

RESOLVING COMPUTER HARDWARE LIMITATIONS THAT LIMIT THE SPEEDS PROVIDED BY AN INTERNET SUPPLIER- PART 2



An International
Association of Technology
& Computer User Groups

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presentation:**

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TOPICS

- After a mandatory speed upgrade from a fiber-optic based residential Internet Provider from 200 Megabits per second up to 1000 Megabits per second: all computers in the residence were limited to Internet speeds that were only a fraction of the speeds that were now provided by the Internet Provider. Adding parts to the existing computers resolved the slowdown but let's look first at what the speed upgrade did to our home network:

MEASURED INTERNET SPEEDS AT VARIOUS PARTS OF THE LOCAL NETWORK

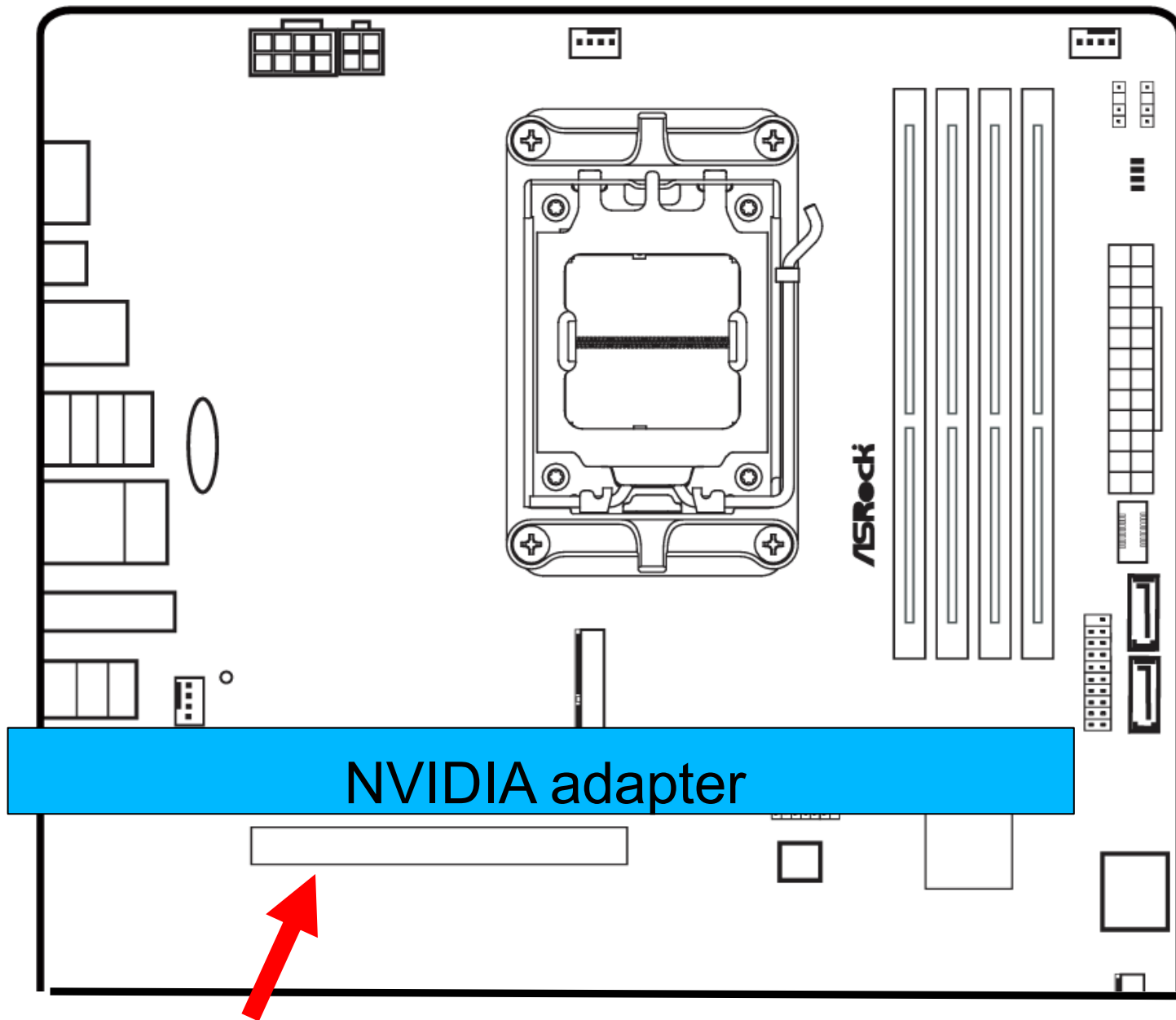
- 980 Megabits per second downloads and 1020 Megabits per second uploads the Internet Provider's point of entry into the residence.
- Same speeds at the "Wide Area Network" port of the main router of the residence
- 30 percent or less speeds at all of the computers in the residence⁴

