Mercury & Gná
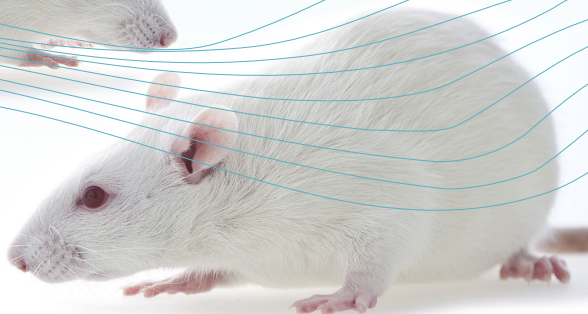
Application Software for Star-Oddi telemetry system

STAR : ODDI

Logging Life Science

Table of Contents

This is the Quick Start Guide for **Star-Oddi telemetry system**.
The whole user manual is included with the software under the
Help menu and on the Star-Oddi website:
http://star-oddi.com/online-support/user-manuals/
Changes may be made without notice.

1   Downloading and Installing Mercury and Gná

To download Mercury and Gná visit: www.star-oddi.com/downloads. The download contains two programs: **Mercury**, where the user programs the loggers, starts the measurement sequence and retrieves the logged data, and **Gná**, which monitors and displays online measurements. To install the program, follow the automatic InstallShield Wizard.

During installation you need to enter the product key found on the inside of the accompanying cover. 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 Connecting accessories

2.1 Communication Box

The Communication Box is a USB compatible communication interface, specially designed to communicate with DST recorders wirelessly via RF (radio frequency). The supplied USB cable connects directly from the box to a PC computer. The USB driver should automatically install on the computer.

The Communication Box has three lights:

1. **Red** – shows that power is fed to the Communication Box.
2. **Yellow** – shows that Mercury has made connection with the box and that the correct COM port has been selected.
3. **Green** – shows that the logger is connected. The green light will not turn on unless red and yellow lights are on.

You may need to use the Connection Wizard to get the yellow and green lights. See chapter 2.2.

The recorder is inserted into the box as shown in the figure below:
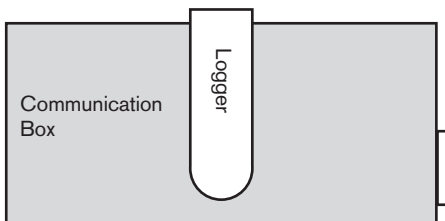Please make sure that the logger is dry.

Figure 2.1 Inserting logger into the Communication Box

2.2 Connection Wizard

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**.

If you wish to program and start up the logger manually go to chapter 3.

Connect the USB cable and the selected port will appear in the wizard pop-up window. Insert the DST into the box, the selected com port will turn green.
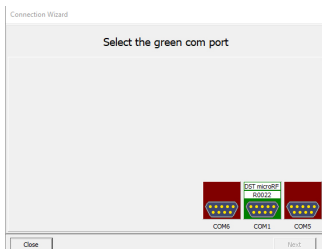

Figure 2.2 Connection Wizard

In the Connection Wizard, click once on the green-lit port and select **Next** or double-click on the port.

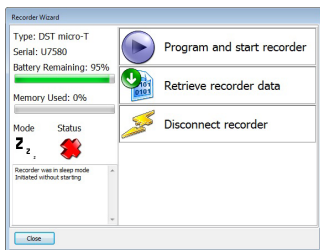The Recorder Wizard opens. Follow the instructions in the wizard.

Figure 2.3 Recorder Wizard

2.2 PAN

The Personal Area Network (PAN) controller is the receiving module which is connected to a computer and the Gná software. The PAN is connected to the computer using a serial cable and a USB converter. At all times the PAN needs to be connected to power via the accompanied AC adapter.

The correct COM port has to be selected through the Gná software
The PAN has two Lights:

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.

2.3 Antenna and RF Box

The antenna transmits data to the RF box via the mini jack connector that plugs into ANT on the RF box. Each cage will need a set of antenna and a RF box. Switch the RF box on.

The antenna is either attached to the bottom of the cage or to the rack system in use. Velcro© can be used to attach the RF box and antenna. Example of placement can be seen in Figures 2.3a and 2.3b below:
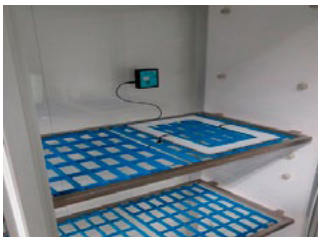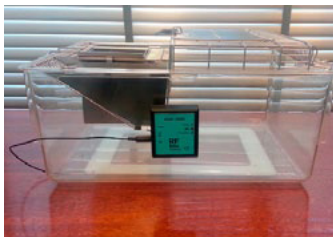

Figure 2.3a

Figure 2.3b

The RF Box has three lights:

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

Red light blinks eight times: RF Box checks 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 to the PC. 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.

