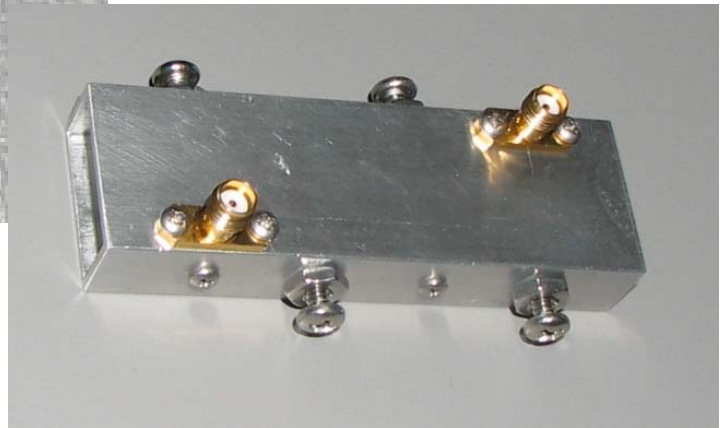
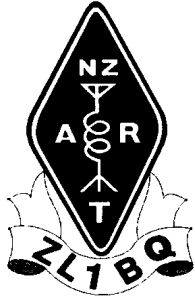


**The Official Newsletter of the  
Auckland VHF Group Inc.  
Spectrum**



**3400 MHz Filter**



# Auckland VHF Group Inc.

## Branch 66 NZART

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

Office	Name	Call sign	Home	Work / Mobile	E-mail
President	John Dunn	ZL1JD	473 9514	021 731 907	<a href="mailto:john.dunn@clear.net.nz">john.dunn@clear.net.nz</a>
Vice President	Jim Meachen	ZL2BHF	480 1043	021 1039 333	<a href="mailto:jim.m@clear.net.nz">jim.m@clear.net.nz</a>
Secretary	Marlene Mathews	ZL1MYL	634 5130		<a href="mailto:perma@xtra.co.nz">perma@xtra.co.nz</a>
Treasurer	Doug Cooke	ZL1TTE	846 6075	0274 978 121	<a href="mailto:d-jcooke@ihug.co.nz">d-jcooke@ihug.co.nz</a>
Committee	Vaughan Henderson	ZL1TGC	418 1071	021 844 804	<a href="mailto:vaughanh@vodafone.co.nz">vaughanh@vodafone.co.nz</a>
	Laurie Mathews	ZL1ICU	634 5130	0274 817 463	<a href="mailto:perma@xtra.co.nz">perma@xtra.co.nz</a>
	Grant Taylor	ZL1WTT		021 234 0270	<a href="mailto:z1wtt1@yahoo.com.au">z1wtt1@yahoo.com.au</a>
	David Probine	ZL1TND	630 8044		
<b>AREC</b>					
Section Leader	Laurie Mathews	ZL1ICU	634 5130	0274 817 463	<a href="mailto:perma@xtra.co.nz">perma@xtra.co.nz</a>
Deputy Section	Franc Dunatov	ZL1SLO	829 2003	021 396 381	<a href="mailto:franc@ihug.co.nz">franc@ihug.co.nz</a>
ZL1BQ Trustee	John Dunn	ZL1JD	473 9514	021 731 907	<a href="mailto:john.dunn@clear.net.nz">john.dunn@clear.net.nz</a>
Repeater Trustee	John Dunn	ZL1JD	473 9514	021 731 907	<a href="mailto:john.dunn@clear.net.nz">john.dunn@clear.net.nz</a>
Klondyke Managers	ZL1TGC, ZL1BK				
690 Manager	Dennis Seymour	ZL1UET	532 8666		
850/670 Manager	Vaughan Henderson	ZL1TGC	418 1071	021 844 804	<a href="mailto:vaughanh@vodafone.co.nz">vaughanh@vodafone.co.nz</a>
ATV/Beacons	Grant Taylor	ZL1WTT		021 234 0270	<a href="mailto:z1wtt1@yahoo.com.au">z1wtt1@yahoo.com.au</a>
Spectrum Editor	Stephen Hayman	ZL1TPH	09 4265056	0274 732663	<a href="mailto:z1tph@xtra.co.nz">z1tph@xtra.co.nz</a>
Trading Table	Franc Dunatov	ZL1SLO	829 2003	021 02572003	<a href="mailto:franc@ihug.co.nz">franc@ihug.co.nz</a>
Hon Auditor	Peter Loveridge	ZL1UKG	377 3398	481 0544	<a href="mailto:peterlov@ihug.co.nz">peterlov@ihug.co.nz</a>
Webmaster	Hannes Hanekom	ZL1LW	4417576	02102396653	<a href="mailto:z1bq.webmaster@gmail.com">z1bq.webmaster@gmail.com</a>
Club Web Page	<a href="http://www.gsl.net/zl1bq">http://www.gsl.net/zl1bq</a>				
ATV Interest Group	<a href="http://www.gsl.net/zl1qf/atvug/ATVusers.html">http://www.gsl.net/zl1qf/atvug/ATVusers.html</a>				
ZL1VHD Dstar gateway administrator;	Laurie Mathews	ZL1ICU	6345130	0274817463	<a href="mailto:perma@xtra.co.nz">perma@xtra.co.nz</a>
ZL1VHD Dstar gateway registration URL :	<a href="http://zl1vhd.ham-radio-op.net">http://zl1vhd.ham-radio-op.net</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.

Membership of the Auckland VHF Group is via subscription; \$25. It is expected that members of the Auckland VHF Group Inc. are also members of NZART, as we are branch number 66 of NZART.

*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 the Monday 7 days before the following General Meeting. Articles may be submitted to the Editor.

## **From the Chair – July 2011.**

### ***Last Months Meeting.***

Our new Vice President, Peter ZL1UKG had to take over at the last minute due to myself becoming indisposed because of injury. My thanks to Peter for stepping in so quickly and taking over the office at such short notice.

Peter has written up the details of the last meeting and below is his report of proceedings:

The President John Dunn presented his apologies. The chair was occupied by Vice President Peter Loveridge

The roll call of introductions was completed by perhaps 15 people. There were no questions arising from the last meeting.

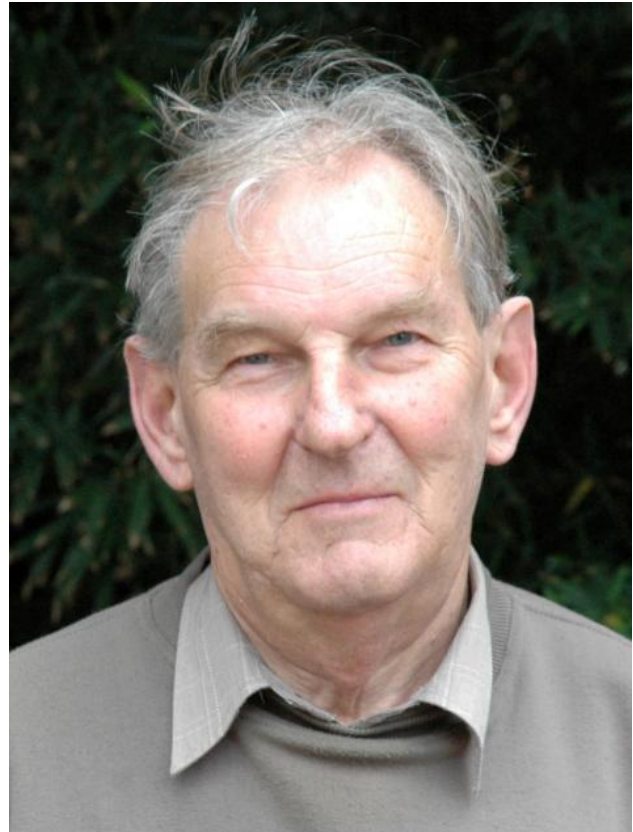
The Working Bee to clean up the container and clubrooms storage was postponed to a later date to be announced by the committee in the next Spectrum. It was deferred in favour of the opportunity of AREC members from all branches to hear policy from the Super City Civil Defense organization.

