8995R

Texas Instruments Essay Challenge

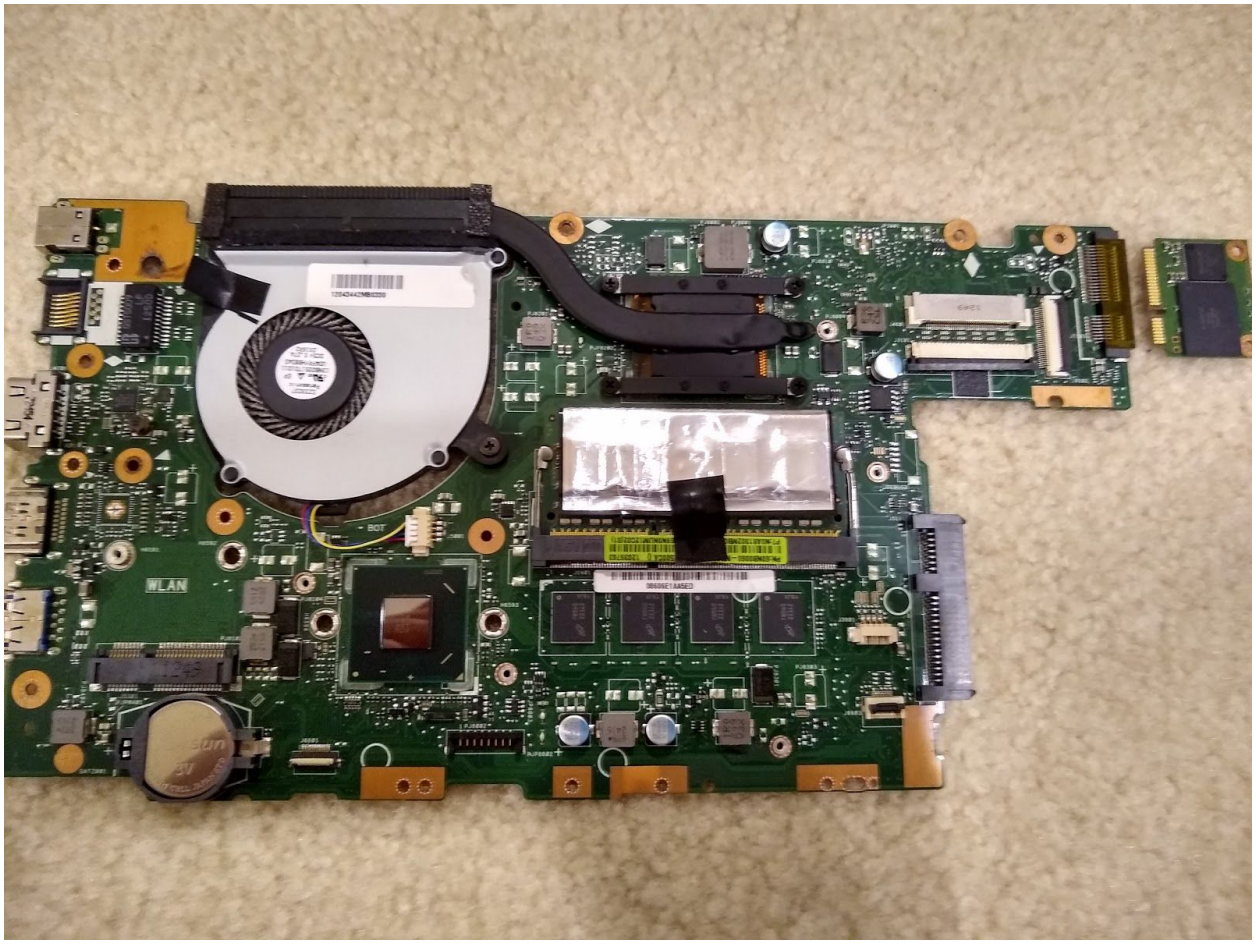
Written by 8995 Raiders

Our team dissected an Asus laptop and spotted many components that work together to make the apparatus that is the laptop. These subcomponents each have an important individual role to make the laptop run properly. We chose this device because we believed that this device had many of the components that other devices have which make up a common computer. The prominent components in the laptop we dissected were the motherboard, the processor, the RAM, the SSD, the battery, and the wifi card.

