

Tools:

Heat Gun, Heat shrinks, Screwdriver

Sharp knife, Drill bit, Pliers

Yellow Tape, Double-sided tape

IMPORTANT: Throughout the process, be very careful not to scratch or damage the glass top of the scale. This device is going to be exhibited and should look absolutely clean.

1. Take scale out of packaging and remove the sticker from the glass top on the front. Before turning the scale over in the next step it might be a good idea to tape down one of the cardboard pieces on top of the glass front to avoid scratches.
2. Turn the scale over and remove the 9 screws and save them.

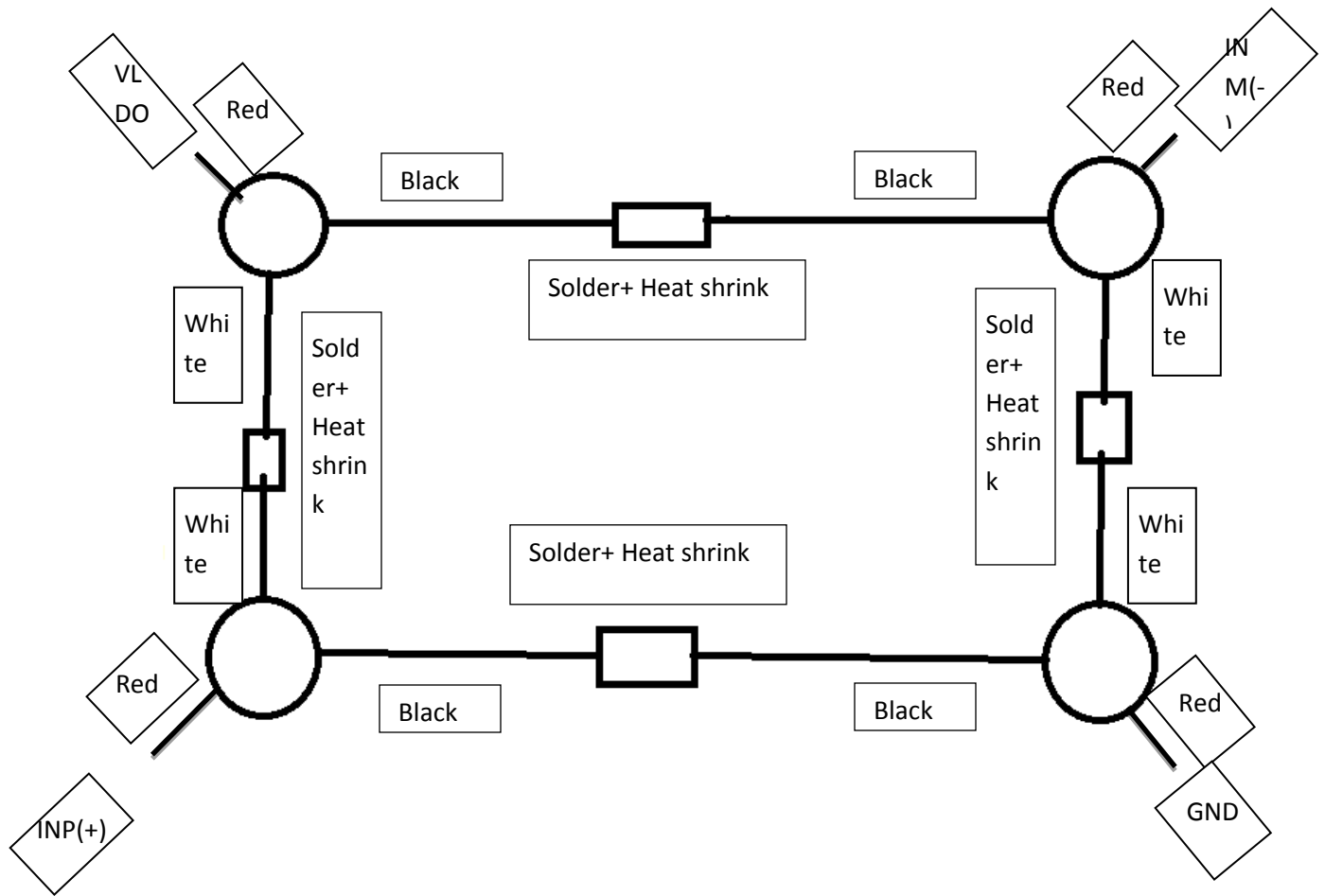


3. Remove the stickers from the bottom. Use the heat gun to reduce the adhesive for the sticker for easier removal. Pull up one corner of the sticker and keep heating at the seam for a clean removal. Remove any residue with rubbing alcohol
4. Remove the battery cover and save any batteries.

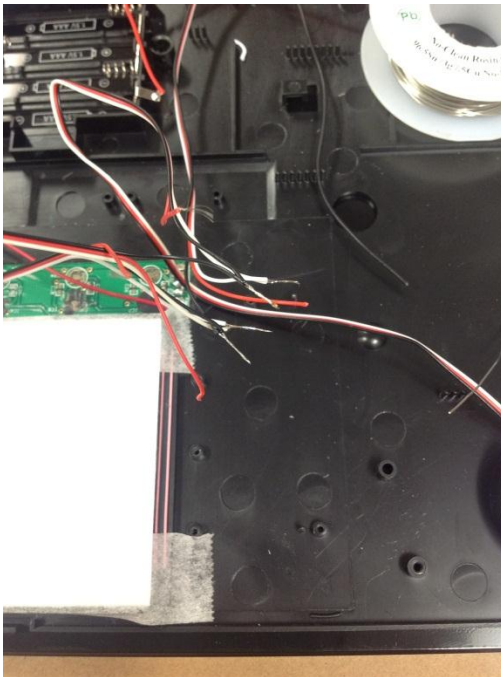
5. Push thumbs into the corner pads and pull to remove the bottom cover. Retain the cover. Remove the 4 rubber pads and save them.

