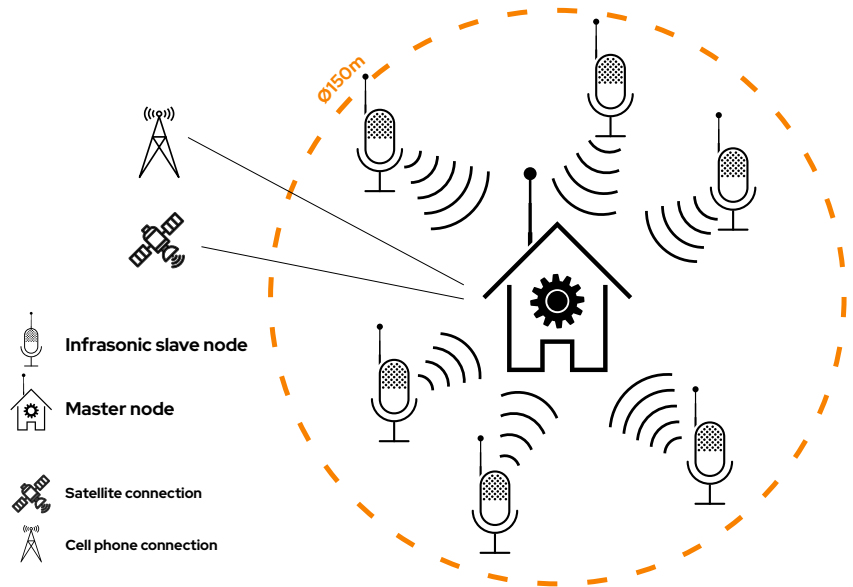




PINA

Portable Infrasonic Array



Key Features

- Easy to transport
- No cables needed
- Low power

A small aperture infrasonic antenna consists of an array of $n > 2$ infrasonic sensors arranged according to a precise geometry at distances of tens of meters which is capable of detecting and monitor low-frequency (0.1 - 20 Hz) acoustic waves produced by many natural and artificial sources by using signal array processing procedure.

Natural infrasound

Earthquakes, Volcanoes, Landslides, Debris flow, Snow Avalanches, Meteors, Bolides, Storms, Wind, Lightnings, Ocean waves, Waterfalls, etc

Artificial infrasound

Car Traffic, Trains, Airplanes, Quarry blasts, Artillery, Weapons, Wind Farms, Power Plants, Factories machineries

The **PINA infrasonic antenna** is equipped with low consumption wireless data communication between the antenna's slave nodes and the master node and it is designed to facilitate the transportation of the equipments and the configuration of array's geometry in the countryside as well as in urban areas, thus offering advantages either for **temporary experiments and for permanent monitoring**.

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Master node

- Max n. of slave nodes: 12@128Hz
- Time synchronization: $\pm 50 \mu\text{sec}$
- Communication interfaces*: Ethernet - Wi-Fi - 3G/4G
- Services: seedlink server, local storage and GUIs
- Power supply: 9-30 Volt
- Power consumption: $< 6 \text{ W}$

*Satellite modem upon request



Slave node power kits

Power kit 1

- » n.110W solar panel
- » n.19Ah@12V battery

Weight: 9 kg

Autonomy: 1 month without sun

Power kit 2

- » n.1175Ah@9V alkaline battery

Weight: 6 kg

Autonomy: 1 year

Infrasonic slave nodes

- Infrasonic sensors*

Medium Sensitivity	High Sensitivity
Nominal sensitivity: 0.16 V/Pa	Nominal sensitivity: 0.8 V/Pa
Self-noise: -62 dB @1Hz rel. to 1 Pa	Self-noise: -87 dB @1Hz rel. to 1 Pa
Full scale range: 250 Pa	Full scale range: 50 Pa
Frequency range: 0.03 - 200 Hz	Frequency range: 0.03 - 200 Hz

- AD Converter:

- » 24-bit - 1 channel
- » Up to 1024 Hz @3-nodes

- Data transmission:

- » 2.4 GHz radio modem with antenna [12dB, 3m cable]
- » Max slave to master distance: 150 m (LOS)

- Power supply: 3-30 Volt

- Power consumption: $< 0.1 \text{ W}$

*Slave node configurable for other infrasonic sensor upon request

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