
User Manual for
DST microRF-HRT
Telemetry heart rate &
temperature logger and

Mercury & Gná
Online user Software



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1. Introduction



Figure 1.1 Telemetry system

The DST microRF-HRT gives the users the benefit of both continuous logging and telemetry. The logger can be programmed to record heart rate and temperature as often as once per minute. It will store those data points in its memory and transmit the data to the accompanying online user software, **Gná**, as often as required by the researcher.

The DST microRF-HRT is implanted in the animal. Prior to implantation, the loggers will need to be programmed using the communication box and the accompanying application software, Mercury, where the user defines groups, measurement start time and transmission frequency.

The heart rate is derived from a leadless single channel ECG in which the electrodes are part of the housing material. The temperature sensor is located behind the membrane as shown in the figure below.

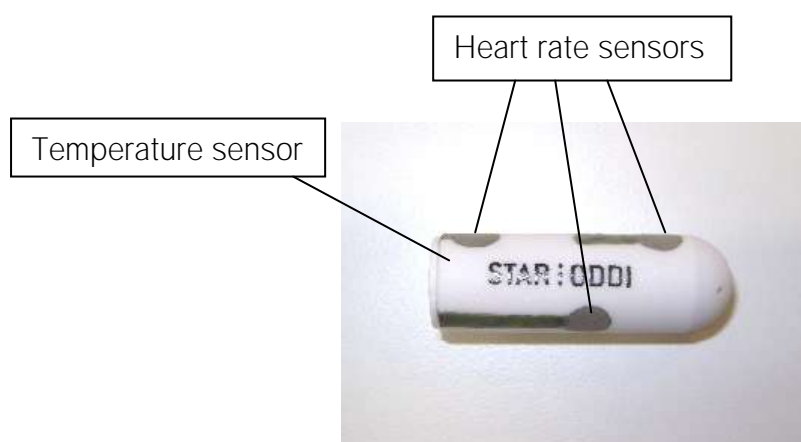


Figure 1.2 Heart rate and temperature sensors

Each cage will need a RF box and an antenna and there can be up to 10 subjects in each cage. The RF box is attached to the cage and the antenna is attached to the bottom of the cage using Velcro®. The antenna is very thin, only about 2-3mm. The RF box will receive the data from the DST microRF-HRT and transmit the data to the Personal Area Network (PAN) and all other measurements will be stored in memory. If you miss a transmission for any reason the logger will not resend the data but will store the data in memory, which can be retrieved at the end of the research.

The PAN is connected to the computer using a serial cable and a USB converter. How far the PAN can be placed away from the RF box varies greatly on the configuration of the lab but in most cases it will transmit about 20-30 meters. The software takes care of minimizing cross talk and even if that does happen all transmissions have the individual logger's **id** attached.

2. Mercury & Gná program installation

Mercury & Gná is an online user software for the Star-Oddi telemetry system. **Mercury & Gná** can run under Windows 2000 or newer. The following chapters will take you step-by-step through the program installation, hardware connections and use of the **Mercury & Gná** Program.

The installation of **Mercury & Gná** requires access to a PC computer with a standard RS-232C serial interface or USB.

The users of **Mercury & Gná** will receive free updates of the software. Updates of **Mercury & Gná** will be available for free download at:

<http://www.star-oddi.com/Downloads/>

The Star-Oddi telemetry logger is supported by the **Mercury** software and the Communication Box, which works as an interface between the logger and the computer. The logger is ready for recording after the user has set the start time and sampling interval in the **Mercury** software. The recorded data is transmitted to **Gná** where the results can be analyzed in graphic and tabular form. In **Gná** the user has the option to print out reports with information such as energy consumption of the RF boxes.

This chapter describes how to install and uninstall the **Mercury & Gná** software on your PC computer. Please note that each software needs to be installed and uninstalled separately.

2.1 Install

To download **Mercury & Gná** visit www.star-oddi.com/downloads. To install the program, follow the automatic InstallShield Wizard.

Follow the instructions on the screen. You will be prompted for a directory name for your **Mercury & Gná** program.

Type in your product key. Please keep the product key in a safe location as you may need it for future use. The product key works for multiple computers on the same network.

2.2 Uninstall

To uninstall the program, do the following:

1. Click on the Start button in Windows.
2. Go to Settings and Control Panel.
3. Choose Add/Remove Programs.
4. Choose **Mercury & Gná** and click on **Change/Remove**, and 'Yes to all'.

3. Preparation

This chapter describes preparations that should be carried out before connecting to the recorder.

Start **Mercury** and the following window appears:

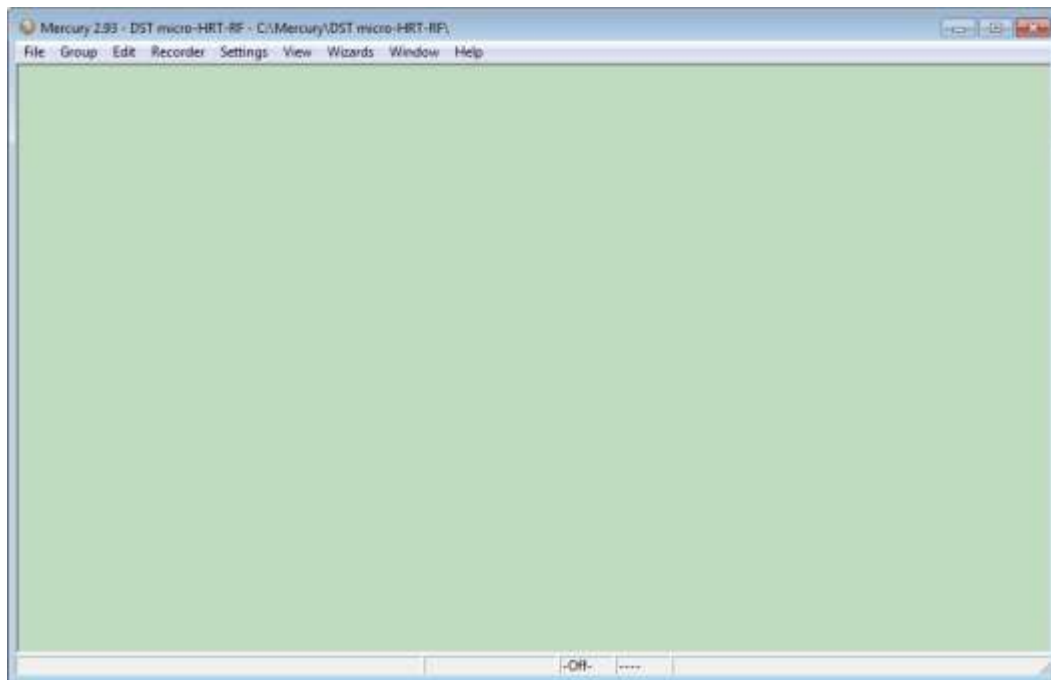


Figure 3.1 Mercury Main Window

If you are starting the software for the first time, you will be asked if you want the **Connection Wizard** to open automatically each time you start **Mercury**. If you change your mind you can always change the settings under **Settings-Options-Startup**.

3.1 Select Recorder Type

Mercury is compatible with other Star-Oddi instruments. A recorder type must be selected before connecting to the recorder. The default setting in the software is set to **DST micro** as a recorder type. Change the recorder type to your type of **DST** by doing the following:

1. Choose the **File** menu and the **New Recorder Type** command.
2. Select the appropriate **DST** as a recorder type.

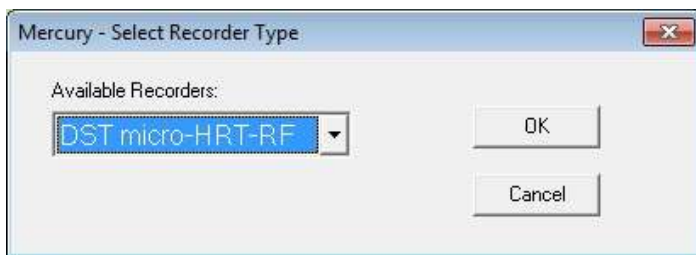


Figure 3.2 Select a new Recorder Type

Before connecting to the recorder, it is important that the clock on the PC computer is correct. This is important since the recorder automatically downloads the PC clock settings.

3.2 Configuration of the Communication Port

If you are using the USB serial converter you will need to download and install the driver from www.star-oddi.com/downloads.

The easiest way is to use the **Connection Wizard**. When opening the software the following window appears:



Figure 3.3 Connection Wizard

Connect the USB cable and the selected port will appear in the wizard pop-up window (see figure 3.3).

The serial port can also be defined manually in the following way:

1. Choose the **Communication** command in the **Settings** menu.
The **Communication definition** dialog box appears.
2. Select a serial port for communications.
3. Choose the **OK** button.

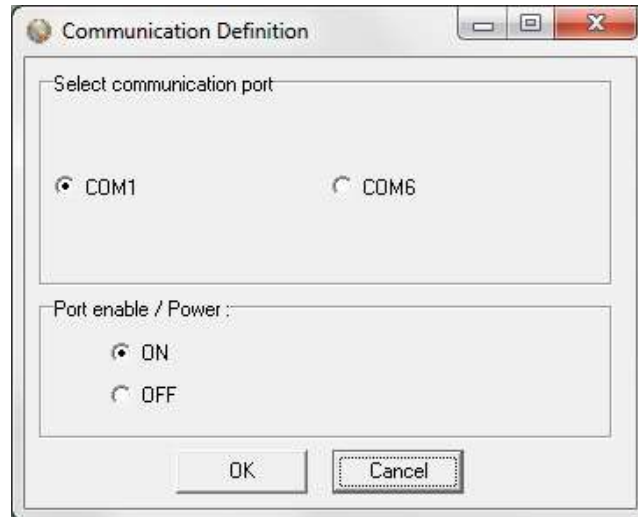


Figure 3.4 Communication Port Configuration

After you plug in the USB cable you will see a new communication port in your device manager, called **Prolific USB-to-Serial Comm Port**. Make sure that the port is enabled and select the appropriate port in Mercury.

