ShakeBot

Technologies for seismology, engineering and geophysics

Shakebot is a ***low cost*** triaxial accelerograph.
It is a compact, flexible and reliable unit.
The most added value to this inexpensive solution is the SEISMONUX control software; the app running in it offers all the functions of our high-end SL06 recorder in this IoT device.

Applications

* Structure Health Monitoring (SHM)
* Earthquake Early Warning Systems (EEWS)
* Seismic switch for industrial facility or equipment sensitive to seismic shakes.
* Modal analysis (thanks to the low noise MEMS sensors)
* Integration of strong motion networks

Main features

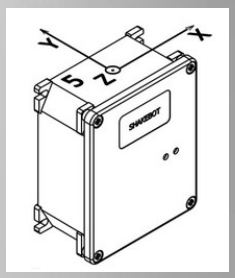
* High computing power allows edge-computing capabilities, with open data flow you can write your own application on it *(using the proper tool-chain)*

* Internet connectivity using LAN / WiFi and Virtual Private Network (VPN), ModBus

* Local data storage of continous time series or triggered events

* International SeedLink standard real-time seismic streaming protocol for direct link to seismic client like: SeismoWin, EarthWorm, SeisLog, SeiscomP, etc..

* Real time measurements according to the UNI9916 norm; it transforms to velocity the measured acceleration in the requested frequency band



* Low power consumption allows the ShakeBot for use in remote installations powered by small accumulators and solar panels

* Easy Web browser configuration and management

* Automatic position sensing and XYZ axis relocation

* Automatic frequency peak-picking with frequency shifting alarm report

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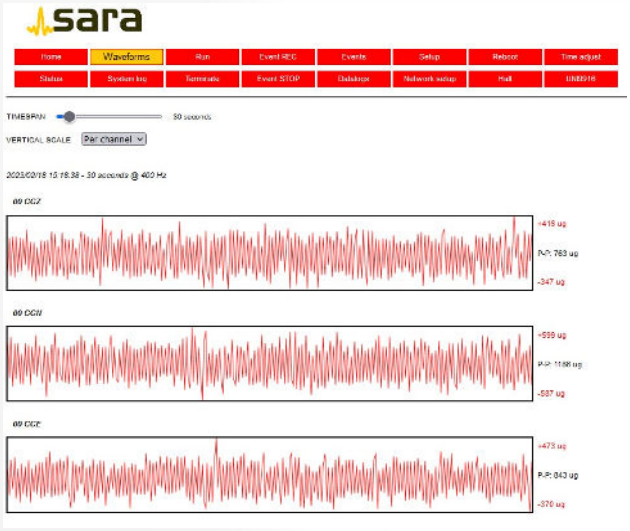
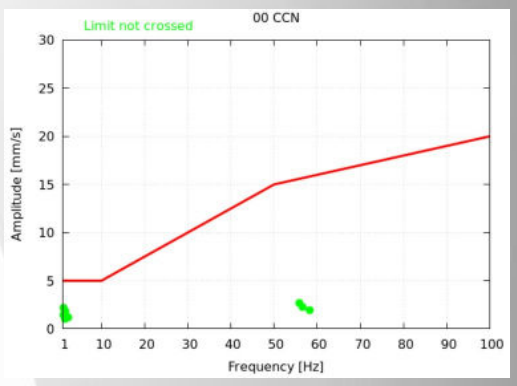
Specifications

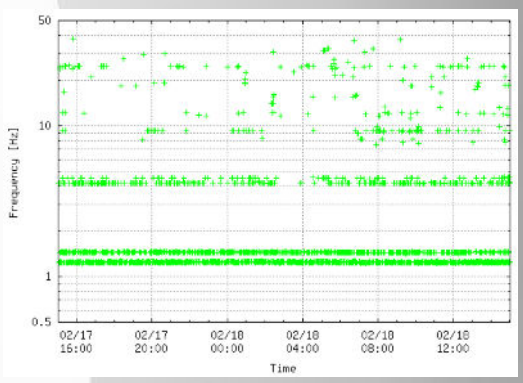
Power supply:	10-36Vdc
Power consumption:	< 3W (WiFi off, LAN on)
Number of channels:	3 @ 20bit
Samping rates:	50,100,200,250,400,500,1000,1200 Hz
Real Time Clock:	NTP synchronized (local NTP server available upon request)
Mass memory:	microSD internal and USB pen-drives (external)
Data format:	SAC, SAF, GSEcm6, GSEint (others upon request)
Data interface:	Ethernet 10-100 / WiFi (optional with USB dongle)
Protocols:	TCP/IP, HTTP, MQTT, SSH, Telnet, FTP, Modbus, SeedLink, etc…
Messaging:	Telegram alerting for groups, message bot or SMS
Triggering:	STA/LTA, amplitude, IP voting, schedule, network
Case:	Aluminum IP44 (115 x 140 x 61mm)
Operative temperature:	-10 / +50°C
Accelerometer:	MEMS sensor
Noise density:	< 28 µg/√Hz
Resolution:	< 0.1 mg (sine-wave visible at sight in the time series)
Dynamic range:	> 85dB (from peak to time series noise threshold)
Bandwidth:	DC-480Hz (maximum at 1200 SPS)
Cross axis sensitivity:	< 1%
Non linearity:	< 0.1%
Control panel:	Status of health by LED coded flashes and one operating button



web based management



UNI9916 transient analisys



frequancy-time peak-picking function

Notice! This paper is an information leaflet only; it is published without programmed updates. All specifications, features and prices are subjected to changes without any prior notice. In the event of any discrepancies between this document and a commercial offer or bidding document, these latter will take precedence.

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