



Leveloader Gold

User Guide

February 10, 2012

Solinst[®]

Levelogger[®]
Model 3001

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**Note:**

In order to use the Leveloader Gold with Version 4.0.2 (or higher) Levelogger Software, the Leveloader must be upgraded to Firmware Version 2.000 (or higher).

**Note:**

In order to use the Leveloader Gold with older model Leveloggers (Mini LT (silver), and LTC (black ceramic), users will be required to downgrade the on-board firmware in the Leveloader to Firmware Version 1.000 and use Levelogger Software Version 3.1.1.

1 Getting Started

This manual explains the capabilities of your Leveloader with the Solinst Levelogger® product line. To begin using your Leveloader, we strongly recommend that you install Levelogger Software Version 4.0.2 (or higher). Please visit www.solinst.com/Downloads/ to download the current version or check for updates.

2 Leveloader Gold

The Leveloader Gold is a supplementary accessory within the Levelogger datalogger series. It has the ability to view, change or add Levelogger logging settings, launch log sessions, download data, view existing or real time data and store multiple data files. The Leveloader supports the Levelogger Edge, Levelogger Junior Edge, LTC Levelogger Junior, Barologger Edge, Model 3002 Rainlogger, Levelogger Gold, Barologger Gold, Levelogger Junior and previous Levelogger models including: the Mini LT (silver), and the LTC (black ceramic). The Leveloader is designed to communicate with a PC via Levelogger Software.

3 System Requirements

The minimal hardware and software requirements for software installation and operation are:

Hardware	Software
Memory: 256MB or more	OS: Windows XP, Vista, or 7
Display: VGA: 800 x 600 pixels, 256 colour	
Ports: USB or RS232 Serial Port	
Hard Drive space: 64MB	

Communication Port Setting for Levelogger Communications:

Bits per second	9600
Data bits	8
Stop bits	1
Flow control	None

4 Software Installation

Web Download

Download the newest version of Levelogger Software by visiting www.solinst.com/Downloads/

CD Installation

- 1) Insert the software CD provided.
- 2) If the installer does not automatically start, to activate the software install click on the 'setup.exe' file located on the software CD.
- 3) The Software Installation Wizard will guide you through the remaining installation process. Figure 4-1 shows the Levelogger Installation Wizard.
- 4) Restart the computer after installation is completed. Default Directory is C:\Program Files\Solinst\Levelogger4_0

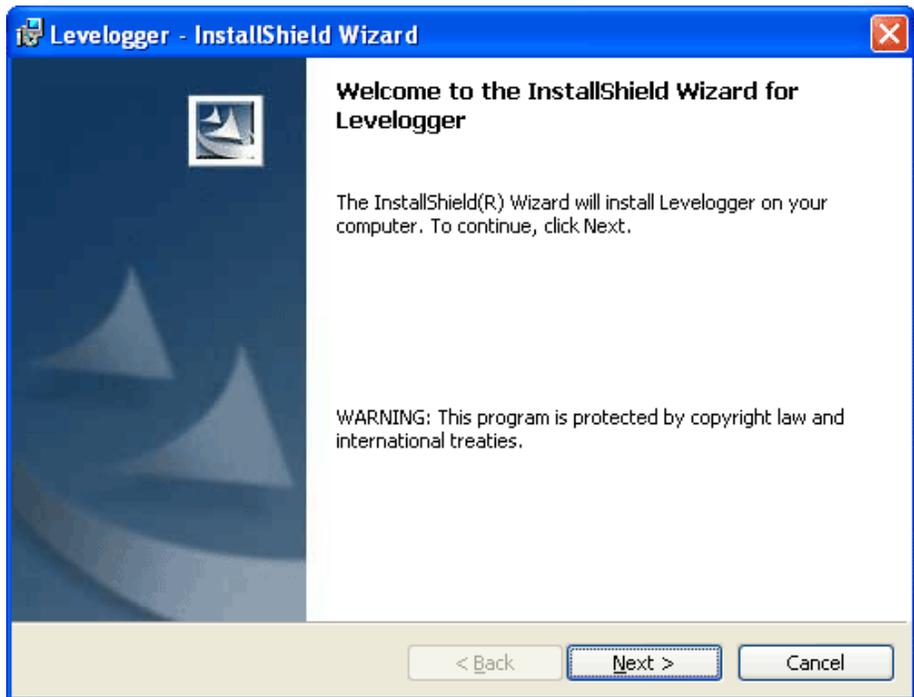


Figure 4-1 Levelogger - InstallShield Wizard



Note:

After plugging in the USB device, if the Found

New Hardware Wizard does not automatically appear, proceed to the Manual USB Installation instructions in Section 5.4.

5 Installing USB Drivers

Leveloader Software Version 4.0.2 comes equipped with USB drivers.

5.1 USB Installation for Windows XP

- 1) Plug the USB device into the computer, and Windows will automatically detect the connected device. Click 'Install' from a list or specific location', then click the 'Next' Button. Start the Hardware Installation Wizard (Figure 5-1).



Figure 5-1 Found New Hardware Wizard Window

- 2) Select the installation option, 'Include this location in the search' (Figure 5-2), then click the 'Browse' Button to search for the appropriate directory:

C:\Program Files\Solinst\Levellogger4_0\USB Drivers



Figure 5-2 Found New Hardware Window and Figure 5-3 Browse for Folder Window

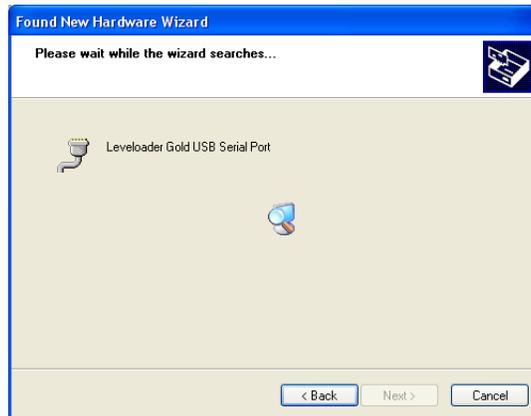


Figure 5-4 Found New Hardware Search Window

- 3) A warning message will then prompt that the software has not passed the Windows Logo Test. Select 'Continue Anyway' (Figure 5-5). This will complete the installation process. A system restart may be required. Repeat the steps if the installation fails the first time.



Figure 5-5 Hardware Installation Window



Figure 5-6 Found New Hardware Completed Window



Note:

After plugging in the USB device, if the Found New Hardware Wizard does not automatically appear, proceed to the Manual USB Installation instructions in Section 5.4.

5.2 USB Installation for Windows Vista

- 1) Plug the USB Optical Reader or PC Interface cable into the desired PC. The system will automatically detect the connected unit and start the 'Found New Hardware' Wizard.
- 2) From the provided list select "Locate and install driver software (recommended)".



Figure 5-7 Found New Hardware Window

- 3) On the next screen select, "I don't have the disc. Show me other options."

