

Eltek

Software



Darca v3.1

Downloading And Remote Control Application

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Darca Plus

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TM1020GB 15/07/14

Darca Plus

Due to our policy of continuous improvement, we reserve the right to modify this program at any time.

Overseas customers should direct any enquiries to their local distributor.

Eltek Ltd
35 Barton Road
Haslingfield
Cambridge
CB23 1LL Telephone +44 (0)1223 872111
UK Fax +44 (0)1223 872521

Website: <http://www.eltekdataloggers.co.uk>

We would welcome any comments on this product by email to
darca@eltekdataloggers.co.uk

Note:

“Squirrel” is the generic name for all Eltek wired (450 / 850 and 1000 series) and RX250AL / RX250ALD GenII wireless data receiver loggers.

“Modem” refers to landline and GSM modems. For a landline to GSM modem connection, a GSM circuit switched data number is required. For a GSM to GSM connection a voice number only is required. See the document ‘GSMPC modem kit’ (TU1017) for more information. This can be found on the Eltek website at www.eltekdataloggers.co.uk/support.html.

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Introduction

The Darca installation utility contains the suite of programs below:

Darca is the program for setting up, downloading, and translating data from Eltek Squirrels. Features include:

- . Multiple channels can be edited simultaneously
- . Squirrels can be contacted directly or via modem
- . Phone list makes accessing a number of Squirrels straightforward
- . Set-ups can be saved to disk and uploaded to Squirrels
- . Wired Squirrel settings can be changed off-line and uploaded later
- . Channels can be renamed for easy identification when metering
- . Alarms can be set up and metered
- . Data can be graphed using powerful graphing tools
- . GenII transmitters can be configured
- . Phone number list for GSM text messaging on alarm

Shed is the utility for automating contact with Squirrels.

Rep Conf is the program for configuring the GenII RP250GD repeater.

Online Help

The majority of the documentation for Darca is kept in the integrated Help system. For more information on any item within the program, click Help, or press the F1 key. The Help file also contains a detailed tutorial.

Note: The Windows Help system is not included with Windows Vista or Windows 7 by default. Darca Plus uses this form of help. If Windows Help is not installed on your PC, see the instructions in the FAQ section of the Eltek website for information on how to download it:

<http://www.eltekdataloggers.co.uk/support.html>

System Requirements

System requirements are:

- PC running Windows 2000, XP, Vista or Windows 7
- CD ROM disk drive (for installation)
- One unused serial port (or USB port with serial to USB adaptor)
- LC68 cable (Logger to PC serial lead)
- LC-TX3 cable (for configuring transmitters via Darca on a GenII system)
- A Windows compatible modem if you would like to dial up Squirrels remotely

Installation

Insert the Darca CD in your CDRom drive and the installation program should automatically run. If it does not:

- Windows 2000 / Vista /XP: From the **Start Menu**, choose **Run...**
Windows 7: Type **Run** in the search bar and click **Run** when it appears
- Type **x:\setup** (where x is CDRom drive) and press 'Enter'

Follow the on-screen instructions to install the software.

Launching the software

- To run **Darca**, select the Darca icon from the Eltek entry in the **Programs Menu**.
- To launch **Shed** automatically every time Windows is started, create a shortcut to Shed in the **StartUp** group.
- To run **Rep Conf**, select **Repeater Configuration** from the Eltek entry in the **Programs Menu**. For instructions on using Rep Conf, see the document TU1007, available in the **Support > Literature** section of the Eltek website.

Note about folders in Darca

Darca creates several sub-folders within the Darca data area folder:

- 'Darca\Setup', which is used for storing Squirrel setup files (.sqj extension)
- 'Darca\Squirrels', which keeps a database of information about every Squirrel contacted in order to speed up contact time (.cfg extension)
- 'Data' which is used for storing Squirrel data files (.dat extension)
- 'Export', which is used for storing exported data to be analysed with a spreadsheet

These sub-folders may be moved to a different location provided that the relevant details are updated in the **Folders** tab of the **Settings > Preferences** window.

Darca Plus

Overview

Darca stands for **D**ownloading **A**nd **R**emote **C**ontrol **A**pplication.

It is designed to communicate with Squirrel data loggers. It performs four main functions:

- Downloading Squirrel data
- Graphing Squirrel data or exporting it into 3rd party spreadsheets / analysis packages
- Remote configuration of Squirrel settings and channel setup
- GenII Squirrel and Transmitter setup

These may be achieved either through a direct RS232 serial connection, via an RS232 to USB converter, via a modem (excluding GenII transmitter setup) or via ethernet using a Moxa serial to ethernet converter.

