

Prepulse Inhibition (PPI) Boxes

Always calibrate the PPI boxes prior to testing on each day

See print manual for more information

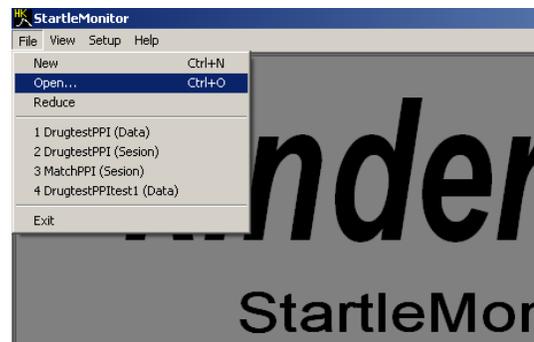
Calibration:

- 1) Turn on the boxes by switching on the surge protector on the bottom shelf and the power adapter on the top shelf.
- 2) Turn on the computer.
- 3) If the restraining cages have not been removed, remove them by sliding them off the base screws and set them aside.
- 4) Retrieve the calibrator apparatus (should be in the bottom drawer) and place the heavy, black calibration cube in the two central holes in the sensing plate of the first chamber, ensuring that the correct side of the cube is facing towards you as indicated by the affixed instructions.
- 5) Plug the power cord into a wall outlet and the input jack into the port marked “Calibrator” on the outside of the chamber.
- 6) Once the computer is booted up, run the StartleMonitor program by double clicking its icon on the desktop.



StartleMonitor.Ink

- 7) Once the program loads, select *File* → *Open...*
- 8) Select “Ncalibration”
- 9) Select *File* → *Run* and save the file in the default location. The name of the file is unimportant.
- 10) When prompted, choose OK to start the calibration program.



- 11) Once the program begins, the screen will show a waveform display and table. **The value under “Max” must be as close to 1.00 as possible (± 0.01) for each chamber in order for it to be properly calibrated.**
 - a. To perform the calibration, locate the calibration knob just underneath the door latch, marked “Gain”. Lift up the switch that is on top of the knob to unlock it.

- b. Turn the knob clockwise to increase the gain, i.e. to increase the value under “Max”. Turn it counter-clockwise to decrease the value. As the value will fluctuate, you may need to wait a few trials for it to stabilize.
- c. When the box is calibrated, push the locking switch back down to lock the calibration knob in place.
- d. Move the calibration cube and its input jack to the respective interfaces in the next chamber.
- e. Advance the “Enclosure” number displayed on the screen and repeat the calibration on the next chamber. Continue doing so until all chambers have been calibrated. If the program terminates before you have finished, restart the program by selecting *File* → *Close* and repeat from step 7. If you finish early, you may manually terminate the program by selecting *File* → *Abort*.
- f. You may delete the raw data file created from the calibration program, as there is no use for it.

Data Acquisition:

- 1) Immediately following calibration, remove the calibration apparatus and replace the Plexiglas restraining cages by aligning the holes on the base with the 4 screws on the sensing plate. Secure the cage by sliding it onto the screws.
- 2) Select *File* → *Close* and then *File* → *Open...* and choose the program you wish to run.
- 3) Information about the test, operator, and other session variables can be entered below the “Session” tab. Information about each individual rat can be entered after clicking the “Encl 1-8” tab. **Be sure to check each box corresponding to the PPI chamber you wish to use.**
- 4) Put each rat into the restraining cage of its corresponding chamber and carefully shut each cage, ensuring you do not pinch any part of the rat’s body. Also ensure that the adjustable ceiling of the cage is at an appropriate height and level. To modify the ceiling position, loosen the two adjustment screws attached to the ceiling and move it to the desired position, then refasten the screws.
- 5) Close the door to each chamber and secure the latch.
- 6) Select *File* → *Save* and then *File* → *Run* and choose where you want to save your data. After clicking “Save”, the program will ask you for final confirmation to start the program. Clicking OK will start the program.

NOTE: While rats are being tested in the PPI boxes, the room should be vacated and the door closed as much as possible, in order to prevent unwanted noise from disturbing the rats.

