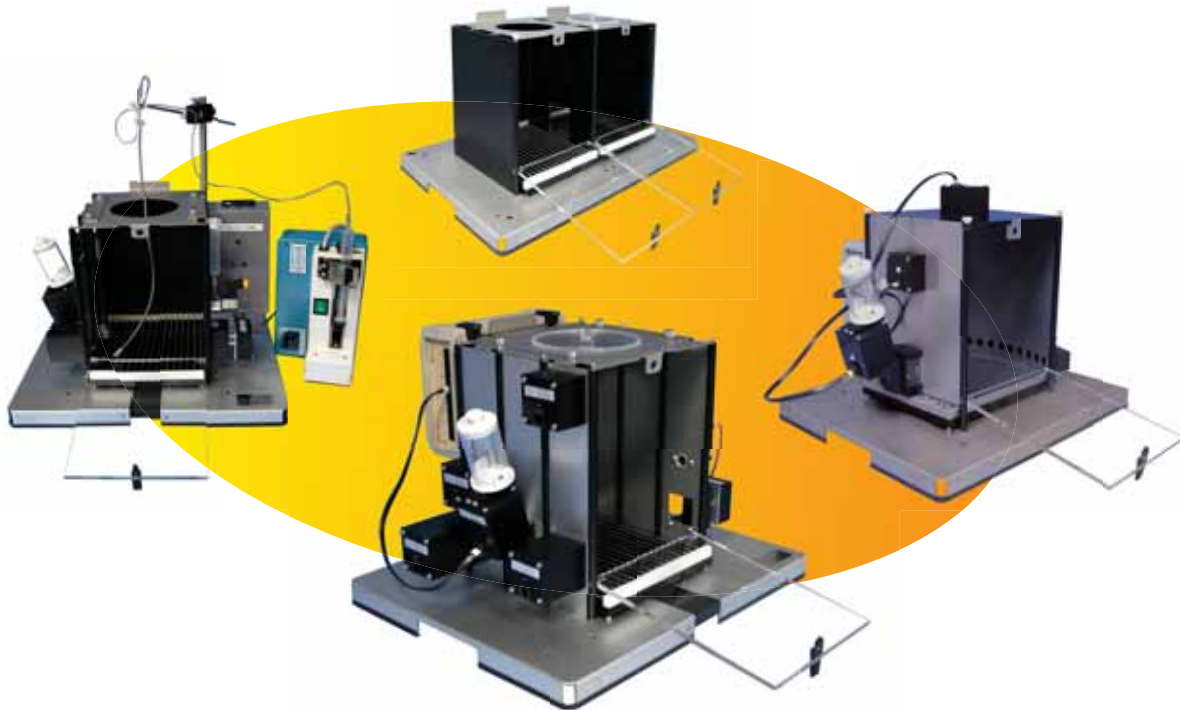




PackWin software

Powerful tool for controlling a wide range of behavioural chambers



SOFTWARE OVERVIEW

Panlab proposes PackWin, whose user-friendliness and versatility offers a powerful tool to develop a wide range of experiments in different types of behaviour chambers.

The system typically controls the Panlab chambers for operant conditioning, self-administration, procedures using the nine-hole box, Vogel cage and shuttle box, it can also monitors any type of chambers provided that the electronic interface of the chamber is TTL compatible.

A potent and highly usable protocol editor allows the experimenter to build a wide variety of standard and user-customized schedules. Up to 32 chambers can be run depending of the characteristics of the associated chamber.

Built-in data reports and graphs provide general and specific meaningful data related to the current running experiment.

Features

- *Unmatched versatility*
- *Simplified communications to hardware*
- *Surprisingly easy-to-use*
- *Advanced tools for protocol edition*
- *Built-in reports and graphs*
- *Subject Data Base*
- *Result traceability*

APPLICATIONS IN NEUROSCIENCES

Classical operant conditioning, Self-administration procedures, Nine-hole, DMTS-DNMTS, Learned helplessness, Drug discrimination, Active & passive avoidance, Vogel test, Latent-inhibition test, Geller-Seifter paradigm, conditioned suppression of drinking, Alcohol preference, etc.



