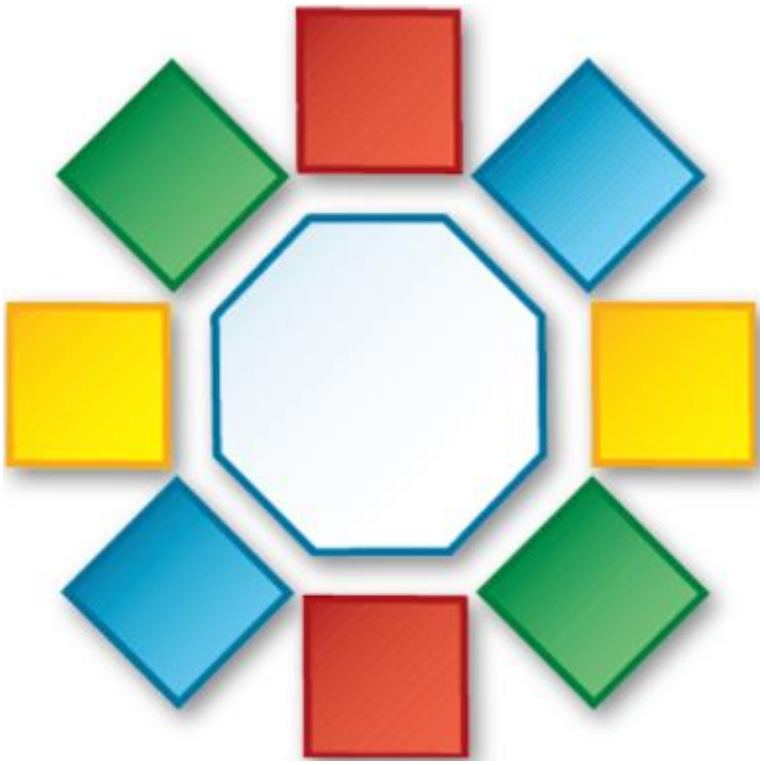
Panlab
An Affiliate of Harvard Bioscience, Inc.



USER MANUAL

MAZESOFT8 2.0.01

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Limitation of liability

PANLAB does not accept responsibility, under any circumstances, for any harm or damage caused directly or indirectly by the incorrect interpretation of what is expressed in the pages of this manual.

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

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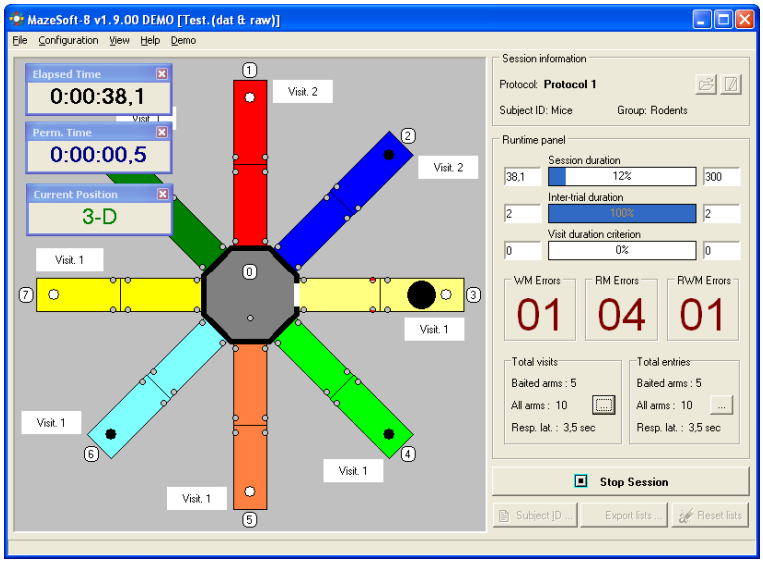
1. INTRODUCTION

MAZESOFT8 is a program designed for the automatic control of an eight arms radial maze through RS232 or USB ports.

The software provides either manual or an automated control of the maze's gates when training animals or testing for memory.

In both cases, the software ensures the control of the animal's position in the maze and provides graphic information about it on the computer screen. This information is also presented in numeric format and it can be filed for analysis purposes.



2. INSTALLATION OVERVIEW

First, please check that your user has administrative rights on the PC or laptop in which the software or device is to be installed. Please contact your IT staff in order to clarify this issue before the installation procedure is done.

Additionally, you will find details about how to configure some requirements, which should be fulfilled to be able to install this system.

2.1. Requirements

MAZESOFT8 needs the following equipment:

- A fully compatible computer with at least:
  - 2,2 GHz Pentium® processor (Celeron not supported).
  - 2 Gb of RAM.
  - 150 MB of free hard disk space.
  - Graphics: 1024x768 pixels and 32-bit true color.
  - 1 free USB port for the protection key.
- Connection interface:
  - 1 free RS-232 serial port for connection to the maze control unit.

  A USB-Serial adapter included in the software pack can be used when an RS-232 serial port is not available.

- Operating system supported:
  - Microsoft® Windows® 11 64bits
  - Microsoft® Windows® 10 32bits and 64bits
- Printer (recommended).

  At least one "virtual printer" must be correctly installed. Please refer to 2.7 for more details.

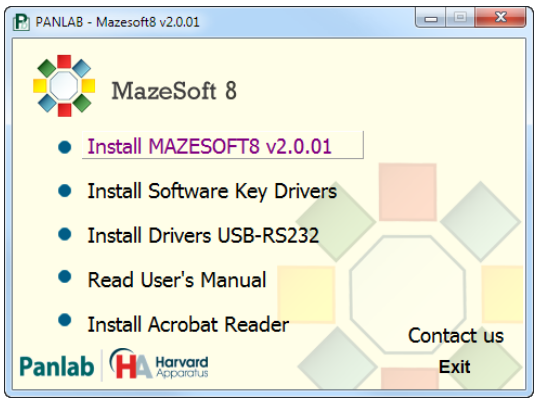
2.2. Installing the software

MAZESOFT8 software is delivered within a single USB flash drive. The USB flash drive contains the software installation tool, this User's Manual in PDF format and other components required to work in specific conditions.

Due to security reasons of the Windows® operating system, a user with administrative rights is required to install the software and other components. Please contact your IT staff before installing the software.

Once you get the administrative rights to install the software, please follow these steps:

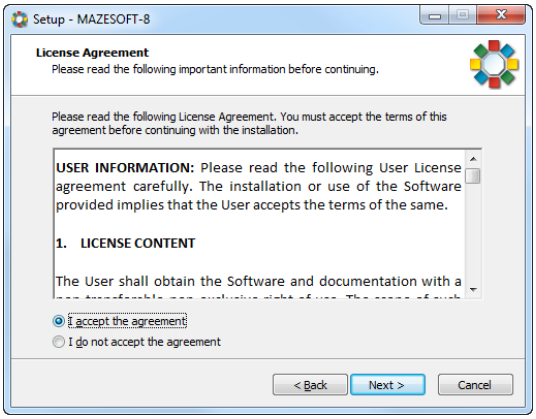
- Plug the USB flash drive in a free USB port of your computer and wait until Windows® installs it as a new removable drive.
- Access the new removable drive detected and execute the PANLAB.EXE file. A window will be shown, as below:



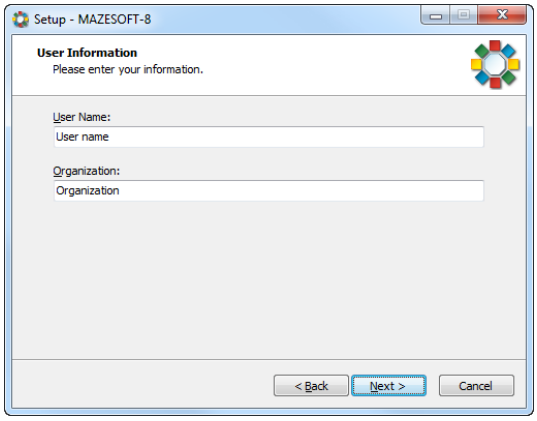
- Press the [Install MAZESOFT8 v2.0.01] button to start the software installation.
- An installation wizard will appear. Press the [Next] button to start the software's installation.

