eTemperature

User Manual

Introduction

1 Introduction

1.1 About the manual

The manual consists of the following parts:
1. Introduction including information about what is eTemperature,
2. How to use eTemperature
3. The fine print licensing and specifications.

There is also a 4 page Quick Start guide which users may find useful when getting started. It saves reading through this manual and covers the essentials. This manual also contains a short tutorial (Getting Started).

The majority of this manual is intended to be a reference guide and online help. Users can read it cover to cover, or simply select the topic of interest and jump straight to it.

A series of tutorials are also being released to assist with key features of the software.

1.2 What is eTemperature

eTemperature provides the viewing and programming of various temperature logging devices. It is designed for easy and quick use of temperature loggers.

eTemperature can be used to:
- Program (setup) a temperature logger
- Download the readings from a temperature logger
- Display the readings as a table and graph
- Save the readings to files for later recall
- Reload the readings from file
- Export the results to the clipboard and other programs

eTemperature focuses on a single usage of a temperature logger. That is, it will display the results of one run at a time. eTemperature DB provides the ability to join data from multiple runs as well as analyze data across a number of readers. It also supports a number of powerful database features.

For the majority of customers the extra features of eTemperature are not required and the ease and speed of eTemperature makes it the ideal software for

1.3 Getting Started

The manual will take you through all of the following in detail. This is a very short tutorial/summary of getting started and the day to day skills you will need to use eTemperature.

Setup

You must be logged in with full administration rights to install the software. It is strongly recommended that eTemperature be run once by the administrator to ensure hardware access is initially granted.

1. Install eTemperature
2. Plug the reader into a USB port
3. The "Found new hardware" wizard should automatically identify the driver.
4. Start the software

Testing for communication

(This is not required if just retrieving/viewing previously saved results)

1. In the status box of eTemperature (at the top of the window) will be a message that indicates that the software is searching for a port, reader and then disappears.
2. If the message remains at "No reader found" then ensure that the reader is plugged in.
3. If you still can not get the system to communicate then contact your local distributor.
4. The first time the software runs you may be asked to enter an unlock code. This should be written on the reader bag. Once it has been successfully entered you will not be asked for it again.
5. If a new reader is used on the PC a new unlock code may be required.

Adding your first logger

1. Plug the logger into the reader.
2. A "Details" tab will appear with information about the logger.
3. A "Reprogram" button will be available on the Details tab..
4. Click on the "Reprogram" button to display the Settings tab.
5. Set the high limit to 25°C, the low limit to 21°C, the sample rate to 3 minutes, start delay to 0 minutes and allow rollovers. These are all the settings that are downloaded to the logger..
6. Press the "Start Logging" button. See the Settings Tab section of this manual to find out more information on what these settings do.
7. After the programming complete message appears remove the logger..
8. Remove the logger and wait for half an hour to collect some data.

Reading a Thermocron

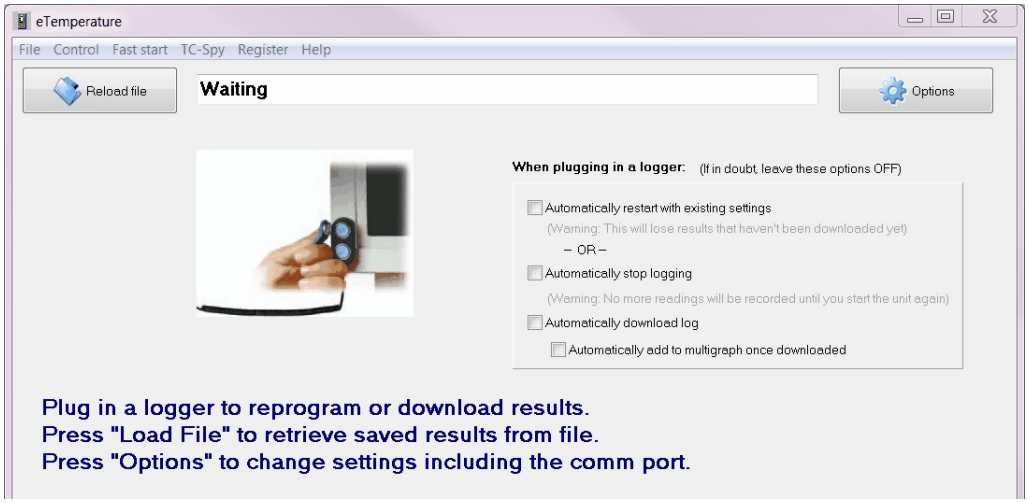
1. Plug the Thermocron back into the reader.
2. The "Read Log" button will be visible. Press it and wait for the readings to finish. A box at the top of the screen will indicate the download status.
3. Once the item has been read a number of extra tabs will be available.
4. View the log, See the Log section of this manual to find out the full capabilities of this screen.
5. Press the actions tab. It is possible to save the information to a text file, Microsoft Excel and to eTemperature's own format.
6. Press the Print button. A summary report is available and can be printed by pressing the button with the printer on it.
7. Close the report

Using eTemperature

2 Using eTemperature

Enter topic text here.

2.1 The Main Screen



When eTemperature is first run, the following screen will appear.

The status bar at the top should show "Waiting". This indicates that it is waiting for a logger to be plugged in, or the "reload file" button to be pressed.

If "Reader not found" is displayed, ensure the USB reader has been plugged in and the driver is working correctly.

Advanced options

For experienced users, the check box options are:

"Automatically restart with existing settings": This will start the logger with the settings that were already programmed into it. This is useful if you are about to start a number of loggers all at once. It was intended for commissioning sterilisers where 12 units are all restarted at once.

Note: The above option can not be used with the following options. The software is either attempting to start the loggers or stop them.

"Automatically stop logging": This will automatically stop the unit from logging. This is useful for where the PC is the end of a supply chain or process.

"Automatically download log": This will automatically download the log from the unit. **This is useful for most users**. Most users are more concerned with retrieving results and in many cases the logger can just be put back in place and will continue logging.

"Automatically add to multi-graph once downloaded" will display the results on the log tab as expected, but will also add them to the muti-graph screen.This allows results to be compared or to be joined together.

2.1.1 Tabs

Depending upon what you are currently doing, a number of tabs will be available:

Details

This is only displayed when:

a. results have been reloaded from file, or
b. the temperature logger is plugged into the reader.

The details tab is intended to show a summary of the logger and give access to the reprogramming or log tabs.

Settings

The settings tab is used to configure the temperature logger for future use.

Log

The log tab shows the graph and table of results that have been previously recorded. They have either just been downloaded from the logger, or retrieved from a saved file.

Actions

The actions tab allow the user to do additional actions with the results such as printing them, saving them or exporting them. It also has the settings for the defaults.

Setup Options

The setup options provide access to all the configuration options. It is only available when the "Options" button is pressed.

2.2 Registration

Unlock code

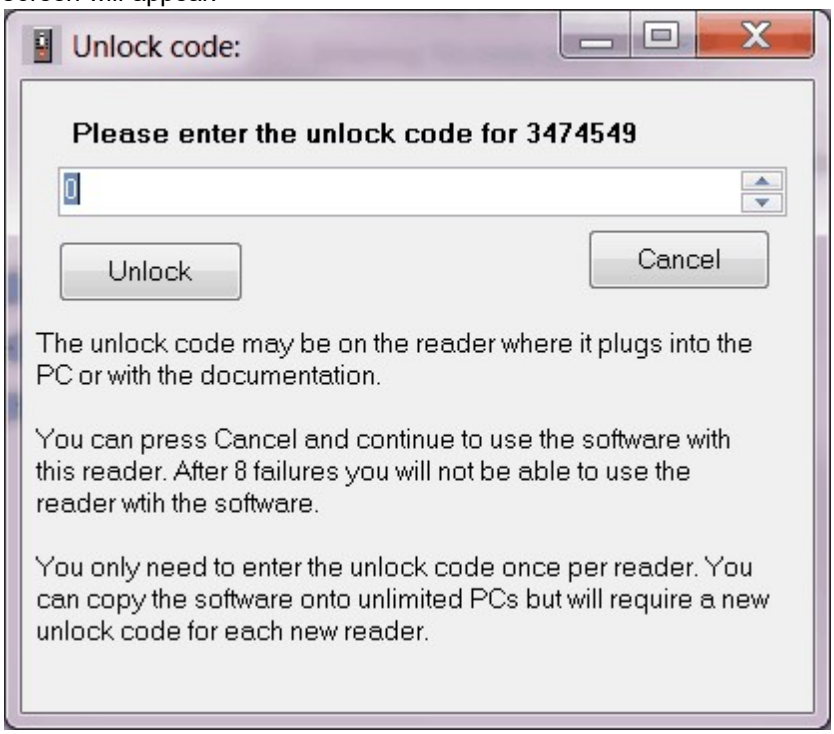
When running eTemperature for the first time (or using a new reader), it is necessary to register the reader.

Note: Some readers are pre-registered and the following screens may not appear.

The first option is to check the internet based list of readers. Before this occurs, the following message will appear:

Clicking "Yes" will check the internet. If the program then hangs (in about 1% of sites), restart it and select "No". No damage to your computer or software will have occurred.

If you select "No", or the reader hasn't been registered centrally, then the following screen will appear:

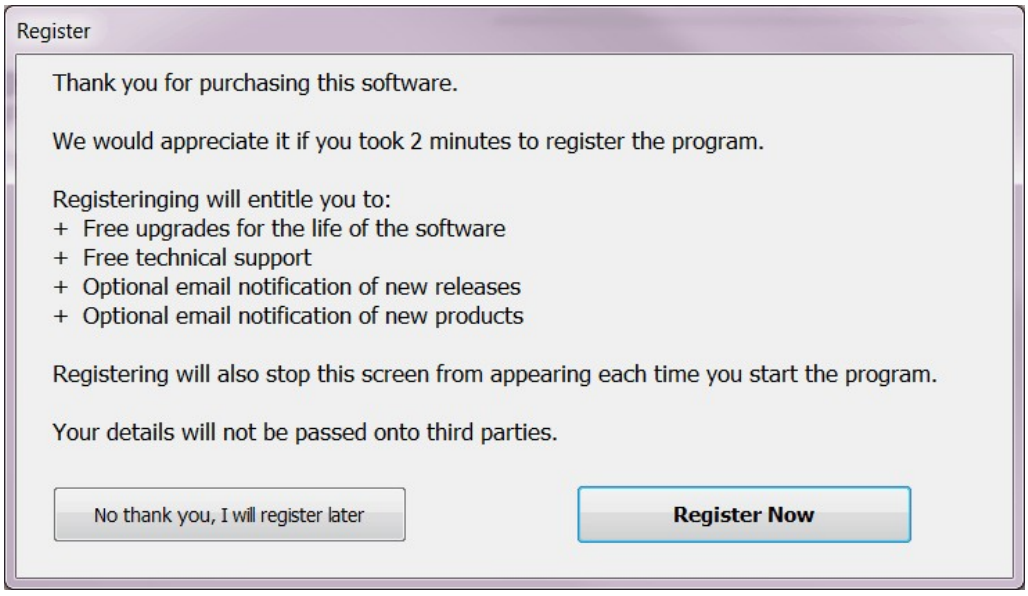


The unlock code is found on a sticker on the USB adapter (the part that plugs into the computer).

If you do not have the unlock code (e.g. you are trialling the software) then you can press "Cancel" and still be able to use the full version of software. After 8 cancellations, the software will stop access to the loggers but you will still have access to saved results.