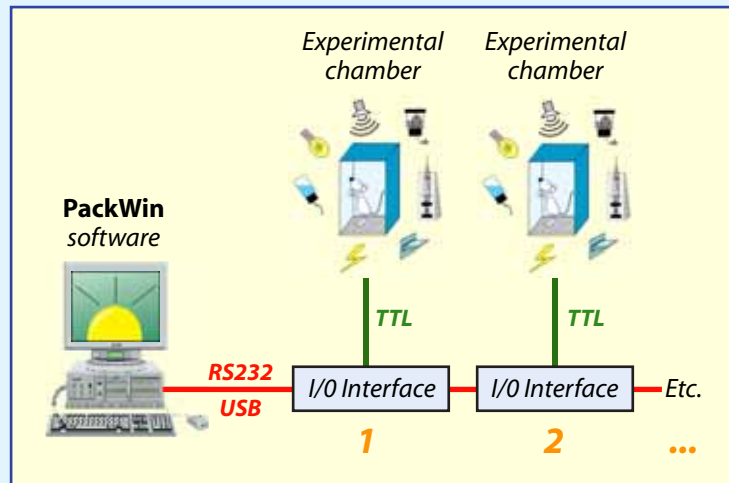
Advanced design and simplified communications

Most of the PANLAB experimental chamber and associated software have been now successfully adapted to the RS 232/USB technology which represents a great advancement in terms of simplicity of use and cost: no need of PCI Card and associated Interfaces, possibility to work with a laptop, gain of space, fewer cables, easier to install...

The Panlab chambers are completely modular: the user can choose the different elements to be present in the experimental chamber (light, sound, lever, pump, food or drink dispenser, etc.). Additional elements can also be appended afterwards depending of the experiments planned by the user.

The chamber-associated link boxes are "input output" (I/O) interface used as a gathering system between the different elements of the experimental chamber and the software. This configuration allows the subject interacting with the experimental paradigm defined in the PackWin protocol editor.

The system does not require any installation of PCI card into the computer. The link is carried out by one only cable from one Box to the other and the first Box is connected to a PC through the RS232 port or a laptop using a RS232/USB adaptor.



SETTING UP EXPERIMENTS

PackWin provides a great amount of potent and user-friendly tools and panel for enabling the configuration of any standard and user-customized protocols. Each experimental file contains all the information about the subjects, protocols and sessions registered.

Subject Data Base

The PackWin Subject Data Base collects all the characteristics of the subjects used in the experiments (name, gender, groups, registered sessions etc...). User-defined lists of subject can be created in order to facilitate the distribution of the subjects in the different experiment chambers before experiment.

Name	Subject 2
Code	ja2
Gender	Male
Specie	C57B6+/-
Used	No
Date of Birth	04/04/2005

The State-based edition of protocols associated to user-defined time, event or state lists enables the configuration of basic schedules for operant procedure (fixed and variable

Add Global-Change Condition

Choose Condition Type

ENTRY in a state

EVENT in an input element of the box

Elapsed TIME.

ratio, fixed and variable intervals of time, fixed or variable DRL, positive and negative reinforcement, extinction, etc.) as well as more specific and complex user-

Next Item

Sequentially chosen

Randomly chosen (Exclusion)

Randomly chosen (No Exclusion)

defined protocols (probability to obtain a reinforcement, conflict, DMTP, 5-choice serial reaction task, etc.).

Protocol edition

The edition is based on the edition of a chain of state, in which the user defines the elements activated (light, sound, pellet dispenser, food dispenser...) and the conditions to go the next protocol step (after x time elapsed, after animal lever pressing, after nose-spoke, etc...).

Element
Lever-1
Lever-1
Lever-2
Light
Buzzer
Pellets
Water
Drug Pump
Shock

Under request, the Software can be supplied with already edited protocols (customisation).

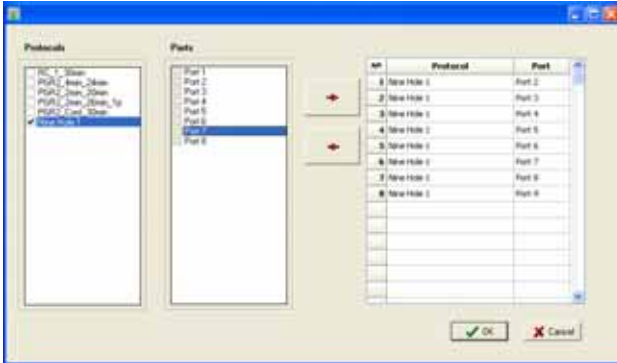
Configurable Runtime Data Panel

The two raw data tables displayed in the PackWin runtime panel (State and Transition tables) are entirely configurable allowing the user to access to meaningful data immediately at the end the session.