- Read carefully the License Agreement statement and select the "I accept the agreement" option to continue the installation of

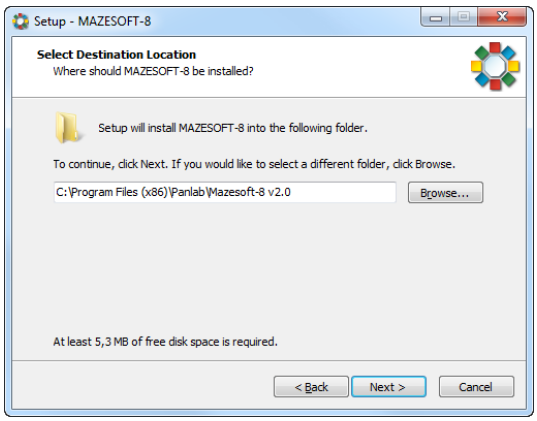
MAZESOFT8. Then press the [Next] button to start the installation.



- In the next windows 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\MAZESOFT8 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 [Install] following the Install Shield Wizard until reaching the [Finish] button.
- A new shortcut will appear on your desktop. Use it for executing the program later.

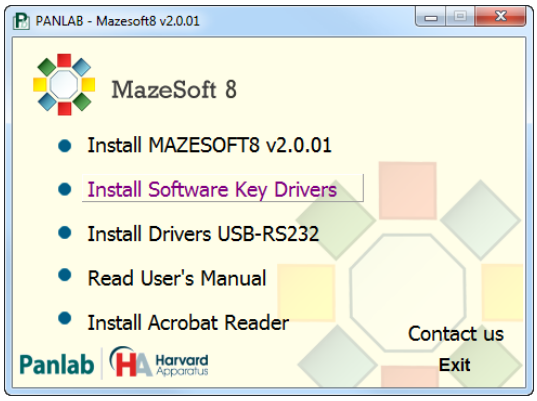
2.3. Installing software protection key

MAZESOFT8 software is delivered with a USB protection key that avoids fraudulent use of the application in a computer which does not have it installed.

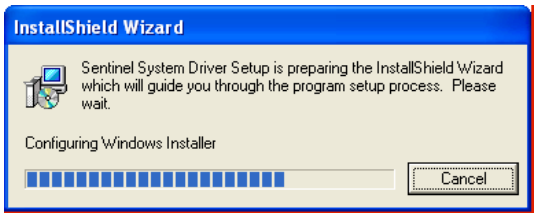
Before installing the drivers, all applications must be closed and all USB SuperPro keys must be removed.

In order to do a correct USB key protection installation, please follow the steps below:

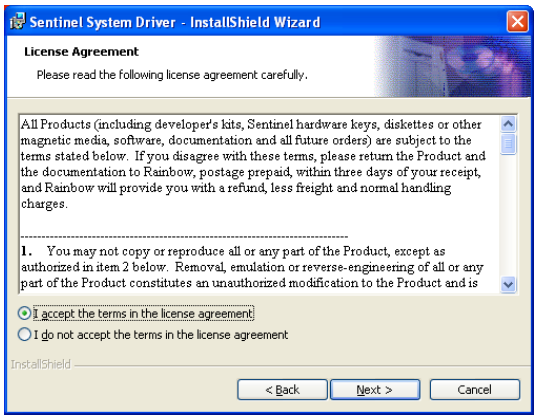
- Press the [Install Software Key Drivers] button to start the driver's installation.



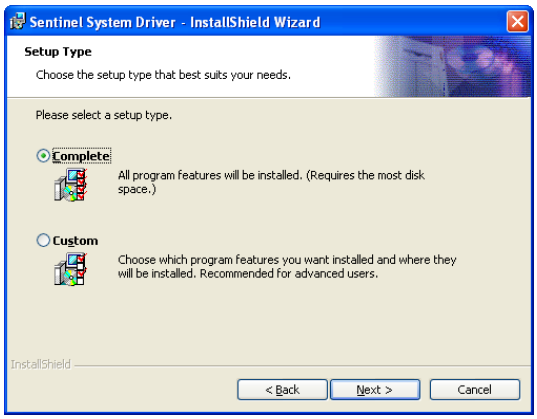
- Automatically a USB key wizard installation will be shown. When the Welcome screen appears, click [Next] to continue.



- Chose [I accept the terms in the license agreement] and click [Next] button to continue.

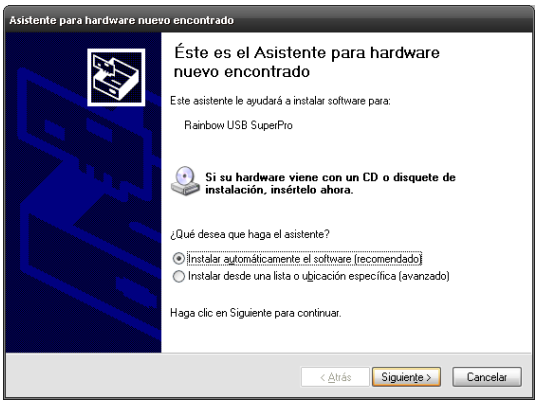


- On the incoming windows please select the [Complete] option of setup type and click [Next] and [Install] buttons to continue.

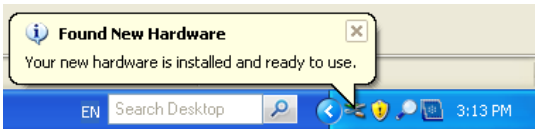


- After pressing [FINISH] button, you must reboot the system. Thus, your computer will recognize the USB security key.
- Did you reboot the computer? If you answer yes, please connect the USB key. In the lower right corner of the screen will appear the next message.

- The wizard for installing the drivers will run when your computer detected correctly the USB key. This process will need some minutes depending on your PC.
- Choose [Automatic Installation] and press the [NEXT] button.



- Wait while the wizard looks for the drivers until it asks you to press the [FINISH] button.
- Finally, a new message will appear in the lower right corner of your screen. The USB key was installed correctly...



Important remark: This step has to be repeated for each USB port of your computer.

2.4. CONRS232USB-HS converter (high speed mode)

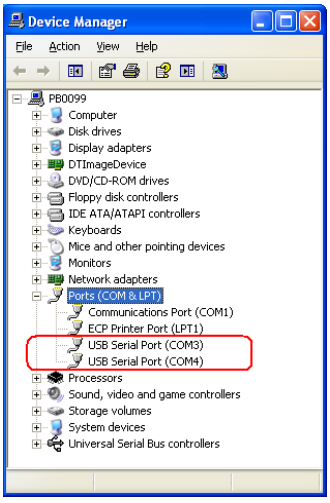
MAZESOFT8 requires the use of the high-speed converter from RS232 port to USB port. A USB – Serial adapter will allow you to set 2 serial ports in your PC or laptop.

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 the 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 in the [Device Manager] window on the Windows Operative System. Usually, the numbers assigned by Windows are sequential.



2.5. CONRS232USB (blue) converter (Legacy mode)

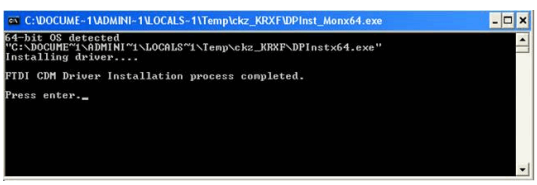
The blue RS232/converter was included in older MAZESOFT8 software packages.

MAZESOFT8 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 continuing installing the device.

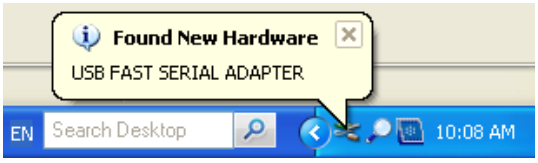
- The drivers should be installed prior to hardware installation. Do not connect the USB to serial I/O Adapters to the USB port of your computer, before you finish driver installation.
- Insert the MAZESOFT8 software USB flash key into a free USB port of your computer and access its content.
    - If 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.

