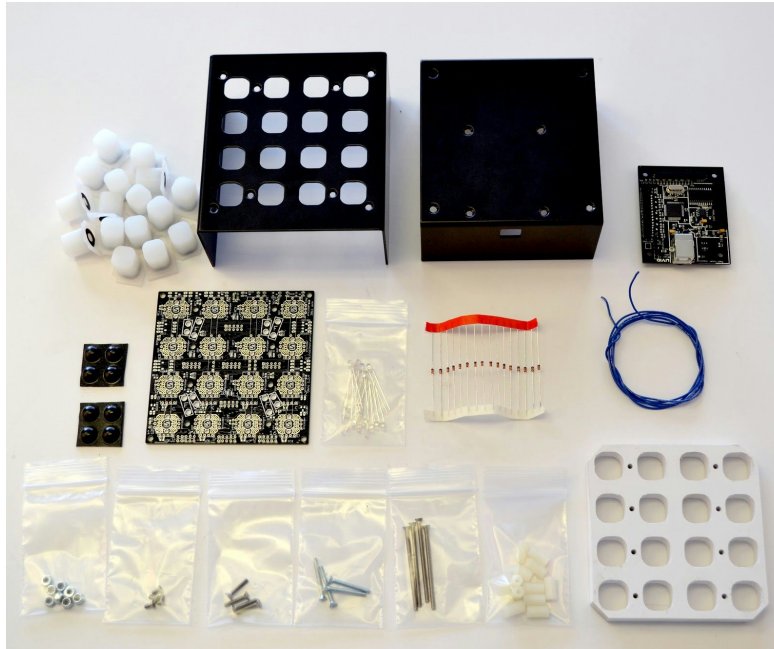


LIVID

Building Guide: Button Box



Warranty

Livid Instruments warrants this kit comes complete and is free of defects in materials and workmanship under normal conditions for 30 days from the purchase date, so long as the kit has not been soldered or built and is: owned by the original purchaser; the original purchaser has proof of purchase from Livid Instruments or an authorized dealer. Warranty does not include repairs needed due to misuse, abuse, or damage to any component or part. Livid Instruments only warrants the parts of this kit, not the build once complete.

Return Policy

All sales of Livid Instruments hardware are given a fifteen (15) day return policy. A kit may be returned within fifteen (15) days of purchase as long as it has not been used. We will refund the purchase price of the product, less shipping and a 15% restocking fee, upon receipt of the returned item. Refunds may take up to 10 business days to process. Any damage will be the responsibility of the customer. We will do our best to determine if damage happened during shipping and will help the customer by allowing carrier inspection of any damaged items.

Tech Support

Builder Boxes are **only** supported through our .pdf "Building Guide" and through our online forums at forum.lividinstruments.com. Phone, online chat, and helpdesk support are not available for this product.*

Livid Instruments makes no promises or guarantees that you will successfully complete your kit in a satisfactory fashion. Nor does Livid Instruments promise or guarantee that you will receive any technical support. Purchasing a product from Livid Instruments does not entitle you to any amount of technical support. Livid Instruments does not promise or guarantee that any technical support you may receive will be able to resolve any or all issues you may be experiencing.

Tools & Parts Checklist

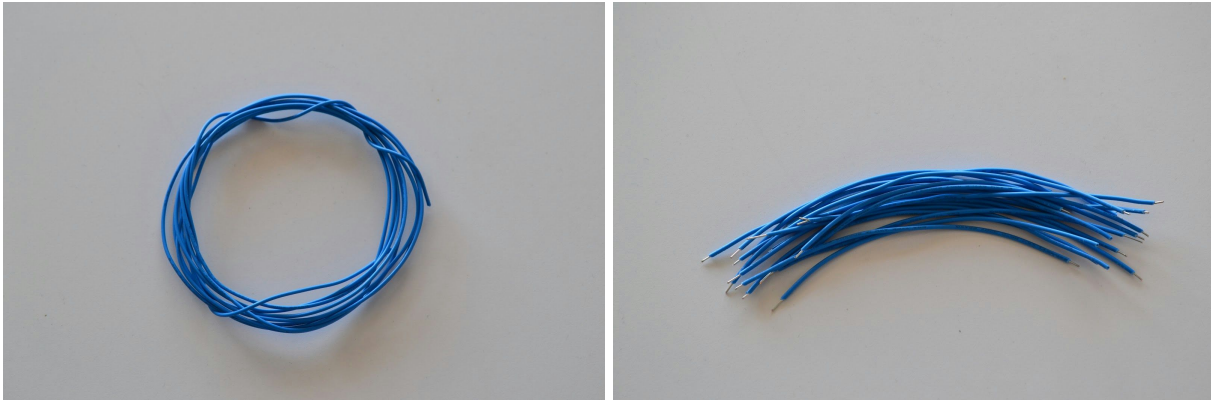
Tools Needed:

- Soldering iron/soldering Kit
- Solder
- Flux Pen
- 2 X #1 Size Phillips head screwdriver
- ¼" hex driver
- Wirestrippers
- Small snips or wire cutters

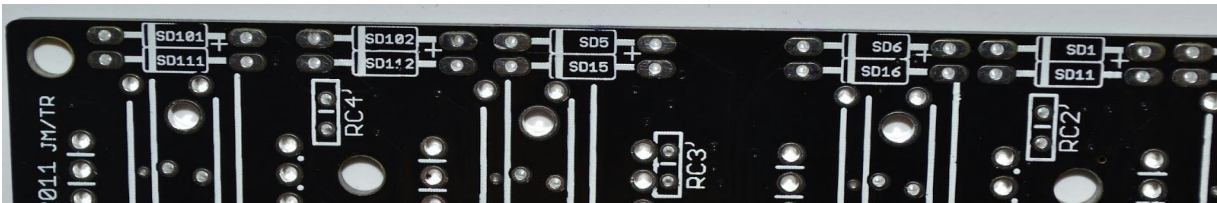
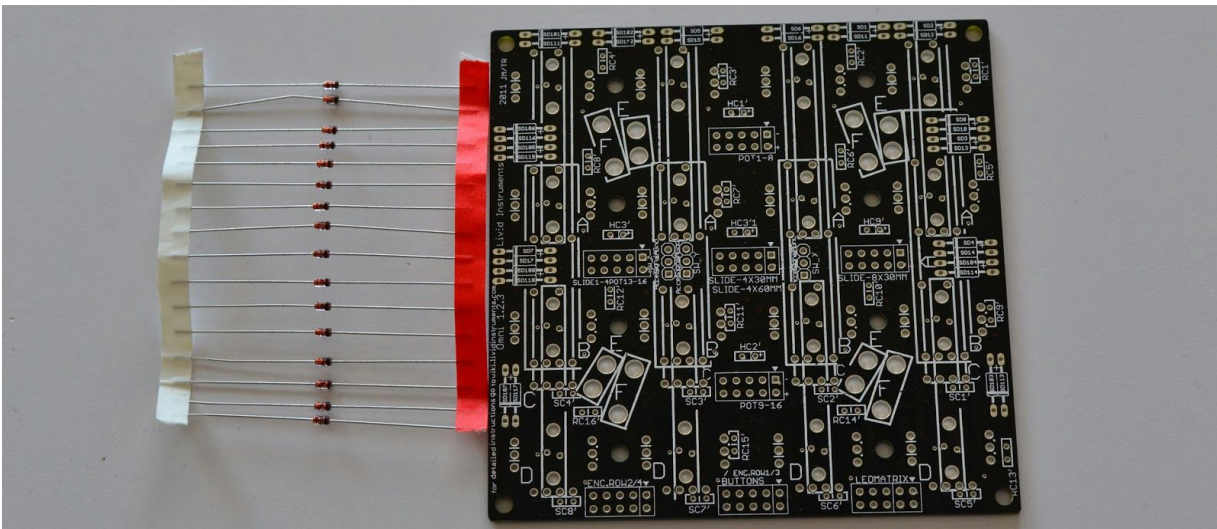
Parts List:

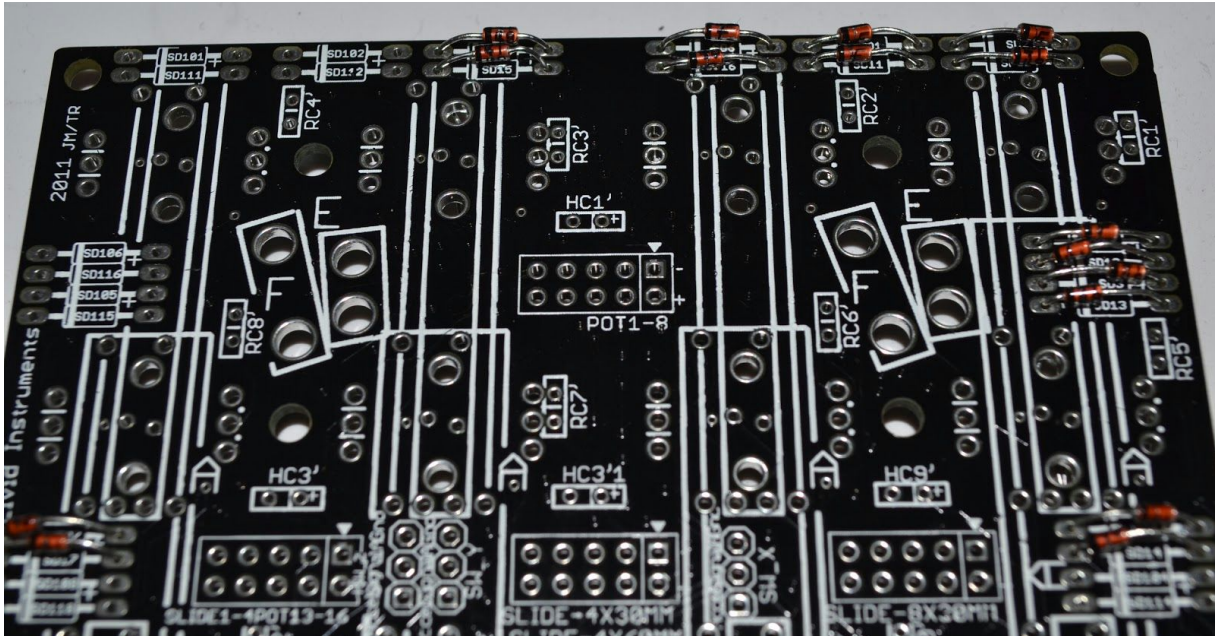
- 1 X 8' 22g solid core copper wire
- 4 X 4-40x1/4" machine screw
- 4 X 4-40x5/8" machine screw
- 4 X 4-40x1" machine screw
- 4 X 4-40x1 6/8" machine screw
- 8 X 4-40 nylon lock nut
- 12 X 4-40x1/2" nylon hex spacer
- 16 X bright blue LED
- 16 X single diodes
- 16 X individual buttons
- 1 X 1/2" plastic button holder/spacer layer.
- 8 X adhesive rubber bumpers
- 1 X Livid Brain Jr.
- 1 X Livid Omni Board
- 1 X Button Box metal housing (Top)
- 1 X Button Box metal housing (Bottom)
- 1 X USB Cable

1) Prepare wires: Take the wire and cut it into 4" pieces. Strip the wire insulation approximately 1/8" from each end to expose the copper. Repeat this until you have 20 pieces.

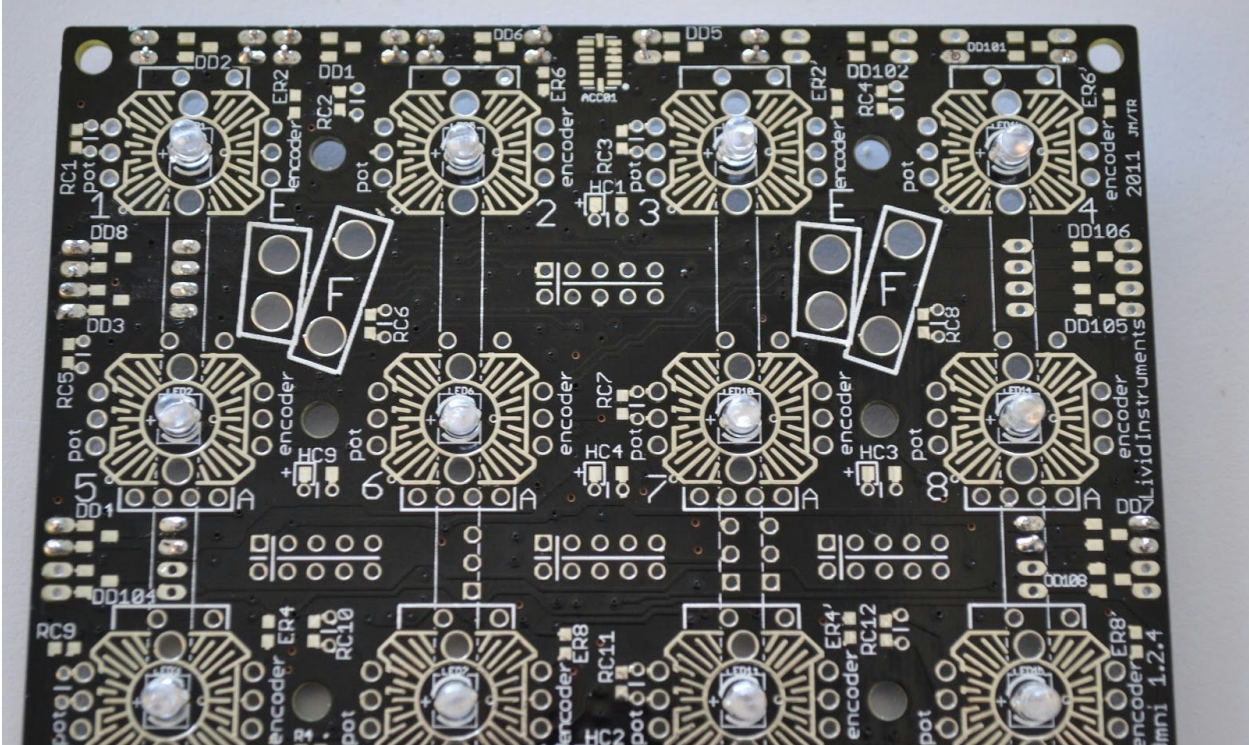


2) Populate diodes: On the Omni Board locate SD1-8 & SD11-18 on the bottom of the board (SD denotes "single diode"). The diodes are polarized, so make sure the thick black line on the diode goes to the negative side marked on the board. Solder the single diodes in positions SD1-8 & SD11-18. Clip off the excess diode leads from the top of the board. The single diodes allow the buttons to function, so if you have trouble with your buttons later on it could mean a diode is incorrectly soldered.

