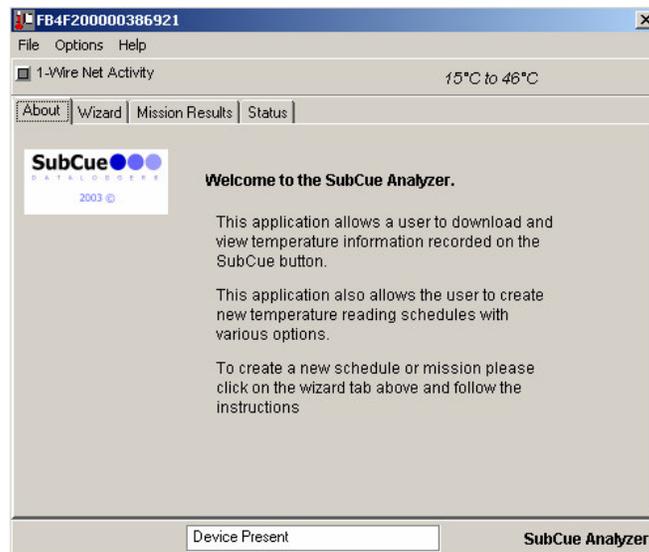




## SubCue Analyzer Software - Introduction

The SubCue Analyzer is a tool to initialize and download the temperature data from implantable SubCue Dataloggers.

To begin, open the SubCue Analyzer program from the desktop icon as displayed above. The program will open and a window will indicate that the program is 'Waiting for Thermachron'. Connecting the SubCue Datalogger to the cable attached from a port with the computer should result in the following image display. The SubCue Datalogger must be detected as 'Device Present'. (Shown below.)



## Table of Contents

|                                                 |   |
|-------------------------------------------------|---|
| SubCue Analyzer Software – Introduction         | 1 |
| Table of Contents                               | 1 |
| SubCue Analyzer Software – Program Summary      | 2 |
| SubCue Analyzer Menu – File, Options, Help      | 3 |
| SubCue Programming – Wizard                     | 5 |
| SubCue Data Retrieval – Mission Results, Status | 8 |

# SubCue Analyzer Software – Program Summary

## Programming the SubCue Datalogger

Programming the datalogger is referred to as sending it on a 'mission'. There are several options when starting a mission. To go through each of these options, SubCue Analyzer incorporates a 'Mission Wizard'. If the device is not currently on a mission, then the SubCue Analyzer defaults to display the Wizard tab first.

## Retrieving Data

In order to retrieve data the SubCue Analyzer program has two tabs: **'Status'** and **'Mission Results'**.

**'Status'** will display the current settings in the datalogger, such as a mission in progress, number of temperature readings taken, etc.

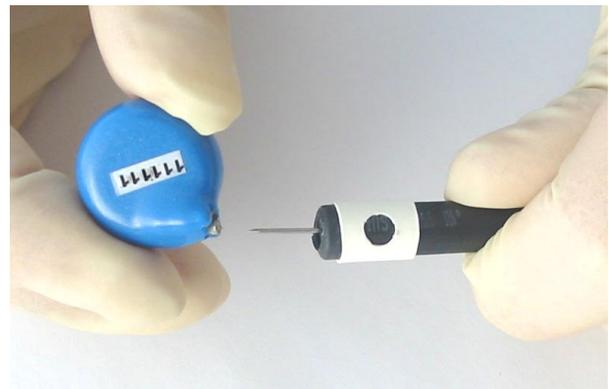
**'Mission Results'** will contain the log of temperature readings and a quick graph. The bottom of the screen contains a status message describing the current operation being performed.

## Software Help

At all times, SubCue Analyzer software shows the Help Menu Option. Each tab available within the software is explained.



Computer COM Adaptor with cable and datalogger is shown above.



