

This guide was initially provided by the Discord user Rezrospect#4610 on 3/1/2020 and is reproduced here in its entirety. Please contact them if you have any questions.

NOTE: This guide was designed for Rock Band guitars, however the final section is an appendix that addresses the differences with Les Paul and World Tour guitars, specifically. These are not fully tested and may require further development. If you attempt this on one of those guitars please let us know in the Discord how you fare! Other guitars are not tested and may have additional requirements not listed here.

Warning: Your guitar will NO LONGER work on consoles. This mod uses a generic USB controller board and you will have to manually remap buttons in Clone Hero.

I. Intro

Do you have a guitar controller, but your dongle is missing? Do you still want to use it to play Clone Hero? Do you no longer care if it ever works on an actual console ever again? Then this is the guide for you! Let's get right to it.

--Note: If at any point you want to test your buttons, you can use Windows' "Set Up USB Game Controllers" and go to properties to check them as you go.

II. What You Will Need

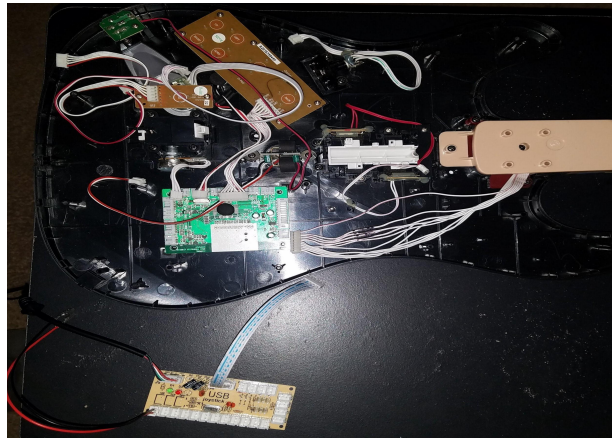
1. Purchase a USB Encoder board on eBay (you can buy them without the cables, but I **highly** suggest spending the extra money to make it easier). Should look like this:



Zero Delay Arcade USB
Encoder PC to Joystick
MAME 5Pin Sanwa
Drucktaster AC425

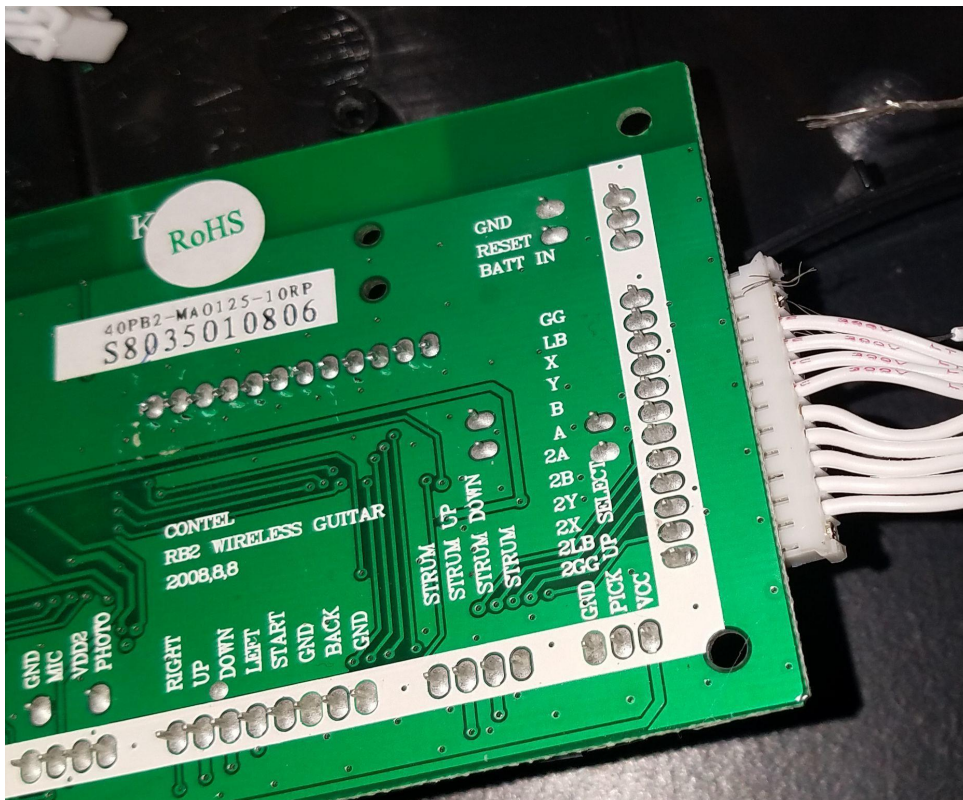
US \$4.80

2. Get some wire strippers, pliers, and your guitar. Open up the body. This mod can be done with any guitar. For the purpose of this guide, however, we will be focusing on the PS3 Rock Band guitar. The main reason for this is that they are the most common to be found without dongles and without a purpose in life :(



III. Main Board Pinout

Luckily for us, the wires in this guitar are labeled on the bottom of the board here:



The wires on the right are coming from the neck. They are our fret buttons. They are labeled as follows:

GG = Main Frets Ground Wire

LB = Orange

X = Blue

Y = Yellow

B = Red

A = Green

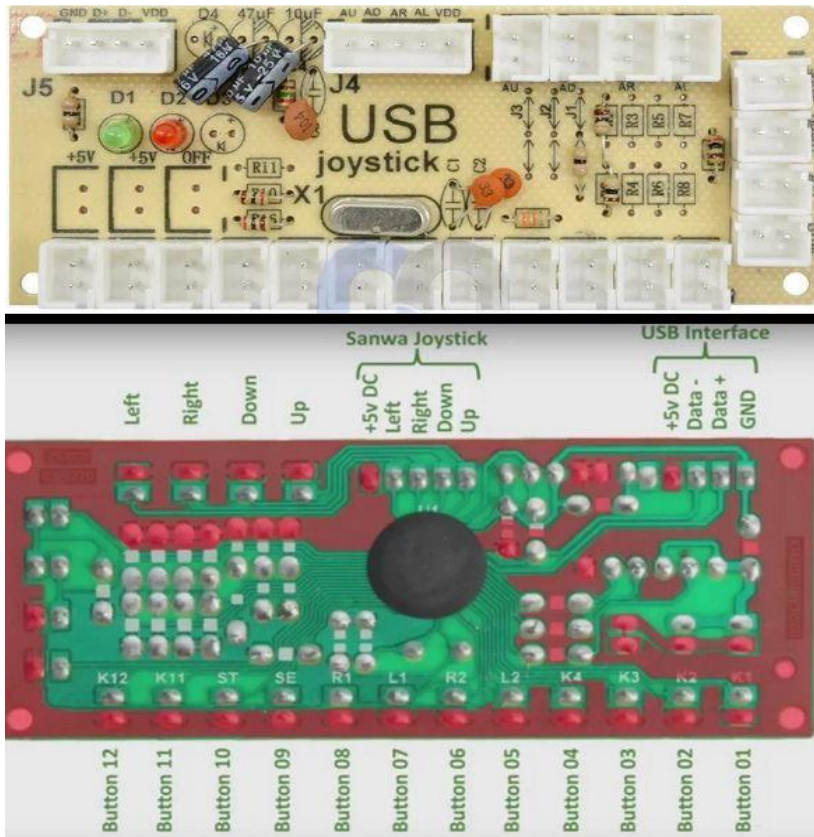
The next group is our small solo buttons further up the neck:

2A = Solo Green
2B = Solo Red
2Y = Solo Yellow
2X = Solo Blue
2LB = Solo Orange
2GG = Solo Frets Ground Wire

--Note: You can group main and solo wires to make both sets of buttons work, but this guide leaves solo buttons useless. You can group by color (GG+2GG, LB+2LB, etc.)--

IV. How to Properly Wire Buttons

1. Take a look at our eBay board. These boards *usually* come with reverse wiring, so the **RED** wire of our red/black duo is the **ground wire**.