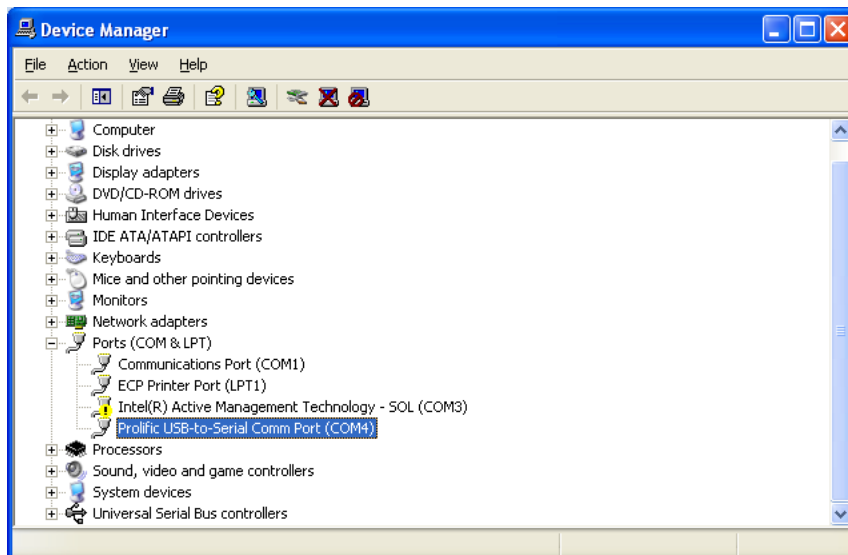


Figure 3.5 USB Communication Port in Device Manager

Using the Serial Port

To check which communication ports are available on your computer, open your Device Manager. On Windows XP you can do it following way: **Control panel > system > hardware > device manager**.

Under Ports you can view all available ports. Make sure that the port you are intending to use is enabled: right-click on the appropriate port and select properties. Under **Device usage** it should state **use this device (enable)**.

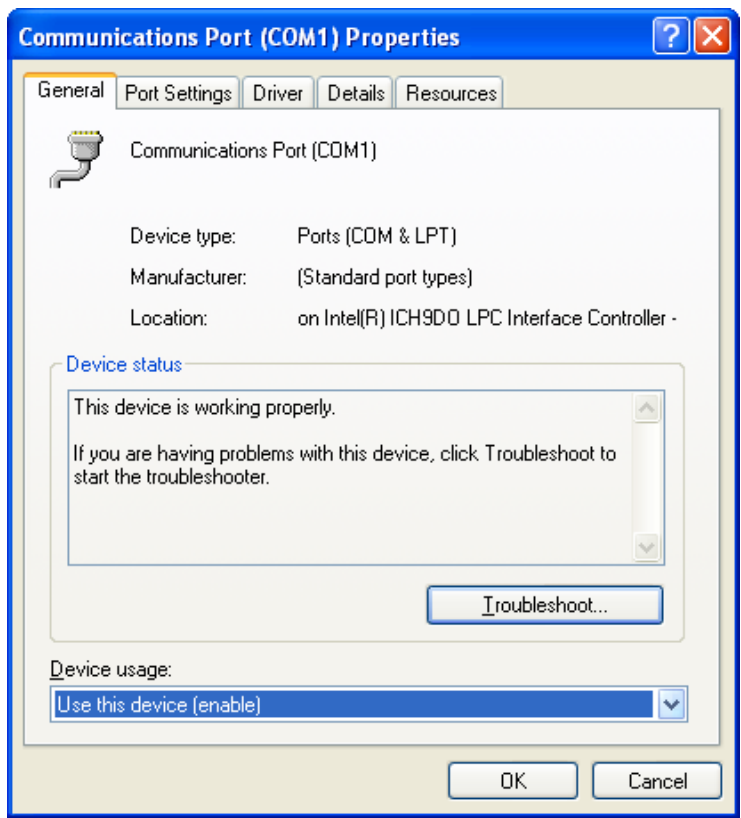


Figure 3.6 Enable Communication Port

4. Communication Box

This chapter provides details concerning the Communication Box and how to place recorder in the box prior to connection.

4.1 Communication Box

The DST Communication Box is a PC-RS-232C compatible communication interface, specially designed to communicate with DST recorders wirelessly via RF (radio frequency). A USB converter plug is optionally available for the Communication Box.

The Communication Box has three diodes:

1. **Red** – shows that power is fed from the power supply to the Communication Box.
2. **Yellow** – shows that **Mercury** has made connection with the box and that correct COM port has been selected.
3. **Green** – shows that recorder is in correct position for seeking connection.

Connect the serial cable between the serial port of the computer and the Communication Box. Plug the power supply connection to a power-socket. The voltage from the power supply should be set to 9V, although there is no damage to use up to 20V. Before inserting the power plug into the box, it is important to note that the polarity should be:

–(O+ (minus on the outside and the plus on the inside)

The polarity is usually shown where the arrows meet on the power plug, and the power supply. After the power supply has been connected to the Communication Box, the red light should be on. After **Mercury** has been started, the yellow light should be on (if correct COM port is selected).

The box will power the recorder while communicating with the PC. In case the battery is dead, the PC and interface are still able to connect to the recorder and retrieve data.

4.2 Connection Point

In order to get the green light, the red and the yellow light must be on.
The recorder is inserted into the hole of the box as shown in the figure below:

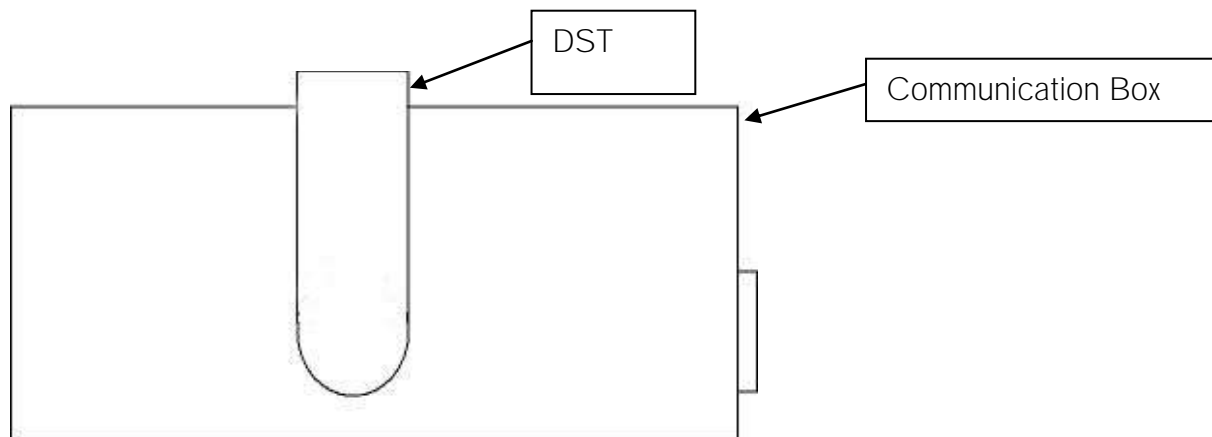


Figure 4.1 Inserting Recorder into the Communication Box

If the recorder is wet/damp, then please wipe it dry before inserting it into the box. The spherical end of the recorder faces down and flat end faces up.

When the green light is on, communication can be established with the software.

If the recorder fails to connect, please refer to the Troubleshooter.

4.3 COM Connection

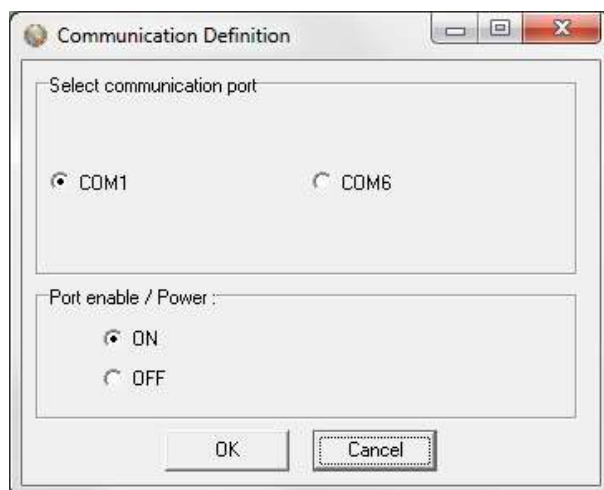


Figure 4.2 Communication Definition

Choose **Settings-Communication-Serial Ports** to display available ports (see figure 4.2). Com ports up to COM255 can be selected.

