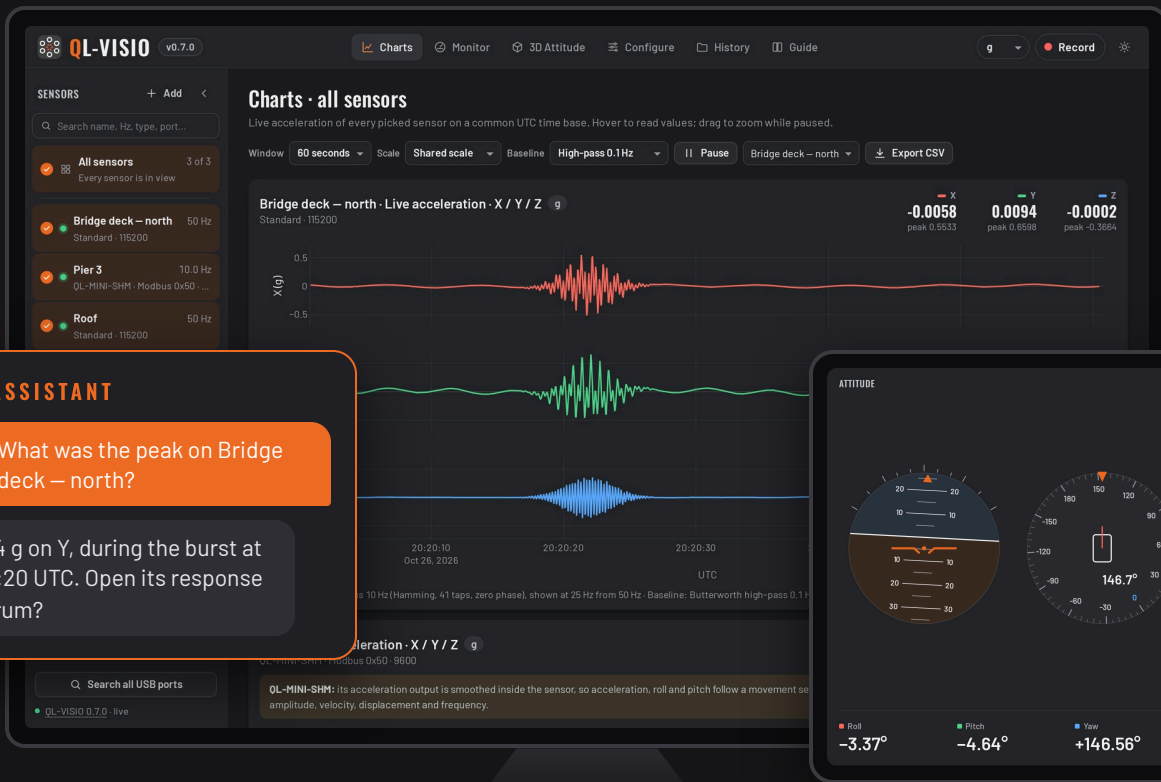


★ AI-POWERED

SENSOR SOFTWARE FOR QUAKESENSE · QL-MINI · QL-MINI-SHM

# QL-VISIO by QuakeLogic

See what your sensors measure, live. Record it, analyse it and share it from one Windows PC – and ask the built-in AI assistant what the data means.



