

NEWS

USB PORTS AND SPEEDS

USB-C was supposed to make everything simple. Instead, it's more complicated than ever. So let's clear up the confusion.

The very name, Universal Serial Bus (or USB) is an ambitious promise: One port to rule them all. The reality is unfortunately messier than that. While your phone, tablet, and laptop might all use the same USB-C port for charging and transferring data these days, they can all work differently.

What's USB4? What's Thunderbolt? Is it the same as USB-C? I'm here to help answer all of those questions, so you can get the best performance out of your devices.

Glossary of USB Terms

First, it's important to define a few terms upfront.

USB 2.X/USB 3.X/USB4

Every USB device is built to some version of the USB specification, managed by the USB Implementer's Forum (USB-IF). These versions are mainly characterized by how much data they can transfer and how much power they can deliver (at least, those are the main th**USB-C and USB-A**

These terms refer to the physical shape of the connectors and ports on devices. USB-C is common and looks like a small, elongated oval. It's also reversible, so you can't plug it in the wrong way. USB-A is the older, rectangular port you've seen for years. There are a lot more types of USB connectors, but these are the two you're most likely to see in charging adapters, hubs, and docking stations today.

SuperSpeed

You might also see some USB devices, marketed with terms like "SuperSpeed," "SuperSpeedPlus," and "SuperSpeed USB 5/10/20 Gbps." These terms were initially meant to be more helpful, marketable labels to denote what generation or speed a USB port was, but unfortunately, it only made things more confusing. In most cases, you can ignore

these labels and look at the actual speed ratings.

ings you need to care about). While most of these devices are interoperable as long as they use the same type of port, the entire chain will conform to the slowest part of the chain. Say you plug a USB 3.2 solid-state drive into a USB 3.2 port on your computer, but use a USB 3.0 cable—data will only transfer at USB 3.0 speeds. Make sure every link in your chain is rated for the speed you need.

USB Power Delivery (or USB-PD)

Instead of carrying a charger for every single device you own, you might opt for a charging adapter that can juice up multiple devices via several USB-C Power Delivery (USB-C PD) ports. Power Delivery is a fast-charging method that supports up to 240 watts of power and allows gadgets to safely talk to chargers to sort out the correct power needs.

You'll find these kinds of ports on USB hubs as well, sometimes referred to as "pass-through charging," though it's not an official term.

Make sure the wattage of a USB-C port on a charging adapter or hub can handle what your device needs. A MacBook Pro typically needs 96 watts during intense workloads (though you can still charge them at lower wattage), so you'd probably need a 100-watt USB-C port on the charging adapter or USB hub for the best charging experience

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__SuperSpeed

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What Is Going on With USB Generations?

It would be nice if you could plug a USB 3.2 device into a USB 3.2 port using a USB 3.2 cable and trust that it all works. Unfortunately, it's way more complicated than that. When USB 3.0 came out in 2008 it had a max speed of around 5 gigabits per second (Gbps). However, when USB 3.1 came out in 2013 with a max speed of 10 Gbps, the 5-Gbps version was renamed to USB 3.1 *Gen 1*, while the new, faster spec was USB 3.1 *Gen 2*. Confused yet? Well, it gets worse. After USB 3.2 came out in 2019, the 5-Gbps USB was rebranded *again* to “USB 3.2 Gen 1,” the 10-Gbps version became “USB 3.2 Gen 2,” and the new 20-Gbps specification became—you guessed it—USB 3.2 Gen 2x2. Wait, what? The “2x2” refers to running two 10 Gbps lanes of data simultaneously. You don't need to know all of this. Many USB hub and docking station manufacturers have given up on names, labels, and symbols. They've started printing the maximum speed next to ports directly.

What this means for you is that if you're using older storage devices or accessories, you may want to look up the specific generation of USB if speed matters to you. A device marketed as “USB 3.0” several years ago, and a device marketed as “USB 3.2” today could potentially have identical transfer speeds if the manufacturer is less than forthcoming with generation names or transfer speed ratings. For what it's worth, we're currently on USB4 2.0, which was set in 2022, and it can hit up to 80 Gbps in data transfer speeds

Thunderbolt vs. USB

Thunderbolt is an Intel-owned standard made in collaboration with Apple that uses the same USB-C connector as typical USB devices. However, certain extra requirements have to be met before a device can earn the Thunderbolt label.

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EL PASO, TX SBE CHAPTER 38 MEETING MINUTE

DATE 06/11/2024

LOCATION: ANTONIO'ZOOM

MEETING CALLED TO ORDER: 11:02 AM, BY ANTONIO CASTRO. WE WERE 10 (TEN) ATTENDANTS.

REPORT OF THE SECRETARY: MINUTES ON JUNE 2024 NEWSLETTER. ACCEPTED BY MICHAEL RIVERA, SECONDED BY DAVID HALPERIN.

REPORT OF THE TREASURER: \$ 3,570.71 IN THE BANK. ACCEPTED BY WARREN REEVES, SECONDED BY DAVID HALPERIN.

REPORT OF THE CERTIFICATION COMMITTEE: MICHAEL RIVERA FOR EXAM IN SEPTEMBER 6th FOR CBNT & CBRE CERTIFICATIONS.

REPORT OF THE MEMBERSHIP COMMITTEE: ELIAS VENTANILLA TO INVITE "TELEMUNDO 48" AS SUSTAINING MEMBER.

