ADEL Code Update Instructions

Thank you for your interest in the ADAMnet Drive Emulator Lite (ADEL). These instructions describe the process of updating code on your device. More information about the ADE and code can be found at https://github.com/Kalidomra/AdamNet-Drive-Emulator.

What Is Needed

- Phillips screwdriver
- Micro-USB cable
- Pololu USB AVR programmer v2.1 - https://www.pololu.com/product/3172
- Pololu USB AVR programmer software - https://www.pololu.com/product/3172/resources
- ADEL .hex update file - https://github.com/Kalidomra/AdamNet-Drive-Emulator
- Xloader (Arduino .hex loader for Windows) - https://www.hobbytronics.co.uk/arduino-xloader

Figure 1: ADEL Opening Location

Figure 2: Pololu USB Programmer Connections and LED Indicators

Procedure

1. Download the Pololu AVR USB programmer software.
2. Download the ADEL .hex update file.
3. Download Xloader .hex loader software.
4. Turn off the ADAM console and remove the ADAMnet cable from the ADEL device. Remove any inserted SD card.
5. Open the ADEL by removing the rubber foot to expose the single phillips screw to remove. See Figure 1.
6. Attach the USB cable from the computer to the USB connector of the Pololu programming device. See Figure 2.
7. Launch the Pololu USB programming software program and configure the programmer settings as follows.

ISP Frequency	2400 kHz
Max ISP Frequency	2400 kHz
Regulator mode	5V
VCC output	Enabled
VCC output indicator	Steady

Note: All other values stay default. **Remember the 'Programming port' value for later**.

Figure 3: 6-pin Ribbon Cable Attachment

8. Verify programmer LEDs are illuminated as per Figure 2 to validate that 5v power is being applied by the programmer. You can now safely close the Pololu USB programming software configuration program.
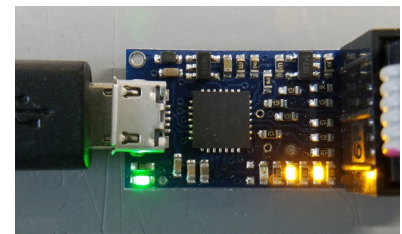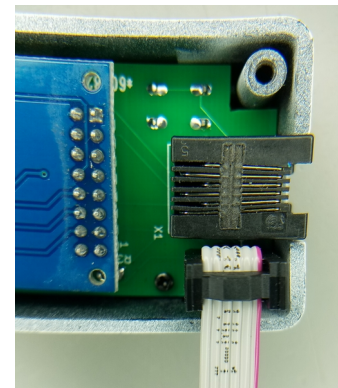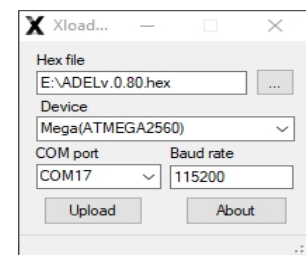
Figure 4: Xloader Configuration

9. Attach the 6-pin ribbon cable from the programmer to the SV1 connector inside the ADEL. The red strip on the ribbon designates Pin-1 of the connector. See Figure 2 and 3 for details.
10. Launch the Xloader updater program and configure Xloader according to Figure 4.
11. Select the appropriate COM port for the device in the drop-down list that was generated for the 'Programming port' earlier in step 7.
12. Select the appropriate ADEL .hex file for the device.
13. Click Upload to update the device. The process will take approximately five seconds to perform.
14. It is now safe to disconnect the 6-pin ribbon connector from the ADEL and reassemble. You can now reinsert the SD card and connect unit back to the console ADAMnet cable.
15. The ADEL is now ready to use. The first time powering the ADEL after an update, you must let the device sit powered for 25 seconds before pulling the console reset switch to boot the device. This time is needed to allow the new EEPROM settings to be configured and saved.

Alternative Methods

The ADEL uses a standard ICSP ATmega2560 6-pin programming connection. It is possible to use other various ICSP programmers on the market if you already have one available. This document is based on using the Pololu programmer and any other method will not be discussed in this document. Linux and Mac users do not have the option to use Xloader, which is available only for Windows operating systems. The full Arduino IDE suite can be used to compile and load code via 'ATMEL STK500 development board' programmer settings using the Pololu programmer. This option will not be described in this document and is for users who are familiar with using the Arduino IDE.
https://www.arduino.cc/en/Main/Software