The motherboard is the main circuit board of your computer and is also known as the mainboard or logic board. In simple terms, it is the backbone that ties the computer's components together at one spot and allows them to talk to each other. Without it, none of the computer pieces, such as the CPU, or hard drive, could interact. Next, we have the CPU, or Central Processing Unit, which is tasked with executing the instructions to run a program. Since this microchip can execute tens of thousands of instructions per second, heat is generated and can reach upwards of 80℃ so it needs to be constantly cooled down by a fan, or an AIO Liquid Cooler (All In One Liquid Cooler used in larger systems). The SSD or Solid State Drive is a data drive that stores all the information, data, applications, and files needed or used by the computer. In this specific laptop, it can store 500 GB of data. There is another storage device necessary for the proper functioning of the computer. It is called Random Access Memory (RAM for short). This is a much smaller storage device at around 2 GB. In this case the RAM stores short-term data that the computer will access randomly as the name implies. If there is a power failure, all data cached on the RAM will be lost. Another vital part of the computer is the wifi and Bluetooth card. This small chip is responsible for connecting the computer to the internet. It is also responsible for connecting the laptop to Bluetooth devices like headphones. The white and black wires shown in the image below are connected to the screen of the laptop which doubles as a large antenna. Finally, we have the battery. This is the power source that provides energy for all the components that make up the laptop.

In conclusion, we learned that there are various parts to a computer and that each part is necessary for a certain function, even if one part does not work or is disabled, the computer may not function correctly as it is missing a critical component. We can compare this to the human body or any system, apparatus for that matter. The CPU, RAM, SSD, wifi card, and battery are only some of the units that make up the complex technological and beautiful achievements known as the computer.

Motherboard



The motherboard, in simple terms, is the backbone that ties the computer's components together at one spot and allows them to talk to each other.