StartleMonitor - [Session File: DrugtestPPI]

File View Setup Help

#	ITIs	Trials	Available Trials
1	15	79 NoStim NoPulse	10ms int 76db PP
2	10	80 120db PULSE	115dbtest
3	17	81 NoStim NoPulse	120db PULSE
4	7	82 76db PP	73db PP
5	8	83 NoStim NoPulse	76db PP
6	4	84 73db PP	82db PP
7	5	85 NoStim NoPulse	CalSensor
8	5	86 76db PP	calsound 115dBa
9	5	87 NoStim NoPulse	light test
10	6	88 82db PP	NoStim NoPulse
11	6	89 NoStim NoPulse	PPI65+2dB
12	6	90 73db PP	sound steps
13	6	91 NoStim NoPulse	Split 76db PP
14	7	92 76db PP	
15	8	93 NoStim NoPulse	
16	8	94 73db PP	
17	8	95 NoStim NoPulse	
18	6	96 76db PP	
19	6	97 NoStim NoPulse	
20	6	98 120db PULSE	
21	7	99 120db PULSE	
22	8	100 120db PULSE	
23	8	101 120db PULSE	
24	8		
25	9		
26	10		
27	11		
28	8		
29	8		
30	6		

Del Edit Add Del View Add Del Edit New

Session Settings

Acclimatize Time: 05 Min Record Window: 0100 ms

Total No. of Trials: 0101 Background Level: 070 db

Data Capture

Enable

Information

Session: Encl 1 - 8

Description:

Operator:

Session A:

Session B:

Session C:

Session D:

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18	6	96 76db PP	
19	6	97 NoStim NoPulse	
20	6	98 120db PULSE	
21	7	99 120db PULSE	
22	8	100 120db PULSE	
23	8	101 120db PULSE	
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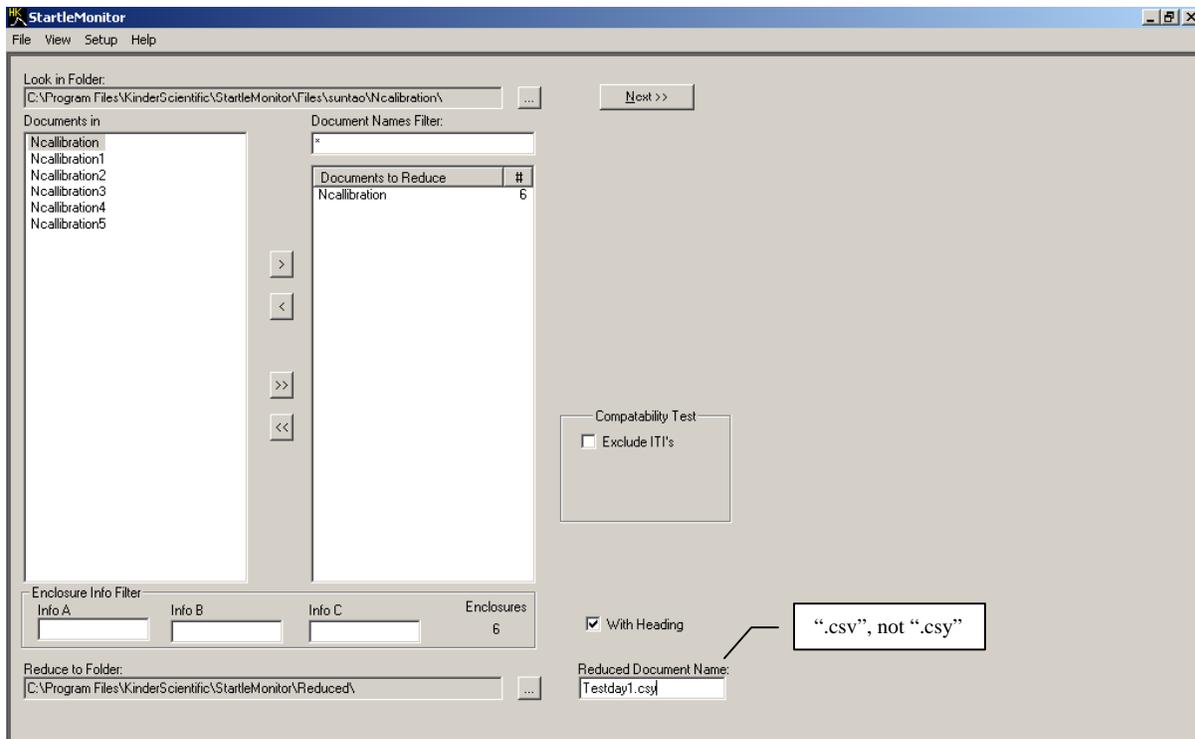
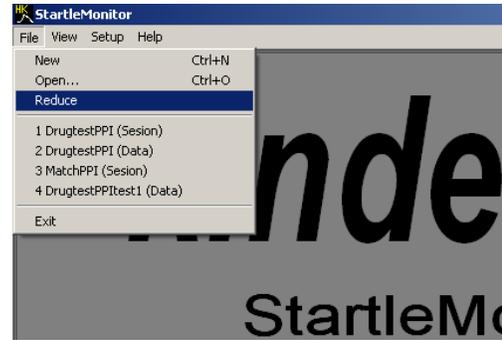
Information

