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# Welcome to the Darca Heritage V2 Manual

This help guide contains information to enable you to get the most out of the Eltek Gen II Telemetry System and Darca Heritage V2.

**Site Administrator Users:**

- If you are a Site Administrator and are running the program for the first time, you might like to read through the pages in the **Getting Started** section to give you a background to using the system.

- Find out how to prepare the system for use in the **Setting up a site** section.

- Once the system has been set up, discover how to use the powerful analysis tools in the **Working with your data** section.

**Department Administrator and Secondary Users:**

- If you are a Department Administrator or Secondary User, skip straight to the section **Opening a Site** to open an existing site and learn about the analysis tools.

# Help Contents:

## Part 1 - Setup

## Part 2 - Analysis

## Part 3 - Advanced

# System Layout

A **Site** is divided into **Buildings**, **Zones** and **Groups**. Each **Zone** typically represents the floor of a **Building** and contains **Groups** of measured data points about a particular location.

In the following example, the 'Ground Floor' is a **Zone** containing four **Groups** ('Gallery 1', 'Exhibition', 'Hall' and 'Store').
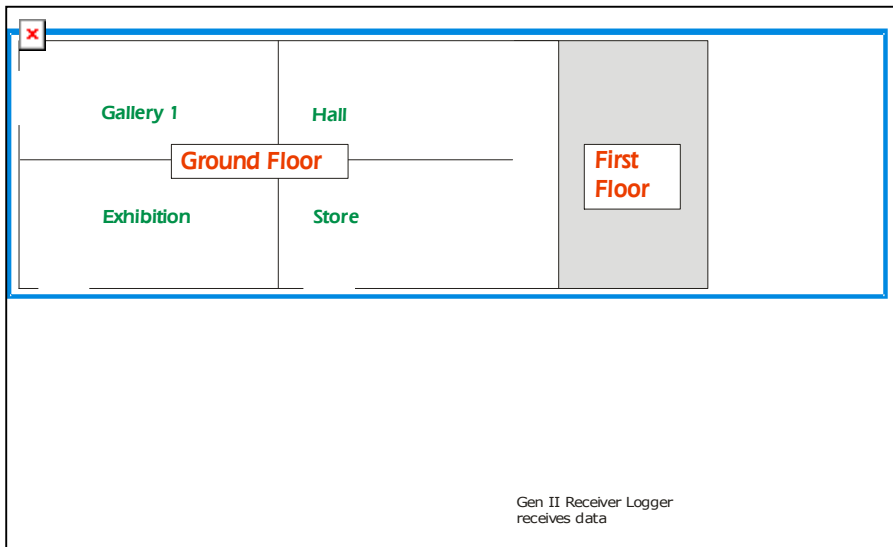


In addition, the site can be divided into **Departments**, each of which has a particular set of transmitters associated with it. The transmitters associated with a department may not necessarily be physically grouped together in the site.

# Network Access

Darca Heritage V2 can be used in a local area network (LAN) environment as follows:
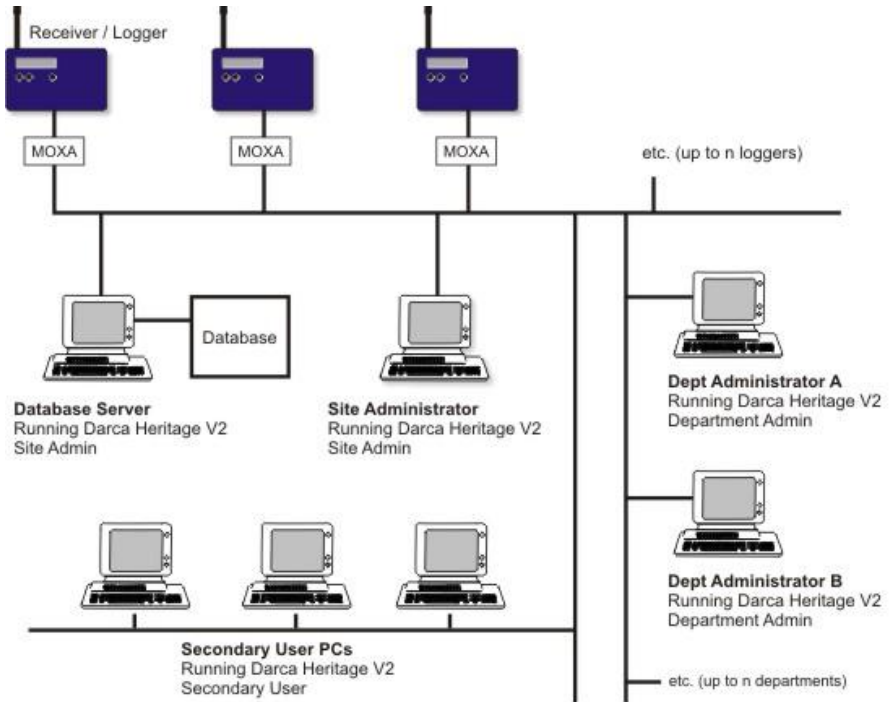


Site information and downloaded data is stored in a database which is accessible to other users on the network.

- The **Site Administrator** has full access to Darca Heritage V2's site editing and logger configuration features.

- The **Department Administrators** can edit the position of their transmitters in the site, view charted data and view a snapshot of current data values.

- The **Secondary Users** can view charted data and a snapshot of current data values but can't edit the site layout.

