

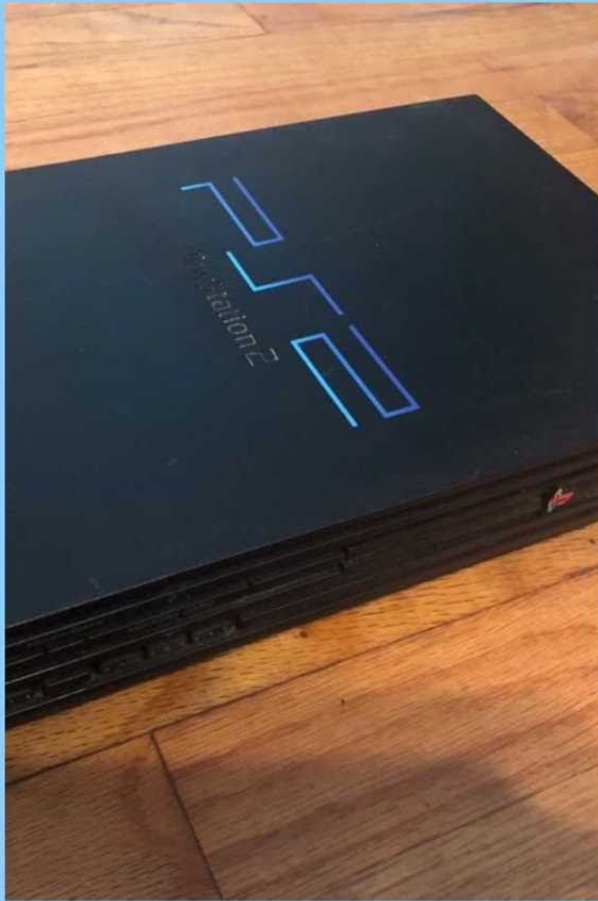
PlayStation2 Dissection

As a team, we chose to disassemble a PlayStation2 (PS2) because its company is known for making their devices complicated, and we decided it would be worth the challenge. The PS2 was released on March 4, 2000, manufactured by Sony Corporation or Sony Computer Entertainment Inc. (SCE). However, when we opened this console, there was the presence of another company, Toshiba, a multinational conglomerate company. Although this is only medium-sized, with continued research, we found various types of interesting chips and components in this popular gaming console.

