Project Progress Report

Accessible Infusion Pump User-Interface
Week 9
March 26, 2007
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Work Completed

After obtaining a scanned pdf copy of the Baxter Flo-Gard 6200 service manual from Soma technologies, we were easily able to connect the infusion pump stepper motor to the MID-7602 Stepper motor driver. From comparing the schematics from the service manual to the connections for the stepper driver, the 6-wire motor system was changed to a 4-wire motor system for the stepper driver connections (see Fig. 1).

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**Figure 1:** Flo-Gard 6200 Stepper Motor to MID-7602 Stepper Driver Connections

The 4-wiring system was done by not wiring the yellow and white wires from the stepper motor since they were the center tapped wires for the given schematic. By eliminating those two wires, the schematic would be exactly the same as the 4-wiring system for the MID-7602 Stepper motor driver.

Testing of the recharging battery was done with connecting the Automatic 12V battery charger to our Rhino (SLA3-12) 12V(3.4Ah) lead acid recharging battery as shown in Fig. 2. The battery was drained by connecting to DC powered motor found within the BME design lab.
Time was taken in understanding the building, downloading, and running operations for the ADSP-BF537 on LabVIEW® 7.1 Embedded Edition. Tutorials were found online in helping to understand the basic process before implementing our LabVIEW® program. An example shown on an online tutorial was the LED example of operating the six LEDs on the ADSP-BF537 evaluation board (see Fig. 3).
Further examples were shown on incorporating the LEDs with the four GPIO buttons on the board. Given this, Kevin and Mike were able to connect the joystick to one of the GPIO buttons on the back of the board on the soldering pins for the button (see Fig. 4). This was successfully completed when we were able to allow the LED to blink with the push on the joystick.
Future Work

Powering the ADSP-BF537 evaluation board will be required. Voltage was checked from the power input with a 7.0V input. Considering our battery gives a 12V output, a voltage regulator LM7807 (+7V possibly) or a series of a LM7812 (+12V) and a LM7905 (-5V) will be needed to obtain a 7V output.

Operation of the character LCD screen (see Fig. 5) is still required knowing the colored LCD will not be operable with our applications.
With emails from Michael Phillips, he suggested using the GPIO drivers and using the LabVIEW program to operate through the ADSP-BF537 evaluation board.

Further work will need to be done in knowing which velocity gives out what volume at a given interval of time. This will help in allowing the correct operation of the pump to our overall design project.

**Project Review**

The motor is operable with the stepper driver; as well as the GPIO buttons with the joystick. Knowing our project has been downsized to a character LCD, this project is feasible once the operations of the character LCD is known. Integration of all these components will be needed to finally complete our senior design project.

**Hours Worked**

12 hours