# marcOgram

**Official Publication of The Montreal Amateur Radio Club Inc.**
**Box 53047 - RPO Dorval, Dorval Quebec H9S 5W4**

**Volume 68, Number 1** **Summer 2021**

## NEXT MEETING

**Tuesday 28 September 2021 at 20:00 via ZOOM.**

**THIS MONTH: Leo Nikkinen, VE2SI, on SWR Test Loads:**
**The design, construction & performance of dummy loads with SWRs between 1:1 & 10:1 for antenna tuner & transmitter testing.**

General meetings are being held via the Zoom platform. Below are the details you need to join the meeting. A rag-chew session starts at 19:30 with the formal meeting starting at 20:00.

Join Zoom Meeting: https://zoom.us/j/99313399988?pwd=YXcwMGJQdStkYVBwa3Fkc2hxa21oZz09

Meeting ID: 993 1339 9988 Passcode: 898003 Or by phone 438-809-7799 using the above meeting ID and passcode.
Important: Please use a headset or headphones and make sure to test your mic/camera ahead of the meeting.
We hope to see you there.

## FROM THE EDITOR'S DESK

### WELCOME!

MARC is starting its new season with the September General Meeting, and we still do not have access to our normal in-person meeting room, so fire up your Zoom session.

We also need to find another venue to hold another potential hamfest once indoor groups are permitted. Anyone with an idea please contact any one of the Directors.

In brighter news, on this page you will find the new improved ways of renewing your membership. If you renew on the MARC web site, you can use Square or Interac; the paper version is for payment **by cheque only**.

73 de Nora, VA2NH

-...-

## Membership Time!

It's that time of the year again! September 1st is the start of the new membership year. We'd like to see you back.

You can either complete the form online at https://www.marc.ca/memform/ and pay with Square or Interac e-Transfer, or you can print the membership form and post it with your cheque.
You'll find the pdf form here: https://www.marc.ca/membership/marcform2022.pdf

**We hope to see you soon.**

Marc-Andre Gingras, VE2EVN
President - Montreal Amateur Radio Club

The MARCogram is published nine times per year on the second to last Wednesday of September through June, excepting December by the Montreal Amateur Radio Club. Advertising and copy deadline is one week prior to publication.

Annual fees are:

| | | |
|---|---|---|
| General Members | ... | $30.00 |
| Family Members (per family) | ... | $35.00 |
| Postal delivery of MARCogram | … | $ 5.00 |

The membership year runs from September 1 to August 31. Memberships received on or after June 1 commence immediately and extend through the subsequent membership year - covering a period of up to fifteen months.





Meetings of the Board of Directors

Meetings of the Board of Directors are held on the first Tuesday of the month (Aug to June) at 19:30 on-line using the Zoom platform. The club no longer holds in-person board meetings. If you have questions, concerns or suggestions for the Board to discuss, please send an email to ve2arc@marc.ca for inclusion in the meeting agenda.

# Club Activities

## *Monthly Meetings are by ZOOM*

(last Tuesday of the month)

September 28 - Leo, VE2SI, SWR Test Loads.

October 26 - **ANNUAL GENERAL MEETING.**

November - Marc-André, VA2EI, Summits On The Air.

Every Wednesday, @ 20:00 (00:00Z), go to the net on VE2RED.
See page 3.

## *Radio Classes*

A Basic level Course is held starting in January of each year. If you know of anyone interested in taking the course, please direct them to https://marc.ca/course/ for more information. Online registration is now closed until the next session.

## *MARC Hamfest*

**The 2021 MARC flea market was cancelled.**

It will be back but we still need a good location. Any ideas? Please contact any of the board members.

**Ideas are welcome!**

Go to http://marc.ca/fest/ for more information as it happens.

## *Incoming QSL card service*

As has been mentioned in previous MARCograms, we are resuming the club's service of having incoming QSL cards sent to the club for members to pick up at meetings. This is a service which we are offering to our members which both saves the individual members money as well as makes more efficient use of our collective resources.

If you would like to avail yourself of this service please send an e-mail to qsl@marc.ca and we will add you to the list of cards that the incoming bureau sends to the club and bring them to the monthly meetings.

## SolderSpot

Group build Power Supply Project - By Leo VE2SI

If you're interested and even if you've spoken with me before, please send an email to VE2ARC@marc.ca and indicate your level of interest.

Participation is open to everyone and MARC membership is not a requirement. Due to COVID-19, SolderSpot is temporarily on hold. Other options are being considered.

