PS4

Pro Remap

Flex Modchip

Installation and Use Instructions

Revised 2/7/2017

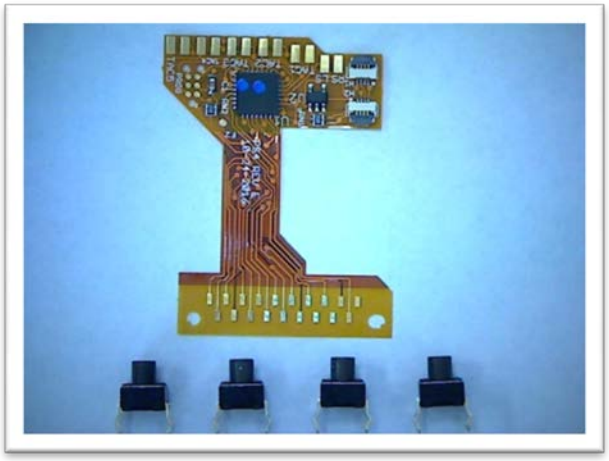
For Sony PS4 Circuit Board Revision “JDM-040”

Tools needed

- PS4 Controller (Circuit board revision JDM-040)
- Viking PS4 Ragnarok Flex modchip “Revision E” kit: modchip and tactile switches
- 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 bit
- Hot glue and glue gun
- Safety glasses
- Additional useful items: flux, tweezers, scissors, wire snippers, etc.

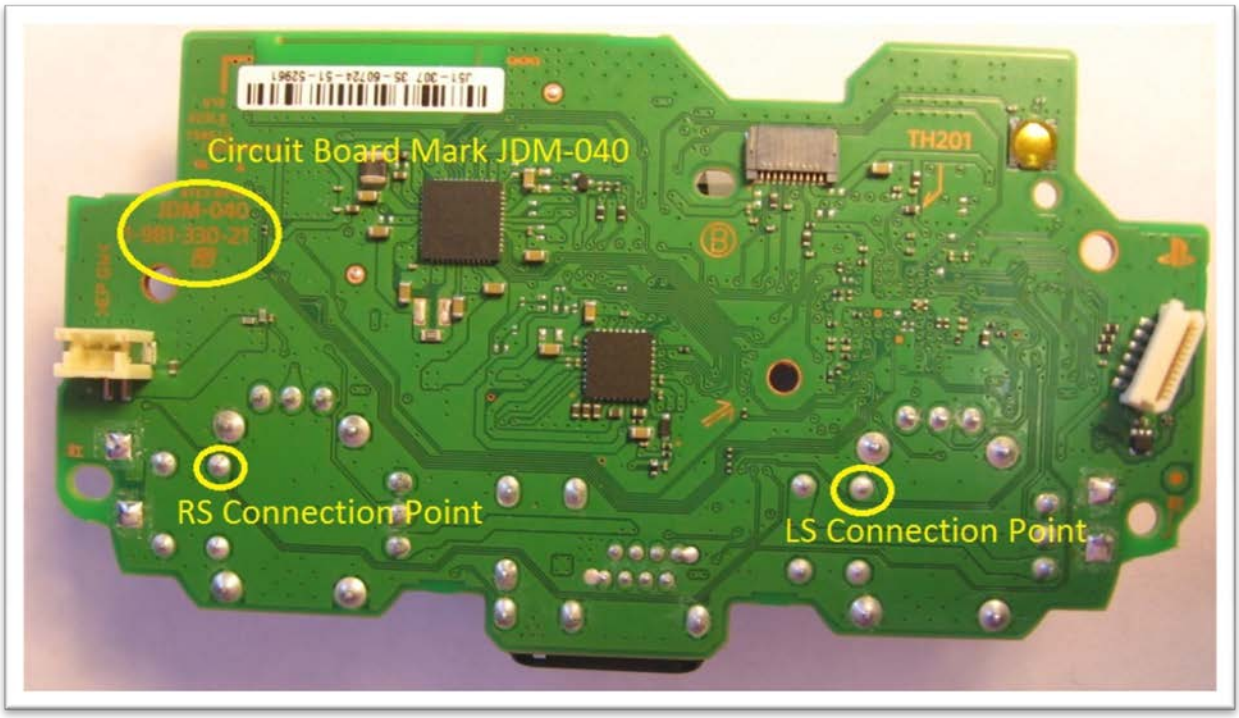
Please note that throughout the physical portion of installation guide, such as removing battery packs and disassembling the controller, has not changed much from one Sony circuit board to another. In the interest of saving time, throughout this guide we may “recycle” photos from previous installation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

Determine modchip and board revision



Please note that these instructions are for Sony PlayStation 4 controller revision “JDM-040”. You will need the PS4 Pro Remap Revision “E” modchip kit (pictured above) in order to modify this board.

To identify the “JDM-040” circuit board, look for the “JDM-040” marking.



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.

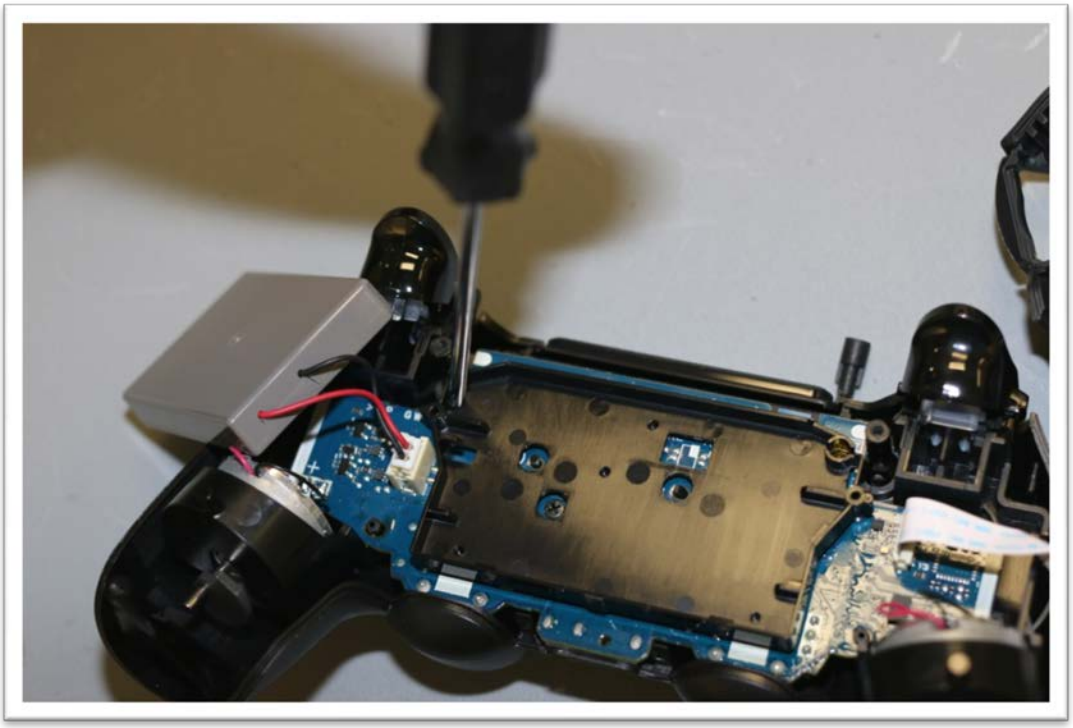
Disassemble the circuit board

NOTE: Some of the following pictures show an earlier circuit board design, but the techniques shown also apply to the JDM-040 board.

