Electronics Online Challenge Sponsored by Texas Instruments





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Final Summary Report 11476A

The device I selected to take apart was an iPhone 8 Plus. The reason I selected this device is because I was curious as to how this device is constructed. This certain phone caught my eye because every phone I've had has been an iPhone so I wanted to take a look inside and see the various elements that make this device a whole.

The iPhone 8 Plus has numerous components. Which include multiple brackets, a li-ion battery, the battery cable, the main camera, the logic board, evolved stereo speakers, a sim card holder, and taptic engine. Each one of these components plays a very important role in making the iPhone function. The iPhone 8 Plus does not have any TI components unlike the recent versions of iPhones.

As I began to take apart the phone, I realized that the purpose of the brackets is to hold all the other pieces of the phone together. After discovering that, I also found out that there are various types of brackets. For example, the Lightning port bracket reinforces the new port and traps the Taptic engine. The battery serves the main purpose of keeping the phone alive and running for daily use. The type of battery used is a li-ion battery. The li-on battery is a 3.82 V, 1821 mAh cell which delivers up to 6.96 Wh of power. The main camera is used for taking pictures which can be stored in the phone using an f/1.8, 6-element lens. The logic board is what operates the machine. This means that everything else supports the logic board and provides additional hardware services. The speaker transforms the software's instructions into sound waves that you can hear when watching a video or listening to music. The sim card holder is what holds the sim card which has information and allows you to connect with your network. The taptic engine is a combination of "tap" and "haptic feedback," its technology provides physical sensations in the form of vibrations.

All in all, I've learned many things while taking apart the iPhone 8 Plus that I did not know before. I now have a better understanding of the device. It's astonishing how they can put all these components together in such a small compact device and have it run so well. Prior to taking apart the iPhone I had no insight as to what was inside. I had a belief that it was as simple as a speaker, a battery, a camera, and cables. After taking it apart, I truly understand now that it is not that simple. There are a lot more elements like the taptic engine and logic board. I would really love to thank Texas Instruments and VEX for giving me the opportunity to do something I never thought I would be doing. Taking apart the iPhone helped me understand more about the electronics and devices I am using everyday.









Image of components	Short Summary
	This image contains all the elements of the iPhone 8 plus.
	This is a picture of the inside of the back cover once the phone is open and all the components have been taken out.

This is a picture of the inside of the front screen when all the components are taken out.
This image displays a bracket. Brackets hold many parts of the inside of the phone together.

This is the evolved stereo speaker which creates the sound that comes out of the phone.
This image shows the sim card holder which carries the sim card. Sim cards hold information and connect the phone to the network.

This is a battery cable which is connected to the li-ion battery and gives power to the rest of the phone.
This is an image of the li-ion battery which gives power to the phone. This is a 3.82 V, 1821 mAh cell.







