

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



Graham Hay's SDR presentation drew a large audience

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# Auckland VHF Group Inc.

## Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446

Clubrooms: 30 Hazel Ave, Mt Roskill

Office	Name	Call sign	Work / Mobile	E-mail
President	Matthew King	ZL1YOT	022 649 3310	president@aucklandvhf.org
Vice President	Not filled			
Secretary	Brendon Reid	ZL1XXX	021 970 785	secretary@aucklandvhf.org
Treasurer	George Raffles	ZL1TUX	021 735 361	treasurer@aucklandvhf.org
Committee	Warren Harris	ZL2AJ	021 649 284	warren@zl2aj.com
	Dave Dingley	ZL1TIA	09 828 9394	mardayak@gmail.com
	Darryl Grange	ZL1TCI	021 123 7733	dgrange@ecohousing.co.nz
AREC Group Leader	Laurie Mathews	ZL1ICU	0274 817 463	perma@xtra.co.nz
Deputy Section	Not filled			
ZL1BQ Trustee	Matthew King	ZL1YOT	022 649 3310	zl1bq@aucklandvhf.org
Head Repeater Trustee	Warren Harris	ZL2AJ	021 649 284	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
690 Manager	Dennis Seymour	ZL1UET	09 278 0381	690@aucklandvhf.org
850 Manager	Vaughan Henderson	ZL1VH	021 844 804	850@aucklandvhf.org
Spectrum Editor	Peter Loveridge	ZL1UKG		spectrum@aucklandvhf.org
Trading Table	Vaughan Henderson	ZL1VH	021 844 804	tradingtable@aucklandvhf.org
Account Reviewer	Basil Orr	ZL1TOW	021 867 367	
Webmaster	Terry Corin	ZL1BPA	027 697 4686	webmaster@aucklandvhf.org
Club Web Page:				<a href="http://www.qsl.net/zl1bq">http://www.qsl.net/zl1bq</a>
ZL1VHD Dstar gateway administrator;	Laurie ZL1ICU		634 5130	0274 817463 perma@xtra.co.nz
ZL1VHD Dstar gateway registration URL :				<a href="http://zl1vhd.dstar.org.nz">http://zl1vhd.dstar.org.nz</a>

### 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  
**peterlov@xtra.co.nz**

# **Auckland VHF Group (Inc) Branch 66**

## **General Meeting Notice**

**Monday 08<sup>th</sup> July 2019 7.30pm,**

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

### ***The Evenings Topics:***

- **Summits on the Air with Warren Harris ZL2AJ**

SOTA is an award scheme for radio amateurs that encourages portable operation in mountainous areas. Come listen to Warren talk about his experience in SOTA, and how you can get involved in this side of amateur radio

**EVERYBODY WELCOME**

**We look forward to seeing you there**

### **Coming Events:**

- Hamilton ARC Market Day 31 August 2019, Vendors from 8 am, Buyers from 10 am at Gordonton Hall, 1024 Gordonton Rd, Gordonton 3281
- Microwave Contest Sat 05-Sun 06 October. All bands 23cm and up.
- Western Suburbs ARC Market Day 02 November 2019, location to be advised. From 9 am
- Field Day Contest Sat 07-Sun 08 December. All bands 6m and up.

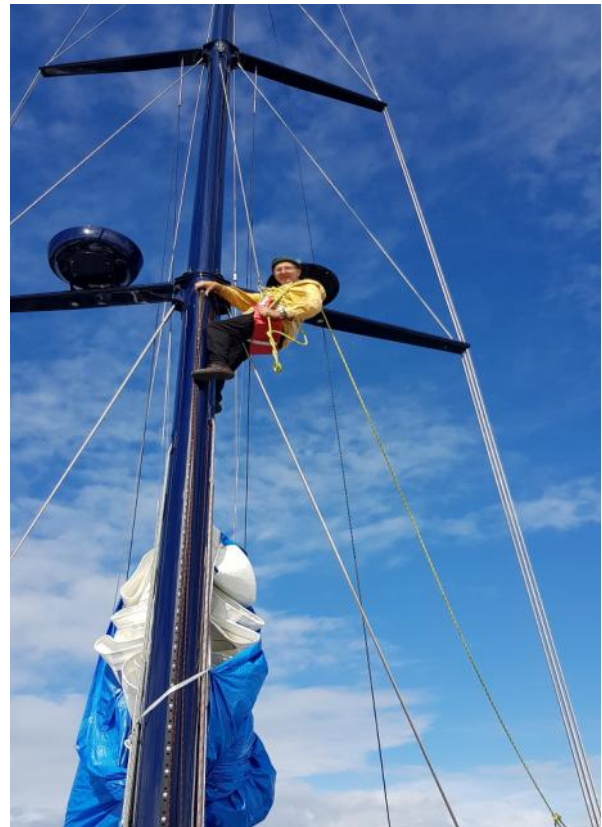
## Auckland VHF Group Presidents Report August 2019

We really need another committee member, guys. There is often someone away with holidays, working or illness, and then we don't have enough for a quorum and can not resolve any issues that require motions. We just need someone to be there, even if you don't have time to take on any of the tasks on the list. We could probably connect by internet if you are out of town.