## QL-VISIO

### WATCH

Live acceleration, rotation and tilt from every sensor

### RECORD

Every sensor at full rate, with one click

### ANALYSE

Spectra, response spectrum, PGA, Arias

### ASK AI

Plain-English answers about your data

### SHARE

Viewers on the network, operators with a password



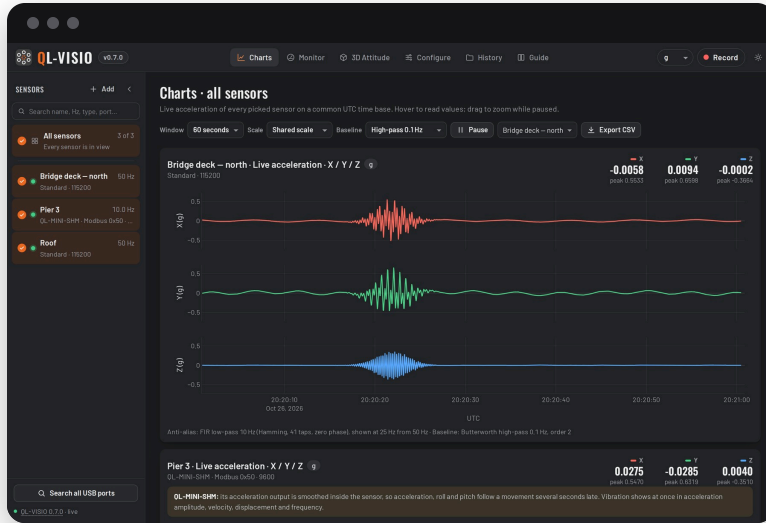
### DEVELOPED IN USA

Designed and software developed in Roseville, California

QuakeLogic Inc. · Roseville, California  
sales@quakelogic.net · products.quakelogic.net

## OVERVIEW

1 OF 6



Windows 11   Raspberry Pi   USB   RS-485   Modbus  
Network   Offline   Exports   **AI assistant**

# QL-VISIO

AI-POWERED

Software for QuakeLogic sensors: watch, record, analyse and configure them in your web browser, with an AI assistant built in.

## WORKS WITH

- ✓ **QUAKESENSE** wired motion sensor: acceleration, rotation, tilt and elevation, USB 3.0
- ✓ **QL-MINI** accelerometer and inclinometer, USB cable
- ✓ **QL-MINI-SHM** vibration sensor for structural health monitoring, RS-485

## HIGHLIGHTS

- ✓ Built-in AI assistant answers questions about your sensors and recordings
- ✓ Plug in a sensor: it is found, named and shown within seconds
- ✓ Any number of sensors side by side, on one UTC time axis
- ✓ Runs as a Windows service from boot: records with no one signed in

QL-VISIO is the software side of every QuakeLogic sensor. A small server on the PC owns the sensors' serial ports; the screen is a web page, so anyone allowed can follow the same sensors from their own browser. It finds the protocol and baud rate on its own and remembers each sensor by its USB socket, so names stay put when Windows rennumbers a port.

### 01 WATCH

Charts, Monitor and 3D Attitude follow every picked sensor live.

### 02 RECORD

One click records all sensors at full rate, named as you choose.

### 03 ANALYSE

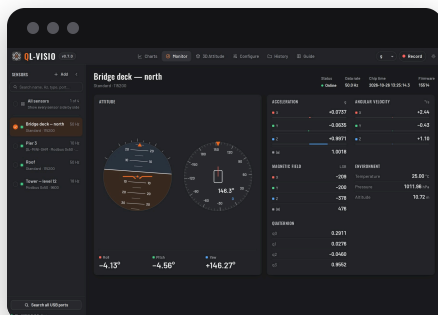
Filters, spectra, response spectrum and engineering measures.

### 04 ASK AI

Ask about any sensor, plot or recording in plain English.

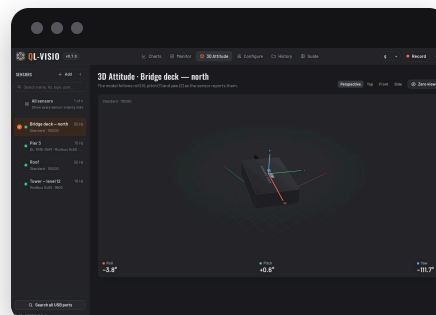
### 05 SHARE

Other devices watch with the viewer password.



## MONITOR

Horizon, heading and every channel with its range.



## 3D ATTITUDE

The sensor's model follows roll, pitch and yaw.

