



The Blurbs



Newsletter of The Phil-Mont Mobile Radio Club
Public Service Since 1949

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April 2021

I'm So Sorry!



On 3/22/21, R Devirg <rdevirg@yahoo.com> wrote:

I'm very sorry to be the bearer of bad news, but Rick passed away today exactly at noon (he always WAS very punctual). They didn't expect him to last the night, but somehow he did -- he's nothing if not a stubborn fighter. But this morning he had crossed a line from which he could no possibly return, and eventually his great heart simply gave out. Even in his fragile state, he fought as hard as he could ... but it simply wasn't enough.

I had just completely redone his "ham shack," too -- fresh paint, new floor, new rug ... and now he'll never be able to enjoy it :(As for me ... my heart is broken :(He was my everything, and now it feels as if there's nothing left. I've always been moved to tears by the front-page "Silent Key" features ... and now it looks as if our intrepid Editor will be starring in that role :(

Sadly,
Eileen (for 73/Rick ND3B)

The Prez Sez



Hello Phil-Mont,

PHIL-MONT is out of this world! The sky is *not* the limit, but rather, the beginning in this hobby.

Rolled into the month with Jay WA2UAR's 'space-weather' What Hams Do episode on Feb. 28th. Followed it up with Rick W2JAZ's March 21 Presentation: ***How I Became a Lunatic: Tales of My Journey to the Moon and Back*** Presentation and Video of Presentation available on website.

Hopefully some were inspired by Jay's episode to explore more at 2021 HamSCI Workshop, Friday and Saturday, March 19 – 20

As I am writing this we are a day away from seeing if the astronauts can fix the ISS radio during their spacewalk. FINGERS CROSSED.

UPDATE It is FIXED!

<https://blogs.nasa.gov/spacestation/2021/03/13/nasa-astronauts-complete-years-fifth-spacewalk-at-station/>

https://www.nasa.gov/mission_pages/station/research/news/iss-20-years-ham-radio-infographic

Text from ARISS Last Heard:

ISS - 00:00:25:45 : NY3J-7]T0PX8U,RS0ISS*,qA0,W2THC-10: `g^v1 [/\`"4x}hello via ISS_\$(

I think all of the space stuff happening at the Club this month has some new and old hams thinking about stuff floating/flying around overhead.

ISS (International Space Station). 1000 times closer than the Moon. Gateway drug. Lots of games to play.

APRS. Hmm, what's that? Do you really want to know? We loan out radios with APRS capabilities to Club Members. [FIND OUT.](#)

ISS repeater. NO WAY. WAAAYYYYY.

Voice contacts. Hmm, well now primarily scheduled school contacts, but astronaut hams have been known, during their freetime, to call CQ.

Throw 145.800 in your scan bank. When it breaks squelch, get excited, stop the scan, record if you can.

<https://drive.google.com/file/d/0B310eHDXiGCNRUhlAe5WS1ZWNm8/view?usp=sharing>

SSTV(Slow Scan TeleVision) OMG. Images from the ISS.

More info:

<https://www.amsat.org/amateur-radio-on-the-iss/>

I remember a time at Ham Camp, after a meeting in the Giant parking lot, when a few of us made a contact with the ISS.