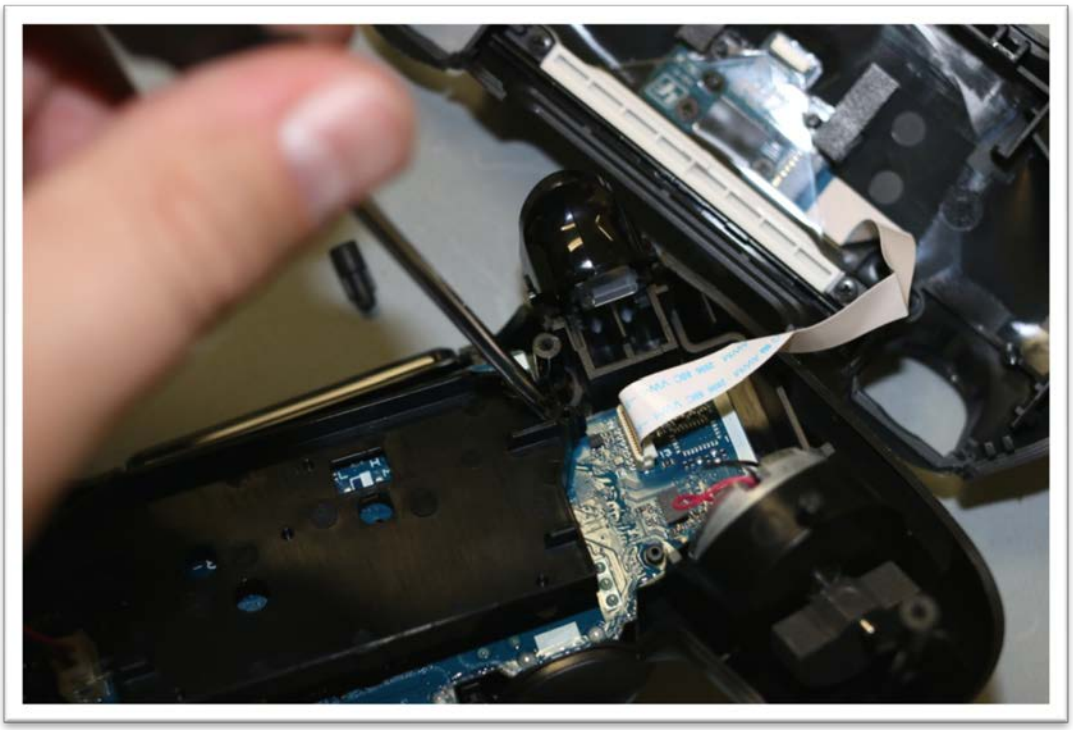
Once the top shell is separated from the bottom shell, flip it open like a clam shell:

Unhook the battery wires from the battery wires hook and remove the battery by pulling up on white battery connector on the circuit board.

The black battery tray 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:



Be gentle and do not break the tray tabs. Move them only enough to release the battery tray.



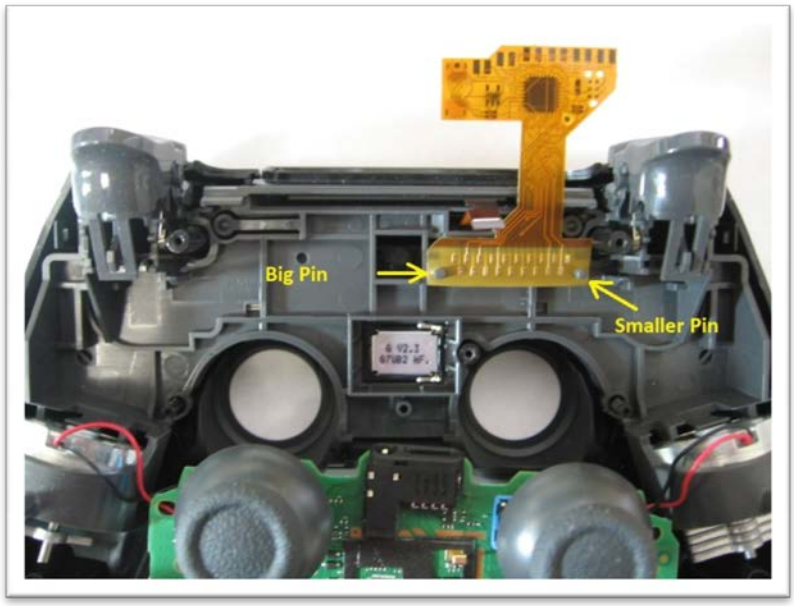
Remove the black plastic battery tray, and you will see the exposed circuit board.

You now need to separate the circuit board from its frame underneath:

1. Pull straight up on the wide ribbon cable at location “A” to separate it from its connector. Note the orientation of the silver pins on the cable, so that you can re-insert it later in the correct orientation. Set aside the bottom shell – it will be drilled and fitted tactile switches later.
2. Separate the ribbon cable from its connector at location “B” by pulling the stiff tab straight forward, or toward the front of the controller.
3. Remove the screw at location “C” and set it aside and do not lose it.
4. There are two securing tabs at locations “D” which keep the circuit board flat in the underlying frame. While pulling gently up on the front edge of the circuit board, push these tabs gently forward just until they release the board.

