

This OVARC email newsletter is sponsored by the Oro Valley Amateur Radio Club <http://www.tucsonhamradio.org>



MONTHLY CLUB MEETING LOCATION
Ascension Lutheran Church
1220 W Magee Rd
Tucson, AZ 85704 (east of LaCanada on Magee)
Third Friday of each month at 7:00 pm



2015 OFFICERS :

- Bob Molczan, KA7VPR -- President** president@tucsonhamradio.org
- Ron Herring, W7HD -- Vice President** vicepresident@tucsonhamradio.org
- Scott Boone, K7ADX -- Treasurer** treasurer@tucsonhamradio.org
- Howard Chorost, KC7AC – Secretary** secretary@tucsonhamradio.org

Board Members:

- Dave Coccio, N7AKC** **Gary Schmitz, KT7AZ** **Steve Wood, W1SR**
- Carl Foster, KB7AZ** **Bob Stephens, AF9W**

Sunday Night Net 19:00 MST OVARC Repeater System

Join the group every Sunday night at 19:00 MST (7:00PM) on the OVARC repeater system for the Sunday Night Net. We also have our Radio Tradio on this net where you can list ham radio items for sale. Everyone is welcome on the net regardless of club affiliation.

We are always looking for Net Control Stations so if you would like to try your hand at being NCS, contact Lanny, KF7LV our Net Manager. [Net_Manager@tucsonhamradio.com]

Wednesday night NBEMS net 19:00 MST OVARC Repeater System

Please join us for an exercise in FLDIGI and NBEMS every Wednesday evening at 7:00 pm on the Ovarc repeater system. We primarily use 146.620 due to military interference issues on 444.100 and Internet linking issues between 146.620 and the other repeaters.

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Start thinking about who you want to nominate for next years positions.
FIVE positions up for election for seats currently occupied by KT7AZ; KC7AC; K7ADX;
N7AKC; W7HD.

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w7hd.homelinux.net is changing to w7hd.ddns.info

Please change your bookmarks as necessary. The content is not changing, just the name.

The cost of the domain name has gone up again to \$40/year, which to me is excessive. Plus, not only is the name shorter, the w7hd.ddns.info domain is free! You can still get to w7hd.net as usual. That isn't changing, since they provide my email and subdomain services.

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It's official !!!

The club call sign is now W7AI as of September 15, 2015 in memory of Ron Walther, SK.

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IT'S NOT THE COST OF THE RIG BUT THE ACCESSORIES

by W7HD – Ron Herring

When my birthday was approaching the XYL asked what I wanted. Well, that was easy. I had been drooling over the Elecraft KX3 ever since it was demonstrated at one of our club meetings. I told her the kit would only cost about \$899 plus tax. Yeah, right...

Her first comment was “No, I mean the actual delivered cost.” She knew me too well after 50 years of marriage. So I dutifully went on the web site and tallied up the real cost, including the accessories I knew I just couldn't live without. Oh, the joy of shopping for a new rig with the wife's blessing! It sure is nice to have a wife that spoils me rotten :-)

Let's see, there was the Automatic Antenna tuner option, the internal battery charger option, the front-mounted paddles for CW, a microphone, the interface cables, and a couple of other things not available direct from Elecraft, like the end plates and plastic cover. See, she had told me that I should get everything I wanted all at once, and not piecemeal it out. What a deal !!!

That all came to about \$1300, which she considered reasonable (I have a GREAT wife who is also a ham - KC7HGX). So I placed the order (on her credit card) while we were still at the campsite, and waiting anxiously for the arrival of the kit. Come to think of it, that was how we bought her new car in 2012 – while we were camping. And we picked that up from the dealer right after returning home. In fact, we came back a day early so we could pick it up on a Saturday and not have to wait until Monday. Part of the deal was a no-interest loan, so everything we paid on it went to the principal. It is nearly paid for now – just 21 months to go.

The KX3 arrived just in time for our return from a camping trip for my birthday, so I actually didn't get it until I got home after my birthday. And I promptly started assembling it. With many years of kit-building behind me I knew better than to do any shortcuts, so I paid careful attention to the excellent assembly manual and errata. There was one screw on the battery holder that seemed too short, but didn't cause any harm, so I just went with the flow. It was replaced later with one that fit better. After all, you are NOT going to delay building while waiting for something as non-essential as a hold-down screw. I would just be careful not bang it around :-)

By the next day, I had it fired up and on the air. I was very relieved that there was no smoke and it worked beautifully right off the bat. My first contact was on 20M SSB to Iowa at 10 watts output.

Now came the hard part – learning all the neat things it could do by reading the manual (I know, I know – a real ham doesn't read manuals). Keep in mind that in one of my past lives, I was one of the “hams at Heath” and helped design the radios and develop the manuals back in the late 1960's and early '70s. I learned a great deal about following the manual to the nth detail, because any time we built a kit while employed there we had to critique the assembly manual. In return we got the item for free, so that was a pretty good deal. At any rate, after almost a year, I'm STILL learning things from the manual. There are so many things it can do in various operating modes, plus there have been 4 enhancement updates since I bought it (and those are always free). This is truly a field-upgradeable radio just by loading new firmware. Such is the nature of a software-defined radio.