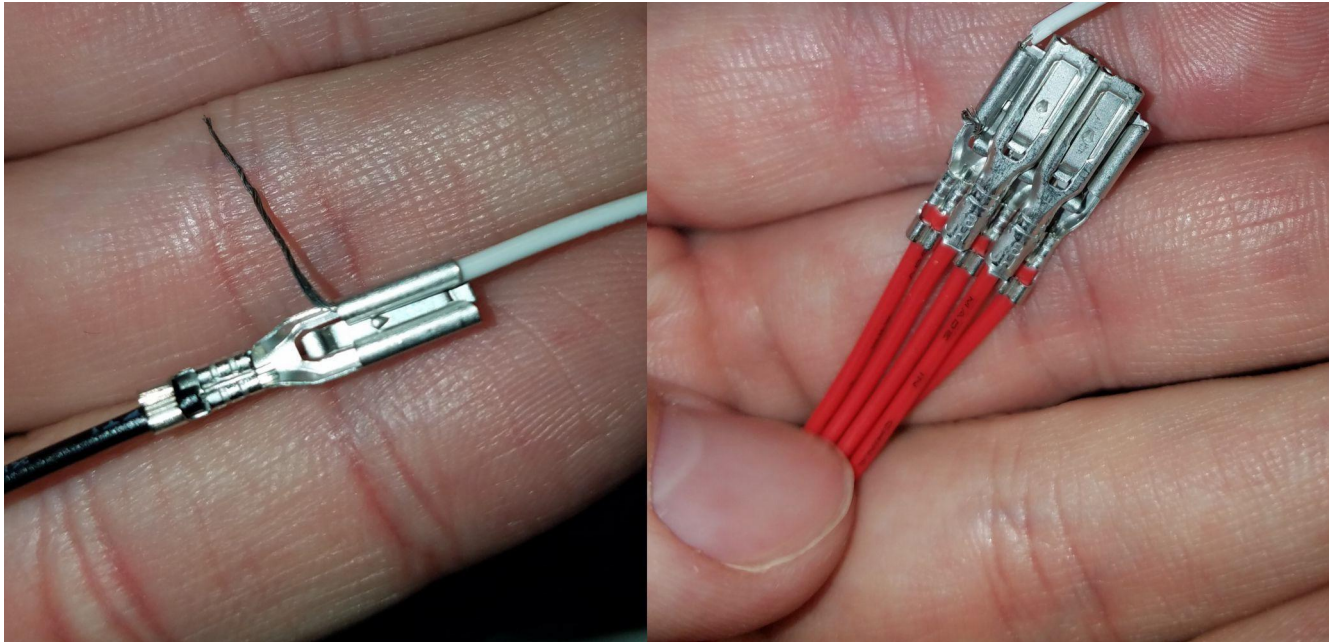


--Note: The bottom part of that image is when you flip the board over. Please take note of the orientation so you don't get mixed up regarding which buttons are which.--

2. Go ahead and plug in some of those two pin cables to the board. For the frets, we will be using the first five buttons (which are the first five slots, Button 1-5). Be sure to reference the original board from the guitar when removing wires so you know for sure which ones you're connecting.

3. Let's go ahead and start with the first couple wires on top shown in the image of the original board above (the one with my crappy pliers removal job). According to our labels, the **very top** wire is the ground wire for the main frets. Go ahead and daisy chain all of the **red ground wires** from our two pin connectors for the first five buttons. You will then connect the very top wire (remember, the ground?) to this cluster of red wires.

Here's a picture of how I connected my frets' wires to the ones plugged into the board:



I was able to figure out a way to clip the ground wires together snugly to avoid a bunch of tape holding the group together. Try it out.