Install the modchip

Pull the circuit board up and flip it over clam-style again toward the rear until the underlying controller frame is exposed. Install the modchip in the exact orientation as shown in the following photo:

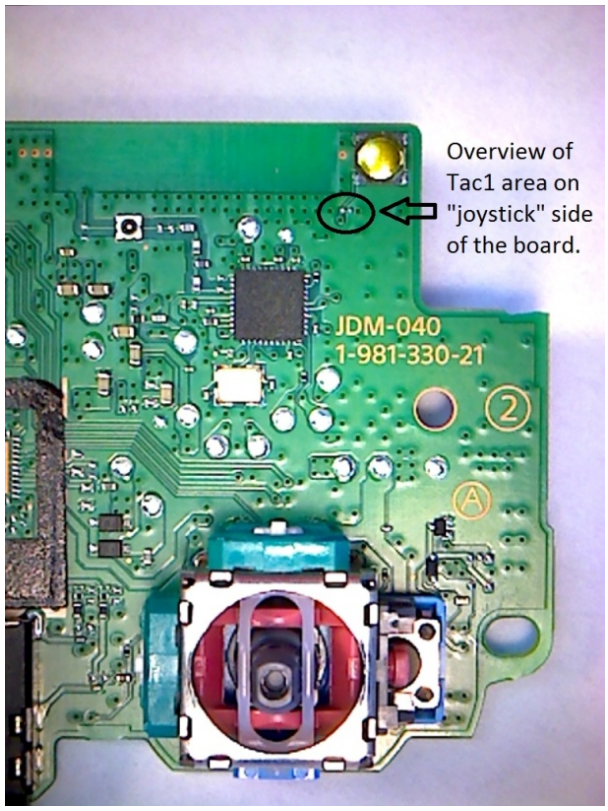


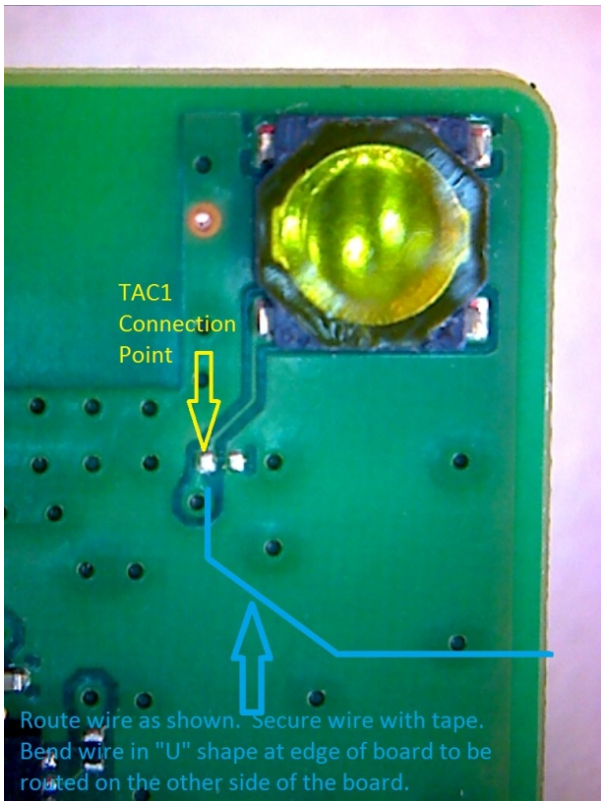
Note that there are two pins (one larger and one smaller) which will locate the modchip "wing" precisely where it needs to be installed. On the modchip wing, the wide pin mates to the larger hole, and the smaller pin corresponds to the smaller hole. Notice that the modchip wing contact pattern mimics the controllers existing clear, flexible contact wing. Press the modchip wing down gently until it is flush with the controller's existing clear wing and is seated fully down on the locating pins.

NOTE: Make sure that all wing contact points are kept clean during installation.

While the circuit board is in this position, you must solder a sufficiently long length of 30 AWG wire to a very small point (TAC1) and secure it with tape.

The TAC1 contact is on joystick side of the circuit board near the gold options button:





IMPORTANT NOTE: Make sure you connect the wire to the one indicated point only. Do NOT allow solder or wire to make a bridge between the two points!

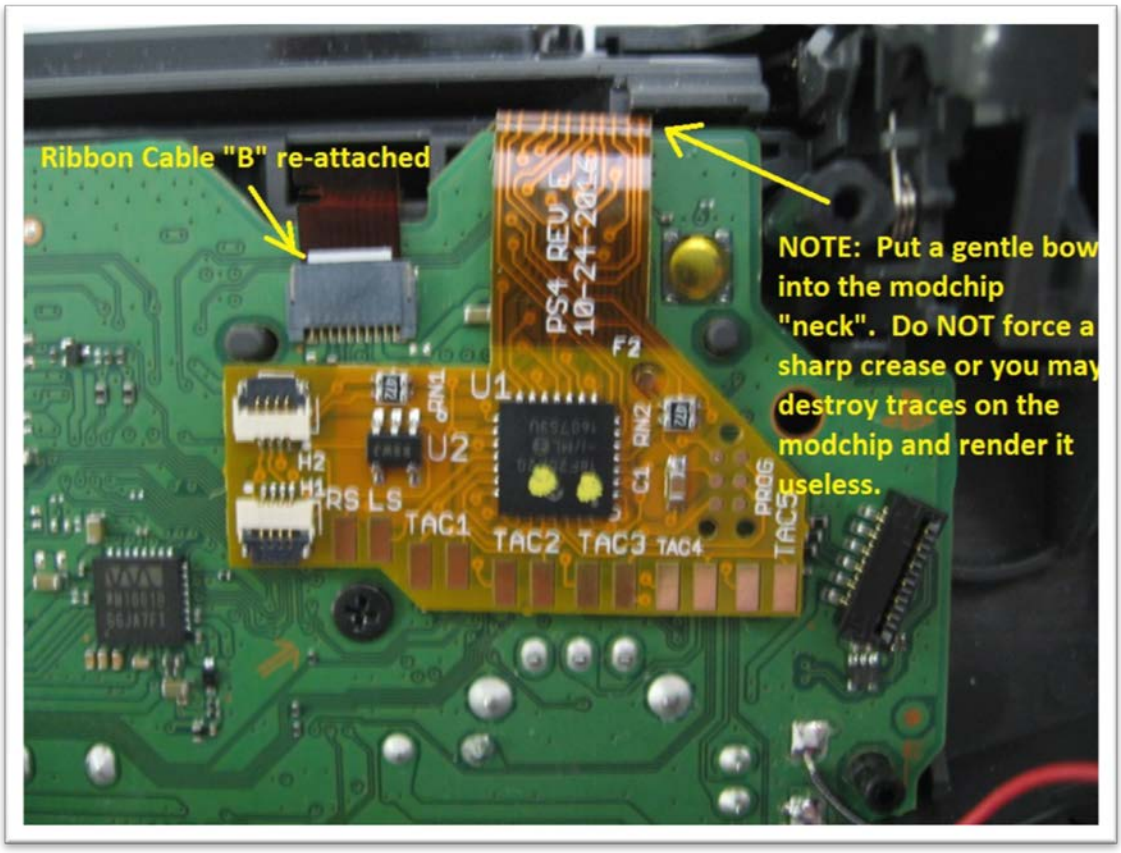
Once the TAC1 wire is soldered and secured, rotate the circuit board back to its original orientation and gently place it back down into its original position in the frame. Note that the circuit board has holes that correspond to the wing locating holes and other locating posts on the underlying frame.

