

Instructions for Modifying an Xbox Rock Band 2 Drum Controller for use with the MIDI Rocker LX

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These instructions show how to take a standard Harmonix Rock Band 2 wireless drum controller for the Xbox 360 and use it with a MIDI Rocker LX from Byte Arts. This modification allows you use an electronic drum set (or any instrument with a MIDI output) to play Rock Band 2 (or any compatible game) on the Xbox 360.

The electrical modifications required are not that difficult – most of the work is doing the mechanical modifications if you want to separate the central drum controller module from the rest of the drums.

Decide to Cut or Not

Before you proceed, you need to decide whether you want to leave the Xbox drum controller intact, or cut it down to retain just the central “module”. If you cut it down, you will no longer be able to use the drum controller by itself to play the game, but it will be much more compact. The final result will look like this:



Completed Module

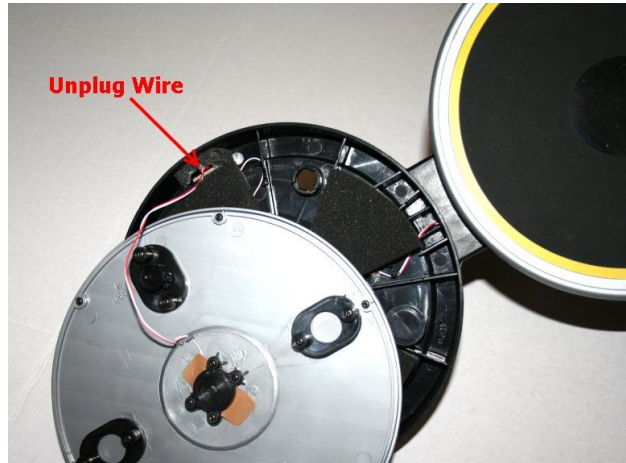
If you want to keep the drums intact, then skip over these first steps and go to Make the Electrical Connections on page 8. Instead of cutting the wires, you should just “T” into the specified connections, leaving the existing connections intact. If you choose this option, the DO NOT connect the power wire from the Interface Cable.

Cutting Down the Drums

Remove the Drum Pads

The first step is to remove the 4 drum pads. Remove a pad by pulling up on it until each of the four rubber “feet” come free. This can take quite a bit of force. Try to pull one feet free at a time. There is a wire from the center of the pad to the rest of drum controller – you can cut this wire, or if you want to keep the pad as a spare, carefully detach the end of the wire where it plugs into the drums (you may

have to pull away the foam from around the connector):



Removing a drum pad

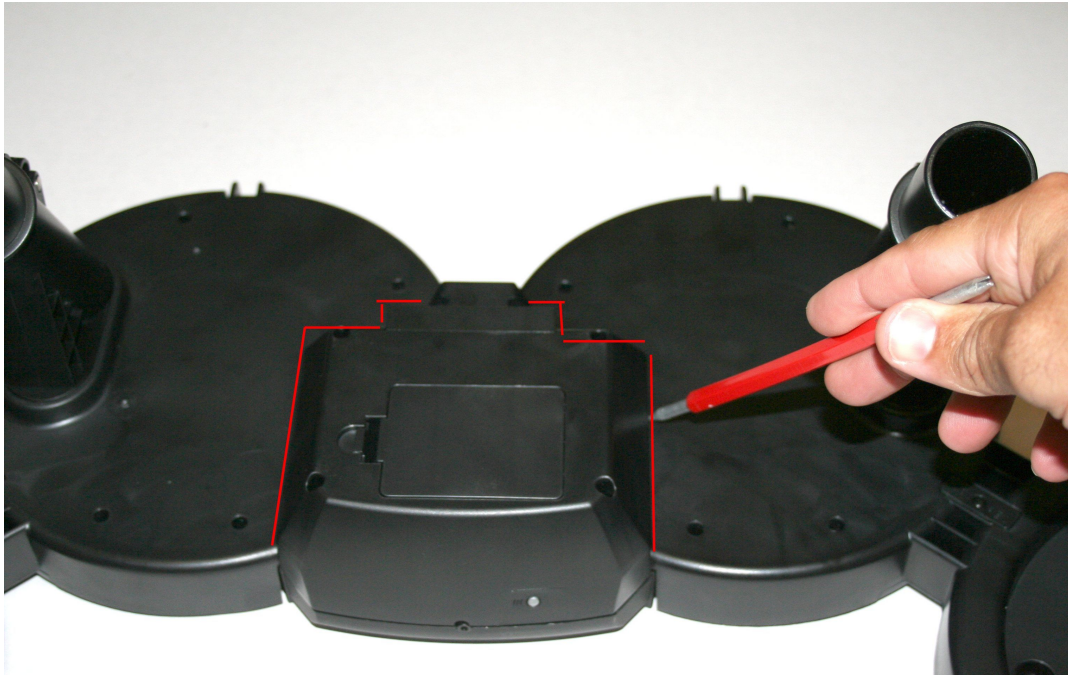
Once you've removed all the pads, the drums will look like this:



