standard
Battery capacity:	12volts 12Ah giving complete autonomy
Solar panel capacity:	2 x 5 watts or 2 x 10 watts

User configurable options:	Reporting frequency (from 5 minutes to 24 hours as standard) Parameters to be displayed Position alert Individual alarm thresholds Recipients of text and email alerts
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### DB-125 buoy

Diameter mm	1250	Solar Panels	Typ 2 x 10W
Hull depth mm	450	Nav light	Self contained solar. Typ Gp5 ev 20 amber, range 2nm in UK.
Typical water line above base mm	250	Radar reflector	Internal Echomax MIDI giving peak RCS24m <sup>2</sup>
Overall height with X and lantern mm	2256	Fairlead deployment tube	128mm ID 160 mm OD x 560mm long
Overall height with X and lantern mm with pre-ballast keel	2326		
Overall Wt Kgs	100		
Overall Wt with pre-ballast keel Kgs	180		
Typical Chain size mm	16/19		
Max weight of Mooring Kgs	145		
Minimum weight of mooring Kgs	75		
Sinker Weight typical in water Kgs	450		

### General

Sample rate	5, 10, 15, 20.30, 60 minutes
Email alerts	Multiple
SMS alerts	One standard multiple possible
Data dump	Day to date, Week, Month, Total
GPS position alarm	User selectable
Turbidity alarms	Minimum, maximum, average, variance
Temperature alarms	Probe and buoy, maximum and minimum
Power supply alarm	Maximum, minimum

