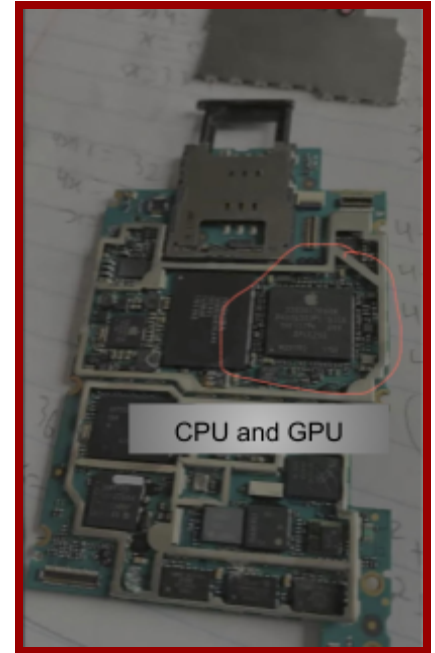


Our robotics team decided to take apart an old iPhone 3gs as we wanted to discover the components behind a piece of technology as brilliant as the iPhone. Since we had this device laying around, we decided to disassemble this device to find out what was inside, and to determine if there were any *Texas Instruments* components.

Upon opening up the device, we found several components that interested us. The first component was the CPU (Central Processing Unit). The iPhone 3Gs has a Samsung APL0298C05 Chip. This interested us as we believed an iPhone wouldn't contain any Samsung products or parts as they are competitors. We learned that before Apple produced their own chips, they used to buy them from another company, such as what they were doing with the Mac. In addition to the CPU, we also found the GPU (a PowerVR SGX535), which is integrated into the CPU in order to provide graphics. We were also able to locate the Infineon baseband processor, and the Elpida DRAM. In addition, we located the battery, screen and LCD, and the Toshiba Flash memory. Unfortunately, we were unable to find any *Texas Instruments* parts

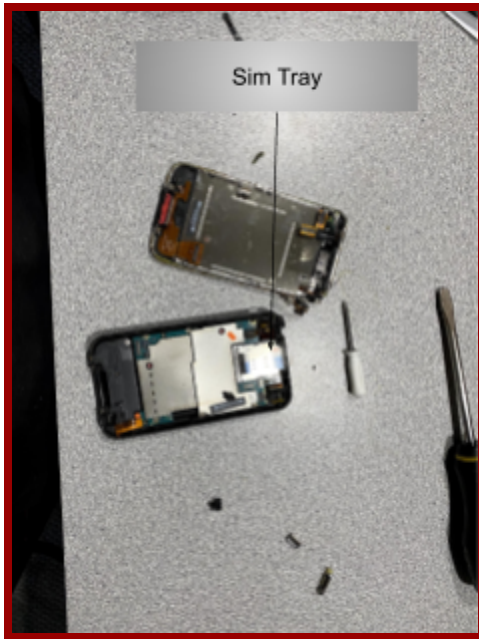


Firstly, the battery in the iPhone 3gs is a 1220 mAh Lithium Ion battery, and serves to power all of the components in the phone, including the screen, storage, and various other parts. Secondly, we located the phone's CPU and integrated GPU, which consists of an ARM Cortex-A8 CPU core underclocked to 600 MHz (from 833 MHz), integrated with a PowerVR SGX 535 GPU and serves to process the phone's data such as calculating, sorting, and searching. Thirdly, we identified the Infineon X-GOLD Baseband Processor which integrates an RF Transceiver, Power

Management Unit and FM Radio. Additionally, this part enables the introduction of new features such as Internet Browsing (WAP, XHTML), Music & Video, Camera, FM Radio Broadcasting and Messaging (MMS, IM, Smart Textinput, Email). Furthermore, we identified the DRAM of our device which is the Numonyx NOR + ELPIDA DRAM. A DRAM stores short term data and is cost effective. Lastly, our device has an LCD screen which uses liquid crystals in its primary form of operation. LCDs allowed displays to be much thinner than cathode ray tube (CRT) technology. To add, LCDs consume much less power than



LED and gas-display displays because they work on the principle of blocking light rather than emitting it.



In conclusion, this fun learning experience helped our team understand the inner workings of one of the most successful devices introduced to humans. Our newfound understanding of these parts taught us how to work as a team remotely, manage our time effectively to finish the project at a timely manner, and have fun while doing it. A fun fact we learned when researching about the DRAM is that Samsung surprisingly makes the DRAM and CPU! This project also taught us the importance of using reliable sources as some of our sources may have been misleading at first until we double checked.