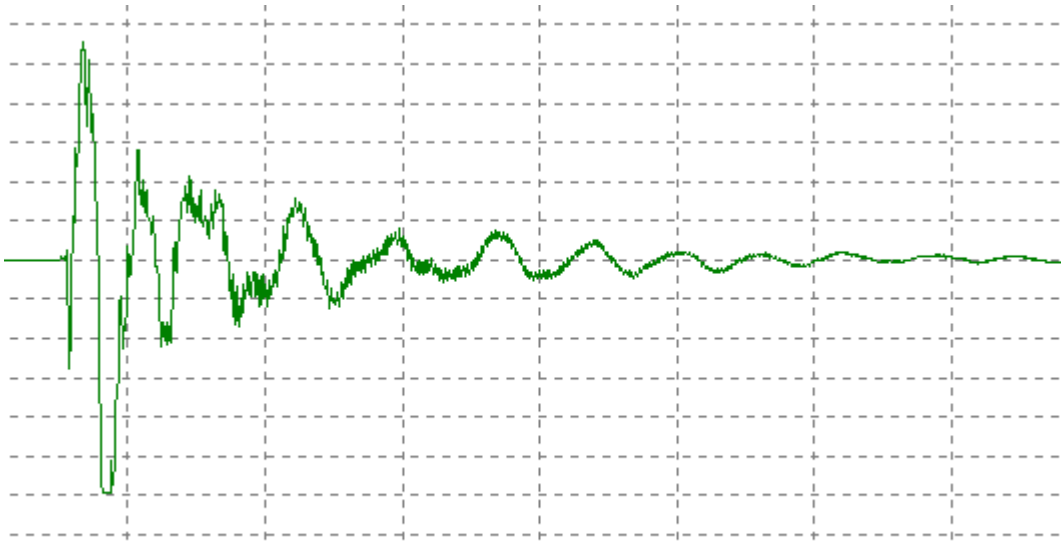
Geotech

SCPT-LOG

User's Manual



Version 1.01

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Installation

Software

To install SCPT-LOG, insert the CD into the CD-player and run setup.exe. Follow the instructions on the screen.

Insert the *MCC DAQ Software* CD into the CD-player and select *Install Instacal* in the auto run window. Follow the instructions on the screen.
Note: It is recommended to install Instacal in the same directory as SCPT-LOG.

Hardware

To install the Seismic Acquisition Box, connect the USB-cable to the computer. The computer will detect the new hardware and the installation will start automatically. It is normal for multiple dialogs to open when you connect the USB-interface for the first time.

Start *Instacal* and wait for it to detect the device, or press the *Refresh boards* button. 
Select the USB-1608FS from the appearing list of Plug and Play devices, press OK.

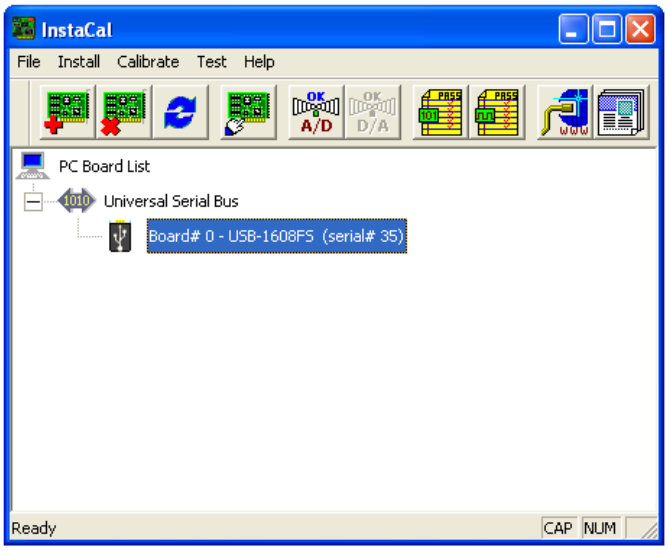




Figure 1. Press *OK* and the USB-interface is correctly installed.