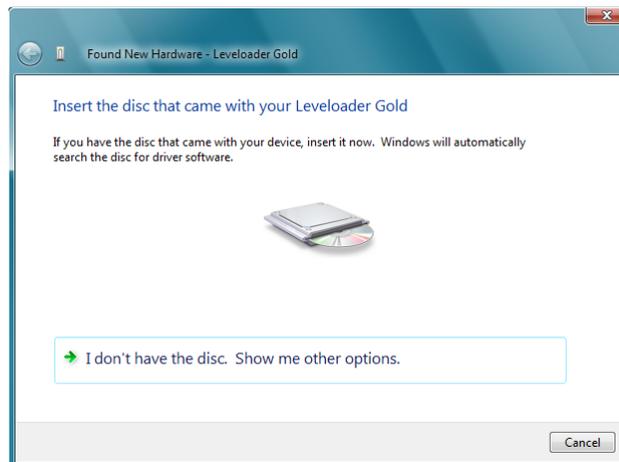


Figure 5-8 Found New Hardware - USB Serial Port Window

- 4) On the next screen select, “Browse my computer for driver software (advanced)” option.

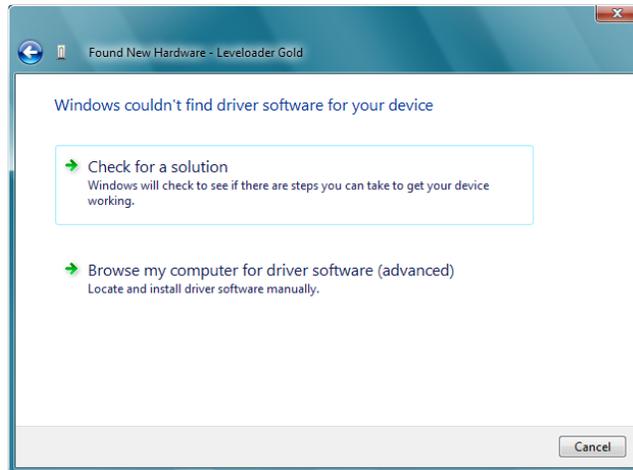


Figure 5-9 Found New Hardware Browse Window

- 5) Select the Browse button and point the navigation window to the provided USB drivers located within the Levelogger4_0 folder. The default destination is:
C:\Program Files\Solinst\Levelogger4_0\USB Drivers
The selected pathway will be provided within the window, select Next on the wizard to complete the installation.

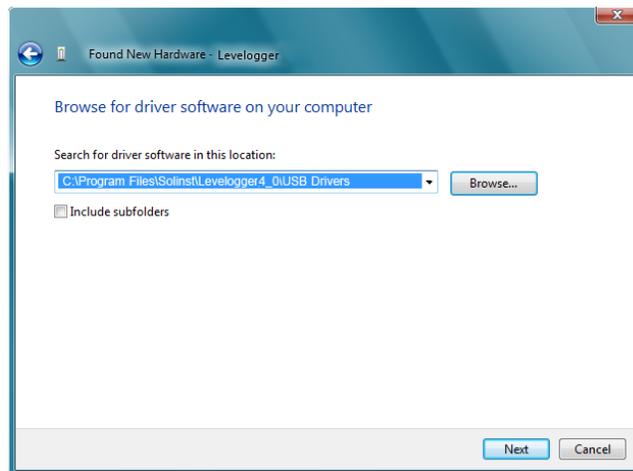


Figure 5-10 Search for Driver Software Window

- 6) Once the installation completes, a system restart may be required. If the found new hardware wizard prompts again, please repeat steps 1 - 6.

5.3 USB Installation for Windows 7

- 1) Plug the Leveloader into the desired PC. Windows will automatically detect the device, but will not install the driver.
- 2) Press the Windows start button to bring up the start menu, select "Control Panel", then "Device Manager".
- 3) Under "Other Devices" there will be a device shown with a yellow warning symbol. Right click on this device, and select "Update Driver Software".

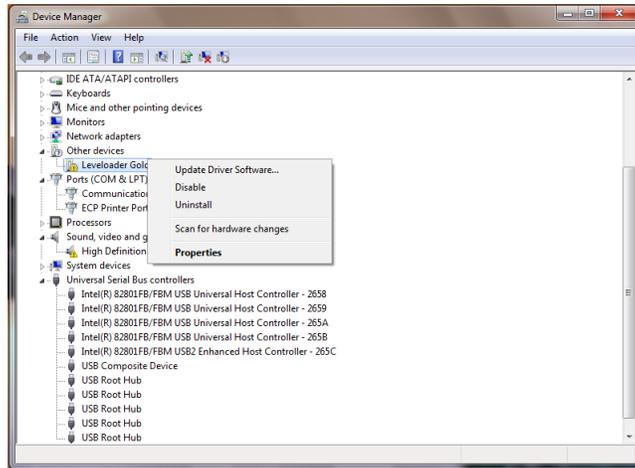


Figure 5-11 Update Driver Software

- 4) Select "Browse my computer for driver software".

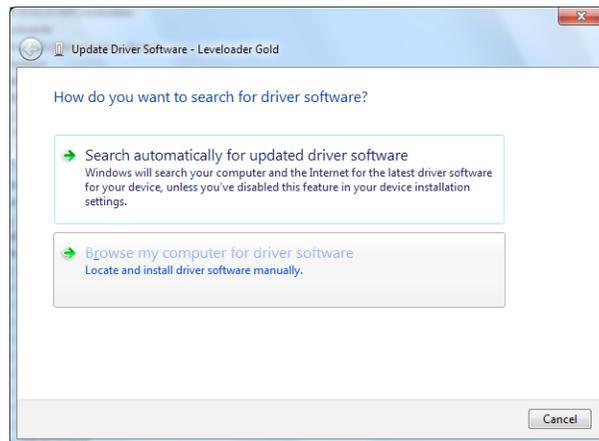


Figure 5-12 Search for Driver Software

- 5) Click the Browse button and point the navigation window to the provided USB drivers located within the Leveloader4_0 folder (See Figure 5-13). Default destination is:

C:\Program Files\Solinst\Leveloader4_0\USB Drivers

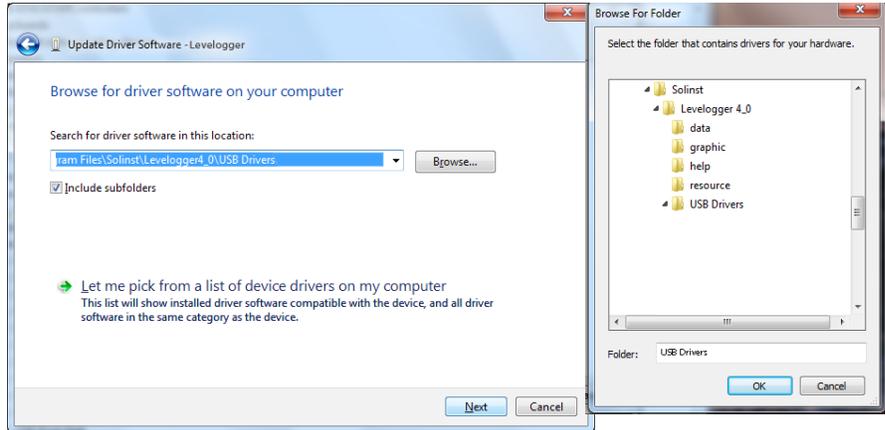


Figure 5-13 Browse for Driver Software

- 6) Select Next. A window may appear stating "Windows can't verify the publisher of this driver software", select "Install this driver software anyway".
- 7) Windows will confirm when the installation is complete. Press Close to close the window, then go back to the "Device Manager".

