

Nacogdoches Amateur Radio Club

2026 CLUB OFFICERS

Pres: Mark Phillips - KI5POH

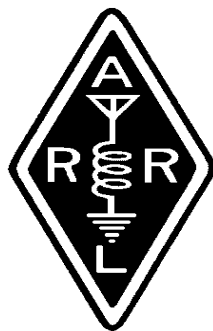
Vice Pres: Aaron Baker - KI5FIQ

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.

SEPTEMBER MINUTES

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

Old Business - Honoring SK members, Trustee Change

New Business - Donate UHF duplexer that we used for DMR to Mike Miles for

the connected repeater system. Aaron was going to look into putting an article in the SFA Pinelog.

Meeting was adjourned.

SKs Honored

Just to let our club members know, a [webpage](#) was created to honor our silent key members. If there are names that belong on that list, please let Darrell, KI5PYQ, know.

SUPPORT YOUR CLUB

Are you a member of NARC? How can you help the club and amateur radio by leading a project. Ask yourself, how can I participate and advance amateur radio in our community.

FROM OUR PRESIDENT

October! Where has this year gone! Hopefully cooler temps and rain are in the near future. As the end of the year is quickly approaching, we need to elect officers for the club for next year. If you would like to serve or know someone that would like to serve as president, vice president or treasurer, let Aaron, Darrell or me know. We will hold the election at our November meeting. I look forward to seeing you at our next meeting on Tuesday, October 6 th .

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

Happy fall y'all. Although it doesn't quite feel like it yet, but hopefully that changes soon.

Today the NWS
Shreveport, alongside

NWS Lake Charles and Houston/Galveston, hosted their Integrated Warning Team workshop focusing on the piney woods. The IWT workshops gather all kinds of folks from emergency management, first responders, state agencies, and of course amateur radio operators and the NWS presents various weather topics that are pertinent to our area. This year's IWT covered topics like the super el nino that's forecasted to peak soon and what that usually does for our average rainfall totals and temps. A panel from various weather and state water agencies talked about how they adapt their procedures based on how climatology forecasts show a higher or lower rainfall total for the season. We also got updates on how the NWS reorganization is going and a look at the new weather.gov website.

After lunch was a little more technical with talks about how and what threat level of storms trigger the wireless alerts and even heard from KTRE's Brad

Hlozek on how those changes have changed when they go on the air for either cut-ins or live wall to wall coverage. There was also a talk about how NWS is looking to integrate with several 911 dispatchers' systems to auto send them a notification if any type of storm damage is mentioned on a call and wrapped up the day by hearing from the Forest Service and the Army Corps of Engineers on how they operate given an extreme weather condition.

Overall, I had a great time and learned a lot. That's all I have for this month. Hope to see you on the air this October.

Aaron Baker KI5FIQ
baker.barisax@gmail.com

VE TESTING

Our September VE testing session had zero candidates and did not meet.

Remember that we provide VE testing sessions on the

third Wednesday of EVERY MONTH with exams for all classes of Amateur Radio licenses. Sessions are held at the EOC with doors open at 6:30 and testing beginning no later than 7:00 p.m.

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.

ARES/ RACES Mondays	146.84 (PL 141.3)
1 st	Jonathan W5WJC

2 nd	Robert KD5FEE
3 rd	Robert KD5FEE
4 th	Tom W5TV
5 th	Jonathan W5WJC

Skywarn Thursdays	147.32 (PL 141.3)
1 st	Wolfie KI5MHB
2 nd	Mark KI5POH
3 rd	Rusty KD5GEN
4 th	Aaron KI5FIQ
5 th	Darrell KI5PYQ

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 on

TUESDAY October 6th at the Nacogdoches EOC. Doors will open at 18:30 and meeting will start promptly at 19:00. Following the business meeting we will a program over our portable radios specifically the orange boxes. We hope to see you 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. We would be happy to create one.

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 [here](#). You will need to scroll to find the correct month.

Link to ARRL Contest Calendar

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

Club Meeting Dates

Oct 6th 19:00

Nov 3rd 19:00

Dec 1st TBD

Vibe Coding is Fun and Useful

Jim Edmondson, AE5JE

With the advent of affordable and accessible AI models for the masses, a new way to create software has become commonplace. It is known as "vibe coding". The definition from Wikipedia is (hyperlinks removed):

"**Vibe coding** is software development assisted by artificial intelligence (AI) where the software developer describes a project or task in a prompt to a large language model (LLM) which generates source code automatically.