**This project is standing by due to COVID-19.**

## Upcoming Fleas/Events

### 2021

**What:** NEAR-Fest XXX
**Who:** New England Amateur Festival, Inc.
**When:** Fri & Sat, 15 & 16 Oct, 2021
**Where:** Deerfield Fairgrounds Deerfield, NH

### 2022

**What:** Iroquois ARC Fleamarket
**Who:** Iroquois Amateur Radio Club
**When:** Saturday, 2 Apr 2022
**Where:** Iroquois ON

**What:** London Vintage Radio Club Flea Market
**Who:** London Vintage Radio Club
**When:** Saturday, 11 Jun, 2022
**Where:** Guelph, ON

**What:** Carp 24th Annual Hamfest
**Who:** Ottawa Amateur Radio Club, Inc.
**When:** Saturday, 10 Sep, 2022
**Where:** Carp Agricultural Fair Grounds, Carp, ON

Note from the editor.
Due to COVID -19, the list of hamfests and events is severely limited. Please check with the organizing authority before planning to attend as some may be cancelled.

# VE2RED Tuesday Net Report

Any discrepancies, please inform Leo, VE2SI

Please join us every **Wednesday** evening at 20:00 local on VE2RED on 2m output frequency of 147.270 MHz (+600 kHz input offset) CTCSS tone of 103.5 Hz. Everyone is welcome. If you have something to sell, or are looking to buy, feel free to mention it.

We have a few Net operators hosting it, but we're always interested in adding to this team if you're interested. Send me an email if you would like to try out Net Operations for an evening.

Leo, VE2SI
leo49@videotron.ca

---

Unknown date; Net commenced 20:00 local, 00:00Z
Net control Leo, VE2ARC (VE2SI)
VE2NGH, George, St. Laurent
VE2WRH, Wayne, Cote St. Luc
VE2SZU, Ariel
VA2LEQ, Lee, Laval
VA2HAZ, Pragyan
VE2MPD, Dave, Verdun
VE2HXK, Henry
VA2NH, Nora, St. Lazare
VA2KWT, Philip, Verdun
VE2LRZ, Erick, Cote St. Luc
VE2QXP, Stan, Pointe Claire
21:27 Net closed.
12 check-ins.
Discussion: Why get a ham license?

---

2021-08-25 Net commenced 20:00 local, 00:01Z
Net control Leo, VE2ARC (VE2SI)
VE2NGH, George, St. Laurent
VE2WRH, Wayne, Cote St. Luc
VE2SZU, Ariel
VA2LEQ, Lee, Laval
VA2HAZ, Pragyan
VE2MPD, Dave, Verdun
VE2HXK, Henry
VA2NH, Nora, St. Lazare
VA2KWT, Philip, Verdun
VE2LRZ, Erick, Cote St. Luc
VE2QXP, Stan, Pointe Claire
21:27 Net closed.
12 check-ins.
Discussion: What will amateur radio look like in 50 or 100 years?

---

2021-09-01 Net commenced 20:00 local, 00:00Z
Net control Leo VE2ARC (VE2SI)
VA2LEQ, Lee, Laval
VE2TEU, Daniel
VE2MPD, Dave, Verdun

*(Continued on page 4)*

(Continued from page 3)
VE2MPD, Dave, Verdun
VA2HAZ, Pragyan
VA2CNE, Cedric, Dorval
VE2NGH, George, St. Laurent
VA2XMX, Peter
VE2SZU, Ariel
VA2NH, Nora, St. Lazare
VA2KWT, Philip
VA2XS, Mike, St. Laurent
21:28 Net closed.
12 check-ins.
Discussion: Are government regulators pandering to public ignorance?

---

2021-09-08 Net commenced 20:00 local, 00:00Z
Net control Leo VE2ARC (VE2SI)
VA2ASS, Andy, Cote St. Luc
VE2SZU, Ariel
VA2CNE, Cedric, Dorval
VE2ZU, Patrick, St. Adele
VE2WRH, Wayne, Cote St. Luc
VA2NH, Nora, St. Lazare
VA2KWT, Philip, Verdun
VE2NGH, George, St. Laurent
VE2LRZ, Erick, Cote St. Luc
VE2FSE, Frank, Pointe Claire
VE2KEK, Eugene, St. Eulalie
21:33 Net closed
12 check-ins
Discussion: Should transceivers include Bluetooth for accessories like microphones and speakers?

---

2021-09-15 Net commenced 20:00 local, 00:00Z
Net control Leo VE2ARC (VE2SI)
VE2WRH, Wayne, Cote St. Luc
VE2MPD, Dave, Verdun
VE2NGH, George, St. Laurent
VA2CNE, Cedric, Dorval
VA2KWT, Philip, Verdun
VA2NH, Nora, St. Lazare
VE2FSE, Frank, Pointe Claire
21:04 Net closed
8 check-ins
Discussion: What was your greatest challenge while working towards your amateur radio license?

