

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



Mobile Antenna Performance Testing
Saturday workshop session. A practical application for VNA equipment

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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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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 14th June 2021 7.30pm

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

Members are advised that a small part of the evening will be a **Special General Meeting to approve our 2020 financial year reports** which will be presented at the SGM. The Reports were supplied as a PDF File which is not compatible with Microsoft Publisher.

Meeting topics for June General Meeting

Report on NZART AGM and Conference.

**Topic for the evening will be "Show and Tell".
Bring along your current project (or an older one) and give us
a five minute talk.**

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:

- 26 June Whangarei ARC Annual Equipment Sale, Buyers from 10 am. Food, tea and coffee will be available will be available from 10 am.
Contact Paul ZL1PC at 021926952 for more information.
- 03 July Papakura ARC Winter Madness Equipment Sale from 10 am to 1 pm at the Clubrooms, Wellington Park, 1 Great South Road, Papakura. Free Entry
A cafeteria will operate from 10:00 am to 12:30 pm

Auckland VHF Group - not the Presidents Report

June 2021

The Auckland VHF Group extends its sincere sympathies to Matthew ZL1YOT on the passing of his Mother, Bonnie Mortimer on Thursday 27 May in Hamilton. As a result, this is not the President's Report. As you will have read in the April issue of Spectrum, we are putting Recruiting up near the top of our committee agenda along with Klondyke funding. It is imperative that we attract some younger members before the club goes the way of many other organisations, unable to function due to the ever-increasing age of its members.

Matthew is keen to set up a ROAD SHOW that is part radio entertainment, part radio basics, and part promoting radio technology as a career. Here are some things we could include:

VIDEO. There was a video doing the rounds about thirty years ago illustrating signal strengths of antennae at a wavelength of about 150mm (2GHz). The transmitting dipole was about five inches long, sitting on one end of a long bench. At the other was a selection of receiving aerials connected to a unit that emitted an audio signal that rose in pitch according to the strength of the received signal. It was fascinating, swapping from a quarter wave to a dipole to a Yagi to a quad.

Another attraction would be a morse key being read by a computer. Get kids to try their hand by speaking the sound to them and getting them to key the letters in. And decoding it onto a screen. Dit dit dit dit, dit dit! Apparently CW is making a comeback with kids, as a curiosity.

Connecting a big subwoofer speaker to the AC mains (with a big resistor) might also impress young minds. 500W at 50 Hz! Find and play audio recordings of real disasters, both from here and overseas, where AREC has assisted in disaster relief operations.

Any ideas along a similar vein would be welcomed, and anyone wanting to be involved please give him a yell.

Fundraising for Klondyke is progressing with an application being made to the Lion foundation for \$50K to assist with the cost of the tower painting. The Lion Foundation have very specific requirements for organisations applying for grants. One that may introduce a delay is the requirement for a letter from Inland Revenue stating that we have tax exempt status. This request is currently with IRD and we will hopefully have that document before too much longer.

Also underway at Klondyke is the replacement of the cable tray up the tower and replacing the ladder that runs up the outside of the top half of the tower. A rigging crew from Compass Communications have started this work, and weather permitting, it will be complete by mid-June. To replace the two runs of cable tray up the tower means that all the coax cable feedlines first have to be removed and secured temporarily to allow the old cable tray to be removed and new tray and mounting blocks fitted.

And before we leave the Klondyke site, a new National System repeater controller is nearly ready to be fitted following comprehensive bench testing thanks to Richard ZL1BNQ and Harry ZL1BK. The new controller will replace our old CMOS 1802 based controller which has given nearly 30 years of service. A major limitation of this controller is that touch-tone commands to switch a link on/off, turn off a transmitter etc., are only acted upon when the carrier drops. This means that if the repeater is locked on for any reason (stuck microphone, open squelch on a National System link), we can't currently command the corresponding receiver off. The new micro-controller will not have this limitation.

Scribed by ZL1VH in the President's absence.

Minutes of the May General Meeting of the Auckland VHF Group Inc.
Held on Monday 10 May 2021 at the Clubrooms, Hazel Avenue, Mt. Roskill

Meeting started at: 19.47

Present: 9 members as per the Attendance Book and one visitor.