3 Creating a group and setting up the logger in Mercury

3.1 Create a group

Before programming the DST microRF loggers you need to create a group. Creating a group allows you to keep all the data from a particular research in one collection.
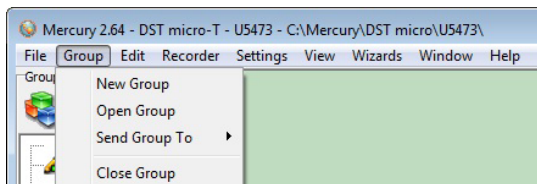

Figure 3.1 Group menu

Select **New Group** to create a new group (see figure 3.1). Please note that it is also possible to create a new group by clicking the New Group button in the group view pane.
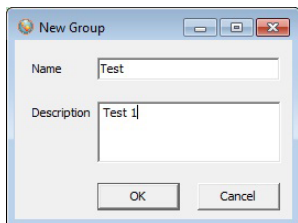
The following window appears:

Figure 3.2 New Group

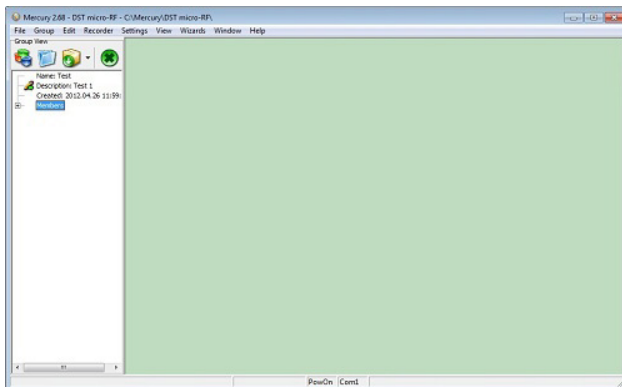Name the group and enter a description. Click OK and the group view pane appears.

Figure 3.3 Group view pane

3.2 Connect to the recorder

Choose **Recorder** and then **Connect**. A window appears with information on the recorder's mode:
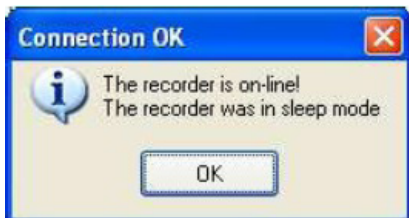

Figure 3.4 Connecting to the recorder

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

3.3 Set new measurement sequence (NMS)

To program the loggers the user needs to define and set a new measurement sequence.

Choose the **Edit menu** and N**ew Measurement Sequence Definition** and **Single Interval** The following window appears:

Figure 3.5 Measurement sequence definition

Set the start time of recording and the sampling interval. It is recommended that the sampling interval be set at 1 minute. If you want to program several loggers with the same sampling interval and start time, it is recommended to select **Multi mode**.

Parameters can be set as primary and secondary with different sampling frequency. When selecting **T-RF normal** (recommended) the logger records temperature and stores the data in its memory and transmits the data to **Gná** at the same intervals. When selecting **Temperature as primary** the user has the option of saving battery life by having the logger transmit data to **Gná** at less frequent intervals.

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

If you are using the wizard, the software will automatically start the new measurement sequence (start recording) and disconnect the logger. If not, choose the **Recorder menu** and **Start New Measurement Sequence command**.
A window appears on the screen, to verify the settings to be downloaded into the recorder:
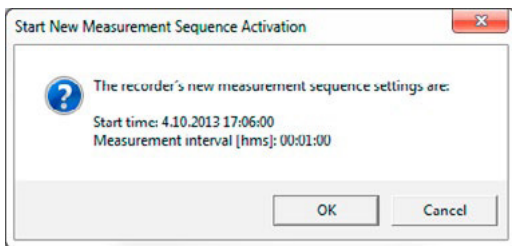

Figure 3.6 Start new measurement sequence

When starting the new sequence the following window appears:
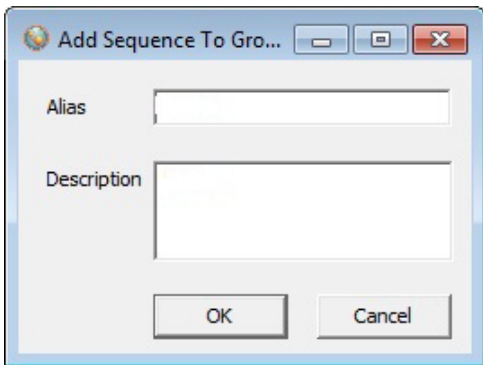

Figure 3.7 Add Sequence to Group

In order to distinguish between the different sequences in the group it is useful to set an alias for the sequence and enter a description. Click OK and the sequence will be added to the group and the recorder will be in Measurement Mode.

3.4 Disconnect logger

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.

4 Transmitting data from Mercury to Gná

4.1 Send Group from Mercury 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.

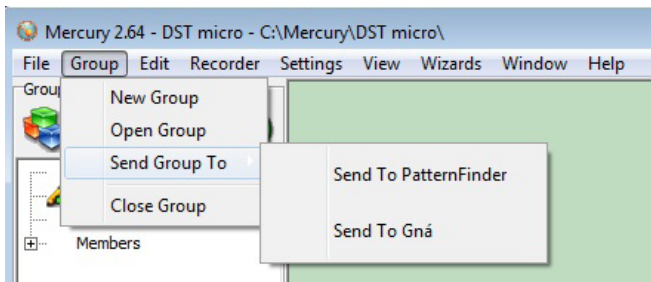Select **Send Group To** in Mercury to transfer a group to Gná.

