

**The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum**



There is a renewed movement to raise funds to get a launch for KiwiSat
This is the processor tray from the Satellite. (Semi-clean-room at Massey Uni)

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Auckland VHF Group Inc.

Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446
 Clubrooms: 30 Hazel Ave, Mt Roskill

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President	Matthew King	ZL1YOT	022 649 3310	president@aucklandvhf.org
Vice President	Brendon Reid	ZL1XXX	021 970 785	vicepresident@aucklandvhf.org
Secretary	Vaughan Henderson	ZL1VH	021 844 804	secretary@aucklandvhf.org
Treasurer	George Raffles	ZL1TUX	021 735 361	treasurer@aucklandvhf.org
Committee	Terry Corin	ZL1BPA	027 697 4686	webmaster@aucklandvhf.org
	Greg Storz	ZL1GSG	09 849 2878	greg@aucklandvhf.org
	Darryl Grange	ZL1TCI	021 123 7733	darryl@aucklandvhf.org
	Mark Howie	ZL1UMK	022 047 3240	mark@aucklandvhf.org
AREC Group Leader	Matthew King	ZL1YOT	022 649 3310	mattking@gmail.com
Deputy Group Leader	Currently Vacant			
ZL1BQ Trustee	Matthew King	ZL1YOT	022 649 3310	zl1bq@aucklandvhf.org
Head Repeater Trustee	Vaughan Henderson	ZL1VH	021 844 804	repeatertrustee@aucklandvhf.org
Klondyke Manager	Vaughan Henderson	ZL1VH	021 844 804	6625@aucklandvhf.org
670 Manager	Vaughan Henderson	ZL1VH	021 844 804	670@aucklandvhf.org
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Club Web Page:	http://aucklandvhf.org			
ZL1VHD Dstar gateway administrator:	Laurie	ZL1ICU	634 5130 0274 817463	perma@xtra.co.nz
ZL1VHD Dstar gateway registration URL :	http://zl1vhd.dstar.org.nz			

Club News and Net:

The combined Auckland VHF Group and Auckland Regional Branch News and Net are held on 146.625 MHz and 439.875 MHz at 8.15 pm each Sunday or after the ZL6A National Broadcast on the last Sunday of the month.

Club meetings are held at the Clubrooms at Hazel Avenue, on the second Monday of each month at 7.30 pm. For other details, listen to the News and Net each Sunday evening.

SPECTRUM is the official journal of the Auckland VHF Group Inc. Opinions expressed are those of the authors and do not necessarily reflect club points of view. The closing date for SPECTRUM articles is by the 1st of each month. Articles to be submitted to the editor Peter ZL1UKG
spectrum@aucklandvhf.org

Auckland VHF Group (Inc) Branch 66

General Meeting Notice

Monday 12th July 2021 7.30pm

At the Hazel Avenue Clubrooms
(Located on the left at the end of Hazel Avenue)

Meeting topic for July General Meeting

**Vaughan Henderson ZL1VH on
"Marine Electronics"**

The meeting will conclude with our usual supper
and time to chat over a cup of tea or coffee.

If you are unable to attend in person, we will have the meeting live via Microsoft Teams. Go to the Group's website at <https://aucklandvhf.org/> and navigate your way to "Meetings and Events" where you will find the link to join us on Teams.

Coming Events:

- 21 August Hamilton Market Day at Gordonton Hall

Auckland VHF Group Presidents Report July 2021

Presidents Report July 2021

We have been looking for a new place to store the hydraulic tower and work on it, and have come up with an idea which we are investigating. We live in hope!

Last week was our committee meeting but I missed it. We had been working the bulls out at the lease block, where it is pretty rough. I managed to poison myself with something ruthless. You don't want to know any more, but I came right after a couple of days.

The 70cm triple figure eight loop I designed with 4nec2 has been rebuilt after the prototype turned out slightly too small. I showed it at our general meeting last month. Unfortunately my VNA analyser has expired and its replacement has not arrived, so I have yet to determine its pedigree.

Janice and I went to Karapiro last week for a two day Organic Dairy conference. It was good meeting up with other farmers enjoying the brief break between drying off the cows (well, most of them) and the start of calving. Then we went to Tuakau for a "Couples Weekend" at an Ashram. Great bunch of people, good processing, and it was almost line-of-sight to Klondyke!

We arrived back shortly before the Sunday night net, so I rolled my car out of the barn and tested the radio. The first battery died when I hit the TALK button, so I switched to the second and the same thing happened. A quick phone call to Vaughan and a restart of the radio, and I got to listen to him run the net. So next week I'll walk the handheld up to the back paddock ridge (30 mins away) and run the net from there with a fully charged 12v gel cell. Providing it's not another frosty night! Five whole Watts into a quarter wave. Or I could take a Yagi up there. Or build a triple figure eight loop for two meters. That could be a bit big, though!

