XBOX One

Ragnarok

Solderless Modchip

Installation Instructions

Revised 1/21/2015

Tools needed

- XBOX One Controller
- Viking XBOX One Ragnarok Solderless modchip kit (includes mod chip, LED board, and LED lense)
- Soldering iron and solder
- 30 AWG wire (American wire gauge) or similar
- Wire strippers (capable of stripping above wire)
- Electrical tape
- Small flathead screwdriver or similar prying tool
- Security Torx 8 and regular Torx 6 screwdrivers
- Power drill
- 9mm and 9/64 inch drill bits (intermediate sizes also useful)
- Hot glue and glue gun
- Safety glasses
- Additional useful items: flux, tweezers, scissors, wire snippers, etc.

Remove the screws and cover

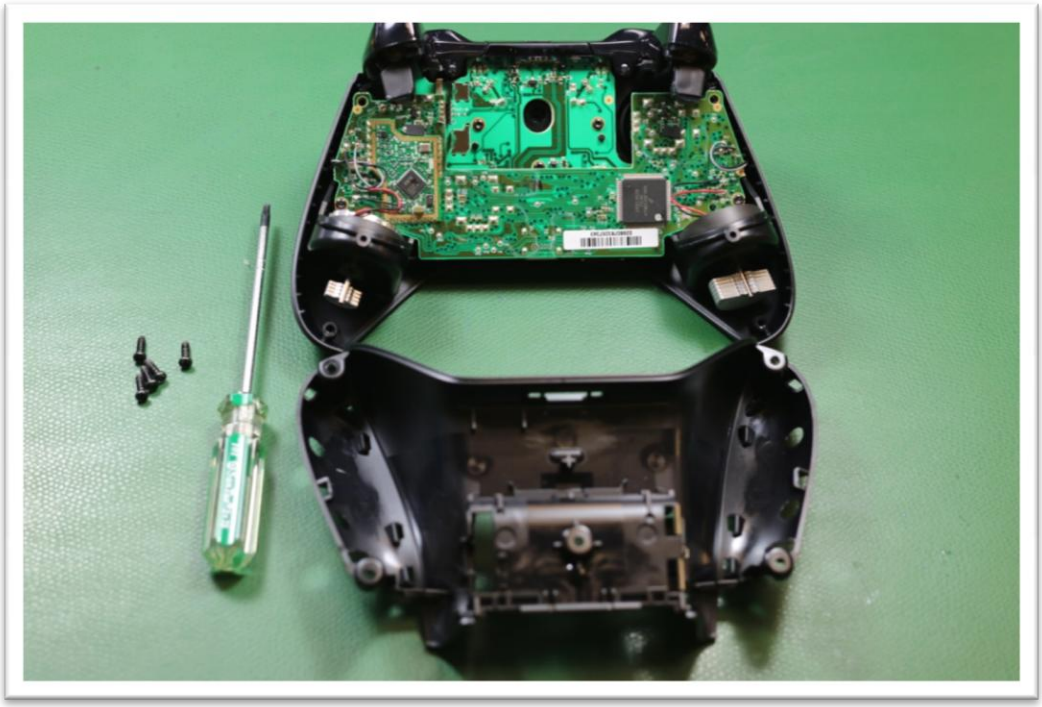
You'll need to remove two plastic handle covers to reveal the screws. Special care should be taken not to scratch the shell. One way to accomplish this is to use a small flat-head screwdriver as a prying bar. Depress the trigger, then push the screwdriver in next to the trigger such that it won't scratch the trigger. Use the screwdriver to pry the handle away from the shell.

Once you've started with the screwdriver, you can finish removing the handle covers with your fingers. Some force is required to pull the covers off.

Once the handle covers are removed you'll need your Torx screwdrivers. Go ahead and remove the battery pack cover now.

There are five screws that need to be removed. Each screw is indicated in the photo below with a red arrow.

Once the five screws are removed, flip the shell over to expose the circuit boards inside of the controller.



The faceplate can also be lifted off, and the thumb stick caps should be removed and set aside.

Drill Shell and Install Indicator

The LED indicator is installed into the faceplate. A 9mm hole must be drilled into the faceplate to accept the indicator, which is 9mm in diameter. You may oversize the hole, but if you drill the hole at 9mm, the LED indicator will press-fit into the hole nicely. 9mm drill bits are available from UK dealers on E-Bay.

Notice the injector mark that looks like a large circle with the letter “A” inside. This injector mark can be used as a visual guide to help center the 9mm hole.