Figure 4.1 Send Group

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

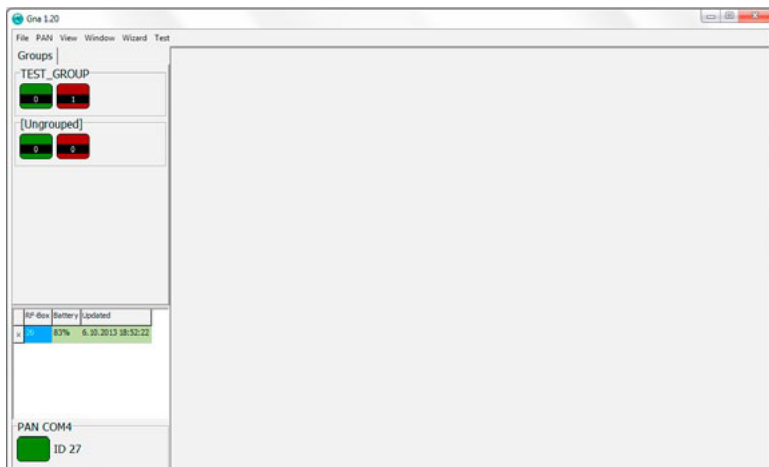The group TEST_GROUP is transmitted to Gná (see figure 4.2).

Figure 4.2 Group sent to Gná

In the green box of the group 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 consistently transmitted data to Gná (see figure 4.3).

Figure 4.3 Online loggers

To open the group graph, right click on the group and select Display (see figure 4.4).
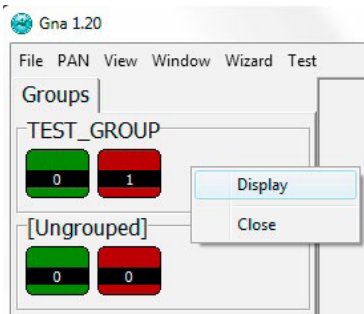

Figure 4.4 Display graph

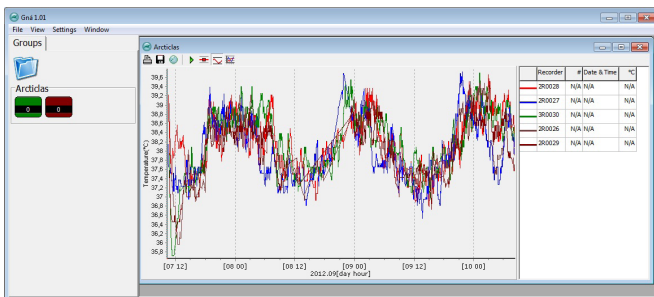A graph will appear displaying the RF transmissions from the loggers that are online (see figure 4.5).

Figure 4.5 Group graph

To open an individual recorder graph double click on the recorder you want to view in the table on the right side of the graph window. Each graph can be saved and opened in programs such as Excel for further analysis.

4.2 Initializing the PAN in Gná

Once you start Gná a COM Port menu will appear, you can then either utilize the PAN Scan feature or select the right COM port from the menu (see figure 4.6).
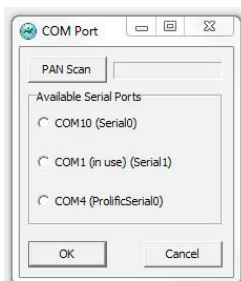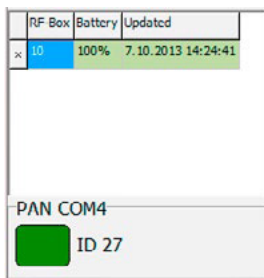

Figure 4.6 Display graph

Figure 4.7 Display graph

Once the PAN is initialized the lower left corner will have a green marker showing the COM number and the PAN ID as seen in figure 4.7. To access the COM Port menu you can always double click on the PAN box.

4.3 Initializing the RF-box

To initialize the RF-box you turn the switch to ON. If the PAN has been correctly initialized then the RF-box should appear in Gná as shown in figure 4.7. The table shows the ID of the RF-box, the battery left and when it was last updated. Each time a data is sent through the RF-box the table is updated.

5 Downloading data in Mercury

Once the research has been conducted and the loggers been 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:
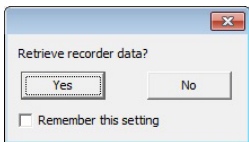

Figure 5.1 Retrieve recorder data

Click **Yes** if you wish to retrieve the data, click **No** if you would like to retrieve it later. If you are not using the wizard choose the **Recorder menu, Connect** and the **Retrieve Data command.**

After you have retrieved the data you can start a new measurement sequence or disconnect the recorder.