Cheers Matthew King
 022 6493310



Minutes of the June General Meeting of the Auckland VHF Group Inc.
Held on Monday 14 June 2021 at the Clubrooms, Hazel Avenue, Mt. Roskill

Present: 11 members as per the Attendance Book . ZL1XXX ViaTeams
Apologies: ZL1TIA
Visitor: Fred Tapp

Minutes of May General Meeting – as published on pages 5 and 6 of the June 2021 issue of Spectrum.

Moved the minutes were a true and correct record: ZL1YOT Seconded: ZL1UKG Carried
Matters arising: NIL

19:52 - Special General Meeting

Present and Apologies as for the General Meeting

Motion: "That the accounts for the year ending 30 September 2020 as presented in Spectrum for June 2021 be adopted". Moved ZL1TOW Seconded ZL1JHM. CARRIED

ZL1TUX reported that the total funds in our bank account has dropped from \$63K to \$53K and will drop again to about \$40K due to planned expenditure. The Club needs to look urgently at additional fundraising. ZL1TOW commented that the deferred maintenance on the Klondyke tower was now having an impact on our finances.

There being no further business, the Special General Meeting concluded at 19:56.

General Meeting continued

Reports:
NIL

Correspondence:

In – newsletters from North Shore Branch 29, Branch 65 Papakura Radio Club, Franklin Branch 10 and Musick Point Radio Group Inc., Break-In. Secretary ZL1VH apologised to the lack of printed newsletters due problems with his printer.

General Business:

Basil ZL1TOW – power use at Klondyke. Simon ZL1THH advised that there were cheap Chinese power meters available. Two single phase meters available, need comms via RS485 and MOD Bus, using a Raspberry Pi. Brian ZL1BJO has these available – ZL1VH to contact him.

Simon ZL1THH – Took ZL1BQ out over the weekend to SOTA Hill # 66 on 6/6/2021. Wet weather prevented a more successful activation.

ZL1VH Gave a report on the NZART Conference held in Napier over Queens Birthday Weekend. Key points –
Call Book 2021/2022 A full paper version call book will be produced this year and included with the November December issue of Break In.

Subscriptions for 2022 Transmitting/Non-Transmitting \$115 per year. Family Transmitting \$30 remains the same. Total Family transmitting membership \$145 (with \$16 rebate \$129.00) Overseas members \$150. Student member \$49.00. A rebate of \$16 is applicable if paid on or before 30th November 2021. The rebate applies only to Transmitting/Non-Transmitting and Family Memberships, it does not include, Student or Overseas subscriptions.

Council Positions: Council is recommending a reduction in the number of Councillors, with the following options to be considered by members:

Option one – One Councillor NI, One in SI and three anywhere in NZ

Option two – Five Councillors to be nominated from anywhere throughout New Zealand

Option three – Two Councillors Northern, two in Central and two for the whole of the South Island.

Option four – do nothing, remain status quo.

Members will be asked to send their suggestions to Council in the near future. Councillor Warren Harris ZL2AJ will be sending out more information on this soon.

Amateur of the Year went to Don Robertson ZL2TYF, CEO of AREC for his work getting the new funding for AREC.

A full report is printed elsewhere in the July issue of Spectrum.

This concluded General Business and the business part of the meeting closed at 2027.

Show and Tell:

Peter ZL1UKG described the Hibiscus Coast Radio Club's 23cm EME station. He discussed the electronic and rf modules making up the station and showed photos of the dish mounting and mechanical arrangements. This is a work in progress.

Matthew ZL1YOT showed a directional antenna using loop elements for 2m. He described the design and use of 4Nec2 to optimise the design.

Fred Tapp – local resident. Electronics enthusiast/hobbyist as a young person. Now getting back into electronics. Has a SDR he wants to get going, discussed some designs for antennas and requested assistance to get the SDR going. He can receive strong FM stations but no success with weaker signals.

Simon ZL1THH showed the beacon antenna theoretical radiation patterns – lobes are optimised for South and West to try and ensure that the new beacons will be heard well South of Auckland and also in Australia.

Meeting closed at 2147, followed by a cup of tea/coffee and informal chat.

Amateur Television in Auckland

Background:

For many years following the loss of the upper part of our 70cm band allocation in the early 1980's and the subsequent negotiation for some new spectrum to replace it – the allocation of 610 to 620 MHz allowed interested amateurs to transmit analogue amateur television on Channel 39 (615 MHz) which was receivable on domestic television receivers. A small group of interested amateurs loosely affiliated to the Auckland VHF Group established an ATV transmitter on Channel 39 and the equipment and aerials were located at a site in the Waitakere Ranges called Nihotupu. This arrangement remained in place for many

years and attracted a small “watching” audience of members of the public who had found the frequency while tuning or re-tuning their domestic television receivers.

Moving forward to 2013 when amateurs in New Zealand lost the use of Channel 39 (615 MHz) as part of the move to UHF digital TV, we have been trying to get access to another allocation within the tuning range of domestic television receivers. The preferred solution was to make use of Channel 25 (502 to 510 MHz) which is an un-allocated UHF TV channel and forms a guard band between the top end of the emergency services frequency allocation and the start of the Freeview suite of channels (Channel 26 and upwards).

