Installation tutorial for Console Customs PS3 3-mode

Rapid fire Microchip for Sixaxis and Dualshock 3 controllers

This tutorial is designed to aid you in installation of a console customs rapid fire microchip. There is no one way to install this chip but this method is what I have found works the best and allows the chip to fit inside the controller.

This installation requires soldering several wires to extremely small confined spaces. I do not advise attempting this installation if you are a beginner at soldering. I recommend reading through all of the instructions and understand them before beginning your installation.

Please proceed with this installation at your own risk. I will not be held responsible for any damage to yourself, your controller, your PS3 console or any other equipment.

Tools needed:

- Small Phillips head screwdriver
- Soldering iron (A 15w/30w from radio shack about \$15)
- Solder (rosin core solder from radio shack works well so there is no need for flux)
- Wire strippers (that can strip 30ga wire, a 30ga wire wrap tool from radio shack includes a 30ga stripper \$8)
 - Wire cutters
 - Hot glue gun
 - 9/64th drill bit (or close to it, a 1/8th will work as well but the hole will be a little big)
 - Small pocket knife or razor blade (optional but helpful)

Please visit our website at www.consolecustoms.net

Also visit our ebay store at <u>http://stores.ebay.com/console-customs</u>

Step 1: Kit Contents

- You should have the following items in your kit
 - 1. (1) 8 pin PIC microcontroller
 - 2. (1) NPN Transistor
 - 3. (2) tactile switches
 - 4. Aprox. 18" of 2 different colors of wire



Step 2: Soldering the Power and button wires to the chip.

- Start by putting the chip on it's back (also called dead bug) or on it's side like have done here. Note the location of the notch that is on top of the chip. Be sure you orient the chip correctly or your mod will not work.
- Pin 1 (red wire) is the power wire. Cut a piece of wire aproximately 1.5 inches long and solder to pin 1
- Pin 2 (yellow wire) is the rapid fire button, (the button you will press to fire) and should be aprox 5 inches long.
- Pin 3 (blue wire) is the mode change button input. This wire should also be aprox 5 inches long.
 tip: For information on proper soldering visit http://www.curiousinventor.com/guides/How To Solder



Step 3: preparing the transistor.

- You will need to attach the transistor to one leg of the chip. So we will cut and bend the legs to make that process easier.
- The Left image shows the transistor as you will receive it, in your kit.
- The middle image shows the legs of transistor cut to the length they should be. This is approximately 1/4 inch.
- Finally you will take and bend the outside two legs over the rounded edge of the transistor as shown in the right side image.

tip: For information on proper soldering visit <u>http://www.curiousinventor.com/guides/How_To_Solder</u>



Step 4: Soldering the transistor, ground wire, LED wire and R1 wires to the chip.

- Now take the transistor that you just prepared and solder it to pin number 5 of the chip. Make sure that the black part of the transistor sits higher than the top if the pins so it can be bent down.
- Solder a wire to each of the two pins you bent back on the transistor. Shown here in blue. These two wires should be approximately 1.5 inches and will go to the connections in the controller for R1 or R2.
- Next is Pin 7 (yellow wire in the image) which will go to the player 4 LED. This wire should be 1.5 inches long.
- Finally is pin 8 (white wire in the image) is the ground wire. This should also be 1.5 inches long.

tip: For information on proper soldering visit <u>http://www.curiousinventor.com/guides/How To Solder</u>



Step 5: Opening the controller

• Remove the 5 screws indicated below.

• The controller also has a clip holding it together in-between the two thumbsticks at the bottom. The left image shows approximately how the clip is located inside the controller. You can usually squeeze the back cover of the controller together at the center to pop off the back cover. But you may need to use a small knife or screw drive to unlatch the clip.



Step 6: Identifying your controller

- Currently there are 2 different types of Sixaxis controllers (no Rumble) and 3 types of dualshock 3 controllers. Below you will find pictures and solder locations for each type of controller.
- First the Old style Sixaxis This is easily Identified by the solder connections for the thumbsticks. This is the only controller with 3 vertical and horizontal solder connections for the thumbsticks (circled in Yellow).
- The Player 4 LED is a very small via just to the left of the 3 in the vertical marking "U13" on the PCB



Step 6 cont.: Identifying your controller

- Next is the new style Sixaxis and 1st Generation Dualshock 3. These are both the same layout and solder points. The only difference is the dualshock has rumble motors. Some versions of this controller do not have the small square chip that is in the upper right corner of the PCB in this picture but all solder points are in the same location.
- The player 4 LED on this controller is a very small via that is just to the top right of the white plastic battery holder.



