Greyline Logger

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To find help on the features of Greyline Logger click on "Menu Commands" below and traverse the different topics until you find the feature you are looking for. The buttons of the data graphs and tables are described in the "ToolBar and Buttons" topic. To jump immediately to a specific help topic, click the "Index" button above.

For a quick reference on how to get up and running right away, click the "Quick Start Guide" below

Menu Commands

ToolBar and Buttons

Hotkeys & Shortcuts Summary

Quick Start Guide

Greyline Logger
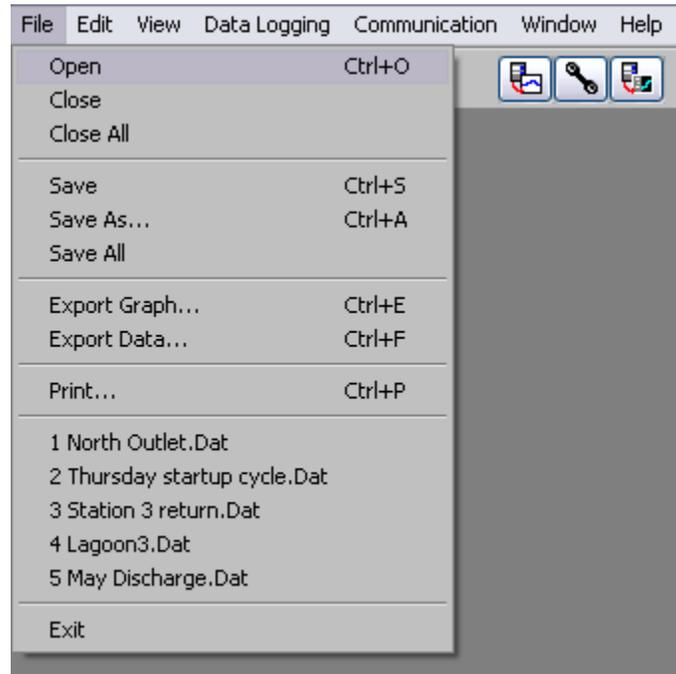
Menu Commands

|	
File	Open, Close, Close All
	Save, Save As, Save All
	Export Graph..., Export Data...
	Print
	Recent Files List
	Exit
Edit	Copy Data
View	Change Units..., Customize Graph..., Data Table
	Graph Smoothing, Toolbar
Data Logging	Retrieve Log..., Real Time Monitor On/Off
Data Tools	Build Formatted Graph, Extract Plot, Take Snapshot
	Apply "Zero" Filter, Generate Flow Log, Merge Graphs
Communication	Connection Setup...
	Dial..., Hang Up
Window	Minimize All, Restore All, Cascade, Tile
	Window List

File

Greyline Logger

|	
Open	Allows you to browse your computer for a previously saved log file and view it.
Close	Closes the currently selected Logging session. You will be prompted to save the sessions, if you have changed any of the graph labels, or if you have not already saved the session.
Close All	Closes all the session graphs and data tables you have currently open. If you have made changes to any of the sessions, or have downloaded a new sessions, you will be prompted to save it.
Save	Saves the currently selected session. If the session has not previously been saved, you will be prompted for a file name to save the session.
Save As	Saves the currently selected session to a new file.
Save All	Saves all of the current logging sessions displayed in the Greyline Logger. If the a session has just been downloaded, you will be prompted for a file name to save the sessions to.
Export Graph...	Opens the Export window for the Graphed data. The data exported will only be a sample of the total data in the session and power failures will be marked as one point at -9999 when the power went down, and two points at -9999 when the power was restored. To export all of the data in the session, see Export Data... below.
Export Data...	Exports all of the data of the session to a delimited file. Before the Export begins a window will appear allowing for the selection of the type of delimiter to be used. Once exported, this file can then be manipulated by any Spreadsheet application. Power failures in this export are marked with "Power Failure Power Down" and "Power Failure Power Up".
Print...	Displays the print window for printing the currently selected session graph or Data Table depending on which one has been selected.
Recent Files List	List 1 to 5 of the most recently opened or saved files for quick loading into the Greyline Logger
Exit	Closes the Greyline Logger. You will be prompted to save any sessions that have been changed or downloaded and not already saved.

Edit
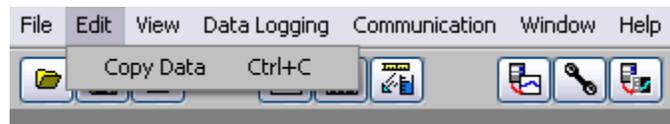
Copy Data   copies the selected data samples of the currently selected Data Table to the Clipboard. If you need to copy more data then is displayed by the Data Table, then please use the Export functions of the File menu
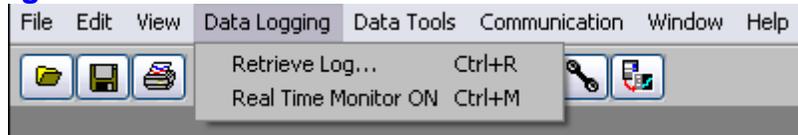
Greyline Logger

View
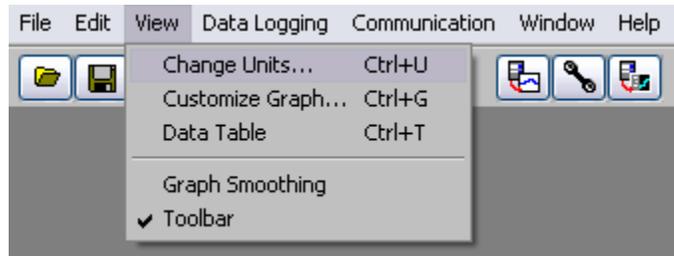
Change Units...	Allows you to change the units of the currently selected session. Only units within the same measurement as the session can be selected (i.e. ft to m for level or USMG/d to L/s for flow)
Customize Graph...	Opens the Graph Customization window to allow you to change many different aspects of a session graph, such as: graph labels, plotting style, plot colour, etc...
Data Table	Opens the Data Table for the currently selected session
Graph Smoothing	Controls whether erratic data points are displayed or averaged into the plot. Zooming in will reduce the effect of this option
Toolbar	Displays or hides the Greyline Logger toolbar

Data Logging

Retrieve Log...	Downloads all data logging sessions currently stored in a Greyline Data Logging instrument.
Real Time Monitor	Click this button to open or close the Real Time Monitor of the currently connected instrument. This window will show the current status as well as the operating calibration and setup of this instrument.