Based on the Request for Quote prepared by Vaughan Henderson the members were informed about progress on site development. There was no new business raised by members at the meeting.

Laurie gave a report on the Upper Hutt NZART Conference covering Remits, speakers and forums and entertainments provided.

The guest speaker Hannes ZL1LW was introduced with his topic of programming for AVR microcontrollers. This was an essential part of making them useful by giving the flavour of programming in a widely available and capable language. Hannes had a difficult task to introduce programming to a group

who may not have had a background in this discipline. By means of prepared diagrams and extracts from programs he introduced simple statements, control of processing flow and decision making. This was then extended to controlling ports to the real world where you could monitor and direct surrounding hardware to carry out the valuable task of running a simple repeater controller.



It is very hard to choose the level of detail and complexity for an unknown audience. This audience included Graham Baker ZL1TOF who is involved with microcontrollers for Fisher & Paykell. His comments and questions drew out explanations of the presentation with good grace and clarity from Hannes.

A generous supper was laid out by Marlene for the members and Hannes was still discussing his material 20 minutes later with interested members.

Thank you Peter for such a detailed report.

### ***Working Bee Planned for Sat 9<sup>th</sup> July 9.00am until 12.00***

There is a need to sort out stuff in the container that we have acquired in recent months and make ready for sales coming up. A working Bee on the Saturday Morning of the 9<sup>th</sup> July should do it. Assistance from members would be very much appreciated. With lots of help the job will not take long.

### ***New Group Auditor Required.***

With the appointment of Peter Loveridge as Vice President, this now leaves the position of Auditor for the clubs books a vacancy that needs to be filled. Peter has been doing it up to now but as people would realise, Peter's new appointment creates a conflict of interest!

The person required to fill this role ideally would have some accounting experience and be able to interpret financial balance sheets in order to verify the correctness of them. It is not an onerous task – only required to act once a year. Never-the-less it is an important role that does need to be filled.

If you would like to find out more about what is involved, please do not hesitate to contact Peter ZL1UKG on (09) 377 3398 or myself on (09) 473 9514.

If you can assist us with this request then please make contact as soon as possible.

### ***ATV Special Interest Group Meeting Club Rooms 31<sup>st</sup> July, 1.00pm***

The ATV Special Interest Group is having their next meeting at the club rooms, Hazel Avenue, Sunday 31<sup>st</sup> July, at 1.00pm. All those interested are invited to attend and catch up on the latest in this area.

### ***SSB Net on 144.2 to recommence after News and Net Sundays.***

SSB has not been receiving much push over recent times, except during contests – when one finds out that the SSB mode suddenly doesn't work any more! So to give more encouragement for operation in this mode, the SSB net will start up again after the News and Net on Sunday evenings. Initially look out for activity on 144.2 MHz simplex and see what you can hear!

### ***D-Star at Klondyke Update.***

The D-Star installation at Klondyke got a knock-back last summer when two of the tower feeders went down on existing operational equipment, requiring to bring into service the two feeders that were to connect the aerials for D-Star equipment. Since then we have had to hunt down some suitable coax to replace those feeders. The hunt was successful except for the quantity we had to buy and the price! Fortunately a sponsor has been found and we now have access to three lengths of suitable coax to replace the two faulty feeders up the tower. There is also a need to replace a top section of cable trunking which has rusted away, so there is a bit of tower work to be done in preparation for the installation of equipment.

A duplexer was found for the 2 meter repeater at no cost, but research and testing found that we could not get the required 600 KHz split required. Enquiries were made from the same source as the duplexer we acquired for 690 replacement and found that with the NZ dollar being as high as it is at present, that we can acquire a suitable unit at a good price – certainly cheaper than other commercial units available on the market. Once a final price has been established for importation of this unit, a motion will be put to the members at the next meeting seeking approval to proceed with purchase.

Meanwhile, application for a license has been made to FMTAG for the 2 meter DV Repeater, and we now have a set of frequencies that can be used.

We now know that an internet connection can be established at Klondyke, and we have a sponsor for this set-up also.

Once the infrastructure for the 70 cm and 2 meter D-Star repeaters is installed, the remainder of the equipment including the gateway can then be fitted and the system will be away. Let's hope the weather gives us the breaks we need for the tower work to be completed.

### ***Watch for Small Children on Way to Club Rooms.***

It has been brought to our attention that a couple of young families have moved into Hazel Avenue, the blind end that provides access to our club rooms. These families have little ones that are at the running around stage and need a careful watch out for. They may think the street is safe – particularly when the evening light starts to come on at about the time people are heading towards the club rooms as summer draws closer. They may unexpectedly come rushing out in front of your vehicle. – Take care!

### ***THIS MONTHS MEETING:***

Computer technology developments over the past 35 years have led to dramatic changes in the way that society operates. But not all of these developments came about through a planned process. This has resulted in some quite unexpected pieces of technology now dominating the industry, and some very fundamental flaws in other pieces of technology that are having a major impact on the cost to industry, and to society for using it.

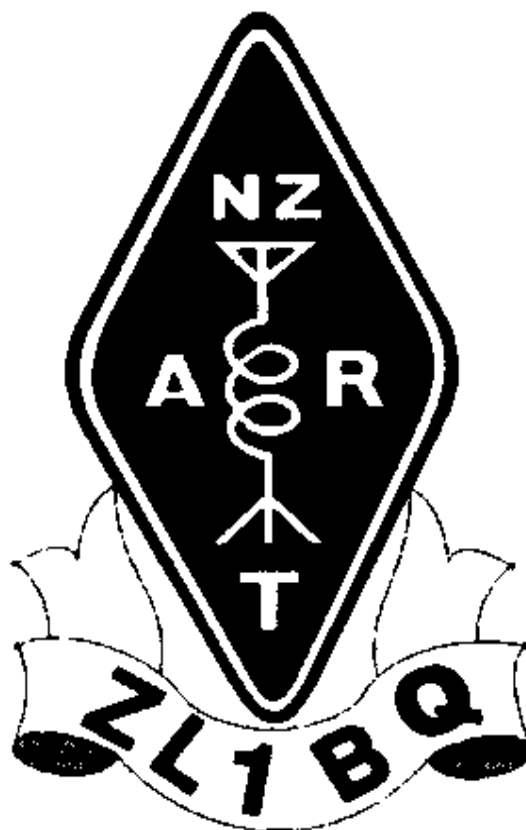
Tony Krzyzewski from Kaon Technologies will go through some key computer and communications technology developments over those years and give his opinion on what we got right... and the lessons to be learnt from what we got wrong!

