GEObit
Monitoring the earth

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AUSTRALIAN & NZ DISTRIBUTOR

GEOsix: Low Power Digitizer-Recorder

- High resolution digitizer
- Eight extra analog inputs
- Eight TTL command lines
- Low power consumption
- Dimensions 168x106x68mm
- GPS time / Precision DPLL
- 100-500 samples per second
- 3/6+1 seismic channels
- Ultra low noise preamplifier
- Embedded Open Source OS
- Embedded SeedLink Server
- Embedded Earthworm Server
- Continuous/Trigger recording
- Advanced functionality
- Smart Network Operation

GEObit introduces **GEOsix series** high resolution 6+1 analog seismic channels telemetry digitizer / recorder. The size of the instrument is only 168 X 106 X 68mm. The power consumption is only 1.2W for 6 channels. Available sampling rate is 100 to 500sps/6ch, 100 to 1000sps/3ch and optional lower sampling rates are supported. Buld-in GPS receiver combined with ultra accurate DPLL unit providing time drift 10e-9 sec ensures timing stability even in the absence of GPS signal. NTP timing is also available. The unit is very flexible and accepts several types of analog front end units so any type of seismic sensor can be connected. Additionally it provides eight extra low resolution and rate analog inputs for seismometer mass position monitoring, or any other environmental parameter monitoring. Eight TTL command outputs are supported for seismometer control or for any other external device control. Typically the digitizer supports differential variable gain preamplifier. Our force-balance sensor front end is also supported, providing a wide-band response (10sec - 98Hz) and high sensitivity 1500V/m/s by connecting a C100 sensor. Acquisition parameters and operation modes can be set from the user - friendly web interface.

The unit 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 information. The unit supports advanced functionality, implemented from the combination of trusted open source software components. Because of it's open source architecture is able to run any custom application thus providing the next day solution to the user. The hardware is based over an embedded ARM9 400MHz ARM linux board. 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.

+ Seismometer

LOCK   UNLOCK   CENTER   CALIBRATE

Calibration Signal: SINE ▼
Calibration Time: 30 ▼ sec

+ Digitizer & SeedLink Stream Server

START   STOP   **Seedlink Server is running**   CLEAR BUFFER

Sampling Rate: 100 ▼ sps
Filter Response: MINIMUM ▼
Gain: 1 ▼
Enable GPS: ☑
GPS cycle: 30 ▼ min
Active Channels: 6 ▼
Digitizer Buffer: INTERNAL ▼
MiniSEED packet: 512 ▼ bytes
Network description: HP Geobit
Network ID: HP
Station Name: G15
Station description: Geobit SRI32
Channel Prefix: H
Use Location Code: ☐
Location: 00   TR
Archive: ☑
Archive Disk: USB ▼
Archive Keep: 5 days

SUBMIT   READ

+ Triggered SeedLink Chain

Contents

- System & Network
- Data Acquisition
- Credentials
- Stream Archive
- Trigger Archive
- Information

+ Network

Hostname: G11
Mode: Static ▼
Static IP address: 192.168.1.11
Netmask: 255.255.255.0
Gateway: 192.168.1.1
DNS: 192.168.1.252
NTP: ☐
NTP Server(s):   pool.ntp.org
PTP: ☐
SSH: ☑
HTTPS Only: ☑
Wireless: AP ▼
Country & Channel: GR   6 ▼
SSID: G04
Key:

SUBMIT   REFRESH

Firmware Update
UPLOAD   Επιλογή αρχείου   Δεν επιλέχθηκε κανένα αρχείο.

Instrument Specifications

ULTRA LOW POWER, MINIATURE SIZE 32BIT ADC SEISMIC DIGITIZER/RECORDER	
DIGITISER	
Analog channels	3/6+1 high resolution seismic channels plus eight auxiliary channels
A/D converter	Fourth Generation, Delta-Sigma, 32bits data stream
THD	-125Db
Modulator	Fourth Generation, 4th order Delta-Sigma Modulator
Filter	Programmable SINC, FIR, IIR filtering, auto-calibration function
Filter Response	Selectable Minimum or Linear Phase Filter
Input resistance	1MOhm differential for variable gain input
Sampling Rate	6ch:100 - 500 sps, 3ch:100 - 1000 sps, optional 0.1-1000sps
Power	9-18Vdc , 1.1W standalone, 1.3W telemetry
RMS noise	137dB @ 100sps 128db@1000sps
Analog Front-End	Modular. **Low noise preamplifier** or **wide-band sensor electronics**
DATA RECORDING	
Storage Media	MicroSD flash card and removable USB stick, miniseed data files
Information file	System log file. SOH message
Recording mode	Continuous, Triggered STA/LTA based or both
Operation	Advanced functionality if connected to an Earthworm server
Operating System	Open Source based, ability for custom application run
TIME BASE	
Type	12 ch GPS receiver/DPLL, GPS port, up to 30m cable GPS antenna or 120m active GPS antenna.
Accuracy	Time: +/-1usec to UTC time pulse, +/-5 meters to position
Timing Sources	Ultra low drift DPLL unit using TCVCXO, RTC
DPLL drift	Less than 17usec between one hour GPS cycles
COMMUNICATION	
Telemetry	Ethernet port, WiFi, seedlink server
Protocols	SSH, FTP, SFTP, Web Interface, TCP/IP, HTTP, HTTPS, PPP, MQTT, CoAP/CoAPS, NTP
LCD	Miniature LCD with alternative information messages
LED	Two high brightness LEDs
DIFFERENTIAL INPUT FRONT END	
Input (standard gain)	40Vpp, 20Vpp, 10Vpp
Input (high gain)	2.5Vpp, 1.25Vpp, 0.625Vpp
INTEGRATED WIDE-BAND SENSOR FRONT END	
Bandwidth	10sec – 98Hz(MK3 version)
Sensitivity	1500V/m/sec using force-balance electronics.
PHYSICAL (DIGITISER/RECORDER WITH INTEGRATED SENSOR ELECTRONICS)	
Size	168mm x106mmx68mm mm
Weight	1.2kgr
PHYSICAL (10s SEISMIC SENSOR if combined with SENSOR ELECTRONICS)	
Type	Borehole Type/Surface Type
Dimensions	50mm diameter X 180mm length
Cable length	5meters, longer cable available
Weight	1.2kgr
Humidity	Up to 20 bar external water pressure
Tilt	+/-10 degrees
ENVIRONMENT (DIGITIZER/RECORDER)	
Temperature range	-20 to +70 °C
Humidity	100%, IP67 enclosure