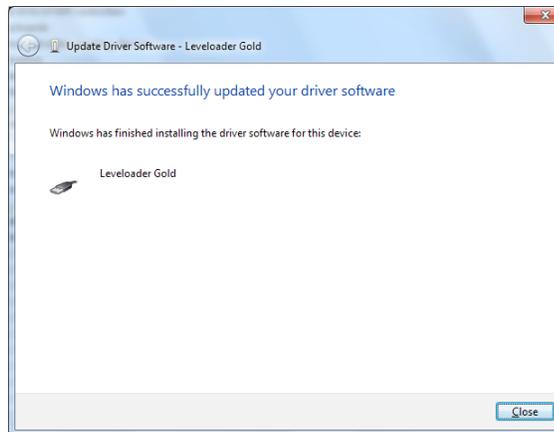


Figure 5-14 Driver Software Installation Complete

- 8) You will repeat steps 3 - 7 to update the USB Serial Port. This will now be shown under "Other Devices" with a yellow warning symbol.

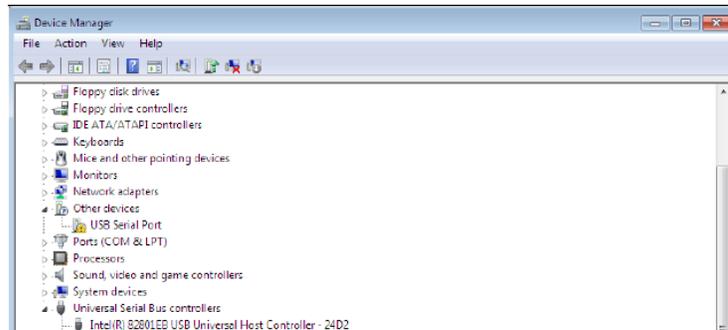


Figure 5-15 Update USB Serial Port

- 9) Once this installation is complete, a window will confirm the COM port assigned to the device.

5.4 Manual USB Installation

If your Leveloader is plugged in and the Found New Hardware Wizard fails to start, then follow these steps:

1. Open the Device Manager. Typically this is found through the path:
Start > Control Panel > System > Hardware > Device Manager

Once the Device Manager is open, a version of the following list(s) will appear:



Note:

If you are unsure which is the correct device in the list, with the screen visible, safely remove the device and then reconnect it. The list should automatically refresh accordingly.



Note:

If you do not know the correct Com Port that was assigned to your device, re-open the Device Manager. Expand “Ports (COM & LPT)” to show the Com Port that has been assigned.

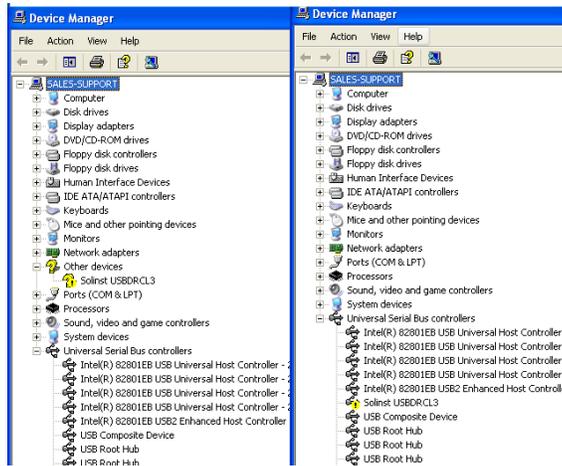


Figure 5-17 Device Manager

2. Identify the Solinst Leveloader from the list. The device will be categorized under “Other Devices” or “Universal Serial Bus Controllers”.
3. Highlight the device in the list and right click. You will see an option to “Update the driver”. This will start the “Hardware Update Wizard”. Now follow the instructions for your specific Windows version.



Note:
Do not open the Leveloader case. Opening the unit will void the manufacturer's warranty.



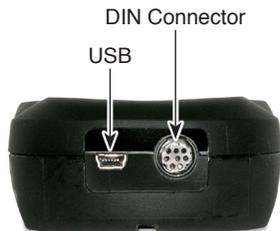
Note:
Leveloader Gold uses a 9V battery. If the battery gauge on the Leveloader is low, replace the battery with either an alkaline or lithium. Access the battery by unscrewing the battery hatch.

6 Hardware

Figure 6-1 illustrates the Leveloader Gold and the key functions of each component.



Figure 6.1 Leveloader Gold



Bottom View showing Connections



Figure 6-2 Leveloader Gold Connections

7 Leveloader Gold Menu

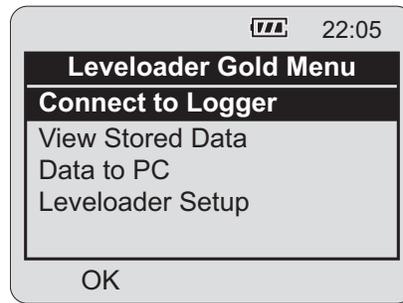


Figure 7-1 Main Menu

Figure 7-1 illustrates the main menu of the Leveloader Gold. The Battery Gauge depicts the remaining life of the Leveloader’s 9V battery. Battery levels can be displayed: full, high, medium, low and empty. When the battery icon is empty, replace the battery immediately.

7.1 Connect to Levelogger

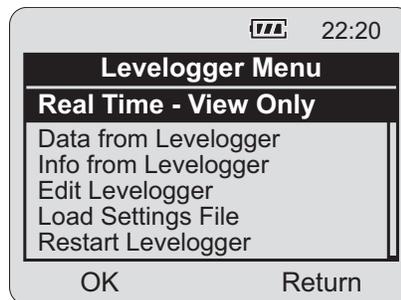
Connect a Levelogger to the Leveloader with the supplied Optical and Direct Read Connector Cables. A connection can be made directly to a Levelogger using the Optical Connector, or a Direct Read Cable assembly. Please note that only one Levelogger should be connected to a Leveloader at a time.

When ‘Connect to Logger’ is selected, the Leveloader will begin to communicate to the connected datalogger. When communication is successful the Levelogger Menu will appear. There are six options under the Levelogger menu: ‘Real Time - View Only’, ‘Data from Levelogger’, ‘Info from Levelogger’, ‘Edit Levelogger’, ‘Load Settings File’ and ‘Restart Levelogger’. Each of these menu options are described in Section 8.