4.4 Connection Wizard

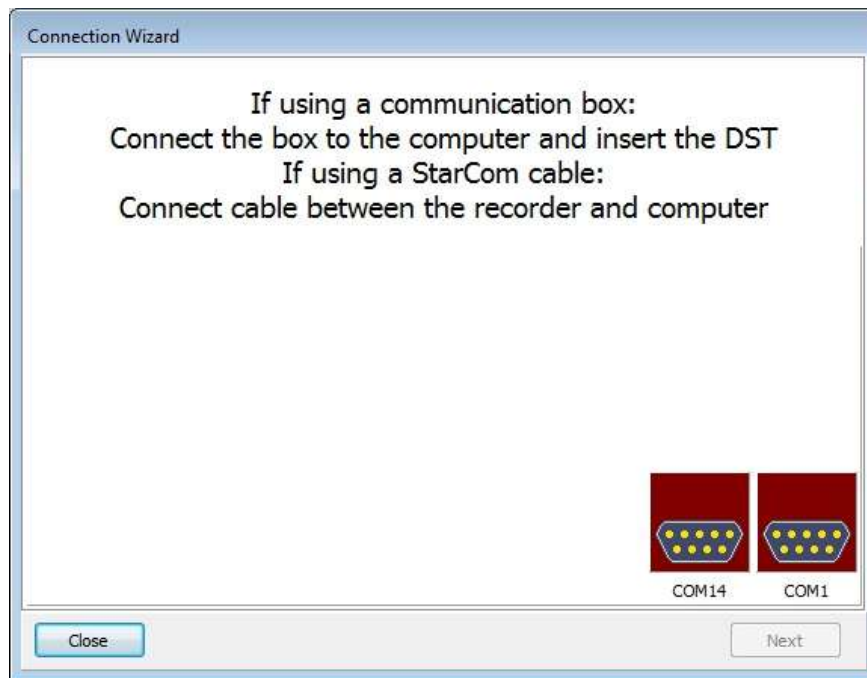


Figure 4.3 Com Port Wizard

Choose **Wizards- Com Box Connection** to enter the Com Port wizard (see figure 4.3). The wizard goes through available ports and activates them one at a time and asks the user to confirm that the communication box displays a yellow light.

5 PAN

The Personal Area Network (PAN) controller is the receiving module which is connected to a computer and **Gná** software. The PAN is connected to the computer using a serial cable and a USB converter. It receives signals from the RF box via MiWi and can handle up to 64 RF boxes.

At all times the PAN needs to be connected to power via the accompanied AC adapter.

5.1 Setup & running

Before connecting the PAN open the **Gná** software. The following window appears:

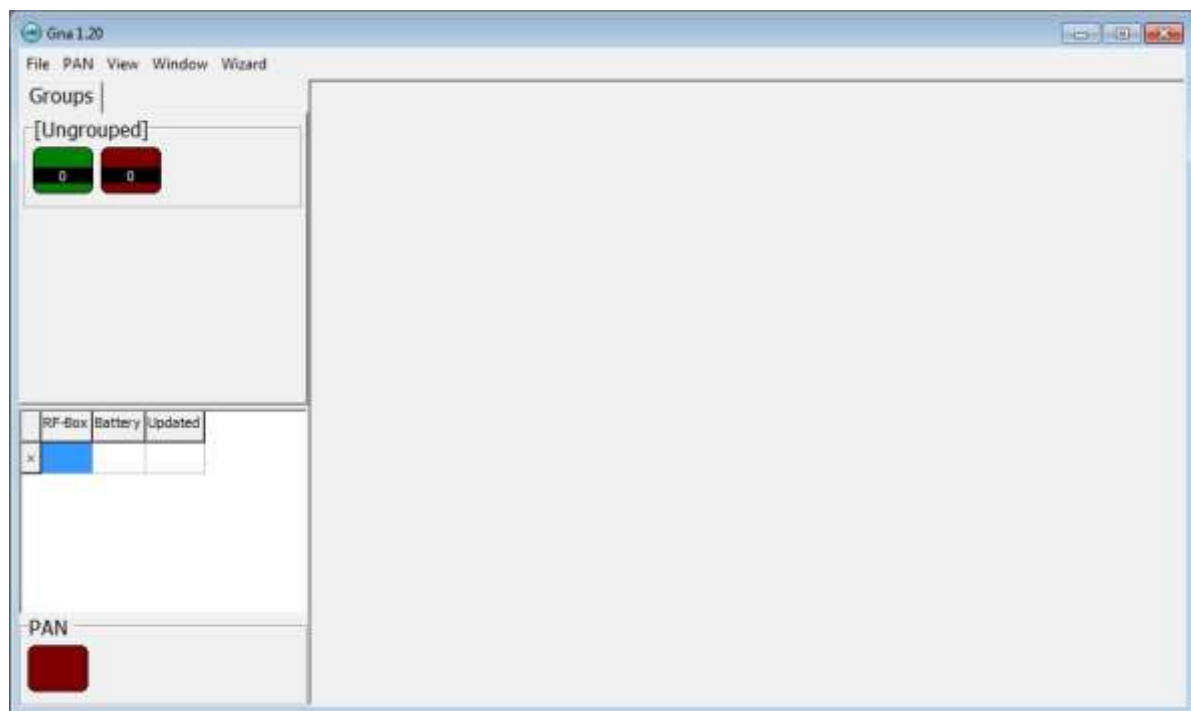


Figure 5.1 Gná Interface

The red box in the lower left corner means that there is no connection. **PAN Auto** means that the Com port was automatically selected.



Figure 5.2 PAN receiver

The PAN is connected to the computer using a serial cable and a USB converter. Plug the power supply connection to a power-socket. How far the PAN can be placed away from the RF box varies greatly on the configuration of the lab but in most cases it will transmit about 20-30 meters.

The PAN has two lights, red and green:

Blinking green light: PAN checks if it is able to connect to the PC.

Green light on: PAN connected to PC/Gná software.

Blinking red light: PAN looks for available channels.

5.2 Configuration of the Communication Port

It is necessary to define which serial port on your PC computer you will use for connecting the PAN. This is done in the following way:

4. Choose the **COM Port** command in the **PAN** menu.
The **COM Port** dialog box appears.
5. Select a serial port for communications.
6. Choose the **OK** button.

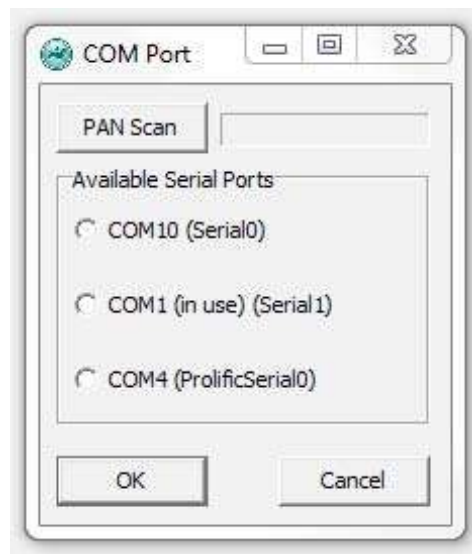


Figure 5.3 Communication Port Configuration

The user can then either utilize the PAN Scan feature or select the right COM port from the menu. Please make sure no other COM devices are connected.

Once the PAN is connected the box in the lower left corner will turn green (see figure 5.4).

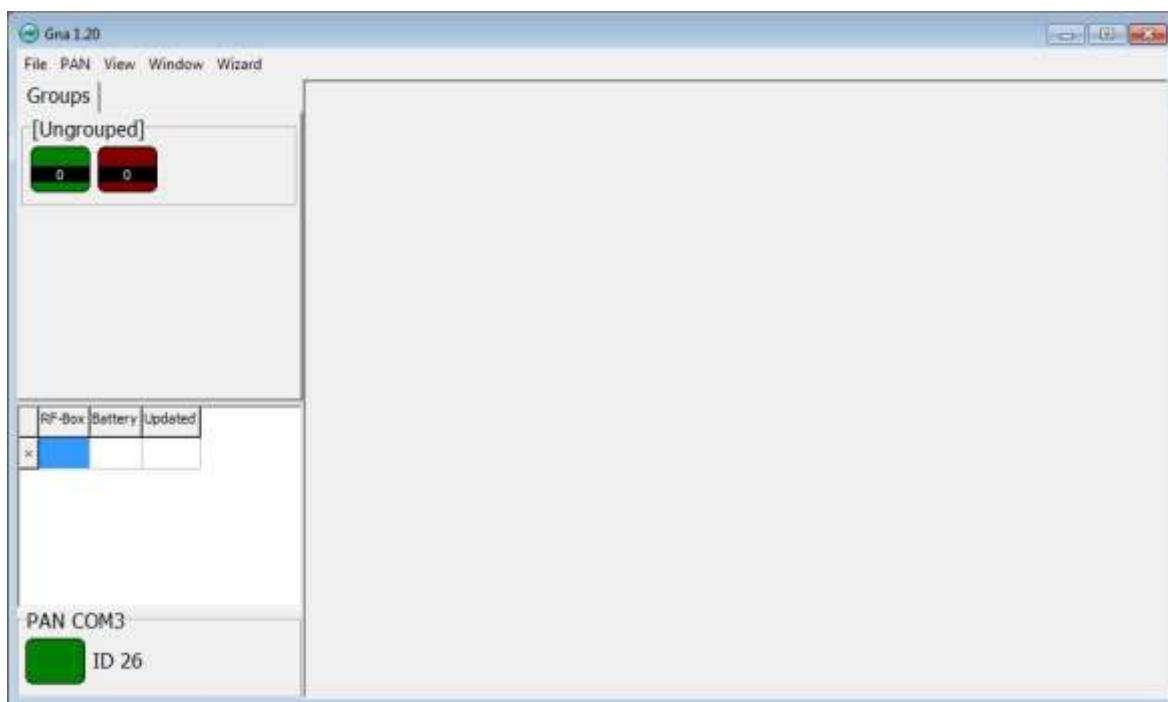


Figure 5.4 PAN connected

Regulatory approval

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

6. RF box and antenna

The antenna receives signals from the logger and transmits them to the RF box. The RF box then transmits the data to the Personal Area Network (PAN).