It has been suggested that we organise some fox hunts. There is an ulterior motive. If we can register as a sports club it will open more financial opportunities. So RDF antennae may come up soon on the construction night's options. Sounds like fun!

There is a wasp nest under the eaves half way along the front wall of the club rooms which we probably need to suppress prior to re-installing the fallen antennae.

The Coastguard Nowcasting equipment has been removed from the Klondyke site. Coastguard have negotiated access to Maritime NZ's nationwide marine repeater system, which makes good sense. Until now, Maritime have had their extensive coastal radio system and we (this with my Coastguard hat on) have almost a monopoly on rescue vessels. So with many incidents they would take distress calls and then pass the details on to us to action them, which delayed call outs by several minutes. This is particularly inconvenient when we needed to question some of the details. So now our radio positions are set up with FIVE screens and two mice! In the attached image the recent additional screen has yet to be commissioned. Last shift I had these channels: Bay of Islands, Cape Reinga, Whangaruru, Whangaroa, Whangarei, Hauraki Outer, Hauraki inner.



See you Monday!

Cheers,  
Matthew King  
02264 93310

## **Auckland VHF Group Inc.**

**Minutes of the General Meeting held on 08 July 2019 at the Clubrooms,  
30 Hazel Avenue, Mt Roskill**

**Meeting Start** 7:25pm  
**Present** Members as per the attendance book.  
**Apologies** Dave ZL1TIA  
**Carried**

### **Moved that Minutes of the Last General Meeting as published in Spectrum be accepted**

Moved Brendon ZL1XXX Seconded Vaughan ZL1VH Carried

### **Matters Arising from the Minutes**

No matters arising

### **Correspondence In**

Papakura Radio Club Newsletter

Copy of a letter from Auckland Council to Julie Farie regarding a request to paint the street with a hockey stick markings to stop people parking over the clubrooms driveway – politely declined.

Entrust Dividend Letter

Multiple Letters from ASB

Email from Coastguard regarding change of circumstances in their radio requirements

### **Correspondence Out**

None

### **Agenda Items:**

Finance Report – George ZL1TUX

No Report

### **Klondyke update**

Vaughan ZL1VH advised that he has made progress with contacting the landowner, watch this space.

### **General Business**

Brendon ZL1XXX called for assistance from members with any of the current 26 projects, from painting the steps to fundraising. Two volunteers tonight, thanks for putting your hands up, the Secretary will be in touch with you.

### **Presentation**

Graham Hay ZL1GH, gave a very interesting presentation on the many aspects of Software Defined Radio, he is interested to work with others who are interested in the field and happy



to meet to promote it to new users.

### Next Meetings

22 July Committee Meeting

12 August - Warren Harris, ZL2AJ, will talk on SOTA (Summits on the Air) SOTA is an award scheme for radio amateurs that encourages portable operation in mountainous areas. Come listen to Warren talk about his experience in SOTA, and how you can get involved in this side of amateur radio.

**Meeting Closed 9:20pm**

## Graham Hay on SDR Software and Radios

Traditionally radios used analogue processing for all stages of reception. Starting with commonly available PCs, Laptops and single board computers and now with the evolving capability of processors such as the Raspberry Pi embedded system the processors are fast enough to calculate the results of the equivalent analogue process.

To make best use of your processor of choice an appropriate operating system such as Linux, Debian, Ubuntu is preferred with Windows a last resort because of its inefficiencies with an enormous choice of processes. A developing operating system to watch for is SEL4 which has a very small kernel (like Linux).



Coding languages can be described as Procedural, Object and Functional. C, C++ are in the procedural family but can play fast and loose with memory if not tidied up. A language like VBA is strictly sequential and is hard to manage different tasks with it. A Functional language like GNU-Radio Companion defines single blocks which perform only one process. The blocks are joined like a Lab-View display and code is generated in Python language to perform the required processing in each block. GNU Radio is also a simulation environment used to create and test software design radio applications. It is a powerful learning tool.

Joe Taylor K1JT writes in Fortran for his digital signal recovery software. Erlang is a language created for Ericsson to manage data switching systems and is now promoted for massively scalable real-time systems with high availability. Graham Hay considered it had an arcane syntax and prefers Elixir written by José Valim which is a more user friendly development from Erlang. To find out more about this look at [www.nerves-project.org](http://www.nerves-project.org)

The commercial development of the DVB-T video dongle lead amateurs to investigate how it might be adapted for their use. It was initially done by sending hex characters to it to see what it would do with them. From the response it was realised that it could be used for other types of

data decoding. With new software it is now sold as an RTL-2382u receiver for 25 – 1760 MHz for AM/NFM/FM/DSB/USB/CW modes.

There is a web site [www.rtl-sdr.com](http://www.rtl-sdr.com) (based in Auckland) which supports getting started in using SDR techniques. There is a lot of information on how to develop your own projects. A starter package can be bought on TradeMe for \$35. He has developed a 4 antenna version of his hardware which can do DTOA direction finding as well. There are other SDR hardware/software packages which can be downloaded from their developers such as RSP2, RSP2-Pro, LimeSDR, USRP, SDRUno.... There is a book by Carl Laufer called “The Hobbyist’s Guide to the RTL-SDR” to give you a background of what you are in for.

