Project Identity
Modified Communication System for Client with Disabilities
Week 9: 10/22/06 – 10/28/06
Stephanie Santos

Work Completed

This week, much of our work was accomplished, putting us closer to our project’s completion. We devised a way to implement the use of an LED indicator to indicate the charging mode for the LCD monitor, as an additional fail-safe mechanism. To do so, we determined the proper circuit design to include an LED indicator. Setting the LED in series with the charger and battery, it is necessary to use a resistor to control the current and voltage supplied to the LED so as not to destroy it. Using the equation $R = \frac{V}{I}$, and knowing that the recommended/required voltage and current for an LED are 2.0V and 20mA respectively, we were able to determine that a resistance of at least $500\,\Omega$ would be necessary to use in the circuit. A test version of this circuit, including the switch to monitor power, was constructed, as shown in Figure 1:

![Figure 1: Monitor Power/Charge Circuit](image_url)

In addition to this testing, the ABS plastic was cut into the appropriate pieces necessary to build the LCD monitor case. The edges of
each piece were mitered at 45° angles for a better appearance and bonding surface. We made additional measurements to cut the appropriate holes for the power switch, monitor face, and an inlay for the monitor. The pieces were laid out to size-up the interior space of the casing, as shown in Figure 2, and to determine placement for the internal components for the monitor.

As the figure shows, we have revised our design so that it is a uniform, rectangular box, which will offer additional space for internal components and a more stable mounting face. In addition, all wiring for the joystick, including the button configuration and the USB connection, were permanently connected, as shown in Figure 3, and the joystick portion of the project is now complete.
Future Work

Our work for the next couple of weeks will include finalizing the remaining pieces of our monitor case and making the final assembly of the monitor components. We have also received our additional pieces from 80/20, Inc. for the monitor mounting. Once the final machining and assembly of the case is finished and all components are assembled, we will be attaching the mounting components to the case. We have also been given permission to travel to New Jersey prior to our presentation date to install our devices into our client’s system. This will take place some time during November, at a date determined by the client.

Project Review

Our project is nearing its completion. We have made great progress over the semester, despite getting off to a slow start. We have only the remaining assembly of the monitor and all of its related components. Once this is completed, the building/assembly/testing portion of the project will essentially be complete. All that will remain will be the final installation of the project and any troubleshooting with the client’s system that may be necessary following the installation.

Hours worked: 9.5