TERRABOT

TERRABOT is an innovative high performance seismograph. It embeds three high sensitivity geophones capable to record seismic noise wiith high resolution and store it in flash memory. It is designed having in mind the Oil&Gas exploration market which go forward the cable-less systems to be partially buried during the survey.

It uses a number of communication protocols, from FTP client/server, to SeedLink for real time data communication, and other support functions for on-the-field multi-link to other Terrabots.

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Compact and flexibile seismograph, highly reliable thanks to our recording software SEISMONUX.

Three channels with sampling from 1 to 1500 samples per seconds allow a variety of applications from passive seismic to single station survey according to Nakamura method (HVSR) and of course permanent seismic monitoring.

Connectivity

Linux operating system offers a number of communication protocols like: TCP, UDP, HTTP, FTP, SSH, Telnet, MODBUS. The seismic unit is accessible with a WiFi channel or with an Ethernet port Ethernet. This one warrants full operation with any communication media like PSTN, GSM, GPRS, SAT, WAN, LAN, etc., also connectivity is warranted even behind firewall and NAT filters thanks to the possibility to run VPN (Virtual Private Network).

Energy

Low power consumption allow Terrabot to be used in remote area with solar panels or batteries of small dimentions.

Sincronization

TERRABOT is equipped with a GPS receiver to synchronize data flow with UTC time. Additionally an NTP client is provided to have good synchronization even when GPS signal is not available (tunnels and inside buildings).

Applicazioni

TERRABOT born to be used IN the soil. Spherical shape allow super easy placement even if places or surfaces do not allow easy levelling using feets or spikes (in stiff soil for example).

Maximum of operative level is reached when terrabot works in parallel with other units in mini-array configuration.

Main applications are:

– local sesimic monitoring
– bi-three dimensional arrays for exploration
— linear array of wide interspace
— HVSR array for 2D reconstruction diagrams
— modal analysis

TERRABOT can embed high gain 4.5Hz geophones or linearized geophones with Lippmann circuit with resultant eigen freqeuncy of 1Hz or 0.5Hz.

The case made in aluminum, stainless steel and PVC is resistant to corrosive agents and can be left on the field permanently.

With a series of algorythms for triggering and multiple parameterization the unit can work with other Terrabots units in a quick and efficient way.

Connected to a PC using cable or wifi it can perform frequency domain analysis in array in real-time

Customizations are possible to both hardware and software.

PRELIMINARY

Some technical features

Power supply:	10-36Vdc, consumptiom < 2.5W
Number of channels:	3 a 24 bit ($\Sigma\Delta$) 144dB (32 bit coming soon)
Sensitivity:	238 nV/count
Noise floor:	< 10 microVolt peak-to-peak (< 7 microvolt RMS)
Sampling rates:	10,20,50,100,200,250,300,400,480,500,600,800,1000,1200,1500 Hz
Real Time Clock:	Sincronised by GPS +/- 10ppm -20/+70°C (+/- 40μs from UTC)
GPS Antenna:	external with cable of 10mt and BNC connector
Mass memory:	microSD interna
Data format:	GSEcm6, GSEint, SAC, SAF
Data interfaces:	Ethernet 10-100; WiFi, RS232
Triggering:	Multimode STA/LTA, amplitude, Ip voting and scheduled
Housing:	Solid block milled aluminum, and PVC for top cover IP67
Temperat. operativa:	-20/+70°C

Standard sensors

Velocimeters:	It can accept a variety of sensors: 0.5Hz, 1.0Hz, 4.5Hz, 5.0Hz, 8.0Hz, 10Hz to be specified at order

For more information send your questions to: info@sara.pg.it