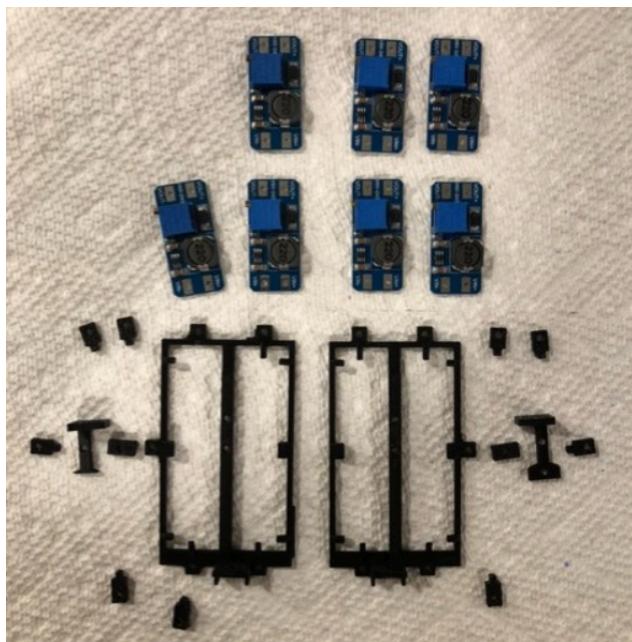
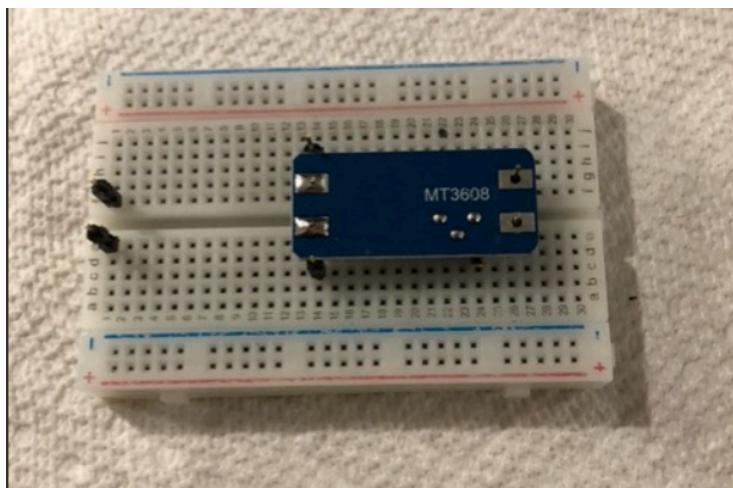


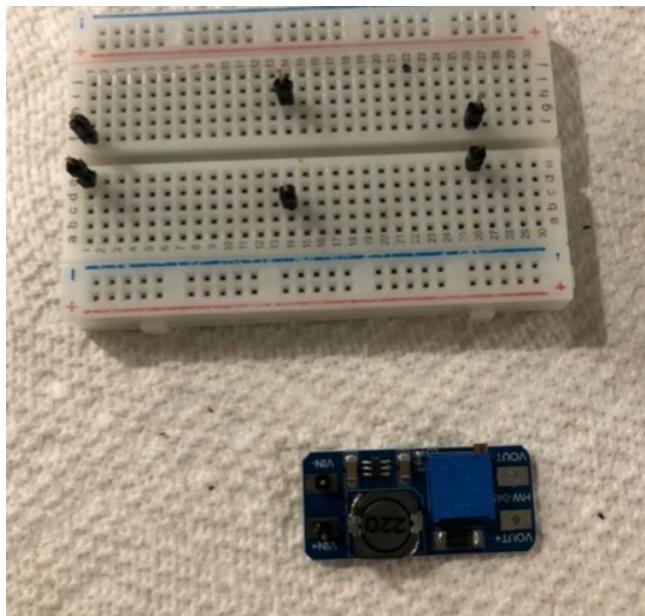
Boost Converter Module Build Instructions



