



FEBRUARY 2024

Volume 13 Issue 2

VE3ERC-LUB

President: Reg VE3RVH**Vice-President: Frank VA3FJM****Secretary: Tom VE3DXQ****Treasurer: Ted VE3TRQ****Trustee: Wes VE3ML****QSL Manager: Kirk VA3KXS****Repeater Trustee: Wes VE3ML****Website Admin: Ted VE3TRQ****Lighthouse:****Maple Syrup Display:****Newsletter: Bob VE3IXX****ERC Website: <https://ve3erc.ca>**

ERC REPEATERS

UHF 444.700 + TONE: 131.8**UHF 444.700 + TONE: 123.0****VHF 147.390 + TONE: 123.0****VHF 147.255 + TONE: 131.8****EMERGENCY SIMPLEX: 146.550****UHF-IRLP node 2404,ECHOLINK VE3ERC-L****VHF- IRLP node 2403,ECHOLINK VE3ERC-R**

**In an emergency, tune
Into our repeaters,
UHF 444.700 or
VHF 147.390 or
HF 3.755 LSB or
Simplex 146.550
For coordination and
assignments.**



Paul VA3PDC activating Woodside National Historic Park in Kitchener, Ontario.

See his story on page 9.



THE PREZ SEZ!

This club is Radio-ACTIVE
This club is Radio-ACTIVE

President's Update for February 2024

Rob VE3PCP sent the following note for an upcoming event celebrating the 150th birthday of Marconi. Mark your calendar for this fun event and get on the air.

Hello All:

I wanted to let everyone know that we are putting plans in place for an upcoming all day operation for International Marconi Day on Saturday April 27, 2024.

It is to celebrate Marconi's 150th birthday. We had a great time on December 12, 2023 in celebrating the 122nd anniversary of him receiving the first transatlantic radio signal at Signal Hill. It seems only natural to celebrate his 150th birthday with a similar operation.

We will plan on operating on 9 bands again from 160M to 10M. SSB on all bands except for 30M which is limited to CW. No FT8 or other digital modes.

I will develop more details over the next few weeks but our operating hours would see a start of 6AM Eastern time on 160M and move each hour to a new band. We switch to Daylight Savings time on March 10th and jump ahead one hour. I will put a schedule together after the time change and send it out.

All will be livestreamed and we will operate QRO on all bands. [Our live streams from December 12th here.](#)

Let me know if you have an interest in participating in the event through our remote station as [VA3XXT](#) or maybe you will have plans to operate from your own station.

Both are great.

73 and talk soon.

Rob VE3PCP.



"Nothing Ventured"

By Bob Koechl VE3IXX

On February 1, Rod VA3MZD, Brendan VA3BVB along with his son John VE3JWU and myself, VE3IXX met with the 27th Guelph Venturer Troop at Gateway Drive Public School in Guelph to introduce Amateur Radio. This was at the request of their leader, Will Barrett, who happens to be Brendan's brother.



Rod VA3MZD holds up his handheld as the group listens for the approaching ISS signal.

We were given a time slot of 6:30 to 8:30 pm and diligently prepared an agenda to fill up every minute of this precious short time.

However, as Rod and I arrived early to put up an end-fed antenna, Rod casually mentioned the ISS was making a pass over the southwest horizon beginning at about 7:03 pm. We would have about a five minute window as it was not an overhead pass.

"Should we try for it?" Throwing all caution to the wind, we decided on a spontaneous change to our plans.

That proved to be the catalyst to more spontaneous changes. The designated meeting room was a classroom in the back of the school. There was only one window which could not be opened. Furthermore, the whole area around the school was open area and the only tree (for the end-fed antenna) was in front of the main entrance. We approached the caretaker about the possibility of setting up a table in the front foyer. The antenna could be strung onto the tree and we could run the coaxial feed line right through the front door. He happily gave permission with the stipulation of no one wearing outside boots and no mess.

And so the adventure began. I started with a shortened introduction in the classroom. How do you synthesise the whole topic of ham radio into 20 minutes? Somehow it was managed and then we hustled the troop and the

leaders, coats and hats, outside to the southwest corner of the school chattering about amateur radio all the way.

Once outside, using Rod's handheld and a second handheld clutched by Brendan, everyone quieted down to begin listening, and hoping on our part!

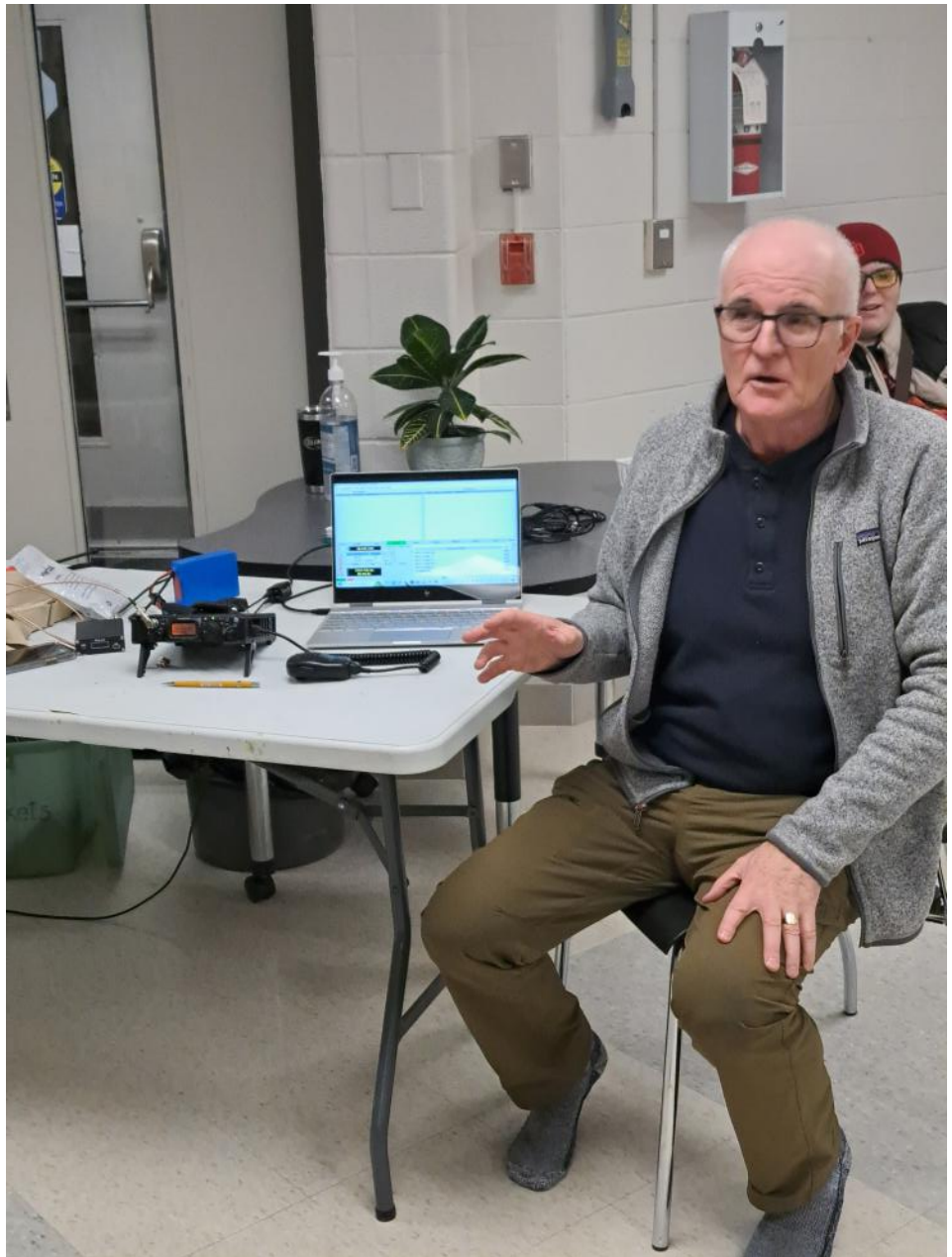
And then it happened. It was very low and weak at first, but gradually we heard chatter which got louder and louder. There were call signs coming through the speakers quite audibly as all the onlookers got more excited. To Rod's credit, he did transmit his call sign and grid square to try making a contact, but our signal just couldn't compete at this time. However, the demonstration had succeeded and within a few minutes all the signals faded out.