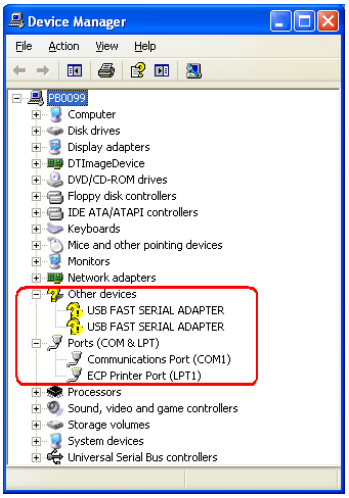


- After the message "FTDI CDM Driver installation process completed" appears, press "Enter" to complete the driver installation.
- Plug in the USB PRO Series Adapter to the USB port of your computer. Windows will finish installing the driver files.

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

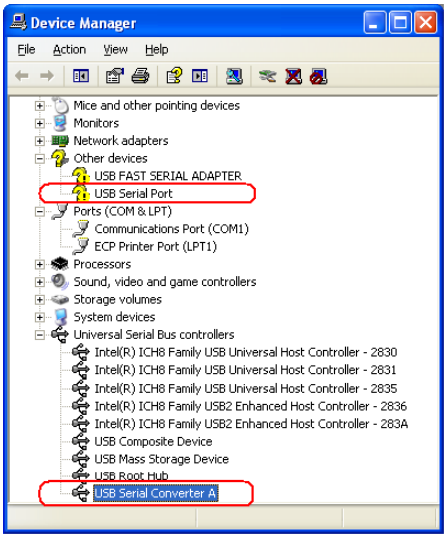


- At the same time, two devices will appear in the [Device Manager] window. The ports provided by the new [USB FAST SERIAL ADAPTER] will be shown under [Other devices] with a warning sign attached.

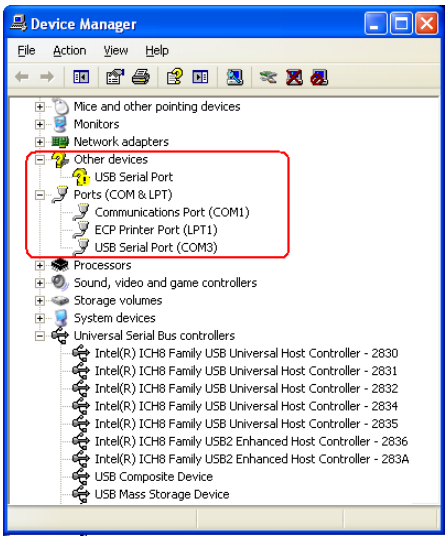


- Please, wait while the wizard locates the drivers installed previously. This process may require some minutes depending on your PC.

- 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.



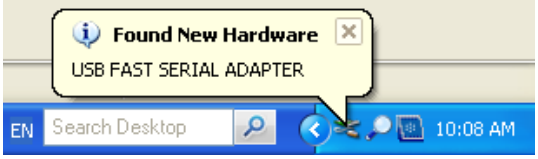
- The next picture shows how the number of the port is finally assigned by the system.



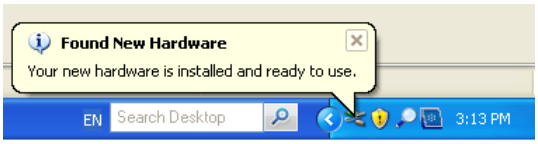
- When the wizard finishes will ask you to press the [FINISH] button.

Important remark:

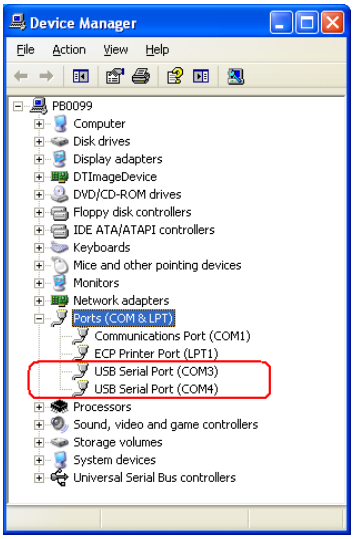
Until now, only one serial port has been correctly installed. The process must be repeated for the second port. Please, wait while your PC or laptop finds another COM port. Once again, the next message will appear in the lower corner of the screen:



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



- At the same time, the two serial ports will appear in 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.

2.6. Mounting the Radial Maze

The following is the list of elements forming the LE 766 and LE 768 radial mazes:

- One tripod to be used as support of the maze.
- One central compartment includes the frames for mounting the arms.
- Eight arms.
- One Control Unit with power cord.
- One set of connecting cables form the control Unit to the Maze, formed by eight cables with 15-pins delta connectors labelled 1 to 8 and one cable with DIN connectors.
- One set of three flat connecting cables from the control Unit to the PC Computer, labelled 1, 2 and 4. This cable is already installed in the PC Computer.

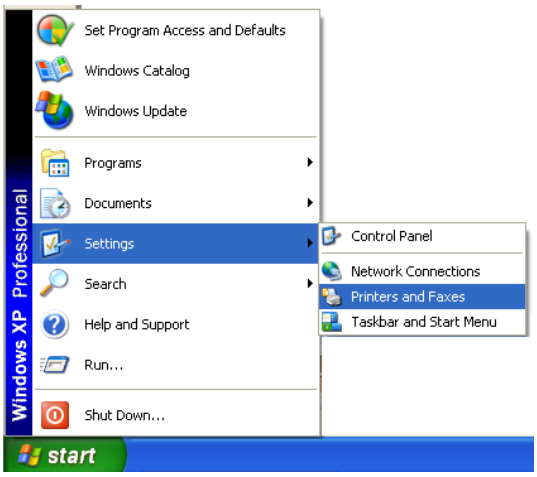
The following are steps to be carried out when mounting the maze:

- Be sure that both the PC Computer and the Control Unit are switched off.
- Open the tripod feet, so as to cover the surface enough to ensure the full stability of the maze.
- Insert the central compartment in the top of the tripod and ensure it by tighten the fixing screw.
- Insert the arms carefully sliding the tabs in the proximal extreme of the arm below the cover of the central platform and securing the fixing screw under the corresponding frame. Take care to put all the arms in their natural order, from 1 to 8 in clockwise order.
- Connect the cables corresponding to each arm in the delta connector situated at the left bottom side of each arm. It's very important to have the correct correspondence between the arm number (see the label at the left side panel) and the cable number (see the label in the extreme of the cable).
- The cable with the DIN connector must be plugged in the female situated in the bottom side of the central platform.
- Connect the cables to the control unit, each one of them at its corresponding connector (see labels in the front panel); the central platform is identified as "0".
- Connect the flat cables to the corresponding connectors in the rear panel of the control unit (labelled 1, 2 and 4).
- Put the power cord in the connector at the rear panel; note the mains switch and the 110/220 V voltage selector (220 V is selected at factory; change if necessary).
- Connect the other extreme of the flat cables to the digital I/O card in the PC computer. To do so, remove the computer cover and join cable 1 to the CN1 connector, cable 2 to the CN2 connector and cable 4 to the CN4 connector in the card. Note that this cable is already installed in factory.