The Main Window

The Main Window is the first window that appears when Darca is launched. The top of the Main Window carries a menu bar through which all of the program's functions can be accessed. The Status Bar at the bottom displays information about the status of communication between Darca and the Squirrel. Between the Menu Bar and the Status Bar is the Control Panel. The buttons that appear depend upon the current connection status. When Darca is first started, the Control Panel shows the buttons listed below:



Export Data

Converts a Squirrel Data file (.DAT) into a text file suitable for importing into spreadsheet programs.



View Graph

Displays a graph of a DAT file.



Preferences

Makes changes to the way Darca operates



Contact Wizard

Goes through the steps of establishing contact with the Squirrel, allowing configuration of the way the Squirrel will be contacted.

The Contact Wizard

The Contact Wizard Step 1 provides four options for Darca to contact the Squirrel.

Manual: Use direct connection (LC68 lead) or modem and follow the steps to get to the Contact window. **Note: the logger display must be blank before Darca can contact the logger.**

Automated: Use direct connection (LC68 lead) or modem. A connection session can be created enabling a quick setup routine for frequent connection to the Squirrel.

Offline: Creates logger setup files and is for **wired Squirrels only** when no logger is connected. It takes you directly to a cut down Contact Window. Setups can be downloaded to the logger or loggers of the same type when needed.

GenII / Transmitter Setup: Once a GenII Squirrel has been contacted this option directs you to four Squirrel / Transmitter setup options. See Page 23 for details.

Note about Squirrel setup files (.sqi files)

If this is the first time you have contacted the Squirrel, there will be no Squirrel setup file (.sqi file) for this Squirrel stored on your computer. In this instance, a dialog will appear informing you that the stored settings do not match those in the Squirrel and offering you three options from which to choose. Choosing the first option allows you to create an sqi file for your Squirrel. An sqi file stores all Squirrel settings and transmitter configuration and can be sent back to the Squirrel in the future if required.

To choose whether this dialog appears on contact, use the checkbox at the bottom of the **Preferences > Automation** window.

Contact Window

The Contact Window appears once a Squirrel has been contacted. Settings in the Squirrel can be changed online, logging can be started and stopped, runs can be downloaded from the Squirrel and the Squirrel's memory can be cleared. The Meter Channels window can also be opened. Various combinations of the following buttons can appear in the Contact window.



Download Runs: Displays the Download dialog box



Meter Channels: Displays the current input of all selected channels in bar or diagrammatic form



Squirrel Settings: Configures various aspects of the Squirrel using Darca



Channel Setup: Configures the channels on the Squirrel



Squirrel / Transmitter Setup:
Restores transmitter setup if closed
(See p.23)

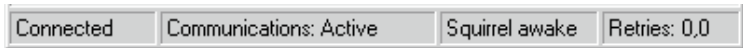


Start/Stop logging



Clear memory

The Status Bar



The Status Bar at the bottom of the window contains four areas that indicate the status of the connection between the Squirrel and Darca:

- The left-hand box shows whether or not a connection has been made.
- The next box shows the current state of communications through the selected serial port.
- The third box is the state of the Squirrel. This can be asleep or awake. Darca must wake the Squirrel before communications can start.
- The right hand box shows 'Retries' followed by two numbers. The first number is the number of times Darca has failed to wake up the Squirrel. The second number is the number of times Darca has not had a response from a transmitted command.

Menus

The menus provide access to all of the functions and options of Darca. Some of the menu items are just alternative ways of getting to the same functions that the buttons provide.

File Menu

The File Menu contains the options for all the file-based operations in Darca. It also contains an option to close the program.

Edit Wired Setup Offline (not applicable to GenII Squirrels)

This option can be used when no Squirrel is connected to Darca. In this context, Darca will open the file in offline mode. This allows the settings within the file to be changed without the need to connect a Squirrel. See 'offline contact' in the online help for more information.

Send Wired Squirrel Setup (not applicable to GenII Squirrels)

This option is available when Darca is connected to a Squirrel. This allows Darca Squirrel Setup files (*.dss) for wired Squirrels to be loaded from disk. If this option is selected when Darca is in contact with a Squirrel, then the selected Squirrel setup is sent to the Squirrel. Note that the setup file can only be sent to the same model of Squirrel for which it was created.

Close Wired Setup (not applicable to GenII Squirrels)

Closes an open Squirrel Setup File. If the file has not been saved, a prompt appears to confirm the action.

View Export

Enables the viewing of exported Squirrel data in text or tabular form.

View Graph

Displays a graph of a Squirrel data file together with summary information.

Save Wired Setup (not applicable to GenII Squirrels)

Stores the current Squirrel setup to disk. If the current setup has not yet been named, the Save Setup As dialog appears.

Save Wired Setup As (not applicable to GenII Squirrels)

Stores the current Squirrel setup to disk after prompting for a filename.

Download

Only available during contact with a Squirrel, this option initiates the transfer of recorded data from the Squirrel to the computer.