Grabbing onto the momentum and the fact that we were already outside I switched Brendan's radio over to VE3KSR repeater. I knew for certain that the handheld would be able to reach Baden and made a call. Fortune was with us again and we got a callback with a hearty greeting to all the Ventures.

So now it was almost 7:30 and we processed back into the school and the front foyer for Rod to demonstrate HF radio. After a short explanation Rod made a call to a POTA station stateside. Not only was it a good copy but Rod got a good signal report as well. Again, this impressed the audience which continued as Rod explained digital communications. There was even greater delight when the computer screen lit up with a station in the Caribbean Sea and then to top it off with an operator in Japan.

That closed off the evening as an unbridled success. This was proven when one of the young men came and took a picture of the Basic Licensing Manual.

Who could have asked for more?



Viewing the digital contacts got a lot of attention.

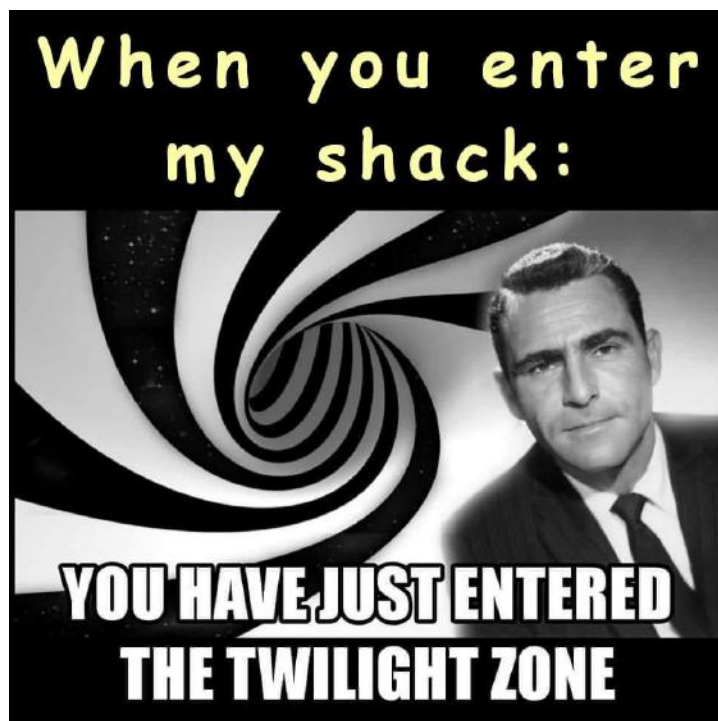
CONTRIBUTIONS TO VE3ERC-CLUB NEWSLETTER

Do you have an article you'd like to submit? Or photos? Do you have any comments you'd like to make?

Perhaps you'd like to share a photo of your shack, a special project you are working on or a special interest!

SEND THEM TO:

Bob bobve3ixx@gmail.com
(519-787-2279)



WEDNESDAY NITE NET CONTROLLERS

JANUARY 31 - FRANK VA3FJM
FEBRUARY 7 - TOM VE3DXQ
FEBRUARY 14 - TED VE3TRQ
FEBRUARY 21 - TONY VE3DWI
FEBRUARY 28 - MEETING
MARCH 6 - BRIAN VA3DXX
MARCH 13 - BILL VA3QB
MARCH 20 - BOB VE3IXX
MARCH 27 - MEETING
APRIL 3 - REG VE3RVH
APRIL 10 - HAGEN VE3QVY



**By Ken Buehler
VE3KCY**

The vertical antenna was one of Paul's experimental antennas, He had it and an end fed along with a G5RV. I tried a OCFD this year which worked well.

Winter Field Day 2024 is in the history books. This year Paul VA3PDC & myself Ken VE3KCY participated back in the Buehler Boonies Sugar Bush Camp near Wallenstein. The camp is located one mile from the highway access is via a no winter maintenance road and is 200 feet away uphill from the Conestoga River. The only residents there are deer, squirrels & wild turkeys and my resident eagle family.

This year we decided to head back on the Friday afternoon to set up antennas so none of that would be required on Saturday. This year Paul was on a G5RV and I used a OCF antenna. We broke trail with the snowmobile which firmed up fine for Saturdays travels. Cutting some wood for the woodstove was on the agenda on the Friday also. We were headed home as darkness approached.

Saturday noon we loaded the sled with our radios, food, gas & sleeping bags. After setting up there were a few antenna glitches that needed sorted out but we were operational for the 2pm start. Conditions overall were very good for the entire weekend event (also the S2 -S3 noise levels there are a great help).

Paul prepared his famous "hot chilli" always fitting for a bush campout ! Every field day someone gets some unusual contacts. This year Paul worked an Ireland station on 10M on Sunday morning. While the Ireland station wasn't a WFD participant it was a great DX contact. My CW contacts were confined to North America mainly on the eastern side but had a Washington State contact.

Sunday morning was a later start but band conditions continued to be good. At 2pm everything was shut down and the clean up



began. Packed 2 loads into the sled & hauled everything back out to the trucks. Another successful field day was in the books !

