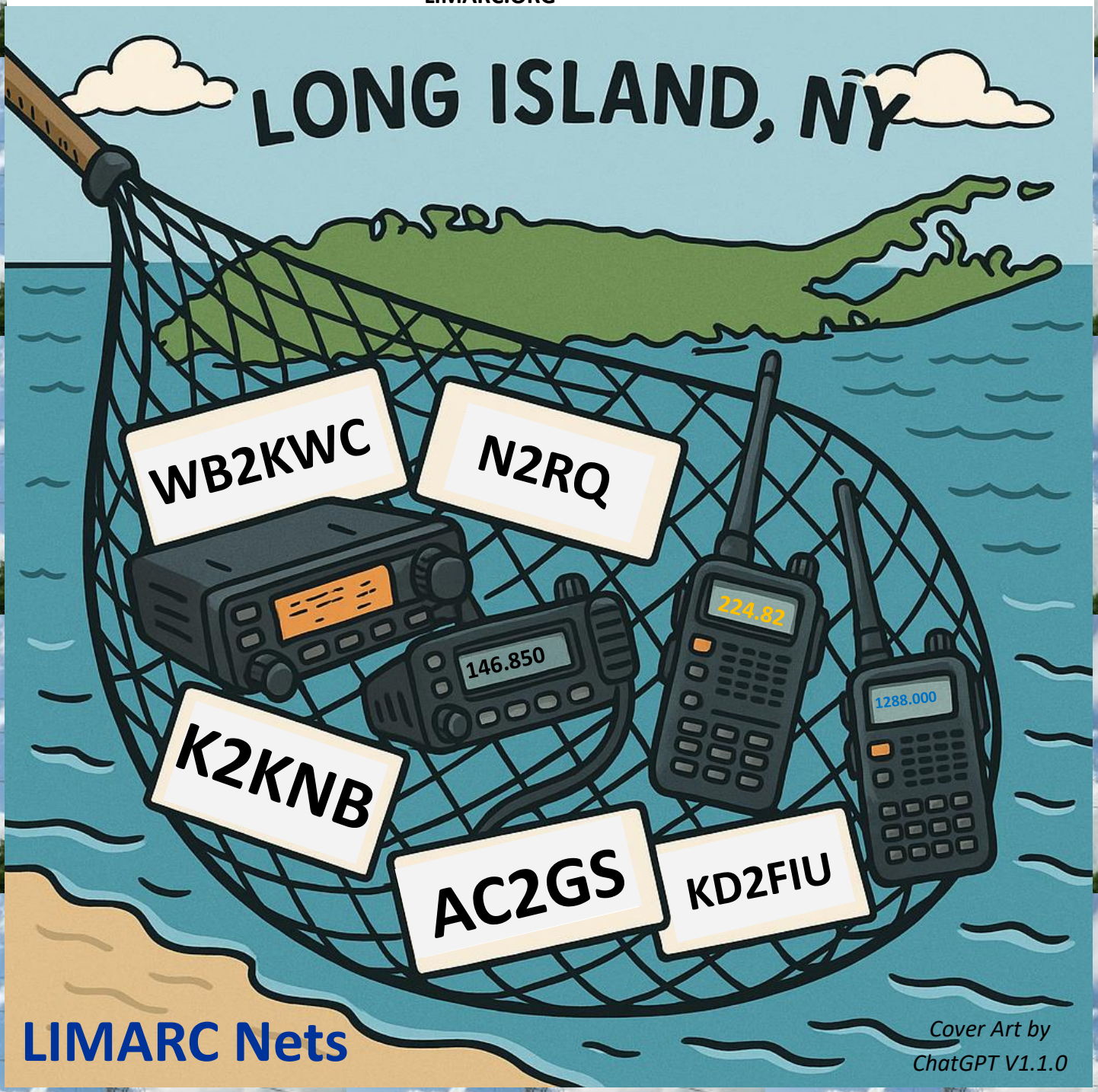
LONG ISLAND MOBILE AMATEUR RADIO CLUB, INC.
SERVING THE AMATEUR RADIO COMMUNITY SINCE 1965
LIMARC

We Are All About Ham Radio!

LIMARC.ORG



LIMARC Nets

Cover Art by ChatGPT V1.1.0

Greetings!

We have been putting much effort into encouraging the use of our repeaters. The nets that we hold regularly are a definite draw for many. The Tech Net and Info Net are the Granddaddy's of the club, seemingly around forever. The Swap -n-Shop Net has been around for a long time too and the Computer Net has done well with a consistent group of followers. The Trivia and Nostalgia Net meets several times a year and it is a fun net. Each of these nets fill a time slot and generally are well attended even if many users just listen.

Unfortunately, our repeaters have too much dead air time. This condition evolved slowly, but increased dramatically during the pandemic. Many reasons including retirements, geographic relocation, work from home, and competition from cell phones, etc., have all contributed to silencing the repeaters. A new breed of hams is also unfamiliar with just how important the repeaters can be.

President's Message (cont.)

To help promote the use of the repeaters we have added several new nets: Friday nights at 8:30 feature the 220 MHz Net followed at 9 PM by the 1.2 GHz Net.

We recently started a daily Morning Net beginning around 7:45 to encourage drive time exchange of traffic related information and group discussion. We would like to host even more nets and we invite you to give us some ideas as to what you might like and what would draw you to use the repeater.

Our future depends upon the continued use of our repeater system. We are building it and we encourage you to be using it.

73,

Richie, K2KNB

President

- (*ed note: See article on nets p26 and schedules on p35*)

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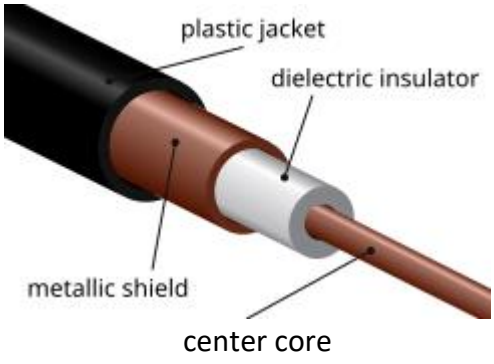
The characteristic impedance Z_0 of a coaxial cable is:

$$Z_0 = \sqrt{\frac{L}{C}} = \frac{138\ \Omega}{\sqrt{\epsilon_r}} \log_{10}\left(\frac{D}{d}\right)$$

The parameters L and C are determined from the ratio of the inner (d) and outer (D) diameters and the dielectric constant (ε).



LIMARC Board Meeting Minutes 2025-04-02

Officers present: President - Richie K2KNB, Vice President - George WB2IKT, Secretary - Ken WB2KWC, Treasurer - Jerry WB2ZEX
Directors present: Harry KC2FYJ, Ken KD2GXL, Martin W1EMR, Glenn WB2QDS, Peter KC2ZVT
Guests present: Larry W2LAG, Jim W2KFV, Steve WB2KDG, Sig KB2HHU, Gary W2MIT, Pat WB2CMF. Les K2TGW, George KD2FIU

The meeting started with the Pledge of Allegiance at 7:30 pm.

Richie K2KNB informed us that Jerry WB2ZEX is back in New York after spending a year in Florida for health reasons.