Export

Once data has been downloaded from the Squirrel, it may need to be processed into a form that can be read by a spreadsheet application. Choosing this option brings up a dialog from which the data file (.dat) can be selected. Darca then processes the data in accordance with the current Export Settings and writes it into a new Export file.

Notes

- In **Settings > Preferences**, Darca can be configured to automatically export the data immediately after a download. With this option selected, the exported file will be automatically opened in Excel if the 'Export Data' button on the main window was used to perform the export.
- The exported data is divided into a number of files depending on the **Rows per file** setting in **Preferences > Export**. Set this to **0** to create a single file.

Memory Card Utils

Some special Squirrels use PC Memory (SRAM) Cards to store data. These utilities enable preparation and management of the card and its data.

Exit

Closes the program.

Contact Menu

The Contact Menu contains the available options for contacting Squirrels.

Direct

Initiates contact with a Squirrel connected to the computer's serial port, either physically (using an LC-68 lead) or via ethernet (using a Moxa DE-5110). The correct serial port must be selected and a compatible baud rate must first be chosen from the **Communications** dialog (accessed from the **Settings** menu or from the **Configure Communications** button - see p.17).

For a physical connection: Eltek Squirrels with serial numbers greater than 6000 operate at 38,400 baud.

For an ethernet connection: When using a Moxa DE-5110, ensure the baud rate is set to a maximum of 19200 and that the COM port matches the setting in the NPort settings utility.

Modem

Jumps to the **Contact Wizard Step 2** and selects the Modem option. A phone number can be entered. Once done, the **Next >>** button starts the modem dialling and initiates the contact. It is important to configure the Squirrel modem correctly; see Darca's integrated help for more information.

Automated

To minimise connection time by executing a predetermined set of actions on a Squirrel, Darca can be configured to carry out contacts automatically. The tasks can be specified in the **Preferences** window (accessed from the **Settings** menu).

Contact Wizard

See **The Main Window** for more information.

Disconnect

Stops all communication between Darca and the Squirrel and returns Darca to the Main Window. In offline contact this option closes the current Squirrel Setup File and returns Darca to the Main Window.

Settings Menu

The Settings Menu contains options that configure Darca. Options for changing the Squirrel's settings are found in the Squirrel Menu.

Preferences

Displays a multi-tabbed dialog box where most of Darca's settings can be changed. Most settings are stored when Darca is closed, including password protection for Squirrel settings.

Communication

All communication settings for Darca are displayed in the communications dialog box. Settings are stored when Darca is closed. Settings for the modem can also be changed from this window, although any changes in these will not be retained when the program is closed. Note: The option **RS232 Network Squirrel Settings** is for Squirrels connected in parallel only. It is NOT for Ethernet networking.

Finding the Squirrel's COM port

If you are using a serial to USB converter, you may wish to use the **COM Port Search** utility to locate the port which has been allocated to the converter. Alternatively, you can use the **Device Manager** in Windows to list the COM ports available on your computer. Type **Device Manager** in the Windows 7 search box to open this, and look for **Ports**. USB to serial converters are listed as **Prolific USB-to-serial**.

Setup Transmitter Channels

Modify transmitter channel assignments and transmitter settings.

Phone List

A list of descriptions, phone numbers and Squirrel serial numbers can be stored in the phone list. The toolbar at the top of the phone list window has buttons to enable entries to be added, edited and removed. Clicking on one of the headings will sort the entries by the selected column.

Squirrel Menu

The Squirrel Menu only appears when Darca is in contact with a Squirrel. It contains all of the options for changing the settings of the Squirrel.

Refresh Status

Periodically the Squirrel Status window is updated with the current status of the Squirrel. This option forces Darca to update this window immediately and re-open it if it has been closed.

Log

The Squirrel's current logging state is shown by this menu item. A tick mark next to this option indicates that the Squirrel is currently logging. Selecting this option will change the logging state by either starting or stopping the Squirrel logging (depending on the current state). The logging state can also be changed from the central control panel of the Contact Window.

Clear Memory

This option will clear all the readings from the Squirrel's memory and is not available when the Squirrel is logging. The memory can also be cleared from the central control panel of the Contact Window.

Settings

All of the Squirrel's settings (with the exception of the channel setup) are controlled from a single tabbed dialog box, accessed by selecting this option. If the Squirrel is not reset, there will be some settings that cannot be changed. Some settings are not applicable to GenII Squirrels.

View Menu

The items in the View Menu are all for showing non-dialog windows for either displaying Squirrel information or changing channel settings. Any or all of the windows opened from the View Menu may be open simultaneously. Reselecting an already open window will bring that window to the front.

Squirrel Status

This window is automatically shown when contact is established. It is recommended that this window is left open permanently, and moved to a convenient location on the screen. It can then be quickly referred to at any time for the current status of the Squirrel. This window will be automatically opened to confirm significant changes to the Squirrel settings (e.g. whenever the Squirrel is set to start logging).

