

## Experiment HP-17: Levels of Processing and Memory

### Equipment Required

PC or Mac Computer

IXTA, USB cable, power supply

2 – EM -220 Event Markers OR

1 – RPD-320 4-Button Response Pad

### Sensor Setup

1. Locate the EM-220 Event Markers and plug them into the Channel EM1 and EM2 inputs on the back of the IXTA.
2. Or locate the RPD-320 4-Button Response Pad. Plug the connector in the RPD and into the Digital Input on the back of the IX-TA.

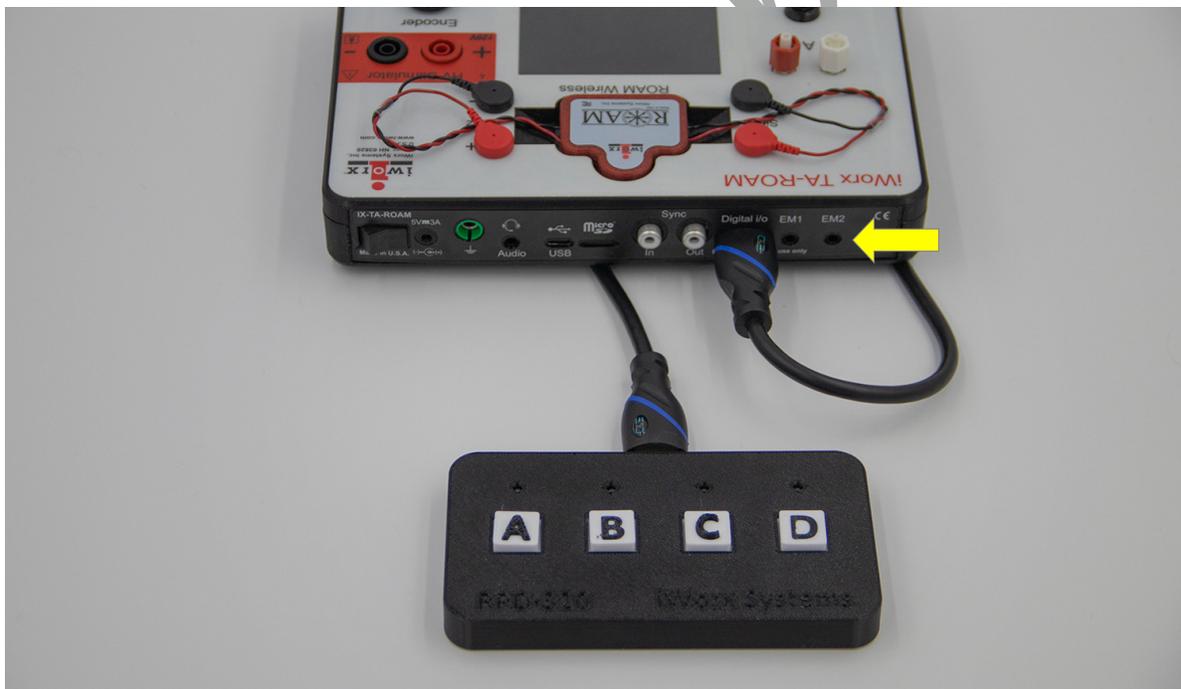


Figure HP-17-S1: RPD-320 plugged into the back of the TA. If using the event markers, plug them into the EM ports as shown by the yellow arrow.

## Experiment HP-17: Levels of Processing and Memory

### General Directions:

All Tests will follow the same directions.

- Subjects will be shown a series of 30 questions and 30 words
- Each question will stay on the screen for 1 sec; each word will show for 200 msec (TEST"X")
  - After the word is shown:
    - the subject will press the event marker in their right hand, or the letter "D" on the response pad, for "YES" if the word answers the question.
    - The subject will press the event marker in their left hand, or the letter "A" on the response pad, for "NO" if the word does not answer the question.
- Once the questions have been answered, the subject will be shown a series of 120 words (RECALL):
  - the subject will press the event marker in their right hand, or the letter "D" on the response pad, for "YES" if the word was one of the 30 shown previously.
  - The subject will press the event marker in their left hand, or the letter "A" on the response pad, for "NO" if the word was not shown previously.

### Exercise 1: Test 1

#### Procedure

**Warning:** *In this exercise, it is important to remember to press the event marker in the correct hand (D or A) for answering YES or NO.*

1. Click on the Record button.
2. Click the **Test1** sequence on the toolbar and run the sequence to begin the sequence of questions and words.
3. Follow the general directions as outlined above.
4. After the thirty questions and answers, the sequence will end with the directions for completing the RECALL portion of the experiment.
5. Click Stop to halt recording.
6. Click on the Save button to save the data file.
7. Let your subject rest for a minute or so.
8. Click the Record button.
9. Click the **Recall** sequence on the toolbar and run the sequence to begin the sequence of words.

10. After the 120 words are shown, the sequence will end.
11. Click Stop to halt recording.
12. Click on the Save button to save the data file.