Session: Encl 1 - 8

Use	Info A	Info B	Info C
1	<input checked="" type="checkbox"/> 1	information	information
2	<input checked="" type="checkbox"/> 2	information	information
3	<input checked="" type="checkbox"/> 3	so	so
4	<input checked="" type="checkbox"/> 4	so	so
5	<input checked="" type="checkbox"/> 5	so	so
6	<input checked="" type="checkbox"/> 6	so	so
7	<input type="checkbox"/>		
8	<input type="checkbox"/>		

Data Extraction:

- 1) When the program ends, you must reduce your data to view it. Select *File* → *Reduce*. (You must first close the program or session)
- 2) Locate your data folder by clicking “...” next to the “Look in Folder:” field, then select the data file(s) you wish to reduce and click the arrow buttons to move them into “Documents to Reduce”.
- 3) Select a save location by clicking “...” next to the “Reduce to Folder:” field and specify a filename under “Reduced Document Name:”. **Be sure to include the extension “.csv” in the filename or the data file will not reduce (i.e. “ReducedData.csv”).**



- 4) The reduced file can be opened in Excel, though it may not automatically recognize the “.csv” file type. As such, you may wish to:
 - a. Open the file directly and specify that you want to open it with Excel.
 - b. Open Excel, select *File* → *Open...*, and locate the directory under which the file is stored. You must set “Files of type:” to “**All Files**”.
- 5) The data file contains trial-by-trial data of each individual rat. For our purposes, you should use the values in the column marked “Max (N)” as the dependent variable. Since the table is very large and contains many redundancies, you may use a special template file to expedite the data extraction process.
 - a. Ask Dr. Li or the author for the template file “PPI Drugtest Template.xls”.

- b. Upon opening the file, it may prompt you to disable or enable macros. Choose to disable macros.
- c. Select the sheet “Insert Data” and delete any and all entries that may have been left there by previous users. **Do not make any changes to the “Calculations” sheet.**
- d. Select all entries in the “.csv” file you wish to extract by pressing ctrl-A.
- e. Copy-paste the entries into cell **A1** of the “Insert Data” sheet of the template file.
- f. If you used the PPI program “Justin-PPIDrugtest”, the first and last 4 trials are not to be included in data analysis and must be removed. Select *Data* → *Sort...* and sort by “TrialNo”.
- g. Select all rows with a “TrialNo” value of 1-4 and 98-101 and delete them. Since they have been sorted by “TrialNo”, you can select row 2 and drag down until you reach the end of “TrialNo” = 4 and delete them. Then do a similar operation to delete the last 4 trials, which are at the bottom of the table.
- h. After deleting the first and last 4 trials, select the sheet “Calculations” and you will see the automatically updated mean values for each rat. This data can now be copy-pasted into SPSS or other software for further analysis.

Clean up:

- 1) Turn off the control unit and surge protector.
- 2) Remove the Plexiglas restraining cages and set them aside.
- 3) Remove feces with a paper towel and use a wet paper towel to wipe down the sensing plate. **Do not use alcohol.** If necessary, apply soap to the paper towels.
- 4) Remove the sensing plate by lifting it off and disconnecting it from the metal base.
- 5) Sweep out bedding and any other debris that may have fallen inside the chamber.
- 6) When finished, **reattach** the sensing plate to the base and set it on the pegs.
- 7) Wipe down the restraining cages with a wet paper towel, again using soapy water if necessary.

Troubleshooting

The program does not run

Make sure a green light is blinking on the control console on the top shelf of the PPI apparatus. If it is not blinking, you may simply need to wait a short while for it to turn on, else you can restart the system. The control console should take no more than two minutes to activate after a restart.

The calibration value (Max) is extremely low (~0.1) or does not change

Make sure the correct enclosure has been selected. Also check to see that the calibration apparatus has been plugged into the correct chamber via the “Calibration” port.