Radio Spectrum Management granted a temporary licence to allow the Wellington VHF Group to undertake test transmissions and make tests in conjunction with the other interested parties to demonstrate that radio amateurs could successfully transmit digital amateur television signal without causing interference to the other services. Although the initial testing was quite successful, and an extension to the temporary licence was granted in 2016, too much time elapsed and the temporary licence expired in 2018. Subsequent attempts to get another temporary licence to permit more testing were not successful.

Between 2018 and 2021, various attempts were made to resurrect the testing programme with NZART’s Engineering Licencing Group but Radio Spectrum Management declined to issue a further temporary test licence. By mid-2021, it has become apparent that for reasons not disclosed to the amateur service, New Zealand radio amateurs are very, very unlikely to get permission to use Channel 25 for amateur DVB-T (Digital Video Broadcasting – Terrestrial) transmissions.

Where to Now?

Instead of continuing to try and get a Channel 25 licence, Michael Sheffield ZL1ABS, with some advice from "others" is proposing to apply for a licence in the 33cm band. The Amateur GURL gives us an allocation from 915 – 928 MHz but is part of a wider GURL (General User Licence) which permits Short-Range-Devices, Amateur, Industrial Scientific and Medical. There are severe limits on radiation outside this band, to protect Cell phones using 870 to 915 MHz and Point-to-Point Links which use 928 to 935 MHz.

The NZART Band-plan for 33cm makes provision for a number of different uses:

915 - 916 MHz	Narrowband Repeater Inputs
916 – 917 MHz	Point-to-Point Links
917 – 925 MHz	Amateur Television – Analogue and Digital
925 – 926 MHz	Standard Narrowband segment: beacons, simplex working, contests, etc.
926 – 927 MHz	Point-to-Point Links
927 – 928 MHz	Narrowband Repeater Outputs

The 8 MHz wide allocation from 917 to 925 MHz provides for Amateur Television, both digital and analogue. Output power is limited to 25W EIRP on this band. Plugging some “typical” numbers into the equation:

For an Effective Isotropic Radiated Power of 25 Watts (+44dBm)

$EIRP = \text{Transmitter Power (dBm)} - \text{Coax Loss (dB)} + \text{Antenna Gain (dBi)}$

Assuming an antenna gain of 6dBi and coax cable loss of 2dB then the maximum transmitter power required will be $+44\text{dBm} + 2\text{dB} - 6\text{dBi} = +40\text{dBm}$ or 10 Watts.

Much work needs to be done by interested people to source a suitable 920 MHz transmitter and aerials for the band. Michael ZL1ABS would like to see the system installed at Nihotupu where the old Ch 39 ATV transmitter was located. Michael ZL1ABS plans to attend the next meeting of the VHF Group to discuss this proposal. Come along and find out more. Please contact Michael ZL1ABS if you are interested in helping.

VHF Group Show & Tell Presentation (June 2021)

The Hibiscus Coast Radio Society EME Project

Ross Hannah was a member of the VHF Group and the HCRS Club while he was developing his EME Station on suitable land belonging to a neighbour. Following his death his wife asked members of the HCRS Club to dismantle his installation and remove it from the neighbour's land. It was gifted to the HCRS Club in exchange for their help. This included dismantling the shack and re-assembling it in her garden. The rest was transported to the HCRS Clubrooms.

The land around the HCRS Clubrooms has a suitable place to set up the equipment but more work has been involved than was expected. A platform was created to support a new shack recently donated to the HCRS and a raising mechanism, tilt over mast and dish. A trench was dug from the shack down to the garages and elevated to the verandah of the clubrooms and into the Radio Room. The cables to the clubrooms were laid in conduit built from domestic spouting downpipes. Cables for power, RG213 for the IF frequency (144 MHz) and Cat-5 cables for control purposes were pulled through the conduit. Luckily we were able to borrow a trench digger for some of this work. By hand was too much like hard work. A shack has been donated to the club recently and it has been placed on the platform and side tracks. Vapour barrier lining has been installed on the interior which is now ready for insulation, wall-linings and a work bench. The club fortunately is quite strong on working bee turn outs and also there are skills like mechanical engineering, electrician, software expert, post-hole and trench digging equipment but the author is the only one with 23 cm experience.



The 2.5 m Dish at its new home.
No linear drive for elevation in place yet.
Prop pitch motor at the bottom right corner.



The mast and winch for raising the mast.
The new (old) shack sits on the framework
to the right.

