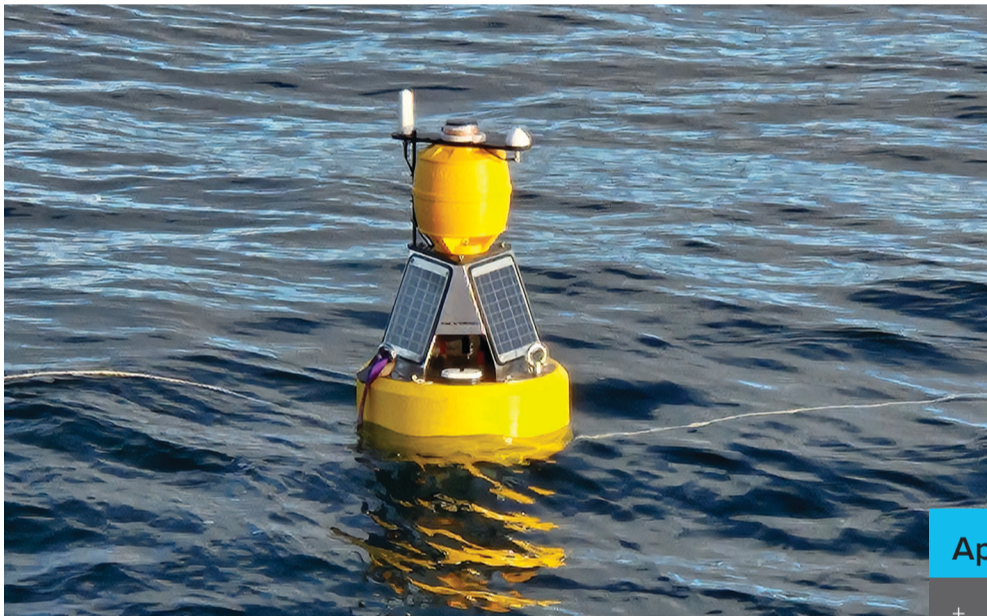


# Real-Time Sound Measurement Buoy System

A remote monitoring system that can collect, measure, process and transmit noise monitoring data in real-time.

Our RTSM buoy is a lightweight, compact and scalable solution to collecting noise monitoring data. Data is collected in real-time via a hydrophone deployed beneath the remote buoy, making the set-up, management and collection of data seamless in real time.



## Features & Benefits:

- Real-time sound metric recordings
- Reduce reporting turnarounds
- Onboard computation and analysis of sound sources
- Fewer personnel working offshore
- User-friendly dashboard
- Cloud accessible processed values
- Onboard archiving of unprocessed recordings
- Compact - easily stowed and deployed

## Applications

- + Monitoring of offshore pile driving noise
- + Real time monitoring of compliance with noise limits
- + Live management of acoustic emissions during piling

# Real-Time Sound Measurement Buoy System

## Specification

### Power:

- 56 Ah Internal batteries
- 6 Days continuous active state (recording, processing and transmitting)
- Solar assisted for longer deployments, potentially indefinite in standby
- Solar Assisted for longer deployments
- IP67 Maritime buoy

### Acoustic Specifications:

- Single channel calibrated hydrophone (210 dB re 1V/uPa)
- 48 kHz sampling rate minimum (frequency range 5 Hz - 24 kHz)
- 24-bit resolution
- On-board audio recording to SD for post-processing and verification

### Communications:

- Iridium (global)
- GPS

### Data Processing:

- The following data points can be processed on the buoy and transmitted live for viewing in real time:
  - $L_{p,pk}$  - Peak sound pressure level
  - $L_{p,rms}$  - Root-mean-square sound pressure level
  - $L_{p,pk-pk}$  - Peak-to-peak sound pressure level
  - $SEL_{ss}$  - Single-strike sound exposure level (unweighted and frequency-weighted)
  - $SEL_{cum}$  - Cumulative sound exposure level (unweighted and frequency-weighted)
  - Third-octave band SELss (ISO-compliant 1/3-octave bands, centre frequencies 20 Hz–20 kHz)
  - Pulse duration (T90) - 5–95 % cumulative energy duration
  - Skewness - Amplitude distribution skewness
  - Kurtosis - Amplitude distribution kurtosis
- Cloud software created real time alerts when approaching or exceeding a noise limit or threshold
- 5 Remotely Programmable Active Periods
- System standby low-power state
- User adjustable pulse detection thresholds