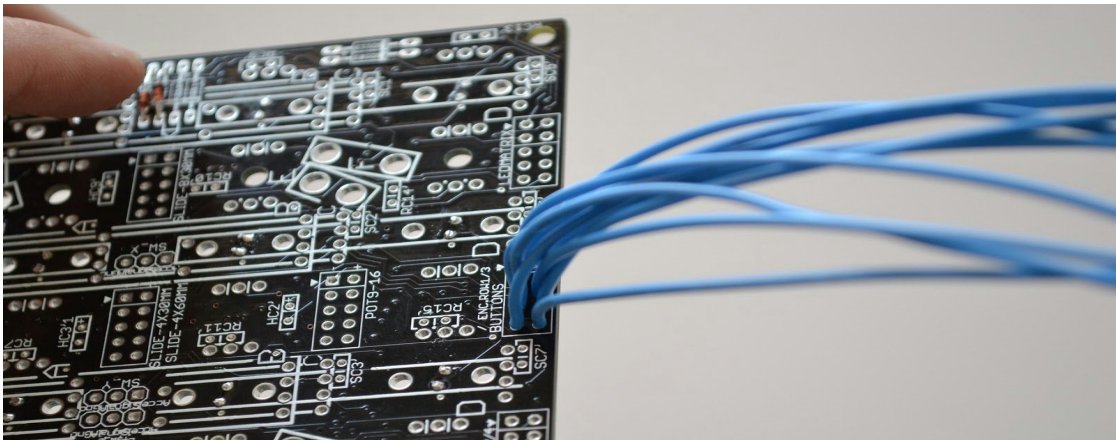
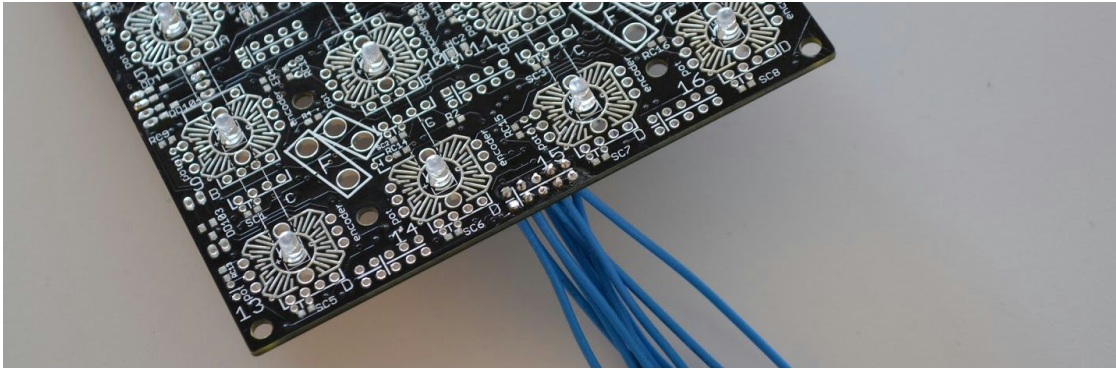




3) Populate LED's: On the Omni Board locate LED1-16 on the top of the board. The LED's are polarized so be sure the longer leg of the LED is in the through hole marked positive (+). Solder the LED's in positions LED1-16. Clip off the excess LED leads from the bottom of the board.



4) Populate Wires: On the Omni Board locate the white rectangle labeled "BUTTONS" on the bottom of the board. Within this rectangle are 10 through holes. Take the 4" wires previously prepared and solder 1 wire into each hole. Make sure that the wires are coming out of the bottom of the board. Next, locate the rectangle labeled "LEDMATRIX". Repeat the same process again with the remaining 10 prepared wires.



5) Connect wires to the Brain: Use the following diagrams to connect the wires soldered on the Omni Board to the Brain Jr.

Diagram 1: LED wires from Omni Board to Brain Jr.

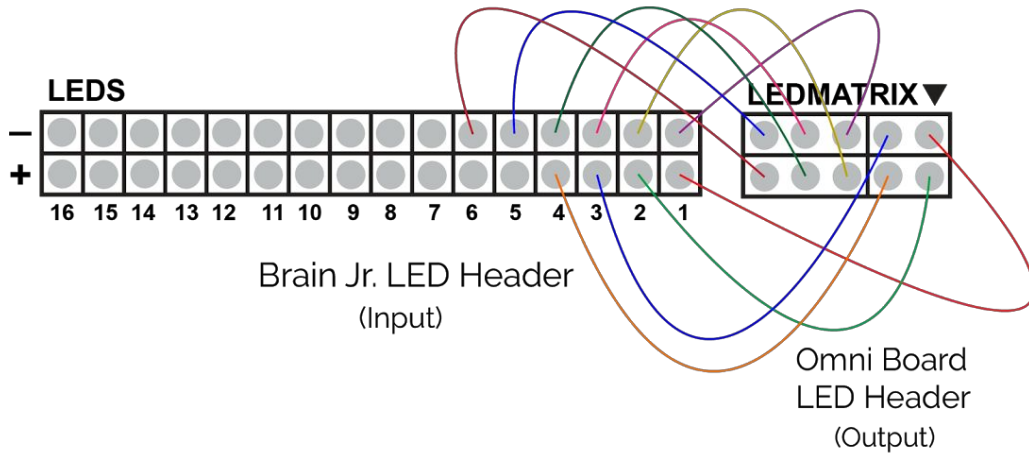
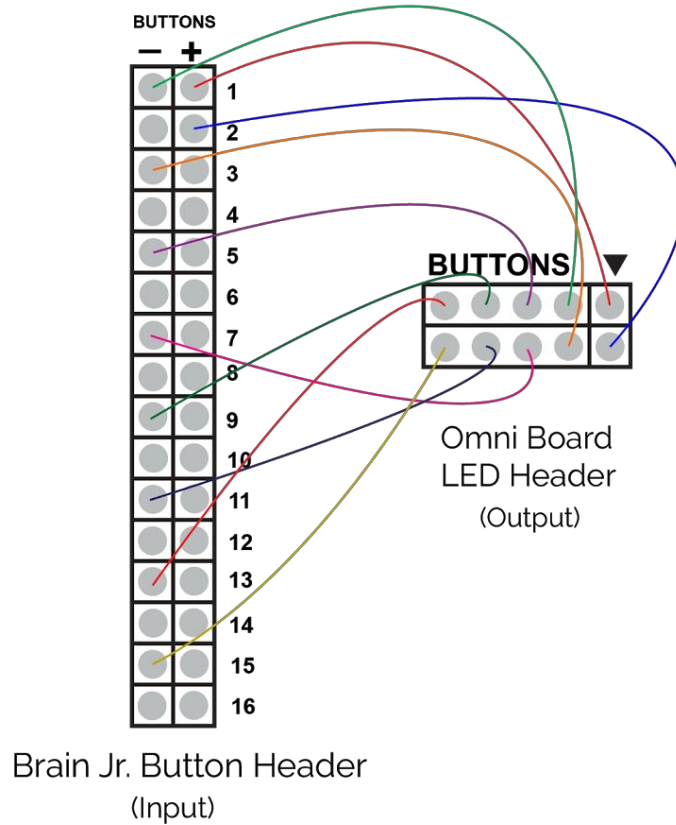
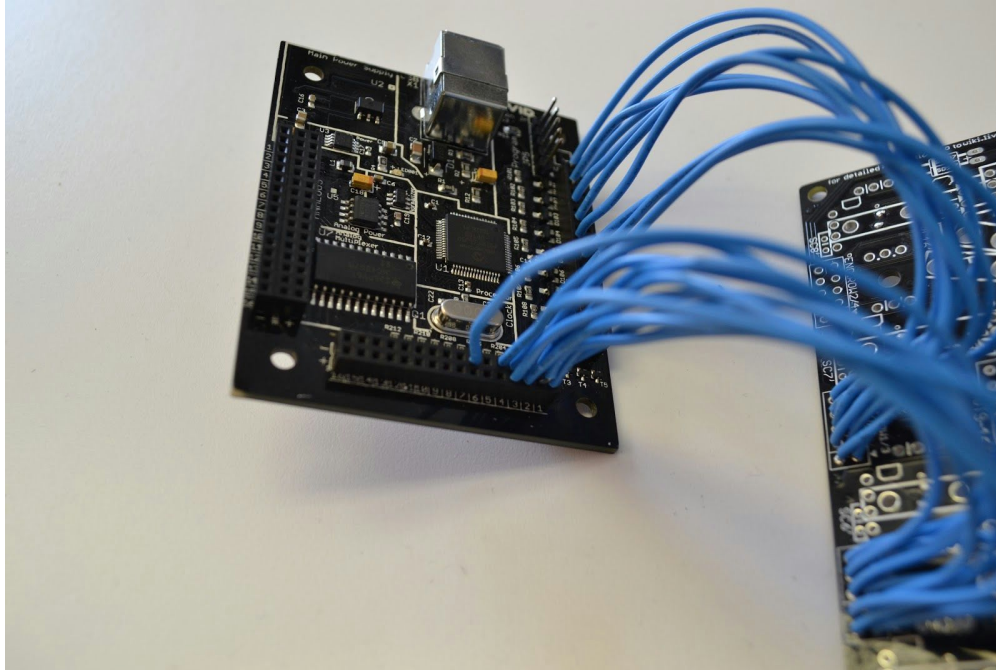


