

Pinnacle EEG/EMG for Mice FAQs

1. I am running Windows XP, and cannot find the EEG/EMG System. Why?

This is most likely a driver issue with the USB chip. Windows XP, if allowed, will automatically install the incorrect driver. This can be fixed by following these instructions:

- Download FTClean utility from <http://www.ftdichip.com/Resources/Utilities/FTClean.zip>
- After running this utility, restart the computer without the EEG/EMG system connected.
- After rebooting, plug the EEG/EMG system in, but do NOT click “automatically install drivers”. Instead, choose to install the driver from a specified location.
- Select the EEG/EMG CD USB Drivers directory. This will pop-up a warning, just click “Continue Anyway”.

2. My EEG/EMG system shuts off without warning. Why?

Both the mouse and the rat system are powered by the USB. Some newer models of computers have implemented an automatic shutoff of USB ports when the computer perceives it to be no longer in use, such as when you are collecting data from an experiment, but are not actively using the computer. The use of a 4-port powered USB hub will correct this problem. They can be purchased at most electronics outlets for \$30-\$40 and will operate up to four EEG/EMG systems simultaneously

3. How many EEG/EMG systems can be run off of one computer?

This varies from computer to computer and there is no easy way to determine the number. Any computer should be able to run four systems at one time.

4. What is the proper cage to use?

A ten-inch (25 cm) circular cage is best. A square cage is also OK. Do not use a rectangular cage, as there is too much slack in the tether when the animal is standing in the middle of the cage. Feeding, watering and other apparatus should be outside the cage to prevent the tether from becoming tangled.

5. At what height above the floor of the cage should the commutator be placed?

The commutator should be placed at a height so that the distance from the base of the swivel of the commutator to the farthest corner of the floor of the cage is equal to the length of the tether. This will allow the animal to reach the farthest extremities of its cage without causing undue tension on the tether. Suspending

the commutator between two ring stands is an efficient way to do easy adjustments.

6. Does the Pinnacle EEG/EMG system need to be calibrated?

End-user calibration is NOT necessary.

7. What are the units on the Y-Axis?

Micro-Volts

8. Can I export live, streaming data into another program, such as Labview?

No, but the data can be collected in EDF format using Pinnacle's Sirenia software. It can then be imported into any program that accepts EDF format. Pinnacle uses EDF format because it is the most common format for this type of data, and therefore the most flexible for most researchers.

9. How do I export raw data scores into an excel file? The comma-delimited option does not seem to do it properly?

Export comma delimited exports all of the raw data in to a comma-delimited file. Software version 1.5.5 and above provide a way to just export the scores. To export the scores, use analyze power, then export none of the power data. This will export all of the scores in .csv with fields: epoch number, date, time, score value, score name. The score value will be 0 for unscored or artifact data, Wake is 1, Non-REM is 2, and REM is 3.

10. What is the total amplification of the system?

5,078 from the preamp, then multiply by the gain settings.

11. Why is it necessary to use silver epoxy during surgery?

If surgeries are done without silver epoxy, the waveforms will probably not look correct. There is a mechanical connection between the screw and the board that shifts due to animal and head implant movement. Application of silver epoxy creates an electrical contact and hardens the connection.

- Apply a small amount of silver epoxy between the screw head and the silver connection on the board just before tightening down the screws.
- Wait 15-20 minutes to cure then add dental acrylic. The acrylic can interfere with the epoxy and cause it to run, if added sooner.

12. How small a mouse can the EEG/EMG system monitor?

The prefabricated mouse headmounts are designed to be used on mice >23g in body weight and that do not have any skull or head abnormalities. Pinnacle does not make headmounts for smaller mice, but if you have electrodes of your own design suitable for the mice in question, they may be able to be connected to the preamplifier and commutator. Check with Pinnacle (785-832-8866).