To continue with the story, I learned later that there were “hidden costs” to being the owner of an Elecraft rig. First, you will need an Elecraft XG3 signal source so you can properly calibrate the receiver to the nth degree. And you need a 20 watt dummy load good to at least 50 MHz so you can do the transmitter calibration. An external SWR meter of good quality followed shortly, An “Outbacker” style portable antenna from MJF for portable operation was a must have (later given to my son AF7LP, who actually does SOTA mountain-topping with his KX3). A LiFePo battery pack (16 amp/hr) about the size and weight of a paperback book equipped me for all-day operation while camping. Did I mention the 18 foot LDG collapsible vertical that gets mounted to the rear of the fifth-wheel while camping?

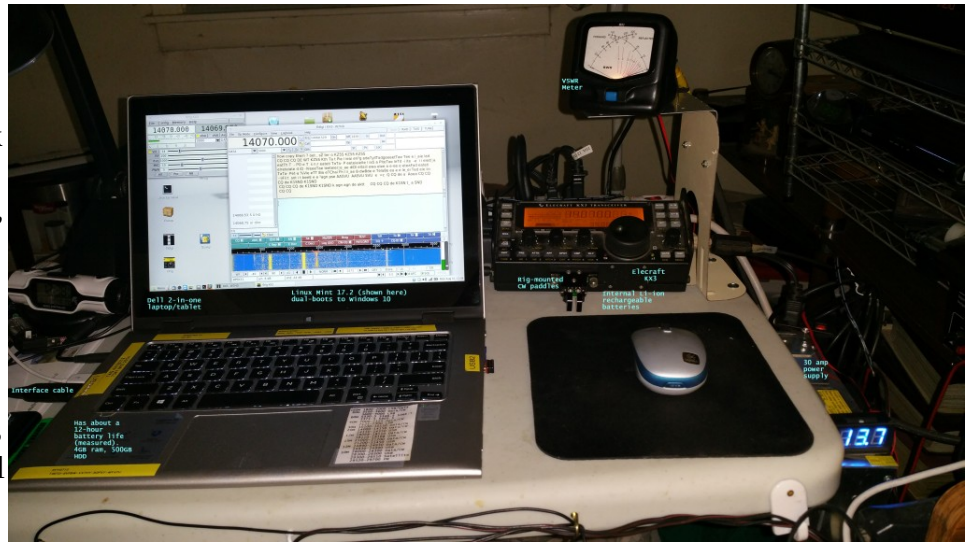
Now came the BIG accessories (read costly). A taller vertical (31 feet), an automatic remote antenna tuner with controller for it to keep SWR losses down on the 100 foot coax feed, a military surplus 50 foot field mast, hundreds of feet of low-loss RG8X coax and Dacron rope, and you get the idea. Plus a new laptop to run the radio plus interfaces. Oh, and an Optimus battery (to the tune of \$270) to provide for days or weeks of operation while camping with no AC power available (that doesn't happen very often, since I also have a 4400 watt generator, but hey, what if I run out of gasoline for the generator?) ... After all, we may have to LIVE in it when commercial power fails at home (as it does every

monsoon season for several hours at a time). See, I'm justified right there :-)

The currently planned purchases are a 30-watt solar panel to keep the battery charged, just in case, a 200-watt solar panel for the roof of the fifth-wheel for the same reason, and a good solar charge controller.

Suffice it to say, that initial \$899 turned into about \$2500 within a year. That does NOT include the \$1500 I spent to equip my son with his KX3 last Christmas, but then that was a reward for earning his Extra class license within one year of becoming licensed initially. The expression on his face when he saw it was absolutely worth every penny.

The complete setup is pretty compact, as shown in this photo. No, this is NOT the mobile hamshack version – this is inside my home. Come to think of it, this might be a good way to go for the fifth-wheel – just move the table and all out there. Hmm, some measuring is in order. A few bungees to hold things down during travel, and I'll be ready to go.



All of this fits on a small 19"x29" table. The SWR meter is suspended on a bracket attached to a bookend (screwed to the desktop). The 30 amp low-noise power supply intended for cell towers is mounted vertically to the right side of the desk. It only costs \$29 from Amazon – and it's good enough that I now have two of them! The powerpole distribution is mounted on the power supply and fed with a 30A fuse. The desk mic is not shown in this photo, but is a modified Kenwood MC50. The modification consisted of a mic cord extension wired to a stereo plug that fits in the KX3 mic input.

Most of the time I run about 5 watts output. But when I check into the Elecraft SSB net on Sunday mornings, I crank it up to the full 12 watts peak output. I also have a small fan that slides under the leg thumb screw and provides additional cooling when needed, which is actually very rare but was great fun designing.

