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LG G3 D850 smartphone

The electronic device I have selected is the LG G3 D850 smartphone. This phone has a 5.5 inch Quad HD IPS Display that makes it wider with more viewing angles and it has high scratch resistance and screen durability because it is made with Gorilla Glass 3. I chose this device because this was my previous phone (which I had broken) and I wanted to understand the components which made the phone work.

Inside the phone, there are a variety of different parts like the: LG G3 battery, LG G3 SIM and SD card slot, LG G3 rear-facing camera, LG G3 vibrator, and LG G3 motherboard.

Each piece contributes to the phone in its own way. The Volume and Power Button Cover turns the phone on and off and controls the volume. There are touch sensors beneath them allowing for this function. The SIM and SD card slot are where the SIM card is placed and allows for Wifi connection and calls.

The LG G3 battery is a lithium-ion battery. Lithium-ion batteries are usually made using a lithium compound intercalated with cobalt and graphite where the lithium compound is the cathode and graphite is the anode. In batteries, electrons, or in the case of lithium-ion batteries, the lithium ions, flow from the anode in a process called oxidation and into the cathode which undergoes reduction because it gains the electrons. In the process of the flow, the electrons are used to do work. Lithium-ion batteries are used widely in electronic devices because they are long-lasting, have no memory effect (when the battery remembers a lower battery capacity as a result of partial discharge before charging), and are relatively environmentally friendly. In the LG smartphone, the lithium-ion battery has a 3,000 MaH capacity meaning that it can run for 10 hours off charge.

Many smartphones have an application where they will vibrate upon an incoming notification. Typically, this vibration is caused by a mini motor, and in the LG G3, this vibration is caused by the LG G3 vibrator. This little motor is built unbalanced with a little weight on its shaft. When the motor spins the shaft after receiving a signal from the phone, it vibrates because the weight distribution is uneven.

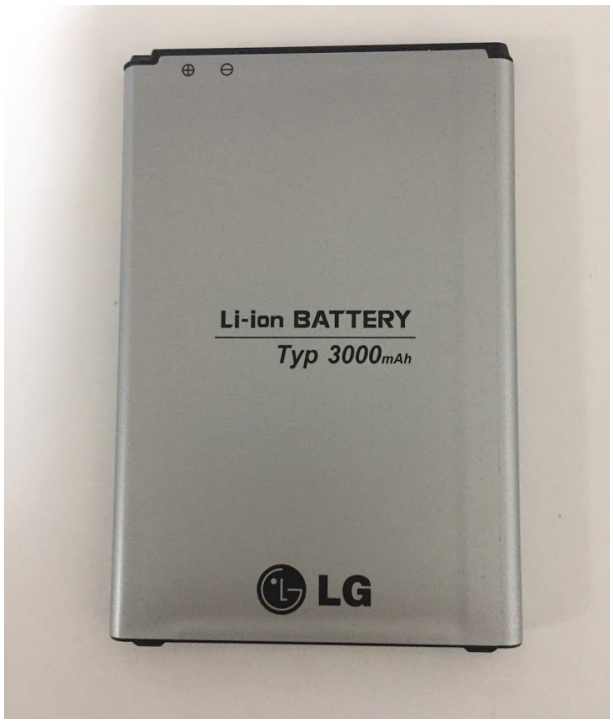
The LG G3 D850 model does not have any Texas Instruments parts, but the older LG Optimus L9 model included a Texas Instrument OMAP 4 4430 which is a system on a chip(SoC). In the G3 model, the SoC is Qualcomm Snapdragon 801 MSM8974AC. The SoC is a microchip with all the parts for a system such as the CPU, memory, and also connects to parts like the RAM, cameras, and display. Essentially, without the SoC, the phone is unable to run. The SoC is also convenient as it is small and also saves power.

Through this experience, I learned a lot about not only my LG phone, but also the parts and pieces which make the phone work behind the scenes.