The board discussed the minutes of the last two board meetings. The board has not seen the February board minutes yet (Secretary Ken WB2KWC was out of town in February) so we could not vote on them. The board corrected the March minutes to show that Richie K2KNB reimbursed Gene from KJI Electronics for the radio stolen from them at our Hamfest and then the board approved reimbursing Richie the amount he gave Gene. The board approved the minutes as corrected.
Hamfest: Richie K2KNB said that we have approval to use the 999 Stewart Ave. Bethpage site for our Hamfest on June 8th (RAIN DATE July 27). We will need people to be at the Hamfest early to set up the site. The board discussed methods of holding up the plastic fencing to prevent unauthorized access. Because of the theft at the February Hamfest we will post a sign telling the vendors to be careful and properly supervise their merchandise. We also discussed mounting security cameras and posting a sign at the entrance advising attendees that we are recording video of the event. A crew will be needed to help clean up at the end of the Hamfest.
Field Day: Field Day is June 28-29, 2025. We will be making some changes to our operation this year. We will not be using towers or ladders to support beams; instead we will be using wire antennas and verticals mounted on poles or tripods. Because of networking problems with the N3FJP software we will be using N1MM Logger+ as our logging software this year. Ken WB2KWC has prepared a presentation on how to use N1MM.
Picnic: Jeff N2ION is applying for a permit to hold our picnic on August 3rd at Bethpage State Park.

LIMARC Board Meeting Minutes 2025-04-02 (cont.)

Vice President: We have made a commitment to the estate of Chester W2DPR to take down the antenna on their roof. The antenna is a TA-33 and rotor. We have ordered 150 tri-fold brochures about LIMARC and ham radio to distribute at Hamfests and public service events. George WB2IKT is doing a presentation at Stony Brook University about why engineering students need ham radio. The program at the April general membership meeting will be a presentation by Arnold Stillman of POEM Technology. He will be speaking about the use of IOT for monitoring home heating oil tanks. We are looking for a speaker for the May 2025 meeting; one possibility is additional information about our Field Day effort.

ARRL: Jim W2KFV said that Field Day 2025 gear is now available. The ARRL newsletters have been restarted. April 18 is International Amateur Radio Day. The Hudson Division Convention will be on July 13 at the Sussex Hamfair. An attempt is being made to rotate the Hudson Division Convention among the sections in the division.

Membership: We have 305 members.

ARES: Ken KD2GXL said that the next ARES meeting will be on April 10 at 7:30 pm at the American Red Cross building. Ken told us that ARES will be supporting the MS walk on May 17 and the American Diabetes Association Bike Ride on May 31.

Technical: Richie K2KNB said that occasionally our repeaters will have a short silence before they ID. Steve WB2WAK is working on an RF link failover between Selden and Glen Oaks as failover for the Internet link. Richie has offered the use of the Middle Island repeater to the Suffolk Amateur Radio Club for their nets. This means that it will be disconnected from the Allstar network during the nets,

Richie K2KNB commented that our repeaters are not used as much as they used to be. One possibility is a morning net to attract members as they are travelling to work. We are in need of some activity to attract new members to LIMARC. We are looking at an amateur radio class to present to the scouts and training classes to attract spouses of members.

LIMARC Board Meeting Minutes 2025-04-02 (cont.)

School Club Roundup: Ken WB2KWC said that we have over 80 SCR entries including 3 DX entries.

Good and Welfare: Harry KC2FYJ's wife is going in for cataract surgery. Jerry WB2ZEX has returned home after a year in Florida.

George WB2IKT said that we need to review the ads in the Log and check if the advertisers are still paying for their ads.

Larry W2LAG reminded us that April 18 is World Amateur Radio Day. Larry said that he was going to post some videos about the rigs that we use at Field Day. Larry is the LIMARC Public Information Officer and has created or updated LIMARC accounts on YouTube, Facebook and LinkedIn. Scroll to the bottom of the LIMARC home page to see links to these accounts.

The meeting adjourned at 9:40 pm.

Votes/Actions:

1 – The board corrected the March minutes to show that Richie K2KNB reimbursed Gene from KJI Electronics for the radio stolen from them at our Hamfest and then the board approved reimbursing Richie the amount he gave Gene. The board approved the minutes as corrected.

Respectfully submitted;
Ken Gunther WB2KWC
LIMARC Secretary

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Attention New York City Members of LIMARC

New York City ARES (Amateur Radio Emergency Service) is looking for additional members who live/work in NYC. Unlike RACES, you do not have to reside in NYC to be a member, you can also be a member of Nassau ARES. Please contact Martin Grillo W1EMR, (NYC District Emergency Coordinator) at: info@emrnyc.com NYC ARES is divided into 5 areas (one for each borough); currently only Brooklyn and Queens are active.

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LIMARC General Meeting Minutes 2025-04 –09

The meeting started at 7:30 pm with the Pledge of Allegiance.

President: Richie K2KNB asked how we can call ourselves a repeater club if people don't use our repeaters. We have 307 members and this is not enough to support our minimum expenses of about $16,000. Our Hamfests bring in approximately $8,000. We will try to make ourselves important to the local community as well as the ham radio community on Long Island. We have allowed the Suffolk County Radio Club to use one of our repeaters for their nets. We would like to find out if spouses/kids/friends of members would be interested in a basic electronics class possibly leading up to a technician class license. We are conducting merit badge classes. Field Day is coming up; it is an important event and a great way to meet your fellow LIMARC members.

Hamfest: Richie K2KNB said that we have received permission to use the 999 Stewart Avenue site for our June outdoor Hamfest.

Vice-President: George WB2IKT said that we are honored to have Arnold Stillman as tonight's speaker. Next month we will have a special Field Day presentation and in June we will have a Field Day extravaganza. In September we will be hearing about radio autoencoder. This is as large a step forward for voice communications as SSB was 60 years ago. This mode is as easy to set up as FT8. George gave a talk on why ham radio is still relevant in today's engineering education at the IEEE regions 1 and 2 conference held at Stony Brook University.

Richie thanked George WB2IKT for all the work he does on the Log and arranging for the programs we have at our meetings.

Membership: Larry W2LAG said that we have 307 members.

ARRL: Richie K2KNB reminded us that we have valuable frequencies. If we don't use our allocations we could lose them. This is the purpose of our Friday night nets on 220MHz and 1.2GHz. George WB2IKT commented that stock traders are proposing to reduce transaction latency by setting up systems using 20 kilowatt transmitters just outside our 20 meter band.

LIMARC General Meeting Minutes 2025-04-09 (cont.)

ARES: Ken KD2GXL told us that the next ARES meeting is on April 10th at the Red Cross building. The topic will be alternative communications using Echolink and IRLP. Orders will be taken for ARES apparel. Upcoming events are the MS Walk on May 31 and the American Diabetes Association bike ride (this is a new event). (*ed. note: refer to ARES article on p9*)

Technical: Charlie KE2AWX will be taking over the role as Technical Committee Chairman.

School Club Roundup: Ken WB2KWC and Lew N2RQ said that we had 83 entries in the February 2025 SCR. This is down from previous Februaries when we had between 90 and 100 entries. One good thing is that we had 3 entries from outside the United States which is more than we have ever had.

Richie K2KNB told us that in order to increase repeater usage, beginning Monday April 14 we will be starting a morning net at 8:15 am on W2VL. Hopefully this net will attract people on their way to work.

The business portion of the meeting ended at 7:50 pm and we heard Arnie Stillman speak about his use of IOT in measuring heating oil level in fuel tanks.

Respectfully submitted;

Ken Gunther WB2KWC

LIMARC Secretary

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What Sir Isaac Newton REALLY Said:

Lex II

"Mutationem motus proportionalem esse vi motrici impressae, et fieri secundum lineam rectam qua vis illa imprimitur."

$$\vec{F} = m \cdot \frac{d\vec{V}}{dt}$$

-"Principia Mathematica Philosophiae Naturalis." - 1686

Current Happenings in Nassau County ARES

Nassau County A.R.E.S. normally meets on the second and fourth Thursdays of the month. All are welcome to attend!

