

Experiment HP-6: Cell Phone Addiction

Equipment Required

PC or Mac Computer

IXTA, USB cable, IXTA power supply

PPG-320 Pulse plethysmograph

BP-220 or BP-220A Non-invasive blood pressure transducer

BT-220 Black tygon tubing with Luer connectors

Optional Equipment: ROAM ECG, GSR electrodes

Precautions

1. Know what you are doing ahead of time.
2. Do not leave the cuff inflated for any prolonged period of time (>20 seconds).
3. The subject should flex and extend their fingers between experiments to maintain blood flow.

This experiment should be performed by healthy individuals who do not have a personal or family history of cardiovascular or respiratory problems.

Blood Pressure and Pulse Transducers Setup

1. Locate the PPG-320 pulse plethysmograph and either the manual BP-220 non-invasive blood pressure (NIBP) transducer or the automated BP monitor.
2. Plug the connector of the PPG-320 into the PT port. Place the pulse sensor on the thumb or middle finger where the finger tips are located.
3. Automated Blood Pressure and Pulse⁴ Transducer Setup
 - Find the automatic blood pressure monitor and blood pressure cuff.
 - Slide the gray connector on the tubing of the BP cuff into the port on the left side of the BP monitor.
 - Turn on the BP monitor using the On/Off switch on the right side of the monitor. Once turned on, the cuff will automatically take BP.
 - Choose AutoBP from the View menu on the toolbar.





4. Manual BP cuff - Connect the extension tubing to the BP-220. Plug the extension tubing connector into the black port labeled A2 on the IXTA.
 - Choose IXTA View from the View menu on the toolbar.



5. Calibrate the BP-220.



Figure HP-6-S1: The PPG-320 pulse transducer and the BP-220 non-invasive blood pressure transducer connected to the TA.

Calibration of the Manual Non-Invasive Blood Pressure Transducer

1. Click on the Record button.
2. Click on the AutoScale button at the upper margin of the Pulse and Blood Pressure channels.

Your recording should look like the image below.

- If the signal on the Pulse channel is upside down when compared to trace, click on the downward arrow to the left of the channel title and select the Invert function. The trace should now look similar to the one in the figure.
4. Record data while the cuff is laying on the table for about 10 seconds.
 5. Select Save As in the File menu, type a name for the file. Click on the Save button to save the data file.