## Notes on the Firebird Database

Darca Heritage V2 uses the Firebird Database to store the site data. Firebird is an open source relational client/server database. To download the latest version, visit http://www.firebirdsql.org. Note: When prompted during installation, choose 'Superserver' rather than 'Classic' mode.

- In a single computer system, the Firebird Database server should be installed on the same computer as Darca Heritage V2.
- In a network system, the Firebird Database server should be installed on a server computer that is accessible to all the other computers running Darca Heritage V2.
    - The database file should not be shared across the network.
    - The database file must be stored on a physical drive on the database server machine.
    - Firebird connects through port 3050 by default.

# Creating A New Site (Site Administrators only)

If you are running Darca Heritage V2 for the first time, the **Welcome screen** will appear. From here, choose **Create a new site** and click **Go**.

If a site is already open, you can create a new site by choosing **File > New Site**.

The **New Site** window will appear.

# The New Site / Open Site / Edit Site Window

If you are creating a new site or opening an existing site, various information must be entered about the access methods and location of the site's database before you can work with the site. To edit this information at any time, click **Settings** > **Site Settings** and **Database Options**.

- The **Site Name** is a unique identifier which will used to refer to the site you're creating.

**Site Folders:**

- The **Local Files Folder** will be used to store your personal settings.
- The **Zone Graphic bitmaps Folder** is the location of your site floor plan bitmaps.

**Database Login:**

- If you are a **Site Administrator**, the default username and password for a new installation of Firebird is 'SYSDBA' and 'masterkey'. It is advisable to change this password to prevent unauthorised users making changes to your database. User accounts may be added to the database or edited with the **Edit User Accounts** button.
- If you are a **Department Administrator** or **Secondary User**, contact your Site Administrator for your username and password.

**Database File Location:**

**Site Administrator Users:**

- If the database file is stored locally on your PC (as in a single user system), select **Database stored on this computer**. Click **Choose** to point to the location of the database file.
- If the database is stored on a server select **Database stored on a server**.

The **Server** is the name of the database server computer on the network.

The **Protocol** should be TCP_IP.

The **File** is the location of the database file (.FDB extension) *relative to the server it's stored on*. For example, if the file is on the server's C drive, in a folder called 'Darca Sites', and called 'mysite.fdb', you should enter

C:\Darca Sites\mysite.fdb

**Department Administrator and Secondary Users:**

- Your **Site Administrator** will supply you with the information you need to enter in the **Server**, **Protocol** and **File** boxes.

---

**Backing up site data – IMPORTANT (Site Administrator only)**

It is vital that the database is regularly backed up to guard against accidental data loss. Click the tab **Database Backup / Restore** in the **New Site/Open Site Window** to access the backup options. To edit this information at any time, click **Settings > Site Settings** and **Database Options**.

The backup file produced by the Firebird database has an .fbk extension. This is a portable, compressed version of the database which can be used to move all site layout information and data to another computer or locally re-create a database that has failed. To use this backup file, copy it into the location in which you wish to use it and perform a **Restore** operation on it.

**Backup Settings:**

- Click **Backup Now** to backup the database at any time.
- Specify the folder in which you would like the backup files to be stored in the **Backup Folder:** box.
- Select when to backup and how the file should be named with the tick boxes below the backup folder. It is highly recommended that **Backup Database on Data Update** is ticked.
- Tick **Backup Incoming DAT Files on Update** to retain the data files which are downloaded from the logger(s) during an update. These files will be useful if the database file becomes lost or corrupted and needs to be re-created from an earlier backup.

**To restore a backup file:**

- Select the database backup file you wish to restore in the **Restore from Backup file** box. Firebird database backup files have an .fbk extension.

- The database can be restored over the currently open database or to a new file. Select the option you require with the **Overwrite / Restore To** radio buttons and then click **Restore...**

- The **Restore** operation can be performed from the main File window of the program if you are moving the database to a computer which has not previously had a site open on it. Click **File > Restore Database...** to restore the database, and then open it by clicking **File > Open Site...** and following the instructions in this section: **The New Site / Open Site / Edit Site Window**

## Connecting to Loggers

To go to the **Setup Loggers** window, click the **Setup Loggers** button in the **Site Settings** window. If you are setting up a new site, you must connect to each of the loggers you wish to associate with the site.

Select:

- **Direct** if your data logger is connected via serial port, USB port or ethernet, or

- **Via Modem** if it's connected via GSM or standard modem.

1. **Direct:**

- The **Baud Rate** should be **38400** if the logger is connected directly through an LC68 serial cable or USB adapter, or **19200** if the connection is made via an ethernet adapter.

- The **Serial Port** should be set to the appropriate communications port.

2. **Via Modem:**

- Select the modem you wish to use in the **Modem** drop down box.

- In the **Phone No** box, enter the phone number of the modem attached to the data logger.

Click **Contact Logger** to connect to the data logger.

## Update Options tab

- If you do not wish to include this logger in the automated collecting of data, untick the box **Include this logger in data update.**

- If you are running Darca Heritage Version 1 alongside Darca Heritage V2, you may wish to keep your Darca Heritage Version 1 site data up to date. Tick **Merge incoming data from this logger..** to add data collected by Darca Heritage V2 into your Darca Heritage .dat file when data is automatically updated.