AI-POWERED

2 OF 6

# ASK QL-VISIO, IN PLAIN ENGLISH

An AI assistant is built into the app. It sees the sensors and recordings you work with.

AI ASSISTANT

Bridge deck — north · 3 sensors

Which sensor shook the most in the last minute?

Bridge deck — north: 0.0094 g peak on Y at 20:20:20 UTC. Pier 3 and Roof stayed below 0.003 g.

What does the second peak in the spectrum mean?

A response near 1 Hz, likely a mode of the deck. Check it on the Fourier spectrum before reading it as structural.

Pier 3 shows no data.

Diagnostics shows checksum errors at 9,600 baud. Check the RS-485 A/B wiring, then search the port again.

Ask about a sensor, plot or recording...

## WHAT IT DOES

- ✓ **Answers** questions about live data and recordings: peaks, times, rates, dominant frequency
- ✓ **Explains** a plot or measure — PSA, Arias, PSD, CAV — in plain words
- ✓ **Guides** setup, calibration, wiring and Modbus addressing step by step
- ✓ **Troubleshoots** a silent sensor from the Diagnostics counters
- ✓ **Summarises** a recording into a short note for your report

## HOW IT FITS

- ✓ Opens from every view, next to the data it talks about
- ✓ Knows the built-in User Guide
- ✓ Your recordings stay the record: the assistant reads them, it does not change them