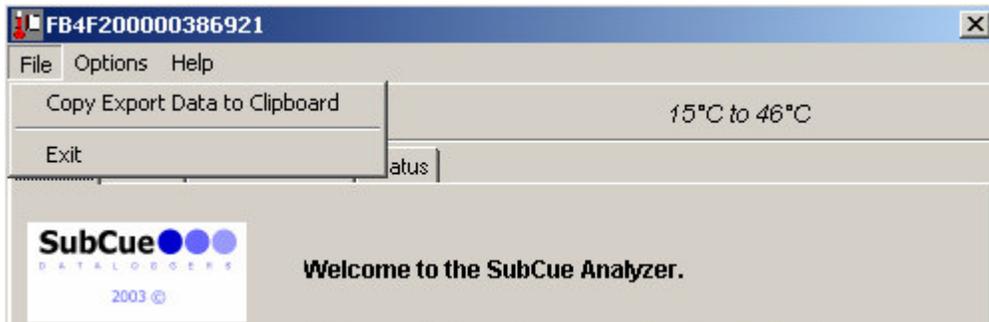
SubCue Datalogger connects to the cabling implement at the pins, as shown.

# SubCue Analyzer Menu

There are several menu selections available. They can be accessed by clicking on the menu groups at the top of the viewer:

**FILE      OPTIONS      HELP**

## SubCue Analyzer Menu - File



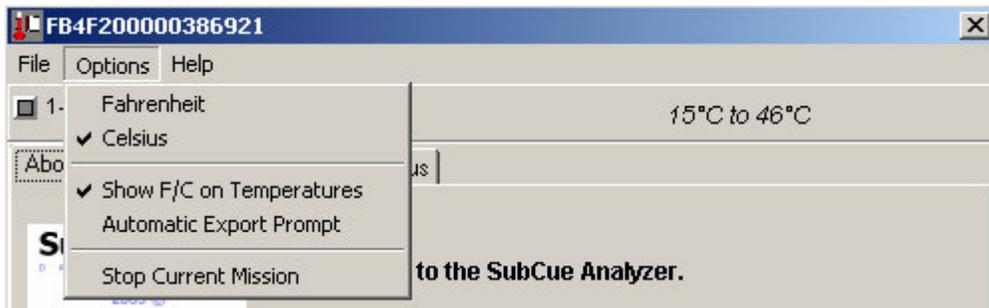
- **Copy Export Data to Clipboard**

The Copy Export menu option will take Mission Results and Status reporting and copy it to the Windows clipboard in the form of text. This function may be more convenient than saving data to a text file before importing it into another program. For further manipulation save data as text file and import into a spreadsheet program

- **Exit**

The Exit menu option will close this analyzer window.

## SubCue Analyzer Menu - Options



- **Fahrenheit**
- **Celsius**

The temperature modes select whether all the temperatures in the analyzer are displayed as Fahrenheit or Celsius. Click on the desired format. This format will also be used in all graphs and export data.

- **Show F/C on Temperatures**

The Show F/C option toggles whether or not the °F or °C are included with the logged temperatures when displayed throughout the program. Some researchers prefer to not have the symbols included with data for export.

- **Automatic Export Prompt**

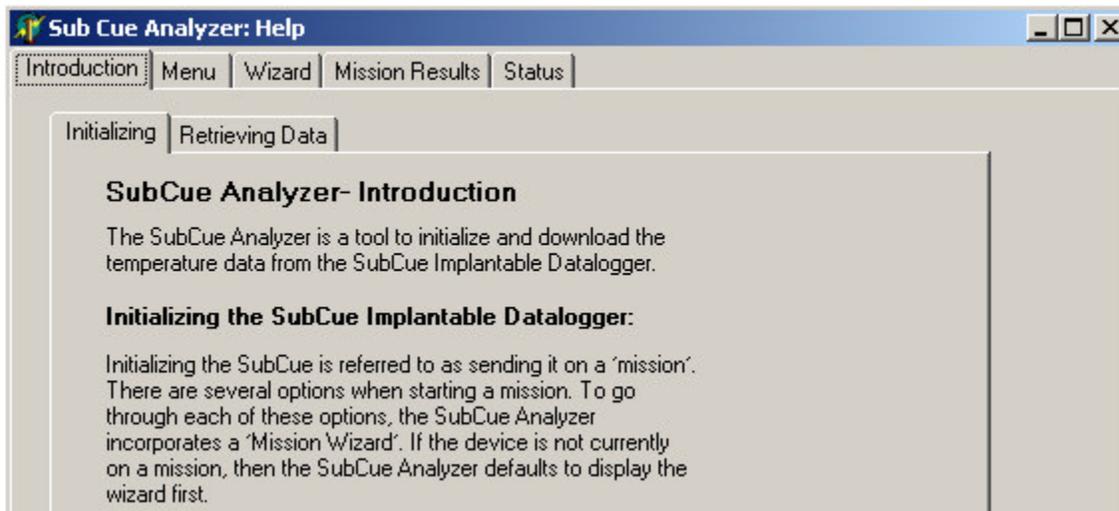
When checked, the program prompts for an output text file immediately after the mission data has been downloaded .

