

9.4.4 Laptop Troubleshooting Facts

Due to the integrated nature of laptops, troubleshooting laptop components is significantly harder than troubleshooting desktop components. Most laptop manufacturers provide service manuals on their websites that you can use to learn specific troubleshooting procedures for a particular make and model.

The following table provides some general troubleshooting guidelines to follow when working with laptop computers:

Component	Troubleshooting Tips
Power	<p>Laptops can run from either AC power through the transformer or from battery power. When troubleshooting power, verify that:</p> <ul style="list-style-type: none"> ■ The cord from the AC outlet to the power adapter is correctly plugged into both the wall and the adapter unit. Move it around to see if a more secure connection can be made. ■ The LED light on your power adapter is lit. If it isn't lit, this means that your point of failure is between the outlet and the adapter. ■ Your battery is sufficiently charged. If the battery reads it is fully charged in Windows, disconnect your laptop from its power source. If the battery lasts only a short amount of time, you can assume that your battery needs to be replaced. ■ If the computer runs for only a short time even while plugged in, it could be that the power adapter is bad. If the adapter is not working, the computer will run off of the battery until the battery is drained. Try using a different adapter, or verify the power coming from the adapter. ■ If your battery seems to be losing the ability to hold a charge, or if the power drops shortly after starting to use it, you might need to recalibrate the battery.
Video	<p>If your laptop has no display at all,</p> <ul style="list-style-type: none"> ■ Press the Fn (Function) and the appropriate display key to switch the display output to the laptop monitor. ■ If the built-in monitor isn't working, connect an external monitor to the laptop. Use the Fn keys to direct output to the external monitor. ■ If you don't get a display on either monitor, you can assume that there is a problem with the video card. Repairing the video card typically means replacing the motherboard. ■ If the display renders on the external monitor but still won't render on your laptop, then you can assume that there is a problem with your LCD display. If this is the case, you should verify that: <ul style="list-style-type: none"> ■ Your LCD cutoff switch is working. Sometimes the switch can get stuck in the off position, thus preventing the display from being sent to the LCD. ■ There aren't cracks in the bezel around your LCD. This can be an indicator that your LCD has been damaged. ■ The power bundles that go from your laptop to the LCD are not damaged or cracked. You must remove the bezel around the LCD to inspect the power bundles. <p>Additional problems with laptop displays include:</p> <ul style="list-style-type: none"> ■ Dead Spots - <i>Dead spots</i> are areas on your screen (sometimes entire rows or columns of pixels) that no longer work. This means that your LCD assembly is no longer functioning and you will need to replace it. Be aware that it is often cheaper to purchase a new laptop computer than to replace the display. ■ Bad Backlight - A bad backlight may cause a display to become dim. It is important to note that dimming the backlight is a power saving method used by laptop computers to conserve power, so you should always verify that this isn't the cause for a dimmed screen before choosing to replace the backlight. ■ Flickering Screen - A flickering screen can be caused by a faulty backlight or inverter. Replacement parts can be purchased from your laptop's manufacturer. <p>If you know that your LCD needs to be replaced but you don't have the resources to buy a new LCD or a new laptop, you can consider converting your laptop into a desktop system by hooking it up to an external monitor permanently. If the video card is bad, you might be able to use a remote solution, such as Remote Desktop, to connect to the laptop from an external system.</p>
Applications	<p>If you cannot load an app from the Microsoft Store, use the Windows Store Apps Troubleshooter to search for and correct problems. Third-party apps have varying levels of support. You may have to contact the developer to troubleshoot issues. If you are unable to decrypt an email, you probably do not have the correct private key. You will need to export it from another computer.</p> <p>If your GPS is not functioning, begin troubleshooting by running the Hardware and Device Troubleshooter program. You can also update Bluetooth drivers if you are having trouble pairing a GPS-dependent Bluetooth device. If the pairing device uses Windows 7 or older, install the drivers in Compatibility mode for the correct Windows version. And as always, use known good devices to check for damaged hardware and replace components as necessary.</p>
Laptop Components	<p>The most common portable components used with laptop systems are keyboards, mice, digitizer pads, and antennae. The following list suggests troubleshooting methods to use when working with these components:</p> <ul style="list-style-type: none"> ■ A bad keyboard can be tested by plugging in an external keyboard to your laptop and seeing if it works. If it does, you can assume that your laptop keyboard is malfunctioning and needs to be replaced. ■ Most laptop systems have features that cause keyboard keys to perform alternate functions, such as emulating 10-key functionality by turning on the NUM LOCK. Before troubleshooting other problems, make sure that no special features are enabled that may cause keys to perform alternate tasks.

- Sometimes the NUM LOCK indicator lights don't correctly correspond to the NUM LOCK's function state. Some power saving modes don't support indicator light function. Sometimes you must press the F LOCK key with the NUM LOCK key for it to respond. If neither of these is the case, the computer probably isn't properly maintaining the NUM LOCK state and may have damaged components.
- Mouse malfunction on a laptop is usually caused by the installation of an incorrect driver. Good indicators that the incorrect driver has been installed are if the laptop mouse's sensitivity isn't consistent or if the mouse doesn't recognize a double tap.
- A digitizer pad is used in laptop and PDA systems to receive input. Input is written onto the pad with a stylus pen, then those motions are transferred into data that is processed by the system. If this pad becomes scratched, the laptop or PDA cannot receive input correctly. This is most easily resolved by buying a cleaning product called *Screen Clean*. This product removes the top layer of plastic from the digitizer pad, thus removing existing scratches and giving the pad a fresh surface. However, you will need to replace the digitizer pad or buy a new system if the scratch is too deep.
- Another problem that digitizer pads face is called *pointer drift* or *ghost cursor*. Drift occurs when a pad's pressure sensors need to be realigned. If this is the case, your digitizer pad needs to be recalibrated. It is always best to address this issue before it progresses to the point that you can't access the recalibration utility.
- Though laptop antennae are supposed to be omni-directional, they sometimes need to be re-oriented to get the best reception. This can usually be done by moving the laptop until the reception picks up. If redirecting the antennae doesn't work and wireless reception is consistently poor, the antennae may need to be replaced.
- Many laptops include a switch that turns the wireless network card on and off. When troubleshooting wireless network connectivity, make sure the switch is turned on.
- If your speakers are not producing sound, begin troubleshooting by making sure the volume is turned all the way up and your speakers or headphones are connected correctly. Make sure your sound card works properly and is running with updated drivers. If that doesn't fix the issue, run the Windows Audio Troubleshooter program. If none of these solutions work, you may have damaged hardware components that need to be replaced.

As long as your laptop runs, you can substitute an external device connected to a PS/2, USB, PCMCIA, or ExpressCard slot for most failed components, allowing you to continue using the computer.

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