The UbER-Badge Developer's Guide

Development Requirements

1) Flash Emulation Tool – This is the interface between the development PC and the UbER-Badge. This can be purchased directly from Texas Instruments for $99.00. The specific part number is: MSP-FET430P140. A company called Softbaugh also makes a compatible product, for information please go to www.softbaugh.com
2) MSP430 Compiler/Assembler/Linker, choices include:
    a. IAR Evaluation Version -- The TI Flash Emulation Tool comes with a free evaluation version of the IAR set of MSP430 tools. These are essentially unusable. It is a crippled version that has a maximum code size. It is also an old entry-level version that has the debugger and the IDE as separate non-integrated applications. This is very annoying.
    b. Rowley Crossworks – This complete suite includes a compiler, assembler, linker, IDE, and debugging system all integrated into one application. This is available fro an educational price of $160. This is the package that the Uber-Badge sample applications and libraries were developed on, and it is recommended.
    c. IAR Professional Version – This is untested and costs $800.00 for educational use.
    d. Quadravox – This is untested and the price is unknown.
    e. ImageCraft C Compiler – This is reasonably priced compared to the IAR package. But it is more expensive and has less features than the Rowley package.
    f. gcc – This is freeware, but untested.

Getting Started

1) Install Rowley Crossworks and apply the license.
2) Download the source code files from the Uber-Badge website.
3) Extract the source code files all into one directory.
4) Change the name of badge_main_demo.c to badge_main.c.
5) Open the file badge_hal.hzp, this is the main project file for the badge application.
6) Open the file badge_main.c
7) Edit the declarations for MY_IR_ID, MY_RF_ID_H, MY_RF_ID_L. These set the badges id tags.
8) Edit the declarations FR_RF_ID_H and FR_RF_ID_L. This sets the id tags of the badge that this badge will talk to.
9) Connect the Flash Emulation Tool to the Parallel port on the PC and to the 14-pin header on the badge.
10) Build the project
11) Start Debugging. This will download the code into the badge.
12) Stop Debugging.
13) Disconnect the badge and connect a different badge.
14) Edit the badge_main.c to set this badge's id tags to the ids that you entered in the first badge's friend declarations. Edit the friend declarations to be the same as the first badge's id tags.
15) Rebuild the solution.
16) Start Debugging.
17) Stop Debugging.
18) Disconnect the second badge.
19) Now the badge will talk to each other by clicking the navigation switch. You should see the led move on the other badge or the motor toggle on/off if you push the switch in at the center. The IR will cause the badges blue leds to glow.