

Newsletter of the North Orange County Computer Club

range Bytes

Volume 50 No 10

October 2026

\$1.50

NOCCC meetings for Sunday Oct 4, 2026

MAIN MEETING FOR Oct. 4 To be determined! Come and be surprised

NOTE. A few lapsed members are receiving the Bytes as an encouragement to re-up and attend.

Special Interest Groups (SIGs) & Main Meeting Schedule

9:00 AM – 10:30 AM

***Beginners Digital Photography*Science 131**

Q and A about Digital Photography, need new leader

***Linux for Desktop Users*.....Science 129**

Beginners' Questions about Linux

10:30 AM – 12:00 PM Noon

***3D Printing*Science 127**

Questions and Answers about 3D printing if requested

***Advanced Digital Photography*...Science 131**

Questions and Answers about Digital Photography

***Linux Administration*Science 129**

More topics about the Linux operating system

***Mobile Computing*Science 109**

We discuss smart phones, tablets, laptops, operating systems and computer related news. **Waiting for a new leader.**

12:00 PM Noon – 1:00 PM

***3D Printing*..... Science 127**

Questions and Answers about 3D printing if requested.

PIG SIG* *Irvine Courtyard

Bring your lunch. Consume it in the open-air benches in front of the Irvine Hall or join the group that goes to the student cafeteria. Talk about your computer(s) and life experiences.

1:00 – 3:00 PM Main Meeting

What is going to happen during the main meeting in October? I don't know. At the time of this writing, neither your President Robert Strain, or your Vice President (acting) Jim Sanders had a plan. I find researching a topic for a presentation that a member inquires about, to almost always be interesting, educational and sometimes even fun. This month's article was all of the above. But there was no request last month. So I will find something before the meeting date.

BOD.....3-4PM..... Science 129

Board Meeting.....*Science 129*

Verify your membership renewal information by checking your address label on the last page. If it is not right, let the treasurer know.

Mark your calendars for these meeting dates

2026: Oct. 4, Nov. 1, 1Dec. 6,

2027: Jan. 10, Feb. 7, Mar. 7, Apr. 4, May 2, Jun. 6, maybe?

Coffee, cookies and donuts are available during the day in room 129 .

“Friends Helping Friends” since April 1976

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Special email addresses

Jim Sanders is: editor@noccc.org

membership@noccc.org

Our Website

WWW.NOCCC.ORG

Reminder: Membership expiration dates are based on the date that you joined the club.

Example, you joined or re-upped your membership in the club in November of 2024.

That means that in November 2025 you should pay your membership dues. In the address label area of the Orange Bytes is your join month/expiration month.

A thought to consider; The only reason the club has been able to continue functioning financially after Covid is a generous donation in the will of a former member. Could you include a small donation in yours?

Reprint Policy

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Board of Directors

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Editors Corner

The Wall Wart Charger Nightmare

By NOCCC member, Jim Sanders

You know the scenario, a box or shelf full of plug in the wall chargers for all of the various electronic toys (some are justified as "tools") that you have bought over the years. These chargers come in a wide range of voltages and current values, for the products that they came with. They have an infuriatingly wide range of incompatible USB/Barrel connectors. The Barrels were first, have a + center socket and the outer contact negative, but just for fun, some companies flip that polarity. *Figure 1* Barrel connectors have a wide range of inner and outer diameter sizes. The different outer and inner diameters have little or nothing to do with voltage, but current matters. It is a big source of irritation when the printed Volt/Amp numbers are good, but the barrel connector doesn't quite fit. It is a shame when that device dies and both it and the unique charger can become eWaste.

As a result, it is a real challenge to find one AC/DC power supply unit in your box that will work as a replacement for the one you can't find or has died. Now all you have to do is find a Wall Wart that is at least close to the right voltage and current. You can then test your soldering skills mating the correct connector from one unit to the one you need. But for simple, dumb, brute power, and zero fancy charging, the Barrel connector is great!



Figure 1

Then came USB charging and I thought, “Hey, we’re making progress.” A drive towards more uniformity in charging by just using 5 Volts and a standard cable. Did I say standard? That turned out to be a mistake! The world of USB charging expanded using either the Apple Lightning connector, a USB Type A connector, OR OTHERS. Note that others is plural.

Now, we have USB-C with USB-PD

On November 23, 2022, the European Union mandated that for smartphones and all suitable products, the USB-C connector was the one to be used. That effectively forced the rest of the world to do the same. So it looks like barrel connectors are niche market, and other USB connectors are mostly out. See Figure 2. So USB-C is the way to go for high speed data and power. So far, that sounds great.

The USB Type-C connector is now king of the hill due to its capabilities and the EU mandate to use it wherever feasible.

Regular USB-C charging is simple, 5 volts, up to 3 amps. The USB Power Delivery (PD) SPR standard needs closer scrutiny. The available voltage, current, and power levels are dramatically increased. The five levels of power-delivery offered by USB-C connectors and the special E chipped cable is impressive.

USB-PD offers three power-delivery modes:

- * Sink: can be a port, usually a device, that consumes power from V_{bus} when attached.
- * Source: a port that provides power over V_{bus} when attached,
- * Dual-role power (DRP): a port that can operate as either a sink or source, and may even alternate between these two states. (e.g., a laptop charging port that can also charge your cell phone).