Structure

Sample Control

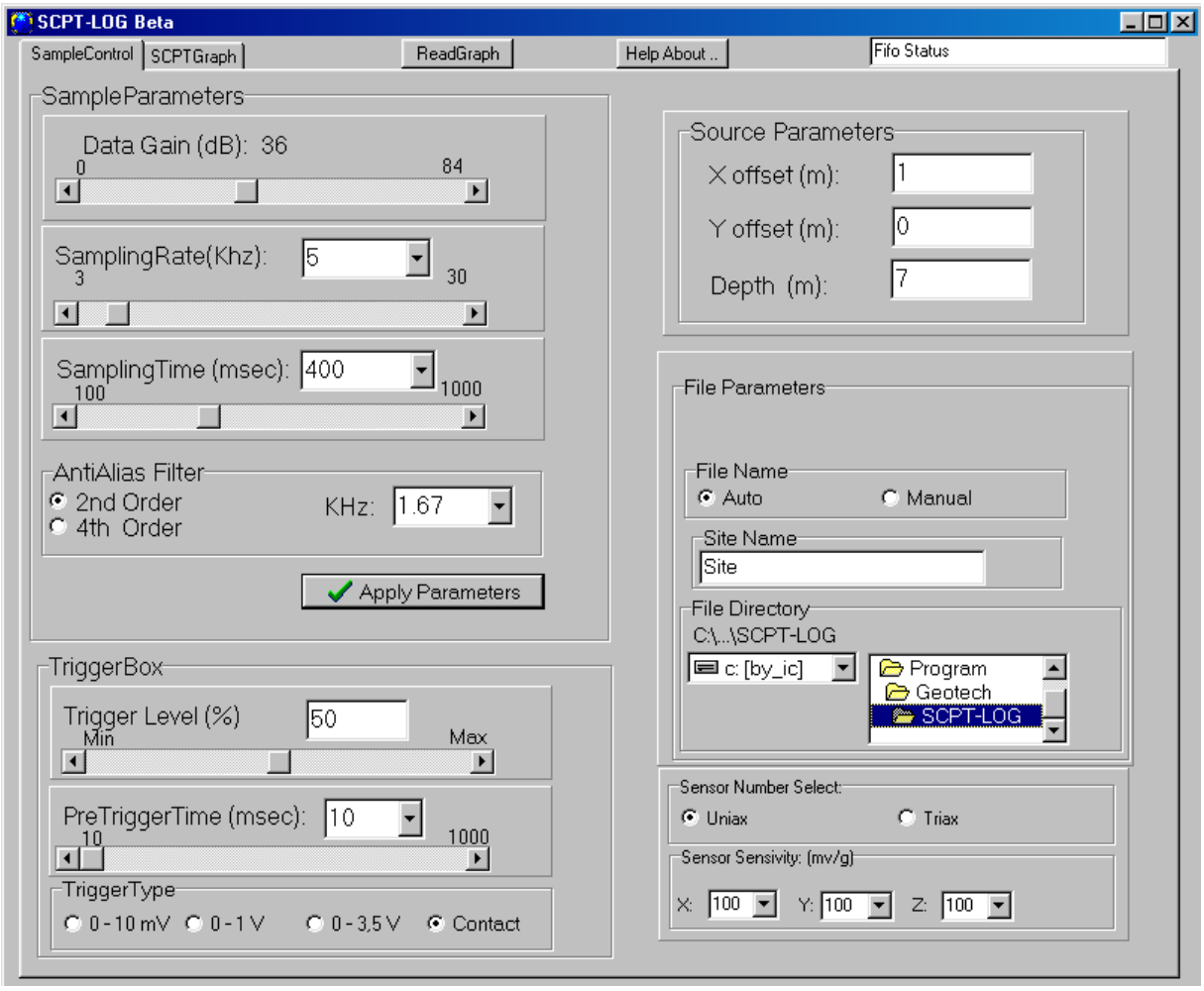


Figure 2. Sample Control.