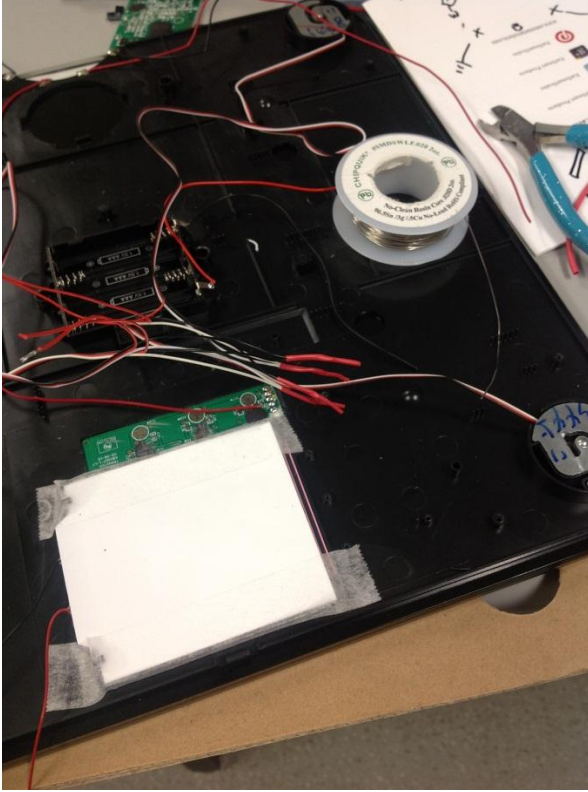


6. Cut off the battery leads on the existing circuit board, they are too short
7. Clip off the foot electrode leads FS+, FE+, FE- and FS- from the circuit board and save them. Clip as close to the circuit board as possible. We will re-use these leads with our board.
8. Clip off all the electrodes on the top bus (4 red, 4 black, 4 white). Clip as close to the circuit board as possible, these will be re-used.
9. Remove the backlight (white rectangle connected to B+ and B-), clip off all the remaining leads on the top circuit board including B+, B- and the multi-colored ribbon.
10. Unscrew the 3 screws on the top circuit board and remove the board.
11. Replace the backlight behind the LCD screen and tape it down to hold the screen in place. Careful not to touch the LCD glass as the dirt will show from the top.
12. Each corner has 1 red, black and white wire. Solder the white and black wires together as shown in the diagram below. The orientation of the diagram matches that of the board when the LCD screen is near the bottom. Pay close attention to the specific positions of the wires.