Apologies: ZL1GSG, ZL1TIA

Minutes of April General Meeting – as published on page 5 of the April 2021 issue of Spectrum.

Moved the minutes are a true and correct record: ZL1VH Seconded: ZL1YOT Carried

Matters arising: Basil ZL1TOW noted that the financial report in the April General Meeting minutes was not quite right and implied that he, the reviewer was the reason the 2020 Accounts and Financial Report was late. In fact, it was the late supply of requested minutes which caused the delay. ZL1YOT apologised for the incorrect wording. Basil ZL1TOW then announced that he had now received all the required information and was pleased to report that the 2020 Financial Report and Review was now complete.

Some discussion on the use of Dropbox for our minutes and other records followed.

Reports:

There were no reports to the meeting.

Correspondence:

In – newsletters from North Shore Branch 29, Branch 65 Papakura Radio Club, Hibiscus Coast Radio Society and Musick Point Radio Group Inc.

General Business:

A Amendment to Clubs Financial Year

Motion #1: “That the Auckland VHF Group’s end of financial year be changed from 30 September to 30 June.” Moved: ZL1YOT Seconded : ZL1TOW CARRIED

Explanation: Currently our 30 September end of financial year makes it impossible to have the Club’s accounts finalised and reviewed in time for the Annual General Meeting in November. By moving the EOFY back to 30 June, there is time to get the accounts and financial report completed and presented at the November AGM.

Motion #2 “That the Auckland VHF Group’s subscription year be from 1 July to 30 June, the same as the financial year. “ Moved : ZL1YOT Seconded : ZL1TUX

Explanation: This brings the subscription year into line with the Financial Year. The year this is implemented in will require some adjustment to member’s subscription payments. George ZL1TUX advised that members would be informed about this. This also meant that any member not financial at the AGM would not be eligible to vote.

B NZART Annual conference and Remit

- 1 A head count of NZART members present who will be voting on the remit: 5
- 2 ZL1VH explained the remit and after a short discussion, was put to the vote:
In favour: 5 Against: 0 Abstaining: 0
- 3 Appointment of a Delegate to the NZART Conference in Napier June 6 and 7 2021:

Moved ZL1YOT Seconded ZL1TOW

“That ZL1VH be appointed delegate for the Auckland VHF Group Branch 66 and be given powers of discretion to deal with any matters arising at Conference.” CARRIED.

C Klondyke – ZL1VH gave a brief on his visit to the site on Monday 10 with ZL1BK and ZL1BQE.

Reports that the Klondyke 2m repeater was hard to hear was investigated. The south 2m PA was found to only have 0.5W output. An open circuit PCB track found, probably heat cycling caused the fault. Resoldered and on test the amplifier now delivering 15W out. This is 3dB down on the normal output indicating a possible faulty transistor in the amplifier. This will be attended to next site visit.

Discussion of the power consumption at the site followed as the sit visit had included a visit by two radio engineers from Downer New Zealand who are interested in establishing a VHF DMR node at the site – this to be used to improve their internal fleet communications. Basil ZL1TOW offered to contact his son Brian ZL1BJO who was working in the field of remote power monitoring and may be able to assist us with power monitors on each of the tenant’s 230V AC power feeds. This will enable us to accurately monitor the power used and ensure that we are billing correctly for the power used.

ZL1TOF asked when the tower had last been painted. About 20 years ago – ZL1VH will check and provide the actual date the work was done.

D Printed Circuit Board available. ZL1VH drew members attention to a new stock of single and double sided pc board which the Club had had donated.

E Future Meeting Topic: Stephen ZL1SRP suggested a future meeting topic on Digital Mobile Radio (DMR), DMR hot spots and how to get new amateurs involved with using this mode. He noted that as a new amateur, he had initially found it difficult to find “where to go” on the various amateur bands. This sort of information should be available on the Club’s web site.

This concluded General Business and the business part of the meeting closed at 20:24.

