

# Güralp CD24

COMPACT THREE-CHANNEL DIGITISER



## Designed for ultra-low power applications

The Güralp CD24 is a compact, cost effective three-channel digitiser, designed for ultra-low power applications. Data can be transmitted in real-time over RS232 or, optionally, Ethernet or WiFi. Alternatively, data can be stored in on-board flash and quickly retrieved to a directly connected FireWire disk.

## Key features

Ultra low power: < 1W from 10V–28V DC

Event triggers optimise storage usage in long-term, unattended deployments and reduce bandwidth requirements when telemetered.

24-bit sigma-delta analogue to digital converters

Multiple sample rates from 1 to 1,000 Hz

Differential input: 40 V peak-to-peak ( $\pm 20$  V).

Lightweight and waterproof

RS232 output in GCF format

Up to 16 GB internal storage

Military-specification bayonet connectors

## Applications

- > Low power or temporary deployments
- > Aftershock deployments
- > Earthquake Early Warning systems

## SPECIFICATIONS

PRIMARY SENSOR INPUTS	
Number of channels	Three at 24-bits
Input voltage	Differential input: 40 V peak-to-peak ( $\pm 20$ V). Also compatible with single-ended inputs: 20 V peak-to-peak ( $\pm 10$ V)
Sample rates available	1 to 1000 samples per second
Gain	1 $\times$
STATE-OF-HEALTH CHANNELS	
Number of channels	3 (sensor mass positions)
Sample rates available	1 to 1000 samples per second
DIGITISER PERFORMANCE	
Digitiser type	Fourth-order sigma-delta
Digitiser resolution	24-bit
Dynamic range	> 132 dB at 20 samples per second
Digital filter types	FIR (linear phase) and IIR (for low latency mode)
Decimation filters	2, 4, 5, 8, 10, 16, 20, 40
Anti-aliasing filter at Nyquist frequency	> 160 dB
Output format	GCF
Absolute accuracy	< 1 %
Nominal sensitivity (at unity gain)	0.9 $\mu$ V/count
Linearity	$\pm 0.5^\circ\text{C}$
USER INTERFACE	
Digitiser control and configuration	Digitiser and sensor control via Güralp Scream! software (free download) and terminal window
SOFTWARE	
Triggering modes	STA/LTA, level, external, software, per-channel voting, network voting via Scream! software
REAL-TIME DATA COMMUNICATION	
Interfaces / Connections	RS-232 serial Wi-Fi (optional)
Protocols	Güralp Scream!
ON-BOARD DATA STORAGE	
Data storage file formats	GCF
Internal storage capacity	512 MB (up to 16 GB)
Data retrieval interfaces	FireWire
CONNECTORS	
Sensor input:	26-pin mil-spec circular
Power/data:	19-pin mil-spec circular
GPS:	19-pin mil-spec circular
FireWire:	6-pin mil-spec circular
POWER	
Power supply voltage	10 - 28 V DC
Power consumption at 12 V	600 W with GPS; no Ethernet or Wi-Fi
ENVIRONMENTAL / PHYSICAL	
Operating temperature range	-10 to +75 $^\circ\text{C}$
Enclosure material	Die-cast aluminium; O-ring seals throughout
Dimensions (length x width x depth)	160 x 160 x 90 mm excluding connectors
Weight	1.95 kg
SUPPORTING DOCUMENTATION	
Calibration values	Digitiser sensitivity and test results enclosed
Full user's guide	Available online at: <a href="http://www.guralp.com/documents/MAN-C24-0001.pdf">http://www.guralp.com/documents/MAN-C24-0001.pdf</a>