

QUAKELOGIC

QL-SEISMOSENSE

AE MONITORING

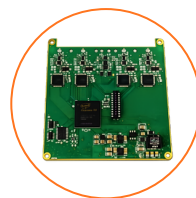
SYSTEM

QL-SS AE



QL-SEISMOSENSE AE MONITORING SYSTEM

ADVANCED ACOUSTIC EMISSION & STRUCTURAL MONITORING SYSTEM



DISCOVER ADVANCED ACOUSTIC EMISSION MONITORING

QuakeLogic's QL-SeismoSense AE Monitoring System is a high-performance acoustic emission monitoring solution designed to deliver continuous, real-time structural health assessment for critical infrastructure, industrial assets, and geotechnical applications. Featuring multi-channel data acquisition, FPGA-based signal processing, and integrated GPS synchronization, the QL-SeismoSense provides an accurate and reliable solution for detecting structural changes and acoustic emission events.

- Improves monitoring efficiency by providing real-time event detection, high-speed signal processing, and continuous data acquisition for rapid structural assessment.
- Reduces maintenance costs by enabling early identification of material fatigue, structural defects, and critical changes before costly failures occur.
- Enhances operational reliability by delivering precise event localization, synchronized multi-channel monitoring, and uninterrupted long-term system performance.
- Supports continuous structural monitoring through scalable system architecture, advanced acoustic emission analysis, and comprehensive remote monitoring capabilities for improved infrastructure safety and operational readiness.

What's Included »

- Multi-Channel AE Monitoring Unit (4 / 8 / 16 Channels)
- Integrated FPGA Signal Processing Module
- High-Sensitivity Acoustic Emission Sensors
- GPS Synchronization Module
- Ethernet & Wi-Fi Communication Interfaces
- Embedded Linux Operating System
- Web-Based Monitoring & Configuration Interface
- Real-Time Event Detection & Data Acquisition Software
- Remote Monitoring & Alarm Management System
- Industrial Power Supply & Interface Cables
- Mounting Accessories & Installation Kit
- System Configuration & Diagnostic Tools
- Technical Documentation
- User Software & Data Management Platform
- PDF Report Export and Data Recording Features

KEY FEATURES

- Real-time acoustic emission monitoring enables continuous detection of structural changes and micro-seismic activity in critical infrastructure and industrial environments.
- High-speed FPGA-based signal processing provides accurate event detection, waveform acquisition, and reliable data analysis.
- Independent multi-channel acquisition supports simultaneous monitoring across multiple sensors with synchronized event recording.
- Integrated GPS synchronization delivers high-precision time alignment for distributed monitoring and event correlation.
- Configurable acquisition parameters allow flexible setup of sampling rate, threshold levels, pre-trigger, post-trigger, and filtering options.
- Tracks and analyzes key acoustic emission parameters including amplitude, duration, rise time, energy, counts, and event location.
- Provides real-time event visualization, waveform display, and system status monitoring to support rapid assessment and decision-making.
- Data recording and PDF reporting features support engineering analysis, historical review, and long-term monitoring documentation.
- Supports a wide range of monitoring applications including structural health monitoring, geotechnical monitoring, industrial equipment monitoring, and seismic research.
- Ethernet, Wi-Fi, and optional cellular communication enable secure remote access, system management, and continuous monitoring.
- Web-based monitoring software allows real-time data visualization, remote configuration, alarm management, and centralized system administration.

PRODUCT FEATURES

Monitoring Modes

Continuous Monitoring
Event-Based Monitoring
Hit-Based Acquisition
Waveform Recording
Triggered Acquisition

System Configurations

4-Channel
8-Channel
16-Channel

Signal Analysis

Amplitude Analysis
Duration Analysis
Rise Time Analysis
Energy Analysis
Counts & Event Detection
B-Value & Beta Analysis

Applications

Structural Health Monitoring
Bridge & Tunnel Monitoring
Geotechnical & Mining Monitoring
Industrial Equipment Monitoring
Seismic & Micro-Seismic Monitoring
Research & Laboratory Testing

Communication

Ethernet
Wi-Fi
Optional Cellular Communication

Languages

Available in multiple languages: English, Spanish, German, French, Italian, Portuguese, Korean, Japanese, Chinese, and Arabic.

For more information on the benefits of the QL-SeismoSense AE Monitoring System, please contact QuakeLogic.