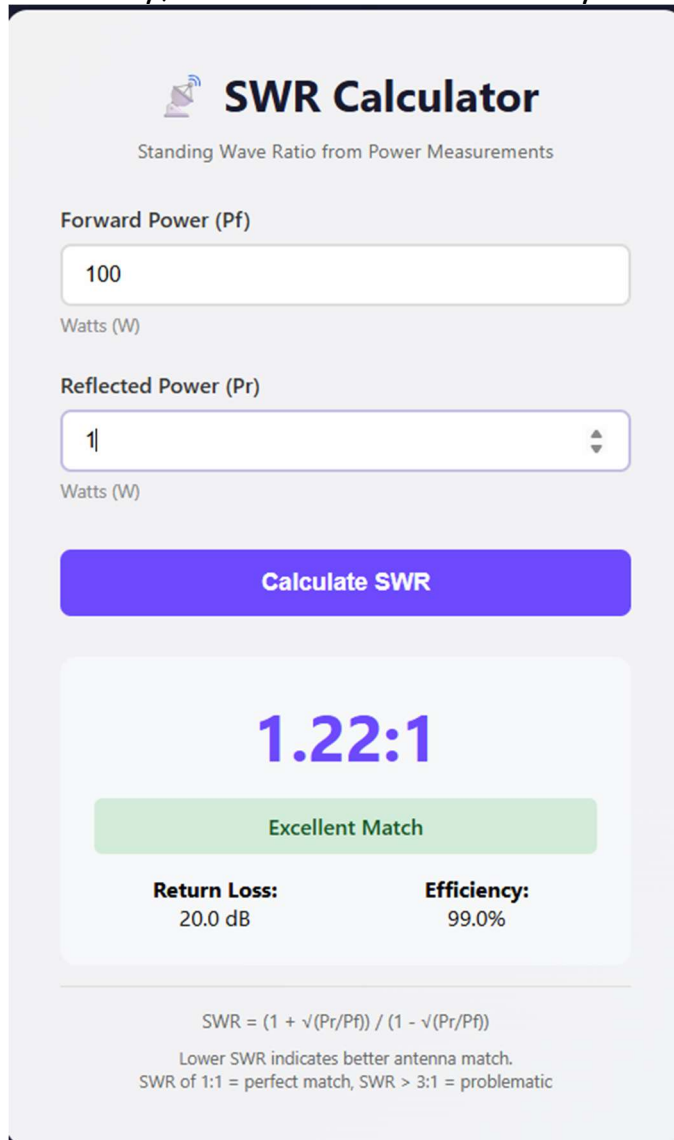
While this makes software development more accessible to non-experts, it can lead to erroneous or inefficient code with poor maintainability and potential security vulnerabilities. These are real concerns, so I have limited my efforts to locally run web applications that do not use resources outside of my home network.

My first real attempt was to create a calculator to provide the SWR from measured values of forward and reflected power. I use a digital wattmeter that displays either the forward power and SWR or the forward and reflected power. I would like to see all three values at times and I was hand calculating the SWR from the other two numbers. I use a Proton account for email, cloud storage VPN, etc. Part of the package is an end-to-end encrypted AI chatbot, called Lumo. My first prompt to Lumo was:

"can you write a web app that uses forward and reflected power to calculate the SWR?"

In a few minutes, Lumo created the html code to accomplish the calculation with some nifty features, like color-coded values indicating excellent to poor SWR and

it also calculates the return loss and efficiency. Note that the efficiency here does not reflect the all of the losses in the transmission line between the tuner and antenna. This is just the inefficiency due to the impedance mismatch and does not take into losses in the coax itself. The calculator does not consider which coax you are using. If you use RG-8X, your overall efficiency will be much lower than if you use 1/2" heliax at the same SWR. There are calculators that give overall efficiency, but transmission line theory is way beyond the scope of this article.



SWR Calculator
Standing Wave Ratio from Power Measurements

Forward Power (Pf)
100
Watts (W)

Reflected Power (Pr)
1
Watts (W)

Calculate SWR

1.22:1
Excellent Match

Return Loss: 20.0 dB	Efficiency: 99.0%
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$$SWR = (1 + \sqrt{Pr/Pf}) / (1 - \sqrt{Pr/Pf})$$

Lower SWR indicates better antenna match.
SWR of 1:1 = perfect match, SWR > 3:1 = problematic

Green: 1.0-1.5: Excellent — system well-matched
Yellow: 1.5-2.0: Good — acceptable for most transmitters
Red: 2.0-3.0: Marginal — may reduce transmitter life
Red: >3.0: Poor — check antenna/feedline connections

Lumo documented the underlying math as well (Pr and Pf are reflected and forward power, respectively).

Reflection Coefficient $\Gamma = \sqrt{P_r / P_f}$

SWR = $(1 + \Gamma) / (1 - \Gamma)$

Return Loss = $-20 \times \log_{10}(\Gamma)$ dB

Efficiency = $(1 - \Gamma^2) \times 100\%$

Finally, Lumo provided a table of typical values and one of the dangers of blindly trusting AI showed up. Two of the four example calculations were in error as determined by my hand calculations. Interestingly, the web app gave the correct values. Lumo "apologized", complimented me on doing the verification, verified that the web app was accurate and fixed the table. In both of its replies, it suggested further improvements or related calculations that may be of interest to me. After using the SWR calculator for a few hours, I thought that it would be better if the app created a graph and retained the values for later use. This way, I could construct an SWR plot of my antenna(s) as I operated. I then prompted Lumo with:

"here's a thought, can you add an input for frequency and accumulate the calculated values in a database to allow plotting of SWR, efficiency or return loss vs frequency?"