<https://photos.app.goo.gl/RXJK1cGsDhB9a7SC6>

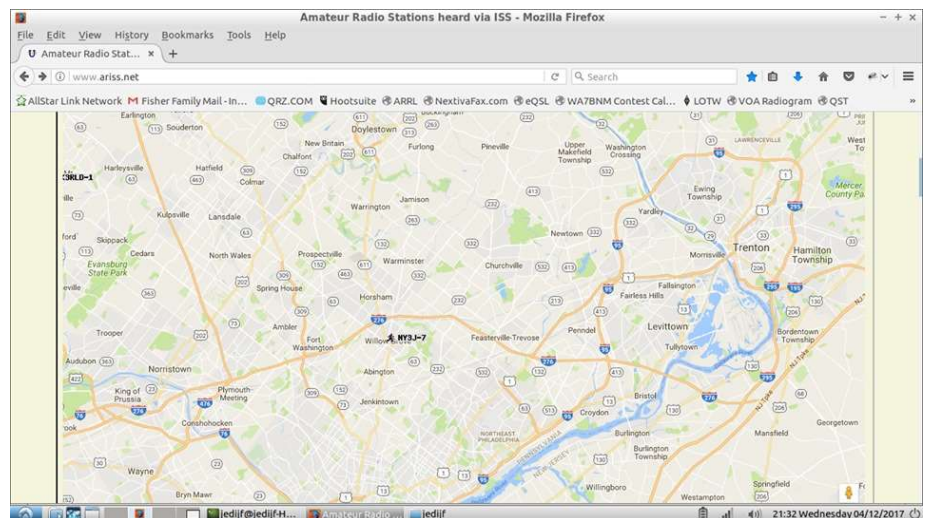
The RETURN PING is at the very end (our ping (send) is higher pitched)...after lots of clowning around.....great visual of ISS on video too!

[ARISS LAST HEARD PAGE](#)

(Can't wait to get back to in person meetings!)

**the 5 watt HT used is the /same/ HT we loan out.....

I will tease more of my own ISS game adventures and invite all to do the same on the Groups.IO mailing list. Let's share our experiences with the new(and



old) folks and create some more experiences!

NOW, back here on the ground. APRIL. Right around the corner is ARRL Field Day, June 26th and 27th. We set up on Friday June 25th....some start around noon.

All the official information is here: <http://www.arrl.org/field-day>

Due to the pandemic, last year's rule change of allowing home stations to participate, count for points, and choose a Club to have their scores reflected in, will still be in effect. And exactly like last year, the Club will have a slimmed down, COVID aware, outdoor event at Fort Washington State Park. All precautions and warnings as determined by the Commonwealth of PA will be in effect. **PLEASE make smart personal choices based on your own personal situation.** There will be future Field Days to participate in. More information on Phil-Mont's Field Day will be coming on the website, The Blurb, and the GROUPS.IO.

Because of Field Day, and the terrible weather and power situation that recently occurred in Texas, I have asked Walt Skavinsky, (KB3SBC), to do the April 14th General Meeting presentation on ZOOM and the 2 meter repeater.

Walt is an avid portable operator. Walt will be doing a presentation on portable operations.



MEMBERSHIP STATS

At press time P.M.R.C. has:

- 116 Full Paid Members
 - 10 Family Members
 - 2 Youth Members
 - 2 Honorary Members
- Elaine Spencer
Richard Moll – W3RM

New members pending:

- John Beck - KC3RMX - Technician
- Charles Wright - KD3HAM - Extra
- Benjamin Krevsky-WD8RYV -Advanced

April Net Control Schedule

- 4-NC3U
- 11-KB3IV
- 18-W3MHP
- 25-KB3IV

Portable operation applies to Field Day, and to all of us as Amateur Radio Operators in the case of an emergency. Great stuff to know. Great stuff to practice. Hopefully, only to utilize in radio games and drills, but having the ability to use if needed and called upon.

EVERY DAY remember, this is YOUR Club, YOUR repeaters. USE them. MONITOR them. BE A REPEATER GREETER.

April Birthdays

- 01 Mark Thomas - KC3DRE
- 05 Rob Moore – N2RM
- 06 Andrew Furlong KC2PMW
- Vincent Pisacane – WB3IDW
- Clayton Owen - AA3JY
- 08 Jackie Chedeville (XYL W3GQD)
- Joe Fitzmyer - KC3ECE
- George Gianios - WB3DZZ
- 10 Michael Elmaleh - K3HIJ
- 12 Larry Bennett - NJ3Z
- 15 Kent Simmons- N3BKR)
- 16 Janet Souza - W3JLS
- Stanley Dworak - W3TTY
- 21 Brad King - WB3BPI
- 22 Susan Hoch (XYL W3UI)
- Jack Livezy - KC3EOO
- 25 Vicki Hollett (XYL WA2UAR)
- Fred Lamberti - KE3NP
- 26 Jim McCusker - K3YO
- 28 Gwen Patton - NG3P
- 30 Al Kaufmann - K3ZMJ

Answer calls when you can. Let's try to leave

NO CALL UNANSWERED.

