

How to check for laptop hardware errors and identify which hardware component is malfunctioning.

Whether you're using a new laptop or buying a used one, how do you check for hardware faults and identify which part is malfunctioning when you're not an expert? This article will provide helpful advice if you're in either of these situations.

If you're not buying a laptop for the first time but rather a used one, what's the first thing you should do? Most people who aren't computer experts first **check the specifications and the laptop's appearance** . However, they probably only look at the exterior ; checking the specifications of a laptop is often superficial, making it difficult to determine the laptop's condition.



In this article, TipsMake will help you check and **identify which hardware component in your laptop is malfunctioning**, whether you've been using your laptop for a long time or are looking to buy a used one. You can check the laptop itself without **needing to be an expert** and disassemble each part of the machine. This method of checking computer hardware errors can be applied to both desktop computers and laptops.

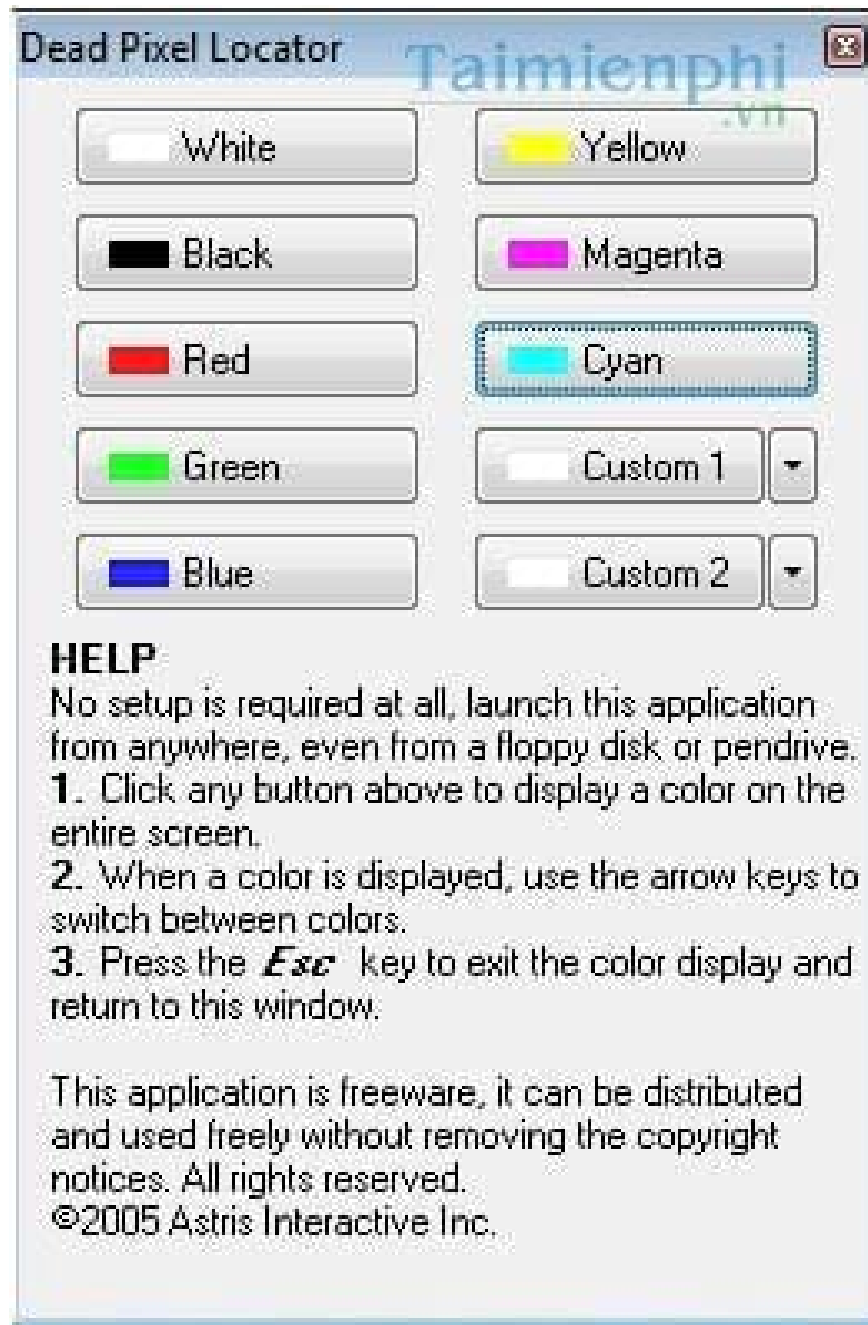
How to check for laptop hardware errors and identify faulty hardware.

The hardware inside a laptop, including **the screen , integrated motherboard, hard drive, and RAM**, are the parts you need to check. Other parts like USB ports, other types of ports, and the keyboard can be checked directly through usage. Therefore, this article will focus on checking the main components of a laptop: the screen, motherboard, hard drive, and RAM.

Check your laptop screen.

To check for hardware errors in a laptop, let's start by examining the screen. The screen is often both easy and difficult to diagnose. It's easy because we can easily spot diagonal or horizontal lines, even if they're just a single line, indicating a display malfunction.