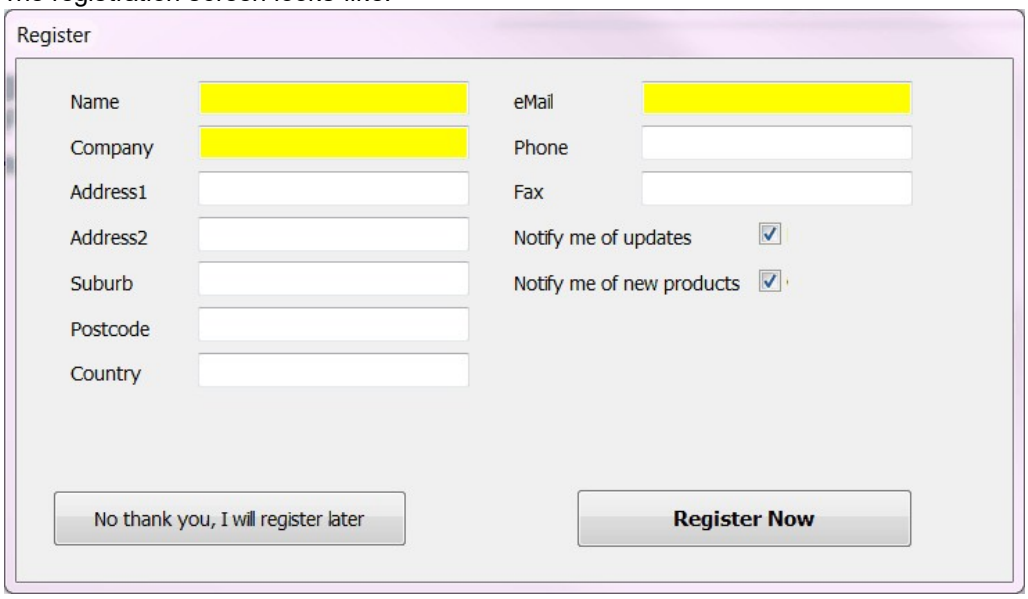
The unlock code is specific to the reader. If the reader is replaced then you may be asked to enter the unlock code for the new reader.

Registration



The registration option screen will appear within a couple of minutes when you first start eTemperature. This screen will stop appearing once you have registered.

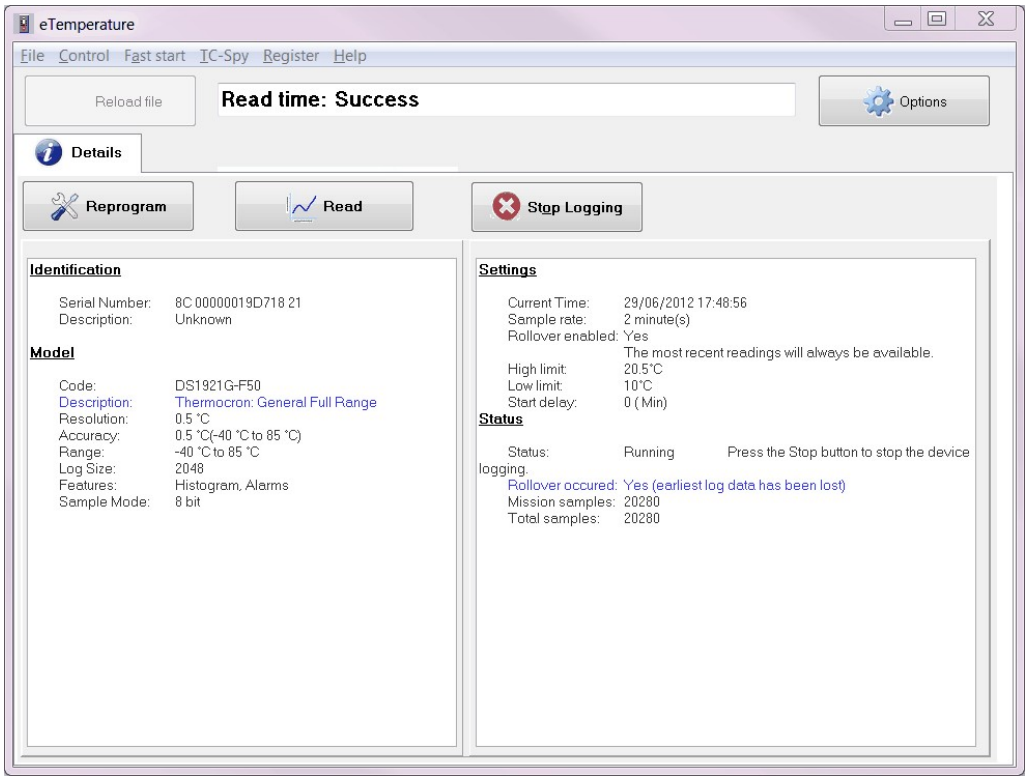
The registration screen looks like:



Your registration details are not supplied to any other company and are used to notify you when major updates are available. You will only be contacted by OnSolution directly if you consent.

2.3 Plugging in a temperature logger

When you plug a temperature logger in, the "Details" tab will appear:



The left hand column shows information relating to the temperature logger model and the features it has.

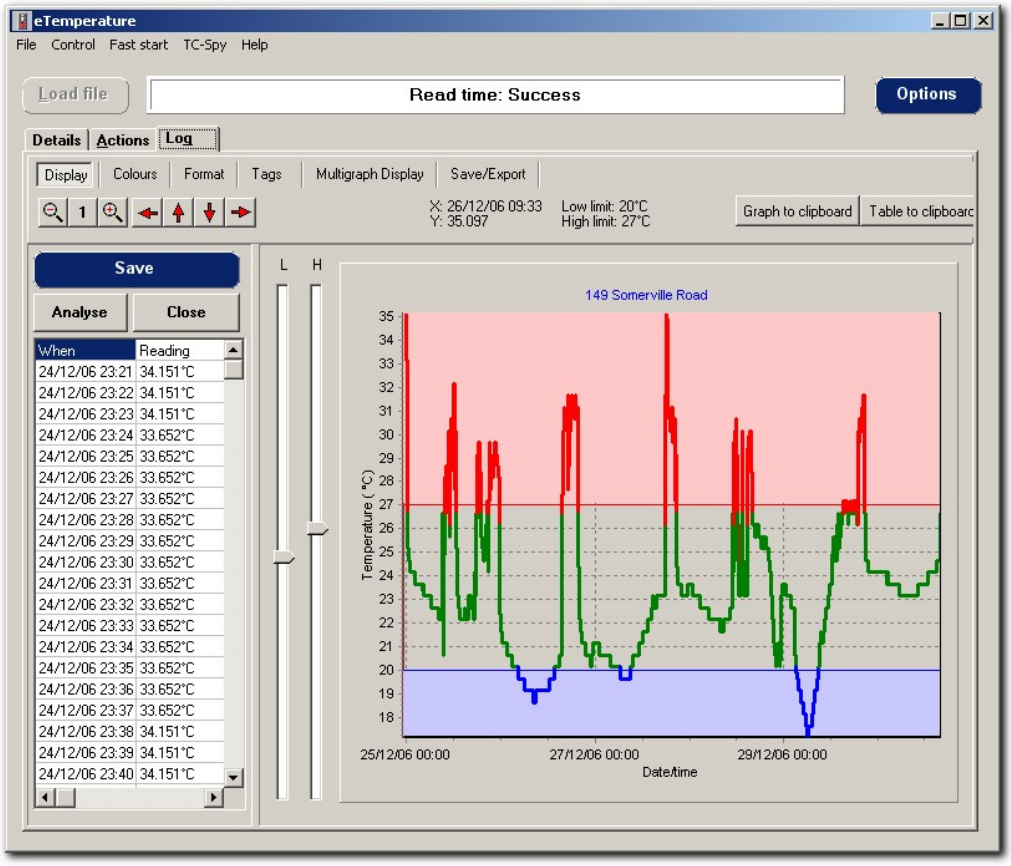
The right hand side has two sections:

1. Settings: These are the current configuration values that are in the temperature logger at the moment (or were in it when the results were saved).
2. Status: This will indicate if the logger is running or stopped, how many samples have been recorded and if the memory has been fully used yet (see Rollover for more information).

From the Details tab it is possible to:

1. **Reprogram**: This will allow you to change the settings in the logger (e.g. sample rate and description) and to start / restart it logging.
2. **Read** will retrieve the logged readings from memory and display it on the screen. From there it can also be saved to hard disk.
3. **Stop logging** will stop the unit from saving additional readings to memory. This will conserve battery life if the unit was sampling faster than once per minute.

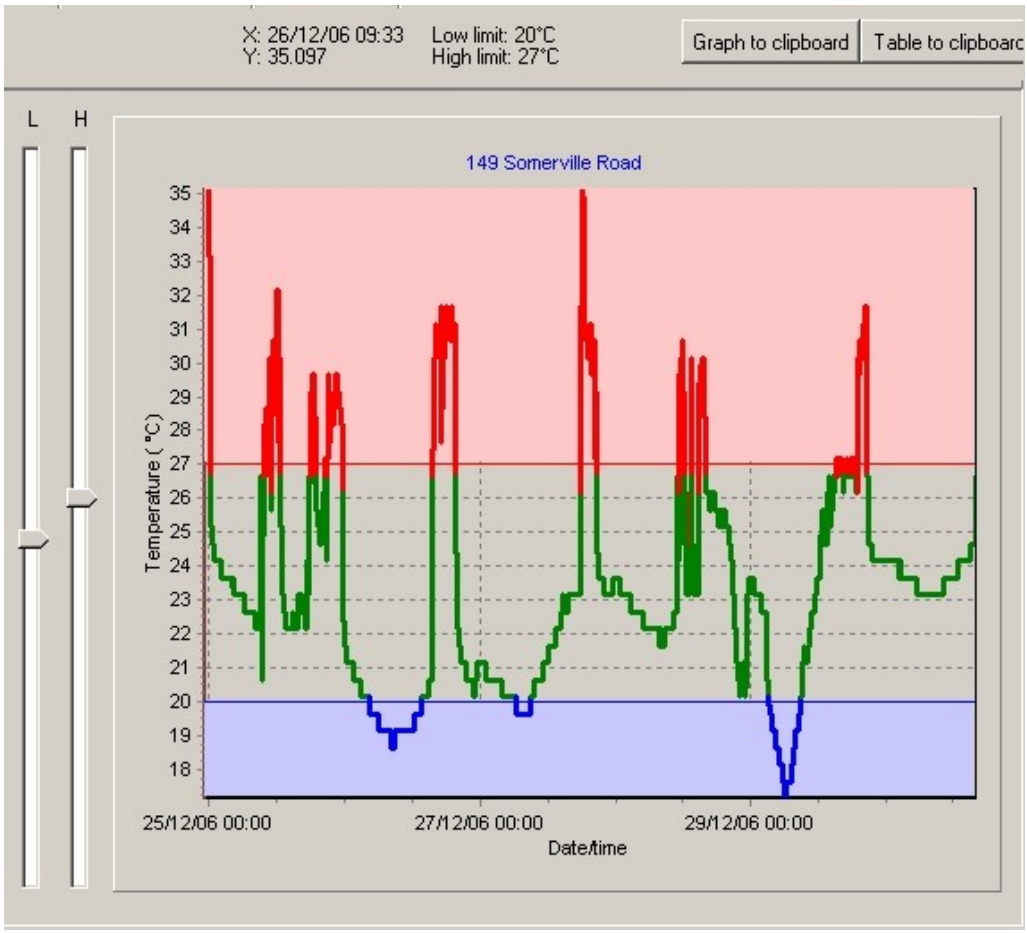
2.4 The Log



This tab is broken up into four sections:

- The graph of the results
- The table of results
- The analysis section
- And information and options on the smaller tab control

2.4.1 The Graph



The log displays a list of date and times and the reading. They will either be the first or last readings depending upon the allow rollover setting. The log is useful for watching the trends in the temperature as well as pinpointing specific information.

The graph displays the temperature versus time. By moving the cursor over the graph, the time and reading can be viewed on the display tab.

It is possible to zoom in on data by selecting the top left corner of the desired area and with the left mouse button held down dragging the mouse to the bottom right hand corner. To zoom out simply drag the mouse in any other direction.