Something I need to consider for the future is a matching Elecraft 100 watt amplifier for when QRP is just not adequate. Oh, plus that 2-meter module that fits inside the radio. Maybe the PX3 panadaptor would enhance my operating skills, too, since it provides additional capabilities for the KX3.

Hmm, let's see, \$700 for the amplifier kit + \$40 for the cables (\$150 savings over assembled price) + \$500 for the PX3 kit (\$80 savings over assembled price) + \$200 for the 2-meter kit (\$60 savings) – not too bad. I'll be "saving" about \$290. Better start saving up my pennies (appropriate because my XYLs name is Penny), though – it's gonna take a while to save up the \$1440.

It might also be nice to get a good dual-band roofing filter; it's only \$140. This would make a nice birthday present this year!

Oh yes, I really need to get Fred Cadys book on the KX3 for \$40. He explains things in an easy-to-find-and-follow format. This is probably more realistic for my birthday present. Save the roofing filter for Christmas, hi hi. (Note: The XYL had me order the Fred Cady book on Sept. 15th.)

73's
Ron W7HD

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Did you know that southeastern Arizona has a lot to offer in the way of repeaters besides our Ovarc repeaters? As an example, the Saguaro National Traffic System (NTS) Net (www.saguaronts.net), meets daily at 6:30 pm MST (0130Z) on the Eastern Arizona Amateur Radio Society (E.A.A.R.S.) (<http://www.eaars.org/>) repeaters. The repeaters are;

- 146.86 and (440.700 Hub) Heliograph Peak
- 147.28 Guthrie Peak - Greenlee County
- 145.21 Jacks Peak New Mexico. Between Lordsburg & Silver City
- 145.41 Pinal Peak Near Globe AZ
- 147.16 Mt Lemmon Near Tucson
- 146.70 Greens Peak Near Springerville - Showlow
- 145.27 South Mtn. Near Alpine, AZ
- 147.08 Mule Mtn. Near Bisbee in Cochise County
- 147.06 Lil Florida Mtn. Near Deming, New Mexico
- 145.47 Caballo Mtn. Near Truth or Consequences, New Mexico
- 145.35 West Peak. West of Heliograph 12 miles

All E.A.A.R.S. network repeaters operate with a PL tone of 141.3. For more information about this net, contact Greg Peters (kc5zgg@arrl.net), Net Co-Manager. - There are many more nets in Arizona. Contact Tomy Ivan KF7GC for the full list.

UPCOMING EVENTS IN ARIZONA from the ARRL September News Letter

- **Oct 10 1600Z to Oct 11 0600Z and Oct 11 1400Z to Oct 11 2359Z the 2015 Arizona QSO Party, sponsored by the ARRL Arizona Section and Catalina Radio Club. www.azqsoparty.org/ Phone, CW and Digital modes on 160/80/40/20/15/10/6/2 meters. Single-Op, Multi-Op, Arizona Multi-Multi, Arizona County Expedition and Mobile categories. If any Arizona clubs are interested in hosting the Special Event Station, please contact ke7dx@marketemporium.com. -**
- **17 October 2015 CopaFest Maricopa Amateur Radio Association, Harrah's Complex, located on Ak-Chin land, Ultra Star Multi Tainment Center 16000 Maricopa Road, Maricopa AZ 85139 <http://www.copahams.com> -**