Proper installation will ensure that the modchip wing is flat and securely sandwiched between the circuit board and the clear flexible wing.

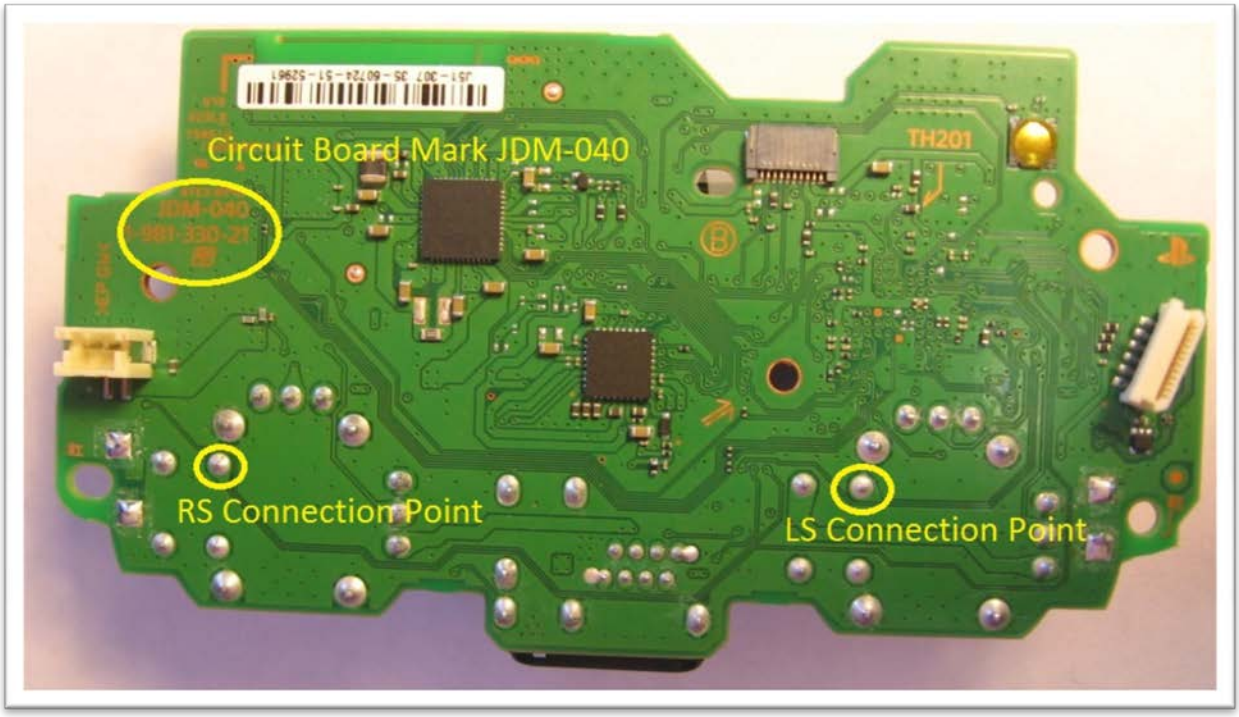
NOTE: Leave the TAC1 wire loose – it will be cut to length later and connected to the first pad of the TAC1 location on the modchip (shown in a subsequent photo).

Make sure the two securing tabs, “D” from a previous photo, snap into place to secure the board. Once the circuit board is back into place and flat in the frame, re-install the single screw “C” which holds the circuit board into place. Leave the modchip hanging out of the front of the controller for now.

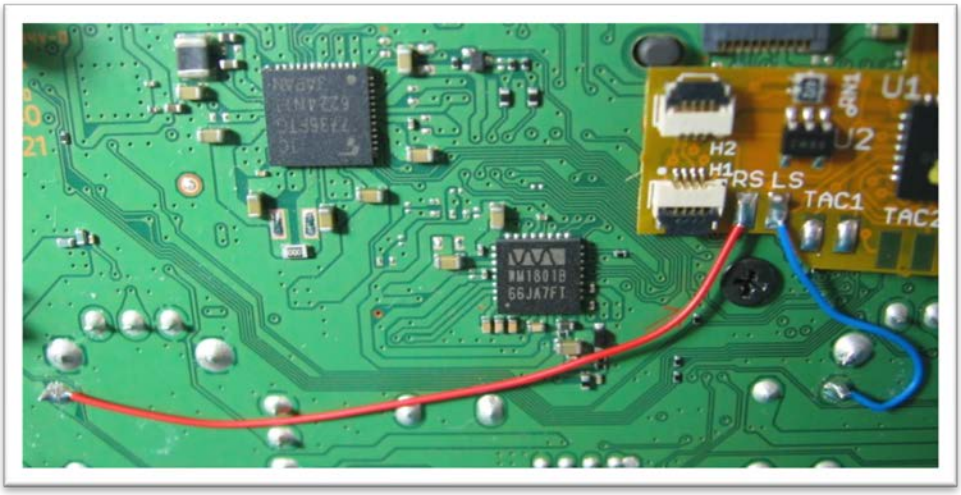
Next, re-insert the ribbon cable “B” into its connector. Put a loop of electrical tape on the back side of the modchip “head” and secure it to the top side of the circuit board, as shown:



Locate the “RS” and “LS” solder points:



With an appropriate length of 30 AWG wire, make a connection between the “RS” point on the circuit board and the “RS” pad on the modchip. Do the same for the “LS” connection points. See following photo for reference and note that the wire routing can vary – just make sure that the wires are not pinched when re-installing the battery tray.

