

WaitLess DK-2 Group status email: Due 2009 January 21

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Current Status

We are gathering part numbers of all the components we need. We are also checking out parts we need from the senior design lab. Currently we are looking at ordering RGB LEDs, so that each hole on the bus map will have only one LED, but have the possibility of lighting up to 3 or more colors, which will represent the color of the bus route. We found an LED driver that will run all our LEDs and should eliminate the need for a lot of micro-controllers. Currently we are still figuring out which Battery and Solar panel will work best for our application. Also, we are still determining which Wi-Fi adapter we will use with the Cypress PSoC we selected to run our code.

Task Status: Actions on last week's Action Items

1. Daniel will take care of getting approval to use the Next Bus XML Feed that will provide the GPS location of all the trolleys and stingers. He plans to research GPS in more detail.
 - ✓ Will be taking care of today, 1/21/09.
2. Matt will look into WiFi modules interfacing with PSoC chips. He plans to research more on low power, feature capable PSoC chips
 - ✓ Determined to not reinvent the wheel and found a 16 channel LED Driver that interfaces over I2C bus. This is better than writing code for multiple PIC Microcontrollers.
3. Josh will further define the capabilities of the bus tracking system, figuring out what is feasible and what is not in the time allotted. He plans to research Solar Panels, controllers, and batteries.
 - ✓ Checked out Controller, Battery, and a temporary solar panel that is too small.
4. Chris will look into WiFi modules that can login to GT Wireless via 'wget' and 'curl' commands. He plans to research how other companies are able to get XML data or any live data streams via WiFi modules that can interface via serial.
 - ✓ He found another module that was about \$10 cheaper than the Wi-Fly wireless serial module; however, it consumes a bit more power than the Wi-Fly module. However, it does have some other pretty neat features such as a

preconfigured protocol to connect to a network time server, email capabilities, and faster serial data transfer speeds. Either way, he thinks both modules would work for what we're trying to do.

Planned Tasks: Action Items for the upcoming week

- Daniel will try to secure the XML link and procedure from NextBus for obtaining the GPS location of the buses. Will try to narrow down the selection of the less than 25mA RGB LEDs we need.
- Matt will begin initial coding to be able to talk to the LED Driver boards using I2C when they arrive.
- Josh will select the best solar panel to provide a steady 5 volts of power to all our electronics. It should also hopefully interface with the solar controller we already have checked out.
- Chris will take care of ordering the Wi-Fly serial module we will use to poll the NextBus XML site.
- All of us plan to meet Thursday, 1-22-09, at 4:30 to discuss and start writing the Proposal.

Problems

We are unsure about and trying to figure out how the Wi-Fi internet module will communicate with the PSoC. We know it will be over serial, but the procedure for connecting/logging into GT Wireless and obtaining the XML feed is something we have to figure out when we get the module and the access to the feed. Compiling and loading meaningful code onto the PSoC is proving to be difficult; it is a steep learning curve.