GEOtiny10
Compact Digital Seismometer

GEObit

Monitoring the earth

Pay Less Get more!

- 3C seismic and 3C acceleration sensor
- DR: 146dB velocity. 97dB acceleration
- Wide response V:10s to 98Hz, A:DC-550Hz
- Low power consumption
- Cost affordable design
- Only 130mm D/115mm H
- Integrated 24bit digitizer, 138dB
- Embedded Seedlink & Earthworm Server
- Realtime Telemetry and Local Storage
- MiniSeed data format
- Linux open source OS
- Web Interface Menu
- SSH, SFTP, HTTPS, CoAP, NTP
- Modular seismic sensor design
- Customized Sensor Corner Frequency
- High sensitivity 1500V/m/s
- Operation Range: -20 +70°C
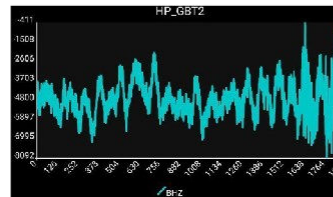- Waterproof IP67 aluminum case

GEObit introduces world's lowest price, compact digital seimometer which integrates seimic and acceleration sensor, 24bit digitizer, local data storage and Seedlink Server for data telemetry.
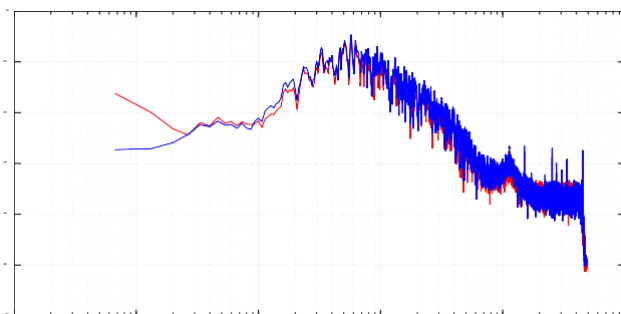
FEATURES

GEOtiny10 is a compact miniature digital seismometer which integrates three seismic and three acceleration channels. It supports high resolution 24bit digitizer, embedded linux OS and GPS or NTP timing. Seedlink server ensures reliable real time data telemetry while large storage 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. Modular sensor interface allows the user to select between a variety of sensor types and frequency corners (10sec, 5sec, 2sec, 1sec, 2Hz, 4,5Hz), thus covering the short period and wide band seismic range. Design simplicity is the great advantage and it is reflected to the price which is only fraction of the common commercial seismometers. The user is able to deploy even 100% more units than using common seismometers at same cost.

- Aftershock monitoring
- Regional seismicity monitoring
- Seismic tomography acquisition
- Induced seismicity monitoring
- Volcano monitoring
- Structural monitoring
- HVSR, MASW surveys
- Educational seismograph
- Personal seismograph

Sensor PSD compared to a Guralp3T 120Sec sensor
RED= GEOtiny, BLUE = 120sec seismometer

GEOtiny10 MINIATURE DIGITAL SEISMOMETER

DIGITIZER

Channels	Three seismic and three 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 to 1000 samples per second
Power	9-18Vdc , or 9-36Vdc 0.8W , 0.95 with integrated sensor board
Autonomy	One week powered from a 12V/9Ah battery, 36days powered from a 12V/55Ah car battery.
Dynamic Range	138dB @ 100sps

DATA RECORDING

Media	Internal flash up to 64Gb and External Removable Flash up to 128Gb (USB-SD)
Data file type	Miniseed
Information file	System log file
Recording mode	Continuous,Trigger or both

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

INTEGRATED FORCE-BALANCE SENSOR ELECTONICS (modular)

Bandwidth	10sec–120Hz, variable frequency corner (10s, 5s, 2s , 1s, 2Hz , 4.5Hz)
Technology	Electro-dynamic Force–Balance technology
Sensitivity	1500V/m/sec , Acc: +/-2g, +/-4g,+/-8g
Dynamic Range	Velocity >142dB, Acceleration > 97dB

PHYSICAL (SEISMIC SENSOR)

Type	Surface Type
Dimensions	130mm diameter x 115mm length
Cable length	Standard 5 meters, up to 50* meters
Mounting	Three adjustable legs
Weight	2.6kgr
Tilt	+/-10 degrees

ENVIRONMENT (DIGITIZER/RECORDER)

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