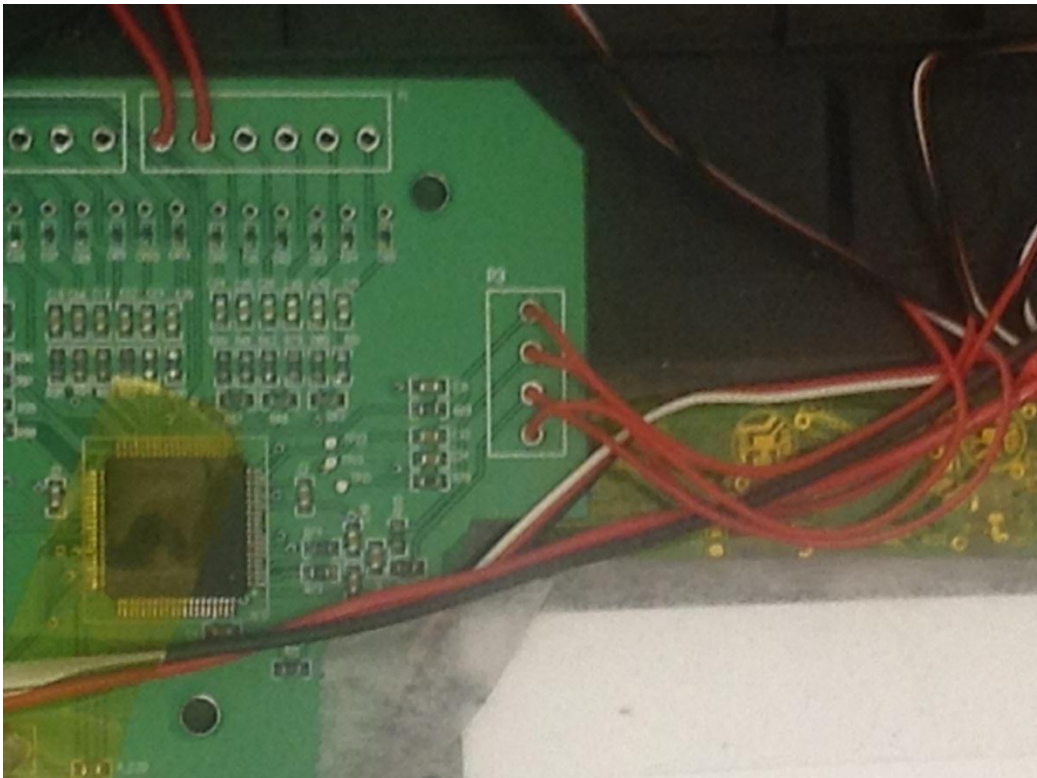


13. After soldering the white and black wires together they should be protected with heat shrinks as shown:

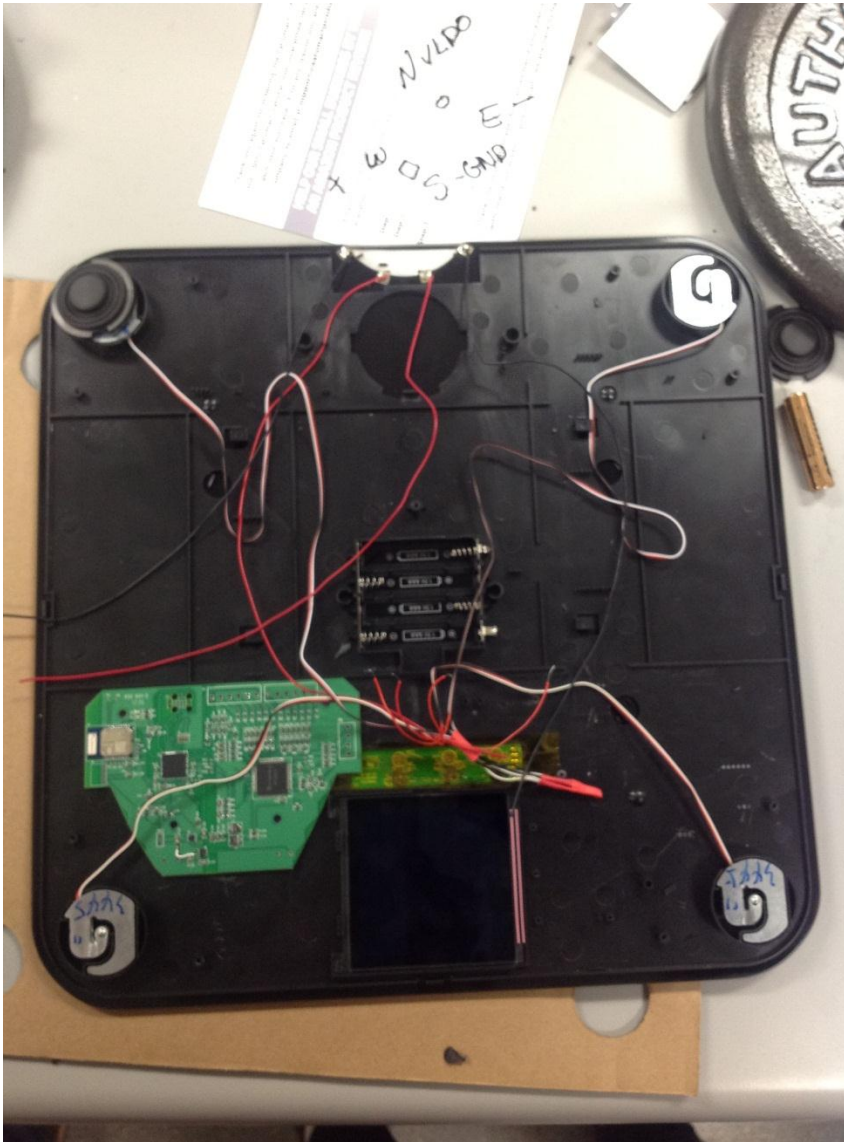




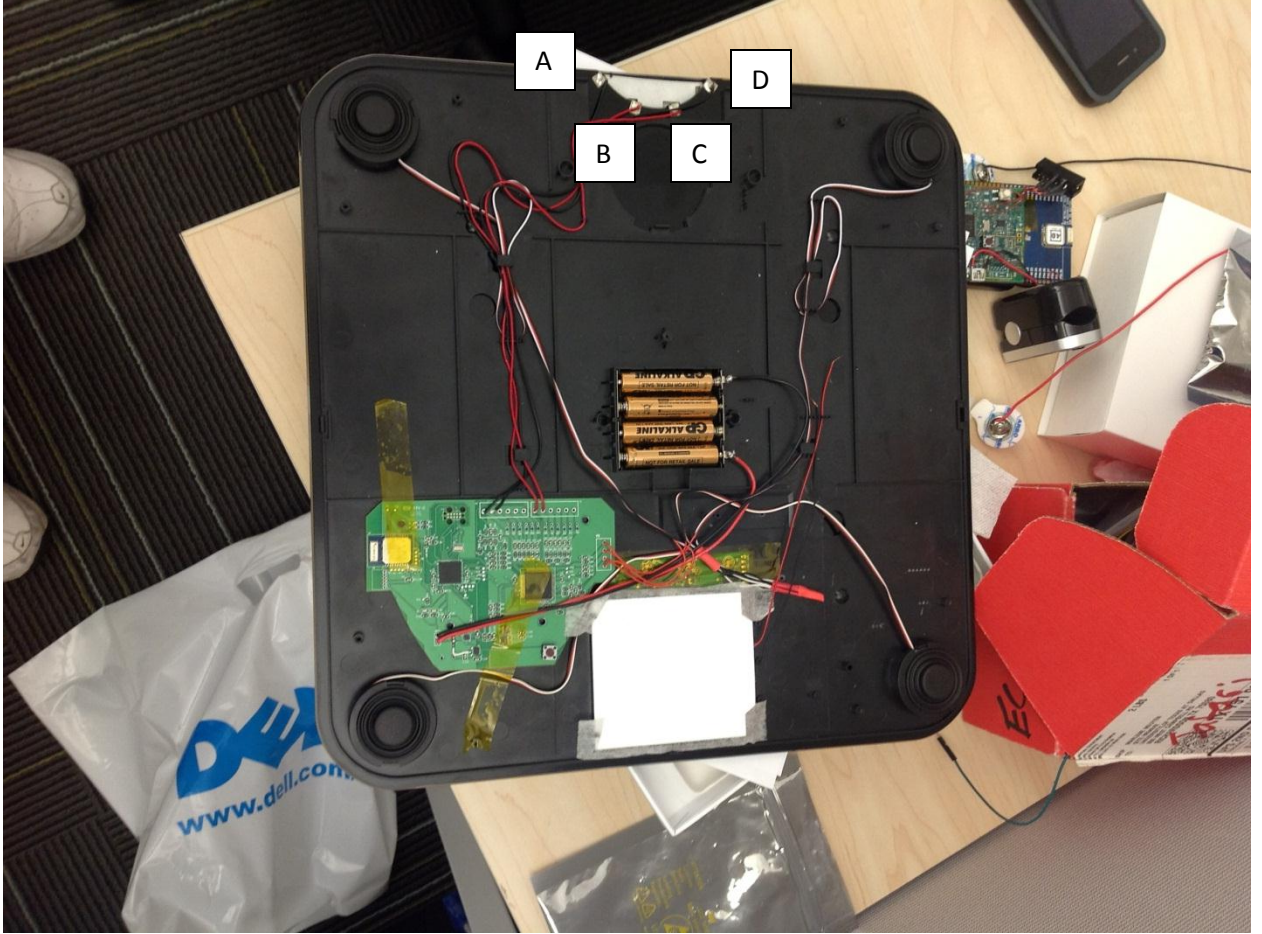
14. The 4 corner red wires should be soldered to the pads on P3 to the right on our board. The 4 pins are from the bottom up: VLDO, INP+, INM- and GND. Tin the leads on the red wires with solder and solder them to the 4 pins as described on the diagram.