SYSTEM CONFIGURATIONS

Category	Description	4-Channel	8-Channel	16-Channel
System Configuration	Multi-Channel AE Monitoring	X	X	X
Signal Acquisition	High-Speed Data Acquisition	X	X	X
Signal Processing	FPGA-Based Real-Time Processing	X	X	X
Synchronization	Integrated GPS Synchronization	X	X	X
Communication	Ethernet & Wi-Fi Connectivity	X	X	X
Remote Access	Web-Based Monitoring Interface	X	X	X
Event Detection	Independent Channel Triggering	X	X	X
Signal Analysis	Amplitude, Energy & Duration Analysis	X	X	X
Data Management	PDF Reporting & Data Recording	X	X	X
System Management	Remote Firmware Update	X	X	X

SENSORS & INPUTS

Type	Description	4-Channel	8-Channel	16-Channel
Sensor Type	High-Sensitivity AE Sensors	X	X	X
	Differential Sensor Input	X	X	X
Input Configuration	Independent Channel Inputs	X	X	X
	Configurable Trigger Thresholds	X	X	X
Synchronization	Integrated GPS Input	X	X	X
Communication	Ethernet Interface	X	X	X
	Wi-Fi Connectivity	X	X	X
	Optional Cellular Communication	X	X	X

ACQUISITION & SYSTEM SETTINGS

Type	Description	4-Channel	8-Channel	16-Channel
Sampling Settings	Sampling Rate Configuration	X	X	X
	Resolution Selection (16-bit / 18-bit)	X	X	X
Trigger Settings	Independent Threshold Configuration	X	X	X
	Pre/Post Trigger Configuration	X	X	X
Signal Processing	FPGA Real-Time Processing	X	X	X
Synchronization	GPS Time Synchronization	X	X	X
Communication	Ethernet & Wi-Fi Configuration	X	X	X

ANALYSIS & REPORTING

Type	4-Channel	8-Channel	16-Channel
Real-Time Event Detection	X	X	X
Live Waveform Monitoring	X	X	X
Automatic Parameter Extraction	X	X	X
B-Value & Beta Analysis	X	X	X
Event Localization	X	X	X
Data Recording	X	X	X
PDF Report Export	X	X	X
Remote Alarm Management	X	X	X
Web-Based Monitoring	X	X	X
Historical Data Review	X	X	X

OPTIONAL FEATURES & ACCESSORIES

OPTIONAL CELLULAR COMMUNICATION MODULE

Expand the deployment capabilities of the QL-SeismoSense AE Monitoring System with the optional Cellular Communication Module. This feature enables secure remote data transmission over cellular networks, allowing continuous monitoring, remote system access, alarm notifications, and data synchronization in locations where wired network infrastructure is unavailable.

WEB-BASED MONITORING SOFTWARE

The licensed monitoring software enables real-time system monitoring, remote configuration, user management, alarm management, graphical data visualization, and comprehensive event reporting through Ethernet, Wi-Fi, or optional cellular connectivity.

ADVANCED ANALYSIS MODULE

The optional Advanced Analysis Module enables enhanced acoustic emission data interpretation through advanced event analysis, waveform processing, B-value and beta analysis, event localization, and extended reporting capabilities. Analysis results can be reviewed, archived, and exported as PDF reports.

MONITORING HARDWARE PACKAGE

The system includes the QL-SeismoSense multi-channel monitoring unit, high-sensitivity acoustic emission sensors, integrated GPS synchronization, industrial communication interfaces, power supply, mounting accessories, and system configuration software, providing a complete and scalable acoustic emission monitoring solution.

TECHNICAL SPECIFICATIONS

Specification	Description
Product	QL-SeismoSense AE Monitoring System
Dimensions	17 × 13 × 13 cm
Weight	~2.5 kg
Power Supply	9–28 V DC
Power Consumption	<10 W (8-Channel Configuration)
Operating System	Embedded Linux
Processor	ARM-Based Embedded Processor
Signal Processing	Integrated FPGA Architecture
Memory (RAM)	128 / 256 MB
Storage	32 GB / 64 GB Industrial Flash Storage
Sampling Performance	1.25 MS/s @ 18-bit, 5 MS/s @ 16-bit
Synchronization	Integrated GPS Receiver
Time Accuracy	<1 µs with GPS Synchronization
Communication	Ethernet, Wi-Fi, Optional Cellular
Remote Access	Web-Based Monitoring Interface
Data Recording	Supported
Remote Management	Supported
Firmware Updates	Supported
Protection Class	IP68
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Warranty	2 Years

**Corporate
Headquarters:**

- **QUAKELOGIC INC.**
- 2008 Opportunity Dr. Suite 130
- Roseville, CA 95678, USA
- Monday – Friday
- 9:00 AM – 5:00 PM (PST/PDT)

Contact Us:

- For product information, quotations, technical support, or partnership opportunities, our team is ready to assist you with professional and timely service.

Phone:

+1 (916) 899-0391

Email:

sales@quakelogic.net

Website:

<https://products.quakelogic.net/>

About QuakeLogic:

- QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, and high-quality solutions to customers worldwide.

Our Commitment

- At QuakeLogic, we are committed to quality, innovation, and customer satisfaction. We build lasting partnerships by delivering reliable solutions and dependable support.

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