Matthew ZL1YOT invited the members to talk about antenna issues they were having. This did not get much of a response, so ZL1VH streamed a video from Alan Wolke W2AEW “An introduction to VNA’s and the Nano-VNA”. This was received with much interest and left everyone with a much better understanding of how the Nano-VNA worked.

The meeting closed at 21:28 and was followed by supper and a general chat. Many thanks to Margaret ZL1AYV for looking after the supper and to Darryl ZL1TCI for assisting with the clean-up afterwards.

Greg Storz ZL1GSG runs a Mobile Antenna test at the Clubrooms

The basic tool in measuring antenna performance is a Directional Coupler. A simple power meter can tell you a ratio of forward to reflected power but are not frequency sensitive. A Spectrum Analyser can tell you where the best / worst frequencies occur. A VNA can also tell you the nature of the mismatch in impedance on you are on your way to optimise your design to make the antenna more efficient.

Greg Storz operated his equipment for those who turned up and demonstrated the LPY Yagi that he is holding which is a commercial design from Create in Japan.

Editor Peter Loveridge ZL1UKG



Chinese Made May Be Cheap BUT !!!

In preparation for the Whangarei International Car Rally over the weekend of May 15 and 16, I took the opportunity to test the dual-band (2m/70cm) mobile whip antenna and magnetic mounting base I planned to use at the VHF Group's antenna workshop on Saturday 8th of May. I was slightly surprised to find that neither the whip antenna nor the mag-mount base was working! No radiated signal when the whip antenna was tested – even on another mag-mount base which was known to be good and nothing out when the mag-mount base was tested with another good whip antenna.... Back home in the workshop and time to find out what was wrong.

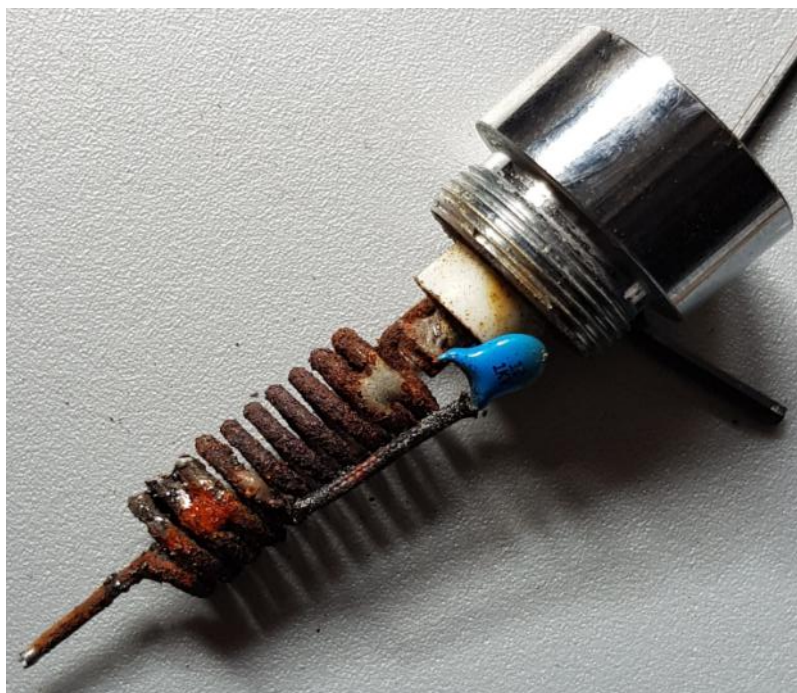
First up was to have a look at the mag-mount base. Cutting open the plastic film on the bottom and the problem was immediately obvious: A bit of an air gap where the centre conductor had parted company from the socket! A little work unsoldering the screen and I was able to remove the coax going into the mag base. Checked the coax cable and no problems there, so cleaned up the base, used some rust converter to coat the rusted part of the cadmium plated metalwork, a coat of corrosion resistant paint over the top of that and re-fitted the coax cable. Used a generous amount of marine sealant on the inside of the base where the cable came through and re-soldered the coax cable screen and centre conductor. The result looked much better mechanically and the solder joint for the centre conductor onto the socket came up nicely with a little heat and fresh solder applied. (Forgot to take a photo at that stage)