PLAY*BREAK*LEARN

jim fisher

AJ3DI

www.aj3di.com

HamshackHotline ext: 14423

"Do, or do not. There is no 'try.'"

-- **Jedi Master Yoda**



A Different Power Source for Field Ham Radio Operating

--de Gwen NG3P

We're coming up on a confluence of two things: Nice weather, and relaxing of the Covid-19 lockdowns in much of the United States. This means more hams leaving their home shacks and taking their operating to the field. For some, this means climbing mountains and doing SOTA activations. For others, this means hiking on trails, and doing POTA activations. For yet others, this means gearing up for Field Day, or doing HF Pack operating, with a manpack station on their back. But no matter what they actually choose to do in the field and why, all of them have a similar need.

They need to power their gear.

This can be a really complex issue. It has a lot of factors, like what radio the person plans to use, what its power requirements are, how many watts do they want to transmit with, how much does the radio draw during receive, will they have access to mains current at any point, if not, will they have gear to recharge their power source, will they be on foot, are they operating from a vehicle...the list goes on and on. But again, there's a need that intersects all of these issues.

They need the power source to be as flexible as possible, and to provide the maximum in available power for as long as possible, but as small and lightweight as practical.

When you're getting to your operating

position by backpacking, every ounce and every cubic inch counts. So you want your power source to be small and light, yet you need it to provide enough power to fulfill your goal.

The default position seems to be: figure out how much juice you'll need for the duty cycle you expect, the power consumption your equipment will require, how much weight you can carry for the requisite distance, and what you can do to replenish that power in the field if you have to. It pretty much falls to: carry a lead-acid gel-cell, or a lithium-ion source with similar storage capability. If possible, carry some means of charging it, which usually means "solar panel".

A lead-acid gel-cell with 5-10 amp-hours (Ah) of available juice is fairly inexpensive, between \$2.00-\$3.50 per Ah (Amazon prices) depending on brand and what the seller says it's for. Some

use cases have higher price points, because it's a more or less "elite" use case. You can get a lead-acid 12V 9Ah gel-cell for around \$25. But lead-acid batteries are heavy and bulky. If you plan to charge one in the field, it requires a special charger, or your charging device needs to have an output suitable for charging lead-acid batteries. They have a limited lifespan, and can be damaged or destroyed by drawing their voltage down too far before recharging, requiring replacement. Then you have a hazardous material to clean up, as your typical trash service won't take them. They're cheap, but can be a hassle. If you're willing to accept the hassle, though, you can get them very inexpensively.

Some radios, such as the Elecraft KX3, can be upgraded with an internal battery tray. The recommended battery for it is a set of Nickel-Metal Hydride AA cells. The rig will charge them, but ONLY NiMH batteries, the charging process is slow, and if you draw the batteries down too far, may damage the batteries so they no longer take a charge. They're lighter than lead-acid, but provide less power, and have special charging needs.

Lithium-Ion batteries tend to be lightweight, have a fairly high efficiency, and while more expensive, have a longer lifespan, requiring replacement less often. But they require a special charger, can take a long time to charge, and are considered to be a very hazardous material. Lithium-ion batteries have been known to explode or catch fire while charging, while in use, or following some kind of damage from incidental accidents, such as dropping. There are heavy restrictions on shipping them, and over a certain size cannot be taken on an airplane in carry-on baggage. The best chemistry for lithium batteries are the relatively recent Lithium Iron Phosphate (LiFePO4) variety. They're lighter, have an even longer useful lifespan, can be drawn down further without damage, and the chemistry isn't

as explosive or prone to fire as other lithium-based cells. But they're expensive, running \$8-12 per amp-hour.