4. With the ground wires out of the way, work your way down the labeled wires one at a time to keep your head straight. The wire just beneath that top ground is Orange, so you will want to connect it to the **black** wire from button **5**. Then go down the list connecting the wires to the respective buttons (e.g. Blue to button 4, Yellow to button 3, etc.). **IF** you want the solo buttons to work, you can double each one up with its main fret buddy and tie the wires together. I did not test this, but it should make it so if either button is pushed, it will activate the corresponding button on the board.

--Note: On Guitar Hero guitars, the Yellow button and Blue button are reversed, so Yellow is button 4 and Blue is button 3. This does not matter for this tutorial since we will be remapping the buttons in Clone Hero anyway.--

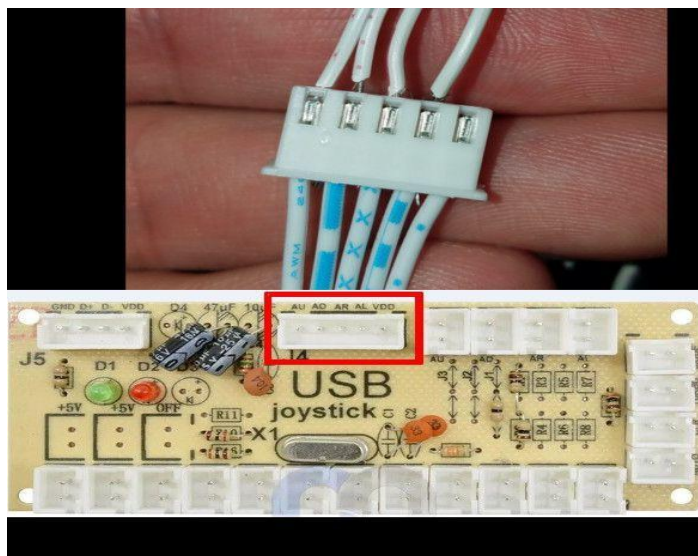
5. Each time you connect a wire, be sure to wrap it with electric tape to avoid the metal bits touching one another and shorting your buttons. It is also wise to organize your job with some classic *cable management*. Awesome, now the frets are done! Let's keep going.

6. The Start and Back/Select buttons work the same way as the fret buttons, but the D-Pad is a little different. The Start and Back/Select buttons each have their own ground wire, but the D-Pad does *not* have a ground wire and it will function properly without one. The D-Pad will be connecting to the ribbon of five wires that came with your board.



The labeling here is a little messed up, but only by how it's printed. The order is still correct. The GG wire is the ground for the BACK wire, and the GND wire is the ground for the START wire. I'm sure you can guess which buttons those go to. The D-Pad buttons are labeled just fine. Official guitars are mapped like this:

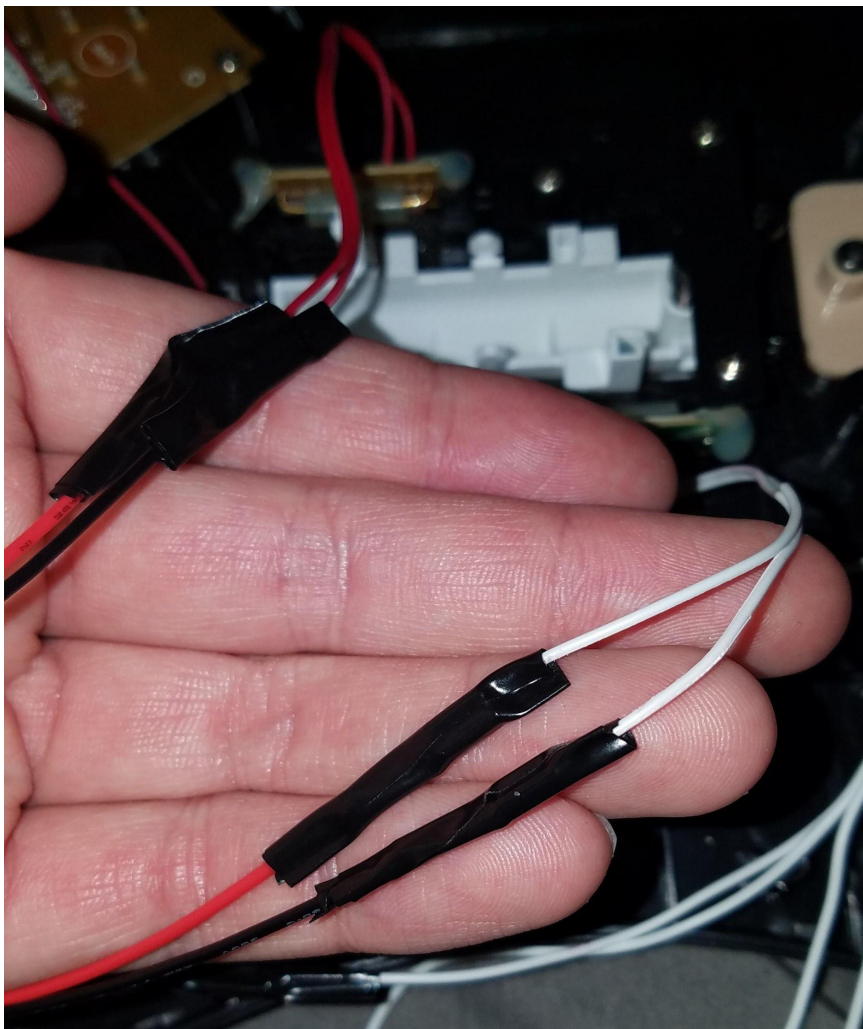
Back/Select = Button 7
 Start = Button 8



See this spot? That's for the D-Pad! We're making it a joystick. Here's my wiring job. As you may notice, I just threaded the wires right into the harness instead of cutting and wrapping them. You can do that if you wish, otherwise just cut and wrap like normal.

You can see that our eBay board has the directions conveniently labeled (AU = up, AD = down, AR = right, AL = left, VDD = unused). **DOUBLE CHECK** your D-Pad wires! They are mixed up and do not match 1 to 1!

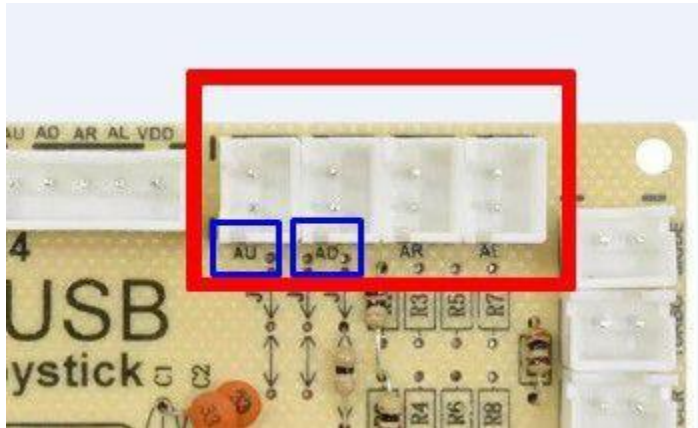
7. The Strum Bar can get a little confusing, but in truth it's simple. During my test, it did not matter which of the two wires was attached to the ground wire. As long as one was attached to black and one attached to red, it just works. They each get their own two pin:



The **red** wires coming from the strum bar are **up**, and the **white** wires are **down**. Watch how the strum bar pillars touch the magnet points on the buttons as you strum and you'll understand why. You can also see my horrible tape job. Where do we plug these into our board? Well, right beside the D-Pad group you will see a set of two pin slots. Each of these is its very own direction. We will be plugging these into their respective slots:

AU = Upstrum
AD = Downstrum

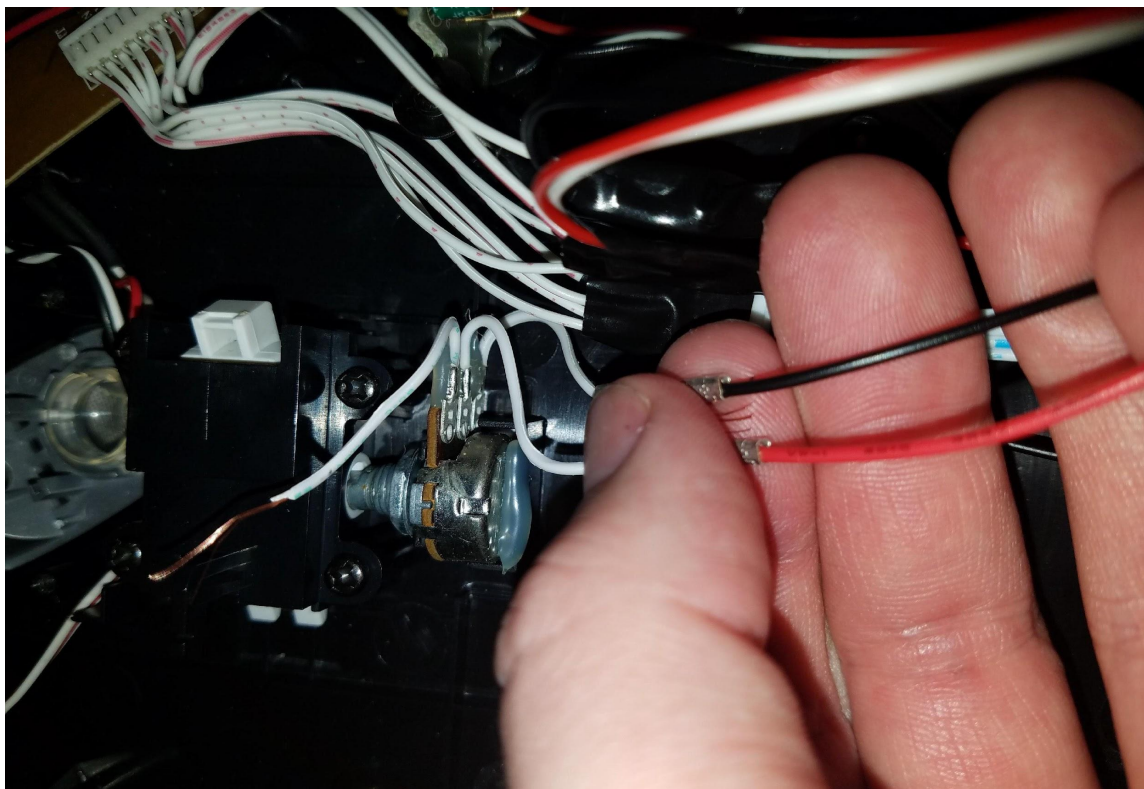
Here's a picture for you.



Voila! The basics are complete! If you want your whammy bar and tilt sensor to work, read on. Otherwise, you're welcome to give up now. (But you can't do that, can you?)