The zoom buttons can also be used to manually zoom in and out.

The display can be scrolled left, right, up or down by holding the right mouse button and moving in the required direction. The scroll buttons at the bottom of the graph can also be used.

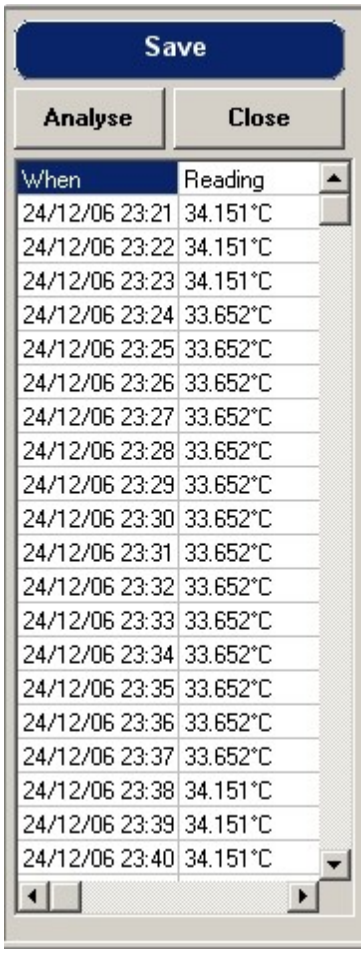
Save to clipboard will save the graph to the clipboard. The graph is stored in a standard graphical format which means it can be easily pasted into most

applications that support graphics including Microsoft Word and Microsoft Excel. To paste the graph, in the other application select Edit from the menu and Paste or try Ctrl-V.

The colour coding of the graph is set by the high and low alarm limits. These default to what were stored in the logger at the time of programming. Any readings above the high limit will be red, below the low limit blue, and normal readings green.

Note: Technically the line will be red or blue from the previous normal reading to the next normal reading. This means that the red or blue line will also appear in the normal range. This is because it is not possible to tell exactly when it went into alarm so eTemperature high lights the entire range.

2.4.2 The Table



The table is the list of readings with the date, time and temperature. This provides the specific readings that were made.

Clicking anywhere on the graph will automatically move the cursor to the nearest reading in the table. Note that the specific reading you are actually after may be within about 10 rows of where the cursor is.

The size of the table can be resized by clicking on the line between the table and graph and dragging it left or right.

Pressing the right mouse button on the table will display a popup menu. Using this menu it is possible to delete the entries before or after the selected point. Deleting the entries will only remove them from the displayed table. They are NOT deleted from the origianl file and if saved to the hard disk all values will be saved. When the report is displayed the deleted lines will not appear. This feature is handy for clearing the "garbage" readings at the start or end of the mission.

Note: It is not possible to delete readings in the middle of the list. Only readings at the start or end can be deleted.

The deleted readings are not removed from the graph. Use the zoom feature to zoom in on the required readings.

The analysis section

Above the table is the "analysis" button if reloaded from a file, or on the "Analysis" tab.

To analyse the result select:

1. "All" to analyse the entire set of readings

2. "Selected" to analyse the currently selected readings in the table

3. Drag and drop a range in the graph.

The values displayed are:

Start: The first reading's date and time.

End: The last reading's date and time

Min: The minimum reading between these times

Max: The maximum reading between these times

Average: The average reading between these times

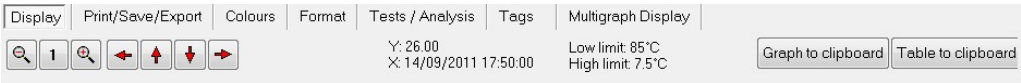
Count: The number of readings between these times

MKT: The Mean Kinetic Temperature for readings between these times.

Icedays: The equivalent number of ice days as used for many perishables. The formula implemented is Ice Days = (1 + 0.2t) ^ 2 * Duration. This formula does not work for frozen goods or for goods that are too warm.

2.4.3 Information and options

Display



The display tab provides access to the graph zoom and panning functionality using buttons. These features have already been covered in The Graph Note that "1" is the auto-zoom feature that will set the zoom to fit the entire graph in.

The X and Y show the current cursor location if it is in the graph area. Note that it is the cursor location, and not the reading at that x position.

"Graph to clipboard" and "Table to clipboard" will copy the graph or table to the Windows clipboard. This allows the user to then paste them into other applications.

Note that the graph is a graphical item and can be pasted into any software that supports graphics (e.g. Microsoft Word or Excel, Paint etc). The table is text and can be pasted into any application that supports text (e.g. Microsoft Word or Excel, Notepad, etc).

Print / Save / Export

The Print/Save/Export tab provides additional methods to save or export the results.

There are two basic reports available in eTemperature:

1. A single page report that contains the graph and the detail information (as shown on the first tab in eTemperature). This is printed if the "Print Summary" button is selected.

2. A multi-page, multi-column report that contains either all or a summary of the data. This is printed if the "Print Table" button is selected.

It is possible to print both reports at once with the "Print All" button.

Colours

The colours tab provides the ability to customise the colour of the graph when it is in the normal range, too high or too low.

It also allows the high and low shading to be set.

For most users this does not need to be modified. Some users will totally disable the high and low colours (i.e. set them to the same as the normal colour) and will disable the shading. This prints a plain graph with no interpretation of "good' or "bad" readings.

Format

This tab is a indication of changing software expectations. It used to be impressive to have a 2d or 3d option in graphs. eTemperature still supports the 3d view, but most users prefer the 2d view. The number next to the 3d check box is the size of the 3d depth.

Analysis

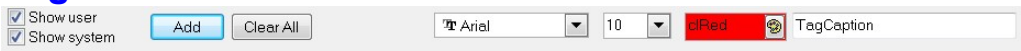
The analysis tab provides access to 3 alternative colouring methods for the graph.

The storage test reverses the high / low / normal colouring. If the logger is below 5°C or above 65° then it will be green. If it is between 5° and 65° then it will be red. This highlights that the food is in the danger zone.

The cooling test is designed to ensure that food is cooled from 65°C to 20°C within 2 hours, and from 20° to 5° within 4 hours. The analysis only works if the food reaches 65° (to start the timing). It will do multiple analysis if the logger is reheated again.

The time analysis is covered in the Time analysis section.

Tags



The Tags section allows the user to add comments onto the graph. This is ideal for explaining why readings may have occurred.

To add a tag to the graph:

- Ensure the font settings are correct
- Enter the new comment in text box showing "TagCaption"
- Press "Add"
- Click on the graph where the tag is to appear

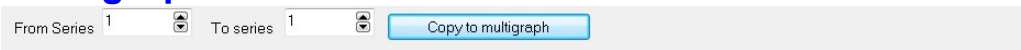
Note that you can zoom in to allow accurate placing of the tab. Zooming out again will still display the tag but the size will remain constant (i.e. it will not appear smaller)

The "Clear All" button will remove the tags from the graph.

The "Show User" check box will show or hide the tags added by the user.

The "Show System" is designed for loggers such as the "Logtag" and is not supported by Thermocrons.

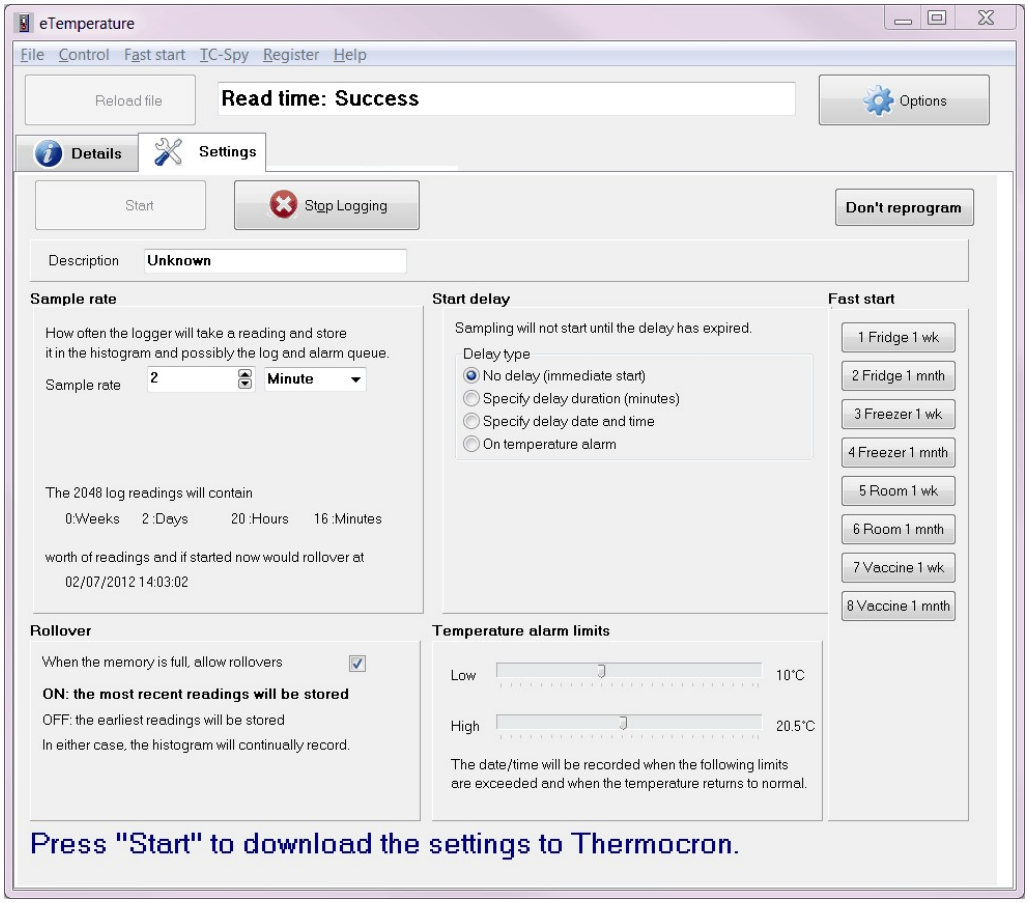
Multi-graph



See Muti-graph for more details.

2.5 Settings Tab

Pressing the "Reprogram" button on the Details Tab will display the Settings Tab.



This screen is used to configure the temperature logger for sampling.

The main sections that need configuring are as follows.

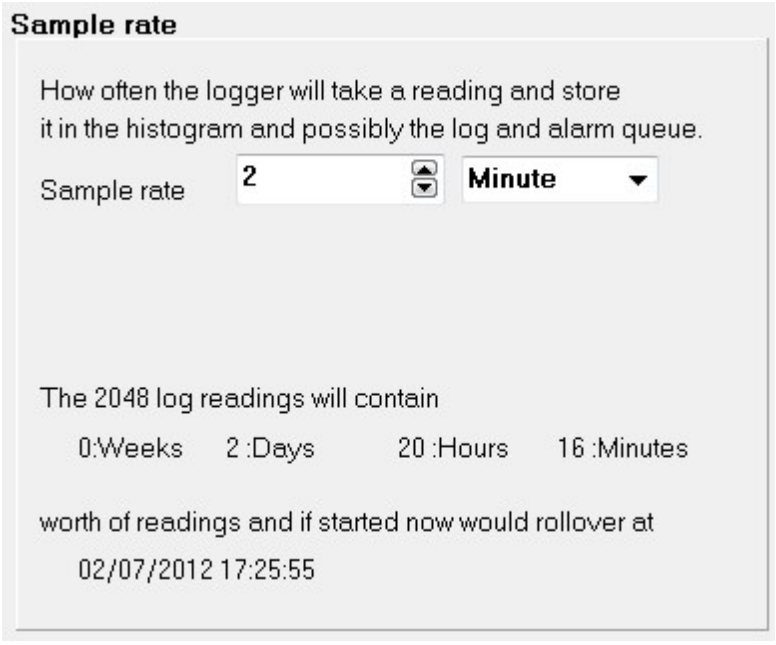
Description

The description is saved with the logger. It is displayed at the top of the log screen, on reports, and is part of the file name when saved to file.