Tony is an entertaining speaker, so we look forward to an interesting night.

We look forward to seeing you all at the meeting – July 11<sup>th</sup>, 7.30 pm, Hazel Avenue Club Rooms.

Best 73's, de **ZL1JD**

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# AUCKLAND VHF GROUP (INC) BRANCH 66

## **MEETING NOTICE**

**July 11th 7.30PM HAZEL AVENUE CLUB ROOMS**

(Located on left at the end of Hazel Avenue)

*The Evenings Subject:*

**“Thirty Five Years of Computer Technology –  
Where are we at?”**

Computer technology developments over the past 35 years have led to dramatic changes in the way that society operates. But not all of these developments came about through a planned process. This has resulted in some quite unexpected pieces of technology now dominating the industry, and some very fundamental flaws in other pieces of technology that are having a major impact on the cost to industry, and to society for using it.

Tony Krzyzewski from Kaon Technologies will take a wander (as he is one to do!) through some key computer and communications technology developments over those years and give his opinion on what we got right... and the lessons to be learnt from what we got wrong!

**EVERYBODY WELCOME**

**The Auckland VHF Group has invited the NZ Electronics Institute to this meeting.**

## Dates to Remember over next few months.

<b>July 3<sup>rd</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>July 9<sup>th</sup> (Sat)</b>	9.00 am to midday – Working Bee Hazel Ave.
<b>July 10<sup>th</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>July 11<sup>th</sup> (Mon)</b>	7.30 pm Hazel Ave Clubrooms, Tony Krzyewski ex Kaon Technologies.
<b>July 17<sup>th</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>July 19<sup>th</sup> (Tues)</b>	7.30pm Franklin Branch Sale. Pukekohe.
<b>July 24<sup>th</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>July 25<sup>th</sup> (Mon)</b>	Committee Meet, 7.30 pm Hazel Ave
<b>July 31<sup>st</sup> (Sun)</b>	8.00pm Official Broadcast followed by News and Net 6625 and 9875.

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<b>August 7<sup>th</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>August 8<sup>th</sup> (Mon)</b>	7.30 pm Hazel Ave Clubrooms, Packet - Past and Present, Paul ZL4AX
<b>August 13<sup>th</sup> (Sat)</b>	Hamilton Equipment Sale
<b>August 14<sup>th</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>August 21<sup>st</sup> (Sun)</b>	8.15pm News and Net 6625 and 9875
<b>August 28<sup>th</sup> (Sun)</b>	8.00pm Official Broadcast followed by News and Net 6625 and 9875.
<b>August 29<sup>th</sup> (Mon)</b>	Committee Meet, 7.30 pm Hazel Ave

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**Saturday August 13th, 2011**

## **Hamilton Table Tennis Club Rooms**

Edgecumbe Street, Hamilton

Vendors from 8.00 am

Buyers from 10.00 am

Table space at \$20 per metre pre-paid

\$25 per metre on the day

All enquiries to: Market Day, Hamilton Amateur Radio Club,  
P0 Box 606, Hamilton

E-mail: [harcmday@nzart.org.nz](mailto:harcmday@nzart.org.nz)

Web: [http://z1lux.tripod.com/market\\_day.html](http://z1lux.tripod.com/market_day.html)

Location: [http://z1lux.tripod.com/market\\_day.html](http://z1lux.tripod.com/market_day.html)



## Last Meeting Branch 66

The June meeting of the Group was held at the Clubrooms on Monday 13th. Laurie ZL1ICU gave a brief report on the Annual Conference held in Upper Hutt over Queen's Birthday weekend. Highlights from the Conference included:

The Conference opened with a few words from Chris Hipkins, MP for Rimutaka who welcomed everyone to Upper Hutt. Stuart Watchman ZL2TW gave an interesting presentation on his time in Christchurch during and immediately after the February 22nd earthquake.

Welcome to new Councillors Stephen Hayman ZL1TPH, Warren Harris ZL2AJ, Simon Lewis ZL4PLM and Terry Thomas ZL4TAE. Also welcomed were Michael Owen, VK3KI, President of the Wireless Institute of Australia and John Longgayroux, VK3PX their Treasurer.

A review of the NZART Constitution is to be undertaken with the aim of gaining charitable status and potentially being able to save paying tax. Evan Sayer, Treasurer, reported that The Association's financial position was much healthier, having recovered from a deficit of over \$200,000 in 1998 to the position in 2011 where we have reserves of over this amount.

Subscriptions for 2012 will remain at \$95 for Transmitting members. Members who pay their subscriptions before 30 November will go into a draw to win a handheld radio.

Doug Ingham ZL2TAR was awarded life membership of NZART in recognition of his many years of service on FMTAG.

### Voting on Remits was as follows:

- Remit 1 – Carried on vote count
- Remit 2 – Lost on voices
- Remit 3 – Lost on voices
- Remit 4 – Lost on voices

Remit 5 – Lost on voices

Remit 6 – Lost on voices

Remit 7 – amended to include the 160m band, carried on vote count

Remit 8 – Lost on vote count

Remit 9 – Lost on voices

Remit 10 – Lost on voices

Remit 11 – Lost on voices

Remit 12 – Withdrawn.

Remit 13 – Withdrawn.

The Arthur Godfrey ZL1HV Branch Award recognising exceptional service at branch level as awarded to: Neil Gibbons ZL2TNG and Maurie Vile ZL2ADP from Upper Hutt Branch; Paul (Jono) Jonassen ZL1UP from Hamilton Branch; Topsy Scott ZL2LS from Nelson Branch and Maurice McNab ZL3MEM from Christchurch West Branch.

The Rothschild Cup was awarded to North Shore Branch with a total of 13 successful candidates passing their amateur examination in 2010.

Nelson Branch introduced a new award recognising those who achieved 100% pass mark in the amateur exam. This will be given to those who are not otherwise eligible for the Youth Achievement Award. Three new amateurs received this award: Suzette James ZL2SGC from Nelson Branch, Jonathan MacKenzie ZL3JDM from Christchurch Branch and Murray Smith ZL2MJS from Lower Hutt Branch.

Amateur of the Year was awarded to David Searle ZL3DWS (now VK2DWS) for his tremendous work with Christchurch Branch and their "buildathons".

Next Conference will be hosted by Nelson Branch at the Tahuna Beach conference Center.

The AREC Forum following the AGM saw a presentation from Geoff Chapman ZL3PX on AREC's involvement with the Christchurch earthquakes; Matthew Lloyd from Red Cross on the Red Cross Telecom Response Unit; Jeff Sayer ZL4JS announced that a new training manager had been appointed – Brian Purdy ZL2ADL. This was followed by an update from Richard ZL1BNQ on the old modular training system and plans to update it. Finally, Bill ZL4AE gave a presentation on his 6 week trip to Tunisia with the Red Cross Telecommunications Unit.