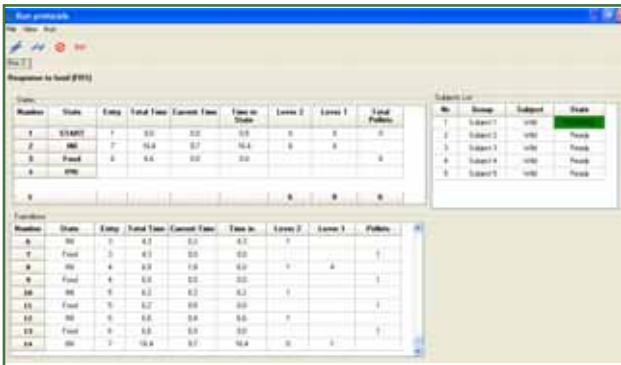
A new set of data can be obtained in the PackWin analysis module by replaying the registered session using a different runtime panel configuration.

RUNNING TEST

The software can run up to 32 chambers depending of the characteristics of the associated chamber. Desired protocols can be selected separately for each chamber.



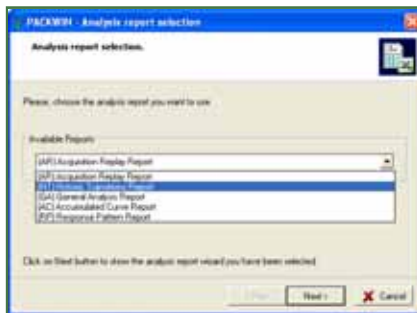
The Runtime panel displays the list of the subjects associated to each chamber and actualizes the data of the tables in real-time providing to the user all the required information about the development of the session (time, events, state of the protocole, calculations...)



Raw data tables obtained at the end of each session can be stored in DOC, XLS, HTML and CSV formats for report and further analysis.

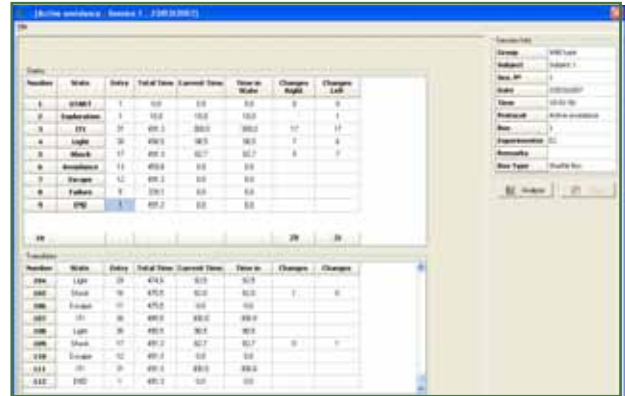
ANALYSING RESULTS

The registered sessions can be re-analyzed for generating different built-in data reports and graphs directly related to the running experiment.



Acquisition Replay Report

The **Acquisition Replay Report** allows replaying the State and Transitions tables generated during the Acquisition process. Of great interest is the possibility to generated new State and Transitions tables fulfilled with different parameters than those calculated during the Acquisition process.



Historic Report

The **Historic Transitions Report** provides a chronological list of all the events (ligh ON, lever pressed, pellet given...) which have occurred during the session. This report allows the user having a precise of what happened at any moment of the session.



General Analysis Report

The **General Analysis Report** allows obtaining a great amount of additional calculations: total number of a user-selected response, mean response rate, mean interval time between responses, total number of response by state, response rate in each state, list of interval of time between two consecutive responses, response latency, etc...

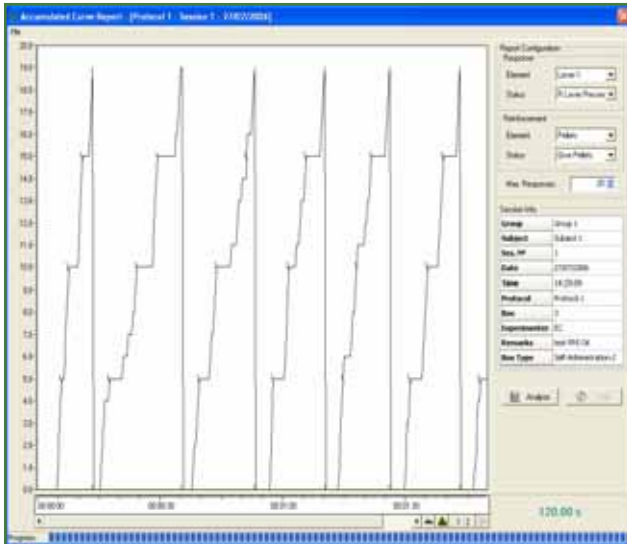
General summary	
Total duration of the experiment	120,00
Total number of responses	135
Total responses rate	67,50
Mean inter-response time	0,84
Mean inter-state time	0,00
Breaking Point	5