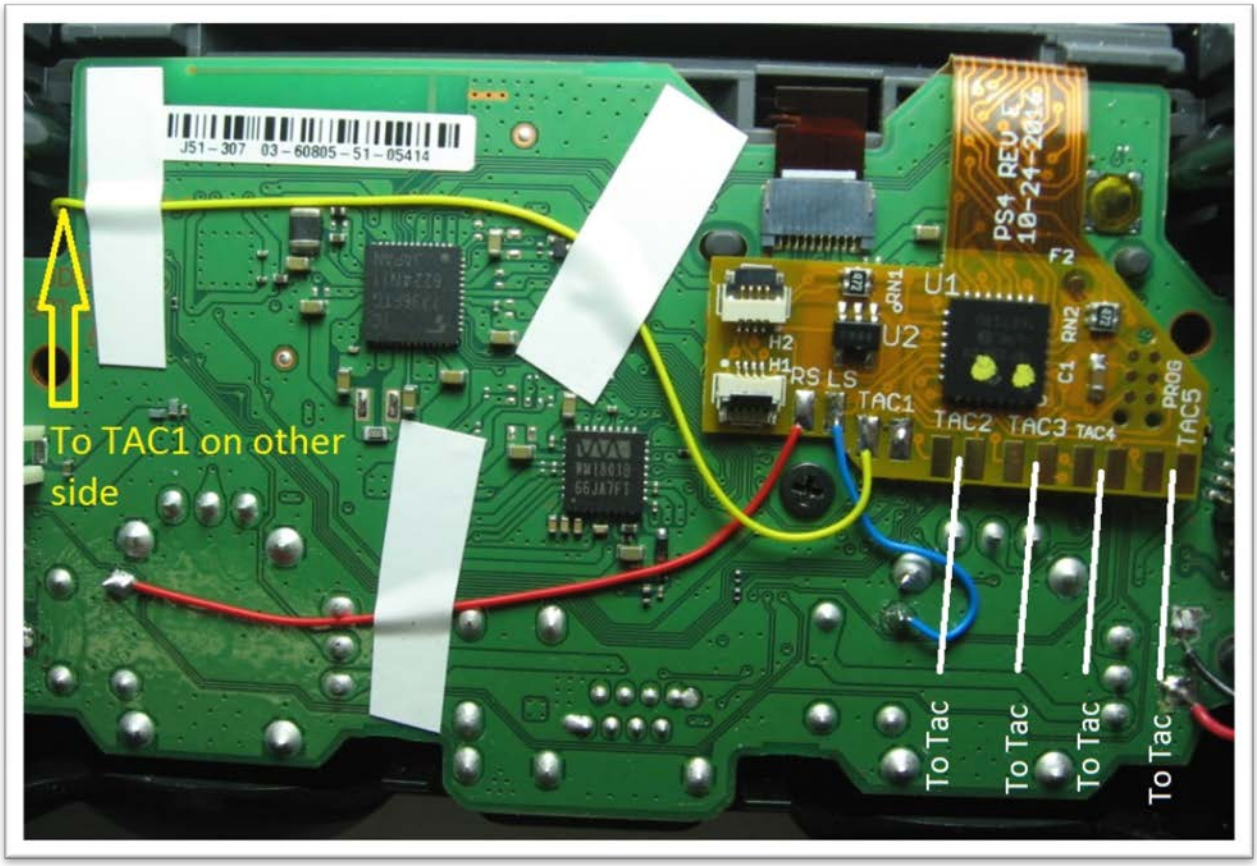


NOTE: It is very important that no bare parts of the wire touch any exposed components on the circuit board.

Cut the TAC1 wire, which was soldered to the other side of the circuit board, to an appropriate length, and connect it to the left-most pad of the TAC1 pads on the modchip. Routing of the wire can vary. See following photo for reference.

The photo below shows the almost complete electrical connections of the modchip installation, with the exception of the tactile switches. Tactile switches will be connected after they have been installed in the shell.

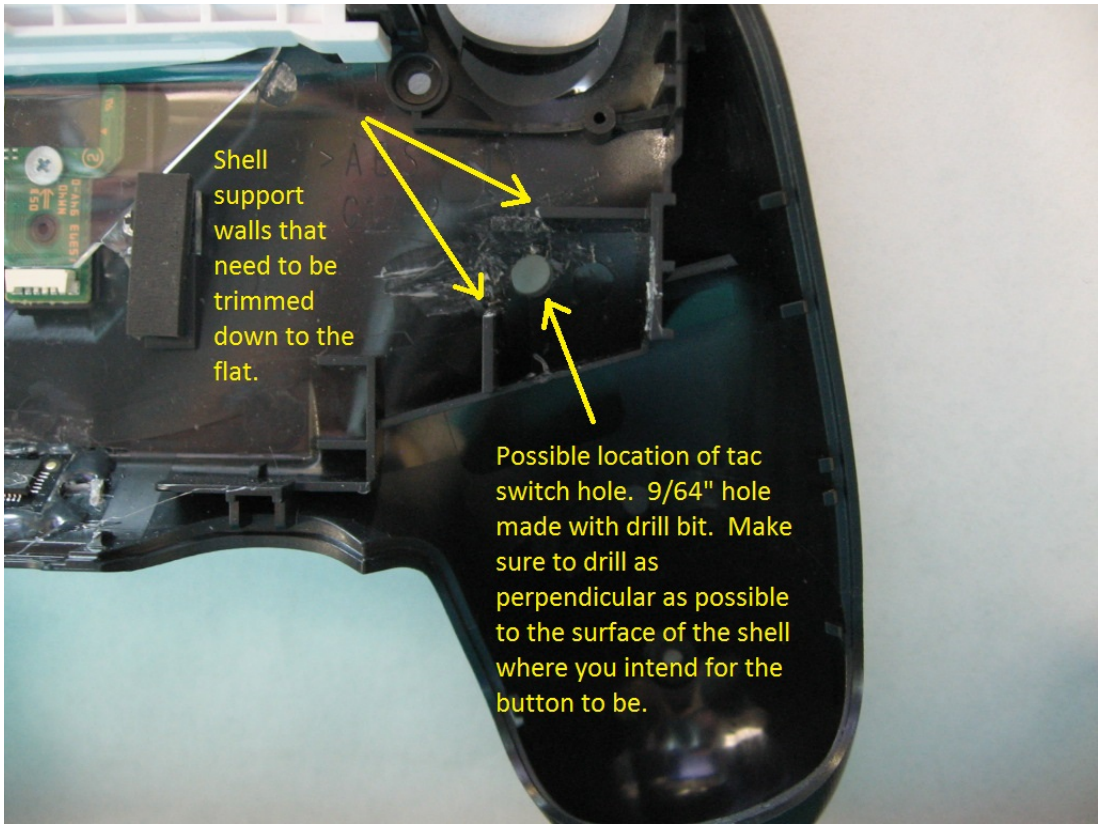
You should secure the single wires with tape, at minimum at the places shown. If you install all four tac switches, you will have to secure them well to the circuit board with tape so that they will not deform the modchip when the controller bottom shell is re-installed.



