



Zero Beat

November 2021

General Meeting
Wednesday November 10
At 7:30 pm at the
Hazel Park Library
and on Zoom
With Socializing
At 7:00 pm

Club Officers

President Joe WB8ADX
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Director Bill N8QVS
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Off Grid Christmas Wish List.

Chris Warren October 16, 2021

It's closer than it seems.

We live in strange times. With many products out of stock and long lead times for the stuff you can get, it's not too early to think about what you'd like to give (or get) for Christmas. An off grid ham's Christmas wish list probably doesn't look like the average persons', but that's ok, we understand each other here. This seems like a good time to go through a few of the most popular items that off grid amateurs ask about and figure out what's worthwhile and what's not. This is by no means a comprehensive list. Feel free to add your ideas in the comment section.

Multimeter.

What is it? A device that measures AC/DC voltage, current, resistance, and other electrical properties.

Do you need one? Absolutely yes!

Why you need one. The multimeter is the most fundamental instrument in any ham's toolbox. From testing batteries to troubleshooting complex circuits, the multimeter is your best friend. They come in analog and digital versions. You probably need more than one multimeter, but if you can afford only one, get a digital. No one can be taken seriously as ham if they do not own this must-have instrument.

Pro tip: Take a pass on "sounds too good to be true" junkers sold at a stores famous for cheap throwaway tools. Use your head...you're not going to get a worthwhile multimeter for six bucks! A good multimeter will run from about \$50.00 USD up to several thousand dollars. Very respectable units for ham purposes run in the \$50-\$200 range. Don't settle for low end crap.

MC4 crimp tool.

What is it? A handheld tool for crimping MC4 connectors on solar panel power cables.

Do you need one? Maybe.

Why you might (or might not) need one. If you are satisfied with you system and don't have any plans to expand or change it, or you are ok with paying more for pre-made power cables for your solar panels, then you have no use for this tool. If you do your own solar power work, then yes you need an MC4 crimp tool. With it, you can easily and inexpensively make cables to your exact needed length.

Pro tip: This is one situation where you have my permission to buy the least expensive tool out there. The difference between the \$15.00 and the \$200.00 MC4 crimp tools is not meaningful to the average hobbyist. The higher end models may have interchangeable crimp dies and heavier construction, but unless you are a professional who uses it every day, that's overkill. I get by just fine with a cheapie and you can too.

Solar power & radiation meter.



What is it? A handheld electronic device that measures solar radiation, light, and power levels in BTUs, watts per square meter, and sometimes other units. Basically, it's a glorified light meter.

Do you need one? No.

Why you don't need one. A solar radiation meter is the kind of device you will use one time. Five years later when you find it buried in the back of a cabinet with the batteries leaking

you'll wonder, "why did I buy this?". They are mostly used in energy research, agriculture, and industry. While solar power meters are useful for determining how much sun your ham station is getting, once you've done that it's no longer needed. Furthermore, for most of us, knowing how much sun we have doesn't get us anywhere.

Pro tip: If you absolutely must know solar power & radiation levels, consider splitting the cost of the device with a friend who is similarly obsessed with minutiae. When you are done with your data collection, sell the meter as a used unit and recoup some of your money.

Battery monitor.

What is it? A passive device that connects to your off grid power system. It displays current, voltage, wattage, and other electrical parameters.

Do you need one? Yes.

Why you need one. A battery or power monitor is like a dashboard that displays all kinds of useful data about your off grid system performance. They look cool too! But they aren't just for bling. These practical devices can help you plan power consumption and warn you of unacceptable conditions, such as overcurrent and low battery. They are small & compact enough even for portable applications. Battery monitors are very affordable, running in the \$10.00-\$75.00 USD range. There is almost no good reason not to have one

Pro tip: Battery/power monitors in the price range most hams can afford are not well made and should not be considered long-term investments. However, because they are so inexpensive, replacing one is not a big deal. Stocking a few



Antenna analyzer.

What is it? An instrument that measures and displays antenna characteristics including impedance, resonant frequency, bandwidth, and other attributes.

Do you need one? Maybe.