Communication

Connection Setup...	Opens the Communication Settings window to allow the selection of the baud rate and comm port that the Instrument is connected. Also the local modem parameters are entered here for instruments that are connected through a modem
Dial...	Allows the selection or entering of a phone number to dial out to a Greyline instrument connected to a remote modem.
Hang Up	Hangs up the local modem if it is currently connected to an remote instrument

Greyline Logger

Connection Setup...
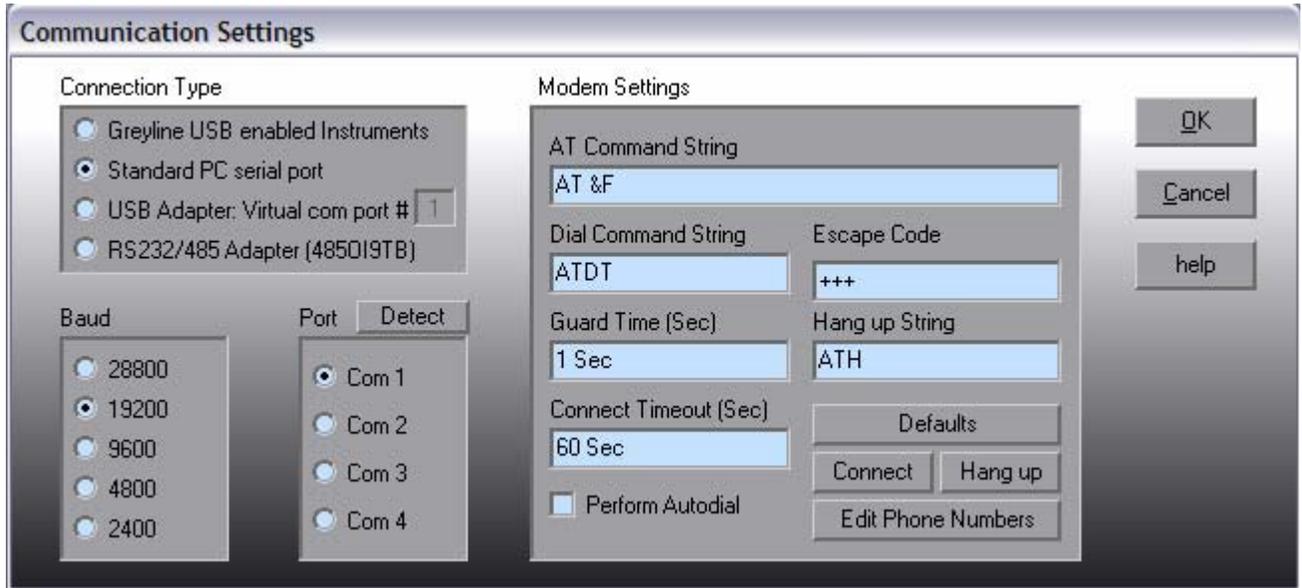
Greyline USB enabled Instruments	This connection type to communicate with instruments through the USB ports. When this option is selected a list of all detected USB instruments will be displayed in the main window. This list has a "Scan for USB Devices" option for detecting instruments that are connected to the PC after this connection type is selected.

The list of instruments will be sorted by the instrument type and Tag ID number. If not instruments are listed, make sure that the USB drivers provided on the Greyline Logger CD have been properly installed. |
| **Standard PC Serial Port** | Select this connection type if the Greyline Instrument is connected the regular serial port located at the back of a PC or Laptop |
| **USB: Using Virtual Com Port #** | If the instrument is connected to a PC or laptop through a serial to USB adapter, then select this option. The com port that the USB adapter has configured itself to can be entered in the adjacent field. If the USB adapter software does not automatically report the com port number, the "Detect" button can be used to find all available com ports on the computer.

If the USB adapter is connected to the PC and the port detect does not list a free com port, the software for the adapter may not be installed correctly. Verify the installation of the USB adapter software with the Device Manager.

This can be found by:
Right clicking on My Computer and clicking on Properties - Device Manager - Ports.
or by:
Clicking on the Start menu and clicking on Settings - Control Panel - System - Hardware - Device Manager - Ports |
| **RS232/485 Adapter (485OI9TB)** | This option is used to specify that the Greyline instrument is connected to the PC through an RS232/485 Adapter. While this option is selected, all modem parameters and Dialup features will |