CONTRIBUTING HARDWARE ISSUES

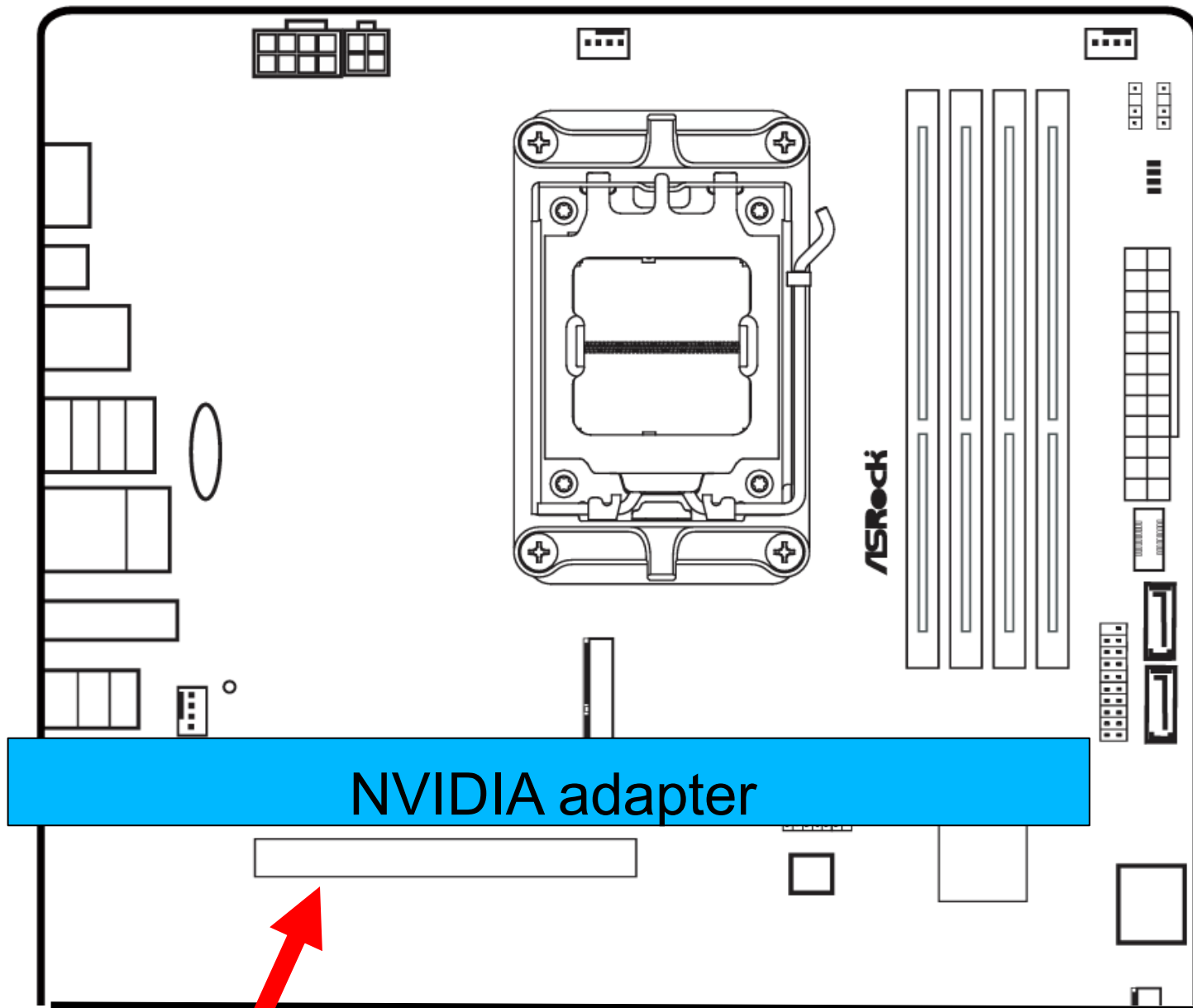
- None of the on-board wired and wireless network adapters on the motherboards of the computers were fast enough to handle the upgraded Internet speeds
- Add-on Ethernet adapters and add-on Wi-Fi adapters were the obvious solution but they require USB 3 ports and the computers at the house only had spare USB 2 ports.

