

Nacogdoches Amateur Radio Club

2025 CLUB OFFICERS

Pres: Mark Phillips - KI5POH

Vice Pres: Dave Emmerling - NR5AT

Sec/Treas: Darrell Thornton - KI5PYQ

Visit our web site at
<https://w5nac.com/>

MISSION STATEMENT

The Mission of the Nacogdoches Amateur Radio Club is to support and promote Amateur Radio by public service, offering training to unlicensed interested parties and licensed Amateurs, mutual support of other Amateurs, engaging events that promote Amateur radio to the general public and other Amateur radio



operators, and continuing fellowship by regularly scheduled organized meetings and events and having fun.

AUGUST MINUTES

Mark, KI5POH, started them meeting off at 19:00. Introductions were made and minutes were approved. The treasury report was read.

Old business is 32 Controller is installed and currently in operation and we talked about 13 colonies.

New business was John, KC5MIB, proposed recycle

of the "Green Monster" antenna mast currently being stored at Andy's, K35EXX, storage area. Dave, NR5AT, is going to take point to take mast to get recycled.

Meeting was adjourned at 19:20.

2025 DUES ARE DUE

Dues are just \$20 a year and cover all licensed hams in a family. Please get your dues to KI5PYQ either in person or mailed to his home address. Sooner is better than later. Make checks payable to NARC.

SUPPORT YOUR CLUB

Are you a member of NARC? Do you check into one or more of the weekly

nets on 2M? If not, why not? Do you participate in the club Fox Hunts? If not, why not? Do you participate in the club Special Events K5C and K5T? If not, why? Let us know how we can get you involved in our club. Is there an event or program that you would like to see, let your club officers know.

FROM OUR PRESIDENT

September is National Emergency Preparedness month. Our federal government has a site dedicated to emergency preparedness at www.ready.gov. This site has a lot of information to help be prepared for many different disasters and emergency scenarios, with building a disaster supplies kit, financial preparedness, being tech ready and how to care for our families and pets. Check out this site, it has some good information. FEMA now has a mobile phone app to communicate real time weather alerts, locate emergency shelters and prepare for common hazards. Being a Ham

Operator, also means making sure we are prepared to help provide communication when needed. Check your equipment often and participate in the weekly ARES/RACES nets.

I am thankful for each of you for being a Ham and being part of our club!

73, Mark KI5POH
KI5POH21@gmail.com

FROM OUR VP

Can't believe September is less than a week away. I remember when I was a kid, wondering if Christmas would ever get here. Now it seems like there's no sense in taking the lights down! Of course, it's been August hot, the grass is turning brown, and the household debate over whether or not to turn on the sprinklers rages on. The weather people have been all up in arms as it appears we have a cold snap coming, so they have something new to discuss!

Wanted to say "Thank You" to Jim for his presentation about his antenna build. I was fortunate to be able to help out a few times, so I got to experience what is involved in a project of that size. I had no idea of the amount of time, money, planning, and knowledge it requires to get an antenna of that size up and functioning. But Jim did it.

Not much is happening at the NR5AT house (thank goodness). Got the RV in for an estimate on repairing the fire damage, last Friday night, the wife hit a deer (wife is fine, Toyota needs a new grill) so it seems a chunk of our savings will be going to deductibles pretty quick. My insurance agent told me I seem to have an above-average amount of bad luck. Yep, three claims in less than 6 months....I expect to be looking for a new insurance carrier next year!

Darrell will put on a brief presentation for the September program. Also,

it is fast approaching the time to be thinking of new officers for the coming year.

That's it for now.

73, NR5AT
Dave Emmerling
Dke1955@duck.com

NOTES FROM OUR EC

Nothing at this time.

73 and see you on the air,
de John Chapman KC5MIB
Jlchapman2@gmail.com

VE TESTING

No candidates showed for August VE Testing.

Many thanks to our VE team which this month consisted of Liaison Army AE5P, Data Entry Expert Rusty KD5GEN, and VE's Mike W5NXX, Mike AA5HH and Dave NR5AT.

Our club sponsors VE testing for all classes of Amateur Radio licenses the third Wednesday of EVERY month at the EOC. Doors open at 6:30 and

testing begins no later than 7:00.

Hope to see you at our next session on September 17th.
Questions? Please contact AE5P.

73 de AE5P.
email:
ae5p@suddenlink.net

TWO METER CLUB NETS

Please join us each week for the two-meter nets sponsored by NARC. All stations are welcome to check into the nets.

Each **MONDAY** is the **NARC ARES/RACES** net, at 20:00 on the club's 146.84 repeater (PL 141.3).