	be disabled.
Port	Changes the serial communications port used to communicate with a Greyline data logging instrument.
Detect	Click this button to scan through all possible windows com ports to see which are available on the computer. This is especially useful for finding the com port number a USB to serial adapter has configured itself to
Baud	Changes the baud rate used to communicate with the instrument. This setting must match the Com setting of the instrument; which is set at the instrument under the special functions menu.
	When connecting directly to a Stingray instrument, 28800 baud must be selected. If modems are used to connect to the stingray then it is best to set the PC to 19200 baud or 9600 baud, whichever is the faster baud rate the remote modem supports
	To communicate properly with the Greyline Logger, both the local and remote modems should be compatible with V.32 or any later standard.
AT Command String	This field contains the AT command string to setup your Host PC modem to connect properly to the remote modem attached to the instrument. In order to properly communicate with a Greyline Instrument through a modem it is necessary to force the connection speed to the same as that of the remote instrument. This can typically be done by setting the &N or S37 register of the modem. The Greyline Logger default command string is recommended for use with US Robotics V.90 modems.
	Refer to the manual supplied with your modem for its AT command codes before configuring.
Dial Command	Use this field to set the AT string for the dial command; not including the phone number (default "ATDT" for V.32 modems).
Guard Time	Use this field to indicate the amount of time the Greyline Logger must wait before and after sending the Escape code. The Greyline Logger Guard Time must match the Modem Guard time for the program to be able to hang up the modem properly (default 1 second for V.32 modems).
Escape Code	Use this field to set the AT string used to return the modem to the command state (default "+++" for V.32 modems).
Hang Up String	Use this field to set the AT string to hang up the modem (default "ATH" for V.32 modems).
Connection Timeout	Use this field to specify the amount of time the Greyline Logger will try to connect to the remote modem. If a connection is not made within this time the Greyline Logger will hang up the modem and display an error message.
Perform AutoDial	Select this option to start the Autodialer function. The Autodialer will dial all phone numbers that have been specified in the phone list. Once all numbers have been dialed and the data-logs downloaded, the Autodialer will disable itself and close down Greyline Logger
Defaults	This button will restore all the modem settings to the original values when it was first installed
Connect	Click this button to dial up and connect to the remote modem.
Hang Up	Click this button to hang up the modem and disconnect from the remote modem.

Greyline Logger

Edit Phone Numbers l or edit the phone numbers stored in the Greyline Logger. Here phone numbers can be designated as an Autodialer phone number, and the time to begin autodialing can also be entered.

OK   Click OK to save the communications settings and close the Communications window.

Close   Click Close to close the Communications window and discard any changes made.

Remote Modems

To communicate properly to a remote Greyline data logging instrument, both the local and remote modems should be compatible with V.32 or any later standard.

To ensure proper operation of the remote modem, the modem should be set to allow its serial port rate to follow that of the established connection. Below is an example of the required AT commands to properly configure a US Robotics V.90 modem.

AT &B0   - Modem Serial Port rate follows connection rate
AT S0=1   - Auto Answer on the first ring
                   (This can also be   achieved by setting dip switch 5 to OFF)
AT &W0   - Save to profile 0
AT &W1   - Save to profile 1

Refer to the manual supplied with your modem for its AT command codes before configuring.
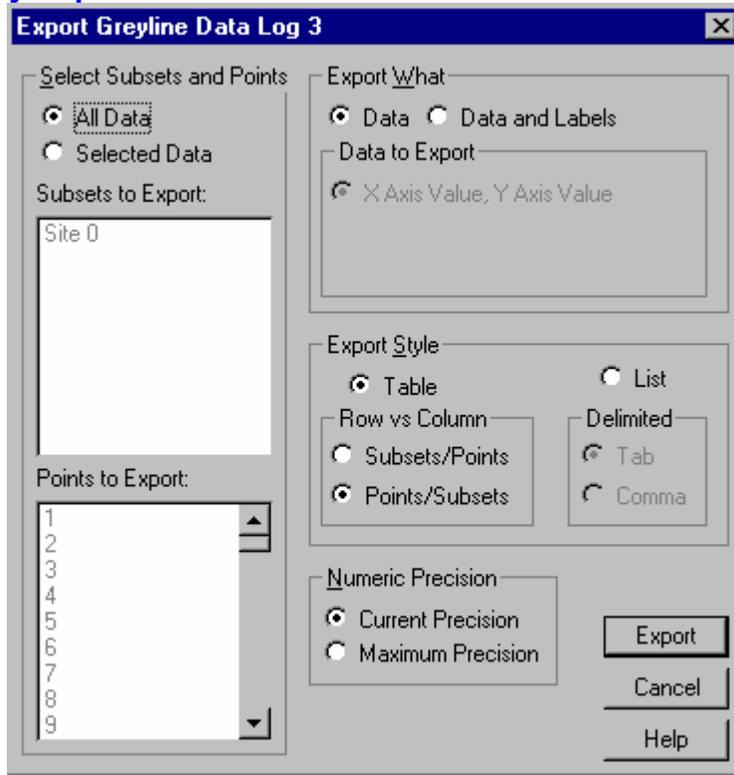
Export Graph...
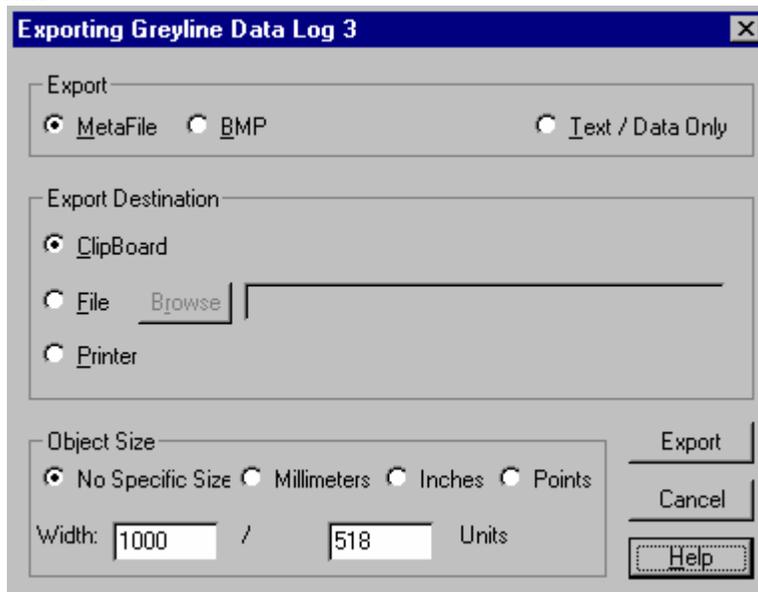
Metafile   This button sets the export style as a standardized Metafile format. Once exported, the graph can be viewed and manipulated by a almost any graphics application. The width and height of the graph can be changed using the Object Size parameters (See below)