The least expensive brand I know of are Talentcell brand. They even have small battery packs, at minimum 12v at around 3A, but some models having 9v and even 5v USB outputs. The 12v and 9v are coaxial jacks, and the units have power switches, power level indicators, and can be charged while in operation. My only complaint about these devices is that they're single-taskers -- they are designed for a limited set of tasks, such as running LED lighting, or IP cameras.

What I had in mind was something of a multi-tasker. Something you could use for powering ham radios, or perhaps other gear as well. I've been looking at the little USB power banks for years, wishing there was a way to operate ham radios from them, but the power and voltage available on them was too low. But now...there's USB-C, and a new protocol for output power on USB-C, the Power Delivery standard.

PD is a handshaking protocol, whereby a device will communicate with a power delivery device and tell it how much power it needs to operate. PD can provide a whole host of values, from 5v at 50mA, to 20v at 5A, with reasonable steps between. It can specify a range of acceptable values, in case the supply device doesn't support the precise value required, but DOES provide something close. The key to the whole thing is a small circuit called a "sink". There are a number of them becoming popular online.

The "PD Buddy Sink" by Clara Hobbs is the first I encountered, on the maker site Tindie. It's a board a little smaller than an inch on a side, with a USB-C socket on one side, and either bare solder pads or screw terminals on the other. To specify the power setting, you

connect to the board via a terminal program such as PuTTY over the USB-C connection, and issue the appropriate commands. Then you can write the result to the internal memory of the board and reboot it. The board will retain the setting until you change it. Another board, the ZY12PDN "Type-C USB-C PD2.0 3.0 to DC USB decoy fast charge trigger Poll detector 100W MA", as named on Amazon, is very similar, but instead will cycle between available values when a button is pressed. It's a slightly smaller and less expensive board than the PD Buddy Sink. The Buddy Sink costs \$30 on Tindie, while the ZY12PDN costs between \$13-18 on Amazon, depending on configuration.

There is a Thingiverse project for a 3d printed case for the PD Buddy Sink in two configurations, one to accommodate a simple wire going to the output pads, and another where a pair of Anderson Power Pole connectors are incorporated into the case, allowing it to be connected to any device that supports Power Poles. But the first one I built, I used a small project box, and ran a two-conductor wire into the end opposite the USB-C connector. I thinned the lid directly over the LED power light, so I could see when the board is on and responding. Eventually, I'll put a small hole over the board's reset button, so I can put it in programming mode.

But why go with a cable? Why not put the Buddy Sink board inside the radio itself, with a slot for the USB-C plug? Because a Buddy Sink board is \$30, that's why! With a smart Power Delivery cable, I can support a whole collection of 12v QRP radios with the same board setting (12v, 2.5A). With a Y-adaptor, I can even supply power to both my KX3 and PX3, though I really wish it had more current. To use a sink in each radio would be a very expensive solution, though it would of course work. It also wouldn't be necessary to leave a way to reprogram the board, since it would only need to supply one range of values, the one necessary to power that radio, and

no other. But this is a far more flexible solution, and a far cheaper one!

Now that the smart cable is out of the way, what about the OTHER end?

There are a number of Power Delivery options for power banks and chargers. I bought a 45W GaN (Gallium Nitride) PD wall charger as a backup for my USB-C Chromebook, but found that it also charged PD power banks quite adequately and quickly. Since it is a PD device, it can also provide mains power to the PD smart cable, and is smaller than a deck of cards. The battery banks I purchased are a 10000mAH model and a 26,800mAH model, both by RAVPower. Both will supply around 30W of power, and will power any of my QRP radios at full output, including the KX3 at 10W.

