



The Next Generation SmartSeis!

SmartSeis ST Seismograph

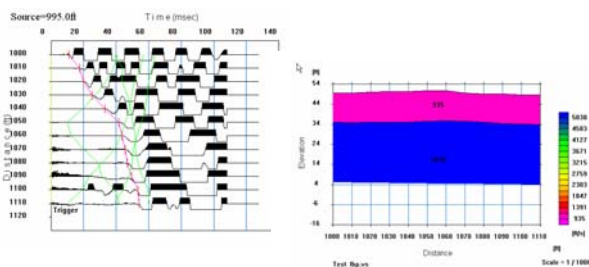
- Find bedrock, depth-to-water, faults; determine V_s for IBC site classification
- Ideal for engineering, construction, road building, and teaching
- Completely integrated and rugged system with built-in PC, daylight-visible color LCD, keypad, and printer
- Provides in-field answers for you and your client
 - ❖ bundled refraction data analysis software picks first arrivals and calculates final cross-section
 - ❖ optional surface wave software picks dispersion curve and calculates shear-wave velocity
- Best value in a professional, all-around seismograph



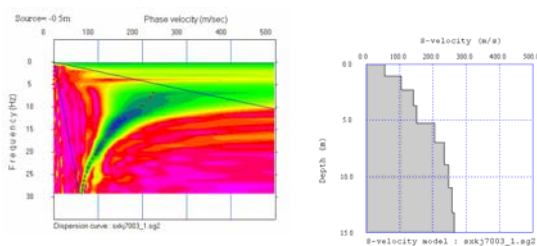
Looking for a quick way to find depth to bedrock? Want to determine the shear-wave velocity (V_s) for IBC V_s30 site classification? Need an economically-priced integrated instrument? Look no further!

If you are a geoscientist doing teaching or research, or need a basic exploration seismograph to find bedrock or determine IBC V_s30 site class, the next generation SmartSeis ST is for you. The SmartSeis ST is an integrated seismic exploration system with a built-in ruggedized PC, daylight-visible LCD, keypad, and high-resolution plotter. Use the plotter to print and show your client or students results right in the field.

The SmartSeis ST system comes standard with the data analysis software you need to do comprehensive refraction surveys. As an option, you can add the capability to analyze surface wave data to determine V_s . Geometrics also offers special pricing for multiple licenses of data analysis software so field crews or students can have their own copies.



Seismager/2D Lite refraction data analysis software lets you model and plan your survey beforehand. Pick first breaks and output cross-sections by three different analysis methods.



Seismager/SW surface wave data analysis software calculates dispersion curves from active and passive source (microtremor) data records. The dispersion curves are then used to determine V_s .

The SmartSeis ST is backed by Geometrics, now in our 40th year of prompt and knowledgeable customer support. Our seismographs and the Seismager suite of software are also available for rent.

Specifications:

Configurations: 12, 16, or 24 channels configured as an integrated unit in weather-resistant container with built-in LCD, keypad, and ruggedized PC running Windows XP Home. System includes SmartSeis ST Operating Software (STOS) with optional software for self-triggering and continuous recording.

A/D Conversion: 24-bit result using Crystal Semiconductor sigma-delta converters and Geometrics proprietary over-sampling.

Dynamic Range: 144 dB (system); 110 dB (instantaneous, measured) at 2 ms, 24 dB.

Bandwidth: 1.75 Hz to 8 kHz.

Distortion: 0.005% @ 2 ms, 1.75 to 208 Hz.

Common Mode Rejection: >100dB at \leq 100 Hz, 36 dB.

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

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

Maximum Input Signal: 177 mV P-P, 24 dB.

Input Impedance: 20 kOhm, 0.02 μ f.

Stacking Trigger Accuracy: 1/32 of selected sample interval.

Preamplifier Gains: 24 or 36 dB, software-selectable.

Anti-alias Filters: down 3 dB at 83% of Nyquist frequency; down 90 dB or more \geq Nyquist frequency.

Acquisition and Display (Butterworth) Filters:

Low Cut: OUT, 10, 15, 25, 35, 50, 70, 100, 140, 200, 280, 400 Hz, 24 or 48 dB/octave.

Notch: OUT, 50, 60, 150, 180 Hz, with the 50 dB rejection bandwidth 2% of center frequency.

High Cut: OUT, 32, 64, 125, 250, 500, 1000 Hz, 24 or 48 dB/octave.

Display filter values are user-selectable with 24 or 48 dB/octave slopes.

Sample Intervals: 0.0625, 0.125, 0.25, 0.5, 1.0, 2.0 ms.

Record Lengths: 4,096 samples standard; 16,384 samples and 65,536 samples optional. Record length of 16,384 samples comes standard with purchase of SeisImager/SW or SurfSeis surface wave data analysis software.

Pre-trigger Data: Up to full record length.

Trigger Delay: 0 to 9,999 ms in 1 sample interval steps.

Triggering: Positive, negative, or contact closure, software adjustable threshold.

Auxiliary Channels: All channels may be programmed as either AUX or DATA.

Line Testing: Real-time waterfall noise monitor displays output from geophones.

Data Format: SEG-2 standard.

Data Storage: Internal 40 GB hard drive.

Display: Daylight-visible 800x600 color LCD.

Plotter: Built-in 4-inch (10.3-cm) wide thermal printer.

Ports: Three USB, one video, one RS-232; one 61-pin Bendix connector for geophone input, one 3-socket Bendix connector for trigger, one 3-socket Cannon connector for power.

Power: Requires 12V external battery. Draws 26 W plus 0.65 W per channel during acquisition.

Environmental: Boots from 0 to 50 degrees C. Operates from -10 to 50 degrees C. Watertight when closed. Passes MIL810E/F vibration test.

Physical: 10.5" x 18" x 14" high (26 cm x 46 cm x 36 cm high). Weighs 25 lb (11.4 kg).

System Software: STOS includes a full complement of acquisition, filtering, display, and storage features. Other options available for self-triggering and continuous recording.

Bundled Applications Software:

- SIPQC refraction analysis software (delay-time method) from Rimrock Geophysics; runs on seismograph.
- SeisImager/2D Lite refraction modeling and analysis software (time-term least squares, delay-time, and tomographic inversion methods) from OYO; runs separately.

Upgrades of SeisImager/2D Lite and SeisImager/SW or SurfSeis surface wave data analysis software available separately; please contact the factory with your requirements.

Warranty: 36 months on seismograph acquisition boards and 24 months all other parts. Please contact the factory for complete details.

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