

Common sense...uncommon innovation



Geotech Instruments, LLC, has over 50 years experience in the development and production of ground motion monitoring instruments. Today, **most of the seismic field instruments used by the U.S. Air Force in fulfilling its mission to monitor nuclear events worldwide** are produced by Geotech.

Geotech has participated in many programs during its long history of producing ground motion monitoring instrumentation. Such programs include the development of **the Worldwide Seismic Network, the Alaskan Long-Period Array, the multi-country Group of Scientific Experts program, the VELA Uniform Seismic Arrays** in operation for more than 20 years, the 25-year-old **Seismic Data Analysis Center**, and more recently Infrasound Arrays and Seismic Systems for explosion monitoring. Also, Geotech provided the sensors and signal conditioning for **the active seismic experiment on the Moon**.

Geotech innovation continues with seismic sensors and digitizers designed to record high-resolution, low-noise data, along with powerful software programs that analyze and quickly extract more information from raw data. Geotech products are used in a wide range of applications: **research, seismic survey of natural and induced seismicity, civil engineering, microzonation, industrial vibrations, geothermal reservoir monitoring, as well as in education.**

THE COMPANY



Geotech's facility in sunny Dallas

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COMPANY PROFILE

Geotech Instruments, LLC is a Dallas, Texas based company offering high-resolution, low-noise systems to detect and record ground oscillations caused by earthquakes, volcanic eruptions or man-made explosions. The company provides hardware, software and services for local, regional or global seismological networks operated by universities, state agencies and international organizations.

The systems and technologies developed by Geotech Instruments, LLC ("Geotech") are used to monitor the seismic activity for seismic risk and seismic hazard studies, to conduct real-time detections for seismic or volcanic early warning systems, and to discriminate between earthquakes and nuclear explosions in the general effort to identify clandestine nuclear tests. Geotech's main areas of activities are:

High-gain, ultra-low noise seismic sensors:

- short period seismometers for *seismic surveys* and geothermal reservoir monitoring.
- broadband seismometers for *nuclear test monitoring programs* and global seismology.
- borehole seismometers for the Air Force, nuclear explosion monitoring, and IRIS applications.
- accelerometers for strong motion networks and *seismic engineering applications*.

High-resolution (24-bit) digitizers/recorders:

- portable recorders for temporary or permanent deployments.
- remote systems for telemetered seismic stations.
- borehole systems for special applications.
- high-resolution *strong motion recorders* for free field and structural monitoring.

Seismic and infrasound networks:

- turnkey solutions for the seismic networks, comprising hardware for remote stations and for the central facility, digital telemetry, as well as software for *real-time* data acquisition, processing, and *automatic* results dissemination.
- turnkey solutions for infrasound arrays, comprising hardware and software for the remote stations and for the central facility, part of the Nuclear Explosion Monitoring System. These applications handle digitally signed data packets, S/MIME Messaging Systems (AutoDRM), automated calibrations, meteorological data, etc.
- *flexible solutions for mobile deployments* for aftershock studies and passive microseismic experiments.
- design and implementation of specific *Early Warning Systems*.

Advanced software for seismological applications:

- automated digital data acquisition, real-time waveform display and state-of-health monitoring.
- advanced automated earthquake data processing, including seismic source inversion and shake maps generation.
- seismological data format conversions.
- advanced interactive data analysis.
- specialized programs for engineering and geotechnical applications.
- automated calibration software package.
- complete automated software suite for off-line processing of data disks from large field experiments.
- automated data and results dissemination via AutoDRM.
- data stream communication in LISS, Earthworm, SeedLink, CD1.0, and CD1.1 protocols.
- CSS3.0 data bases.