Satellite Receiver

We are the Hub City Stackers of Mississippi. We are a girl powered duo that have been best friends for as long as we can remember! We love to learn about space and how things work. For this online challenge, we selected a digital satellite receiver. We were interested to see what was in this common item. We like how this device takes images from a satellite in space and relays them to a television set on earth.

Listed are several components that we found inside of a LAVA 3200 digital satellite receiver, and their functions. We were unable to completely identify all items found in our device.

1. We found three power boards. These hold the main components that allow the device to function properly.
2. There was one LED display. This shows what channel you are watching.
3. Two radio frequency tuners were in this receiver. This helps put images on a screen.
4. We were able to identify two heat syncs. They help pull heat away from components inside the device.
5. There was one LCD cable that transmits information from chips to the screen for display.
6. There was one power supply cable. This provides power to the electronic device from an electrical outlet in your home.
7. We found a semiconductor by the Samsung Company. This contains information to complete tasks.
8. There were fuses inside of our digital satellite receiver. These were made by Carli and Rubycon. A fuse protects other elements by melting if too much energy is being transferred.
9. We also found capacitors in our device. These store energy for later use.
10. We found diodes. These stop a backflow of current in an electrical device.
11. Varistors were also in the digital satellite receiver. They limit surges of energy.
12. We were able to identify resistors in our device. These set a maximum limit on the flow of electrical current.
13. There were chips in the digital satellite receiver. Chips store and receive information. We were able to identify one Texas Instrument chip in our electrical device. We found TI HC164.

We learned about electricity and currents. We also learned about how every part depends on another part. We realized that many companies must work together to make electronics. One thing we found stamped on the inside of one of the power boards was 2005-09-24. We think this must be the date this was constructed.

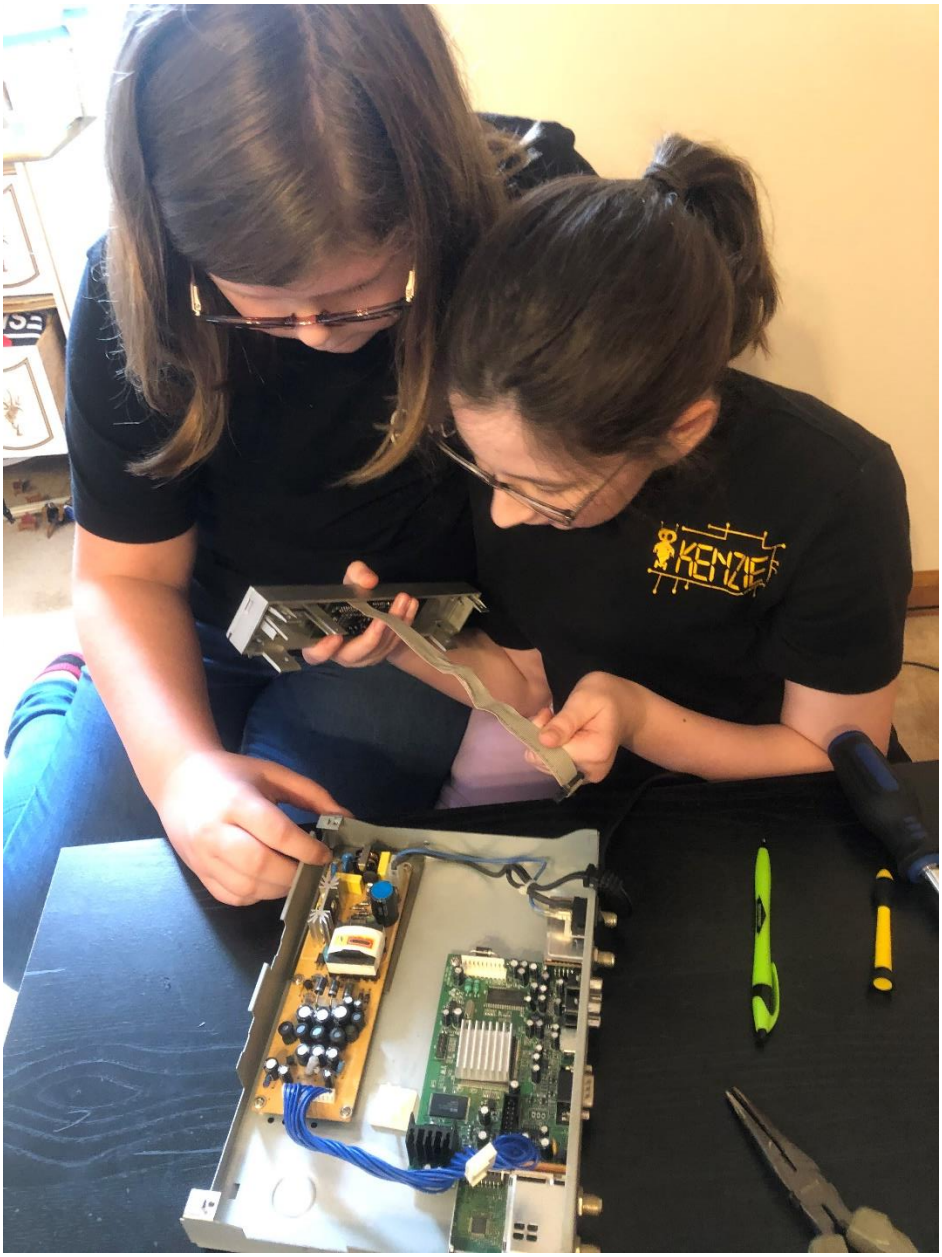
We loved this experience. It was interesting to see how electronics work from the inside. We used tools to reverse engineer a device. We have more appreciation for people who build electronics. After seeing how small some parts are, we realized this must be a time consuming and intense job.