Saturday evening's guest speaker was Ian Johnstone, best known for his Crime watch series on TV who gave a fascinating talk on his time in broadcasting.

On Sunday, the WARO AGM re-elected Margaret ZL1MB as their President and Marlene ZL1MYL has joined the WARO committee. At the AMSAT-ZL meeting we got an update on progress with Kiwisat, The Hardware is nearly complete and good progress is being made with the critical operating system software. A highlight was a live link-up using Skype with Clayton Gumbrell, VK1TKA in Canberra who described the software development in more detail. Other forums on the Sunday were Police Digital Radio (ZL2FY), STSP Repeater building (ZL2TW), VOIP protocol (ZL2UDF), APRS update (ZL2MAX), the Pixie II JOTA project (ZL1TGC) and D-Star (ZL1ICOM). Thanks to Upper Hutt Branch 63 for an excellent weekend.

Following Laurie's report, Peter ZL1UKG who was chairing the meeting introduced the guest speaker for the evening: Hannes ZL1LW who gave us a very interesting presentation on the AVR family of microcontrollers followed by an introduction to microcontroller programming using the "C" programming language. Hannes showed a number of examples of the type of programming that could be done using C and described in some detail the code structure. Many thanks Hannes for a very interesting presentation.

The well attended evening finished off with yet another excellent supper provided by Marlene ZL1MYL.



**Hannes ZL1LW with a talk on the AVR family of microcontrollers at the June Branch 66 meeting**



## NZART AGM Conference Chairman Says Thank You

Hi Everyone,

NZART Conference 2011 has come and gone for another year, and please take this as a personal thank you for your interest, attendance or support that helped make this years conference such a success this year.

As I count the numbers, write the cheques and finalise all the payments it has made all the work worthwhile, and I look forward now to Nelson in 2012. I hope that as many as possible will look to attending Nelson and future Conferences to support not only the national association but the local branches.

I took the opportunity to talk with many of you, many for the first time in a face to face meeting, and not across the impersonal keyboard or even across our standard communication method in amateur radio that of the air waves. I'm sure that we all left here with new friendships and a better understanding of everyone's point of view.

On behalf of the Upper Hutt Branch 63 members, and the Alternative Programme team (Karen, Judy, Steve and Peter) we wish you well for the trip home and the rest of the year.

Mark Gooding ZL2UFI  
NZART Conference 2011, Upper Hutt



**Mark Gooding ZL2UFI**



**Vaughan ZL1TGC, Roy ZL2KH, Debby ZL2DL and Evan Sayer**



**The President of the W.I.A Michael Owen-VK3KI**



## Proposed Changes to VHF-SHF Records Keeping

**Simon Lewis ZL4PLM - NZART VHF-SHF Records Keeper**

Last year I offered to take over the running of NZART's VHF-SHF records system and as part of that changeover, I decided to carry out a review of how the records program was being run, the records formats in use and the rules and guidelines being used to govern the process.

Following on from that review I wrote a proposal to Council on how I would like to re-structure the records system, the changes I would like to see in the way the records are recorded and some proposed changes to the rules and guidelines used, all of which are intended to bring the records program inline with globally recognised standards, provide a set of guidelines and rules that match modern operating methods and more importantly, provide a new baseline that will encourage new record attempts and increased participation in the VHF-SHF records program.

This proposal was reviewed and accepted by council at the F2f meeting at Silverstream and as part of the change process we are now publishing the proposed changes for comment from interested VHF-SHF operators and would like to hear your comments and feedback on the proposed changes. I have also included a sample of what the 144 MHz record table would look like under the new format so you can see the proposed look and feel to the tables.

Closing date for comments / feedback is 17 July 2011 after which fine tuning will take place and the new formats placed online onto the website. Feedback and comment should be sent to the NZART VHF-SHF Records keeper [zl4plm@nzart.org.nz](mailto:zl4plm@nzart.org.nz)

To further encourage participation in records attempts a new certificate

of achievement is being created and will be awarded to all new successful records submission to recognise the achievement. A hall of fame and firsts list will also be created so that that past history is not lost.

Simon ZL4PLM

Use this link to see the proposed rules and sample image:

<http://www.nzart.org.nz/info/vhf-records/>

## NZART VHF-SHF Records

Update 2011-06-19

### Submissions – Rules & Guidelines

**Simon Lewis ZL4PLM - NZART VHF-SHF Records Officer**

#### Overview

This document describes the NZART VHF-SHF records application process and the guidelines and rules for applicants.

#### General Rules:

The following rules should be considered when submitting an application:

1. Any distance record claimed must either exceed any previously recognised New Zealand distance record or be the first record claimed for that band or mode by a significant distance. No minimum distance increase on a previous record is defined but an application should be considered to be a “reasonable extension” on the previous record and in the spirit of record attempts. Final discretion on a submission is the decision of the NZART VHF-SHF Records Officer.
2. Contacts may be made with DXCC entities outside of New Zealand for record attempts. NZ record tables are split into two categories; Internal NZ Distance Records and Overseas Distance Records. However, it is considered that as long as one of the participat-

ing stations holds a NZ amateur transmitting licence and is located on sovereign territory, then it is not of any concern that the other end of the path maybe in another DXCC entity and in fact is positively encouraged in the best spirit of extending distances.

3. Participants involved in the record attempt must operate within the constraints of the Radio Regulations for their local country that applied at that time.

4. The NZART VHF-UHF Records Officer is the final approving authority for applications.

These guidelines and notes are to assist you with to claiming a distance record:

Claimants must consider the following guidelines and notes when attempting a record setting contact. These details are based on internationally recognized rules and best-practice procedures.

Individual claimants must be aware that personal information provided by them when claiming a record is being collected for the purpose of retention, on-going communication and disclosure for the management of record claims. Information provided may be published in records, journals and in media releases of by NZART.

### **Evidence Required**

When claiming a distance record the applicant (s) must supply evidence of that contact event including statements giving each of the following:

State that the operators involved in the contact were operating within the constraints of their licence conditions that applied at that time.

That both stations were attended and operated by licensed operators and that no automated response systems such as robots, satellites, repeaters, packet stations or Internet links such as IRLP etc were used.

That both stations remained stationary in the same locations during the exchange of the re-

quired information and completed the valid contact within a reasonable period I.E over a number of hours.

That a valid contact has taken place and that all required information details have been exchanged.

A declaration that the claim as has been made in accordance with rules above

### **Definition: Valid Contact**

A valid contact is a single-band two-way station-to-station contact that includes the exchange of the required information via the frequency band and mode stated.

Talkback on an alternative band and/or Internet liaison through the use of sites such as VKLogger/ON4KST Chat is permitted, however QSO information that would allow the contact to be validated should only be passed over the band claimed for.

Applicants using Internet chat/loggers should pay particular attention not to give away contact information in their liaison chat such as pasting of WSJT decodes.

### **Definition: Required Information**

Both stations exchange and confirm back to the other station:

The call sign of operator or operating station,

Unique information such as a signal report

### **Notes on Station Operation**

Audio visual/multimedia recordings are encouraged but not mandatory for an application to be made. Video and still photographs not only help to document your record attempt but also serve as a useful historical record of technical achievement.

