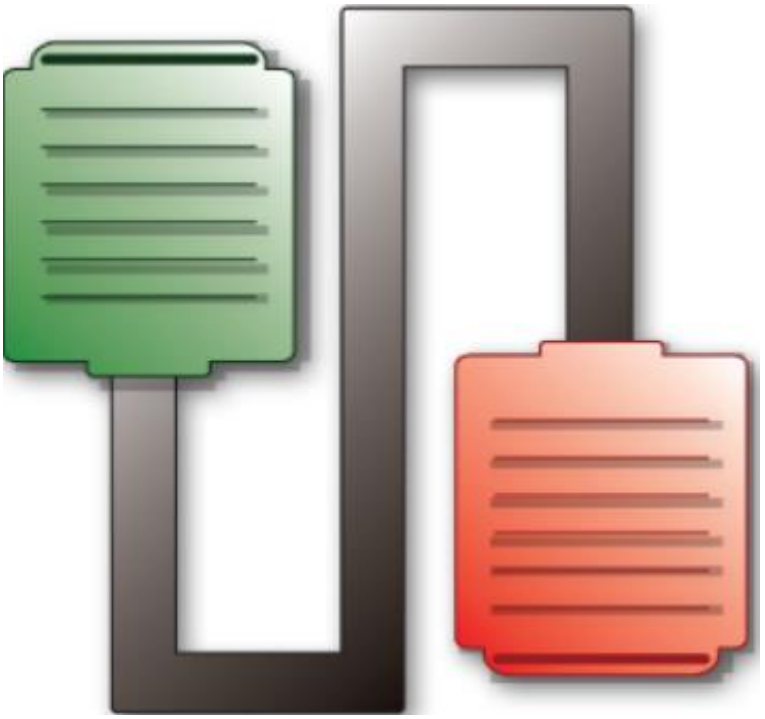
Panlab
An Affiliate of Harvard Bioscience, Inc.



USER MANUAL

SEDACOM 2.0.03

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Some symbols may have more than one interpretation by professionals unaccustomed to their usage.

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1. INTRODUCTION

SEDACOM is a very easy, convenient and cost-saving data transfer software providing an ideal environment for visualizing the registered data on a computer and exporting them in a format that simplifies any further post-analysis processes.

SEDACOM can be used with a wide range of devices from several lines of Panlab products for measuring physiology and behaviour in small laboratory animals (motor activity, pain sensitivity, body temperature, memory etc.).

The name of SEDACOM comes from SErial DAta COMmunication due to the direct communication of the Panlab devices to the computer through an RS232 serial port communication. Nowadays, some optional accessories are offered for allowing the use of the USB technology making possible running experiment on a laptop, if requested.

Highlighted features in the new SEDACOM 2.0 version:

- An Experiment Header can be used for entering the general information about the experiment (project name, experimenter, challenge, starting Date & Time…).
- New Runtime panel and report presentation in a format using tabular structure, more appropriate (and time-saving!) for the post-analysis process of the data.
- The table reports the information edited in the Edit Header panel and contains new editable fields for Subjects and Groups that can be edited before, during, or after the experiment ends.
- The data can be saved in an experimental file and opened later for adding a new set of data.
- The data can also be exported directly to Excel, txt and htm formats for further data processing, statistics and presentation.
- Depending of the devices uses, SEDACOM still have the possibility to control some particular function directly from the computer! It will be explained with more details in this manual. You can receive data from several devices at the same time.
- New USB Installation and License key (everything included in 1 USB key).

2. INSTALLATION OVERVIEW

2.1. Requirements

SEDACOM needs the following equipment:

- A fully compatible computer with at least:
  - 2.2 GHz Pentium® processor (Celeron processor not supported).
  - 2 GB of RAM.
  - HD 250 GB (150 MB of free hard disk space).
  - Graphics: 1024x768 pixels and 32-bit true colour.
  - 1 free USB port for the protection key.

- Connection interface:
  - For all equipment except for the Touchscreen Rotarod, Touchscreen Treadmill and Incapacitance Test:
    - 1 free USB port to connect the RS232 port using the USB-serial adapter.
    - A USB-Serial adapter (not included in the software pack) can be used when a RS-232 serial port is not available. We strongly recommend the use of the Panlab USB-Serial adapter (contact your Sales delegate for information). Problems of compatibility have been reported with other adapters.
  - For the Touchscreen Rotarod, Touchscreen Treadmill and Incapacitance Test:
    - 1 free USB port.
- Operating system supported:
  - Microsoft® Windows® 11 64bits
  - Microsoft® Windows® 10 32bits and 64bits
- Microsoft Office Excel installed (to support exporting data to Excel).
- Printer installed (advisable).

2.2. Installation steps

The steps to follow for the installation of the software associated drivers are different depending on the equipment used and Windows operating system. Here a summary of the steps to follow for each case please refers to the corresponding chapter indicated in each step:

- **All equipment (except the Touchscreen Rotarod, Touchscreen Treadmill and Incapacitance Test):**
    1. Check that the control unit or the USB-adapter are **not** connected to the computer (very important!).
    2. Install the USB-adapter (see chapter **Error! Reference source not found.**).
    3. Install the software (see chapter 2.5).

- **Touchscreen Rotarod and Touchscreen Treadmill:**
    1. Check that the control unit is **not** connected to the computer (very important!).
    2. Install the software (see chapter 2.5).
    3. Install the USB-serial driver (see chapter 2.6).

- **Incapacitance Test:**
    1. The Incapacitance test is delivered with a special USB-Serial cable which driver would be automatically installed by Windows when the cable is connected to the computer.

2.3. CONRS232USB-HS converter (high speed mode)

This step is not needed for the Touchscreen Rotarod, Touchscreen Treadmill and Incapacitance Test devices.

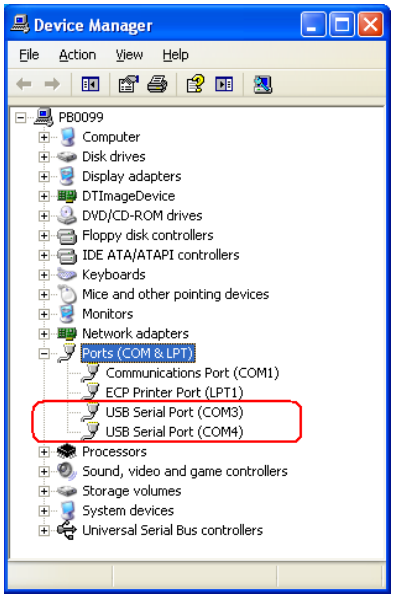
SEDACOM requires the use of the high speed converter from RS232 port to USB port. A USB – Serial adapter will allow you to set 2 serial ports in your PC or laptop.

WARNING: do not use direct connection between the device and the computer RS232 serial port (if any).

We recommend the use of a specific model of converter. We cannot guarantee a correct functioning of the system with any other USB-serial converter. The converter includes an extension cable just in case.

To Install the converter:

- Connect the converter to the computer.
- Windows 8, 10 and 11 will automatically install the drivers.
- If working with a Windows 7 or previous, please refer to the notice provided in the box of the converter.
- Once connected and installed, two serial ports will appear into the [Device Manager] window on the Windows Operative System. Usually the numbers assigned by Windows are sequential.


Device Manager
File
Action
View
Help
PB0099
Computer
Disk drives
Display adapters
DTImageDevice
DVD/CD-ROM drives
Floppy disk controllers
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Ports (COM & LPT)
Communications Port (COM1)
ECP Printer Port (LPT1)
USB Serial Port (COM3)
USB Serial Port (COM4)
Processors
Sound, video and game controllers
Storage volumes
System devices
Universal Serial Bus controllers

2.4. CONRS232USB (blue) converter (Legacy mode)

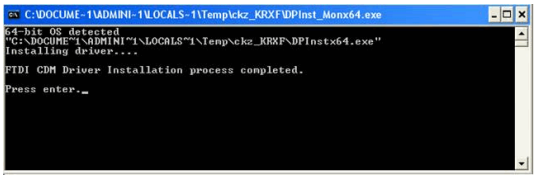
The blue RS232/converter was included in older SEDACOM software packages.

SEDACOM is still compatible with the use of the system in a Legacy mode (not high-speed). In case you need to re-install this device, please follow the below procedure:

- You need to have administrator privileges to install any new drivers under Windows 10/8/7/Vista/2003/XP/2000. To install the driver or update the configuration please log onto Windows as "Administrator" or ask your system administrator to install the USB to serial driver. Please contact your IT staff in order to clarify this issue before continue installing the device.

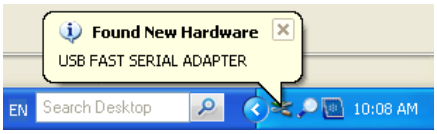
- The drivers should be installed prior to hardware installation. Do not connect the USB to serial I/O Adapters to the USB port of your computer, before you finish driver installation.
- Insert the SEDACOM software USB flash key into a free USB port of your computer and access its content.
    - If your PC is running Windows XP, a manual installation is required: go to folder Files\USBCom and execute file USBCom-CDM_20824.exe
    - Otherwise, for the rest of Windows versions, execute the installation assistant (Panlab.exe). The following installation window will be shown. Press the [Install Drivers USB-RS232] option to start the software installation process.

- The USB COM install program will auto-detect the OS type and install the driver automatically. In some operating systems, it might appear a dialog box asking to press [ENTER] at the end of the installation.

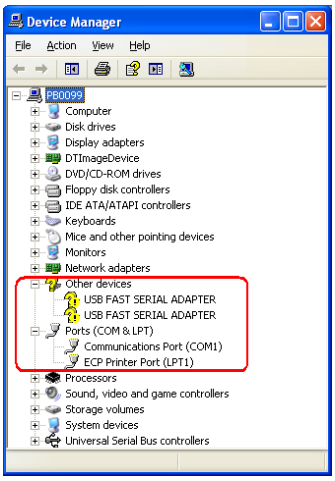


- After the message "FTDI CDM Driver installation process completed" appears, press "Enter" to complete the driver installation.
- Plug in the USB PRO Series Adapter to the USB port of your computer. Windows will finish installing the driver files.

- In the lower right corner of the screen the next message will be automatically shown:

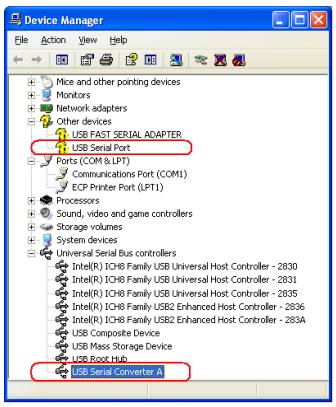


- At the same time, two devices will appear into the [Device Manager] window. The ports provided by the new [USB FAST SERIAL ADAPTER] will be shown under [Other devices] with a warning sign attached.

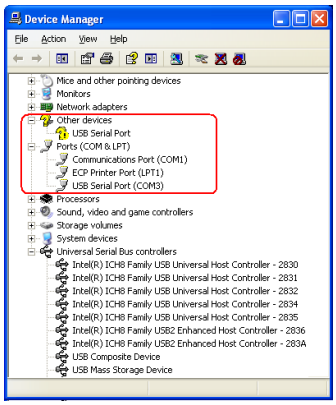


- Please, wait while the wizard locates the drivers installed previously. This process may require some minutes depending on your PC.

- The process of the correct activation of the device (that is, when the PC or laptop recognizes the new serial port), is done one by one.



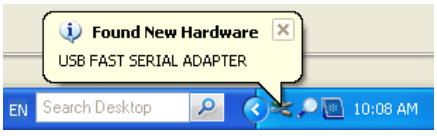
- The next picture shows how the number of the port is finally assigned by the system.



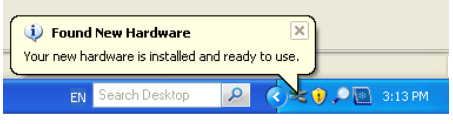
- When the wizard finishes will ask you for pressing the [FINISH] button.

Important remark:

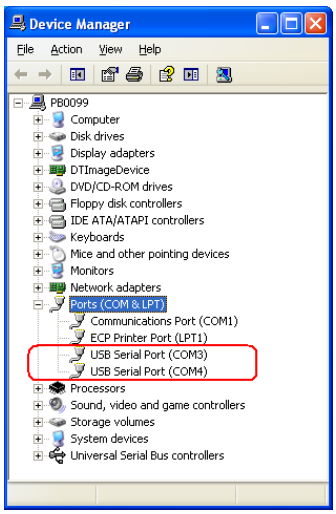
Until now, only one serial port has been correctly installed. The process must be repeated for the second port. Please, wait while your PC or laptop found another COM port. Once again, the next message will appear in the lower corner of the screen:



- The adapter will be correctly installed when all previous steps had been repeated. Finally, the message will appear in the lower right corner of.



- At the same time, the two serial ports will appear into the [Device Manager] window. Usually the numbers assigned by the system are sequential.



A yellow label with the text [Port 1] is attached to the adapter device to identify the first port recognized for the computer system. That means that if [Device Manager] shows two ports (COM3/COM4 or higher numbers), then that label [Port 1] corresponds to COM3 or the lower number of the new created COMs.

2.5. Installing the software

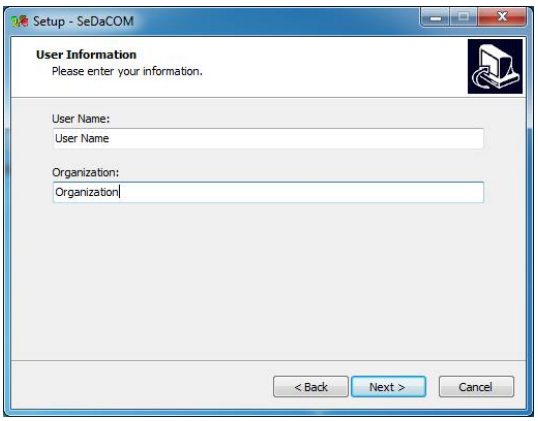
The SEDACOM software is delivered in a USB flash key which contains the application and its license of use.

If you have Windows administrative privileges, please follow the steps below:

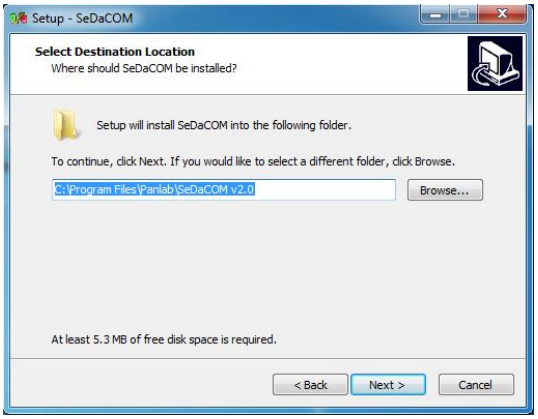
- Insert the SEDACOM software USB flash key into a free USB port of your computer, access its content and execute the installation assistant (Panlab.exe).
- The following installation window will be shown. Press the [Install SEDACOM v2.0.03] option to start the software's installation process.

- An installation wizard will appear. Press the [Next] button to start the software's installation.

- In the next window introduce the name of the user and the company in the correct field. After this, press [Next] button to continue.



- During the installation process the software is installed in a new folder called [Panlab\SEDACOM v2.0] created under the Programs Files folder. If desired, the installation program allows you to choose another folder to locate the software. The location of the software is independent of the data folder, which is defined by the user using the corresponding options of the program.



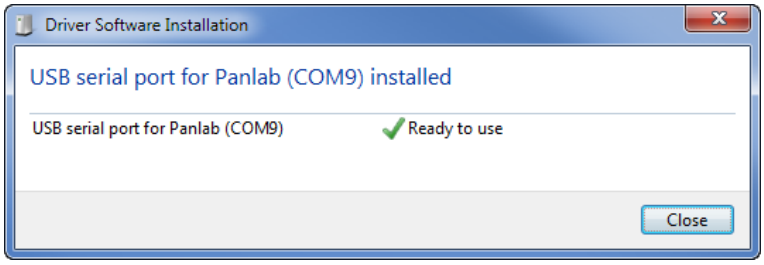
- Press the buttons [Next] and finally press [Install]. The installation is complete when the Finish installation screen is shown. At this point press the Finish button to close the installation wizard.

- A new shortcut will appear on your desktop. Use it for executing the program later.

2.6. Installing USB serial driver for Touchscreen Rotarod and Touchscreen Treadmill

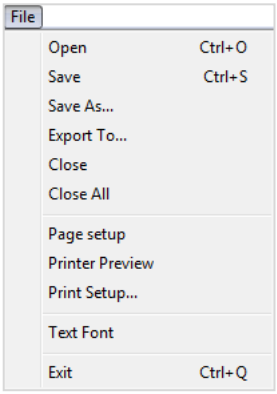
In order to properly install the USB serial driver of the Touchscreen control unit for the Rotarod and Touchscreen Treadmill, the next steps have to be followed.

The USB serial driver is preinstalled during the installation of the SEDACOM software. Plug the device to the PC using the USB cable and turn it on. Windows will recognize the device and finish the installation process.



3. MAIN MENU OPTIONS

3.1. File



- **Open** (Ctrl+O): this option can be used for opening already registered RAW data from an experiment registered with Specific Device mode (SED or RAW extension).
- **Save** (Ctrl+S):

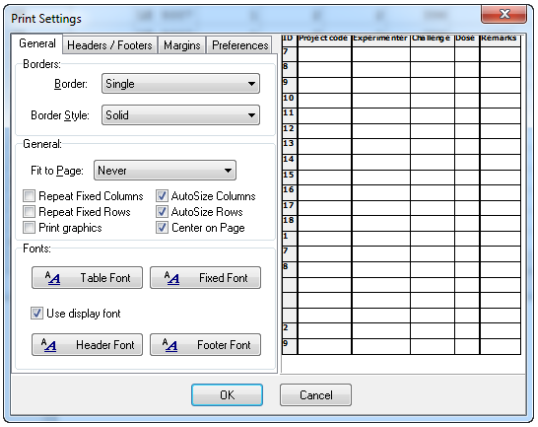
  In the Generic mode, the **Save** option save the runtime panel data in TXT format.

  In the Device mode, the **Save** option save the data into an experimental file with SED and RAW extension. The RAW file contains all the data stream received from the device. The SED file contains all the data shown into the runtime panel.

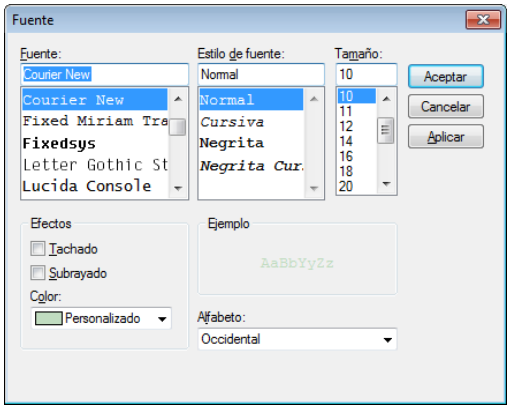
  RAW files acquired with older versions of SEDACOM (v1.4 or older) cannot be saved again without a valid USB Flash license key plugged. Please refer to the chapters 2.5 and 5.2.3 for more details on this aspect.
- **Save As**: this option has the same function as the **Save** option, but you can choose the name of the file and its location. The existing files with different name are not modified.

  RAW files acquired with older versions of SEDACOM (v1.4 or older) cannot be saved again without a valid USB Flash license key plugged. Please refer to the chapters 2.5 and 5.2.5 for more details on this aspect.
- **Export To...:** this option is only used in the Device mode to export the data from the runtime panel to a file. Three different formats are available: Excel (.xlsx is supported), Text file and Html formats.

  RAW files acquired with older versions of SEDACOM (v1.4 or older) cannot be exported to Excel without a valid USB Flash license key plugged. Please refer to the chapters 2.5 and 5.2.5 for more details on this aspect.
- **Close**: this option closes the window. If the data were not saved before closing the selected/active runtime panel a message will pops up asking for confirmation.
- **Close All**: this option closes all the opened runtime panels.
- **Printer preview**: provide a preview of the printed information.
- **Page setup**: this option is used to set the printed page if you want to print the runtime panel.

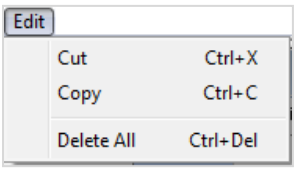


- **Text Font**: The **Text Font** option is used only in the Generic mode. The Font style used to display data can be selected from the available list. All the available fonts are "fixed pitch" fonts, so importing the data in a table or a spread sheet should not be a problem.