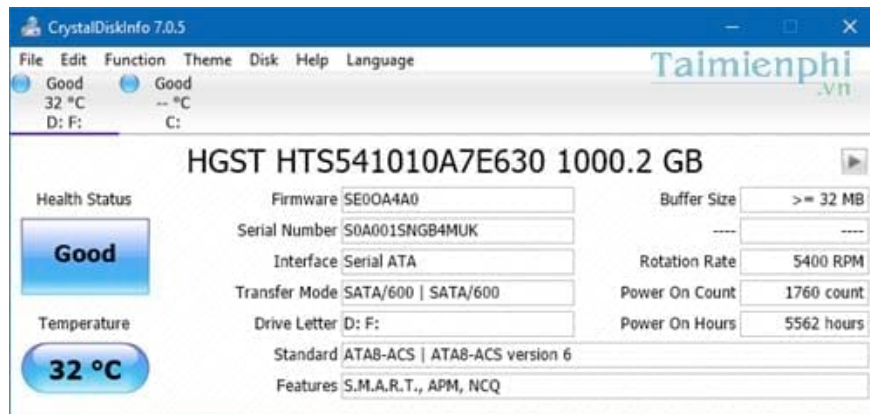
But if the screen doesn't have any vertical lines, we move on to the second type of error that not everyone notices: checking for dead pixels. Dead pixels **are points on a screen that are a single color and don't change color regardless of what color the screen is displaying** . To check for dead pixels, you can use software like Dead Pixel Locator .



More specifically, you can refer to the guide on how to check and detect dead pixels on your screen that TipsMake has created.

Check your hard drive with CrystalDiskInfo.

Download CrystalDiskInfo here: [Download CrystalDiskInfo](#) .



CrystalDiskInfo is one of the leading software programs for checking hard drive health, helping you check the current state of your hard drive. There are many parameters you need to know when checking for hardware errors or whether your laptop's hardware is failing, but with CrystalDiskInfo, you only need to pay attention to the following parameters:

- **Health Status:** This includes three statuses: Good, Caution, and Bad. **Good indicates a healthy drive** . Caution warns of potential bad sectors, while **Bad is the worst** state . However, CrystalDiskInfo has difficulty determining the severity of a bad sector. You will need time to test the drive. Nevertheless, if your drive is in this state, you should back up your data and consider getting a new drive.
- **Power On Count:** This parameter measures the number of times the computer is turned on. This determines how often you turn on your computer and can also help estimate the battery life if you're considering buying a used laptop.
- **Power On Hours:** If Power On Count doesn't prove much to you, Power On Hours definitely does; this refers to the total time your laptop is in use. On average, a laptop is used for about 2500 to 3000 hours a year, and if a laptop is used for **more than 10,000 hours** , you should be aware that your hard drive could fail at any time.

Test your RAM with Memtest86+

```
PassMark MemTest86 V7.3 Free Intel Core i5-5200U @ 2.20GHz
Clk/Temp : 2195 MHz / 62C
L1 Cache : 64K 136.70 GB/s
L2 Cache : 256K 37.89 GB/s
L3 Cache : 3072K 26.44 GB/s
Memory : 12.0G 13.53 GB/s
RAM Info : PC3-12800 DDR3 1600MHz / 11-11-11-2B / Kingston 99U5428-018.A00L

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CPU: 0123 | Cpus Found: 4
State: \D-D | Cpus Started: 2 Cpus Active: 2
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Time: 0:00:16 AddrMode: 64-bit Pass: 1 / 4 Errors: 0

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RESULTS / CPU STATE / EQUIPMENT INFO
```

As you know, RAM is always the most talked-about component in a computer, whether you're familiar with laptop hardware troubleshooting or not. Although RAM is one of the most durable components, that doesn't mean it's immune to problems. To ensure your RAM is working smoothly and without errors, checking for faulty laptop hardware, such as RAM, using Memtest86+ is the best option. To perform this hardware troubleshooting, you need to prepare and follow the instructions in the Memtest86 guide on checking RAM with Memtest86 that TipsMake has tested.

Check the integrated motherboard including the chip, motherboard, and VGA.

Taimienphi.vn wants to dedicate this section to "Integrated Motherboard" because, simply put, on laptops, the chip and VGA are usually soldered to the motherboard. Although technicians can open it up and replace them, this capability is quite limited. To check components like the motherboard, chip, or VGA, we can categorize them as follows.

- With the CPU, we can check the temperature to get a sense of the laptop's condition. Normally, a laptop **runs at 30-40 degrees Celsius**, reaching around 50 degrees Celsius during light tasks and slightly higher at **heavy tasks, potentially reaching 60 or even 70 degrees Celsius**. However, with a laptop that hasn't been cleaned for a long time, you can easily notice that even under normal conditions, it can reach 60 degrees Celsius; it feels very hot to the touch and the fan will make noise. To check the CPU temperature, we can use the Speedfan software.

- With the VGA card, we can check the temperature similarly to the chip. Excessively high temperatures will cause the VGA card to reduce its clock speed, at which point you need to **clean your laptop** to extend the lifespan of the components and prevent damage due to heat.

- The remaining part is the motherboard, and checking the motherboard is very difficult. You can only check for hardware errors in this laptop through usage. The main signs are that **the computer frequently freezes** even after a fresh Windows installation, it's difficult to access the BIOS or boot from USB drives, or sometimes the screen doesn't display anything.

Above are some identifying characteristics and advice from our experience in checking for laptop hardware errors. Identifying faulty laptop hardware will help you buy a safer laptop or protect and use your laptop more effectively. If you want a more comprehensive and regular check, the following top laptop hardware testing software will be very suitable for you. Check out TipsMake's article on the latest 2017 laptop hardware testing software now!

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