## SENSORS

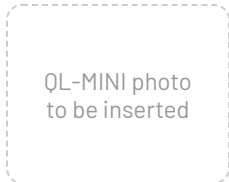
## ONE SOFTWARE, THREE SENSORS



**QUAKESENSE**

Acceleration, rotation, tilt and elevation

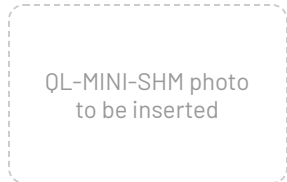
USB 3.0 · 15 M CABLE · IP68



**QL-MINI**

Accelerometer and inclinometer

USB · PLUG AND PLAY



**QL-MINI-SHM**

Vibration sensor for structural health monitoring

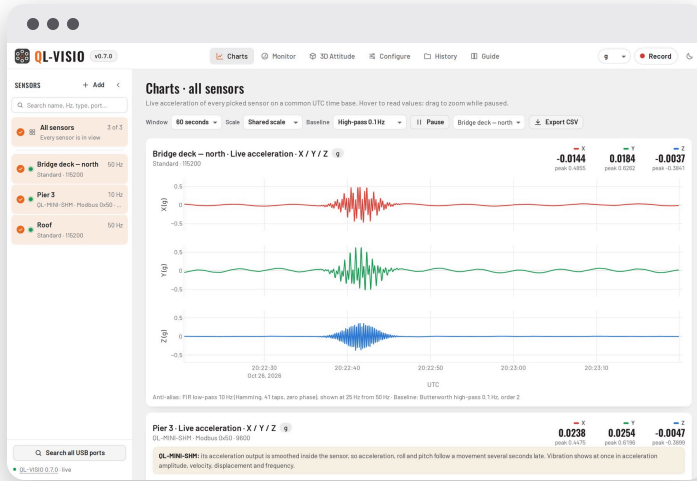
RS-485 · MODBUS RTU

LIVE VIEWS

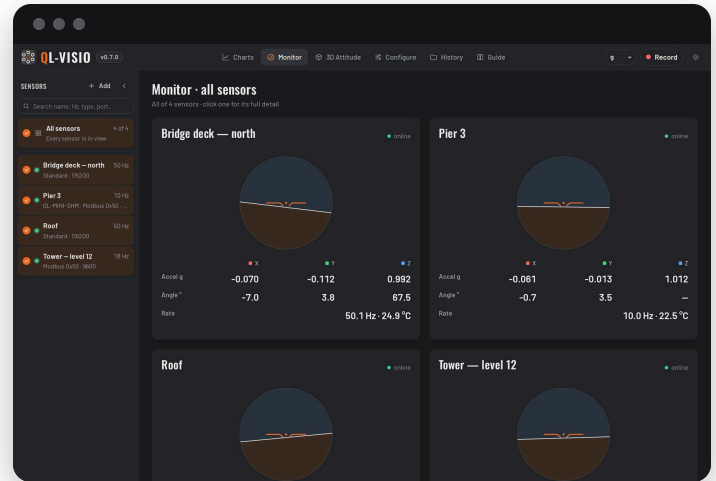
3 OF 6

# EVERY SENSOR, LIVE

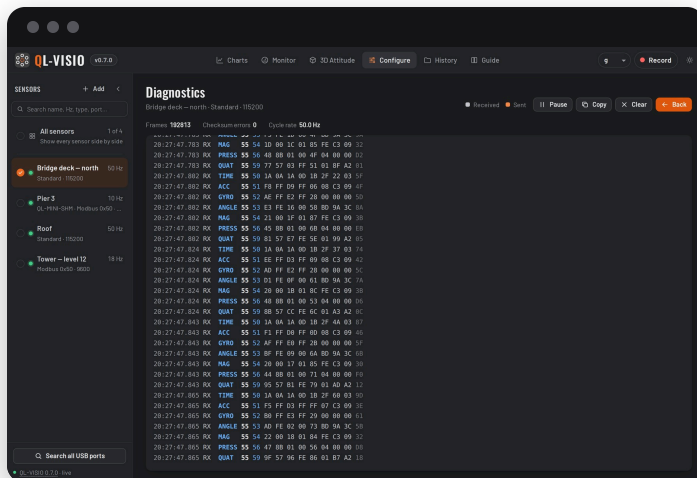
Pick sensors in the list; every view shows the ones you picked, side by side.



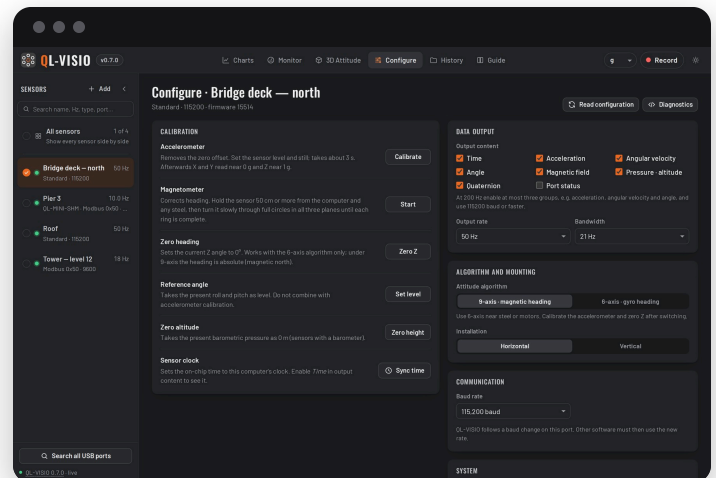
**CHARTS** X, Y and Z acceleration on one UTC axis, latest value and peak per axis. Light or dark theme.



**SEVERAL SENSORS** One card per sensor with its horizon and readings.



**DIAGNOSTICS** The bytes on the wire, frame by frame, with error counters.



**CONFIGURE** Rate, bandwidth, calibration and Modbus address, set in the sensor.

## CHARTS

- ✓ Window 10 s, 30 s, 60 s or 5 min; shared or per-axis scale
- ✓ Baseline: Butterworth high-pass 0.05–1 Hz, or none to see tilt
- ✓ Anti-alias FIR before decimation; the filter in use is printed under each plot
- ✓ Pause, zoom, save PNG, export the window as CSV