BMP   This button sets the export style to bitmap format. The width and height of the graph can be set using the Object Size parameters (See below), but the number of colours of the bit map will depend on your current colour system settings. Once exported, the graph can be inserted as a picture into a document.

Text/Data Only This button sets the export style as text and will export the actual session data that is currently being displayed on the graph. Note that the data displayed on the graph is only a representative sample of the total data for the session.

ClipBoard   Selecting this button sets the export destination to the clipboard. Once the graph or data is sent to the clipboard it can be pasted into a document.

File   Selecting this button sets the export destination to a file. The file can either be entered manually or using the Browse button.

Printer   Selecting this button sets the export destination to the printer. Only metafiles may be exported in this fashion.

Units buttons   These buttons sets the units of measure for the sizing of the exported graph.

Width/Height   These fields are used to set the dimensions of the exported graph. The graph will be scaled from the currently displayed size to the size specified by these fields.

Export/Print   Click this button to perform the export, or printing, of the graph and close the export window. If Text/Data is being exported another export window will popup giving further options for formatting the text layout. (See Exporting Text/Data)

Cancel   Click this button will close the export window with out performing the export.

Text/Data Only Export

All Data	Select this button to export all points in all the subsets of the graph.
Selected Data	Select this button if you wish to export only a specific subset of data or data points. Only the subsets and points selected in the "Subsets to Export" and "Points to Export" list will be exported (See below).
Subsets to Export	With this list you can select individual subsets to be exported. To select more then one subset, hold the [CTRL] key and click the subsets you wish to select.
Points to Export	With this list you can select individual points to be exported. To select more then one point, hold the [CTRL] key and click the points you wish to include. To select a block of points, hold the [SHIFT] key can click the first and last point of the block you wish to export. Although your logging session may contain sever thousand points, only a maximum three hundred points will be plotted on the graph for each subset. Plotting more points then this will not change the appearance of the graphed data and will cause your computer to become very slow while display large logging sessions.
Data	This button allows you to export just the data points of the graph, with out the subset titles.
Data and Labels	This button allows you to export the data points along with the subset titles. Exporting with the titles allows you to distinguish where on subset begins and another ends in the List Export style.
Table	This options allows you to export the data in a table format where all subset subset dates and points are placed beside each other on the same line. When exporting in the Table format, points are

	separated from their dates with a comma and subsets are separated from each other with tabs.
Subset/Points	Select this option if you want the exported table to have the subsets as rows and the points as columns. If using this option on a Trend plot , the table will have 3 rows and up to 3 hundred columns.
Points/Subsets	Select this option if you want the exported table to have the points as rows and subsets as columns. If using this option on a Trend plot, the table will have 3 columns and up to 3 hundred rows.
List	This option allows you to export the data as a list where the data of the subsets are listed after each other.
Tab	Select this option if you want the exported list to have the dates and points to be separated by a tab.
Comma	Select this option if you want the exported list to have the dates and points separated by a comma.
Current Precision	This option will allows you to export the data to 3 decimal places.
Maximum Precision	This option will allow you to export the data to 5 decimal places.

ToolBar and Buttons
ToolBar Buttons

Open	Click this button if you wish to view a previously saved logging session.
Save	Click this button to save the currently selected logging session to a file.
Print	Click this button to print the currently selected logging session.
Customize	Click this button to change various features of the selected graph, such as graph labels, plotting style, plot colour, etc...
View Table	Click this button to view the data of the currently selected logging session in a table.
Change units	Click this button to change the data units of the currently selected logging session.
Retrieve Log	Click this button to download and display all the logged data stored in a Greyline logging instrument.
Dial	Click this button to connect to a Greyline logging instrument through a modem.
Hang Up	Click this button to disconnect from a Greyline logging instrument that is currently connected through a modem.
Real Time Monitor On/Off	Click this button to open or close the Real Time Monitor of the currently connected instrument. This window will show the current status of the instrument as well as the operating calibration and setup of the instrument.

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Session Graph Buttons

⊠ 🔍 ⊕ 🔍 ◎

Undo Zoom   Click this button to undo any zooming and return to the full session view.
⊠

Zoom Out   Click this button to return to the view before you zoomed in.
🔍

Zoom In   Click this button to zoom in on the current cursor position by a factor of 2
⊕

Full Screen   Click this button to expand the current view to cover the entire screen.
🔍

Centre Graph Click this button to place the graph cursor on the point currently selected
◎   in the data table. For this feature to work properly, you should first undo
                  any zooming

Data Table Buttons

Centre Table   Click this button to display the data around the graph's current cursor
◎   position

Transfer to Excel   This button is used to transfer the selected data to Excel. Clicking this
X   button a second time will stop the transfer. Excel must be installed on
                         the PC for this feature to work

Copy to Clipboard   Uses this button to copy the selected data to the clipboard
📋

Hotkeys & Shortcuts Summary

Main Window

[CTRL]+A Opens a browse window to save the currently selected logging to disk.
[CTRL]+C copies the selected data of the current Data Table to the clipboard.
[CTRL]+E Opens the Export Graph window.
[CTRL]+F Opens a browse window to export all the data of the currently selected
              session to disk.
[CTRL]+G Opens the Customize Graph window.
[CTRL]+M Opens the Real Time monitor display and sample windows
[CTRL]+N Opens the Communication Settings window.
[CTRL]+O Opens a browse window to open a previously saved logging session.
[CTRL]+P Opens the Printer Setup window to print the currently selected logging
              session.
[CTRL]+R Begins downloading the logging data from the Greyline Logging
              Instrument connected to the computer.
[CTRL]+S Saves the currently selected logging session to disk.
[CTRL]+T Opens the Data Table window centered on the cursor in the currently
              selected logging session.
[CTR]+U   Opens the Change Units window for changing the display units of the
              currently selected logging session.