As we turn the calendar to May we are concluding our training season and starting to gear up for the first two events:

1. First up is the M.S. Walk at Jones Beach on Saturday May 16th. Nassau County ARES members will be spaced along the Boardwalk providing radio support and being there for participants that may need assistance. Our operators will relay the information to our Command Post, where our net controls will have the appropriate resources respond, whether EMS for an injury, reuniting separated family members, or a ride for a participant who is unable to complete the walk.
2. The Second Event is new for us, the American Diabetes Association's Ride for the Cure Bike Ride on Saturday May 31st traversing north shore Nassau communities. We will provide operators at designated rest stops, in Support and Gear (SAG) Vehicles, and at the Command Post. Our Net Control Operators will be able to track the SAG Vehicles using APRS to dispatch the nearest vehicle to a cyclist in need.

Both events are early starts and usually have been completed by 1pm.

Our next meeting will be Thursday, May 8th, 7:30pm at the American Red Cross Building located at 195 Willis Ave in Mineola (2nd Floor Conference room). Parking and entrance in rear. If you would like to join us or help with the events, please contact me at kd2gxl@ncaresmail.net.

(continued next page)

Nassau County ARES (cont.)

To join us requires very little, an FCC license, a radio and a desire to help and learn. Part of being a licensed radio operator is for public service; every time we support one of these events we practice our radio skills. This prepares us so when an emergency does arrive (i.e. when traditional methods of communication are inoperable, such as during weather-related storms, or other disasters), we can smoothly respond to it.

For further information use the email on the previous page or go to our webpage: www.nassaucountyares.org

Ken Kobetitsch
KD2GXL
District Emergency Coordinator
Nassau County, NY

2023 ARES Group Photo

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HOME BREW TRANSISTOR CURVE TRACER

By Steve Campolo, KA2YHY

Most Hams now-a-days have no need for a curve tracer unless you are into home brewing and perhaps repair audio equipment. In the kinder, gentler times when Hi-Fi (remember Hi-Fidelity) audio gear was all the rage and “component” stereo systems were mandatory, repairing expensive equipment was common. Remember, those were the days before the $10 HT and we became a disposable society. If you had something good, you had it repaired or attempted it yourself, like all hams of that era.

Early audio and RF transmitters transitioned to solid state in the 1960’s from older vacuum tube technology. With the “transistor finals” often overdriven these unprotected specks of silicon vaporized with a whiff of smoke and that all too familiar burnt transistor odor. Drat! Off to the repair shop. Remember those? Usually a radio/TV repair shop was nearby but now-a-days nonexistent.

For the brave of heart or just died-in-the-wool ham tinkerers, you dove in! Fully expecting that you blew the finals; yeah, you knew you had the volume up way too loud (a subject for another day) or was a transmitting with a high Standing Wave Ratio (SWR). Perhaps the equipment came with a schematic or you purchased a “Sams”. Remember Sam Photo Facts? They had schematics for just about everything, but you had to call or look it up in a catalog-no internet then.

So, you find the finals, and if lucky one looked burned, or had the familiar odor. If you weren’t lucky, you used a ANALOG VOM or VTVM multi-meter and trouble shot transistors until you found one with an open or short or just different resistance values from the others. So, next the adventure of going to Lafayette, Radio Shack (good luck), Electronic City, or some other place to find a replacement transistor. If you went to Electronic City, the knowledgeable parts clerk would ask “do you want a matched pair?”. You didn’t need any matched pair; you only needed the replacement for the burned out one. The clerk shrugged his shoulders, sold you one transistor and off you went. If you were a real audiophile, you would have taken the matched pair. This type of curve tracer is what the manufacturers or distributers would have used to “match” the transistors.

Why?

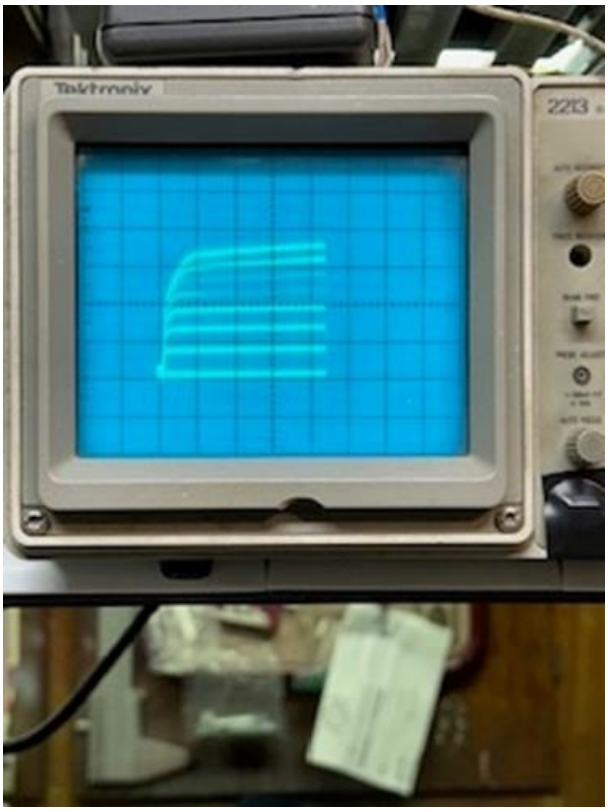
Transistors have what is called gain, or more specifically, current gain. Generally, an input signal goes into the base and is amplified at the emitter. The ratio of input current to output current is called gain. Sometimes it's called Beta β or hfe. If the particular configuration of your amplifier used two transistors (the subject for another day) and worked in conjunction with each other, the gains needed to be matched. Perhaps you remember vacuum tube finals being sold in matched sets. Power transistors were often sold in a similar fashion. Remember the clerk who shrugged his shoulders?

To match transistors, an expensive curve tracer is needed. I always wanted one, but they were really high priced, and still are. However, the world market came to the rescue along with eBay. I found a kit or assembled PCB on eBay from a vendor in Thailand. I bought it and created this curve tracer.

OVERALL CURVE TRACER

The right hand PCB is the curve tracer, the other is the optional power supply. I supplied the transformer.

The PCB's came fully assembled. I did need a transformer. You use an oscilloscope to visualize the transistors gain, The scope is used in the X-Y mode.



OUTPUT GAIN

The curve tracer injects 8 different currents into the base and displays the collector current vs voltage simultaneously on the scope in X-Y mode.

The output traces are called a “family” of curves. Note that the two faint lines are due to the scanning raster of the scope and were bright on the screen, an artifact of the camera shutter speed. The vertical scale is 1 ma per division and the horizontal scale is 2V per division. Each of the traces represents one of 8 different base currents. In the above photo the base currents are 0uA, 24uA, 48uA, 72uA, 96uA, 120uA, 144uA and 168uA. A higher current range for power transistors is used that goes up to 2.24mA of base current. So, how to determine the gain? If we look at the highest current curve which is with a base current of 168uA, we can read the output current at about 3.5mA. So, the ratio of output to input is 3.5mA/168uA which is a gain of about 21. However, that’s the simple analysis.

To “match” transistors one looks for a family of curves that are nearly the same. To make this easier, I installed an A/B switch to rapidly switch back and forth between two candidate transistors to see how close they are. This is what the factory does when they “match” transistors, and charge about four times the price. With discrete transistors now very cheap, one could buy a large quantity and match them up when needed.

