PS4

Ragnarok

Flex Modchip

Installation Instructions

Revised 4/15/2016

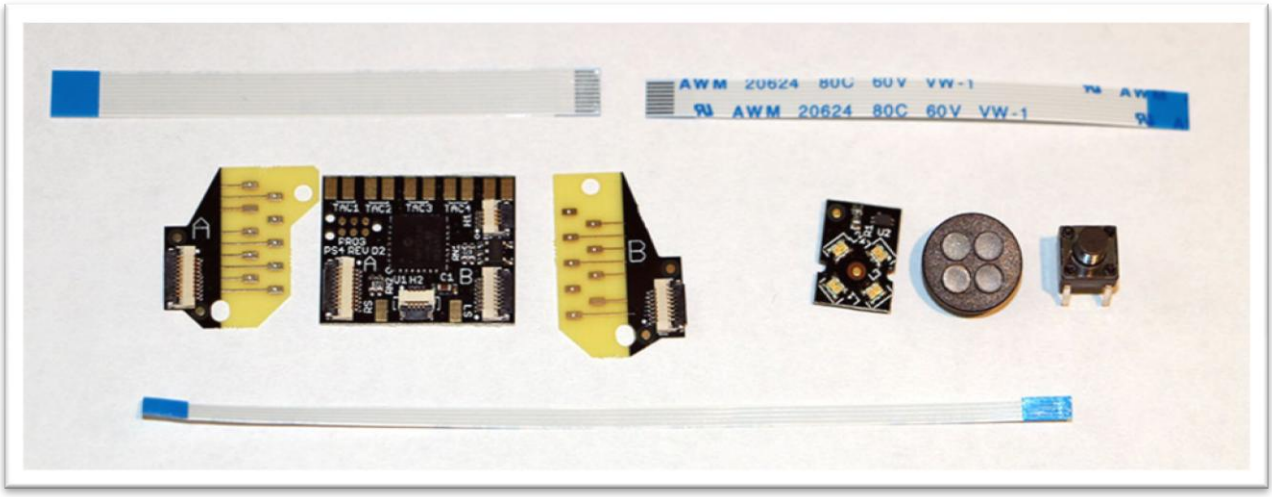
For Sony PS4 Circuit Board Revision "JDM-030"

Tools needed

- PS4 Controller (Circuit board revision JDM-030)
- Viking PS4 Ragnarok Flex modchip “Revision D” kit: 3-piece modchip, 10-position ribbon cable, 8-position ribbon cable, 4-position ribbon cable, tactile switch, 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
- Fine phillips screwdriver
- Power drill
- 9mm and 9/64 inch drill bits
- Hot glue and glue gun
- Safety glasses
- Additional useful items: flux, tweezers, scissors, wire snippers, etc.

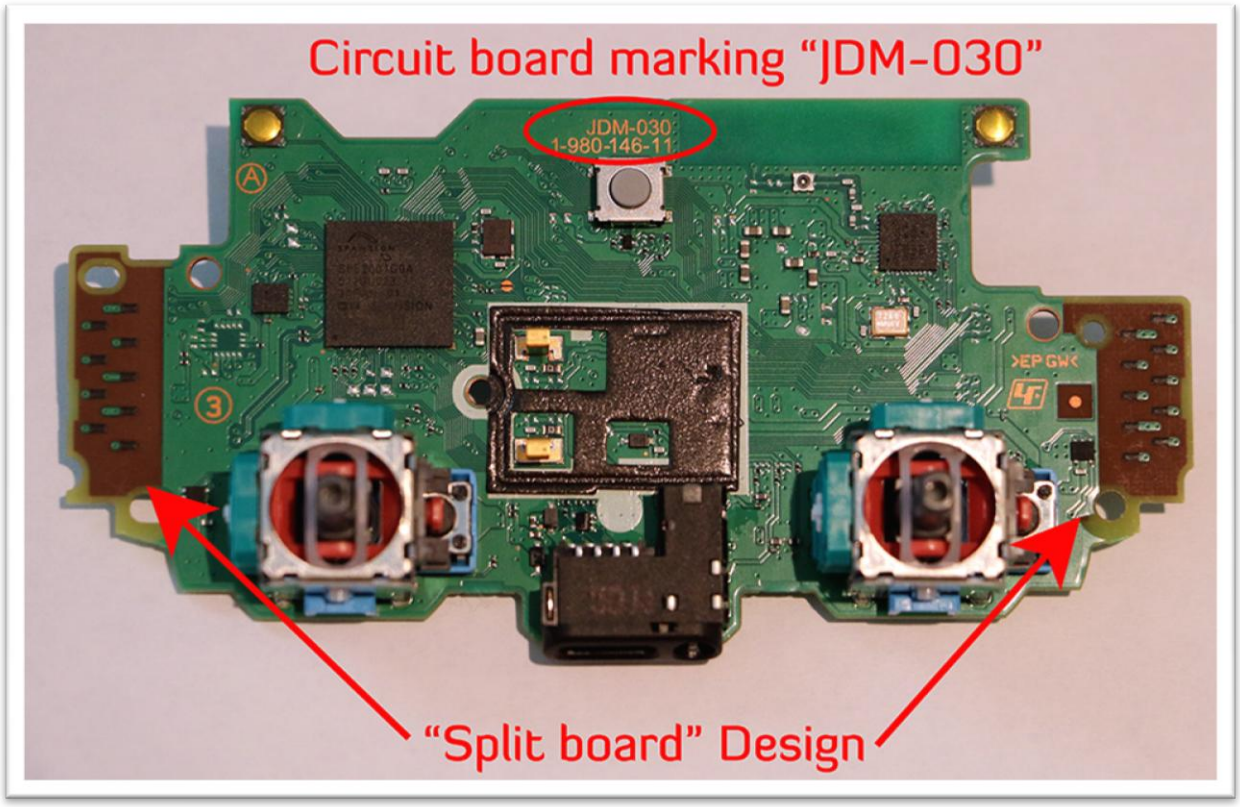
Please note that throughout the physical portion of installation guide, such as removing battery packs and disassembling the controller, has not changed much from one Sony circuit board to another. In the interest of saving time, throughout this guide we may “recycle” photos from previous installation guides.

Determine modchip and board revision



Please note that these instructions are for Sony PlayStation 4 controller revision “JDM-030”. You will need the PS4 Ragnarok Revision “D” modchip kit (pictured above) in order to modify the Sony JDM-030 circuit board.

To identify the “JDM-030” circuit board, look for the “JDM-030” marking and the “split board” design:



Remove the screws and cover

Once the 4 screws are removed, start separating the cover near the microphone port at the bottom. It may take some force to separate the shell. Cracking noise may be heard and some small tabs may be broken in the process, practice will make this process go more smoothly:

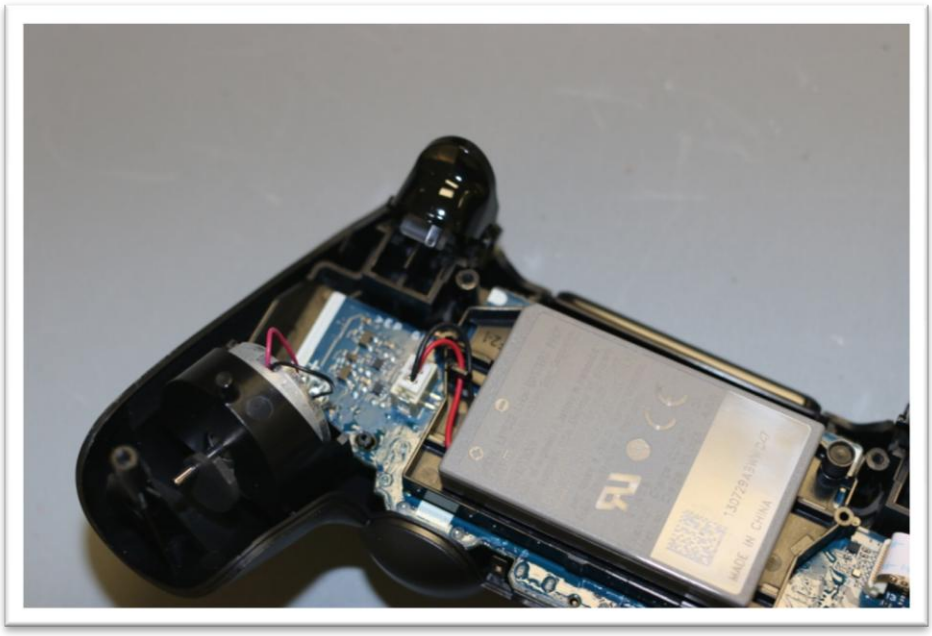
It is possible to remove the shell without removing either the triggers or the bumpers. The rear part near the round end of the handles should be lifted up and over the pegs that lie underneath:

Once the rear handles have cleared the pegs, it is possible to push the back half of the shell "forward" to clear the bumper and triggers, without causing the triggers to pop off. Practice will make this process go more smoothly. If the triggers pop off, **LOOK AROUND CAREFULLY FOR THE SMALL TRIGGER SPRING.** The small trigger spring is required otherwise the trigger will not return fully to the non-pressed position.