Each cage will need a set of antenna and RF box. The antenna is attached to the bottom of the cage using, for example, Velcro[®] and then connected to the RF box (see figure 6.1). The RF box can also be attached to the cage using Velcro[®]



Figure 6.1 RF box and antenna

The RF box can work on battery power alone, the box is charged using the power supply that comes with the box.

6.1 Starting & running

Connect the antenna to the RF box and switch the box on. The green light will stay on for 5 seconds after the box has been switched on.

Once the RF box has been connected it will appear on the RF box table on the left side of the interface. The table also shows how much battery is left in the RF box and when the battery status was last updated (see figure 6.2). The RF box table can be cleared by selecting **View-Clear RF-Box Battery**.

	RF-Box	Battery	Updated
x	29	74%	7.11.2013 17:23:49

Figure 6.2 RF box battery level

The RF box has three lights, yellow, red and green (see figure 6.3):



Figure 6.3 RF box

Yellow light on: The RF Box is fully charged
Yellow light blinking: The RF Box is charging

Red light blinks eight times: RF box is checking all the channels.
Red light blinks once: Battery is running low.
Red light blinks three times: Transmission failed.

Green light on: The RF box is connected. The light will stay on for 5 seconds after the box has been switched on.
Green light blinks once: RF box receives a signal from the logger and forwards it to the PAN.

Regulatory approval

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

7. Working with groups and programming the logger

Creating a group is a way to gather multiple measurement sequences which are part of the same research project into one group. In a group the user can track when the logger was started, the data retrieved and the data converted/reconverted. Furthermore, groups can be transferred to **PatternFinder** for further data analysis.

Before implanting the DST microRF-HRT logger, the user must create a group for the logger sequences, set a new measurement sequence and start the logger.

7.1 Creating a group

Select **Group-New Group** to create a new group (see figure 7.1).

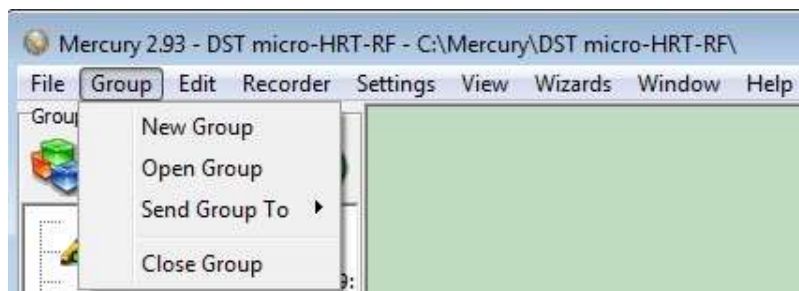


Figure 7.1 Group menu

Please note that it is also possible to create a new group by clicking the **New Group**

button  in the group view pane.

The following window appears:

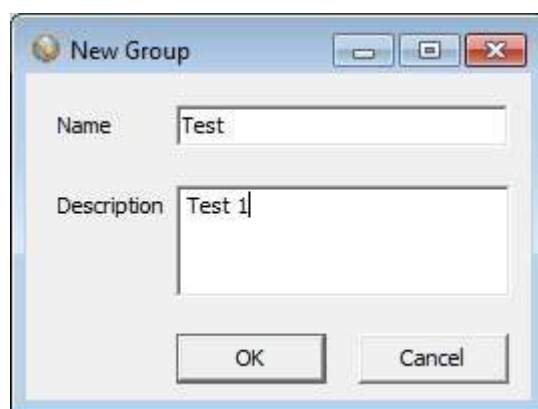



Figure 7.2 New Group

Name the group and enter a description. The group file will be saved under the directory: C:\Mercury\Groups. Each group has its own subfolder where data files from

each sequence in the group are stored, this way the data can be accessed from **PatternFinder** and **Gná**.

Open Group

Select **Open Group** to open the Group directory. It is also possible to open the directory by clicking the **Open Group** button  in the group view pane.

Once a group has been selected the group view pane appears:



Figure 7.3 Group view

7.2 Connecting and programming the logger

Connect the Communication Box as described in chapter 4. Insert the DST into the box, the selected com port will turn green in the Connection Wizard window.

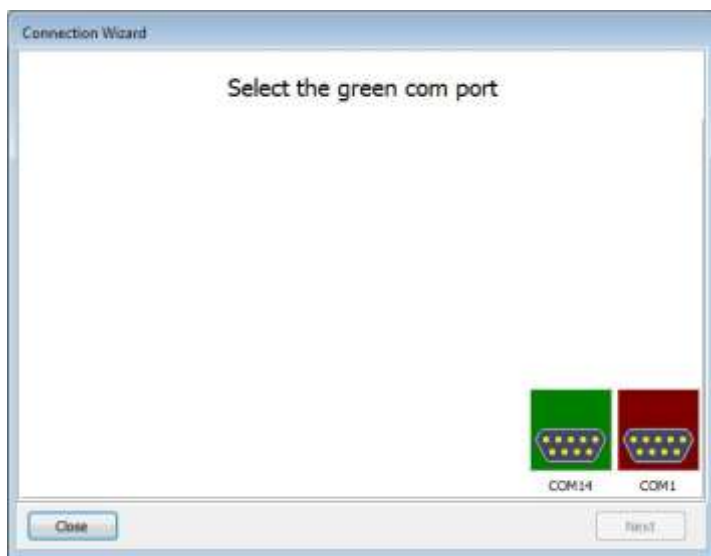


Figure 7.4 Connection Wizard

You can either click once on the selected port and select **Next** or double-click on the port. If you are not using the wizard choose the **Recorder** menu and the **Connect** command.

The window in figure 7.5 appears.

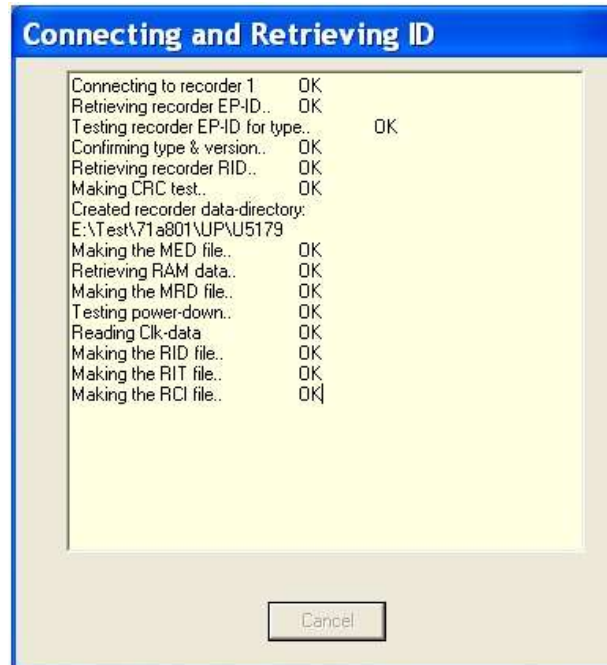


Figure 7.5 Connecting and Retrieving

Once the connection has been established, a window appears with information on the recorder's mode (see figure 7.6).

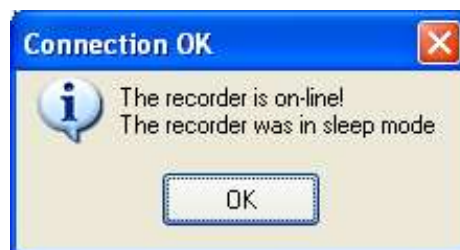


Figure 7.6 Connecting to the Recorder

Press **OK**. The Recorder is now on-line, as indicated at the bottom of the **Mercury** window.

If you have selected to use the **Connection Wizard**, the following window appears:

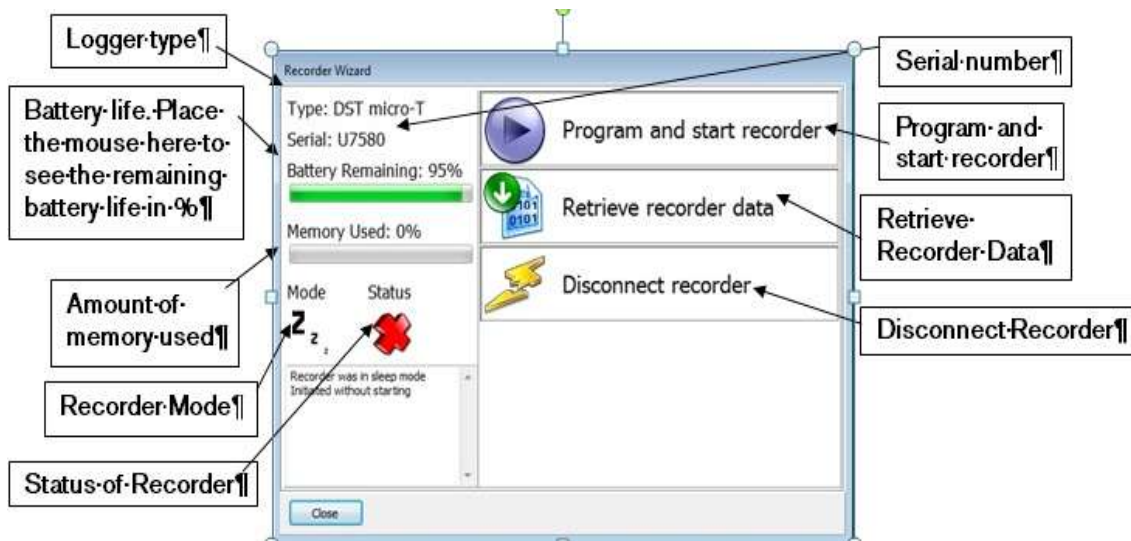


Figure 7.7 Recorder Wizard

Mercury checks which version of firmware is in the recorder. If the software does not recognize the firmware the user will be asked to update **Mercury** as there might be a new functionality in the firmware which **Mercury** does not support.