Every year navigating in the snow becomes a little more difficult as we age but we always **have a GREAT time !**

We had some very special visitors this year.



**From
the**

PAST

World's 1st rotatable AM short wave
antenna Philips in Huisen Holland 1930



Thanks to Tony VE3DWI for
sending this.

To QRP or Not to QRP

BY PAUL CURTIN VA3PDC

I've always been a skeptic of QRP. I never thought I would enjoy it, "you need at least 100 watts minimum to be heard"

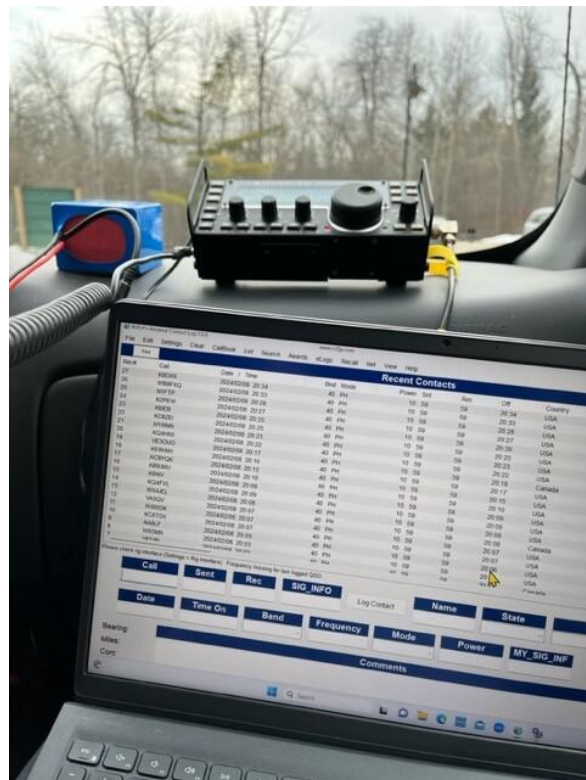
I was pleasantly surprised Thursday afternoon while doing a POTA activation at Woodside National Historic Site in Kitchener.

It was a great afternoon to do a POTA activation. It was plus 8C and sunny.

I put up a 32.5 foot piece of spliced speaker wire on a Spiderbeam telescopic pole, with a 4:1 UNUN at the bottom and 12 feet of coax into the truck.

It took about 15 minutes to set everything up. I've attached a couple of pictures of my new setup. I don't recall the specs when I checked it but they were pretty good, around 1.8:1.

It took a few calls after spotting myself on 40 meters to get my first call in the log. Things were moving along ok, but after about 30 minutes



I had 29 contacts, some Ontario, the upper midwest and the eastern seaboard, nothing unusual.

I switched to 20 meters where it was about 4:1 swr and tuned up. My first response was from AL7KC, I could not believe my ears.

I have never had a contact in Alaska before. I made another 26 contacts in the next 25 minutes, including another one from AK, I also had calls from TX, AL, UT, NM, MN and the list goes on. All this on a piece of speaker wire and 10 watts?????

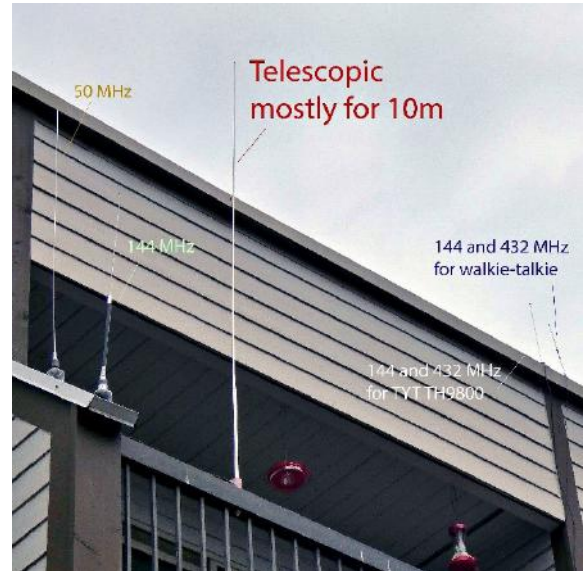
I must say, I don't believe the nay sayers any more, I will be doing more QRP in the future, guaranteed!!!!



Automatic antenna tuner ATU-130

by Daniel Romila, VE7LCG

I have a cheap FM only quad band transceiver, TYT TH-9800, . I mostly use it on 29.6 MHz, where with the declared 50 Watts (actually 43 Watts) I constantly have contacts at over 4488 kilometers away, between Vancouver Canada and Miami, Florida, USA. W4NMA, Mark Topley from Miami Florida, is always ready to confirm he hears me there almost every morning, and he is amazed I am often heard with 59 signal report although I only have a telescopic balcony antenna, 2.5 meters long, tuned with a NanoVNA. The telescopic antenna can be extended to 4.7 meters long, but I lose the tuning, although I pretty much would like to use all its length.

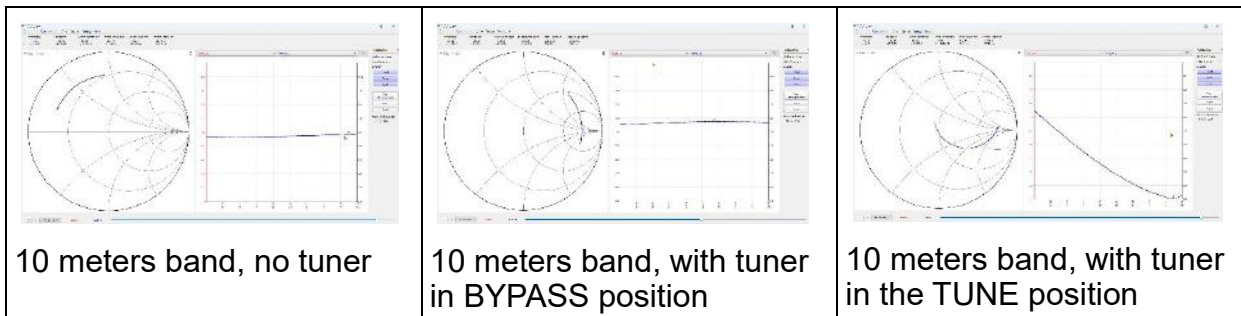
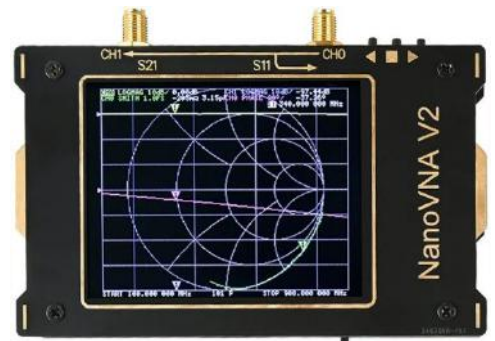


This is how I got to the ATU-130 solution, to insert an automatic antenna tuner between my TYT TH-9800 transceiver and the antenna.