## SENSOR LIST

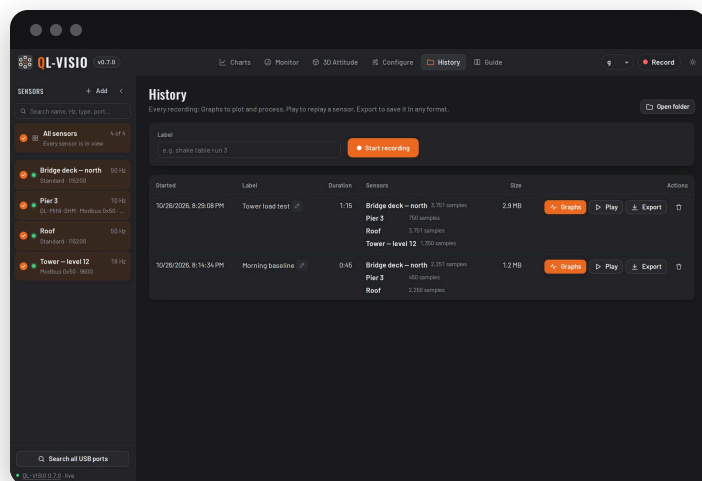
- ✓ Live status and data rate for every sensor
- ✓ Search by name, type, port, baud rate, address or rate
- ✓ Drag to reorder; every view and browser keeps the order
- ✓ Built-in Guide, a two-minute guided tour and the AI assistant

## RECORD AND ANALYSE

4 OF 6

# RECORD, THEN LOOK CLOSER

Every recording keeps every sample from every sensor, ready for engineering work.



**HISTORY** Named recordings: graph, replay, export or open the folder.

## PROCESSING

- ✓ Presets: strong motion, structural vibration, ambient noise, slow tilt
- ✓ Baseline correction, taper, notch, spike removal
- ✓ Butterworth low, high, band-pass and band-stop, order 1-8
- ✓ Integration to velocity and displacement; resampling

## PLOTS AND MEASURES

- ✓ Waveform, Fourier spectrum, PSD and spectrogram
- ✓ Response spectrum PSA, PSV, SD, 0.01-10 s, several dampings
- ✓ PGA, PGV, PGD, Arias intensity, CAV, D5-95, mean period
- ✓ Every plot zooms, saves PNG and downloads its data
- ✓ Ask the AI assistant to explain any plot or measure



**GRAPHS** Fourier spectrum, PSD and response spectrum of one recording.

## EXPORT FORMATS

| FORMAT          | OPENS IN               |
|-----------------|------------------------|
| MiniSEED        | ObsPy, SeisComP, Swarm |
| SAC             | Seismic analysis tools |
| PEER AT2        | OpenSees, SeismoSignal |
| MATLAB .mat     | MATLAB, Python         |
| Excel .xlsx     | Excel, LibreOffice     |
| CSV, text, JSON | Any tool               |

Raw or processed data, the sensors and channels you choose, in any acceleration unit. Several files come as one ZIP.

WINDOWS 11 EDITION

5 OF 6

# ONE QL-VISIO PER COMPUTER

Installed once, it starts with Windows and serves every account, the lab and the network.

- ✓ **Starts with Windows**, before anyone signs in: recording carries on unattended and after a power cut
- ✓ **Shared**: every Windows account sees the same sensors and recordings
- ✓ **Installs offline** from the USB stick; the PC goes online once, for the sensor's USB driver
- ✓ **Upgrades keep** passwords, settings, sensor names and recordings
- ✓ **Network sharing** with one switch: other devices open the PC's address in a browser, nothing to install

| WHAT PEOPLE CAN DO          | VIEWER | OPERATOR |
|-----------------------------|--------|----------|
| Watch, analyse, export      | ✓      | ✓        |
| Ask the AI assistant        | ✓      | ✓        |
| Start and stop recording    | ✓      | ✓        |
| Configure, calibrate        | —      | ✓        |
| Add, remove, rename sensors | —      | ✓        |
| Delete recordings, replay   | —      | ✓        |
| Sharing, passwords, stop    | —      | ✓        |

At the PC everyone is a viewer. The operator password is chosen in Setup; there is no default password.