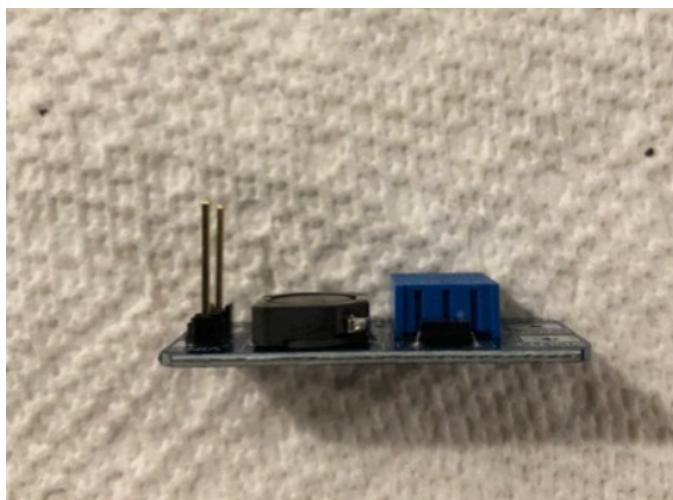
Needed materials. Seven boost converters and printed parts



Start by soldering two jumper pins or wires on the Vin+ and Vin- of the module. Solder from the back like pictured.



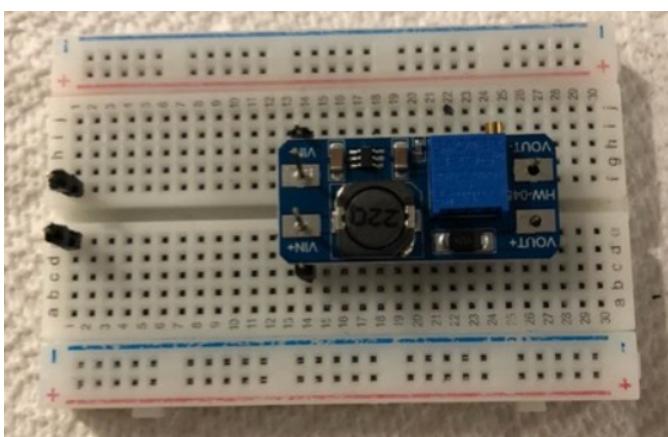
Pins soldered pictured from the front. Remove plastic parts of pin holder or sheath of wire if you decide to use wire.



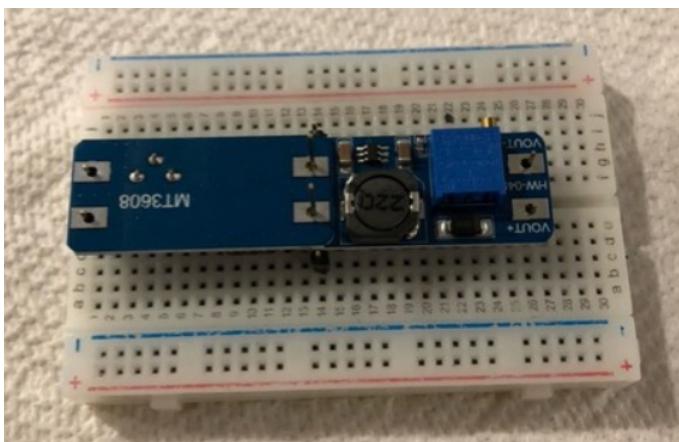
Pictured from the side.



Plastic parts removed.



Place back on holder with components facing up.