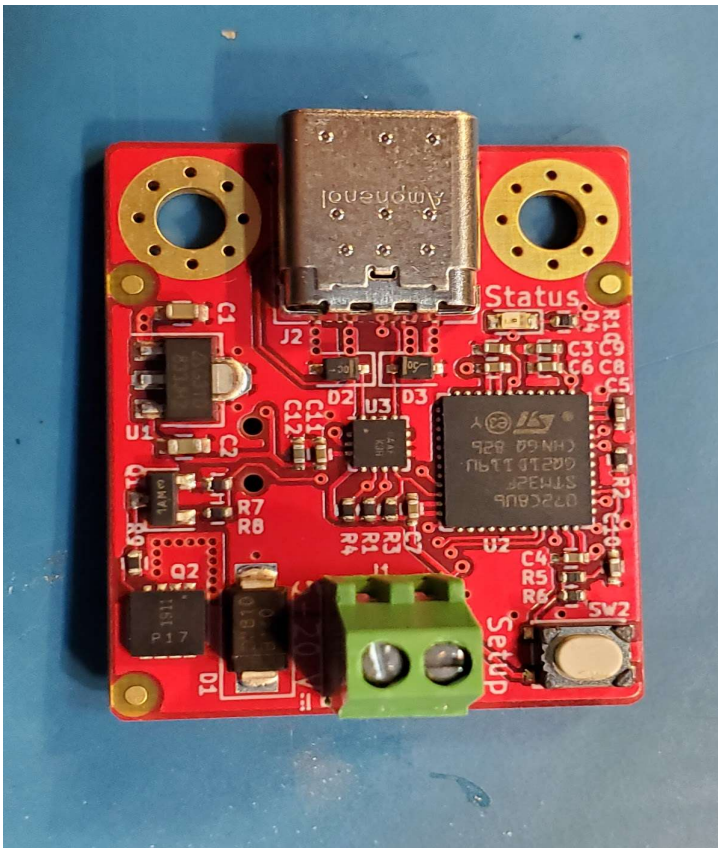
They may not be able to supply as much juice at 12v/2.5A as a dedicated 12v battery, but they also don't weigh nearly

as much or take up nearly as much space as a 12v battery. I have a Talentcell 12Ah LiFePO4 battery that weighs about 2 1/2 pounds. The RAVPower 10000mAh PD bank weighs about 6 ounces. The 26,800mAh PD bank weighs about 15 ounces. They also cost much less. The 10Ah model cost about \$20, the 26.8Ah, about \$50. The 12Ah battery cost around \$100, and appears to be no longer available from Talentcell. By my calculations, the 26,800mAh bank should provide around 8,250mAh at 12v, and the 10,000mAh bank, around 3,000mAh.

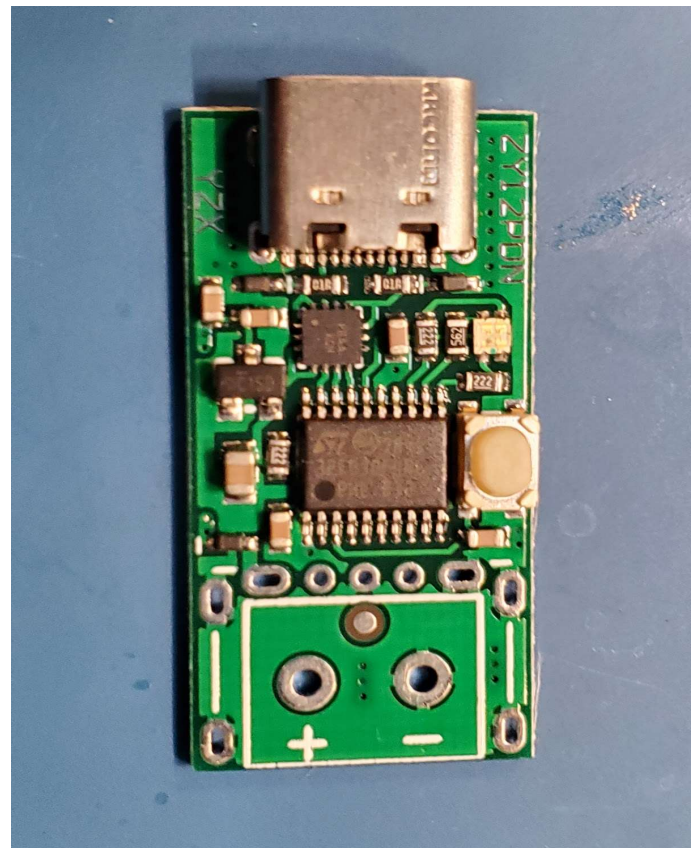
To give a real-world test to this technology, I charged the 26.8Ah RAVPower pack completely, then connected it via the PD smart cable to my 40m QCX transceiver. I was able to run it, with intermittent transmitting, for 7 hours before I personally got too tired to continue the test. The power bank had only reduced its available power by a single indicator light, roughly 25% of its total. Now, it's certain that if I'd

