

# Altair-Duino Experimenter Add Aluminum Frame

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Up-to-date instructions are always available at [www.adwaterandstir.com/instructions](http://www.adwaterandstir.com/instructions). **Be sure to check this page before starting construction for addendums.**

**Altair 8800 Simulator - Copyright (C) 2017 David Hansel**

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<https://github.com/dhansel/Altair8800/raw/master/Documentation.pdf>

I would strongly suggest comparing the parts you received with the list below. Let me know if you are missing anything and I will send a replacement. (It will not be unusual to have a few extra minor parts.)

**Bag #1**

- 4 x 8mm Male-Female Standoffs
- 4 x 20mm Female-Female Standoffs
- 2 x 40mm F-F Standoffs
- 4 x 12mm M4 Bolts
- 4 x M4 Nuts

- 4 x M4 Lock Washers
- 4 x Rubber Feet

**Bag #2**

- 2 x Aluminum Brackets

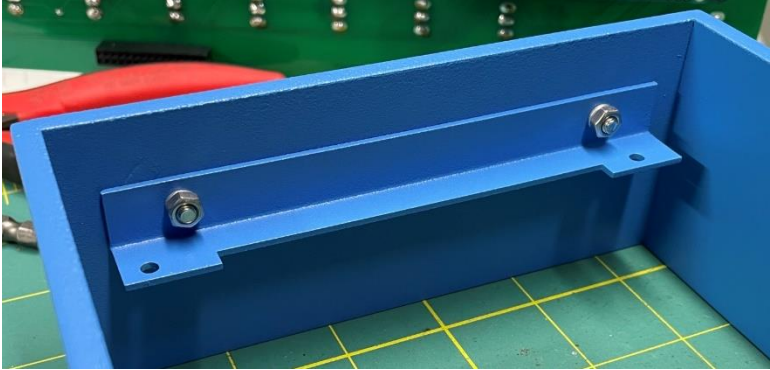
**Unbagged Parts:**

- 1 x Aluminum Frame

Get the frame, two blue mounting brackets (from bag #2), four 12mm M4 bolts, four M4 lock washers, and four M4 nuts (from bag #1).



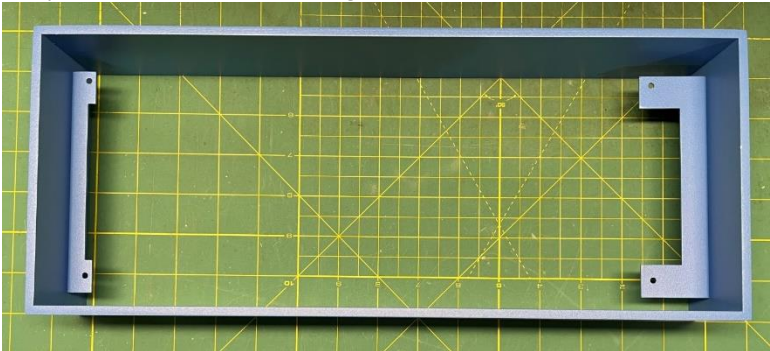
Place the aluminum frame with the holes closest to the top, and mount the smaller side bracket **exactly as shown**:



Turn the bracket and do the same to the other side:



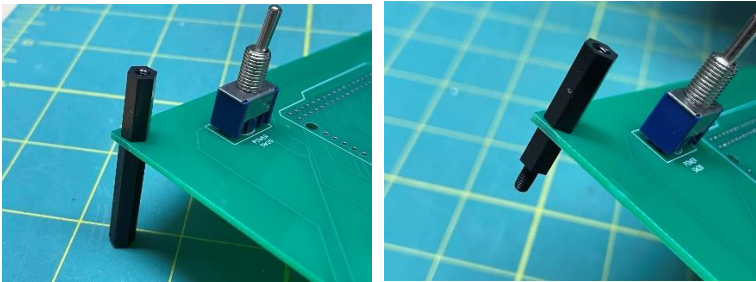
Turn the assembly over and it should look exactly like this. Note the placement of the mounting holes.



Disassemble your Altair-Duino Experimenter. Remove the back clear panel with expansion board and put that to the side for later.



Remove the front panel from the main circuit board and put that to the side. Now replace the four 28mm standoffs on the rear of the main circuit board with four 8mm standoffs.

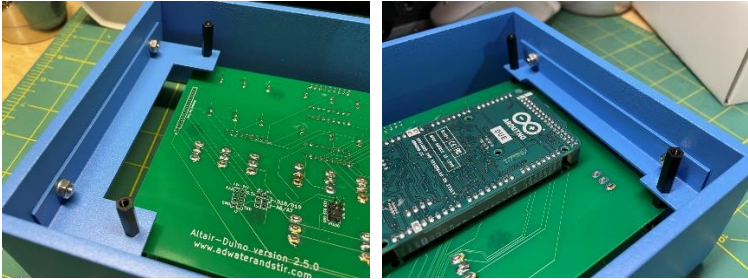




Place the assembled main circuit board in place, directing the 8mm standoffs into the mounting holes.