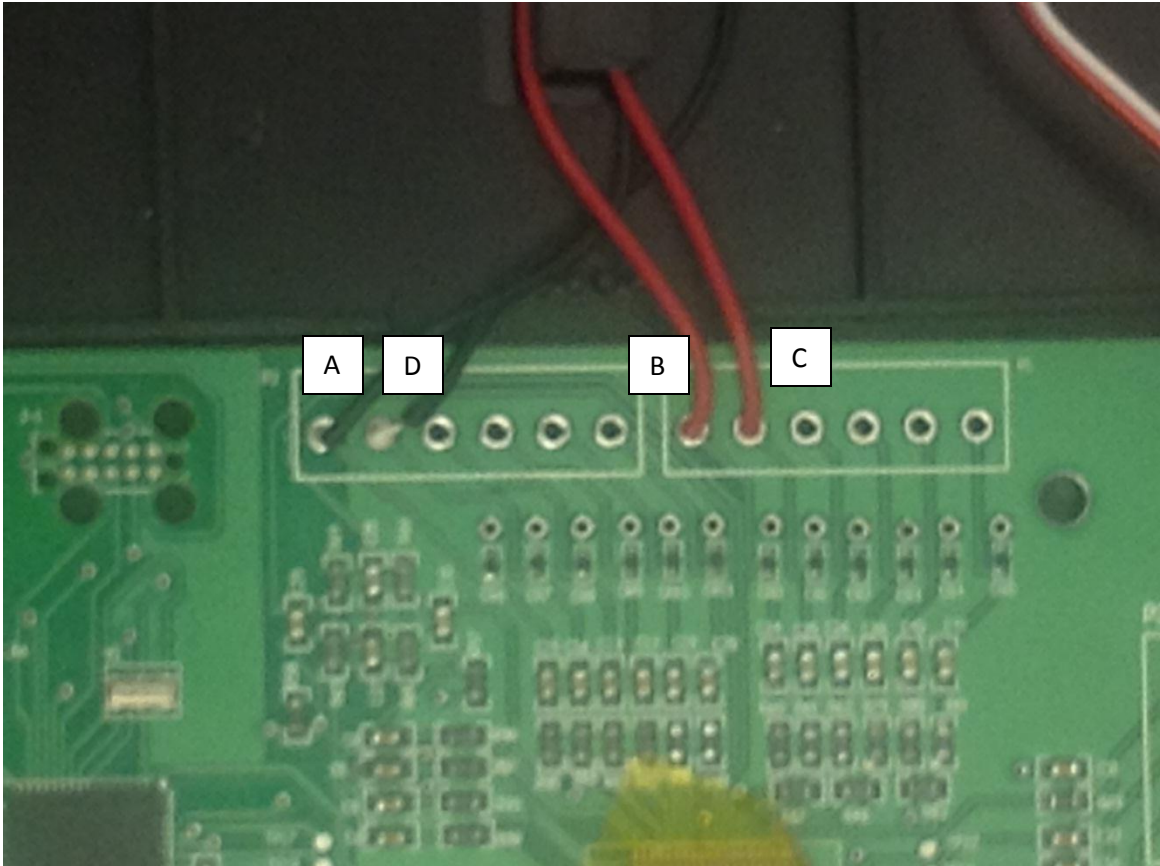


15. Isolate the touch buttons on the weigh scale with yellow tape.
16. Turn the board over and you will see 2 push-buttons; de-solder both of them. The one on the right will not be used, and the one on the left needs to be soldered in the same position on the top side of the board. (refer to the picture of the completed board at the bottom of the document)
17. Lay the board as shown in the picture and then cut off any plastic projections underneath that prevent the board from lying flat. **This part may be tricky and you could easily hurt yourself.** See Jake for advice on the technique required.