Diagram 2: Button wires from Omni Board to Brain Jr.





6) Test your work: Now that everything has been soldered, check that the Brain Jr. is functioning properly with Brain V2/Jr Configure.

- [Brain Configure](#) is a software that allows you to monitor the inputs from the Brain Jr. visually on your computer. It also allows you to customize the MIDI messages being sent to the computer from the Brain Jr. if needed for your workflow.
- Download Brain Configure here - [Mac](#) / [PC](#)
- Plug in the Brain Jr. to your computer via USB cable
- Open Brain V2/Jr Configure. In the dropdown above 'MIDI port', Brain Jr Controls should be selected.

Brain V2 Configure

BUTTONS							LEDS				ANALOGS							SETTINGS		
ID	MIDI	type	btn as toggle	enc mode	enc flip	LED group# size	ID	MIDI	type	group size	group style	ID	MIDI	CC mode	note	type	enable	flip	LED group# size	
0	1	note	no	no	cc	no	0(0)	1	note	1	none	1	2	cc	65	pot	yes	no	-	
1	2	note	no	no	cc	no	1	127	cc	1	none	2	3	cc	66	pot	yes	no	-	
2	3	note	no	no	cc	no	2	127	cc	1	none	3	4	cc	67	pot	yes	no	-	
3	4	note	no	no	cc	no	3	127	cc	1	none	4	5	cc	68	pot	yes	no	-	
4	5	note	no	no	cc	no	4(4)	5	note	1	none	5	6	cc	69	pot	yes	no	-	
5	6	note	no	no	cc	no	5	127	cc	1	none	6	7	cc	70	pot	yes	no	-	
6	7	note	no	no	cc	no	6	127	cc	1	none	7	8	cc	71	pot	yes	no	-	
7	8	note	no	no	cc	no	7(1)	2	note	1	none	8	9	cc	72	pot	yes	no	-	
8	9	note	no	no	cc	no	8	127	cc	1	none	9	10	cc	73	pot	yes	no	-	
9	10	note	no	no	cc	no	9	127	cc	1	none	10	11	cc	74	pot	yes	no	-	
10	11	note	no	no	cc	no	10	127	cc	1	none	11	12	cc	75	pot	yes	no	-	
11	12	note	no	no	cc	no	11(5)	6	note	1	none	12	13	cc	76	pot	yes	no	-	
12	13	note	no	no	cc	no	12	127	cc	1	none	13	14	cc	77	pot	yes	no	-	
13	14	note	no	no	cc	no	13	127	cc	1	none	14	15	cc	78	pot	yes	no	-	
14	15	note	no	no	cc	no	14(2)	3	note	1	none	15	16	cc	79	pot	yes	no	-	
15	16	note	no	no	cc	no	15	127	cc	1	none	16	17	cc	80	pot	yes	no	-	
16							16	127	cc	1	none	17								
17							17	127	cc	1	none	18								
18							18	127	cc	1	none	19								
19							19	127	cc	1	none	20								
20							20	127	cc	1	none	21								
21							21(3)	4	note	1	none	22								
22							22	127	cc	1	none	23								
23							23	127	cc	1	none	24								
24							24	127	cc	1	none									

SETTINGS

Brain Jr Controls

MIDI port: 1

CHANNELS

- 1 main
- 16 settings

CONTROL TYPE CHANNELS

- 1 buttons
- 2 encoders
- 1 LEDs
- 1 analog ccs
- 3 analog notes

OTHER

omni

button local control

get settings

reset to defaults

tools

SETTINGS FILES

save to file

open file

CONFIGURE

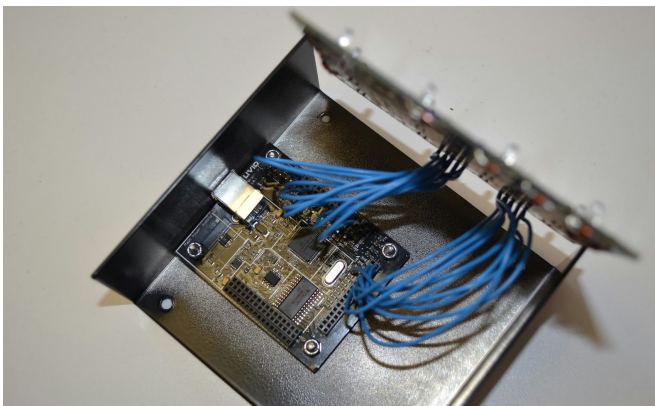
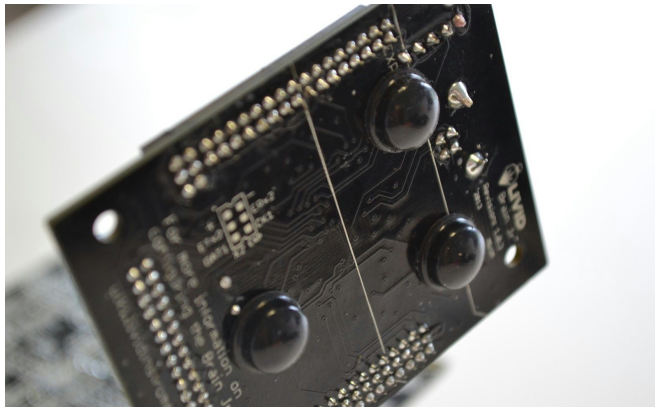
send config to Brain