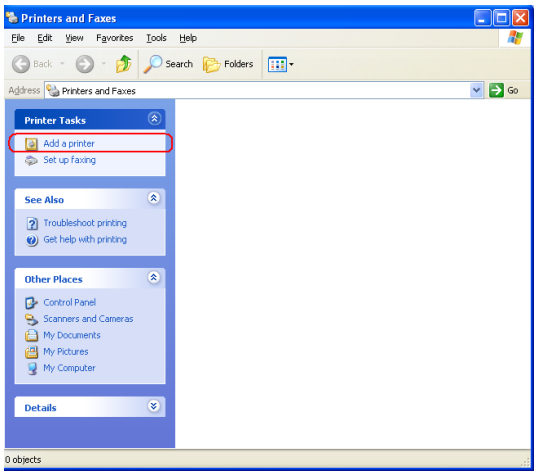
2.7. Installing a printer by default

If there is not a printer installed in your PC, one virtual printer must be installed by default. If your PC is running Windows 10, there are two virtual printers installed by default (Microsoft XPS Document Writer and Microsoft Print to PDF) and no additional action is required; but for earlier Windows versions, the next steps must be followed to fulfil the system requirements:

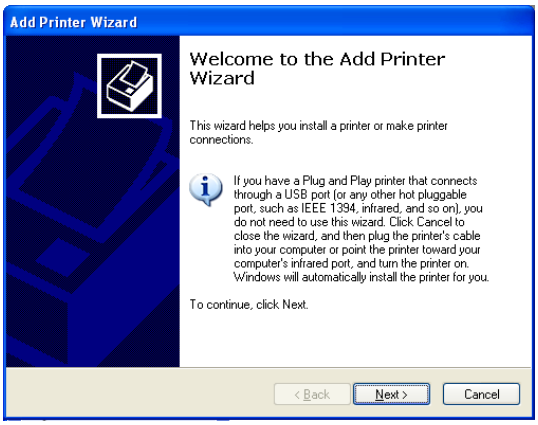
- Go to [Printers and Faxes] option of your system. The access is possible by clicking on [START – Settings].



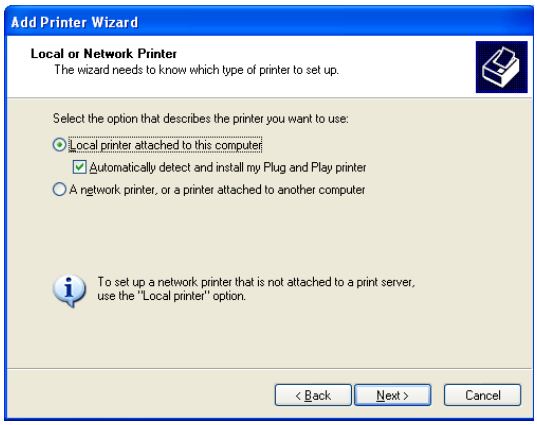
- In the [Printers and Faxes] window press on the [Add printer] button.



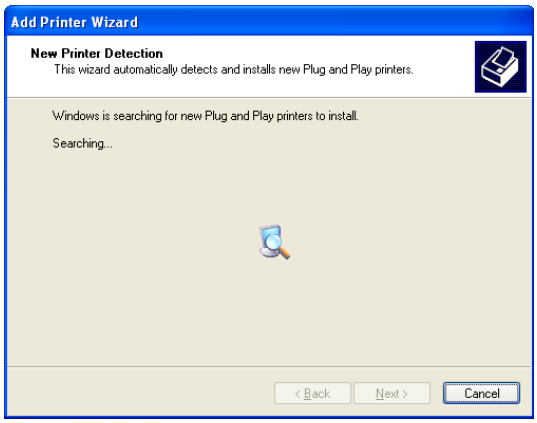
- The Welcome to the add printer wizard appears, click [Next] to continue.



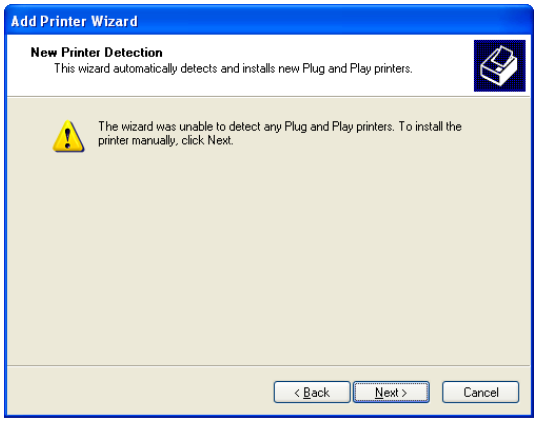
- As this procedure is for installing a virtual printer, the options must be selected as is shown in the next window. Press [Next] button to continue.



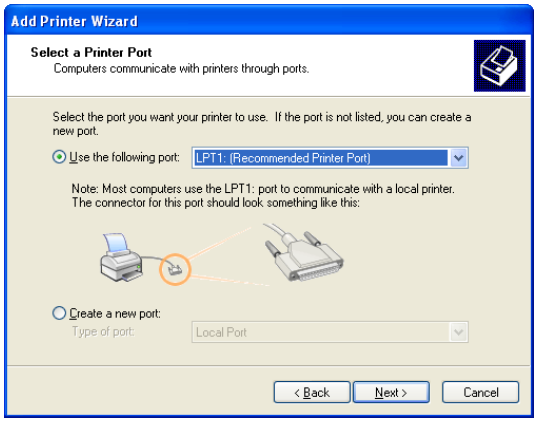
- The wizard will search the drivers for the virtual printer. This process will need some minutes depending on your PC.



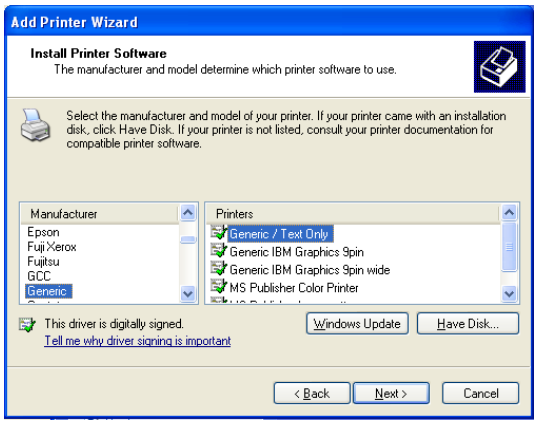
- The wizard notifies that there is not a real printer present. Press [Next] button to continue.



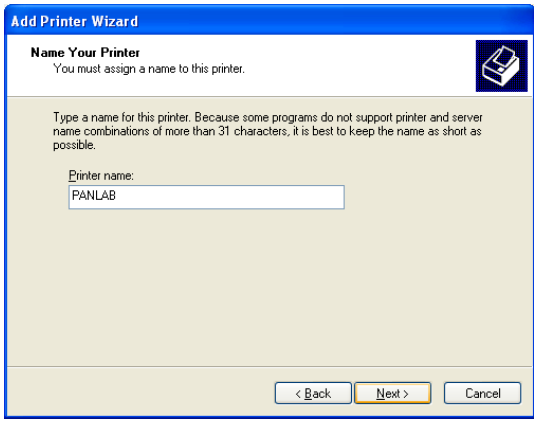
- Obviating the previous message, the options for the next window must be selected as is shown in the next picture before pressing the [Next] button.



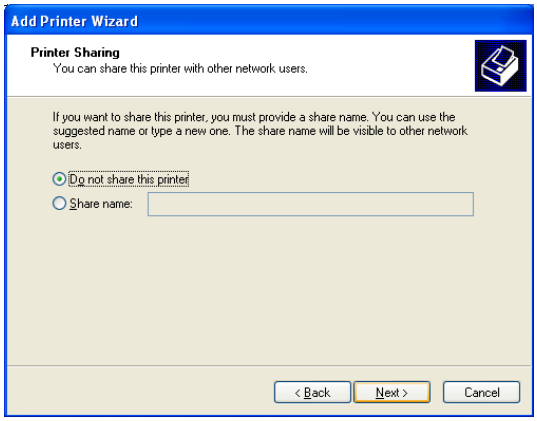
- The virtual printer will be a [Generic / Text Only] thus these options must be selected in the next window before pressing the [Next] button.



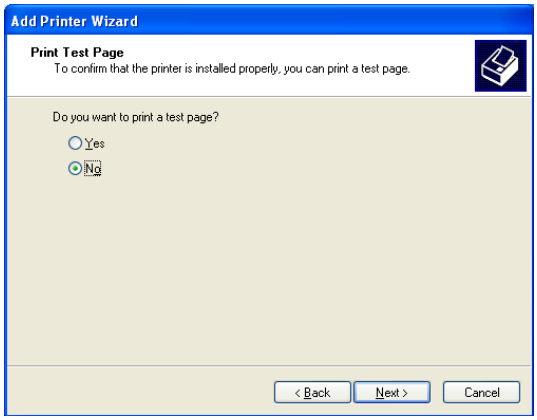
- This virtual printer can be called [PANLAB] so that it can be easily identified when a real printer is connected to the system. The option [No] must be selected before pressing the [Next] button.