CONTRIBUTING HARDWARE ISSUES

- Installing a PCIe-to-multiple USB-C adapter was the obvious solution but the only free PCIe slot was partially covered up by the NVIDIA graphics adapter of the computer:

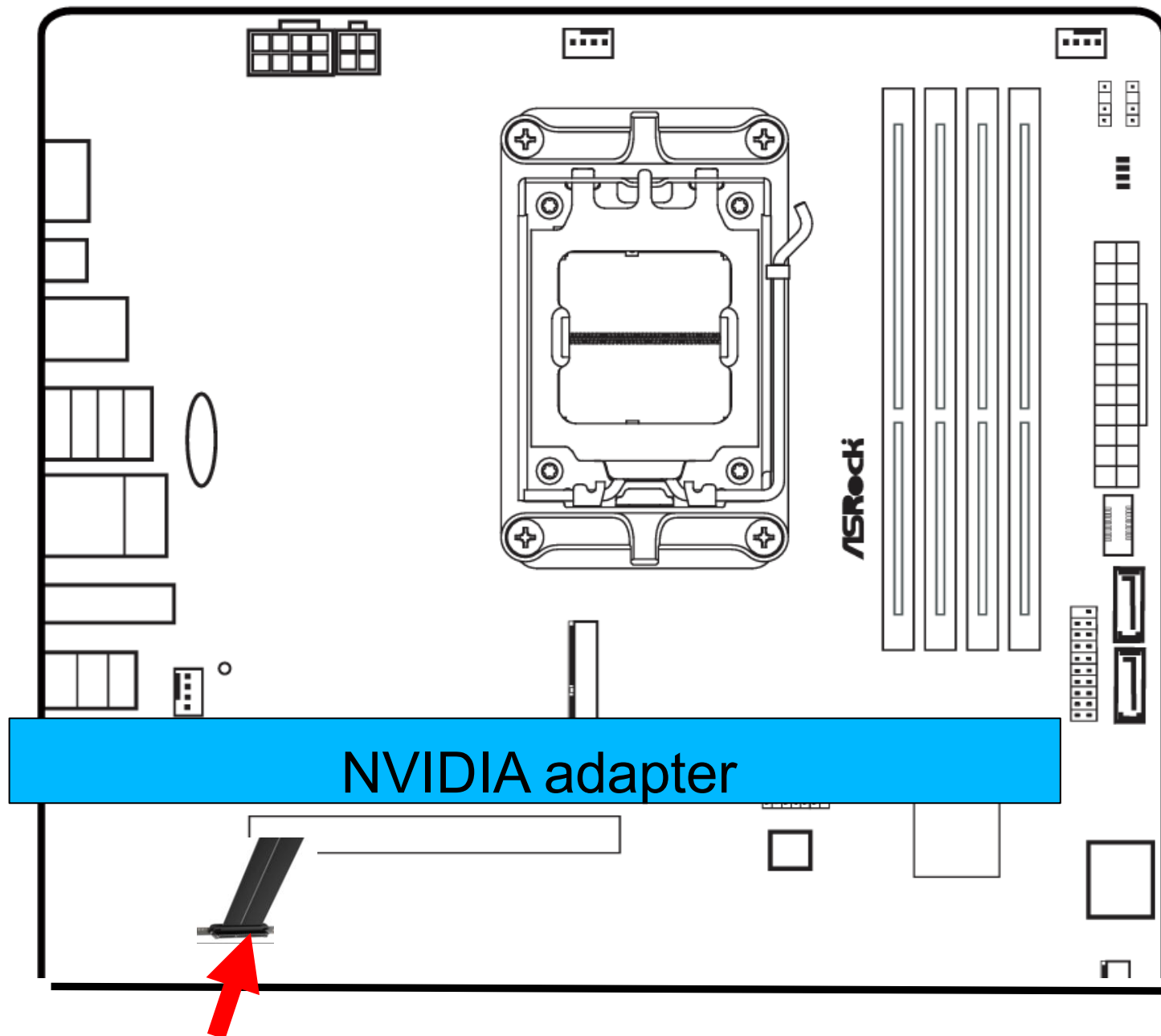


Available PCIe slot is blocked by the NVIDIA graphics adapter

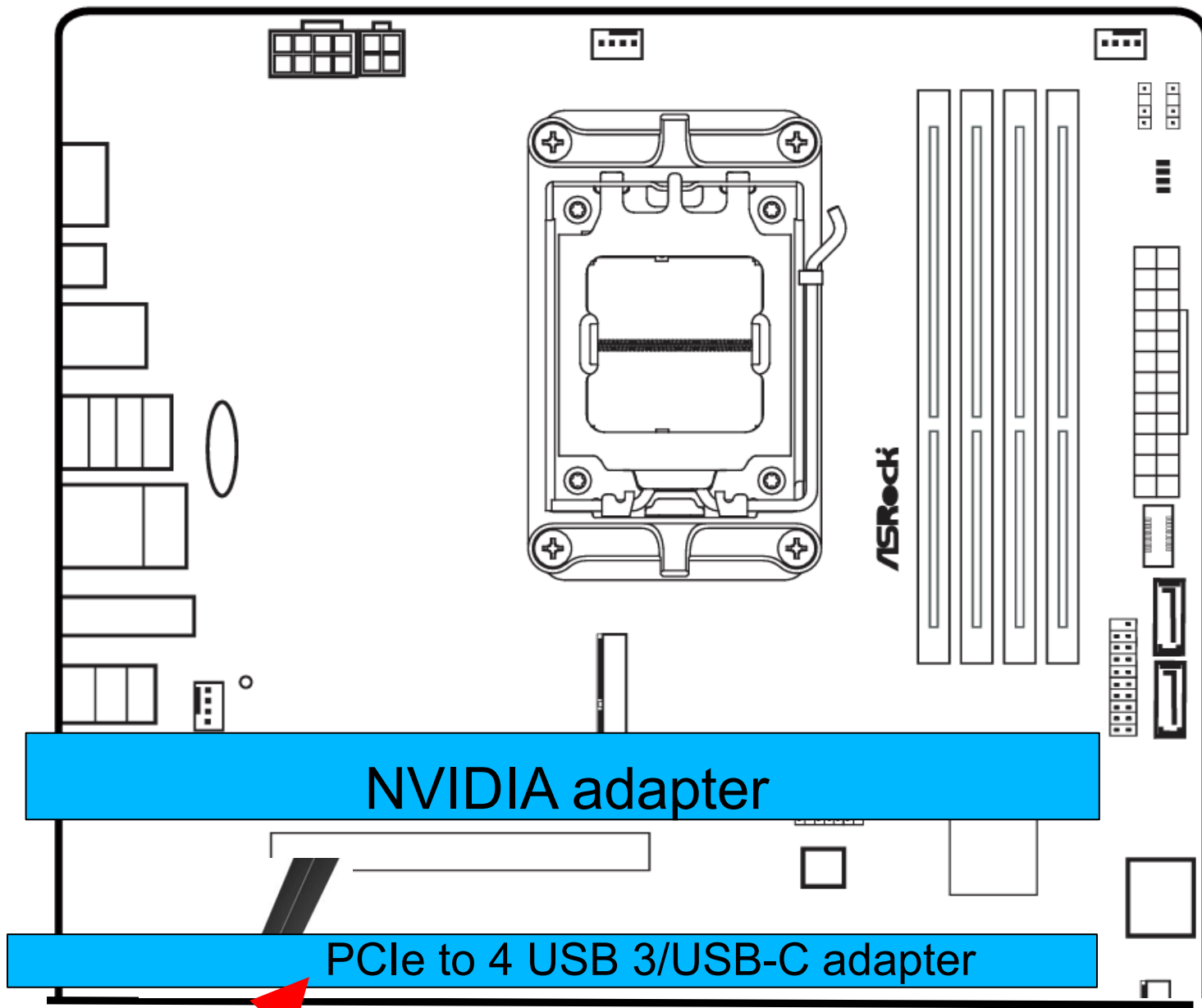


NVIDIA adapter

Installed a PCIe riser cable



Installed a PCIe riser cable



Attached a PCIe to 4 USB 3/USB-C adapter
to the PCIe riser cable

INSTALLING ADDITIONAL HARDWARE TO RESOLVE THE ISSUES

- Install of PCIe riser cable to make the spare PCIe slot on the motherboard available
- Connect a 4-port USB-C to PCIe adapter to the PCIe riser cable
- Connect a multiple Gigabyte Ethernet adapter to the 4-port USB-C to PCIe adapter
- Connect a Wi-Fi 7 Wi-Fi adapter to the 4-port USB-C to PCIe adapter

INSTALLING ADDITIONAL HARDWARE TO RESOLVE THE ISSUES

- https://www.amazon.com/dp/B0HB4741PS?ref=ppx_yo2ov_dt_b_fed_asin_title&th=1

The 90-degree angle at the PCIe side is critical for getting past obstructions such as the NVIDIA graphics card that is right above the spare PCIe connector.