A witness account of your contact may be entered with your application for verification but your witness may not also claim the record contact.

QSL cards exchanged between the stations are

not required but submission of such material will help the review process and give both stations a personal record of the contact. Electronic QSL methods such as LOTW, EQSL are acceptable.

Operation from a commercial sites such as a commercial telecoms installation using equipment/antennas deemed not to be readily available to the average amateur while important for activity reasons, will not be accepted for records attempts as they are deemed to have an unfair advantage.

### **Notes on Distance Claims & Distance Verification**

All distances will be computed using a certified ellipsoidal program having the values for the earth's radius of 6378.140 km at the equator and 6356.755 km at the poles.

For inter NZ contacts NZ reference map coordinates should be used wherever possible to report your exact location, e.g. TOPO50, Infomap 260 series. GPS readings for positions may also be provided as supporting documentation to map coordinates, and should use the NZ Geodetic Datum 2000 (NZGD2000).

For contacts outside of NZ territories the WGS84 datum should be used or, if in any doubt as to what format to use.

The Records Coordinator may apply a margin of error when computing distances. This margin is at the discretion of the Records Coordinator and may vary based on the technique used and accuracy applied in determining the station(s) exact position(s) by the claimant. Records claimed may not succeed if the increase in distance from the previously recognized record falls within this margin.

Claimants are encouraged to attempt records that are a significant increase on those claimed previously. Claimants should avoid claiming records for "One step Backward" record attempts.

### **NZ Records Format**

Records are recorded in the following format:

1. Band and Propagation Mode
2. Table 1 – Internal NZ Distance Records  
Table 2 – Overseas Distance Records

A separate unique table will cover NZ ATV records .

3. The following propagation modes are included as recognised VHF-SHF propagation modes:

F2 (F2)

Trans Equatorial Propagation (TEP)

Tropospheric Ducting (TD)

Troposcatter (TS)

Ionoscatter (IS)

Field Aligned Irregularity (FAI)

Aircraft Scatter (AS)

Meteor Scatter (MS)

Rainscatter (RS)

Sporadic E (SpE)

Aurora (AU)

Auroral E (AuE)

Moonbounce (EME)

4. For EME and Meteor Scatter modes the following are the recognised transmission mode categories for records:

Digital and Non Digital. Digital QSO's include an QSO using PC generated modulation methods for Meteor Scatter and EME contacts. Non Digital QSO's include any SSB, FM, CW or MCW type of modulation that is received and / or decoded by the human ear i.e Unassisted. EME/MS band entries will contain one digital and one non digital entry.

### **Publication of Records**

1. Successful record applications will be confirmed to the individual and a full updated table and rules publication be made regularly in Break In and on the VHF/SHF records section NZART website.
2. Any further feedback submitted to the records keeper and / or council, will be evaluated against the criteria already in use.
3. Regular updates to records rules and guidelines will be made as / when changes in technology or science occur.

Simon Lewis – NZART VHF-SHF Records Keeper

08 June 2011

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## NZART Top Monitoring System Observer Award

*Update 2011-06-08 from the NZART website:*

The purpose of this NZART Top Monitoring System Observer Award is to encourage all listeners and radio amateurs to actively report unusual signals or suspected intruders on the allocated international and IARU Region 3 radio frequencies from VLF to Microwave.

The purpose of these reports to assist the NZART Monitoring System Co-ordinator who collates and verifies potential intruders, who invade our precious finite radio frequencies. This information will be recorded for evidential purposes and where appropriate action taken to remove the intruder. There is a very long history of radio amateurs and listeners' providing such reports to ensure that the allocated frequencies are protected for the enjoyment of all.

What do you need to do?

Merely enjoy your scientific hobby, but report signals via the different means available via

the NZART web site to the Monitoring System Co-ordinator. All reports will be verified and collated into an annual league table and shown in the bi-monthly Break-in magazine and NZART Web pages.

The person judged to be a prolific and solid Intruder Watch contributor during each year. The recipient will receive a free one year NZART (single) membership subscription and will be provided with an official certificate of merit of their achievement. The NZART Monitoring System Coordinator will ask for clarification or additional information as required to verify the report.

Conditions:

All past and present Monitoring System Coordinators are barred from entry for this award.

Send reports including date/time in GMT, Frequency, Readability, Strength, Tone (RST), Mode, direction of signal (if possible), and any relevant comments.

Send your reports to:

[MS@nzart.org.nz](mailto:MS@nzart.org.nz) or via:

[intruderwatch@googlegroups.com](mailto:intruderwatch@googlegroups.com)

You do not need to be a current member of NZART to contribute towards the Top Watcher Award or to participate. The award winner will be declared in November of the current year.

John ZL1GWE NZART Monitoring Service Coordinator

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## Press Release DXpedition to Rotuma as 3D2R

After many months of careful planning, we are pleased to announce our DXpedition to Rotuma-3D2R with a large multi-national DXpedition Team.

Rotuma is located in the South Pacific Ocean and is #32 on Club Log's most wanted DXCC list.

Hrane Milosevic-YT1AD has recently visited Fiji and has obtained the license of 3D2R and a landing permit. We have received the Rotuma Island Council's official approval as well as from the Prime Minister's Office.

The team of 19 operators will meet in Fiji on September 24th and sail to Rotuma with an arrival slated for September 27th. We will be active on all bands and modes from September 27th to October 7th, 2011.

We will focus on the low bands at this time of the year and will make every effort to satisfy the needs of EU operators.

At this time, we are seeking Foundation, Club and Individual Sponsors to help us defray the costs of carrying out this DXpedition.

Our official website <http://www.yt1ad.info/3d2r/index.html>

3D2R Team

## ATV report from Grant ZL1WTT and a Milestone

Today I got my software-defined Television DATV transmitter running after two months working on this project.

It is software-defined as far as the Mpeg2 encoders and the multiplexer. These stages are set via software using Ubuntu Linux as the OS, using shell script files. The code used is based on C programming language and lets me plug into various software modules. To assemble data packets as a DVB transport stream, that is then converted to an ASI signal to feed an L-band QPSK modulator. By taking this approach I have kept the cost down to a minimum, where by most of the parts were sourced from Trade me, such as Mpeg2 encoder cards, the Satellite tuner cards and the shuttle computer running the required software.

I have configured the script files for a single channel, two channels without too many problems and got up to a four channel multiplex running. I have also tested a HD 1080i h264 encoded file as well. As far as I can tell I am the first to get a software-defined ATV transmitter operational. So it might pay to remember today's date in Ham radio history. (9 June 2011)

I plan to demonstrate this technology on the ATV repeater and hope to do some testing on 23 cm simplex over coming weeks.

