Güralp 5TDE

DIGITAL FEEDBACK INTERNET ACCELEROMETER

A digital, triaxial, force-feedback accelerometer with a large dynamic range.

The Güralp 5TDE is suitable for seismology, hazard mitigation and civil engineering applications. An on-board, Linux-based acquisition module offers remote monitoring and control with unparalleled flexibility.

Combining the 5T strong motion instrument, a DM24 digitizer and an embedded acquisition module (EAM), the 5TDE is a low-noise sensor with on-board and external storage options. With web-based user interface and multi-protocol communications over serial and Ethernet connections, an optional Wi-Fi module offers 802.11b and g connectivity.

Applications

> Ground motion modelling
> Large earthquake source characteristics
> Earthquake Early Warning systems
> Structural health monitoring

Key features

Low-noise components for high precision and extra dynamic range

Full-scale sensitivity form 0.1 to 4.0 g

Low pass corner from 50 to 100 Hz

No mass-locking or sensor levelling required

Isolated power supply for 10-36 V operation

Robust and waterproof

Up to 256 GB of on-board Flash memory storage

Unlimited external USB mass storage

Data recording in GCF or miniSEED formats

Fast data download over Ethernet or USB

Configuration via serial or Ethernet; command-line or web-based

Full network security suite, including HTTPS and Firewall, allows direct, permanent connection to the internet

LCD display allows operators to monitor triggers and memory usage in real-time

Powerfule, flexible Linux operating system

Optional USB Flash memory stick storage option

Optional 802.11b and 802.11g Wi-Fi

Images show the Güralp 5TDE feedback internet accelerometer

Güralp 5TDE

SPECIFICATIONS

SYSTEM	
Configuration / Topology	Triaxial orthogonal (ZNE)
PERFORMANCE	
Acceleration output band	DC – 100 Hz standard
Output sensitivity	± 4 g, ± 2 g, ± 1 g, ± 0.5 g, or ± 0.1 g
Peak / Full scale output	±10 V differential
Sensor Dynamic Range	> 165 dB >140 dB for 0.005 - 0.05 Hz >127 dB for 3 - 30 Hz
Self-noise	< 1 µg rms
Cross axis rejection	0.001 g/g
Linearity	0.1 % full scale
Lowest spurious resonance	> 450 Hz
Offset zeroing	Automatic on start up and on user command
Transfer function	User manual is available to download from the website. Each sensor is provided with full calibration details including measured sensitivity, measured frequency response and instrument poles and zeros
Calibration controls	Sine, step and broadband calibration via web interface or command-line
MASS / MONITORING CONTROL	
Sensor Mass positions	Three independent sensor mass position outputs (single ended)
POWER	
Power consumption (at 12 V DC)	3.2 W (excluding GPS)
Power voltage range	10– 28V DC
ENVIRONMENTAL	
Operating temperature	-20 to +70 °C

PHYSICAL	
Diameter	176 mm
Height with handle	200 mm
Height without handle	141 mm
Enclosure/Materials	Hard anodised aluminium case
Weight	3.45 kg
Communication / Connectors	Mil-spec connectors
Environmental protection	IP67

DIGITISATION*	
Digitul inputs	Can act as a communications hub for other digitisers
Digital resolution/output format	24-bits
Data storage formats/Direct disk recording formats	Data recording in GCF or miniSEED formats
Seismic network protocols	Scream (Antelope/Earthworm), BRP, SEEDlink, CD1.1 and others
Data storage	16 GB industrial grade Flash internal memory storage as standard (up to 256 GB optional. External USB storage options available
Communication interfaces	RS-232, 10BASE-T/100BASE-T Ethernet, serial, PPP. Optional 802.11b and g Wi-Fi
Internet technologies supported	TCP/IP, PPP, HTTP, SSH (others on request) Firewall and routing capabilities
* See DM24 digitiser datasheet for more information	

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