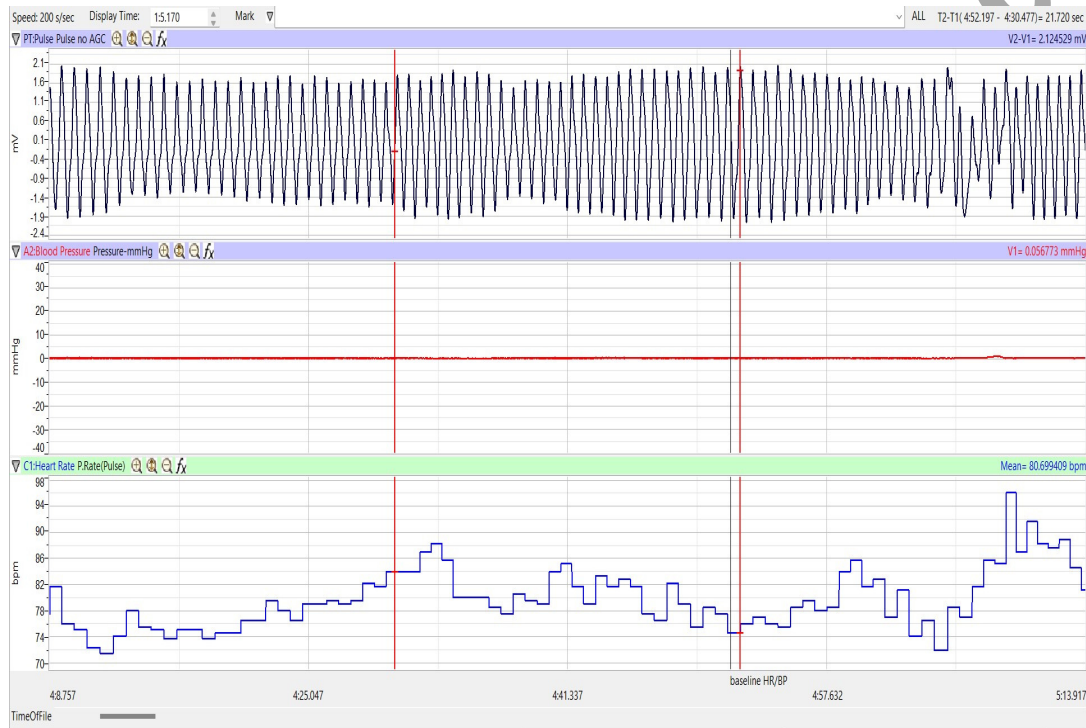


Figure HP-6-S2: The output of the BP-220 non-invasive blood pressure transducer displayed on the middle channel of the Main window. Pulse is shown on the top channel and heart rate on the bottom.

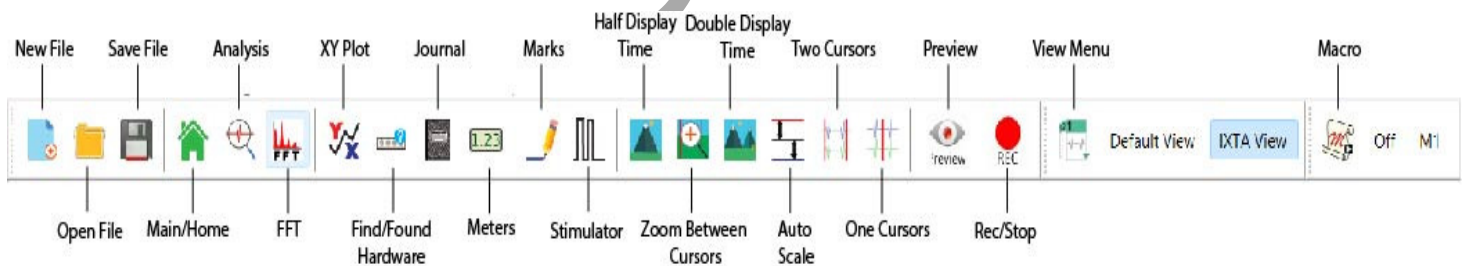


Figure HP-6-S3: The LabScribe toolbar.

Units Conversion

1. On the Blood Pressure channel, move one cursor to the left side of the screen and the other to the right, spanning about 6-8 seconds of data.
2. Click V2-V1 on the right side of the Blood Pressure channel and click Set Offset.
3. When the Set Offset window opens, set the values and radio buttons as in the image below.
 1. Put a check mark in the box next to Apply the calculated offset for this block to all blocks. Set the Mean Value between Cursors to: "0" in the box at the top. Click on the OK button in the lower right corner.
4. Click OK. Click Save As in the File menu and save your data file.

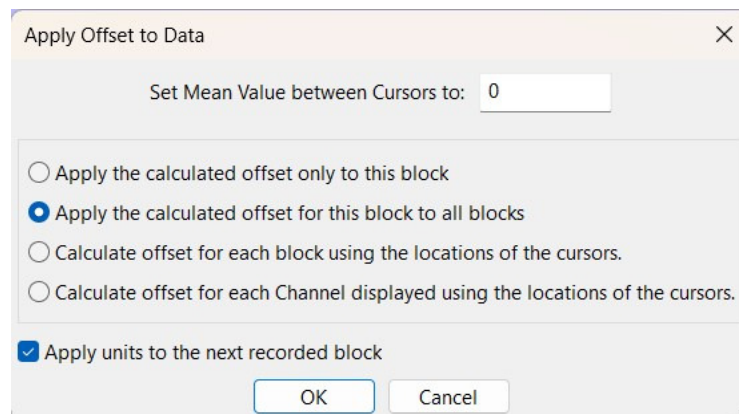


Figure HP-6-S4: The Units Offset dialogue window with the mean values set to “0”.