All the drum pads removed

Mark the Outline of the Central Module

Next you need to scribe or mark a line with sharp object or a pencil where the bottom of the central module (the part with the battery box) meets the rest of the drums. You will be cutting the plastic along this line later. Mark the area as shown here:



Marking the outline of the battery box

Separate Center Drum Plate from Rest of Drums

Next you need to separate the part of the drum assembly which contains the center two drum pads and the central module from the rest of the drums. First you have to remove the eight screws which are underneath the foam pads as shown below (the location of the screws is circled in red).

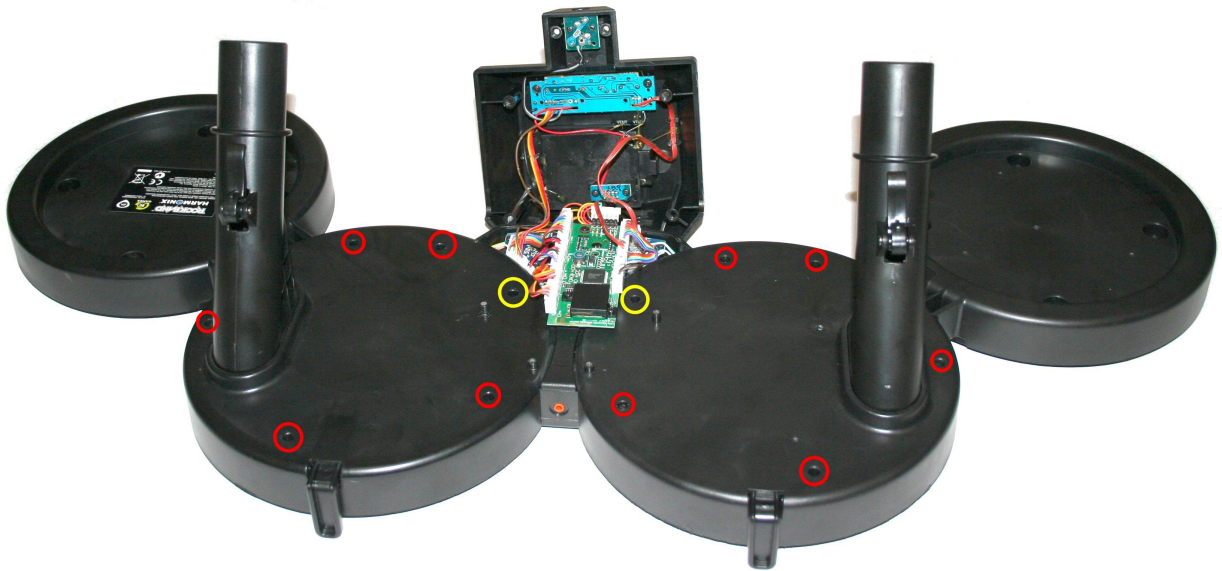


Removing screws under the foam

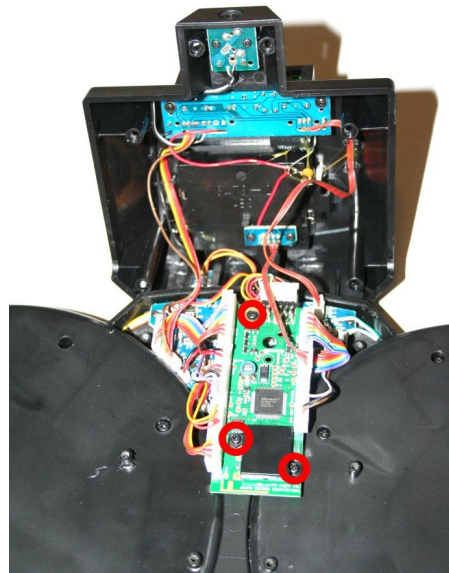
You can peel back the foam to find the screws, or just feel around with the tip of the screwdriver to find the screw and simply remove the screw without peeling back the foam.