- October 23 2015 - October 24 2015 Arizona State Convention
kingmanhamfest.com Location: Mohave County Fairgrounds 2600 Fairgrounds Blvd.
Kingman, AZ 86401 Website: <http://k7mpr.net> Sponsor: Mohave Amateur Radio
Club Talk-In: 147.240 (PL 123.0) Public Contact: William Smith, KD7MIA 1530
Ellerman Drive Kingman, AZ 86401 Phone: 928-529-2299 928-529-2299 Email:
bill1021@gmail.com -
- November 7 2015 - Cochise Swapfest & CW Communications Exercise Event
www.k7rdg.org Time: 0700-1200 Event City: Sierra Vista Event State: AZ Event
Sponsor(s): Cochise Amateur Radio Association Event Facility: Green Acres
Event Facility Address: 2756 South Moson Road Special Features of Event:
Flea market Tailgating VE sessions Exams being given: ARRL Sponsored Exams
Talk-In Freq: 146.76- 162.2 Advance admission fee: Free At-door admission
fee: Free Table fee: \$5 for Tailgating, \$10 for Indoor Table Event web URL:
<http://www.k7rdg.org> Public contact name: Lee Ilse Public contact call sign:
KD7OED Public contact address: PO Box 1855 Sierra Vista, AZ 85636 Public
contact phone: (520) 236-1237 Public contact fax: Public contact email:
kd7oed@arrl.net -
- 7 November 2015 - Oro Valley Amateur Radio Club hamfest in Marana, AZ Marana
Middle School 11285 West Grier Road Marana Arizona 85653. Contact
www.tucsonhamradio.com/hamfest for more information -
- 14 November - 2015 HARKFEST Tailgate Hamfest Hosted by the Hassayampa
Amateur Radio Klub North Ranch Escapees RV Park, 30625 S Highway 89,
Congress, AZ. Hours are 8:00 AM until 12:00 Noon. Free Admission - Free
Tailgate Space (pre-registration required) Overnight Camping with Full Hook-
Up or Dry (pre-registration required at www.escapees.com/parking/congress)
Free VE Testing at 9:00 AM - Prizes - Arts & Crafts Show - Lunch Available
beginning at 10:30 AM. Talk-In 146.62 (PL 162.2) or 146.580 (simplex) -
- 5 December 2015 - Superstition SuperFest 2015 Hosted by Superstition Amateur
Radio Club, 1833 W. Southern Avenue, Mesa AZ. 85202. VE Testing at 9:00 AM.
ARRL DXCC Card Checking, Fox Hunt, Special Event Station, Gota Station.
<http://www.superstitionsuperfest.org> for more information -
- 17-23 January 2016 Quartzfest, Quartzsite Arizona ARRL Specialty Convention
www.quartzfest.org - 19 -20 February 2016 Southwest Division Convention and
Yuma Hamfest, 2520 E. 32nd Street, Yuma AZ. 85365 You can email the Director
of the Yuma Amateur Radio Hamfest Organization (YARHO), Roger Hunt (K7MEX).
Snail mail YARHO P.O. Box 1843 Yuma, AZ 85366-1843 <http://www.yumahamfest.org>
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- 26 March 2016 TUCSON SPRING FEST Radio Society of Tucson Spring Hamfest,
6:00 AM to 11:00 AM Target 9615 e. Old Spanish Trail, Tucson 85748 Free
Admission, Vendors and Tailgaters \$10.00. Seller set up 5:00 AM Contact
www.k7rst.org for information. Talk in 146.800 PL 156.7 APRIL is DeVRY
Hamfest which weekend is still up in the air. We will know in January 2016 -
22 - 24 July 2016 - ARCA/Williams Hamfest - hosted by the Amateur Radio
Council of Arizona will be held at the Williams Rodeo Grounds, Rodeo Road in
Williams. Hamfest hours are Dawn to Dusk Friday and Saturday. Prizes, VE
Testing, DXCC Card checking, Seminars and more. For complete up-to-date
information, visit the ARCA Website at www.arca-az.org and click on the
"ARCA/Williams Hamfest" link at the left of the screen.

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RADIO CONNECTS LOCAL 4-H CLUB WITH SPACE STATION

Space call Photos by Ron Medvescek / Arizona Daily Star

Sophomore Jerico Dzicek, facing camera, listens as astronaut Kjell Lindgren, orbiting Earth at an altitude of 240 miles, answers her question via ham radio. The event was held Saturday at Empire High School in Vail. The radio transmission crackled for a second, paused, and crackled again before a voice broke through: "This is NA1SS reading you loud and clear." Jerico Dzicek's jaw dropped as she turned to her fellow members of the Vail Vaqueros 4-H Club's Ham Radio Project and smiled in amazement.



The voice on the other end of the radio connection belonged to NASA astronaut Kjell Lindgren, who chatted with the students as he worked aboard the International Space Station 240 miles above the Earth's surface. With only a 10-minute window to speak with Lindgren before the space station passed out of range, Jerico, 14, quickly took the ham radio microphone and asked her first question: "What would you do if you damaged your space suit when you were out in the field? Over.

A great job done by all the Amateur volunteers that worked this project. I thank you all very much.

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We need volunteers for the hamfest !!!

Please go to the sign-up genius on our website (tucsonhamradio.org), which has the list of positions needed, or send an email to ka7vpr@comcast.net.

We really do depend on the club members to step up and use their free admission to donate an hour of two of your time to helping us run this great hamfest. Maybe you would like to do a seminar – we have slots available. Or maybe you would just like to help set up or tear down. Set up starts at 05:00-07:00. Teardown runs from 13:00-15:00, although usually doesn't take the full two hours.

However you can help out, we need you!

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This was our ad in the September ARRL Arizona newsletter.

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<http://www.arrl.org/Groups/view/arizona> has the full color version of the ARRL Arizona Section newsletter. Well worth your perusal.

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**ARIZONA
SECTION
EMERGENCY
COORDINATOR**

Emcomm is an ever evolving function. Many times, I talk to hams about the FEMA independent study courses and get a response similar to: "I've been a ham for 35 years. I don't need any extra training."

[Editors note: guilty as charged - we exchanged some very informative emails about this subject, although I've been a ham for 48 years, so that must have been someone else. My son Sean AF7LP was in charge of one of the National Guard units sent to New Orleans, and was my source of information about the horrors.]