Meter

The Meter Window shows all the current input states of all the currently enabled channels. The interval at which it is updated can be changed in the Settings/Preferences dialog box. The appearance of the meters can be controlled from the context menu, which is brought up by right clicking anywhere on the Meter Window.

To view either Meter and/or Graph go to **Settings > Preferences > Metering** and select the appropriate option from the drop down box.

Channel Setup

A spreadsheet style grid shows each Squirrel channel and its corresponding settings. Ranges, Wired EU (Engineering Unit) Settings, and Alarms can be reconfigured for individual or multiple channels from the Channel Setup Window. A context menu (which can be brought up by right clicking on a channel in the Channel Setup Window) shows the available options for the currently selected channel(s). Selecting Edit Channel brings up a tabbed dialog box from which all of the changes are made.

Transmitter Status

This feature is for use with Eltek Telemetry Squirrels only. It displays information about the transmitters connected to the Squirrel.

Help Menu

The Help Menu contains all of the normal help menu items for the program. A comprehensive on-line help system (including a tutorial section) gives all the information needed to get the most out of Darca

Note: The Windows Help system is not included with Windows Vista or Windows 7 by default. Darca Plus uses this form of help. If Windows Help is not installed on your PC, see the instructions in the FAQ section of the Eltek website for information on how to download it:

<http://www.eltekdataloggers.co.uk/faq.shtml#helpsystem>

The Graph Window

The Graph Window can appear in two forms:

- **Offline** (with Squirrel not connected) to display or graph saved data.
- **Online** (with Squirrel connected) to display graph and meter (effectively real time) from the Squirrel. To graph and/or meter go to **Preferences > Metering** and select from the drop down menus.

The Offline Graph Toolbar

Graph Appearance

This window allows general graph settings such as colour, gridlines, 3D graphing options and plot type to be configured.

Chans / Axes

This window provides control over the ranges of the graph axes and the selection of which channels are to be plotted on the graph and their assigned colour and axis.

Cursor

The graph cursor window displays the data values of a point on the graph.

Thresholds

Graph thresholds allow the plotting of threshold limits alongside the channels' data on the graph.

Summary

The summary window shows information about the Squirrel from which the data was recorded, the data itself, and statistics calculated from the data.

Note

In order to identify meaningful points on the graph, notes may be drawn onto the graph. A note consists of a line at the relevant point together with a text label.

The Online Graph Toolbar

The online graph toolbar contains many of the same tools as the offline graph toolbar. However, there are two additional ones:

Save

This saves all the data plotted on the online graph into a Squirrel DAT file which may be viewed later once contact is finished.

Pause

Pauses the flow of data onto the graph and stops it scrolling until pausing is finished, whereupon data received during the paused period will be plotted onto the graph.

GenII / Transmitter Setup

To access the GenII / Transmitter Setup menu, click **Contact Wizard** in the main window and select the bottom option **GenII Setup / Transmitter Setup**. The following options are then available:

- **Modify the Transmitter setup based on the current Squirrel setup (Normal):** The connected Squirrel's setup will be loaded into Darca. Changes to transmitter channels and settings can be made. Click on **Transmitter Setup**, follow the instructions and connect all transmitters in turn before finally clicking on **Send to Squirrel**.
- **Modify the transmitter setup based on a Squirrel setup File:** The transmitter setup can be modified using a saved Squirrel setup file.
- **Save a Squirrel setup file from a Squirrel:** Update a PC configuration file from the current setup of the Squirrel. Use if the Squirrel button panel or another PC was used to change settings.
- **Update the Squirrels setting from a file:** Update the Squirrel from a current configuration stored in the PC.

Note: Squirrel setup files (including transmitter details) are saved as **SQ**quirrel **I**nformation files (.sqi extension).

Automated Contact with a Squirrel

Darca's Automated Contact feature allows you to specify a number of tasks which you wish to be performed during a contact with a Squirrel. This is particularly useful if you have a number of Squirrels which all require a set series of operations to be performed during contact or if you are using a modem to connect to your Squirrel and wish to minimise the length of the phone call. Automated Contacts can be scheduled for multiple Squirrels using Shed (See below). There are four tasks which may be performed on a Squirrel during automated contact:

- Download All Runs (the most recent run is always downloaded)
- Clear And Restart
- Set up Squirrel
- Update Time And Date.

The **Set up Squirrel** option allows you to configure a wired Squirrel exactly as you require using a previously saved wired setup file.

Scheduling Automated Contacts using Shed

Shed allows you to perform scheduled automated contacts by launching Darca at a specified time. It is possible to specify the exact type of automated contact using command-line parameters, more details of which can be found in Darca's online help. You may schedule repeated automated contacts with a Squirrel by using the 'frequency' setting in Shed.