Next flip the drums over and remove all the screws from the area of the two center drum pads, including the 6 screws around the battery box on the central module. Basically, you want to remove every single screw you can see (shown circled in red in the photo below). You should then be able to flip up the battery box (be careful, there are still wires attached which you don't want to break). You

will find some more screws that were hidden underneath that you also need to remove (circled in yellow below).



Next you need to remove the three screws which hold the small green circuit board in place, shown circled in red below:



When you remove the two screws that hold the little black cover in place, the cover will be loose, so be sure to not lose it. Note that the two screws which held the cover on are smaller than the other screw – you should keep track of which screw goes where for later. The green board is now loose from the drum assembly, but still attached to the other circuit boards with wires, so be careful not to yank on the wires or pull any of them loose.

You can now carefully flip the drums over and get the central drum assembly to separate from the rest of the drums as shown below – if it doesn't come loose, double-check that you've removed all the necessary screws. There are still some wires holding the two assemblies together, so they won't come apart yet.



You can now look around underneath the central drum assembly and find the wires which go to the drum pads and cut them, as shown here:



You should now be able to separate the two assemblies, being careful to not stretch or yank any of the wires which are still attached to the circuit boards on the central module:

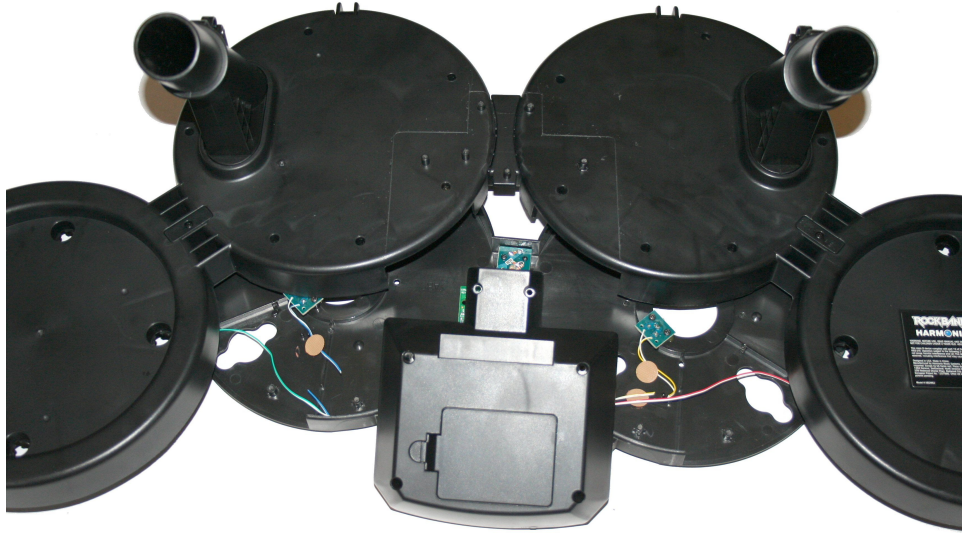


Illustration 1: Success! The two assemblies taken apart.

Trimming the Top Cover

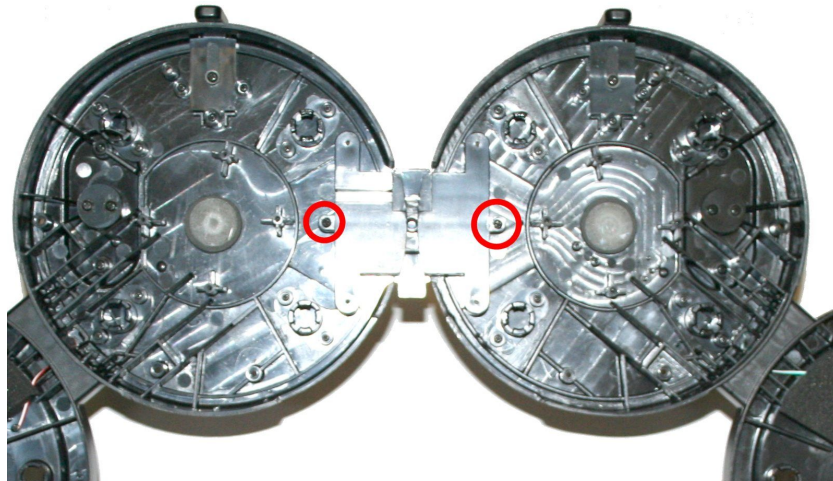
You next want to trim down the center module assembly by cutting away the circular “drum plates” from the center module top cover (the part with the Xbox controls). You should put a few screws in to hold the battery compartment in place while you do this to hold it in place and lessen the chance of breaking a wire. Note that the wires which used to go out to the drum pads will be dangling – don't cut them yet, as you will need to attach new wires to them later. The top covers should be cut down to remove as much of the drum plates as possible, so it ends up looking like this:



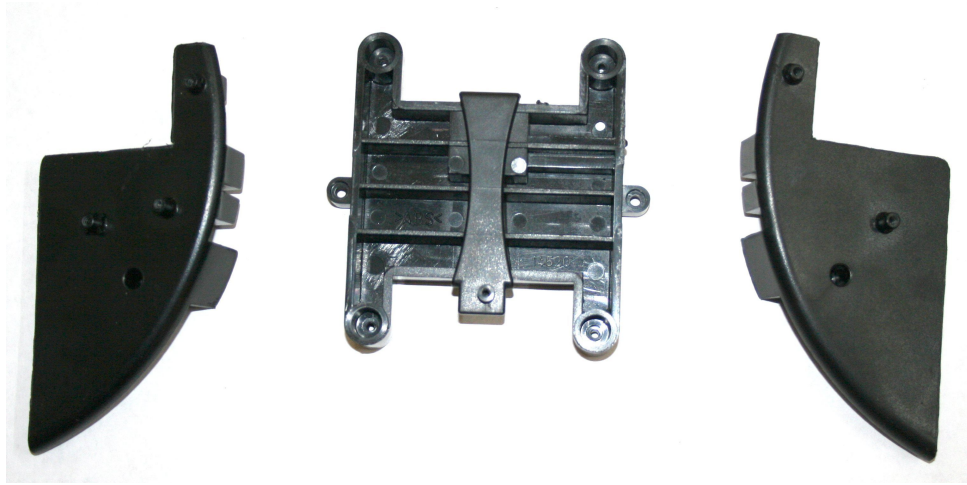
NOTE: There is an alternate procedure which entails removing the circuit board from underneath the controls and then completely trimming away the drum plates. I will put pictures and instructions describing this in the next revision.

Trimming the Bottom Covers

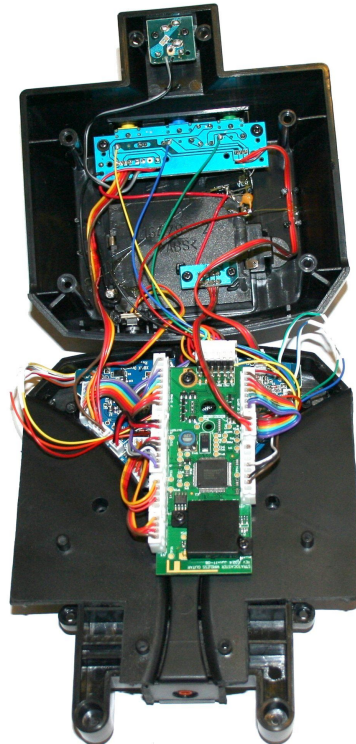
You'll next need to take the bottom drum cover assembly apart by removing the two screws in the central bracket which hold the left and right halves of the assembly together:



Keep the center bracket (you'll need it later), and then cut each of the bottom covers along the lines you marked earlier. A hacksaw or dremel tool works well. When you are done, you'll be left with something like this:



You now install the center bracket and then slide the two bottom cover pieces in place so the whole assembly looks like the picture below. Note that you will have to lift up the green circuit board slightly to slide the bracket and cover pieces into position. Install the 3 screws that hold the green circuit board in place – be careful to orient the little black cover correctly – it only goes on one way.