ORO VALLEY ARC



HAMFEST

An ARRL Sanctioned Event Presented by the Oro Valley Amateur Radio Club

- Great Fun!
- Great Food Truck!
- Great Raffle Prizes!
- VE Session
- Interesting Seminars!

November 7, 2015
Marana Middle School
11285 West Grier Road
Marana Arizona 85653

Mark your calendars.
Details to be announced

Send questions to hamfest@tucsonhamradio.org This email address is being protected from spambots. You need JavaScript enabled to view it.

Talk in on the [OVARC Repeater System](#)

Per AZ State Law, no smoking or firearms are permitted on school property including parking areas.

Well, the reality is, they need it more than the new hams. Emcomm has been evolving since the 9/11 attacks and Hurricane Katrina. Hams need the training to understand how they fit in a response and can properly support it. The days of just showing up to help are long over and those hams actually can become a part of the problem.

Don't be a part of the problem, be a part of the solution and take IS-100b, IS-200b, IS-700a and IS-800b. They are online and free at www.training.fema.gov/is.

After you have received your completion certificate forward it to your DEC. Have questions? Contact your local District Emergency Coordinator (DEC) / Dennis Bietry-KE7EJF Section Emergency Coordinator ke7ejf@arrl.net

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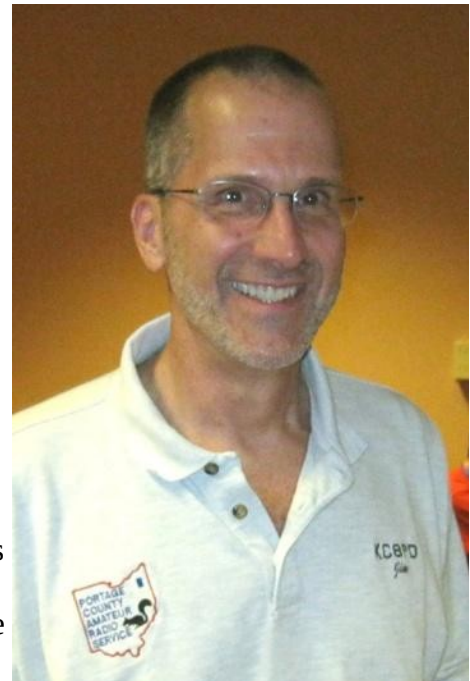
The next two articles are reprinted by permission from the Portage County Amateur Radio Society.

I regularly exchange newsletters with KB8UUZ, editor of the PCARS newsletter RADIOGRAM, and we freely use each others newsletter articles.

I am also trying to get some articles from their Linux For Hams group.

EmComm

Jim, KC8PD
Radio Officer, Portage County OHS/EM
Communications Unit/RACES



It's that time of year again for National Preparedness Month. Sponsored by the Federal Emergency Management Agency, the month of September is set aside for educational programs nationwide encouraging all of us, not just hams, to be prepared for natural disasters.

Many of us think that we have things covered for personal, family and business emergency preparedness. But there is always more to be learned and there are some handy resources for that.



Start out with FEMA's www.ready.gov web site. From brochures to checklists, whether for families or businesses, you will find a ton of helpful data. This includes everything from pandemics to house

fires to natural disasters.

There is information about preparing all types of safety plans for individuals, households, communities, or even students on campus. You can also find recommended lists for the items you should include in your preparedness kits.

You can also find a lot of information on how to get involved in community activities and a wealth of information for businesses. For instance, you are your employer may want to take a look at the section on continuity of operations planning.



You can also check FEMA's emergency preparedness publications at <http://www.ready.gov/publications> .

The State of Ohio is also has some skin in this game and you will want to review <http://publicsafety.ohio.gov> which is the ReadyOhio web site.

And these days it almost goes without saying that there is an app for that! Find it at <https://itunes.apple.com/us/app/fema/id474807486?ls=1&mt=8> Check those sites

out and get to work on making things safer for you and your family by being better prepared. And since it's the beginning of the month, have you charged all of those backup and HT

batteries lately?



Build Your Own Programming Cable

John Mikor, N3NXU

http://www.miklor.com/COM/UV_ProgrCable.php



Frustrated with that generic programming cable? This \$2 solution might just be your ticket to sanity.

Let's See... You purchased a radio and programming cable, loaded the software, and that's as far as you've gotten. You're fighting with error messages: - Radio did not respond, - Could not open COM port, - Run Time Error and Windows (TM) 10 keeps changing your drivers.

Now you do what many owners do. Put the radio in the drawer to be worked on later. This is like buying a rollaway treadmill and putting it in the closet until the next time you want to exercise. (NOT gonna happen)

But wait, yours has the company name and logo right on the cable. - It doesn't matter. Keep reading. There are a few options available, such as an FTDI cable. It's truly Plug 'n Play, and costs about \$20. But here's a project that just might solve the issue for around \$2. All you need is a small flat blade screwdriver, a soldering pencil, and a CP2102 board.