- **Stop Current Mission**

The Stop Current Mission prompt will end a mission if one is currently in progress. It does not stop the real-time clock.

**\*\*\*Caution: Stopping a mission will also erase all previously collected data on the SubCue.\*\*\***

## SubCue Analyzer Help



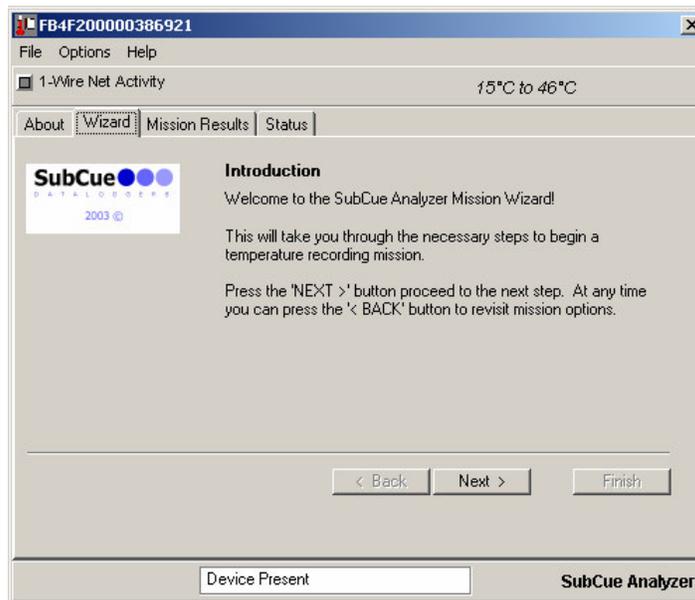
- **Help**

The Help tab is an available tab for every tab within the program. Each screen is specifically geared to windows of the program.

# SubCue Programming – Wizard

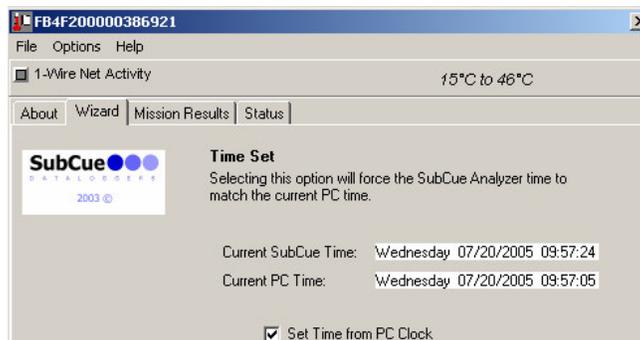
The Mission Wizard can be started at **any time** by clicking on the 'Wizard' tab and proceeding through the options by clicking 'NEXT' > button. Previous options can be re-addressed by clicking on the '<BACK' button.

**\*\*\*Caution: Starting a new mission will terminate current mission and erase all collected data.\*\*\***



- **Real Time Clock**

The Real Time Clock screen will optionally set the SubCue's real-time clock from your PC clock. To help with this decision, the current device and PC clock time is displayed. The time display will be updated approximately every 3 seconds. The time is displayed in 24-hour format. Clicking on the check box at the bottom will determine whether the time will be set from the computer's clock.



- **Mission Start Delay**

The SubCue can delay a specified number of minutes before it begins taking temperature readings. This feature can be used to prevent unnecessary readings before the target time frame or to synchronize several SubCues during an experiment. As a convenience, drop-down boxes are used to select the number of days, hours and minutes. The total delay is displayed. The drop-down boxes allow a maximum selection of 44 days, 23 hours and 59 minutes, giving a total of 64799 minutes.