spent that time ragchewing, it would have consumed much more power, as 5w out takes a lot more juice, but I'm not a ragchewer on CW as yet. For casual use, this seems like an adequate power supply for the size and weight. For a device that only provides 8.25Ah at 12v, it seems quite efficient, powering a 5w transceiver for 7 hours with only a 1/4 reduction in capacity. With greater transmission time, this would certainly be a greater draw on the power bank, but even if it were 1/2 or 3/4 discharged, that's an 8-hour day's worth of continuous operating in a battery bank 1/4 the size of the 12Ah Talentcell I have.

It's also a multi-tasker. It can charge my phone via the USB-A port while operating the QCX. It can charge my USB-C Chromebook. It can charge other USB devices, such as my watch, or the flashlight I wear on a chain around my neck. It can charge my Baofeng BF-T1 Mini 70cm handy-talkie. It can charge my electrolytic water purifier, which equates



PD Buddy Sink by Clara Hobbs



ZY12PDN Board - Amazon

to 150 liters of purified water. It can run a USB LED lamp, or my TS100 soldering iron. Except for the soldering iron, I'd need an adapter to use the 12v battery on any of those other devices.

I also have more options to charge it back up. I have a solar panel set, also by RAVPower, which can charge either of the PD power banks. I also have two different thermoelectric generators, that provide USB level power from a strong heat source. I can make hot water for drinks or freeze-dried food while charging the power banks. If my car is available, I can recharge the banks from my lighter socket, a source that isn't clean or stable enough to power the radios directly. I can use the GaN charger to recharge the banks, or I can run the radios from that charger with the smart cable while I have access to mains power. It's all very compact and lightweight, making it easier to transport

into the field, such as when hiking on a trail or climbing a mountain. (I'm disabled, so my hiking and climbing days are over, but I still go to parks to operate, on picnic tables convenient to nearby parking!) Talentcell put a battery management board inside the case for the large battery, so it can be charged from a charger for a lead-acid battery, but that would still require AC mains power to use!