CP2102

The CP2102 is a USB to TTL UART chip. What? Long story short... It's the same thing that's in your current cable now, except these work. CP2102 boards can be found on eBay for around \$2 and on Amazon. Here's How. Let's start with that original cable. Take a small screw driver and pry the open the case from the back where the cable enters. It should only be snapped together.



Unsolder the 3 wires connected to the board. GND is Black, TX is Red, RX is White. Solder the 3 wires to the corresponding terminals on the new board.

Note 1: Some boards may have the TxD and RxD reversed. If it doesn't work the first time, reverse the two wires. No damage has been done. **Note 2:** Some boards have pins on the back requiring small connectors. You can either remove the pins, solder to them, or use the connectors. Whatever floats your boat.



Driver

When you insert the new board into the USB port, give Windows a chance to find and load the new driver. Should take about 30 seconds. When it says Driver Found, you're done.

If the driver is labeled CH340 instead of CP210x in Device Manager, that's not a problem. Both chips are designed to do the same thing.

But I don't have a Cable

If you don't have a generic cable, you can use 2.5 and 3.5mm stereo jacks. Here are the pin outs, and what Jim's (KC9HI) cable looks like.



Cosmetics

If you are adventurous, try retrofitting the new board inside the original plastic housing. This will require a Dremel tool, X-Acto knife, Glue, and some patience, but it can be done. If the board only has 5 terminals instead of 6, it's not an issue.



You only need GND, TX and RX. Some come protected with a piece of clear heat shrink over the board so you can see the cool blinking lights. Note 3: If



you are trying to retrofit the board inside an existing shell, the red board is a bit shorter and easier to fit. For a dollar or so more, you can find the same boards in a metal case.

What's the Advantage

- First and Foremost, it works. Take the radio out of the drawer, program it and have some fun.
- Next, it only cost around \$2 to save the generic cable from the trash.
- Very Important - Bragging Rights. Now, when you go to a club meeting and someone says they can't get their cable to work, tell them they can build their own, just as you did.

I hope you had fun with this project. It's super simple and very rewarding. I've made several and never had a failure. Say goodbye to driver issues. My thanks to Jim KC9HI for his input on this project



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WINDOWS 10 INFO

If you didn't do an upgrade install from a previous version of Windows to the Insider Preview, check slmgr /dlv and see if there's an expiration date and see if your key is still a generic key. This will confirm once and for all the question of whether people with insider builds who didn't upgrade from Windows 7/8/8.1 got a free license. Note that it takes a few seconds before the license display comes up.

Find out more about how to check the status of your windows 10 license key here:

https://www.reddit.com/r/windows10/comments/3dfda8/build_10240_did_you_get_assigned_a_licenseproduct/

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From a posting on Reddit by cozzbp: After a lot of testing, all I get are generic keys, for reference:

- Windows 10 Home - YTMG3-N6DKC-DKB77-7M9GH-8HVX7
- Windows 10 Home SL- BT79Q-G7N6G-PGBYW-4YWX6-6F4BT
- Windows 10 Pro - VK7JG-NPHTM-C97JM-9MPGT-3V66T
- Windows 10 Pro VL-MAK - QJNXR-7D97Q-K7WH4-RYWQ8-6MT6Y

So obviously our activation will be tied to our hardware, which seems to mean that we will not be able to transfer the free upgraded Windows 10 licenses like we would a purchased Windows 10 license.

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From a post by harsh431 on Reddit:

When you do a clean install, only one partition is affected, the partition on which you choose to install Windows. Other partitions remain completely untouched.

[Editors note: I have confirmed this with an installed dual-boot configuration, and it stayed intact through the upgrade. All I had to do was update the Grub bootloader in Linux so the menu would read properly.]

If you choose to install Windows 10 Home on the same partition that contains Windows 10 Pro already, all the files including your Programs, Program Data, System files, User documents, Desktop files, etc will be saved on that partition under the folder named "Windows.old ". And the documents such as Pictures, music or other folders that you might have on that partition remain unaffected. That means that nothing is going to be erased.

So after the clean install is complete you can fetch up your programs from the older installation of Windows and can copy them inside the new installation.

Most of your older programs will work but the programs which require Registry keys will not run. So , if you choose to keep them, you can take the backup of the program's registry files by exporting them from the Registry Editor(Before performing clean install , of course).

You can also copy all your documents from the Documents folder located in Windows.old to the Documents folder of the current installation. So this was the manual method of restoring your programs and which is not quite difficult but if you have a lot of programs to backup, then it becomes time consuming.

Taking a backup of only the documents and settings is fairly easy and it can be done automatically in many ways. But, there is no automatic way of taking a backup of programs and restoring them later , according to me.

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Use the media creation tool to create a usb drive, boot to it, clean install.