The description can be any thing you like but we recommend that you include the name of fridge/freezer if possible, and also the name of your company.

The description normally should not include the date because the date will be included in the saved file's properties anyway.

Sample rate

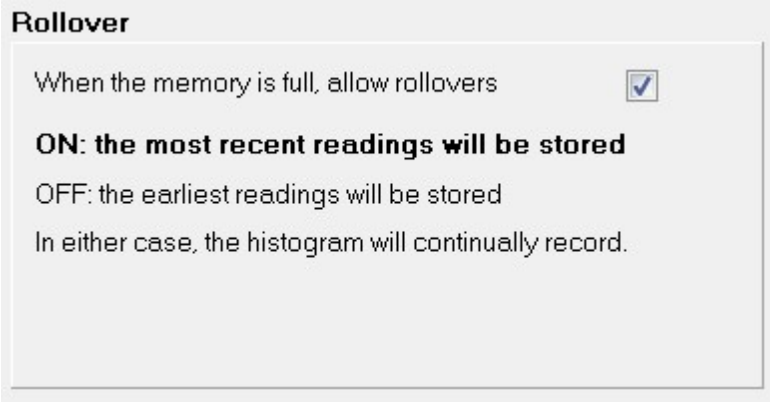


The sample rate determines how often the reading will be made.

As a general rule of thumb, a sample rate of between 5 minutes and 30 minutes is typical for most users.

For more information see the following section on Sample rate

Rollover

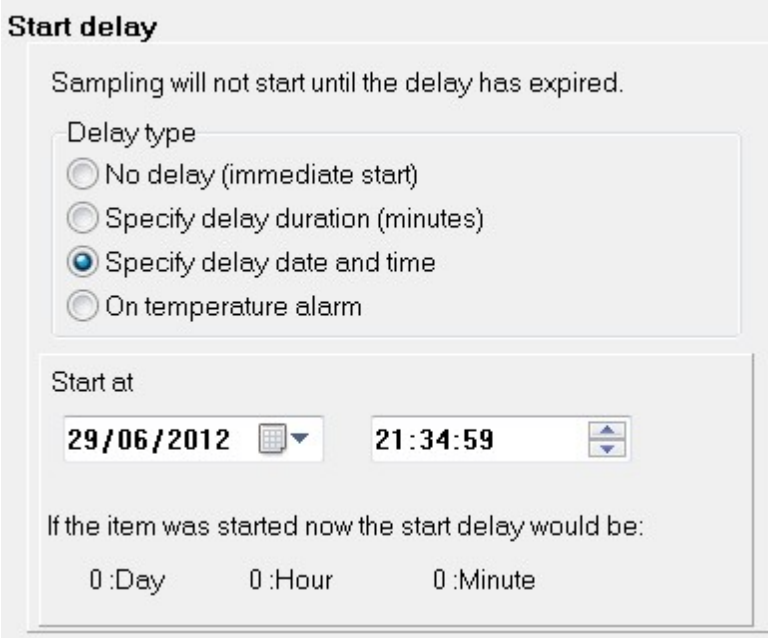


The allow rollover flag is used to determine what the logger will do once the memory is full.

By default it is turned on and should generally be left on. This ensures that the logger will always have the most recent readings in memory.

For more information see Rollover

Start Delay



The start delay is how long the temperature logger will wait until it starts recording the temperature. This feature makes it possible to pre-program the temperature logger without impacting on the results.

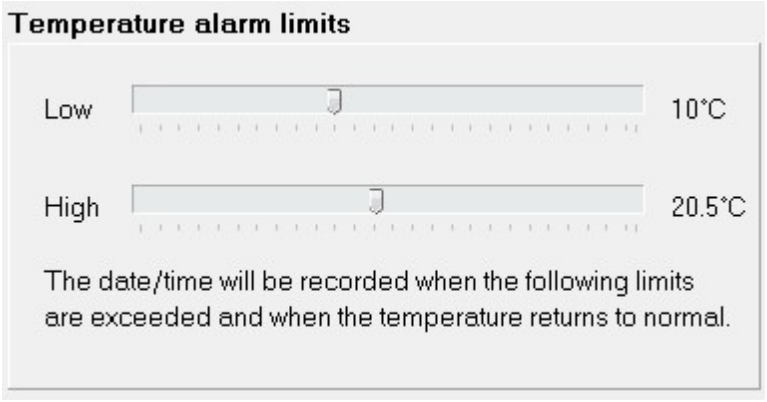
For example, the temperature logger could be setup in the office and then taken to site during the day. In this case a 12 hour delay would provide sufficient time for the temperature logger to be installed. After 12 hours they would then start sampling.

It is possible to set the sample rate either by a fixed offset (in minutes) or at a specific date and time.

On some units it is also possible to have logging start once the minimum or maximum alarm temperature is reached.

Most users will typically use "no delay", or may use the "specify delay date and time".

Alarm limits



The alarm limits have a minor role. When the results are retrieved and displayed in the log, they will be colour coded depending upon if they are too high (red), too low (blue) or in range (green).

The default values for high and low and the alarm limits. Note the emphasis on default because the user can manually change them later.

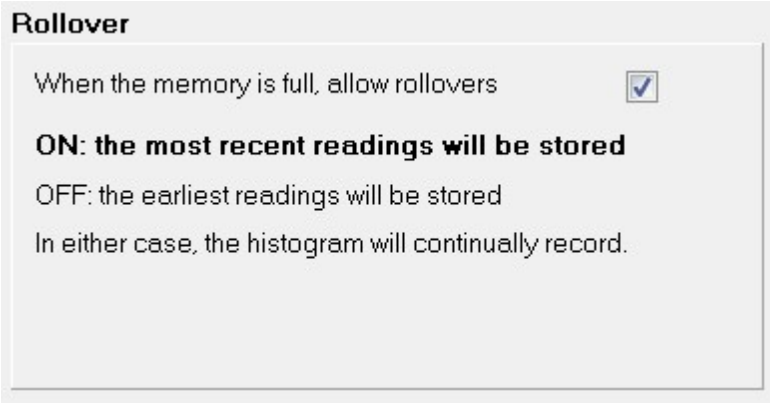
Start Button

The start button will download the current settings and then start the unit logging.

If the unit is already logging then the start button won't be enabled but the stop logging will be. In this case press the stop logging first and then the start logging.

Note: If you stop the unit logging you will still be able to retrieve the logged results in it. Once you restart it, the results will be cleared. You must download the results before pressing start.

2.5.1 Rollover



This section covers more details about rollover.

If the flag is turned on (rollover is allowed) then when the memory in the logger becomes full, it will automatically start over writing the earliest (oldest) readings. This is what most users will probably require. It ensures that the logger will always have the most recent readings in memory.

The main exception to this is where the unit is being sent to someone and it is that trip that needs to be recorded. In this case it is the earliest data that is the critical data. In this case the allow rollover flag should be turned off. Once the memory is full the unit will stop recording the results.

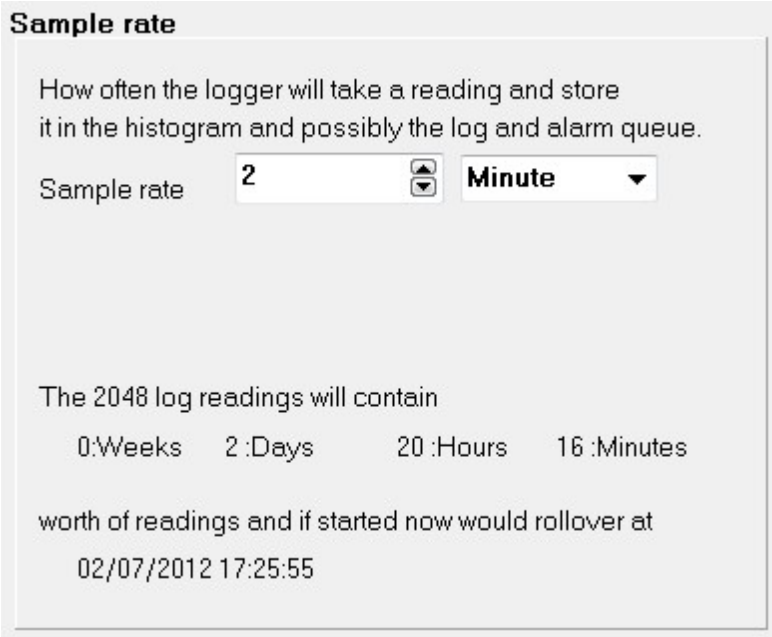
eTemperature will default the allow rollover flag to on.

Notes:
1. This is only how the logger handles the results. Once the results have been downloaded to a computer and saved they can never be lost.
2. It is only how the logger handles the result for the next run. The logger can be reprogrammed differently next time.
3. Once rollover occurs, results will be lost. If rollover is turned on then the oldest results are lost. If it is turned off, then the most recent results are being lost.

There are a number of ways of trying to avoid rollover happening and results being lost:
1. Download the results more often
2. Slow down the sample rate
3. If possible, use a start delay to minimise any wasted time while the logger is being sent some where (assuming it is not the trip you are trying to monitor)
4. Use a model with a larger memory

But most of all, remember that as long as you are retrieving the results more often than the logger cycles through memory then they aren't being lost. A continuous record is on the hard disk.

2.5.2 Sample rate



The sample rate times the number of readings will give the total time it will take before the memory is full.

To save users having to work this out, the duration is shown below the sample rate.

For 2,048 readings (for models TC and TCZ) a sample rate of a minute will give just over 1 day's worth of readings. Slowing it down to 5 minutes will allow a week's data to be stored. Slowing it down to a reading every 20 minutes will then give a month's data.

But if the larger memory models are used (TCS, TCX, TCU, HC) then these times are extended.

With the larger memory models there is also an option to go with 8-bit or 11-bit resolution. The higher resolution readings will mean less readings can be stored. Once again, eTemperature will automatically calculate this for you.

Practically most temperature related events are slow. That is, things will slowly heat up or slowly cool down. For example, items in a fridge that has been left open will take some time to heat up.

Because of this, sample rates faster than 5 minutes is typically not necessary.

At the other extreme, very slow sample rates are not good. For example, a sample rate of 4 hours means that it is possible to have a 3 hour event occur (e.g. the fridge being left open) and be totally missed because it happened between samples.

A sample rate of between 5 minutes and 30 minutes is typical for most users.

2.5.3 Fast Start

Quickly setting up parameters

To assist in setting up loggers quickly, a series of buttons are displayed on the right hand side of the screen:

Pressing any of these buttons will automatically set the sample rate, allow rollovers, and high and low alarm limits according to what was selected.

For example, the "Fridge 1 wk" (i.e. "Fridge 1 week") will set the sample rate to 5 minutes (or 3 for larger memory models) and the alarm limits to 0°C and 5°C. The allow rollover will be enabled.

Note: Pressing the fast start buttons only change the settings. It does not automatically start the logger. The "start" button must still be pressed.

Customising the Fast Start buttons.

These are only the default settings for when eTemperature is installed. It is possible to modify them to suit your own requirements.

To change the settings:
1. Set the parameters (sample rate, allow rollover, alarm limits) to what are required
2. Select "Fast start" in the menu
3. Select "Save defaults"
4. Select the required button
5. Enter the new text that is to appear on the button

These changes are permanently saved.