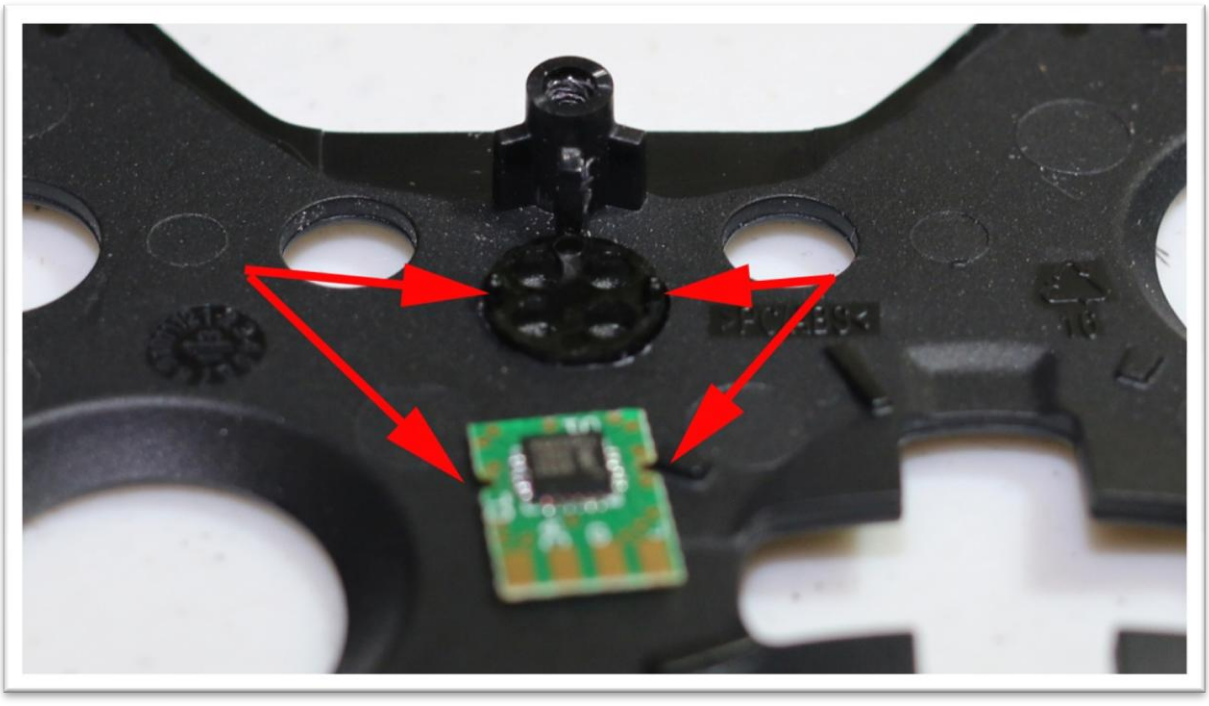
Note: if you have access to a CNC router, a CNC router with custom jig can make faster, more accurate holes than using a hand drill.

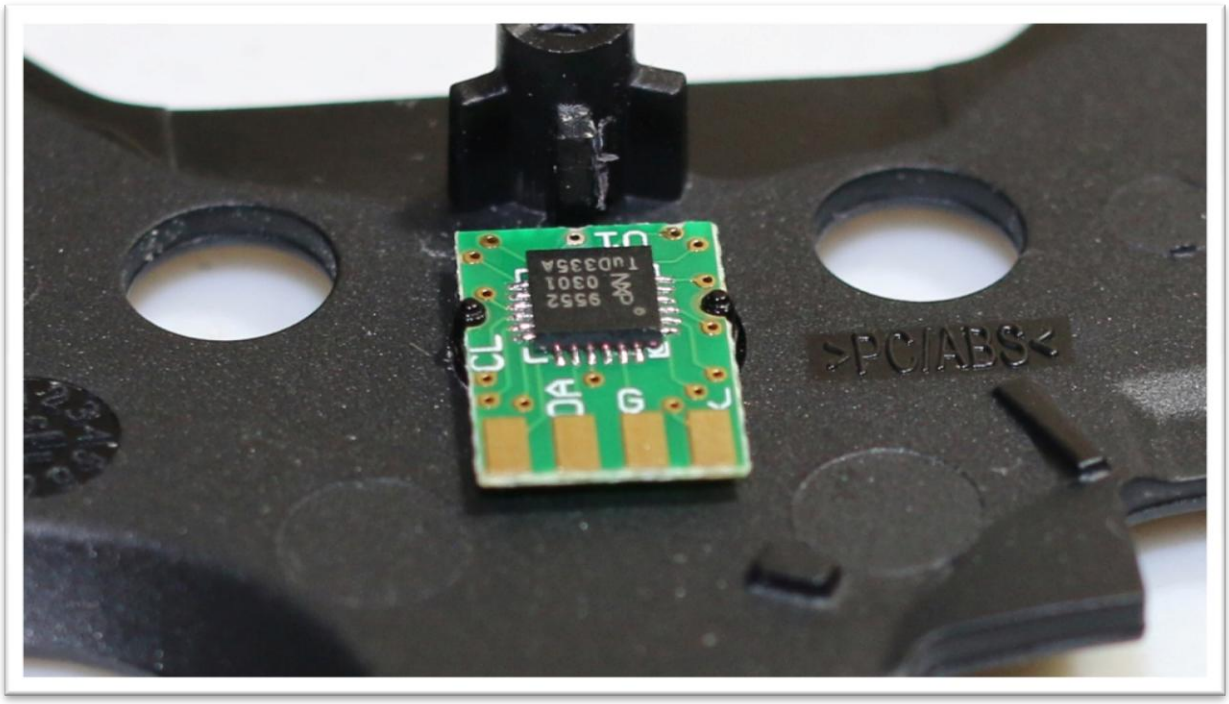
Begin by drilling a smaller pilot hole, using the injector mark as a visual guide.

For best results, drill another larger intermediate sized hole, but don't drill the 9mm hole yet.

