Experiment HP-26: Spatial Location and Visual Attention

Equipment Required

PC or Mac Computer

IXTA, USB cable, power supply

EM -220 Event Marker

Sensor Setup

1. Locate the EM-220 Event Marker and plug it into the Channel EM1 input on the back of the IXTA.

Figure HP-26-S2: The EM-220 Event Marker plugged into the EM1 port on the TA.

Set the Viewing Distance

1. Click "**Viewing Distance**" on the Macros list on the LabScribe toolbar.

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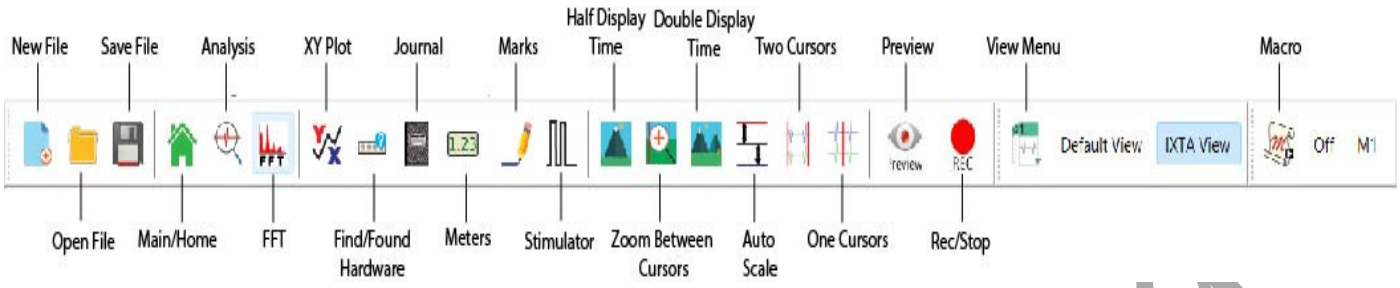

Figure HP-26-31: LabScribe toolbar

2. Click Record and run the **Viewing Distance** macro.
3. Follow the directions on the prompt for setting the proper viewing distance for your subjects for this lab. It is important to sit the correct distance away from the monitor.
4. One the viewing distance is set, continue to the Lab directions for completing the Spatial Location test.

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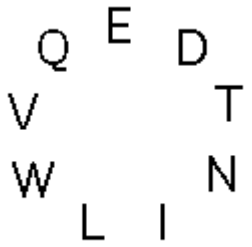
Experiment HP-26: Spatial Location and Visual Attention

General Directions:

- Subjects will be shown a series of 36 images.
  - They will each have nine letters arranged in a circle (see image below)



- Before the "lettered" image is shown, the subject will be shown a fixation "+" for 1 sec
- Then the image will be shown for 200 msec
- After the image is shown, the subject will type in the Mark box:
  - The **1st curved letter** they remember (**D, G, O or Q**)
  - Then, any other letters they can remember from the image
  - Click the "Mark" button to record their answer on the screen
- There is no time limit
- Once they record their answer, press the event marker to advance to the next image.

Note – the event marker is only used to advance to the next image. It is important for the subject to mark the recording with their answers.

Exercise 1: Spatial Location of Attention

Procedure

1. Click the **Directions** macro on the toolbar.
2. Click the Record button.
3. Follow the **General Directions** as outlined in the Directions macro and above.
4. Click Stop.

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5. When the subject is ready, click the **SpatialLocation** macro and click Record.
6. The data will look like Figure HP-26-L1.
7. When all 36 trials are completed, click Stop to halt recording.
8. Click on the Save button to save the data file.