You can see on the left all equipment I use nowadays. Nothing fancy. The two walkie-talkies are in the picture because they have to stay somewhere, and my space on the desk is limited. I live in a small apartment building.

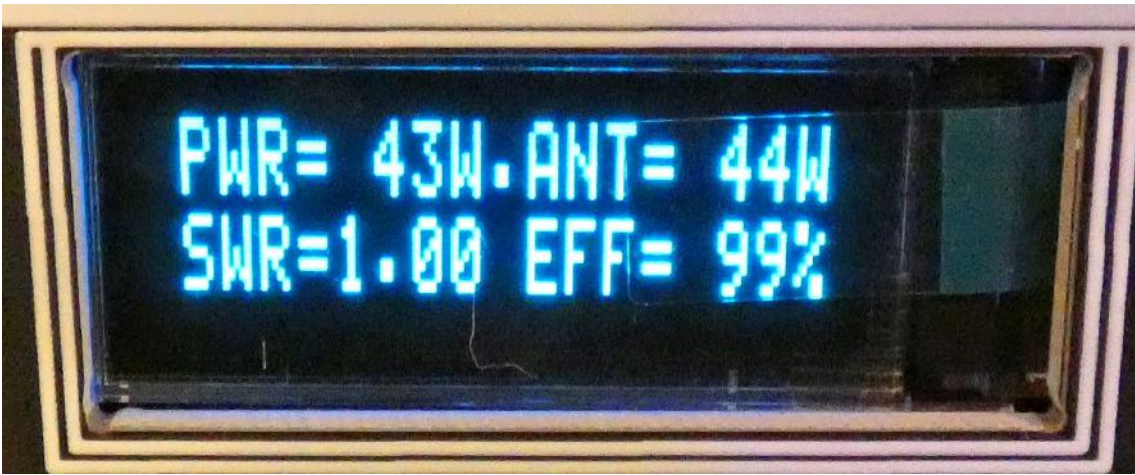
ATU-130 will tune antennas from 1.8 MHz to 50 MHz. It tuned on 52.525 MHz, without any problems. I will give the specifications, in details, at the end of the article. Before buying the product, I contacted the seller and asked for a manual. I got it almost immediately – of course – in Chinese. What did you expect? I made an automatic translation into English, and it is OK.

Once I got the tuner, I installed it immediately, and I want to show you "the beef", in images. I did not even peel off the protective film from the LCD display. Here are the results, in a 3 columns table. I also used my trusted NanoVNA S-A-A-2, v2.2, tethered on a Windows 11 PC, with the program vnaQT.



I was targeting to tune on 29.6 MHz. With the antenna fully extended, the nanoVNA measured it as having above 5.5 SWR the entire 10 meter band. I inserted the tuner between the antenna and NanoVNA, and I put the tuner in the BYPASS position. The measurements became even

worse, with a SWR above 6.5 in the whole 10 meter band. This was not something that I wanted to connect to the transceiver, because the reflected wave would jeopardize my final power RF transistors. I put the ATU-130 in the TUNE position, and continuously transmitted FM. I heard the internal relays for several seconds, and what I obtained on the ATU-130 display is:



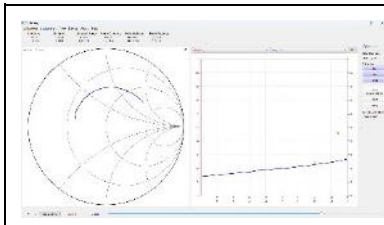
The measurement of the power is not exactly accurate (10%), and it is rounded, without any decimal. Keep that in mind when looking at the values, and forgive them. So, I can count on 43 Watts, with a SWR of 1.00 with my fully extended tel-

lescopic antenna, 4.7 meters long, on 29.6 MHz.

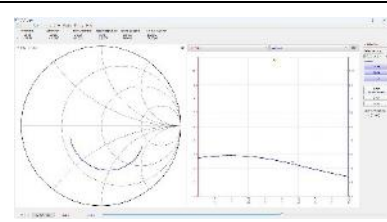
I disconnected the transceiver, and I connected the NanoVNA. From the table of 3 graphics from this page you can see, the tuner remains in the circuit not only during the transmission, but also during the reception, where it acts like a filter for reception. Not bad. The SWR in the graphic, measured with NanoVNA, is 1.05.

I am pretty excited about such good results with my cheap automatic antenna tuner, ATU-130. In a moment of excessive enthusiasm, I tried to tune in the 144 MHz band, although the tuner clearly states 50 MHz band as its limit. Do not do it. The tuner immediately shut off, and I was afraid I damaged it. But it worked OK again after power OFF and power ON.

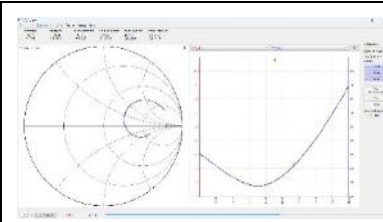
I repeated the measurements I did for the 29.6 MHz for the frequency of 52.525 MHz.



6 meters band, no tuner



6 meters band, with the tuner in BYPASS position



6 meters band, with the tuner in TUNE position

Somehow my NanoVNA shows that on the above extreme right graphic the tuner tuned somewhere lower. Most probably it did not, because it tuned for my TYT TH-9800 transceiver, which for sure has different inductance/capacitance characteristics in the 6 meters band than my NanoVNA has. ATU-130 shows on the screen.

Based on the fact I reach the repeaters I reached before having the tuner, with a dedicated antenna for the 6 meters band, I now also reach the same repeaters with a longer antenna that has by itself a 3.31 SWR on 52.525 MHz. Now tuned with ATU-130 with even a lower power (it is a longer/better antenna), I tend to believe the ATU-130 display, and I explained why there is no contradiction between what NanoVNA shows and what ATU-130 shows, because the measurements are done for different impedances.

I bought the ATU-130 with \$109 CAD (\$81 USD), shipping and taxes included, in February 2024. I have the black version, which requires 10 Watts or more for tuning. The blue tuning is more suitable for QRP. Since the user manual is very short, I am including it here as follows:



This device contains a set of 7 inductors and 7 capacitors that effectively cover the wideband radio amateur shortwave range from 1.8 MHz to 50 MHz.

- Connect the antenna, the power plug (12~15VDC) and the transceiver. Turn on the power of the shortwave transceiver and the power of the antenna tuner. The self-test of the equipment shows that it

is normal.