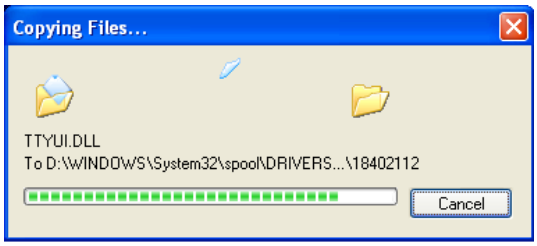
- Of course, it is not necessary to share the PANLAB printer so select the [Do not share this printer] option and press the [Next] button to continue.



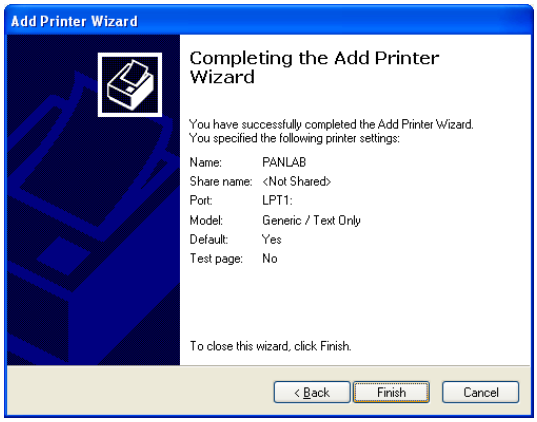
- It is not necessary to print a test page either so select the [No] option for answering to the wizard and press the [Next] button to continue.



- The wizard will copy the drivers for the virtual printer. This process will need some minutes depending on your PC.



- When the virtual printer is successfully installed the wizard shows you a window as the next picture. Press [Finish] button.



- A new icon will appear in [Printers and Faxes] window called [PANLAB]. Close the window and launch the software.

3. MAIN MENU OPTIONS

3.1. File

Functionalities for file operations and exiting the program.

- New

  Creates a new sessions data file. A dialog will ask you where to save the new data file. Different data files can be used for saving the sessions of the same experiment.

- Open

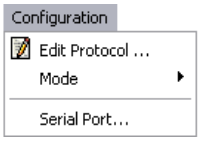
  Opens a sessions data file. A dialog will ask you to choose a file and enables you to browse the directories of your computer to find a session file. If a new trial is carried out when an existing file is open, the newly obtained data is added to the end of the file.

  Please note that no mechanism is provided to prevent data proceeding from different experimental subjects to be mixed.

- Exit

  Exits the program.

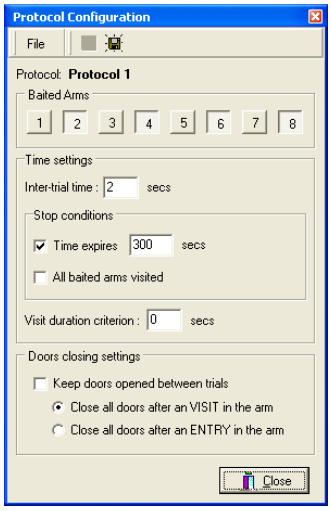
3.2. Configuration



Configuration of the protocol and the acquisition mode.

- Edit Protocol

  Opens the protocol con-figuration window, which allows you to edit and save the current selected protocol. See point 4.3 for further information about editing protocols.



- Mode

  Allows for the selection between the two main working options: (i) "Manual" for a manual control of the doors or (ii) "Automatic" for an automated control of the door following some preconfigured designs.

- Manual Mode

  This option can be used for both training (shaping) and testing the animals in the radial maze procedure. The user can fully control the gates opening and closing (clicking on the pad in the computer screen), while the software shows graphically the current subject position. In the protocol configuration panel, the user will be allowed to set all the parameters which are not associated with the management of the doors such as (i) the baited arms, (ii) the time criterion defining a visit in an arm and (iii) the stop conditions for the session. During the acquisition, the number of working and reference memory errors are given together with some additional parameters of interest.

- Automatic Mode

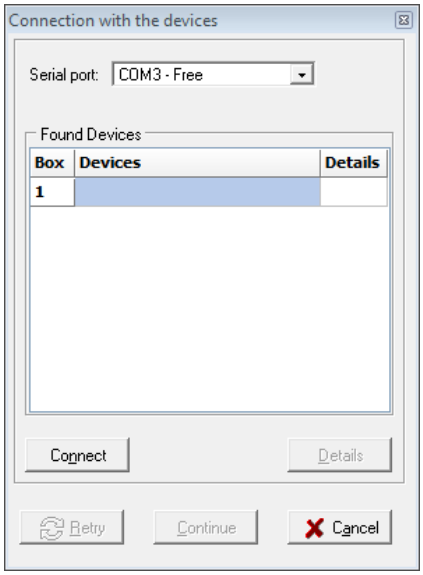
  This option can also be used for both training and testing the animals in the radial maze procedure. By using this mode, the control of the doors is entirely automated during the session, allowing the user to spend his time on other tasks. The "behavior" of the doors will depend on the user-defined configurations made in the protocol configuration panel (see point 4.3).

- Serial Port

  This section explains in detail how to configure the communication between the maze and the computer.

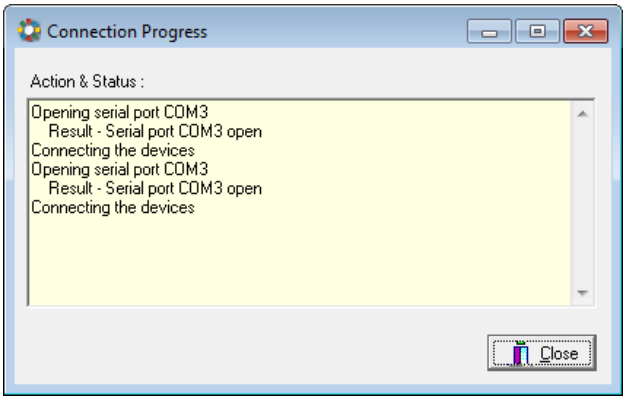
  Configuration window can be shown through Configuration > Serial Port… menu option.

  The corresponding configuration window is:



We can see different parts in this window:

- Serial port: It indicates the port number where the hardware is connected to.
- Found devices: It indicates the list of devices found in the serial port selected after pressing the [Connect] button.
- Details button: It shows information of both the connection process with the device and the found devices process.

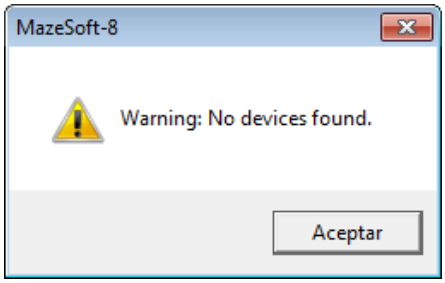


To configure the communications:

1. Select the communications port.
2. Press [Connect] button.

Depending on the result of connection:

If connection fails a message like this will be shown:



If this message is shown, please check the following issues:

- Devices connections are established as referred to in the corresponding manual.
- Control unit is connected to the PC with the right cable and in the selected COM port.
- This COM port is not used by another running application.
- If a USB adapter is used, the corresponding drivers are correctly installed.

If connection doesn't fail, you'll see the list of devices in the list "*Found Devices*".

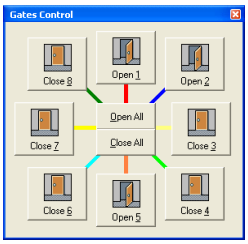
- If the shown list is the correct list, you must press **Continue** button and the application will create the corresponding devices to start, else if the list is incorrect, please repeat the steps from number 2 after changing the serial port selected.