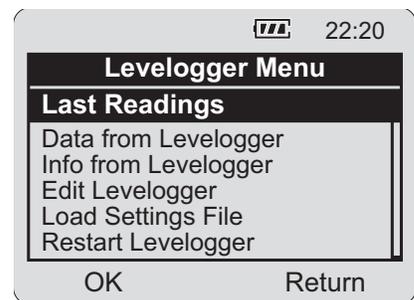


Note:

The features available within the Levelogger menu are based on the type of datalogger connected.



*Levelogger Menu
with Levelogger Edge, Junior Edge,
LTC Junior, Rainlogger,
Gold or Junior Connected
(Leveloader Firmware 2.000 and higher)*



*Levelogger Menu
with Mini LT Connected
(Leveloader Firmware 1.000)*

Figure 7-2 Levelogger Menu

7.2 View Stored Data

'View Stored Data' displays a list of stored log files together with the serial number for each Levelogger file (Figure 7-3). To select a specific log file use the Up/Down Buttons to highlight the desired log file and select 'OK'. The next screen (Figure 7-4) will show the number of readings within the log file and the complete data set. Use Up/Down Buttons to scroll.

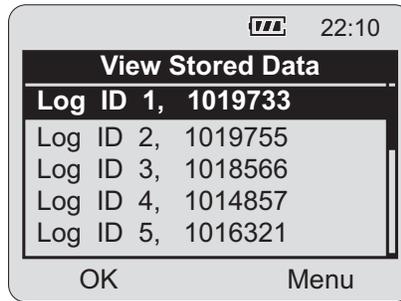


Figure 7-3 View Stored Data

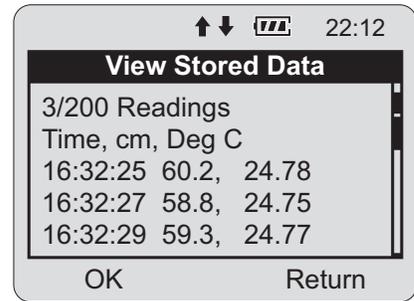


Figure 7-4 Next Screen, View Stored Data Menu

7.3 Data to PC

'Data to PC' lists the number of log files stored in the Leveloader (Figure 7-5). To transfer data from the Leveloader, turn the Leveloader ON, connect the USB cable from the Leveloader to the PC and open the Levelogger Version 4 (or later) Software. Within the software, select the 'Leveloader' tab (Figure 9-1). Inside the Leveloader window, click the 'Retrieve Leveloader Settings' icon, then the download icon to start data transfer from the Leveloader to the PC. To return to the previous menu, press the right Chevron Button (see Section 9 for more details).



Note:

The Leveloader will not turn on when connected to the PC with a USB Cable. You must turn the Leveloader on before connecting, or unplug from the PC then turn on and reconnect it.

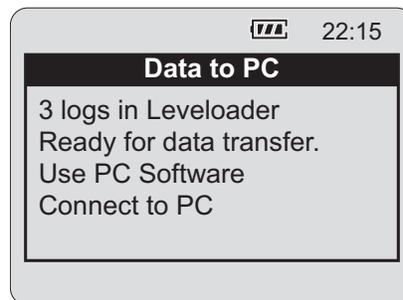


Figure 7-5 Data to PC Menu

7.4 Leveloader Setup

The Leveloader Setup menu (Figure 7-6) contains five functions: Time Setup, Restored Factory Settings, Contrast Control, Leveloader Information and Erase Most Recent Log.



Figure 7-6 Leveloader Setup Menu

7.4.1 Time Setup

The Time Setup menu is used to adjust the date and time settings of the Leveloader (Figure 7-7). The date/time format is YY/MM/DD HH:MM:SS. Using the Up/Down buttons, scroll and change the date/time, then select {SUBMIT} to confirm the changes. To discard the changes, click 'Menu' which also returns to the previous menu.

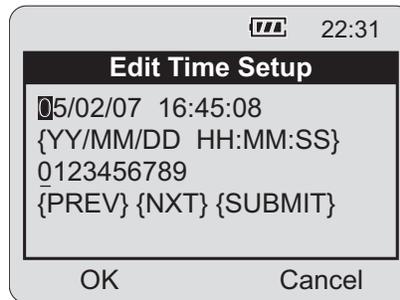


Figure 7-7 Time Setup Menu

7.4.2 Restore Factory Settings

This menu is used to restore the default settings of the Leveloader to the original factory settings. E.g. Contrast Control.

7.4.3 Contrast Control

Contrast Control is used to adjust the brightness of the LCD. The user can also adjust the contrast for the LCD in the main menu by holding down the top right Chevron Button and selecting either the Up or Down Button.

7.4.4 Leveloader Information

Leveloader Information shows the firmware version number, memory capacity, percent available and Solinst website address.

7.4.5 Erase Most Recent Log

Erase Most Recent Log function will delete the latest log file stored in the Leveloader, to free up memory. When selected, a warning message will prompt the user to confirm the removal of the log file. To erase all files stored in the Leveloader use the Levelogger PC Software. (See Section 9.2.)



Note:

The Leveloader Time can also be updated

automatically by synchronizing with a PC using Levelogger Software. Refer to Section 9.3 for further detail.



Note:

The features available within the Levelogger Menu are based on the type of datalogger connected.



Note:

If a Mini LT or Black LTC Levelogger are connected, the 'Real Time View Only' function will be replaced by 'Last Readings'. This function will allow the user to only view the last data points recorded by the attached Levelogger

8 Levelogger Menu

When 'Connect to Logger' is selected, the Leveloader will begin to communicate with the connected datalogger. When communication is successful the Levelogger Menu will appear (Figure 8-1). There are six options available: 'Real Time - View Only', 'Data from Levelogger', 'Info from Levelogger', 'Edit Levelogger', 'Load Default Settings' and 'Restart Levelogger'.

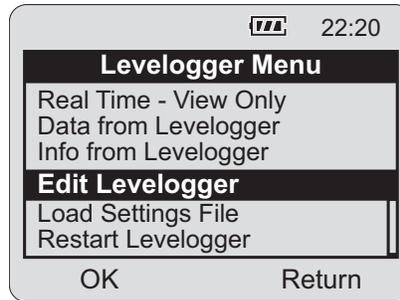
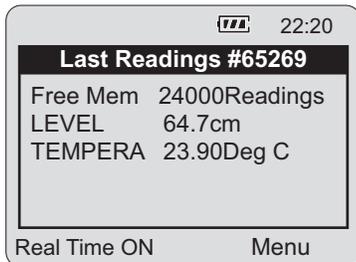


Figure 8-1 Levelogger Menu

8.1 Real Time - View Only

When 'Real Time - View Only' is selected from the Levelogger Menu, the Levelogger will take a reading immediately and display it in the LCD screen (Figure 8-2). The display will show the data logger serial number, available memory and the readings from the data logger's available channels (level, temperature and/or conductivity).