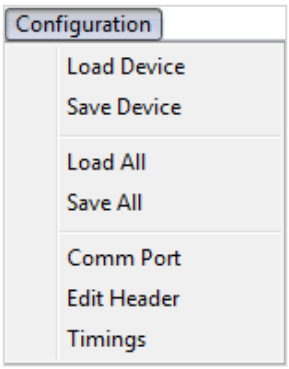
- **Exit** (Ctrl+Q): The **Exit** option is used to close the SEDACOM program.

3.2. Edit

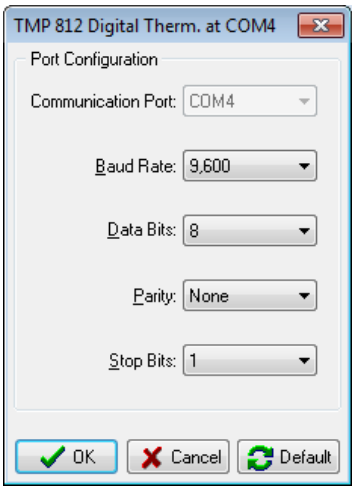


- **Copy** (Ctrl+C): Only for the Generic mode. The **Copy** option can be used for copying the selected data to the clipboard. Use the Left-click option of the mouse for selecting the data to copy (the data will be highlighted in clear blue).
- **Delete All**: this option deletes all the data on the selected/active runtime panel. If the data were not saved before closing the selected/active runtime panel a message will pops up asking for confirmation.

3.3. Configuration



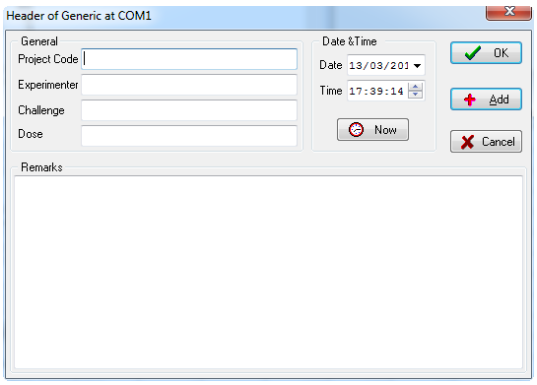
- **Load Device**: The **Load Device** option loads the common parameters of Configuration of a saved device as the experiment header, printing parameters and text font. The saved device can be different that the actual one, only the common parameters will be recovered.
- **Save Device**: The **Save Device** option saves the common Configuration parameters of the selected/active runtime panel.
- **Load All**: The **Load All** option loads a saved Configuration (all the opened runtime panels, their Configuration parameters, their position in the screen, etc.).
- **Save All**: The **Save All** option saves all the Configuration parameters of all the opened runtime panels.
- **Com Port**: The **Com Port** option can be used for modifying the serial port parameters.



  - Communication Port: This field is only for information, it cannot be changed here, and it has been selected on the [New] window.
  - Baud Rate: The user can modify the baud rate of the device.
  - Data bits: This field is the number of bits that contains the information.
  - Parity: This field is the kind of parity of the serial data transmission.
  - Stop Bit: This field is the number of stop bits that has the information.
  - Default: Resets all the fields to the default value depending of the device selected.
  - OK: Accepts all the modifications.
  - Cancel: Cancels all the modifications.

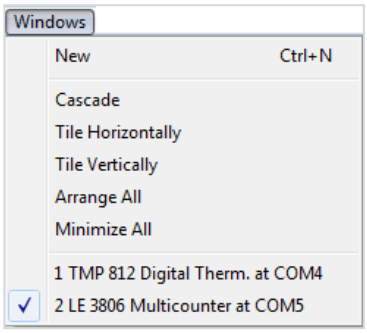
- Edit Header:

  The user can edit the information that will appear on the data header. This information is shown in the first data columns of each device in the Device mode or in plain ASCII format in the Generic mode.



  - **Project Code**: Name or code of the experiment.
  - **Experimenter**: Name of the person charged of the experiment.
  - **Challenge**: Purpose of the experiment.
  - **Dose**: Dose of product given to the animals, if any.
  - **Date**: Current date. This field can be edited by the user.
  - **Time**: Current time. This field can be edited by the user.
  - **Now**: When the **Now** button is pressed the application update the Date and Time fields with the value taken from the Time/Date schedule of the computer.
  - **OK**: Save the modifications and close the window.
  - **Add**: Only for the Generic mode. Save the modifications and adds the header to the data.
  - **Cancel**: Close the window without saving the modifications.

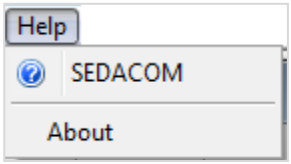
3.4. Window



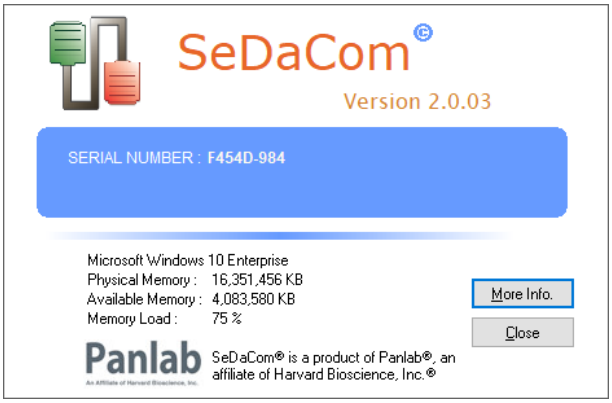
- **New** (Ctrl+N): In this window, you can select the Device and the Serial Port (see section 5.1).
- **Cascade**: Orders the opened runtime panels in cascade mode.
- **Tile Horizontal**: Divides the main screen size in horizontal divisions between all the opened runtime panels.
- **Tile Vertical**: Divides the main screen size in vertical divisions between all the opened runtime panels.
- **Minimize All**: Minimizes all the opened windows.

There will be a list of the opened runtime panels and you can switch between them.

3.5. Help



- **SEDACOM**: Opens the User Manual in PDF format.
- **About**: Information about SEDACOM version and serial number and the computer specifications.



Pressing the **More info** button provide additional information about Panlab and contact data.

When a technical support is needed, please contact us providing the following information:

- Software name and complete version number.
- Software serial number.
- Description of the request or problem.

4. GENERAL GUIDELINE OF USE

SEDACOM can be used in association with a wide number of Panlab equipment. However, the general steps of its use are shared by all devices and can be summarize in the following list.

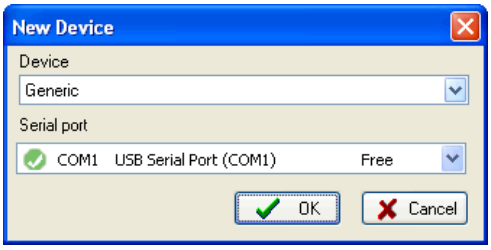
- Device and serial port settings.
- Experiment Header edition.
- Protocol configurations (timings, thresholds, specifics protocols and controls), if any.
- Data Acquisition and Runtime panel visualization.
- Data output and reports.

This list has to be considered as a general guideline, the specificities related to each device will be described in the corresponding Specific Device Interface chapter.

5. DEVICE AND PORT SETTINGS

Before transferring Data from the LETICA Device to the SEDACOM software, the Device name and Port number have to be selected.

Go to the **WINDOWS** menu on SEDACOM main screen and select **New** (or press Ctrl+N). The following window will appear.

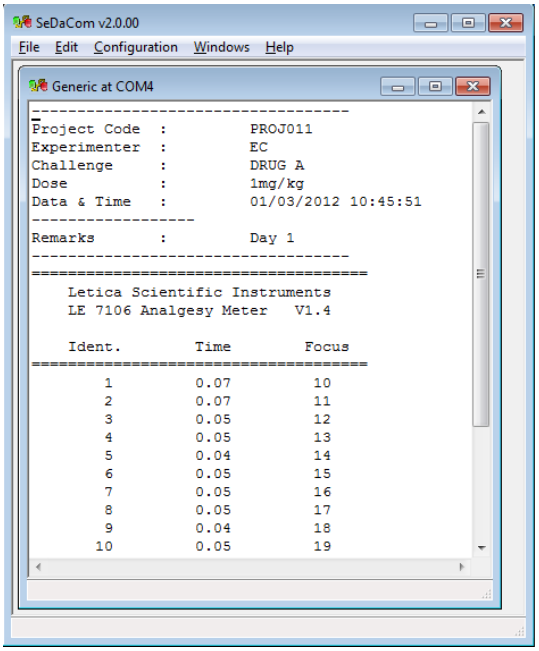


5.1. Device

SEDACOM can be used in 2 modes: the **Generic** mode or the **Device** mode.

5.1.1. Generic mode

During the acquisition, the data are shown in the runtime panel in txt-like format.



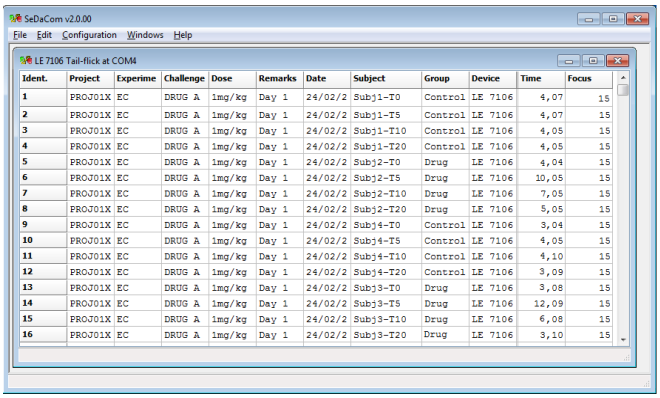
Once the acquisition process is finished, the data shown in the runtime can be saved on TXT format and imported in an Excel file for further analysis.

The generic mode can be used for all the Panlab devices. It also can be used for Devices that are not manufactured by Panlab with the condition that they can send the information in plain ASCII format ending in CR + LF.

Some devices will send the data to the PC automatically after been acquired line by line. Other devices will require the user to press manually a button labelled "Send data" or similar.

5.1.2. Device mode

During the acquisition, the data are shown in tabular format.

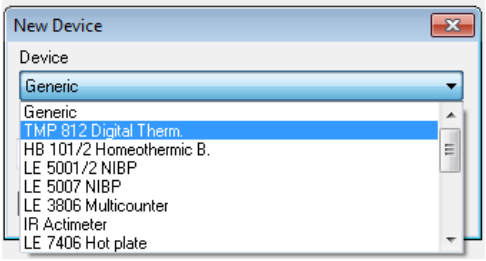


Ident.	Project	Experime	Challenge	Dose	Remarks	Date	Subject	Group	Device	Time	Focus
1	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj1-T0	Control	LE 7106	4,07	15
2	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj1-T5	Control	LE 7106	4,07	15
3	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj1-T10	Control	LE 7106	4,05	15
4	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj1-T20	Control	LE 7106	4,05	15
5	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj2-T0	Drug	LE 7106	4,04	15
6	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj2-T5	Drug	LE 7106	10,05	15
7	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj2-T10	Drug	LE 7106	7,05	15
8	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj2-T20	Drug	LE 7106	5,05	15
9	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj4-T0	Control	LE 7106	3,04	15
10	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj4-T5	Control	LE 7106	4,05	15
11	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj4-T10	Control	LE 7106	4,10	15
12	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj4-T20	Control	LE 7106	3,09	15
13	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj3-T0	Drug	LE 7106	3,08	15
14	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj3-T5	Drug	LE 7106	12,09	15
15	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj3-T10	Drug	LE 7106	6,08	15
16	PROJ01X	EC	DRUG A	1mg/kg	Day 1	24/02/2	Subj3-T20	Drug	LE 7106	3,10	15

Once the acquisition process is finished, the data can be saved in two ways:

- A raw data file can be saved using de **Save** and **Save as** option of the **File** menu. The raw data file can be opened again through the SEDACOM application for registering an additional set of data.
- Numeric report file can be saved using the **Export** option of the **File** menu in the user-defined format (Excel, txt or html…) for further analysis (statistical analysis, data illustration, experiment report…).

In the **Device** box of the **New Device** panel, select the PANLAB Device connected to the computer.

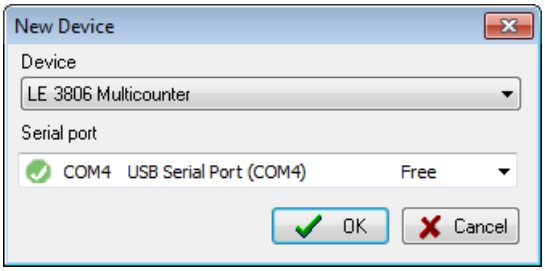


5.1.3. Device summary table

DEVICE	DEVICES ALLOWED		BAUD RATE
	CODE	DESCRIPTION	
Generic		Multiples devices	-
TMP 812 Digital Therm.	TMP 812RS	Digital Thermometer	9600
HB 101/2 Homeothermic B.	HB 101/2	Homeothermic blanket	9600
LE 5001/2 NIBP	LE 5001 LE 5002	Non Invasive Blood Pressure meter	2400
LE 5007 NIBP	LE 5007	Non Invasive Blood Pressure meter	9600
LE 3806 Multicounter	LE 3806	Multi-counter	9600
IR Actimeter	LE 8811	Activity Frame	19200
LE 7406 Hot plate	LE 7406	Hot Plate	9600
LE 7500 Plethysmometer	LE 7500	Plethysmometer	9600
EVF Von Frey	Von Frey	Pain measurement (up to version EVF3)	9600
Von Frey UB	Von Frey from Ugo Basile	Pain measurement	300
GSM Grip test	Grip Test	Strength measurement	9600
LE 7950 Incapacitance Test	LE 7950	Incapacitance Test	9600
Treadmill Touchscreen	Treadmill Touchscreen	Treadmill Touchscreen	115200
LE 7106 Tail-flick	LE 7106	Light Analgesic meter	9600
LE 7306 Paw pressure	LE 7306	Pressure Analgesic meter	9600
Rotarod	LE 8200 LE 8300 LE 8500	Rotarod	9600
Treadmill LCD	Treadmill	Treadmill	9600

5.2. Selecting the serial port

In the **Serial port** box of the **New Device** panel, select the communications port to which the device has been connected.



5.2.1. Direct RS232 serial port connection

The device has been connected directly to one of the RS232 serial port of the computer using the RS232 cable provided with the device. The serial ports of the PC are available for selection in the **Serial port** list shown in the **New Device** panel.

For instance, if the device has been connected to serial port 2 of the PC, the COM2 option has to be selected in the **Serial port** list.

5.2.2. Connection through the RS232/USB adapter

In that case the device is connected to one of the USB port of the computer through the RS232 cable and RS232/USB adapter.

When the RS232/USB adapter has been installed, 2 new COM port have been created and are then available from the **Serial port** list shown in the **New Device** panel.

5.2.3. Connection through direct USB connection

When the USB driver has been installed, a new COM port is created and is then available from the **Serial port** list shown in the **New Device** panel.

5.2.4. Multiple device connection

SEDACOM can control up to 9 devices (each one connected to a single serial/USB port) at the same time.

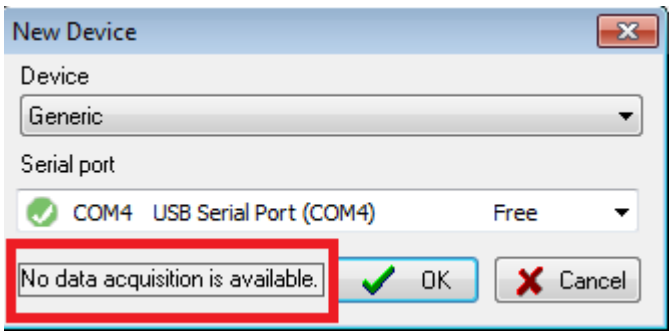
If you need additional serial ports, a USB Hub can be used.

All the devices would be managed from the same SEDACOM instance. To do that, the New Device menu option has to be selected as many times as the number of devices connected. A New Device panel would be then available for each Device for selecting the corresponding port COM.

5.2.5. Licence considerations

In SEDACOM 2.0, the USB-flash Licence needs to be connected to the computer for allowing the acquisition of data.

When the USB-flash Licence key is not connected the following message is shown in the **New Device** panel: "No data acquisition is available".



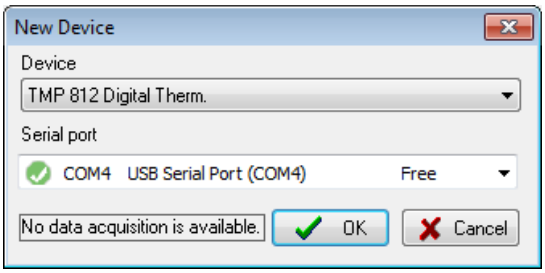
Once you have set the Device and Serial Port, press the **OK** button and a specific runtime window will appear for the selected Device.

6. SPECIFIC DEVICES INTERFACE

6.1. TMP 812 Digital Thermometer

6.1.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option TMP 812 Digital Therm. and the related serial port (see Chap. 3).

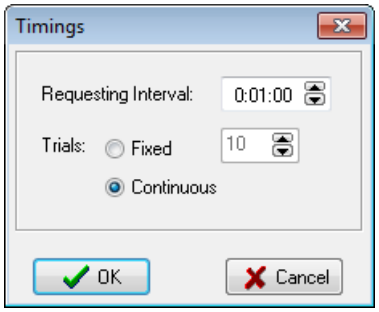


6.1.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

6.1.3. Timing settings

Set the Timings of the experiment through the **Timings** option of the main **Configuration** menu.



- Set the **Requesting Interval**: time interval for the automatic data transfer from the control unit to SEDACOM.

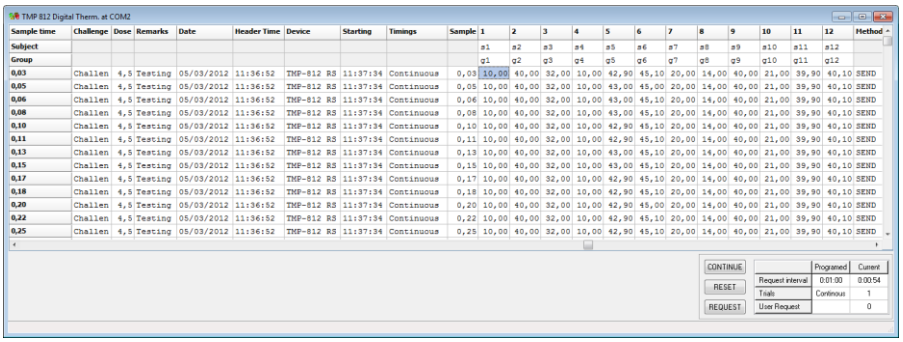
- Fixed: number of intervals. When all the intervals are elapsed, the acquisition process automatically stops.
- Continuous: with this option, the data will be sending each user-defined intervals of time until the user presses the SYOP button.

If the communication between the SEDACOM and the TMP812 is interrupted, the following message will be displayed **"Error in the communication: Time Out".** Press Ok, check connections and the experiment can be continued.

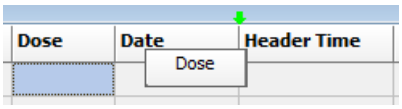
6.1.4. Runtime panel

The TMP 812 Runtime panel is composed of a Numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



The displayed information is:

- The first two rows are used to type the subject and group for each probe column from 1 to 12.
- A column with the sample time (shown in the first column and repeated just before the columns displaying the data for each panel). Unit expressed in minutes (with 2 decimals).
- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Starting time and timing configuration used.

- 12 columns with the temperature of each probe. If there is no probe connected the program will display ---.
- A column with the method of sending (described below):
    - PROG: shown when the data are acquired through the programmed timing.
    - USER: shown when the data are acquired when the user presses the **REQUEST** button.
    - SEND: shown when the data are acquired when the user presses the SEND button on the frontal panel of the TMP812RS control unit.

The displayed sample time is the fraction of minute that elapsed since the user pressed the START button and a new sample is read. If no START button has been pressed then this column is empty.

Control buttons

- START/STOP/CONTINUE:
    - **START**: When the START button is pressed, the TMP812 RS control unit begins to send automatically the data every user-defined time interval. The button shows the START label (i) before beginning to acquire data, or (ii) when the timing time is elapsed.
    - **STOP**: press the STOP button to pause the data acquisition.
    - **CONTINUE**: press the CONTINUE button to continue the acquisition of the data after a pause.
- **RESET:** Cleans the data on the screen and update the START/STOP/CONTINUE button to the START label.
- **REQUEST:** at any moment, the user can press the REQUEST button to request the current temperature data from the control unit.