# Setting up transmitters

Each transmitter channel (a physical sensor on a transmitter) must be mapped to a logger channel so that its data can be logged. Transmitter channels must also be configured with the correct range and transmit interval for your application.

- Connect the logger to the PC.

- Click **Setup Transmitters** in the **Site Settings** window to open the **Transmitter Setup Options Menu**.

- Select the logger you wish to configure and click **Next**.

- The **Squirrel Channel to Transmitter Channel Assignments** window will appear.

- If there is a spare serial port available on your PC, connect a transmitter to it with the **LC-TX3** cable and select the port in the **Serial Port** drop-down list. If only one serial port is available, disconnect the logger and connect a transmitter in its place.

- Click the **Transmitter Setup** button.

- Logger channel numbers run in a column down the left hand side of the table. Select the logger channel you wish to assign to and click **OK / (Connect)**.

- Configure the transmitter appropriately. Use **Next Transmitter** to repeat this process for all transmitters that require configuration.

- Once you're satisfied with the Squirrel to Transmitter channel assignments and the transmitter configuration, reconnect the logger and click **Update logger and close** to store your new settings.

- Click **Done**.

# Configuring the logger

- Connect the logger to the PC.

- Click **Setup Loggers** in the **Site Settings** window. Choose the appropriate logger and click **Contact Logger**. Once a connection to the logger has been established, the **Squirrel Status** and the **Configure Squirrel** windows will appear.

- In the **Squirrel Status** window, the time and date will be highlighted in red if they differ from the PC clock.

- To configure the time and date, logging interval, memory usage, logger name or SMS alarm settings, click **Logger Settings**.

- To set alarm levels on the logger channels, open the **Channel Setup** window. Right click on a channel and choose **Edit Channel** to configure it.

- Once you are satisfied with the logger settings, click the **Start** button to start the logger logging.

- Click **Done** to disconnect from the logger and return to the **Site Settings** screen.

## Specifying Parameters To Measure

- Click the **Parameters** button in the **Site Settings Window**.

- The **Parameters Window** will appear. If no parameters have been set up for this site, the **Site Parameters Wizard** will appear. If parameters already exist, the window will open in **Complete View**.

### The Site Parameters Wizard

To get started quickly, the **Site Parameters Wizard** removes most of the controls from the **Parameters Window** and provides some simple defaults. Simply tick the parameters you will be measuring in your site and click **OK**.

### The Parameters Window in Complete View

To customise parameters or add parameters that aren't in the list of defaults you must use the window in **Complete View.**

### Adding a new parameter

1. In the **Name** box, type a name for your parameter or select an existing parameter from the drop down list.
2. Select the **Type** of parameter. Parameters may be physically measured from sensors (**Physical**) or calculated mathematically from other parameters (**Calculated**).
3. Enter **Range** limits for the parameter in the **From** and **To** boxes, and type in the parameter **Units**.
4. In **Safe Limits** set **Threshold** and **Alarm** limits if required.
5. If the parameter is to be charted, tick **Display Parameter**. Enter a **Chart Number** and **Axis**.
6. Choose a **Parameter Colour**.

7.  Thresholds and Alarms for this parameter can be plotted on charts in either a single **Line** style or as a **Colour Block** which fills the area between the high and low limits with colour.
8.  Enter a **Formula** if the parameter is **Calculated**.

## Assigning a Chart Number to a Parameter

By default, the **Chart Window** puts each group in the zone into a separate tab, e.g..:



This works well for groups with a small number of channels in. For more complex groups, however, it may be necessary to split the group across several charts to leave each chart uncluttered.

Using the example above, if a **DPT** channel was added to the **music room** group, it could be charted on a separate chart by assigning the **DPT parameter** a **Chart Number** of **2**.

*   To assign a parameter a chart number, open the **Parameters** window and in the **Display Parameter** settings type a number in the **Chart Number** box.

The **Chart Window** will then look like this:
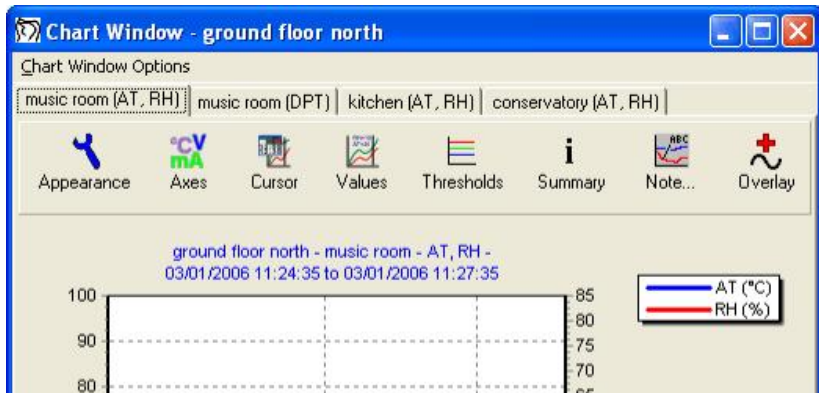


Note that the new chart appears **second** in the charts for its group because the chart number for its parameter is **2**.

## Entering formulae for calculated parameters

Open the **Parameters** window and select a parameter to edit.

- Parameters with a **standard formula** calculate each data point by applying a mathematical formula to the data points from one or more other parameters.

- Parameters with a **cumulative formula** calculate their data by summing data points from another parameter over a period of time. They are especially useful when monitoring total light exposure.