Graham’s aim is to take an existing SDR, put a preamp on the front and a USB driver on the back. He will then work on the software in the middle to make a “carrier-grade” (software that runs reliably) application. When learning from existing software he uses three steps.

- Refactor. Extract one function into one piece of code and comment out the unwanted code until the original stops working. The essential code has been identified.
- Refurbish. Add guards and supervision to provide reliability.
- Re-implement. Code in “Rust” a language focused on safety, especially safe concurrency. It was voted the most popular development language for 4 years in a row by the “Stack Overflow” website. It is a language like C++ but provides better memory safety.

Peter Loveridge      02 July 2019      From notes made during the presentation

## Results of the 2019 DX Weekend Contest – 9/10 February

*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.*

<b>Overall Winner</b>	Station	Points
	ZL2BKC	4984
	ZL4AA	4351
	ZL1GSG	3953
	ZL1AA	3101
	ZL3DC	606
	ZL2MF	314
	ZL2WHO	154
	ZL4HSV	112

<b>Band winner</b>	Station	Points
6 m (50 MHz)	ZL4AA	79
	ZL1AA	67
	ZL2MF	41
	ZL1GSG	7
	ZL4HSV	3

<b>Band winner</b>	Station	Points
2 m (144 MHz)	ZL4AA	552
	ZL2BKC	527
	ZL1AA	512
	ZL3DC	419
	ZL2MF	227
	ZL1GSG	220
	ZL2WHO	154
	ZL4HSV	86

<b>Band winner</b>	Station	Points
70 cm (432 MHz)	ZL2BKC	576
	ZL4AA	550
	ZL1AA	377
	ZL3DC	187
	ZL1GSG	90
	ZL2MF	46
	ZL4HSV	23

<b>Band winner</b>	Station	Points
32 cm (925 MHz)	ZL1GSG	266
	ZL2BKC	266

<b>Band winner</b>	Station	Points
23cm (1296 MHz)	ZL4AA	1046
	ZL1AA	622
	ZL2BKC	607
	ZL1GSG	210

<b>Band winner</b>	Station	Points
12 cm (2400 MHz)	ZL1GSG	227
	ZL2BKC	146

<b>Band winner</b>	Station	Points
9 cm (3400 MHz)	ZL2BKC	618
	ZL1GSG	450
	ZL1AA	124

<b>Band winner</b>	Station	Points
6 cm (5760 MHz)	ZL1GSG	878
	ZL2BKC	878
	ZL1AA	124
	ZL14AA	65

<b>Band winner</b>	Station	Points
3 cm (10368 MHz)	ZL4AA	2059
	ZL2BKC	1366
	ZL1GSG	900



ZL1AA 124

<b>Band winner</b>	Station	Points
1.2 cm (24xxx MHz)	ZL1AA	1150
	ZL1GSG	659
	ZL2BKC	659

<b>Greatest DX</b>	Station	Distance
6 m	ZL4AA - ZL3NW	318 km
2 m	ZL1AA - ZL2WHO	461 km
70 cm	ZL2BKC - ZL1AA	337 km
23cm	ZL2BKC – ZL1AA	337 km
12cm	ZL2BKC- ZL1GSG	122 km
9 cm	ZL1AVZ – ZL2BKC	271 km
6cm	ZL1GSG – ZL2BKC	125 km
3 cm	ZL4AA – ZL3RC/P	286 km
1.2cm	ZL1GSG – ZL2BKC	125 km

#### **Active Stations** (40 in total)

ZL1AKW, ZL1AVZ, ZL1BK, ZL1BRL, ZL1CBE, ZL1CZZ, ZL1GSG, ZL1JLM, ZL1PDT, ZL1RCC, ZL1RQ, ZL1TBG, ZL1TGS, ZL1VH  
ZL2ALW, ZL2BAY, ZL2BKC, ZL2CHAR, ZL2MF, ZL2NW, ZL2TC, ZL2WHO  
ZL3DC, ZL3LF, ZL3NW, ZL3PX, ZL3RC, ZL3RJ, ZL3TKI  
ZL4ASW, ZL4BC, ZL4DC, ZL4HSV, ZL4LV, ZL4LV, ZL4SA, ZL4SY, ZL4TH, ZL4UC, ZL4VM

#### **Active team members**

ZL1AA: ZL1SWW, ZL1SLO    ZL4AA: ZL4DK, ZL4FM, ZL4OL, ZL4TAE

#### **Operator comments**

**Greg ZL1GSG:** In contrast to other contests, this time I had excellent weather. No gale force winds, no hail, no thunderstorm, no downpour, just a light breeze to keep the bugs away. Timing issues meant that I could only be active on Saturday. The plan was to be on the North side of Mt Ruapehu so I could work the Auckland stations, unfortunately the conditions haven't been too good. Another reason for going South was to work ZL2BKC on 24GHz and the other microwave bands. The result of that was that we've managed to work each other on all of the 10 bands from 50MHz to 24GHz and that in one time period. However, it has become obvious that Wayne and I are microwave people, as neither of us had a useful 50MHz antenna. Working so many microwave bands was something I haven't done before and most likely will not happen again in the future.

**Wayne ZL2BKC:** Great weather made the weekend enjoyable. Highlights: Working Greg ZL1GSG on all 10 bands to 24GHz. Low points: No propagation on higher bands from Egmont to Auckland this year. It was a real struggle to make contact on 23cm. 33cm band contacts with Greg ZL1GSG were excellent copy, several S-points above 1296 MHz.

