

## Electronics Online Challenge

(By: Angel Lara Perez)

The electronic device that I chose for this challenge was an HTC Desire 510 smartphone, or alternatively known as A11. This mobile device was manufactured by High Tech Computer Corporation, HTC for short. The reason I chose this smartphone is that I never got to use it again. I saved the device in case my newest phone was to break or malfunction.

As I searched inside the phone and in web pages, I discovered a list of its components and parts. Starting with the smartphone design, I have seen that HTC Desire 510 weighs 158 g. Its width is 69.8 mm, Its thickness is 9.99 mm, At last, the phone's height is 149.9 mm long. Next, the phone has its Subscriber Identity Card (SIM) that is used in mobile devices for storing data authenticating the subscriber of mobile services. Then the phone also has its operating system, which manages and controls the functioning of the hardware components of the device. Then upcoming the mobile device has a radio system, which allows the phone to communicate with other devices. Following, the phone Universal Serial Bus or USB for short, which allows different electronic devices to exchange data with one another. Upcoming with the headphone jack, which allows plugging headphones to the mobile device. Then one of the important pieces for the phone, which is the battery because it provides the electrical charge needed for the phone to function. Afterward, the front camera and the rear camera allows the phone to take pictures. The camera includes video resolution and video fps features to take good pictures. Some other internal components are the speakers that reproduce various sounds such as ringtones, alarms, music, etc. Following with storage, or the internal memory that allows the device to built-in storage. Afterward, the sensors measure different physical quantities and convert them into signals recognizable by the mobile device. Adding up another component of the HTC Desire smartphone, it's the logic board or motherboard. The board is one of the principal components of the device, which allows communication between many of the crucial electronic components of the system, such as the central processing unit and memory. Finally, the system on chip (SoC) includes a single chip, some of the main hardware components for the mobile device. The chip has a list of components, which are the CPU, CPU bits, CPU cores, CPU frequency, RAM capacity, RAM channels, RAM frequency, and for last, the level 0 to 2 of cache memory. Unfortunately, I did not come upon the Texas Instruments component, for it is manufactured by a Taiwanese company.

Finally, reaching the last sentence, by doing this experiment, I have acquired some basic knowledge about the internal components of a mobile device, specifically more about the HTC Desire 510 smartphone. Although by doing this, I have realized that it would be harder to apply this knowledge with advanced phones later on due to the fact that phones are getting advanced internal upgrades. Phones could be very powerful furthermore in the future.