---

# A Vector Network Analyzer

Courtesy The Communicator, May 2021 issue,
Surrey Amateur Radio Communications,
VE7SAR blogspot.

Once only a lab instrument, today the prices are affordable for most hams.

The great thing about amateur construction projects is that it provides opportunities to learn about new things. I was curious about a device called a VNA (Vector Network Analyzer) after Les Tocko VA7OM showed me his home-built VNA which he was using to tune up the triplexer, diplexer and bandpass filters currently under construction. Here is what I learned from a Tektronix website.

Vector Network Analyzers are used to test component specifications and verify design simulations to make sure systems and their components work properly together.

From mobile phone networks, to Wi-Fi networks, to computer networks and the to the cloud, all of the most common technological networks of today were made possible using the Vector Network Analyzer that was first invented over 60 years ago.

R&D engineers and manufacturing test engineers commonly use VNAs at various stages of product development. Component designers need to verify the performance of their components such as amplifiers, filters, antennas, cables, mixers, etc.

Array Solutions AIM VNA 2180

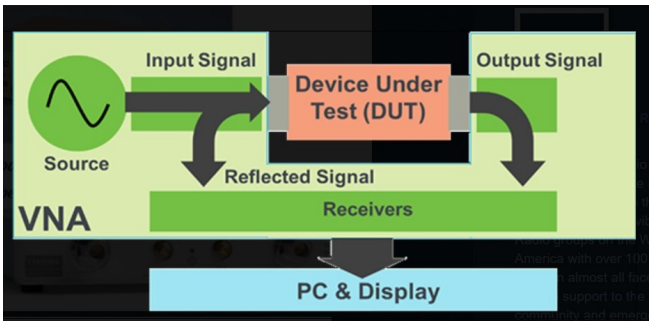
Tektronix VNA TTR506A

## How does a VNA work?

A Vector Network Analyzer contains both a source, used to generate a known stimulus signal, and a set of receivers, used to determine changes to this stimulus caused by the device-under-test or DUT.

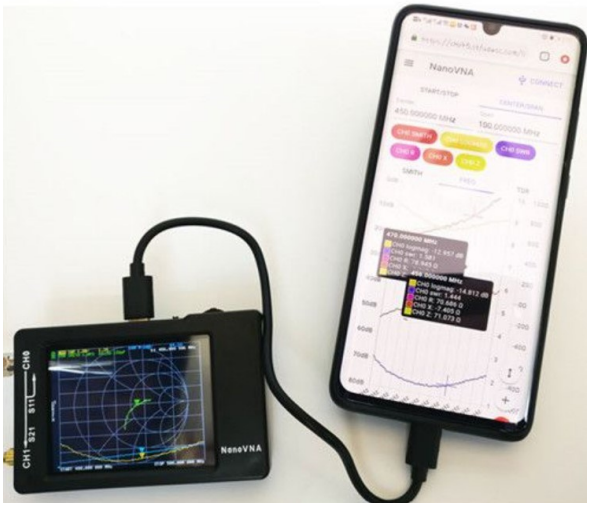
(Continued on page 5)

(Continued from page 4)

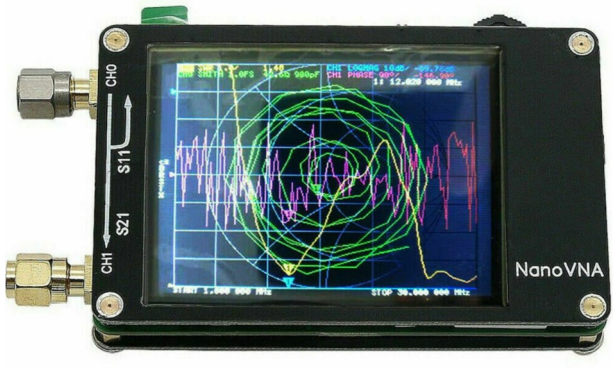



How a VNA works - block diagram.

The stimulus signal is injected into the DUT and the Vector Network Analyzer measures both the signal that is reflected from the input side, as well as the signal that passes through to the output side of the DUT. The Vector Network Analyzer receivers measure the resulting signals and compare them to the known stimulus signal. The measured results are then processed by either an internal or external PC and sent to a display.




The NanoVNA can be connected via USB to your smart device or computer for a larger screen and many additional functions.




The NanoVNA, a very affordable instrument.