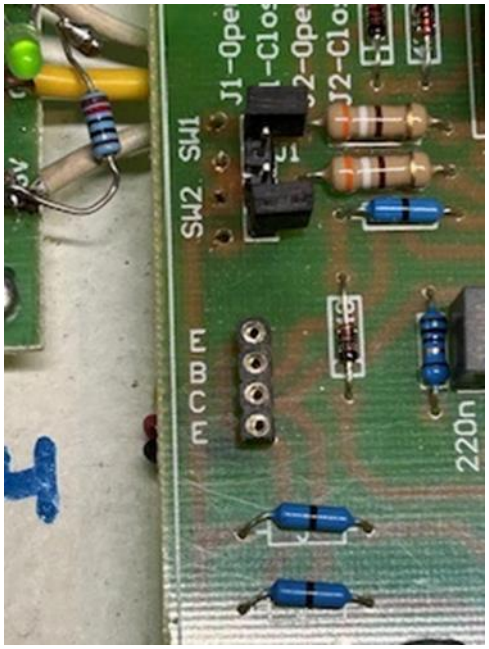
Next, a description of my mods:

BNC CONNECTORS

While the PCB had little stubs to attach the scope leads, I added BNC connectors.

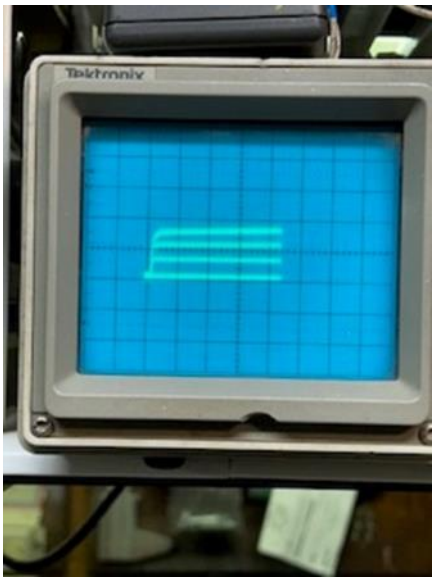
POWER LIGHT

A simple LED and resistor to let me know it is on. Installed on the DC output of the power supply board.



BASE CURRENT AND TRANSISTOR TYPE

This close-up of the main PCB shows how one selects between hi and lo base current, PNP or NPN device and where you plug in the transistor. The EBC are the Emitter, Base Collector terminals of the transistor. I took these connections and placed them on the breadboard.



4 Trace Display

When looking at the first photo you can see the zero-insertion force component holder I installed with the A-B switch so I can rapidly switch between transistors. You can also see the PNP/NPN switch and the Hi/Lo power range switch. If you look closely, you will see another switch labeled 8/4. This is a hidden “Easter Egg” on the PCB. Someone discovered that by cutting one of the traces on the PCB and installing a simple switch, you can switch between 4 and 8 traces. This is helpful in making it easier to read. Viva la Internet!

The PCB’s are available on eBay from Thaikits. Use the following URL:

https://www.ebay.com/sch/i.html?_nkw=thai+curve+tracer&_sacat=0&_from=R40&_trksid=p4432023.m570.l1313

So that’s the curve tracer. Plenty more can be said about using them. If anyone is interested in additional details, you can catch me on the repeaters or email me at KA2YHY@Limarc.org.
73, Steve, KA2YHY

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Join LIMARC Groups.io

This Groups.io Group, known as the "LIMARC Reflector" is open to LIMARC members in good standing. The LIMARC Reflector is used to post club notices, activities, and allow LIMARC members to share articles or postings, and their ideas about amateur radio and club-related materials amongst each other.

Go to https://groups.io/register Then complete the Email address and Password fields, then click or tap the *Create An Account* button. Search for LIMARC and join. The moderator will notify you within 48 hours about your acceptance to the group.

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Long Island's Highest Hills by County

- by George Sullivan, WB2IKT

For this article we take a geographic peek (peak?) at Long Island's hills including Brooklyn and Queens. Lets look at them in height order and then relate that to VHF/UHF radio wave propagation. The description includes latitude and longitude information for each site.

Jayne's Hill is in South Huntington, West Hills County Park, Suffolk County is considered to be the highest natural point on Long Island with a height above mean sea level (AMSL) of 400.9'. It may be reached by a short walk from Reservoir Road, just west of Rt. 110 opposite the Walt Whitman Mall. 40° 48' 54"N, 73° 25' 30"W (*pics on next page*)

Harbor Hill in East Hills (Roslyn), at 348 feet AMSL is the highest natural point in Nassau County. The summit is slightly north and west of the intersection of Ash Drive and Lufberry Drive. 40° 47' 57"N, 73° 38' 22"W

Glen Oaks has the highest natural point in Queens. This prominence has no formal name for the hill, but it is 258.2 feet above mean sea level. The North Shore Towers complex (where W2VL is found) is built on this high point. 40° 45' 27'' N, 73° 43' 9'' W

Battle Hill is the highest natural point in Brooklyn with an elevation of 216 feet above mean sea level. It is located in Green-Wood Cemetery; the 1869 Civil War Soldiers Monument is nearby. 40.6568709° N, 73.989786° W


Battle Hill

Why Does This Matter to Ham Radio Operators?

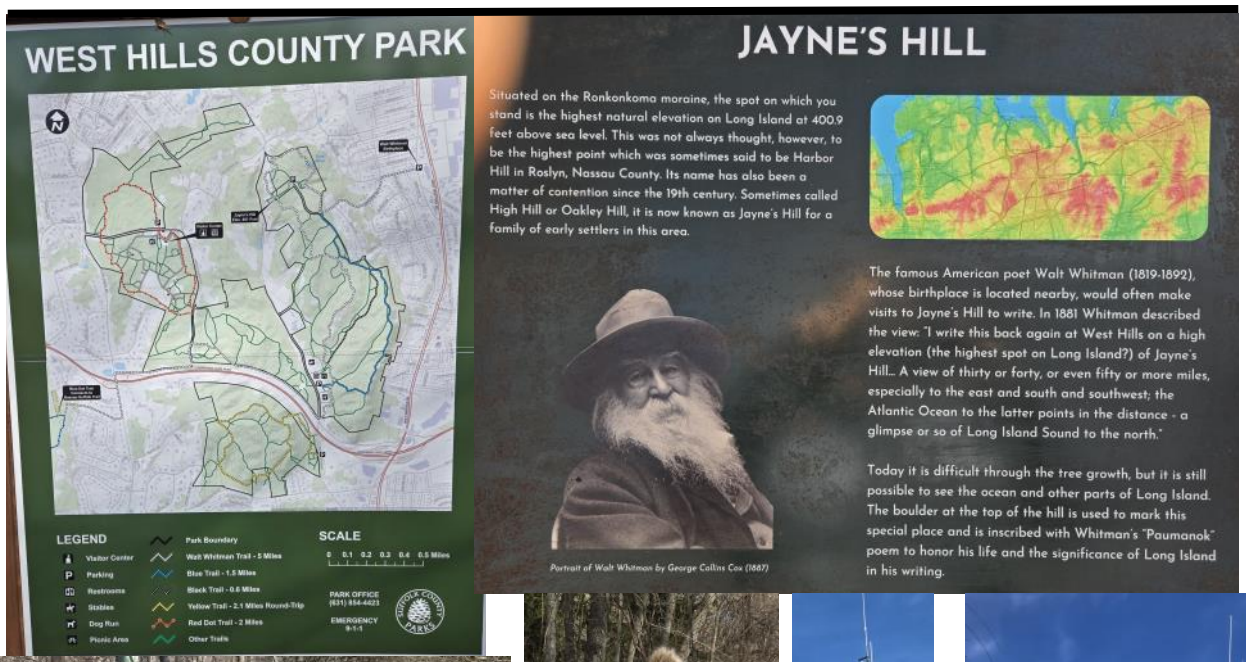
VHF/UHF (50 to 999 MHz) signal propagation depends upon having a line-of-sight path free of obstructions between the transmitting and receiving antennas. Naturally high points provide the highest sites for the antennas thus increasing the coverage area.