Finally, drill the 9mm hole. The 9mm hole should sit about flush with the plastic screw peg above it, but you should not have to remove or disturb any of the plastic on the screw peg.

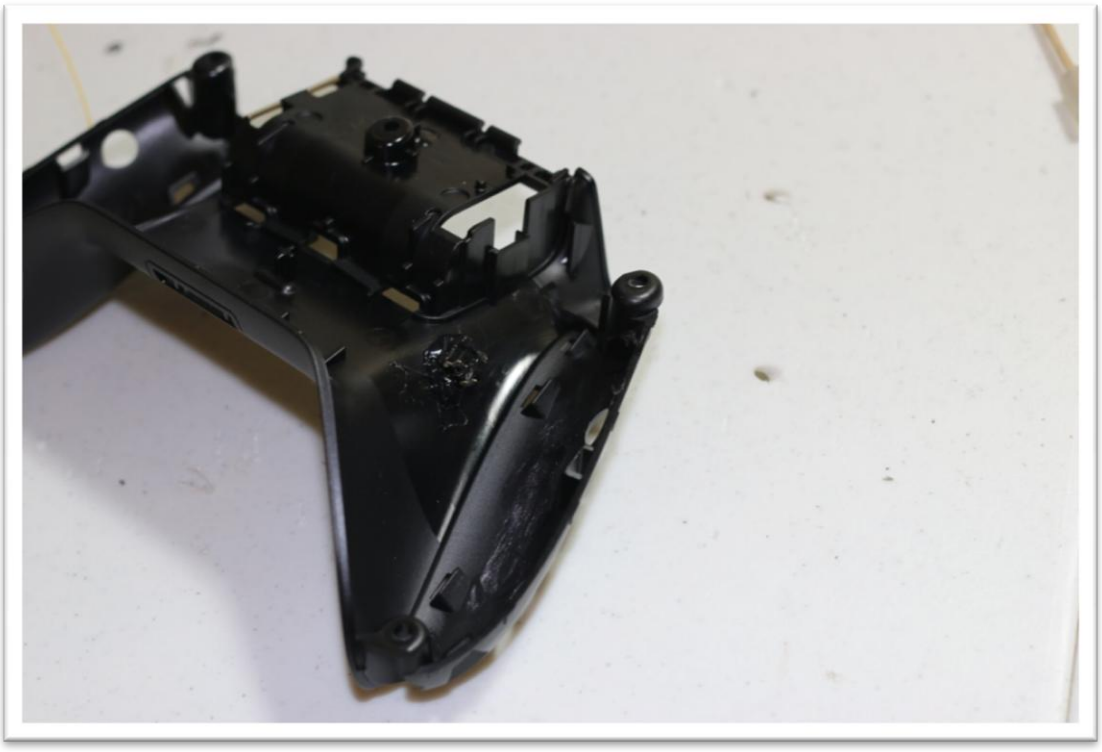
Press the LED indicator into the hole as shown. Be sure to orient the two small orientation pegs properly as these will have to mate with the LED driver board.





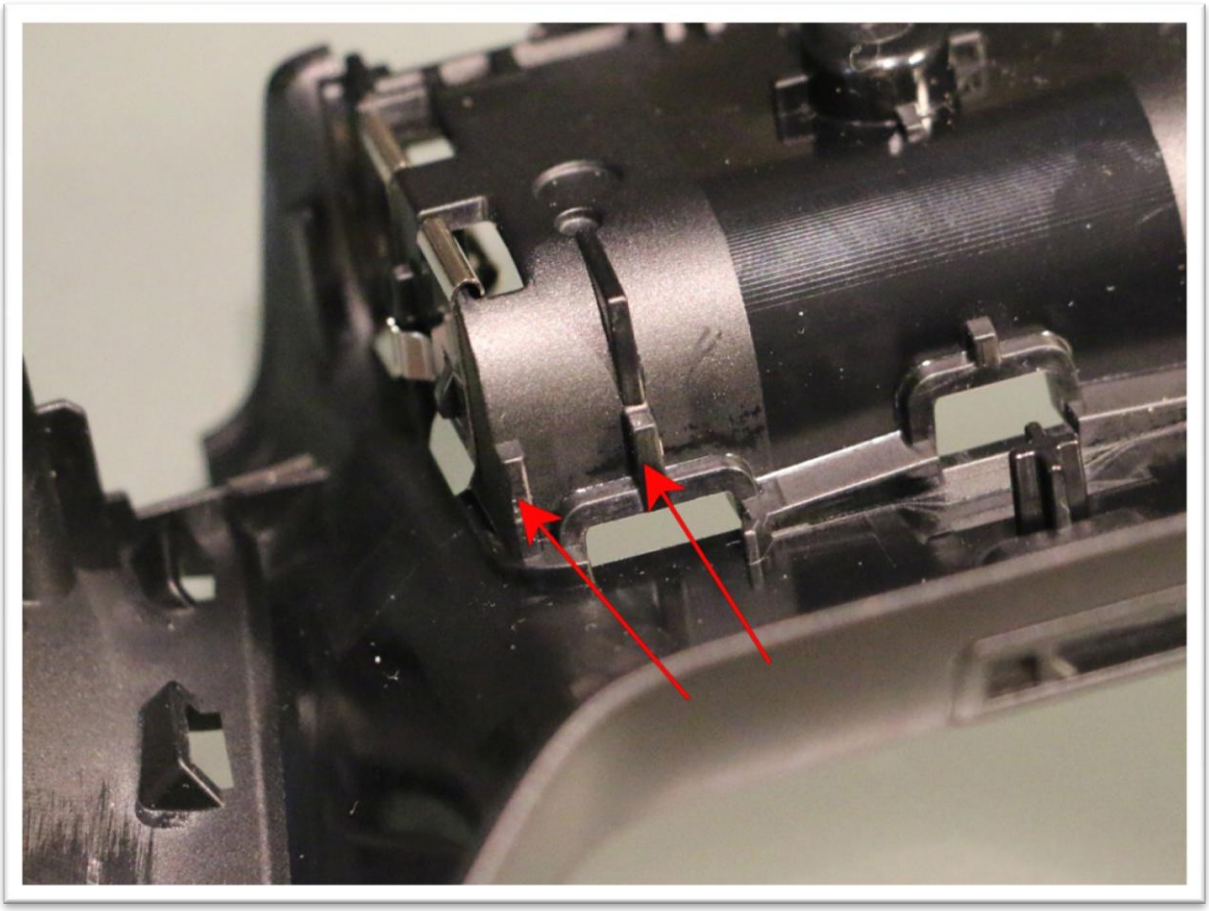
Use sufficient hot glue to hold the LED lense and LED driver board securely.