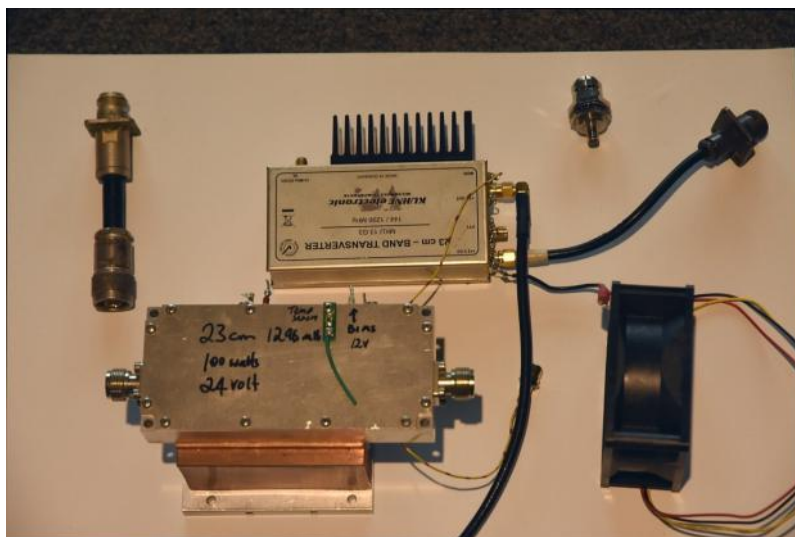
The electronics in the shack will be a 144 / 1296 MHz Transverter and a 100 W power-amp, boxed up for protection and fan cooling of the power amp. The power supplies will be located in the shack run from the 230v available at the shack. The heat exchanger under the power-amp needs some fancy sheet metal folding to convey the air from the fan into it. The Feed Horn is an OK1DFC Septum Feed. The frame to hold the feed can be seen above the mesh dish. This will have separate TX and RX cables back to the shack along with the safety relay and LNA power which will be mounted on the feed. Once the electronics has been boxed up it will be possible to

position the feed in the frame for maximum Sun noise. This also requires that the rotation and elevation motors are working. By comparing Sun excess noise to quiet space a comparison can be made world-wide with similar dishes for gain and efficiency.

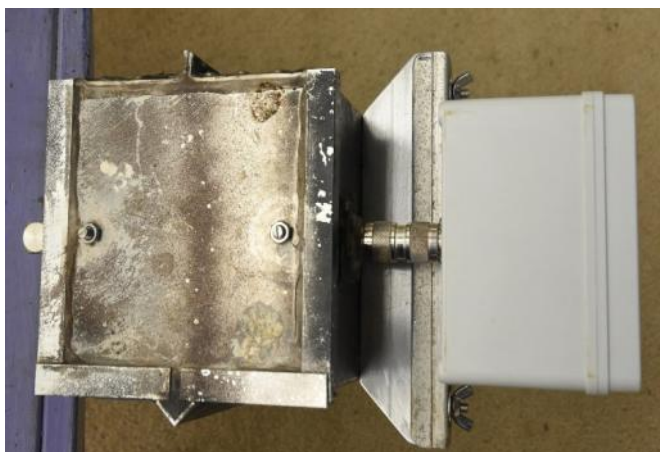
This is where the Cat-5 cables come in. The steering motors will use relays in the shack activated by wires in the Cat-5. The same applies for the Sequencer in the Clubrooms to the LNA protection relay and Transverter control PTT is located. The Sequencer will also control the IF radio in the Clubrooms.



The Septum Feed with LNA mounted on the RX probe



The Electronics to be boxed up in the shack



The Septum Feed is fine-tuned by the thread which positions a disk (capacitor) below the RX and TX feeds. The lock nuts are visible on the back of the Feed. This is another fine adjustment to be made before it gets to be mounted on the dish for focusing. The LNA is mounted as close as possible to the probe to reduce signal losses. The cable loss to the Transverter is not as critical. The 144 MHz cable to the Clubrooms is also not so critical.

Take this as a warning that EME is not an “off the shelf” purchase and “switch on” to hear other stations. I leave the dish steering to the software and mechanical skills for following the moon and all the other friendly club members who will help make it happen.

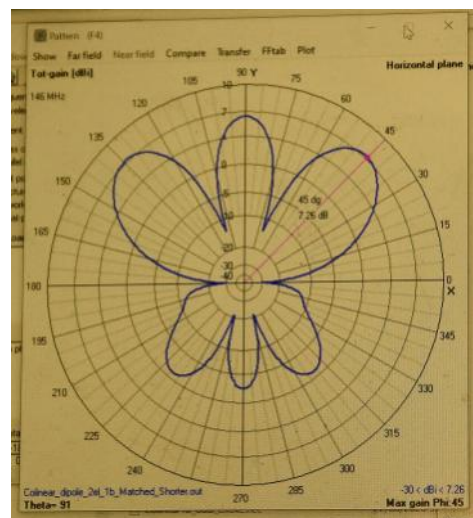
Peter Loveridge ZL1UKG
June 2021

Show & Tell – June 2021

Matthew King is a 4nec2 user and experiments with his designs before he builds them. His design is unconventional but cheap and easy to build. It replaces two vertical polarised 3 element yagis with 6 loops of 1 cm width metal strip with 3 diameters that correspond to the lengths of a director, driven element and reflector, separated by a half wavelength. The pairs of loops touch at the middle. The driven loops require a choke in the form of several turns of coax close the drive point to prevent current flow down the braid. Matthew says that a field test performed as predicted. A later 70 cm version required lengthened elements to be on frequency.