VNAs perform two types of measurements – transmission and reflection. Transmission measurements pass the Vector Network Analyzer stimulus signal through the device under test, which is then measured by the Vector Network Analyzer receivers on the other side.

Examples of transmission measurements include gain, insertion loss/ phase, electrical length/delay and group delay. Reflection measurements measure the part of the VNA stimulus signal that is incident upon the DUT, but does not pass through it. Instead, the reflection measurement measures the signal that travels back towards the source due to reflections.

It sounds like every serious amateur experimenter should own one of these devices. While most of the available devices are expensive lab quality instruments usable at microwave frequencies, many are affordable and suitable for amateur use at HF.

~ John VA7XB

# AMONG THE AMATEURS

## HOME TELEPHONE COMPANY INSTALLING RADIO TIME SYSTEM.

Jamestown N. Y., is to receive the time of day by wireless from the Government's big wireless station at Arlington, Virginia.

The two poles supporting the antennae have been placed in position on top of the Home Telephone Co's. office on Pine street. The receiving instrument is of the latest type and is equipped with an additional duplex loading coil to take care of the great wave length in receiving the messages.

At five minutes before 12 o'clock the first signals are sent out from the station at Arlington and every minute until exact noon is reached similar signals are given—a long dash indicating exact noon.

## WIRELESS JOINS TWO UNIVERSITIES.

Wireless telegraphic communication between Washington University and the University of North Dakota in Grand Forks has been established and messages are being exchanged daily by the stations, 850 miles apart.

The student operators in the engineering department of Washington recently were informed by the Dakota operator that the latter university had established communication with the University of Michigan and efforts are being made to establish universal communication between the three colleges.

## WIRELESS PLACED ON HIGH SCHOOL.

The Science Club of the Johnstown, N. Y., High schools has taken up the study of wireless telegraphy. At a recent meeting, it was discussed at length. A wireless station has been placed on the school building by Yates Van Antwerp, Thomas Kane and Henry Davenport.

## PENN. BOYS CATCH WIRELESS MESSAGES.

An indication of the inventive genius of the younger generation is seen in the erection of wireless apparatus by several boys of Harrisburg and its vicinity. One of these is Jack Hart, son of Lane S. Hart, of Duncannon, who has been interested for some time in the erection of a wireless station on the top of his home at Duncannon. His aerial is sixty-five feet high and being located on the top of a hill, great receiving range is obtained. He is at present increasing the height of one aerial mast from thirty to fifty feet and with this improvement he expects to send a great deal farther and receive anything within a radius of three thousand miles. At the present time he can only send fifteen or twenty miles.

Young Hart is at his station every night and hears anything and everything from press reports to weather forecasts. Some of the places he has heard from are Arlington sending time signals, New London sending Block Island weather reports, the John Wanamaker New York store, Sayville, Long Island and in clear weather Tampa and Key West.

He is not able to send very far as his transformer only draws 660 watts and the United States government only allows 1,000 watts. Other boys interested in wireless in town are Nathan Stroup, George Tripp and Edwin Brown.

Mr. Edgar Purdom, of Vanceburg, Ky., in a recent letter to the E. I. Co., writes:

"I received the motor all right. I like it very much. You will find enclosed four cents in stamps for your latest catalog. You may consider me as a regular customer. I also received my first copy of your *Electrical Experimenter;* it is a fine little paper."

Miss Alice McConaughy, of Madisonville, Ohio, an E. I. customer, 14 years of age, writes them as follows in regard to their No. 8100 antenna switch:

"I received my switch No. 8100 last Saturday and it has proven very satisfactory. All of my instruments that are not home-made, are of your make, and I take pleasure in saying that, *they are the best for the money.*"

Fred Lewinson of Springfield, Mass., an E. I. Co. patron, writes as follows:—"I am using a single 75 ohm 'phone which I bought from you about two years ago, and can recommend it very highly, as I can pick up *Sayville, L. I.,* every night, and can hear very plainly indeed every message they send. This is not a fish story I am telling you, but a positive fact, as there are some fellows up here who use 1,000 and 1,500 ohm 'phones, and they are really surprised that my 'phone would pick up such long distance messages so clearly."

## AS TO "ELECTRO" RECEIVING INSTRUMENTS.

Raymond W. Myers of Tiffin, Ohio, in a recent letter to the Electro Importing Company, has the following to say, in regard to the efficiency of their Radio Receiving Apparatus:

"I have one of your loose couplers, fixed condenser, and Universal Detector Stands No. 7777 in my station now, and this apparatus works excellently. With an enameled wire loading coil in series with the coupler primary, I copied press from W. S. L. I hear N. A. A. loud enough sometimes so that I can remove the head receivers and still hear them. I also get N.A.R. and all the lake stations, besides many others in nearby States. The aerial is only 100 feet long, and 52 feet to 38 feet high at the lower end, arranged on 10 foot spreaders. I certainly never expected to get such good results from your apparatus, as it is *so low-priced in comparison to other similar apparatus* now on the market."