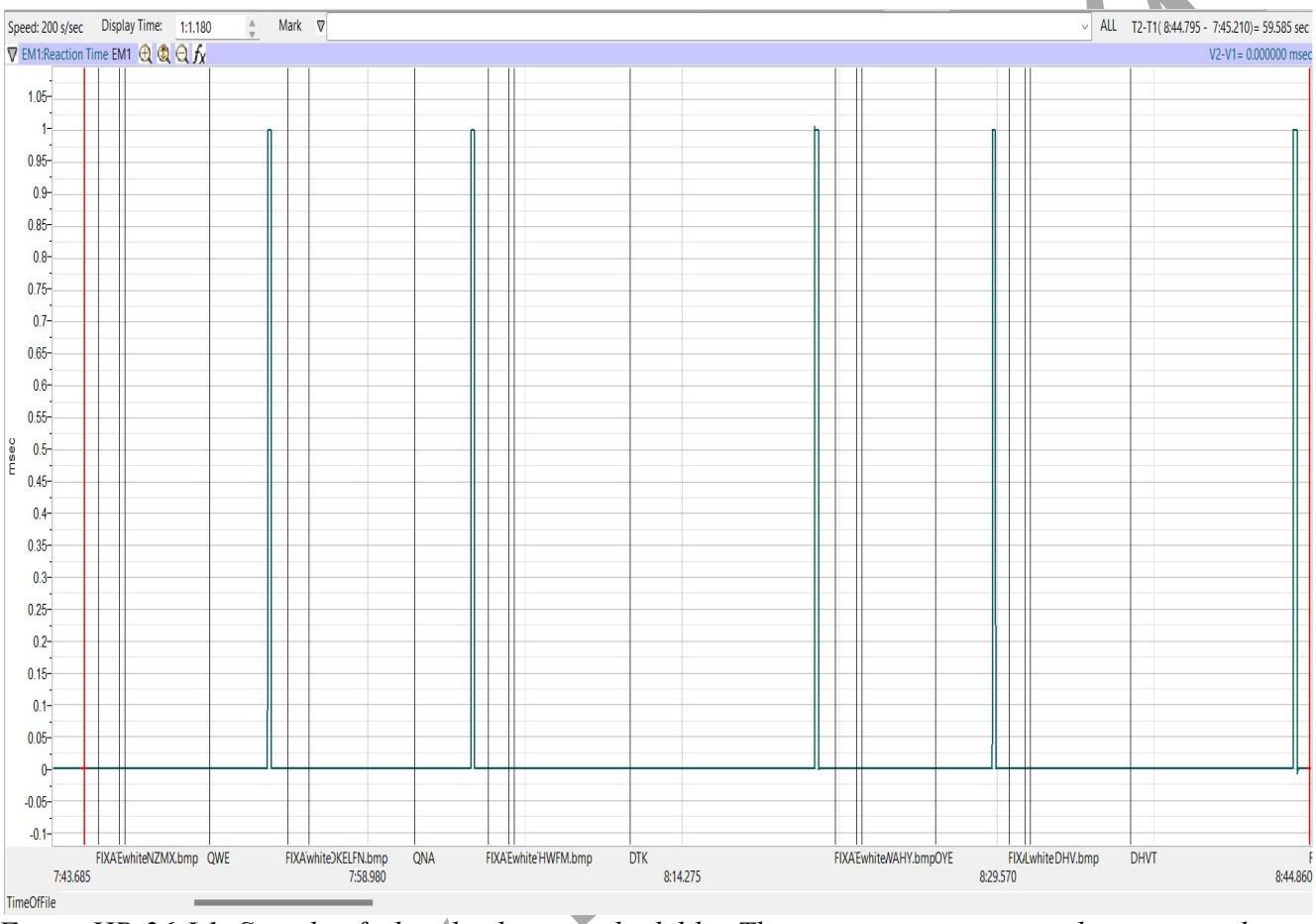

Figure HP-26-L1: Sample of what the data may look like. The green square wave is the event marker advancing to the next image.

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Data Analysis

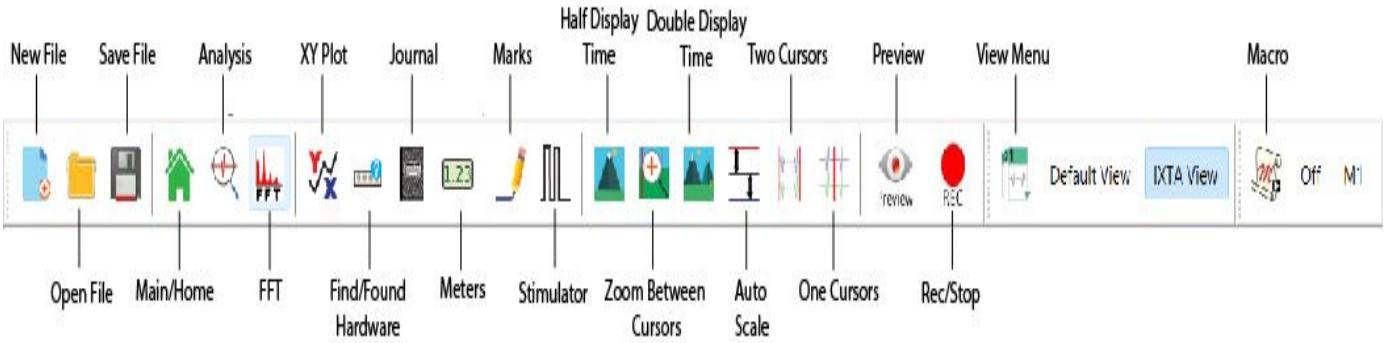

Figure HP-26-L2: LabScribe toolbar.

1. Move to the beginning of the recording and place both red cursors before the onset of the first image being shown, but after the directions.
2. Click the Marks icon on the toolbar. It is the "pencil" icon.
3. Click Export → All Marks → OK.

