Introduction

This manual provides instructions on the hardware and software setup of the RS-232 Data Logger module.

Hardware Configuration

1. Connect the AdaFruit RA8875 driver board to the Arduino Mega using the following pins (Note – It will have to share the SPI SCK, MISO and MOSI pins with the RFID module).
    a. Connect the 3-5 Vin to the Arduino 5V output pin.
    b. Connect the GND pin to any Arduino ground pin.
    c. Connect the SCK to the SPI clock via pin 52 on the Arduino Mega.
    d. Connect the MISO pin via pin 50 on the Arduino Mega.
    e. Connect the MOSI pin via pin 51 on the Arduino Mega.
    f. Connect the CS (SPI SS) pin via any digital output pin on the Arduino Mega.
    g. Connect the RST pin via any digital output pin on the Arduino Mega.
2. Connect the LCD to the driver board. Very carefully slide the ears out, insert the cable with the gold contacts facing up, then slide the ears back in.
3. Connect the RFID RC552 module to the Arduino Mega using the following pins.
    a. Connect the 3.3 Vin to the Arduino 3.3v or RA8875 Driver boards 3.3V regulated output pins.
    b. Connect the GND pin to any Arduino ground pin.
    c. Connect the SCK to the SPI clock via pin 52 on the Arduino Mega.
    d. Connect the MISO pin via pin 50 on the Arduino Mega.
    e. Connect the MOSI pin via pin 51 on the Arduino Mega.
    f. Connect the RST pin to any digital output pin on the Arduino Mega.
4. Connect the Xbee3 module to the Arduino Mega using the following pins.
    a. Connect the Tx pin to any available Tx pin on the Arduino Mega.
    b. Connect the Rx pin to any available Rx pin on the Arduino Mega.
    c. Connect the 3.3 Vin to any available 3.3V regulated output from either the Arduino Mega or the RA8875 driver board.
    d. Connect the GND to any available ground pins on the Arduino Mega.
5. Connect the setup via the Arduino using a USB 2.0 Type B cable to connect to a PC and upload the necessary code to handle the system's logic.
6. The system can now be disconnected and powered via the DC Power Barrel Jack from a wall adapter.

Software Configuration

1. Ensure the microcontroller is already flashed with the program specified in the GitHub repository. If not, re-flash it using the Arduino IDE.
2. The program can be tested by setting up the ZigBee network and attempting a login via RFID or manual credential login.