For propagation studies we commonly use two methods for determining the altitude (height) of a radio antenna system. The 1st uses a metric called AMSL or height Above Mean Sea Level. This provides the height of the land at a point on a map measured against the average sea level thus eliminating tidal effects. The height of the antenna's radiation center is added to the ground elevation and becomes the starting point for propagation coverage analysis for line-of-sight VHF/UHF signals.

Long Island's Highest Hills (cont.)

The second method, HAAT (Height Above Average Terrain) involves a series of measurements determined by taking 50 evenly spaced elevation points (with the elevations above or below mean sea level [AMSL]) along at least 8 up to 360 evenly spaced radials from the antenna site starting at 0 degrees True North. The 50 evenly spaced points are sampled in the segment between 3 to 16 km along each radial. The elevation points along each radial are averaged, then the several radial averages are averaged to provide the final HAAT value. This method provides a better estimate of the stations coverage area because it accounts for the average altitude of the ground level, which is almost always greater than the sea level. This URL links to the free FCC HAAT calculator program and includes a detailed explanation of why it is used to calculate service contours.

https://www.fcc.gov/media/radio/haat-calculator



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Stony Brook University 2025 IEEE Student Conference

Ham Radio Presentation by LIMARC VP WB2IKT

The IEEE Student Activities Conference (SAC), is an annual event organized by the IEEE Regions 1 and 2. It provided students with hands-on workshops, compete in various technical and professional competitions, and network with fellow students, industry professionals, and IEEE leaders. SAC fosters innovation, collaboration, and professional growth, helping students develop essential skills for their future careers in engineering and technology.

Amateur Radio Workshop *The presentation may be found online at*: limarc.org/ieee

Amateur (Ham) Radio is a valuable tool for technical students as it puts theory to practice. It is practiced globally, and provides a vital communication service. George Sullivan WB2IKT, the Vice-President of the Long Island Mobile Amateur Radio Club (LIMARC), presented the scope and purpose of amateur radio, tendered his brief bio, explored recent advancements in analog and digital communications, and discussed local amateur radio activities.

54 out of over 300 registered students attended this talk; 9 student attendees hold amateur radio licenses. The attendees represented Stony Brook as well as 39 other universities spanning 14 states across the northeast and the mid-Atlantic regions.

Event organizer Spencer Wu KE2EBK coordinated the logistics of this workshop. George distributed LIMARC trifolds to each person at this session as well as the event registration desk and the luncheon site.

Special thanks to LIMARC members Maury WB2MSB for attending and providing this photo, and to Larry W2LAG for providing a link for the students to get copies of the presentation.

George Sullivan, WB2IKT

The Availability of 1.2 GHz Equipment Today

- by Joe Wi2M

The 1.2GHz band is part of the UHF spectrum but it borders the microwave bands but don't worry, you won't need a passport to operate on the band, just a Technician class license and above. The band covers from 1240 to 1300 MHz.

It is also known as the 23cm band or the 1.2 GHz band. Most of us think there are no commercial radios available for this band; in this article I will try and show you that this is far from the case. Keep in mind what you will see in this article is just a sample, so let's take a look and see what's available, both new and used.

Most of us know something about the first radio in the review and it's the Quansheng UVK5. "Wait, what?" like some younger hams might say; they also might say "isn't the UVK5 a 2 meter and 70 CM HT?"

And yes they would be correct, but available on the web the UVK5 has free experimental firmware updates made by fellow hams. Some of these allow the UVK5 to Rx and Tx up to 1300 MHz including the 23 CM band, and up to 15 MHz in the HF spectrum. But buyer beware (even if it's free) some of these firmware updates only allow the HT on the 1.2 GHz band to transmit with a few miliwatts and the Rx is quite poor. But for around $20-$30 for the radio it is a good choice for experimentation. Future firmware or a chip that improves the Rx filters on the UHF band may appear soon.

Now I own the UVK5, I have the IJV firmware installed, and I have conducted some non–scientific tests while having the repeater in sight. I was barely able to bring up the repeater using a small 1.2 GHz antenna. I could hardly hear the repeater respond, so this one still requires some improvements for it to be usable on the 1.2 GHz band.

The Availability of 1.2 GHz Equipment Today (cont.)

Next up is a transceiver that needs no introduction, its the Icom IC-9700. Its a new, still in production, high end radio coming from Japan. The MSRP at the time I wrote this article is around $1750 (US). It's a 100 watt base station that covers 144, 430, 440, and 1200 MHz bands and is all mode including D-Star. It has a 4.3" touch screen and is based on the IC-7300 HF transceiver with which it pairs well. Both make a complete HF/VHF/UHF station for sure and can operate using the satellites.

It has all the features a serious operator would love, but it comes with a hefty price tag. And for the purposes of this article, on the 1.2 GHz band it has a max power output of 10 watts, and remember this is an all mode radio. So a very good choice.

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Next up is our first transceiver not in production but still available used; it's the Kenwood TM-541A. It is a mobile radio that has an output power of 10 watts high and 1 watt low which is typical of most, if not all radios for this band. This radio is strictly FM only, but comes with all the features to get on the repeater or for simplex communications.

I have seen these go from $250 to $550 (US). These are solid radios and get good reviews online, but keep in mind that they were discontinued in the late 1990s, so be sure to get them checked out.

The Availability of 1.2 GHz Equipment Today (cont.)

Next up is another used ICOM, and it's the IC-1201A. An older unit from the late 1980s and discontinued in the 1990s. The 1201 is an FM mobile radio with the typical 1 watt low and 10 watts high. I have seen several versions from the 1201 to the 1201A and the 1201C, so check the specs as some are from Japan, and some have a tone board and some do not.

I own this radio and use it to get on the repeater and on simplex. Prices are climbing, and I have seen them from $250 to $300 (US) depending on the condition and version. So do your research.

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Next up is another used Icom, this one is an HT. It's the Icom IC-T81a. I also own this radio and have used it for many years; actually it was the first radio I purchased when I received my Technician Class license. It is still in service so I can attest to its high quality.

The radio is a quad band FM and covers 50, 144, 440, and 1200 MHz.

For the purpose of this article, we will focus on the 23cm band as it's strictly FM, and it will get you on the repeater.

Power output on High is 1 watt and low is around 300 mw; I have been able to get into the repeater depending upon my location. It was the only equipment I owned for the band for many years until I purchased the Icom IC 1201.

Prices on the used market are around $250 (US) but buyer beware as these radios were discontinued in early 2003 so be sure to check their condition and from what part of the world it came from as band plans do differ on VHF/UHF depending on the region.

The Availability of 1.2 GHz Equipment Today (cont.)

I have saved for last what is considered the latest addition to the 1.2 GHz list of equipment.

The Linton LT-9100 is a Chinese radio. At the time I wrote this article this radio is only available on sites like AliExpress and is not currently available from any US distributors but hopefully that will change. The current price is around $83 (US).

What makes this radio interesting is that they claim it will operate from 18 to 630 MHz and 840 to 1300 MHz.

It offers short wave reception, FM broadcast band, and aviation band for good listening. Some accounts say it comes in a metal case similar to the ATS line of short wave radios. It has a black LCD screen, a 2000 mAH battery, and it will transmit up to 7 watts. I am unsure at what power output it will transmit on the 1.2 GHz band. It offers USB type C charging and claims to support “wireless Copy Frequency”. This radio has plenty of promise but remains to be seen if it will materialize as a solid performer, especially for the 1.2 GHz band.

So you have done your research, purchased a radio that will operate on the 1.2 GHz band and you’re ready to go, now what? Its time to get on the air! Check your local area for repeaters that are on the air and see if you can access them!