<http://lifehacker.com/how-to-do-a-clean-install-of-windows-10-1720775893>

You could try doing a "reset", and see if that will work. (It'll be easier than a full reinstall)

http://answers.microsoft.com/en-us/windows/wiki/windows_10-win_upgrade/how-to-perform-a-clean-install-using-reset-this-pc/6f6335fc-8d15-4598-af16-033d1d8c16bf

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Hamfest planning began Saturday 5-Sep-2015 at 09:00. Building on past planning, we are well on the way and may only need one more session at most.

If you have suggestions for raffle prizes for the hamfest (or club meetings) please let us know. We need your help on this one. We have proposed a \$300 limit on raffle prizes for the hamfest. Last year we made about \$400 off the raffle after costs.

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Jim W5ZIT proposed a solution to our Keystone Peak linking problem. It is called an in-band link and just requires a radio on the 146.62 frequency pair that is connected to the CL250 at Main and a directional antenna. Basically, it acts just like a user on the system, but the audio input/output is via one of our existing controllers at Main. The CL100 and its associated hardware could be removed from Keystone once the new in-band link is in place, or just simply deactivated and left in place until someone goes up there to unplug it.

Jim said he had used that system in New Mexico for a couple of repeaters and it worked very well. I had also used it to link my repeater into a repeater in town a few years back. It operates just like a remote base. A radio rated for 5 watts continuous output and a beam antenna are all the additional hardware needed. A Yaesu FT1900 would run about \$130, so would be an inexpensive and elegant solution.

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Thinking about building a repeater?

Oh, have you opened a can of worms... This is NOT a trivial undertaking.

Here are some of the items you need to consider:

- Mixing products at the site from not only your own equipment but any nearby equipment
- Best way to solve mixing products involves using cavities and circulators, but that is very, very expensive (typically starting at \$1800 per transmitter).
- How much desense can your receiver tolerate? There WILL be some.
- How about a free frequency? Contact your local frequency coordinator AND the tower coordinator. Some frequencies might be too close, might create interference due to harmonics, mixing products, etc.
- How much are you planning on spending on this project? Start at \$1000 and add in anything else you might need - that is the cost of a basic repeater. Power supplies, backup batteries, controllers, interfaces to computers, interfaces to the internet network, etc. are all needing consideration.
- What type of antenna do you plan on installing? A multi-bay dipole is usually best for performance and coverage areas. But you can probably get away with a pair of hamstick-style antennas with one pointing up and one pointing down with at least $\frac{1}{4}$ wave of separation between them. Be sure the antenna will tolerate the local conditions, such as rain, wind, hail, lightning, etc.
- Everything MUST be grounded to a single ground point that then ties to the local earth ground (NOT the power company ground).
- Will you be using solar power? If so, insure that your batteries will handle the load, and you have a good quality solar controller between the panels and the battery.
- Do you have a way to remotely control the repeater? This is a must, since you can't always be physically present. Ideally, you will also have a way to remotely disconnect power to the equipment (sometimes the only way to reset a recalcitrant beastie).
- If you will be using a computer, is it a good quality laptop? They have the advantage of a built-in battery reserve, but also use less power than a desktop computer. My laptop has an 11-hour battery life, for example. My old laptop only had about 2-1/2 hours of battery life. How long can you continue to operate with no commercial power available?
- What will be your coverage area for this site with this antenna at this height?

And these are only SOME of the considerations. For a more detailed look at the requirements, go to

<http://www.repeater-builder.com/rbtip/index.html>

There is a lot to know and learn. But at least now you have a bit more appreciation for that guy that installs and maintains your repeaters.

Kudoes to KT7AZ Gary Schmitz - our repeater guru for OVARC ...

Ron Herring W7HD, Editor

IS DSTAR LEGAL?

I was curious about the status of Dstar as a valid mode, since I have heard several people say they think it is illegal to use. So I asked Icom if the FCC had given formal approval and here is their answer.

D-Star is simply a digital mode of operation that has been used for several years and there is a very large infrastructure, both here in the US and also world-wide. All of our D-Star radios are type certified by the FCC for use on D-Star, so with that being said, I believe that the appropriate answer is "yes".

D-Star is not encrypted, it is simply a digital signal. The FCC does not allow encryption for amateur radio use and any special codes or any attempt to hide communications on amateur radio is strictly forbidden. With D-Star, each time an operator transmits, their call sign is sent out on their signal so that they can automatically provide their call sign as the FCC requires.

D-Star is an open protocol that anyone can develop and is not AES or DES encryption in any way. Also, D-Star is not the same protocol as our IDAS radios, so they do not "play" together. D-Star was developed by the JAARL (Japan's AARL) and Icom has made the commitment to develop products for this mode of operations. The FCC would never have allowed D-Star to operate in the US if it violated their rules. As a matter of fact, the US military uses D-Star, Homeland Security uses D-Star and so do many hospitals and state agencies. The FCC would not allow this mode of operation if there was a problem with the protocol. I hope that this helps.