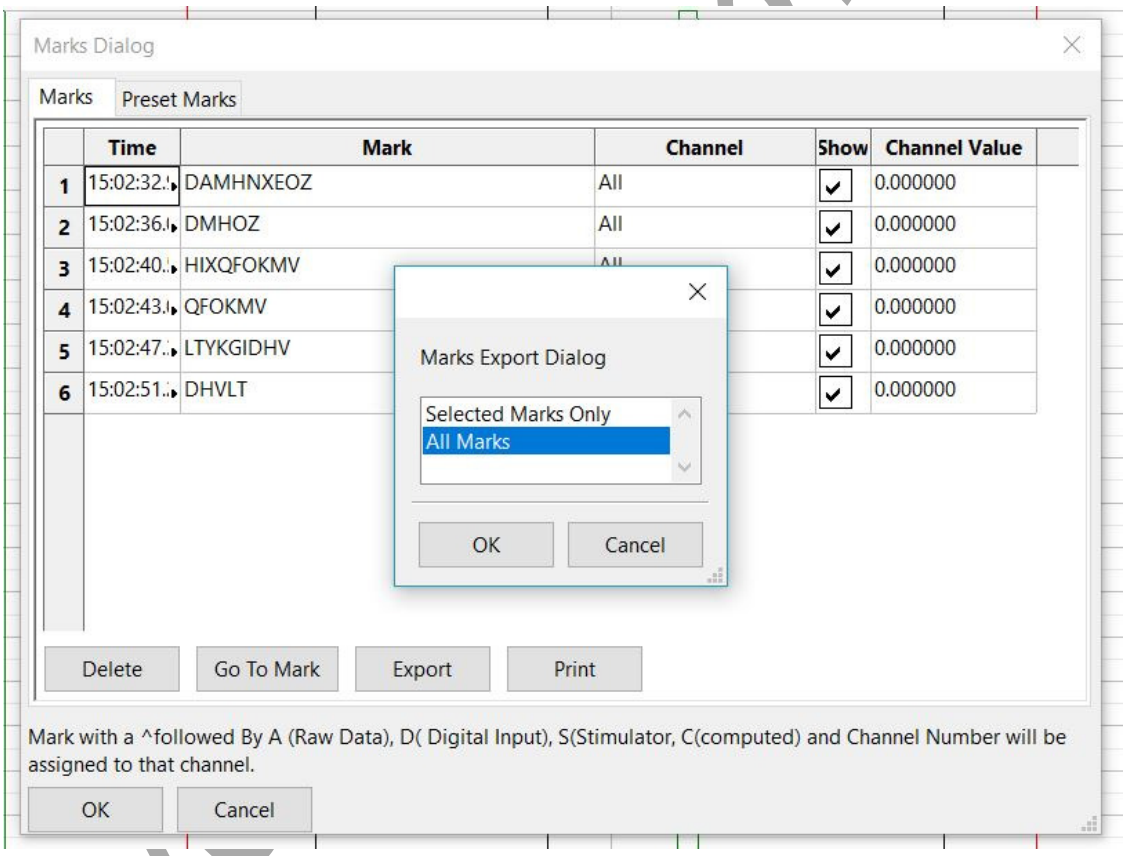

Figure HP-26-L3: Marks dialog to export marks to Excel.