Set new measurement parameters

Select **Program and start recorder** in the wizard or choose the **Edit** menu and the **New Measurement Sequence Definition** command. The following window appears:

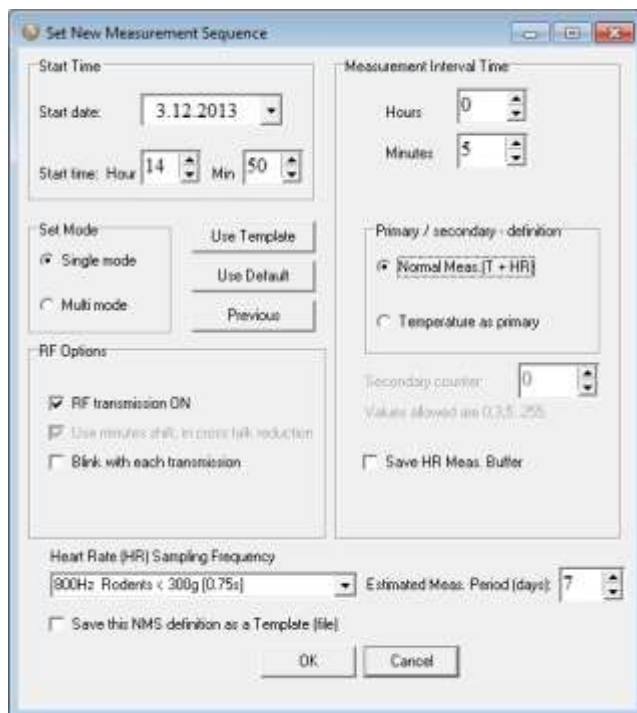


Figure 7.8 Set New Measurement Sequence

Select the start time of recordings (**date-month-year, hours-minutes**). The start time of the new measurement sequence must be set at a minimum of three minutes in advance. Set the sampling interval (**hours-minutes**). The minimum measurement interval time for the DST microRF-HRT is one minute.

With **Normal Meas. (T+HR)**, temperature and heart rate will be recorded as pairs and transmitted to **Gná** at the same intervals. The user has the option to select temperature as a primary sensor, taking more frequent measurements. The purpose with this feature is to save memory size, increase recording period, and get more data on the sensor that is of more interest (primary sensor). In this case, a secondary counter can be defined, which can only be odd numbers. If temperature is selected as a primary sensor, and the number 3 is defined as a secondary counter, the heart rate will only be recorded every third time when temperature is recorded, and the majority of the memory is used for temperature recordings.

Save HR Meas. Buffer tick box enables you to record the raw measurement behind the HR measurement. When you set up the recorder it is of great value to estimate how much memory you could possibly have left during your trial period to record as many of these raw data measurements as possible.

The heart rate (HR) is an ECG derived measurement where a burst recording of approx. 4-6 beats is done and the HR is calculated from the R-R interval of the ECG waveform. The HR sampling frequency is estimated from the average HR of the animal from scientific literature which is usually highly correlated to the weight of the animal. Figure 7.9 shows the possible sampling frequencies for the DST-HRT loggers.

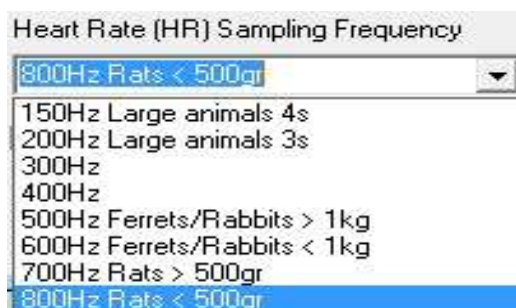


Figure 7.9 Available HR sampling frequencies

In the corner brackets [] after each sampling frequency the duration of the recording is displayed, this is important for animals with slow HR in the range of 100-200bpm or lower. If the HR is outside a defined range of beats-per-minute (bpm) for each sampling frequency or if there is no R-R interval detected during the measurement then the DST-HRT will conduct another measurement.

Under **RF Options** there are three features. Select **RF transmission ON** to enable data transmissions to **Gná**. **Use minutes shift, in cross talk reduction** allows the user to reduce cross talk by shifting the start time by one minute. By selecting **Blink with each transmission** a blinking light will appear in the logger each time it transmits data.

Under **Estimated Meas. Period** enter the number of days you estimate the measuring will take.

If the user wants to program several recorders with the same sampling interval and start time, it is recommended to select **Multi mode**. By choosing **Multi mode**, the settings are fixed; giving each recorder connected to thereafter, the same settings. The recorders connected to, following the first recorder; automatically get the same settings as the first recorder. This saves time in the programming process. The multi mode can be deactivated by clicking **Cancel** when connecting to the recorder (see figure 7.10).

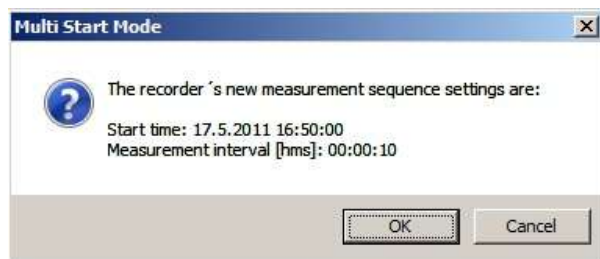


Figure 7.10 Multi Start Mode

The three buttons **Use Template**, **Use Sequence**, and **Previous** are not commonly used, but can be handy when wanting to use a previously programmed sequence.

After the settings have been selected, press the **OK** button.

Start a new measurement sequence

To set the logger in Measurement Mode (start recording), choose the **Recorder** menu and **Start New Measurement Sequence** command. The window in figure 7.11 appears.

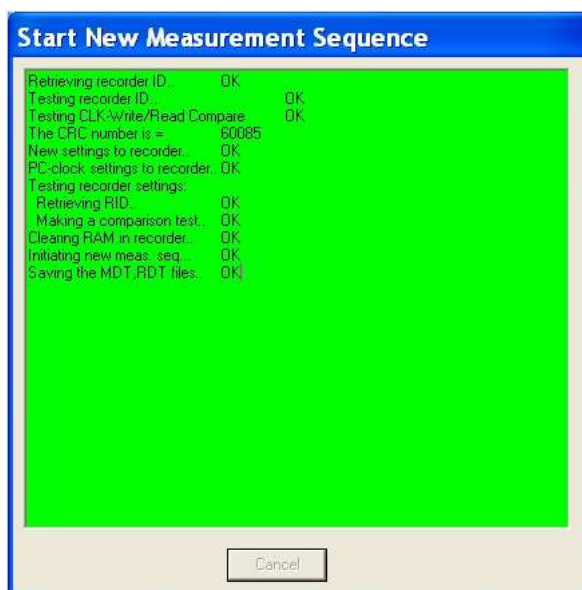


Figure 7.11 Start New Measurement Sequence

Once the new measurement sequence has been downloaded into the recorder, a window appears on the screen in order to verify the settings (see figure 7.12).

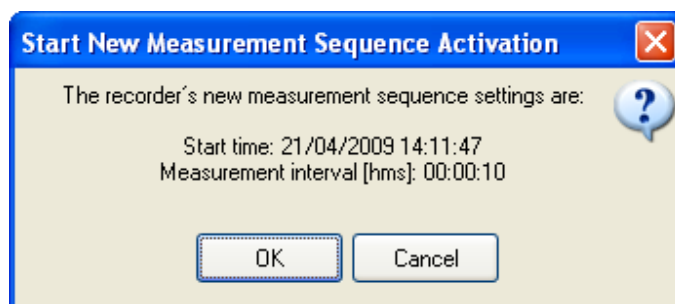


Figure 7.12 Start New Measurement Sequence

When starting the new sequence the following window appears:

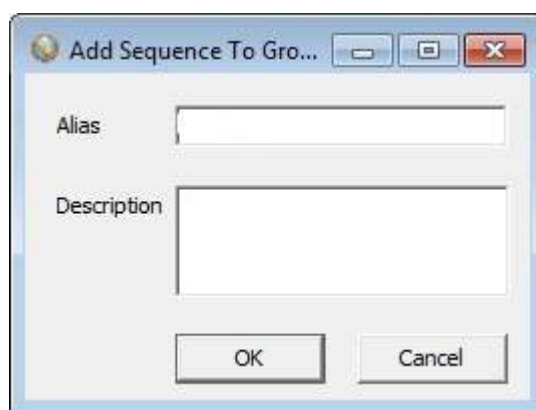


Figure 7.13 Add Sequence to Group

Set an alias for the sequence and enter a description. Click **OK** and the sequence will be added to the group previously created (see figure 7.14). If a group is open when starting up a logger the new measurement sequence will be automatically registered in the group. If no group is open the sequence will not be registered in any group.

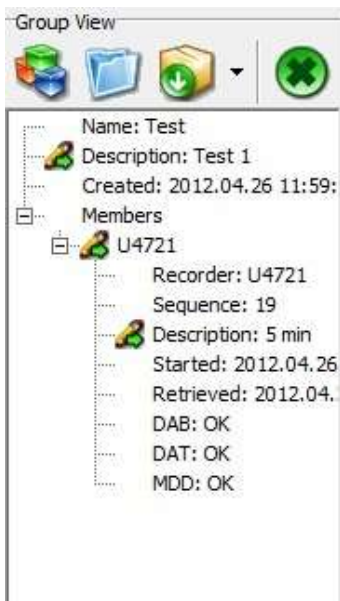


Figure 7.14 Group view pane

Press **OK** and the recorder will be in Measurement Mode.