Distributing customised Fast Start buttons

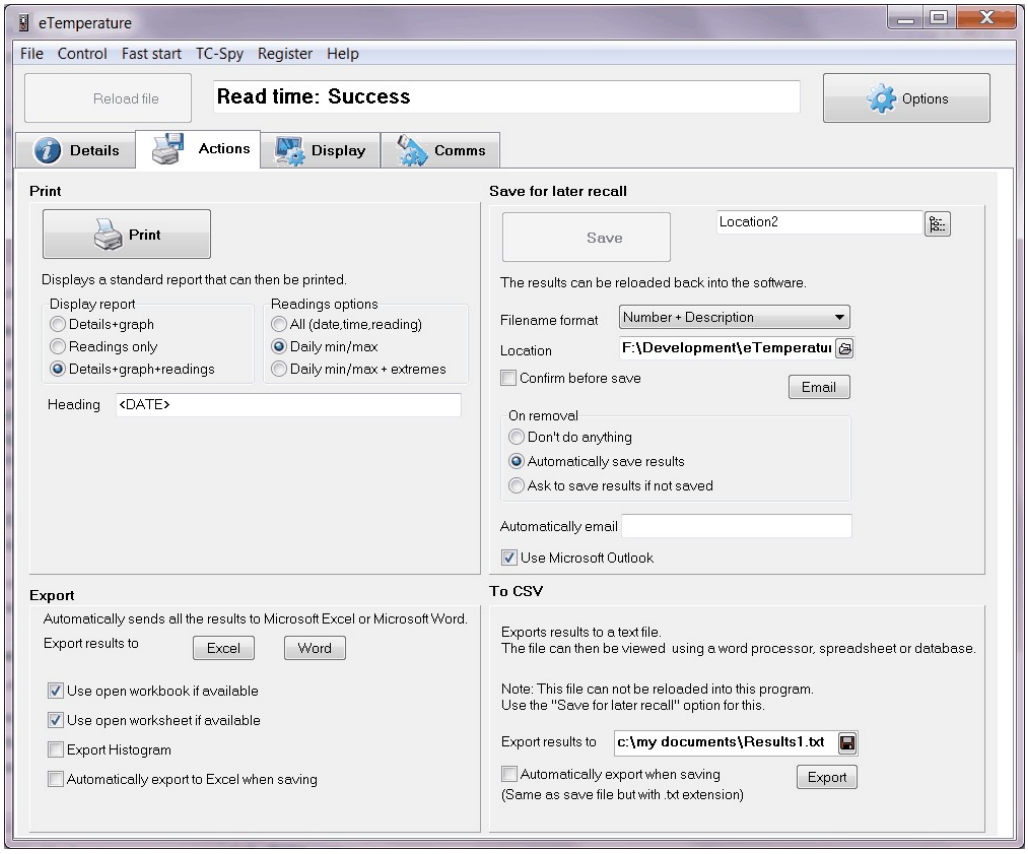
(For IT support staff only)
If the Fast Start buttons are to be made available on a number of PCs, they are contained within the .ini file. This file can be customised and distributed as part of the configuration process.

If you require a customised installation file contact sales@onsolution.com.au.

2.6 Actions Tab

The actions tab provides a number of ways to export or print the results.

It appears when:
- Results are downloaded from the logger
- Results are reloaded from file
- Clicking the "Options" tab



Print

This is where the print defaults are configured. The print button is available here but is also available from the log tab and the menu.

There are two types or parts to the reports:

1. Details and graph

This displays the two sets of information that are displayed on the details tab as well as the graph. It is a single page summary of the results.

2. Readings

This is a list of all the date, time and temperatures. By default it is in a 4 column report.

For many users the readings tab may provide too many pages of data. The "readings options" then provides a way to summarise this data:
- "All" is a complete list.
- "Daily min/max" will show just the date and minimum and maximum temperature each day. It was designed for pharmacies where they historically just recorded the

minimum and maximum temperature each day. Our recommendation is to not use this report format, but the "daily min/max with extremes"

- "Daily min/max with extremes" provides the convenience of the min/max report with the power of a temperature logger. For each day the minimum and maximum temperatures are shown, but additional information for where it matters. Any readings that are above the maximum or below the minimum are listed along with the time at which they occurred. This means that the viewer of the report can easily identify how significant the peaks are.

Once the report is previewed there is a Save button. Do not mistake this for saving the data. The data is not saved. Use the Save for Later Recall option above to save the results.

The save option does contain a number of other formats that are also beneficial including pdf, rtf, html and some graphical formats.

Save for later recall

If the Save button is pressed the settings and results will be stored to a file for later recall into eTemperature.

This is the recommended method for saving results. It allows the results to be reloaded, viewed, printed and exported at a later date.

The filename format provides the ability to change the order of the text, description and unique number. For example, by having the description first it is possible to order the open file list by filename to quickly locate a set of results.

The Confirm Before Save will display the "Save as" dialog box allowing the operator to change the name and location of the saved file.

The On removal options allow the program to automatically save the results or to ask the operator if they want to save the results. This ensures that results are not accidentally lost without being saved first.

Export

Clicking on the Excel button will export the settings, log, histogram and alarms to an Excel spreadsheet.

The options determine what should happen if Excel is already running. If it is not running it will be automatically started. If it is running it will use the currently opened workbook if the appropriate check box is selected and will use the current worksheet if the appropriate checkbox is selected. These options can potentially over write other data.

To CSV

If the File button is pressed the settings, log, histogram and alarms will be saved to a file as a comma separated value file. The results can be imported into a spreadsheet or word processor but can not be reloaded into eTemperature.

The file name and directory can be entered in the edit box or by clicking on the button with the disk symbol.

2.7 Setup Options

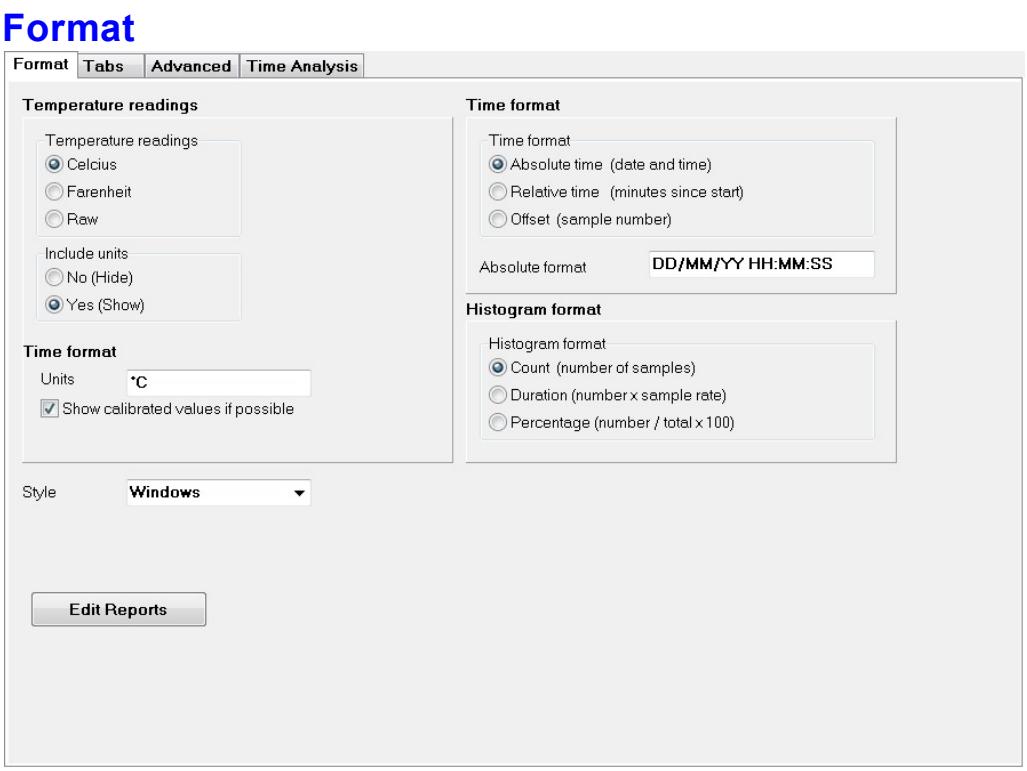
Pressing the Options button will display the tabs for:

- Settings
- Display
- Comms

Pressing the Options button again will hide the tabs.

Most users will not need to modify the options (except possibly the "Settings").

2.7.1 Display



Temperature readings

The temperature readings option will change how the settings tab and graph tab will display the temperature results.

"Raw" shows the value between 0 and 255 (or 65,535) that is retrieved from the temperature logger. This is provided for users who want to validate the original data and should not be used by most people.

Time format

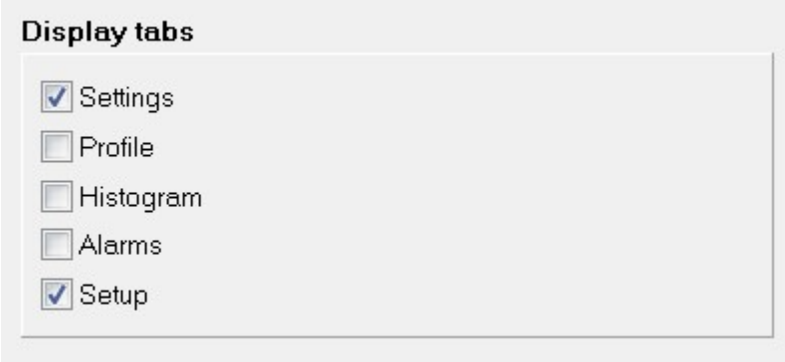
Most users will require absolute time where the date and time are shown. The "Absolute format" is then used to determine how it is displayed. This is the standard windows formatting syntax for showing the date and time. By default it is "DD/MM/YY HH:MM:SS" (i.e days, months, 2 digit year, hours, minutes seconds)

Histogram format
The histogram tab is hidden by default. It is available on the TC and TCZ models of the Thermocron but has caused more confusion than benefit. If displayed (see Tabs) then the axis can be count, duration or percentage.

Style
Style provides a range of skins/styles for the software. It's a gimic, but some do look good.

Edit reports
See Customising the reports

Tabs



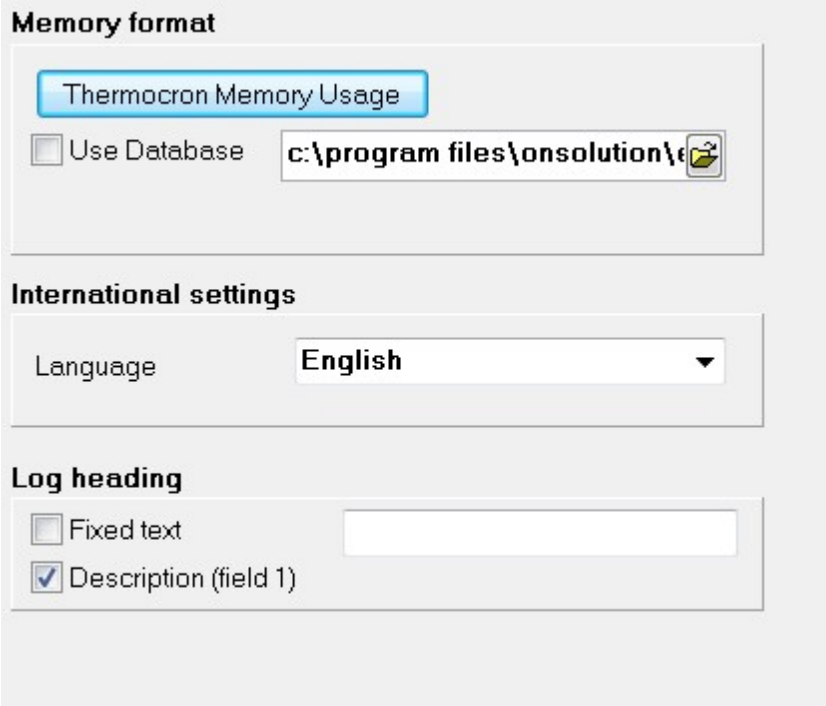
The "Tabs" tab determines which tabs will be displayed.

The histogram and alarms tabs will only be displayed when retrieving results from a TC or TCZ.

