Electronics Online Challenge Sponsored by Texas Instruments

Taking apart an Apple iPad Wifi+Cellular

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Final Summary Report

Introduction: Identifying the electronic device selected and why

I chose to take apart an Apple iPad for this project.   This iPad was not usable anymore, and I got my Dad's permission to dissemble. I selected this device because I believe inside the iPad, there are many mysterious components that I might find interesting.   I hope I would find a few things inside of this iPad that I did not expect.

Figure 1: I was taking the iPad apart.

Summary of the chips and components you found inside. Were any TI components?

I first pried the screen off the iPad. Under the touch screen, I found the display.   Beneath the display, I found a lot of components. I took out all the screws and revealed a lot of things.   I found 2 microphones, 2 antennas, 2 speakers, headphone jacks, etc. On the left, I found the Motherboard that had a lot of Semiconductor chips, one with the Apple logo, and many other names and I didn't recognize. There were 2 large Li-ion model Batteries.
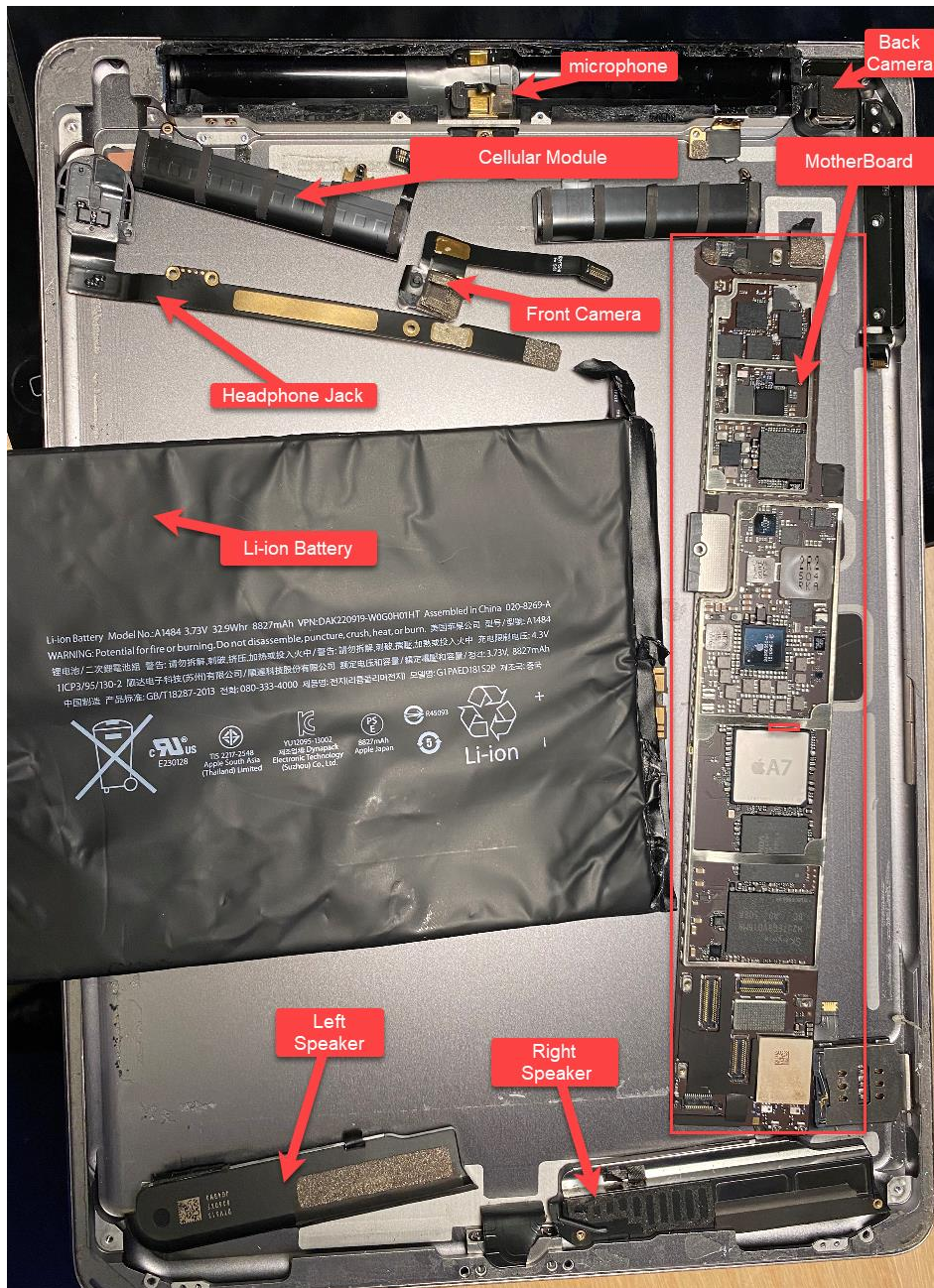

Figure 2. Main components inside an iPad.

In the Mother Board, I also found the North Bridge and the South Bridge. I was not able to find any TI component in this iPad.

Figure 3. I was inspecting the back to the Motherboard.

Research findings of what these components do and the role they play in the system.

The main brain of the iPad is the Apple A7 chip. It is the CPU that contains all the circuitry needed to process input, store data, and output results of this iPad.
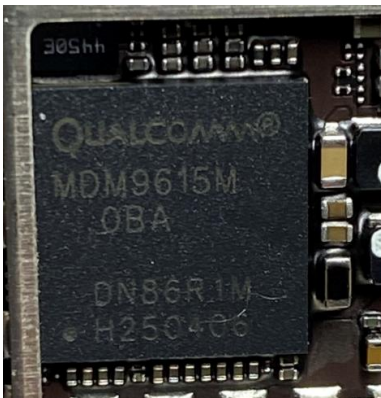

The North Bridge links the CPU to very high-speed devices, such as the RAM storage chip.

Here is a list of other chips that I found in this Mother Board:

- SKhynix H2JTEG8VDI8MR - which was the RAM memory chip. The iPad has 32 GB of memory.
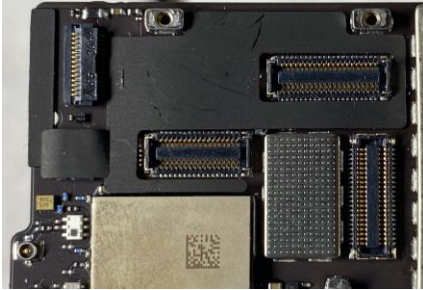

- QualComm MDM 9615M- which is a Mobile Data Modem, is a type of modem that allows the device to receive data.

- TriQuint TQF 6514 – a Power Amplifying Module, which is used to raise the power of the input signal.

- Connectors: I found many small connectors that link to the cameras, speakers, headphone jacks

Conclusion - Lessons learned

      I have used the iPad since I was 5, and I have never thought about what was inside of this iPad. I found that the iPad is a very complex system, and I was happy that I chose the iPad for this project. I was fascinated that inside the iPad has many semiconductor chips that work together to provide a great user experience that I always enjoyed. I also learned what a Semiconductor does and many names of the chips. Inside of an iPad, it is complicated, and fun to disassemble!

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