## INSTALL IN THREE STEPS

### 1 RUN SETUP

From the USB stick. Choose the operator password and whether to share.

### 2 PLUG IN

Connect a QUAKESENSE, QL-MINI or QL-MINI-SHM. QL-VISIO finds it and its settings.

### 3 OPEN AND RECORD

Start → QL-VISIO opens in the browser. Press Record.

## WHERE IT FITS

SENSORS  
**QUAKESENSE · QL-MINI**  
**QL-MINI-SHM**  
USB, RS-485



SOFTWARE  
**QL-VISIO**  
Windows 11 PC or Raspberry Pi, AI assistant built in

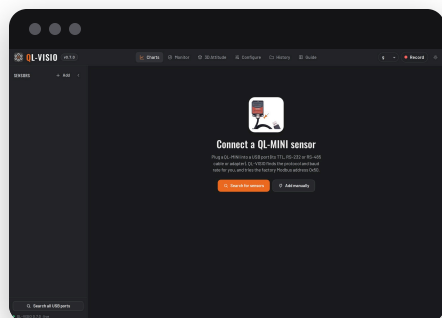


PEOPLE  
**BROWSERS**  
At the PC and on the network

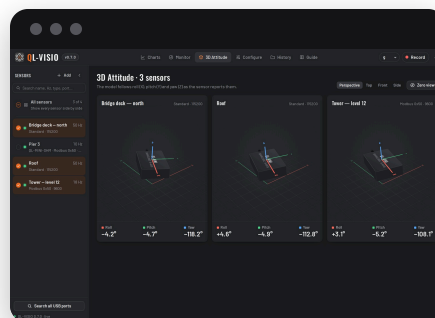


RESULTS  
**RECORDINGS**  
MiniSEED, AT2, MATLAB, Excel

## FROM SENSOR TO REPORT



**FIRST START**  
Plug in a sensor, or search every USB port with one button.



**SIDE BY SIDE**  
Every picked sensor in 3D, each with its own readings.

## TECHNICAL SPECIFICATIONS

6 OF 6

## SENSORS AND LINKS

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| QUAKESENSE       | USB 3.0, 15 m (49 ft) cable, IP68                           |
| QL-MINI          | TTL over its USB cable, standard protocol                   |
| QL-MINI-SHM      | RS-485, Modbus RTU, one per adapter                         |
| Baud rates       | 4,800–921,600 bps, found automatically                      |
| Modbus address   | 0x01–0xF7; factory 0x50 tried first                         |
| USB-serial chips | WCH CH340/CH341, Silicon Labs CP210x, FTDI, Prolific PL2303 |
| Sensors per PC   | No set limit; each on its own port                          |
| Hot plug         | Found and named in seconds; known by USB socket             |

## MEASUREMENTS

|                  |                                                                                   |
|------------------|-----------------------------------------------------------------------------------|
| Acceleration     | X, Y, Z,  a ; ±16 g                                                               |
| Angular velocity | X, Y, Z; ±2,000 °/s                                                               |
| Angle            | Roll, yaw ±180°; pitch ±90°                                                       |
| Also             | Magnetic field (raw), temperature, quaternion; pressure and altitude where fitted |
| QL-MINI-SHM      | Vibration velocity, displacement, dominant frequency, inclination                 |
| Output rate      | 0.2–200 Hz (standard); Modbus poll 5–100 per second                               |
| Units            | g, mg, %g, gal, m/s <sup>2</sup> , µg                                             |

## LIVE VIEWS

|               |                                                            |
|---------------|------------------------------------------------------------|
| Views         | Charts, Monitor, 3D Attitude, Diagnostics                  |
| Time base     | UTC; PC arrival time per sample                            |
| Chart filters | 2nd-order Butterworth high-pass; zero-phase FIR anti-alias |