In the New York City/Long Island area LIMARC operates a repeater at Glen Oaks on 1288 MHz with a 12 MHz negative split (1276 MHz) with a 136.5 tone. LIMARC has a net on Friday nights at 9pm local time, myself and Richie K2KNB are NCS, so join us, test out your equipment, and get on the air. It is a terrific repeater with an amazing footprint for the 1.2 GHz band and has battery back up in case of an emergency.

So hope to hear you on the net as it’s open to all licensed hams, technician class or higher and you do not need to be member of the club to join the net. If there are no repeaters in your area, try and schedule a simplex QSO with a friend. You will be surprised how fast two hams turn into a group if you’re motivated. That’s all for now, and if there is any interest I can do something for the 900 MHz band so reach out to me.

—73, Joe Wi2M

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Reminder: LIMARC is a 501(c)(3) non-profit corporation. As such, all monetary donations are tax deductible, and equipment donations are deductible either to the amount that the club might sell the item for, or the fair market value. As we try to provide assistance to schools wishing to set up amateur radio programs, please consider us for your donations.

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If You Hear Something, Tell Someone

Those of you who use the repeaters on a regular basis are all too aware of the fact that there are certain individuals who have nothing better to do with their time than to interfere with people on the repeater. An organized effort is underway to locate and identify these individuals.

YOU CAN HELP: If you hear malicious interference on any of the LIMARC repeaters, please hit the reverse (HM/RV) button on your radio and see if you are able to hear them on the input. Do not acknowledge the interference on the air. Please email your findings to rfi@LIMARC.ORG. Indicate if you heard them on the input. Include date, time, the repeater, your location and type of antenna; include the heading if you have a beam.

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Link to the ARRL NYC/LI Section Website

One can find recent happenings at the ARRL's NYC/LI section website: http://nli.arrl.org/

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From Lou NY2H

LIMARC has a YouTube channel. In order to subscribe, you can follow the link, or use the QR code on the right.

https://tinyurl.com/LIMARCYouTube

****

ARRLVEC volunteer examiner coordinator®

ARRL VEC, 225 Main Street, Newington, CT 06111
Phone: 1-860-594-0300 web: arrl.org/volunteer-examiners

Follow these three steps to become an ARRL Volunteer Examiner:

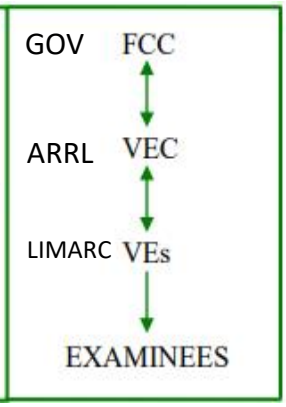
1. Review the Volunteer Examiner Manual paying special attention to Chapter 2: Becoming a Volunteer Examiner. Read the information that extends and supports the published manual. http://www.arrl.org/files/file/VEs/VE%20Manual%20Web%20Final%202022.pdf

2. Complete and sign the Volunteer Application form and the open book review. (40 question review). http://www.arrl.org/files/file/VEs/ARRL%20VEC%20VE%20pkg%202022%20interactive.pdf

3. Please fax, mail or email forms (Adobe PDF file or scanned JPEG image showing your real signature) to this address:
   ARRL VEC , 225 Main Street, Newington Ct. 06111 Email: vec@arrl.org

AMATEUR RADIO ARRL VEC VOLUNTEER EXAMINER

The VEC serves as the interface between the FCC and the VEs, who administer the exams to the candidates. VEs serve under the umbrella of the VEC, while the VEC supports the VEs and provides data to the FCC for issuance of licenses and resolution of regulatory issues.



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LIMARC History

-- compiled by George Sullivan, WB2IKT

50 Years Ago—From the May 1975 Log

Ed Pores lectured on audio filters as applied to 2 meter FM rigs. LIMARC associated with the Nassau County Police Department Community Radio Watch Program to encourage prompt reporting of emergency conditions encountered by members during routine operations. A "five step dB attenuator for RF" construction article by K2PMA used low cost parts.

40 Years Ago—From the May 1985 Log

LIMARC announced it had 494 licensed paid-up members. Members: 19% held Extra, 26% Advanced, 22% General, 31% Tech, and 2% Novice. WB2WAK supplied a detailed article on the repeater controller timer schedule.

30 Years Ago—From the May 1995 Log

Presentation by W2OQI on building and using simple wire antennas. KB2SYQ wrote an article called: "An Anatomy of Home Video Editing" using a camcorder equipped with a "flying erase head" to accurately control the edits.

20 Years Ago—From the May 2005 Log

Meeting topic by N2FF was: "What's Happening in Ham Radio Today and Tomorrow". LIMARC continued its quest for a place to store Field Day and other club apparatus. A 40th Anniversary Award contest was announced for working 40 LIMARC members.

10 Years Ago—From the May 2015 Log

Meeting featured KD2AKX demonstrating how to crimp coaxial connectors, followed by K2KNB discussing connectors and their Uses. President W2BMP announced a proposal to buy and install a DMR repeater. AC2GS provided a technical article discussing decibels (dB) and how to use them in ham radio applications.

****

1N73LL1G3NC3 15 7H3 4B1L17Y 70 4D4P7 70 CH4NG3
-573PH3N H4WK1NG

Heard on a LIMARC Net

The LIMARC Tech Net

Meets every Sunday at 8PM on the 146.85 repeater. AC2GS is net control.

All technology may be covered in discussions on this amazing net.

The Computer Net

Meets monthly on the 3rd and 4th Wednesdays at 8:30 PM. WB2KWC is net control.

2025-03-26 6 check-ins. Topics: WiFi Security, Router configuration

2025-04-16 8 check-ins. We ran for about an hour with many who checked in participating. Topics: Stopping OneDrive from syncing folders to the cloud, obtaining drivers for Windows systems, Windows 10 end of support, DigiRig for Retvis radios, what to do about no integral CD/DVD drive on recent computers.

2025-04-23 12 check-ins. Topics: WB2ZEX computer not recognizing its drives. W2MIT talked about a computer that controls a smart TV, the screen saver blanked the screen too quick-ly. WB2KWC talked about a utility from Microsoft for Windows 10 and 11 called PC Manager. The discussion was lively and the net closed at 9:45 pm.

220 and 1.2 GHz Friday Night Nets

Join us in checking out your 220 and 1.2 GHz equipment along with ad-hoc discussions.

8:30PM 224.82 MHz Pl. 136.5—Glen Oaks Input is 223.22 MHz K2TGW is net control

9:00 PM 1.2880 GHz Pl. 136.5—Glen Oaks Input is 1.276 GHz Wi2M is net control

Daily Morning Drive Time Net

Begins at 7:45 AM The participants discuss traffic, weather, and topical issues during their commutes as well as those who want to chime in with something to say.

LIMARC Infonet

Meets every Monday evening at 8:30PM on 146.85 MHz. Rotating net control assignments

Features topical and timely LIMARC information including event updates.

****

LEO Position, Navigation, and Timing https://leosats.ieee.org/workshops/leo-position-navigation-timing

Free IEEE LEO Sats Workshop: LEO Position, Navigating, & Timing (PNT)
Monday 5 May 2025 at 9 AM – 12:10 PM EDT

Low Earth Orbit (LEO) satellite constellations are revolutionizing global connectivity, but their potential extends far beyond communications. This workshop delves into the cutting-edge advancements in LEO-based positioning, Navigation, and Timing (PNT), exploring novel techniques, system architectures, and real-world applications. Join us to gain valuable insights into the future of satellite-based navigation in the LEO era.

Copy this URL to Register: https://bit.ly/422Igt3 *(note: zoom meeting)*

Featuring leading experts, we will discuss the challenges and opportunities of leveraging LEO constellations for precise and resilient PNT, covering topics such as signal design, orbit determination, multi-constellation integration, and security. Overall, this workshop promises to be an enriching experience, providing valuable knowledge and practical skills in LEO satellite technology.