## Again from Grant on the 10<sup>th</sup> June 2011

Today I added in more channels into the multiplexer, I stacked up to six SD and one HD

channel. With this many channels my multiplexer crash out so I decided to drop the HD channel. Once I did this I found six was good number to experiment with. The problem I came across was that I needed more head room on the modulator side, my peak data rates were getting up to 32M bit/s. This is why I move to same setting that Freeview and Sky are using (22.5M S/s). My setup looks something like this:

- CH 1 looped play-list files in Mpeg2 format
- CH 2 looped play-list files in Mpeg2 format
- CH 3 Mpeg2 encoder card encoding video from my VCR
- CH 4 Satellite feed from Satellite receiver card
- CH 5 Satellite feed from Satellite receiver card
- CH 6 Off air UHF receiver Mpeg2 encoded

If you were at technology 2009 you would remember I talk about how to use play-list file, this is what I did for Channels 1, 2 and also for the HD channel. To get these six channels to work as a multiplex TS stream, I used four computers on my LAN network to do this. My Server feed channels, 1, 2 and 6. Another computer had the Satellite receiver card installed for this feed. These Computers all feed their channels to six different ports on the one IP address. On this IP address my laptop was located and acted as the Multiplexer and recodes the PIDs (Packet Identification headers), this is basically what a Multiplexer does. This multiplex stream is then feed to another IP address where the IP to ASI box is located. At this point is where the QPSK modulator provides the RF that is then amplified and transmitted out on the 23 cm band.

This is not a simple process at all to get working there many points where things can go wrong and sometimes do. I had number email come in over night asking how this all works, you need to have some understanding on LAN networks IP address, Linux and how DVB transport streams work. It is low cost but it's not a case of installing a program and it all works. This maybe the case in a few years time as people improve the software used.

Grant, ZL1WTT

## June NZART VHF Contest Report

A small patch antenna on 3.4 GHz from Simon ZL1SWW QTH over the near by hill as photographed resulted in a S9 SSB and FM contact to Steve ZL1TPH at Moirs Hill at a mere 31 km with a small flange dish feed used at the other end.



Patch antenna for 3.4 GHz



Simon ZL1SWW temp 70 and 23 cm

# Really Cool 3400 MHz Filter

By Mike, KL6M

Internet URL <http://kl6m.com/9cm/3400filter.html>

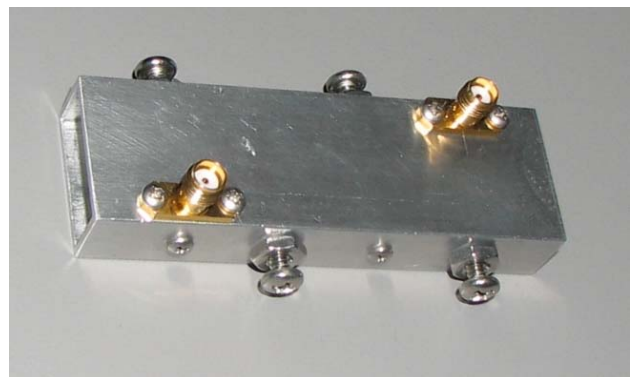
I built this using a chunk of WR90 waveguide, referring to Paul Wade's (W1GHZ) article in Jan/Feb 1999 QEX.

The exact dimensions I came up with are here: <http://kl6m.com/9cm/3400idf.pdf>

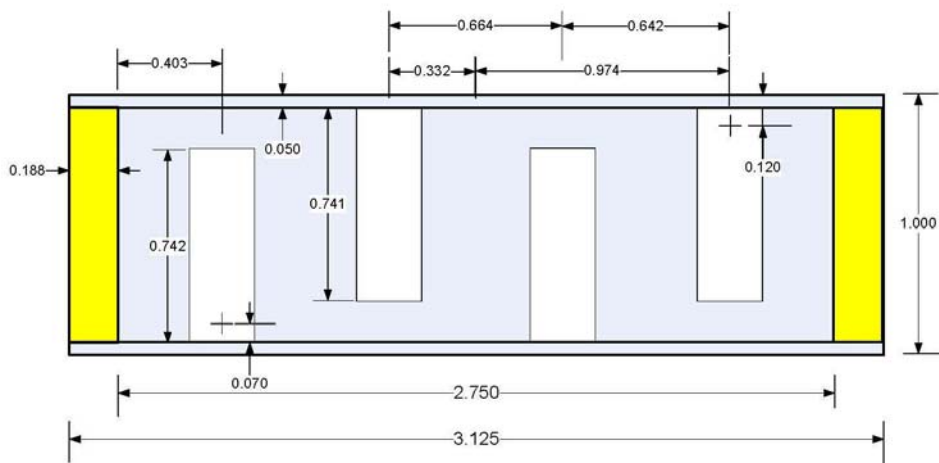
The filter can be tuned in a couple ways: It can be peaked on frequency for insertion loss less than a dB. I got it down to 0.7 dB. Or it can be tuned for a wider band pass as shown in Wide1 and Wide2, where it is optimized to cover 3400 MHz as well as 3456 MHz. The wider band pass actually attenuates the LO frequency by 50 dB, slightly better than when it is tuned right on 3400.

I will be using this filter in my 3400 MHz transverter currently under construction. I turned all the elements in a lathe to within a couple thousandths of an inch. The dimensions were obtained using the DOS software INTFIL.EXE, which is discussed in Paul's article.

With thanks from Mike,  
KL6M (BP51dc) <http://www.qsl.net/kl6m>



3400 MHz (1/4 WAVELENGTH = WR90)  
Target frequency = 3400 MHz



## **Kordia Agreement Signed**

*NZART Headquarters Infoline Issue 232  
19-JUNE-2011*

On behalf of NZART Council I am very pleased to be able to report that a new lease agreement has been signed between your Association and Kordia Ltd. The agreement is for a five year term and covers all the existing Kordia sites which have amateur equipment installed.

The agreement signals a return to the terms and conditions which existed prior to Kordia's decision to charge site rentals – i.e. there is no charge for the equipment rack space or antenna space and the only cost is a contribution towards the power used. This is less than \$1000 per year and will continue to be paid for by your Association, as it has been since the original agreement was reached with Kordia's predecessors, BCNZ and BCL.

Particular thanks must go to Otago Branch for their excellent submission to the Minister for State Owned Enterprises, the Hon. Tony Ryall. This submission titled "Save Our System" clearly struck a note with the Minister and resulted in a political directive to Kordia resulting in their return to an arrangement which is financially sustainable for the amateur community.

I would also like to acknowledge with thanks the contributions made by Christchurch Branch, Whangarei, Kawerau and Gisborne for their work in raising the political noise level with their local MP's which I am sure made the Minister and his predecessor aware of the situation.

I have received some comment regarding the apparent lack of action by NZART at a national level in lobbying the Minister for SOE's over the Kordia's situation. I did make two attempts to get an appointment in Wellington. The first was deferred by the then Minister (Simon Power)

and the second opportunity late in November 2010 I had to cancel due to work overseas. A reply received from the Hon. Simon Power in October 2010 read as follows:

"You will appreciate that my responsibility as Minister for State Owned Enterprises does not extend to the operation of a SOE. In accordance with section 5(2) of the State-Owned Enterprises Act 1986, matters of an operational nature, including charges, are legally the responsibility of SOE boards."

This did not give me any great expectation that the then SOE Minister would be responsive to representations from NZART at a national level.