The basic settings are made in the Sample Control tab-sheet. The sheet is divided in five parts, which are described below.

Sample Parameters

Parameters concerning the data signal.

Data Gain – Sets the amplification of the signal (dB)

Sampling Rate – Sets the sampling frequency (kHz)

Sampling Time – Sets the length of the acquisition (ms)

AntiAlias Filter – Sets the order of the hardware filter. The filter frequency is automatically set to 1/3 of the sampling frequency.

Trigger Parameters

Parameters concerning the trigger signal. As a trigger source, either a contact switch or a transducer type trigger can be used.

Trigger Level – Sets the sensitivity of the trigger (% of full trigger signal, used for transducer type trigger only).

PreTriggerTime – Specifies the acquisition time before triggering (ms).

Trigger Type – Sets the trigger type to contact or voltage level. If a contact switch is used as source the trigger type should be set to *Contact*. If a transducer type trigger is used a voltage level matching the transducer output should be chosen.

Source Parameters

Specifies the location of the impact point.

X offset – X-distance from drillhole to seismic source (m).

Y offset – Y-distance from drillhole to seismic source (m).

Depth – the probe depth (m).

File Parameters

The user can specify a filename or let the computer generate an automatic filename.

File Name – Sets the data file name to Auto or Manual. If auto is chosen the program will generate a specific filename automatically and if manual is chosen the user will be asked for a filename each time a file is saved.

Site Name – The name of the investigation site.

File Directory – Specifies the data file directory.

Sensor parameters

Sensor Number Select – Sets the program to Uniax or Triax mode.

Sensor Sensitivity – Sets the sensitivity for each accelerometer.

When all parameters are set the user presses *Apply Parameters* to update the acquisition interface box.

SCPT Graph

Once the basic parameters are set in the Sample Control tab the program can be operated from the SCPT Graph tab-sheet.