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Session Graph

-	Zoom Out.
+	Zoom In.
[ENTER]	Maximize the graph.
[ESC]	Undo Zoom.

Double clicking on a point	Opens the Data Table window centered on the point that was double clicked .
Right or Double clicking on a graph	Opens the Customize Graph window for the graph that was clicked on.
Single Clicking a Graph Label	Opens an Input Window to edit the label that was clicked on, except the Power Out label.

Session Data Table

Single Clicking on a cell	Moves the cursor on the graph to the data point clicked
Double clicking on a cell	Sets the starting or ending data point for the selection of a block of data. Once both start and end points have been double clicked, the selected data will be highlighted
Enter while cells selected	Creates a snapshot of the graph that contains only the data selected
Right clicking on a cell	Selects a single row.

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Introduction

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Greyline Logger

Stingray Real Time Monitor

These windows are used to display the status of the Stingray as well as a brief log of the sensor measurements. The most recent level, velocity, and temperature readings are displayed in the upper left corner of the large sample window. The Real Time monitor can be used to confirm the operation of the Stingray and to troubleshoot application problems.

Site Name — This field is used to identify which Stingray the data has come from. If this is the first time that Greyline Logger has retrieved data from this Stingray, "New Sensor" will be displayed for the site name. This name can be changed at any time if the Stingray is moved to another location.

The Site name is stored on the PC so that it will be displayed again the next time data is retrieved from this particular Stingray.

Data Capacity — This display indicates how much data has been logged in the Stingray. It also displays the number of days left until the data-logging is full.

Battery — This field shows the current status of the batteries in the Stingray, as well as an estimate of how many more days the batteries will last. The Stingray will log data until the battery meter reaches 0% for both batteries. While the batteries are at 0% the instrument will enter a low power stand-by mode and not log data until the batteries are replaced.

Because of their higher power capacity, and better low temperature characteristics, it is recommended that only premium quality batteries be used in the Stingray.

Status — This display initially shows the current logging status of the Stingray then disappears during normal operation. It will only appear again if there is a problem with the Stingray. This field will also display the duration of the fault.

Greyline Logger

Close   Click this button to close the Real Time Monitor as well as the setup and measurement windows.

Show Setup   This button is used to display or close the Stingray setup window. From here the data-logger can be configured and a new data log can be initiated. The Setup window also shows the current logging status of the Stingray.

Sample Windows These windows display current parameter measurements. Double clicking on any of the smaller windows will cause it to switch places with the larger window. To see the exact value of any data points in the sample windows simply hold the mouse over the point and its value will pop up below the mouse.

These windows will only display the last five minutes of sampled data. To view more data than this the data log will have to be downloaded.

Stingray Setup
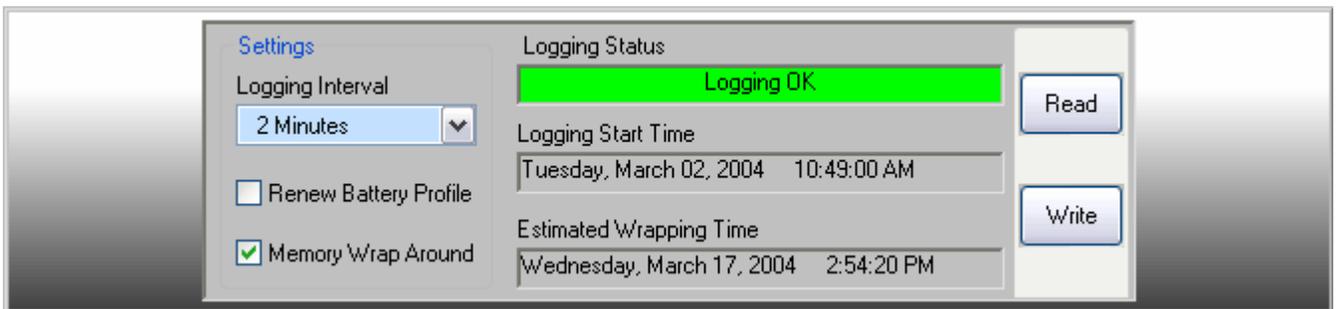
This window is used to display the current setup of the Stingray as well as logging status and estimates of when the Stingray will finish data logging.

Start New Log   Selecting this option will erase the current data log and begin a new data log when the Write button is clicked.

Logging Interval   This field allows selection of the data logging interval. The Stingray will take measurements for 10 seconds and record the sampled data. It will then enter a low power "sleep" mode for the remainder of the interval time. While in sleep mode, the Stingray consumes minimal power. This means that the logging interval also determines the battery life of the instrument. The table below shows the maximum amount of time the Stingray can log while at a constant 68 °F (20 °C).

