

# 10 Gigabit

This is adapted from the [help page](#) of a Bay Area ISP, Sonic.

## Expected Speeds on Sonic 10 Gigabit Fiber

Sonic 10 Gigabit Fiber service is just like our 1 Gig service in terms of it's "All or nothing" bandwidth to your modem. The only limitation to this service is the equipment being used to provide the service to your end devices.

Even though 10G bandwidth is at the ONT (Fiber modem), getting that speed to your end devices depends on those devices and the Router you are using to get that speed to them. In some cases the "bottleneck" in speed is restricted due to common issues like using WiFi. WiFi typically "tops out" at around 500Mbps. Theoretically speeds of around 1,500Mbps could be possible, but only under the best conditions. These conditions being how much RF interference you have around your WiFi router. If you have more than 10+ WiFi connections around you when you look up your "available wireless networks", it will be harder for you to get the maximum possible speed due to all the interference from those neighboring signals. The more signals you have, the more overlap there is, resulting in slower than expected speeds. You'll also want to ensure your WiFi router is not near any other source of RF interference like within 3 ft of a speaker, sub-woofer, wireless telephone bases or microwave oven etc.

If you have your equipment placed in clean areas more than 3 feet from sources of RF interference, or you don't have a lot of neighboring WiFi signals to interfere with your WiFi signal yet you are still seeing slower than expected speeds, the issue may be with the external wire getting to your ONT.

If you suspect this is the case with your service please reach out to [Sonic Support](#) for assistance.

Few customers today are able to utilize the full 10 Gigabit of bandwidth delivered to their ONT. You must have a device connected via Ethernet that is configured for and capable of 10 Gigabit speeds. As technology advances, Devices and routers capable achieving 10G speeds will become more readily available and it will be much easier to use the FULL bandwidth of 10G at that time. Detailed below are some real world examples of hardware and software configurations and the expected speeds for those configurations.

# Connected via Ethernet

Ethernet is the recommended method of connecting your device to your Sonic Gigabit Fiber service to achieve maximum speed. If you are getting 100Mb/s on your 10 Gigabit Fiber connection your device may be configured for Fast Ethernet as opposed to Gigabit.

Method of Connection	Age of Device	Expected Speeds
Ethernet Connector	2010 or newer	2Gb/s - 10Gb/s
Ethernet Connector	Older than 2010	100Mb/s
USB2 to Ethernet Adapter*	2010 or newer	Up to 7Gb/s
USB3 to Ethernet Adapter*	2014 or newer	Up to 10Gb/s

# Connected via WiFi

WiFi connectivity is ubiquitous and convenient, however the technology is not yet able to achieve true Gigabit speeds. Other factors that can affect WiFi speeds include the age of your device, the wireless protocol your device is utilizing, wireless interference, the distance your device is from the router, and whether you have a [gigabit wireless adapter](#). Wireless connectivity is susceptible to a variety of external influences that may negatively impact speeds but you can mitigate many of them by troubleshooting. To troubleshoot WiFi consult our [wireless troubleshooting guide](#).

Wireless Protocol	Device Type	Expected WiFi Speeds
802.11ac	High end computer	Up to 500Mb/s
802.11ac	High end phone or tablet / computer	100Mb/s - 500Mb/s
802.11n	Phone or tablet / budget computer	Up to 300Mb/s
802.11a/b/g	Devices manufactured before 2007	Up to 100Mb/s

# WiFi 6 is here! What does this mean?

Wi-Fi 6, or 802.11ax is the newest version of the 802.11 standard for wireless network transmissions that people commonly call Wi-Fi. It's a backward-compatible upgrade over the previous version of the Wi-Fi standard, which is called 802.11ac. Wi-Fi 6 isn't a new means of connecting to the internet, it's an upgraded standard that compatible devices, particularly routers, can take advantage of to transmit Wi-Fi signals more efficiently.

Wi-Fi 6 is exciting because it solves one of the most significant current problems with Wi-Fi, how it can struggle to support multiple devices connecting to the same signal. This problem has become more notable in recent years as smartphones and smart devices have become more popular and the number of devices connecting to the same router or hotspot has multiplied.

WiFi 6 is capable of transmitting more speed over Radio waves which translates to a faster, more reliable connection when using WiFi. There are of course external factors that can impact the speed you can achieve such as the ones we mentioned above. WiFi 6 capable routers can provide on average 1,320 Mbps. That's about 40% faster than the fastest Wi-Fi 5 speed we've ever measured, which is 938 Mbps!

Gigabit-plus speeds like this are a lot more than you're likely to ever need from a single device. In environments with a lot of devices that need to connect, Wi-Fi 6 will make a huge difference. In small homes with only a few devices on the network, the difference might be harder to notice. With more and more businesses now restricting their content to the cloud, Faster access speeds will become the mainstay in the future.

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Wireless Protocol	Device Type	Expected WiFi Speeds
802.11ax	High end computer	500Mb/s up to 1,500Mb/s
802.11ax	High end phone or tablet / computer	300Mb/s - 1,500Mb/s+
802.11n	Phone or tablet / budget computer	Up to 300Mb/s
802.11a/b/g	Devices manufactured before 2007	Up to 100Mb/s

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