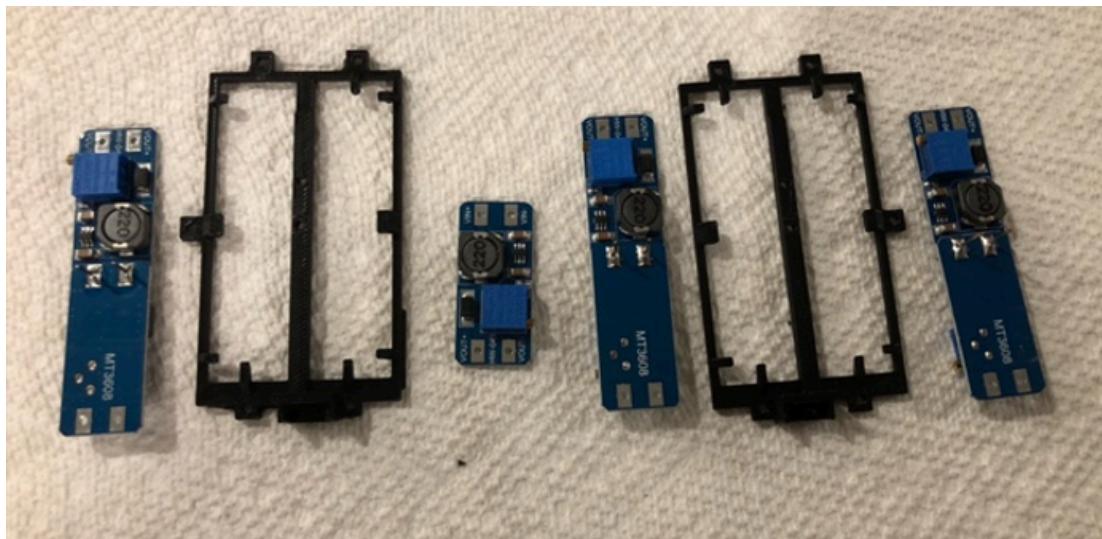
Place another boost converter on top of the first so that the Vin+ and Vin- are in direct contact with each other.



Two boost converters soldered together.



From another angle.



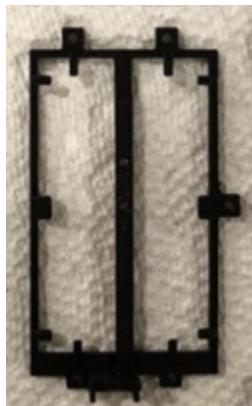
Three groups of two boost converters soldered together and one by itself.



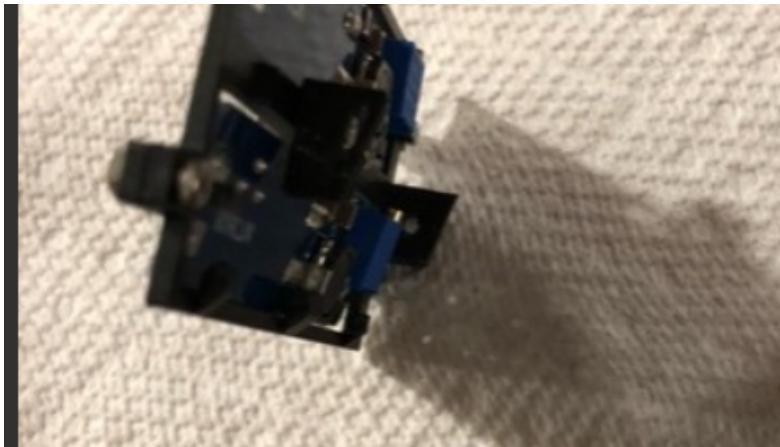
Boost converters placed in respective holders. Each holder is the mirror image of the other. The three boost converters go in the holder that will attach to the left of the backplate (looking at the interior) and the four boost converters will attach to the right.



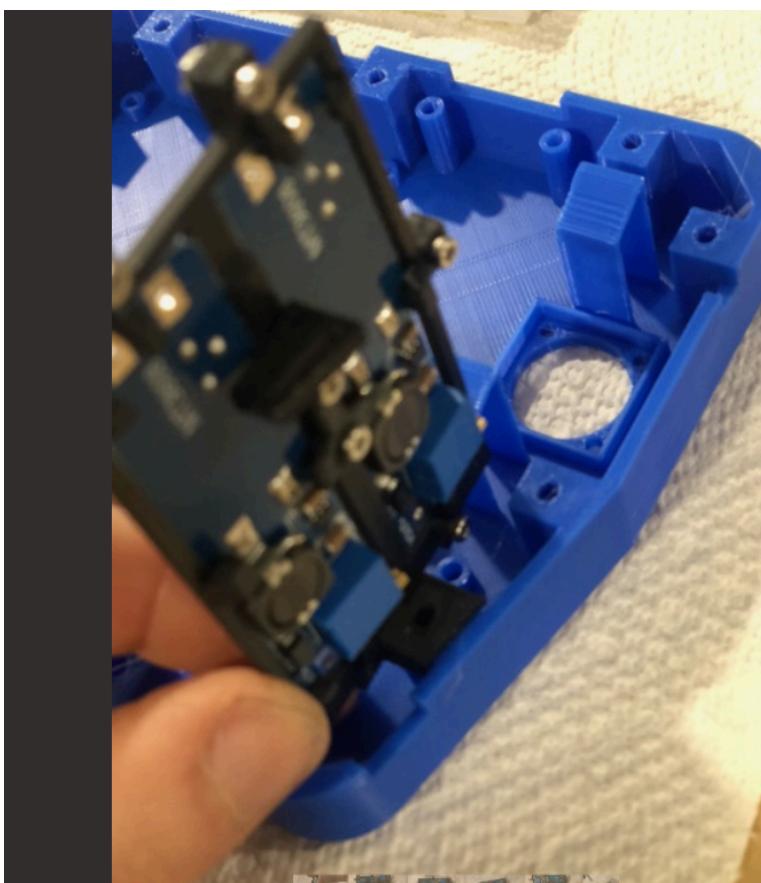
Middle attachment piece.



