Electronics guide

This is a brief overview of my electronics setup for the ah-64 MPD project.

For both MPDs I used a heavy object and a multimeter to determine which lead corresponded to what button.
Once I knew which pins where connected to what, I plugged them into the pin headers on my boards in order.

For the left MPD, I chose an Arduino Mega knockoff board as the controller. The main chip on the Arduino Mega does not natively support USB HID (at least in the configuration that is on the board) so a workaround is required.

I used Nico Hood's wonderful Hoodloader2 library to solve this problem. (https://github.com/NicoHood/HoodLoader2)

With Hoodloader2, I am able to program a sketch onto both the smaller ATmega16U2 chip, and the larger ATmega2560 chip while still having an onboard programmer available to update the ATmega2560.

The ATmega2560 runs a sketch that polls the input and constructs serial data to send to the 16u2.

The ATmega16U2 runs a sketch containing a serial receiver that processes the serial data, and inputs it to a USB HID library that transmits the data to the computer.

The HID library is also written by Nico Hood.
(https://github.com/NicoHood/HID)

For the right MPD, I did not have another Arduino Mega, so I chose to use a Teensy 3.6 instead. The Teensy 3.6 has native USB HID support so no workarounds are required.

I wrote a simple sketch to poll the inputs and send them to the computer using the Teensy native hid.