7.3 Send group to Gná

In order to monitor the online measurements after the loggers have been set up for measuring, the user needs to start up the **Gná** software and send the group from **Mercury** to **Gná**.

Select **Group-Send Group To-Send to Gná** in **Mercury** to transfer a group to **Gná**.

It is also possible to transfer a group by clicking the **Send Group to** button  in the group view pane.

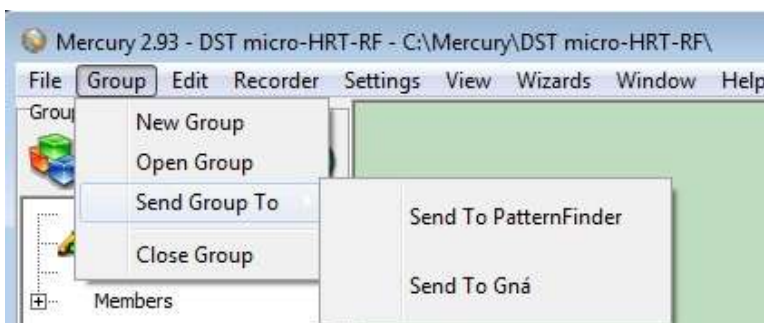


Figure 7.15 Send Group

The **Gná** software will open automatically:

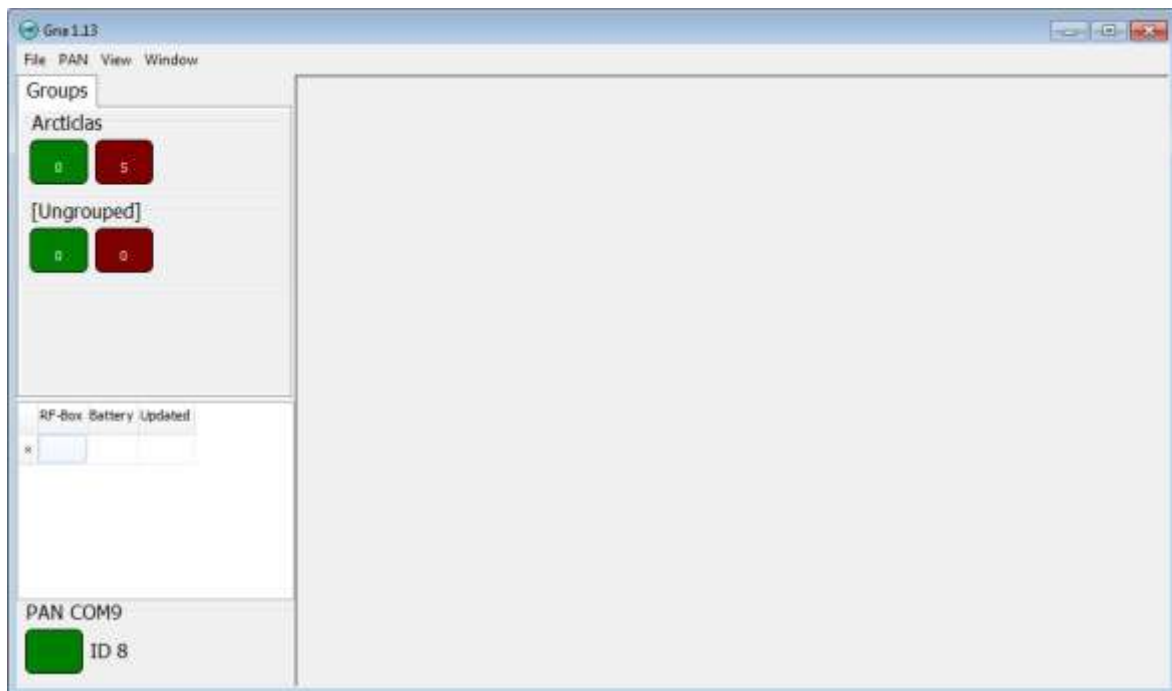


Figure 7.16 Group sent to Gná

In the green box on the left side of the interface the user can see how many loggers are online. The number in the red box represents how many loggers have not transmitted data to **Gná** recently (see figure 7.17).



Figure 7.17 Online loggers

To open a graph, right click on the group and select **Display** (see figure 7.18).

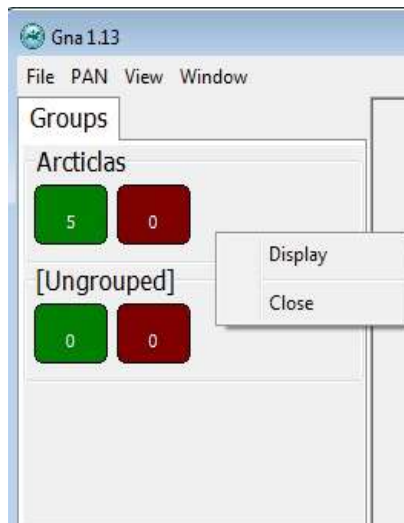


Figure 7.18 Display graph

The group graph appears:

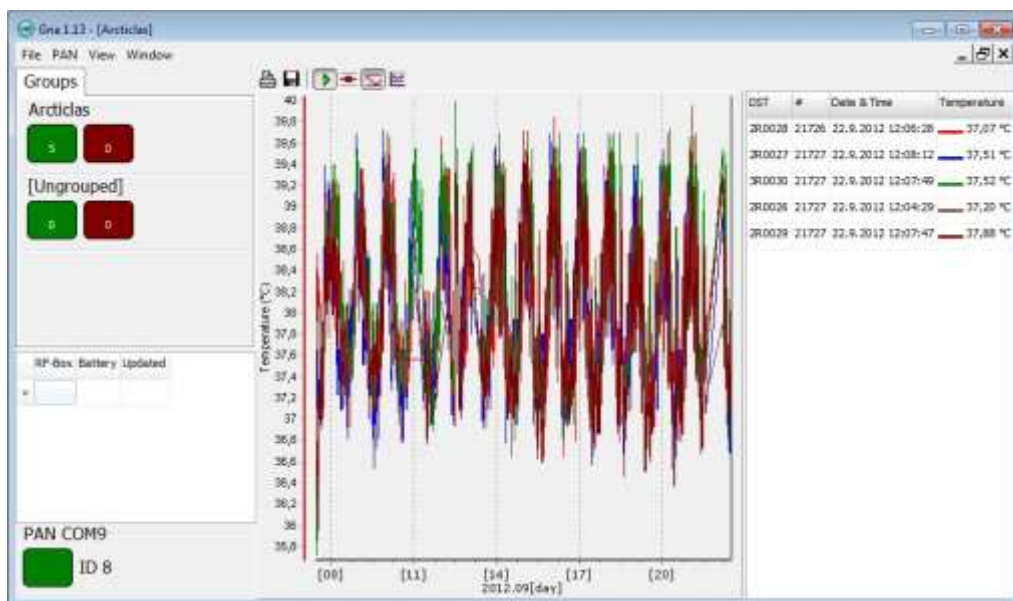


Figure 7.19 Graph

The table in the graph window gives an overview of the loggers, recording time and temperature values (see figure 7.20).

DST	#	Date & Time	Temperature
2R0028	21726	22.9.2012 12:06:28	37,07 °C
2R0027	21727	22.9.2012 12:08:12	37,51 °C
3R0030	21727	22.9.2012 12:07:49	37,52 °C
2R0026	21727	22.9.2012 12:04:29	37,20 °C
2R0029	21727	22.9.2012 12:07:47	37,88 °C

Figure 7.20 Table

To open a specific logger graph double click on the logger you want to view in the table.

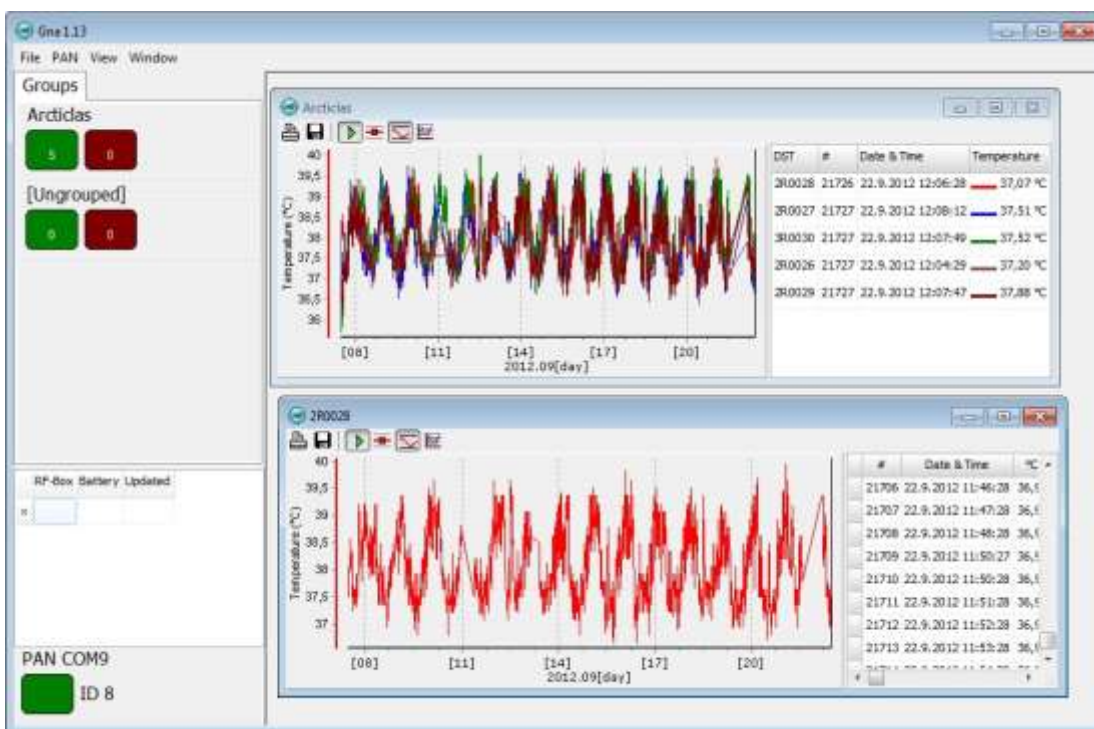


Figure 7.21 logger graph

Please see chapter 8 for more information on how to monitor the online measurements in Gná.

