6 reasons for slow WiFi dongle speed, poor performance

When using the WiFi dongle, you may experience some problems, especially the poor wireless speed, not meeting what you need on other devices in the house. Here are some reasons why the USB WiFi adapter is slow and what you can do to fix it.

A dongle is a small device, often shaped like a regular USB stick, that plugs into another device to provide additional functionality. A wireless dongle, also known as a WiFi adapter, provides WiFi capabilities for a device that doesn't have WiFi capabilities, such as a desktop PC without a wireless network card.

Dongles are useful because you can easily move them between devices, they don't take up a lot of space and offer very convenient additional functionality. But when using the WiFi dongle, you may experience some problems, especially the poor wireless speed, not meeting what you need on other devices in the house.

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Is the WiFi dongle slow? What is the cause?

1. 1. Limit wireless bands
2. 2. Dongle is placed in an inappropriate position
3. 3. The internal antenna is of poor quality
4. 4. Hardware limitations
5. 5. USB port or driver problems
6. 6. Maybe the dongle is not the problem

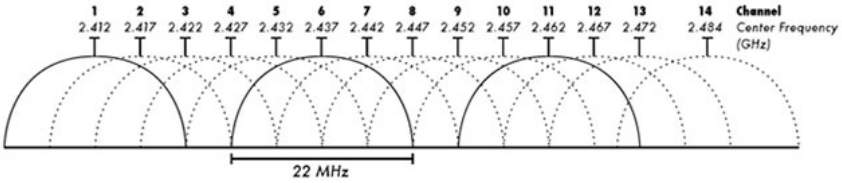
1. Limit wireless bands

WiFi devices can communicate on two different bands. The 2.4GHz band is older and supported by most devices, but slower. Meanwhile, the 5GHz band is new and more reliable, but has a shorter range and doesn't work with older devices.

While modern wireless dongles tend to support both bands, you can only use the 5GHz band, if the router also transmits on the 5GHz band. If your router is not dual-band, then you will be forced to use the 2.4GHz band. Thankfully, most modern routers come with dual-band, so you might want to consider buying a new one.

The problem with the 2.4GHz band is that it is extremely narrow. In the US, there are only 11 channels to choose from and even this number is not standard because the frequency of each channel overlaps with that of the neighboring channels. Therefore, only channels 1, 6, and 11 are the only ones that do not overlap.

Overlapping channels are not good because wireless data waves can interfere with each other, causing packets to be lost and sent back. Sending packets again takes a long time, which can slow down the wireless network.

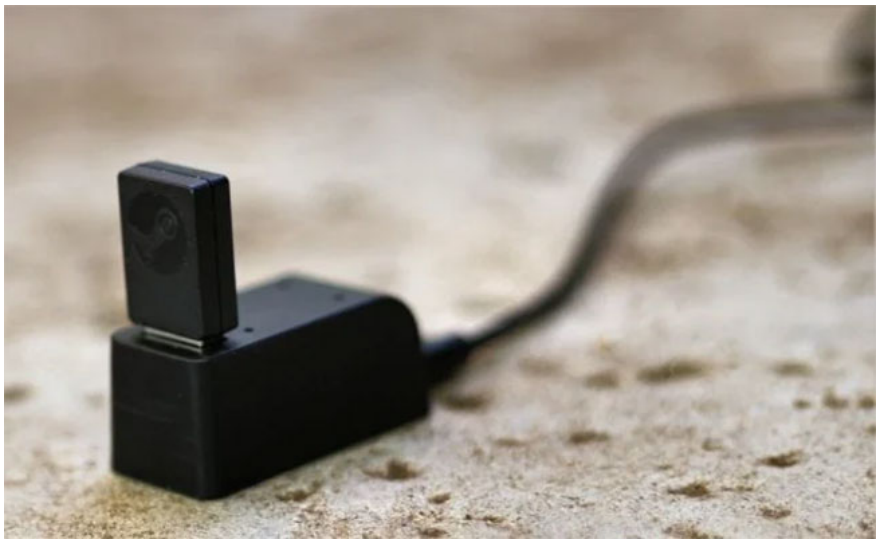


The 2.4GHz band is extremely narrow
That gets worse if you live in a densely populated building, such as an apartment complex in a big city. In these cases, there are hundreds of devices around you trying to transmit WiFi data. Even if you are using a non-overlapping channel, transmitting on the same channel can cause interference. Hence, a wireless dongle on the 2.4GHz band has a lot of barriers to getting good performance out.