The profile tab is a feature that is no longer supported. It was for a specific research project which has now ended. The functionality still exists and should work. It displays a 24 column grid (one column per hour, one row per day) with a red, green, blue colour coding for if it was too hot, cold or always within range. Contact sales@onsolution.com.au if you require additional support.

The Settings option is provided to allow companies to have a version of eTemperature where it is read only (i.e. the thermocrons can not be reprogrammed).

Advanced



Thermocron memory usage
See Memory Usage

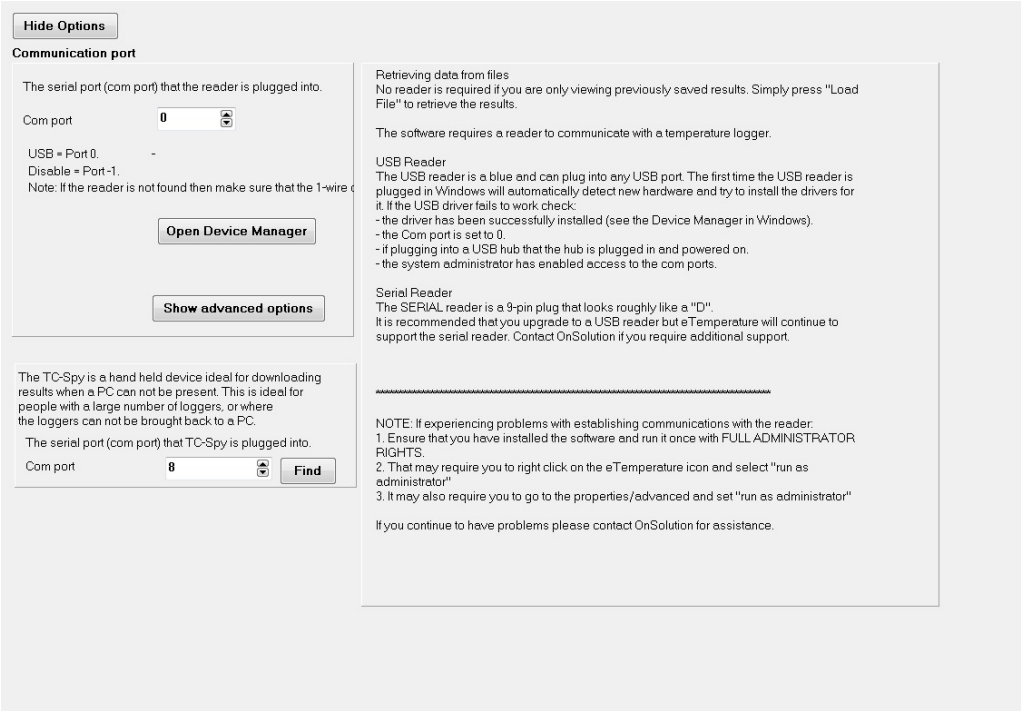
Use database
See Access Database

International settings
eTemperature has multiple language support but requires the text to be translated. If you are interested in translating eTemperature into your local language please contact sales@onsolution.com.au

Log heading
Log heading is the title that appears on the log report. It can either be fixed text (i.e. what ever the user enters in the text box), or it will be the description that was programmed into the logger at the start.

Time Analysis
See Time analysis

2.7.2 Comms



The communication port configuration process is now almost automated. If using a USB reader (which has been standard with eTemperature since 2006) then don't change the com port.

Setting the com port to -1 will hide the "Reader not found" message. If eTemperature is only being used to display previously saved results then consider setting it to -1.

The TC-Spy uses a serial port. See TC-Spy for more information.

Advanced options

3 Advanced options

The following topics cover the more advanced options within eTemperature. Most users will not need to understand how to configure or use these features.

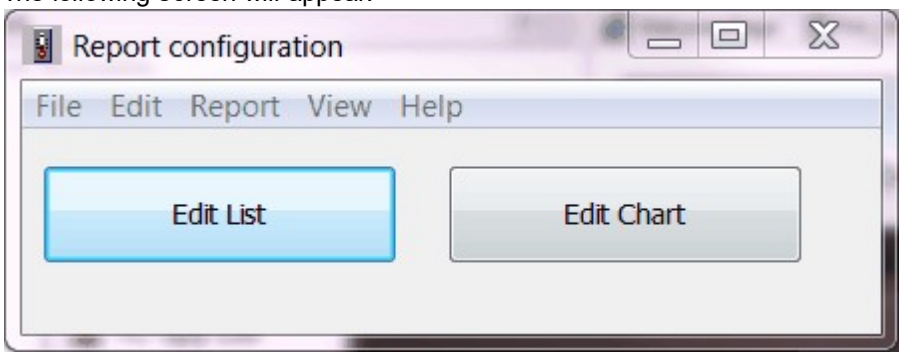
For additional support please contact sales@onsolution.com.au.

3.1 Customising the reports

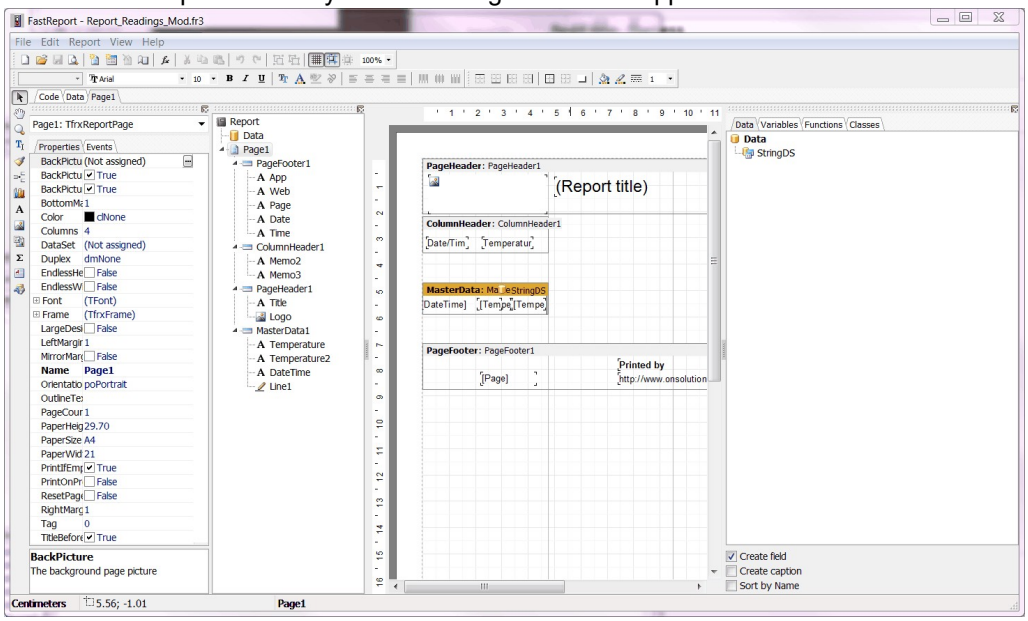
The two standard reports (summary and detail) can be customised to suite. It is strongly recommended that only minor changes be made to the layout. For significant changes please contact sales@onsolution.com.au for additional assistance.

To access the report configuration:
- Select "Options" to show the configuration tabs
- Select the "Display" tab
- Select the "Format" tab on the display tab
- Press the "Edit reports" button

The following screen will appear:



Select which report to modify. The following screen will appear:



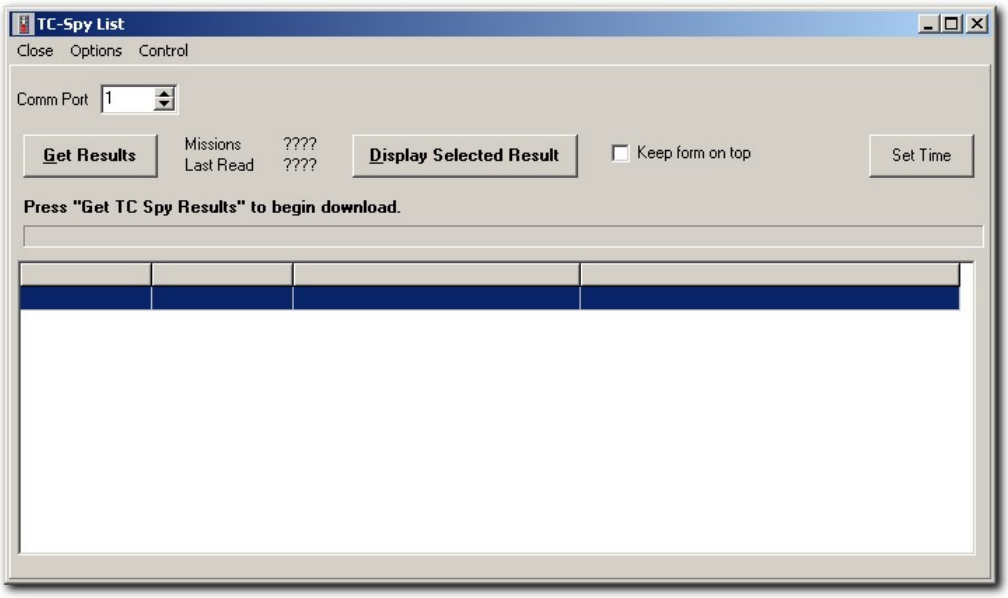
The report designer is similar to many other reporting applications. The full manual can be found at www.onsolution.com.au. (On the downloads page).

3.2 TC-Spy

The TC-Spy is a hand held device for starting a logger in the field, or retrieving the results. Up to 666 sets of retrieved results are stored in memory. Once downloaded to the PC, the TC-Spy can then be re-used to collect more sets of results.

Using the TC-Spy

Pressing the TC-Spy option in the eTemperature menu will display the TC-Spy form:



Downloading Results

Select "Get TC-Spy Results" to download all results from the TC-Spy.

The status bar will indicate how the download is going.

If no Missions are displayed immediately then ensure the TC-Spy is correctly connected and the correct comm port is selected.

Displaying Results

Once the results are downloaded they are automatically saved to the hard disk.

To display any downloaded results simply double click on the entry in the list.

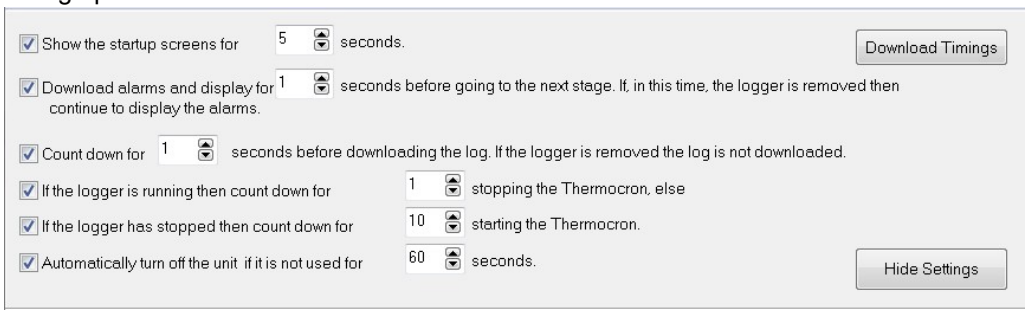
Options

It is strongly recommended that you do NOT adjust these settings.

"Don't clear after download": Will leave the results in the TC-Spy's memory so that they will be downloaded again next time.
"Download previously downloaded results": Will download all missions in the TC-Spy if they have not been cleared before.
"Keep form on top": Will keep the TC-Spy form as the top form above the eTemperature main form. This is useful for navigating between saved files.

Timing options

Selecting Options - Timing Options in the menu will expand the screen to show the timing options.



"**Show the startup screen**": How long the initial 2 screens will be displayed for when the unit is turned on. Default = 5.

"**Download alarms and display**": If 0, the alarms are not downloaded. If greater than 0, the alarms are downloaded and displayed. If the unit is disconnected then all alarms are displayed. If the unit is not disconnected then the alarms will be displayed for this amount of time before moving onto the next step. Default = 1.