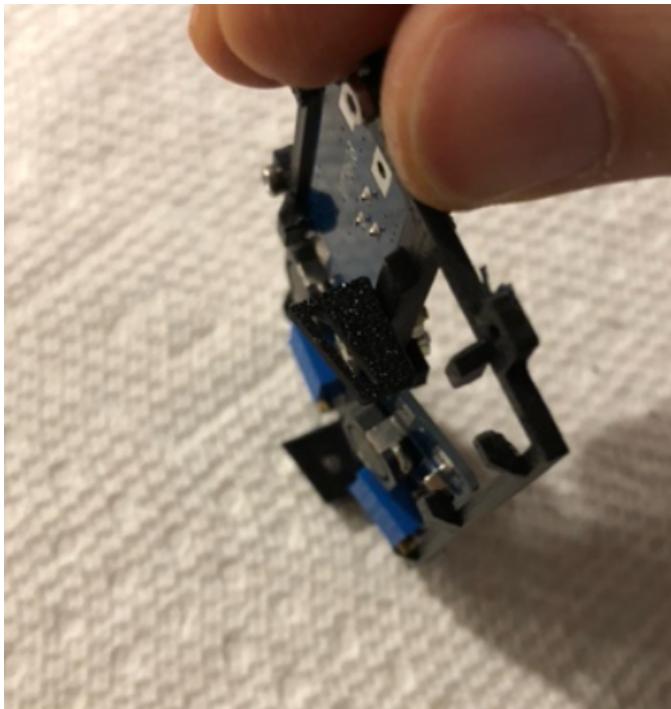
Boost conv holder.



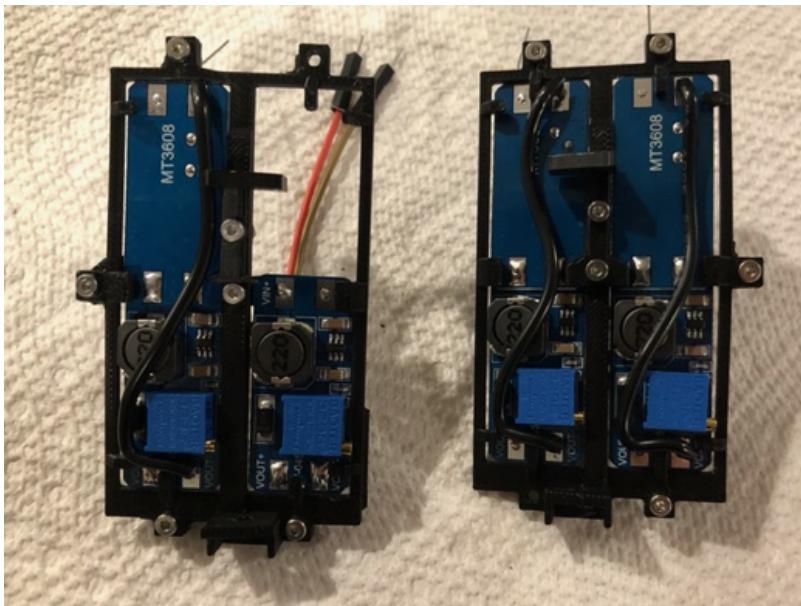
Ensure the contour of the middle attachment piece matches the contour of the bottom of the boost conv holder.