If you must use 2.4GHz, make sure you have set up your router to use the latest WiFi standards instead of "legacy" or "mixed" mode, which has limited backwards compatibility.

However, if possible, you should use the 5GHz band with the WiFi dongle. As long as the router and dongle both support 5GHz, doing this is simple. The 5GHz band has 23 non-overlapping channels and is not susceptible to interference from other devices like microwaves.

2. Dongle is placed in an inappropriate position



Depending on the dongle location, interference may begin before the signal reaches the router. If your dongle is physically small, it will be right next to the desktop, possibly with a metal case. This can significantly reduce the signal's reliability.

Not just desktop computers, if the dongle is plugged right next to a desk with metal pins, you may run into the same problem.

To partially solve this problem, you can buy a USB extender, plug it into the USB port and give you more space to plug in the dongle practically avoiding interference. Many wireless dongles include a USB holder in the box, so give it a try.

Speaking of which, don't forget that computer placement is also important. If your desktop computer is using dongles downstairs and routers upstairs, then concrete walls will affect the signal strength.

3. The internal antenna is of poor quality

Wireless dongles come in two main forms: compact type (with internal antenna) and bulky type (with external antenna). Compact wireless dongles, sometimes referred to as nano dongles, are what most people aim for because they are more compact, portable, and aesthetically pleasing.

No one wants a giant antenna protruding out of their device. In addition, the internal antenna can be manufactured at a cheaper cost, so compact security devices are more affordable. A good example of this is TP-Link's N150 USB WiFi Adapter.

While internal antennas have come a long way and not too badly, external antennas often offer better performance. This is because external antennas usually have a higher gain, resulting in better reception.

You can direct them towards the router for better reception. An example of this dongle is Techkey's USB WiFi Adapter.

If you are using an old nano dongle, you should upgrade to a dongle with an external antenna. They're not pretty, but if you rely on WiFi to get your desktop work done, they're worth the investment.

4. Hardware limitations

When considering the best WiFi dongle for your needs, there are a few details you should pay attention to.

The first is the specifications of the dongle. A dongle labeled as supporting 600Mbps may not support as much throughput per band. Instead, it could be 150Mbps on 2.4GHz and 450Mbps on 5GHz, for "total" 600Mbps.

Make sure to get a dongle with the maximum speed of the Internet packet on the band you plan to use. If you are not sure, see how to check the speed of your home network. Not a bad idea if you get a dongle that is a bit faster than current network speeds, in case you do a future upgrade.

Next is the USB port you plug the dongle into. The USB 2.0 port has a theoretical maximum speed of 480Mbps, but due to protocol overhead (information must be sent along with data routed over the network to the destination) and hardware inefficiency, you never will. get that value. For best results, you should take a USB 3.0 dongle and plug it into a USB 3.0 port, which has a theoretical maximum speed of 5Gbps.

Finally, consider your maximum Internet speed. If you are paying for 25Mbps down and 5Mbps up speeds, then there is no combination of router and wireless dongle that will get you faster speeds. Since the ISP may not be able to provide the maximum speed for your plan, you may need to upgrade to a faster plan.

5. USB port or driver problems

One final aspect to check when the WiFi dongle is slow or unreliable is the USB port it is plugged into. In addition to the USB 2/3 problems discussed above, you should also make sure that the USB port is working properly.

Try moving the dongle to another USB port and see if that gives better performance. If you have it plugged into a USB hub, unplug it and plug it directly into the USB port.

Also, you should also see if you have the correct driver installed for your dongle. On Windows, press **Win + X** and click on **Device Manager** , then find **Network adapters** and name your WiFi dongle. Right-click and select **Update driver> Search automatically for drivers** to see if an update is available.

If this doesn't work, you should check to see if the dongle manufacturer provides any specific drivers for your model. Google your model name to find the official download page, then install any available driver updates and reboot your PC.

6. Maybe the dongle is not the problem

If you've gone through all the above steps and still have poor WiFi dongle performance, the problem probably isn't really with the dongle. Similar to the limits from ISP speeds mentioned above, the WiFi speed might be slowing down due to too much bandwidth at once.

In situations where you have multiple people playing 4K video, downloading large files and doing other network activities, network performance will suffer, if you don't have enough bandwidth to handle all of them. You will tend to see these problems more severe when you use a poor quality WiFi dongle.

If you've upgraded your dongle, optimized your location, channel, and made sure you're free of hardware issues, you should analyze your bandwidth usage to see if that's the real culprit. or not.