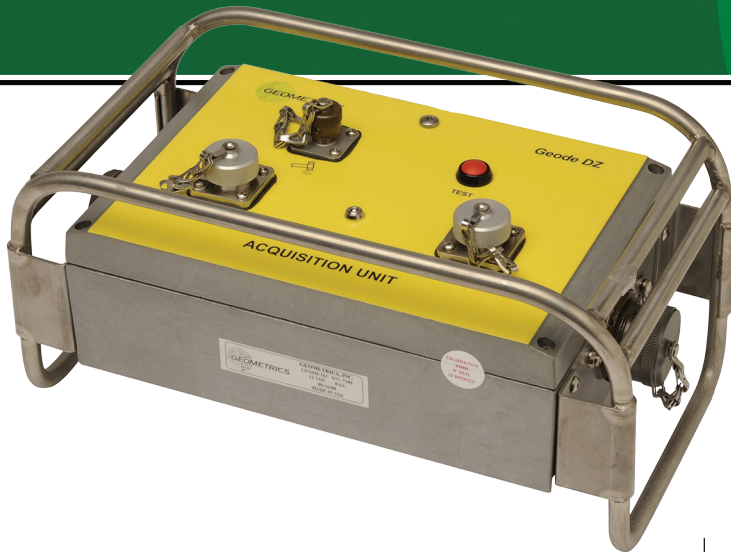


Geode DZ

3D Seismic System



The Geode DZ is a 3D seismic system based on our time-tested Geode technology. It combines all the functionality and electronic specifications of a standard Geode with Line Tap Units and state-of-the-art 3D acquisition software to make 3D surveying accessible to non-oil and gas practitioners at a much lower price point.

Now you can lay out several lines of Geodes and geophones, and assign X,Y, and Z coordinates to each. You can easily roll a patch of live channels through a larger grid, either following a survey script file or manually. Obstacles are easily dealt with using the graphical DZ Obstacle Manager.

In addition to enabling true 3D acquisition, the 100 megabit/sec LTUs, combined with GigE on the recording PC, make large-channel continuous recording possible. This makes the Geode DZ the system of choice for monitoring and surveillance applications.

Like the standard Geode, the Geode DZ comes with a 3-year warranty on the acquisition modules and LTUs.

FEATURES & BENEFITS

- **Create your own script (SPS) file** – No need to purchase expensive 3D planning software.
- **Compatible with standard Geode** – Use your existing Geodes to build larger-channel systems.
- **Supports simple to complex layouts** – Survey anywhere, whatever the obstacles.
- **In-box stacking** – Rapid data acquisition.
- **Wizard-driven software** – Easy-to-use, easy-to-remember, in the Geometrics tradition. No month-long training session required. Concentrate on data acquisition, not complex software.
- **Look-ahead line and geophone tests** – Quickly troubleshoot the geophone array.
- **Compatible with impact, explosive, vibrator, and mini-Sosie sources** – Tackle any job your client throws at you.
- **Easy-to-use Obstacle Manager** – Quickly adapt to changing field conditions.
- **Runs under Windows** – No proprietary recording hardware required. Run a full 3D survey from a laptop.
- **Full suite of analog self-tests** – Quickly prove that the system is meeting published specifications.
- **Integrated digital and analog cables** – Only lay out one set of cables between boxes.



CONFIGURATIONS

A/D Module: 2, 4, 6 or 8 channels per box, software selectable
Line Tap Unit (LTU): interfaces to 1 or 2 DZ line segments and to trunk line.

SYSTEM

- Up to 16 lines.
- Up to 2048 channels.
- 480 channels per line (240 channels per line segment).
- Separate trunk line controls AUX and VIB channels.
- PC based controller with gigabit Ethernet.

ELECTRONICS

A/D Conversion: 24-bit.

Dynamic Range: 115 dB at 2 ms, 24 dB.

Distortion: 0.0005% @ 2 ms, 1.75 to 208 Hz.

Bandwidth: 1.75 Hz to 8 kHz. Low frequency option available.

Common Mode Rejection: > 100dB at <= 100 Hz, 36 dB.

Cross Talk: -125 dB at 23.5 Hz, 24 dB, 2 ms.

Noise Floor: 0.20 mV, RFI at 2 ms, 36 dB, 1.75 to 208 Hz.

Stacking Trigger Accuracy: 1/32 of sample interval.

Maximum Input Signal: 2.8V PP, 0 dB, 177 mV PP, 24 dB.

Input Impedance: 20 kOhm, 0.02 mf.

Preamplifier Gains: 0, 12, 24 or 36 dB.

Anti-alias Filters: - 3 dB at 83% of Nyquist down 90 dB.

Acquisition Filters:

- Low Cut: OUT, 10, 15, 25, 35, 50, 70, 100, 140, 200, 280, 400 Hz.
- Notch: 50, 60, 150, 180 Hz and OUT.
- High Cut: OUT, 250, 500 or 1000 Hz.

Display filters: Any user-defined corner frequency.

Diversity stack and spiking filters for MiniSosie.

Sample Interval: 0.02, 0.03125, 0.0625, 0.125, 0.25, 0.5, 1.0, 2.0, 4.0, 8.0, 16.0 ms.

Correlation: Built-in high-speed hardware correlator in each DZ module, before or after stack. Additional s/w correlation in controller for QC display when recording uncorrelated.

Record Length: 65,536 samples per channel, may be limited by configuration.

Intelligent Event Self-Trigger: Available for micro-seismic, earthquake and vibration monitoring.

Continuous Recording: GPS synchronized for injection monitoring micro-seismic or earthquake studies.

TESTING

Instrument Tests: Noise, DC offset, gain and phase similarity, distortion, bandwidth, timing accuracy, cross feed, CMRR. Line and Geophone Tests: natural frequency, damping, line resistance, distortion, geophone similarity, cross talk, impedance. Real-time full waveform waterfall-style noise monitor.

POWER

DZ Module: 12V external battery, 0.5W/ch during acquisition, low power modes available when inactive.

LTU Module: 12V external, 3.0W.

Environmental: LTU and DZ: - 40°C to +75°C (-40°F to +167°F).
Submersible to 1 meter for 1 hour.

PHYSICAL

DZ A/D Module: L: 16.5; W: 24; H: 8.25 cm; Weight: 2.3 kg (6.5x9.5x3.25 in; 5 lb).

LTU Module: L: 16.5 cm; W: 16.5 cm; H: 8.25 cm; Weight: 1.8 kg (6.5x6.5x3.25 in; 4 lb).

SOFTWARE

Survey Control Software: Controls initial layout, testing and collection of 2 and 3D seismic data. 'Smart' SPS file system matches instrument to survey coordinate system, alerting operator when hardware mismatches occur. Map window displays shot/unshot status. Non-sequential source-driven shooting supported with multiple vibes/shooters. Integrated QC tools for signal to noise, first break, and RMS amplitude analysis. Flexible displays allow in-field analysis of data frequency content and signal strength.

SYSTEM

Data Formats: SEG-2, SEG-D and SEG-Y.

Communication Protocol: 10/100/1000 bit Ethernet depending on module and system requirements.

Wake-Up Time: Approximately 30 s.

Operating System: Windows XP, 7, 8.

Plotters: Drives any Windows compatible printer/ plotter.

Warranty: Three year parts and labor on Geometrics-built components. Extended warranty available.