SinLoon PCIe 4.0 X4 Riser Cable, 90 Degree(20CM)

64Gbps, PCI-E 4X Male to Female Riser Extension Cord

[Visit the SinLoon Store](#)

4.0 ★★★★★ (2)

New on Amazon in past month

\$25⁹⁹

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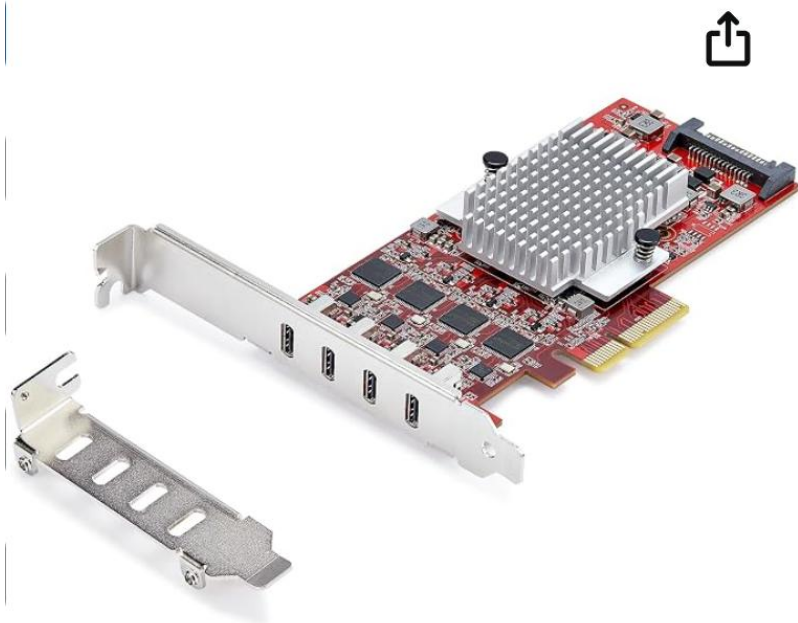
Customer reviews: 2

INSTALLING ADDITIONAL HARDWARE TO RESOLVE THE ISSUES

- <https://www.amazon.com/StarTech-4-Port-USB-C-10Gbps-P10Q4C-USB-CARD/dp/B0F7NBCW4K/>

This is one of the few USB-C adapter cards that actually provide USB 3.0 ports instead of USB 2.0 ports.

USB 3.0 ports are mandatory for Ethernet to USB adapters and Wi-Fi 7 to USB adapters at the Internet speeds that are typically available.



StarTech.com

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StarTech 4-Port USB-C 10Gbps PCIe Card, TAA (P10Q4C-USB-CARD)

4x Independent USB 3.2 Controllers, PCI Express 3.0, Standard Profile

4.4 ★★★★★ (42)

Amazon's Choice

Lowest price in 30 days

-25% \$209⁹⁹

INSTALLING ADDITIONAL HARDWARE TO RESOLVE THE ISSUES

- <https://www.amazon.com/BrosTrend-Ethernet-Adapter-Laptop-Desktop/dp/B0GYDFH1CW/>



BrosTrend 5Gbps USB to Ethernet Adapter for Laptop Desktop PC, Plug & Play

5 Gigabit Aluminum USB Ethernet Adapter for Windows, Linux (Kernel 7.1+), ChromeOS MacOS, USB3.2 to RJ45, Lifetime Protection

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4.5 ★★★★★ (50)

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INSTALLING ADDITIONAL HARDWARE TO RESOLVE THE ISSUES

- <https://www.amazon.com/s?k=netgear+a9000&crid=3QYKBSDZT4554>

ll Pick 



NETGEAR

Nighthawk WiFi 7 USB 3.0 Adapter (A9000) – BE6500 Tri-Band Wireless Gigabit Speed (Up to 6.5 Gbps) – 6 GHz Band – Works with Any Router or Mesh System – for...

4.1 ★★★★★ (172)

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