## AMATEUR WIRELESS MEN ORGANIZE RADIO CLUB.

Fifteen members were present at the first meeting of the Rhode Island Radio Association recently in room 303, Tribune building. The association is intended for bringing together amateur wireless operators for the discussion of improvements in that system of telegraphy.

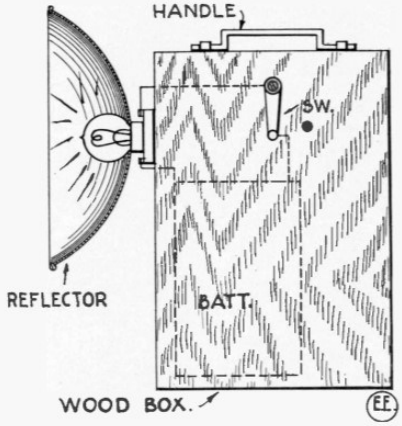
The meeting was called to order by R. L. Harris, and following a discussion of the plans of the organization the following officers were elected: President—R. D. Harris of Auburn; vice-president—James Doherty of Providence; secretary—Raymond C. Newton, 292 California avenue, Providence; treasurer—Nelson B. Stackpole, Pawtucket.

Paul Osborn of Milford, Ill., has installed a wireless telegraph station at the rear of his father's furniture store, and being an experienced operator, catches messages from all over the United States.

## KING TO HONOR MARCONI.

King Victor Emanuel of Italy intends to nominate William Marconi a senator at an early date. Marconi has now reached the age of forty, which makes him eligible.

### THIRD PRIZE, $1.00
### AN ELECTRIC SEARCH LIGHT.




First procure a small wooden box. This box may be procured from any druggist, is usually from Ammonium Bromide or other chemicals. After you have procured the box, you will have to get the following from the E. I. Co.:

| | | |
|---|---|---|
| 1 No. 508 | Miniature reflector, at | $.05 |
| 1 No. 1052 | Miniature Receptacle, at | .05 |
| 1 No. 6143 | Switch Point, at | .02 |
| 1 No. 6129 | Switch Lever, at | .05 |
| 1 No. 1042 | Miniature Electric Lamp, at | .10 |
| 1 No. 1059 | Flashlight battery, at | .25 |
| | | $.52 |

Mount everything as shown in the sketch below. All wiring is to be hidden from sight.

Contributed by Chas. Rosenthal.

[*E. Notes—By using a high C. P. Tungsten Lamp and sufficient flashlight batteries, a powerful searchlight can easily be made.*]



Electrical Experimenter, June 1914, Vol II, #2, by Hugo Gernsback, courtesy World Radio History web page.

# Notice of Annual General Meeting

Notice is hereby given that the annual general meeting of the Montreal Amateur Radio Club Inc., will be held on Tuesday, October 26, 2021 at 20:00 via the Zoom platform due to COVID-19 restrictions in place.
Meeting link:
https://zoom.us/j/99313399988?pwd=YXcwMGJQdStkYVBwa3Fkc2hxa21oZz09

Meeting ID: 993 1339 9988, Passcode: 898003, or by phone 438-809-7799 using the above meeting ID and passcode.

The meeting is called to:

- Receive and if thought fit, approve the reports of the officers;
- Receive and if thought fit, approve the report of the auditor;
- Elect directors and officers to hold office for the coming year;
- To consider and if thought fit, approve the amendments to By-Law Number 1;
- To transact such other business as may properly come before the meeting.

Given in St. Lazare this 22nd day of September, 2021.

(Sgd.) Nora Hague

Nora Hague. VA2NH,
Secretary,
Montreal Amateur Radio Club, Inc.

# By-Law Number 1

By-Law Number 1, as amended 27 October 1999 and 30 October 2018,

is hereby further amended as follows:

**Section 3.4** is repealed and replaced with the following:

> "3.4 No notice need be given of regular General Meetings held at times fixed by resolution of the Members. Written notice of General Meetings (both Annual and Special) shall indicate the time and place of the Meeting and shall be mailed **or e-mailed** to each Member at least ten (10) days before the date of the Meeting to the address shown on the books of the Club."

**Section 5.1** is repealed and replaced with the following:

> "5.1 The management of the Club shall be vested in a Board of Directors consisting of not less than **five (5)** nor more than ten (10) Members."