Inter-Response Time				Inter-State Time			
Index	Element	Status	I.R.T.	Index	A	B	I.S.T. (A)
1	Lever-1	R. Lever Not	0,22	1	iv	pellet	5,70
2	Lever-1	R. Lever Not	0,19	2	iv	pellet	1,70
3	Lever-1	R. Lever Not	0,22	3	iv	pellet	3,34
4	Lever-1	R. Lever Not	0,23	4	iv	pellet	2,80
5	Lever-1	R. Lever Not	0,95	5	iv	pellet	3,83
6	Lever-1	R. Lever Not	0,19	6	iv	pellet	6,70
7	Lever-1	R. Lever Not	0,22	7	iv	pellet	5,11
8	Lever-1	R. Lever Not	0,19	8	iv	pellet	6,09
9	Lever-1	R. Lever Not	0,27	9	iv	pellet	4,03
10	Lever-1	R. Lever Not	2,50	10	iv	pellet	4,25
11	Lever-1	R. Lever Not	0,19	11	iv	pellet	7,20
12	Lever-1	R. Lever Not	0,22	12	iv	pellet	2,30
13	Lever-1	R. Lever Not	0,19	13	iv	pellet	4,23
14	Lever-1	R. Lever Not	0,25	14	iv	pellet	3,81
15	Lever-1	R. Lever Not	1,84	15	iv	pellet	4,25
16	Lever-1	R. Lever Not	0,20	16	iv	pellet	4,84
17	Lever-1	R. Lever Not	0,20	17	iv	pellet	4,19
18	Lever-1	R. Lever Not	0,19	18	iv	pellet	3,33
19	Lever-1	R. Lever Not	0,38	19	iv	pellet	3,56
20	Lever-1	R. Lever Not	1,84	20	iv	pellet	4,73
21	Lever-1	R. Lever Not	0,20	21	iv	pellet	4,69
22	Lever-1	R. Lever Not	0,19	22	iv	pellet	4,73



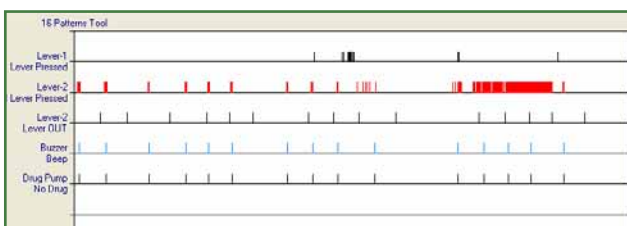
Accumulated response curve report

The **Accumulated Curve Report** provides a graphical representation of the cumulative user-selected response curves expressed as a function of the time. Dynamic scaling and scrolling of the Y and X-axis allows the user to focus on critical time periods of the cumulative record.



Response pattern report

The **Response pattern** report displays a graphical representation of the temporal distribution of the user-selected responses and reinforcements in each session. The different patterns can be displayed with same or different colours. This built-in report is particularly useful in self-administration experiments for visualizing the pattern of lever or nose-spoke pressing to receive drug with addictive properties.



Transferring data

Raw data tables can be stored in DOC, XLS, HTML and CSV formats for report and further analysis. All graphs are directly exportable to bitmap image format and associated raw data to XLS format.

OTHER FEATURES

GPL compliance and traceable data

As required in the Good Practices of Laboratory (GPL) directives and instruction, PackWin has been built in order to obtain traceable data. Each registered session is unalterably linked to the corresponding experimental data (date, experimenter, animal data, protocol used, etc.). Internal software mechanisms protect raw data and used protocols from subsequent manipulations.

Personalized customer support

At any moment, our customers can take profit without any charge of the Panlab Scientific Department for any personalized help for the use of the PackWin software.

Related Panlab's chambers

- Modular Operant box
- Self-administration box
- Nine-hole box
- Vogel box
- Shuttle box

COMPUTER REQUIREMENTS

Windows™ 98, 2000 or XP compatible computer system. Minimum Pentium 4 processor of equivalent (Celeron excluded). 2 GHz Hard disk, 256 MB of RAM (512 MB recommended). RS232 or USB bus available.

ORDERING INFORMATIONS

PACKWIN

PC software to control up to 8 Experimental Chambers

OPTIONS

RS232/USB adaptor

Adaptor for running PackWin in a laptop

Contact us for additional information

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