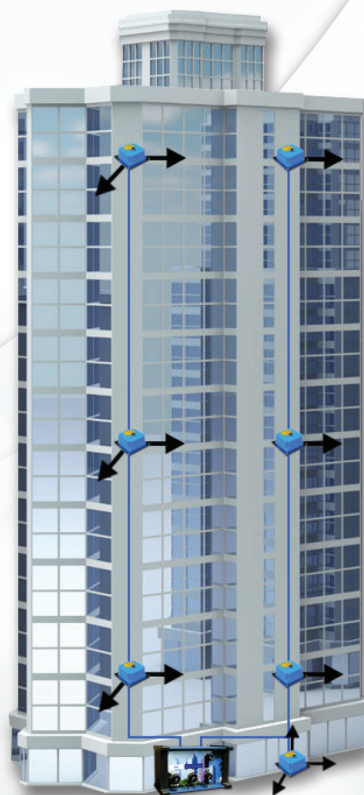


## iDAS

### Internet-Ready Digital Accelerograph System

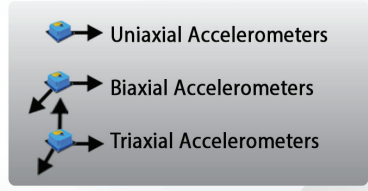
Example Layout of 12 Channel System



**iDAS Recorder**  
IP-based, rugged central recording unit, provides power and timing to digital sensors

**TSA-100D-24**  
Digital Uniaxial, Biaxial and Triaxial accelerometer; low noise, 24bits,  $\pm 4g$ , 200sps

Daisy-chained with single CAT-6 cable



EQMet's internet-ready Digital Accelerograph System (iDAS) for earthquake monitoring consists of multiple multi-channel 24-bit digital seismic accelerometers (TSA- 100S-D24) interconnected via inexpensive CAT-5 cable to a central recording unit for power, common timing, triggering, and data storage. The system is configured as an event recorder with real-time streaming output option. Where internet service is provided (e.g., Broadband, GPRS, etc.) the system can be securely accessed from anywhere via any standard web browser.

The TSA-100S-D24 delivers 1, 2 or 3 channels of linear acceleration at sample rates of 200sps. Unlike silicon MEMS-based accelerometers, the TSA-100S delivers ultralow noise performance, high linearity, and low hysteresis.

Customers around the world have confirmed the high performance and ease-of-use of EQMet sensor and recorders. If you are ready to collect high-fidelity accelerograph data for your next monitoring project, you are ready for the iDAS system.

#### Key Features:

- Ultra-high-linearity accelerograph
- Very low signal distortion
- 24-bit resolution
- Non-volatile memory (up to 64GB)
- Multiple data formats
- Multiple real-time streaming clients
- Many communications options
- Optional GPS timing (< 900 ns jitter)

#### Benefits to You:

- Save time and money with a daisy-chained digital system that is easy to set up and use
- Record high quality data at a price that fits your budget
- Lower your station noise floors by 20-40 dB with out blowing your budget
- Orders of magnitude more quiet
- Allows ambient vibration analyses
- Digital sensors can traverse long distances

## SPECIFICATIONS

### Central Recorder Hardware

Processor: 400MHz Intel PXA255 Xscale®  
Memory: 256 Mbytes SDRAM  
Storage: 1x Internal CF slot (up to 64 GB), 1x SD card 4 GB  
Interfaces: 1x 10BaseT Ethernet ports, 1x RS232 serial ports  
Environment: -20 to +60°C (optional -30 to +70°C), 0-100% RH (non-condensing)

### Central Recorder Middleware/Software

OS: MontaVista HardHat Linux v2.4.20  
Type: Loaded with Kinematics limited edition Rockhound; real-time data collection and processing software  
Compatibility: Earthworm, Seedlink  
Monitoring: Extensive State-of-Health monitoring; input and system voltages, internal temperature, internal humidity, and communication link diagnostics  
Data Format: Kinematics EVT, miniSEED, SAC, COSMOS, MATLAB, SUDS, SEISAN,

### Physical Recorder

Enclosure: Rugged aluminum extrusion with MIL-SPEC type connectors designed for 1m drop and 1m temporary immersion (IP67)  
Environment: Lead-free; RoHS, WEEG, and CE compliant  
Protection: Transient and EMI/RFI protection on all connections  
Display: System status LEDs for power, event

### Power

Type: Internal switched power supply (100-250VAC 50/60Hz) and battery charger system  
Battery: Optional external 12V, 35Ah or more  
Autonomy: 24 hours (pending size of battery)  
Recorder: 8-18 VDC 0.6W (typical)  
Sensor: 18-72 VDC (from recorder) 3.4W (2.4W sensor, 1W digitizer)

### Measurement

Type: Triaxial, force-balance accelerometer with capacitive displacement sensor, restoring coil and calibration coil  
Range: +/-4g  
Sensitivity: 5V/g differential  
Sample Rate: 200sps  
ADC: 24bits sigma-delta  
Dynamic range of 125dB from 0.1 to 40Hz integrated  
Bandwidth: DC to 225Hz  
Cross-axis: < 0.5% including misalignment  
Offset: < 0.05g  
Hysteresis: < 200 µg peak-to-peak with +/-1g excitation or < 0.005% of full-scale  
Non-linearity: < 0.015% total  
THD: < -74dB total harmonic distortion  
Anti-Alias: 144dB linear phase FIR standard minimum phase filter optional

### Triggering

Type: IIR band-pass filter (three types available)  
Threshold: Selectable from 0.01% to 100% full scale  
Voting: Internal, external, and network trigger votes with arithmetic combination  
Pre-event: Software selectable up to 500s  
Post-event: Software selectable up to 65,000s

### Timing

Time Base: TCXO digitally locked to GPS (optional)  
Accuracy: < 1 µs of UTC with GPS  
< 0.5 ms channel-to-channel synchronization without GPS