6.1.5. Data output

Use the Save and Saves as option of the File menu to save the experimental file.

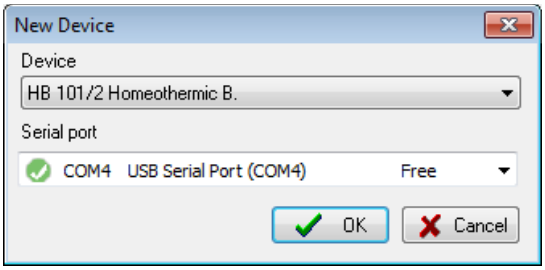
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.2. HB101/2 Homoeothermic blanket

6.2.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option HB 101/2 Homoeothermic B. and the related serial port (see Chap. 3).

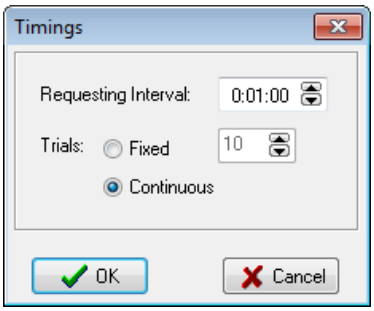


6.2.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

6.2.3. Timing settings

Set the Timings of the experiment through the **Timings** option of the main **Configuration** menu.



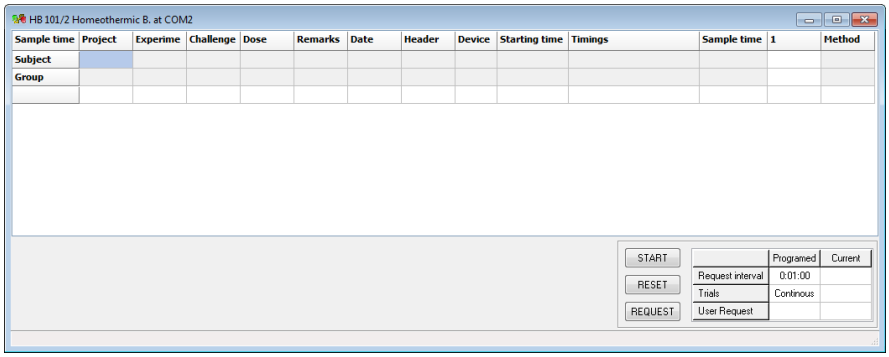
- Set the **Requesting Interval**: time interval for the automatic data transfer from the control unit to SEDACOM.
- Fixed: number of intervals. When all the intervals are elapsed, the acquisition process automatically stops.
- Continuous: with this option, the data will be send each user-defined intervals of time until the user presses the SYOP button.

- If the communication between the SEDACOM and the TMP812 is interrupted, the following message will be displayed **"Error in the communication: Time Out".** Press Ok, check connections and the experiment can be continued.

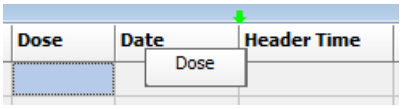
6.2.4. Runtime panel

The HB101/2 Homeothermic B. runtime panel is composed of a Numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



The displayed information is:

- The first two rows are used to type the subject and group for each probe column from 1 to 12.
- A column with the sample time (shown in the first column and repeated just before the columns displaying the data for each panel). Unit expressed in minutes (with 2 decimals).
- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Starting time and timing configuration used.
- One column with the set temperature. If there is no probe connected the program will display ---.
- A column with the method of sending (described below):
    - PROG: shown when the data are acquired through the programmed timing.

- USER: shown when the data are acquired when the user presses the **REQUEST** button.
- SEND: shown when the data are acquired when the user presses the SEND button on the frontal panel of the TMP812RS control unit.

The displayed sample time is the fraction of minute that elapsed since the user pressed the START button and a new sample is read. If no START button has been pressed then this column is empty.

Control buttons

- START/STOP/CONTINUE:
  - **START**: When the START button is pressed, the HB101/2 control unit begins to send automatically the data at every user-defined time interval. The button shows the START label (i) before beginning to acquire data, or (ii) when the timing time is elapsed.
  - **STOP**: press the STOP button to pause the data acquisition.
  - **CONTINUE**: press the CONTINUE button to continue the acquisition of the data after a pause.
- **RESET:** Cleans the data on the screen and update the START/STOP/CONTINUE button to the START label.
- **REQUEST:** at any moment, the user can press the REQUEST button to request the current temperature data from the control unit.

6.2.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

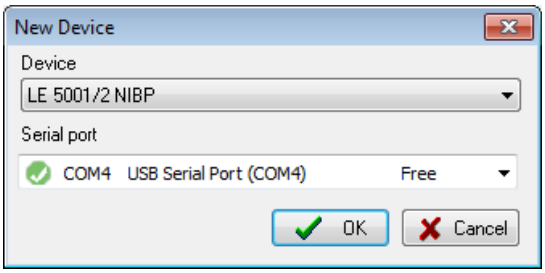
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.3. LE 5001/2 NIBP

6.3.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 5001/2 NIBP and the related serial port (see Chap. 3).

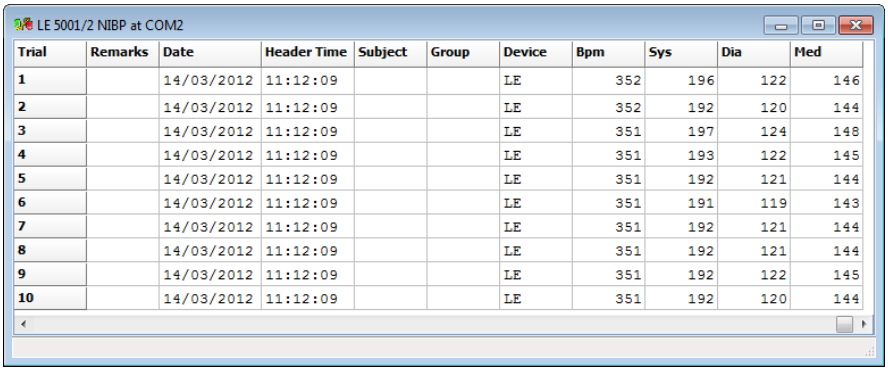


6.3.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

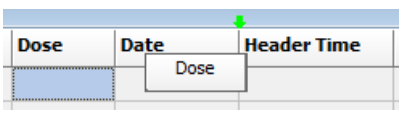
6.3.3. Runtime panel

The LE5001/2 NIBP Runtime panel consists in a Numerical Data Table.



Trial	Remarks	Date	Header Time	Subject	Group	Device	Bpm	Sys	Dia	Med
1		14/03/2012	11:12:09			LE	352	196	122	146
2		14/03/2012	11:12:09			LE	352	192	120	144
3		14/03/2012	11:12:09			LE	351	197	124	148
4		14/03/2012	11:12:09			LE	351	193	122	145
5		14/03/2012	11:12:09			LE	351	192	121	144
6		14/03/2012	11:12:09			LE	351	191	119	143
7		14/03/2012	11:12:09			LE	351	192	121	144
8		14/03/2012	11:12:09			LE	351	192	121	144
9		14/03/2012	11:12:09			LE	351	192	122	145
10		14/03/2012	11:12:09			LE	351	192	120	144

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the LE5001/2 device.

With the LE5001 device, the data shown in the display are automatically sent to the computer when a measurement is completed (at the end of the deflating process).

With the LE5002 device, the data are sent every time the SEND button available from the control unit front panel is pressed. In that case, the user can chose sending only the displayed trial or All the data saved in the internal memory of the device.

6.3.3.1. Data provided:

- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Subject & Group - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- Device – Name of the connected device. Here: LE5001/2.
- Bpm – Subject pulse when the START button is pressed on the control unit front panel for initiating the measurement, expressed in beat per minute.
- Sys – Systolic pressure, expressed in mmHg.
- Dia – Diastolic pressure, expressed in mmHg.
- Med - Mean pressure calculated with the formula MP = DP + 0.33·(SP + DP).

6.3.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

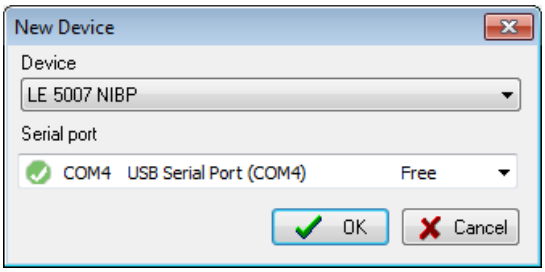
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.4. LE 5007 NIBP

6.4.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 5007 NIBP and the related serial port (see Chapter 3).



6.4.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

6.4.3. Previous settings

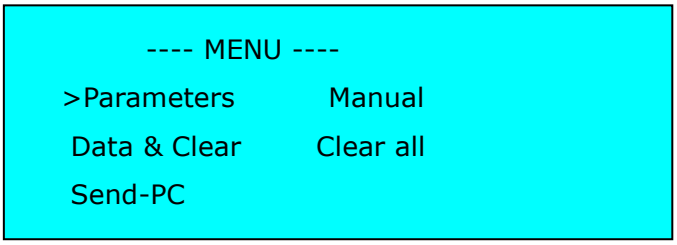
With the LE5007 device, there are two ways to send the data to SEDACOM:

- **Manual:** the data are sent every time the SEND button available from the control unit front panel is pressed. In that case, the user can chose sending only the displayed trial or All the data stored in the internal memory of the device.
- **Automatic:** the data shown in the display are automatically sent to the computer each time a measurement is completed (at the end of the deflating process).

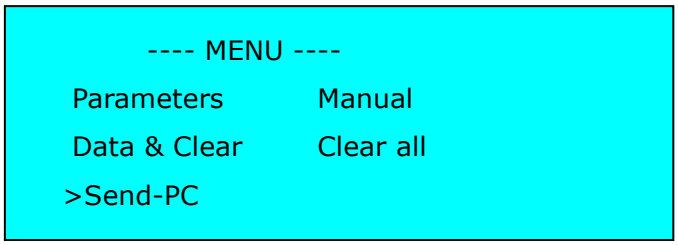
6.4.3.1. Manual data sending

1) Press 

to access MENU screen.

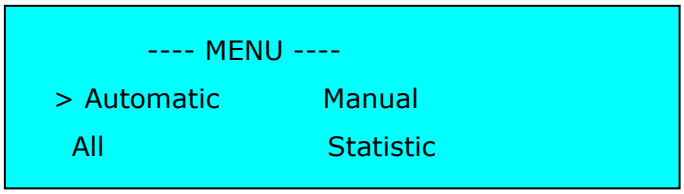


2) Navigate with the arrow buttons  until the **Send-PC** option is selected.



3) Press 

to accept the option and the following screen will appear:



- **Automatic:** This mode sends all data taken in automatic mode (this should not be confounded with automatic data sending). This mode is normally used working with an **LE 5650 Heater & Scanner**.
- **All:** This mode sends all data, whether manual or automatic.
- **Manual:** This mode sends all data taken in manual mode.
- **Statistic:** This mode sends all data. It also uses the data sent to calculate statistical parameters.

4) Navigate with arrow buttons  until you reach the selected option.

5) Press 

to accept or 

to cancel.

The next figure shows an example of data sent in **Statistic** mode.

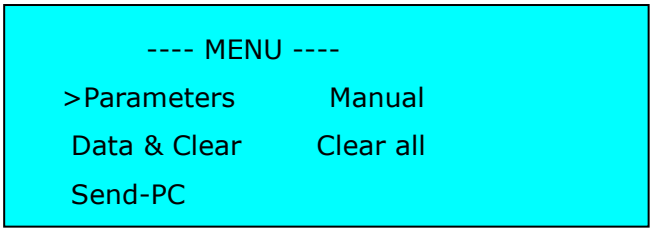
Device	Trial	Channel	Meas	Bpm	Sys	Dias	Med
LE 5007	MAN	1		320	88	68	74
LE 5007	MAN	1		320	86	67	73
LE 5007	MAN	1		320	85	67	73
LE 5007	MAN	1		320	85	66	72
LE 5007	MAN		X	320	86	67	73
LE 5007	MAN		S	0	1	0	0
LE 5007	MAN		n	4	4	4	4

6.4.3.2. Automatic data sending

In automatic mode every time a measurement is finished, data are automatically sent to the computer. To do that, first the **Send data** parameter must be set to **On** in the device:

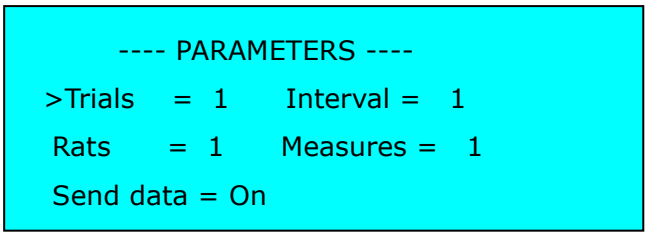
1) Press 

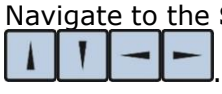
to access the main menu with the parameters option selected:



2) Press 

to accept.



3) Navigate to the **Send data** option using the arrow buttons  .

4) Press 

to validate the parameter. Its value will appear between brackets [ ].

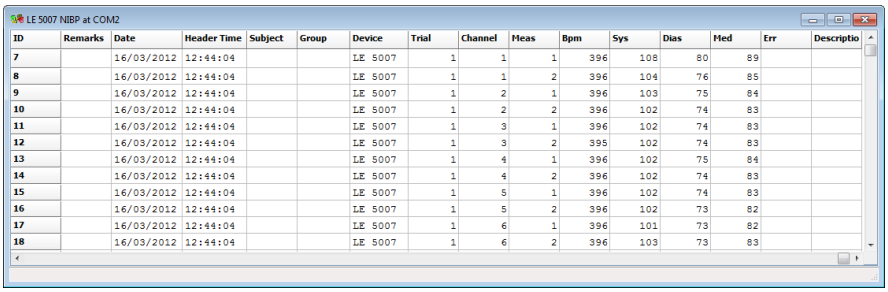
5) Change parameter value with arrow buttons,  and select **On**.

6) Press 

to accept the value or 

to cancel it.

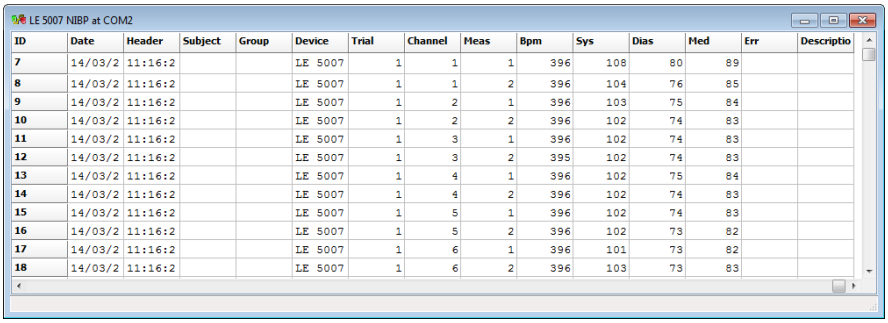
The next figure shows an example of data sent in **Automatic** mode.



ID	Remarks	Date	Header Time	Subject	Group	Device	Trial	Channel	Meas	Bpm	Sys	Dias	Med	Err	Descriptio
7		16/03/2012	12:44:04			LE 5007	1	1	1	396	108	80	89		
8		16/03/2012	12:44:04			LE 5007	1	1	2	396	104	76	85		
9		16/03/2012	12:44:04			LE 5007	1	2	1	396	103	75	84		
10		16/03/2012	12:44:04			LE 5007	1	2	2	396	102	74	83		
11		16/03/2012	12:44:04			LE 5007	1	3	1	396	102	74	83		
12		16/03/2012	12:44:04			LE 5007	1	3	2	395	102	74	83		
13		16/03/2012	12:44:04			LE 5007	1	4	1	396	102	75	84		
14		16/03/2012	12:44:04			LE 5007	1	4	2	396	102	74	83		
15		16/03/2012	12:44:04			LE 5007	1	5	1	396	102	74	83		
16		16/03/2012	12:44:04			LE 5007	1	5	2	396	102	73	82		
17		16/03/2012	12:44:04			LE 5007	1	6	1	396	101	73	82		
18		16/03/2012	12:44:04			LE 5007	1	6	2	396	103	73	83		

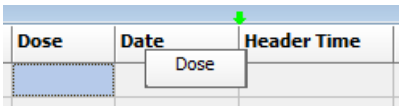
6.4.4. Runtime panel

The Le5007 Runtime panel consists in a Numerical Data Table.



ID	Date	Header	Subject	Group	Device	Trial	Channel	Meas	Bpm	Sys	Dias	Med	Err	Descriptio
7	14/03/2	11:16:2			LE 5007	1	1	1	396	108	80	89		
8	14/03/2	11:16:2			LE 5007	1	1	2	396	104	76	85		
9	14/03/2	11:16:2			LE 5007	1	2	1	396	103	75	84		
10	14/03/2	11:16:2			LE 5007	1	2	2	396	102	74	83		
11	14/03/2	11:16:2			LE 5007	1	3	1	396	102	74	83		
12	14/03/2	11:16:2			LE 5007	1	3	2	395	102	74	83		
13	14/03/2	11:16:2			LE 5007	1	4	1	396	102	75	84		
14	14/03/2	11:16:2			LE 5007	1	4	2	396	102	74	83		
15	14/03/2	11:16:2			LE 5007	1	5	1	396	102	74	83		
16	14/03/2	11:16:2			LE 5007	1	5	2	396	102	73	82		
17	14/03/2	11:16:2			LE 5007	1	6	1	396	101	73	82		
18	14/03/2	11:16:2			LE 5007	1	6	2	396	103	73	83		

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the LE5007 device.

6.4.4.1. Data provided:

- ID – Measurement number.
- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Subject & Group - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- Device – Name of the connected device. Here: LE5007.

- Trial – Measurement mode:
  - MAN: Manual mode.
  - In the automatic mode, this columns display the the number or the trial.
- Meas – measurement label:
  - Empty: value line.
  - X: Mean sample value (for n-1 data.
  - S: Sample deviation.
  - N: Number of data considered for X and S calculations.
- Bpm – Subject pulse when the START button is pressed on the control unit front panel for initiating the measurement, expressed in beat per minute.
- Sys – Systolic pressure, expressed in mmHg.
- Dia – Diastolic pressure, expressed in mmHg.
- Med - Mean pressure calculated with the formula MP = DP + 0.33·(SP + DP).
- Err – Error code.
- Description – Description of the message.

CODE	ERROR
1	Insufficient Level
2	High level
3	Stopped
4	Over Pressure (+ 300 mmHg)
5	Systolic not found
6	Diastolic not found

6.4.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

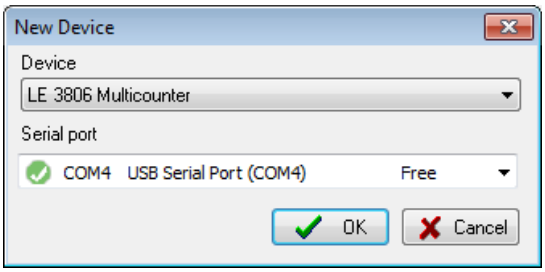
6.5. LE 3806 Multicounter

The LE3806 Multicounter can be used with two different systems: the Rotameter and/or the Activity wheels.

- Up to 30 activity wheels can be connected to the multicounter. The activity wheel has 1 magnet sensor on the wheel so the data provided are the number of time this sensor is activated (usually related to the number of complete rotations).
- Up to 15 rotameters can be connected to the multicounter since the number of both clockwise and counter clockwise rotations would be provided for each rotameter (so each rotameter uses 2 channels). The rotameter has 4 magnet sensors so the data provided are the number of time this sensor is activated. In that case, the multicounter counts 4 pulses by revolution (each ¼ turn), but this can be set to 1, 2, 4, 8 or 16 pulses per revolution from the hardware.

6.5.1. Device & Serial port

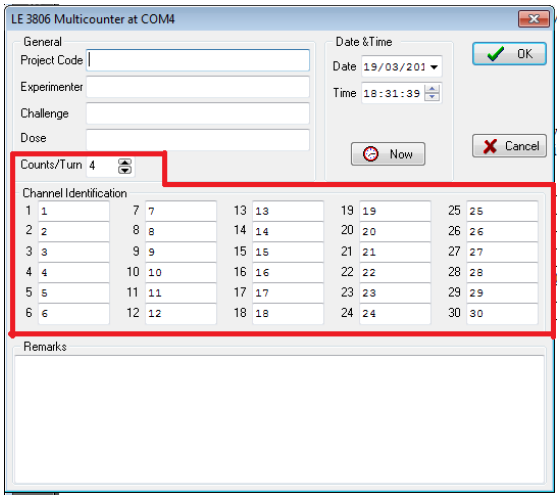
Select option **New** in the **Windows** menu; then select option LE3806 Multicounter and the related serial port (see Chap. 3).