### Standard Formulae

- Type a mathematical formula in the box by using parameter names and mathematical operators, e.g.

    (Pp/(AT+273.15))*(18.0/8.31)

- If required, any of the following built-in functions may be used:

| | |
|---|---|
| abs(x) | Return absolute value |

| | |
|---|---|
| acos(x) | Calculate arccosine |
| asin(x) | Calculate arcsine |
| atan(x) | Calculate arctangent |
| atan2(x, y) | Calculate arctangent with two parameters to preserve quadrant angle |
| bessj(n, v) | Bessel function of the first kind. n is order and v is input value. |
| bessy(n, v) | Bessell function of the second kind. N is order and v is input value. |
| Ceil(x) | Find integer ceiling |
| Cos(x) | Calculate cosine |
| Cosh(x) | Calculate hyperbolic cosine |
| exp(x) | Calculate exponential function: ex |
| floor(x) | Calculate hypotenuse of right triangle |
| hypot(a,b) | Calculate hypotenuse of right triangle |
| log(x) | Calculate natural logarithm |
| log10(x) | Calculate base-10 logarithm |
| max(x) | Return larger of two values |
| min(x) | Return smaller of two values |
| rand(x) | Get pseudorandom number between 0 and 1 |
| sin(x) | Calculate sine |
| sinh(x) | Calculate hyperbolic sine |
| sqrt(x) | Find square root |
| srand(x) | Initialize pseudorandom series |
| tan(x) | Calculate tangent |
| tanh(x) | Calculate hyperbolic tangent |

## Cumulative Formulae

1. Select a **Parameter** upon which the cumulative parameter is to be based.
2. Enter a **Starting Point** from which the data points will be summed.
3. Enter a **Divisor** if required. Data points will be divided by this value before being added to the summed total.
4. Enter a number of **Max. No Datas** if required.
   **Why is the Maximum No Datas value important?**
   When a data point is **no data** (no data was sent by the transmitter to the data logger), Darca Heritage V2 can 'fill in' the data point by calculating the average of the 5 previous data points and the 5 subsequent data points. This value is then added to the cumulative total.
   When a value of **Max. No Datas** is set, this averaging procedure will not happen after the specified number of **no datas** in a row. To bypass this averaging procedure and add nothing to the total when a data point is **no data**, set **Max. No Datas** to 0.

## Entering Site Layout information

The **Site Layout** window is divided into two parts.

### Adding or removing buildings, zones and groups (top part of window)

- To **Add** a building, zone or group, click the appropriate menu and choose **Add...**

- To **Delete** a zone or group, click the appropriate menu and choose **Delete**.

- To create a new building, zone or group based upon an existing one, use the **Copy** and **Paste** options in the appropriate menu.

- To set up a zone graphic for the currently selected zone, click the **Zones** menu and choose **Zone Graphic Setup...**

### Adding physical channels to a group (green panel in bottom part of window)

The green panel in the bottom part of the window contains a drop down list of all the transmitters in the site.

- Select the **Transmitter** you wish to add or remove from the group

- Click the **Add All** button to add this transmitter. Darca Heritage V2 will intelligently place channels from the transmitter into parameters which have matching units.

- To add individual channels to the group, select a channel and click the **>>** button.

**Adding or removing calculated channels from a group (white panel in bottom part of window)**

Use the tick boxes in the list to add or remove calculated channels from the group.

**Channel specific alarms**

If a channel requires its own alarm levels, open the **Unique Channel Alarms** window by clicking **Edit Alarms...**

# Creating departments with Department Setup (Site Administrator only)

Click **Departments** > **Show Department Setup** in the **Site Layout Window** to view the Department Setup at the bottom of the window.

- A list of all the transmitters in the site is shown on the left.
- Create departments with the **Add Department...** button.
- Select the transmitters you wish to associate with a department by clicking and dragging in the list of transmitters. Hold down Ctrl and click to select additional transmitters from the list.
- Click **Add Selected** to add the selected transmitters to the currently selected department.

# Creating a zone graphic in the Zone Graphic Setup window

A **zone graphic** is a floor plan image of a zone in your site. **zone graphic bitmaps** are typically created by scanning architectural floor plans, scaling them to fit on the screen and saving them as bitmap (.bmp) image files in an image editing program.

- In the **Site Layout Window** choose the Zone you want to work with and click **Zone Graphic Setup...**
- Click **Import BMP...** to open the **zone graphic bitmap** you wish to work with.
- For cluttered floor plans, turn on the arrow tool with **Use Arrow**, allowing you to pinpoint exactly where the group is.

- Position groups in their physical location on the floor plan by selecting the desired **Group** and clicking **Place**.

- Click the location of the group on the floor plan to position the arrow or top left corner of the group box.

- Add extra text to the floor plan with the **Comment** box if required.

- Click **OK** to accept your changes.

## Using alarms to monitor safe data limits

In some applications it is useful to know when the measured data points go outside certain limits. There are two types of limits in Darca Heritage V2: **Threshold** and **Alarm** limits.

- Channels outside **Threshold** limits will appear yellow in the **Meter** and **Zone Graphic** windows.

- Channels outside **Alarm** limits will appear red.

- You can configure how the limits are displayed on Charts in the **Parameters** window.

- The **Statistics** tab of the **Chart Summary** window shows how long each channel has spent outside its safe limits.