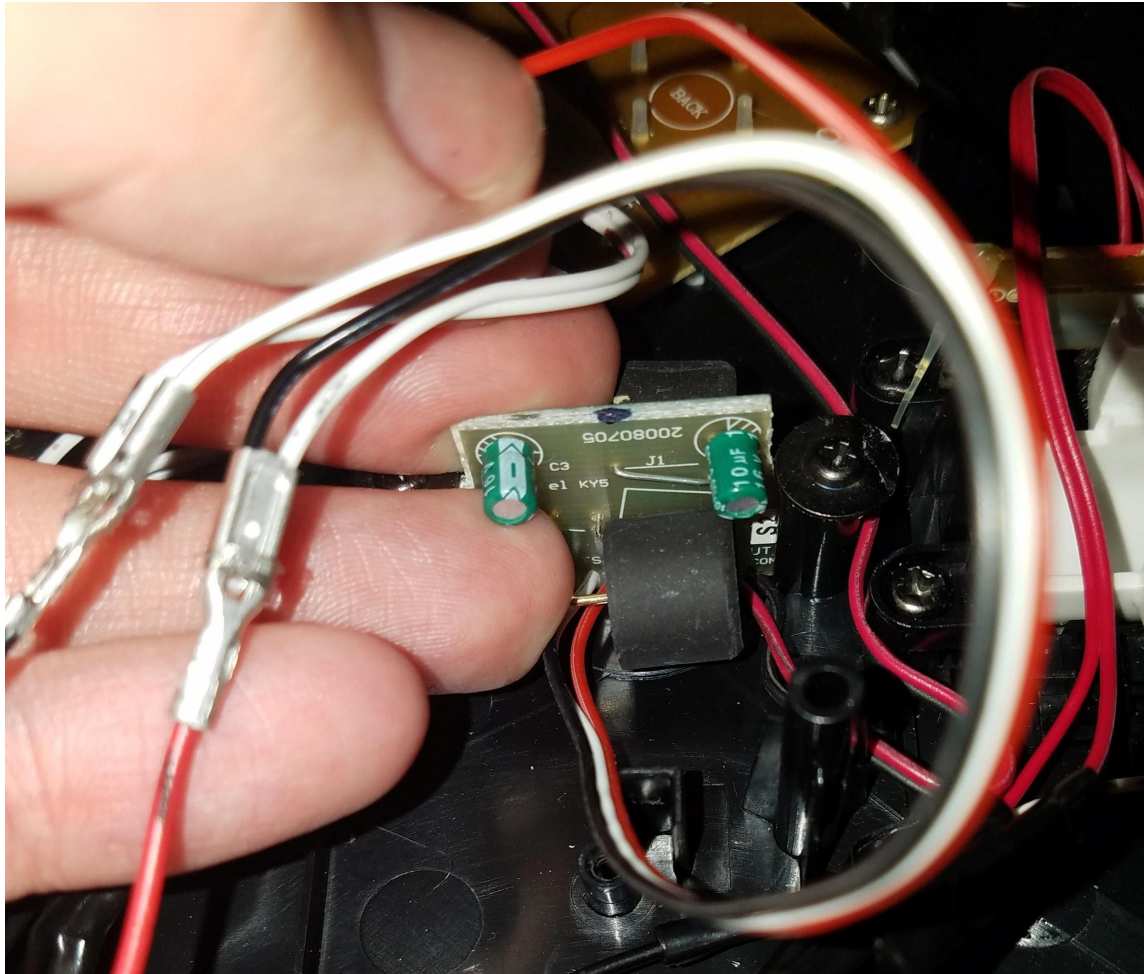
V. Wiring Whammy and Tilt Sensor

1. Here, we will be wiring the whammy bar and tilt sensor to buttons. This means they will NOT be “Slider +/-” and “Z Rotation +/-” as they usually are. They will either be active or inactive. Just figured you should know.



This picture is kind of bad, but let me explain what's going on. The top wire is unused for us, the middle wire goes to the red wire, and the bottom wire goes to the black wire. This can then be plugged into whichever two pin button you have free. I used button 9. **Be sure to tape to avoid shorts.**

2. The tilt sensor will be *mostly* functional. By this, I mean tilting UP will work, but tilting down will not be mapped. The main reason for this is there are two directions and only one ground, and tying both up and down wires together breaks the functionality.