**Maurice ZL2MF:** Contest enjoyable but severe lack of activity, particularly from the Waikato, meant for meagre scores. Ended up driving up to see ZL1AA as it was such a lovely sunny day on the Sunday.

**David ZL4AA:** Weather – hot and dry, mostly calm. Band Conditions – variable, some very strong signals on Sunday morning that faded away to low levels later in the day. Had a slow start as a faulty balun connection in the 2 metre antenna took some time to repair.

**Simon ZL1AA:** Had a great time, bit of a late start. Had times where we got absolutely soaked with very little warning! Band conditions not that flash with Hepburn showing a big back spot between us and the south. Really annoyed I left the FT-817 behind for the transverters but limped along with an old FT-290R. Nice to have some visitors to watch it all happening. All hams so I couldn't get some prospective new amateurs in!

The rules for VHF-UHF-SHF-EHF Contests, as administered by the Auckland VHF Group on behalf of all VHF groups are available on the NZART website: <http://www.nzart.org.nz/activities/contest-rules/rules-vhf-and-above/>

## **An invitation to Microwave Update 2019**

Conference registration is now available on line at [www.microwaveupdate.org](http://www.microwaveupdate.org)

The North Texas Microwave Society would like to invite you to the annual Microwave Update Conference to be held October 3rd through the 5th 2019 at the Hilton Garden Inn and Conference Center in Lewisville (Dallas) Texas. Microwave Update is the premier microwave conference of the year and was initially started by Don Hilliard W0PW (sk) back in 1985. This is the ideal conference to meet fellow microwave enthusiasts and share ideas and techniques that will help you conquer your next microwave band.

The latest list of speakers now includes Rex Moncur VK7MO, Tony Emanuele K8ZR, Rick Fogle WA5TNY, Brian Hendryx, Paul Wade W1GHZ, Joe Jurecka N5PYK, Doug Miller K6JEY, Greg McIntire AA5C, Steve Kostro N2CEI, Kent Britain WA5VJB, Bob Stricklin N5BRG, Barry Malowanchuk VE4MA, Tom Williams WA1MBA, Tom Apel K5TRA, Tom McDermott N5EG, Dave Robinson G4FRE, Ben Lowe K4QF, Skip Macaulay VE6BGT, Warren Ferber WF0T and Al Ward W5LUA. Check out the web site for the titles.

Friday morning will be dedicated to antenna gain measuring led by WA5VJB, noise figure testing led by W5LUA and phase noise analysis led by AF8Z and KC4YOE.

On Thursday afternoon, we plan to have a workshop lead by Tom McDermott N5EG on GNU Radio. GNU Radio is a development and simulation environment used to create and test software design radio applications. This is a powerful learning tool and GNU Radio can be used to implement working radio applications. Topics to be covered during the workshop will include:

- \* Installation of the GNU Radio package in Windows.
- \* Review of GNU Radio capabilities and core concepts.
- \* Review of important GNU Radio modules, building a project, implementing and running projects involving hardware.
- \* Use of Gnuradio Companion (GRC) graphical environment.
- \* Demonstration of Gnuradio Companion (GRC) application with Ettus radio.

The workshop is scheduled for Thursday afternoon from 3 PM until 6 PM.

We still have several surplus electronics and mechanical places in the DFW area that may still be worth a visit on Thursday. A complete list is available on <<http://www.ntms.org>> [www.ntms.org](http://www.ntms.org).

Hotel registration has been setup. The hotel link is  
<https://hiltongardeninn.hilton.com/en/gi/groups/personalized/D/DALLEGI-MICRO-20191003/index.jhtml>

I suggest copying and pasting the link into your internet browser for best results. Microsoft Edge gets fussy but Chrome and Mozilla Firefox work well.

The conference rate for Thursday, Friday, and Saturday night is \$104 per night for a King which includes breakfast. The rate on the same days for a Double Queen is \$114 per night including breakfast. We encourage everyone to register for the hotel as early as possible. If your plans change and you can't attend, you have until September 30th to cancel without any cancellation fee. Special room rate will be available until September 13. If you book without using the link above please mention North Texas Microwave Society so we can get credit for the room nights as this is required for us to keep conference registration rates as low as possible. The Group Code is "MICRO". If you have any problems with booking the hotel rate please contact

<<mailto:w5lua@sbcglobal.net>> [w5lua@sbcglobal.net](mailto:w5lua@sbcglobal.net).

Please book your hotel early so we can make sure rooms are available for everyone. Late booking has been an issue at past MUDs and we would like to have everyone at the same hotel. It's more fun for all.

Hope to see you in the Dallas area once again.

73 Al Ward W5LUA Conference Co Chairman  
Bob Stricklin N5BRG Conference Co Chairman

July 19, 2019

## **Repeater Book – useful smartphone app.**

Google or search on Playstore or AppStore for Apple IOS devices. Repeater Book is a comprehensive world-wide free repeater directory. Once installed you can configure it for amateur repeaters from 30 MHz through to 24 GHz and set the distance from your location. All repeater modes can be selected or de-selected – FM, D-Star, Yaesu System Fusion, Echolink, IRLP, ATV, DMR, AllStar and more. If your rig has Blue-Tooth capability, certain rigs can be controlled directly from the App (currently Icom 7000, 7100, 9100 and Yaesu FT-857, FT-817, FT-897, FT100D). Selecting the repeater on the App page will automatically set your rig to the repeater frequency and mode.