Second, on **THURSDAY** evenings at 20:00 is the **Deep East Texas Skywarn Emergency Weather Net** on the 147.32 repeater (PL 141.3).

Please join us for one or both.

HAMLIST

Are you on Hamlist? Check it out and join at:

<https://w5nac.com/about/email-reflectors/>

NEXT MEETING

The next regular NARC meeting will be TUESDAY September 2nd at Nacogdoches EOC. Meeting begins at 19:00; Please plan to arrive early for socialization with the doors opening at 18:30.

We will have a short business meeting. The program will be hosted by Darrell, KI5PYQ. He will be talking about ways to connect to Winlink for email over 2 meter.

Looking forward to seeing everyone there.

FOX HUNT

The Fox Hunts will be on hold for now. We currently do not have enough attendance to continue currently. If you would like to have another fox hunt,

please let Darrell KI5PYQ or Mark KI5POH know that you would like to participate.

UPCOMING EVENTS OF NOTE

Mark your calendars for the following events coming up in the next few months. Full information on these events and much more can be found at <https://www.contestcalendar.com/contestcal.html>. You will need to scroll to find the correct month. Link to ARRL Contest Calendar

<https://www.arrl.org/contest-calendar>

Club Meeting Dates

Sept 2nd 19:00

Oct 7th 19:00

Nov 4th 19:00

Dec 2nd 19:00

How Can an SDR Help a Ham Radio Operator?

Jim Edmondson, AE5JE

I have been interested in SDRs (Software Defined Radios) for some time, but have never owned one. Recently, I thought that it would be nice to be able to monitor other bands while operating. This article is obviously not for the "Flex Radio" guys, but for those who operate more "traditional" single-receiver ham transceivers.

It is well-known that 6M is not open very often, but if I was monitoring 6M while chasing contacts on another band, I could see when signals started to appear. The same applies to other bands as well. Another use for a second receiver would be to better chase DX'ers that operate split. By listening to both the DX'er and the callers, I could see where the DX'er is listening and adjust my transmit frequency to improve my chances of breaking the pileup. Other sporadic activity such as 10M FM repeaters and even local VHF / UHF repeaters can be monitored. Many hams use an SDR as a "panadapter" to create a high-resolution waterfall on a large PC monitor. Of course, the SDR with the right antenna can be used to listen to shortwave, AM / FM broadcast stations, air band, maritime stations, etc. Since none of my shack rigs have two receivers (or VHF / UHF), I decided to see if an SDR could work for some of these tasks.

There are two very important points to consider when using an SDR with your transceiver:

First, you need a way to protect the SDR from strong signals when you transmit. This is especially critical if the receiver and transmitter share an antenna. For this case a T/R switch that operates on the PTT signal from your transmitter is the safest method. These can be [expensive](#) and add other functionality, but an effective T/R switch can be made using an appropriate relay and a few components. Beware of the cheap T/R switches that you see on Amazon, ebay, etc. These rely on detecting the RF transmitted, while they can work, any mis-timing can send full transmitter output into the receiver. If you are receiving on a band far from where you are transmitting on a separate antenna, the receiver may not need protection or just a bandpass filter. Most SDRs can be damaged by as little as 1mW. In the excitement of chasing a QSO, you may transmit on "wrong" band and destroy the SDR front-end.

Second, is that if you want to monitor different bands while using the same antenna, you will need a multiband antenna. A Hexbeam would be an excellent choice to operate on 20M - 10M while monitoring 6M (although both bands will have the same directions). A fan dipole, DX Commander, EFHW and full-wave loop antennas can also be effective while being more omni-directional and less inexpensive. I have been trying a small, [receive-only mag loop](#) antenna that claims coverage from 100kHz to 180 MHz. It is mounted about 20' up on a pushup pole outside the shack. Dave Casler [reviewed](#) this loop and found that it worked pretty well compared to his Chameleon loop even though it was mounted at a slightly lower elevation.

Since I was just beginning to investigate SDRs, I started at the bottom end of the price range - \$37 for an [RTL-SDR](#) on Amazon. I later realized that, for the same price, the [nooelec](#) is a better choice. It has slightly better specs and a shape that fits standard USB A spacing. There are many standalone SDRs to choose from ranging up to several hundred dollars. I may eventually choose a more expensive SDR if things work out well. A fully "tricked out" SDR setup can include a splitter, an LNA (Low-Noise Amplifier), variable attenuator and a commercial T/R switch. I am lucky in that my main shack rig has a receive antenna input, built-in splitter (for antenna output) and transmit protection for the receiver attached to the antenna output. Because of this, I could get by with a minimal setup. For a good description of a fully capable SDR system that will share an antenna and work with pretty much any rig, see [this video](#). Many SDR applications can interface with your rig via OmniRig or HamLib and some of these will "deafen" the receiver by reducing the gain by 10's of dB when you transmit. This may not be as safe as a PTT-based T/R switch.

