

Seismic sensor and data recorder unit

The seismic sensor and data recorder unit comprises a geophone connected to a robust metal box containing microprocessors, real-time clock, GPS, rechargeable battery, and satellite modem. Optional solar panels provide continuous battery life.

The unit can receive signals accurately over large distances up to 50km depending upon terrain. Sensol is able to integrate up to 100 sensor units into a single system covering thousands of square kilometres.

Signals once received are transmitted via satellite modem to a web-enabled central location. Sensol uses advanced signal analysis techniques to interpret data and identify event locations to 20 metres.



Specification

- Seismic geophone, Data storage device, Processor, Short range wireless link, Rechargeable battery, GPS positioning.
- Repeater Unit comprising higher power RF transceiver unit with Mesh networking enabled and rechargeable Battery.

Capabilities

- Seismic (geophones) expected detection: up to 30km
- Separation of sensor node and repeaters: maximum 20 km
- Triangulation of impacts: within 100m, ideally within 20m
- Detection of multiple impacts: able to identify up to 4 main impacts occurring within 30 seconds
- Battery Life: nominally 12 months in sleep mode with periodic activation
- Data storage: greater than 24 hours
- Physical Interfaces: at least an a-synchronous, 8-bit(min), RS232 interface
- Expansion and upgrade capability: ability to have extra sensors installed and/or replace existing sensors.
- Remote activation and deactivation.

Components

- Sensor node contains 1x 3-axis Geophones per sensor node, 24-bit ADC, GPS unit, Processor, Flash memory, 10 mW transceiver.
- Repeater Unit comprises 1W Transceiver unit capable of mesh networking
- Satellite modem etc etc
- Software including Interface support, impact peak identification interface, position calculation.