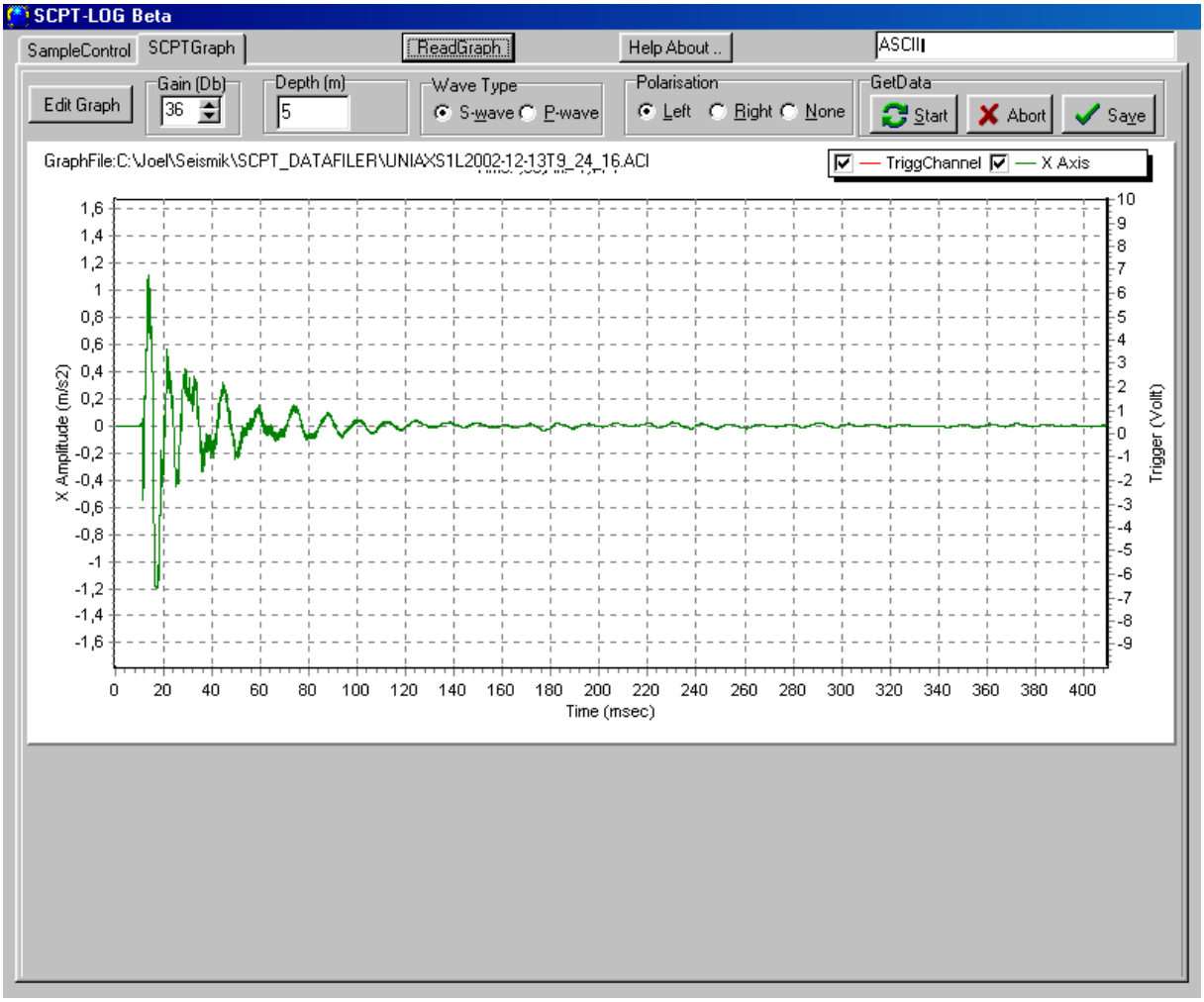


Figure 3. Data acquisition menu

Settings that are frequently changed can be reached directly from the Graph window. These settings are:

Gain – Sets the amplification of the signal (the same parameter as *Data Gain* in the Sample Control window).

Depth – The depth of the probe (m) (the same parameter as *Depth* in the Sample Control window).

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Wave Type – The wave type is either *p* (pressure) or *s* (shove).

Polarisation – The polarisation of the seismic source.

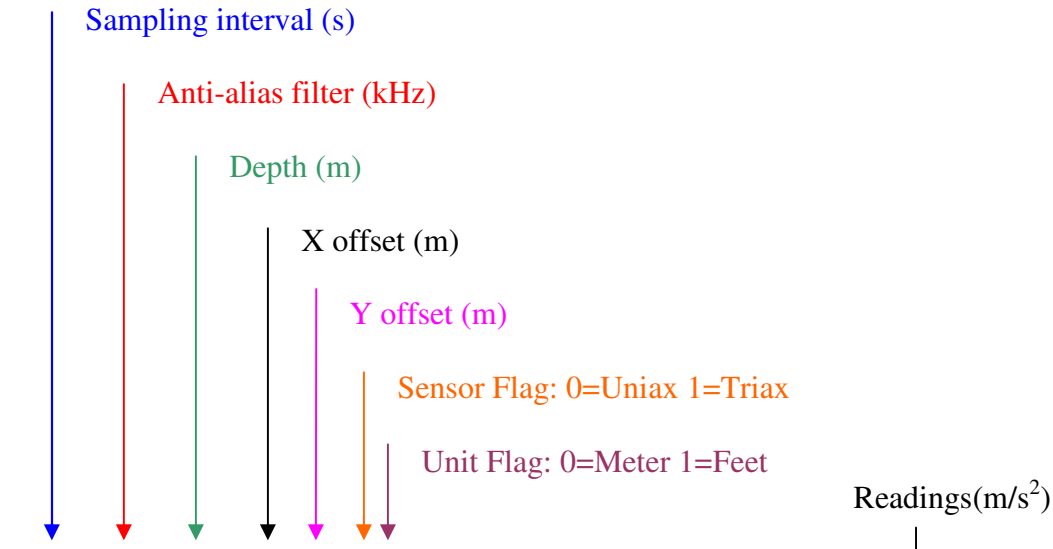
To start an acquisition the user presses *Start*, which makes the program wait for the trigger signal. When the trigger signal appears the program will record data for the specified time and then display it in the graph window. The user can choose to save the data to the specified file by pressing *Save*, or delete it by pressing *Abort*.
The button marked *Edit Graph* opens a graph editor with options for changing the axes values and printing.