Last Readings Menu (Silver LT)

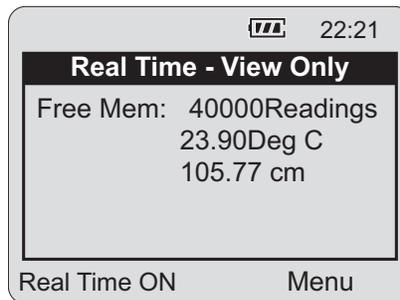


Figure 8-2 Real Time - View Only

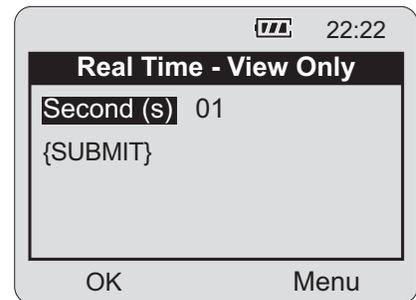
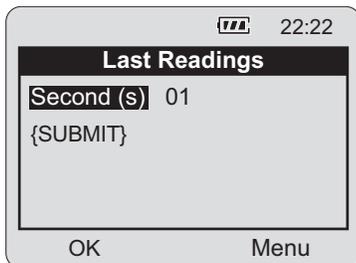


Figure 8-3 Real Time - Edit Menu



Last Readings Edit Menu (Silver LT)

To update the Levelogger readings periodically, select 'Real Time On' using the left Chevron Button. When enabled, input a sampling rate (Figure 8-3). Select the time increments: seconds, minutes or hours and then the rate: 1-99. **Real Time readings can not be saved.**

8.2 Data from Levelogger

'Data from Levelogger' downloads the stored data from the attached Levelogger. The screen (Figure 8-4) allows scrolling with the Up/Down buttons through the stored data, indicates battery level, time, data logger serial number and number of readings. To save the data to the Leveloader, push the left Chevron Button. After the data has been saved in the Leveloader memory, the Leveloader will return to the main menu.

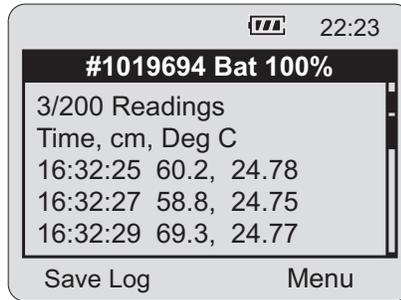


Figure 8-4 Data from Levelogger Menu

8.3 Info from Levelogger

When 'Info from Levelogger' is selected, a list of the information from the attached Levelogger will be shown on the screen. The list contains the firmware version, battery level, number of readings, data logger date, time and data logger status.

8.4 Edit Levelogger

The 'Edit Levelogger Menu' displays the attached data logger's settings. The Leveloader can adjust many of the Levelogger's settings, including: Date/Time, Project ID, Location, Sampling Rate, Sampling Type, Units, and Altitude for some datalogger types. To adjust any setting, highlight it and click the Edit button.

8.4.1 Edit Date/Time

This menu item is used to synchronize the date and time of the Levelogger with the Leveloader. To synchronize the time, highlight the Date/Time and click 'Edit' in the Edit Levelogger menu.

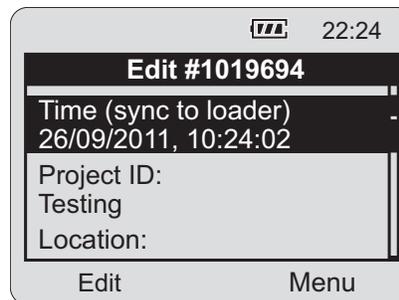


Figure 8-5 Edit Levelogger Menu



Note:

The Levelogger must be stopped in order to

change the settings. To stop the Levelogger, press BOTH the UP and DOWN Buttons simultaneously.

Remember to save the log before re-starting.



Note:

If there was a password set for the Leveloader,

it will need to be entered before you can edit the Levelogger settings. See Section 8.7 for details.

8.4.2 Edit Project ID and Location

Figure 8-6 shows the 'Edit Project ID' screen. The current Project ID is shown on top of the menu as 'TESTING'. To change the Project ID, highlight the character to modify by selecting {PREV} or {NXT}. Select a character from the list below and click 'Edit' to modify the highlighted character.

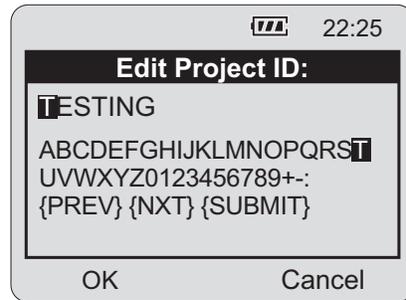


Figure 8-6 Edit Project ID Menu

Shading over the character indicates the current character. Press {SUBMIT} when complete. The Leveloader will send the new setting to the Levelogger. To discard the changes, click the 'Cancel' button before submitting. This will return you to the Edit Levelogger menu and discard the changes. This type of operation is also used to modify the Location.

8.4.3 Edit Sampling Rate and Sampling Type

The 'Edit Sampling Rate' screen displays the current sampling rate stored in the Levelogger (Figure 8-7). The following procedure is used to modify the sampling rate:

1. Select unit (Seconds, Minutes and Hours) using UP/DN and click Edit.
2. Select duration (1 – 99) using UP/DN and click OK.
3. When {SUBMIT} is highlighted, click OK to confirm all the changes and the new setting will be sent to the Levelogger.

To cancel the operation, click 'Cancel' to return to the Edit Levelogger menu.

These changes can be confirmed by viewing the 'Edit Levelogger Menu'. The 'Edit Sampling Type' screen displays the current sampling type stored in the Levelogger (Figure 8-8). Use the up/down buttons to scroll through the sampling types: Linear, Schedule or Event Based. To accept the selection press {Submit}.



Note:

In 'Event Based' sampling, the user must define what the pressure change must be for data logging to occur, as well as define the sampling rate to determine how often the data logger checks pressure changes.

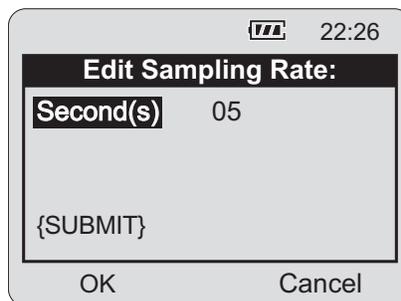


Figure 8-7 Edit Sampling Rate Menu

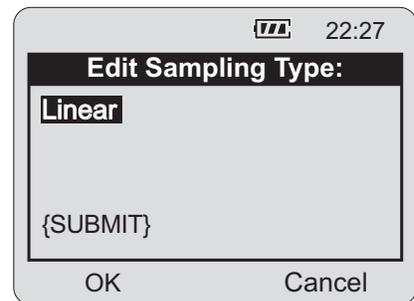


Figure 8-8 Edit Sampling Type Menu

8.4.4 Edit Unit

'Edit Unit' (Figure 8-9) allows you to change the units that the Levelogger is using to record LEVEL and TEMPERATURE. Use the Up/Down buttons to scroll through the units for LEVEL, and press okay when the desired unit is shown. Repeat this for the TEMPERATURE unit.