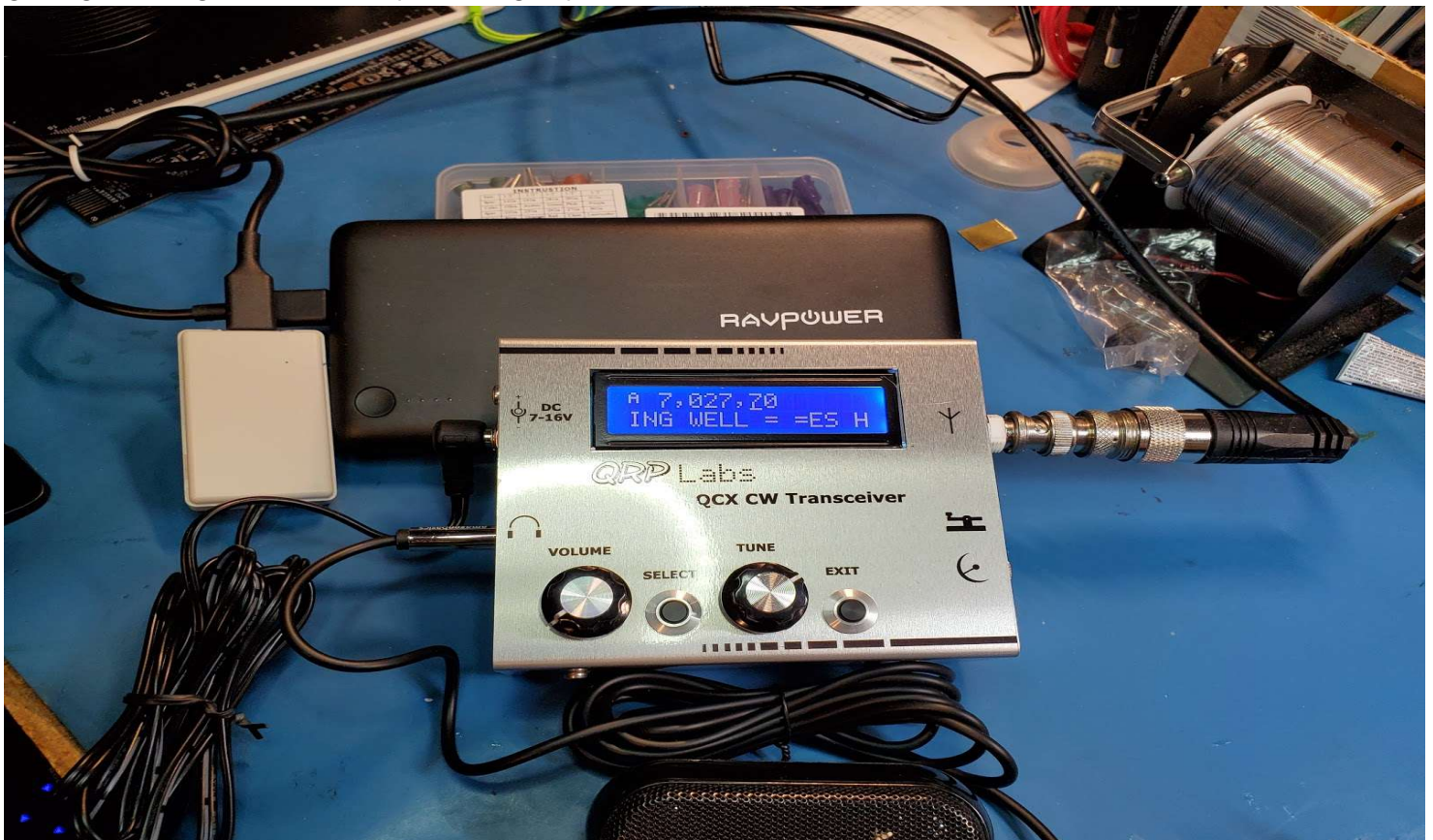
Power Delivery is still a very new power bank technology, but it appears to be getting more popular. I think it'll be easier in the long run to use such multi-tasking power bank options to run portable ham radio gear than to lug about heavier and less convenient power sources as the technology improves over time. I have a new PD power bank on order, also by RAVPower, a 20,000mAh model with a digital power meter, so I can better

gauge how much of the power bank's capacity is being consumed during use.

UPDATE:

From some questions I've received since posting this, I have a couple of points to add.

- If your power bank has a low-drain timeout feature (it shuts off if the device you connect doesn't draw enough current), it will NOT turn off if your radio doesn't draw a lot in receive mode. The power bank is not seeing the RADIO'S consumption level, it's seeing the handshake from the sink board, which does not automatically turn off if the draw is "too low".