Simon Bridger showed a 4nec2 pattern that could fulfil the purpose of the Beacon replacement at the Nihotupu site. One wants distant operators to be aware that propagation has improved and contacts can now be made to the Auckland region. The most common long distance contacts are made over the sea. Simon selected the East Coast of Australia and the West Coast of NZ which are at 90° to each other to receive most of the TX energy. His design was tested with 4nec2. It has a compromise in the design by presenting a small lobe in between the wanted lobes. To reduce the energy in the unwanted lobe would result in broadening the wanted lobes which is not desirable.



From notes and photos made by Peter Loveridge ZL1UKG, Editor of Spectrum

50 Years Ago in Spectrum

July 1971 Spectrum – meetings continue at the Auckland Technical Institute, Wellesley Street on the 2nd Monday of the month.

President Doug ZL1TFY lamented the poor turnout for the May 30th contest – only a handful of logs received. He wondered where all the proponents of more contests had got to! To try and increase band activity, the AHF Group was planning a weekly sched – the time and place to be decided.

“Stickybeak” who regularly reports on band activity noted that although the weather was colder, there had been some DX and activity. Tim ZL1TNS, a newcomer had a good signal from the North Shore. ZL1AKT, another new call had been active from the top of Mt Eden and Arthur ZL1TBQ had been heard from Tauranga. Also noted were a couple talking about 432 MHz and why there was not more activity on that band.

Carol Johnston ZL1TNR had passed her morse test and was now had a Grade 2 licence and new callsign ZL1AJL. Carol’s mother Aola ZL1ALE had also recently passed her 15 wpm test and now had a Grade 1 licence.

A Central Districts VHF Group had been formed by amateurs from the Wanganui, Horowhenua and Manawatu Branches of NZART. President Selwyn ZL2TGT, Secretary Jim ZL2ANP and Treasurer Harry ZL2BFR. Meetings to be held bi-monthly at the Branch 20 clubrooms.

The Papakura Radio Club had a Mobile Rally planned for the 8th of August and VHF Group members were invited to attend. A 2m Contest with rules was coming up on Sunday 15th August. Contest provided for both phone and CW contacts!

A report from Gary ZL2TDB in Nelson gave news of operating activity and also a suggested modification to the Christchurch Branch Converter to bring the gain up when using intermediate frequencies 8 MHz and above. The Christchurch converter had a better S/N ratio than the RTV & H tube converter and with the modification, the gain at 144.5 MHz increased from 9dB to 29dB.

The debate over the merits of AM v. FM modulation continued with Bob VK3AOT objecting to a previously published statement that FM outperforms AM on weak signals. He provided test results for two similar receivers, one on AM at 104 MHz and the FM receiver tuned to 161 MHz.

Details of the new FM repeater channelling were given – four channels have been set aside nationally for FR repeater operation: Channel A 145.60 MHz, Channel B 145.65 MHz, Channel C 145.70 MHz and Channel D 145.75 MHz. Maps of the north Island and south Island showed the suggested geographic areas for Channels A, B and C, based on “communities of common interest. Channel D was not shown and the proposal was that this be kept as a national repeater channel. Any area would be able to be set up with this channel, provided they accepted the possibility of co-channel interference to/from other repeaters, also on Channel D.

Part One of a seven part series on the Waikato VHF Group’s F.M. Repeater was presented by Ian ZL1TAT. The basic specifications were an all solid-state design with receive sensitivity better than 1uV; power output of 8 to 10 watts. Receiver bandwidth 25 kHz. Power supply to be a battery with a mains powered float charger. The repeater transmitter would be muted when not in operation. The repeater to have remote shut down facilities. Cavity filters to be used on Tx and Rx to minimise spurious responses and radiation; a telemetering system to allow checks of the battery condition and RF output; construction to be of a modular form allow simple modifications or replacement of specific sections.



Amateur Radio Emergency Communication.

**Volunteers in radio communications.
Using our resources to help the community.**

INFORMATION

The Auckland VHF Group has an AREC Group that works closely with Auckland Council Emergency Management. They provide advice, resources and manpower to assist in times of need.

The AREC section is headed by Group Leader Matthew King ZL1YOT.

From time to time the VHF Group has training sessions and exercises. Members also assist with sports events, parades and other community activities. For further information about AREC please see the NZART web site: <http://www.nzart.org.nz/arec/>

JOIN BRANCH 66 AREC

All members of the Auckland VHF Group are encouraged to join the AREC section. Your contribution, large or small is appreciated by all involved. For further information about joining Branch 66 AREC contact the Group Leader:

Matthew King ZL1YOT

022-6493310

mattking@gmail.com

The Deputy Leader position is currently vacant

AREC News:



AUCKLAND VHF GROUP (INC)

SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR
SUBSCRIPTION

SUBSCRIPTIONS FOR 2021

THE SUBS GO TOWARDS;

- Maintenance and on-going improvements to beacons, repeaters and linking systems for the national system, including the Klondyke repeater site.
- Providing on-time and free access to spectrum magazine as soon as it is available.
- Providing facilities for good speakers and lecturers at our general meetings.
- Discounted access to our trading table goodies.
- Access to test equipment and technical help when needed.