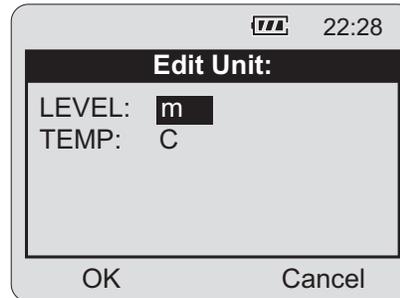


Figure 8-9 Edit Unit Menu



Note:

Edit Altitude is only available for the Levelogger Gold and Junior Models. Levelogger Edge and Levelogger Junior Edge data can be adjusted for Altitude post data collection using the Data Compensation Wizard. See Levelogger User Guide.



Note:

Maximum altitude value for the Levelogger Gold is 5000 m (16400 ft).

The maximum altitude value for the Mini LT Leveloggers is 3000 m (9750 ft).

8.4.5 Edit Altitude

'Edit Altitude' is very similar in setup to the Edit Project ID operation. The Leveloader only allows the numerical value of the altitude to be modified, not the units. Enter the altitude and select {SUBMIT} to confirm the modification. The units of altitude can only be adjusted using Levelogger Software on a PC.

8.5 Load Levelogger Settings Files

To use this feature, the 'Levelogger Settings Files' must be pre-programmed using Levelogger PC Software. Details provided in section 9.1.

Once selected, a list of up to 10 customizable settings are shown (Figure 8-10). By using the Up/Down buttons, the user can select one of the settings and send it directly to the attached Levelogger. A confirmation message will follow. Then scroll down to restart the Levelogger

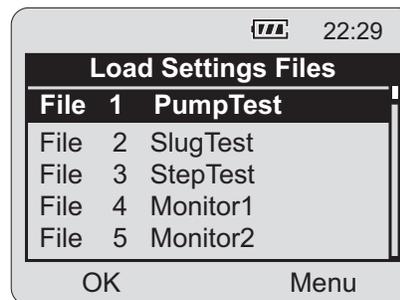


Figure 8-10 Load Settings Files Menu



Note:

Remember the Levelogger must be stopped to be restarted. To stop the Levelogger, press BOTH the UP and DOWN Buttons simultaneously.



Note:

Remember to save the log file before restarting the Levelogger.



Note:

Remember that the Levelogger must be stopped to edit settings.

8.6 Restart Levelogger

By selecting 'Restart Levelogger' the user can start data logging immediately or with a defined future start time (Figure 8-11). If a future start time is selected the user must enter the desired start time (Figure 8-12). Please note that if the Levelogger is already running, then it must first be stopped (Figure 8-13). Remember to save the data file before restarting the Levelogger.

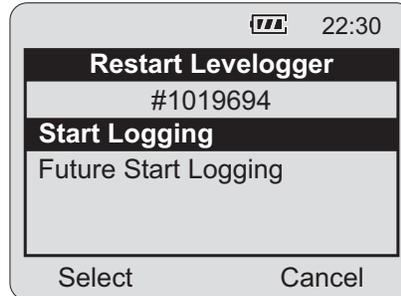


Figure 8-11 Levelogger Restart Options

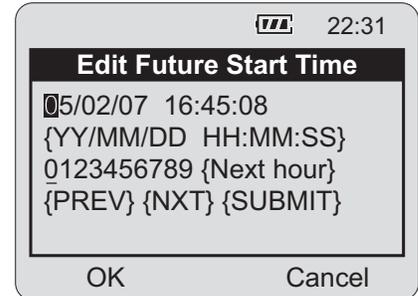


Figure 8-12 Edit Future Start Time

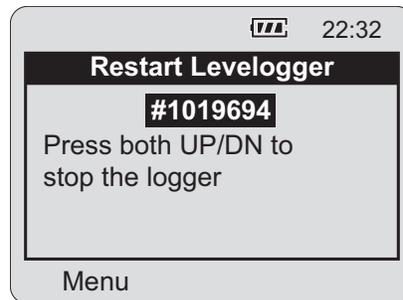


Figure 8-13 Stopping Levelogger

8.7 Security

If the Leveloader Gold has been configured with a password (see section 9.4 for details), then an Enter Password screen will appear if the user attempts to edit the attached Levelogger (Figure 8-14). If password protection is activated, use the UP/DN buttons to choose letter/function. Press OK to enter each letter in the password. Use {PREV} and {NXT} to move the cursor in the password and {SUBMIT} when the password is complete. Click the Menu button to exit the Enter Password screen. Note that the Levelogger must be stopped to edit settings.



Figure 8-14 Enter Password Menu



Note:

Remember that the Leveloader must be in the 'Data to PC' mode when connecting to the software.



Note:

Please note that depending on the computer make, the USB connection must sometimes be made before starting the Levelogger Software.



Note:

The Leveloader will not turn on when connected to the PC with a USB Cable. You must turn the Leveloader on before connecting, or unplug from the PC then turn on and reconnect it.

9 Levelogger Software and Leveloader Gold

Figure 9-1 shows the main window of Levelogger Software Version 4.0.2. To access the Leveloader options from the software window, click on the 'Leveloader' tab.

To begin communication between the Leveloader and the PC, turn the Leveloader on and connect the Leveloader using either the supplied USB or RS232 cable. Select the proper communications port that the Leveloader is connected to using the drop down 'Com Port' selection window. Select the 'Data to PC' option from the Leveloader main menu. Click the 'Retrieve Leveloader Settings' icon  in the software.

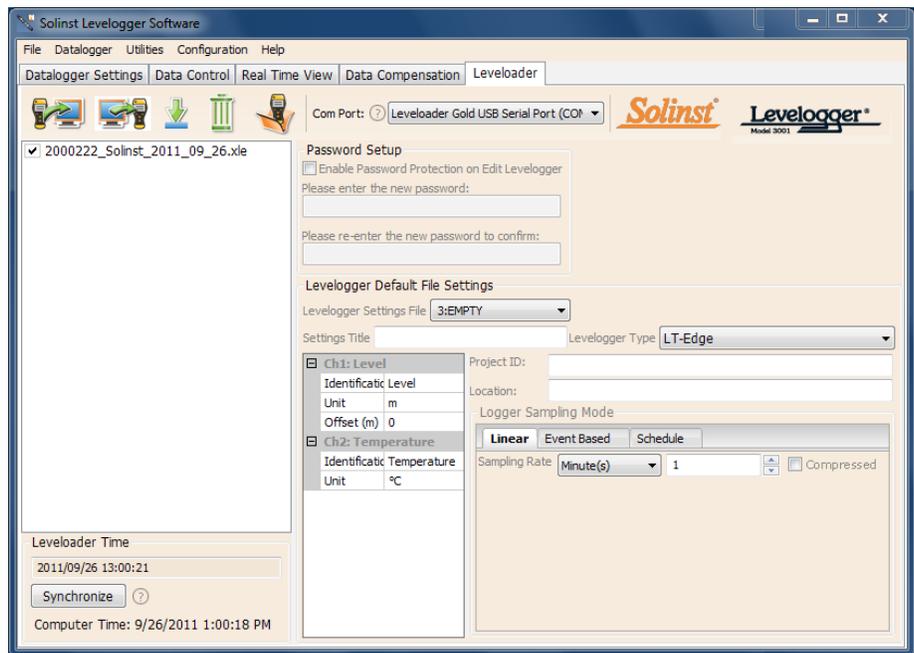


Figure 9-1 Leveloader Tab



Note:

By selecting



, you can

choose the information you want to include in the file names of your downloaded data, e.g. start time, stop time, location and serial number.