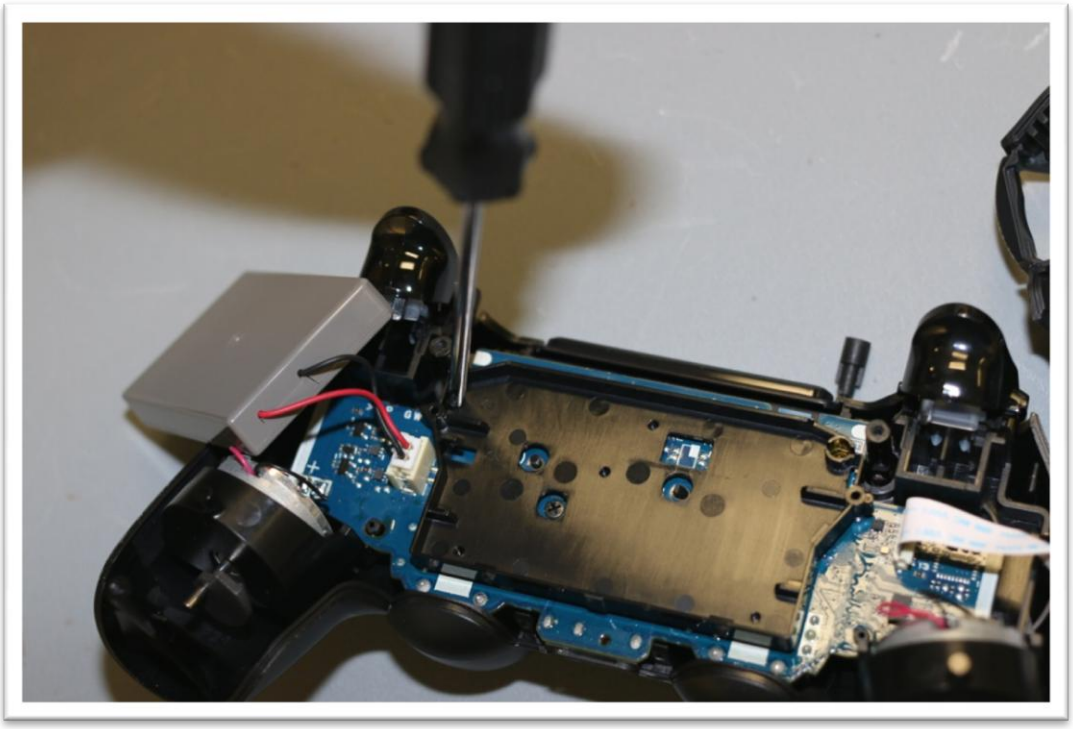
Disassemble the circuit board

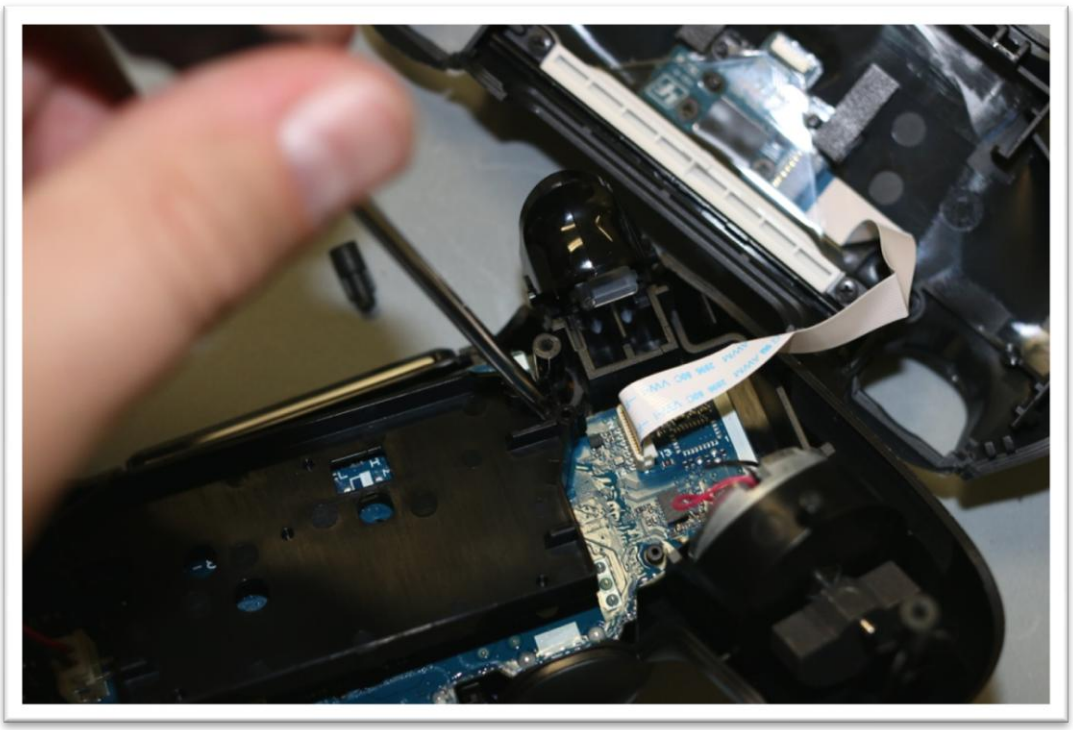
Once you've gotten the back half separated from the front half, flip it open like a clam shell:

Unhook the battery wires from the battery wires hook and remove the battery.



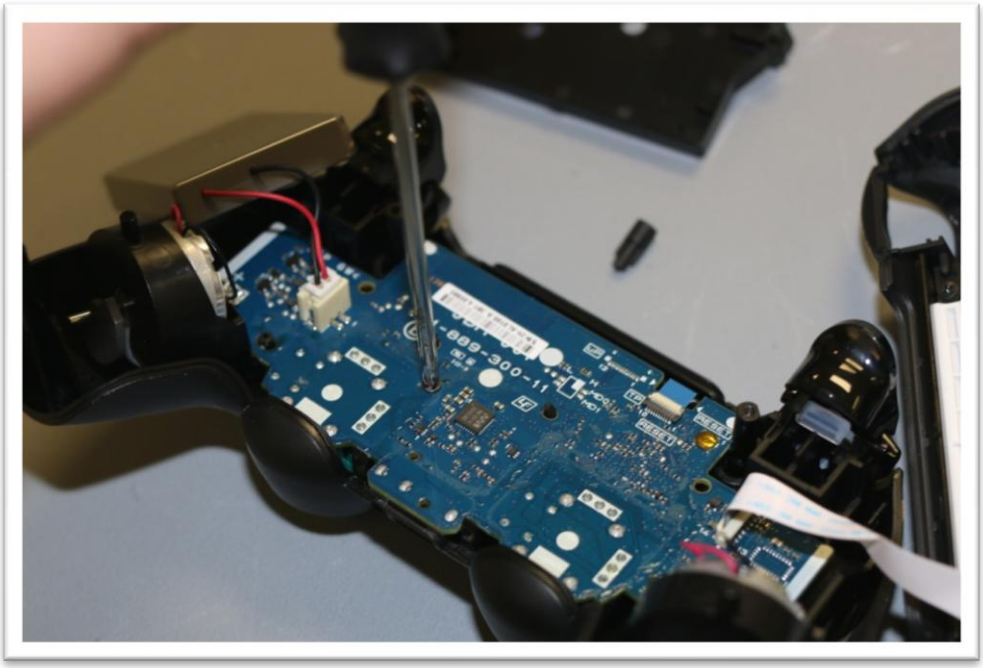
The black battery holder is held in place by two plastic tabs that “hook” around the circuit board. The tabs can be loosened by inserting a flat-tip screwdriver in the locations shown:



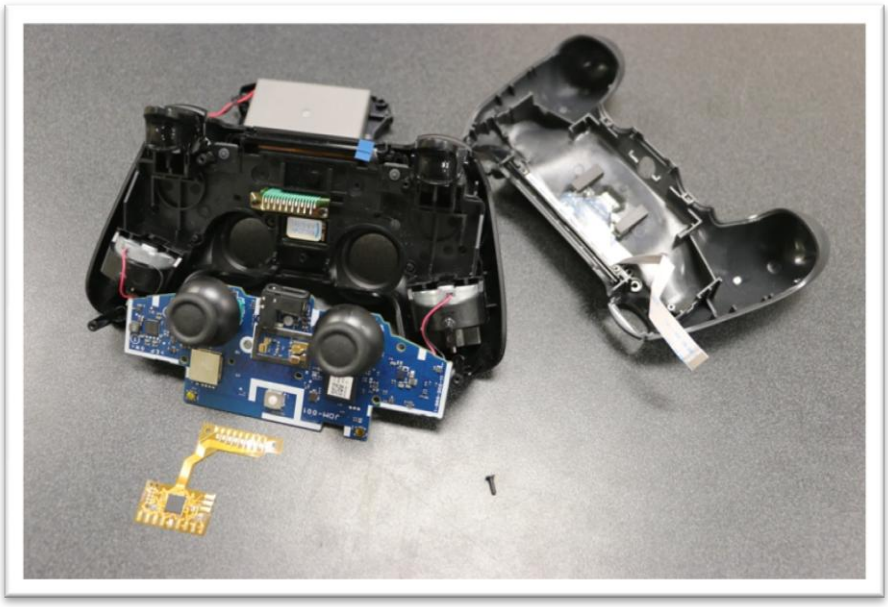


Remove the black plastic battery holder. Remove the single screw that holds the circuit board in place. Now, remove the battery wires, remove the larger white ribbon cable by pulling straight up on the blue tab.

Next, notice the smaller ribbon cable near the “RESET” on the board. Flip up the little white tab, then pull the ribbon cable out by pulling on the blue tab. The white tab locks the blue tab in place, so the white tab must be lifted before the blue tab can be pulled out.



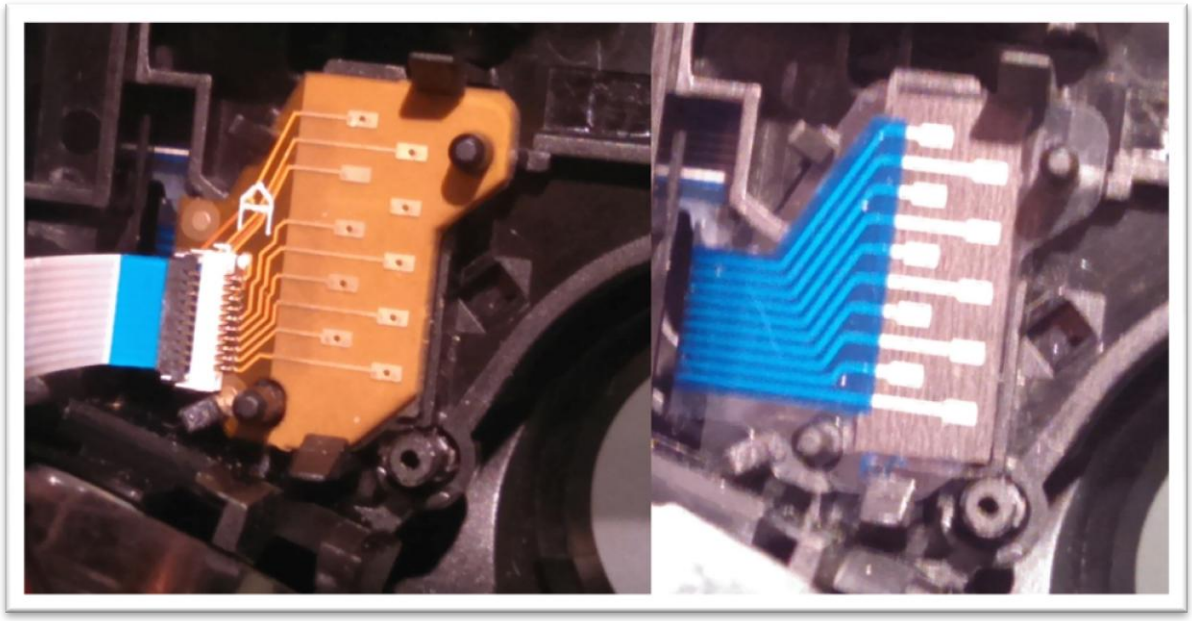
Once both ribbons have been removed, the battery has been removed, the reset button has been removed, and the single screw has been removed, the circuit board is still permanently connected to the two rumble motors. Pull the circuit board up and flip it over clam-style again:

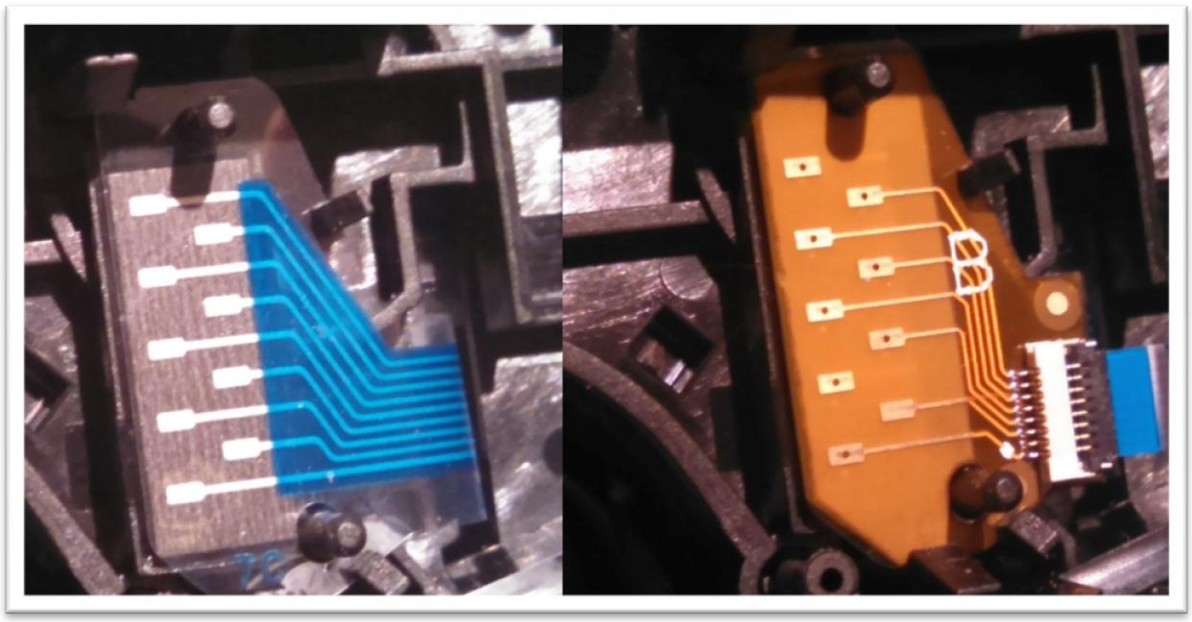


We are now ready to proceed with modchip installation.

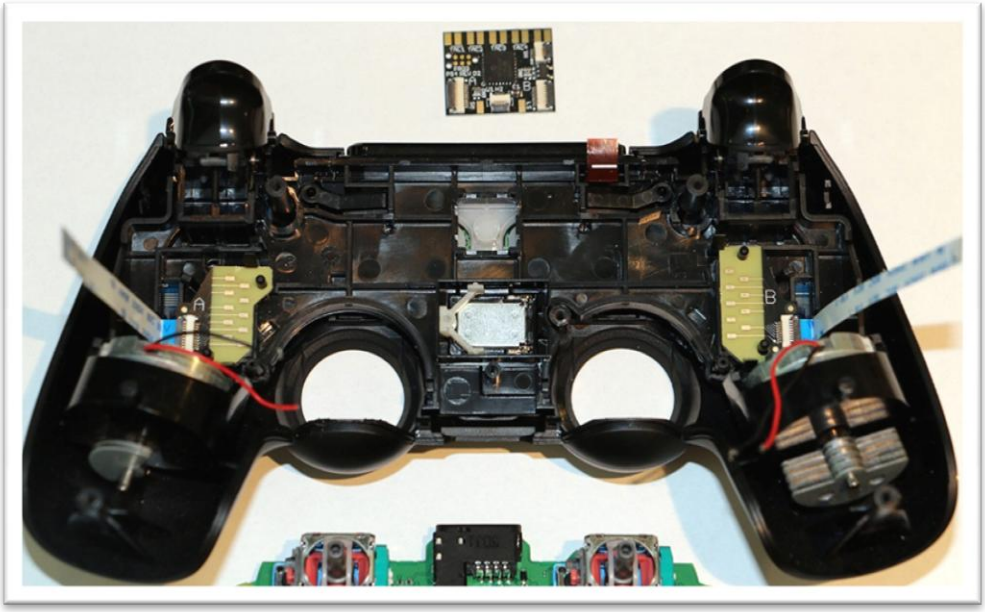
Install the modchip

Install the Wing A and Wing B from the modchip kit directly over top of the existing clear wings:

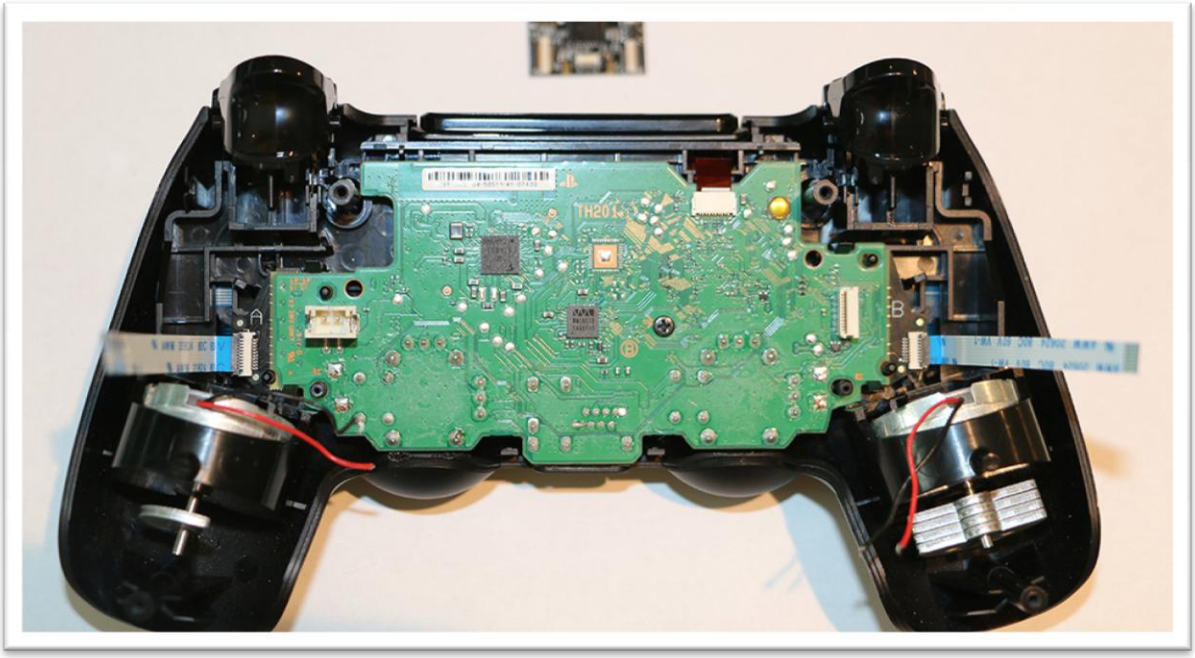




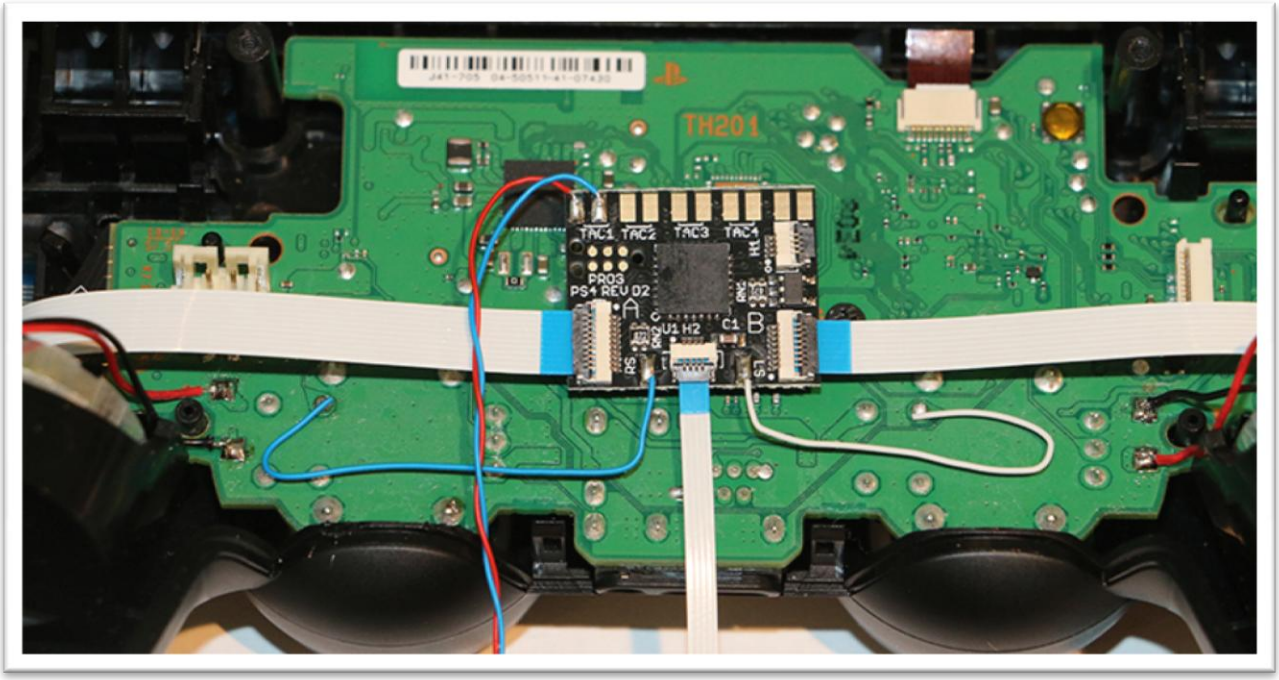
Insert the 10-position ribbon cable into “Wing A” and secure the cable by flipping over the black clasp. Insert the 8-position ribbon cable into “Wing B” and secure the cable by flipping the black clasp. Bend both cables up at a right-angle. (Now is also a good time to skip to the LED installation instructions, if you wish to install the LED underneath the speaker grille).