### Setting threshold and alarm limits

- You can set limits by **Parameter** or by **Channel**.

- Use the **Parameters Window** to set limits for a **Parameter**. These limits will apply to all channels of that parameter type.

- Use the **Site Layout Window** to set limits on individual channels. (Select a channel and click **Edit Alarms...**)

- If you wish to trigger a hardware alarm (e.g. a buzzer) from the logger, **Alarms** on **Physical** channels can be set by contacting the logger and clicking **Channel Setup** (see **Configuring the Squirrel**).

### Notes on using alarms in a multi-user system

- Parameter alarms are stored alongside each department. Therefore, one department's RH alarm levels may be different from another department's.

- Individual channel alarms are stored alongside the channel, and therefore are site-wide (because a transmitter will not usually be shared by different departments who require its individual alarm levels to be set to different values).

## Configuring the way charts look

- Click the **Chart Setup** button in the **Site Settings** window to open the **Chart Setup Window**.
- Almost every aspect of the chart appearance can be customised using the tabs in the top left of the window. Changes made will be reflected in the example chart on the right.
- Configure the quick-jump time controls in the chart windows with the **Time Axis Selector** settings.
- Once the desired appearance is achieved, you may wish to save it as a template for any other sites you create. Use the **Load / Save Chart Template** buttons to do this.
- Click **OK** to accept the settings for the current site.

## Managing data downloads (Site administrator only)

**Updating the site with data from the logger**

Darca Heritage V2 is designed to automatically retrieve data from the logger and store it in the database on a regular basis.

- Open the **General Options** window by clicking **General Options** in the **Site Settings** window.
- Go to the **Update** tab.
- Choose how often you want data to be updated in the **Automatic Update** panel.
- Tick **Synchronise Update With Logging** if you want to the data to be updated each time a set of readings is logged. The update will occur 5 minutes after each set of readings is logged by the logger. IMPORTANT: If you use this feature, you must turn on the logger's **Start Delay** feature. This can be found in the logger's **STAT** function and can only be set using the buttons on the logger.

- Tick **Synchronise Squirrel Clock With PC** to keep the logger's internal clock synchronised to the computer.

- Automatic updates will commence once you click **OK** and after the specified time period. Note: The program must be in **View Data** mode (the main window displays 'View Data' when in this mode) for automatic updates to happen. Automatic updates will not happen when you are in **Site Settings** mode.

To manually update data, use the **Update Data** button in the **View Data** window.

## Opening A Site

If you are running Darca Heritage V2 for the first time, the **Welcome screen** will appear. From here, choose **Open an existing site** and click **Go**.

If a site is already open, you can open a different site by choosing **File > Open Site**.

The **Open Site** window will appear. (see the section '**The New Site / Open Site / Edit Site Window**' in the first part of this manual).

## Working with your data – the View Data window

The View Data window will appear every time the program is launched, provided a site has been setup. The main part of the window displays the layout of the site in tabbed form, allowing you to select the area you are interested in. To select a zone, click it with the left mouse button. Multiple consecutive zones can be selected by clicking and dragging with the cursor, and additional zones can be selected by holding down Ctrl and left-clicking. Once zones are selected, the three main data analysis tools are available:

- **Zone Chart** plots the data for the selected zone(s) in chart form.
- **Zone Graphic** displays the current measured values on a map of the selected zone.
- **Meter** displays the current measured values numerically in a table.

For administrator users, an additional option is available. **Update Data** retrieves the latest data from the logger and updates the site data file.

## Using the Zone Graphic to view current data by physical location

- In the **View Data** window, select the zone you wish to view in the **Zone:** drop-down list and click **Zone Graphic**.
- If you are an administrator, a connection to the logger will be established in order to read the latest values.
- If you are a secondary user, the latest logged values will be read from the stored data.

- Values are displayed on the zone graphic, colour coded according to alarm status.

## Using the Meter Grid to view current data numerically

- In the **View Data** window, select the zone you wish to view in the **Zone:** drop-down list and click **Meter**.
- If you are an administrator, a connection to the logger will be established in order to read the latest values.
- If you are a secondary user, the latest logged values will be read from the stored data.
- Values are displayed in the meter grid, colour coded according to alarm status.
- To change which zones are displayed in the meter grid, click the **Select Zones** button.

## Charting data with the Chart Window

The **Chart Window** displays charts for all the groups in a zone.

- Each chart has its own tab to make it easy to flick between the charts with the mouse or cursor keys.
- A group may be spread across several different charts if the parameters it contains have different **Graph Numbers**.
- To insert or delete charts from the Chart Window, click **Chart Window Options** and choose **Insert Chart** or **Delete Chart**.
- To export the current chart to an image file, click **Chart Window Options** and choose **Export Chart To**.
- Chart tools:
    - Navigate around the chart with the **Zooming and Panning** tools.
    - Change the chart appearance with the **Chart Appearance** window.
    - Edit the range of the chart axes with the **Chart Axes** window.
    - View the numeric readings of a specific point on the chart with the **Chart Cursor**.
    - Analyse safe data limits by adding **Thresholds** to the graph.
    - View numeric chart data and statistics in the **Summary** window.
    - Add comments to the chart with the **Notes** tool.

o   Add series from other groups/zone or time periods with the **Overlay** tool.
o   Jump to different time periods with the **Time Selector** and **Scroll** controls.
o   Print or save the layout of the chart window with the **Chart Report** tool.

