HAM Project Meeting

February 4, 2014

1. Current Progress
   1. Light Sensor- Completed (UV Mode)
   2. Accelerometer- Completed
   3. Memory Storage- In Progress (Single Bit Read/Write): Starting to think about how much data must be stored and in what fashion. Specifically, how will the separate bytes of data for the date, accelerometer values, and UV sensor data be stored and accessed.
   4. Power and Power Management- Ready to Order
2. Moving Forward
   1. Memory Storage- Write Accel. And Light Sensor Data to Memory: The next stages that need to be considered involve the offloading of data from memory to a computer. We need to look into reliable transfer protocols for USBs in order to determine how we will actually get the data off of the memory. This might include writing a command line .cpp program to handle the data transfer.
   2. Begin Power Management Tests
   3. All Subsystems working together. Discussed the need for having dedicated I2C and SPI pins that can be accessed separately. Basically, most things can be handled in a simpler fashion if the functionality of a single pin is not duplicated for separate uses. (side note: remember that differently addressed parts can be accessed on the same I2C bus).
3. Questions for Professor Schafer
   1. Turnaround Time on PC Boards- When do we need to start designs: Apparently the boards take about a week to a week and a half to be sent out after ordering. Again, we should start thinking about the board design and the required interfaces (# of I2C, SPI, USB…). Another thing to think about is the packaging, especially for the light sensor. Basically, how are we going to get light to the sensor if it is on the board.
   2. Update on crystal for time: The current version of the kitboard does not have the correct capacitor values for a correct real time clock implementation. We could still put a crystal on the board to work with the RTC interface, but the values would be erroneous. Other things to consider are RTC sleep functionality (does the RTC sleep if the microcontroller itself sleeps).
   3. Need for Testing Functioning Subsystems with new Microcontroller : Software should be directly compatible on different versions of the microcontroller (i.e. MZ vs. MX microcontrollers). It looked like the newer versions of the microcontrollers (MZ) were more expensive than the MX versions. We will need to see if the MZ version has any crucial features that are not implemented in the MX versions. Other things to consider are the Errata sheets for the microcontrollers.
   4. Battery to use Kit Board Outside- Testing UV Data: There is a 9V battery adapter available for the kitboard. We can get 9V batteries from Clint Manning.
   5. Locking the Cart: Yes
4. Professor Schafer Questions for HAM