FULL MEMBERSHIP **\$55.00**

ASSOCIATE MEMBERSHIP **\$50.00**

FAMILY MEMBERSHIP ADDITIONAL **\$20:00**

SEE ATTACHED MEMBERSHIP RENEWAL FORM (next page)

**REMEMBER TO KEEP US INFORMED OF YOUR EMAIL
ADDRESS!**

OTHERWISE WE CANNOT SEND YOU SPECTRUM!



Thought for the month:

“The most difficult thing is the decision to act. The rest is merely tenacity.”



AUCKLAND VHF GROUP INC.

P O Box 10138, Dominion Rd, Auckland 1446,
 30 Hazel Avenue, Mount Roskill, Auckland,
 Web: <http://www.aucklandvhf.org>
 NEW ZEALAND



NAME				
Mr/Mrs/ Miss/Ms	Christian or given		Surname	
Address		Date:(dd/mm/yy)		
		Phone: (home)		
		Phone: (work)		
Email		Phone (Cell)		
Occupation:		Callsign:		
NZART Member	Yes/No		Branch assigned	
AREC Member	Yes/No		Branch assigned	
Family Member 1	(Name)	(Call)	(Email)	(Mobile #)
Family Member 2	(Name)	(Call)	(Email)	(Mobile #)
Family Member 3	(Name)	(Call)	(Email)	(Mobile #)
Category				To pay
Membership	Full		\$55.00	\$
New/Renewal/Change	Associate		\$50.00	\$
Receipt #	Family (per member)		\$20.00	\$
Donations	Klondyke Refurbishment			\$
Auckland/Brynderwyn/ Klondyke/670/690	Repeater Maintenance			\$
	Data/D-Star			\$
	Beacon/Repeater/Links/ Licences			\$
	Other			\$
		Total		\$
Payment (Mark One →)		Cash <input type="checkbox"/> Cheque <input type="checkbox"/> Internet deposit <input type="checkbox"/>		
Invoice/Statement required		<i>Please Advise Treasurer</i>		
Internet	To account ASB 12-3011-0830580-00. Account name is: Auckland VHF Group Inc. Include your Name/Callsign for us to track. Note: this form needs to be sent to us to update records. Email to: treasurer@aucklandvhf.org .			
Post	The Treasurer, Auckland VHF Group Inc., PO Box 10138, Dominion Road, Auckland 1446.			
In Person	Bring this form and payment to the next club meeting, 2 nd Monday of the month or to the Committee meeting the 4 th Tuesday of the month.			
Privacy	Unsubscribe from Email Notifications <input type="checkbox"/>		Do Not disclose contact Information <input type="checkbox"/>	

The Auckland VHF Group Inc Branch 66 NZART
*gratefully acknowledges the sponsorship of Branch 66 Beacons, Repeaters and
 Fixed Links license fees and the Group's repeater operations by the following
 radio amateurs and NZART Branches for 2021*

2021-04-13, Donations for Repeater Licences and Klondyke Refurbishment

Frequency + Operation	Location	Donation	Donor Name
53.725 Repeater	Klondyke Road	\$50.00	Gwynne Rowe
144.253 Beacon	Nihotupu		Waiting for Antenna
144.575 Digipeater	Whitford		
145.625 Data Rptr	Klondyke Road		
145.650 D-Star Rptr	Klondyke Road		
146.625 Repeater	Klondyke Road	\$50.00	David Wilkins
146.700 Repeater	Ruaotuhenua	\$50.00	Dennis Thornton
146.900 Repeater	Mt Puketutu	\$50.00	David Wilkins
432.253 Beacon	Nihotupu		Stability testing
438.175 D-Star Rptr	Klondyke Road		
438.450 Repeater	Klondyke Road		
438.500 Repeater	North Head		
439.850 Kaimai Link	Klondyke Road	\$50.00	George Marr
439.875 Nat System Rptr	Klondyke Road		
439.900 Egmont Link	Klondyke Road		
439.950 Brynderwyn Link	Klondyke Road	\$50.00	Kylie Peterson
1291.900 Repeater	217 Glenfield Rd		
DMR Rptr (Waitakere)	Quinns Rd		Auckland Area AREC
		\$300.00	

2021-04-13, Donations for Refurbishment

Auckland Branch	\$100.00
Manukau Radio Club	\$100.00
Brenton Faithfull, ZL1BBF	\$50.00
Papakura Radio Club	\$500.00
Ann Walker ZL1BFB	\$100.00
Soren Low ZL1SLK	\$100.00
	\$950.00