- Adjust the shortwave transceiver to the working frequency, set the working mode to AM, FM, CW, or FT8, RTTY and other modes (modes that can provide continuous carrier waves), press the shortwave transceiver transmit key or CW key to trigger transmission. At 10W or more power continuous transmission, the tuner starts to adjust automatically. When the standing wave is less than 1.5, the tuner automatically stops tuning.
- At this time, at the current frequency point, change the shortwave transceiver to the mode where it will work, and you can use it with high power.
- When switching frequency bands, you need to perform the tuning operation again.
- If the tuner is tuned but fails to reach within 1.5, you can press the TUNE button to reset the tuner and repeat the above tuning process again until the standing wave reaches within 1.5.



Possible problems and solutions

- If it is still not tuned, the impedance of the antenna system may be beyond the tuning range of the antenna system, or the grounding should be checked.
- If the antenna tuner has no tuning action: Check that the connecting cable is well connected to the transceiver, whether the antenna tuner is in automatic mode, whether the shortwave transceiver is in the correct mode, and whether the tuning power reaches the triggering condition (for ATU-130 blue is greater than 5W, for ATU-130 black is greater than 10W, and should not exceed 20W).

When the antenna is not tuned or the standing wave does not reach 1.5, do not transmit with high power, otherwise the equipment may be damaged!

The automatic operating mode offers the user a unique opportunity to use the device without pressing buttons and connecting any external controls. The algorithm uses the following method: Tuning mode is activated if the current SWR exceeds 1.3 and has changed to (1.3-1) relative to the value recorded after the last tuning process.

When the unit is powered on, quick test mode is activated by pressing the three buttons Tune, Bypass and Auto. In this mode, the device powers all relays, which allows you to quickly identify faults related to transistor switching or soldering faults.

When the unit is powered on and the BYPASS and AUTO buttons are pressed, the unit enters simple test mode. In this mode, you can manually change the value of the capacitor or inductor using the Bypass and Auto buttons in a step-by-step manner. A long press on the Tune button selects the current element to be moved, a short press changes the capacitor. In this mode, input power and SWR can be measured online. The entire process is accompanied by clear instructions.

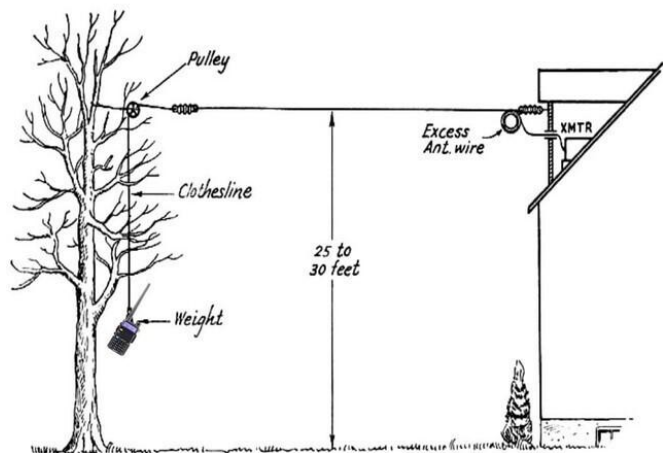
Technical characteristics

- Permissible supply voltage range: 10-15 V DC
- Maximum current consumption: 500 mA
- Maximum operating power: 150 watts
- Maximum possible measured power: 200 watts
- Minimum power required to start tuning: 5W (ATU-130 Blue 5W, ATU-130 Black 10W)
- Minimum possible measured power: 0.1 Watt
- Measurement steps for power up to 10 watts: 0.1 watt
- Measurement steps for power above 10 watts: 1 watt
- Power measurement accuracy: 10%
- Maximum installed inductance: 8.53 μ H
- Minimum installation step of inductor: 0.05 μ H
- Maximum installed capacity: 1869 pF
- Minimum capacitor installation step: 10 pF
- Typical consumption 200-300 mA



"Looking at it now, there may have been better choices for a counterweight on my new 80M dipole."

Tongue-in-cheek Rod VA3MZD suggested the Baufeng as a counterweight.

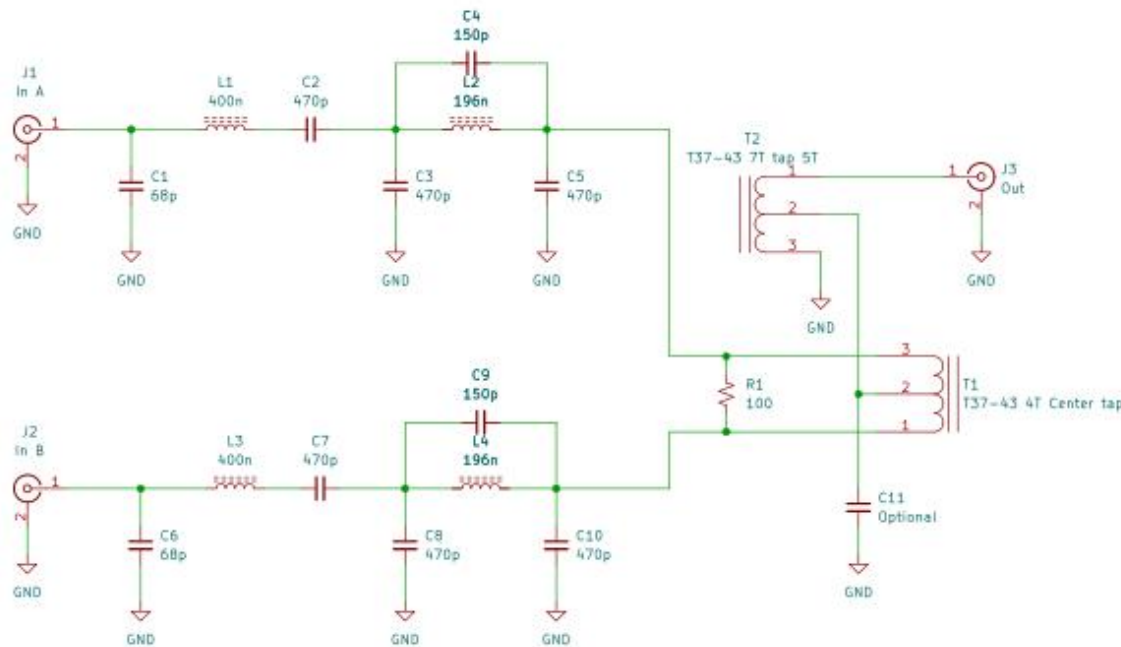


Building an RF combiner to test linearity of amplifiers

By Hagen Kaye VE3QVY

I had fun and learned so much with my two tone generator testing the truSDX transceiver. I have a DDS signal generator that can output two frequencies up to 60Mhz and wondered if I could combine the two outputs to drive an RF amplifier directly - sort of like the two tone generator which outputs audio, but instead bypass the transmitter section and go directly to RF frequencies - the 20m band is the band of interest for me. Some quick tests showed that the signal generator is okay, but as an RF generator it had quite a few harmonics and I wanted a clean signal -

pure sine waves. So I built this band pass filter/rf combiner to filters on the 20m band and then combines the two outputs into one.