7.4 Downloading data in Mercury

Once the research has been conducted and the loggers retrieved from the subjects, the user can download data from the loggers in Mercury.

When connecting to a logger after a measurement period, the following window appears:



Figure 7.22 Retrieve recorder data

Click **Yes** if you wish to retrieve the data, click **No** if you would like to retrieve it later.

If you want the software to automatically retrieve data upon connection, check the **Remember this setting** option.

Select **Retrieve Recorder Data** in the wizard. If you are not using the wizard choose the **Recorder** menu and the **Retrieve Data** command. The window in figure 7.23 appears.

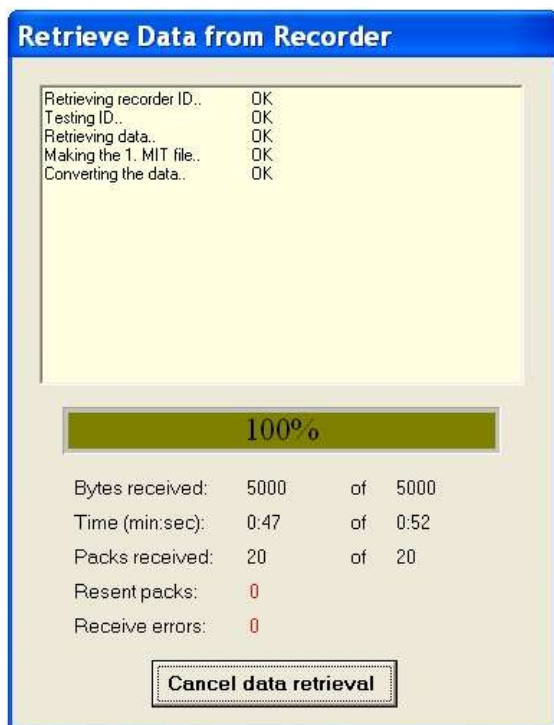


Figure 7.23 Retrieve Data from Recorder

The window in figure 7.23 shows the data retrieval progress in bytes, time elapsed and number of packs received.

Data will be uploaded from the recorder and presented in graphical and tabular form. With default settings, **Mercury** automatically creates a sub-directory in the Mercury directory, named after the DST type. In the DST type directory, a directory named after the recorder's serial number **Nnnnn** is created; N is the letter for DST nano. All files related to the recorder are automatically saved in the serial number directory. The default data directory can be viewed in the **Settings** menu, and **Directories**. The user has the option to define a new data directory path if desired.

The data is retrieved in a non-destructive manner. This means that you can repeatedly read the data without erasing it from the memory. Each time data is retrieved, a new file will automatically be created. The name of the data file consists of the measurement sequence number and the serial number of the recorder. The recorder cannot be loaded with new settings if it contains data that has not been retrieved. This is a safety feature which prevents data from being accidentally lost. New recordings overwrite previous recordings that have been retrieved.

Once the data has been retrieved the following window appears:

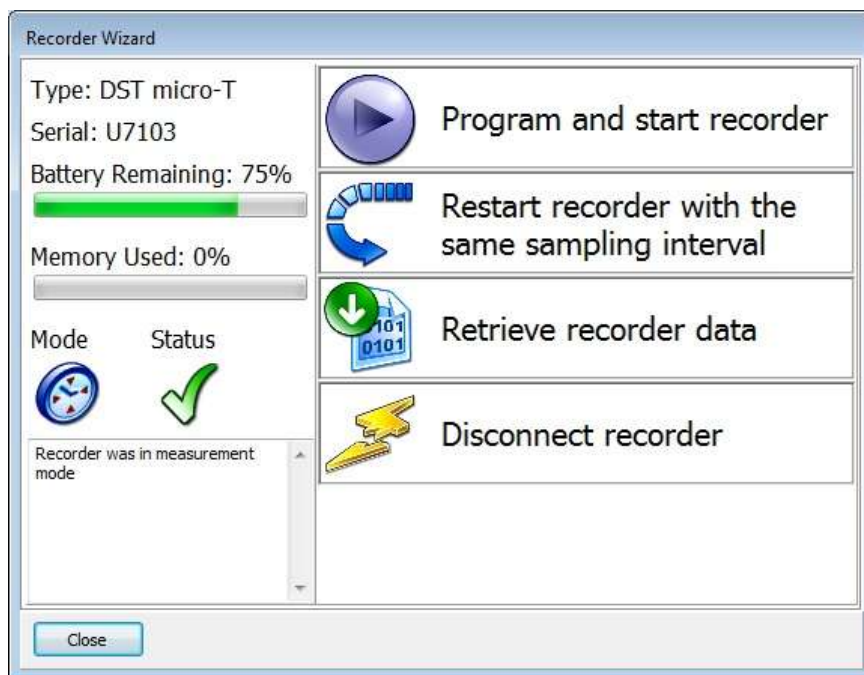


Figure 7.24 Recorder wizard

If you wish to start a new measurement sequence you can either program the logger with a new measurement sequence by selecting **Program and start recorder** or **Restart recorder with the same sampling interval**.

Disconnect

After the recorder has been set up for measuring, it should be removed from the Communication Box. If the recorder is not put in measurement mode, it will automatically go into sleep mode when removed from the box.

If you simply remove the tag Mercury will still have the recorder in on-line mode in the program and won't allow selecting another recorder or using certain options. Select **Recorder > Disconnect** to go into off-line mode.

View Data

If data is retrieved from the recorder, a new file will automatically be created and opened in graphical and tabular form. To open existing data files on the computer, choose the **File** menu, **Select Recorder** command, and then the **Select Measurement** command. When a data file has been opened, a new window appears with the data shown as a chart and a table.

For more information, please see the **DST micro-HRT** user manual.

8. On-line monitoring

This chapter describes the options available in **Gná** for viewing the data.

8.1 Buttons

When the chart is opened, buttons related to the chart are displayed.

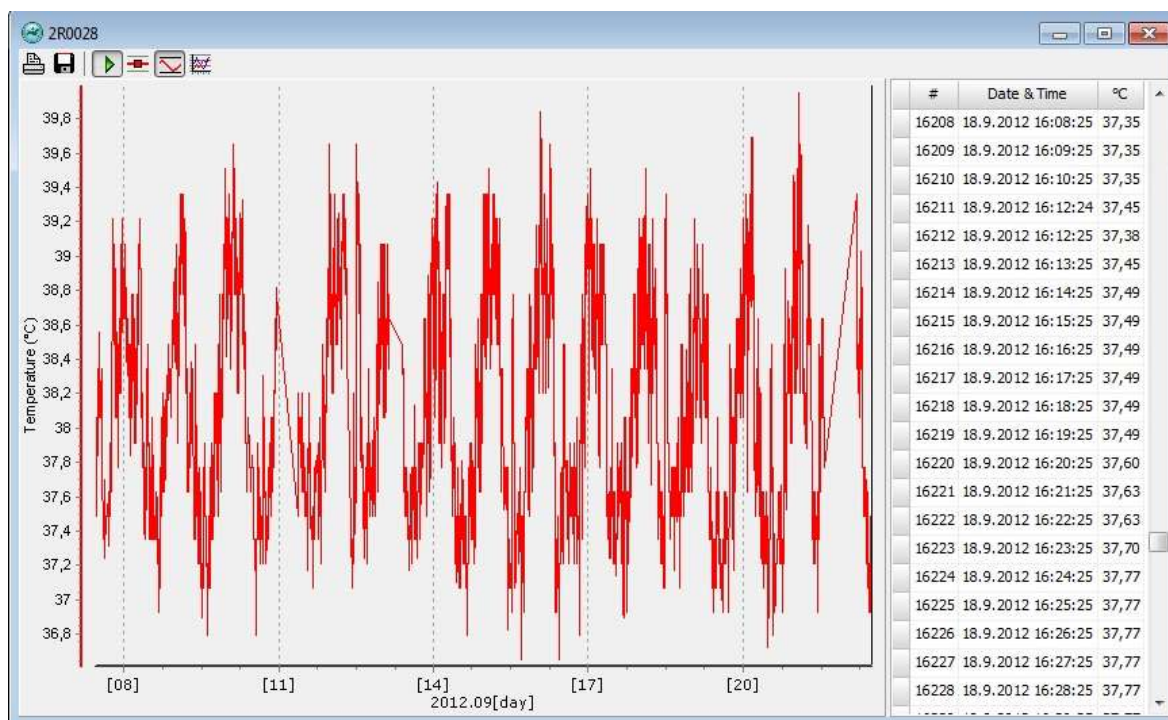


Figure 8.1 logger graph



Print Chart

Click the Print Chart button and the following window will appear:

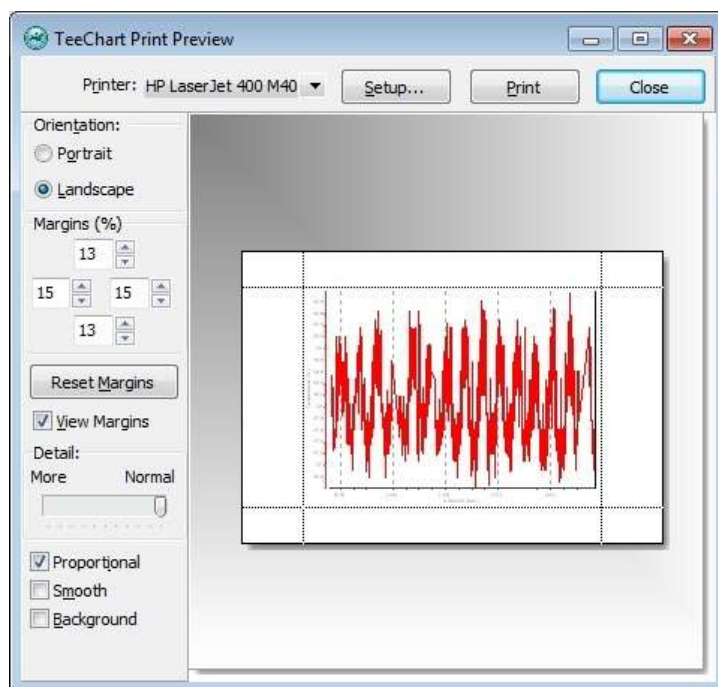


Figure 8.2 Print Preview

Orientation

The chart can be printed in either portrait or landscape format.

Margins

By changing the margins, the chart's length and width can be re-scaled. The margins can be varied by either changing the numbers given for the left, right, top and bottom margins, or by moving the margin lines with the mouse by pressing and holding the left button as the lines are dragged.

Move

When the cursor is located on the chart, a hand becomes visible. By clicking on the graph and holding down the left button of the mouse, the graph can be moved around the page to a desired position.

Details

The size of horizontal and vertical gridlines as well as the texts on the X and Y-axis can be re-scaled by using the scroll bar. The number of gridlines is increased when the bar is moved to the left.



Export Data

Export the data to other programs. Data will be exported in comma separated values (.CSV).



Scroll automatically to new data

This button gives the option of viewing the most recent data. This feature is on by default.



Data Point Marker

This button gives the option of displaying/hiding data points in the chart.



Adjust Axis

This button adjusts the axis in order to display all data within the zoomed timeline.



Active Series List

This button can be useful when working with a multi-sensor recorder, in order to select which parameters to display in the chart. For example, when working with a chart displaying temperature recordings, the user can hide the temperature line in the graph. Click the button and the following window appears:

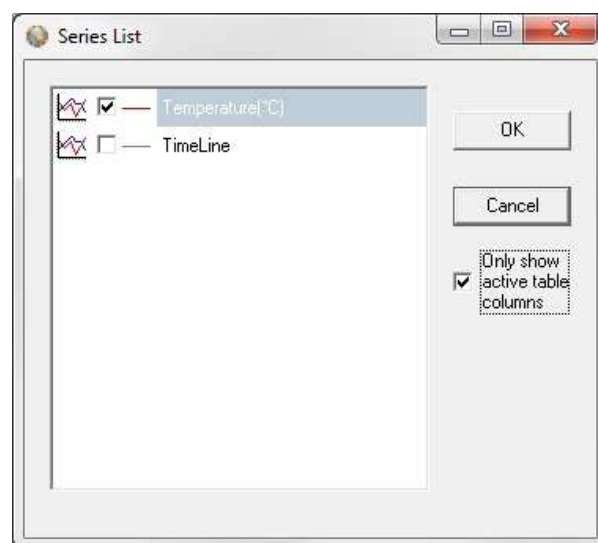
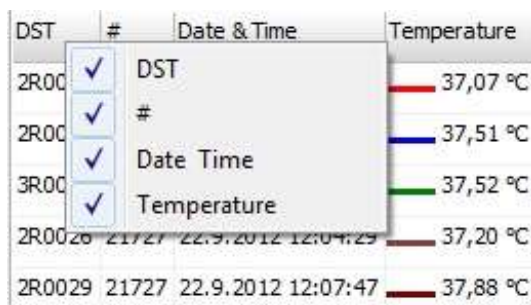


Figure 8.3 Series list

By selecting **Only show active table columns** only the selected series will be displayed in the chart table.

The table columns can also be changed manually by clicking on the table header (see figure 8.4).



DST	#	Date & Time	Temperature
2R00	✓	DST	37,07 °C
2R00	✓	#	37,51 °C
3R00	✓	Date Time	37,52 °C
2R0026	21727	22.9.2012 12:04:29	37,20 °C
2R0029	21727	22.9.2012 12:07:47	37,88 °C

Figure 8.4 Table

8.2 Using the Mouse

Zoom

The chart can be zoomed in on by holding down the left button of the mouse, and using the cursor to create a box to the right, around the desired area to zoom in on. The user can also zoom both in and out by using the mouse wheel

Scroll the Chart

The chart can be scrolled upward, downwards and to the sides, by holding down the right button of the mouse and moving the cursor in the desired direction.

Go back to initial View

To go back to the initial view of the chart, simply hold down the left button of the mouse and make a box **to the left** with the cursor. The position of the box on the chart is irrelevant.

8.3 View menu

Temperature

Select **View-Temperature** to define whether degrees Celsius, Fahrenheit or Kelvin are used as a unit for temperature measurements. The measurements can also be viewed as Raw Measurements (see figure 8.5).

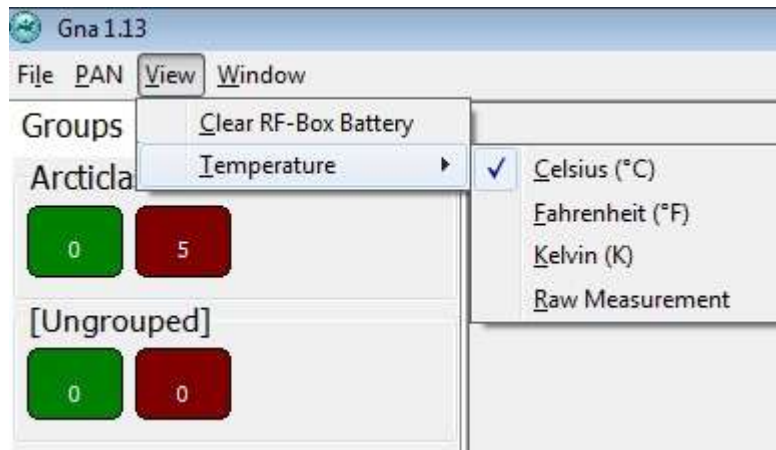


Figure 8.5 Temperature units

9. Wizard

There is one wizard in **Gná**.

9.1 Launch Mercury Telemetry Wizard

Open the **Wizard** menu and select **Launch Mercury Telemetry Wizard**. The **Mercury** software opens. The wizard goes through all the necessary procedures for starting the DST microRF-HRT logger (see figure 9.1).



Figure 9.1 RF-Wizard

9.2 Help menu

Choose **Help** and the following window appears:

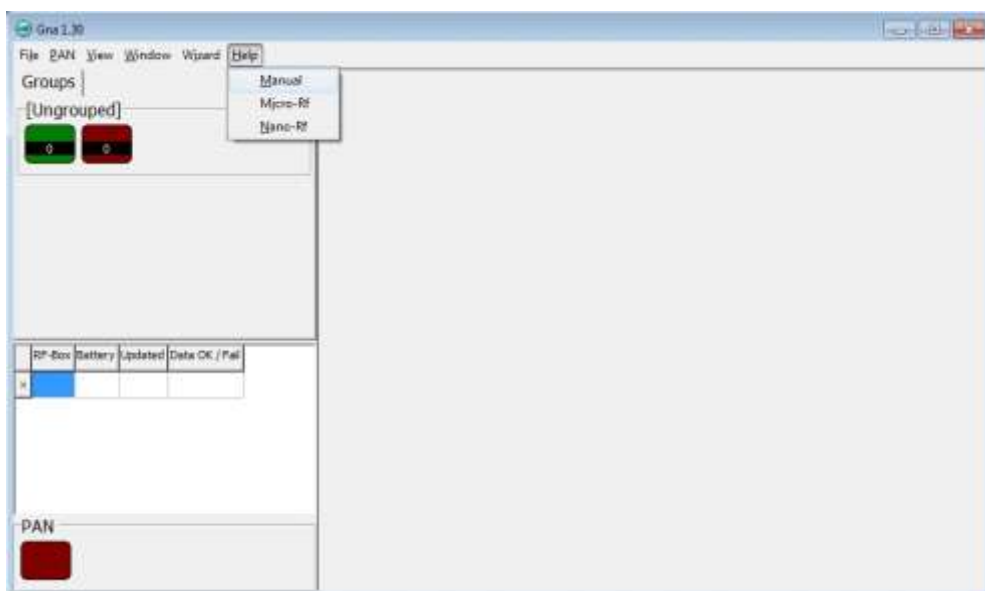


Figure 9.2 Help menu

Manual

Select **Manual** to open the SO Telemetry user manual, **micro-RF** to open the DST microRF-T user manual and **nano-RF** to open the DST nanoRF-T user manual.