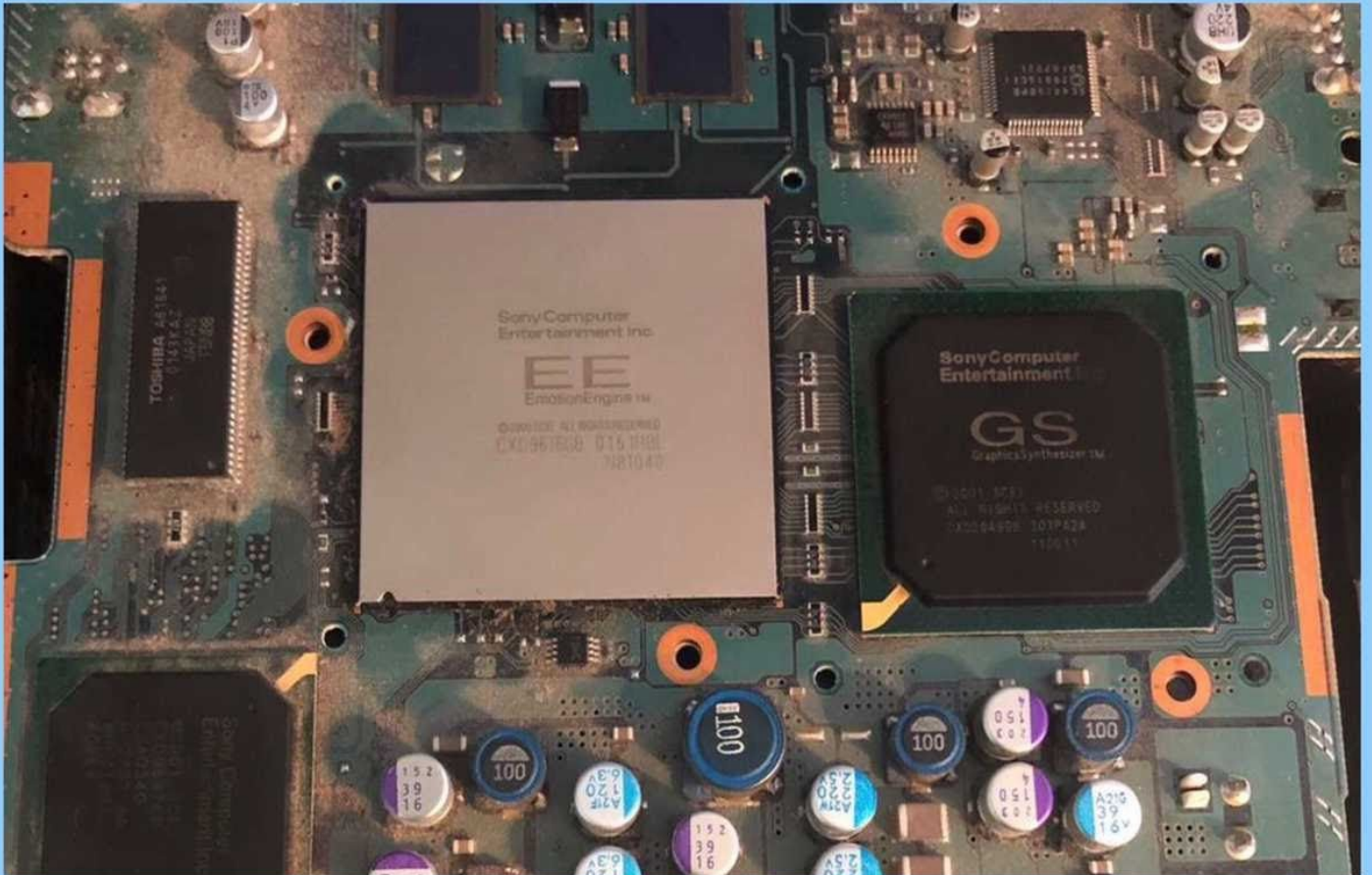
Starting with chips, the most distinctive ones are the Emotion Engine (EE) and the Graphic Synthesizer (GS), they were used in the PS2 and in some early versions of the PlayStation3. The EE, fabricated by both companies, SCE and Toshiba, is the Central Processing Unit (CPU); composed of the main memory, control unit, and arithmetic-logic unit. It manages the operation of the console to convert the main memory into arithmetic logic for the device to take in; basically the heart of the console. Moving on, the GS was made by SCE, and its purpose is to rasterize and input streams of primitives. This means that it transfers and converts programming languages into pixels for screens so that people can see the layout as they connect the PS2 onto a TV. GS consists of a Dynamic Random-Access Memory (DRAM), which is used to help the GS work very quickly and fill rate operations as they communicate with the CPU. The only chip we found that was produced by Toshiba itself was used as an 'in/out module'. All chips are present for a reason, either for sound, memory, storage, ect., and they all play crucial roles for the PS2.

Progressing to components, one that many people may not know about is the heat sink. They are metal, rectangular bars that regulate the temperature of the device to prevent overheating by directing the heat away from the motherboard, which causes the heat. The internal cooling fan has a similar purpose as the heat sink, it cools the temperature of the device. The disk scanner is a very important component, it's where the game disk is held in place by magnets while it gets scanned by a laser. One last mentionable component is the battery made by Sony (cr2032), it keeps some of the device's operation on while it's not plugged in, it's made with Complementary Metal Oxide Semiconductor.

To conclude, the PS2 was an interesting and fun challenge we experienced, providing us with new knowledge about electronics. We learned about the considerations taken when making a device, a way to communicate with teammates under unfortunate circumstances, and most importantly, learned that understanding concepts of devices' systems can be very enjoyable. Lastly, as stated before, the PS2 is a console that was produced mainly by the company Sony with a small collaboration from Toshiba, so as a result, we did not find any pieces or components by Texas Instruments.



This is the plastic covering and protecting case of the PS2.



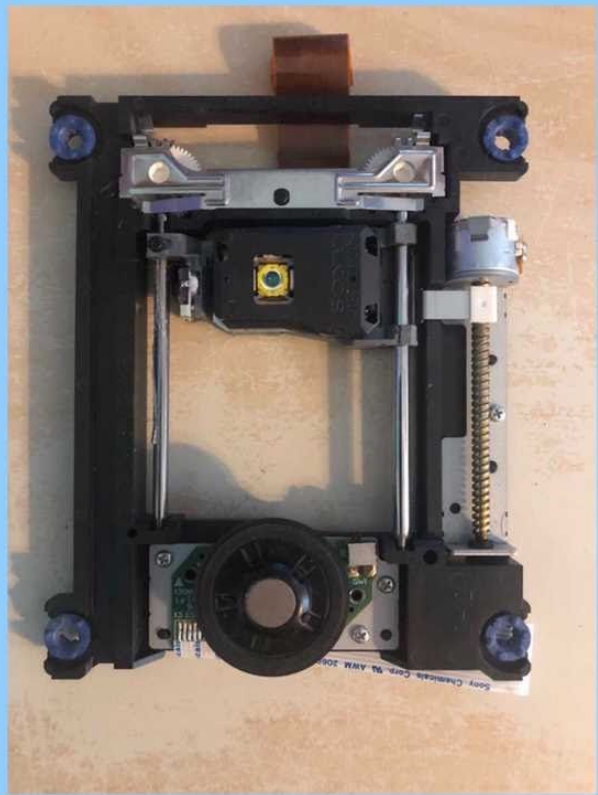
A picture of the chips, EE, GS, and Toshiba on the motherboard.