Final job was to replace the plastic film over the base of the mag mount. I had nothing suitable on hand so visited a large stationery shop to get some of the self-adhesive film that is used to cover books. Could not find any in a plain colour and decided I did not want a Star Wars theme or cartoon character for the new cover over the base. A chance conversation with a friend and a visit to a local sign shop and I came away with some off cuts of slightly thicker plastic film used in the sign industry. Some of this worked perfectly and the finished result is a more reliable mag mount base with a good protective film over the bottom, so the vehicle paint work won't get scratched. Last job was to clean up the top of the mag-mount, give the SO-239 socket a spray with Inox and replace the three slightly rusty screws with new stainless-steel ones.

Now for the faulty dual band whip antenna.

I undid the grub screws that held the whip into the fold-over base section and pulled the whip out. This left the antenna base with PL259 type plug and above it the black plastic section with the matching section inside. This all unscrewed quite easily:



Not a pretty sight! The coil part of the matching section was a steel spring and the 10pF capacitor which went between the centre of the plug and soldered onto the "coil" was no longer making contact.

With only a week before Rally Whangarei, I decided trying to repair this was in the too-hard-basket in the time available, so the whip base and the rest of the antenna have been put aside for a day when I might be able to make a new coil (it has to be a spring to "push" into the fold-over part of the antenna).



This photo (above) shows the tilt over part of the antenna base where the top of the very rusty spring is a push fit into the hole.

Results of the 2021 Low Band Contest – 10/11 April

*VHF-UHF-SHF-EHF Contests, as administered by the Auckland VHF Group Inc;
on behalf of all VHF groups, including all New Zealand radio amateurs
and supported by NZART.*

Overall Winner	Station	Points	Greatest DX	Stations	Distance
	ZL2MF	230	6m	ZL2MF – ZL1AKW	199 km
	ZL2VS	228	2m	ZL2VS – ZL1IU	539 km
	ZL1SWW	175	70cm	ZL2MF – ZL1IU	199 km
	ZL1AB	87			
	ZL3RC	73			
	ZL1GSG	10			

Band winner	Station	Points	Band winner	Station	Points
6 m (50MHz)	ZL2MF	57	2 m (144MHz)	ZL2VS	196
	ZL1SWW	25		ZL2MF	133
	ZL1AB	12		ZL1SWW	92
	ZL2VS	6		ZL1AB	66
				ZL3RC	64
				ZL1GSG	10

Band winner	Station	Points
70 cm (432MHz)	ZL1SWW	58
	ZL2MF	40
	ZL2VS	26
	ZL1AB	9
	ZL3RC	9

Active Stations (17 in total)

ZL1AB, ZL1AKW, ZL1GER, ZL1GSG, ZL1IU, ZL1SWW, ZL1TBG, ZL2ALW, ZL2GD, ZL2MF, ZL2VS, ZL3DC, ZL3JJ, ZL3LM, ZL3OY, ZL3RC, ZL4LV

Operator Comments

Very low activity down here in ZL3. But we called north as much as I could. Finally heard ZL2VS but he was weak and tried and tried to get his number but just didn't make it. So apart from that a very dull contest.

Was hardly home for much of the contest but managed to make a few contacts. Best DX was Royden ZL2VS – Great signal into Auckland

It was a wet and wild night on the Saturday at Mt Curl but Sunday was a nicer day. Contacts to the South were a bit poor but had good contacts in to Auckland.

Thanks to all that participated and a special thanks to the 2 field stations.

Simon, ZL1SWW
Greg, ZL1GSG

50 Years Ago in Spectrum

June 1971 Spectrum – meetings continued to be held at the Auckland Technical Institute on the 2nd Monday of the month. The June issue was produced in a bit of a rush to advise members of the postponement of a mobile rally and social weekend that had been planned for the end of the month.

Notice was given that the July meeting would be a hidden transmitter hunt.

Members were encouraged to get out in their cars equipped with a receiver capable of listening on 144 MHz and a Quad, Halo, Turnstile or even a whip antenna would do. For those without a car or equipment, passengers were always required to navigate ? and add moral support. Come and see what reflected signals can do in the city with tall buildings playing ghosts...

