Week of 01/24/07 - 01/31/07

Completed Work:

Over winter break it was decided to not use the Blackfin Digital Signal Processor we were previously going to use to process our signals. This was due to the fact that the technology is relatively new and would be fairly expensive to incorporate into our design, thus having the potential to create problems. Instead, we will work with a Microchip PIC16F877. This processor is of the 40 pin processor family providing substantial space for code and giving us 33 i/o pins, which would be plenty for what we plan to do. This single processor can support our LCD screen (which will be hooked up in parallel), as well as provide the USART required for the Bluetooth Technology.

This past week I took the time to get everything organized for the rest of the semester, and well as began reviewing C and Assembly Language which will be used to program the microcontroller. Past BME 252 labs were also reviewed to get associated with how to display values on the LCD screen. I also began working with the Winbond Speech Chip to get familiar with the pin layout and the electronics. Ours had not arrived yet, so another chip that was in the lab was used instead. Below is a picture of the speech module connected to the power supply and serial cable.
Referring to the pin diagram below, pin 2 on the serial cable was attached to the Sp03’s TX line, pin 3 to the RX line, and pin 5 to the ground. Working with the configuration program SP03.exe, allowed for interaction with the speech module, and will allow us to program predefined phrases in the future. For our project, bits of data from the microcontroller will be sent to the speech module which will allow the speech module to speak the results.
Future Plans:

This week I will continue to familiarize myself with programming the microcontroller by using the microchip evaluation board. Working with this board will allow us to practice programming the microprocessor using MPLab and displaying numerical values on the LCD screen. As of now, our program will be written using C instead of assembly language. Currently, we are working on finding a compiler which will convert C into assembly language.

Total Hours Worked: 11