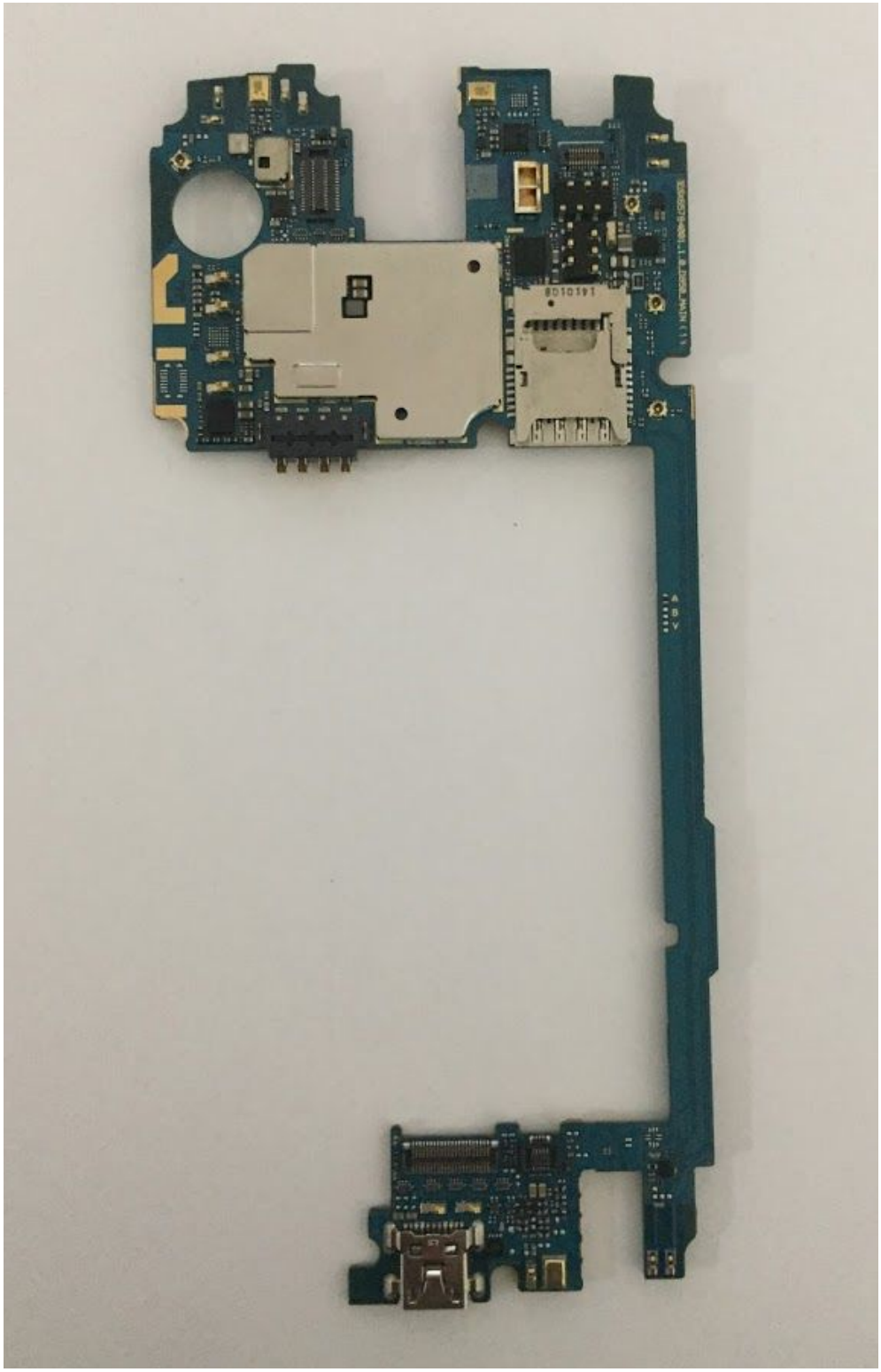
List of Parts Found:

LG G3 earpiece speaker
LG G3 rear facing camera
LG G3 vibrator
LG G3 motherboard cover
LG G3 motherboard
LG G3 battery
LG G3 Charge Port
LG G3 SIM and SD card slot
LG G3 headphone jack
LG G3 Volume and Power Button Cover