It is possible to open old data files for viewing in the graph window by pressing *Read Graph*.

Data Acquisition example

Make sure that all hardware is correctly connected and start SCPT-LOG.
Set all the parameters in the Sample Control and press *Apply parameters*.
Press *Start acquisition* and the system is ready to collect data.
Directly after the acquisition is finished the graph is displayed in the graph window. Click *Save* to save the data or *Abort* to delete it without storing.

Interpretation of .aci-files

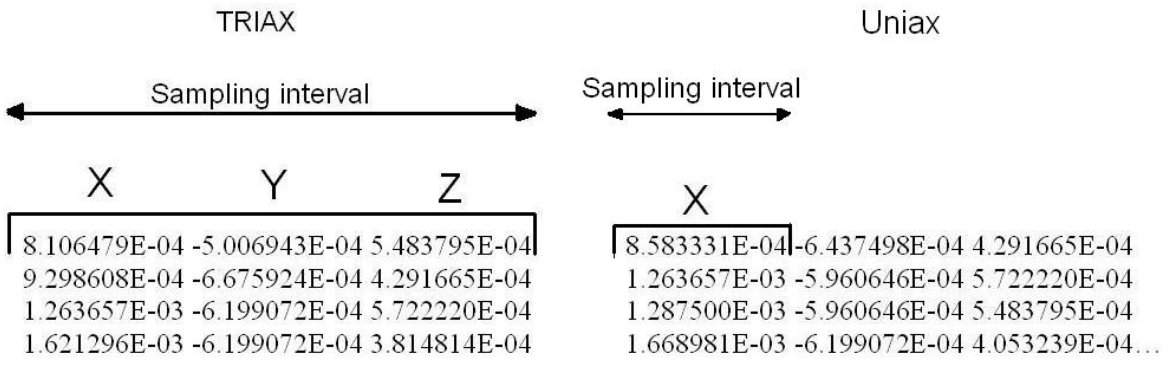


0.2000 1.67 0.30 0.61 0.91 0 1 Uniax (Ft)
ASCII
-2.121990E-03 -2.002777E-03 -2.074305E-03 -1.788194E-03 -1.931249E-03 -2.026620E-03
-1.668981E-03 -1.382870E-03 -1.406713E-03 -1.525925E-03 -1.502083E-03 -1.478240E-03
-1.215972E-03 -1.192129E-03 -8.583331E-04 -6.675924E-04 -8.106479E-04 -6.675924E-04
-8.106479E-04 -6.675924E-04 -5.006943E-04 -2.622684E-04 -4.291665E-04 -5.722220E-04
-6.199072E-04 -6.914350E-04 -5.722220E-04 -6.675924E-04 -5.245369E-04 -5.245369E-04
-2.384259E-04 -9.537034E-05 -1.430555E-04 -1.668981E-04 7.152776E-05 2.384259E-04…

Example 1

Example 1 above shows the file head and the raw data results of a test in Uniax-mode. In this example the unit for depth and offset is in feet. Note that even though the depth in the test was set to 1.0 ft, it is displayed in the raw file as 0.3 m. The two flags in the head indicates to the program, *SCPT-Log* or *SCPT Analysis*, what sensor-mode(Uniax/Triax) and what unit(meter/feet) that is at hand. The two flags are followed by a clarification in plain text.

Under the head follows the readings from the sensors in m/s^2. In Uniax-mode each value from the X-sensor is presented in a sequence. In Triax-mode however, each sample contains values from three sensors. These three values are read simultaneously within the same sampling interval, but they are presented in a consecutive order [X, Y, Z], se *Example 2* below.



Example 2