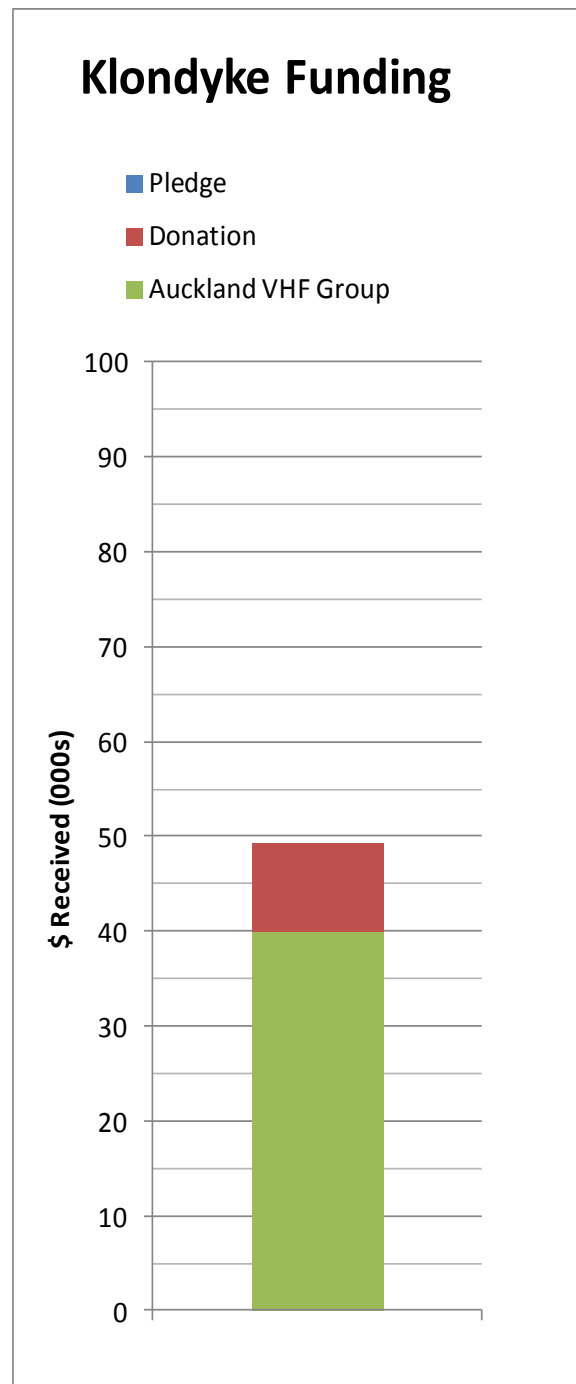
Total \$1,250.00

**Klondyke Tower
Donations towards Maintenance**

Target 100,000

Name	Donation	Pledge	Tower	63,245.00	Other	27,268.25
			GST	9,486.75		
Donations 2018 - 2020	8444.00					
			Total	72,731.75	Total	27,268.25
Margaret Dingley ZL1AYV	100.00					
David Dingley ZL1TIA	100.00		Auckland VHF Group	40,000.00	40.00	
Jennie Dingley, ZL1TDB	100.00					
Yuri Muzyka ZL1GYM	50.00					
Martyn Seay ZL3CK	500.00					
Martyn Seay ZL3CK	\$100					

Total	9394.00	-
Percent	9.39	0.00



TRADING TABLE

Currently our Trading Table is only open on meeting nights.

NEW – Printed Circuit Board. Thanks to a generous donation from N.Z.'s last circuit board production company (now closed down), we have a large quantity of single sided fibreglass printed circuit board material in sizes ranging from 1200 x 600 down to smaller pieces. There's some double sided board as well. Come along to our May meeting if you want some – prices can be negotiated!

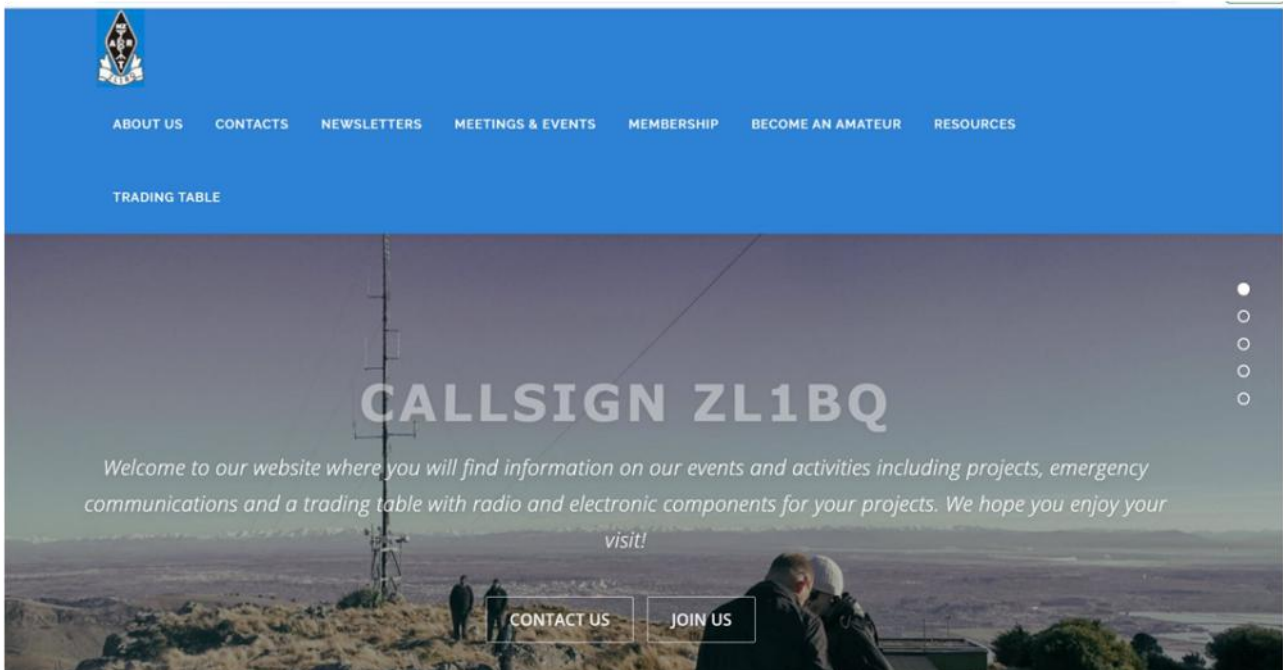
NEW – RG58C/U 50 Ohm Coaxial Cable. Thanks to a bulk purchase we are able to offer this good quality coax at a competitive price. The cable has tinned centre conductor and screen braid making it resistant to long term corrosion. The price is \$2.00 per metre with a discount for purchases of 20m or more. See Vaughan ZL1VH on meeting nights to get this quality coax cable.

