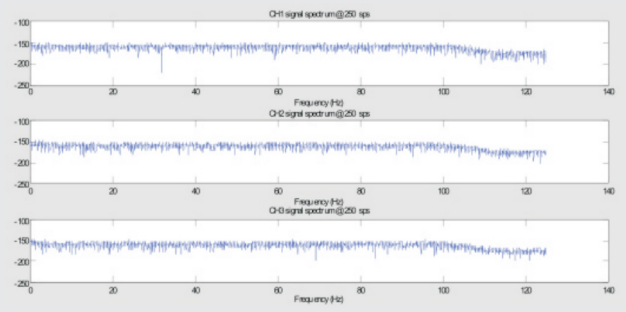
GEO3tiny
Low Power Seismic Digitizer

GEObit
Monitoring the earth

- Three 24bit seismic channels
- Three extra analog channels
- Three control lines
- Low power consumption
- Iintegrated 3C accelerometer
- Only 130mm D/60mm H
- High resolution 140dB
- Embedded Seedlink & Earthworm Server
- Realtime Telemetry and Local Storage
- MiniSeed data format
- Linux open source OS
- Web Interface Menu
- SSH, SFTP, HTTPS, CoAP, NTP
- Operation Range: -20 +70°C
- Waterproof IP67 aluminum case

Pay Less
Get more!



GEObit introduces world's cost affordable, miniature size seismic datalogger which integrates acceleration sensor, 24bit digitizer, local data storage and Seedlink Server for data telemetry.

FEATURES

GEO3tiny is a compact miniature seismic digitizer which integrates three seismic and three acceleration channels plys three extra analog channels for seismomster mass monitoring. It supports high resolution 24bit digitizer, embedded linux OS and GPS or NTP timing. Seedlink and Earthworm server ensures reliable real time data telemetry while large stor- age volume ensures long period local data recording. The instrument has very low power consumption so it can operate getting powered from a small 12Vdc battery. Due to its small size provides the ability to be buried underground. The analog input supports differential architecture and variable gain set, user configurable. Three extra analog channels can monitor seismometer's mass position and three control lines can be used for seismometer Lock, Unlock and Centering. The digitizer can be connected to any kind of active or passive seismometer. It operates in continuous mode, triggered mode or both and data are streamed through different data ports. Local data storage is selectable as well as logfile in- formation. The unit supports advanced functionality, implemented from the combination of trusted open source soft- ware components. Because of it's open source architecture is able to run any custom application thus providing the nextday solution to the user. The hardware is based over an embedded ARM9 400MHz ARM linux board running 14.6 linux kernel. The data are stored in mini-SEED format into the microSD card or to a removable USB stick. The instrument supports 10/100 ethernet port and debug port. FTP, SFTP, SSH are also available. The state of health is transmitted over UDP packets upon request.

INSTRUMENT SPECIFICATIONS

GEO3tiny TINY SEISMIC DIGITIZER

DIGITIZER

Channels	Three seismic seismic channels, three analog channels and three on board acceleration channels
A/D converter	Fourth Generation, Delta-Sigma, 24bits
Nonlinearity	+/-0.001%
Modulator	Fourth Generation, 4th order Delta-Sigma Modulator
Filter	Programmable , FIR filtering
Analog Input	Modular sensor board
Sampling Rate	1 tp 1000 samples per second
Power	9-18Vdc , or 9-36Vdc 0.9W
Autonomy	One week powered from a 12V/9Ah bat- tery, 36days powered from a 12V/55Ah car battery

DATA RECORDING

Media	Internal flash and Removable USB stick
Data File Type	Miniseed
Information File	System log file
Recording Mode	Continuous/Trigger or both
Memory	Internal 256Mbyte RAM in ringbuffer mode and minimum 64Gbyte FLASH memory

TIME BASE

Type	GNSS receiver (GPS, GLONASS, WAAS, EGNOS, BeiDou, QZSS)/DPLL, GPS port
Accuracy Time	+/-1usec to UTC time pulse, +/-5 meters to position
Timing Sources	GPS, RTC, NTP
DPLL Drift	Less than 17usec between one hour GPS cycles

COMMUNICATION

Telemetry	SEEDlink
Connectivity	Ethernet port, WiFi
LED	5 high brightness LEDs monitoring system SOH
Protocols	SSH, FTP, SFTP, Web Interface, TCP/IP, HTTP, HTTPS, PPP,MQTT, CoAP/CoAPS, NTP

CONTROL - CALIBRATION

Control Signals	Seismometer Lock, Unlock, Center, Calib. Enable, active high/low user selectable
Calibration	Pulse, Sine waveform, variable amplitude and frequency, 16bit DAC

DIFFERENTIAL INPUT FRONT END

Input (standard gain)	40Vpp, 20Vpp, 10Vpp
Input (high gain)	5Vpp, 2.5Vpp, 1.25Vpp, 0.625Vpp

PHYSICAL

Type	Surface Type
Dimensions	130mm diameter x 60mm Heigh
Mounting	Three fixed legs
Weight	1.2kgr
Tilt	+/-10 degrees

ENVIRONMENT (DIGITIZER/RECORDER)

Temperature range	-20 to +70 °C
Humidity	100%, IP67 enclosure

GEObit
Monitoring the earth
13 Ag. Saranta str. Patra 26222 Greece
Tel: +30 261 087 6876 | Fax: +30 261 087 6877
info@geobit-instruments.com
geobit-instruments.com