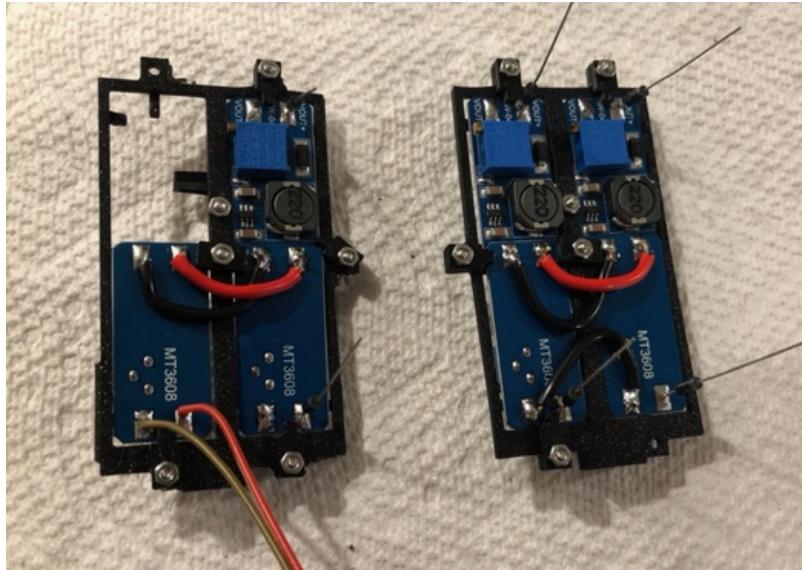
Picture of the attachment point of the boost conv holder in the back plate. Observe how the contours of the holder and the middle attachment piece match the contour of the inner wall of the back plate.



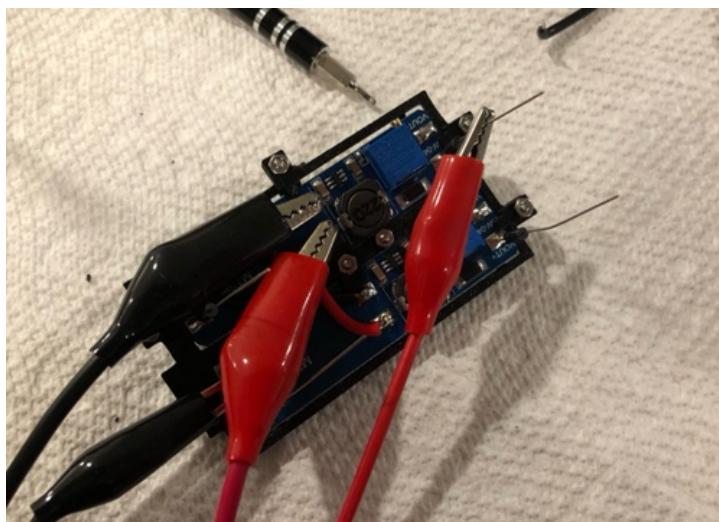
Left boost converter holder (only has three boost converters). Observe the contours match on this side as well. Side note, I moonlight as a hand model. Not sure if you can tell...



Now we go about finishing attaching the Vin+ and Vi- together and attaching the Vout+ and Vout- together with the caveat that the single boost converter outputs remain separate. From the other two. The Vout- are soldered to each as pictured. Soldering them on the contour attachment side gives us room for all the other attachments on the other side.



The other side. We will attach diodes to each individual Vout+ except for the single boost converter. We also want to solder each Vin+ / Vin- on one side to the Vin+ / Vin- on the other side as pictured. Although the Vin+ and Vin- are obscured from soldering those sections together previously, use the Vout+/Vout- as your guide (positives are on the right and negatives are on the left). Clip off any excess wire or pin in the Vin/Vout side but save a short section so we can solder more wires to the assemblies once they are installed. Notice we soldered diodes to all the Vout+ except for the single one (diode: silver side indicates direction of current). Finally notice that the Vout- on the bottom of the right board are soldered together. Since we soldered the top to the bottom on the back side this means that all of those modules are now grounded together. You may do this on the left assembly but you don't have to. Solder two jumper wires to the single boost converter board.