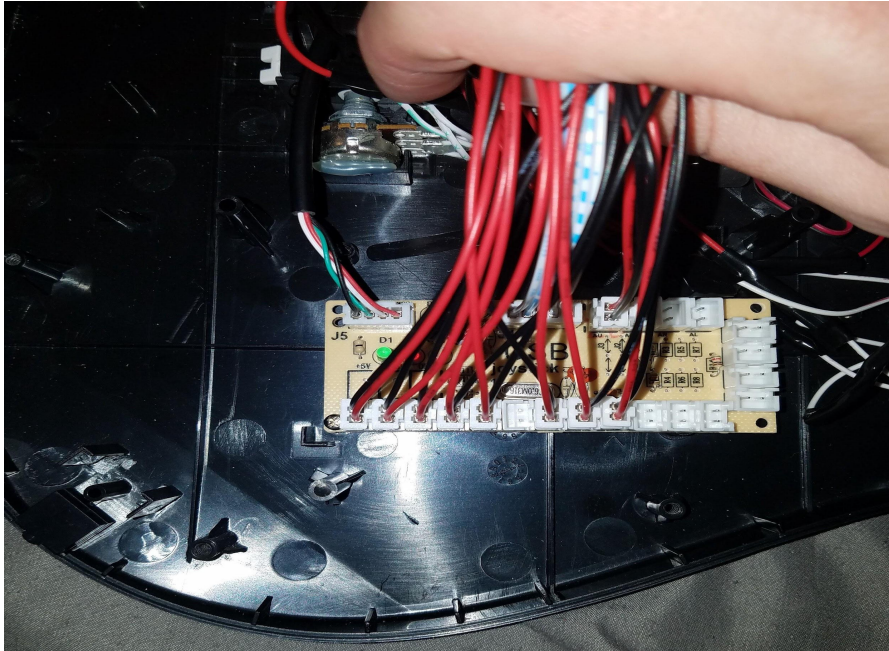
As you can see in this picture, I connected the tilt sensor to an already existing button. Which one? Why, the Back/Select button of course! Here's the wiring I used:

Tilt Sensor black wire = two pin red wire
Tilt Sensor white wire = two pin black wire
Tilt Sensor red wire = unused

This wiring will make it so if either the Back/Select button is pressed or the tilt up sensor is activated, it will press the button and we can use both for Star Power. Cool!

VI. Finishing Touches

Well, we're down to the end. Let's get our board in place and screw it down where the original board was. I only used one screw (because that's all that would fit), but that should be plenty to hold it in place.



This is not my final wire management job, I moved everything so the screw I used at the bottom left was easily visible. I routed my cables along the bottom of the guitar (except for the D-Pad and USB wires on the top side). The only other thing you need to do after cable management is figure out where you're putting the USB cable out from the controller. I led mine out from the PS3 button since it was easily accessible, but **make sure you affix it to the inside of the guitar or you will rip it out if you pull on it!!**



And there you have it! Put it back together, remap your controls for Clone Hero, and get to playing! As far as I can tell, the board I bought for this guide is a “zero delay” and seems to be pretty good as far as latency. If you have any comments or want to correct something in this guide, be sure to DM me on Discord: @Rezrospect#4610

VII. Appendix: Guitar Hero

PS3 LES PAUL:

There is a slight difference in the PS3 Les Paul that comes in the bundle. On the PS3 there are the same 8 wires in the strip running down the neck of the guitar but the strip running from the main board in the base of the guitar only has 6 wires. The solution is:

Wire 1 - Green - X or listed as CRO for cross on main board

Wire 2 - Ground - GRD on main board

Wire 3 - Blue - TRI on main board

Wire 4 - Orange - L1 on main board

Wire 5 - Ground - GRD on main board

Wire 6 - Yellow - SQU on main board

Wire 7 - Red - CIR on main board

Wire 8 - Ground - GRD on main board

Combine all 3 wires 2,5 and 8 with the GRD wire on main board.

PS3 WORLD TOUR GUITAR:

1st number is the data wire, 2nd number is the ground wire

Green 1+8

Red 2+7

Yellow 3+7

Blue 4+7

Orange 5+6