6.5.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details of the standard files available.

The LE3806 has some specific additional fields available in the Header.



- Counts/turn: rotation sensor detection adjustment. This number must be the same that the one configured in the device. When the activity wheel is used, this number can only be set at 1. When the rotameter is used, the user has the possibility to set a different number of pulses detected per rotations.
- Channel Identification: number of the channel. Can be edited by the user.

6.5.3. Previous settings

The transfer of data from the LE 3806 control unit to SEDACOM can be made using 2 different modes:

- M1 (JUST SAVING) – The data of one experiment (or of all experiments) is saved in the multicounter internal memory only. These data can be transferred to the SEDACOM software only when the user manually presses the SEND button on the front panel of the control unit.

  The limit of samples is 5330 for each set of experiment/recording (independently of the number of channel used).

  Exp: if the total duration of the experiment is 12 hours, the minimal interval time that can be used is 9s ((12h x 60 x60)/5330= 8.10). Each 9 s the system will sum the number of time the magnet has been detected.
- M2 (SAVE & SEND) – The data of one experiment (or of all experiments) is automatically transferred as they are simultaneously stored in the internal memory of the device at the end of each interval of time. Additionally, the SEND button can be presses for the manual transfer or the data.

The limit of samples is 5330 for each set of experiment/recording (independently of the number of channel used).

Exp: if the total duration of the experiment is 12 hours, the minimal interval time that can be used is 9s ((12h x 60 x60)/5330= 8.10).Each 9 s the system will sum the number of time the magnet has been detected.

- M3 (JUST SENDING) – The data of one experiment (or of all experiments) is automatically transferred but they are not stored in the internal memory of the device. Additionally, the SEND button can be presses for the manual transfer or the data.

  For this configuration, we recommend to connect the computer to a SAI, as a protection against any fluctuation of the current in the power net.

  The limit of samples is 9999 for each set of experiment/recording (independently of the number of channel used).

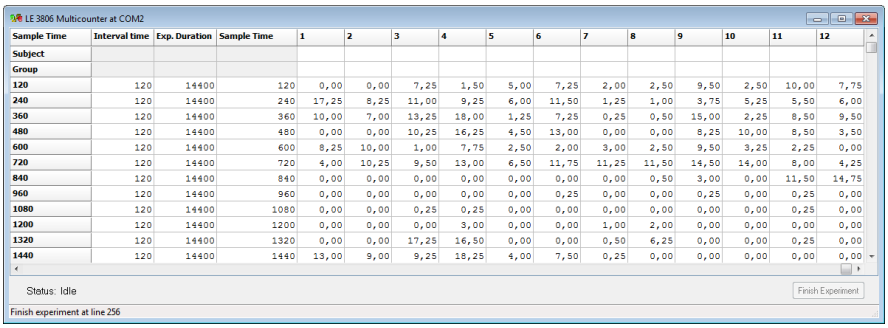
  Exp: if the total duration of the experiment is 12 hours, the minimal interval time that can be used is 5s ((12h x 60 x60)/9999= 4.32). Each 5 s the system will sum the number of time the magnet has been detected.

In order to choose the operating mode on the device go to the front panel and press **MENU**, select **MODE** and press **ENTER, M1=JUST SAVING** will now appear. If it does not, press **ENTER** repeatedly until it appears. See also the LE3806 Multicounter user's manual.

6.5.4. Runtime panel

The LE3806 runtime panel is composed of 1 numerical Data Table and 1 control button.

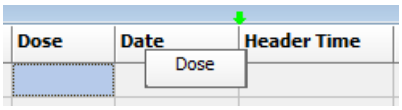
Numerical Data Table



Sample Time	Interval time	Exp. Duration	Sample Time	1	2	3	4	5	6	7	8	9	10	11	12
Subject															
Group															
120	120	14400	120	0,00	0,00	7,25	1,50	5,00	7,25	2,00	2,50	9,50	2,50	10,00	7,75
240	120	14400	240	17,25	8,25	11,00	9,25	6,00	11,50	1,25	1,00	3,75	5,25	5,50	6,00
360	120	14400	360	10,00	7,00	13,25	18,00	1,25	7,25	0,25	0,50	15,00	2,25	8,50	9,50
480	120	14400	480	0,00	0,00	10,25	16,25	4,50	13,00	0,00	0,00	8,25	10,00	8,50	3,50
600	120	14400	600	8,25	10,00	1,00	7,75	2,50	2,00	3,00	2,50	9,50	3,25	2,25	0,00
720	120	14400	720	4,00	10,25	9,50	13,00	6,50	11,75	11,25	11,50	14,50	14,00	8,00	4,25
840	120	14400	840	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,50	3,00	0,00	11,50	14,75
960	120	14400	960	0,00	0,00	0,00	0,00	0,00	0,25	0,00	0,00	0,25	0,00	0,25	0,00
1080	120	14400	1080	0,00	0,00	0,25	0,25	0,00	0,00	0,00	0,00	0,00	0,00	0,25	0,00
1200	120	14400	1200	0,00	0,00	0,00	3,00	0,00	0,00	1,00	2,00	0,00	0,00	0,00	0,00
1320	120	14400	1320	0,00	0,00	17,25	16,50	0,00	0,00	0,50	6,25	0,00	0,00	0,25	0,00
1440	120	14400	1440	13,00	9,00	9,25	18,25	4,00	7,50	0,25	0,00	0,00	0,00	0,00	0,00

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title

line and enlarge a column or click on a column title and displace it.



During the acquisition of the data, the SEDACOM Runtime panel display the status of the process in the bottom-left part of the panel.

- **Idle** – SEDACOM is waiting to receive the data from a new experiment.
- **Waiting latency** – SEDACOM is waiting that the end of the latency period.
- **Waiting interval N** – SEDACOM is waiting for the data from the current interval of time.
- **Reading interval N** – SEDACOM is currently reading the data from the current interval of time.

If the system is in "Waiting latency" or "Waiting interval" states, the button "Finish Experiment" is enabled. Pressing this button makes the system to jump to the "Idle" state.

During the "Waiting interval" state, the current data acquisition process is automatically finished by SEDACOM (so that the experiment jumps to the "Idle" state) whenever the interval time plus two seconds is elapsed without receiving any data from the LE 3806 control unit.

The displayed information is:

- The first two rows are used to type the subject and group for each probe column from 1 to 12.
- A column with the sample time (shown in the first column and repeated just before the columns displaying the data for each panel). Unit expressed in minutes (with 2 decimals).
- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Timing configuration used: Latency, number of intervals, interval time, Exp. Duration).
- 30 columns with the number of rotations detected in each channel.

6.5.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

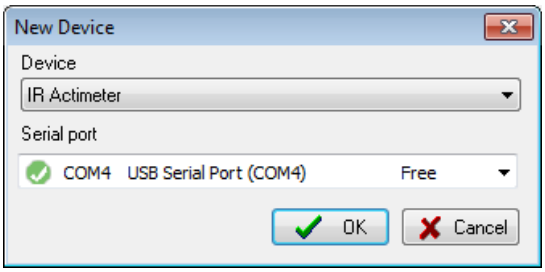
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.6. IR Actimeter

6.6.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option IR Actimeter and the related serial port (see Chap. 3).

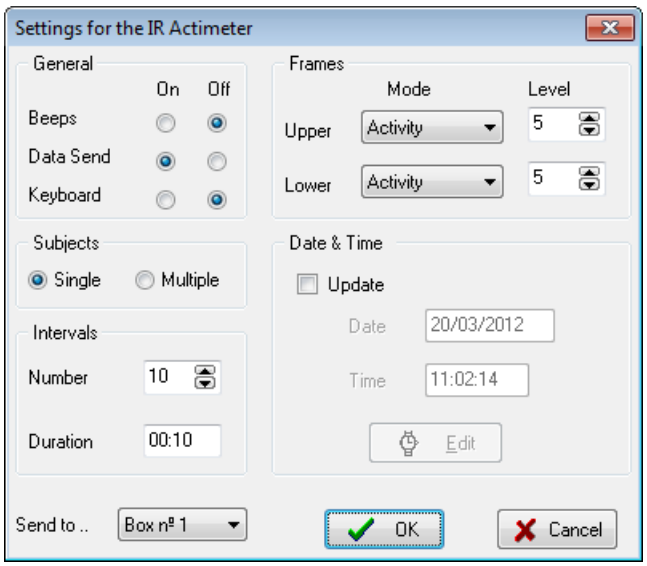


6.6.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

6.6.3. Previous settings

From the **Send Settings** option of the **Configuration** menu, the user can define the configurations of the whole system (Frame configurations, Timings, etc…). In the Send Settings panel, the user will found the same functions that can also be programmed in each control unit, with the advantage that this operation can be performed directly through the software.



6.6.3.1. General

- **Beep:** Enables/disables the sound (beep) emitted each time a photobeam is activated.
- **Data Send:** Enables/disables the automatic sending of data when the experiment ends. This option has to be activated for the use of the system with SEDACOM.
- **Keyboard:** Enables/disables the keyboard of the control unit LE 8811 while the experiment is running.

6.6.3.2. Subjects

Two Subjects modes are proposed:

- **Single**: Only one subject.
- **Multiple**: Several subjects.

6.6.3.3. Intervals

This section set the number of intervals of the experiment and their duration:

- **Number**: Set the number of intervals to be considered for the experiment (from 1 up to 200).
- **Duration**: Set the duration of each interval (from 10 seconds up to 59 minutes and 59 seconds).

6.6.3.4. Frame

This section contains the settings of each frame:

- **Upper**: settings for the upper frame.
- **Lower**: settings for the lower frame.
- **Mode**: working mode of the frame:
    - Activity: the frame is used for Activity measurements (horizontal activity).
    - Off: the frame is not used.
    - Rearing: the frame is used to detect the subject rearing (vertical activity).
    - Hole Board: the frame is used with a Hole Board accessory for the detection of nose-poke.
- **Level**: Threshold level defining the movement category for activity (slow or fast movements) and duration category for rearing and nose-poke (short or long durations). See details and correspondence tables in the Hardware IR Actimeter user's manual.

6.6.3.5. Date & Time

The Date and Time of the control unit LE 881 can be set here:

- **Update**: Enables the edition of the date and time.
- **Edit/System button**: The user can edit the date and time or choose the computer date and time.

6.6.3.6. Send to…

The user can decide to apply the settings to one specific box or to all the connected boxes.

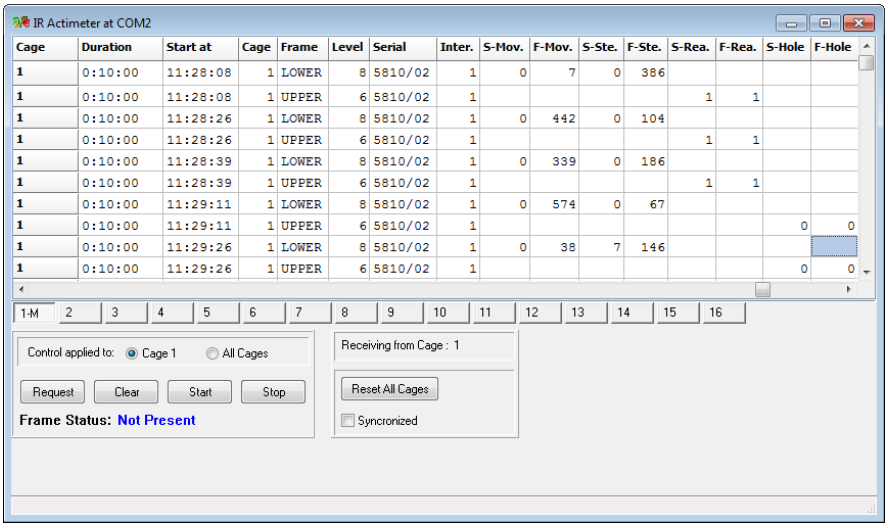
6.6.3.7. Closing options

- **OK:** close the panel, save all settings and apply them to the selected boxes.
- **Cancel:** close the panel without saving the modifications.

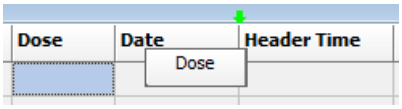
6.6.4. Runtime panel

The IR Actimeter runtime panel is composed of a Numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



The displayed information is:

- Cage: ID number of each LE8825 control unit. This column is repeated just after the "Start at" column.
- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Subject & Group - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- Exper. – Experiment number.
- Intervals number – number of intervals set by the user.
- Duration – time duration of the intervals; set by the user.
- Start at: Starting time of the acquisition process.
- Cage: ID number of each LE8825 control unit.
- Frame: IR frame position: LOWER or UPPER.
- Level: activity level set by the user.
- Serial number of the device.
- Inter. Interval number.
- S-Mov. : number of beam breaks associated with animal Slow Movements (activity with displacement).
- F-Mov. : number of beam breaks associated with animal Fast Movements (activity with displacement).
- S-Ste: number of beam breaks associated with animal Slow stereotyped movements (activity without displacement).
- F-Ste: number of beam breaks associated with animal Fast stereotyped movements (activity without displacement).
- S-Rea. : number of beam breaks associated with rearing of short duration.
- F-Rea. : number of beam breaks associated with rearing of long duration.
- S-Hole. : number of beam breaks associated with nose-poke of short duration.
- F-Hole. : number of beam breaks associated with nose-poke of long duration.

Control buttons and specific runtime panel information

- **Cage ID buttons**: The buttons labelled from 1 to 16 and available just below the table are used to visualize the last row sample for a given cage in the grid. It can control up to 16 LE8825 control units by serial port. If there are data from a control unit not saved, the label changes to *n*M (where *n* is the number of cage).
- **Frame status:** state of the experimentation unit (control unit plus frames):
    - Not Present: there is not communication detected between SEDACOM and the control unit.
    - Standby: the communication is detected between SEDACOM and the control unit.
    - Running: the experiment is in progress.
- **Control applied to:** the user can choose that the function of the Request, Clear, Start and Stop buttons are to be applied to:
    - Cage n: Only one control unit with number n.
    - All cages: All the connected control units.
- **Request:** Receives data stored in the memory of the actual control unit or from all the units.
- **Clear:** Erases the internal memory of the actual control unit or all the units depending of the selection. Once the memory is erased the data cannot be recovered.
- **Start:** Starts the experiment in the active control units.
- **Stop:** Stops the experiment in the active control units.
- **Reset All Cages:** Deletes the data contained in the runtime panel of all the cages.
- **Synchronized:** update the runtime view to the last sent data.

6.6.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

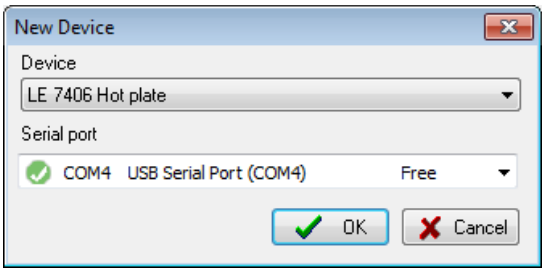
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.7. LE 7406 Hot plate

6.7.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 7406 Hot plate and the related serial port (see Chap. 3).

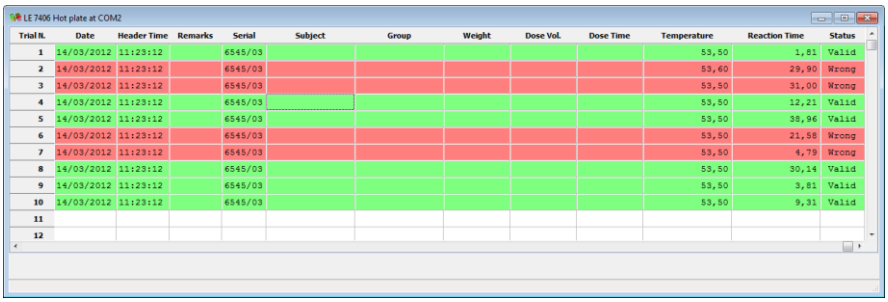


6.7.2. Data Header

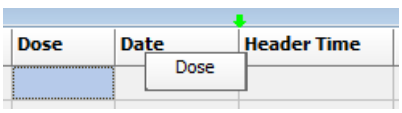
Edit information general information about the experiment. See Chapter 3.3 for details.

6.7.3. Runtime panel

The Hot-plate Runtime panel consists in a Numerical Data Table.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



To send TIME and TEMPERATURE data to SEDACOM while the TIMER is running, press the PEDAL and the TIMER will stop. If you press the PEDAL again the TIMER will be reset to 0.00.

6.7.3.1. Data provided:

- **Trial:** ID number of the trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Weight:** free edition box for entering the weight of the subject.
- **Dose Vol.:** free edition box for entering the volume of treatment given to the subject.
- **Dose Time:** free edition box for entering the time elapsed between the injection of the treatment and the measurement.
- **Temperature:** temperature automatically sent by the control unit each time that the foot-switch is pressed (in Celsius degrees).
- **Reaction Time:** animal reaction time defined as the time between the beginning of the experiment and the foot switch pressing.
- **Status:** This field is editable by the user; he can switch between VALID or WRONG with a single left-click on the line. The colour of the rows is not exported to the Excel reports.

LE 7406 can work in GENERIC mode too, but then we only will receive TRIAL ID, TEMPERATURE of the plate and LATENCY TIME.

6.7.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

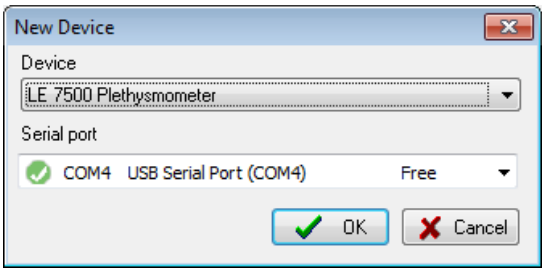
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.8. LE 7500 Plethysmometer

6.8.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE7500 Plethysmometer and the related serial port (see Chap. 3).

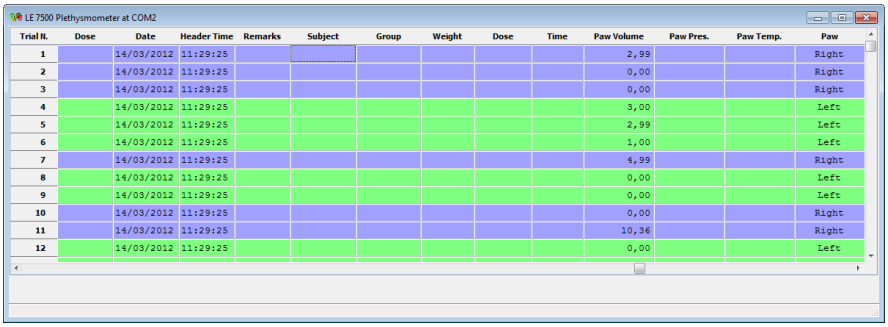


6.8.2. Data Header

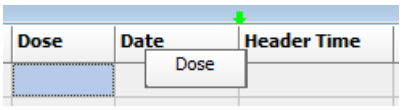
Edit information general information about the experiment. See Chapter 3.3 for details.

6.8.3. Runtime panel

The Plethysmometer Runtime panel consists in a Numerical Data Table.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the Plethysmometer device.

Every time that the foot switch is pressed the value on the display is hold and sent to the computer. To reset again the equipment the volume has to be removed and the foot switch must be pressed again.

6.8.3.1. Data provided:

- **Trial N:** ID number of Trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Weight:** free edition box for entering the weight of the subject.
- **Dose:** free edition box for entering the volume of treatment given to the subject.
- **Time:** free edition box for entering the time elapsed between the injection of the treatment and the measurement.
- **Paw Volume:** Volume of the paw sent by the device to the computer when user presses the foot switch.
- **Paw press:** free edition box for entering the blood pressure in the paw of the animal.
- **Paw Temp:** free edition box for entering the temperature of the paw.
- **Paw:** the field indicates the paw position, by default the value is LEFT, it can be changed to RIGHT by a left-click on the cell. When the value is LEFT all the row is green coloured, when the value is RIGHT all the row is violet coloured. The colours are not exported to the Excel report.

The LE 7500 can be used in GENERIC mode as well, but then we only will receive the Trial ID and the VOLUME measured.

