

The device we selected is the Samsung Galaxy S9+ because we wanted to take apart a device with the minimal amount of parts documented and space used. We also wanted to look into the unique components inside of different phone brands, specifically Samsung brands. When looking at Samsung, different versions had a multitude of different designs and features that made each phone unique while also convenient and practical to its user. This close analysis of the smartphone's physical components and countless capabilities piqued our interest, and it also just so happens to be under our career field of interest, engineering. We wanted to learn how to take apart different devices to understand the significance each piece has in the function of the device. This can be used as future references in career fields since engineering requires a lot of hands-on experience.

A way to separate the components of the device is the necessary parts for the device to operate, the main mother/logic board, secondary daughter board, screen/display, battery, and the basic components of the device standard to what a smartphone must have, and features that are the industry standard in modern smartphones along with special features that come with specific models or company brands which include the cameras, iris scanners, sensors, vibration motor, speakers, aux port, wireless charging coil, and sim and micro sd slot. When analyzing the individual components, we were unfortunately unable to find any with the Texas Instruments Logo or any definitive answers of if there are Texas Instruments parts in our research.

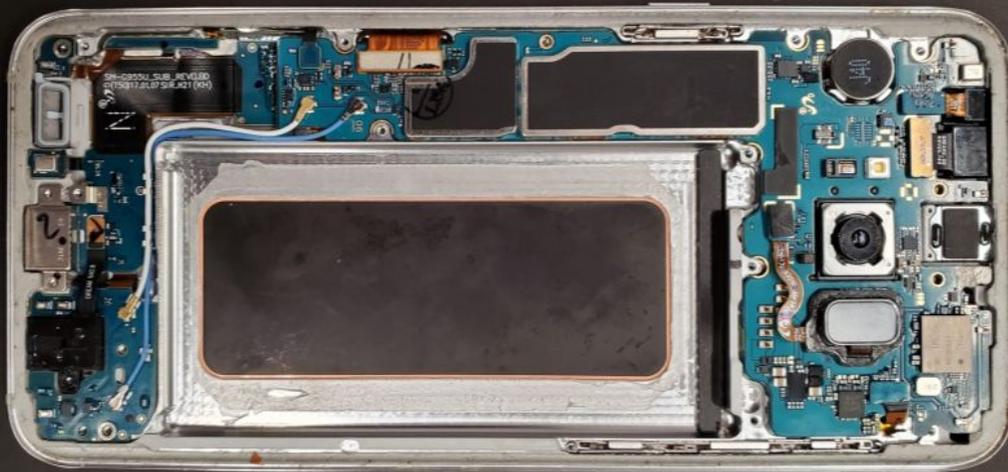
The main motherboard and daughterboard have all the components that allow the device to operate the device's programmed software and everything else from running programs or apps on the device to being able to do the basic necessities of a smartphone that work in the such as connecting to the internet, make phone calls, take pictures, and many more functions that we rely a phone to perform on a daily basis. Even the simplest function of charging the battery requires

the board to be programmed to take in the power from a power source that plugs in through the daughter board, goes through the motherboard and directly into the battery, in which must be programmed to charge the smartphone and to stop charging at moments such as when it is not in use and at full or charge or when the battery is overheating, otherwise consequences could be dire that could lead to results as bad as the device catching on fire or exploding.

Patience was one of the main lessons we learned as it was crucial for us to take our time and analyze each piece of the phone thoroughly so we were able to understand all their purposes. Collaboration also played a big role as it was much more effective to have two people working together than one individual. This took time and effort to build the relationship between us so we could work synchronously and maximize our limited time.



This is the lithium ion battery that was found inside of the phone. It has expanded from being placed in an improper environment.



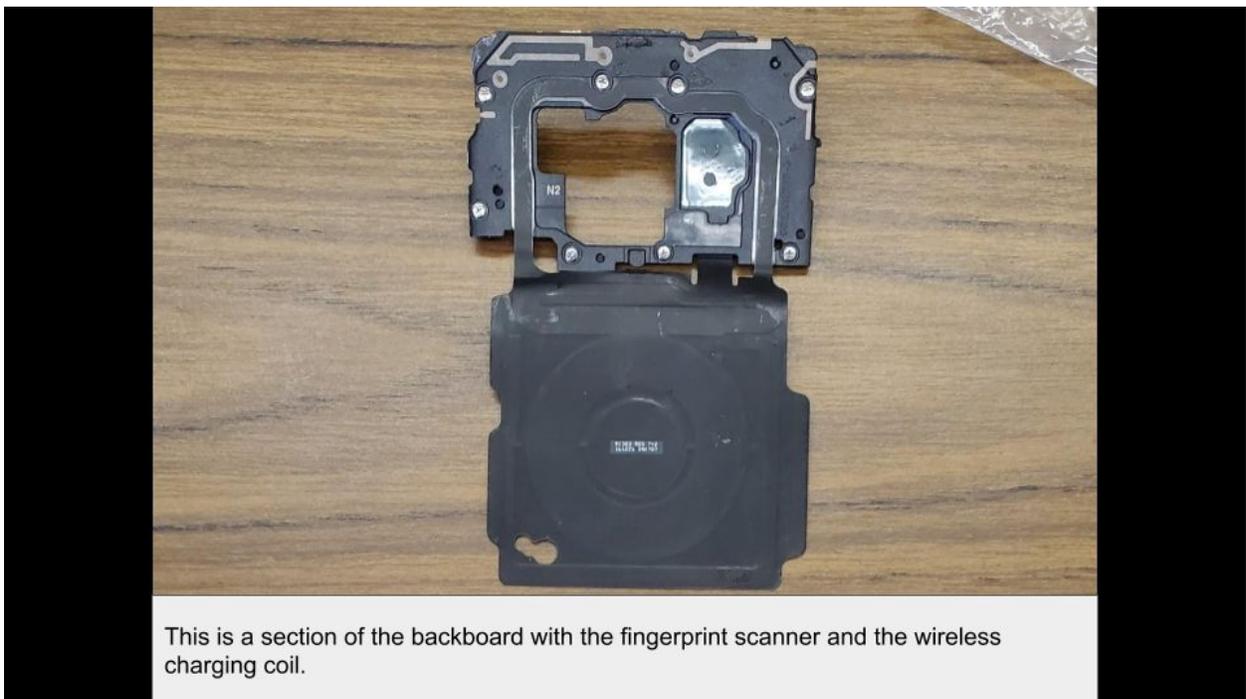
This is the phone's internal boards after the back panel, wireless charging coil, covers, and battery have been removed.



This is the galaxy S8+ smartphone before being disassembled for analysis.



These are the various components of the phone that were removable from the boards that control the majority of the functions.



This is a section of the backboard with the fingerprint scanner and the wireless charging coil.