RAVPower PD 26,800mAh Power Bank, Buddy Sink Cable, and QRP-Labs QCX 40m Xcvr - 7 hour test

- There is no oscillator noise from the sink board because it is not boosting 5v from the power bank to 12v. The board is *requesting* 12v from the power bank, and the power bank is supplying it under the USB-C PD standard. So there's no oscillator boosting the voltage, hence, no noise from the sink board.
- You need to use a *USB-C Power Delivery* power bank for this. Qualcomm fast-charge is a different standard, and will not work. There will be a "PD" logo on the power bank if it is supported, and should say it is Power Delivery in the documentation. Here is a document explaining the PD standard:
- <http://www.ti.com/interface/usb/type-c-and-power-delivery/getting-started.html>

73,
Gwen Patton, NG3P

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Links to items:

PD Buddy Sink:	https://www.tindie.com/products/clarahobbs/pd-buddy-sink/
ZY12PDN Sink:	https://www.amazon.com/gp/product/B07T2858G6
RAVPower 10Ah:	https://www.amazon.com/gp/product/B07Y9QYCDC
RAVPower 20Ah:	https://www.amazon.com/gp/product/B07TF73QZS
RAVPower 26.8Ah:	https://www.amazon.com/gp/product/B01LRQDAEI
Inateck 45W GaN Charger:	https://www.amazon.com/gp/product/B0719KV9PH
3d Printed PD Buddy Sink Case:	https://www.thingiverse.com/thing:2847318

For Sale

HeathKit *antenna switch*.

TenTec HF Transceiver Paragon 585 model -

Ant wire 100 foot new -

Used 1-1 **balun** -

Daiwa **Ant Tuner** model CNW419. B+.wTVi filter

low pass model/1500 -

Power Supply Astron model RS-35m

Everything. \$600.00. Contact Arthur WX3PHI at
wx3phi@comcast.net

100 watt **K3s Transceiver** (160 to 2 meters) plus P3
Panadapter and SP3 external speaker. Price is very
negotiable. Don't want it to gather dust on the shelf.
Contact Patrick Taylor, W3HVG.

1/8" (290#) & 3/16" (380#) Dark Olive Drab **Braided
Cord** · 100% Polyester/Dacron Knit Braided. Nice
stuff! Tough and long lasting — UV Resistant and
Low Stretch, Proudly Made in the U.S.A.! Contact
Steve WU3I at wu3i@arrl.net or
215-605-6074.

Antennas for sale:

• **Hustler 4BTV vertical antenna** with a 75m super
resonator on top.

• **3 element Beam** with extra traps; I believe it's a
Mosley.

• **Diamond Dual band VHF/UHF base antenna.**

I have the paperwork for the Hustler and Mosley
Asking \$50.00 each, but no reasonable offer will be
refused. Contact Carmen KE3QB at
my3gumbas@gmail.com

Red Cross and ARES in Southeast PA

The Red Cross of Southeastern Pennsylvania (SEPA) has joined with Philadelphia ARES to create a cadre of Amateur Radio Operators in the region. Under the leadership of Red Cross volunteer Bill Bianco, AB3PU, the group had its first online meeting Tuesday, March 9 th . The goal is to create a volunteer and social organization of hams who will serve the community in times of need. Philadelphia County Acting Emergency Coordinator, WA2UAR – Jay Silber, recommended that Philadelphia ARES members join the team, and several including Silber, have done so. Also in the meeting was Montgomery County EC, W3AFV – Phil-Mont's Secretary, Chuck Farrell. A number of Red Cross volunteers who obtained licenses as a result of training Bianco organized, were invited to join the Philadelphia ARES net meetings, Sundays at 9 PM on the Phil-Mont repeater. Eventually, Bianco hopes to hold meetings at the Red Cross Philadelphia headquarters at 23 rd and Chestnut Streets in Center City Philadelphia. Antennas, cables, and a transceiver are already in place, and a team is being put together to determine how best to re-construct what was once an active Amateur Radio station. Watch this space for more news on the collaboration between ARES and the Red Cross of Southeastern Pennsylvania.