The June meeting had Graham ZL1AHQ present a lecture on his work and development with phase locked receivers, and this was accompanied by a demonstration. Brian ZL3TFL reported with news from Christchurch and Anthony ZL2AZJ reported on activities from the Wellington VHF Group.

In a letter to the Editor, Bob Halligan VK3OT submitted a challenge to the statement made in Spectrum for May 1971 where the author, referring to FM, stated "...the speech is crystal clean with a complete absence of background noise and under marginal circumstances will out-perform an A.M. transmitter of similar power". VK3OT contended that the statement was quite accurate. He presented a technical analysis of A.M., SSB and FM modes with results that were summarised as:

- 1 FM can be considerably better than the other modes, but only at signal levels at which AM and SSB would be 100% copyable anyway. He cites a reference to J.A. Betts "Signal Processing, Modulation & Noise" published by the English University Press which states that at low signal-to-noise ratios, AM gives better performance than FM.
- 2 SSB is better than AM at all signal levels but particularly at very low levels.
- 3 Wideband FM gives a worse low level performance than Narrow Band FM, but is superior to NBFM at high signal levels.

An advertisement from the Farmers Trading Company announced no price increase on new model Trio receivers and transceivers. The products could be bought over the counter at the Home Appliances, 1st floor of the Farmers Building in Hobson Street.

The Trio JR310 Amateur Band Communications Receiver was \$299, could be bought with a deposit of \$45.00 and \$2.95 a week payments! The Trio TR2E 2m Trans-Receiver with 20 to 24 watts DC input to the final transmitter tube (QQE03/12) was also \$299.95 with the same deposit and terms. The advt. also listed the Trio 9R59S General Coverage Communications Receiver for \$199.95, deposit \$30.00 and \$1.95 a week repayments.

Rodney ZL1TFX produced a design for a Telemetry Signal Generator using a multivibrator based around a CA3028A followed by a low pass filter and single transistor amplifier to give about a 7V peak-to-peak sinewave output. With a varying voltage in on pin 2 of the CA3028A the unit produced a frequency from 1.5 to 2.5 kHz out.

The issue concluded with a very comprehensive report from Jumbo ZL1HV on the 45th NZART Conference held in Palmerston North over the weekend of 4 to 7 June. Registrations for the Conference totalled 299 and also present were amateurs from WA6, VE7 and VK3.



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

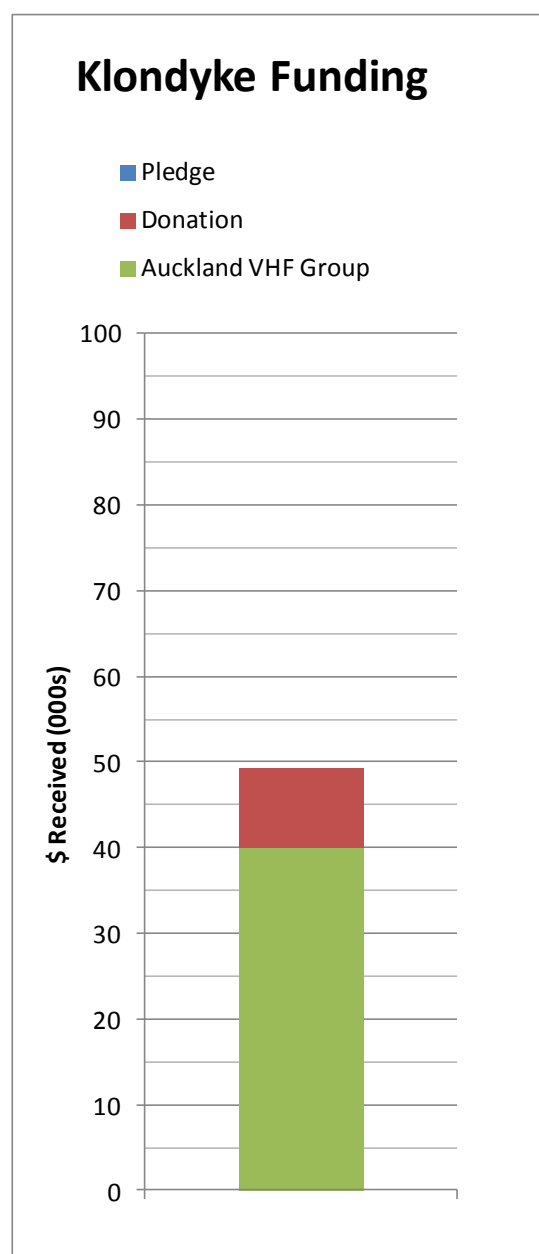
Auckland Branch	\$100.00
Manukau Radio Club	\$100.00
Brenton Faithfull, ZL1BBF	\$50.00
Papakura Radio Club	\$500.00
Ann Walker ZL1BFB	\$100.00
Soren Low ZL1SLK	\$100.00
	\$950.00