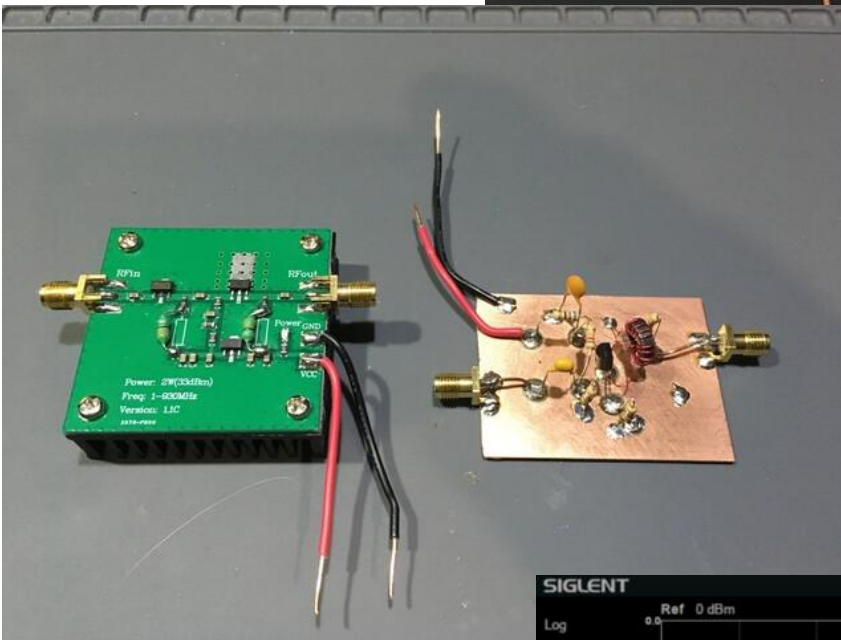
Each input goes thru a band pass filter (C1-C5 and L1,L2 for input A) to clean up any harmonics coming through the signal generator. T1 is a center tapped auto transformer that combines the two inputs into one. R1 is used to isolate the two inputs, a value of 100 ohms is used since the two inputs are in series and each input is 50 ohms. The impedance of the center tap of T1 is 25 ohms (turns ratio is 1:2 so impedance ratio is the square or 1:4 - or 100 ohms / 4). T2 changes the impedance of 25 ohms back to 50 ohms - 7 turns tapped at the 5th turn (pretty darn close to the square of 2 when you do the math).

R1 is used to isolate the two inputs, a value of 100 ohms is used since the two inputs are in series and each input is 50 ohms. The impedance of the center tap of T1 is 25 ohms (turns ratio is 1:2 so impedance ratio is the square or 1:4 - or 100 ohms / 4). T2 changes the impedance of 25 ohms back to 50 ohms - 7 turns tapped at the 5th turn (pretty darn close to the square of 2 when you do the math).



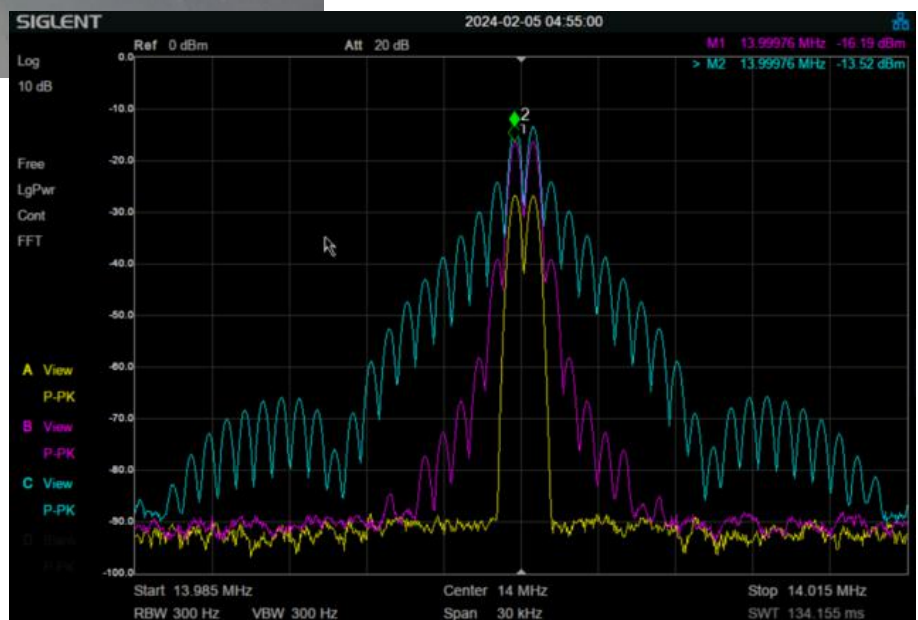
Here is pic of the project, in a small metal enclosure

And a pic of my setup testing the band pass filter/rf combiner. The DDS signal generator connects to combiner and the output is connected to my RF generator. I'm feeding it 14.000Mhz and another signal at 14.0007 Mhz (700Hz higher) and the result is two clean sine waves - two peaks of frequency with no TOI harmonics.



Let the tests begin, first with a cheap 2W wide band RF amp I bought from Amazon (on the left) and second with a DYI class A amp that I built from the ARRL handbook (on the right).

Although the cheap wide band amplifier states it can do 2W, I was only about to get a little over 500mW out of the unit. Using the rf combiner with the above frequencies shows a lot of TOI distortions and this amp is definitely overdriven trying to get 500mW of power out of it. The graphs below show the original signal in yellow, the amp at maximum output in blue and in purple at about 250mW a slightly better but still distorted output.



And here are the results of the small class A amp from the ARRL handbook.

The amp does about 20dB of gain and from the above graphs, no TOI distortion. While the gain is less than the first amp, it is a single transistor amp, so adding a second stage should easily get 500mW output with no distortion.