Step 6 cont.: Identifying your controller

- Next is the 2nd generations dualshock. Pay close attention to the markings on the PCB so you are sure to find the correct layout for your controller.
- The player 4 LED is a very small via just under the P in "TP51" that is written on the PCB.



Step 6 cont.: Identifying your controller

- Finally is the 3nd generations dualshock. Unfortunately Sony did not leave us any large solder pads for the R1 and R2 solder points in this controller. So we will be using this as our sample for the rest of the installation as it is the hardest to work with.
- The player 4 LED solder point is a very small via on this board and is covered by the battery holder in this picture, but it is just under the "T" in "TP12" that is written on the PCB.



Step 7: Mounting your Chip.

- We will proceed with the installation using the 3rd generation dualshock 3 controller as this is the hardest to work with due to the small solder points for the R1 and R2.
- Start by using some hot glue to hold the chip and transistor in place on the PCB. Notice that we have pushed it right up against the white piece of plastic that is sticking through the PCB. (not all controller versions have this piece, so just mount it anywhere in this general location. Just make sure it is not hanging over the edge of the PCB or the controller will not close correctly.



Step 8: Attaching the power and ground.

- Refer to the controller identification for the proper power and ground points for your controller type.
 - Note All controllers except the old style sixaxis controller use the same power and ground as this image.
- Here you can see the power and ground wires soldered in place. The power being the red wire and ground being the white wire.



Step 9: Attaching the R1 and R common wires.

- Again this is the 3rd generation dualshock 3 controller shown. <u>Refer to the controller identification to find</u> the solder points for your controller.
- You will solder one of the blue wires from the transistor to the R common point on the controller and the other to either the R1 or R2 solder point depending on which you want the button to perform the rapid fire for.
- As you can see the solder point for the R1 location on the 3rd gen is extremely small. It also has a coating over it that must first be scraped away with a knife to expose the bare metal. Be careful when scraping this small point to not expose metal around the point as this will open up an opportunity for a short causing the rapid fire to not work.
- Once you are done use some hot glue to hold these wires in place. Do not put hot glue directly on the solder points. If you do it will make it much harder to go back and fix a mistake, instead hot glue only the wires away from solder points such as where the two wires cross in our picture.



Step 10: Attaching the LED wire.

- Again this is the 3rd generation dualshock 3 controller shown. Refer to the controller identification to find the solder points for your controller.
- There are two ways you can hook up the LED. One is using the LED points shown on the controller identification which are on the back of the PCB and easy to get to, but are also very small. The other option is to remove the PCB and solder directly to the LED. We will show you both methods.
- First is the left image using the small via that is on the back of the PCB, on the 3rd gen that we are using you need to cut the battery holder for easy access to the via. All other controller types do <u>not</u> require cutting the battery holder. Once you have the coating over the via scraped you can solder you wire.
- The second method is to remove the PCB. To do so remove the small screw show in the top right side image. And pull the PCB up. Watch the triggers as you are removing the PCB as they sit on the PCB. Also on some Dualshock 3 controllers you may also need to unscrew the rumble motors.
- With the PCB out you will see something similar to the bottom right side image. The player 4 LED is the one all the way to the left. On the 3rd gen controllers like the one shown you will need to solder your wire to the bottom of the LED, all other controller types you will solder to the top of the LED.



Remove this Screw To remove PCB





Step 11: Installing the rapid fire button.

- Using your 9/64th Drill make a hole for installing the rapid fire button into your controller. We put ours on the inside of the right side hand grip. You can put where button where ever is comfortable for you. Just be sure there is clearance for the rumble motor or whatever else may interfere with the controller closing correctly.
- Your button has 4 legs on it and you really only need 2. When looking at the button you will see it has two legs on one edge of the button and the other two are directly across. You want to remove two legs that are on the same edge. You will end up with a button that has 3 sides with no legs and one side with two legs. See the right side image below for additional information.
- Finally use a generous amount of hot glue to hold the button in place.



Step 12: Installing the mode switch button.

- Using your 9/64th Drill bit make another hole for installing the mode switch button into your controller. We put ours just under the Right thumbstick in the small curved area. You can put where button where ever is comfortable for you. Just be sure that if you use the same location as us you get the hole exactly in the middle or you will not have enough clearance for the button to fit properly.
- Again use a generous amount of hot glue to hold the button in place.



Step 13: Final Steps, Attaching wires to the buttons.