Re-install the Sony circuit board and re-insert the single screw that holds the Sony circuit board in place.



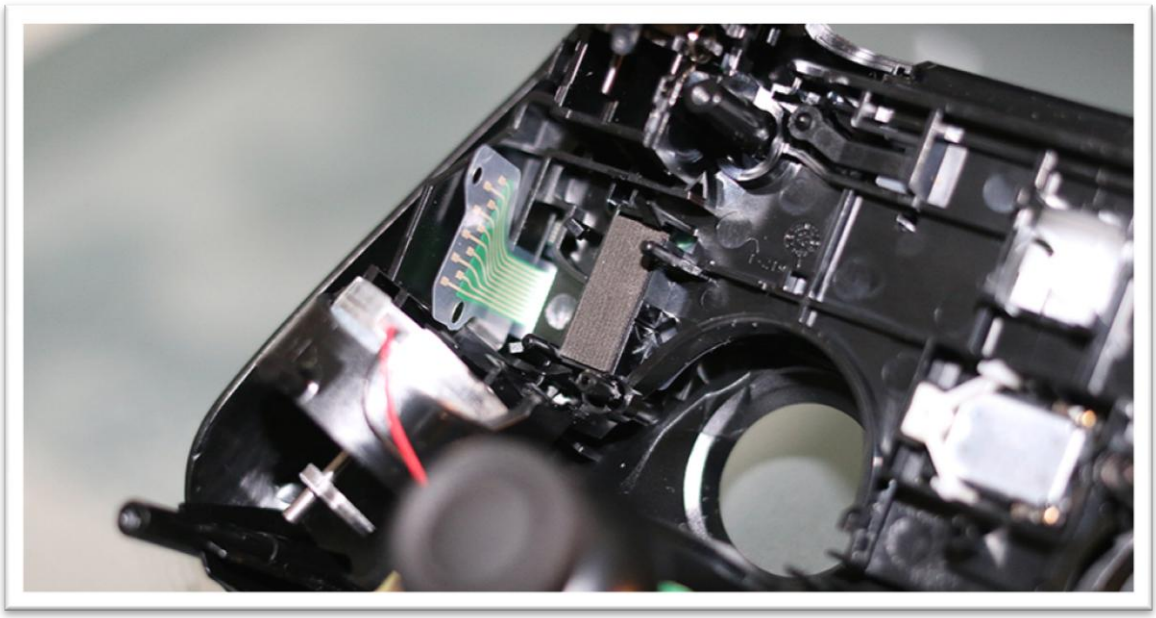
Connect Wing A to the main board using the 10-position ribbon cable. Connect Wing B to the main board using the 8-position ribbon cable. Connect two wires from “TAC1” to the mod switch. Connect the 4-position ribbon cable from “H1” or “H2” (you can use either) to the LED driver board. Connect the “RS” (blue) and the “LS” (white) wires.

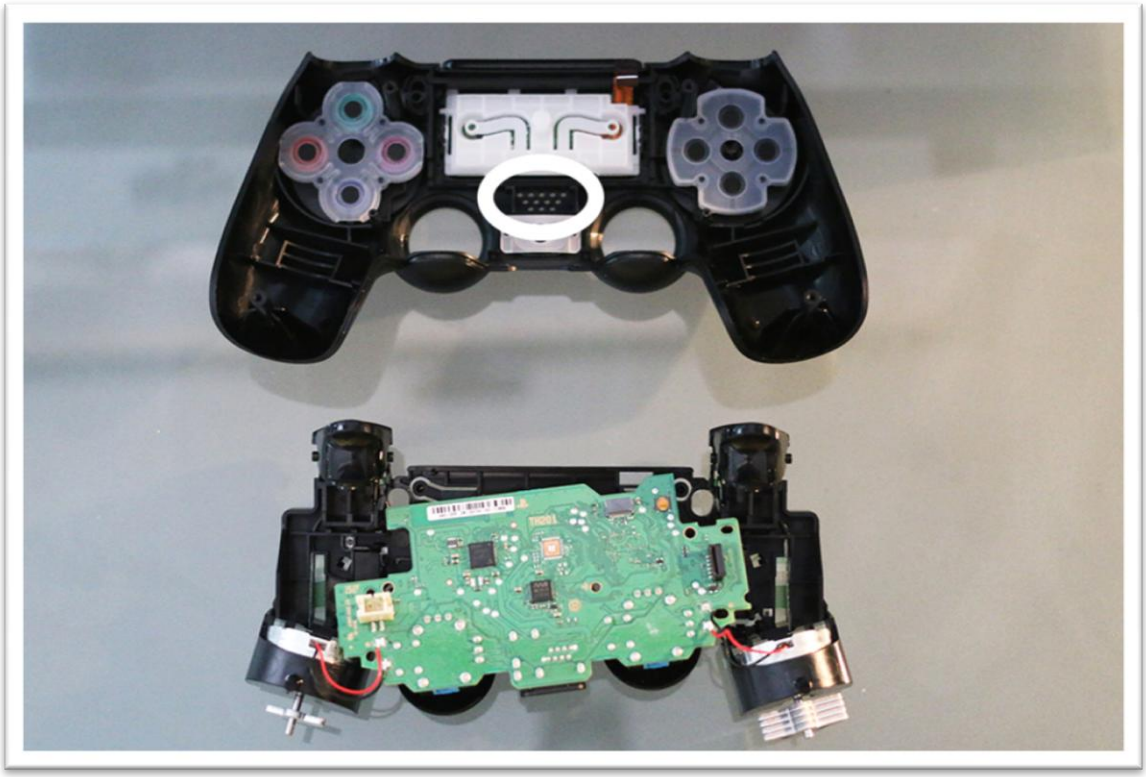


At this point you have completed the electrical installation. Proceed with mechanical installation as outlined in the following sections of the manual.

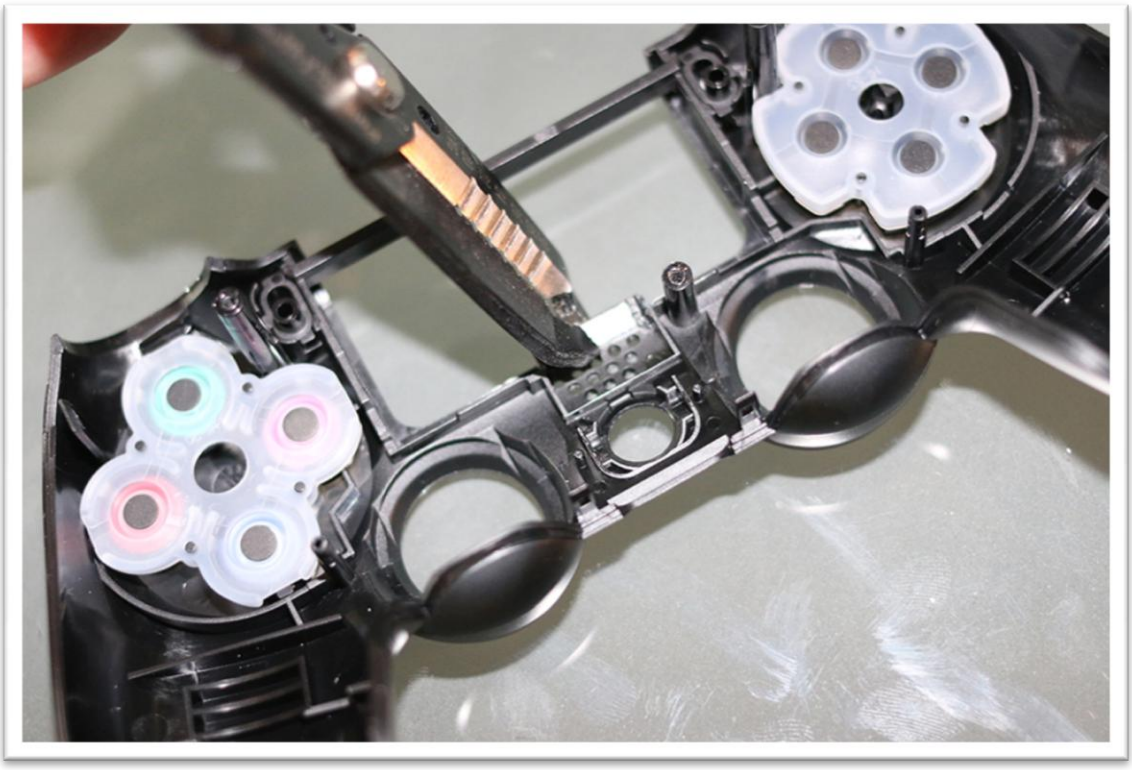
Install Indicator (Option 1)

Access the speaker grille.