**Mission Start Delay**

The Mission Start Delay specifies the amount of time to delay before starting a mission and beginning to make temperature readings.

Select the number of Days, Hours, and Minutes to delay. The total number of start delay minutes is displayed to the right.

Days:  Hours:  Minutes:  Total Minutes:

- **Sample Rate**

The Sample Rate specifies the number of minutes between each temperature reading. The SubCue can store 2048 time stamped temperature readings. Setting the sample rate will affect how long it takes for the memory to fill up or optionally roll-over. The sampling rate can be from 1 to 255 mins.

**Sample Rate**

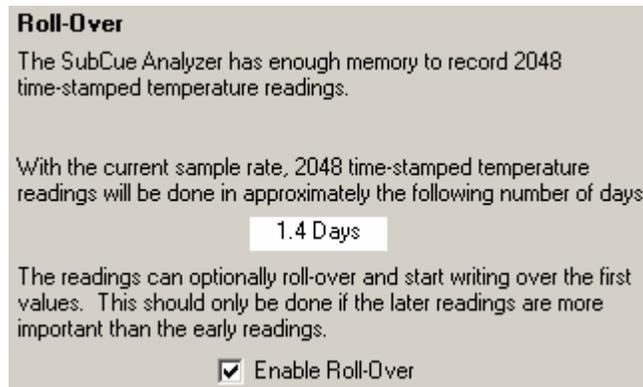
The Sample Rate specifies the number of minutes between temperature readings once the mission begins.

|                                         | Sample Interval | SubCue Sampling Time |
|-----------------------------------------|-----------------|----------------------|
|                                         | Minutes         | Days                 |
| Minutes: <input type="text" value="1"/> | 1               | 1.4                  |
|                                         | 5               | 7                    |
|                                         | 15              | 21                   |
|                                         | 60              | 85                   |
|                                         | 255             | 362                  |

- **Roll Over**

There is a maximum of 2048 time-stamped temperature readings. The Wizard panel indicates the amount of time it will take to fill up memory, depending on the sample rate. The behavior of the SubCue

can optionally be set to begin writing over the earliest readings when the memory is filled. If this sample period is too small, use the '<BACK' button to go back to the sample rate selection and pick slower sample rate.



- **Finish**

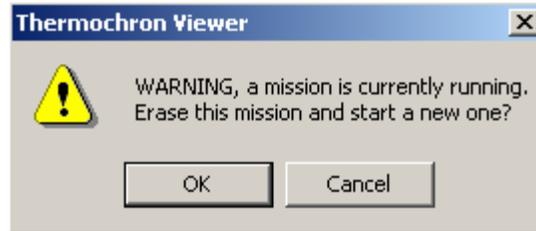
The final panel of the Wizard displays all of the options selected. If any of these options are not desired, use the '<BACK' button to revisit the different options. The box at the bottom of the panel may not be able to display all of the options. Use the scroll bar to view all of the options. When satisfied, click on the 'FINISH' button. The mission settings are then written to the datalogger and the mission will begin when programmed to start. To show the start of the new mission, the viewer will automatically switch to the 'STATUS' tab.



\*\*\* The 'STATUS' window displays current SubCue status. (More information available later in this document.)