Have a look at the web page at <https://repeaterbook.com/> for more information.

## NZART response to French use of the Amateur 2m Band Allocation

By John Moriarty ZI2JPM, NZART IARU Liaison Officer <iaru@nzart.org.nz>

The recent proposal from France that additional bandwidth for aeronautical use be made available in the 144 -146 MHz spectrum has been opposed by the International Amateur Radio Union (IARU) and some other member states of the International Telecommunications Union (ITU) in Region 1.

NZART is a very active member society of the IARU and New Zealand is a well-regarded member state of the ITU. The spectrum in question is a primary, worldwide allocation to amateur radio.

At this stage, there is no certainty that France's proposal will develop into a formal position by member states within Region 1. And even if it did, would then need to receive support from wider ITU forums such as the World Radio Conference (WRC) where adoption would require international consensus. There is currently no evidence that this is a likely outcome.

However, it is sensible to consider the relationships between amateur radio, the spectrum allocations we enjoy and how all of this contributes to our society. For the 2 metre band alone, New Zealand's amateur radio operators have invested tens of millions of dollars in infrastructure and have dedicated hours beyond measure to usage and innovation. On top of this, we have also contributed to our broader society through, for example, disaster communications, search and rescue, plus administration support to organisers of public events. The value of our voluntary efforts is enormous and, arguably, without substitute!

The 2 metre band is not replaceable for most of these contributions as it is well-matched to the task of reliable radio communication in our urban and mountainous terrain. This New Zealand story is replicated throughout the world in different ways and the IARU have been explaining this to member states in Region 1. They are being listened to.

Radio spectrum is scarce and precious. Amateur radio operators have rights to it, so long as the ITU agrees that we should. There is no sensible reason why the enormous social and economic contribution by amateur radio operators should be reduced, but we should not expect to be free from challenge! For this very reason, NZART and other radio societies are contributing members of the IARU so that there is a strong voice in the right places to advocate for the spectrum we have and explain the contributions we make to our respective societies.

Many who read this may still have their concerns. Many will not be members of NZART but, none-the-less, expect someone to work for the protection of the amateur spectrum. The only resources NZART and the IARU get come from their members, so don't ask what NZART can do for you, but rather, what can you do for NZART?

If you are not a member – join NZART and a radio club. Just do it!

If you are a member, we thank you for your support and ask that you participate to the extent you can: use the 2 metre band, log your QSO's, write short articles for *Break-In*, be active in your Club, cooperate with NZART Officers who volunteer their time to inform IARU, Radio Spectrum Management (RSM), Youth development and more besides.

In the meantime, it is more important that you show your support for NZART and your club rather than speculate about what might never happen in the years to come with a very immature proposal from a country in Europe. The more resources NZART and the IARU have, the more likely it is that you will continue to enjoy the benefits of the spectrum we have.



**Amateur Radio Emergency Communication.  
Volunteers in radio communications.  
Using our resources to help the community.**

**INFORMATION**

The Auckland VHF Group has an AREC section 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 Section Leader Laurie Mathews ZL1ICU.

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 Section Leader or his Deputy:

Section Leader; Laurie Mathews ZL1ICU 634 5130 0274 817 463 [perma@xtra.co.nz](mailto:perma@xtra.co.nz)

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## AUCKLAND VHF GROUP (INC)

**SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR  
SUBSCRIPTION**

### **SUBSCRIPTIONS FOR 2019**

THE SUBS GO TOWARDS;

- Maintenance and on-going improvements to beacons, repeaters and linking systems for the national system, including the Klondyke repeater site.
- Provides on-time and free access to spectrum magazine as soon as it is available.
- Provides 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 \$45.00**