In choosing an SDR, two of the most important factors are the frequency ranges covered and the bandwidth available at one time. Many SDRs are based on chips designed for TV reception and do not tune HF natively. Some of those can tune HF by "direct sampling". One popular model (AirSpy's HF+ Discovery) covers HF up to 31 MHz, then VHF starting at 64 MHz - so no 6M band! Another popular choice, SDRPlay SDRs have continuous coverage without such gaps and can display 10MHz at one time. One SDR (RX-888) with a 16-bit DAC can display a spectrum across 64 MHz at one time! AirSpy and SDRPlay devices are generally 14-bit devices. In contrast, the \$37 SDR is an 8-bit device and can only display 2.4 MHz reliably. That bandwidth is enough for my initial purposes. SDR receivers are extremely sensitive due to built-in LNAs, so sensitivity is usually not a concern. However, this high sensitivity may lead to interference from local strong signals and dynamic range is a more important spec for SDRs. There too many other considerations to go in a short article, so see [this other video](#) for a good overview.

One final thing to mention is software. There are probably as many SDR software applications as SDRs! This is another reason that I went with the cheap route first - to see what software had the features that I needed before committing to a more expensive SDR. I tested five different SDR application and found that SDR# ("SDR Sharp") and SDR Console worked well for my use cases and were fairly easy to learn. SDR# is more basic, but if you are not tuning around a lot, or monitoring multiple frequencies simultaneously, it is very effective. SDR Console is a full-featured application with memories, built-in favorites, multiple independent receivers, and a server for remote operation. It is overkill for what I need, but the interface is easier to use and I prefer it over SDR#.

So far, there has been no activity on 6M or 10M FM repeaters while I have been monitoring, so I have not actually tested the SDR for that. The SDR was helpful in chasing DX operating split mode and I have also used it to monitor HF bands while working a different band. The ability to transfer frequencies between SDR and transceiver has been useful in general HF operating. The operation of the RTL-SDR on the 10M band has been hit or miss. I have had to adjust settings to eliminate lots of birdies across the band and receive actual signals. I think that this is caused by the cheap SDR.

The RTL-SDR also seems to be less sensitive than my transceiver. I have done some tests to quantify this using FT8. To use wsjt-x with the SDR, you will need to install a virtual audio cable application such as [VAC](#). The free version of VAC creates one

Windows speaker and one microphone sound device that you can use just like physical speakers or microphones.

I used wsjt-x in the usual way with my transceiver. I then opened a second instance of wsjt-x using the Windows Run feature. To do this on a Windows PC, right click on the shortcut that you use to open wsjt-x and then click on properties. Copy the "Target" URL using CTRL-C. Press the Windows key and "R" at the same time to get the Run dialog box. CTRL-V the Target URL into the "Open:" text box. Then type a blank space and "--rig-name=xxxx" after the URL. The "xxxx" is arbitrary and need not be the actual rig name. (Each instance of wsjt-x just needs a unique "rig name" so that it can keep the settings straight among instances.) Click on "OK" and a new wsjt-x window will open. Finally, select "No Radio" in the Radio settings and the VAC that you created as a sound input device in the Audio settings of wsjt-x. (The wsjt-x sound output device does not matter since you should not be transmitting!) Select the VAC cable as the output device in your SDR software and you should now see signals on the wsjt-x waterfall. FYI, if you have two transceivers, you can also use this method to listen to wsjt-x on two bands at once.

I did not do an exhaustive scientific test, but observations showed that SDR-based instance of wsjt-x decoded the same or fewer signals that the transceiver-based instance on several HF bands. The SDR-based decodes were typically 25 - 50% lower than those of the transceiver over a 15-second FT8 receive cycle. I then let wsjt-x and Grid Tracker run for about 10 minutes with the SDR and then the transceiver on 15M FT8. In this test, the transceiver roster contained 57 decodes and the SDR contained 50. So the transceiver was only a little better over a longer operating period. The longer time tests were done with the small mag loop mentioned above. I was able to receive signals from the South Pacific, Eastern Europe and Southern Argentina with very good signal-to-noise ratios - pretty impressive for a 2' loop at 20'!

I also noted that it was visually obvious from the transceiver and SDR waterfalls, there were fewer and weaker signals on the SDR. Given the high sensitivity of SDRs, I did not expect this. Maybe I need to learn optimum settings or get a better SDR, stay tuned....