6.8.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

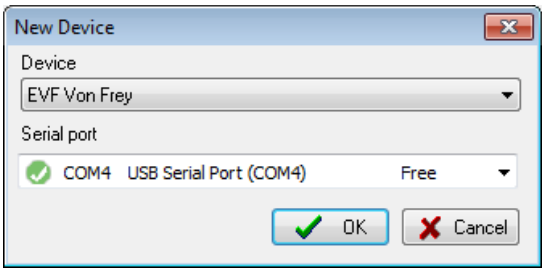
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.9. EVF Von Frey

6.9.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option EVF Von Frey and the related serial port (see Chap. 3).



The EVF Von Frey is a product manufactured by the BIOSEB Company (France). SEDACOM V2.0 is compatible to all the EVF versions until the version EVF3.

SEDACOM V2.0 is not compatible with the EVF version 4 and superior.

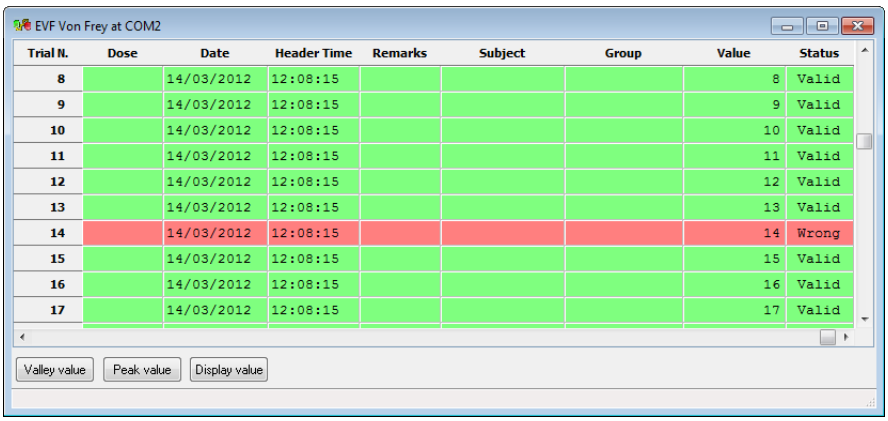
6.9.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

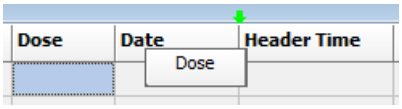
6.9.3. Runtime panel

The EVF Von Frey runtime panel is composed of a numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.9.3.1. Data provided:

- **Trial N.:** ID number of the trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject and group code:** Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Value:** pressure applied to the paw until a reaction is detected.
- **Status:** Identifies if the reading is right or wrong: If you place the mouse over the cell the cursor will change to a finger, clicking it you can switch between the two status.
    - Valid: The reading is right and the line is highlighted with a green colour.
    - Wrong: The reading is wrong and the line is highlighted with a red colour.

Control buttons

- **Valley Value:** Reads the valley value of the test.
- **Peak Value:** Reads the peak value of the test.

- **Display Value:** Reads the last value that appears in the display.

6.9.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

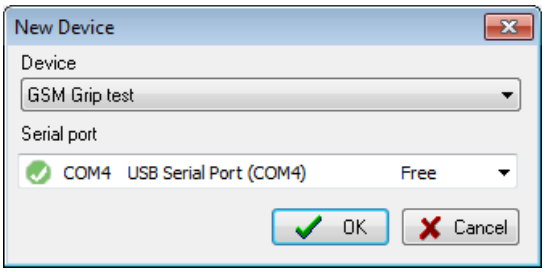
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.10. GSM Grip Test

6.10.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option GSM Grip test and the related serial port (see Chap. 3).



The EVF Von Frey is a product manufactured by the BIOSEB Company (France).

6.10.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

6.10.3. Previous settings

In order to use the GSM Grip Test with SEDACOM, the grip test control unit must be configured as follows:

RS232 I/O	
Bds	9600
Par	NO
Bits	8
Stop	1
Demand	"P"
CR	YES
LF	YES
Sign	YES
Unit	NO
DatHour	YES

Please follow the User's Manual of the GSM Grip Test to get more details about how to configure the communications parameters of the device.

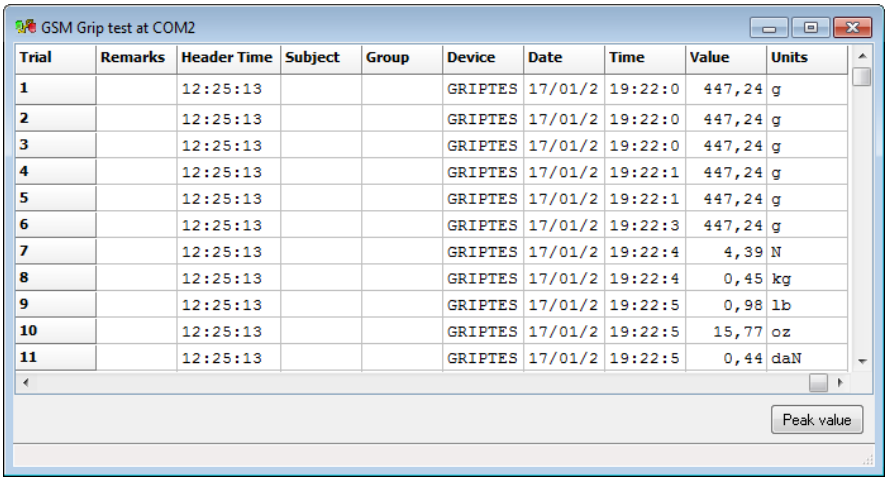
In order to send a new trial row to SEDACOM, follow the next steps:

1. Press the ON/OFF button to turn on the screen.
2. Press the ZERO button in the device front panel to start the new trial resetting to 0 the current value shown in the screen.
3. Carry out the test with the animal. See the user´s manual of the GSM Grip Test to get more details on this step.
4. Press the TDX button in the device front panel or press the PEAK VALUE button in the SEDACOM runtime panel in order to send the strength value achieved.
5. Repeat from step 2 to begin a new trial.

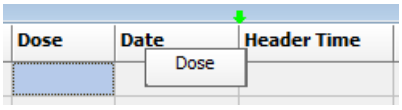
6.10.4. Runtime panel

The Grip test runtime panel is composed of a numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.10.4.1.Data provided:

- **Trial N.:** ID number of the trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject and group code:** Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Device:** name of the device: GRIPTEST.
- **Date:** date of the measurement.
- **Time:** time of the measurement.
- **Value:** registered force strength value.
- **Status:** Identifies if the reading is right or wrong: If you place the mouse over the cell the cursor will change to a finger, clicking it you can switch between the two status.
    - Valid: The reading is right and the line is highlighted with a green colour.
    - Wrong: The reading is wrong and the line is highlighted with a red colour.

Control buttons

- **Peak Value:** Reads the last registered value.

6.10.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

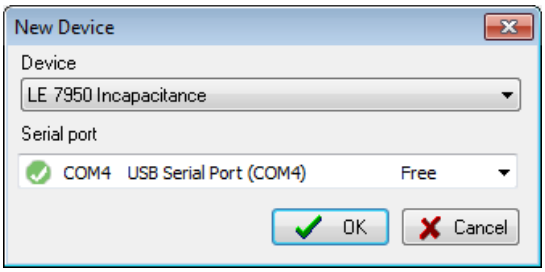
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.11. LE 7950 Incapacitance Test

6.11.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 7950 Incapacitance and the related serial port (see Chap. 3).



The LE 7950 Incapacitance is a product developed in collaboration with the BIOSEB Company (France).

6.11.2. Data Header

Edit general information about the experiment. See Chapter 3.3 for details.

6.11.3. Previous settings

In order to use the Incapacitance tester with SEDACOM, the control unit must be configured following the instructions for the recommended settings stated in chapter 5.4 "Statistics Panel" of the SWB touch user manual.

The following picture shows the Statistics panel configuration screen of the touch device.

Configure the Statistics panel following these rules:

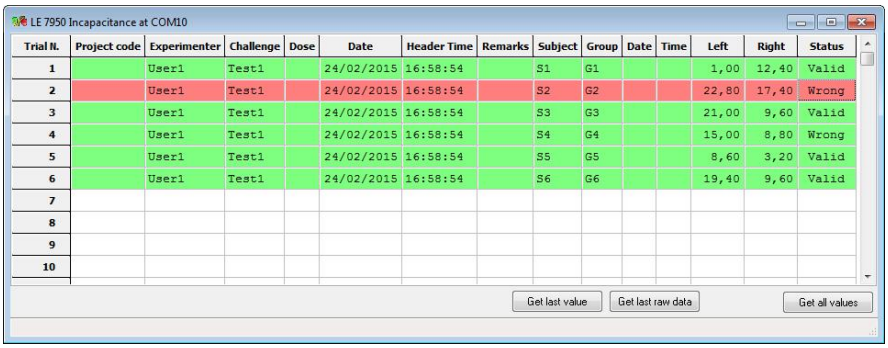
- The "Statistics" option must be activated.
- The mean value calculation of the force applied by the left paw of the animal is assigned to FORCE1 sensor.
- The mean value calculation of the force applied by the right paw of the animal is assigned to FORCE2 sensor.

Please follow the User's Manual of the LE-7590 to get more details on how to access and configure the statistics parameters of the device properly.

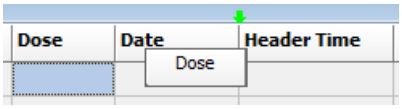
6.11.4. Runtime panel

The runtime panel is composed of a numerical Data Table and some control buttons.

Numerical Data Table



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



Get Last Value: Request the unit to send the last registered value. The same result can be accomplished by pressing the "Send RS232" button in the device touch screen. A new line with the last sample acquired is added to the table with the following information:

- Project Code: field configured in Configuration/Edit Header.
- Experimenter: field configured in Configuration/Edit Header.

- Challenge: field configured in Configuration/Edit Header.
- Dose: field configured in Configuration/Edit Header.
- Date: field configured in Configuration/Edit Header.
- Time: field configured in Configuration/Edit Header.
- Remarks: field configured in Configuration/Edit Header.
- Subject: empty cell for the user to type the name of the subject.
- Group: empty cell for the user to type the name of the subject group.
- Left / Right: weight (in the units configured in the device) captured from each of the cells in the device.
- Status: validity of the data acquired.

Get Last Raw Data: Request the unit to send all the last value curve raw data. As a result a new set of lines with all the raw samples recorded is added to the table.

Get All Values: Request the unit to send all the registered values stored in the memory of the device. For this function to work properly, the device must be configured with the Statistics option activated and following the requirements described in chapter 6.11.3.

Subject codes can be freely edited by the User. The status of a sample can be changed from "Valid" to "Wrong" by clicking on the corresponding cell.

6.11.5. Data output

Use the Save and Save as option of the File menu to save the experimental file.

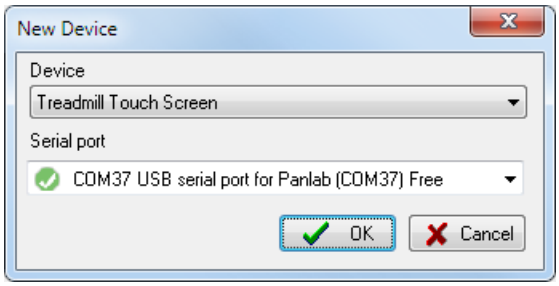
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.12. Treadmill Touchscreen

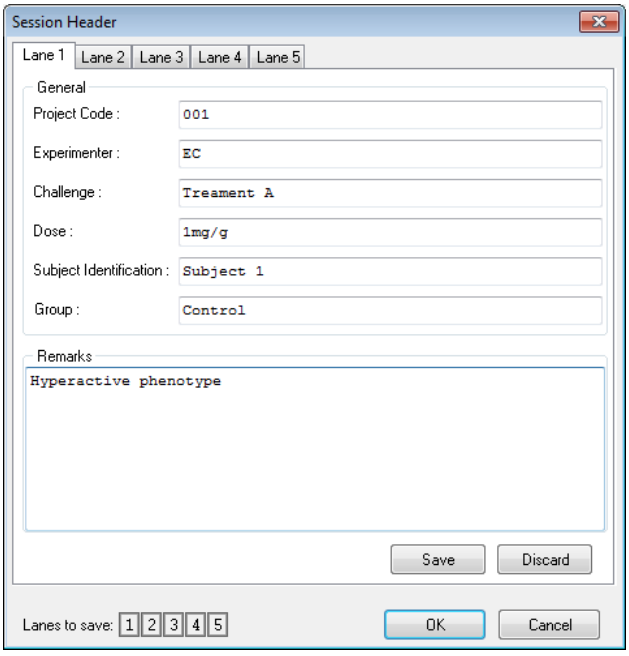
6.12.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option Treadmill Touchscreen and the related serial port (see Chap. 3).



6.12.2. Data Header

Edit general information about the experiment. Open the Edit Header option of the configuration menu and enter general information about the experiment. A panel is available for each lane of the treadmill.



Available fields:

- **Project Code**: Name or code of the experiment.
- **Experimenter**: Name of the person in charge of the experiment.
- **Challenge**: Purpose of the experiment.

- **Dose**: Dose of product given to the animals, if any.
- **Subject Identification**: Name of the subject related to the current trial.
- **Group**: Group of the subject related to the current trial.
- **Remarks**: Additional field for remarks.
- **OK**: Save the modifications and close the panel.
- **Cancel**: Close the window without saving the modifications.

The Panlab Treadmill Touchscreen can be used in 3 different modes:

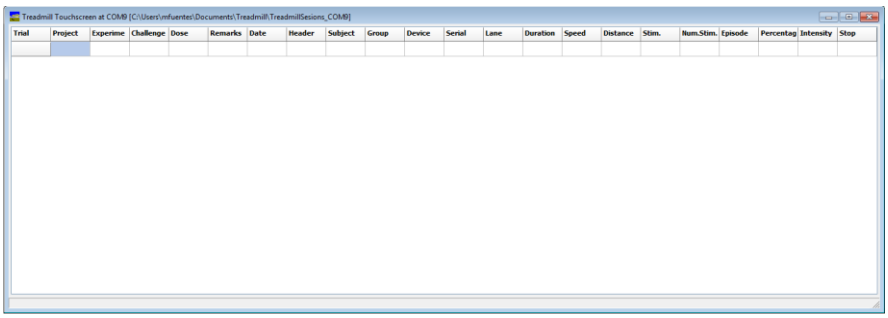
- Front panel mode.
- PC Single mode.
- Protocol mode.

6.12.3. Front Panel mode

6.12.3.1.Runtime panel

When this option is selected, all the settings are set up from the control unit (intensity, speed, stop conditions…). The software only receives the data sent by the unit.

When the STOP/RUN button is pressed on the control unit, the experiment starts. Data are sent to SEDACOM at the end of each trial.



6.12.3.2.Data provided:

- **Trial:** ID number of the trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These

columns can be edited at any moment before, during or after data acquisition (double-click in a cell and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the cell to copy.

- **Device:** device name – TREADMILL-TS.
- **Serial:** device serial number.
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill model).
- **Duration:** duration of the trial (H:MM:SS), from Start to Stop.
- **Speed:** value of the constant speed used during the trial (cm/sec).
- **Distance:** distance covered by the subject (m). This distance is not increased when the animal is detected on the grid.
- **Stim.:** total duration of stimulus received by the subject during the trial (sec).
- **Num.Stim.**: number of stimulus received by the subject during the trial.
- **Episode**: Duration of the current stimulus episode. This value is reset when the next stimulus is detected.
- **Percentage**: Current percentage of time the subject has received the stimulus: current total duration of stimulus received/trial duration (in %).
- **Intensity**: intensity applied to the shock stimulus (mA).
- **Stop Cond.**: manual or automatic stop condition that led to the end of the trial.

6.12.3.3.Data output

Use options Save and Save As from File menu to save the experimental file.

Use option Export from File menu to export the data in Excel, txt or html format.

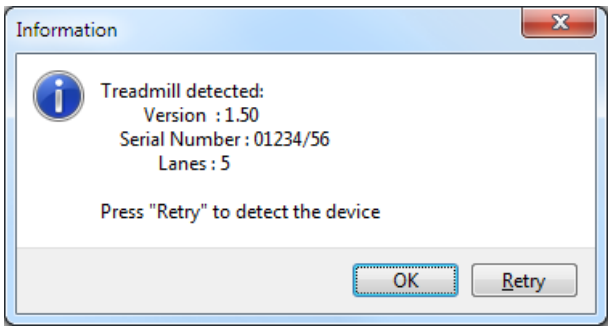
See Chapter 3.1 for details.

6.12.4. PC Single mode

When this mode is selected, the settings are made directly in SEDACOM, from the treadmill runtime panel (the controls button of the control unit are disabled).

6.12.4.1.Treadmill Info

Information about the control unit can be shown in SEDACOM by selecting the Treadmill Info option of the Configuration menu.



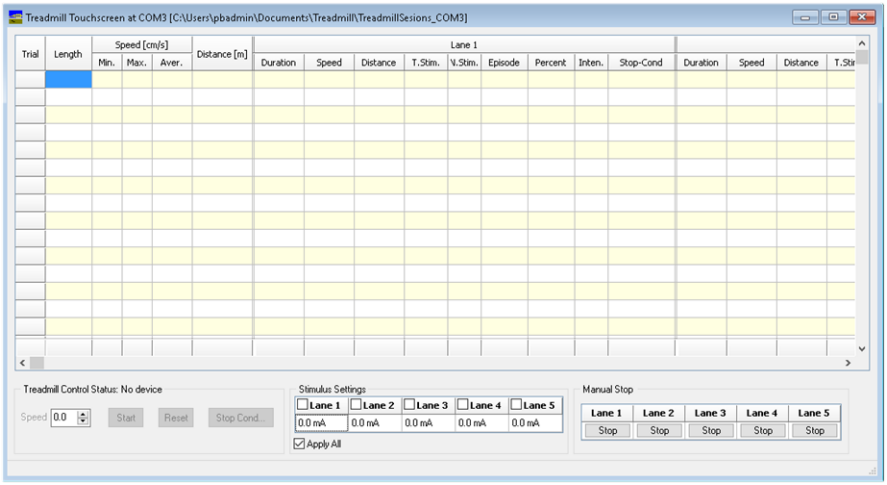
When there is no communication between the computer and the control unit, the first time an attempt is made to receive the info. Press the **Retry** button to update the data. Press the **OK** button to accept and close the information panel.

6.12.4.2.Runtime panel and Controls

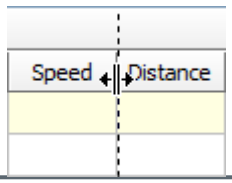
The Treadmill runtime panel in this mode contains a numerical table, a session table and some settings fields and control buttons.

Treadmill runtime panel

The Treadmill **runtime panel** provides a visualisation of the evolution of the experiment during the acquisition of data. The table is divided in a general data section and a specific data section for each lane.

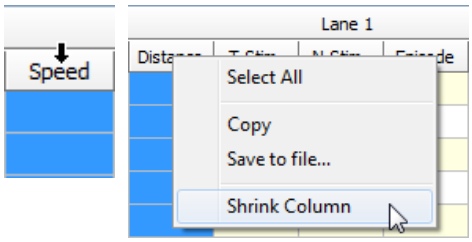


The size of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge/shrink a column or double-click on a

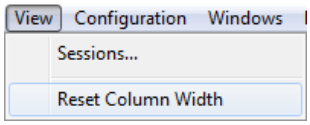


column division to automatically adjust the size to the column's content.

The width of a column can also be set to a minimum by selecting the column (left-click over the column title) and selecting the "Shrink Column" submenu option of the column popup menu.



The layout of the runtime panel can be reset to the default values by using the submenu option "Reset Column Width" under the "View" main menu.



6.12.4.3.General data section

- **Trial:** ID number of the trial.
- **Length:** Duration of the trial.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver**. **Speed**: Average speed of the lane achieved during the trial.
- **Distance (m)**: Distance covered by the lane.

6.12.4.4.Specific data section

- **Duration (h:mm:ss)**: Duration of the trial.
- **Speed (cm/s)**: Current speed during the trial.
- **Lane *n* Distance (m)**: distance covered by the animal in the lane 1 (*n* can be 1, 2, 3, 4 or 5 depending of the treadmill model) = (total distance covered by the lane) menus (distance corresponding to the duration of stimulus activation).
- **Lane *n* Time-St.**: total duration of stimulus received by the subject during the trial (in seconds).
- **Lane *n* Stim.**: number of stimulus received by the subject during the trial.
- **Lane *n* Episode**: duration of current stimulus episode.