- Start by connecting a wire to one leg of each button you have installed. The easiest way we have found is to solder one end to the button on the grip and then ment the casing off of the wire with your soldering iron to solder the wire in line with the second button. This way you only have one wire that needs to be soldered to ground. For the ground we use the base of the right thumb stick as you can see in the image below.
 - Note: this picture again shows the 3rd gen dualshock 3 controller. All of the controllers can use this same grounding point <u>except</u> the old style sixaxis. For the old style sixaxis refer to the controller identification images for different ground points.
- Next Connect the wire from pin 2 (yellow wire) from the PIC to the remaining leg of your rapid fire button.
- Then Connect the wire from Pin 3 (blue wire) from the PIC to the remaining leg of the Mode Change button.





Thank you for purchasing one of our custom Playstation 3 Rapid fire controllers. We appreciate your business and work hard to provide a 5 star experience to all of our customers. If for any reason you are having trouble with your controller or have general questions, please contact us at <u>consolecustoms@yahoo.com</u>. Below you will find helpful information on using your new controller or mod.

PS3 RFP-3 3-mode rapid fire:

- This mod has many different features and functions which we will explain below. Video instructions are available for all of these features on our website www.consolecustoms.net or from our youtube page www.youtube.com/consolecustoms.
- This controller has 3 game modes. Each mode has speeds designed for specific games but these are not the only games they will work for, this mod chip will work for almost every first person shooter available with the addition of our user programmable mode. To switch the game mode you must hold in the mode/speed change button for aprox 3 seconds, this is the button closest to the middle of the controller directly under the right thumbstick. You will see the player 4 LED flash. The number of flashes indicates the game mode. When you switch the chip to a game mode it will stay in that game mode unless you change it again by holding in the button.
 - **Mode 1:** Call of Duty 4 / Modern Warfare 2 This game mode has 3 setting, Fast, Slow and Burst fire.
 - Mode 2: Call of Duty: Worlds at War This game mode has 3 setting, Fast, Slow and Burst fire.
 - Mode 3: User Programmable This mode has a standard firing and burst fire speed that can be set by the user from 6-25 shots per second. Programming instructions on next page.
- To cycle through the settings you only need to tap the mode/speed change button underneath the controller. Once you are in the game mode you would like and change the speed setting, you will fire using the rapid fire button.

Thank you, Console Customs

Changing the User adjustable rapid fire speed

- These instructions are also available as a video from our website <u>www.consolecustoms.net</u> and also our youtube page <u>www.youtube.com/consolecustoms</u>.
- 1. You first need to be in the user adjustable game mode. Use the procedure described on the previous page to switch the controller to the correct mode.
- 2. Once in the user adjustable game mode. You will need to first hold in the rapid fire button and while holding the rapid fire button press and hold the mode change button on the back. You must hold in the rapid fire button first, before pressing and holding the mode change button. If you do not follow this order you will just switch the game mode instead of entering to programming mode.
- 3. Hold both the rapid fire button and the Mode change button for aprox 3 seconds. After 3 seconds you will see the player 4 LED come on for 1 second then go out. After you see this you can release both buttons. You are now in the programming mode.
- 4. When you enter the programming mode the user programmable speed is set back to 6 shots per second (166 milliseconds per sot). This is so you always know where you are at and also allows the programming to be done with only using one button.
- 5. While in the programming mode every time you press the mode change button on the back of the controller the firing rate will increase by 2ms. The player 4 LED will also flash. The rate can be increased until you reach 25 shots per second (40 milliseconds per shot). At this point the player 4 led will not flash and pushing the button will no longer increase the speed.
- 6. At any time you can test you speed by just pressing the rapid fire button.
- 7. Once you are at the desired speed follow steps 2 and 3 above to return to the user adjustable game mode.

<u>Tips:</u>

- Every time you enter the programming mode the speed is set back to 6 shots per second (166 milliseconds per sot)
- Remember or better yet write down the number of times you pressed the button. So you can go back and make adjustments if needed.
- This mode works in milliseconds each time you press the button the speed is decreased by 2ms. So you can easily calculate you speed.
 - The default is 6 shots per second or 166ms. There are 1000 milliseconds in 1 second. So 1000/166 = 6.02 or approximately 6 shots per second.
 - If you press the button 20 times you are now at 126ms. 1000/126 = 7.94 approximately 8 shots per second.
- If you want to go slower in speed you must exit and re-enter the programming mode and start over. Since there is only one button you can only make the rapid fire faster from the default 6 shots per second.