**ASSOCIATE MEMBERSHIP \$40.00**

**FAMILY MEMBERSHIP ADDITIONAL \$10:00**

***SEE ATTACHED MEMBERSHIP RENEWAL FORM (next page)***



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

**OTHERWISE WE CANNOT SEND YOU SPECTRUM!**



<b>NAME</b>	<b>Mr/Mrs/Miss/Ms</b>	<b>Christian or given name</b>	<b>Surname</b>
<b>Address</b>		Phone: (home)	
		Phone: (work)	
		Phone (Cell)	
		Email	
<b>Occupation:</b>		<b>Callsign</b>	
<b>NZART Member</b>		<b>Branch assigned</b>	
<b>AREC Member</b>		<b>Branch assigned</b>	
<b>Category</b>			<b>To pay</b>
<b>Membership</b>	Full	\$45:00	\$
<b>New/Renewal/Change</b>	Associate	\$40:00	\$
<b>Receipt #</b>	Family Add	\$10:00	\$
<b>Donations</b>	Auckland/Klondyke		\$
	Brynderwyn		\$
	Data/D-Star		\$
	IRLP		\$
	Other		
	Beacon / Repeater / Links / Licence donations		\$
		<b>Total</b>	\$
<b>Payment</b>			
Circle one -->	Cash	Cheque	Internet deposit
Invoice/Statement required	Please Advise Treasurer		
<b>Internet</b>	<p>To account <b>ASB 12-3011-0830580-00</b>. Account name is: Auckland VHF Group Inc. Include your <b>Name/Callsign</b> and Sub or <b>RepeatDon</b> etc in particulars field, for us to track. To sponsor a specific repeater, nominate the repeater and a backup repeater for the donation, in case the initial choice has been taken. The sponsorship is a minimum of \$50.00 which covers the licence for a year. <b>Note:</b> Please return the Form to the email or postal address given below to allow us to update our records.  <b>(Please Note the Account Number and email may have changed from last year)</b>  <b>Email to: <a href="mailto:info@aucklandvhfgroup.org.nz">info@aucklandvhfgroup.org.nz</a></b></p>		
<b>Post</b>	The Treasurer, Auckland VHF Group Inc., PO Box 10138, Dominion Road, Auckland 1446.		
<b>In Person</b>	Bring this form and payment to the next club meeting, 2 <sup>nd</sup> Monday of the month or to the Committee meeting last Monday of the month.		

## ***The Auckland VHF Group Inc Branch 66 NZART***

*gratefully acknowledges the sponsorship of Branch 66 Beacons, Repeaters and Fixed Links licence fees and the Group's repeater operations by the following radio amateurs and NZART Branches for 2019*

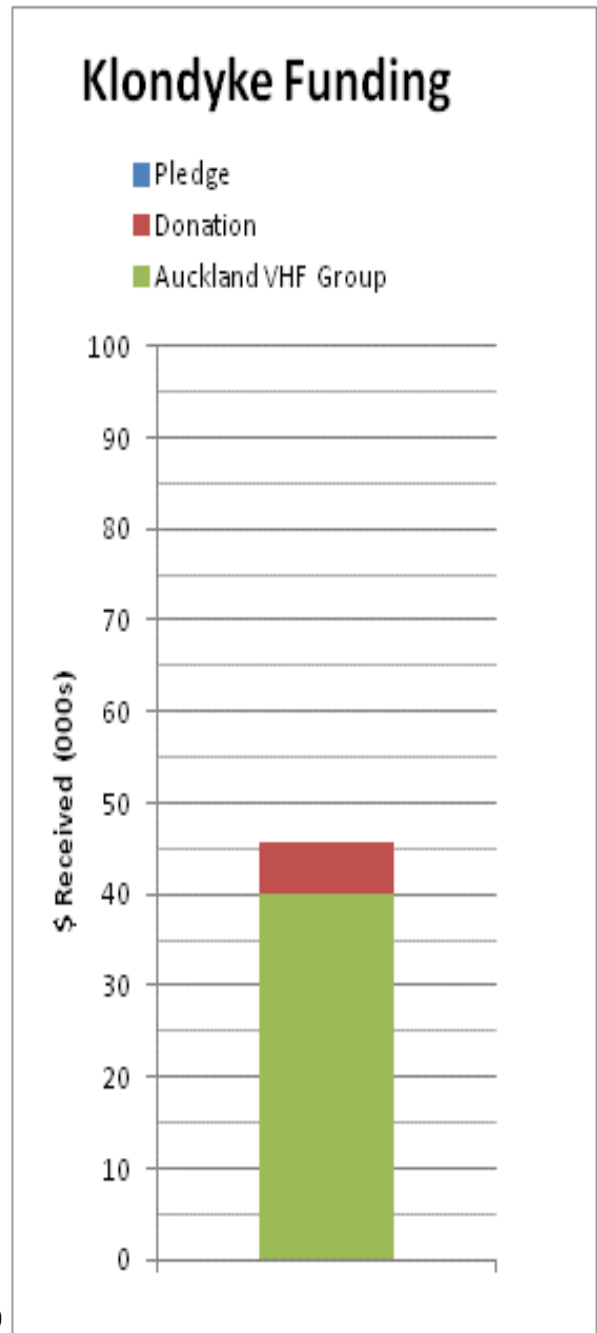
<u>Repeater frequency</u> and name	Repeater location	Sponsorship advised for 2019	Amount paid
53.725 Repeater	Klondyke Road	Gwynne Rowe	\$50
144.253 Beacon	Nihotupu	Not operating	
145.625 Data Rptr	Klondyke Road	Not operating	
145.650 Dstar repeater	Klondyke Road	Laurie Mathews	\$50
146.625 Repeater	Klondyke Road	Laurie Mathews	\$50
146.700 Repeater	Ruaotuhenua	Dennis Thorton	\$50
146.900 Repeater	Mt Puketutu Radio	David Wilkins	\$50
432.253 Beacon	Nihotupu	<b>Stability testing</b>	
438.175 Dstar repeater	Klondyke Road	Laurie Mathews	\$50
438.500 Repeater	North Head	Not operating	
439.850 Link Tx to Kaimai	Klondyke Road	Franklin Radio Club	\$50
439.875 Ak Nat Sys Rptr	Klondyke Road	Franklin Radio Club	\$50
439.900 Link Tx to Egmont	Klondyke Road	Franklin Radio Club	\$50
439.950 Link Tx to Brynderwyn	Klondyke Road	Franklin Radio Club	\$50
1291.9 Repeater	217 Glenfield Rd	Soren Low	55.00
		<b>Total Sponsorship</b>	<b>\$555</b>
<b>NZART Inc: Branch/Personal donations</b>			
<b>Manakau Branch</b>			\$100
<b>Papakura Radio Club</b>			\$500
<b>Helicopter Trust (Brynderwyn)</b>			\$360
<b>Auckland Branch</b>			\$100
<b>Compass Communications</b>			\$2,760
	<b>Donations</b>		<b>\$3,820</b>
<b>Current as at 05/05/2019</b>			