3.3. View

Options in this menu show or hide different windows such as the current position of the animal and the total elapsed time. Following windows are accessible:

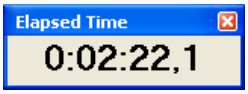
- Gates Control

  Show or hide the pad controlling the manual opening/closing of gates. This option is only active in the manual mode. It is disabled in the automatic mode.



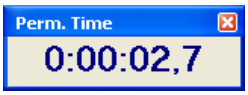
- Elapsed Time

  Show or hide the panel showing the total elapsed time in the current session.



- Perm. Time

  Show or hide the panel showing the elapsed time in the current zone position.

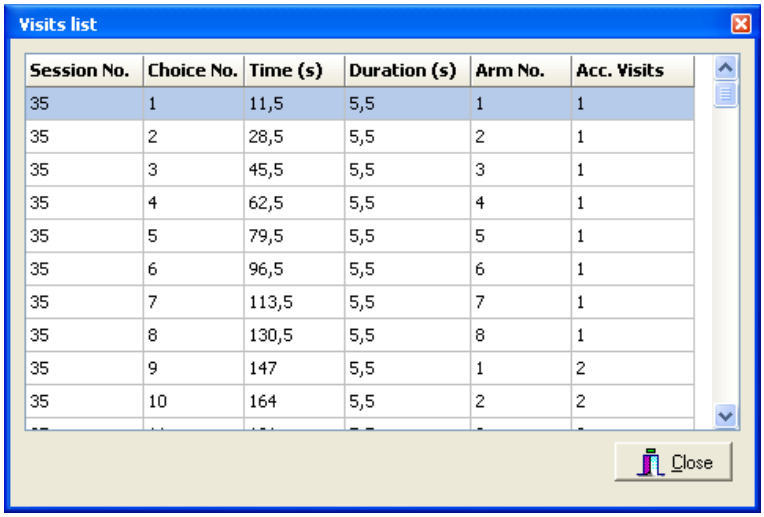


- Current Position

  Show or hide the panel showing the current position of the animal in the different zones of the maze. The number stands for the arm number and the letter for the position in the arm. "P" stands for proximal, the inner segment of the arm, and "D" stands for distal, the outer segment of the arm. "B" stands for base, the middle area of the maze.

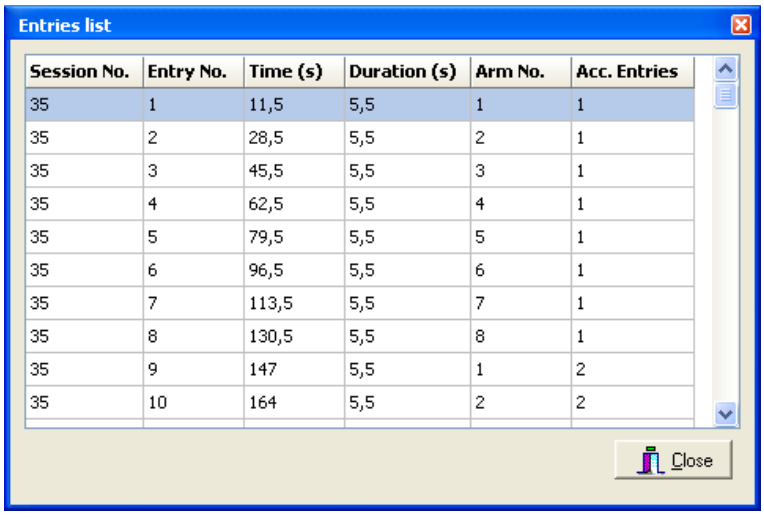
- Visits

  Show or hide the window containing a table with all the visits to the arms performed by the animal during the last sessions. Use the "Export lists …" button to export the data of this list. For more information about exporting data please look at point 4.2.5.



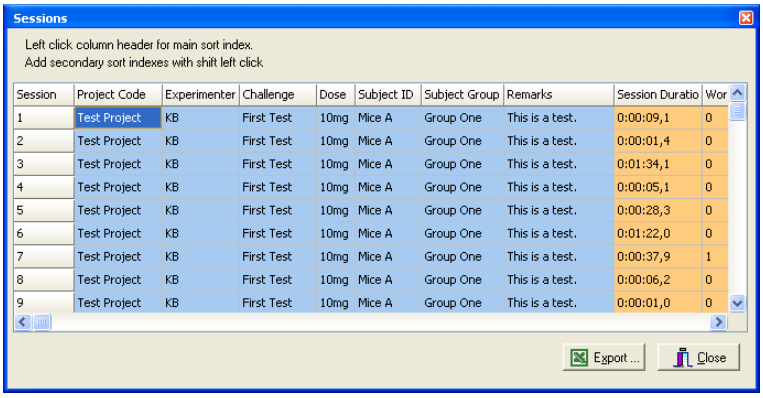
- Entries

  Show or hide the window containing a table with all the entries into the arms performed by the animal during the last sessions. Use the "Export lists …" button to export the data of this list. For more information about exporting data please look at point 4.2.5.



- Sessions

  Show or hide the window containing a table with all the saved sessions.



  The columns are divided into three sections:

  - Session header (Blue columns)
  - Session result data (Orange columns)
  - Session protocol settings (Green columns)

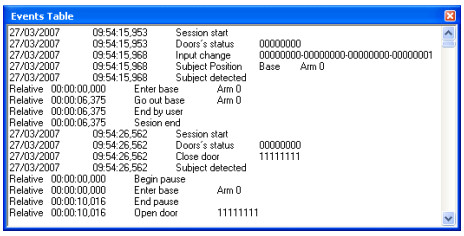
  The session's definition of the columns is:

  - Session: Number of the session (p. 33).
  - Project code: Project code defined in the session header. (p. 33).
  - Experimenter: defined in the session header. (p. 33).
  - Challenge: defined in the session header (p. 33).
  - Dose: defined in the session header
  - Subject ID: defined in the session header (p. 33).
  - Subject Group: defined in the session header (p. 33).
  - Remarks: defined in the session header (p. 33).
  - Session Duration: Total duration of the session.
  - Work. Mem. Error: Number of working memory errors the animal has made. A working memory error is the repeated visit to a baited arm.
  - Ref. Mem. Error: Number of reference memory errors the animal has made. A reference memory error is the first visit to a non-baited arm.
  - Ref. Work. Mem. Error: Number of reference working memory errors the animal has made. A reference memory error is the first visit to a non-baited arm.
  - Visits B.A.: Number of visits to baited arms.
  - Visits All A.: Number of visits to all arms.

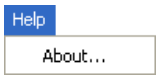
- Visits Resp. Lat.: Visits response latency during the whole session calculated as the ratio between the session duration and the number total of visits.
- Entries B.A.: Numbers of entries to baited arms.
- Entries All A.: Number of entries to all arms.
- Entries Resp. Lat.: Entries response latency during the whole session calculated as the ratio between the session duration and the number total of entries.
- 1st Work. Mem. Error: Number of visits that caused the first working memory error.
- 1st Ref. Mem. Error: Number of visits that caused the first reference memory error.
- 1st Ref. Work. Mem. Error: Number of visits that caused the first reference working memory error.
- Date: when the session was performed.
- Time: when the session was performed.
- Time Expires: Expiration time of the session configured in the protocol (p. 34).
- Inter-Trial Duration: duration configured in the protocol. (p. 34).
- Visit Duration: criterion configured in the protocol (p. 34).
- Baited Arms: Numbers of the baited arms configured in the protocol (p. 34).
- Time Stop Cond.: Indicates if the time stop condition was activated in the protocol or not (p. 34).
- Visit Stop Cond.: Indicates if the visit stop condition was activated in the protocol or not (p. 34).

- Events Table

  Show or hide the window containing the raw data of all the events that occurred during the last sessions.