What I did do through this time was to encourage the various people who had contacted me to try lobbying their own local MP to try and raise the political "noise" level. In early March this year came the announcement that the Hon Simon Power was retiring from politics at the end of 2011 and early April, the announcement that the Hon. Tony Ryall was appointed as the new Minister for State Owned Enterprises. Otago Branch's very timely letter to the new minister was sent on 13 April and as you now know, resulted in prompt action by the new minister.

The new agreement recognises Kordia Ltd as a platinum sponsor of NZART and we will be working with Kordia to both recognise and promote them via the NZART web site and also in Break-In. The value of the new sponsorship agreement with Kordia is \$92,300 – this is the figure we would have to pay if we were paying commercial rates for the eleven Kordia owned sites where amateur radio equipment is located. Other NZART branches that have their own web sites are encouraged to also place appropriate acknowledgement of this generous sponsorship on their own web sites. More information on this will be available in the near future.

Many of you will be aware that ARTANZ made a submission to Kordia. This

proposed a five year term and to provide publicity for Kordia in exchange for a return to the "status quo" – i.e. no charge for the sites. While the ARTANZ submission may have assisted Kordia in drafting up the new terms of the agreement, I am in no doubt that it was not their submission that brought about the change of heart on Kordia's part. In my recent discussions with Kordia, it was clear that it was political pressure which resulted in their change of position regarding charging for our use of their sites.

While the new agreement only covers existing sites, I would be happy to approach Kordia in the future to seek approval for additional sites for amateur repeater equipment. To this end ARTANZ have completed and submitted to Kordia the required engineering evaluation for Hedgehope with a view to the possible use of this site as an extension to the National System on to Invercargill and this site will be included in the new co-location schedule. Both Dunedin and Eastern Southland Branches have been actively investigating alternative sites for a National System extension which does not require the use of Hedgehope. I expect a final decision on the most appropriate site for an extension of the National System into the "deep south" will be made by the Branches concerned.

Vaughan Henderson ZL1TGC

NZART Vice-President

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## Winter Sporadic E

The magic 6 m band was open across the Tasman on the 10<sup>th</sup> of July 2011 for some Winter Sporadic E propagation.

ZL4 and ZL3 6 metre stations were working into VK3, VK7 with best beacon report from Rod, ZL3NW to VK5RBV at 3049 km. The VK5RBV 6 metre beacon transmits on 50.3150 MHz.

A higher band MUF was reported by a VK2/

SWL station who reported FM broadcast stations on 90 MHz from Invercargill New Zealand.



## VK4CP logger reports

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## Getting Started on 2-Meter SSB

### Vaughan Henderson ZL1TGC

Over the past few years, a new breed of amateur radio transceiver has become readily available in the marketplace - radios that cover from HF through to VHF and UHF frequencies. These radios include "all-mode capability" which means that they can operate FM, CW and SSB on the VHF bands. Clearly, FM is the most commonly used mode on VHF and UHF but having SSB opens up a whole new range of operating fun.

### Why SSB?

FM is the most popular mode primarily due to the wide availability of FM repeaters, extending the operating range on the 2m and 70cm bands allowing low power handheld transceivers to communicate over distances of 100 kilometres or more. FM is also used on simplex to make contacts directly without repeaters. The main disadvantage of FM is relatively poor performance when signals are weak, which is where SSB really comes into its own. A weak FM signal can disappear completely into the noise while a comparable SSB signal is still

quite readable. How big of a difference does this really make? Perhaps 10 dB or more, which corresponds to one or two S-units. Putting this another way, using SSB instead of FM can be equivalent to having a beam antenna with 10 dB of gain, just by changing modulation types. This is a real advantage for long distance VHF and UHF communications and those of us interested in serious VHF work have naturally chosen SSB as the preferred voice mode.

### **When and Where to Operate**

The SSB portion of the band runs from 144.100 MHz to 144.250 MHz and Upper Sideband (USB) is used. The 2M SSB internal calling frequency is 144.200 MHz, so that is the first place to look for activity or to call CQ within New Zealand. One of the realities of 2M SSB operation is that many times, no one is on the air. There is just not that much activity out there, compared to 2M FM. This can be quite discouraging so stations turn off their radio and miss the thrill of working distant stations during a band opening. To get started on 2M SSB, the trick is to be on the air at times when you know there will be activity - during VHF nets and VHF contests.

Here in Auckland, the VHF Group net is on Sunday night at 8:15 PM local time on the 146.625 MHz repeater. Some years ago, a few keen hams would migrate to 144.220 MHz (USB) for a chat after the '6625 net finished. This practice fell into disuse some time ago, and this article is to propose that we again try gathering on 144.200 MHz after the Sunday night News & Net and see who else we can talk to on 2m SSB. Listen out on the Sunday night '6625 repeater for an announcement about going to 144.2MHz SSB some time soon!

### **VHF Contests**

The VHF Contests held every two months or so throughout the year are another good opportunity to get on the air and work other local and more distant 2M SSB enthusiasts. The next Contest will be the Brass Monkey Contest, 50 MHz and up, on Saturday the 6th and Sunday the 7th of August 2011. The operating

times are: Saturday 1700 to 2300 NZST and Sunday 0700 to 1300 NZST.

The main contest of the year is the December Field Day Contest, to be held this year over the weekend of December 3rd and 4th. Operating times for this contest are: Saturday 1700 to 2300 NZST and Sunday 0700 to 1300 NZST.

### **Equipment**

The equipment required to get started on 2M SSB is fairly basic - a transceiver capable of 2M SSB and a 2M antenna. If you own one of the rigs mentioned above then you are probably ready to go. Most likely, the 2M antenna you already have is vertically polarised since that is what we use for 2M FM, both mobile and base stations. All of the 1/4-wave and 5/8-wave antennas that are commonly used for 2M mobile work are vertically polarised. Most omni-directional base station antennas such as those made by Diamond and Comet, etc. are vertical, too. These antennas will work for SSB but most of the really active 2M SSB stations use horizontally polarised antennas. Stations with vertically polarised antennas can work stations with horizontally polarised antennas but there will be a significant signal loss in the order of 20dB. If vertical is all you have, then give it a try. If you can get a horizontal antenna, then your results will be much better.

The most common horizontally-polarized antenna on 2M is a Yagi mounted so that its elements are parallel to the ground. It is also possible to buy or build your own horizontally polarised omni-directional antenna.

### **Have a Go - Get on the Air**

Hopefully this information will help get you on your way to operating 2M on the SSB portion of the band. You will learn more as you get into it and you will find that most of the people hanging out down on sideband are friendly, knowledgeable and helpful. They are always happy to see new call signs on 2M sideband. If there's enough interest we can publish some simple 3 element Yagi designs in Spectrum, or you can Google these yourself.