## Zooming and panning around the chart

Once a chart is displayed, you can use the mouse to navigate around the plotted data.

- **Zoom** in on a particular section of the chart by clicking with the **left** mouse button and dragging **down** and **right** to mark the section of interest. To zoom back out, click and drag **up** and **left**.
- **Pan** around the chart with the right mouse button. Note: Panning should only be used when zoomed in. When zoomed out, use the **Time Selector** and **Scroll** tools to change the time span of the plotted data.

## Changing the appearance of the current chart

- Click the **Appearance** button in the **Chart Window** to open the **Chart Appearance Window**.
- Almost every aspect of the chart appearance can be customised using the tabs in the window. Changes made will be reflected on the chart.
- Note: These changes are only temporary. To permanently change the appearance of all charts in the site, use the **Chart Setup** window in **Site Settings**.
- Click **Close** when the desired changes have been made.

## Changing chart axes limits with the Chart Axes window

Click the **Axes** button in the **Chart Window** to open the **Chart Axes** window.

- To change limits for the left and right axes, enter the new values in the appropriate edit boxes. To set axis limits automatically from the series assigned to it, click the corresponding **Reset** button.

- To specify the start and end of a time axis, use the **Bottom Axis** and (when shown) **Top Axis** tabs:
  - o Enter a start time/date with the **From** controls. To set the time to midnight, click the **00:00:00** button. To set the start of the axis to the start of the data, click **Set to start of data**.
  - o Enter an end time/date with the **To** controls. You can either enter a specific time and date or set the axis to span a particular time period. Click **Set to end of data** to set the end of the axis to the end of the data.
- To apply axis changes to all open charts, tick **Apply time changes to all charts**.
- To change the axis, plot colour or alarm plots for a particular channel, click the appropriate control in the **Table of Channels** in the bottom half of the window.

## Using the cursor to display numeric values of a point on the chart

There are two types of cursor available: the **Standard Cursor** and the **Values Cursor**.

- Using the **Standard Cursor** is much slower, but gives access to all of the plotted data in a scrollable table.
  - o Click the **Cursor** button to open the cursor window.
  - o Click the point of interest on the chart.
  - o The row containing the clicked reading of data is highlighted in the table.
  - o The cursor can be moved around the chart either by selecting a different row in the table or by clicking another point on the chart.
- Using the **Values Cursor** is instantaneous, but only one set of readings is displayed at any one time.

Click the **Values** button to display the values panel below the chart buttons.

  - o Move the cursor left and right by moving the mouse across the chart. The values of the selected point are shown in the values panel.

# Adding custom thresholds to the chart to analyse safe data limits

The safe limits for each channel are plotted on the chart by default. However, custom thresholds may also be plotted for additional analysis on a particular chart.

- Click **Thresholds** to open the **Chart Thresholds** window.

- To add a new threshold, click the ![+] button. The **Add Threshold** window will appear.

- To edit an existing threshold, click the ![edit] button. The **Edit Threshold** window will appear.

- To delete an existing threshold, click the ![−] button.

- To view statistical information about the plotted channels and the thresholds you have added to the chart, open the **Chart Statistics** window.

## Viewing statistics for the chart data

There are two places to view statistics for the current chart:

- As a panel on the chart itself (tick the option **Show stats on chart** in the **Chart Setup Window**)

- In the **Summary Window**, which displays detailed statistics in table form:
  - Open the **Summary** window for the current chart by clicking **Summary** in the chart window.
  - The **Statistics** tab is displayed by default.
  - To choose which statistics are displayed, click **Setup...**
  - To choose which channels are displayed, click **Add Chans...**
  - To copy or print the contents of the statistics tab, click **File > Copy** or **File > Print**.

# Creating statistics reports

A **Statistics Report** is a saved set of statistics for a particular selection of channels over a particular time period.

- To create a new statistics report:
    - In the **View Data** window, click **File > Statistics Report > Create...**
    - Choose the zones and groups containing the desired channels and click **OK**.
    - Tick the types of statistics you are interested in and click **OK**.
    - Enter the time period over which you wish the statistics to be calculated and click **OK**.
    - The statistics report will appear. To save it, click **File > Save Statistics Report...**
    - To change the time period, click **File > Set Time Period...**
- To view a previously saved statistics report:
    - In the **View Data** window, click **File > Statistics Report > View...**
- To delete an unwanted statistics report:
    - In the **View Data** window, click **File > Statistics Report > Delete...**

# Viewing the chart data numerically in a table

In the **Chart Window**, click **Summary** to open the **Chart Summary**. Navigate to the **Data** tab.

- To search the data for a particular value, click **Find**.

- To add data from other channels to the table, click **Add Chans...**

- To copy or print the contents of the table, click **File > Copy** or **File > Print**.

- To edit the data (site administrators only), select one or more cells in the table and click the right mouse button. Enter the new value and click **OK**. Changes to the data are temporary and can be cancelled by clicking **Clear Changes** or saved to the data file by clicking **Apply Changes**.

# Adding text notes to describe significant points on the chart

Chart Notes allow you to place descriptive text on the chart at a particular point in the data.