save to Brain

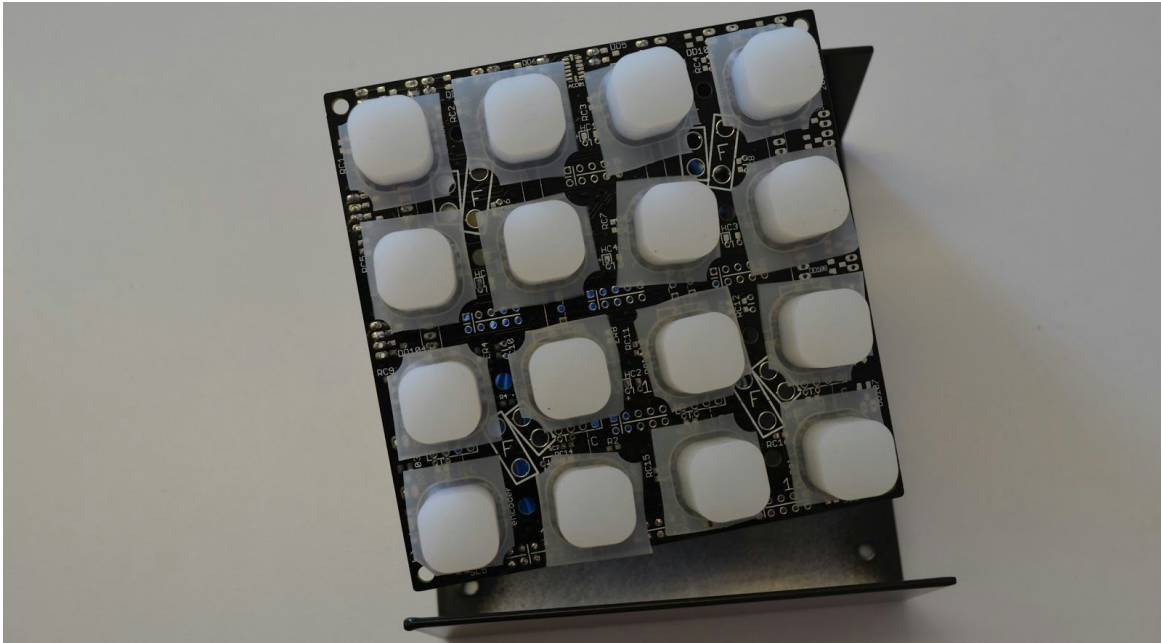
If an Analog control is set to one of the FSR or btn types, the control will send a note in addition to CC data. This column sets the note sent by the control. Most commonly, this is used for a drum pad.

- Now each LED on the Omni Board should be lit up.
- Take a single button and place it over the each LED and press down. Make sure the button is centered over the LED on the board. When you press down, the LED should turn off. This mimics what will happen when your button box is fully built, allowing you to test the functionality of the buttons and LEDs before you have built your Button Box. If every LED turns off, you are good to move onto step 7.
- If your LED's or buttons do not all trigger properly, reload the "Button_Box_1.0.lmd" file and double check your wiring, solder joints, components & connections.
 - NOTE: The Brain Jr. that shipped with your kit is already loaded with the editor settings, (.lmd file), that works for the Button Box. If you run into any issues, here's how to reload that file.
 - Download "[Button_Box_1.0.lmd](#)".
 - In Brain Configure, click "open file". Open "Button_Box_1.0.lmd" and then click "Save to Brain".

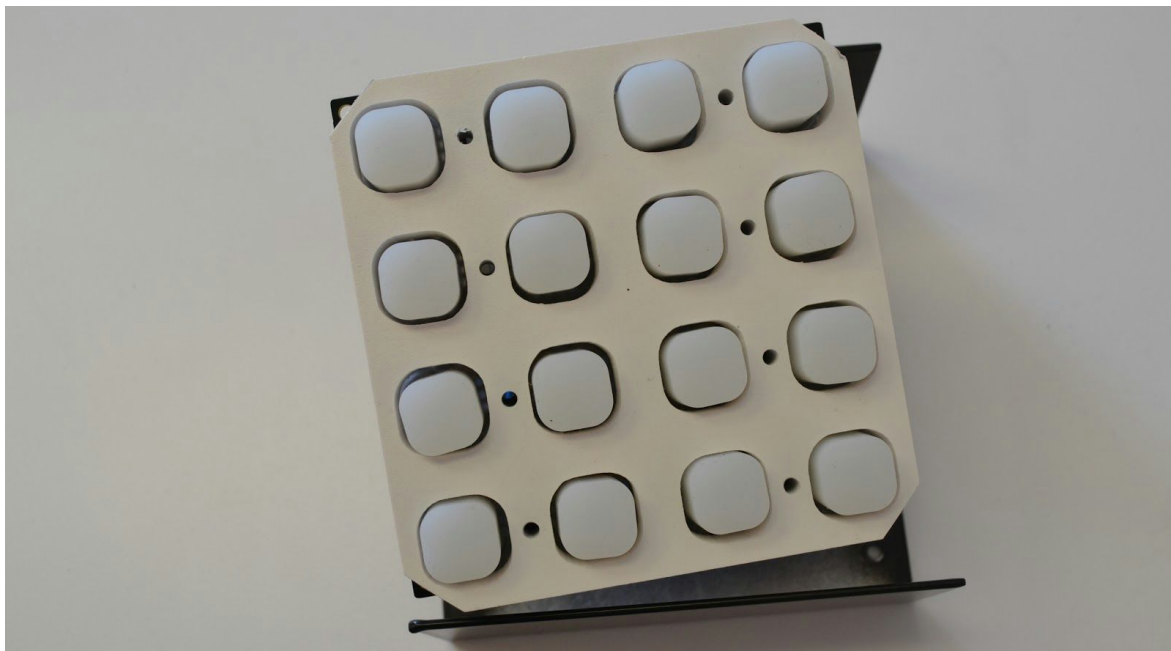
7) Mount the Brain Jr.: Place three of the adhesive rubber bumpers on the bottom of the Brain Jr. in a triangular shape to keep it from grounding out on the metal housing. Mount the Brain Jr. to the Button Box metal housing (Bottom) using the four 4-40x1/4" machine screws and four of the 4-40 nylon lock nuts. Do not over tighten the nuts as it can bend and damage the circuit board. Double check your wiring to the Brain Jr. in case any wires popped out.