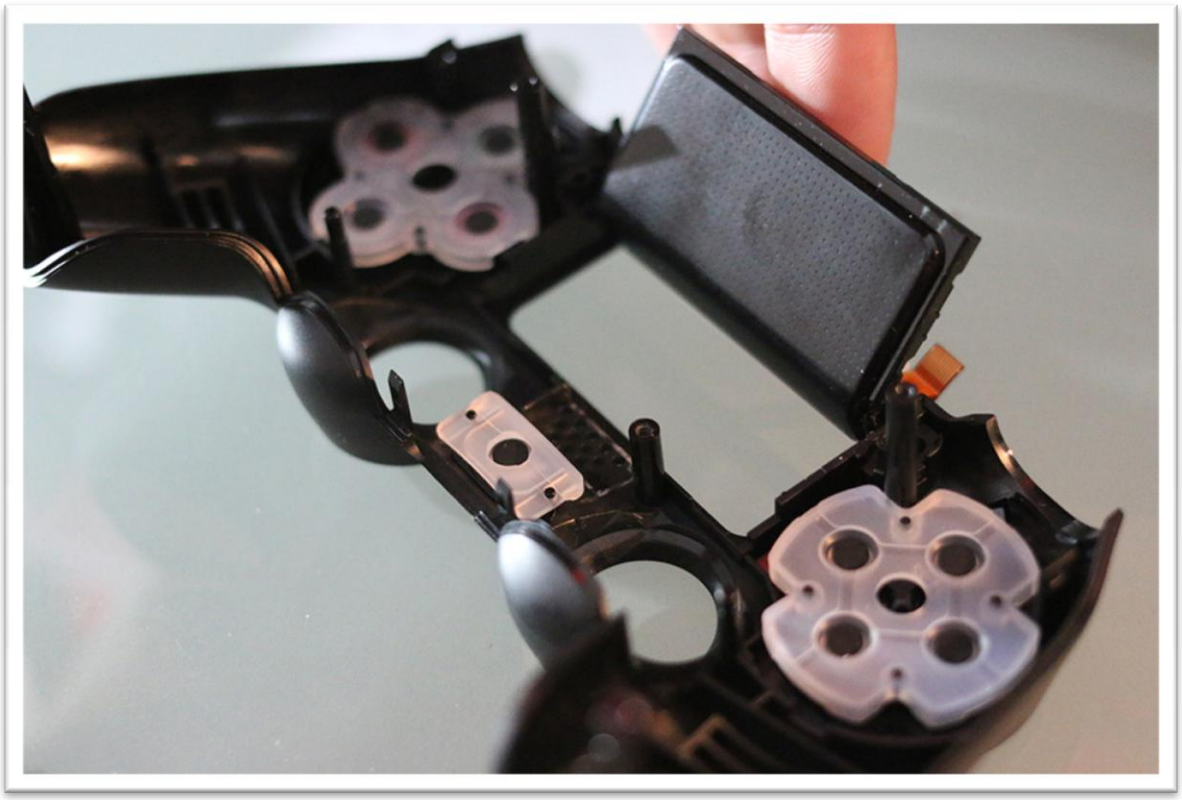


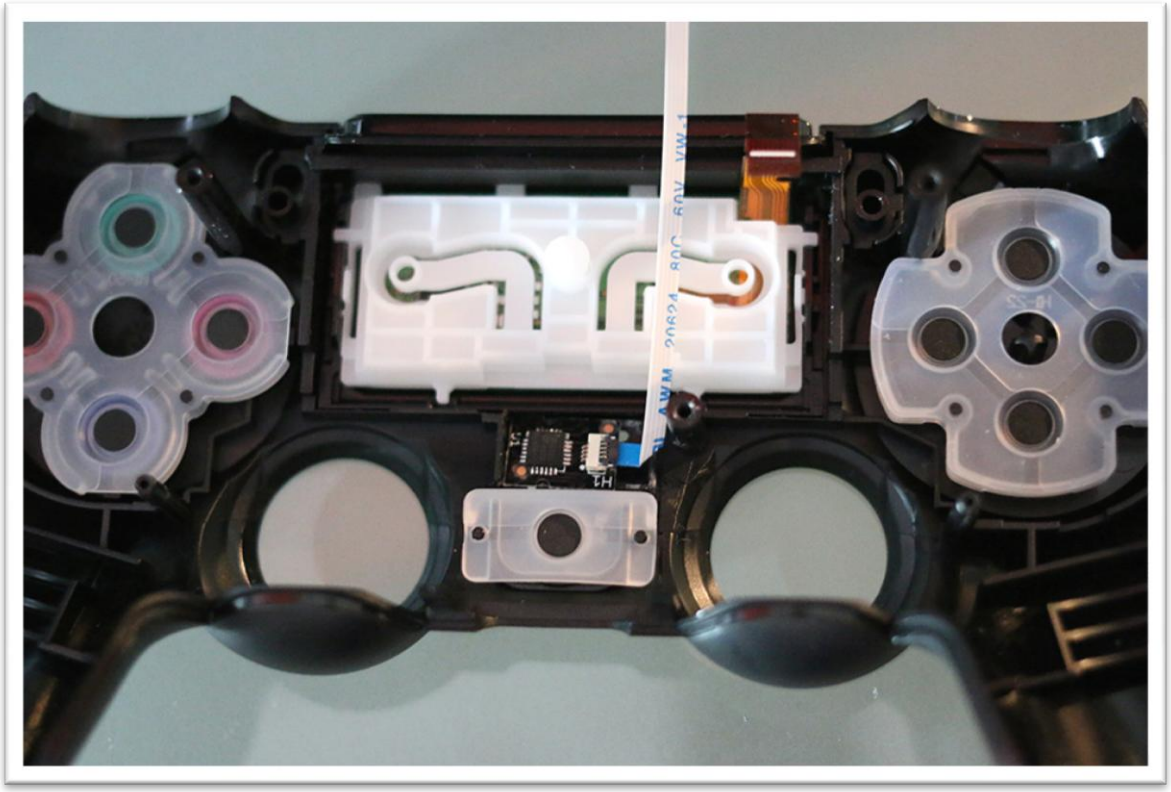


Trim away the speaker grill plastic on all four sides.

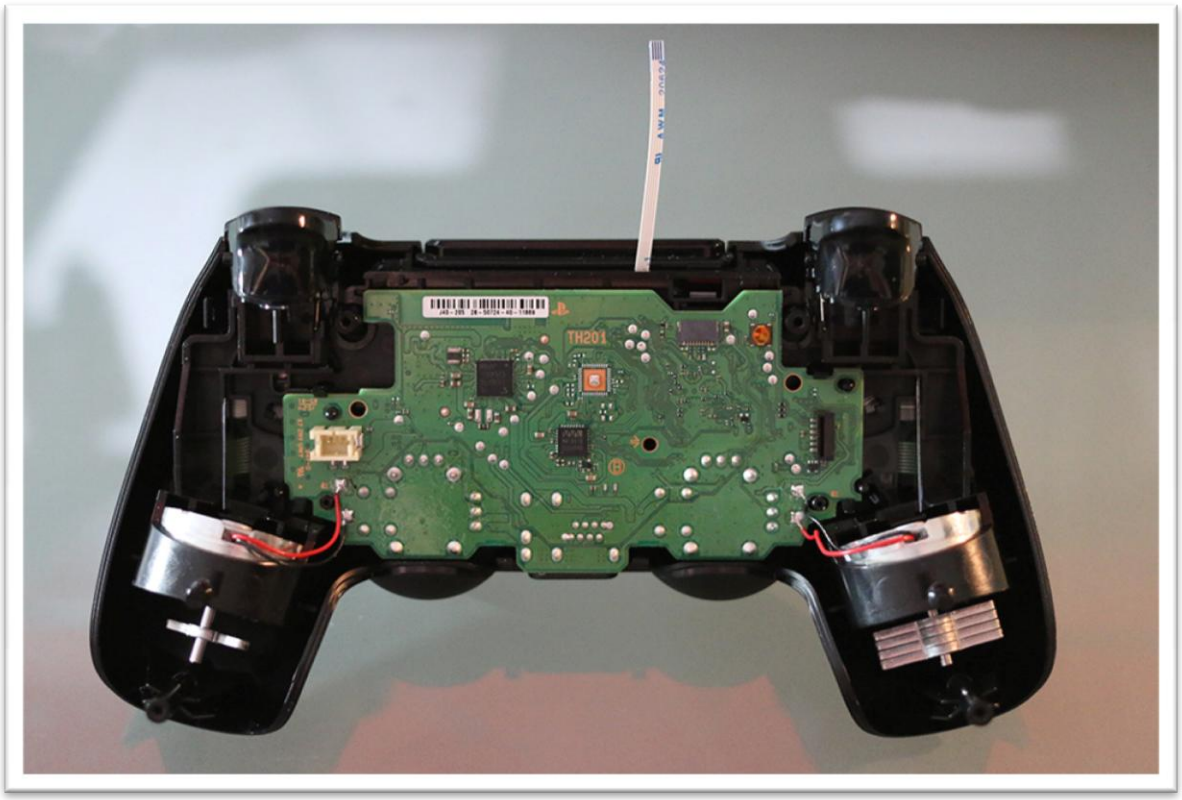


Install the LED driver board and connector cable as shown.





Make the connector cable look like this. “Blue side up” when connecting to modchip’s H1 or H2.