*The Auckland VHF Group, Branch 66, would like to thank all those who came forward to sponsor the licence fee for our Beacons, Repeaters or Fixed Links for the year 2019 or donate towards the Group's repeater Operations.*

**Klondyke Tower  
Donations towards Maintenance**

**Target 100,000**

Name	Donation	Pledge	Tower	63,245.00	Other	27,268.25
			GST	9,486.75		
Western Suburbs Radio Club	200.00		Total	72,731.75	Total	27,268.25
Ross Glover ZL1BGB	50.00					
Michael Sheffield ZL1ABS	500.00					
Andrew Brill ZL1COP	100.00		Auckland VHF Group	40,000.00	40.00	
Martyn Seay ZL3CK	50.00					
Aaron Pelly ZL1FAT	10.00					
Cris Hodgetts ZL1CLH	20.00					
David Crosier ZL1THF	20.00					
Ann Walker ZL1BFB	20.00					
Bruce Churcher ZL1BLB	20.00					
Klondyke Raffle @ Western Suburbs	160.00					
Dennis Thornton ZL1TAY	50.00					
George Raffles ZL1TUX	100.00					
Keith Dix ZL1BQE	100.00					
Franklin Radio Club ZL1SA	800.00					
Terry Corin ZL1BPA	1000.00					
Keily Peterson ZL1KM	150.00					
Gilbert Eckroyd ZL2EK	100.00					
David Blackett ZL1AD	50.00					
Ian Sexton ZL1PZ	500.00					
Auckland Branch ZL1AA	100.00					
Ralph & Rosemary Boshier	40.00					
Nick Emery ZL1BOP	50.00					
A. Kelvin McLean	20.00					
Soren Low ZL1SKL	100.00					
North Shore Radio Club	1500.00					
<b>Total</b>	<b>5810.00</b>	<b>-</b>				
<b>Percent</b>	<b>5.81</b>	<b>0.00</b>				



## TRADING TABLE

Currently our Trading Table is only open on meeting nights.

**Resistors:** We are no longer going to stock the standard 1/4W carbon film resistors on the Trading Table. Any members wanting to stock up on resistors before they are otherwise disposed of – come along to the next meeting and help yourselves.

The shelf space currently taken up by resistors will be used to display other Trading Table stock items. Watch this space for details.

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

Back in Stock—

**SO239 UHF Adaptor:**

Just what you need to make up a mobile antenna. SO239 socket and mounting nut. The tube on the side is a screw-in fit for RG58 coax cable. Just strip the outer sheath off and allow about 6 to 7mm of centre conductor, screw the RG58 into the side of the adaptor and solder the center conductor to the centre pin of the fitting.



### **Coax Adaptors:**

Thanks to a recent donation we have a range of assorted coaxial adaptors available at only \$3.00 each, but be in quick!



**Trading Table Stock List**—thanks to those members who assisted with a stock take of the Trading Table components. A little more work remains to finish off the stock and when complete, a new list will be available. Keep an eye on our web page for updated information.

## Capacitors, Transmit:

Capacitors, Metal Clad Mica (Unelco, Semco)

\$2.20 each

Values (in pF):

Or 10 up for \$2.00 each

3.9, 4.7, 6.8, 10, 12, 15, 20, 22, 24, 27, 30, 33, 34, 47, 51, 62, 82,

100, 120, 130, 150, 220, 240, 300, 360, 680pF

Most are rated 350V working  $\pm 5\%$  tolerance.

Similar to illustration, tab does not have hole:



## Resistors Surface Mount:

Packed in bags of 10 for \$0.50 bag

Most are 1206 size: 2.7 ohm, 4.7 ohm, 22 ohm, 49 ohm, 56 ohm, 68 ohm, 82 ohm, 100 ohm, 180 ohm, 270 ohm, 330 ohm, 390 ohm, 470 ohm, 510 ohm, 680ohm, 820 ohm, 1K ohm, 2k2 ohm, 3k3 ohm, 5k6ohm, 10K ohm, 68K ohm, 100K ohm.