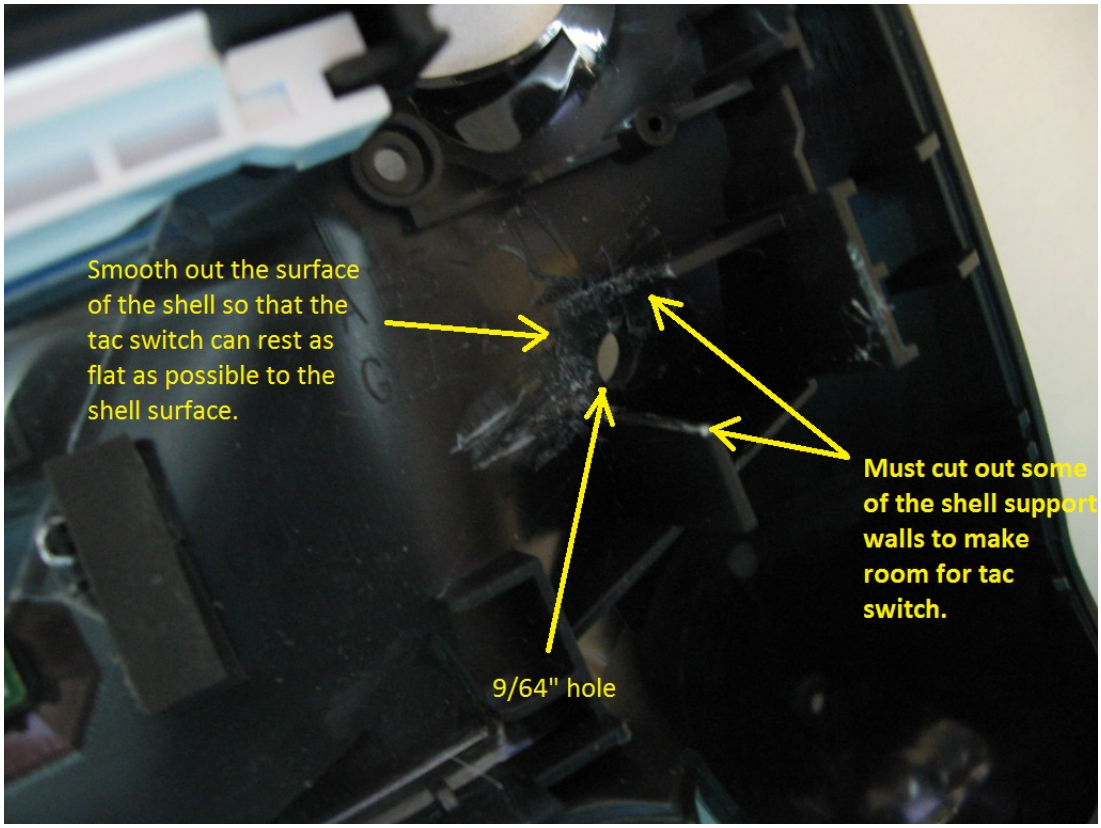
NOTE: The next section shows how to install a tac switch in a single location. Any additional tac switch locations shall be determined at your sole discretion. There are a number of spots on the bottom shell where tac switches can be located. Any spot(s) chosen must have enough clearance to be able to close the shell together successfully and to avoid tac switch contact with the circuit board.

Install Mod (Tactile) Switch

The following single tac switch location is standard location for Viking buAny other tac locations needed for a multiple switch remap build, will be at your sole discretion.

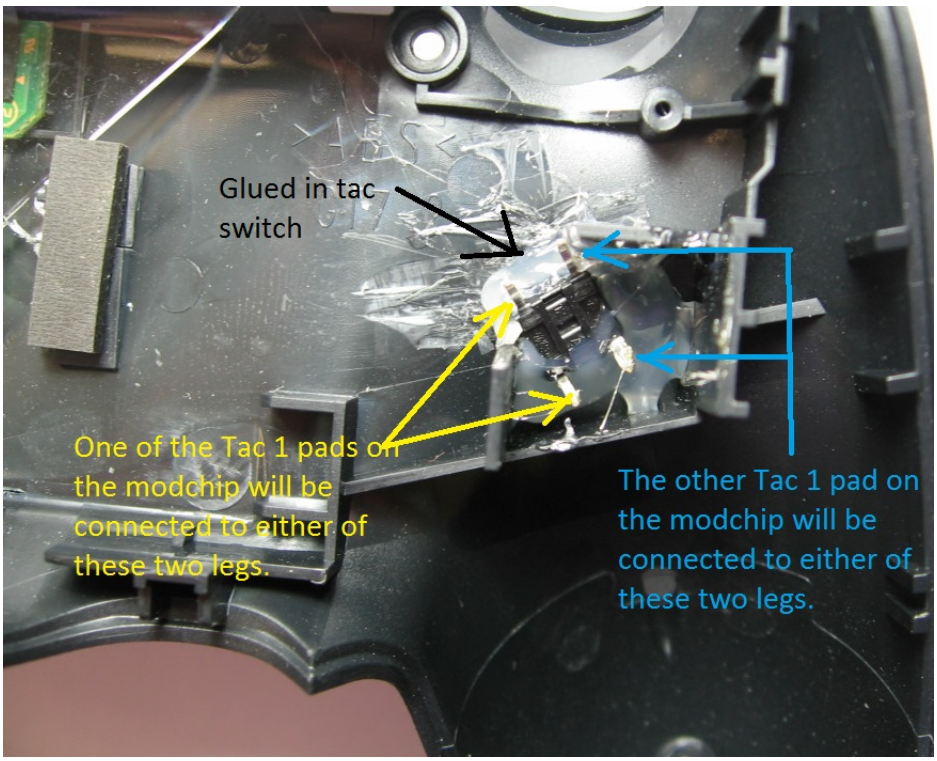


The next photo shows what material removal may be required to make room for the tactile switch in this location.