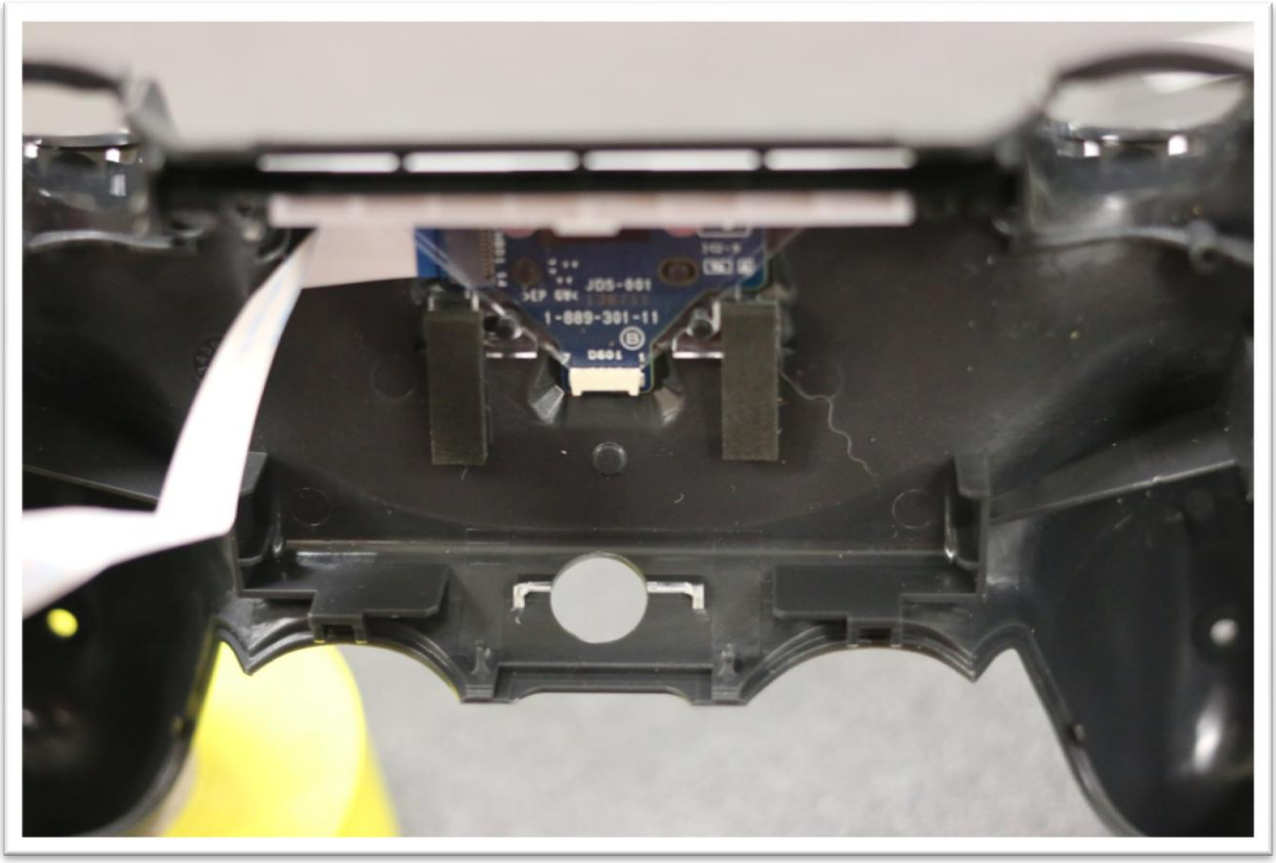


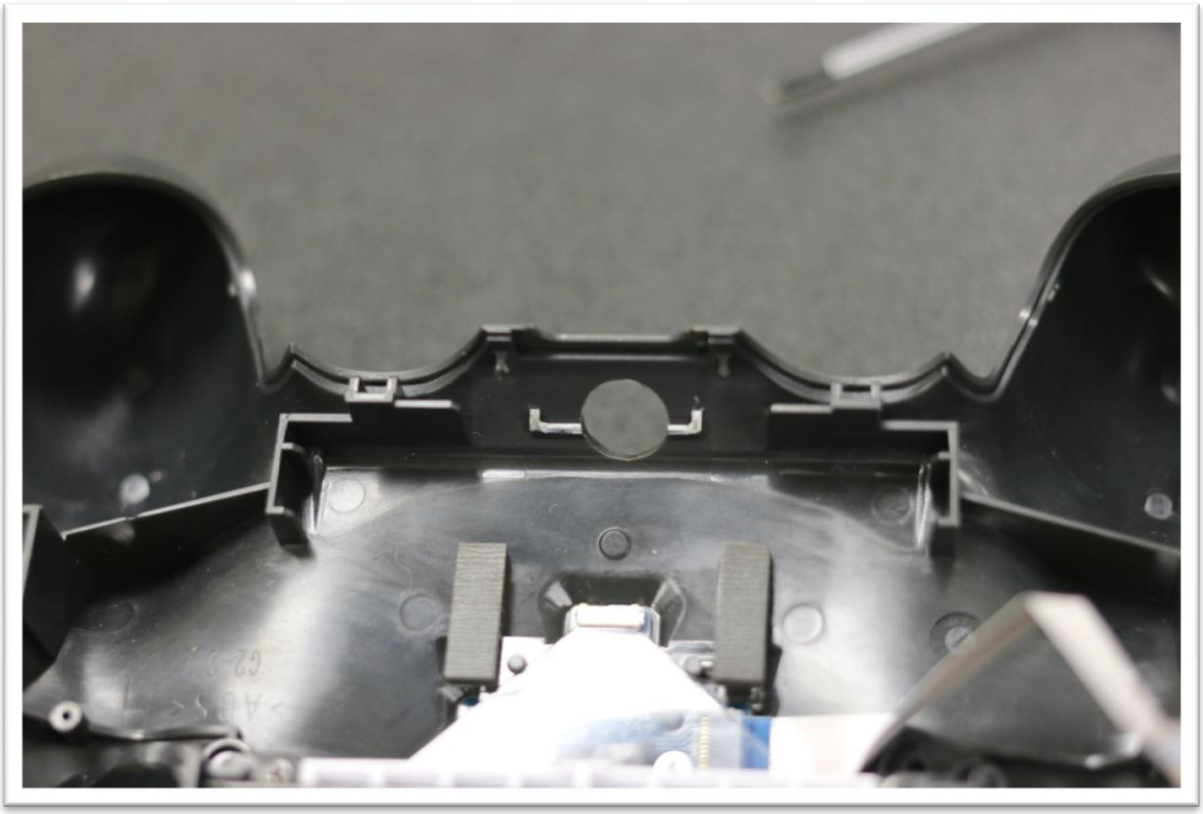
Drill Shell and Install Indicator (Option 2)

Drill a 9mm hole in the shell. Practice will be required to find the best location for the hole. Also drill a smaller hole as desired for the mod switch. We recommend using a smaller drill bit to drill a guide hole, then use a larger drill bit to make the hole a little larger, and then very last use the 9mm drill bit to make the hole the correct size.

The LED indicator is 9mm in diameter, and by using a 9mm drill bit, the indicator makes a nice press-fit into the hole. If you attempt to drill the shell without drilling a guide hole, you will most likely end up damaging the shell as the plastic is very soft.

Remove the tab of plastic before drilling:

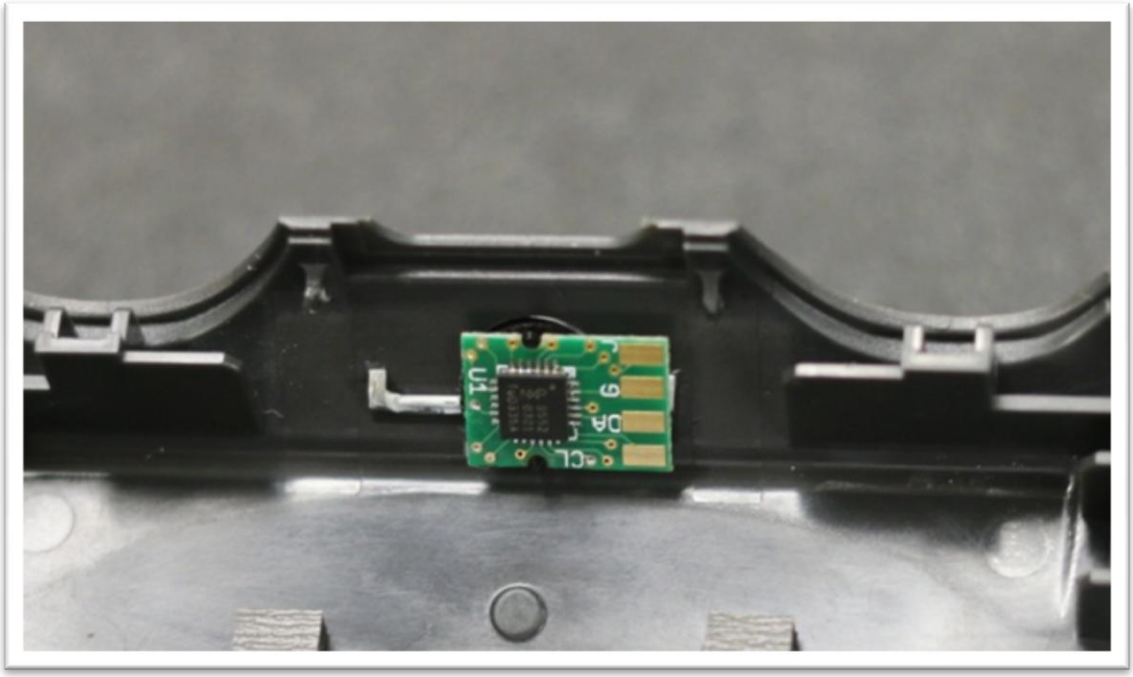




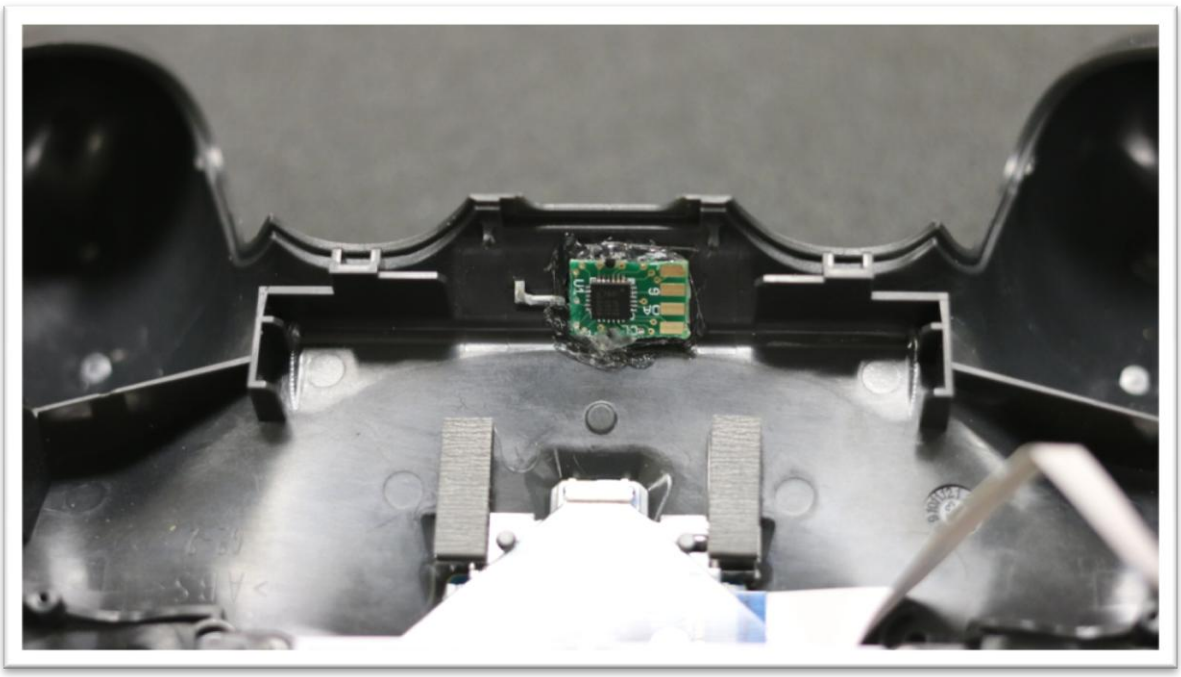

SONY
MODEL CUH-ZCT1U WIRELESS CONTROLLER 5V 800mA
Sony Computer Entertainment Inc.
MADE IN CHINA
NOM


