

## AUDERA PRO P300 QUICK GUIDE

The operating manual contains information pertinent to the use of the GSI Audera Pro, including safety information, as well as maintenance and cleaning recommendations. Read the manual in its entirety prior to use of the Audera Pro on a patient.

### TESTING ENVIRONMENT

It is important that the test environment for evoked potentials be conducive to collecting good quality test data free from excessive noise. The GSI Audera Pro should be used in a suitable acoustically quiet testing environment such as a sound booth or quiet room. To minimize the amount of electrical noise, it is recommended that the Audera Pro be plugged directly into a dedicated, earth-grounded electrical outlet. Any unnecessary equipment such as computer monitors, cellphones, fluorescent lights, electronic beds, etc should be turned off during testing.

### PREPARE THE SOFTWARE

1. From the opening window, click on the search patient icon to select an existing patient or click on the new patient icon to create a new patient file and enter First Name and Last Name (required). Click OK.
2. Select the EP icon to launch the evoked potential module.
3. Select the Load Settings icon to select the P300 protocol.

**SEARCH  
PATIENT**



**NEW  
PATIENT**



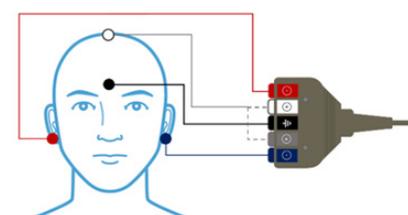
**EP  
ICON**



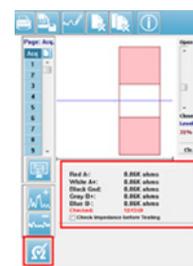
### PREPARE THE PATIENT

1. Scrub the skin at four locations: right and left mastoids or ear lobes, vertex, and low forehead.
2. Using the 5-snap lead patient cable, apply the reusable cup electrodes on the patient's head as shown in Figure A. Use a jumper cable to connect the white (+) of Channel A and gray (+) of Channel B as indicated by the dashed gray line in Figure A.
3. Check the electrode impedance by selecting the impedance icon from the side toolbar. See Figure B. Under 5 K ohms is ideal. If necessary, re-scrub if the impedance is higher than 5k ohms.
4. The patient must be alert and actively attending to the stimuli during the test. It is best if they are sitting up in a chair. Instruct the patient to 'listen' carefully to the stimuli and count the number of times they hear a sound that is "different." The purpose of this is to ensure the patient remains alert during the test.

**FIGURE A**



**FIGURE B**



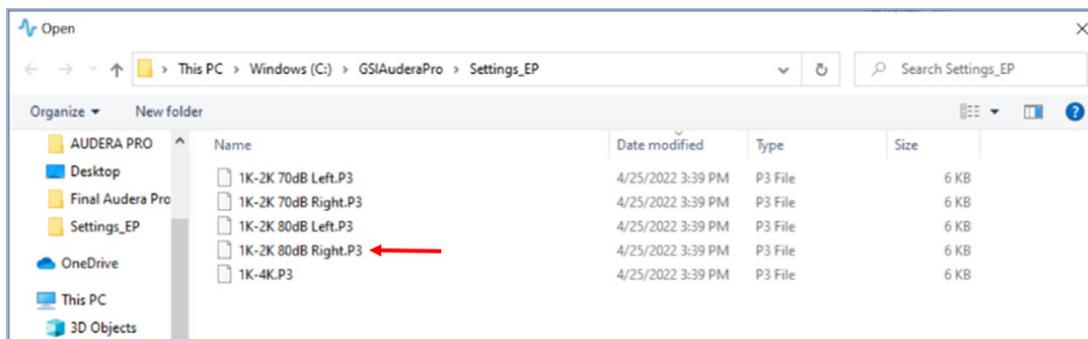
**IMPEDANCE  
ICON**



# PERFORM THE P300

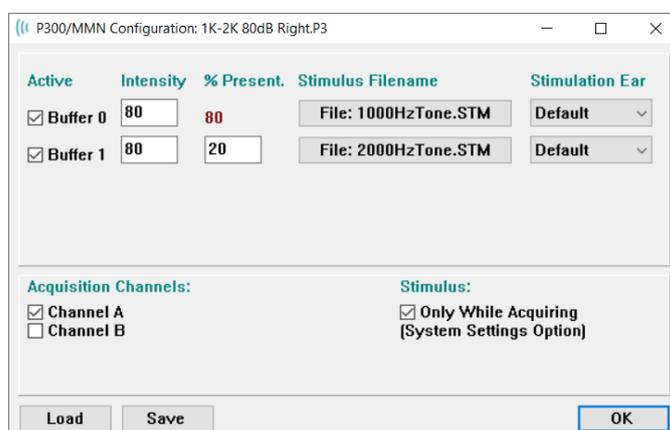
1. Select Setup P300, Load to access the test stimuli.
2. To test the right ear, select the stimulus pair labeled 80 dB Right. See Figure C.

FIGURE C



3. Verify the test frequency pairs and % presentation of the frequent and infrequent stimuli. Ensure the Channel A is selected in Acquisition Channels for the Right Ear. See Figure D.

FIGURE D



4. Review the collection parameters in the Collection toolbar. Note that the sweep number corresponds to the number of infrequent stimulations.