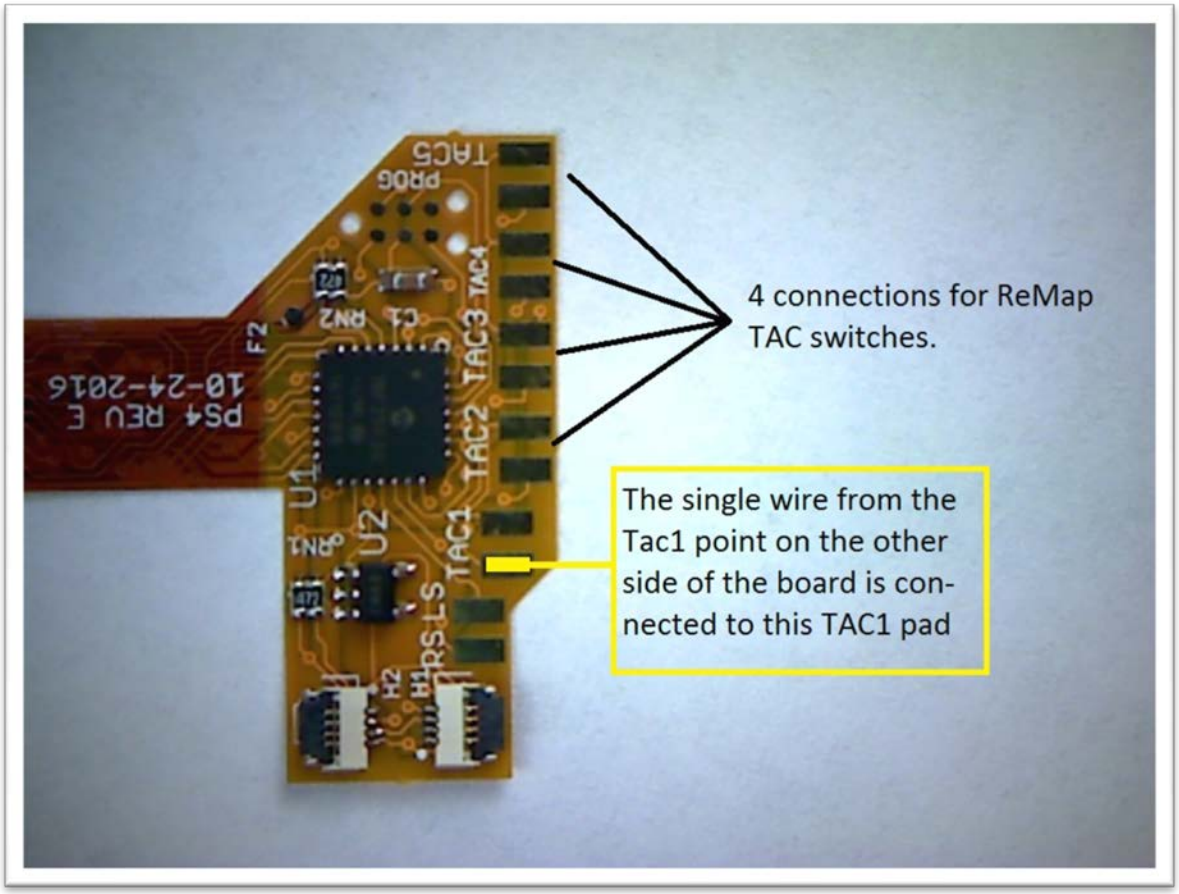
Make sure that the tactile switch is laying flat. Lay in enough hot glue on all four sides of the tactile switch in order for it to be as stable and permanently attached as possible. Tactile switch legs can be bent (before or after soldering the tactile switch wires) to fit them in the available space. Just make sure that they do not touch and create a short.

IMPORTANT NOTE: For Remap builds, physical tac switches are connected to TAC2, TAC3, TAC4 and TAC5. TAC1 pads on the modchip are reserved for a circuit board connection.



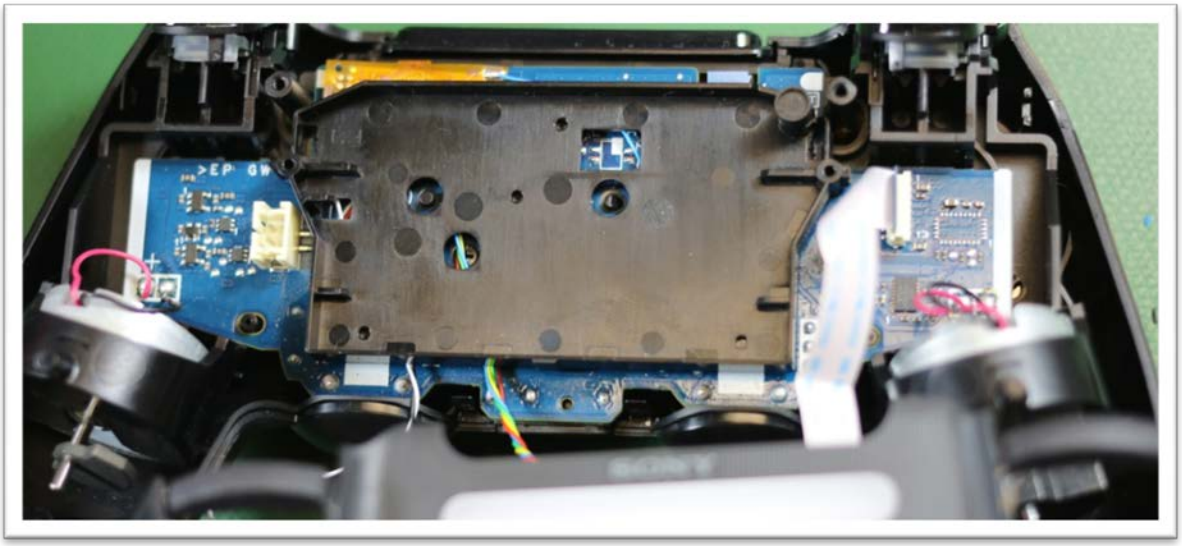
Connecting Re-mappable Tactile Buttons

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”.

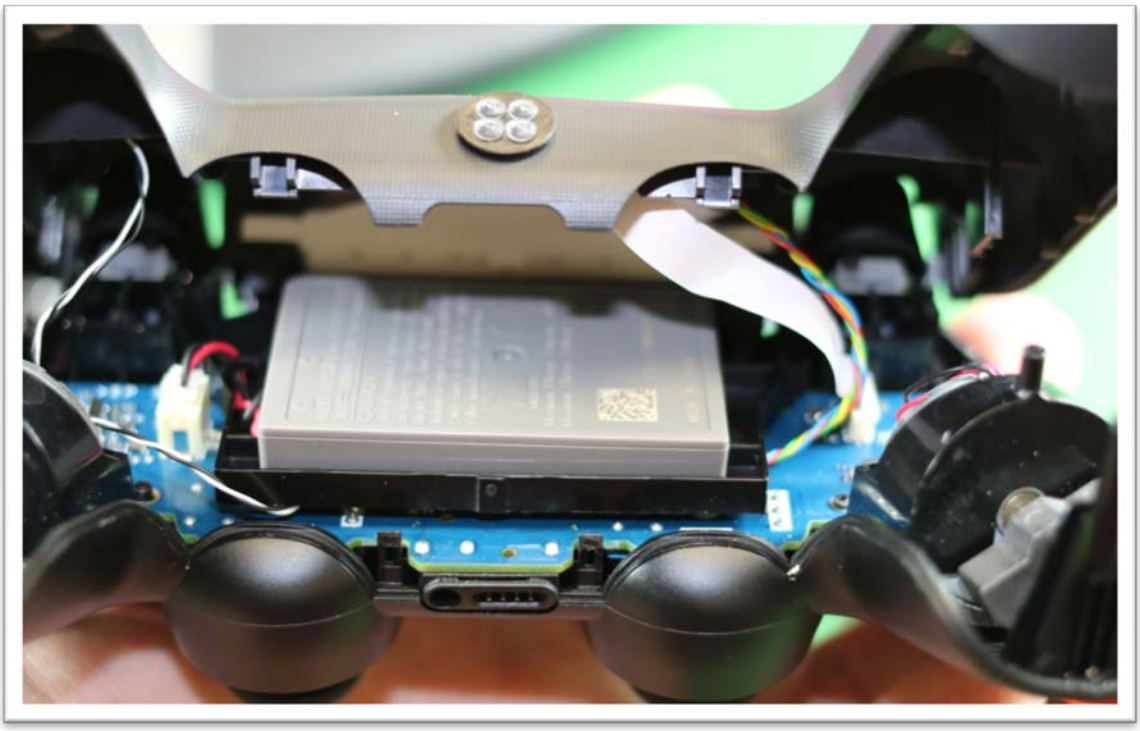


Put the controller together

Once the modchip is installed and completely connected, you will re-insert the factory ribbon cable from the bottom shell to the circuit board. Next install the battery tray and battery.



