

## **Geometrics Knowledgebase**

### **SmartSeis SE Basic Description**

#### **SmartSeis SE Specifications**

Please Note this unit has been replaced by the SmartSeis ST in 2009

Seeing what is underground with the SmartSeis is easy:

First arrivals (first breaks) can be picked automatically right on the seismograph screen, with the ability to override the selection that the computer has made. Travel time curves of your shot are drawn so that you can make sure that you have sufficient subsurface coverage. Preliminary layer assignments are made by the seismograph, and can be edited by the operator

A velocity cross section is automatically generated directly on the seismograph by a version of SIPT, the popular refraction interpretation software from Rimrock Geophysics. The cross section is printed on the SmartSeis's built-in high-resolution thermal plotter. The complete version of the SIPT refraction interpretation software that runs on your office PC is also available from Geometrics. The full version accommodates multiple spreads, unique geometries and plots color cross sections.

Specifications:

Number of Channels: 12 or 24

Energy Sources: Hammer, weight drop, or explosives

Record Length: up to 24,000 samples.

Sample Interval: Selectable among 31, 62, 125, 250, 500 1000 and 2000 microseconds

Display: High resolution 640x480 LCD, PC compatible. Visible in bright sunlight.

Noise Monitor: Waterfall style moving trace, also shows channel continuity and geophone performance

A/D Conversion: 18-bit A/D, 32 bit result

Pretrigger Memory: allows viewing of data before trigger.

Gain Control: Automatic, set by continuously measuring two stage instantaneous floating point amplifier.

True amplitude is preserved and can be used for ground motion studies.

Data Display: Wiggle trace, shaded or variable are, trace clipping, automatic gain control, fixed gain and post acquisition filtering included.

Plotter: Built-in four inch (11 cm) wide thermal printer.

Interfaces: RS-232, video, keyboard and printer.

Pretrigger Delay: Allows viewing of data before trigger for troubleshooting and monitoring .0 to 9999 ms in 1 ms increments

Data Storage: sufficient for several days recording. Includes both floppy and hard disk storage.

## Filters and Noise Reduction Technology:

32-bit stacking: Reduces contributions from random noise.

Memory Freeze: Allows selective stacking of weak channels.

Low cut filtering: Reduces the effects of traffic noise.

High cut filtering: Removes wind noise. Filters can be run in real-time after data is collected, making costly repeated shots unnecessary.

Low Cut: 25, 35, 50, 70, 100, 140, 200, 280, and 400 Hz

High cut: 250, 500, and 1000 Hz.

Power Line Notch: 50, 60, 150, and 180 Hz.

Anti-alias: Automatic

Custom Filter Frequencies Available

In-field Processing:

Automatic first arrival picking with manual override.

On-screen travel time plots.

Automatic layer assignment with manual override.

Automatic calculation of depths below shots and geophones. Program ray traces the data and indicates where data quality might be poor. Prints table of all data, depth calculations and a quality control plot showing questionable data. Report ready cross section with rock velocities printed last. Analysis and interpretation software from Rimrock Geophysics.

Environmental: Operates from -5C to 40C, boots from 5C to 40C.

Mating Connectors: NK-27-21C, 12 channels per connector.

<http://support.geometrics.com/kb/questions.php?questionid=5>