It gets complicated

The macro description makes PD sound straight forward and effective, but the detailed USB PD description is not like opening a HDD folder and only having one sub folder topic and opening that one, only one more. Rather, it is like the Windows OS. Each sub folder can have many sub folder topics. By the time you get to the bottom, you have forgotten why you went there. It would take a much longer article to get in to the details of USB PD. Also referred to as **Standard Power Range (SPR)** — **Up to 100W (5V to 20V)** Which is wonderful for devices that can fast charge There are many good macro articles as well as detailed articles about that standard. But somebody said “Hey, if that is a good thing, lets make it even better.” So, **Extended**

Types of USB Connectors As Per USB Standards

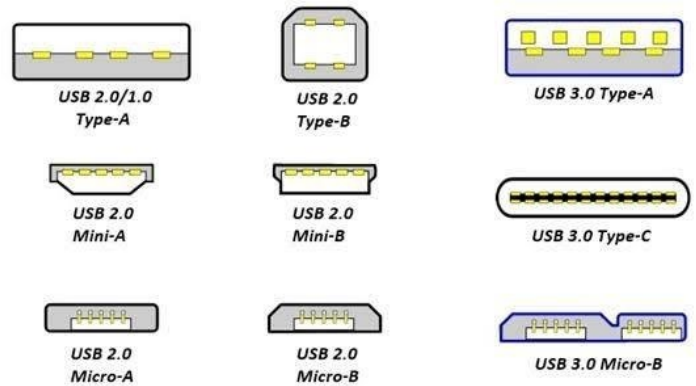


Figure 2

Power Range (EPR) — Up to 240W (28V to 48V) was introduced. **NOTE!** Both require a special cable. WOW! Now you can buy a single charger that does both **SPR** and **EPR**. That gets very complicated. Starting with the negotiation dialogue that occurs between the devices on each end of the cable connection. They have to agree on what voltage and what current they can operate at. An added complication is that on a multi-port charger, USB PD allows for multiple loads to be charged at the same time, from separate ports, each with different requirements.

When a double ended USB-C connector cable is plugged into the charger, the two devices start the pretty complicated negotiation about what is desired/possible to be done . In theory, if that cable is not the special CHIPED SPR or EPR cable, and the USB -C port is manufactured to the specifications, it defaults to 20V at 3Amps max. If a off-the-shelf USB-A to USB-C cable is used, 5V at 3A max. If it is not to specification, **absolutely nothing is supposed happen** (no charging because the charger can’t determine what is safe) and the user may think the charger is broke.

You need a pretty smart embedded micro computer to calculate the many USB PD scenarios in seconds. The conditional rules. The exceptions, state and timing diagrams. It is a pretty long list.

At first sight, the USB-C/PD spreadsheet scenario was a great thing. One universal charger. That sounds great to me. It claims to handle everything up to the specified maximum. A no brainer for the user, and no incompatibilities. What’s not to like?

Then I thought about it a bit more. When I looked into the full range of USB PD requirements it gave me pause. For a single charger to be able to solve the requirements for every charging solution it might face, is a pretty daunting task. History shows that many devises with such overarching goals, became a jack of all trades and master of none. And jacks make mistakes.

Having a universal charger sounds great, but trying to program the controller to deal with every possibility with so many inter acting variables is huge. Testing that the charger correctly responds to every possible combination, ditto! Maybe separate SPR and EPR chargers is a safer approach?

Scenario: You plug your cell phone into port 3 of your does it all, combo SPD/EPD charger. Something goes wrong, **and 48 volts goes to your cell phone**. That might be interesting,,,,,,,,,,,, or not.

North Orange County Computer Club

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To All Members:

The line above your mailing address
now shows your joindate. Please use
your join **month** to choose when to
renew your membership.

Dated Material – Please deliver ASAP

Membership Level (\$)	1 Year	3 Years
Individual Member	35	90
Each Additional Family Member	15	40
Full-Time* Enrolled College Student	20	
Enrolled High School Student	15	
*Minimum 12 Semester Hours		
Business Member + Ad (Business Card)	25	
Business Member + Ad (¼ Page, ½ Page)	65,	100
Business Member + Ad (Full Page)	175	
Contributing Member	75	
Supporting Member	100	
Advocate Member	250	
Patron Member	500	

Directions to the NOCCC meeting location



Enter CA-55 N (Costa Mesa Freeway) crossing Interstate 5 toward Anaheim/Riverside for 9 miles. *Notice freeway and street signs stating "Chapman University."* Exit toward E Chapman Ave. Turn right onto N Tustin St. Turn left onto E Walnut Ave.

1) Turn left past N. Center St. for the **best place to park** in the underground parking structure (Lastinger under the sports field). Pay the small fee (\$2) to park Ask members or help@noccc.org about parking details, restrictions, and our price break!

2) Turn left onto N Center St. On the right is the Hashinger Science Center, 346 N Center St. Orange California. Parking on the University side is free. Parking on the residential side is a city violation that may cost you a **tow away and a ticket!**