Logging Interval	Logging Time
10 Seconds	15 Days
30 Seconds	45 Days
1 Minute	3 Months
2 Minutes	6 Months
5 Minutes	1 Year
10 Minutes	2 Years
30 Minutes	5 Years
60 Minutes	10 Years

Low temperatures and varying battery quality will reduce the amount of time the Stingray can log until the batteries need to be changed. Because of their higher power capacity, and better low temperature characteristics, it is recommended that only premium quality batteries be used in the Stingray.

Renew Battery Profile The Battery Profile can be used to better estimate the battery life of a particular brand of batteries at certain temperature conditions. If "Renew Battery Profile" is selected, the Stingray will record the power of the batteries, while it is logging, until the main battery set reaches 0%. This recording will then be used to estimate the battery life of any new batteries placed in the Stingray. It is important to remember that if a new log is started, before the main battery set reaches 0% the battery profile will not be generated.

Unchecking the "Renew Battery Profile" will allow the Stingray to use the current battery profile to estimate the battery life of the instrument. If a battery profile has not be created; or allowed to complete; then Greyline Logger will use a generic battery profile to estimate the battery life of the Stingray.

Memory Wrap Around Click this box to enable data wrap around. When the Stingray data log is full, and wrap around is enabled, the Stingray will overwrite the oldest data at the beginning of the log. This allows the Stingray to always have a record of the most recent flow events.

If this option is unchecked, the Stingray will stop logging when the data log is full and keep the log in memory until a new log is started.

Logging Status This field displays the current state of the Stingray's logger. If this field displays "Unknown" it means that Greyline Logger cannot determine the current state of the Stingray, usually due to a bad serial connection or dead batteries.

Logging Start Time This field displays the start time for the current data log. If "Start New Logging" is selected this field will display the date and time that will be stored for the new log. In this case, the Logging Start Time should be the same as the current date and time. If it is not, check the Date and Time properties of the PC.

Estimated End Time This field gives an estimate of when the data log will be full. This estimate is based on the full data capacity of the Stingray, and not the expected battery life.

If data wrap around is enabled, this field indicates when old data will be overwritten with new data.

Read Click this button to read the current setup of the Stingray, and update the Setup window with any changes made.

Write This button is used to send the new logging setup to the instrument. All changes made in the setup will take effect immediately, including erasing any previous logging. It is important to download the data log before starting a new log.

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Autodialer

The auto dialer function will dial up all designated phone numbers in the Greyline logger's phone list. Once connected, it will download all data logs from the instruments at these phone numbers and save them to specifically named log files. This feature can be enabled through the communication settings, or through a command line argument. Once all instruments have been called the Autodialer will be disabled and Greyline Logger will close down. A log of the events that occurred during the auto dial process will be listed in the file "Autodialer Report.txt". The Autodialer supports a maximum of 68 phone numbers

Adding an Auto Dial phone number
Phone numbers can be added to the phone list by clicking the Edit Phone Numbers button of the communication settings.

To designate a phone number as an Autodial site use the format

XXX-XXXX ~$Site Name$~ ++Time

Site Name: The Site Name is used to identify a phone number as an auto dial number and to name the data log file. The site name must be preceded with ~$ and must end with $~

If "~$ USB Download $~" is entered as the Site Name, the autodialer will download from all USB enabled instruments connected to the PC. A phone number is not required when using this site name.

Time: The time field is used to tell the Autodialer when to start dialing the phone numbers. The Autodialer will dial all designated phone numbers at the time of the earliest Time given, so it is only required to be entered once in the phone list. In order for the Autodialer to function Greyline Logger must be running at the time specified.

The time field is indicated with "**++**" and follows the format of HH:MM using the 24-hour clock style of time. For example to start dialing at 11:30PM, the time must be entered as "++23:30". To start dialing at 1:00AM, the time must be entered as "++01:00". The time field can also be entered as "++Now". This will tell the auto dialer to begin dialing immediately.

Command Line enable
The Autodialer can be enabled through the use of the command line argument "-autodial". This allows another program, such as the Windows Task Scheduler, to automatically launch the Greyline logger and download the data logs at selected intervals. The command line to enable this option must be entered as:

"C:\Program Files\Greyline Logger\Greyline Logger.exe" "-autodial"

Once enabled in this manner, the Autodialer will only begin downloading at the time stated in the phone numbers list, so it is important to use the "++Now" option in the time field. It is also important to note that for the Task Scheduler to work in Windows XP a Windows Log On password must be entered. The Task Scheduler will not work with a blank Log On password.

Autodialer Report File
The Autodialer will track various errors that can prevent a log file from being downloaded and saved. If the file is missing after the Autodialer has completed, the file "Autodialer Report.txt" can

be reviewed to determine the problem. In the event that there has been an error, it is best to manually dial the instrument and download the data log for a better description of the problem.

Below is a list of errors that the Autodialer is able to report

Modem Connection Errors

Connect Error: -1Port in Use. Another application may be using the modem
Connect Error: -2No phone number or invalid phone number entered
Connect Error: -3Modem did not respond. Local Modem may be turned off or not connected
Connect Error: -4Invalid Command String. Check the AT command string in the Communication Settings
Connect Error: -5Line Busy. Remote modem has not yet hung up
Connect Error: -6No Dial Tone. Local modem is not plugged into the phone line
Connect Error: -7No Carrier. Remote modem could not complete the connection handshaking
Connect Error: -8Connect Timeout. Remote modem did not answer the phone, or phone line is too noisy to establish a connection
Connect Error: -9User canceled the connection from within Greyline Logger
Connect Error: -999Modem currently connected. Local modem has not hung up the phone yet
Connect Error: >0Windows System Error