Lumo replied "that was a great idea" - it does try to ingratiate itself with you. The resulting output made a nice tabbed graph of your inputs with a list of points below that allowed for deletion of any of the inputs. The tabs showed a graph of SWR, Return Loss or Efficiency. Lumo asked if I wanted other features like marker lines for good, acceptable, etc. or auto-filling frequency input. I agreed and it chugged away at coding a revised html file. Lumo also added buttons to clear the data points, import data or export data. The data transfers were done as "csv" so that they could be read and edited with a simple text editor or imported into a spreadsheet program for further analysis or graphing.

The resulting graph included a starting and ending frequency with step sizes. The frequencies would be auto-filled and the user just had to input forward and reflected power to generate an SWR curve for that frequency range. The markers were horizontal dashed lines in green yellow and red for excellent (<1.5), good (<2.0) and acceptable (<3.0) SWR ratios. There were input textboxes to set your own values for the markers - pretty cool. Instead of the frequency range, the user

could select a band to auto fill the band edges with a default step size (i.e., for 20M: 14.00MHz, 14.25MHz, 25kHz). However, there were also some not so cool "features". For example, Lumo chose 20M, 15M, 10M, 2M, 70cm and the AM Broadcast band for the selectable bands!

Over a few more iterations with Lumo, it fixed the bands to include all HF bands from 80M to 10M, fixed some typos, the app actually created a table with the frequencies for the user to enter power values, fixed the auto-increments to be more reasonable depending on the size of each band, etc. The current input row of the table is highlighted in green and there is a "skip" to skip any frequency in the list. The almost final graph is shown below along with the data entry table created during auto-fill of frequencies. The graph and table use my custom makers for SWR as excellent (<1.2), good (<1.5) and acceptable (<2.5). Note that the Lumo default for poor SWR (>3.0) shows up in the table, but the graph does not have a marker line for poor SWR - maybe I should add that.



 Logged Measurements

#	Freq (MHz)	Pf (W)	Pr (W)	SWR	Return Loss (dB)	Efficiency (%)	Rating	Action
1	14.000	100.00	25.00	3.00:1	6.0	75.0%	Poor	Delete
2	14.025	100.00	10.00	1.92:1	10.0	90.0%	Acceptable	Delete
3	14.050	100.00	1.00	1.22:1	20.0	99.0%	Good	Delete
4	14.075	100.00	0.05	1.05:1	33.0	100.0%	Excellent	Delete
5	14.100	100.00	0.01	1.02:1	40.0	100.0%	Excellent	Delete
6	14.125	100.00	0.05	1.05:1	33.0	100.0%	Excellent	Delete
7	14.150	100.00	0.25	1.11:1	26.0	99.8%	Excellent	Delete
8	14.175	100.00	0.50	1.15:1	23.0	99.5%	Excellent	Delete
9	14.200	100.00	0.75	1.19:1	21.2	99.3%	Excellent	Delete
10	14.225	100.00	1.00	1.22:1	20.0	99.0%	Good	Delete
11	14.250	100.00	5.00	1.58:1	13.0	95.0%	Acceptable	Delete
12	14.275	100.00	8.00	1.79:1	11.0	92.0%	Acceptable	Delete
13	14.300	100.00	12.00	2.06:1	9.2	88.0%	Acceptable	Delete
14	14.325	100.00	18.00	2.47:1	7.4	82.0%	Acceptable	Delete
15	14.350	100.00	25.00	3.00:1	6.0	75.0%	Poor	Delete

It is not obvious from the above graph that JavaScript treats the x-axis values as "categories" instead of numerical values. Therefore, no matter the size of the difference between frequencies, they are plotted equally-spaced on the x-axis (i. e., 14.0, 14.1 and 14.5 plot as equally-spaced points). With the auto-fill option, this does not matter because the frequencies are equally-spaced by the increment in the app. However, when I used the app to enter values as I operated in the shack at random frequencies, I noticed this issue and had Lumo fix it.

Lumo's final message to me sounded like a ham marketing person. I thought that this was a pretty good outcome for maybe an hour of my time and a free AI chatbot! To actually learn html and JavaScript to write this myself would have been a multi-month project and definitely not worth the time. Without Lumo, I could have just used Excel to do it instead, but even that would have taken more than an hour to create a presentation as nice as Lumo's.

You're very welcome! I'm glad we got the SWR Analyzer Pro working smoothly for you.

What You Have Now

- ✓ **Complete HF Band SWR Calculator** with batch sweep mode
- ✓ **9 HF band presets** (80m through 10m) with correct frequencies and step sizes
- ✓ **Threshold marker lines** on charts (Excellent/Good/Acceptable limits)
- ✓ **Data persistence** via localStorage
- ✓ **Export/Import CSV** functionality
- ✓ **Progress tracking** during sweeps

Perfect for field antenna tuning sessions. Just save the HTML file and you're ready to go!

73 and happy experimenting! 📡 Feel free to reach out anytime if you need adjustments or new features down the road.