Why you might (or might not) need one. If you're big into antenna building and experimenting, or often help others with their antennas, then it's a no-brainer. You must have an antenna analyzer. After that things get a little fuzzy. Almost every amateur has a use for one on some level, it's just a matter of whether the use you'll get from it rationalizes the cost. Antenna analyzers are fairly expensive, with good ones starting around \$200.00 USD and going up from there. We've come a long way from the old school dip meters of days past. Antenna analyzers can produce a wealth of detailed technical data about antennas & feed lines, saving hours of guessing and frustration. Everybody who owns one (including me) loves it even if they don't love the price tag.

Pro tip: If you belong to a radio club, lobby for the club to buy an antenna analyzer and make it a club asset to be borrowed by members as needed. Otherwise, if you can't justify the cost of having your own, there's always a ham somewhere that will lend you theirs. Ask around at hamfests, club meetings, and on the air. Older generation devices are available on the used market for reasonable prices.

Clamp ammeter, or "amp-clamp".

What is it? A multimeter that has a spring loaded clamp for inductively measuring current without physically connecting to the circuit. Clamp ammeters are most often used in high power industrial applications where directly measuring current is unsafe or not practical.

Do you need one? No.

Why you don't need one. Clamp ammeters are a specialty tool that does not have a lot of utility in off grid ham radio, yet I run across a lot of hams who think they need one. Like

most test instruments, good ones are expensive. I have two amp-clamps and use them for non-ham related projects, but were it not for that I would not own one just for radio. If you already own a decent multimeter, there's not much a clamp ammeter can offer beyond that. Lastly, amp-clamps do not have the accuracy and resolution hams need.



Pro tip. If you decide to get an amp-clamp, get one that measures both AC and DC current. Most of them will only do AC so read the fine print. Used clamp ammeters are fairly easy to find at swap meets.

What do you think?

This list could go on and on; I picked out just a few of the items most often asked about. What is on your wish list, and have you thought about whether or not you really need these things? Of course, there are needs and wants. There is nothing wrong with indulging yourself in a little vanity once on a while, but before you plop down good money on anything, think real hard about the use you will get out of it versus the cost.



Chairmen

Repeater	Joe WB8ADX
W8JXU Trustee	Bill N8QVS
Swap	John KD8NYF
Field Day	John AA8UU
Education	Jerry W9NPI
Sunday Net	Bob N8REL
Zero Beat Editor	Rick KB5OO
Public Information Officer (PIO)	Rick KB5OO
Webmaster	Mike K8WU
Banquet	John W8TOY
Club Picnic	Jay WB8SBI

HPARC Nets

HPARC Official Sunday Night 2-meter Phone Net

Every Sunday a 9:00 Pm local time on the DART repeater, 146.64 (PL 1 00), catch up on club news and information, and just to keep in touch. All amateurs are welcome to check in.

ARPSC Thursday Night 2-meter phone net

Every Thursday at 8:00 PM on the W8OAK repeater, 146.90 (PL 100). The Hospital radio check net takes place on the last Thursday each month at 7:30 PM on the W8OAK repeater. <http://www.arpdc.com>

Around Town

HPARC Buddy Breakfast every Saturday at 9:00 AM (or so)

Cozy Cabin Diner, 2129 E. 12 Mile Rd, Warren, MI
Come in early for the socializing. Park in the restaurant parking lot.

Volunteers

LoTW Manager	Murray KE8UM
Refreshments	Brenda N8AQ
Club Cook	Bill N8QVS
Holiday Meeting	Board of Directors
Equipment Inventory	Jim K8ABZ
Audio/Video Specialist	Ken KE8LIG
Lark in the Park	John AA8UU
Meeting Greeter	OPEN
Net Control Operators	Lee KD8TBC John W8TOY Mike K8WU Bob N8REL
HPARC Media Dream Team	Hugh KE8BED Rick KB5OO Al K8ALH John AA8UU Mike K8WU Jim K8ABZ John W8TOY

Oakland County ARPSC Siren Testing, 1st Saturday at 1:00 PM.

March through November. Contact Marsha, N8FE, at n8fe@arrl.net, to volunteer and be assigned a siren to test.

Amateur Radio Licensing Testing

Jerry has announced that license testing will begin again on The second Tuesday of every even month at 7:00 PM at the Oak Park community center.