## RECORDING AND ANALYSIS

|                   |                                                                         |
|-------------------|-------------------------------------------------------------------------|
| Recording         | All sensors at full rate; CSV per sensor and one MiniSEED per recording |
| Replay            | At original timing, through every view                                  |
| Spectra           | Fourier (Konno–Ohmachi smoothing), Welch PSD, spectrogram               |
| Response spectrum | PSA, PSV, SD; 0.01–10 s                                                 |
| Measures          | PGA, PGV, PGD, RMS, Arias, CAV, D5–95, Tm                               |
| Exports           | MiniSEED, SAC, PEER AT2, MATLAB, Excel, CSV, text, JSON                 |

## AI ASSISTANT

|       |                                                                            |
|-------|----------------------------------------------------------------------------|
| Where | Built in; opens from every view                                            |
| Knows | Picked sensors, recordings, measures, settings and the User Guide          |
| Does  | Answers, explanations, setup and troubleshooting help, recording summaries |

## SENSOR CONFIGURATION

|             |                                                                                |
|-------------|--------------------------------------------------------------------------------|
| Calibration | Accelerometer zero, magnetometer, heading, reference angle                     |
| Settings    | Output content and rate, bandwidth 5–256 Hz, 6/9-axis, mounting, baud, address |

## WINDOWS 11 EDITION

|                  |                                                                                          |
|------------------|------------------------------------------------------------------------------------------|
| Operating system | Windows 11, 64-bit; setup.exe from the USB stick                                         |
| Runs as          | Windows service, from boot                                                               |
| Access           | Viewer and operator passwords                                                            |
| Network          | Off by default; firewall rule for private networks                                       |
| Internet         | Not needed to watch and record; once for the USB driver; AI assistant needs a connection |

## ALSO RUNS ON

|                    |                                                   |
|--------------------|---------------------------------------------------|
| Web edition        | Any computer with Python 3.9+, incl. Raspberry Pi |
| Browser · language | Edge, Chrome, Firefox · English                   |

QL-VISIO displays, records and analyses sensor data; it does not detect earthquakes or raise alarms. AI answers are guidance; check them against the data. Specifications are subject to change without notice.

## QUAKE SERIES

# SEE IT. RECORD IT. PROVE IT.

QL-VISIO, QUAKESENSE and the QL-MINI family join the Quake Series: QuakeLogic sensors and AI-powered software designed together in Roseville, California.

## ABOUT QUAKELOGIC

QuakeLogic designs seismic and structural monitoring systems: sensors, data loggers, earthquake early warning and the software that ties them together, for engineers, researchers and facility owners.

## SUPPORT

The full User Guide and the AI assistant are built into QL-VISIO. Our engineers help with setup, sensors and data.

## CONTACT

### QuakeLogic Inc.

2008 Opportunity Dr., Suite 130  
Roseville, CA 95678, USA

+1(916) 899-0391

[sales@quakelogic.net](mailto:sales@quakelogic.net)

[products.quakelogic.net](https://products.quakelogic.net)

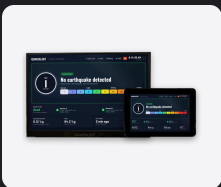
## PRODUCTS



Scan for QUAKESENSE, QL-MINI sensors and the Quake Series.

## THE QUAKE SERIES

## BY QUAKELOGIC



### QUAKEALERT

Earthquake early warning display



### QUAKESENSE

Wired motion sensor



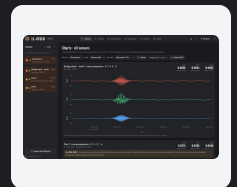
### QUAKENODE

Remote sensor



### QUAKERELAY

Smart relay for safe shutdown



### QL-VISIO

AI-powered sensor software

## SENSORS

QUAKESENSE motion sensor, QL-MINI accelerometer and inclinometer, QL-MINI-SHM.

## SOFTWARE

QL-VISIO: live views, recording, analysis, exports and a built-in AI assistant.

## DELIVERY

Setup and the quick start on a USB stick with every sensor.



## DEVELOPED IN USA

Designed and software developed in Roseville, California