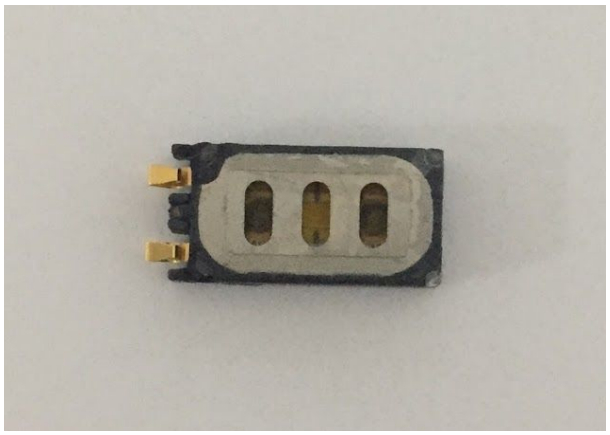
This is the phone case with the motherboard and other components removed. The piece which is boxed in red is the LG G3 Vibrator.



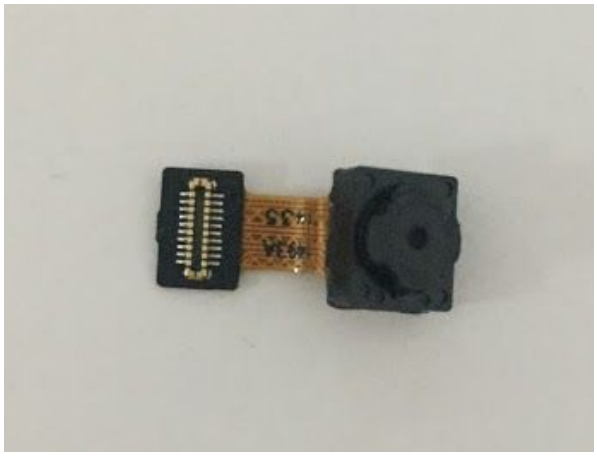
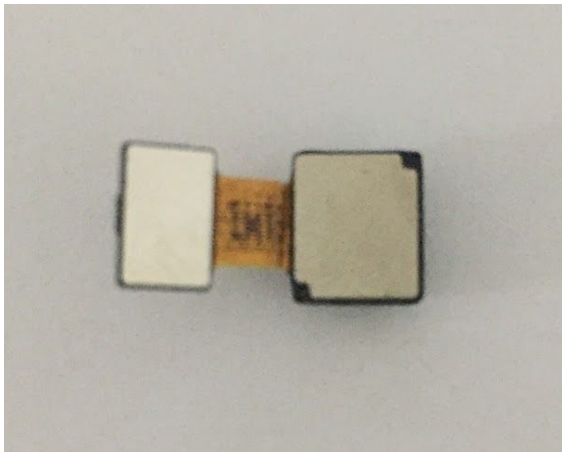
This is the LG G3 battery.



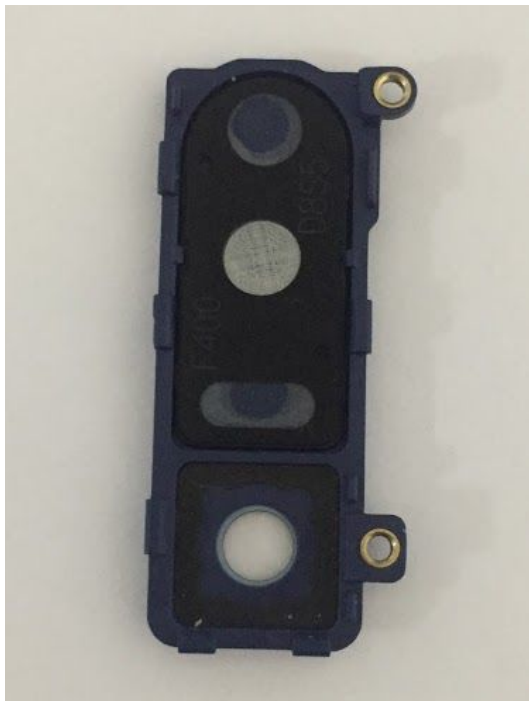
This is the LG G3 motherboard.