SONY
MODEL CUH-ZCT1U
800mA
NOM

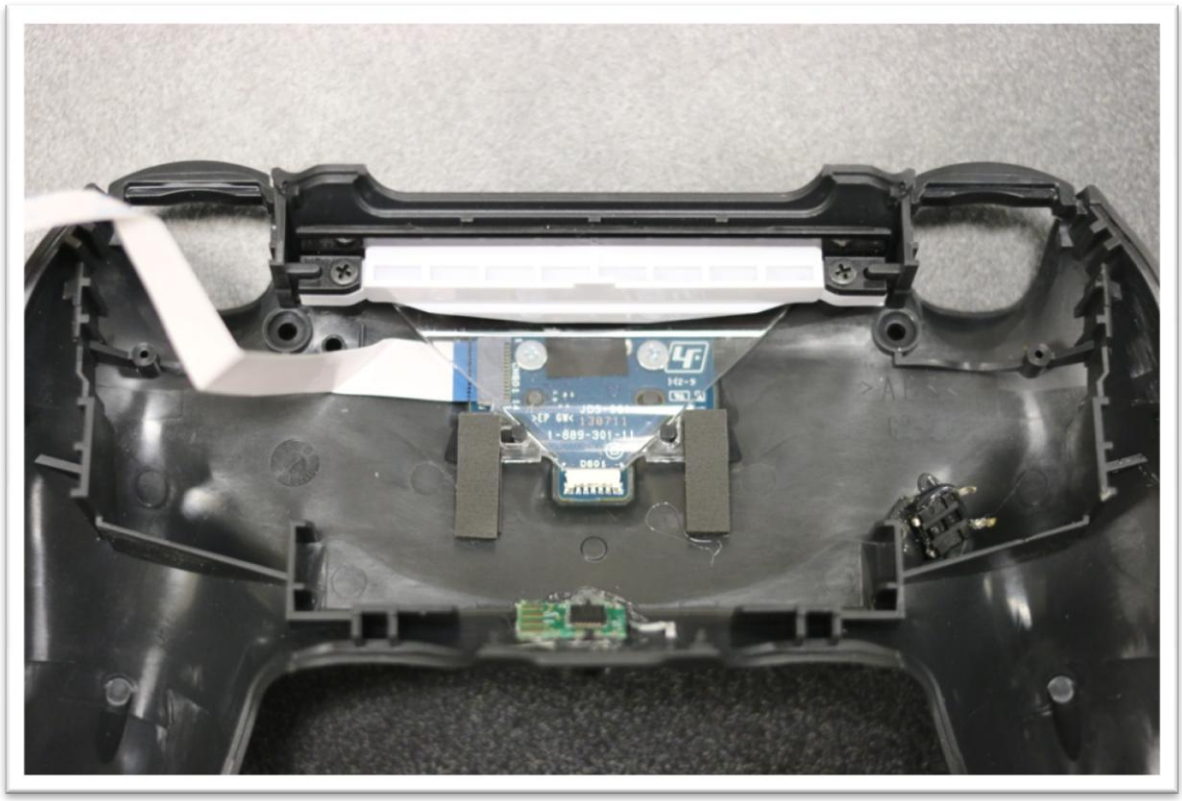
Press the LED lense all the way into the hole, noting the orientation of the two small nipples. The nipples will line up with the notches on the LED board. The LED board should be pressed firmly into the LED lense such that the little LED's on the board are sitting inside the LED lense. This will ensure best light performance.



Be sure to keep the LED board tight and firm against the LED lense and aligned in the alignment nipples, then use a few dabs of hot glue to secure everything in place.

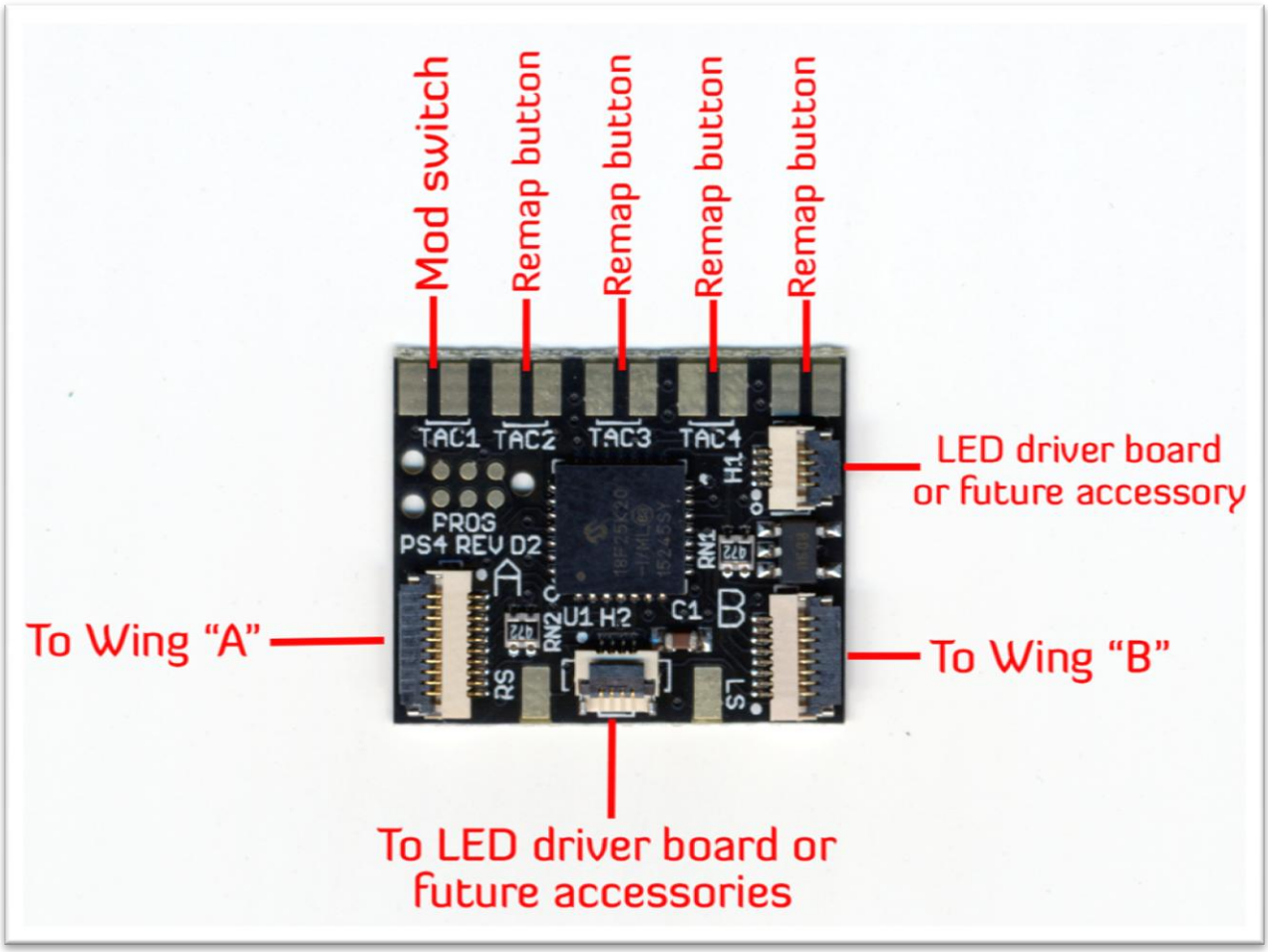


One possible location for the mod switch is shown in the photo below:



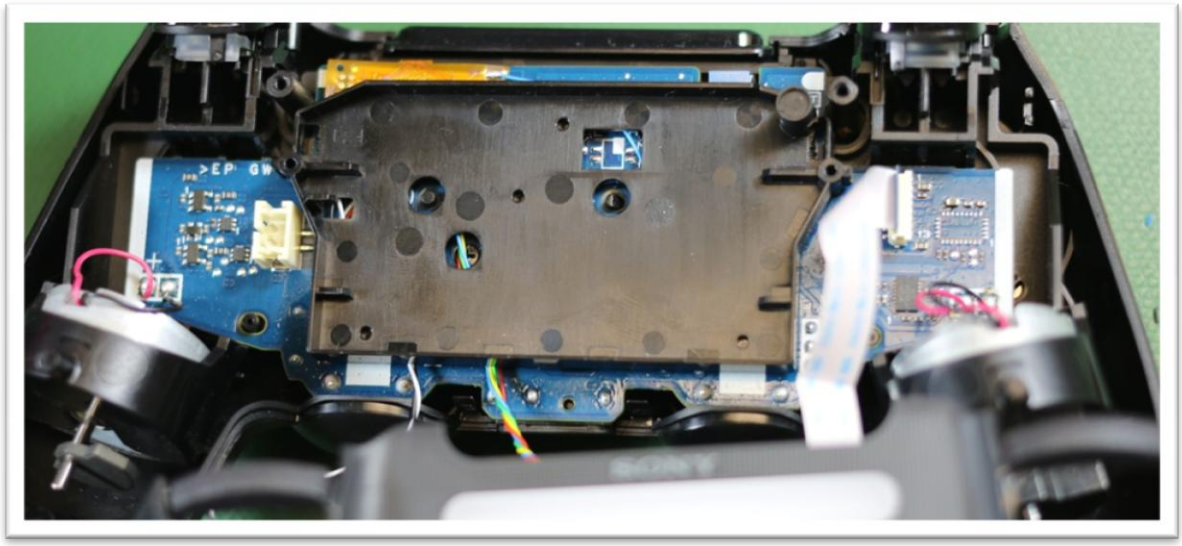
Connecting Re-mappable Tactile Buttons

You may connect many up to four additional tactile buttons to the modchip, and these tactile buttons may then be used as programmable remapping buttons. The photo below shows “TAC2”, “TAC3”, “TAC4” and “TAC5”.