- To add a note to the current chart:
  - In the **Chart Window**, click **Note... > Add Note**.
  - On the chart itself, click and drag to create a line between the point of interest and the place where you would like the text to appear.
  - Enter the text and click **OK**.
- To add a note which will appear on every chart, follow the steps above but choose **Add Note to all Charts** instead of **Add Note**.
- To edit existing notes, click **Note... > Edit Notes**.
- To view all existing notes for printing or copying to the clipboard, click **Note... > View all Notes**.

# Overlaying data from other groups/zones or time periods

The overlay feature allows you to add channels from other groups or zones to the current chart. In the **Chart Window**, click **Overlay** to open the **Chart Overlay** window.

- To overlay channels for side-by-side comparison, tick the channels you require in the **Bottom Axis** tab and click **OK**.
- To make a comparison between existing channels' data and data from a different time period, use the **Top Axis** tab and then click **OK**. Once channels are plotted on the top axis, use the **Chart Axes** window to set the top axis to the required time period.
- To permanently overlay channels on this chart, switch the window into **Fixed Overlay** mode. All overlaid channels will then appear on the chart every time you view the chart for this location.

# Using the time selector and scroll tools to move around the time axis

The **Time Selector** is to the right of the **Refresh** button on the chart window tool bar. It allows you to quickly set how far back the time axis stretches.

- The duration of the three different time periods can be configured in the **Chart Setup** window.
- Click a time period to set the time axis of the charts in the chart window to the chosen time.
- If **Apply to All Charts** is ticked, all open charts will be set to the chosen time period.

The **Scroll Buttons** shift the time axis backwards and forwards whilst leaving the span of the time axis the same.

- Click the **Left Scroll** or **Right Scroll** buttons to scroll the data.
- Click the **Home** button to return the chart to an unscrolled state.

# Inserting a new chart into the Chart Window

To add a chart into the chart window for the comparison of channels from a different zone, click **Chart Window Options > Insert Chart...** from the **Chart Window**.

- Choose the required channels using the tick boxes in the **Bottom Axis** and **Top Axis** tabs.
- Click **OK**. The new chart will appear as a tab in the current chart window.

# Creating a chart report to print or save the Chart Window

**To create a new report for the current chart window:**

- Click **Chart Window Options > Create Chart Report to Print Charts...**
- By default, the charts are positioned sequentially throughout the report, one per page.
- To keep the order but place more than one chart on a page, alter the **Charts Per Page** setting.
- To use a custom order, click **Using the check boxes to select individual charts**.
    - Enter the number of pages you require in the report in the **No Of Pages** box.
    - Set the **Chart Size** value to the number of charts you require per page.
    - Use the check boxes on the right to choose which charts should be placed on the current page. The order of the charts can be changed using the up and down arrows to the right of the check boxes
- To add a header and footer to each page, enter it in the **Header** or **Footer** boxes and use the formatting controls at the top of the box to adjust its appearance.
- To get a close up look at a page on the report, click **Full Size** in the **Zoom** settings.
- To save the report for future viewing, click **File > Save Report As...** Saved reports remain 'live' when re-opened so further adjustments may be made to the charts in the chart window if required.
- To save report header/footer and orientation settings as a template to apply to other reports, click **File > Save Report As Template...**
- To print the report on paper or as a PDF, click **Print Report...**

**To open a saved report:**

- In the **View Data Window** click **File > Chart Report > View...**

**To create a report for a particular group over a set of several time periods, use the** Multi Period Report **feature:**

- In the **View Data Window** click **File > Chart Report > Create Multi Period Report...**
- Select the required **Zone** and **Group**.
- Set the **Start Time and Date**, the **Number of time periods** and the **Time Span of each chart**. (e.g. if you're creating the report for a year and you want each chart to span one month of data, enter **12** as the **Number of time periods** and **1 month** as the **Span**)
- Click **OK** to create the report.

**To delete an unwanted report:**

- In the **View Data Window** click **File > Chart Report > Delete...**

# Exporting data for analysis in a different application

To use a different application such as Microsoft Excel to analyse the site data, it must be converted into text format.

- In the main program window, click **File > Export Data...**
- Select the time period of the data to export in the **Time Period** box.
- Choose which channels you would like in the exported data in the **Tick Data to Export** box.
- Click **OK** to produce the exported data file. It will be placed into the **Exported File Folder** (see the **Folders** tab in the **General Options** window).

# Uploading charts to the internet automatically

To make charts accessible to other users via the internet, Darca Heritage V2 can be configured to automatically upload a screen shot of each chart when the site data is updated.

- Click **General Options** in the **Site Settings** window to open the **General Options Window**.
- Navigate to the **Chart Upload** tab and tick **Upload open charts to the internet when data is updated**.
- Charts must be uploaded to an FTP server. Enter the account information for your FTP server in the **Host**, **Port**, **Username**, **Password** and **Folder** boxes. If you don't know the **Port**, leave it at the default value of **21**.
- Choose the **Filename Format** of the chart image files.
- The best way to view the charts across the internet is to create HTML pages on the server with <IMG> tags in that point to the chart image files.
- To test the settings you've entered, open a **Chart Window** and click **Chart Window Options > Upload All Open Charts**.
- Once you're satisfied that the settings are correct, set Darca Heritage V2 to **Automatically Update Data** and open the **Chart Window**s for the charts you wish to be uploaded.
- Each time data is updated, a screen shot will be taken of each open chart and these will be uploaded to the specified FTP server. Any users viewing the charts in their internet browser will need to press **Refresh** in their browser in order to view the latest data.