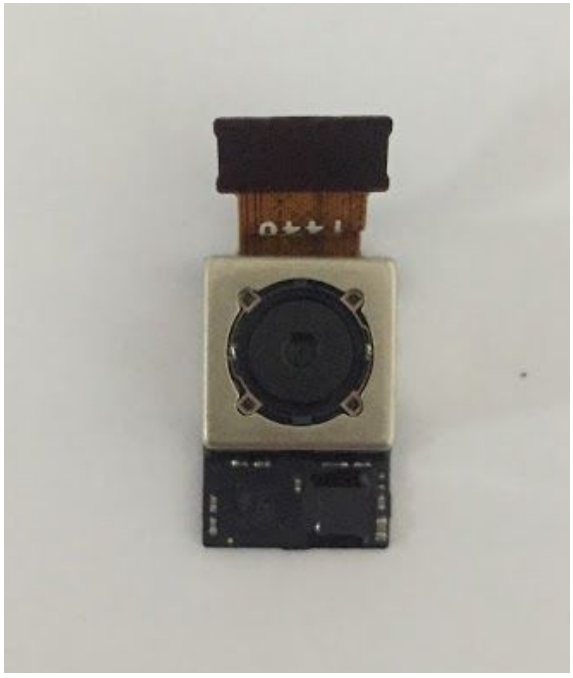

This is the LG G3 earpiece speaker which produces sound from electric impulses on a phone. (front and back)

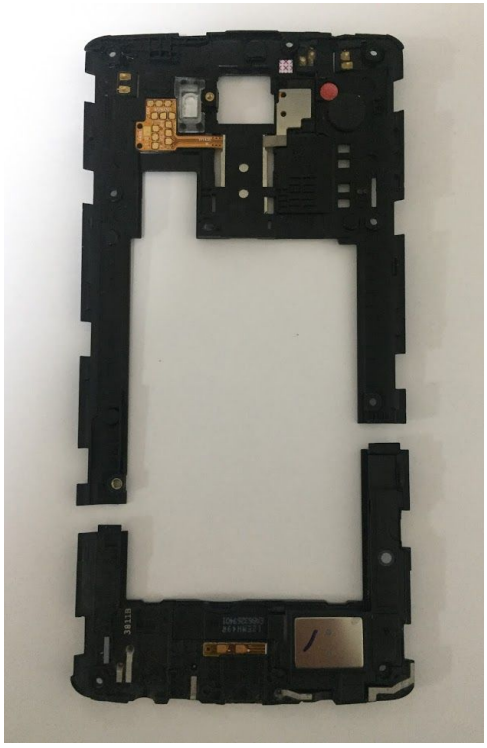
This is the LG G3 rear-facing camera. (front and back)

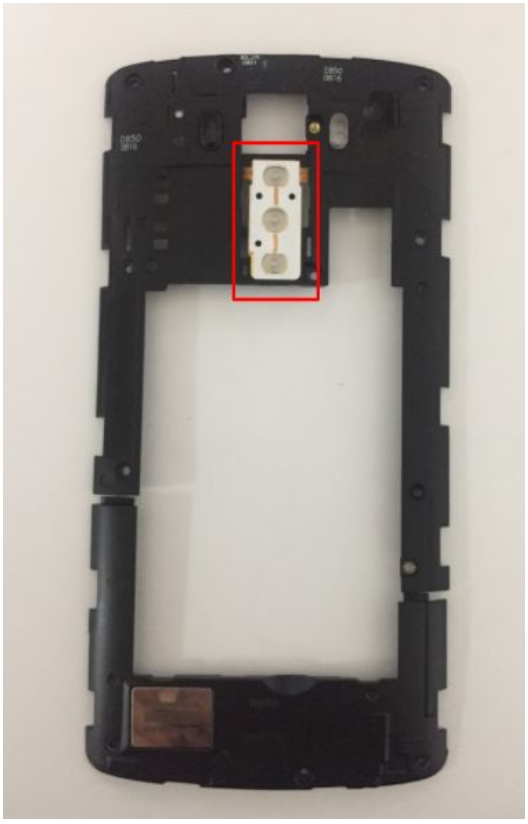
This is the LG G3 Power and Volume Cover. (front and back)



This is the LG G3 rear facing camera.



The upper piece is the motherboard cover of the phone and the bottom piece is the speaker assembly. This is the inside.



This shows the outermost side and the red box depicts the touch sensors which affect the volume and power of the phone.

This is the LG G3 phone with the back and phone cover removed.