## Quartz Crystals:

3.579545 MHz HC18/U wire ended holder		
4.194304 MHz HC18/U wire ended holder	[F.4.1]	\$1.00 each
4.1952 MHz HC18/U wire ended holder	[F.4.2]	\$1.00 each
4.33618 MHz HC18/U wire ended holder		\$1.00 each
6.000 MHz HC49/S SMD package 20pF load capacitance	[F.4.3]	\$1.00 each
8.192 MHz HC18/U wire ended holder		\$1.00 each
8.867238 MHz HC18/U wire ended holder		\$1.00 each
13.875 MHz HC18/U wire ended holder	[F.4.5]	\$1.00 each
14.31818 MHz HC18/U wire ended holder. Rakon J30G-4H spec	[F.4.6]	\$2.00 each
14.7456 MHz HC49/S SMD package	[F.4.7]	\$1.00 each
17.472 MHz HC18/U wire ended holder		\$1.00 each
18.432 MHz HC18/U wire ended holder	[F.4.8]	\$1.00 each
20.0000 MHz HC49S SMD package P/No.7D20000183BSAF25Q3	[F.4.9]	\$1.00 each
24.567 MHz HC18/U wire ended holder		\$1.00 each
45.600 MHz HC18/U wire ended holder		\$0.50 each

## Miscellaneous:

Battery clip for 9V (PP9) type battery	[F.2.5]	10 for \$1.00
RJ-12 sockets, 6-way PCB mount	[E.6.10]	20c each
TO-3 Mica Washer and insulating bushes	[S.9.9]	50c bag of 20
LED Holder panel mount type	[S.7.10]	50c bag of 10
Test point sockets pcb or chassis mount	[F.2.4]	10c each
Brass rivets, ideal for through-hole connections	[F.2.6]	50c/100
Cable retainer clips black plastic fits 25mm square boom	[F.2.7]	50c each
Plastic standoff mounts for PCB mounting	[F.4.8]	10c each
Handle, Grey Plastic, for equipment enclosures	[F.2.1]	\$1.00 each
Crystal socket PCB mount for HC25/U crystals	[F.2.10]	10c each
Crystal socket chassis mount for HC6/U crystals	[F.2.9]	10c each
Rubber switch boot (waterproof) 15/32"	[F.2.7]	50c each

## Radio Frequency Transistors

ATF55143	Low noise E-PHEMT 0.6dB noise figure. Low noise amp for frequencies between 450MHz and 6GHz. SMD package SOT343 (4 lead). [S.case]	\$1.00 each
MGF1302	Low noise GaAs FET Nf = 1.4dB @ 4GHz, 4dB @ 12GHz. [S.case]	\$5.00 each
BF199	NS 25V 25mA, 500mW ft = 550MHz TO92[S.4.14]	\$1.00 for 10
BF494	NS 20V 30mA Low noise mix-osc/IF amp TO-92 [S.4.15]	\$1.50 for 10
BFR91	NS RF Amp. 5GHz 1.9dBnf @ 500MHz [S.case]	\$2.00 each
MFE121	Dual gate N-MOSFET 20V 5mA VHF Amp BF352 equiv. [S.case]	\$0.50
MPS5179	NS TO92 12V 50mA 200mW ft 2000MHz Nf 5.0dB [S.5.13] RF Transistor. Use in UHF/VHF amplifiers with collector currents in the 100 uA to 30 mA range, and in low frequency drift, high output UHF oscillators.	\$0.50 each
BFG67	NS 8GHz 50mA rf amp/preamp SOT143B package [S.case]	\$1.50 each
MPS5172	NS 25V 100mA Ft 120MHz [S.7.5]	\$0.10 each
MPS6507	NS, VHF Mixer, 20V, 100mA, Ft 700MHz [S.5.8]	\$0.20 each
C1-12	NS RF Pwr 400 – 500 MHz 1W 12.5V [S.Case]	\$1.00 each
C3-12	NS RF Pwr 400 – 500 MHz 4W 12.5V [S.Case]	\$2.00 each
MRF237	NS RF Pwr. VHF 4.0W 12V TO39 [S.5.13]	\$3.00 each
MRF449	NS RF Pwr. 2-30MHz 30W 12.5V stud mount [S.Case]	\$10.00 each
MRF559	NS RF Pwr. 806-960MHz 0.5W 12.5V [S.5.13]	\$0.50 each
MRF628	NS RF Pwr 400 – 500 MHz 1W 12.5V [S.Case]	\$2.00 each
MRF904	NS RF Small signal amp. Ft 4GHz 15V TO206 [S.5.13]	\$3.00 each
SD1144	NS RF Pwr 400–550 MHz 2W 12.5V stud mount [S.Case]	\$3.00 each
2N5945	NS RF Pwr 400–700 MHz 2W 12.5V stud mount. [S.Case]	\$3.00 each
2N5946	NS RF Pwr 400–550 MHz 10W 12.5V stud mount [S.Case]	\$4.00 each
2SC908	NS TO39 RF Amp 1W @ 500MHz 13.6V [S.5.13] Designed as driver and RF power amplifier. 0.5 to 0.8W output at UHF land mobile band. Gain 15dB (Vce=6.0V, Ic=5mA, ft=2000MHz)	\$1.00 each
3SK45	Packaged as ECG221, dual-gate N-channel MOSFET for vhf amp and mixer applications. [S.6.16]	\$0.75 each
3SK192GR	Dual-Gate MOSFET 15V 30mA(max) [S.7.13]	\$1.00 each
2SC5488	NS 30V 70mA low noise rf pre-amp [S.6.4]	\$0.10 each

### Recent additions:

BST70A	N-Chan DMOS 80V 0.5A TO92 switch	\$0.20 each
PMBT3904	NPN 40V 200mA switching transistor SMD	\$0.50 for 10
PMBT3906	PNP 40V 200mA switching transistor SMD	\$0.50 for 10