- **Lane *n* Percent**: % of time receiving stimulus form the beginning of the trial: current total duration of stimulus received/trial duration (in %).
- **Lane n Stop Cond**: manual or automatic stop condition that led to the end of the trial.

6.12.4.5.Settings & Control

- **Speed:** The speed can be selected from 0.4 to 150.0 cm/s and 0 = stopped.
- **RUN:** This button starts the experiment and then changes its label to STOP. If it is pressed again, then the experiment ends and a panel is shown to save the acquired session data.
- **RESET:** This button resets to 0 the counters in the display of the control unit.
- **Stop Cond:** This button shows the Stop Condition dialog (see section 6.12.4.6 for more information).
- **Stimulus:**
    - **Enabled**: Enables/disables the stimulus when the animal reaches the grid.
    - **Intensity**: When the selected stimulus is a shock, the intensity can be selected from 0.0 mA to 2.0 mA. A minimum intensity of 0.2 is needed for a correct detection of the animal on the grid and correct counting of the shock stimuli.
- **Manual Stop**: Each button stops the data acquisition on each lane, it is, freezing the counters and disabling the stimulus.

6.12.4.6.Automatic Stop Conditions

The Stop Conditions settings allow to automatically stop the data acquisition depending on some user-defined criteria. There are several stop conditions rules that can be defined:

a) Trial Duration: the session stops after a user-defined trial duration (in sec).

b) Stimulus Total Time: the session stops after the subject receives a user-defined total duration of stimulus (in sec) from the beginning of the trial.

c) Stimulus Episode Time: the trial stops after the subject receives a stimulus which current duration is equal or higher to the user-defined duration. For example, the trial

stops the first time the subject receives a shock with duration of at least 5 sec.

d) Distance Travelled: the session stops after the subject has covered a user-defined distance.

e) Stimulus Percentage: the session stops when the subject has spent a user-defined % of time receiving the stimulus. For instance, when the % of time receiving the stimulus has been higher than 30%.

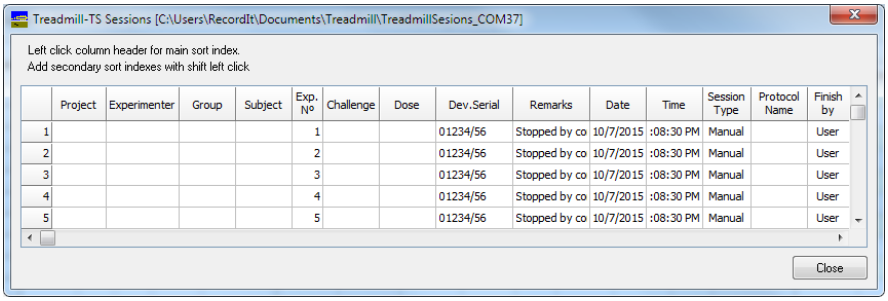
While the trial is running, the system will evaluate all the stop conditions. When one of the stop conditions is fulfilled in a lane, the acquisition will be stopped for that lane.

For a multi lane system, the belt of the treadmill will be only stopped when all the data acquisition has been ended in all the lanes.

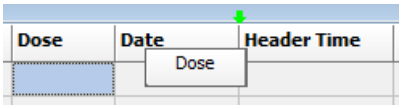
6.12.4.7.Treadmill Session panel

The session panel provides a summarized view of the data in an optimized format for Excel exportation and further calculations and statistics.

The **Session panel** can be reached through the **Sessions** option of the **View** menu.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.12.4.8.Data provided:

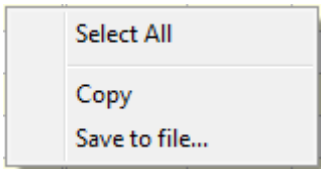
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Dev.Serial:** device serial number.
- **Remarks:**

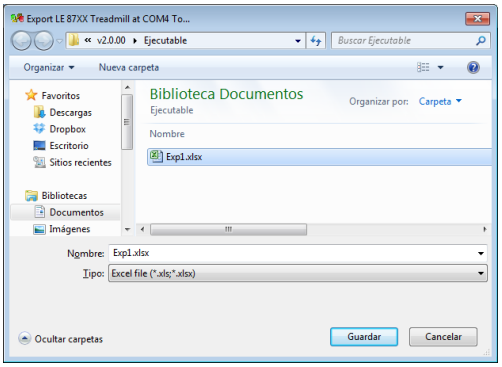
- **Date:** Date of the experiment start.
- **Time:** Time of the experiment start.
- **Session Type**: labelled **Manual** in PC (single) mode.
- **Protocol Name**: empty field in the PC (single) mode.
- **Finish by**: labelled **User** in PC (single) mode.
- **Duration:** duration of the trial.
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill models).
- **Step:** step number of the protocol. In PC (single mode) the value is always "1".
- **Distance**: distance covered by the animal in the lane = (total distance covered by the lane) menus (distance corresponding to the duration of shock.
- **Stimulus time**: total duration of stimulus received in each lane by the subject during the trial (in seconds).
- **Number of Stimulus**: number of stimulus received in each lane by the subject during the trial.
- **Episode Time**: duration of current stimulus episode received by the subject.
- **Percent**: % of time receiving stimulus from the beginning of the trial: current total duration of stimulus received/trial duration (in %).
- **Intensity**: intensity of the electrical shock applied.
- **Stop Cond.**: manual or automatic stop condition.
- **Lane distance**: Total distance covered by the lane.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver**. **Speed**: Average speed of the lane achieved during the trial.
- **Protocol information** (speed, stimulus, duration, distance): empty fields in PC (single) mode.

6.12.4.9.Data output

Treadmill runtime panel

The treadmill Runtime panel can be saved by using the **Save to file...** option of the contextual menu available by left-clicking on the table.

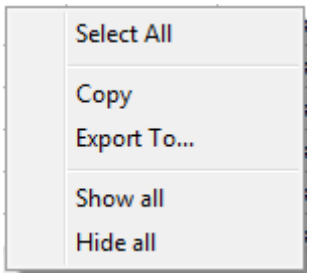


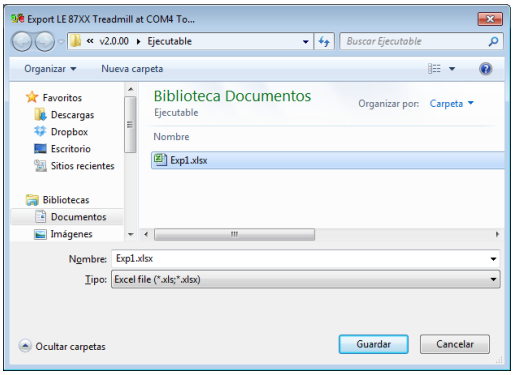


The Runtime panel table can be saved in Excel, txt or html formats.

6.12.4.10. Treadmill Session panel

The treadmill Session panel can be saved by using the **Export to ...** option of the contextual menu available by left-clicking on the table.





The Runtime panel table can be saved in Excel, txt or html formats.

6.12.5. Protocol mode

When this option is selected, the settings are made directly in SEDACOM, from the treadmill runtime panel (the controls button of the control unit are disabled).

6.12.5.1.Treadmill Info

Information about the control unit can be shown in SEDACOM by selecting the Treadmill Info option of the Configuration menu.

When there is no communication between the computer and the control unit, the first time an attempt is made to receive the info. Press the **Retry** button to update the data. Press the **OK** button to accept and close the information panel.

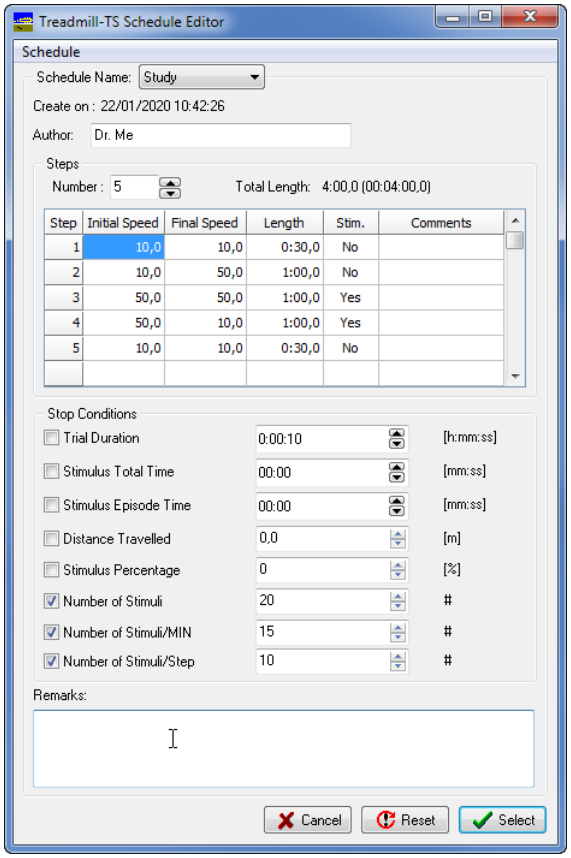
6.12.5.2.Create and select a protocol

In Protocol mode, TREADMILL allows a very flexible control of the belts speed in the range of 0 (stopped) and 0.4 to 150.0 cm/sec. A protocol is a set of steps, each of them containing:

- A starting speed (in cm/sec),
- A final speed (in cm/sec),
- A step duration,
- Stimulus status.

Protocol definitions can be stored and recovered as many times as necessary and freely assigned to any of the four treadmills controllable by the software. Protocol assigned to a treadmill does not need to be the same to all of them; each treadmill can use a different protocol.

In order to define a protocol or select one to be used, select the **Protocol** option of the **Configuration** menu.



1. Select the **New** option of the **Schedule** menu for creating a new protocol.
2. Enter the name of the protocol in the **New Protocol** panel and press **OK** to continue.
3. In the Treadmill Schedule editor panel, the **Create on** fields indicates automatically the Date and Time of the protocol creation.
4. Enter the name of the Author of the protocol (optional).
5. Select the number of Steps required in the protocol.
6. Define the following parameters for each step of the protocol:
    a. The Initial Speed (cm/s), from 0.4 to 150.0 and 0 = stopped.
    b. The Final Speed (cm/s), from 0.4 to 150.0 and 0 = stopped.
    c. The step duration (Length: M:SS,0). Must be higher than 0. There is not a maximum value defined for this field, but the Total Length must be smaller than 9 hours.
    d. The Stimulus status – YES: activated, NO: inactivated.
    e. Comments: free-edition field.

7. Define the automatic stop conditions.
    a. Trial Duration: the session stops after a user-defined trial duration (in sec).
    b. Stimulus Total Time: the session stops after the subject receives a user-defined total duration of stimulus (in sec) from the beginning of the trial.
    c. Stimulus Episode Time: the trial stops after the subject receives a stimulus which current duration is equal or higher to the user-defined duration. For example, the trial stops the first time the subject receives a shock with a duration of at least 5 sec.
    d. Distance Travelled: the session stops after the subject has covered a user-defined distance.
    e. Stimulus Percentage: the session stops when the subject has spent a user-defined % of time receiving the stimulus. For instance, when the % of time receiving the stimulus has been higher than 30%.
    f. Number of stimuli: the session stops once the subject has received a user-defined number of shocks/air puffs.
    g. Number of stimuli/min: the session stops when the subject has received a user-defined number of shocks/air puffs within one minute.
    h. Number of stimuli/step: the session stops when the subject has received a user-defined number of shocks/air puffs within a step. The system resets the shocks counter related to the evaluation of this condition each time the protocol changes of step.

While the trial is running, the system will evaluate all the stop conditions. When one of the stop conditions is fulfilled in a lane, the acquisition will be stopped for that lane.

For a multi lane system, the belt of the treadmill will be only stopped when all the data acquisition has been ended in all the lanes.

If the starting speed = final speed, the belt speed will be constant during the whole step.

If starting speed is < final speed, the belt speed will progressively increase in a time corresponding to the duration of the step.

If starting speed is > final speed, the belt speed will progressively decrease in a time corresponding to the duration of the step.

The user can edit as many protocols as needed. To manage the protocols, the menu **Schedule** proposes several additional options:

- **Rename** – To rename the current protocol.
- **Save** – To save changes in the current protocol.

- **Save as** – To save changes in the current protocol with another name and location.
- **Reset** – Apply the default values to the current protocol.
- **Delete** – Delete the current protocol. The system requests confirmation. **Warning: this step is no reversible.**
- **Close** – Close the protocol editor panel.

Three additional buttons are available from the Treadmill schedule editor:

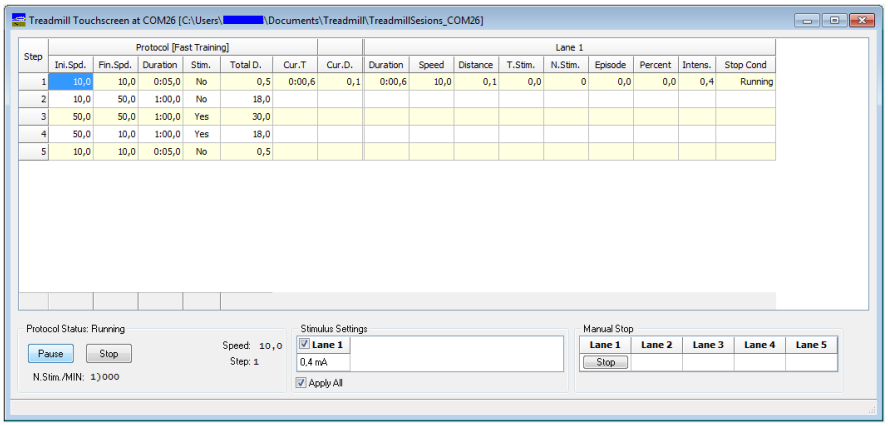
- **Cancel** – Close the editor panel without saving changes.
- **Reset** – Same as **Schedule/Reset** menu.
- **Select** – Selects the current protocol to run it and close the editor panel.

6.12.5.3.Execute a protocol - Runtime panel & Controls

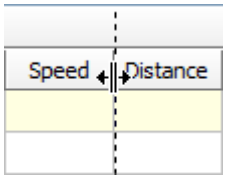
The current protocol is executed step by step. SEDACOM send the protocol instruction to the treadmill.

Treadmill runtime panel

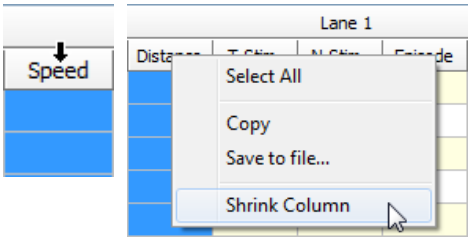
The treadmill **runtime panel** provides a visualisation of the evolution of the experiment during the acquisition of data. The table is divided in a general data section and a specific data section for each lane.



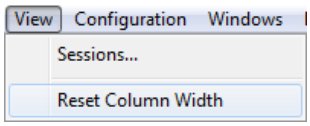
The size of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge/shrink a column or double-click on a column division to automatically adjust the size to the column's content.



The width of a column can also be set to a minimum by selecting the column (left-click over the column title) and selecting the "Shrink Column" submenu option of the column popup menu.



The layout of the runtime panel can be reset to the default values by using the submenu option "Reset Column Width" under the "View" main menu.



6.12.5.4.Session General Data

- **Step:** number of the current step.
- **Protocol Ini.Spd.**: Initial speed of the current step.
- **Protocol Fin.Spd.**: Final speed of the current step.
- **Duration:** duration of the current step.
- **Total.D**: Total distance covered by the belt.
- **Cur.T. –** Time elapsed in the current step.
- **Cur.D. –** Covered distance in the current step.
- **Lane *n* Duration**: current duration of the step.
- **Lane *n* Speed**: current speed of the step.
- **Lane *n* Dist.**: distance covered by the animal in the lane 1 (*n* can be 1, 2, 3, 4 or 5 depending of the treadmill model) = (total distance covered by the lane) menus (distance corresponding to the duration of stimulus activation).
- **Lane *n* T-Stim.**: total duration of stimulus received by the subject during the step (in seconds).
- **Lane *n* N.Stim.**: number of stimuli received by the subject during the step.
- **Lane *n* Episode**: duration of current stimulus episode received by the subject.
- **Lane *n* Percent**: % of time receiving stimulus from the beginning of the trial: current total duration of stimulus received/trial duration (in %).
- **Lane *n* Stop Cond**: Conditions met for stopping the session.

Protocol Status section

- **Speed –** Shows the current speed of the belt.
- **Step –** Shows the current step number of the protocol.
- **N.Stim./MIN** – for each lane number of stimuli received during the last minute.

6.12.5.5.Settings & Control

Protocol Status

- **Start / Pause / Continue** button – This button is used to start the session (START), pause a session (PAUSE), or continue (CONTINUE) a session.
- **Reset** button – Stop the current session. SEDACOM will request confirmation to the user.

Stimulus Settings

In this section the user can set the intensity of the shock intensity stimulus. A different intensity can be set for each lane.

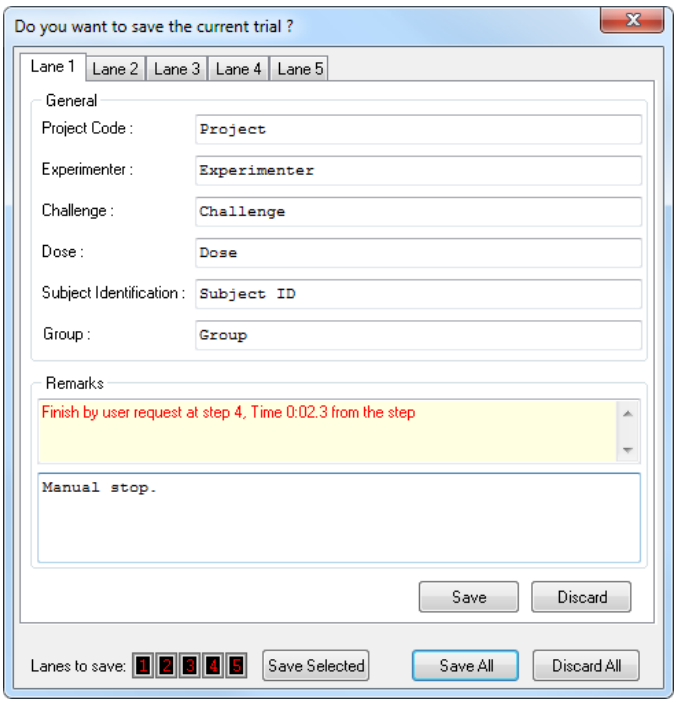
In order to modify the intensity, click on the cell and use the up and down buttons, the new value will be sent automatically to the control unit.

Manual Stop

By pressing the corresponding stop button, the user can stop manually the data acquisition in a certain lane.

6.12.5.6.Saving Sessions

When a session is finished (by protocol time or by protocol stop condition or by user request, pressing **Reset** button, or **Manual stop** buttons) the saving panel is presented:



This panel allows to enter (or change) the information of the available fields.

When the session has been stopped by pressing the RESET button, the Remarks fields appears with red-colour text and a yellow background.

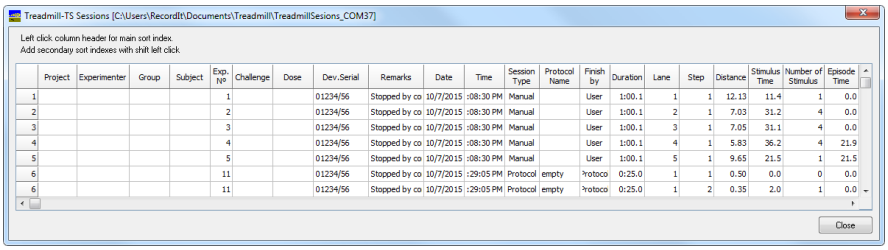
- **Save All**: save the sessions of all the lanes.
- **Discard All:** discard the session (the data will not be saved).
- If only some sessions would be saved then press the button **Save** or **Discard** of each lane and, finally, press the button **Save Selected**. Lanes to be saved are shown in red colour and lanes to be discarded are in grey colour, in the bottom-left square of this panel.

The saved sessions are automatically added to the experiment file and are shown in the Sessions panel.

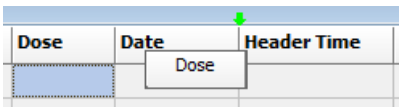
Treadmill Session panel

The session panel provide a summarized view of the data in an optimized format for Excel exportation and further calculations and statistics.