# Emailing and texting users when alarm conditions occur

Darca Heritage V2 contains the facility to send emails and text messages when alarm conditions occur or when aspects of the system may not be functioning correctly. To configure the alarm emails / texts, click **Settings > Site Settings** and choose **Alarm Emailing**.

Alarm Emailing works by maintaining a list of users, each of which has a number of email addresses and/or mobile phones associated with it. Alarm types can then be enabled/disabled for each user.

Any departments belonging to the site will appear in the list of users by default. If you are a **Department Administrator**, the list of users will be hidden and you may only alter settings for your department. If you are a **Site Administrator**, additional users can be created by clicking **Add...**

- Enter the email address(es) you wish to associate with the selected user in the **Email Address(es)** table.
- The following table describes the alarm types that are available:

| Alarm Type | Specific Alarm Condition |
|---|---|
| Channel Alarm | Transition from a safe value to an alarm value (low or high). |
| 3 consecutive no datas | The logger receives no data from a transmitter for 3 consecutive logging intervals. Alarm is reset when a valid reading appears. |
| Transmitter battery low | Transition from safe battery level value to battery low value (below 20%). |
| Unable to contact logger | When the server's attempt to contact a logger is unsuccessful. |
| Darca Heritage shut down on server | When the software is shut down on the server. |
| Performance Statistics | Sent weekly. |

- Tick the alarm types required. All ticked alarm types will go to all the email addresses entered for that user.
- To send text message alarms, enter the details of the mobile phones you wish to text in the Alarm SMS texting tab.
- Each mobile phone entered can be set to monitor a specific area of the site. Choose the area of the site you wish to monitor in the Monitored locations for selected mobile panel.

**Configuring the server to send emails and text messages (Site Administrator only)**

- The following steps should be performed in the software running on the server (i.e. the computer which is responsible for updating data from the loggers):
- In the Email server properties tab, tick Use this computer to send alarm emails if you wish to send emails from the server.
- Enter the required information about your SMTP server in the Server Information and Authentication boxes.
- The Local Information enables you to specify information which will identify the emails sent from the server. The Name will appear in the 'From' field of the emails.
- Use the Test Information panel to test these properties by sending an email to a known address.
- In the Alarms tab, tick Send Alarm Emails to enable the alarm emailing feature.
- In the GSM Modem Properties tab, tick Use this computer to send alarm SMS messages if you wish to send text message alarms.
- Select the correct COM port for the modem in the GSM Modem port box and click Connect. The status information at the bottom of the window should update. Wait until the status reads Modem network status: On Network.
- Test the connection by entering your mobile number into the Test Mobile Number box and clicking Send Test Text.
- Unless you are experiencing problems with the modem connection, leave Log serial comms with modem unticked.

# Viewing diagnosis and performance statistics for the site

Click **File** > **Performance Statistics** to open the **Performance Statistics Window**.

- Choose a time period over which to view statistics and click **Display Stats**

- The **% No Datas** column shows the percentage of readings from a transmitter that were not received by the logger. If a transmitter shows 100 in this column, it may have run out of batteries or malfunctioned.

- The **Max Consecutive No Datas** column shows the longest run of No Datas for a transmitter. This is useful for finding transmitters whose signal is not being received for extended periods of time.

- The **Batt. Level** column shows the battery level of a transmitter in percent.

- To save the statistics for printing or emailing, click **File** > **Save As CSV** or **Save As HTML**.

# Importing Darca Heritage Version 1 Sites

Darca Heritage V2 contains a feature to import sites made with Darca Heritage Version 1.

- To move your Darca Heritage Version 1 Site into Darca Heritage V2, first create a new site which the data will be imported into. (See the section **Setting Up A New Site**)

- Click **File** > **Import V1 Site** to open the **Import V1 Site Data Window**.

- Ensure your version 1 site files are all in the same folder and click **Import Site File...**

- Select the site file from your version 1 site and click **Open**.

- Use the **Import** buttons to import the various aspects of your version 1 site which you wish to upgrade.

- Click **OK** to accept the import data.

# Importing historic Eltek data

To import .dat files from your logger which were downloaded with Darca Plus, open the **DAT File Utilities Window** by clicking **File** > **DAT File Utilities**.

- Navigate to the Data File Folder where your .dat files are located.

- Choose the file(s) you wish to import by ticking the **Select?** check box next to the file(s).

- Click **Insert Ticked Files** to insert the .dat files into the database.

## Importing CSV data from non-Eltek systems

If you have older data from a system which wasn't supplied by Eltek, you can import it into Darca Heritage V2 as a CSV file. A CSV file must be created for each location you wish to export. It should contain three columns: date/time, temperature and humidity.

- Export the relevant data as a CSV file(s) using your non-Eltek software.

- Open the **Site Layout Window** by clicking **Settings** > **Site Settings** > **Site Layout**.

- Right click the group you wish to import data into and choose **Insert CSV data...**

- Select the CSV file for this group.

- Currently, three CSV column layouts are supported:
    - Date/Time, RH, Temperature
      (Time format: Hrs:Mins Day/Month/Year)
    - Row No, Date/Time, RH, Temperature
      (Time format: Year-Month-Day Hrs:Mins:Secs)
    - Date/Time, Temperature, RH
      (Time format: Day Month Year Hrs:Mins)

  Choose the appropriate layout and click **OK**.

- The CSV data will be imported into the database.