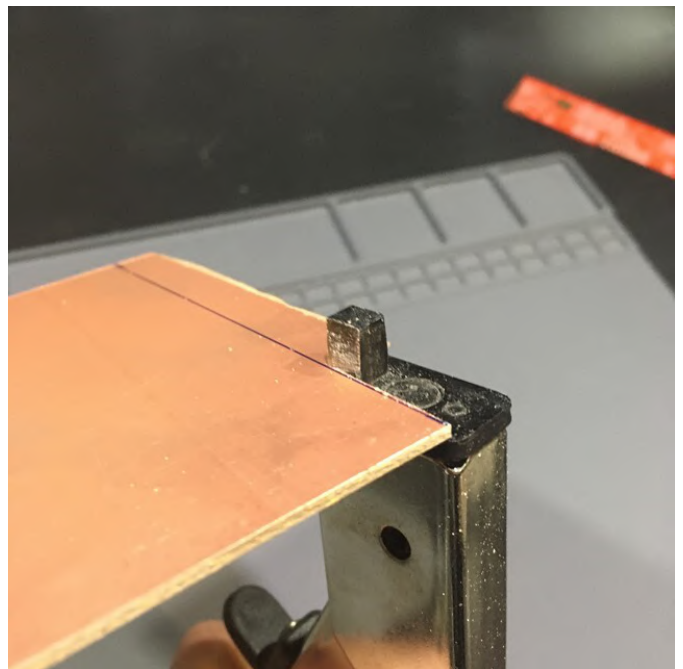
Injecting two RF frequencies close together can reveal a lot about a RF amplifier i.e. if the stages are overdriven, not linear, etc. and aid in the design of a clean amplifier. This little tool will come in handy over the next couple of months as I explore various designs available on the internets.



Tech Tips

Thought I would start a thread of some of the useful tools you have in your shop. Got this idea just now as I starting using my nibbler, don't even know if you can buy one nowa-days. Useful for nibbling (or cutting) metal, PCB boards, etc. Handy for making interesting cut outs.

73 Hagen VE3QVY

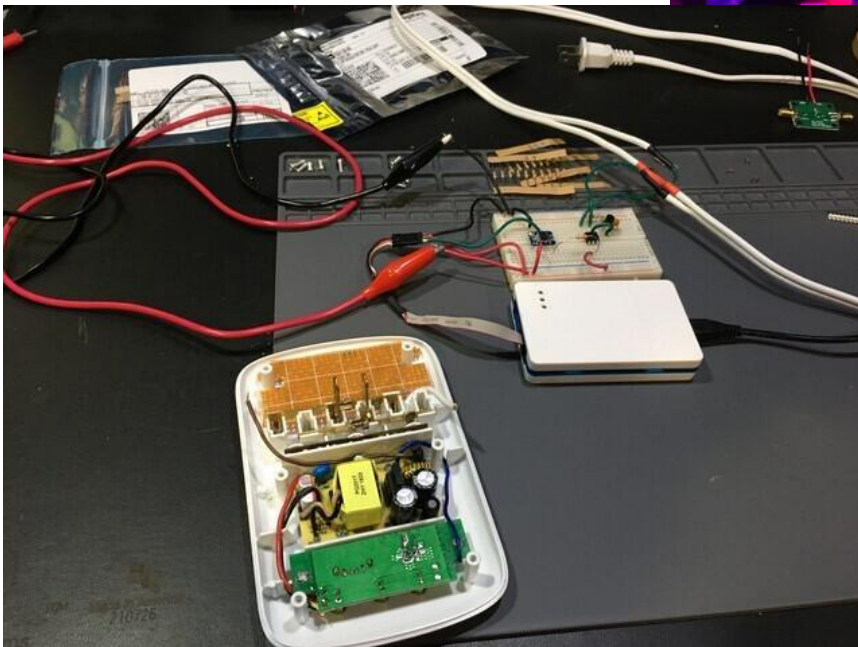


Hagen also added and showed his shared Shack set-up with his "Better Half"!

Ginny's maker space - beside mine in the basement. Around this time it turns into indoor nursery to get a head start on some of the longer to start veggies. Peppers and early tomatoes are on the list. Peppers take quite a bit of time, so they get started as soon as possible. Early tomatoes (that's our name for it) are just tomatoes that will be big enough that when they go into the ground we get tomatoes earlier in the season - we'll have some regular tomatoes as well.

The indoor nursery features grow lights, a couple of hydroponic kits, seed warmer mats and of course nice weather for the February winter. We also have a nursery outside in the detached garage that these plants will start to migrate to later on - grow lights and heaters are there. As usual, we plant way too many seeds and its a good thing we know several people that have big veggies gardens that help us out with the excess inventory

Of course, my part of the fun is building little electronic gadgets to automate this mini nursery. I'm hacking a 3 outlet + USB thingy and putting in a microcontroller that will control each individual outlet - turn it on/off at random intervals. I'll



have 3 small fans that will blow on the seedlings as they grow to simulate different windy/breezy conditions - this will harden up the plant so they are strong before going into the ground. At least that's the theory.

CORRESPONDENCE

Tony VE3DWI wrote:

Anyone interested in participating in a study involving the "April Solar Eclipse", will find detailed information in this ARRL news.

Amateur Radio Operators Needed for Help with Solar Eclipse Project

The [Case Amateur Radio Club, W8EDU](#), the club station at Case Western Reserve University in Cleveland, Ohio, is asking for amateur radio operators to help with a research project centered around the April 8, 2024, solar eclipse.

W8EDU club member Adam Goodman, W7OKE, said the project centers around studying the effects of the eclipse on propagation to better understand the recombination time of the ionosphere.

"To do this, we are recruiting North American amateur stations interested in recording the Canadian time standard station CHU (Canada's WWV) for two weeks surrounding the eclipse," added Goodman. "Anyone with a [KiwiSDR](#) or a rig that can interface with analysis/recording software such as [Fldigi](#) is encouraged to reach out to us to participate."



W8EDU club member and project software manager Maris Usis, KE8TXG, said that while the software is simple to use, there is some detailed work involved. "We can help make it easier and there are good online instructions as well," said Usis.

All of the participation details are on the club's website at

<https://w8edu.wordpress.com/chu-eclipse-data-collection/>.

W8EDU club faculty advisor David Kazdan, AD8Y, said the research project has received positive attention from the [ARRL Collegiate Amateur Radio Program](#) community, the Ham Radio Science Citizen Investigation ([HamSCI](#)) community, and Case Western Reserve University's engineering deans. "It is already a truly international effort, and we are collaborating with more than 20 stations across the continent, from collegiate and high school stations, to a representative from the Radio Amateurs of Canada, to a station in Mexico," said Kazdan.

The [2024 solar eclipse](#) will be over Mexico, the United States, and Canada. ARRL is a partner with HamSCI to help promote this opportunity for radio amateurs to participate in an active science experiment, through the Solar Eclipse QSO Party.