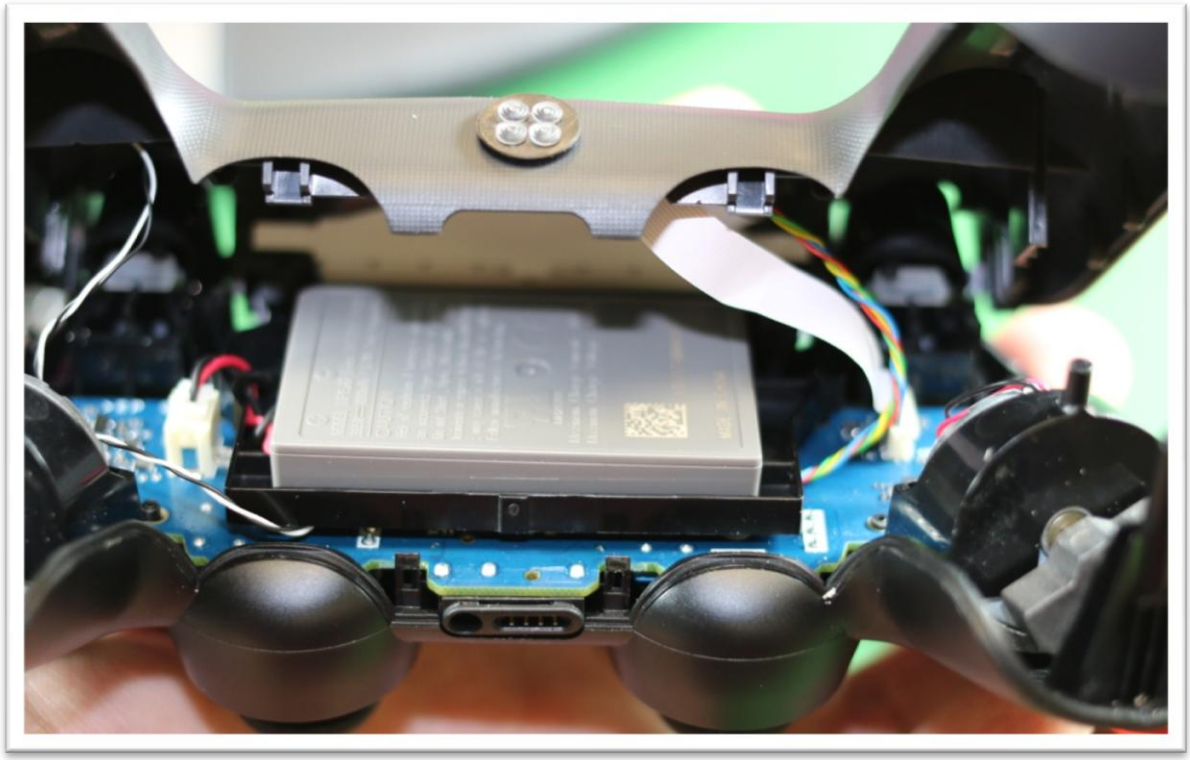


Put the controller together

Once the 10 modchip is installed, re-install the plastic battery cover and the controller's ribbon cables.



Route any ribbon cables or wiring harnesses carefully to avoid pinching off any ribbon cables or wiring harnesses when the shell is closed up:



Boot Into Special Test Mode

You may boot the controller into a special LED and button test mode to verify that all the buttons are working properly. To do so, begin with the controller powered off, then hold L1 (Left Bumper) + R1 (Right Bumper)+ Mod Switch while powering up the controller. (Be sure to continue holding that three button combination for several seconds after the controller powers up).

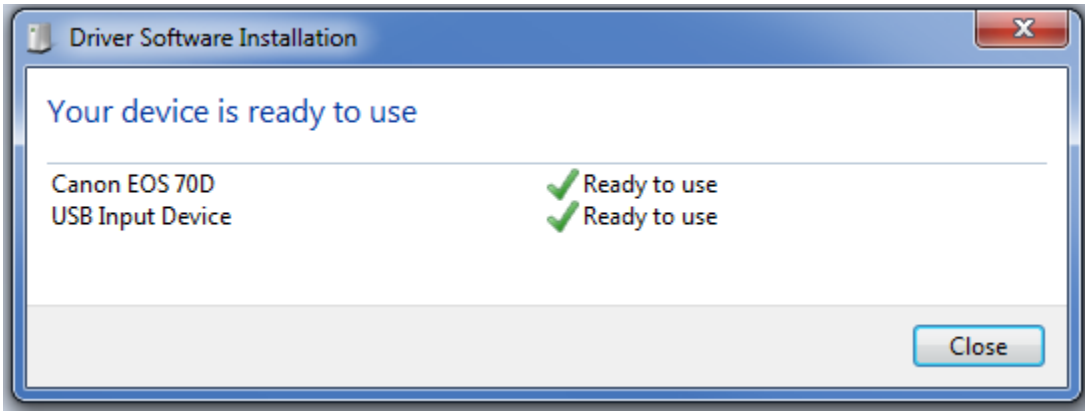
The controller will play back all the available colors on the LED indicator and then start a button test. During the button test, the LED's will blink a certain number of times to correspond with each button press. Here are a list of button presses:

Button	Number of LED Blinks when pressed
D-Pad Up	1 quick blink
Right Stick Center	1 regular blink
D-Pad Left	2
Left Stick Center	3
D-Pad Down	4
Triangle Button	5
Left Bumper	6
D-Pad Right	7
Right Bumper	8
Square Button	9
PS Home	10
X Button	12
Circle Button	13
Right Trigger	14
Left Trigger	15
Mod switch on TAC1	16
Tac switch on TAC2	17
Tac switch on TAC3	18
Tac switch on TAC4	19
Tac switch on TAC4	20

Test the Controller Through Windows

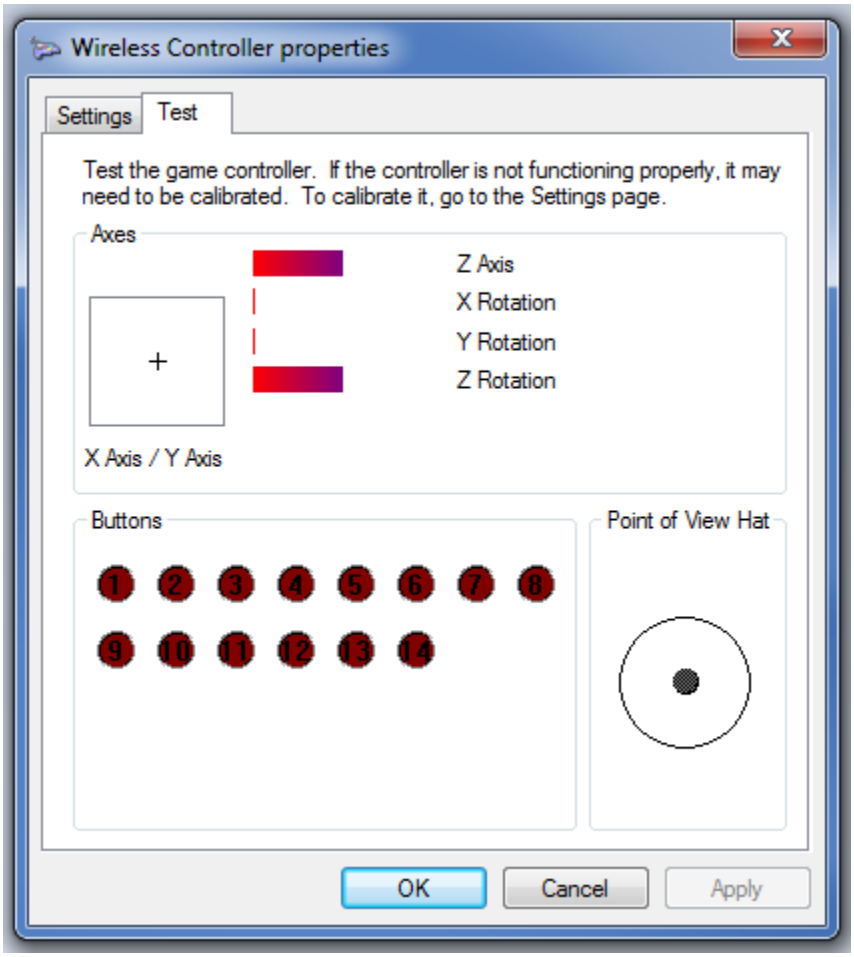
There are two ways to test the controller. The first method involves connecting the controller to a Windows PC to verify that all the button presses are working correctly.

The PS4 controller can be connected to a Windows PC.



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. Mods such as rapidfire can be tested without the need for a console by monitoring the flashing lights in the tool:



The second test method involves booting the controller into a special “test mode”. Start with the controller powered off. Hold L1 (left bumper), R1 (right bumper) and the Mod Switch. While holding these three buttons, power up the controller. The modchip will enter a special test mode. You will see an LED test where all LED’s flash through 10 different colors, an

First Power-up (Lock/Unlock)

Note: It is extremely important to follow this section. Failure to initialize your modchip properly will result in permanently disabling some or all of your mods.

These modchips are designed for re-sale by mod shops. When you first power up the controller, all four LED's will show red. The mod is waiting for you to start a "lock/unlock" sequence. By default you will want to UNLOCK ALL MODS.

Tap the mod switch one time to begin the lock/unlock sequence. The Player 2 LED will turn red. Now hold down the triangle button. You should see a series of LED blinks, with green LED blinks in between. This is the modchip unlocking all mods. When the sequence is complete all LED's will go out.

If you don't follow these instructions, some or all mods will become locked and this is irreversible.

Once you've tested all the buttons and unlocked all the mods, you're ready to play!