DM24SxEAM Peli

güralp

CAPTURE. PROCESS. DISTRIBUTE.

Sophisticated and adaptable digital acquisition system.

The Güralp DM24S3EAM and DM24S6EAM combine three- and six-channel digitisers with storage and communications modules into flexible and expandable tools for connecting analogue and digital instruments to your network. A USB/FireWire disk-drive interface beneath the lid allows for simple bulk data storage and easy retrieval in deployments without telemetry.

Inside the robust, waterproof casing is a 24-bit, high fidelity digitiser with a GPS-synchronised timing system. Designed for data quality and durability, the Güralp DM24SxEAM includes a stable and robust Linux-powered unit with on-board storage and networking facilities.

The Güralp DM24SxEAM can be fully controlled and accessed via a web interface suitable for both expert and non-expert field staff.

Key features

Four or seven low-noise 24-bit analogue-to-digital conversion (ADC) channels (three or six primary plus one auxiliary)

Ultra-low-noise: 137 dB of dynamic range at 40 samples per second

Eight environmental channels with 20-bit resolution (3 for mass position and 5 for user applications)

Triggering/events subsystem capabilities including STA/LTA, level (threshold), software triggers, per-channel voting and peer-to-peer network voting

Four concurrent output sample rates (continuous or triggered) up to 1,000 samples per second

UTC time-stamped data using a low-power GPS receiver

Multi-user Linux operating system with full network support

On-board Web server (HTTP and HTTPS) allows full remote configuration of digitizer parameters and broadband sensors, including remote lock, unlock and centre

External USB storage connection

Built in calibration signal generator: step, sine or broadband

Supports multiple data formats, including GCF, GDI, miniSEED and CD1.1

Applications

> Borehole
> Vault
> Networked Arrays
> Earthquake Early Warning systems

Images show the Güralp DM24SxEAM

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SPECIFICATIONS

PERFORMANCE	
Digital resolution / output format	24-bit
Dynamic range	>137 dB at 40 samples per second
Absolute accuracy	0.50%
Common-mode rejection	> 80 dB

DATA PROCESSING	
Output rates available	1 to 1,000 samples per second
Decimation filters	2, 4, 5, 2×4, 2×5
Low-pass filters	FIR (other options available)
Out of band rejection	140 dB
Trigger modes	STA/LTA, level, external, software, per-channel voting, network voting

TIMING AND CALIBRATION	
Timing precision when GPS locked	8×10^{-7}
Timing sources	GPS and NTP
Calibration signal generator	Sine, step or broadband. Adjustable amplitude and frequency.

SOFTWARE PROTOCOLS	
Operating system	Linux
Communications technologies	Rs232, USB, Ethernet (10BASE-T, 100BASE-TX)
Internet technologies	TCP/IP, PPP, SSH, HTTP, HTTPS (others on request) Firewall and routing capabilities

DATA COMMUNICATION	
Data recording formats	GCF, GDI and MiniSEED
Seismic network protocols	Scream (Antelope, Earthworm), CD1.1, SEEDlink and others
Storage	Hot-pluggable 250 GB USB/FireWire disk drive located under lid Unlimited external NAS (network-accessible storage)

POWER	
Power supply voltage	12 to 28 V DC
Average power consumption at 12 V DC	1.96 W without GPS and without Ethernet 2.55 W without GPS and with Ethernet 2.85 W with GPS and with Ethernet

ENVIRONMENTAL / PHYSICAL	
Operating temperature range	-25 to +60 °C
Enclosure material	Copolymer Polypropylene. IP67
Dimensions (length x width x depth)	265 × 245 × 120 mm, excluding connectors and cables

SUPPORTING DOCUMENTATION	
Calibration values	Digitiser sensitivity and test results enclosed
Full user guides	DM24 digitiser: http://www.guralp.com/documents/MAN-D24-0004.pdf EAM acquisition module: http://www.guralp.com/documents/MAN-EAM-0003.pdf

In the interests of continual improvement with respect to design, reliability, function or otherwise, all product specifications and data are subject to change without prior notice.

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