"**Log countdown**": A message will appear displaying "Download log in x seconds". Use 0 to bypass the message. Default = 1. Turn off the tick box to disable the downloading of the log.
Note: If no memory card is present in the TC-Spy then it will not download the log.

"**Stop countdown**": If turned on, the TC-Spy will stop a unit that is running. It will display a message saying "Stop logging in x seconds". Use 0 to bypass the message. Default = 5.

"**Start countdown**": If turned on, the TC-Spy will start a unit that has stopped. It will display a message saying "Start logging in x seconds". Use 0 to bypass the message. Default = 5.

"**Automatically turnoff**": If on, the unit will automatically turn off if a new Thermocron is not connected within the timeout period.

3.3 Muti-graph

It is possible to display multiple sets of results on the one graph. A new form is displayed with the graphs on it.

Adding another graph to multi-graph

From the log tab

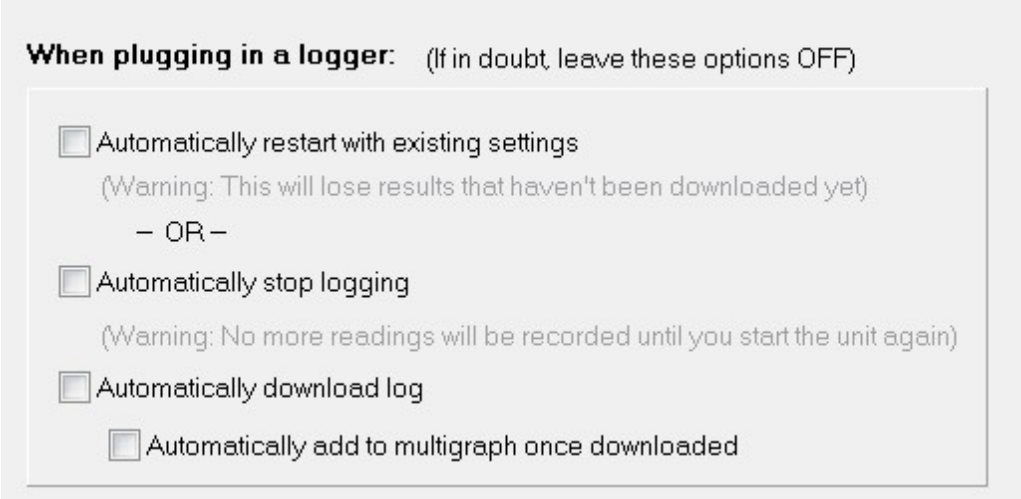
To copy a graph onto the multi-graph form press the "Copy to Multigraph" button.

The "From Series" determines which graph will be copied across when 2 or more graphs (eg temperature and humidity for the humidity loggers) are displayed. For most users it should always be left as 1.

The "To Series" will determine which series the data will be copied to on the destination graph. Up to 8 series can be used. Each series can be individually configured for colour and other attributes. The "To Series" will automatically increment each time it is used.

Automatically

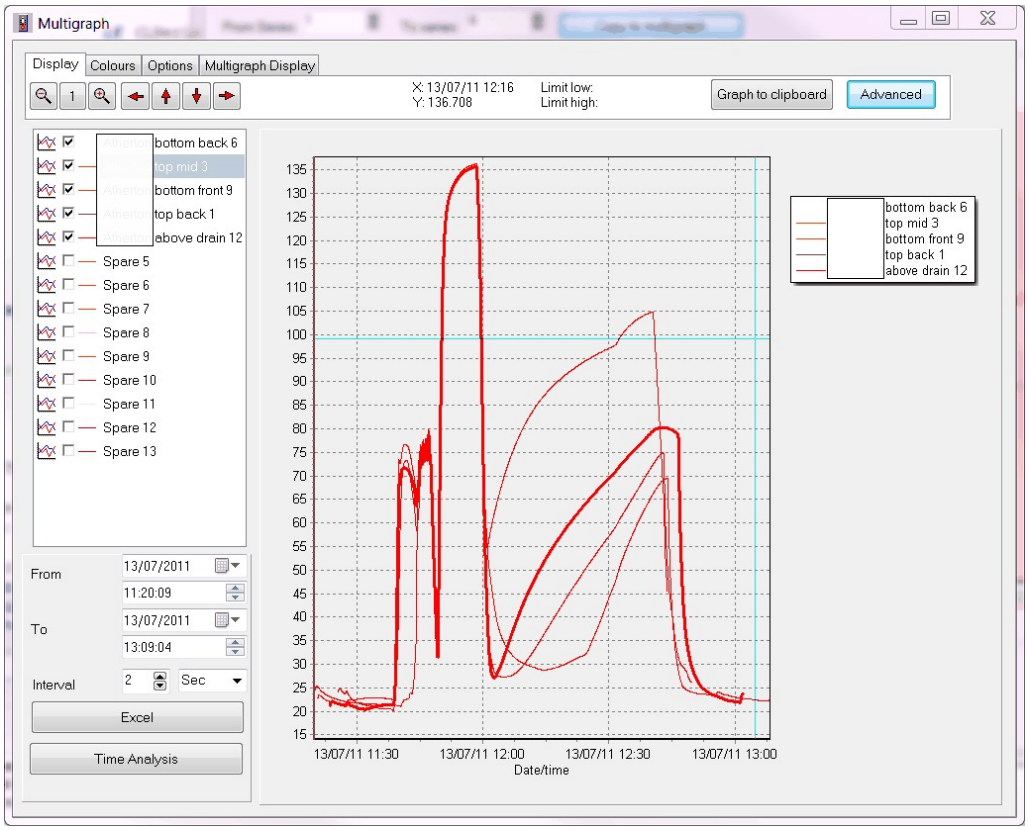
On the main screen, before a Thermocron is plugged in or results retrieved, the following options are displayed:



If both "Automatically download log" and "automatically add to multigraph" are turned on then the graph will be automatically added to the next available series on the multigraph.

This feature was designed for where a group of simultaneous results are being loaded and compared.

Using multi-graph



Parts of the multi-graph form are very similar to The Graph and won't be covered in this section of the manual.

The list of results is displayed in the top left column. Individual series of results can be shown or hidden by the check box.

The display is graph only because it is very difficult to align readings in a table. If the underlying data has different sampling rates or different starting times then they can not be aligned perfectly into a table. As a compromise, the Excel export does not do a straight export of raw data. Instead, it will use the from date/time to work out the first row and then the interval to determine the following readings. In the example above it starts at 13/07/2011 11:20:09 and will make a row for each 2 seconds after that (11:20:11, 11:20:13 etc). It will then check each series to see when the next readings are and if they are within this period. If so, it will then export one of these values (typically the maximum) to Excel. If there are no readings in the next interval then the Excel square will be left blank.

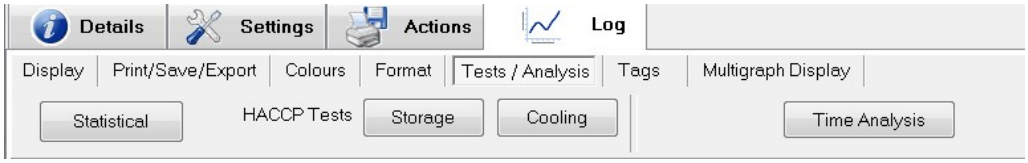
The final result of the Excel export for most people will be exactly what they need. The above point is made to clarify why the Excel export may not be as expected.

To remove a series from the results, click on the multigraph tab and there will be an option to clear the series.

3.4 Time analysis

Using the time analysis

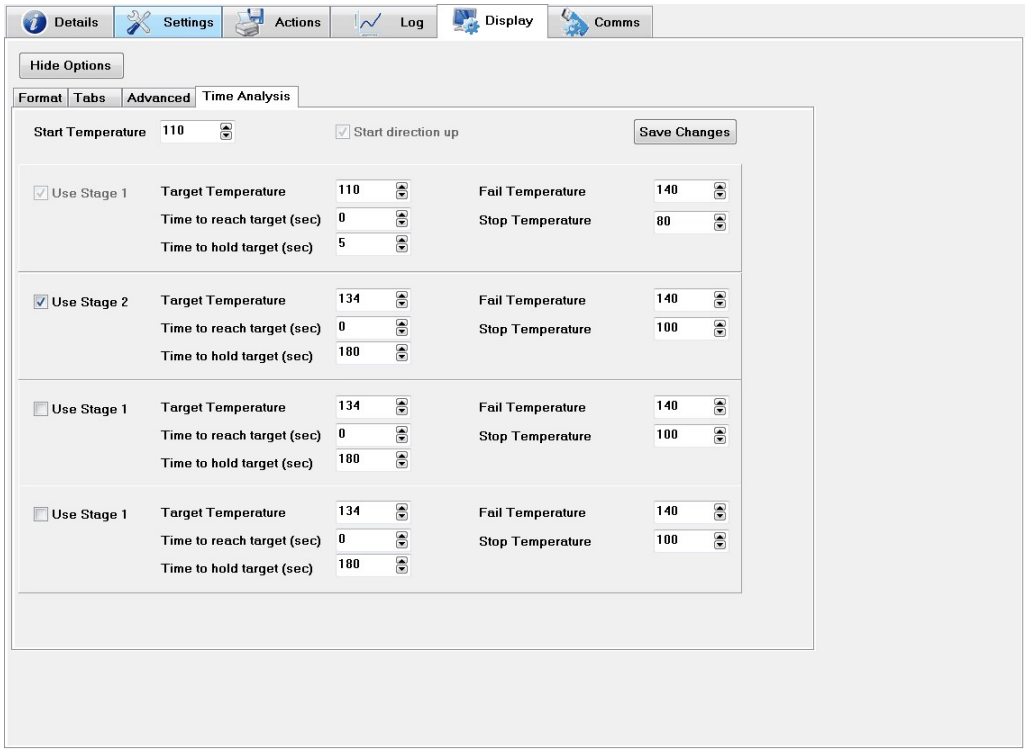
The time analysis button is shown on the log tab, "Tests / Analysis" tab.



Doing a time analysis will display a series of passes (or fails) for each stage that it checks.

It was primarily designed for the certification of sterilisers where they must reach a certain temperature within a given time frame, hold it, and then cool down.

Configuring time analysis



Start temperature: This is the temperature at which the analysis will begin. If the temperature is greater than 25° then it will start when the temperature is above that temperature. If it is less than 20° then it will wait for the temperature to drop below that temperature.

For each stage of the analysis, the following fields must be entered:
Target temperature: This is the temperature at which the stage will pass. Depending upon the previous stage's temperature will determine if it is trying to drop to that temperature or rise to that temperature.

Fail temperature: This is an overshoot temperature. If the temperature goes beyond the target temperature to the fail temperature then the stage will fail.

Time to reach target (sec): This is the time in seconds that the logger has to reach the target temperature. A value of 0 means that it is not checked. If the temperature is not reached within this time then the stage will fail.

Time to hold target (sec): Is the amount of time for which the logger must be between the target temperature and fail temperature. The count is reset each time it drops out of the range.

Stop temperature: If the logger returns back to the stop temperature then the analysis will fail and stop.

For more information or advice on configuring contact sales@onsolution.com.au.

3.5 Memory structure

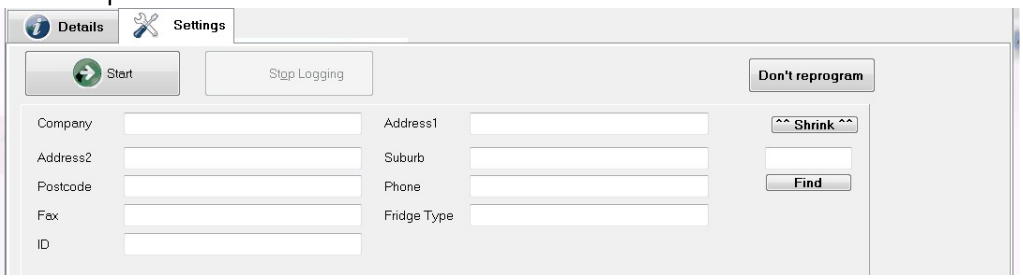
Introduction

The memory structure allows the available memory in the loggers to be used to store useful information.