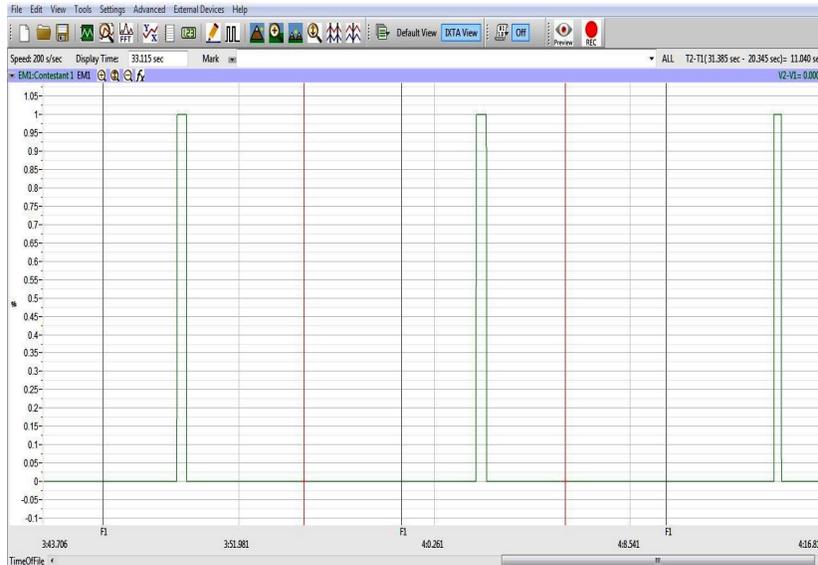


Figure HP-17-L1: Sample of what the data may look like. This sample only shows one graph of data. For this experiment, there will be two graphs of data, one representing the YES answer and one for the NO answers.

## Data Analysis

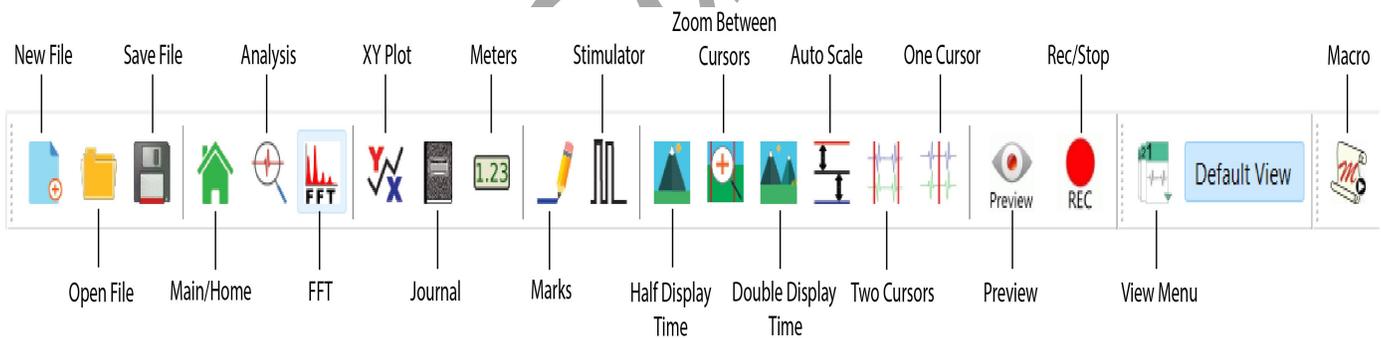


Figure HP-17-L2: LabScribe toolbar.

## WORDS:

1. Click the Double Display time button until approximately 10 responses show on the screen.
2. Move one red cursor line to the mark made when the WORD was shown and the 2<sup>nd</sup> to the start of the click of the event marker or response pad. Make a notation if the word shown actually answered the question delivered.

3. Look at T2-T1 (upper right corner) and record that number.
4. Repeat for the next 9 words.
5. Repeat the procedure for the next 20 words (for a total of 30).
6. Enter the data into the table on the next page.

**RECALL:**

1. Move to the data where the RECALL sequence began.
2. Carefully scroll through the data looking for the YES and NO answers to whether the word was shown in the Test1 sequence.
3. Tally the YES and NO responses for the words the subject recognized as being shown from the sequence.

**Questions:**

1. What was the mean reaction time of the subject for answering the question?
2. What was the total percentage recall for all the words? Number of words recalled/Total shown
3. What was the percentage of words correctly identified?
4. What was the percentage of words incorrectly thought to be recalled (but were not actually shown)?

**Exercises 2, 3, and 4:**

**Procedure**

Repeat the same directions from Exercise 1.

**Data Analysis**

Repeat the same directions from Exercise 1.

**Questions:**

1. What was the mean reaction time of the subject for answering the question?
2. What was the total percentage recall for all the words? Number of words recalled/Total shown
3. What was the percentage of words correctly identified?
4. What was the percentage of words incorrectly thought to be recalled (but were not actually shown)?

It is important to keep track of the percentages between the different Exercises.

**Table HP-17-L1 – Exercise 1** (Create your own data tables for Exercises 2, 3 and 4)

<b>Image</b>	<b>Reaction Time (sec)</b>	<b>YES to question asked</b>	<b>NO to question asked</b>	<b>YES Recalled</b>	<b>NO Not recalled</b>
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
17					
17					
18					
19					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
<b>Mean</b>					