Best Regards;

Mike Hilton
Technical Support Representative

ICOM America, Inc.
12421 Willows Rd. NE
Kirkland, WA 98034

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I've found these links for mesh networks.

<http://www.broadband-hamnet.org/>

[http://ohiopacket.org/index.php/Integrating HSMM-MESH into an existing network](http://ohiopacket.org/index.php/Integrating_HSMM-MESH_into_an_existing_network)

<http://www.mark-rodgers.com/hsmm-voip-phone-test/>

<http://wndw.net/> A good reference on how to build a mesh network using a case study.

I AM LOOKING FOR ARTICLES ON MESH NETWORKING. If you are involved in such a project, I would really appreciate an article for the newsletter.

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We are now an international newsletter, with the addition of recipients in Europe!

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Tucson Area Nets

Data compiled from multiple sources. All times are MST.

Day	Time	Net Name	Frequency	Mode	Duplex? (FM only)	Offset (FM only)	CTCSS (FM only)	Notes
Sunday	0730	AZ State RACES	3.990	LSB				
	0830	VHF Sideband Net	144.250	USB				
	1230	AMSAT Local HF	14.282	USB				
	1900	OVARC Net	146.620	FM	Duplex	-	156.7	
		Linked to:	147.320	FM	Duplex	+	156.7	
		Linked to:	444.100	FM	Duplex	+	156.7	
	1900	EAARS Net	147.160	FM	Duplex	+	141.3	
		Linked to all EAARS repeaters						
	2000	Emergency Preparedness Net	146.500	FM	Simplex			
Monday	1800	Traders Net	145.775	FM	Simplex		100.0	
	1900	Olivia 8/500	144.300	USB				
	1930	Smart Net	147.160	FM	Duplex	+	141.3	
	2000	10M FM Net	29.600	FM	Simplex			
Tuesday	1830	160 Meter Net	1.861	LSB				
	1930	Pinal County Emergency Group	147.200	FM	Duplex	+	162.2	
	1930	Tucson Skywarn Net (3rd Tuesday)	147.160	FM	Duplex	+	141.3	
	2000	Skywarn Nat'l Weather Service	146.740	FM	Duplex	-	162.2	
	2000	Tucson Area 10 Meter Net	28.420	USB				
Wednesday	1230	2 Meter AM Net	144.400	AM				Tuesday?
	1900	NBEMS Net	146.620	FM	Duplex	-	156.7	
	1900	AMSAT Net	146.880	FM	Duplex	-	110.9	
	1930	1960s Music & TV Trivia	224.500	FM	Duplex	-	156.7	
	2000	6 Meter Sideband Net	50.130	USB				
	2030	UHF Sideband Net	432.100	USB				
	1900	Green Valley Net	145.290	FM	Duplex	-	107.2	

-more-

Thursday	1830 Tucson 220 Net	224.500	FM	Duplex	-	156.7	
	1900 Tucson VHF Sideband Chit Chat	144.210	USB				Horizontal
	1900 Cochise Amateur Radio	146.760	FM	Duplex	-	162.2	
	1930 Northlink (S.Mt)	442.125	FM	Duplex	+	100.0	
Friday	no local Friday nets						
Saturday	0700 So AZ Emergency Communications VHF Net	146.880			-	110.9	
	Linked to:	147.300				110.9	
	0715 So AZ Emergency Communications HF Net	3.865	LSB				
	1300 So AZ Emergency Communications VHF Net	146.880	FM	Duplex	-	110.9	
	Linked to:	147.300	FM	Duplex	+		
	1900 REF009C Arizona DStar Net	147.100	DV	Duplex	-		K7RST C
	Linked to:	445.900	DV	Duplex	-		K7RST B
	Linked to:	145.115	DV	Duplex	-		KR7ST C
	Linked to:	REF009C					
	2000 Red Mountain Net	146.640	FM	Duplex	-		
	2000 6 Meter Net	50.400	AM				
Daily	0600 0630 Weather Net	145.350					
	0700 ROMEO Group (except Tuesday)	3.999	LSB	Switches to 1730 MST on October 15 each winter			
	1830 Saguaro NTS Net	147.160	FM	Duplex	+	141.3	
	1900 ATEN Net	3.950	LSB				

Legend

- ATEN = Arizona Traffic and Emergency Net
- D-STAR = Digital Smart Technologies for Amateur Radio
- DV = FM Digital Voice
- NBEMS = Narrow Band Emergency Messaging System
- OEM = Office of Emergency Management
- OVARC = Oro Valley Amateur Radio Club
- RACES = Radio Amateur Civil Emergency Service
- ROMEO = Retired Old Men Eating Out
- RST = Radio Society of Tucson
- Skywarn = a program of the US National Weather Service

Thanks to Bob AF9W and David AK2L for this information.

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Feel free to email me at newsletter@tucsonhamradio.org

===== END NEWSLETTER =====