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**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:**

53.725 Repeater - Tim Moore VK4TIM / ZL1TN

144.253 Beacon - Steve Hayman ZL1TPH

144.575 Digipeater - Franklin Branch ZL1SA

145.625 Repeater - Jim Meachen ZL2BHF

146.625 Repeater - Frank Dunatov ZL1SLO

146.700 Repeater - Western Suburbs ARC

146.900 Repeater - Franklin Branch ZL1SA

432.235 Beacon - Steve Hayman ZL1TPH

438.450 Repeater - Laurie Mathews ZL1ICU

438.500 Repeater - Franklin Branch ZL1SA

439.850 NatLink - Franklin Branch ZL1SA

439.875 NatSys Repeater - John Dunn ZL1JD

439.900 NatSys Link -

439.950 NatSys Link - Vaughan Henderson ZL1TGC

615.250 ATV Repeater - AKVHFG ATV Group

1296.253 Beacon - Steve Hayman ZL1TPH

Papakura Radio Club Branch 65 NZART Donation of \$300.

If you would like to support the Auckland VHF Group by sponsoring the licence fee for one of the available Beacons, Repeaters or Fixed Links or donate towards the Group's repeater operations please contact Jim ZL2BHF by email - [zl2bhf@clear.net.nz](mailto:zl2bhf@clear.net.nz)

# TRADING TABLE

## AREC recommended "T" type connectors:

Set of male and female quick connect terminals and housings similar to illustration. Terminals are tin plated, not brass as shown.

Only \$2.00 per set



Back in stock: **PL259 UHF Connectors and Reducing Adaptors.**



UHF-MALE (PL259) connector is nickel plated, with a tapered brass tip, brown phenolic insulation and heavy duty knurling. Suits RG8, RG213 50 ohm coaxial cables. These connectors perform satisfactory up to 200MHz, and are usable with caution up to 500MHz. The voltage rating is 500 volts RMS.

**Our price: \$2.50 each or 10 for \$20.00**

Nicely machined reducer which screws into the back of the PL-259 connectors.

Nickel-plated on brass construction, will fit RG58/U 50 ohm coaxial cable.

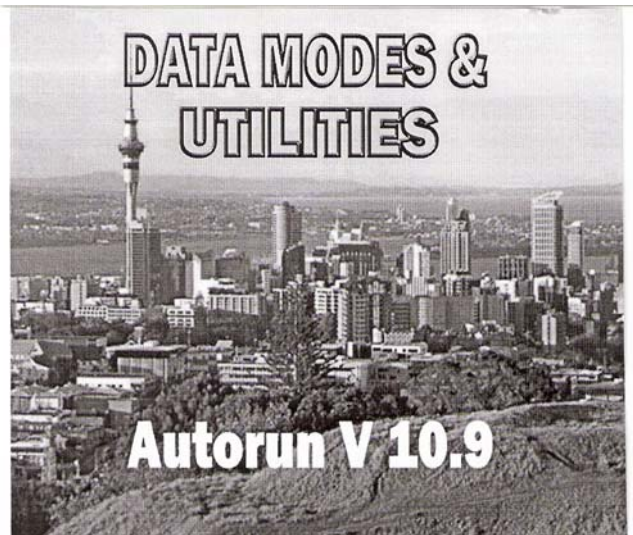
**Our price: 50c each.**

## DATA MODES & UTILITIES CD

Over 270 programmes, utilities, tutorials on just about every aspect of Ham Radio you could want. Many useful utilities, logging programmes, amateur satellites, digital modes, test equipment. Software Defined Radio, PCB design programmes, this CD has got it all!

Latest version is V 10.9.

Still only \$10.00



## CONNECTORS

New stock just arrived of type N connectors for use with RG58 coaxial cable. These are solder clamp type, just the thing if you don't have the right crimp tool!



**Only \$5.00 each – be in quick, we only have limited stock.**

### Other coaxial connectors available from the Trading Table:

TNC plugs 50ohm for RG58 coax (crimp and clamp/solder type available)	\$2.50 each
BNC plugs 50 ohm for RG58 coax (solder/clamp on type)	\$2.50 each
BNC plugs 50 ohm for RG58 coax (crimp on type)	\$2.50 each
BNC sockets 75 ohm – single hole mounting	\$1.50 each
BNC jack cable end crimp type 50ohm for RG58 coax Radiall R141237161	\$1.50 each
PL259 coaxial plugs. Genuine Amphenol 83-ISA brand. Brown phenolic insulation. Suit RG8/RG213 50 ohm coaxial cable.	\$3.50 each
PL259 right angle adaptors Male-Female (limited quantity)	\$3.00 each
SO239 chassis mount socket (4-hole flange)	\$2.00 each
N Type male solder on suit RG213 coax	\$4.00 each
N Type male quick-fit (solderless press fit into centre pin) for RG213	\$8.00 each
N Type male right angle, suit RG213 coax	\$4.00 each
N Type male crimp on suit RG213 coax **	\$3.00 each
N Type socket crimp on suit RG213 coax **	\$3.00 each
N Type male silver plated solder/clamp on suit RG58 coax	\$3.00 each
N Type male crimp on suit RG58 coax (only a few left) **	\$2.50 each

\*\* Crimping service available for these at club meetings.



**Back in stock:**

**ATF55143 Low noise E-PHEMT 0.6 dB noise figure.**

Low noise amp for frequencies between 450MHz and 6GHz.

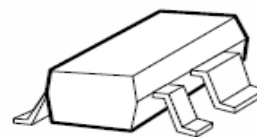
SMD package SOT343

(4 lead). Data sheet available.

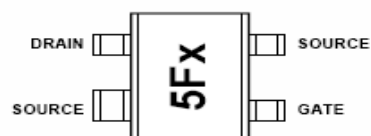
Available from the Trading Table for

Only \$1.50 each.

**Surface Mount Package  
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"5F" = Device Code  
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0.2-4.5pF GHW4R5000. Glass piston trimmer

(Sprague-Goodman) [scase] \$4.00 each

1 - 14 pF Murata MVM0145 [scase]  
\$2.50 each



1.7-11pF	T6-5 125V DCW. Johnson T-type, Q=2000@1MHz [scase]	\$3.00 each
1.4-9.2pF	189-503 air variable [scase]	\$2.00 each
1.8 – 10pF	Philips high temp. film dielectric [B.5.9]	\$1.00 each
1 - 52pF	TP52CA glass piston trimmer (Voltronics) [scase]	\$3.00 each
2 - 20pF	150V Philips film dielectric green [A.6.1]	\$1.00 each
3 – 65pF	250V Philips film dielectric yellow 10mm [A.6.2]	\$1.00 each
3 -16pF	Ceramic pcb mount. Packed in bags of 10 [A.6.3]	\$1.00 bag
4 - 40pF	100V Philips film dielectric high. Temp. (2222 809 08002) [scase]	\$1.00 each
5 -15pF	100V film dielectric [A.6.4]. Packed in bags of 10.	\$0.50 bag
5 - 20pF	100V Murata TZ02R200. Packed in bags of 5. [A.6.5]	\$1.00 bag
7 – 40pF	Mica compression type. GMA30200	\$1.00 each
5 - 100pF	Mica compression type [A.6.7]	\$1.00 each
16 - 100pF	Mica compression type GMA70300 [scase]	\$1.00 each
25 – 150pF	Mica compression type 424	\$1.00 each
2-gang	Miniature broadcast type [A.6.8,9]	\$0.50 each

See our website: <http://www.qsl.net/z11bq/>