REPORT OF THE FREQUENCY COORDINATOR COMMITTEE: CALIFORNIA COMPANY "BLUE ORIGIN" IN VAN HORN, TX. UP AND RUNNING

REPORT OF THE SCHOLARSHIP COMMITTEE: NO APPLICANTS HAD REQUESTED FOR THIS YEAR. POSTPONED FOR 2025

REPORT OF THE WEBSITE COMMITTEE: NOW 44987 VS. 4958 EQUAL 29 HITS.

REPORT OF THE EAS CHAIRMAN: TEXAS MONTHLY TEST CAME FINE, NEW MEXICO TEST NOT RECEIVED YET, MAYBE AT THE END OF THE MONTH

REPORT OF THE PROGRAM COMMITTEE: NO REPORT.

NEW BUSINESS OR ANY ITEMS FOR THE CHAPTER INTEREST:: MARIO JIMENEZ SENT HIS BIO TO MEGAN CLAPPE AT SBE NAT'L

OTHER. RE-ACTIVATE WALTER HANTHORN AT WELLS FARGO BANK

NEXT MEETING DATE AND LOCATION: JULY THE 9th. TIME AND PLACE T.B.D.

MEETING ADJOURNED: AT 11:33 AM.

The editor will be out of town for a couple months assisting family affairs.

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JULY PROGRAM

THE JUNE CHAPTER 38 MEETING WAS IN THE ZOOM MODE FROM THE CHAIRMAN TECH PLACE

WE HAD AN ATTENDANCE OF 10 (TEN) RADIO AND TV ENGINEERS.

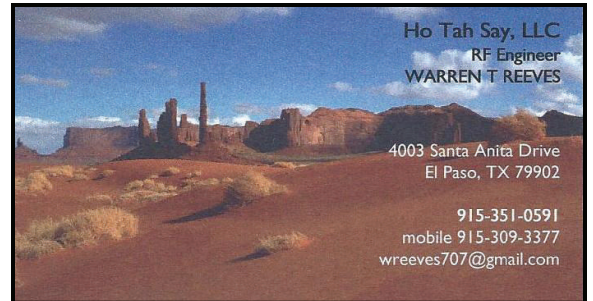
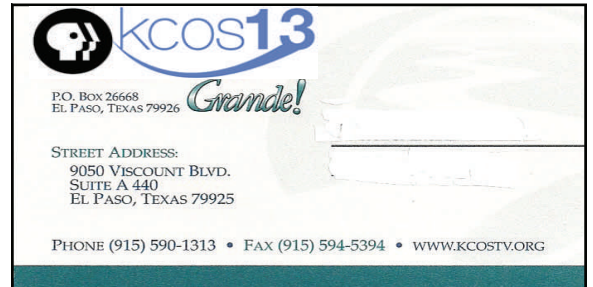
NO PRESENTER THIS TIME

OUR JULY MEETING WILL BE POSTPONED AND THEREFORE WON'T BE A PRESENTATION

WHEN:

WHERE:

TIME:



Higher transfer speeds. Thunderbolt ports are designed to transfer massive amounts of data compared to the USB-C ports they often sit beside. Thunderbolt 3 and Thunderbolt 4, for example, reach speeds up to 40 Gbps, while the new Thunderbolt 5 standard reaches a ludicrous 80 Gbps (or up to 120 Gbps when used for unidirectional connections like outputs to displays).

Display output support. Thunderbolt ports are designed to make it easier to connect external displays. Most Thunderbolt ports can at least support up to one 4K display, with more modern versions like Thunderbolt 4 supporting multiple 4K displays. Thunderbolt 5 is set to expand this even further with support for multiple 8K displays, or several 4K displays at super high refresh rates.

Compatibility with USB: While Thunderbolt is its own specification, it's still cross-compatible with USB ports. However, any connections will default to the slowest link in the chain. The good news is, as long as your device has a USB-C connection, you can plug it into a Thunderbolt port and it will work fine. Just, maybe a little slower. Make Sure Your Cables Are Up to Spec

Getting a USB hub or laptop docking station that's capable of massive data transfer speeds won't matter much if any cables you use aren't capable of those same speeds. This is an easy thing to overlook because most cables don't have labels that tell you what speeds they support. Fortunately, there are a few things you can do to ensure you're using the right cable:

Use the cable that came with your device. The simplest way to ensure that a cable is capable of getting the speeds you need is to use the one that comes with any device you have. For example, if you have an external solid-state drive, there's a good chance the USB cable that came with it will support the SSD's fastest speed.

- **Check the box or listing for specs.** Some manufacturers will list the version (and generation) of the USB cable on the box or online listing where you got the cable, or the device it came with. Some manufacturers will only list the type of USB connector or only mention the version (like USB 3.2) without mentioning the generation (like Gen 2x2), making it difficult to deduce the actual speed.

Look for speeds, rather than the USB version. Since USB specs can be confusing, many manufacturers have resorted to listing speeds directly. Many cables, including those in our Best USB-C Cables guide will list their maximum speeds directly, skipping all the confusing jargon. This applies to power wattage too.

Nimble lists that its USB-C cable supports up to 240 watts of power, meaning you can use it with a 240-watt charger and it will carry that amount with no issues. If you use a cable that is only rated at 60 watts, you will only supply your device with 60 watts of power, even if your charging adapter can output more.

ERIC RAVENSCRAFT GEAR JUL.3, 2024