Logging Errors

Comm Port ErrorCould not initialize the comm port of the PC or laptop, make sure that a valid comm port is selected in the communication settings
Data Not Readyno data-points have been logged yet, wait for at least one logging interval to pass
Data Not Ready, logging stoppedLogging has been stopped on the instrument and no data points have been recorded
Logging not AvailableThe connected instrument is not a data logging instrument
No Download Informationcould not receive the necessary information to begin the download, possibly due to a noisy phone line
received bad dataData received is bad due to noisy phone lines

Windows System Errors
Download Start Error: ###
Download Initialization Error: ###
Download Error: ###
Decompiling Error: ###

Save Error This error can occur during the saving of the log file if there is no permission to write to a network drive, or if there is no space available on a local drive
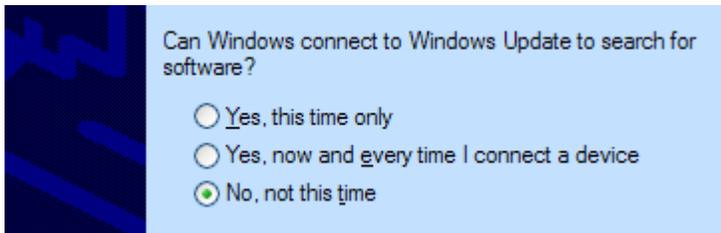
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Quick Start Guide

When you connect to an instrument for the first time follow this procedure

1) Use Communication/Connection Setup... to configure your PC communications
   - Stingray instruments only communicate at 28800 Baud
   - All other Greyline logging instruments have a factory default baud rate of 19200 (19.2)
   - The com port on the back of a PC will typically be either com 1 or com 2.
   - For USB-RS232 adapters and other com port options see the Connection Setup... help topic

2) For Stingrays, use the Real Time Monitor to configure the logging frequency
   - A temperature reading greater than 100°C (212°F) indicates the Velocity-Level sensor is not connected

3) Use the Data Logging/Retrieve DataLog... to download log files from the instrument

4) Sample datalogs are provided with the installation of Greyline logger.
   - Select File/Open to view these data logs
   - Several tools are provided in the Data Logging menu to manipulate data log

Installing drivers for USB enabled instruments
(procedure required with each new instrument connected to the PC for the first time)

1) Plug the instrument into a USB port

2) When the "New Hardware Wizard appears, select "No, not this time", and click "Next"

3) in the next window select "Install from a list or specific location (Advanced)" and click "Next"
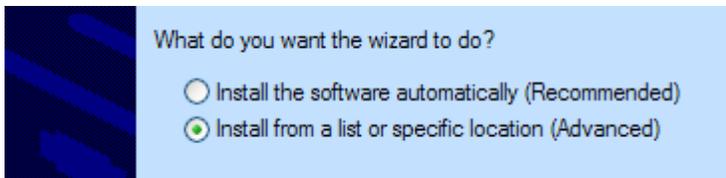
4) For the search and installation options:
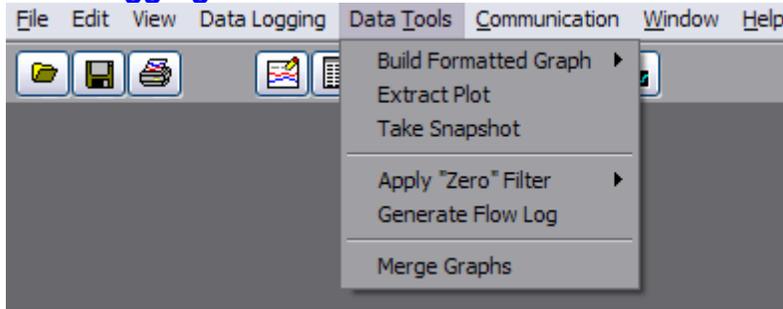   - Select the "Search for the best driver in these locations" option

- Click the "Include this location in the search:"
- Enter "D:\USB Drivers" (or use the browse button to find the USB Drivers folder on the Greyline Logger CD ROM)
- Click "Next"
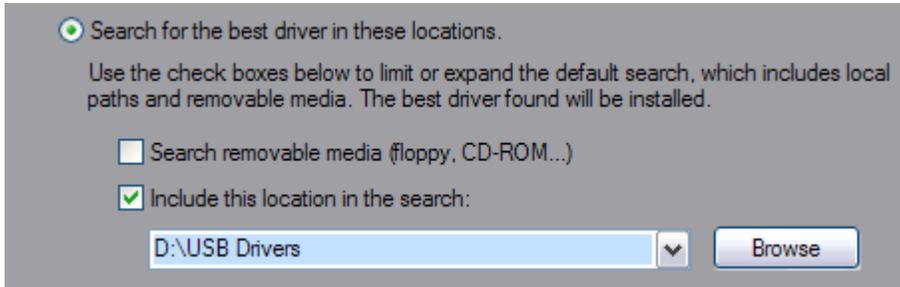
5) During the Hardware installation a warning will pop-up about the Windows Logo Testing. Click "Continue Anyway" for this window

6) Once the driver installation has been completed, click "Finished"

7) Windows will then ask to install the drivers a second time. For this second installation, repeat the steps above

Greyline Logger

Data Logging

File   Edit   View   Data Logging   Data Tools   Communication   Window   Help

Build Formatted Graph   ▶
Extract Plot
Take Snapshot

Apply "Zero" Filter   ▶
Generate Flow Log

Merge Graphs

Build Formatted Graph   Converts the selected plot of the current datalog from a Trend log to a Formatted log where the minimum, maximum, average and total are plotted. This function will convert any Trend log provided there are enough points to complete at least two intervals of the Formatted log.

Extract Plot   Extracts the data of a <u>single</u> plot to a new graph window. If the current graph has been zoomed, only the data in the zoomed view will be extracted.