Drill a hole for, and use hot glue to install, the mod switch as desired. One possible location for the mod switch is illustrated below.



Trim the shell

Use snips to trim off the two plastic tabs indicated in the photo below. These tabs must be removed – failure to remove the tabs could result in the tabs pressing against the solderless modchip and knocking it out of position.

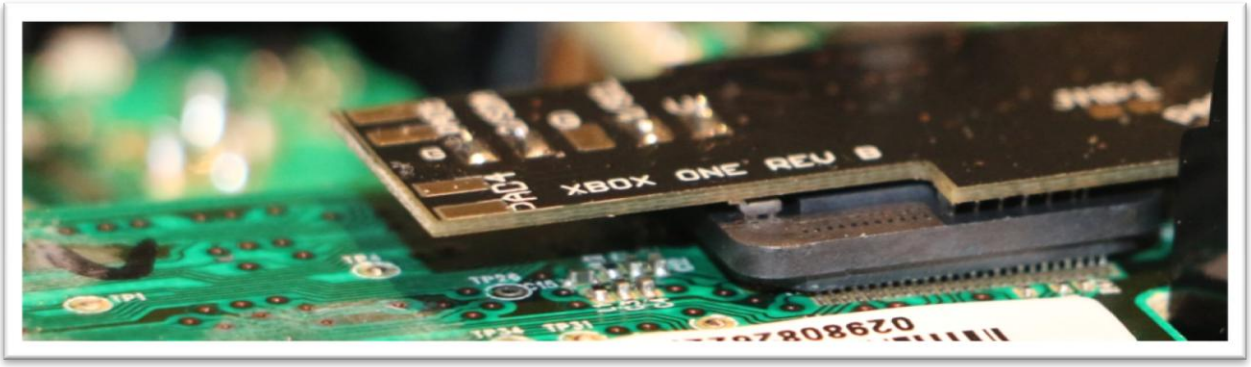


Install the modchip

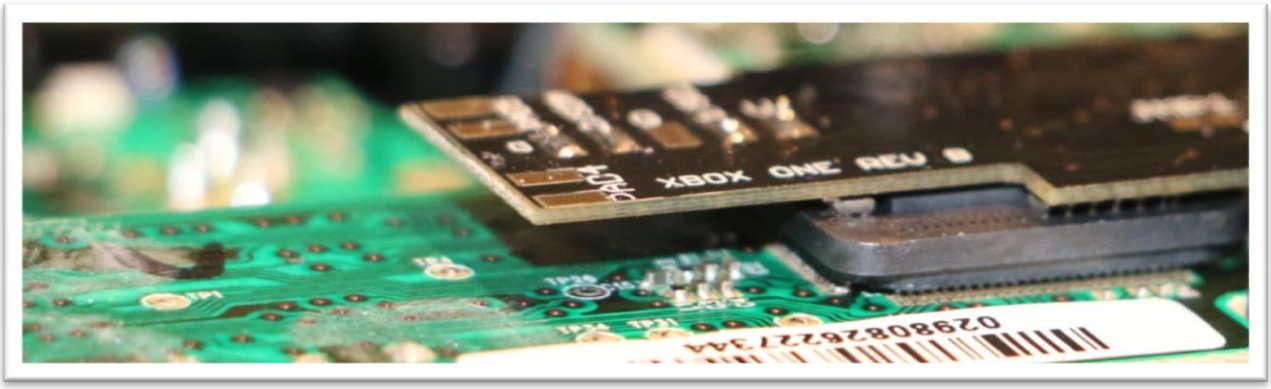
THIS STEP OF THE INSTALLATION IS ABSOLUTELY CRITICAL, AND REQUIRES PATIENCE. FAILURE TO USE FINESSE TO INSTALL THE CLIP COULD RESULT IN DAMAGE TO THE PINS OF THE CPU OR THE CLIP.