FUN FACT

Thomas Edison as a teenager would ride the trains and sell newspapers to earn some extra money. At a station near Detroit, one of the train cars broke loose and started to roll toward a small child that was playing on the tracks. Tom jumped down and pulled the boy to safety. It just so happened that he was the son of the station telegrapher. To thank Tom the telegrapher taught Tom telegraphy and at 16 years of age Tom was hired as a telegrapher here in Ontario. Every day at noon Tom would have to send a confirmation telegraph message to Toronto. This was boring so he designed a device to do this automatically and if he was not busy was able to take a nap. However, one day he was caught napping and was fired.

Elmira Radio Club VE3ERC Meeting Wednesday, February 28, 2024 Minutes

7:00pm Virtual Eyeball QSO – Setup, Social time & Coffee

7:30pm

1. Meeting Call to Order, Welcome - Frank VA3FJM called the meeting to order at 7:28 pm in Reg's absence. The meeting was held on Zoom due to the poor weather conditions

2. Roll Call & Quorum – Graham VE3BYP, Ken VE3KCY, Rich VE3DCC, Paul VA3PDC, Judd N4WXU, Hagen VE3QVY, Bob VE3IXX, Gary VE3JGK, Tony VE3DWI, Marianne VE3MXT, John VA3PT, James VE3JLC, Bruce VE3QB, Frank VA3FJM, Rod VA3MZD, Bill VA3QB, Ted VE3TEQ, Roger VE3RKS, Linda VE3CZ, Mike VE3FE, Brian VE3HBJ. Frank determined that the one third of the membership required for quorum was achieved.

3. Adopt Agenda - Rod VA3MZD - Moved by Rod and seconded by Frank that the Agenda be adopted as published. Carried

4. Presentations/Speakers/Workshop • Hagen VE4QVY - measuring distortion with a spectrum analyser - Hagen provided a fascinating and detailed look at harmonics using his precision measuring equipment and used the slide deck attached to walk us through his measurements which resulted in an engaging discussion.

See: <https://docs.google.com/presentation/d/1Z1GI01gKHq64yLeiFyx-TkRLbP67QnzOOkVVVDr3E80/edit?usp=sharing>

- Rod VA3MZD Online resources for learning Morse Code - Rod showed some of the online resources he has been using to learn CW, both iOS/Android Apps and Web resources. Learn CW Online and VBand were highlighted.

See: https://docs.google.com/presentation/d/1XdGKCXJ5BbGgeUnLiZ1a4_Mf2K-2t6jbw1LJKSq78iM/edit?usp=sharing

5. Secretary's Report Rod VA3MZD • Email from Barry Brousseau VE3SLD
Rod asked if there were any errors or omissions from the January 2024 meeting then moved that the Minutes from the February meeting be adopted as published. Tony Seconded. Carried. There was communication from Barry VE3SLD about two requests. See New Business below.

6. Treasurer's Report Ted VE3TRQ • Monthly Financial update
Ted shared the financial statement for the month and noted there was one line item this month, the membership dues of new member Andy Burgess, a RAC member. Moved by Ted and seconded by Roger that the Treasurer's Report be accepted. Carried.

7. President's Report - Reg VE3RVH • Frank reported that due to Reg's absence, there would not be a President's report.

8. Committee Reports • Repeater Technical Committee Bill VA3QB/Tony VE3DWI - Tony reported that all the Repeaters were operational.

•Nomination Committee for 2024 AGM - Rich VE3DCC - Rich noted that the committee, which also includes Reg and Bob, are looking for nominations for President, VP, Secretary, Treasurer and Trustee. A March meeting deadline was set for the nominations. Nominations should be emailed to Rich. Bill VA3QB volunteered to stand for Trustee if Wes declined.

•Guelph Venturer Crew- Bob VE3IXX - Bob reported that he and Rod visited the 26 Guelph Venturer Crew, along with Brendan VA3BVB, and did a presentation about Ham Radio, including an

ISS pass and the Cross Band Repeater, local KWARC repeater on FM, POTA on 40m, FT8 and WiresX on the VE3RKL repeater. The demonstration was well received by the Venturers and leaders.

9. Unfinished Business

- Guelph Data Centre tour Dave VA3DAS, Ted VE3TRQ - Ted is awaiting contact from the Centre.
- ARRL/RAC YOTA Summer Camp, Halifax, NS, July 7-12- Sponsorship - Rod VA3MZD - Rod suggested that Bob see if there is an interest from one of the Home School hams in attending YOTA and then the club could decide how much support we could give for them to attend the conference in Halifax.
- Lending Library- Rene RRP - Rene was not in attendance. (Later in the meeting this idea resurfaced as we discussed ways to use the Club's funds.)
- Book Library- Tony DWI - Rod raised the idea that we contact the Elmira Library to see if they would be interested in keeping a Ham Radio Library. Rich mentioned that something like this had been tried before with a RAC subscription and was refused. Rod volunteered to contact the Library. Tony, who initiated the idea, wants to curate a list of books that will be posted on Groups.io and people can request to borrow them directly from him when we meet monthly. Others are invited to contribute. Ted suggested we list the books on the members only website as well. Graham inquired about access to the members only section. Ted will send the info out to all members.

10. New Business

- Central Ontario Hamfest - Barry VE3SLD is chair of the event and has requested that ERC consider putting on an event (Antenna Shoot Out?), or just having a booth for the club, or running a station.

This proposal came from Barry VE3SLD GARC President/RAC Ontario Rep in an email to the Club. A discussion occurred about our participation in the Hamfest including running ONTARS there, having a Flea market Table. Tont plans to have a personal sale at the Hamfest.

- Linking our VA3TET and GARC VE3RKL Wires-X repeaters - Barry VE3SLD - The members discussed this briefly and it was decided that we would need more information so Frank will ask Barry to come to our meeting to discuss with the membership.

11. Announcements

- Next meeting: 4th Wednesday of the month- Wednesday, March, 27, 2024
- Wires-X Net - 4th Thursday of the month - Thursday, March 28, 2024 - A discussion followed this reminder as only Rod and Judd were into the WiresX Net although others attempted to join in. If the repeater and the Room are not connected then those coming in via RF aren't able to get in. Judd had tried to explain this to Rod during the Net but Rod was operating via WiresX Software via remote Internet and did not copy! We need to make sure that they are connected in future so that the Net will be open to all. Ted suggested we need to have members with privileges to do so.

Gary opened up a discussion about spending the Club's funds by suggesting we give a grant for the purchase of equipment to a deserving local student interested in ham radio. A number of counter suggestions were offered: buying new equipment for the Club (Paul, Tony), building an equipment library for members (Roger), lowering dues for members (Rich), new repeaters, linking repeaters, a Firehall repeater, adding an All-Star node, adding Internet to the Feed Mill repeater through a cellular modem, etc. Roger suggested we monitor our funds so that at least one year of expenses is in reserve.

- 12. Adjournment • Motion to adjourn the meeting- at 9:28 Frank moved that the meeting be adjourned. All were in favour!