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Dec. 8, 2020

### Electronics of a PS3 Controller



I chose to dissect this PlayStation controller because it has already malfunctioned. The thumb sticks are very worn in and are not accurate since they input movement on their own without me moving the thumb sticks. Also, I have many a time took this controller apart to see if cleaning the various electronics with hydrogen peroxide would solve the issue, it did not. I know that I would need to order new analog sticks but that is beside the point. Along with knowing how to take it apart and put it back together, I am also very aware of each component and what they do.

There are many different parts to a PlayStation controller. You have the shell, all of the button shells, buttons connected to the circuit board, button contacts, lithium battery, inner housing, circuit board, vibration motors, ribbon cables, wires, button membranes, analog sticks, thumb sticks, clear plastic for LEDs, LEDs, mini-USB port, lithium battery connection port, analog triggers, trigger lever springs, gyroscope, gyroaccelerator, and a microprocessor with Bluetooth. There are a few Texas Instruments components in a PlayStation 3 controller that

consist of the Texas Instruments BKO, Texas Instruments B029, Texas Instruments B029A, Texas Instruments R2A20060, Texas Instruments SN89062 (those help controlling power), Texas Instruments YA018, Texas Instruments SN84001, and the Texas Instruments A6044A0 (these helps control the sticks).

The purpose of a PlayStation controller is to receive inputs from a player and then broadcast those inputs to the console. Pressing a button or moving the thumb sticks is similar to setting off a reaction. You press the button, the button makes contact with the membrane, the membrane then presses on a contact on the ribbon cable, the ribbon cable sends data to the circuit board, the processor then recognizes the input and sends a Bluetooth signal to the console which then performs the action given by the button press. Another process is the power source. You plug in the controller to charge; the battery then receives electricity and stores it. Once turned on the battery sends the electricity to through voltage regulators and then throughout all internals of the controller that are connected to the internal frame.

What I learned is that electronics are nothing but causes and effects. You do one thing, and it creates a chain of events. Like with my earlier example, you press a button and after a whole sequence of events your input is acted upon.