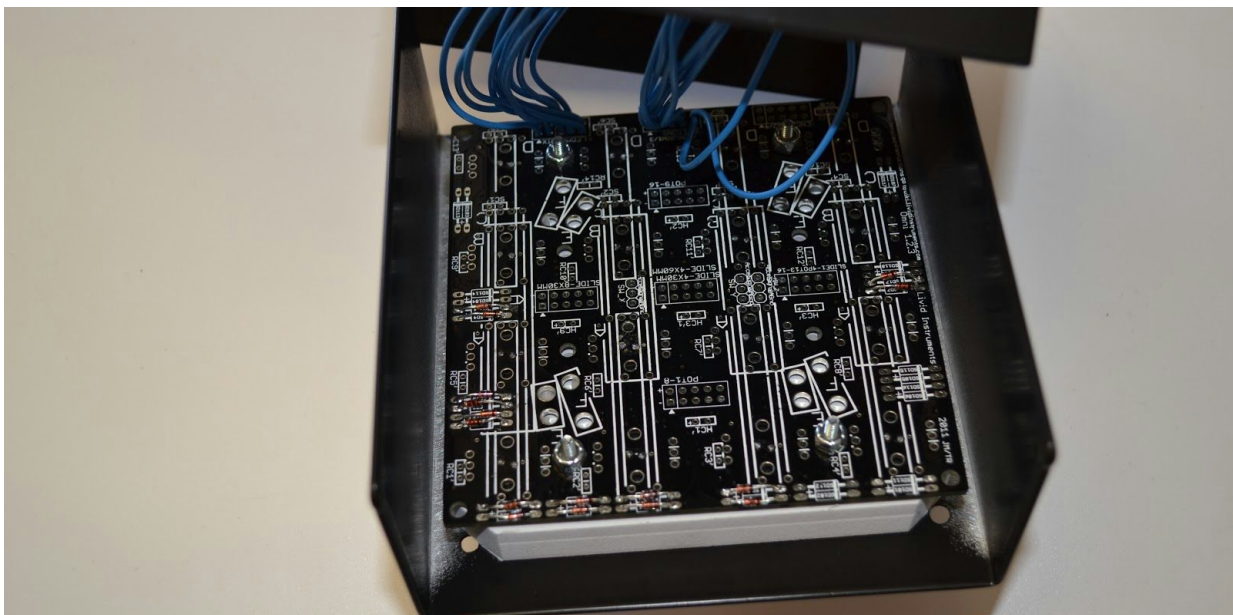
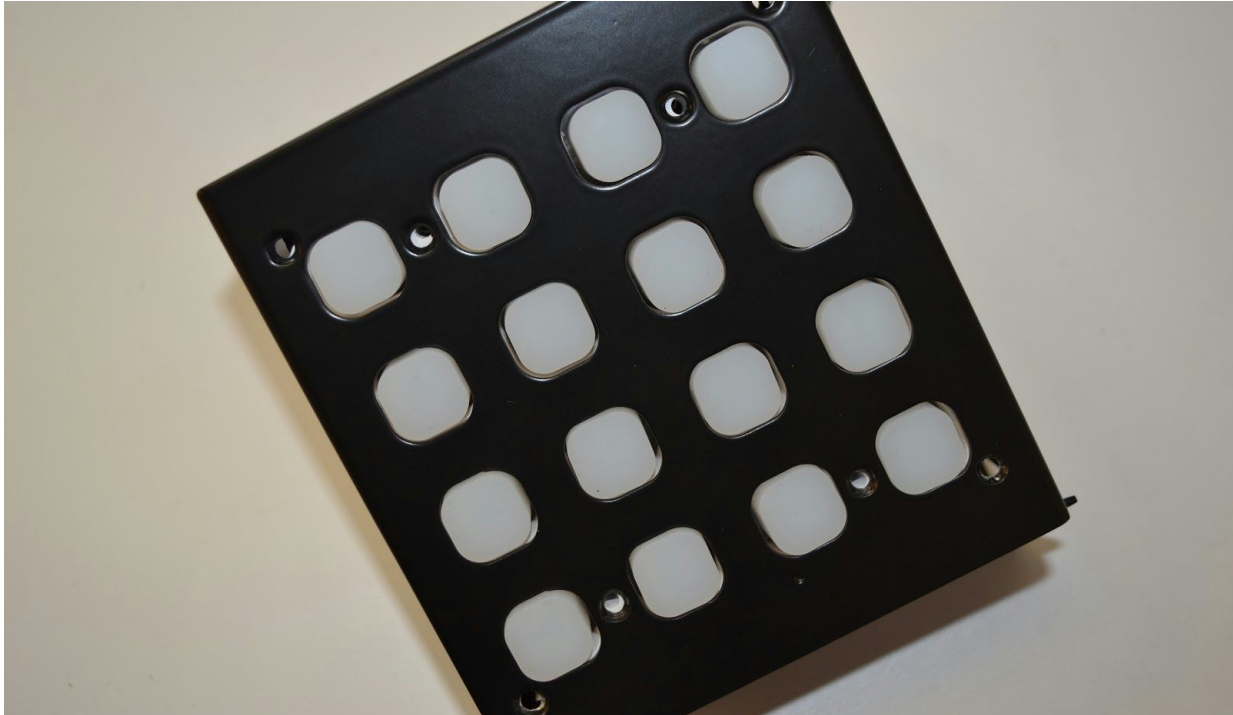
8) Place rubber pads: Arrange the 16 individual buttons on the Omni Board (one over each LED). Make sure the rubber isn't covering any of the bigger through holes on the Omni Board that will be used for screws.

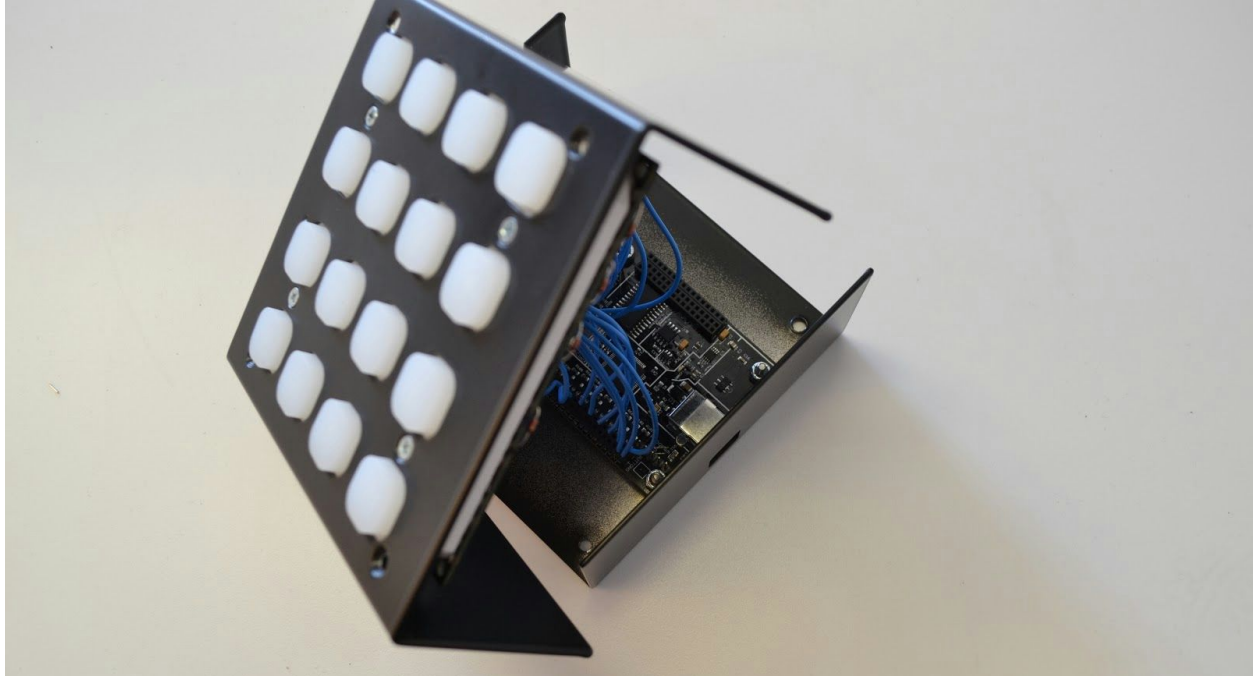


9) Secure rubber pads: Slide the 1/2" white plastic button spacer layer over the buttons making sure that the holes in the spacer layer are lined up with the screw holes on the Omni Board. Make sure all the buttons are lined up in the center of the button holes on the spacer layer.