Route any ribbon cables and wiring harnesses carefully to avoid pinching off any ribbon cables or wiring harnesses when the shell is closed up. If four tac switches are installed, there will be a lot of wires to route into available space as you are closing the shell. It may be challenging.



Setup the Remappable Buttons

The PS4 controller can be connected to a Windows PC. In order for the modchip to work, the controller must be synced either to a Windows PC (using a standard USB to micro USB cable) or to a PS4 console.

To enter button programming mode: Once synced to a PC or console, hold the OPTIONS button for at least 3 seconds, then release. The modchip is now awaiting you to program your tac buttons. You may hold the button for longer than 3 seconds, but it must be held for at least 3 seconds.

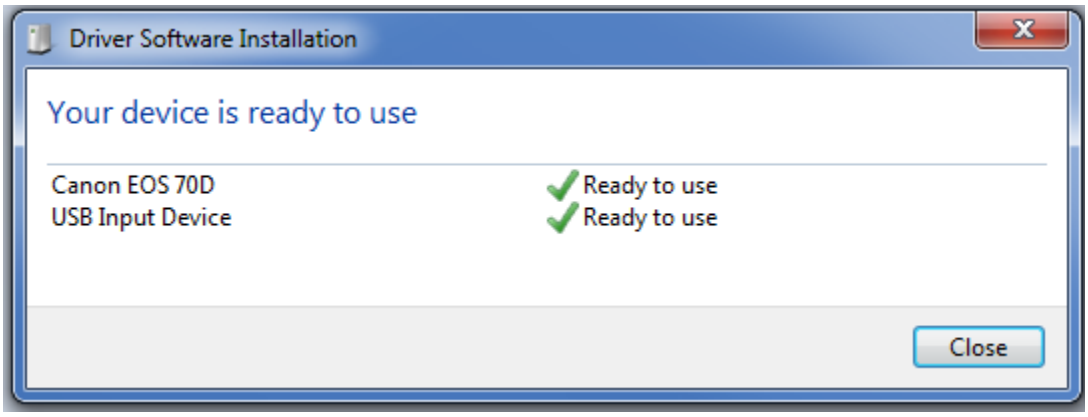
To program a tac switch: Once in programming mode, hold down any tac button, then tap a stock button to map it to the tac switches.

To exit programming mode: When you are done setting up all your tac switches, hold the OPTIONS button for at least 3 seconds, then release. This exits the tac switch programming function. You may hold the button for longer than 3 seconds, but it must be held for at least 3 seconds.

To use the remappable tac switch: After the tac switch is setup to emulate a stock button, just press it – you now have a remapped tac switch that emulates a stock button press.

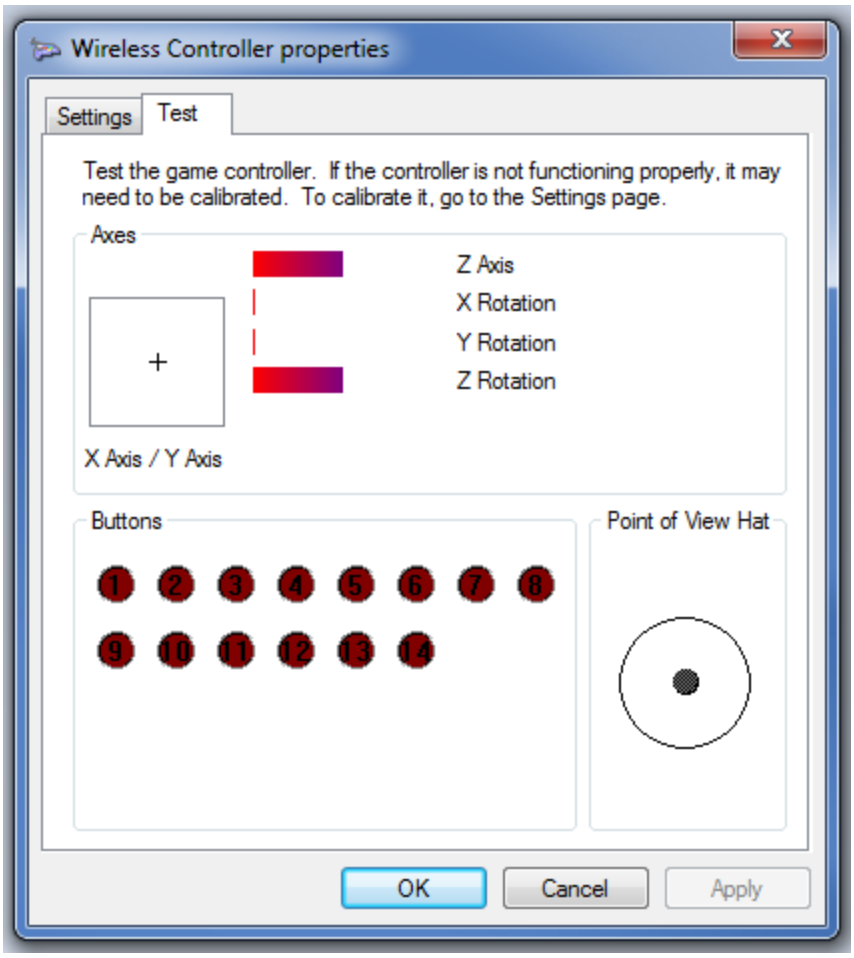
Test the Controller Using Windows

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:


Wireless Controller properties
Settings
Test
Test the game controller. If the controller is not functioning properly, it may need to be calibrated. To calibrate it, go to the Settings page.
Axes
Z Axis
X Rotation
Y Rotation
Z Rotation
X Axis / Y Axis
Buttons
1 2 3 4 5 6 7 8
9 10 11 12 13 14
Point of View Hat
OK
Cancel
Apply