This experiment furthered our teamwork skills because we needed to work together to disassemble the device. We improved our communication skills as we identified and researched the many parts of this device. We never knew how complicated it might be to watch television!

We are about to open our device.

Dismantling the satellite receiver.

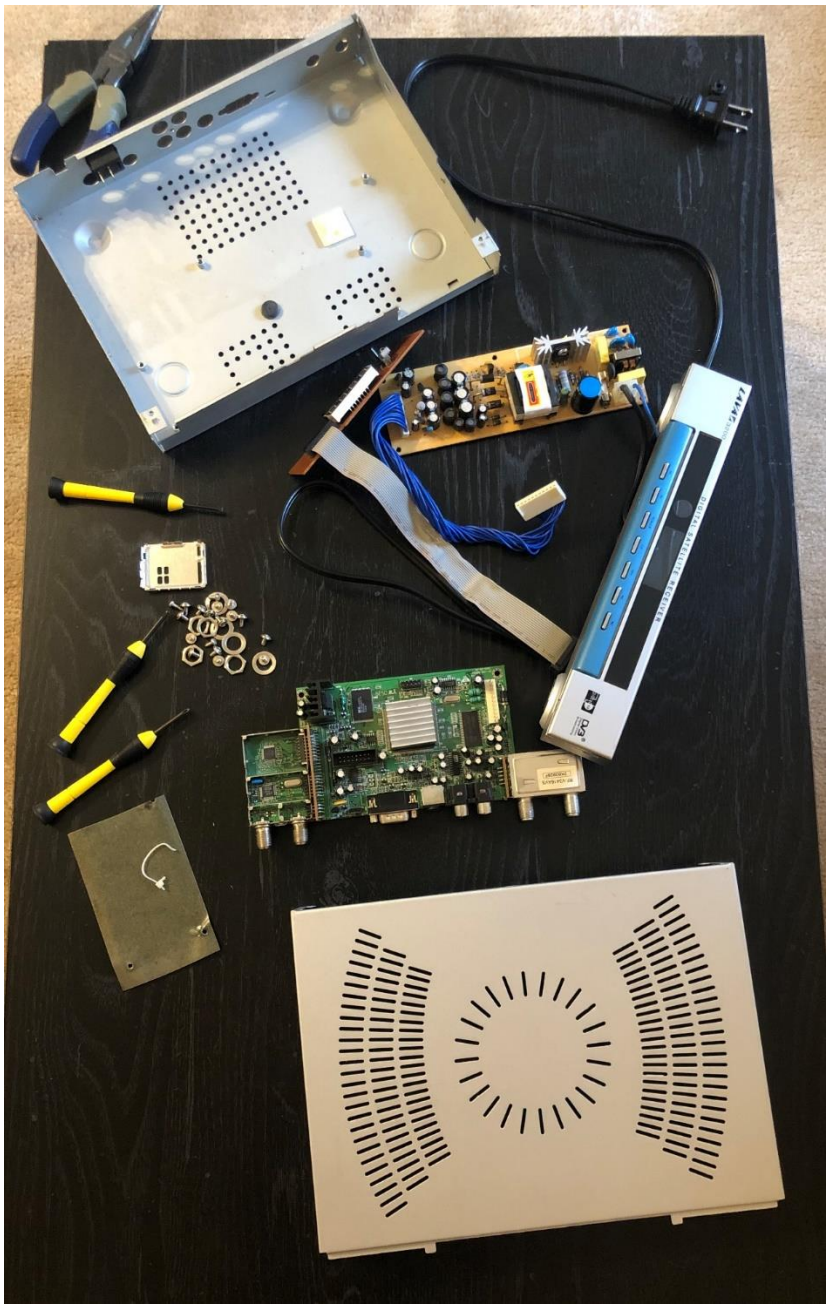
Our first look into our object.



Dismantling to get a better look.

Taking a peek inside.

Exploring the circuit board.



Completely disassembled.