Take Snapshot   The Snapshot creates a new graph from the current view of the data. With the Snapshot however, the new graph will be the same type as the original (formatted, trend, multi-channel) and will include all data plots of the original graph.

The data table can be used to take a snapshot of data between two specific points. To do this, open the data table for the graph and double click on the first data point to be included in the Snapshot. Then scroll through the table to find the last data point to include in the Snapshot. Double clicking this point will select all data between the two points.

Once the data is selected, pressing the Enter Key will create the snapshot graph of only the data selected in the table

Apply "Zero" Filter   In very turbulent applications, the Stingray may miss echo readings and store zero level readings. To calculate an accurate total in a flow graph, these zeros must be removed by applying the "Zero" filter.

The filter will only remove zeros that occur in a group equal or less than the duration of the filter size selected. If the group of zeros is longer than the filter duration then no zeros will be removed.
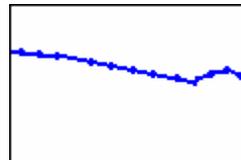
1 minute logging interval   2 minute filter time   10 minute filter time
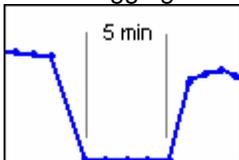
When generating a flow graph that contains many zeros Greyline Logger will recommend a filter time. If after applying this filter the total is still not calculated, select a larger filter time. The maximum filter time is 10 minutes

# *Greyline Logger*

Generate Flow Log This function will create a new flow graph calculated from a multi-channel (level, velocity, temperature) data log. To properly calculate the flow a "Channel Setup" window will first appear were the required channel details can be entered, such as channel type and dimensions

If this function is applied to a Level or Range only graph then the Channel Setup window will display a list of flumes. In order to calculate the flow from a Stingray data logging in a flume, the level data will first have to be extracted using the Extract Plot command.

This function may also be used to create a flow graph from a from DFM velocity data log
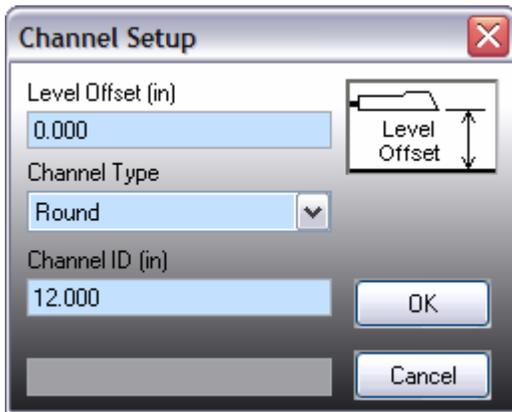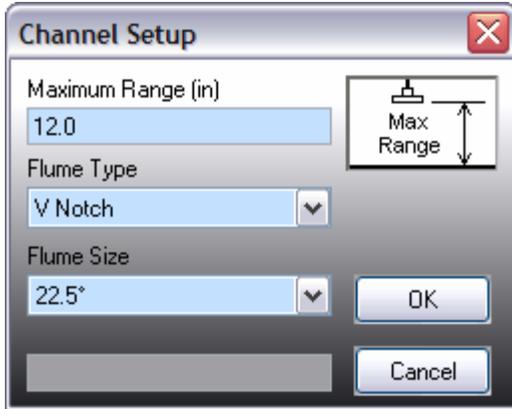

Generate Flow Log
from level/velocity/temp plot
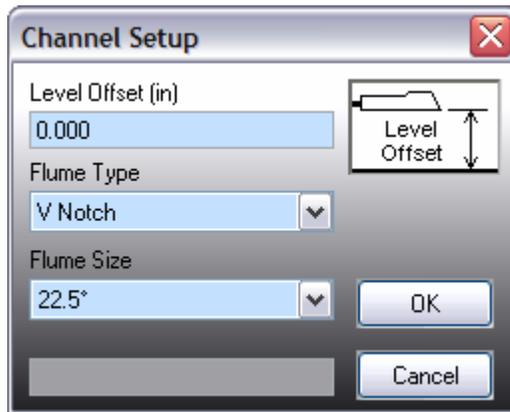
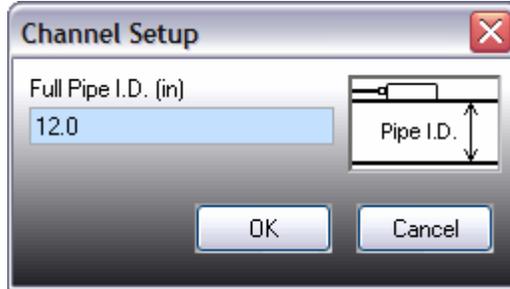Generate Flow Log
from level only plot

If the Stingray or AVFM instrument is mounted in a flume, a flow log can be generated from just the level data. To do this, click on a level data point then use the "Extract Plot" data tool to create a Level only data log. Using the "Generate Flow Log" function on this data will then allow you to select an appropriate flume for calculating the flow

Similarly, if the Stingray or AVFM has been logging in a full round channel or pipe, the velocity data may also be extracted to allow the flow to be calculated based on a full pipe of the specified diameter.

Greyline Logger

Generate Flow Log
from range only plot

Generate Flow Log
from velocity only plot

Merge Graphs   This function will combine all the data of the currently displayed graphs into one graph. Graphs do not have to be in the same logging interval to be merged, however they must contain the same type of data and be in the same units. If the graphs contain overlapping data, the data of the earlier graph will be used.

Large gaps in time between merged files are displayed as thin lines between two data points. In the case of flow graphs, the total value will be calculated as if this line represents continuous flow during the gap in time.

This feature only works on displayed graphs. Minimizing a graph will exclude it from the merge.