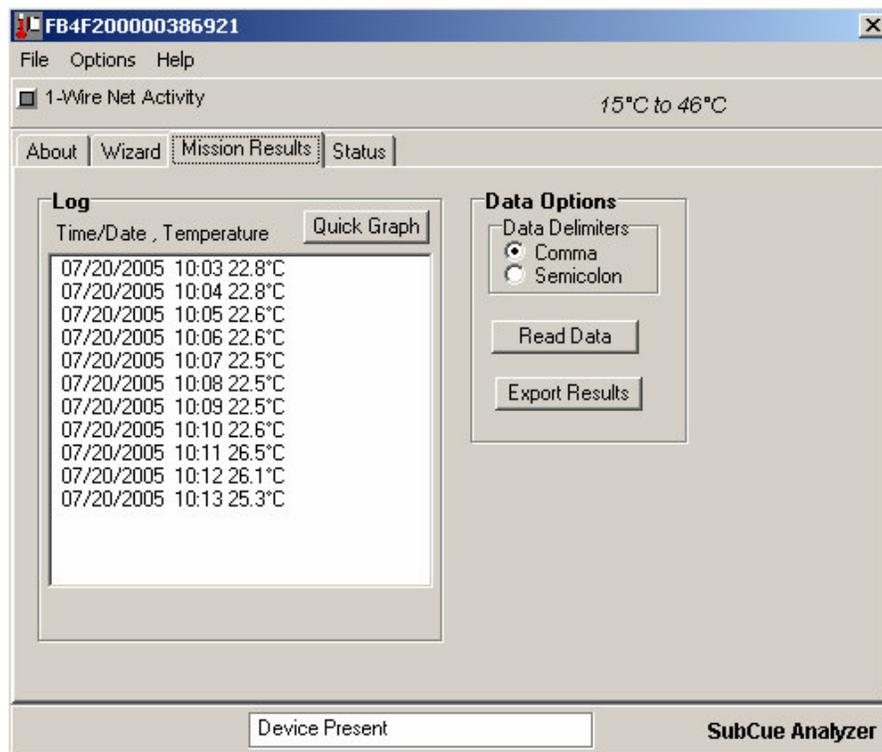
- **Warning**

If a mission is currently running, this software will confirm the user's action as shown.



## SubCue Data Retrieval – Mission Results

The Mission Results tab displays the temperature reading results from the current or last mission. The mission results are automatically downloaded when the SubCue Analyzer is started if there is a mission running and data displayed in the log can be automatically displayed as a graph.



- **Quick Graph**

A graphical representation is quickly generated by clicking this icon.

- **Read Data**

If the mission has been ended, then results can still be downloaded using the 'Read Data' button.

- **Export Results**

The Export Results Button prompts for a text file to export all of the mission results and status. Note that there is a menu option to copy the same contents to the clipboard.

## SubCue Data Retrieval – Status

| Mission                |             |                        |                  |
|------------------------|-------------|------------------------|------------------|
| Mission Status:        | in progress | Mission Start:         | 07/20/2005 10:03 |
| Sample rate (minutes): | 1           | Start Delay (minutes): | 0                |
| Roll-Over Enable:      | yes         | Mission Samples:       | 13               |
| Roll-Over Occurred:    | no          | Total Samples:         | 689629           |

| Temperature                         | Real-Time Clock                     |
|-------------------------------------|-------------------------------------|
| Force Read <input type="checkbox"/> | Time: Wednesday 07/20/2005 10:15:11 |

- **Mission Status**

The Mission Status will indicate 'in progress' if a mission is currently running. It will display 'ended' if there is no mission.

- **Sample Rate**

The sample rate is the number of minutes between samples.

- **Roll Over Enabled**

Roll Over Enabled will say 'yes' if the device has been enabled to overwrite early readings after the time stamped readings have been done. It will say 'no' if roll over is not enabled.

- **Roll Over Occurred**

Will say 'n/a' if roll-over is not enabled. If roll over is enabled then this box will display 'yes' if more than 2048 readings have been made and 'no' if the number of readings is less than 2048.

- **Mission Start**

The Mission Start is the date/time stamp of the beginning of temperature readings. Note that this is the start time after the start delay has expired and the first reading has been taken. While the start delay is counting down, Mission Start will be displayed as 'not started yet' . The Mission Start is displayed in 24 hour format.

- **Start Delay**

The Start Delay is the current delay count down value in minutes. For example, if in the mission Wizard a start delay of 10min was selected, then the initial value viewed in this box would be 10. After a minute it would decrease to 9min and so on. When the Start Delay goes to 0, then the mission sampling will begin.

- **Mission Samples**

The Mission Samples indicated the number of temperature samples that have been taken during the current mission.

- **Total Samples**

Total Samples indicates the total number of temperature samples that have been taken on the device. This is a battery monitor as the battery lasts for about 1 million samples.

- **Temperature - Forced Read**

If there is no current mission, the Forced Read button is enabled. Clicking this button instructs the SubCue to read the current temperature. The temperature will be displayed to the right of the button after a few seconds, The Forced Read button is disabled if a mission is currently running.

- **Real-Time Clock - Time**

Time displays the current real-time-clock value from the SubCue. This time is updated every 3 seconds and displayed in 24 hour format.