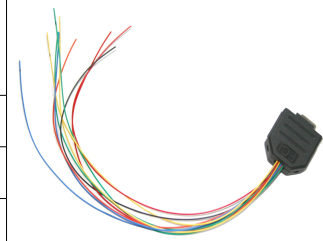
Make the Electrical Connections

Interface Cable Pinout

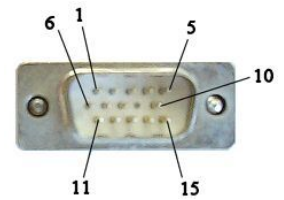
The supplied LX/Xbox Interface Cable has 10 wires – 4 drum pad wires, 1 kick pedal, 3 cymbals, 1 ground and 1 power wire. They are color-coded, but some wires are the same color but with a black

mark near the end to distinguish them. Use this chart and pin diagram to identify the wires:

Wire Color	Pin Number	Usage
Red	1	Red drum
Yellow	2	Yellow drum
Blue	3	Blue drum
Green	4	Green drum
Orange	5	Kick pedal
Blue with a black mark on end	6	Blue cymbal
Yellow with black mark on end	7	Yellow cymbal
Green with black mark on end	8	Green cymbal
Red with a black mark on end	14	Power (5 Volts) from LX
Black	15	Ground



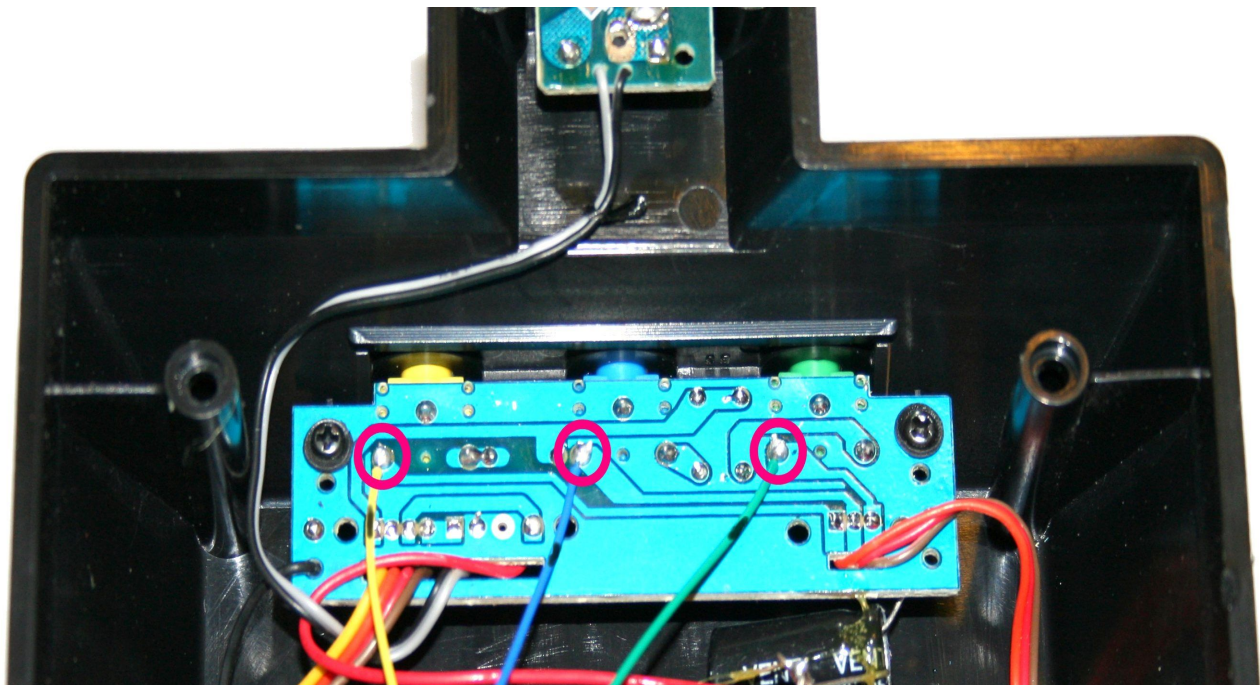
Interface Cable



Connector Pinout

Connecting the Cymbal Wires

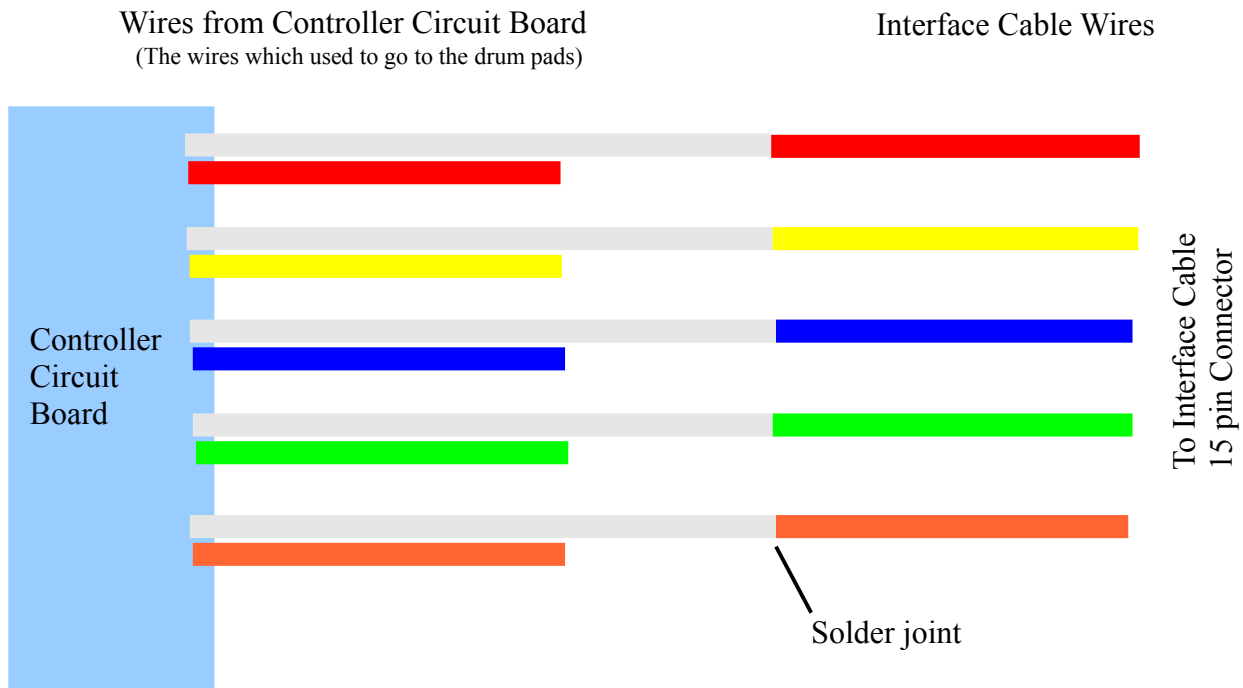
The cymbal wires (the yellow, blue and green wires with the black mark on them) are soldered to the cymbal connector pins on the board inside the Xbox controller as shown here:



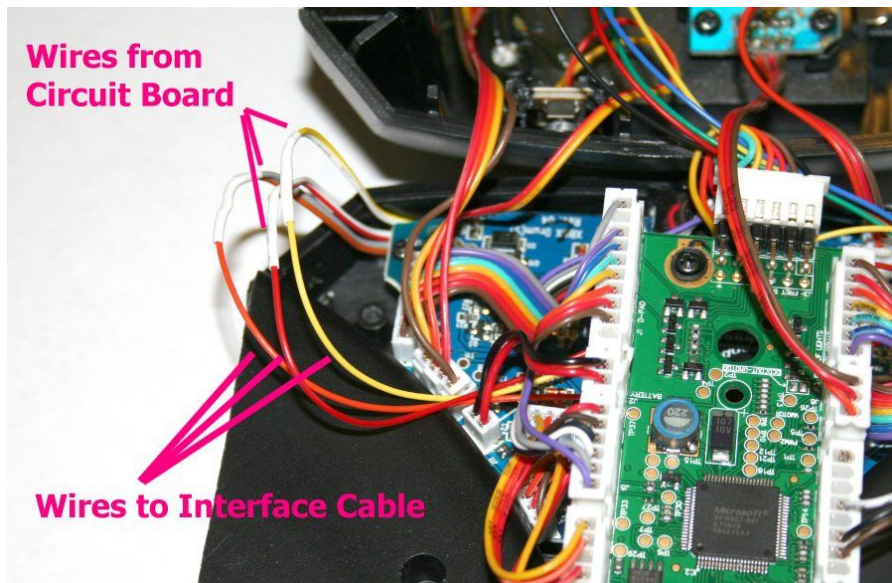
Be careful to solder each wire to just the connector pin on the back of the board and not bridge the solder to adjacent pins or pads on the board.