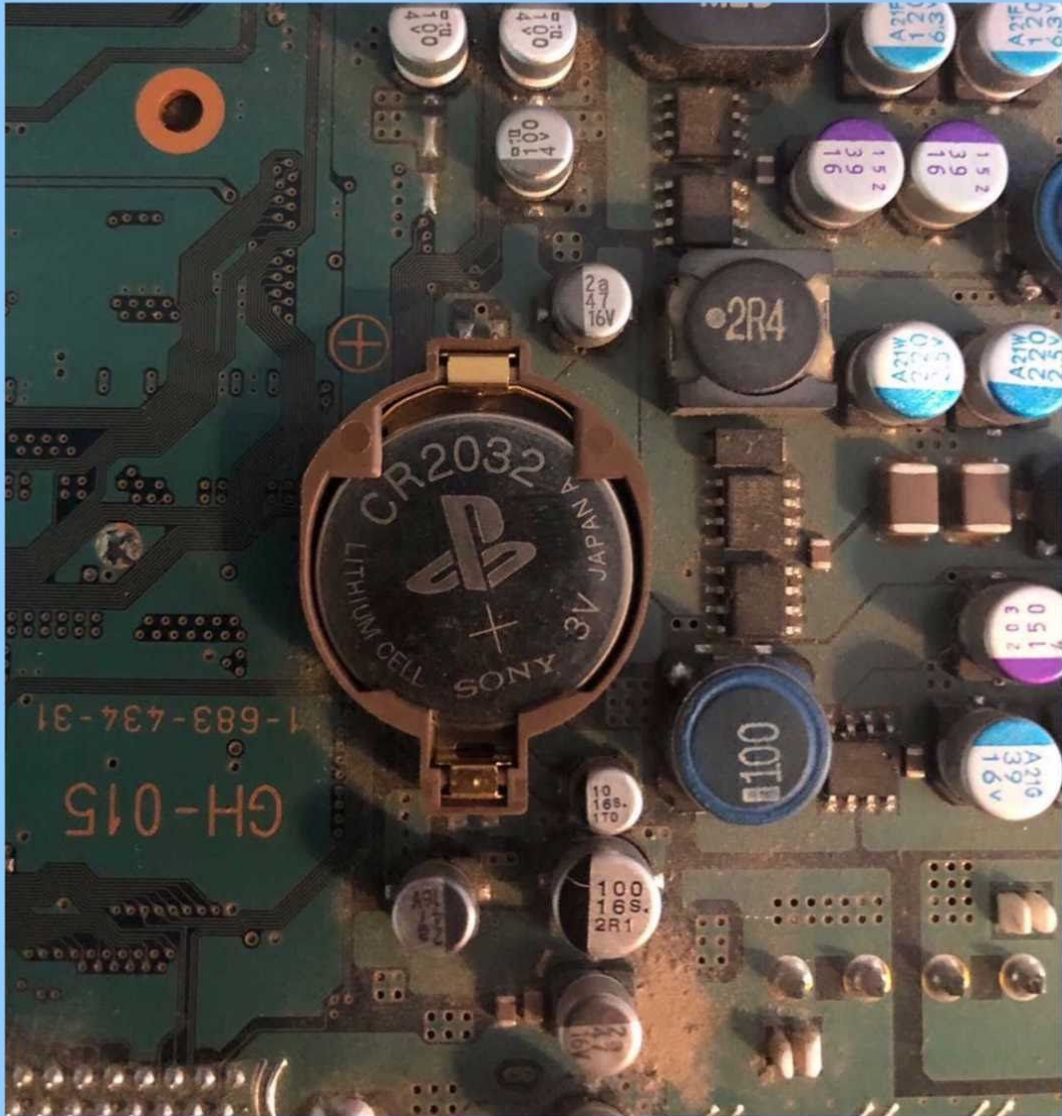
**This is a picture of the
internal cooling fan that
moderates the temperature
in the PS2**



**The heat sink that
directs heat away from
the motherboard**



Pictures of the disk scanner



Battery in the PS2



The PS2 fully taken apart.

All photos were taken by student researchers.

Team- 30016S

Sources Used-

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