Sample

5. Choose **Comma Separated File (csv)** from the drop down menu.

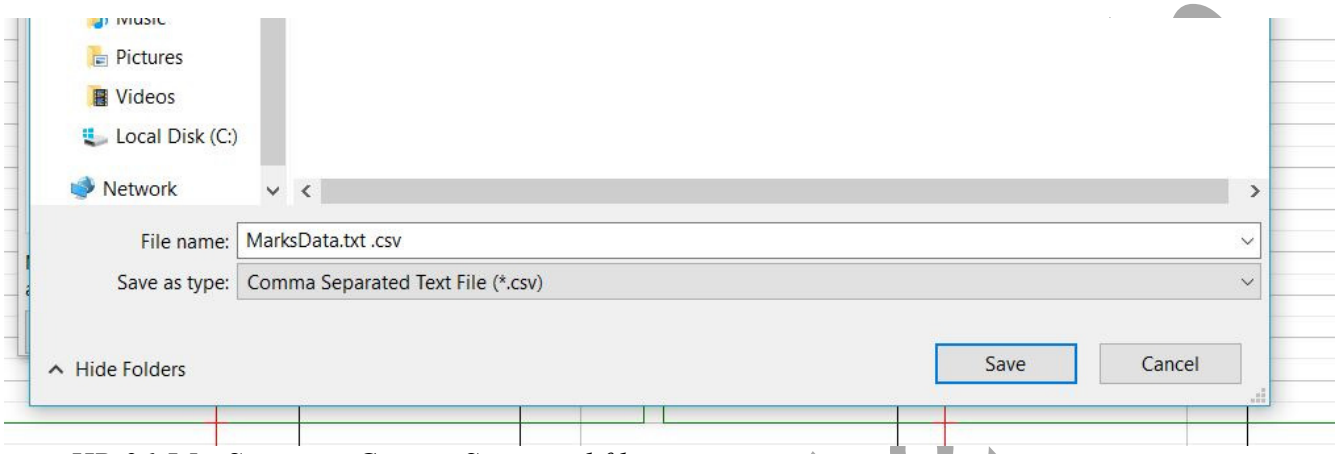

Figure HP-26-L5: Save as a Comma Separated file.

6. Open the new file you created in Excel. You will see a list of Marks in the first column.
    - The first Mark will be the one created when the image one shown and will always have 9 letters in it. The letters are in "clock" order with the first letter being at the 12:00 position. Shown in yellow in the figure below.
    - The second Mark will be the one made by the subject (shown in light green).
        - The 1st letter in the answer should always be either a **D, G, O** or **Q**.
        - The next set of letters will be whatever letters the subject remembered for that image.

7. Manually count the number of letters for each mark that the subject got correct. If the first letter is not a "rounded" letter, do not count that trial at all.
8. Note if the letters remembered are clustered near to the rounded letter or not. **This is important!**

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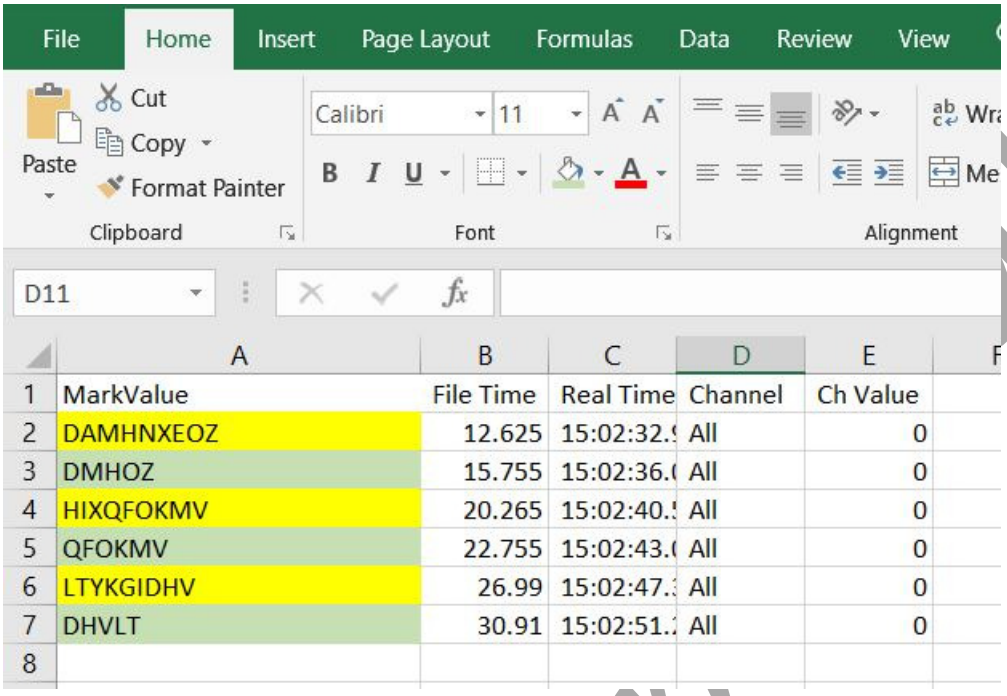

	A	B	C	D	E
1	MarkValue	File Time	Real Time	Channel	Ch Value
2	DAMHNXEOZ	12.625	15:02:32.9	All	0
3	DMHOZ	15.755	15:02:36.(	All	0
4	HIXQFOKMV	20.265	15:02:40.5	All	0
5	QFOKMV	22.755	15:02:43.(	All	0
6	LTYKGIDHV	26.99	15:02:47.3	All	0
7	DHVLT	30.91	15:02:51.2	All	0
8					

Figure HP-26-L6: Excel file of the exported Marks.

Questions:

1. Was the subject always able to come up with a rounded letter as their first answer?
2. Was the subject ever able to remember all 9 letters? If so, how often did this happen?
3. What was the percentage of times the subject put a rounded letter first? All 9 letters?
4. Did the subject remember letters that were close to the target letter or farther away from the target letter more often?
5. Why do you think this happened?
6. Was the target letter actually helpful in identifying the other letters around it? Why or why not?

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