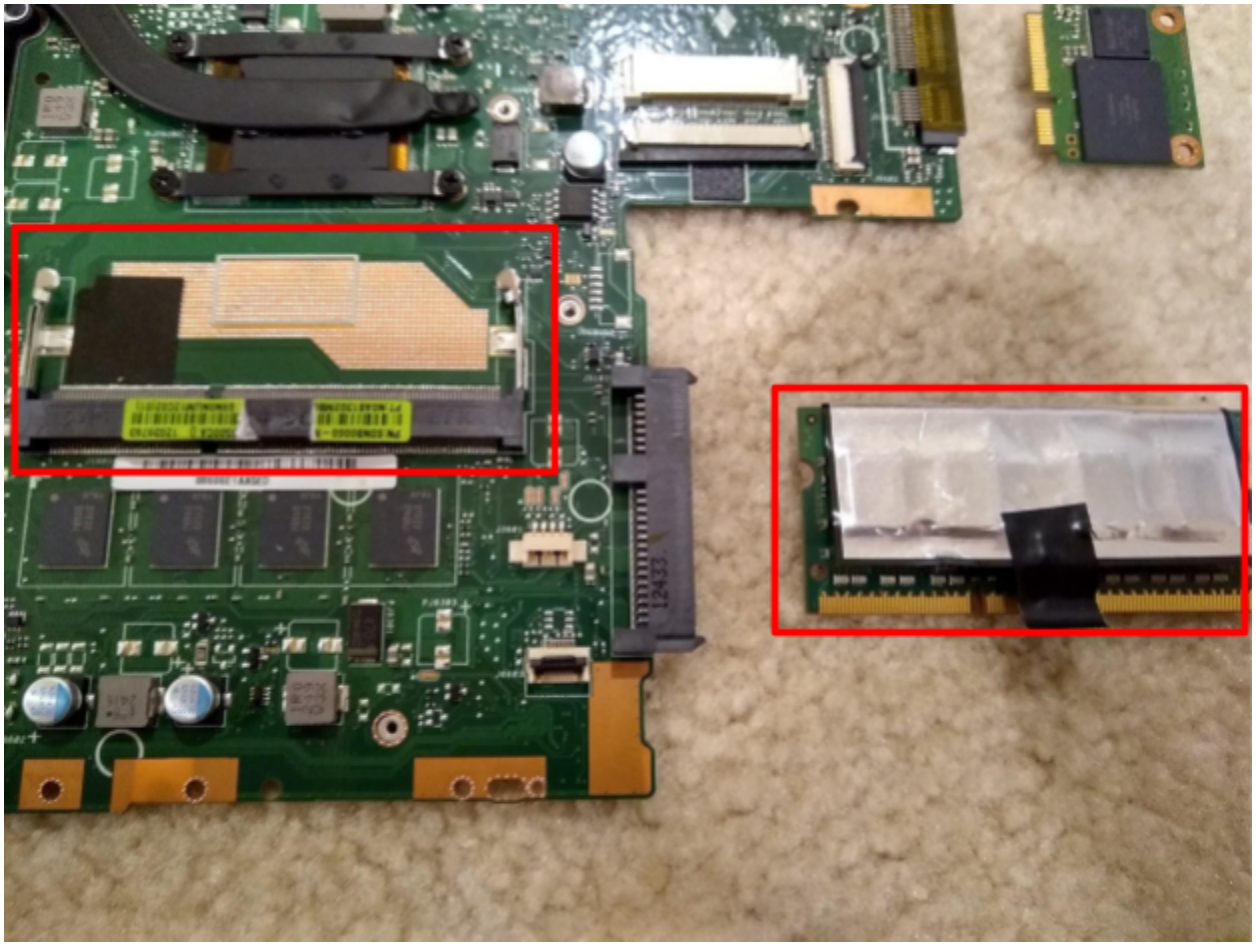
CPU (And Cooling Fan)

The CPU, or Central Processing Unit, is the electronic circuitry that executes instructions for a computer program. It’s covered by a heatsink to keep cool.

Solid State Drive (SSD)