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					



Total	9294.00	-
Percent	9.29	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!

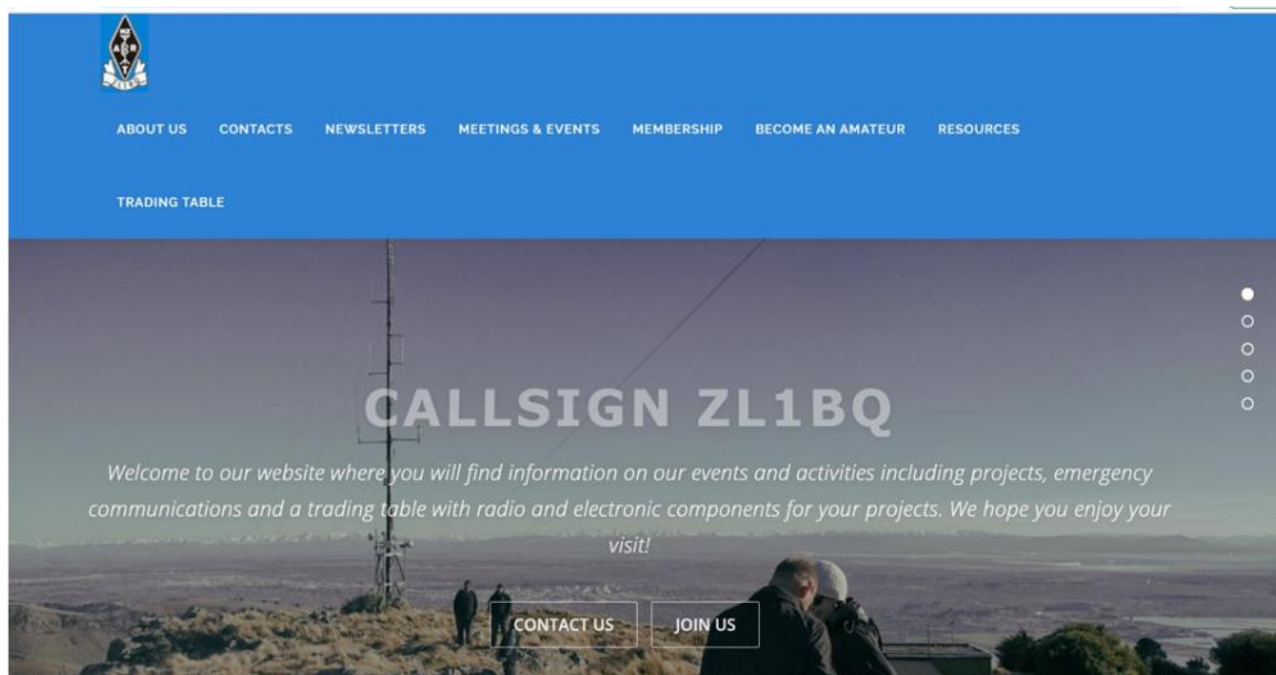
NEW – RG58C/U 50 Ohm Coaxial Cable. Thanks to a bulk purchase we are able to offer this good quality coax at a competitive price. The cable has tinned centre conductor and screen braid making it resistant to long term corrosion. The price is \$2.00 per metre with a discount for purchases of 20m or more.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