When the Leveloader Gold is connected to the PC, the window on the left of the Leveloader tab will display the log files that are available for download. To download data from the Leveloader, select the file(s), then click the download data icon .

A destination folder window will open where you can choose the location your log files will be saved. Click the 'OK' button to start the transfer process.

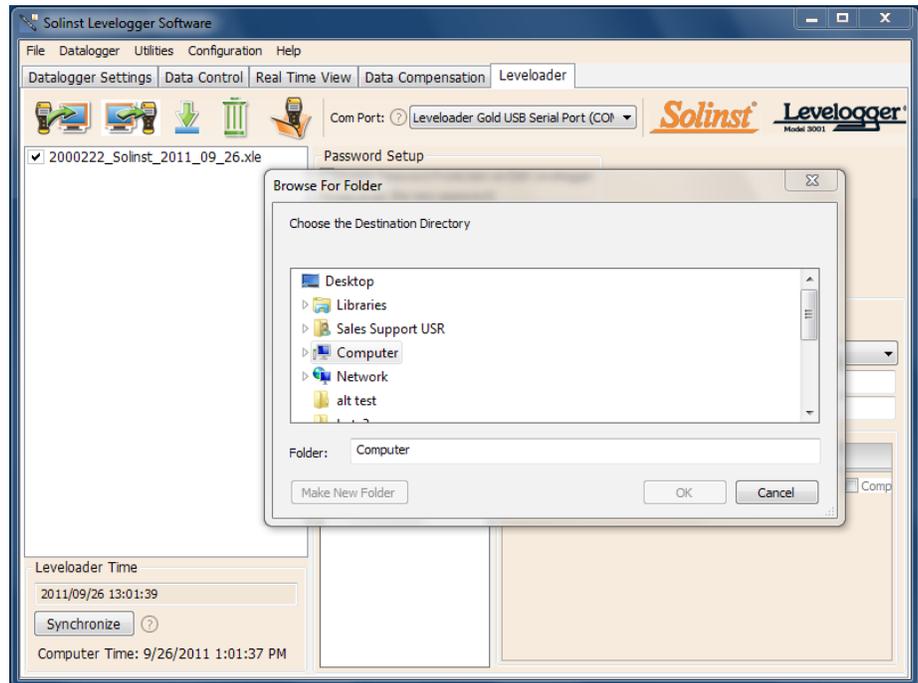


Figure 9-2 Log File Download



Note:

For more information on the 'Data Control' tab, see the Levellogger Series User Guide for Software Version 4 (or later).

To view the log files, open the 'Data Control' tab. You can open the files using the open file icon . From here, you can also print data or export data to a .csv or .xml file.

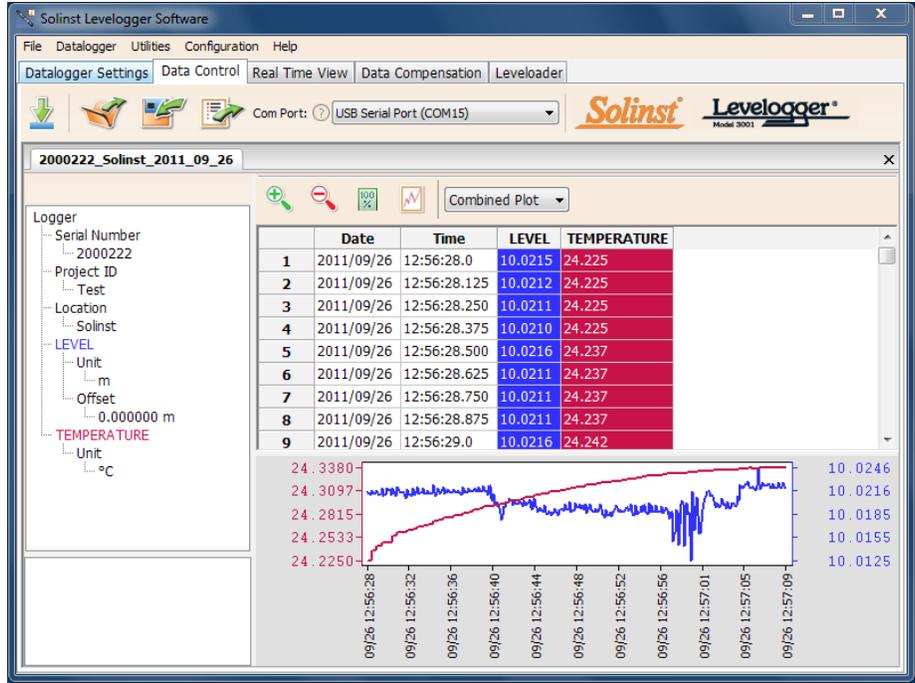


Figure 9-3 Data Control Window



Note:
Remember that the Leveloader must be in the 'Data to PC' mode.



Note:
The Settings File created for a Rainlogger assumes the Rain



Note:
Altitude and Density can be set for the Levellogger Junior, LTC Levellogger Junior, and Levellogger Gold and Barologger Gold dataloggers.

9.1 Customizable Levelogger Settings File Setup

This feature allows you to input up to 10 customized files with pre-defined settings for the Levelogger series including: Project ID, Location, Sample Mode, Sample Rate, Channel ID, Units and Offset.

To create a settings file in the 'Leveloader' tab, select the type of Levelogger you are creating the file for from the drop-down menu, then enter the desired Levelogger settings file name. The available sampling options will be displayed for that Levelogger type. Enter the settings to create the customized file (Figure 9-4). To send the settings file to the Leveloader, click the 'Apply Leveloader Settings' icon .

The screenshot shows the 'Levelogger Default File Settings' window. At the top, there is a dropdown for 'Levelogger Settings File' set to '3:Well 2'. Below it, 'Settings Title' is 'Well 2' and 'Levelogger Type' is 'LT-Edge'. The main area is divided into two columns. The left column contains a table for channel settings:

Ch1: Level	
Identificatio	Level
Unit	m
Offset (m)	0
Ch2: Temperature	
Identificatio	Temperature
Unit	°C

The right column contains 'Project ID: Monitoring Wells', 'Location: Georgetown', and a 'Logger Sampling Mode' section with three tabs: 'Linear', 'Event Based' (selected), and 'Schedule'. Under 'Event Based', 'Event Channel' is 'Level', 'Change' is '0.30 m', and 'Sample Rate' is 'Minute(s)' with a value of '1'.