Gently lay the modchip's clip onto the main CPU of the controller's circuit board. Without applying pressure, gently move the clip around on the CPU until the clip is covering about ½ of the pins of the CPU on ALL FOUR SIDES.

Note the picture below shows INCORRECTLY POSITIONED CLIP. Notice how the modchip does not evenly cover ½ of the pins on all four sides:

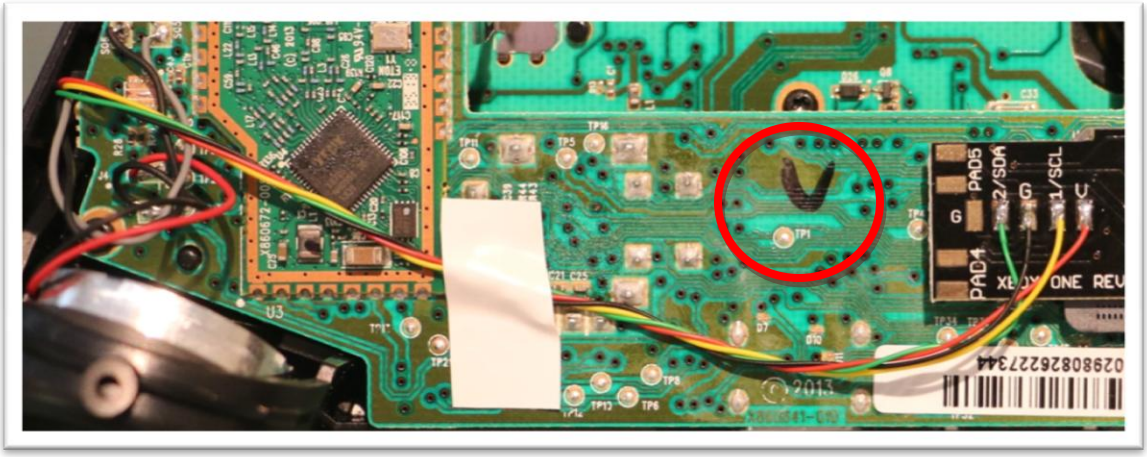


The photo below shows a correctly positioned clip, the clip is evenly covering ½ of the CPU pins on all four sides. Once the modchip is sitting in this position, to a gentle touch it will feel as if it has "locked in".

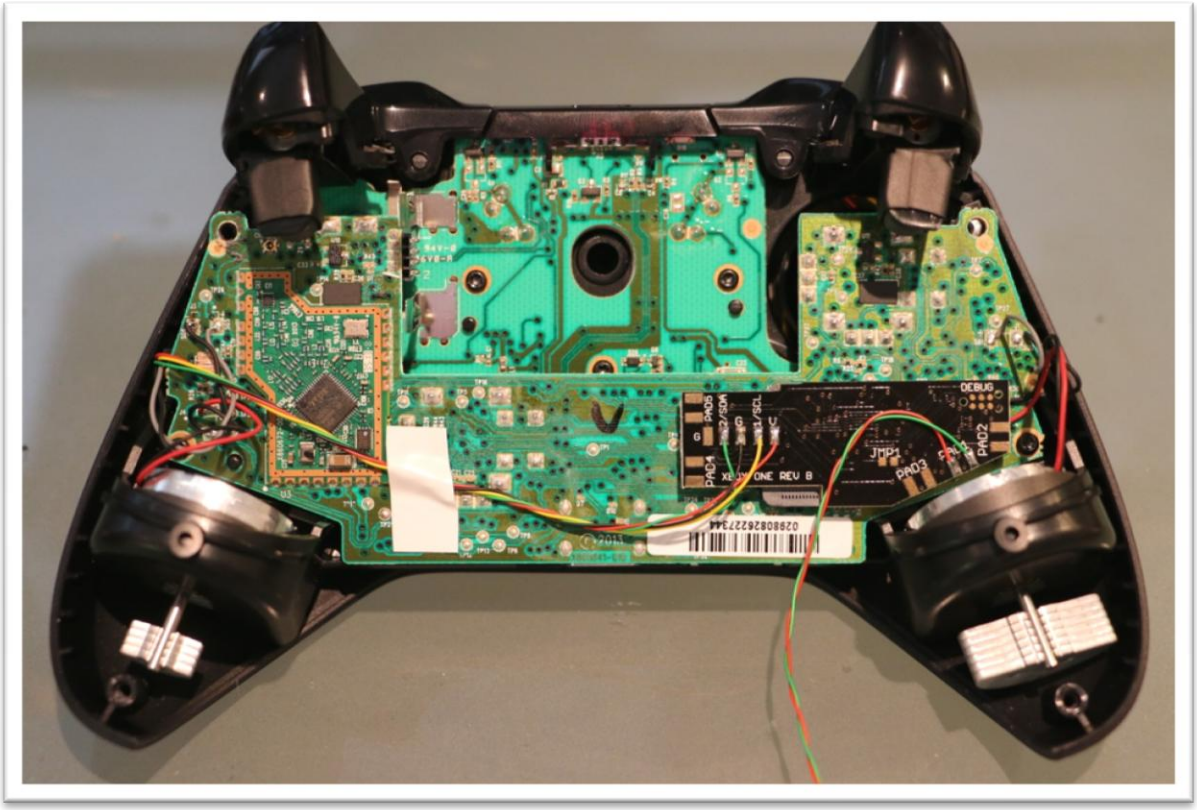


Once the clip is aligned, apply even pressure downward and press the clip onto the CPU.