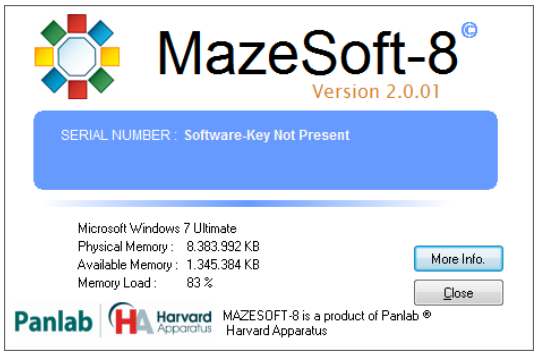


3.4. Help



- About

  Shows information about the program, such as its version and serial number.



4. RUNNING MAZESOFT8

4.1. Entries Versus Visits

Throughout this manual, the terms "*visits*" and "*entries*" are used to define the following:

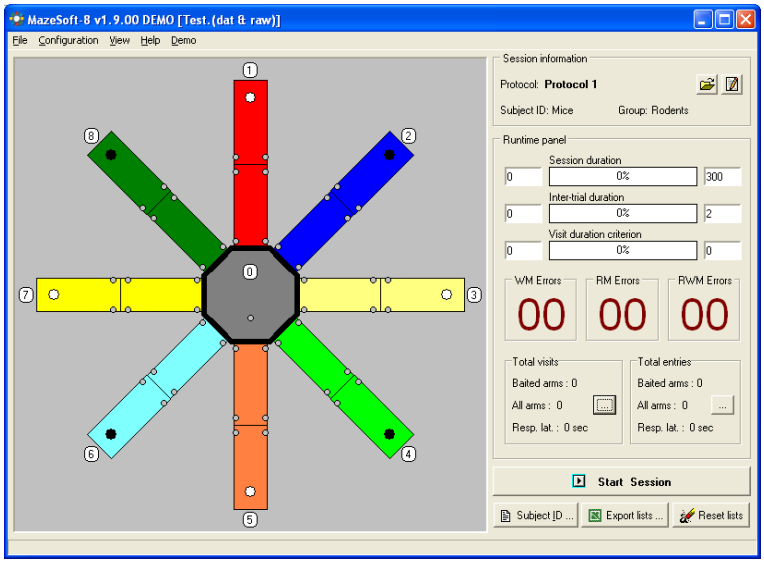
- Entry

  An *entry* is performed when the animal passes from the base zone of the maze to the proximal zone of an arm of the maze.

- Visit

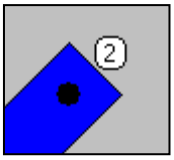
  A *visit* is performed when the animal enters an arm of the maze and remains in its distal zone until the time configured at "Visit duration criterion" (see point 4.3.5) has elapsed.

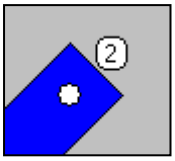
4.2. The main window



The screenshot above shows the main window of MAZESOFT8. In the left sector of the screen, the radial maze is shown, with the arms identified from "1" to "8" and "0" for the central area. Each arm is divided into proximal and distal sections.

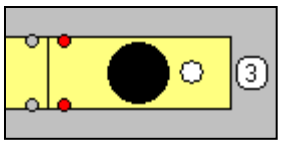
A dot inside the distal section of each arm shows if the arm is baited or not. If the dot is black, the arm is baited. If the dot is white, the arm is not baited.





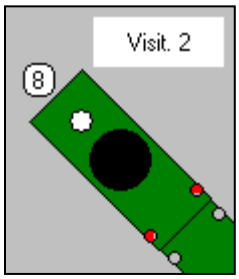
A black circle shows the current subject's position in the maze. The little red/white dots show if the sensors are activated or not. White means the sensor is not activated. Red means the sensor is activated.

In the next picture is in the distal section of the third arm (3-D)



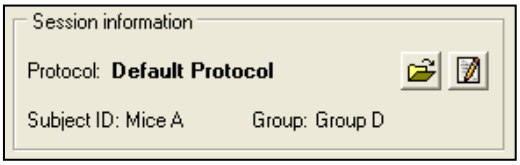
After the subject has visited an arm at least once, a white box beside the arm will be shown with the number of visits of that arm.

The subject, in this case, has visited the arm "8" two times:

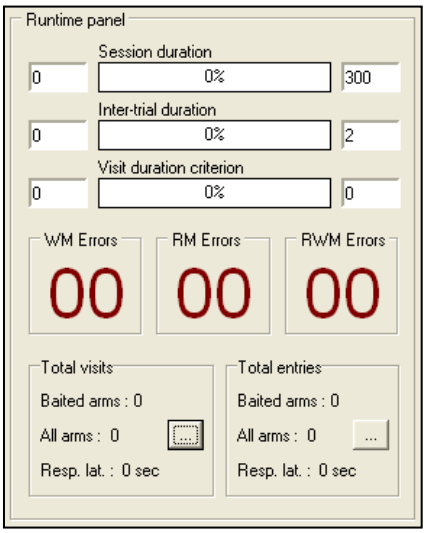


4.2.1. Session Information Panel

The "*Session information*" panel shows the currently selected protocol such as the subject id and the subject group of the current subject. If no protocol is selected, the factory configured "*Default Protocol*" will be loaded. Once a protocol is selected, it will be loaded each time you open the program. You may select or load a protocol by clicking the [Open Protocol …] button. To edit the protocol, click the [Edit Protocol …] button. See point 4.3for further information about editing protocols. To change the subject information, click the [Subject ID…] button at the bottom of the main window. Detailed information about the "Subject id …" button is described below point 4.2.4.



4.2.2. Runtime Panel

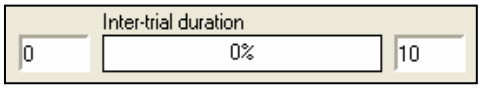


[Runtime pane] window shows current information about the running session.

[Session duration] bar shows the total elapsed time in the current session. The left field shows the time in seconds. If the protocol is configured to expire after a given time, and the selected mode is "*Automatic*", then the progress bar will show the percentage of the time elapsed until the session terminates and the right field will show the time in which the session will terminate.

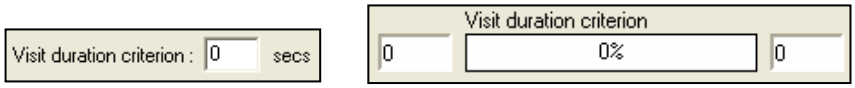
The progress bar and the right field of [Session duration] will remain empty if "*Time Expires*" is not checked in the actual protocol configuration or if the "*Manual*" mode is selected.

"*Inter-Trial duration*" shows the elapsed time in the base between each visit. The left field shows the time in seconds. The progress bar will show the percentage of the time elapsed until the doors open again, the right field will show the time that has to elapse until the doors open.



The progress bar and the right field of "*Inter-Trial duration*" will remain empty if "*Keep doors opened between trials*" is checked in the actual protocol configuration or if the "*Manual*" mode is selected.

"*Visit duration criterion*" shows the elapsed time in the distal zone of an arm. The left field shows the time in seconds. The progress bar will show the percentage of the time elapsed until the visit is recorded. The right field will show the time that has to elapse until the visit is recorded. This time can be set in the protocol configuration.

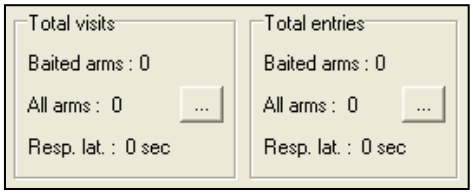


"*WM Errors*" shows the number of working memory errors the animal has made. A working memory error is the repeated visit to a baited arm.

"*RM Errors*" shows the number of reference memory errors the animal has made. A reference memory error is the first visit to a non-baited arm.

"*RWM Errors*" shows the number of reference working memory errors the animal has made. A reference memory error is the repeated visit to a non-baited arm.

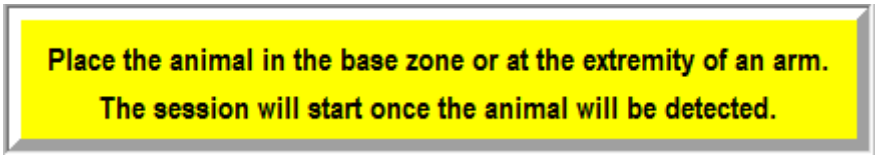
"*Total visits*" and "*Total entries*" show the number of visits and entries respectively. The "*Resp. Lat*" of each panel shows the response latency of visits and entries. The value of the response latency is the total elapsed time divided by visits or entries.



