CPE 301 Microprocessor System Design Lab

Lab # 02 Fall2013

Objective:

To learn how to use the laboratory oscilloscopes.

Procedure:

1. **Before lab** read the "Oscope Pocket Guide" and pages 4 through 6 of the "Introduction to Oscilloscopes Lab Experiment". Both documents are on Webcampus.

The "Introduction to Oscilloscopes Lab Experiment" document is written for use with a Tektronix MSO 2024 oscilloscope and our lab oscilloscope is a Tektronix model TDS 2022. The photograph on Webcampus "OscopeCompare.jpg" shows the front panel of both of these models. You will need to be aware of the differences while doing the lab experiments. Some examples of the differences relevant to the experiment on page 6 of the "Introduction to Oscilloscopes Lab Experiment" document are:

a. The power button on the MSO is on the lower left front and on the TDS it is on the top left.
b. The "PROBE COMP" connectors are in different locations and the plus voltage and ground connectors are reversed top/bottom – be sure to connect the probe properly.
c. The MSO "AUTOSET" button is the same as the TDS "AUTORANGE" button.

2. Perform the "Initial Setup and Screen Explanation" experiment on pages 6 and 7 of "Introduction to Oscilloscopes Lab Experiment".

3. Perform the "Vertical Controls", "Horizontal Controls", and "Trigger Controls" experiments on pages 9 through 13 of "Introduction to Oscilloscopes Lab Experiment".

4. Experiment with obtaining stable displays on the oscilloscope from the lab function generators. Use different frequencies, amplitudes, and waveforms from the function generators and examine what you need to do with the oscilloscope controls as you change frequencies and amplitudes in order to get useable displays.