Connecting the Drum Wires

There should still be 5 sets of wires coming off the drum controller circuit board (the wires that used to go to the drum pads, and the wires which go to the kick pedal jack). Each set of wires consists of a pair of wires – a colored wire and a white, (or a light gray wire). The drum wires from the interface cable connect to the WHITE wire in each corresponding pair. For example, if you find the wire pair with the green/white wires, you will connect the green wire from the interface cable to the white wire which is paired with the green wire going to the circuit board. This diagram shows all the connections you will need to make:

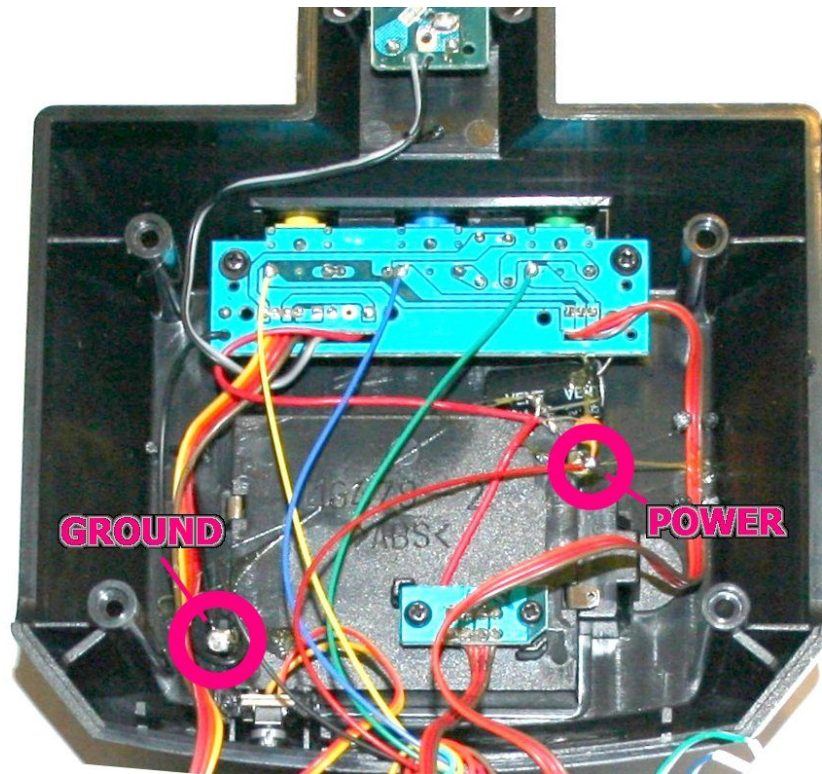


Connect the wires by carefully splitting each pair of wires apart, then solder the white wire from each pair to the corresponding colored wire of the interface cable. Be sure to cut the unused color wire off short and use shrink wrap or electrical tape to keep the connections from shorting. Here's what it should look like when you are done (this photo shows the yellow and red drum wires, and the orange kick pedal wire):



Connecting Power and Ground

Connect the black wire from the Interface Cable to the negative terminal on the battery box. If you would like to use power from the MIDI Rocker LX instead of using batteries in the controller, then connect the red wire with the black mark to the positive terminal.



WARNING: If you connect the power wire to the battery box, then you **MUST NOT** use batteries in the controller or there is a risk of them heating up and bursting. If you do not connect the red power wire from the Interface Cable, then cut it off and make sure it can not be shorted.

Final Assembly

Route the interface cable wires out one side of the module and make a small notch in the cover for the wires to exit. You may want to use some hot-melt glue or other means to hold the wires in place so they can't get accidentally pulled loose.

Next carefully put the two halves of the module together. Watch out that no wires get pinched when putting them together. Carefully insert screws into the 6 holes on the bottom of the battery cover assembly and tighten.

You can now connect the MIDI Rocker LX using the interface cable.

Using the MIDI Rocker LX with the Modified Controller

With the MIDI Rocker LX connected to the controller via the Interface Cable, and the USB on the MIDI Rocker connected to the Xbox 360, you can power up the Xbox controller by pressing and holding the Xbox button on the controller. The first time you use it, you may have to “pair” the controller with your Xbox by pressing the connection button “O)))” on the controller and on the Xbox.

Connect your drum kit to the MIDI IN on the LX and you are ready to play. See the MIDI Rocker LX User's Guide for more details.