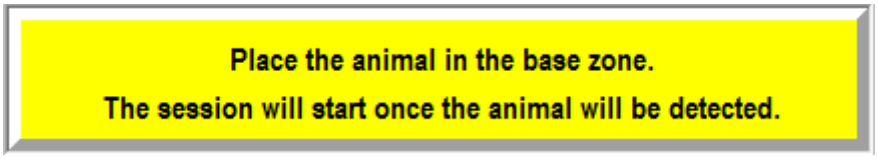
4.2.3. "Start/Stop Session" Button

This button starts and stops the session.

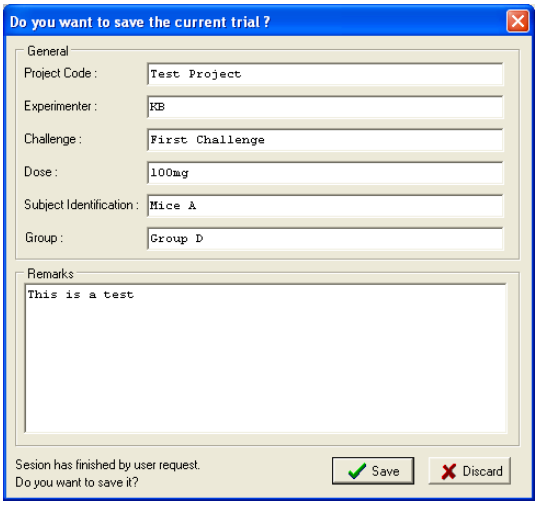
When the "Start Session" button is pressed, the system will check if the subject is present within the maze. The session will start as soon as the subject is detected. While the system cannot detect the subject, a message will be shown inviting you to place the subject in the maze. If the system is working in manual mode, you may place the subject in the base or at the extremity of an arm.



If the system is working in automatic mode, you can place the subject in the base only.



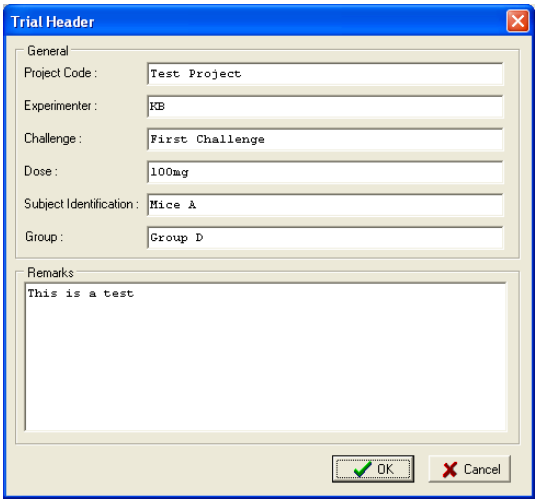
As soon as the session starts, the protocol will be executed and data will be acquired. When the session stops, you will be asked if you wish to save the session that has just stopped. To save, enter the information about the subject and click [Save] button. Else, if you do not want to save, click [Discard] button. If the window is closed , the session will be discarded.



If you don't save the session, all data will be lost! Entries for this session in the visits list and entries list will be deleted!

4.2.4. "Subject ID …" Button

This button allows you to edit the header of the session. Values entered here will be kept after closing and opening the program.



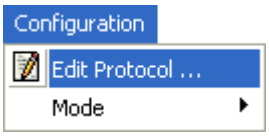
4.2.5. "Export lists …" Button

This button is used to export the lists of visits, entries and entries to zones. A dialog will ask you to choose the lists to export by checking the respective boxes. The "*Export …*" button will export the lists to an Excel® file which will have a page for each list. You must choose at least one list to be able to export. Click on "*Cancel*" to cancel the operation.

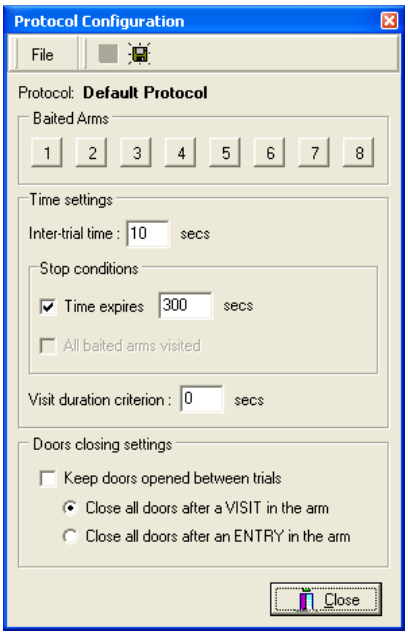
4.2.6. "Reset lists" Button

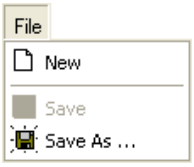
Use this option to reset the lists of visits, entries and entries to zones. All data in this lists will be lost if you have not exported the data before.

4.3. Protocol Configuration



To edit or configure a protocol click on [Configuration – Edit Protocol …] of the main menu or the "*Edit Protocol …*" button in the "*Session information*" panel of the main window. The "*Protocol Configuration*" dialog will always edit the currently loaded protocol in the main window.





4.3.1. File - New

Use this option to create a new protocol. This will close the current protocol and load the default protocol.

4.3.2. File – Save

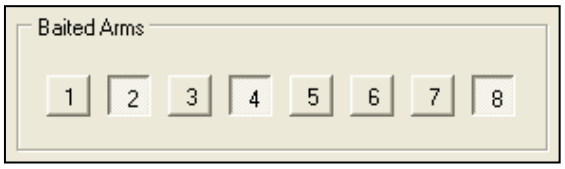
This will save the current protocol. If the protocol has not been saved, it will ask you where to save the file.

4.3.3. File – Save As

Use this option to save the current protocol with a new file name. It will ask you where to save the copy of the protocol.

4.3.4. Baited arms

The buttons stand for each arm of the maze. The lowered or pressed buttons are baited; the ones not pressed are the non-baited. Click on the buttons to change the settings of each arm.



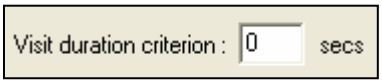
4.3.5. Time settings

- Inter-trial time

  Time in seconds that the doors remain closed after starting the session and between each trial or visit.

- Visit duration criterion

  Time in seconds the subject must remain in the distal zone of an arm until a visit is detected. If set to "0", a visit is counted as soon as the subject enters the distal zone of an arm.



4.3.6. Stop Conditions

With these settings it is possible to terminate the session to a given time or when all baited arms where visited.

- Time expires

  To configure the protocol so that the session terminates after a given time, check the option "*Time expires*" and enter how long the session should last by typing the time in seconds in the field next to the option.

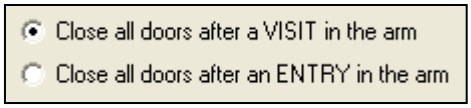
- All baited arms visited

To configure the protocol so that the session terminates after all baited arms were visited, check the option "*All baited arms visited*".

4.3.7. Doors closing settings

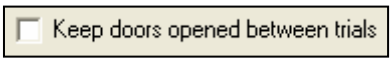
During the session, if the "*Automatic*" mode is selected, the doors will close between each trial and opened again after the time configured in "Inter-trial duration" is elapsed.

The subject is allowed to freely explore until the entrance into one arm is detected; then, all the gates are closed, except those corresponding to the arm being visited. When the animal turns back to the central area, the open gate is closed. It is possible to define if the door should be closed after a visit or after an entry.



All gates remain closed until the inter-trial time is elapsed and then opened again for a new choice. The trial ends when the stop conditions configured in the protocol are fulfilled.

To keep the doors, open between the trial check the option "*Keep doors opened between trials".* In this case, the options above will be disabled.



5. 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!

PANLAB

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Technical Support

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