IEEE LEO SatS

Workshop Highlights:

- Navigation in the 21st Century
- ESA's LEO-PNT In Orbit Demonstration Mission and the Future
- Precise Orbit Determination: A Requirement for LEO-PNT Systems
- State Estimation in Navigation
- A Look at the Stars: LEO PNT with Uncooperative Satellites
- Doppler Shift Based Opportunistic LEO-PNT With Starlink Signals

IEEE

Enter the 2025 IEEE Connecting the Unconnected Challenge!

Help contribute to worldwide Internet digital inclusion by submitting a novel, early-stage project or concept that offers a unique way to increase Internet access and usage for the 2.9 billion unconnected people around the world.

Key Date: Submit your 500 word abstract by 16 May 2025!

Internet access is critical to education, industry, and healthy living. Unconnected populations lack access to buy and sell goods and services online. Unconnected students lack access to the flourishing remote education market. The IEEE Connecting the Unconnected Challenge seeks to further connectivity by calling for early-stage projects and concepts that pursue unique ways to increase broadband access and usage for unconnected or under-connected populations/geographies.

Help us find innovative solutions to connect the unconnected.

Start-ups, grassroots organizations, non-profits, universities, and others working toward digital inclusion in original ways are encouraged to participate. IEEE recognizes that the Digital Divide is not merely a technical problem. For this reason, the Connecting the Unconnected Challenge will reward submissions across three different categories:

1. Technology Applications (TA) – Innovative use of technology to increase/improve Internet access or otherwise enable connectivity.
2. Business Models (BM) – Innovative approaches to a business model that result in increased affordability and/or usage of Internet access.
3. Community Enablement (CE) – Innovative programs that increase the likelihood that populations or groups choose to start using the Internet where previously they did not. (In this category, supply and affordability may not be a problem, but many people still don't or won't use the internet.)

Read the competition rules and learn about how to enter your proposed projects at the CTU website: https://ctu.ieee.org/

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Email us at: RFQ2824@schecklabs.com

Phone: 631-343-5392

Please Note: John sells surplus LIMARC Equipment.

Contact: John, KD2HVS 631-343-5392

100 East Jefryn Blvd Deer Park NY

DOOR PRIZE DONATORS

This is a list of individuals, organizations and companies that contributed to our virtual Ham-fests. Please consider making future purchases from them as a thank you for their generosity and loyalty to our club. Be sure to let them know that you saw their ad in the LIMARC LOG.

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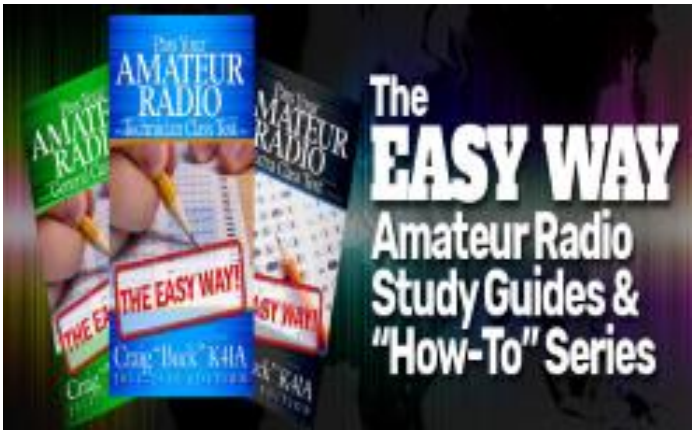

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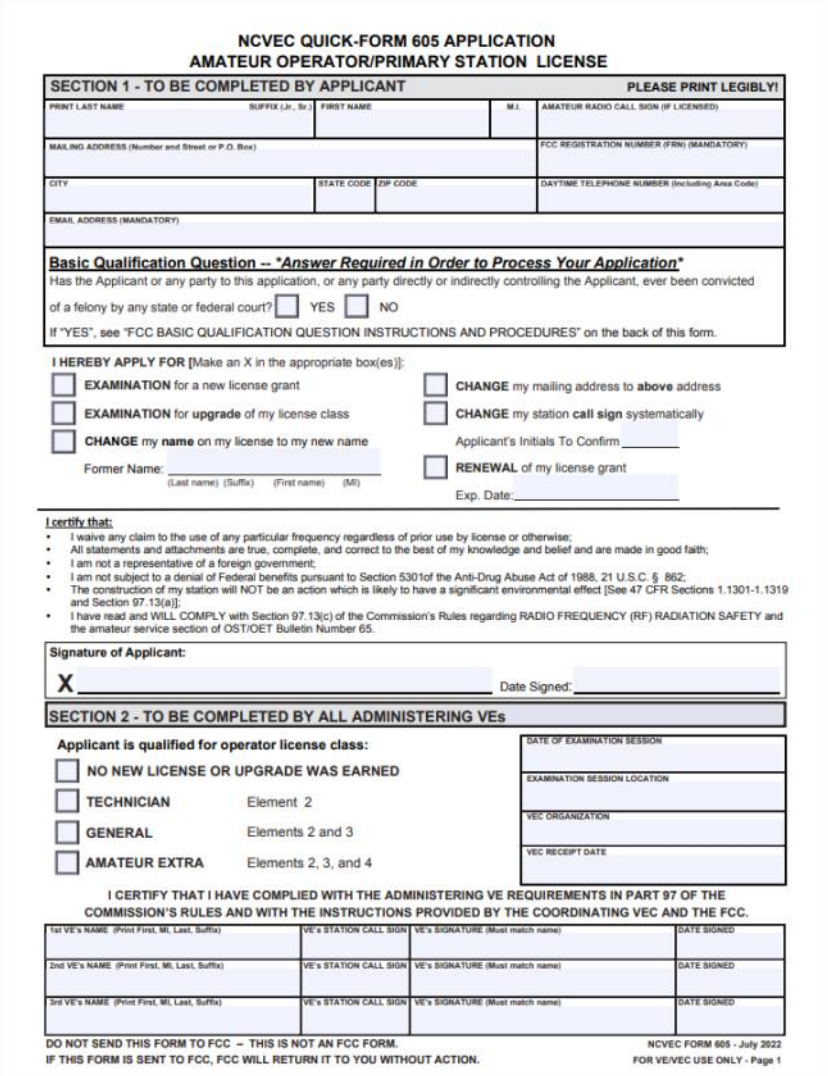
Testing Schedule for 2025

LIMARC VE Test Sessions are held on the second Saturday of every odd numbered month at Levittown Hall, 201 Levittown Parkway, Hicksville, NY. Please remember to bring **two** pieces of identification (one with a photo), your ***original*** ham license ***and*** a copy of it, any ***original*** **Certificates of Successful Completion of Examination (CSCE's)** *and* copies of them.

Also remember to bring the proper fee in check made out to ARRL VEC or exact change (NOTE: the 2024 ***exam fee*** *remains at* ***$15.00)****.* The LIMARC VE Team will supply the FCC Form 605. The F.C.C. **$35 license fee** applies to all renewals, new applications, and vanity callsign requests, but not license upgrades.

Contact Al W2QZ at (516) 623-6449, or Jim W2KFV at (516) 315-8608 for information.

VE Sessions will be held at Levittown Hall. All Saturday VE Sessions start at 8 AM.



NCVEC QUICK-FORM 605 APPLICATION
AMATEUR OPERATOR/PRIMARY STATION LICENSE

SECTION 1 - TO BE COMPLETED BY APPLICANT — PLEASE PRINT LEGIBLY!

