EQResponder

Central Recorder

Multi-sensor coordination. Microsecond precision. Centralised control for advanced structural array management.

The EQResponder Central Recorder is the hub of Canterbury Seismic's structural monitoring ecosystem—designed to synchronise, aggregate, and intelligently manage data from distributed EQResponder sensor nodes across complex installations.

Purpose-built for multi-instrument deployments, the EQResponder Central Recorder collects data from up to 16 different accelerographs, displacement sensors, or environmental stations, integrating them into a single coherent dataset with microsecond-level precision. An intuitive and modern web interface enables full diagnostic oversight and configuration control across the entire sensor array. Support for both GNSS and Precision Time Protocol (PTP) as either a master or slave ensures accurate and resilient time synchronisation across all connected instruments.

Advanced triggering logic, individual sensor configuration, and flexible deployment options make the Central Recorder ideally suited for structural arrays in buildings, bridges, tunnels, dams, and other critical assets.

Key Features

- Connect accelerograph, LVDT, digitiser and weather sensors
- Control all your array from one interface
- Receive timestamped data from all sensors in a single file
- Built-in GNSS and PTP timing options
- Run as PTP master clock or slave clock
- Cable, Wi-Fi, or cellular communication
- Monitor and manage programmatically via API
- Convenient data storage in MiniSEED or CSV

Specifications

Size	
Dimensions	140 x 84 x 50 mm
Weight	0.8 kg
Power	
Direct supply	10.5 – 30.0V DC, 2.0 W
External Battery / UPS	12V SLA, 7.0 Ah 36h with plug-pack 230 VAC – 13.8 VDC charger, (Option: 24V SLA compatible)
Communication	
Type	Integrated LAN, External 3/4/5G cellular modem, Wi-Fi via USB or Ethernet
Protocol	TCP-IP
Services	TLS-encrypted HTTPS web server, Programmatic HTTPS API, Email outputs
Compatibility	
Sensors	Fully compatible with EQResponder Accelerographs (EQR-90 and EQR-120), EQResponder LVDT, EQResponder Digitiser, EQResponder Weather Station products. (Option) Class A accelerometer integration
Triggering	
Type	Trigger array-wide recordings based on accelerograph, LVDT, or wind sensor measurements Configure array-wide triggers with either a simple or weighted trigger voting system Configure accelerometer input triggers by either PGA or individual channel thresholds
Pre-event length	10 to 60 seconds
Post event length	10 to 600 seconds
Relay output upgrade	(Option) Up to 2 solid state relay output, latching or non-latching, active high or active low
Data Storage	
Format	MiniSEED, CSV (compressed or uncompressed), JSON metadata file
Type	Flash disk, PGA, peak channel accelerations, and trigger duration
Storage time	32 GB MLC Flash disc (SLC option), Triggered / Continuous data
Timing	
Type	Synchronised to UTC. Internal GPS, NTP, IEEE1588v3 PTP master or slave, backup real-time clock
Accuracy	<1µs of UTC with GPS lock or PTP, <5ms NTP timing (typical), 50ppm with backup real-time clock
User Interface	
Type	Desktop / tablet / mobile browser compatible web server, Windows / MacOS / Linux supported
Features	Parameter configuration for all array sensors, live data and diagnostics display, historical diagnostics charts, data downloads, full-array mapping
Environmental	
Housing	Aluminium case, IP54 rated, IP65 rated enclosure option
Temperature range	-10 to +60°C standard, non-condensing. -40 to +60°C option
Mounting	Separate mounting plate with protective dust cover, IP65 rated enclosure option
Warranty	1 year standard, extended option (up to 6 additional years)

CANTERBURY Seismic

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