Housing Build Example

The following document provides the steps taken to build a housing for FluxPMU for the ALSET Lab at Rensselaer Polytechnic Institute. There are several ways that you can build a final product, ranging from the example here, to the original 19" rack design shown in the document OpenPMU - Enclosure Assembly - V1.1.pdf.

FIgure 1: Final Product

Figure 1 shows the final housing that was built to house FluxPMU. One note is that in the image above, the GPS is not shown.

To begin a similar build, you will need to acquire some sort of base box. McMaster-Carr is a good place to start if you are looking to make a similar build as above. The housing in Figure 1 has a length of 10 inches, width of 6 inches, and height of 2 inches. The build began by drilling screw holes, and machining five holes for the cables to enter.

Figure 2: Bare Housing with Holes

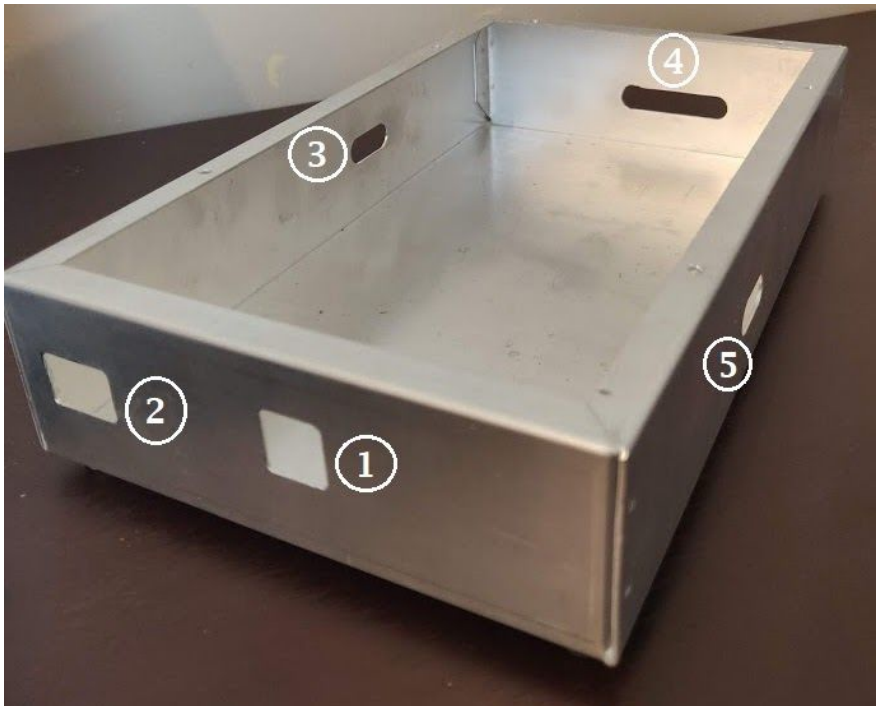
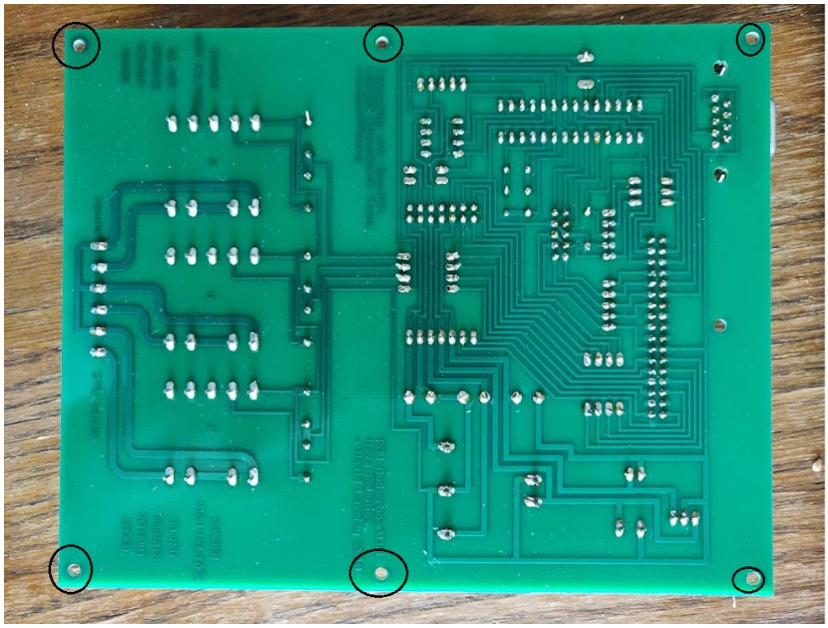


Figure 2 shows the five machined holes for various input and output cables. Circle 1 is for the NI DAQ printer cable. Circle 2 is for the USB to Serial connection. Circle 3 is for the GPS wires. Circle 4 is for the input voltage lines. Circle 5 is for the power supply cables.

Additionally, 8 more holes were drilled on the bottom of the box to act as the mounting points for the FluxPMU board itself. The six holes shown in Figure 3 were traced, and lined up in the housing to create 6 mounting points.

Figure 3: FluxPMU Mounting Holes



The other two holes were added for the NI DAQ USB-6009. Once screws, washers, and plastic mounts that raised the board off of the metal housing were obtained, the FluxPMU board and NI DAQ were mounted. Additionally, the DIN rail was cut to 6 inches, and mounted with two screws above the input side of FluxPMU (above circle 4 in Figure 2). The power supply was simply attached to the DIN rail for ease of use. Finally, a clear plastic sheet was added to the top of the mourning to add safety to the user and protection for the board and all of it's components.