PRINT LAST NAME | SUFFIX (Jr., Sr.) | FIRST NAME | M.I. | AMATEUR RADIO CALL SIGN (IF LICENSED)

MAILING ADDRESS (Number and Street or P.O. Box) | FCC REGISTRATION NUMBER (FRN) (MANDATORY)

CITY | STATE CODE | ZIP CODE | DAYTIME TELEPHONE NUMBER (Including Area Code)

EMAIL ADDRESS (MANDATORY)

Basic Qualification Question -- **Answer Required in Order to Process Your Application**

Has the Applicant or any party to this application, or any party directly or indirectly controlling the Applicant, ever been convicted of a felony by any state or federal court? ☐ YES ☐ NO

If "YES", see "FCC BASIC QUALIFICATION QUESTION INSTRUCTIONS AND PROCEDURES" on the back of this form.

I HEREBY APPLY FOR [Make an X in the appropriate box(es)]:

- ☐ **EXAMINATION** for a new license grant
- ☐ **EXAMINATION** for **upgrade** of my license class
- ☐ **CHANGE** my **name** on my license to my new name — Former Name: (Last name) (Suffix) (First name) (MI)
- ☐ **CHANGE** my mailing address to **above** address
- ☐ **CHANGE** my station **call sign** systematically — Applicant's Initials To Confirm _____
- ☐ **RENEWAL** of my license grant — Exp. Date: _____

I certify that:

- I waive any claim to the use of any particular frequency regardless of prior use by license or otherwise;
- All statements and attachments are true, complete, and correct to the best of my knowledge and belief and are made in good faith;
- I am not a representative of a foreign government;
- I am not subject to a denial of Federal benefits pursuant to Section 5301of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862;
- The construction of my station will NOT be an action which is likely to have a significant environmental effect [See 47 CFR Sections 1.1301-1.1319 and Section 97.13(a)];
- I have read and WILL COMPLY with Section 97.13(c) of the Commission's Rules regarding RADIO FREQUENCY (RF) RADIATION SAFETY and the amateur service section of OST/OET Bulletin Number 65.

Signature of Applicant:

X _____ Date Signed: _____

SECTION 2 - TO BE COMPLETED BY ALL ADMINISTERING VEs

Applicant is qualified for operator license class:

- ☐ NO NEW LICENSE OR UPGRADE WAS EARNED
- ☐ TECHNICIAN — Element 2
- ☐ GENERAL — Elements 2 and 3
- ☐ AMATEUR EXTRA — Elements 2, 3, and 4

DATE OF EXAMINATION SESSION | EXAMINATION SESSION LOCATION | VEC ORGANIZATION | VEC RECEIPT DATE

I CERTIFY THAT I HAVE COMPLIED WITH THE ADMINISTERING VE REQUIREMENTS IN PART 97 OF THE COMMISSION'S RULES AND WITH THE INSTRUCTIONS PROVIDED BY THE COORDINATING VEC AND THE FCC.

1st VE's NAME (Print First, MI, Last, Suffix)	VE's STATION CALL SIGN	VE's SIGNATURE (Must match name)	DATE SIGNED
2nd VE's NAME (Print First, MI, Last, Suffix)	VE's STATION CALL SIGN	VE's SIGNATURE (Must match name)	DATE SIGNED
3rd VE's NAME (Print First, MI, Last, Suffix)	VE's STATION CALL SIGN	VE's SIGNATURE (Must match name)	DATE SIGNED

DO NOT SEND THIS FORM TO FCC – THIS IS NOT AN FCC FORM.
IF THIS FORM IS SENT TO FCC, FCC WILL RETURN IT TO YOU WITHOUT ACTION.

NCVEC FORM 605 - July 2022
FOR VE/VEC USE ONLY - Page 1

LIMARC 2025 Schedule of Events

Month	Bd.Mtg	Gen.Mtg	VE Exam	Hamfest	Other Events
Jan.					
Feb.					
March					
April					
May	7	14	10		Lindbergh 21
June	11	25			Field Day 28-29
July	2		12		Moon Ldg. 20
Aug.	6				
Sept.	3	10	13		
Oct.	1	8			VanMtrPky 10
					JOTA 18-19
Nov.	5	12	8	9	
Dec.	3	10			GARC anv 21

HRU—Ham Radio University

SCR—School Club Roundup

Lindbergh—Anniversary of 1st non-stop transatlantic flight

Moon Ldg—Anniversary of Apollo 11 1st Lunar Landing

VanMtrPky—Anniversary of Opening of Vanderbilt Motor Parkway

JOTA—Jamboree on the Air for Scouting America

GARC— Grumman Amateur Radio Club (callsign: WA2LQO)

Dates subject to change without notice. LIMARC may revise them as required.

LIMARC Repeaters

*Analog **PL** tone is **136.5***

Location	Output Frequency	Shift	Callsign	Mode	Echo Link	IRLP	AllStar	System Fusion
Glen Oaks	146.85	- 600kHz	W2VL	Analog	W2VL-R, Node 487981		Node 576290	
Glen Oaks	224.82	-1.6MHz	W2KPQ	Analog				
Glen Oaks	1288	-12MHz	W2VL	Analog				
Hempstead Hofstra U. GARC	146.745	-600kHz	WA2LQO	Analog /Digital				WIRES-X Node:98304 Room:08304
Plainview	449.125	-5MHz	W2KPQ		W2KPQ-L Node 500940	Node 4969	Node 576291	
Plainview	449.375	-5MHz	W2KPQ	DMR CC1				
Selden	147.375	+600kHz	W2KPQ	Analog	W2KPQ-R Node 503075	Reflector Node 9126		
Selden	449.3625	-5MHz	W2KPQ	DMR CC1				
Middle Island	449.075	-5MHz	NY2H	Analog				
East Meadow	145.070		W2KPQ	Packet Digipeater				

LIMARC Nets

Net	Day	Time	Frequency	Net Control
TechNet	Sunday	8PM	146.85	AC2GS
Infonet	Monday	8:30PM	146.85	Rotating Schedule
Swap&Shop	Monday	Follows Infonet	146.85	KD2FIU
ARRL NewsLine	Monday	Follows Swap&Shop	146.85	(audio feed)
Computer Net	3rd & 4th Wednesday	8:30PM	146.85	WB2KWC
Nostalgia Net	5th Wednesday	8:30PM	146.85	K2KNB
220 Net	Fridays	8:30 PM	224.82	K2TGW
1288 Net	Fridays	9:00 PM	1288	Wi2M
AM Drive Time	Daily	7:45 AM	146.85	K2KNB

Week Rotation	Net Control
1	N2RQ
2	K2KNB
3	K2KNB
4	KC2FYJ
5	KC2ZVT

GARC Repeater

145.33 WA2LQO

136.5 PL FM Analog

Hauppauge

LIMARC Officers 2025			
President	**Richie Cetron**	**K2KNB**	
Vice-President	**George Sullivan**	**WB2IKT**	
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Peter Genova	**KC2ZVT**	
Martin Grillo	**W1EMR**	
Harry Gross	**KC2FYJ**	
Glenn Kearney	**WB2QDS**	
Ken Kobetitsch	**KD2GXL**	

Email for officers and Board members can be addressed to their: call sign@LIMARC.org.

In addition, all can be reached at LIMARC@LIMARC.org

George Sullivan, Editor of The LOG, WB2IKT@LIMARC.org

LIMARC PO Box 392 Levittown, New York 11756-0392 Published Monthly

From The Editor

As usual, please send items for entry into the LOG to WB2IKT@LIMARC.org. I will be glad to accommodate appropriate requests. If you miss a deadline (the deadline is the 15th of the month) I would be glad to place your item in the LOG next month, space permitting. Thanks, and 73, George WB2IKT - Editor, The LOG