Install a 4-wire harness from the four pads labeled “V, G, SDA, SCL”. The wire harness may be twisted, but once the harness reaches the left side of the Microsoft circuit board (where it will wrap around to the front of the board), it should be left untwisted. Hot glue may be used to attach the harness to the Microsoft circuit board instead of electrical tape. **NOTE: NOTICE THE RED CIRCLE “KEEP OUT” AREA.**



Also, install a twisted pair of 2 wires to the “PAD1” pads. These 2 will be installed to your mod switch.



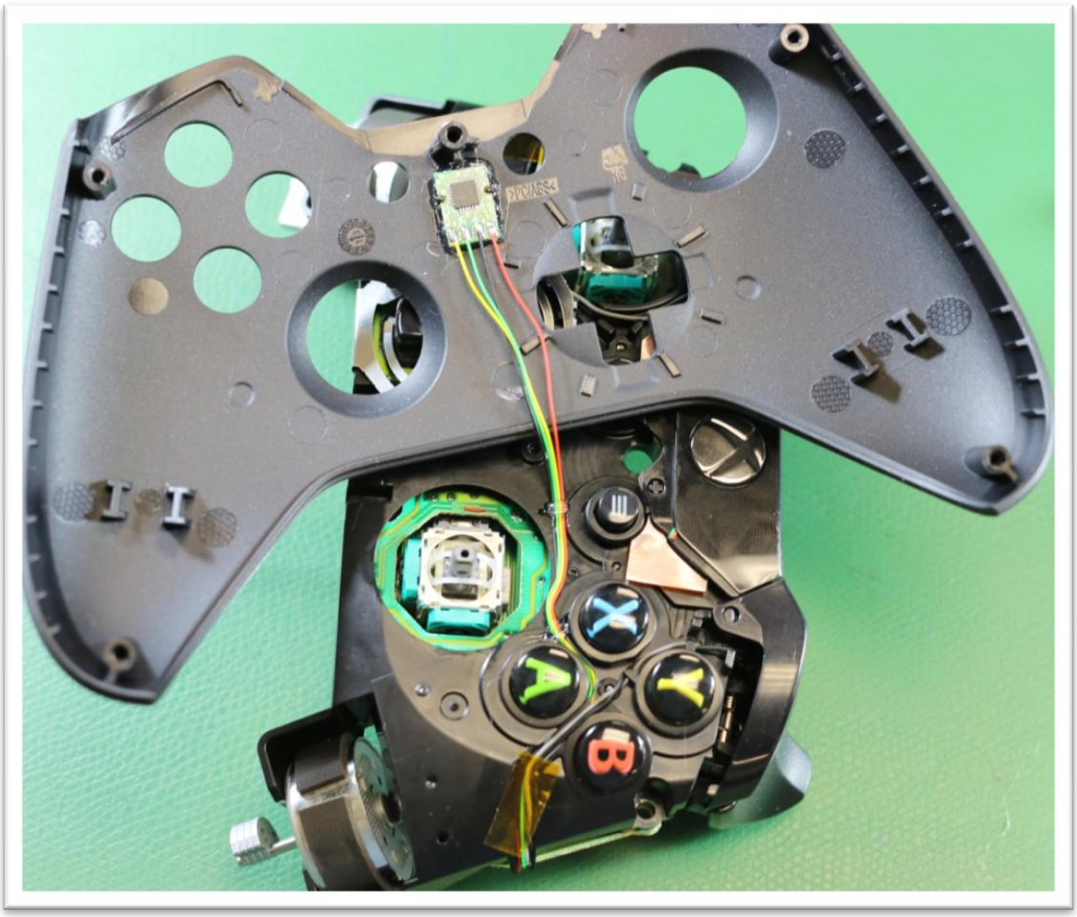
Optional: If you wish to take advantage of the programmable remappable button feature of this modchip, attach additional twisted wire pairs to “PAD2”, “PAD3”, “PAD4”, and/or “PAD5” as desired.

Remove the orange piece of tape and untwist Microsoft's grey and black wires that run within the small "Trench". The grey and black wires, as well as the 4 wires for the LED driver board, will all fit in trench together provided that none of the wires are twisted. Replace the orange tape, and then route the 4 additional wires as shown.

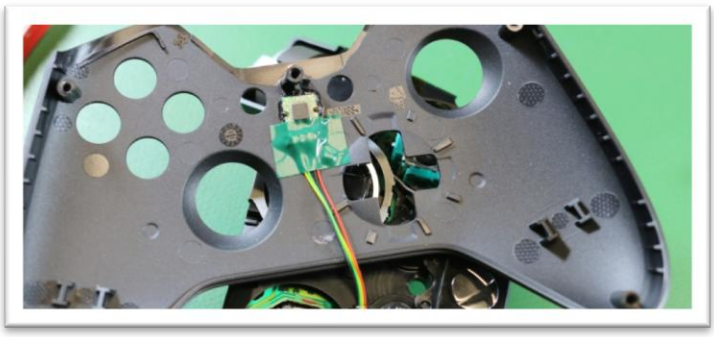
Hot glue can be used sparingly in certain areas to secure the 4-wire harness in place. Be sure the harness does not ride too "high" or it will prevent the faceplate from seating properly. Also be sure to keep the wires away from the joystick opening or it may interfere with proper joystick movement.

