

ELECTRONICS ONLINE CHALLENGE SPONSORED BY TEXAS INSTRUMENTS

APPLE IPHONE 3GS, 16GB

VEX Robotics Competition Team 254F

Bellarmino College Preparatory

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Final Summary Report

The iPhone was and still is the definition of a revolution in our age of modern technology. It's compact size and versatility enabled it to become a staple in modern life, and thus has changed our world forever. The first iPhone was slow and had unreliable software, crashing often but when the 3GS was introduced, the iPhone really began to take off. The 3GS not only possessed better software for features such as videotaping, voice control, and a user-interface that allowed for multitouch that were all incorporated into its successors, but it was so fast it bested the first generation by two times. However, such amazing technology cannot be created, if not for the components working in harmony inside of it. A multitude of special and unique components were found in the iPhone 3GS, which required a wide variety of companies to participate and provide for the creation of this device to be realized. Texas Instruments was among the companies that provided parts for the phone. There were 16 main chips on the circuit board, along with a SIM card holder for calls. The largest chip on the board

contained the 16 GB of memory the phone had available and the chip just behind it in size was the Apple Application Processor, used for performing functions that were uniquely Apple's. These two largest components were also arguably the most important components as they allowed the phone to store data and allowed the phone to perform the functions that were special only to Apple. Simply acknowledging the size of the memory drive was a feat, as technology has progressed to the point where a small phone of about one and a half the size of the 3GS can store up to eight times the data. The chip that Texas Instruments provided controlled the touch screen capabilities of the iPhone and was newly updated with the first multitouch abilities, considerably heightening any user's experience with the phone. But the most important part of the phone was the three SDRAM chips that were located on the side of the motherboard, provided by Elpida. SDRAM allows the phone to run more functions at one because it allows the phone to store more memory in the short-term where it can easily access it. The 6 chips mentioned above were the greatest differences and improvements between the iPhone and the 3GS. When taking apart this phone, we learned to be careful and caring to all objects we were examining. We had no backup plan and if we destroyed anything, our project would be ruined. A direct connection to the world can be drawn here as if we destroy our precious past and our dear future, we may never get it back.

(Word Count 455)

Photos and Documentation of Process and Pieces



The original phone with screwdriver for scale.



The phone with it's screen pried off and the internal components exposed.



The phone with all components disassembled. Battery, screen, and motherboard are visible.