

Electronics project

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Introduction

For this project, we decided to break down a 2007 model Toshiba satellite computer. It has various and very different components such as a motherboard, keyboard circuit, processor, and battery. Each of these components is different and has a multitude of purposes. It was easy to take apart but hard to put back together.



(2007 Toshiba Satellite)

Motherboard

The motherboard is one of the main components of a computer. One of the most important functions of a motherboard is to act as the hub to which other computer devices connect such as the CPU (Central processing unit), the processor, and especially the Keyboard circuit. It helps other components in the computer talk to the other components. Sort of a messenger. The Toshiba satellite model is a K000045540 premium dual-core motherboard. The dual-core allows the computer to run multiple processes at once. The model is not very advanced and is one of the very first made. There are numerous models out there and their power each varies differently. The better the motherboard the better the computer. A board can come in many sizes, needs, budgets, and speeds.



Keyboard matrix circuit:

A keyboard circuit is a panel inside of a computer keyboard that is made to sense when a key is pressed, determine what key was pressed, and then send the information to the Central processing unit (CPU). The keyboard sensor inside the Toshiba satellite has bumper sensors to indicate which and when

the letter is pressed. For example, when I press the letter “L”, the bumper sensor is triggered and it will print the letter on the page. More advanced computers have better keyboard circuits that don’t consist of bumper sensors. The only downside of having a bumper sensor is damage to the circuit when someone presses too hard on a computer. Keyboard circuits are always getting better and better. You can’t call a computer a computer if you don’t have a keyboard.



Processor

The processor is a small chip inside the computer. Its basic job is when the user gives an input, it will give an output. For example, if I type “Texas instruments” in the search bar, it will give results based on that specific search. Even though the Toshiba satellite is very old, it can give up to a few billion results per second. Our 2007 Toshiba satellite processor Intel Core i7-5500U is old but impressive. Processors get better over the years. The laptops of today have high-quality processors and it can even give out 8.95 billion outputs per second. And this is only a mere average. Most people barely notice wondrous things such as processors. But now, it’s a part of our everyday life and they’re always getting better.

Processor Fan

The processor fan’s job is to cool the processor. The fan is located inside or attached to a computer case used for cooling the processor. The fan draws cool air from outside and kicks out the warm air. Its purpose is to prevent the processor from overheating. If you ever had the bottom of your laptop feel warm or hot, it usually means that the processor is overheating and the processor fan is trying to cool it. Regularly, processor fans can go up to 5000 rpm if the computer user wants the processor to cool fast. The speed of 1000 to 1200 rpm is low but can still cool the processor. Most of the time, it is dangerous to just leave the processor running. Processor fans are usually not strong but can prevent overheating. Users get the choice to make the fan automatic if they feel they want to.



Battery

_____ The battery holds chemical energy that can be converted to electrical energy. Laptop batteries can last up to twelve hours. Depending on how the laptop is used or how old it is, the battery life can vary.

The 2007 Toshiba satellite can only hold 5 hours of battery life compared to today batteries can hold 5 days charge. The average laptop battery requires 12 to 20 volts to run the laptop. The average Toshiba battery takes up to one to three hours to charge. The battery is supposed to hold the power and share it throughout the computer. Without the battery, the computer wouldn't be able to charge up or work. The battery serves one of the most important roles in any device.



R.A.M (Random Access-Memory)

R.A.M is (Random Access-Memory). A way of referring to it is calling it the memory area. This component is the most significant component for determining the performance of your computer. R.A.M allows applications to store and access data. This is on a short term basis. The component keeps track of some things you have open so that it can be accessed fast. The average storage capacity that a Toshiba R.A.M is about 8 gigabytes. But computers these days have up to 3 terabytes. While the computer with the most qualified and best R.A.M has almost 160 terabytes. But terabytes is not the only one. It can go up to zettabytes, which is almost 1000000000000 gigabytes. Just imagine how many games you can get with that. This all depends on the R.A.M. It serves as one of the most essential and one of the most crucial components of any computer.



(computer base breakdown)

In conclusion

The 2007 Toshiba Satellite is a very old computer and is easy to breakdown. We think this computer has helped us learn the extraordinary and important components inside a computer. Even in a 2007 computer, We've discovered so much about computer parts. Some of the components are just astonishing to think about because even in such an old computer, you don't expect that much. It makes me wonder how powerful and cool the computers of today are.

**We are team 9007K and that is our
electronics project!**

**Thank you Texas Instruments and VEX IQ for this
rather fun project. We have learned so much from it
and we couldn't have done it without you.**