## COLLECTION TOOLBAR

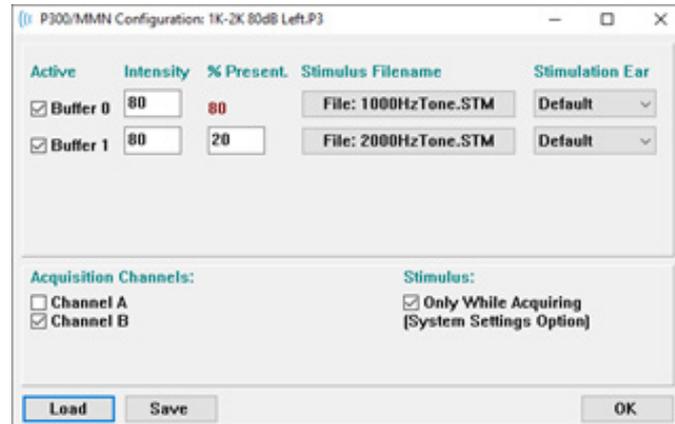


5. Instruct the patient to 'listen' carefully to the stimuli and count the number of times they hear a sound that is "different."
6. Begin the collection by selecting the Acquire button from the Collection toolbar.
7. Two waveforms will display during collection. The waveform labeled A0 corresponds to the response to the frequent stimulus. **The waveform labeled A1 corresponds to the response to the infrequent stimulus and is the P300 or the cognitive response to the oddball stimulus.**

*NOTE: When testing the left ear, the waveform labeled B0 corresponds to the response to the frequent stimulus and the waveform labeled B1 corresponds to the response to the infrequent stimulus and is the P300 or the cognitive response to the oddball stimulus.*

- Stop the collections when repeatable response is obtained. Replicate as needed.
- To test the left ear, select Setup P300 and select the stimulus pair labeled 80 dB Left. See Figure C Above.
- Verify the test frequency pairs and % presentation of the frequent and infrequent stimuli. Ensure the Channel B is selected in Acquisition Channels for the Left Ear. See Figure E.

**FIGURE E**

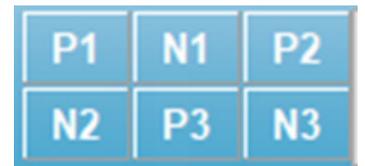


- Select Left Ear in the Collection toolbar.
- Repeat steps 5-8 to test the Left ear.

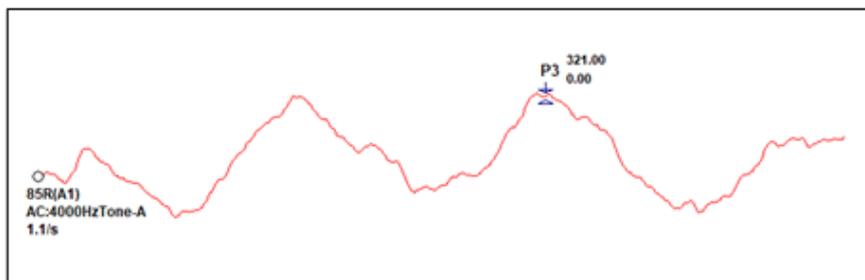
## ANALYZING AND MARKING WAVEFORMS

- The waveforms labeled A1 are the P300 response to the infrequent stimuli in the Right Ear. The waveforms labeled B1 are the P300 response in the left ear. When analyzing, it may be helpful to delete or clear the waveforms labelled A0 and B0.
- To mark a peak on the Active waveform, select a label from the Toolbar. Selected label will appear red.
- Hover the mouse slightly above the peak of the active waveform and click once for the marker to appear. Fine tune the mark using the arrow keys on the keyboard or drag the marker to the desired location. See marked P300 below.

**TOOLBAR**



**MARKED P300**



## PRINT THE REPORT

- Arrange the collected waveforms on the page.
- On the side toolbar, click on the Page Settings icon and select "Send all data on this page to" the desired page (1-9).
- To add test summary, go to Report, Add Text. Move the text anywhere on the page.
- To save the report select Report, Save Report.
- Select Print, Print All Pages PDF Preview to review and print the report.

**PAGE SETTINGS**



## HELPFUL HINTS

1. Eyeblink Artifact - Since P300 acquisition requires an alert patient, it is best to keep their eyes open for the duration of the test; however, this may lead to eye blink artifacts. To avoid artifacts, connect an unused acquisition channel placing the electrodes above and below one of the eyes. In this case, the polarity of the electrodes is not important, as the blink will register either way.  
Once the electrodes are in place, with the EEG & amplifier window open, observe that channel's EEG while the patient blinks repeatedly, then lower the rejection level so that all blinks are rejected. Maintain this rejection level when collecting P300's. It is also helpful to ask the patient to fix their vision on a particular location, this usually leads to reductions in the number of blinks.
2. The patient must be alert for the duration of the test. It is helpful to instruct the patient to count or raise their hand when they hear the odd stimulus.
3. The number of sweeps indicates the number of infrequent stimuli which can take some time when collecting, causing patient fatigue. It may be helpful to shorten the test time by lowering the number of sweeps to five or 10 to give the patient time to rest before resuming the test. Multiple waveforms can be added together and marked for analysis.