Secure the board in place with four 20mm nylon standoffs:

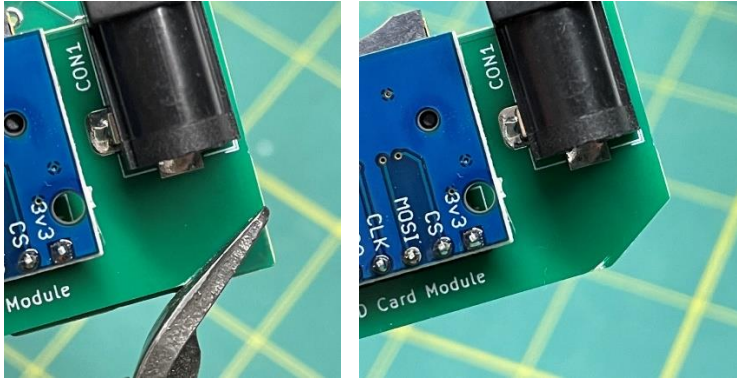


Plug the USB extension cable into the Programming Port on the Arduino Due (the port closest to the power jack.)

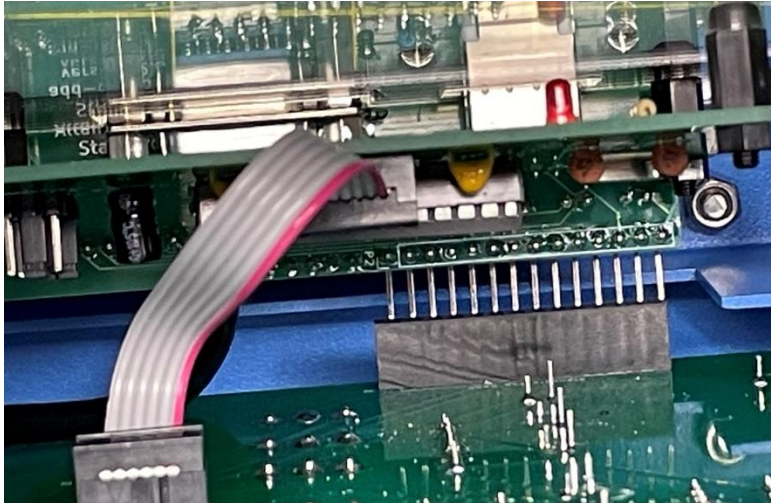


This step is optional. The small expansion circuit board is just a couple millimeters too tall for the new case. You can leave it as is if the rear panel sitting at a slight angle on the back of the case does not bother you. Otherwise you can take a pair of side-cutters and snip a small piece off the expansion board. There are no traces in this part of the circuit board, and I have cut several of these with no problems.

If you decide to do this, make sure you cut it fast with one motion.



The next part can be somewhat tricky. You need to insert the 14-pin male header from the expansion circuit board into the 14-pin female header on the main circuit board.



One thing I have found that can help is to use your finger from the opposite side to guide the pins into the correct position.



Secure the rear panel in place with your existing nylon bolts.



Turn the case over and put the front panel in place.



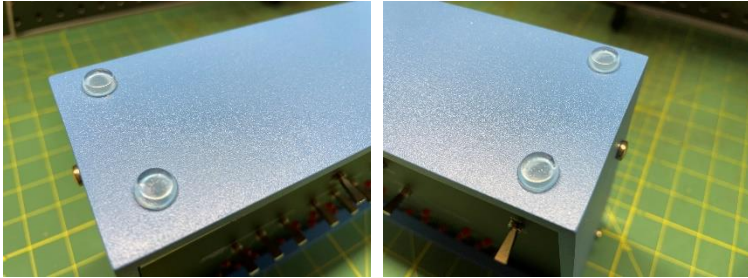


You may have to push a few of the toggles to the side to get the panel in place. When it is in correctly, the toggles will stick out like this:



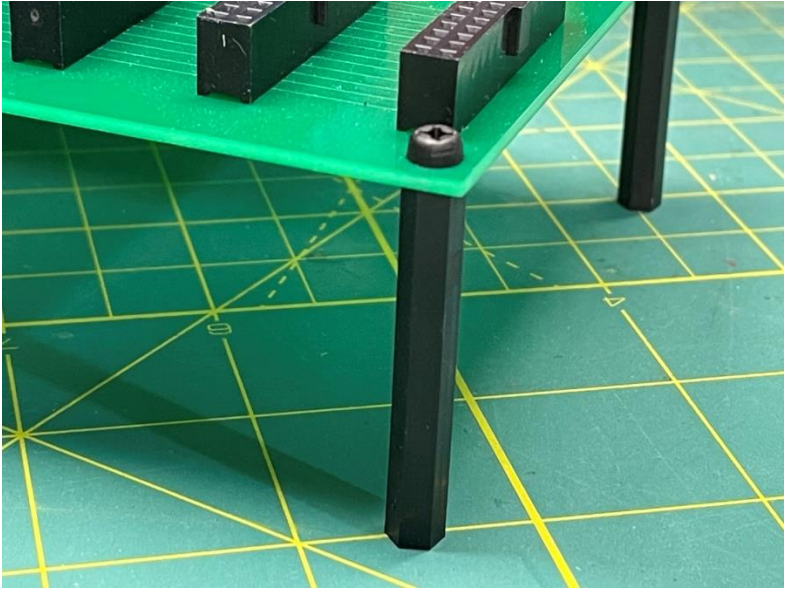
Secure the front panel in place with your existing nylon bolts.

Apply four self-adhesive rubber feet to the bottom of the case.



The main body of your Altair-Duino Experimenter is complete.

If you have the backplane, replace the four 28mm standoffs with two 40mm nylon standoffs at the outside edge of the circuit board and secure with two 6mm M3 nylon bolts.



**CONGRATULATIONS!  
YOUR ALTAIR 8800 IS  
COMPLETE!**