Figure 9-4 Levelogger Default File Settings

Please note that inputs into the 'Settings Title' will appear as the settings file title in the Leveloader (Figure 9-6). To create and add more than one customizable file, select a new 'EMPTY' slot from the drop down menu (highlighted drop down menu below).

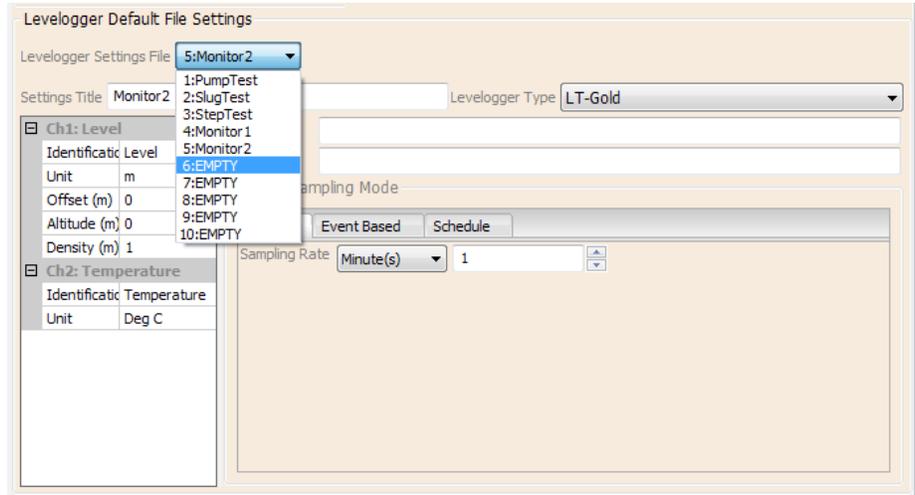


Figure 9-5 Levelogger Settings File - Setup

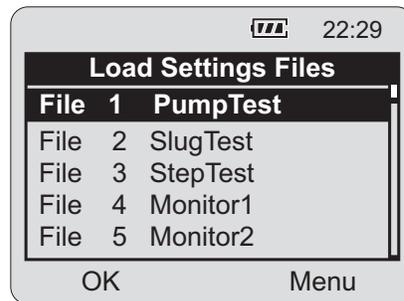


Figure 9-6 Leveloader - Load Settings File Window

9.2 Erase Data

To erase the stored files on the Leveloader Gold, click on the erase icon  located in the 'Leveloader' tab. A message will prompt the user that all of the data will be erased. Once the data is erased, the attached Leveloader will indicate that there are 0 logs stored.

9.3 Clock Synchronization

The attached Leveloader's system time is displayed in the bottom left corner of the 'Leveloader' tab. To synchronize the Leveloader to the PC clock, simply click 'Synchronize'.

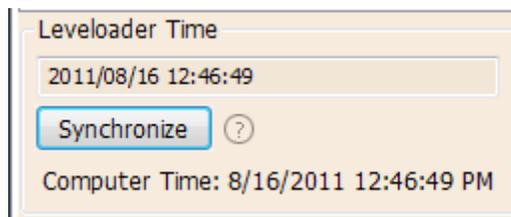


Figure 9-7 Clock Synchronization



Note:
A maximum of 6 characters can be entered for the password.

9.4 Password Setup

Activating the password protection function will prevent unauthorized changes using the Leveloader, to an attached Levelogger's settings.

In this section of the 'Leveloader' tab, check to enable password protection, enter your password, then re-enter to confirm (Figure 9-8). To send the password to the Leveloader, click the 'Apply Leveloader Settings' icon .

Figure 9-8 Password Setup

Once a password has been set, the 'Password Setup' section will update to look like Figure 9-9.

Figure 9-9 Password Enabled

To remove a password, enter the current password, uncheck 'Enable Password Protection on Edit Levelogger', then click the 'Apply Leveloader Settings' icon.



The 'Password Setup' section will update to look like Figure 9-10.

Figure 9-10 Password Not Enabled



Note:

DO NOT allow an interruption to communication between the PC and Leveloader during a firmware upgrade. It is important that the communication between the PC and the Leveloader is not interrupted during a firmware/calibration upload.

PLEASE make sure to close any other running programs, especially screen savers, and DO NOT disconnect the Leveloader before the upload is finished.

10 Firmware Upgrade Utility

The Firmware Upgrade Utility is included with the Levelogger PC Software and can be used to upload new firmware files into a Leveloader. The firmware file can be obtained from <http://www.solinst.com/Downloads/>

To upload new firmware to a Leveloader Gold, follow these steps:

- 1) Turn the Leveloader ON, scroll to the 'Data to PC' option on the Leveloader Menu and select 'OK'. Connect the Leveloader to the PC using the USB or RS232 Communication Cable.
- 2) Open the Solinst Firmware Update Utility, which is located in the 'Utility' folder in the Levelogger4_0 folder. It can also be launched from the Utilities menu in the Levelogger Software. Pick the Com Port that the Leveloader is connected to and make sure the Baud Rate is set to 115200.
- 3) Click the 'Open'  button, which should open a file dialog asking for the firmware file (*.ssf) to upload. Navigate to where the firmware file was saved on your PC, then click on the file and click 'Open' (make sure you have unzipped the downloaded firmware *.ssf file).
- 4) Check the 'Firmware File Information' box to make sure that the opened file is the right one.
- 5) Click the 'Upload Firmware'  button to start the firmware upload process.
- 6) If a communication error occurs and is indicated in the Leveloader Information Window either before the "Verified Program Checksum" message or after the "Program Information Section", then restart the upgrade process.

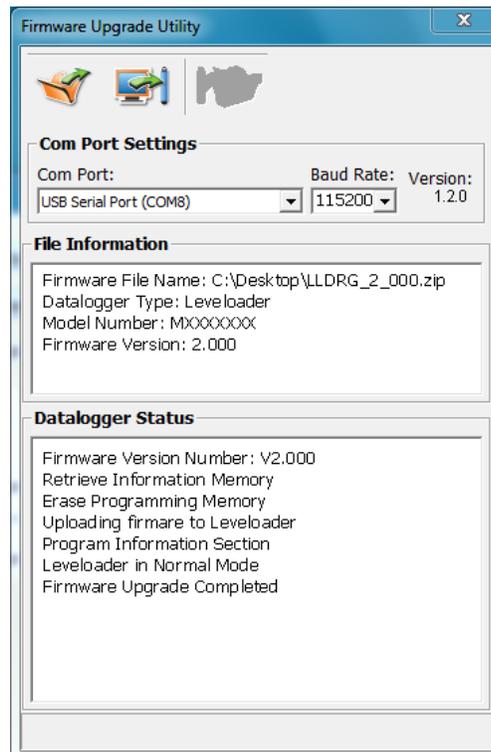


Figure 10-1 Firmware Upgrade Utility Window