Orient the faceplate as shown and then trim the wiring harness as short as possible, while still allowing the wires to be attached to the LED driver board. The wire pairs are matched from the mod chip to the LED driver board as follows:

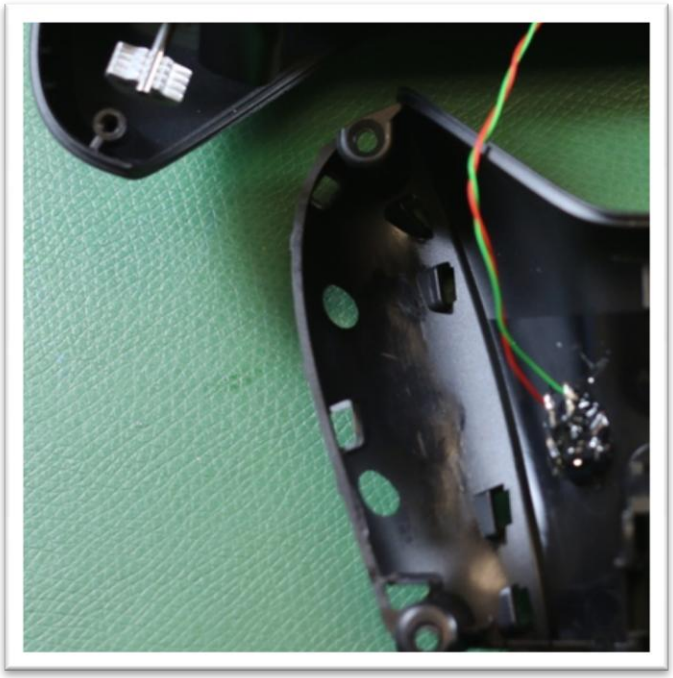
- G goes to G
- V goes to V
- SCL goes to CL
- SDA goes to DA

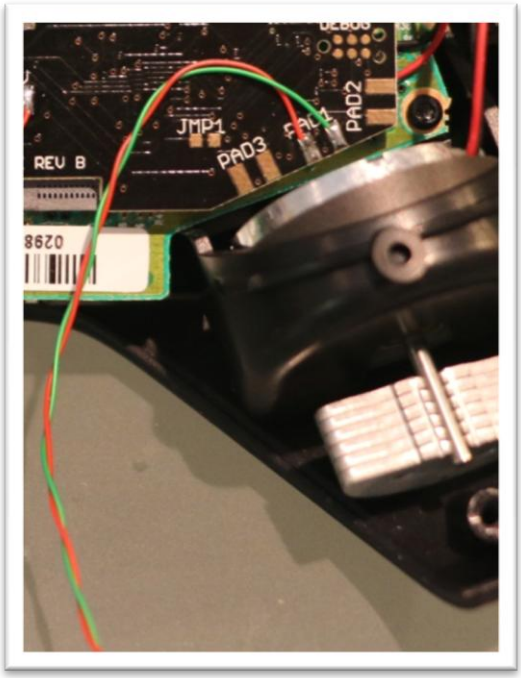


Cover the attachment points with a small piece of electrical tape as shown.



Attach the "PAD1" wire pair from the mod chip, to the mod switch that was installed in the back half of the shell.





Optional: Remember, if you wish to take advantage of the remappable programmable button feature of this modchip, attach additional wire pairs to pads “PAD2”, “PAD3”, “PAD4”, and/or “PAD5” as desired.

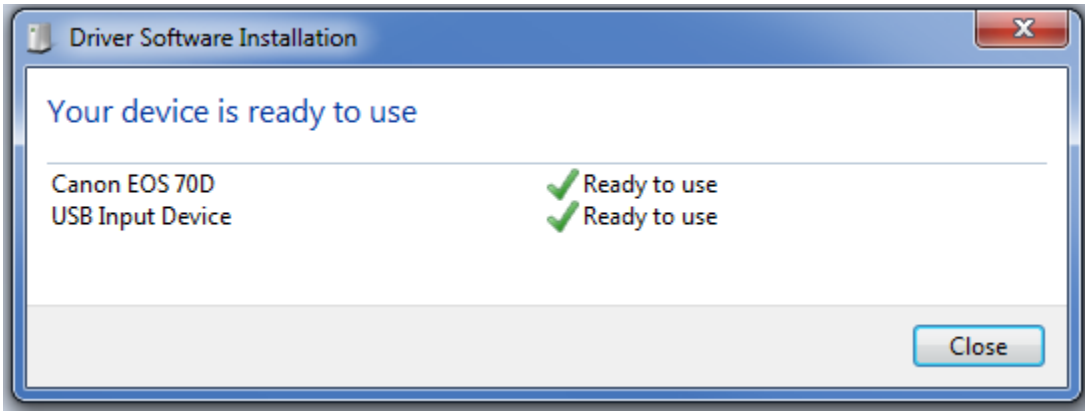
Put the controller together

Install the faceplate and back half of the shell. Be sure to keep an eye on all wiring harnesses and route them such that they are not pinched or short-circuited as you close up the shell. Re-install the five screws into the back half of the shell. Re-install the handle covers.