Next you'll want to adjust the boost converter output as shown. Attach a power supply or your battery supply to the Vin+/Vin- connections in the middle of the board. Then attach negative of

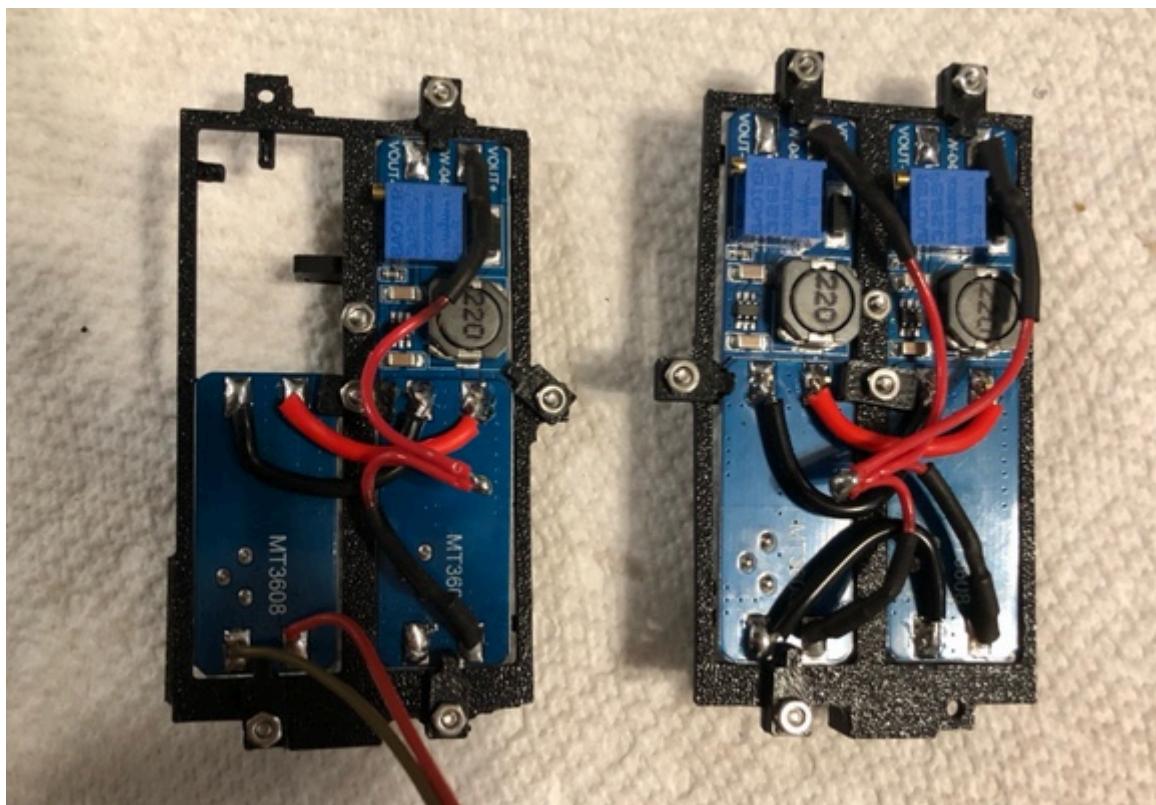
a DMM to the common Vout- of all boards and clip the positive of the DMM to the connected diode of each Vout+. Turn the screw on the potentiometer (blue box) counter clockwise until you reach the desired voltage. Keep turning, it takes a few turns before you start to see the voltage change.

Required voltages:

Right assembly (four connected boost converters): 8V

Left assembly (two connected boost converters): 5.5V

Left assembly (single boost converter): 5V (this one goes to the Raspberry Pi. if you overvolt this one you might destroy your pi)



Finally, solder all the Vout+ together on the right assembly and only the two that are connected on the left assembly. This ensures that all the boost converters on the right are acting as one unit and the two connected converters are acting as another unit. The single is acting on its own. Note that setting the connected converters to the same value ensures that they are all working to maintain the same voltage and the diode is necessary so that there won't be any backflow from one converter into another.

Please review back plate build instructions for final soldering steps for these assemblies.