Electronics Online Challenge Sponsored by Texas Instruments

My Electronic device that I dismembered for this challenge was a VEX Robotics controller. The reasoning behind this decision was that I needed an item with an array of parts (but not too many), something that was somewhat easy to disassemble, and something that was broken so I did not have to waste a perfectly good piece of equipment. The item that I thought fit all of the criteria was the VEX controller. The controller had many parts to it, was easy to dismember, and it was partly broken as it would not connect to the robot properly.

As I have said in my previous statement the controller a had an array of parts in it including a plethora of microprocessors, a couple of LEDs, two joysticks, many resistors, capacitors, ports, and last but not least, the on and off switch. I found one Texas Instrument product. It was a MAX202 5-V Dual RS-232 Line Driver/Receiver with ESD protection.

The biggest parts that I first saw when I opened up the shell and saw the circuit board were these big black squares which I now know are microprocessors. What a microprocessor is basically, a CPU on a single integrated circuit. These ones were specifically embedded, which means that they are used in an embedded system. The Texas instrument piece, as I said before, is a line driver/receiver. What these do is they make data transmissions over two electronic components, something that I expected to see in a controller. The LEDs are for indication on the status on the robot and the controller, joysticks move the robot in specific directions, resistors are for holding back power, capacitors sort of store electricity then release it at certain intervals, ports are for outside electrical components to interact with the controllers such as a partner controller, and I think the on and off switch speaks for itself.

Some of the things that I learned from this little experiment are that the controllers have a multitude of electronic components, everything from a line driver/receiver to the embedded micro-processor. It also taught me about the way that these types of things are constructed, each layer more complex than the next. But most importantly, I had fun and an overall good time doing this project.

This is the shell of the controller.
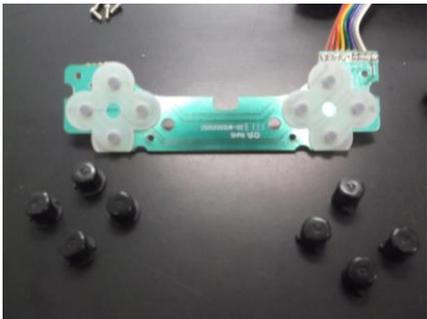
These are the sensors used for the button.
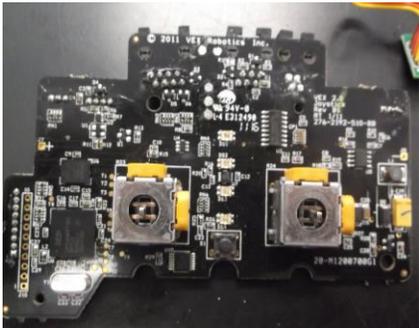
This is the main circuit board, where all the main parts are.

This is the whole thing taken apart.