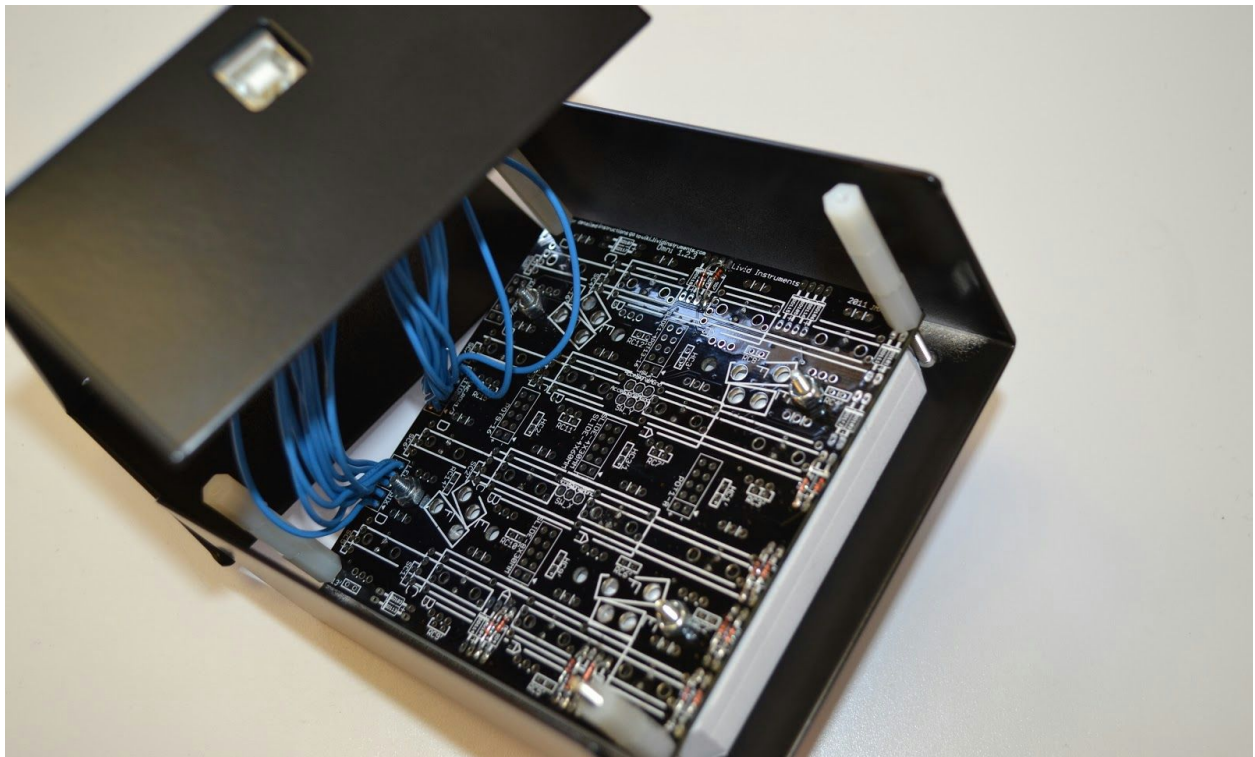


10) Mount the top housing to Omni Board: Verify that the Omni Board is sitting in the correct direction to mount inside the housing. The top of the Omni board should be on the same side of the box as the USB port. Slide the Button Box housing top over the Omni Board, buttons, and button spacer layer. Position the top housing so that it is centered over the buttons and lines up with the holes in the spacer layer. Secure the top housing to all three layers with four 4-40x1" machine screws (these go through the four center holes through the top of the housing). Secure the four screws on the bottom of the omni board with four of the 4-40 nylon lock nuts. Once again do not over tighten. Doing so will cause the buttons to have too much pressure which can cause them to phantom trigger.



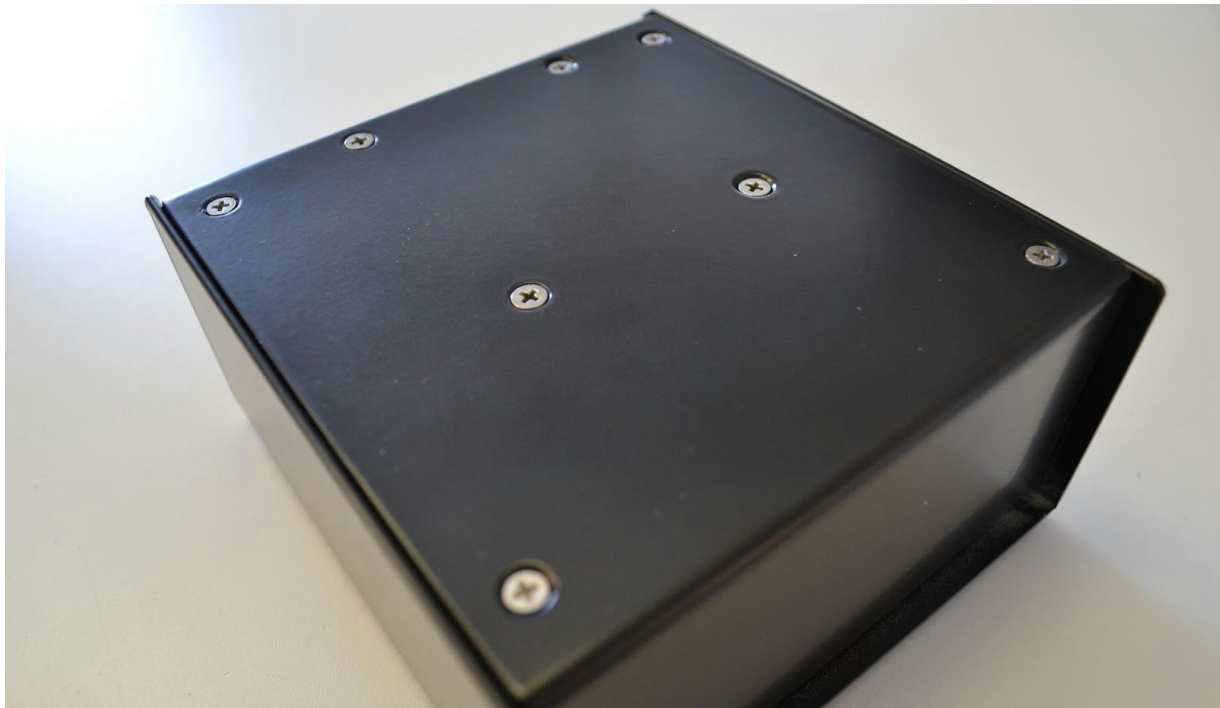
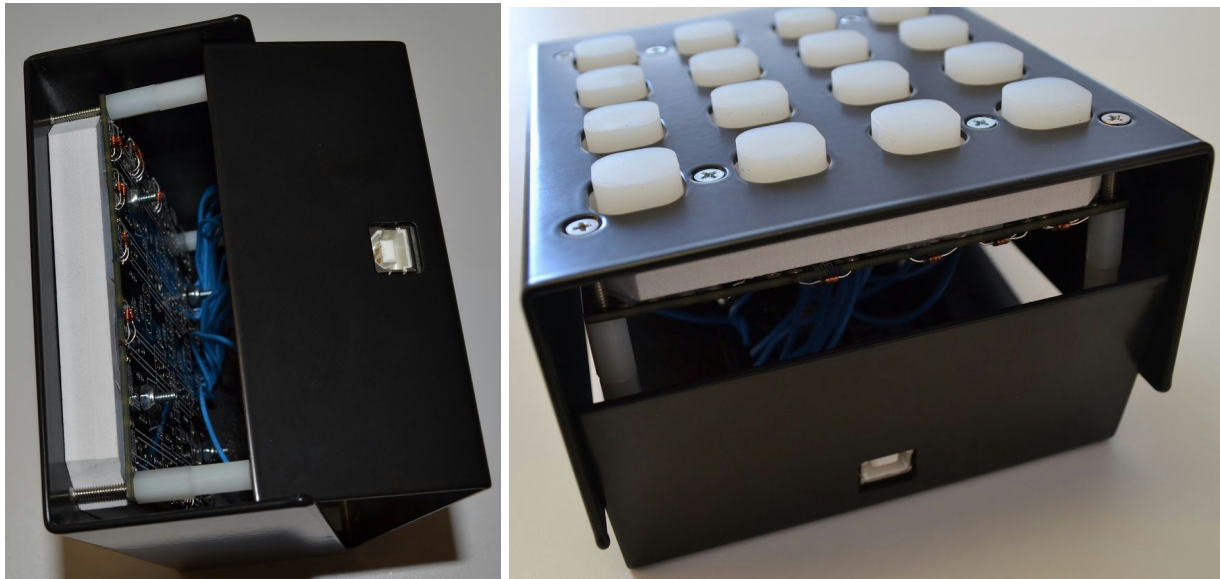


