**Installation and Build Guide for LLPS**

The code on the github controls the LCD screen of the Arduino, allows the Arduino Mega microcontroller to read the current and voltage sensors, perform power output calculations, lock the firing of the laser diode, as well as control the four digital relays of the circuit.

The LCD Menu Screen of the Arduino is implemented via a state machine controlled by the buttons on the LCD screen. Each state leads to a screen display of either current, voltage, battery percentage, discharge time, and power output. Via the different buttons pressed on the LCD Shield, the user is able to control what is being displayed on the GUI to find relevant information regarding the power supply.

**Downloading and Installing the Code**

1. Download the Final Arduino Code file on github and save it to a convenient location on the user’s computer
2. Ensure that the Arduino IDE is installed on the user’s computer
3. Ensure a stable connection is established between an Arduino Mega microcontroller with LCD shield attached and the user’s computer via the USB adapter
4. Open the downloaded code on the Arduino IDE
5. Ensure that the Arduino IDE is uploading to the correct board (Arduino Mega) and the correct COM port
6. Press the upload button and the Arduino IDE should begin uploading the code onto the Arduino Mega Microcontroller
7. With the code uploaded, close the Arduino IDE and disconnect the Arduino Mega microcontroller from the user’s computer.
8. Connect the Arduino Mega microcontroller to the power adapter within the power supply circuit and once the Arduino Mega Microcontroller is properly integrated into the circuit and the circuit is turned on, the user should encounter the LCD screen text and can manipulate the menu screen per the user guidance manual