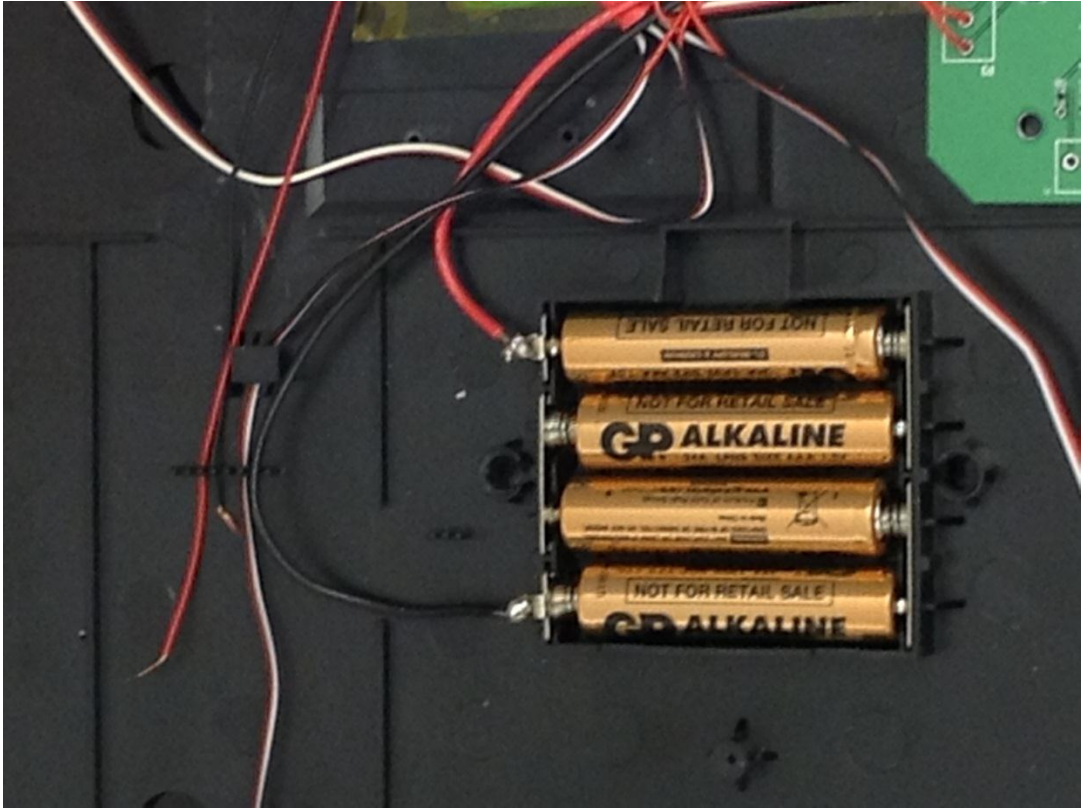


18. Solder the BCM wires (2 red and 2 black at the top center of the scale) to our board as indicated by the labels in the 2 pictures:





19. Remove the battery wires already on the device as they are too short. Solder two new wires between the board's battery pad and the device's battery leads as shown:



20. Stick the board down with double sided tape
21. **DON'T MESS THIS UP ASK FOR A DEMONSTRATION FIRST** Remove the ridges on the underside of the bottom cover(marked with black sharpie in this picture) as they will impede the board when you try to replace the bottom cover. Use a plier and twist to get the ridges off



22. Use a 3/8 drill bit (the largest one in the kit) to make a hole on the bottom cover in the exact position as the template board which has a yellow sticker indicating the hole position. This hole will be used to press a button on our board. **DON'T MESS THIS UP ASK FOR A DEMONSTRATION FIRST** Mark the hole, place a piece of wood behind the plastic cover, and drill through both the plastic and the wood for a clean hole. The board should be adjusted such that the center of the button is centered in the hole.
23. Route the wires into the little clips. Avoid placing wires near the battery hole , and the 5 other large holes. They can pinch and cut the wires.
24. Put the cover back on, making sure you press down the center and then all 4 sides until they snap in place. Also the center large hole needs to be snapped down. Make sure the 4 rubber footpads on the corners are positioned properly.

1) Across from the On/Off button there are two through-hole vias where another button was meant to be soldered. If you are looking at the board and the on/off switch is on the bottom right, then these two vias will be on the bottom left (near P_C22).

2) The via to the left is tied to the MSP430 GPIO pin being used for LCD toggling, and the other is GND. You can even check to make sure which one is GND by testing with other grounds on the board.

3) Then simply solder the black wire from the LCD to the ground and the red wire to the other via.

So it's just a matter of finding those two spots where the other button was to be soldered. As i said, they should look exactly like the pads/vias the existing on/off button is soldered on and they are located across from this button in the other corner.

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