The **Session panel** can be reached through the **Sessions** option of the **View** menu.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.12.5.7.Data provided:

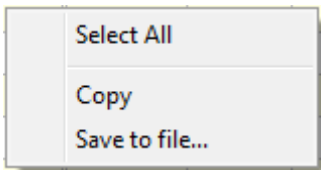
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Dev.Serial:** device serial number.
- **Date:** Date of the experiment start.
- **Time:** Time of the experiment start.
- **Session Type**: labelled **Protocol** in Protocol mode.
- **Protocol Name**: name of the protocol used during the session.
- **Finish by**: finish condition.
- **Duration:** duration of the trial.

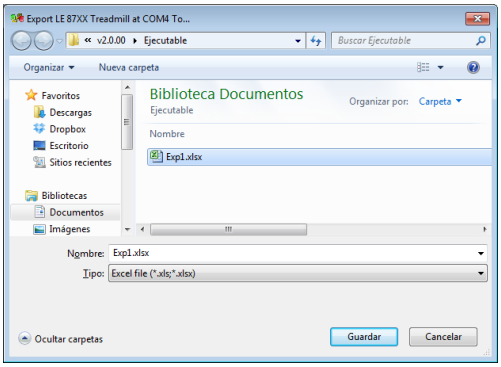
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill models).
- **Step:** step number of the protocol. In PC (single mode) the value is always "1".
- **Distance**: distance covered by the animal in the lane = (total distance covered by the lane) menus (distance corresponding to the duration of stimulus.
- **Stimulus time**: total duration of stimulus received in each lane by the subject during the trial (in seconds).
- **Number of Stimulus**: number of stimulus received in each lane by the subject during the trial.
- **Episode Time**: duration of current stimulus episode received by the subject.
- **Percent**: % of time receiving stimulus form the beginning of the trial: current total duration of stimulus received/trial duration (in %).
- **Intensity**: intensity of the shock stimulus applied.
- **Stop Cond.**: manual or automatic stop condition.
- **Lane distance**: Total distance covered by the lane.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver. Speed**: Average speed of the lane achieved during the trial.
- **Protocol Ini.Speed**: Initial speed of the current step.
- **Protocol End.Speed**: Final speed of the current step.
- **Protocol Stimulus:** Status of the stimulus in the current step.
- **Protocol Duration:** duration of the current step.
- **Protocol Distance**: distance covered by the belt during the current step.

6.12.5.8.Data output

Treadmill runtime panel

The treadmill Runtime panel can be saved by using the **Save to file...** option of the contextual menu available by left-clicking on the table.

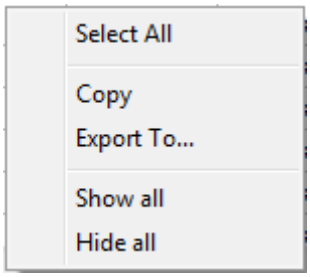


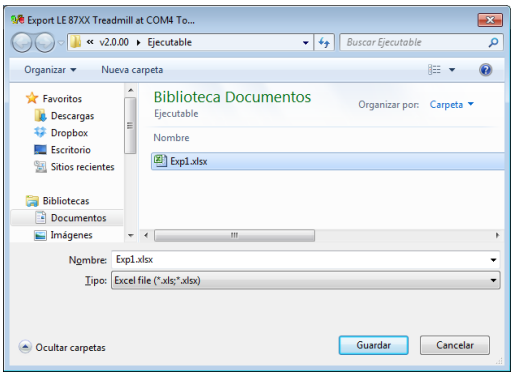


The Runtime panel table can be saved in Excel, txt or html formats.

Treadmill Session panel

The treadmill Session panel can be saved by using the **Export to ...** option of the contextual menu available by left-clicking on the table.



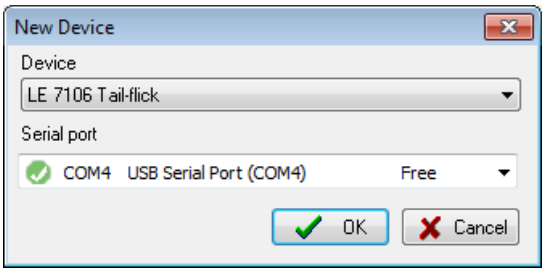


The Runtime panel table can be saved in Excel, txt or html formats.

6.13. LE 7106 Tail-flick

6.13.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 7106 Tail-flick and the related serial port (see Chap. 3).

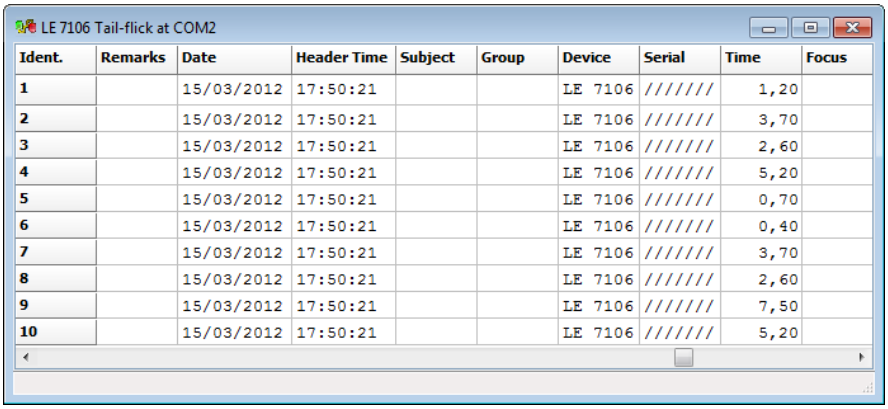


6.13.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

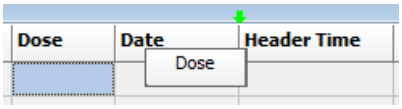
6.13.3. Runtime panel

The Tail-flick Runtime panel consists in a Numerical Data Table.



Ident.	Remarks	Date	Header Time	Subject	Group	Device	Serial	Time	Focus
1		15/03/2012	17:50:21			LE 7106	///////	1,20	
2		15/03/2012	17:50:21			LE 7106	///////	3,70	
3		15/03/2012	17:50:21			LE 7106	///////	2,60	
4		15/03/2012	17:50:21			LE 7106	///////	5,20	
5		15/03/2012	17:50:21			LE 7106	///////	0,70	
6		15/03/2012	17:50:21			LE 7106	///////	0,40	
7		15/03/2012	17:50:21			LE 7106	///////	3,70	
8		15/03/2012	17:50:21			LE 7106	///////	2,60	
9		15/03/2012	17:50:21			LE 7106	///////	7,50	
10		15/03/2012	17:50:21			LE 7106	///////	5,20	

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the LE 7106 device. Data are sent to SEDACOM each time the subject moves the tail and the heat stimulus cuts off.

6.13.3.1.Data provided:

- Header info - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- Subject & Group - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- Device – Name of the connected device.
- Serial: Serial number of the device, if any.
- Mode - Rotarod mode used during acquisition: constant speed mode (RUN) or acceleration mode (ACC).
- Time – animal reaction time (in second).
- Focus – heat stimulus intensity configuration.

6.13.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

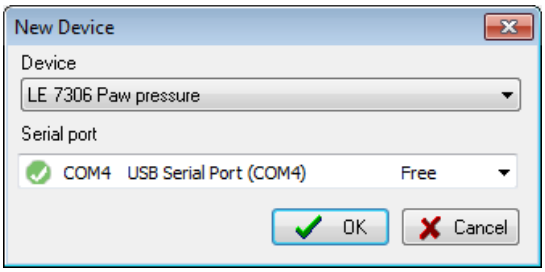
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.14. LE 7306 Paw pressure

6.14.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option LE 7306 Paw pressure and the related serial port (see Chap. 3).

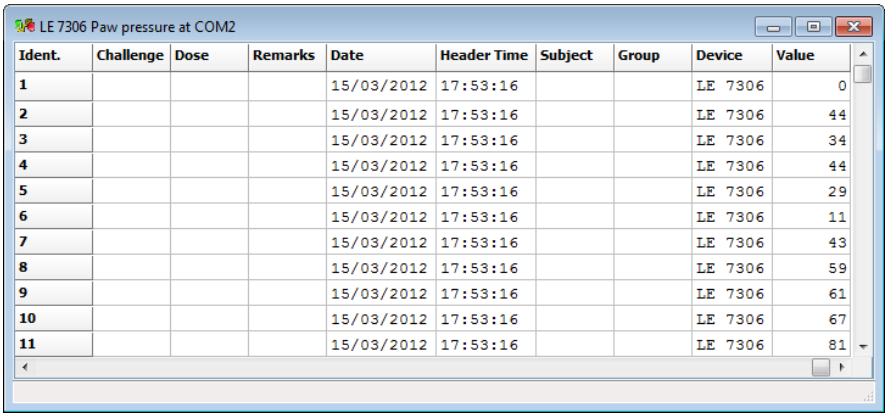


6.14.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

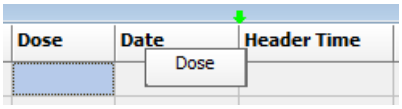
6.14.3. Runtime panel

The Paw pressure Runtime panel consists in a Numerical Data Table.



Ident.	Challenge	Dose	Remarks	Date	Header Time	Subject	Group	Device	Value
1				15/03/2012	17:53:16			LE 7306	0
2				15/03/2012	17:53:16			LE 7306	44
3				15/03/2012	17:53:16			LE 7306	34
4				15/03/2012	17:53:16			LE 7306	44
5				15/03/2012	17:53:16			LE 7306	29
6				15/03/2012	17:53:16			LE 7306	11
7				15/03/2012	17:53:16			LE 7306	43
8				15/03/2012	17:53:16			LE 7306	59
9				15/03/2012	17:53:16			LE 7306	61
10				15/03/2012	17:53:16			LE 7306	67
11				15/03/2012	17:53:16			LE 7306	81

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the LE 7306 device.

To run an experiment, press the pedal and the stimulation unit will move downward. Once the pedal is released the display of the LE 7306 will maintain the value, and at the same time this value will be send to the SEDACOM Runtime panel.

6.14.3.1.Data provided:

- **Header info** - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Device** – Name of the connected device.
- **Value** – Registered pressure.

6.14.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

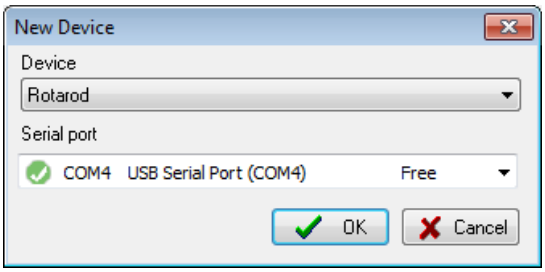
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.15. Rotarod

6.15.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option Rotarod and the related serial port (see Chap. 3).

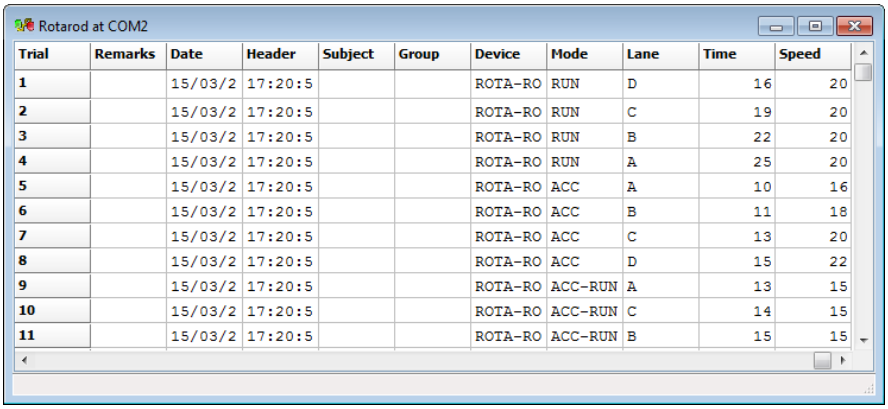


6.15.2. Data Header

Edit information general information about the experiment. See Chapter 3.3 for details.

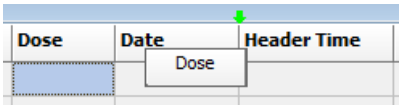
6.15.3. Device Runtime panel

The Rotarod Runtime panel consists in a Numerical Data Table.



Trial	Remarks	Date	Header	Subject	Group	Device	Mode	Lane	Time	Speed
1		15/03/2	17:20:5			ROTA-RO	RUN	D	16	20
2		15/03/2	17:20:5			ROTA-RO	RUN	C	19	20
3		15/03/2	17:20:5			ROTA-RO	RUN	B	22	20
4		15/03/2	17:20:5			ROTA-RO	RUN	A	25	20
5		15/03/2	17:20:5			ROTA-RO	ACC	A	10	16
6		15/03/2	17:20:5			ROTA-RO	ACC	B	11	18
7		15/03/2	17:20:5			ROTA-RO	ACC	C	13	20
8		15/03/2	17:20:5			ROTA-RO	ACC	D	15	22
9		15/03/2	17:20:5			ROTA-RO	ACC-RUN	A	13	15
10		15/03/2	17:20:5			ROTA-RO	ACC-RUN	C	14	15
11		15/03/2	17:20:5			ROTA-RO	ACC-RUN	B	15	15

The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



In this state the system is ready to receive the data sent by the ROTAROD device. Every time that a lever is lowered the data related with this lever is sent to the computer.

6.15.3.1.Data provided:

- **Header info** - Columns with the experiment header information specified through the menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Device** – Name of the connected device. Here: Rotarod.
- **Mode** - Rotarod mode used during acquisition: constant speed mode (RUN) or acceleration mode (ACC).
- **Lane** - lane identification: A, B C or D.
- **Time** - time latency to fall expressed in second.
- **Speed** - speed set (RUN mode) or reached (ACC mode) when the subject fell down, expressed in rotation per minutes (r.p.m.).

6.15.4. Data output

Use the Save and Save as option of the File menu to save the experimental file.

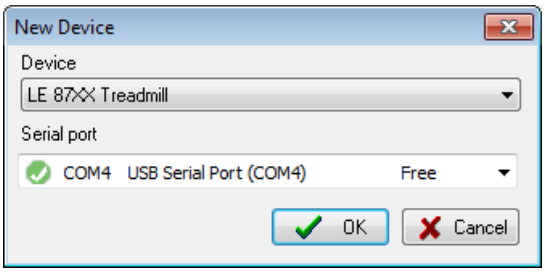
Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.16. Treadmill LCD

6.16.1. Device & Serial port

Select option **New** in the **Windows** menu; then select option Treadmill and the related serial port (see Chap. 3).



6.16.1.1. Working with several Treadmills

A single instance of SEDACOM can control a unique Treadmill device. However, the system is enabled to control up to 9 devices connected to the same computer as long as a SEDACOM instance is opened for each existing Treadmill device.

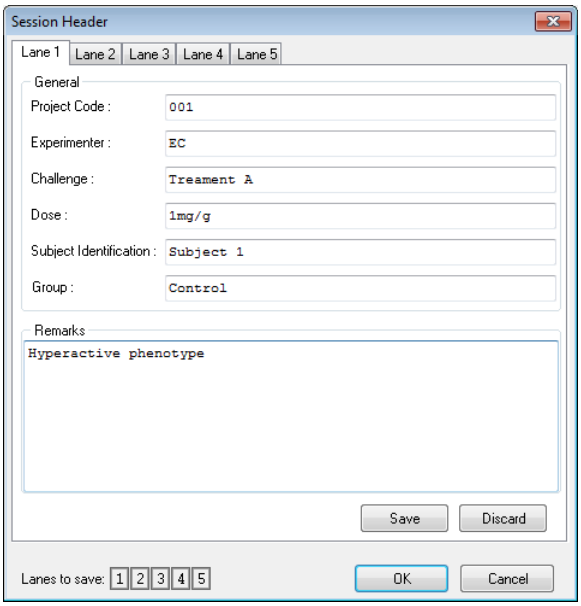
To do that, please consider the following instructions:

For each additional treadmill device:

- Make a copy of the SEDACOM installation folder in a different location of the hard disk. The experimenter user must have read/write permissions over the created folder. Rename the created folder using a meaningful pattern, for example "Treadmill 2" for the second device, "Treadmill 3" for the third device and so on.
- Rename the "Sedacom.exe" file inside the copied folder with the same naming pattern used in the previous step and create a shortcut to it on the Windows® desktop.
- Execute the new created instance of Sedacom and configure a new connection to the selected treadmill device.

6.16.2. Data Header

Edit information general information about the experiment. Open the Edit Header option of the configuration menu and enter general information about the experiment. A panel is available for each line of the treadmill.



Available fields:

- **Project Code**: Name or code of the experiment.
- **Experimenter**: Name of the person charged of the experiment.
- **Challenge**: Purpose of the experiment.
- **Dose**: Dose of product given to the animals, if any.
- **Subject Identification**: name of the subject related to the current trial.
- **Group**: group of the subject related to the current trial.
- **Remarks**: Additional field for Remarks.
- **OK**: Save the modifications and close the panel.
- **Cancel**: Close the window without saving the modifications.

Note: the **Save** and **Discard** buttons are not used here.

The Panlab treadmills can be used in 3 different modes:

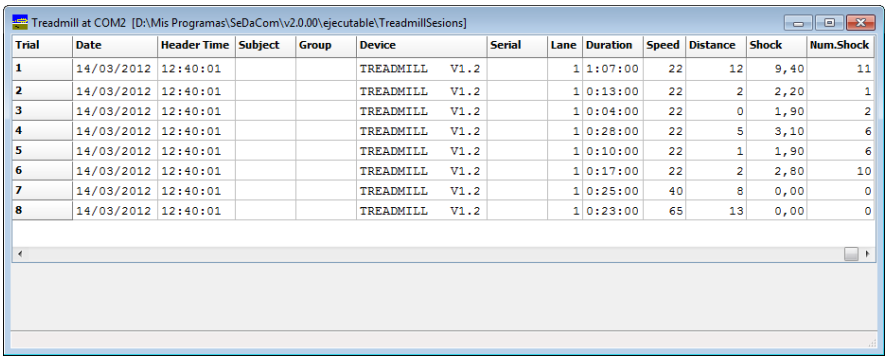
- Front panel mode.
- PC Single mode.
- Protocol mode.

6.16.3. Front Panel mode

6.16.3.1.Runtime panel

When this option is selected, the control unit is set up with the control button available on the front panel of the unit.

When the STOP/RUN button is pressed on the front panel of the unit, the experiment starts. Data are sent to SEDACOM at the end of each trial.



Trial	Date	Header Time	Subject	Group	Device	Serial	Lane	Duration	Speed	Distance	Shock	Num.Shock
1	14/03/2012	12:40:01			TREADMILL V1.2		1	1:07:00	22	12	9,40	11
2	14/03/2012	12:40:01			TREADMILL V1.2		1	0:13:00	22	2	2,20	1
3	14/03/2012	12:40:01			TREADMILL V1.2		1	0:04:00	22	0	1,90	2
4	14/03/2012	12:40:01			TREADMILL V1.2		1	0:28:00	22	5	3,10	6
5	14/03/2012	12:40:01			TREADMILL V1.2		1	0:10:00	22	1	1,90	6
6	14/03/2012	12:40:01			TREADMILL V1.2		1	0:17:00	22	2	2,80	10
7	14/03/2012	12:40:01			TREADMILL V1.2		1	0:25:00	40	8	0,00	0
8	14/03/2012	12:40:01			TREADMILL V1.2		1	0:23:00	65	13	0,00	0

6.16.3.2.Data provided:

- **Trial:** ID number of the trial.
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Subject & Group** - Two free-text edition columns for entering the name and group of the subject. These columns can be edited at any moment before, during or after data acquisition (double-click in a case and edit it!). The copy/past option can be used using the contextual menu available after right-clicking on the case to copy.
- **Device:** device name – TREADMILL.
- **Serial:** device serial number, if any.
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill models).
- **Duration:** duration of the trial (H:MM:SS).
- **Speed:** value of the constant speed used during the trial (cm/sec.).
- **Distance:** distance covered by the subject.
- **Shock:** total duration of shock received by the subject during the trial (in seconds).
- **Num. Shock**: number of shocks received by the subject during the trial.

6.16.3.3.Data output

Use the Save and Save as option of the File menu to save the experimental file.

Use the Export option of the File menu to export the data in Excel, txt or html format.

See Chapter 3.1 for details.

6.16.4. PC Single mode

When this option is selected, the settings are made directly in SEDACOM, from the treadmill runtime panel (the controls button of the control unit are disabled).

6.16.4.1.Treadmill Info

Information about the control unit can be shown in SEDACOM by selecting the Treadmill Info option of the Configuration menu.