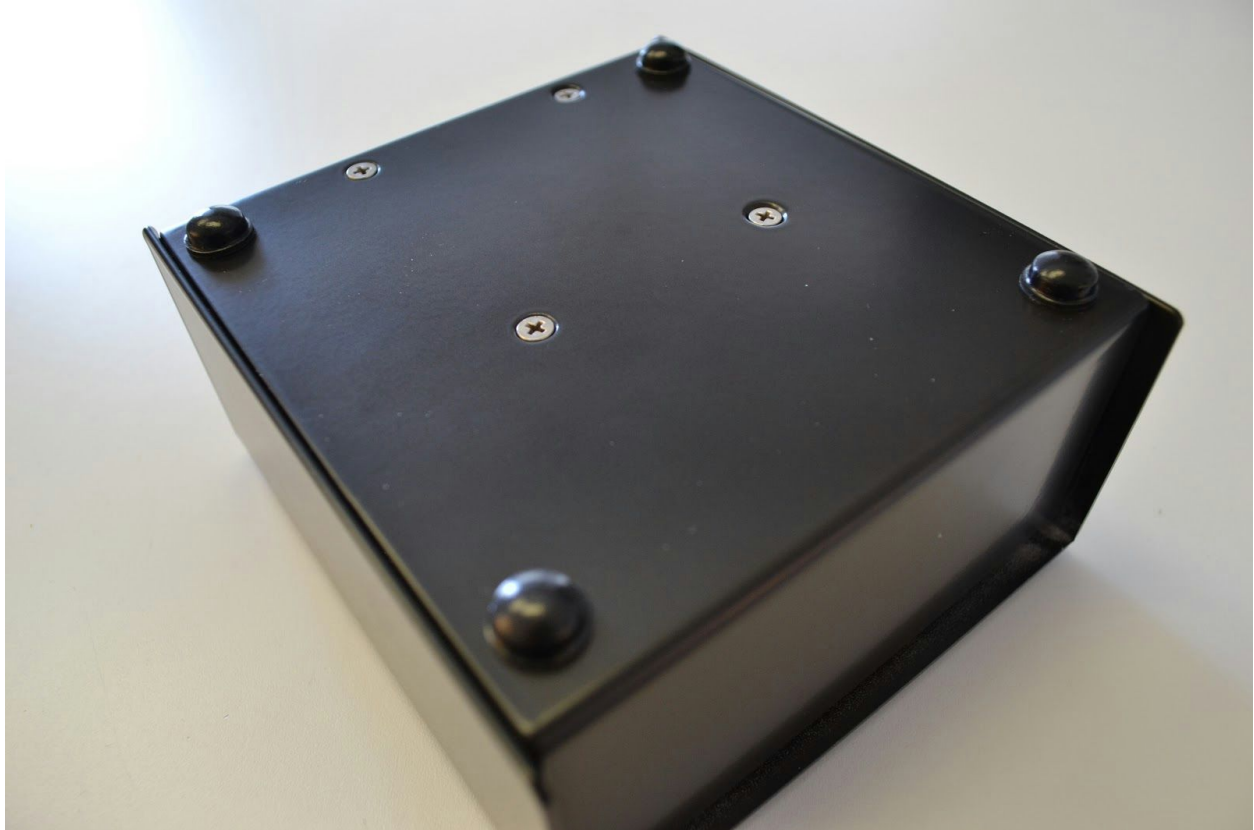
11) Prepare for final assembly: Take the four 4-40x1 6/8" machine screws and run them through the four holes on the outside of the Button Box metal housing (Top) and through the Omni Board. Thread a 4-40x1/2" nylon hex spacers over each of the 4-40x1 6/8" machine screws. Repeat this step 2 more times so that each screw has 3 hex spacers threaded on them.



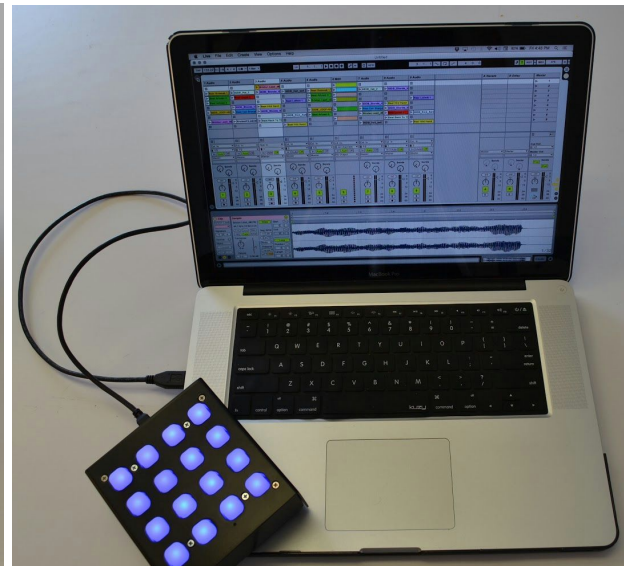
12) Check your work: Verify all the wire leads from Omni Board to Brain Jr. are still attached and everything looks secure.

13) Final Assembly: Fit the two parts (top and bottom) of the housings in place making sure that the top of the Omni Board is aligned correctly with the USB jack. Take the four remaining 4-40x1/4" machine screws and thread them through the outside holes on the Button Box metal housing (Bottom). The remaining adhesive rubber bumpers now can be placed on the bottom of the housing to protect the bottom finish of the housing.





14) Plug and Play!



Software Resources:

Within the "Project Resources - Button Box.zip" file is a "Software Resources" folder. Here you will find free software templates to get you started.

Explanation of settings & customization:

The .lmd file that's loaded onto the Brain Jr.'s Button Box is programmed to get you up and running right away with the software resources provided. If you are looking for further customization to get the Button Box to work in specific ways for your particular software & hardware set up, you can use the [Brain Configure](#) software to edit the functionality. Please note that when you change the settings on the Brain Jr. it will no longer work with the remote scripts or templates provided. Check out the [forums](#) to connect with builders and users and see what they have done for inspiration, tips, & tricks.