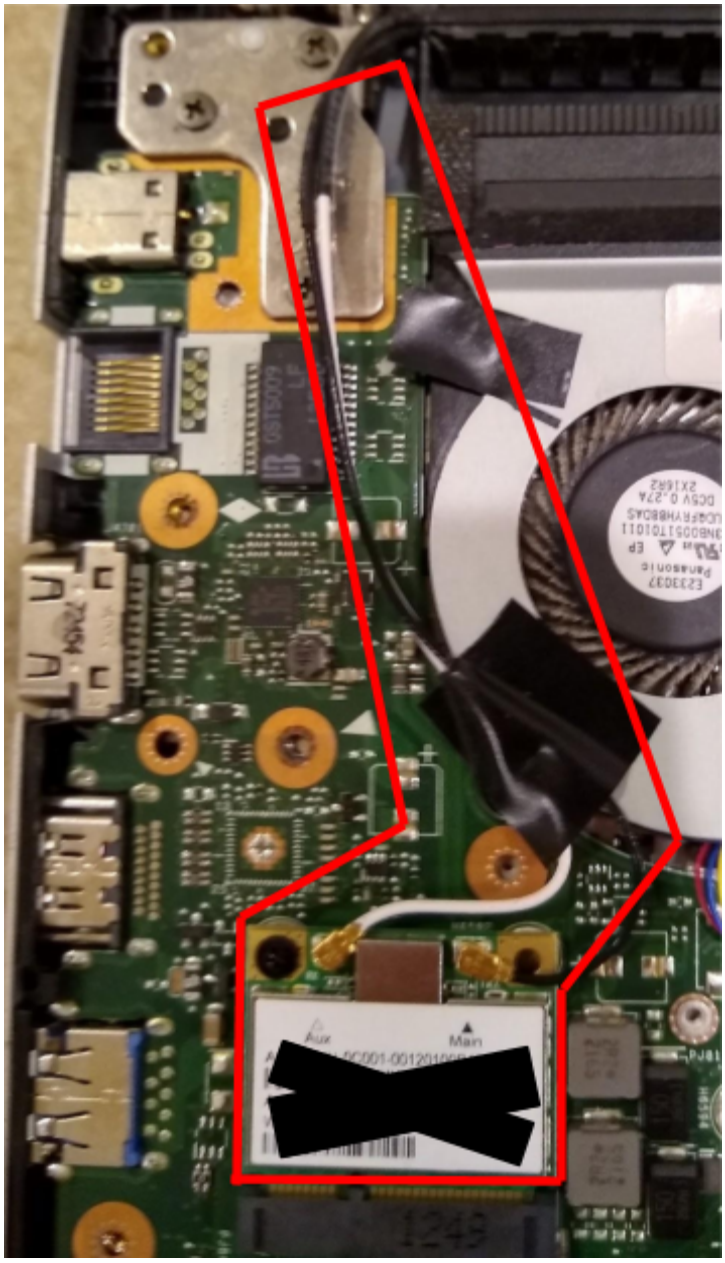
The SSD is where all of the files and applications are stored. Since SSDs utilize flash-based memory, it can achieve high read and write speeds.

Ram (Random Access Memory)



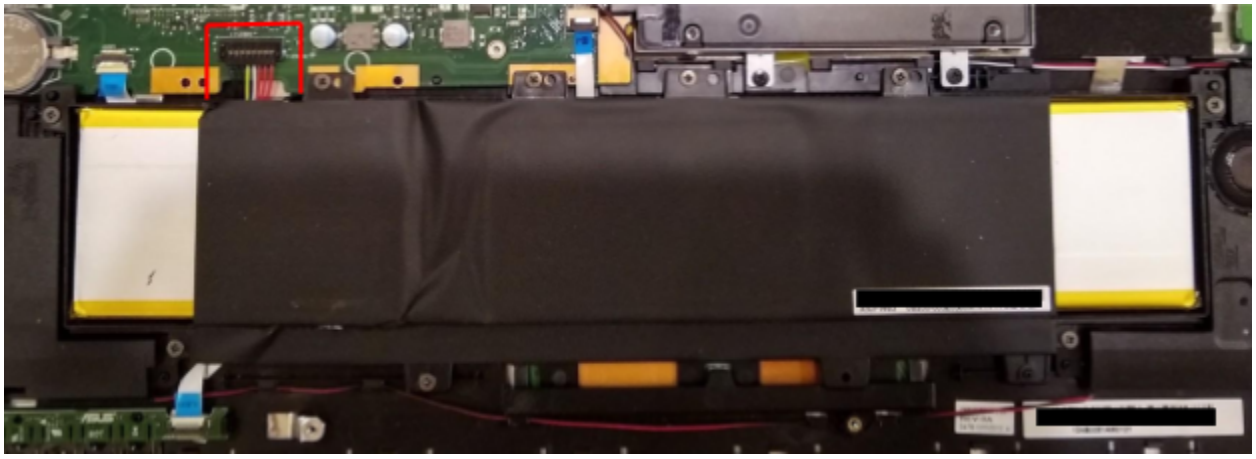
The RAM or Random Access Memory is an onboard storage device that holds short-term data for the computer while in use.

Wifi and Bluetooth Card



This module is responsible for connecting the computer to the internet and allowing Bluetooth connection from external devices. The screen is used as an antenna.

Battery



The battery is responsible for powering all the parts of the laptop. This battery is about ~5000 mA which lasts for 5 hours of use.