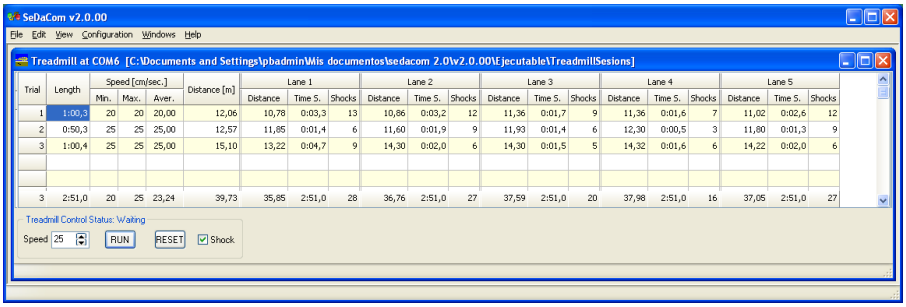
When there is no communication between the computer and the control unit, the first time an attempt is made to receive the info. Press the **Retry** button to update the data. Press the **OK** button to accept and close the information panel.

6.16.4.2.Runtime panel & Controls

The treadmill runtime panel in this mode contains a numerical table, a session table and some settings fields and control buttons.

Treadmill runtime panel

The treadmill **runtime panel** provides a visualisation of the evolution of the experiment during the acquisition of data. The table is divided in a general data section and a specific data section for each lane.



6.16.4.3.General data session

- **Trial:** ID number of the trial.
- **Length:** duration of the trial.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver**. **Speed**: Average speed of the lane achieved during the trial.
- **Distance (m)**: Distance covered by the lane.
- **Lane *n* Distance**: distance covered by the animal in the lane 1 (*n* can be 1, 2, 3, 4 or 5 depending of the treadmill model) = (total distance covered by the lane) menus (distance corresponding to the duration of shock activation).
- **Lane *n* Time S.**: total duration of shock received by the subject during the trial (in seconds).
- **Lane *n* Shocks.**: number of shocks received by the subject during the trial.

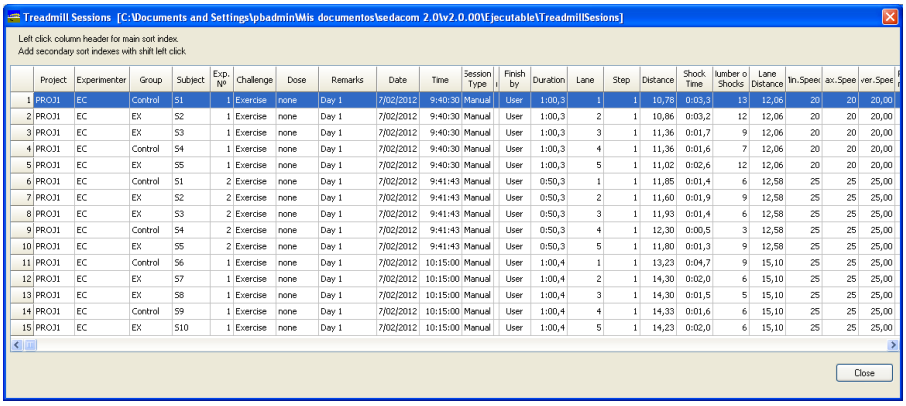
6.16.4.4.Settings & Control

- **Speed:** The speed can be selected from 5 to 150 cm/s
- **RUN:** This button starts the experiment and then changes its label to STOP. If it is pressed again, then the experiment ends and a panel is shown to save the acquired session data.
- **RESET:** This button resets to 0 the counters in the display of the control unit.
- **Shock:** Enables/disables the shock when the animal reaches the grid.

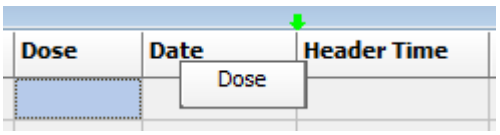
6.16.4.5.Treadmill Session panel

The session panel provide a summarized view of the data in an optimized format for Excel exportation and further calculations and statistics.

The **Session panel** can be reached through the **Sessions** option of the **View** menu.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.16.4.6.Data provided:

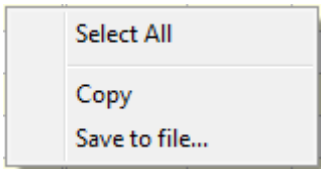
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Dev.Serial:** device serial number, if any.
- **Date:** Date of the experiment start.
- **Time:** Time of the experiment start.
- **Session Type**: labelled **Manual** in PC (single) mode.
- **Protocol Name**: empty field in the PC (single) mode.
- **Finish by**: labelled **User** in PC (single) mode.
- **Duration:** duration of the trial.
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill models).
- **Step:** step number of the protocol. In PC (single mode) the value is always "1".

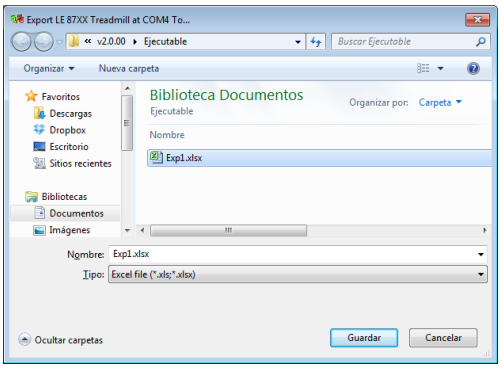
- **Distance**: distance covered by the animal in the lane = (total distance covered by the lane) menus (distance corresponding to the duration of shock.
- **Shock time**: total duration of shock received in each lane by the subject during the trial (in seconds).
- **Number of Shocks**: number of shocks received in each lane by the subject during the trial.
- **Lane distance**: Total distance covered by the lane.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver**. **Speed**: Average speed of the lane achieved during the trial.
- **Protocol information** (speed, shock, duration, distance); empty fields in PC (single) mode.

6.16.4.7.Data output

Treadmill runtime panel

The treadmill Runtime panel can be saved by using the **Save to file...** option of the contextual menu available by left-clicking on the table.

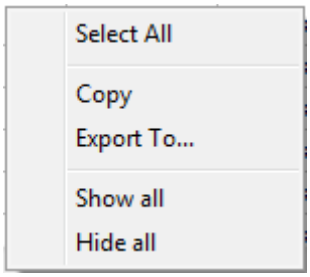


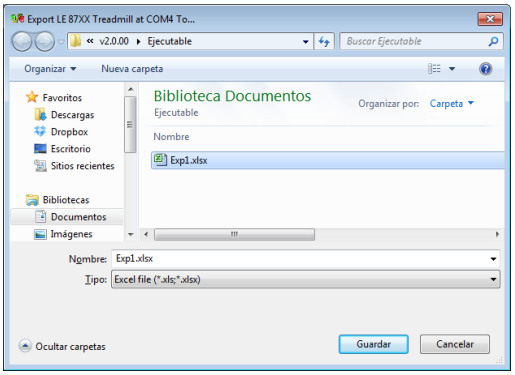


The Runtime panel table can be saved in Excel, txt or html formats.

6.16.4.8.Treadmill Session panel

The treadmill Session panel can be saved by using the **Export to ...** option of the contextual menu available by left-clicking on the table.





The Runtime panel table can be saved in Excel, txt or html formats.

6.16.5. Protocol mode

When this option is selected, the settings are made directly in SEDACOM, from the treadmill runtime panel (the controls button of the control unit are disabled).

6.16.5.1.Treadmill Info

Information about the control unit can be shown in SEDACOM by selecting the Treadmill Info option of the Configuration menu.

When there is no communication between the computer and the control unit, the first time an attempt is made to receive the info. Press the **Retry** button to update the data. Press the **OK** button to accept and close the information panel.

6.16.5.2.Create and select a protocol

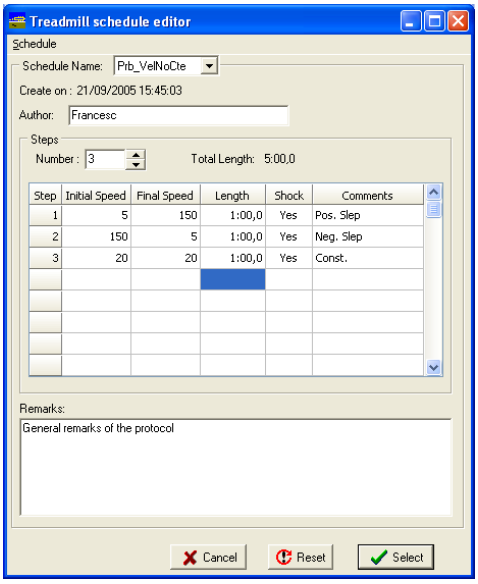
In the Protocol mode, TREADMILL allows a very flexible control of the belts speed in the range of 0 (stopped) and 5 to 150 cm/sec. A protocol is a set of steps, each of them containing:

- A starting speed (in cm/sec),

- A final speed (in cm/sec),
- A step duration.
- Shock status.

Protocol definitions can be stored and recovered as many times as necessary and freely assigned to any of the four treadmills controllable by the software. Protocol assigned to a treadmill does not need to be the same to all of them; each treadmill can use a different protocol.

In order to define a protocol or select one to be used, select the **Protocol** option of the **Configuration** menu.



1. Select the **New** option of the **Schedule** menu for creating a new protocol.
2. Enter the name of the protocol in the **New Protocol** panel and press **OK** to continue.
3. In the Treadmill Schedule editor panel, the **Create on** fields indicates automatically the Date and Time of the protocol creation.
4. Enter the name of the Author of the protocol (optional).
5. Select the number of Steps required in the protocol.
6. Define the following parameters for each step of the protocol:
    a. The Initial Speed (cm/s), from 5 to 150. 0 = stopped.
    b. The Final Speed (cm/s), from 5 to 150. 0 = stopped.
    c. The step duration (Length: M:SS,0). Must be higher than 0.
    d. The Shock status – YES: activated, NO: inactivated.
    e. Comments: free-edition field.

If the starting speed = final speed, the belt speed will constant during the whole step.

If starting speed is < final speed, the belt speed will progressively increase in a time corresponding to the duration of the step.

If starting speed is > final speed, the belt speed will progressively decrease increase in a time corresponding to the duration of the step.

The user can edit as many protocols as needed. To manage the protocols, the menu **Schedule** proposes several additional options:

- **Rename** – To rename the current protocol.
- **Save** – To save changes in the current protocol.
- **Save as** – To save changes in the current protocol with another name and location.
- **Reset** – Apply the default values to the current protocol.
- **Delete** – Delete the current protocol. The system requests confirmation. **Warning: this step is no reversible.**
- **Close** – Close the protocol editor panel.

Three additional buttons are available from the Treadmill schedule editor:

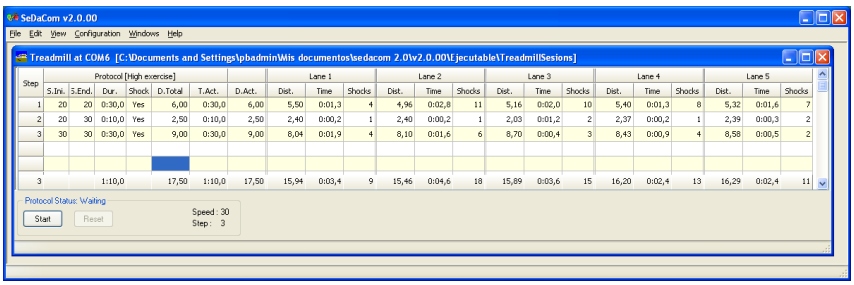
- **Cancel** – Close the editor panel without saving changes.
- **Reset** – Same as **Schedule/Reset** menu.
- **Select** – Selects the current protocol to run it and close the editor panel.

6.16.5.3.Execute a protocol - Runtime panel & Controls

The current protocol is executed step by step. SEDACOM send the protocol instruction to the treadmill.

Treadmill runtime panel

The treadmill **runtime panel** provides a visualisation of the evolution of the experiment during the acquisition of data. The table is divided in a general data section and a specific data section for each lane.



6.16.5.4.General data session

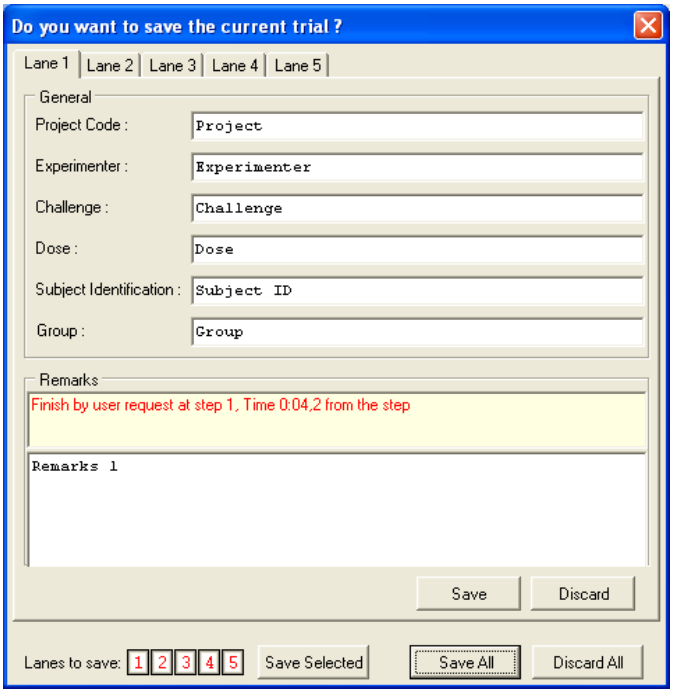
- **Step:** number of the current step.
- **Protocol S.Ini**: Initial speed of the current step.
- **Protocol S.End.**: Final speed of the current step.
- **Dur.:** duration of the current.
- **D.Total**: Total distance covered by the belt.
- **T.Act –** Time elapsed in the current step.
- **D.Act –** Covered distance in the current step.
- **Lane *n* Dist.**: distance covered by the animal in the lane 1 (*n* can be 1, 2, 3, 4 or 5 depending of the treadmill model) = (total distance covered by the lane) menus (distance corresponding to the duration of shock activation).
- **Lane *n* Time**: total duration of shock received by the subject during the trial (in seconds).
- **Lane *n* Shocks.**: number of shocks received by the subject during the trial.
- **Speed –** Shows the current speed of the belts.
- **Step –** Shows the current step number of the protocol.

6.16.5.5.Settings & Control

- **Start / Pause / Continue** button – This button is used to start the session (START), pause a session (PAUSE), or continue (CONTINUE) a session.
- **Reset** button – Stop the current session. SEDACOM will request confirmation to the user.

6.16.5.6.Saving Sessions

When a session is finished (by protocol time or by user request, pressing **Reset** button) the saving panel is presented:



This panel allows to enter (or change) the information of the available fields.

When the session has been stopped by pressing the RESET button, the Remarks fields appears with red-colour text and a yellow background.

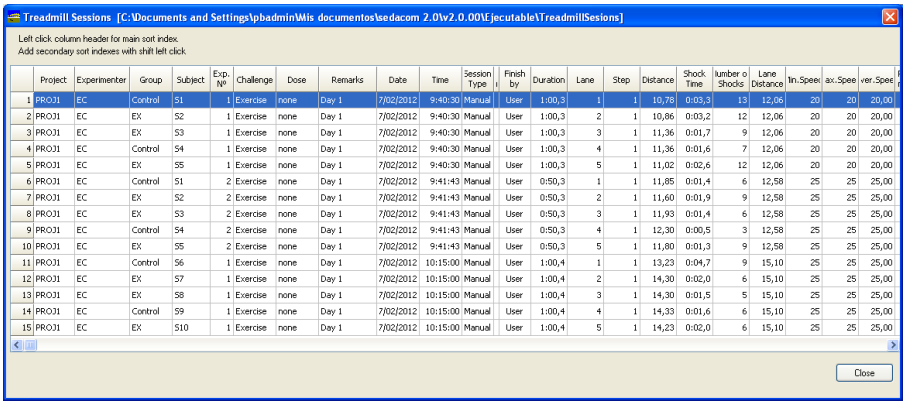
- **Save All**: save the sessions of all the lanes.
- **Discard All:** discard the session (the data will not be saved).
- If only some sessions would be saved then press the button **Save** or **Discard** of each lane and, finally, press the button **Save Selected**. Lanes to be saved are shown in red colour and lanes to be discarded are in grey colour, in the bottom-left square of this panel.

The saved sessions are automatically added to the experiment file and are shown in the Sessions panel.

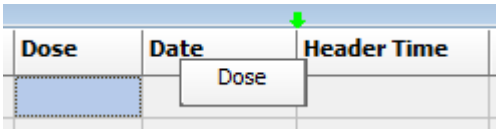
Treadmill Session panel

The session panel provide a summarized view of the data in an optimized format for Excel exportation and further calculations and statistics.

The **Session panel** can be reached through the **Sessions** option of the **View** menu.



The wide and order of the columns can be changed manually at any time by the user. Just click on the column division of the title line and enlarge a column or click on a column title and displace it.



6.16.5.7.Data provided:

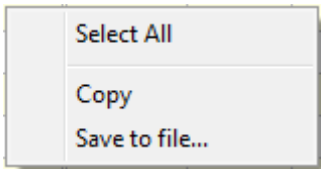
- **Experiment Header columns**: data entered in menu Configuration/Edit Header.
- **Dev.Serial:** device serial number, if any.
- **Date:** Date of the experiment start.
- **Time:** Time of the experiment start.
- **Session Type**: labelled **Protocol** in Protocol mode.
- **Protocol Name**: name of the protocol used during the session.
- **Finish by**: finish condition.
- **Duration:** duration of the trial.
- **Lane:** number of the lane (from 1 to 5 depending of the treadmill models).
- **Step:** step number of the protocol. In PC (single mode) the value is always "1".
- **Distance**: distance covered by the animal in the lane = (total distance covered by the lane) menus (distance corresponding to the duration of shock.
- **Shock time**: total duration of shock received in each lane by the subject during the trial (in seconds).
- **Number of Shocks**: number of shocks received in each lane by the subject during the trial.
- **Lane distance**: Total distance covered by the lane.
- **Min. Speed**: Minimum speed achieved during the trial.
- **Max. Speed**: Maximum speed achieved during the trial.
- **Aver**. **Speed**: Average speed of the lane achieved during the trial.
- **Protocol Ini.Speed**: Initial speed of the current step.
- **Protocol End.Speed.**: Final speed of the current step.

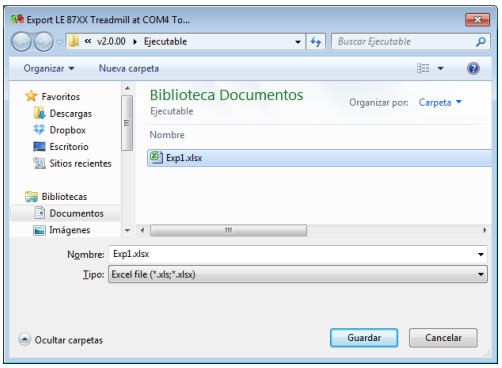
- **Protocol Shock:** Status of the shock in the current step.
- **Protocol Duration:** duration of the current step.
- **Protocol Distance**: distance covered by the belt during the current step.

6.16.5.8.Data output

Treadmill runtime panel

The treadmill Runtime panel can be saved by using the **Save to file...** option of the contextual menu available by left-clicking on the table.

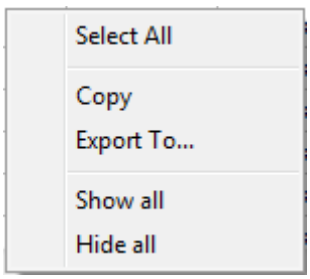


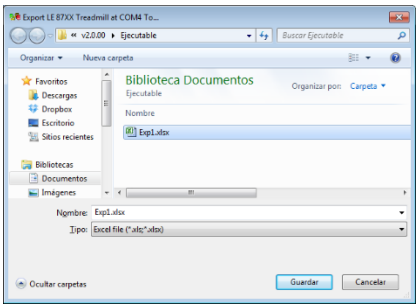


The Runtime panel table can be saved in Excel, txt or html formats.

Treadmill Session panel

The treadmill Session panel can be saved by using the **Export to ...** option of the contextual menu available by left-clicking on the table.





The Runtime panel table can be saved in Excel, txt or html formats.

7. CONTACT INFORMATION

We are available to help you with your questions and concerns. Should you hit a roadblock or need some additional training, please feel free to visit the HBIO Behavioral Support Center at https://support.behavior.hbiosci.com to find articles and helpful information in our knowledge base or submit a ticket. We are happy to help!

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