The Trading Table is now on line. Navigate your way to our new look web site at <https://aucklandvhf.org/> and click on TRADING TABLE (the most right hand tab).

Wait a few seconds and the on-line version of the Trading Table will pop up. From here you can browse the various sections, dig deeper to look at what's available and even place your order online.

If you prefer to just look at the Trading Table List, just hover your mouse pointer over the TRADING TABLE and a pull down list will appear. From this you can access the full trading Table list and download it in .PDF form.

We also have heaps of parts from dismantled commercial analog TV gear – transmitters, filters, circulators, patch panels, power supplies. Too much to list individually, so come along to the clubrooms and have a look.



Recent Additions to our Trading Table Stock

Electrolytic Capacitors SMD	(Packed in bags of 10 for 50c):	
10uF 16V electrolytic	47uF 16V electrolytic	100uF 16V electrolytic
Resistors:		
50 Ohm 0.4W +/-1% tolerance.		10 for 50c
0.25 Ohm 5W wire wound		
0.27 Ohm 3W Wire wound vertical pcb mount		
Siemens Gas Surge Voltage Protection Tubes:		
SVP Tube type B13-A230. 230V D.C. minimum strike voltage.		\$1.00 for 10
2-electrode type with wire leads, pre-bent for 10mm hole spacing.		
ETAL P1200 600:600 Ohm line matching transformer		\$3.00 each
Quartz Crystal: 6.000 MHz HC49SMD package marked CQ6.0000		\$1.00 each
BNC plugs 50 ohm R/Angle for RG58 coax (solder/clamp type)		\$2.50 each
Relays:		
12V coil, DPDT 1A non-latching (EB2-12NU) SMD package		\$2.00 each
12V coil, DPDT 1A 2-coil latching (EB2-12TNU) SMD package		\$2.00 each
LED Holder panel mount 5mm Kingbright nylon in bags of 50		\$3.00 per bag
Lacing Twine black plastic, in 10m rolls.		\$1.00 each
Ceramic feed-thru insulators, 500V rating, solder in.		50c bag of 10
Semiconductors:		
RURP30120	1200V 30A ultrafast switching diode	\$1.00 each
1SS55	Silicon switching diode. 70V 100mA DO-35	10/\$1.00
2N5777	NPN Light detector, Photo-darlington 45V TO-92	\$0.50 each
2N6027	Programmable Unijunction Transistor 40V 300mW	\$0.10 each
2N6122	NPN TO220 60V 4A 40W GP amplifier	\$0.50 each
2N6292	NPN TO220 70V 40W GP amplifier	\$0.50 each
2N6609	PNP TO3 140V 16A 150W audio/driver	\$1.00 each
BUK457-500B	Power MOSFET 500V 9A 150W TO-220	\$2.00 each
SGP15N60	NPN IGBT 15A 600V fast switch TO-220	\$1.00 each
SGP20N60	NPN IGBT 20A 600V fast switch TO-220	\$1.00 each
UDN2965W-2	Dual high power stepper motor driver. 20 to 50V out at 4A SIP package.	\$1.00 each
LM3909N	LED driver/flasher. 8-pin plastic DIL package.	\$0.5each
LM3911N	Temperature Controller IC. 8-pin plastic DIL package.	\$10 .00 each
LM3914N	LED Bar-graph driver. 18-pin DIP plastic package.	\$5.00 each
PIC16C54B	8-Bit CMOS Microcontroller. 18 pin SOIC SMD package Limited quantity	\$2.00 each