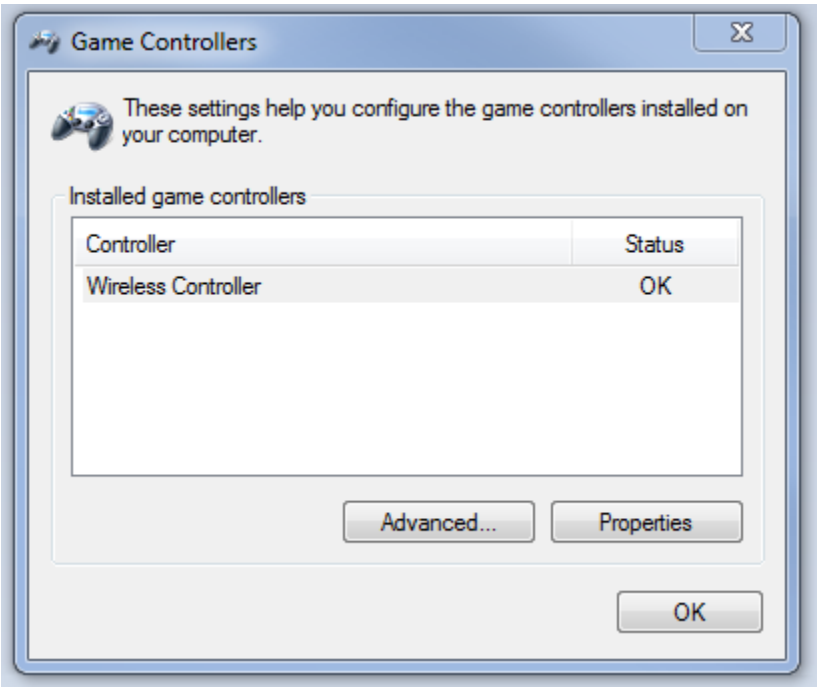
Your XBOX One controller is now modded! Please note that the controller MUST be sync'ed to a console before any of the mods will work.

Test the Controller

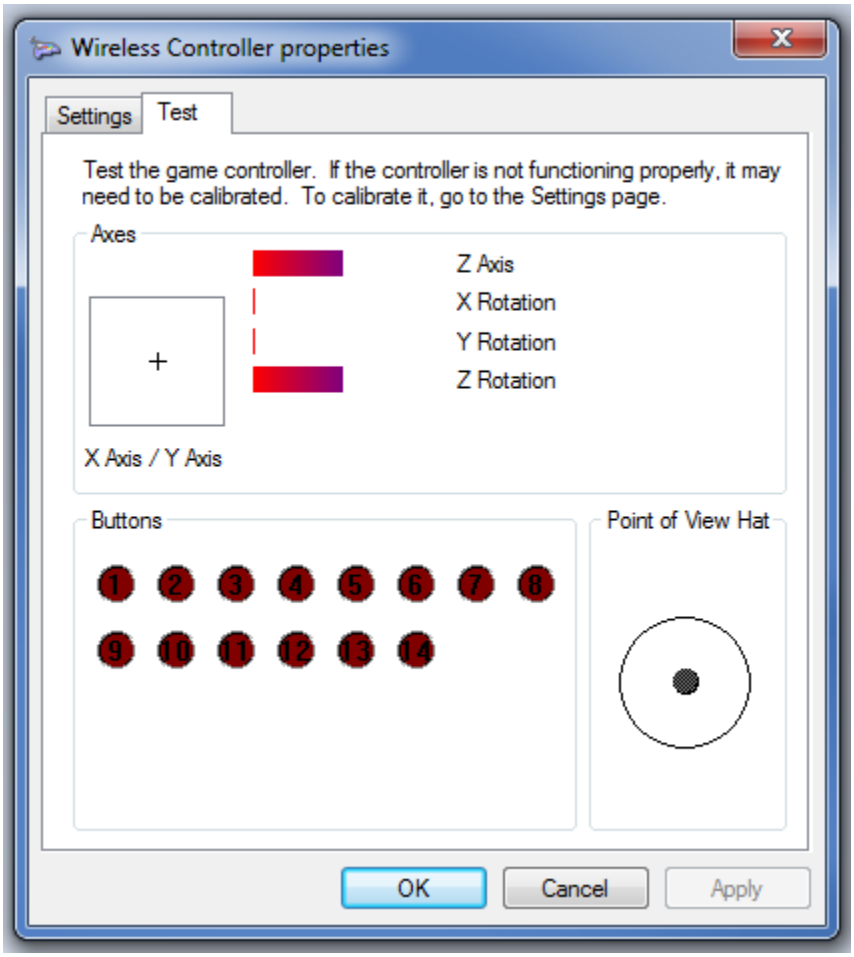
The XBOX One controller can be connected to a Windows PC. In order to connect, you must download the official Microsoft Windows drivers for the XBOX One controller. At the time this manual was written, the drivers could be downloaded at this link: http://support.xbox.com/en-US/xbox-one/accessories/controller-pc-compatibility



Once the drivers are installed, on Windows 7 for example, connect your controller by USB to your computer, and then type “Set up USB game controllers” into the search bar to launch the Windows native game controller tool.



The tool can be used to check that all button presses are functioning properly.



Once all button presses have been confirmed working and mods have been tested, it's time to play!