By default it is used to store up to 32 characters as a "Description".

It is possible to have multiple fields and with varying sizes. For example, it is possible to have fields for description, address, vehicle, contact name, contact phone etc. This information can be typed in before starting the loggers. It is stored in the loggers and retrieved from the loggers with the results.

For example:

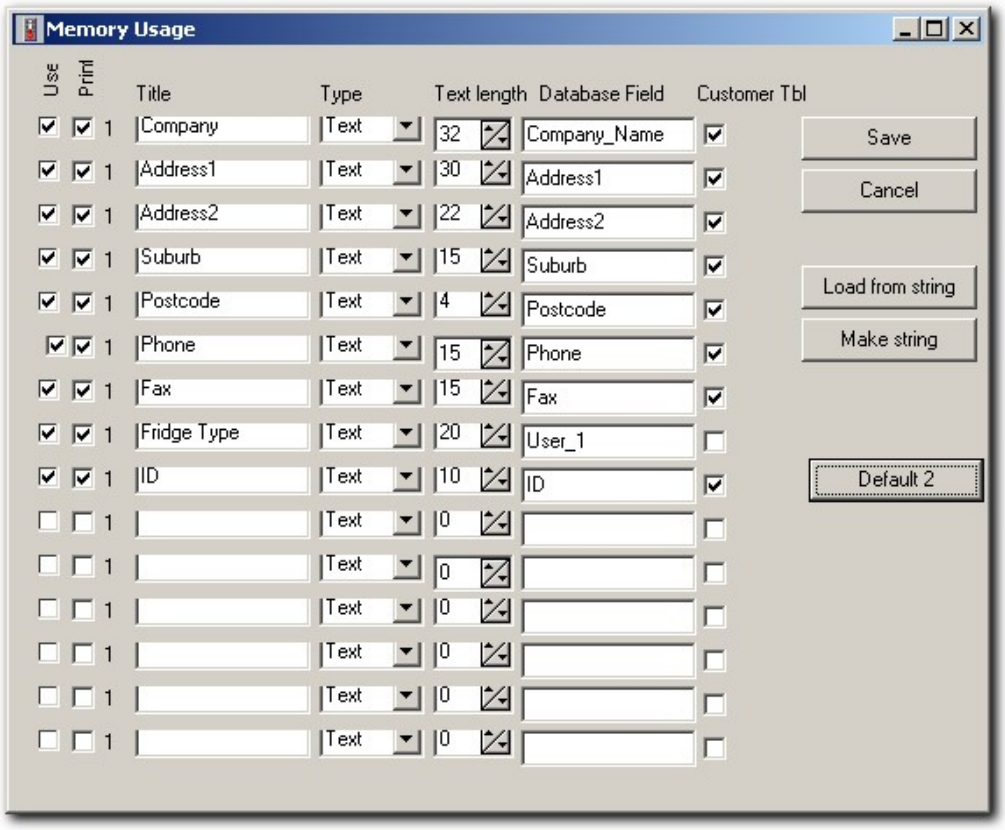


Configuration

To configure the memory structure:

- Click on the "Options" button
- Select the "Display" tab
- Select the "Advanced" tab on the display tab
- Press the "Thermocron Memory Usage" button

The following screen will appear:



The above settings are loaded when the "Default 2" button is pressed. The "Default 2" settings are designed for use with the Access database. See Access Database

The initial default is to have only "Description" in the first row.

It is possible to use what ever titles are meaningful to the user. The total size can not exceed 200 characters.

If a different PC is used to retrieve the information then it needs to know about the memory structure. The "Make string" will create a piece of text that can be copied into an email or document.

On the other PC, the "Load from string" will then ask for a string to be entered. Copy and paste the text in and it will automatically set the titles etc.

3.6 Access Database

eTemperature can interface to an Access database to store the data. Contact sales@onsolution.com.au for a copy of the database.

To configure the Thermocron to store the information correctly see Memory structure.

3.7 Online polling

Introduction

By default, eTemperature will process a single Thermocron at a time. The thermocrons spend most of their time disconnected from the reader.

It is possible to have one or more Thermocrons permanently connected to the PC. eTemperature will periodically check to see what is connected to the PC, and will also periodically download and save the results. This makes eTemperature a very low cost automated monitoring solution.

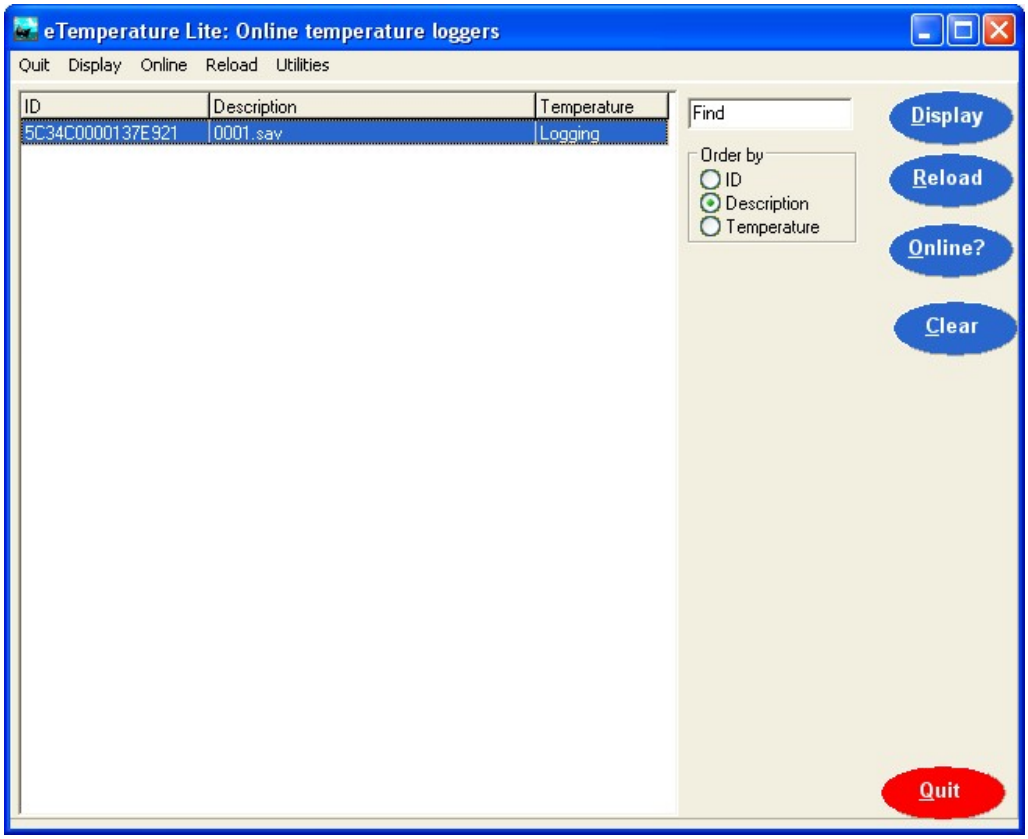
A single cable is all that is required to connect multiple Thermocrons to the PC. The cable is daisy chained (i.e run from one Thermocron to the next). Many other temperature sensors require a dedicated cable for each sensor. By providing a daisy chain capability, loggers can be quickly and inexpensively installed.

For information on cabling and maximum distances contact sales@onsolution.com.au.

Using the Online form

The Online Polling form will appear if the mode is set to online.

The list displays all units currently connected.



Displaying a unit

To display a unit either:
Select it in the list and press the Display button
Double click on it in the list.

Note that displaying a unit will not automatically download the log but will download the settings page.

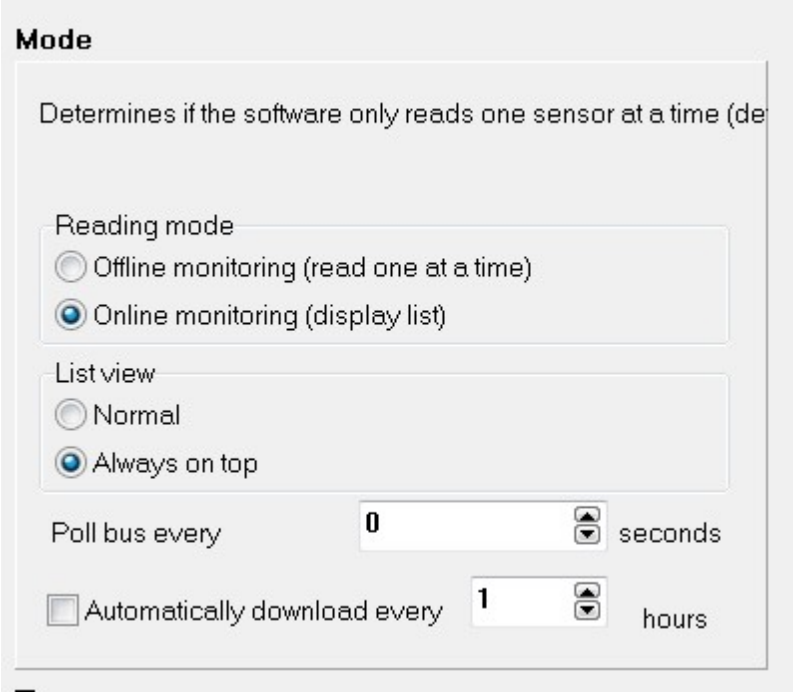
Reloading saved results
The reload button will display the Open dialog box. Select the required file and press open. This is the same as pressing the reload button on the main form.

Updating the list
The list of devices can be update by either:
Pressing the Online? button, or
Automatically by turning on the automatic update feature on the Setup tab (see Online Polling for further information).

Clear
The clear button is used to remove all devices from the list. For some device types, the list will remember all units that have been connected and will not automatically clear each time it is refreshed.

Configuration
To access the configuration of the online mode:
- Select "Options" to display the options tabs
- Select the "Comms" tab
- Press the "Advanced options" button
- Select "Online mode"

The following options will appear:



List view
For the online system, this option determines if the list of devices will always be the top window. This option is normally off.

Poll Bus Every
If the list is displayed, it is possible to automatically refresh the list periodically. Setting the refresh rate to 0 will disable the feature. If enabled, the PC will automatically check

for any new and existing Thermocrons on the bus. If off, use the OnLine button to update the list.

Automatically download

If on the the bus is being automatically polled then the PC will automatically download the Thermocron's results and save them to file at the specified rate. The location and name of the file is determined by the Actions tab.

The fine print

4 The fine print

This section covers the specification and licensing for eTemperature.

4.1 Specifications

Software

Operating system Windows 7 or later.
Earlier versions may still be compatible but are no longer officially supported.
32-bit and 64-bit are both supported.

Minimum PC requirements

Processor	Pentium
Video	800x600 but higher resolutions are strongly recommended.
HDD Drive	30M spare
Accessories	CD-ROM on Internet access for installation. Mouse
Supported readers	Thermocron USB. Thermocron serial is compatible but is no longer officially supported.

Mac Support

A Mac version of eTemperature is not currently available, but users have been able to run eTemperature through the virtual PC application for the Mac.

4.2 Licensing

eTemperature is licenses on a reader basis, not a PC or user basis.

This means that you can install eTemperature freely onto multiple PCs. You can distribute eTemperature to other people who may want access to your saved results.

When you plug in a reader it will be checked to see if it has been licensed. The "unlock code" is on a sticker on the reader. See Registration for more information.

Updates are freely available from the OnSolution website for the life of the software.