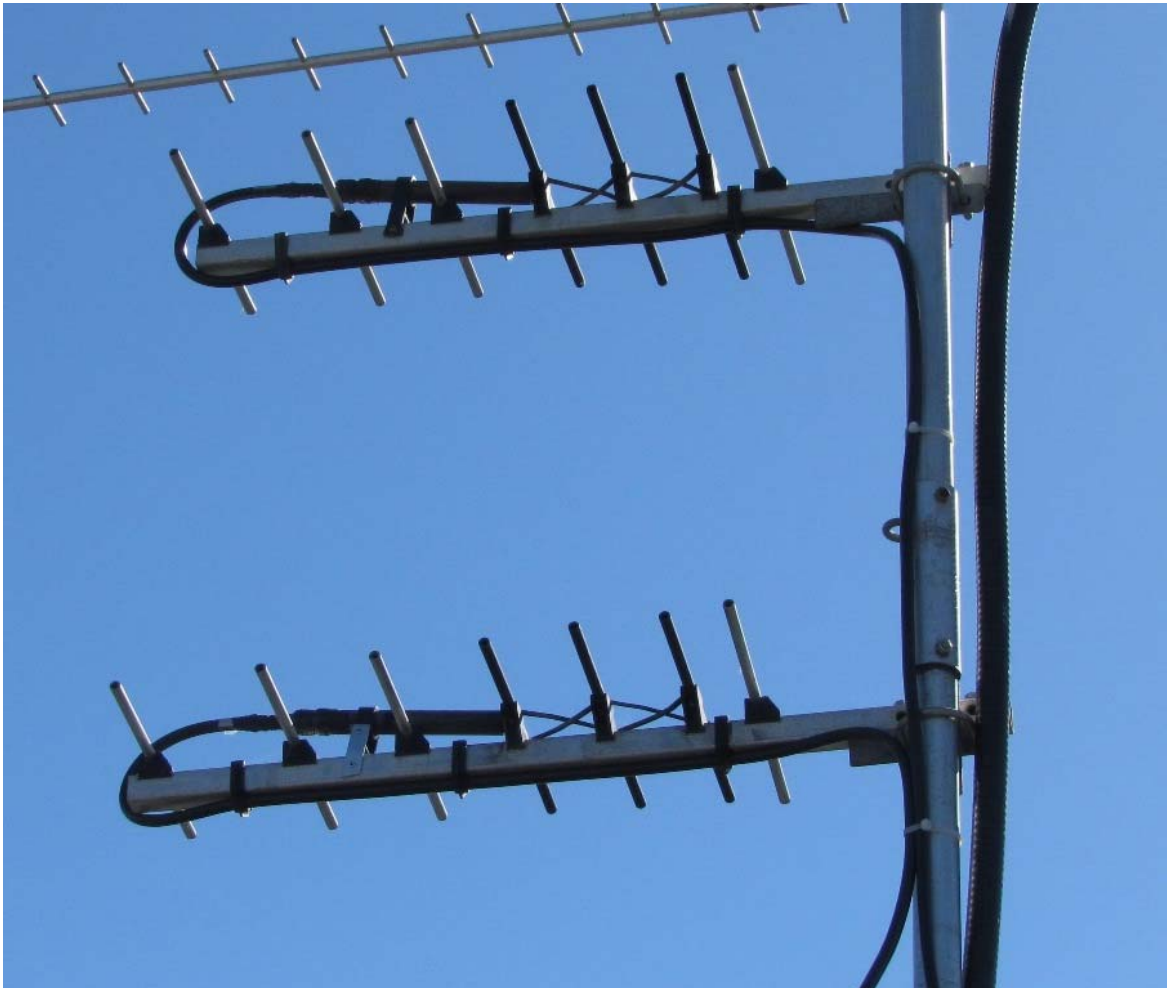
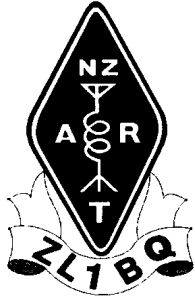


The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum



Combining 70 cm Yagi's

(Page 8)



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

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 – April 2011.

Last Months Meeting.

Bruce Hurley from Telecom – in place of the man from Chorus, who was busy in Christchurch helping to restore services there, gave a very interesting presentation to a crowded meeting about the way Broadband was being and had been delivered to the country. He explained the structure that had been put in place to achieve the upgrade to roadside cabinets, and the amount of work that was being carried out to ensure the service was available to as many people as possible. The figures, including the cost involved, were quite staggering. Bruce also explained how the bundling and un-bundling process worked and was handled.

Bruce also went into the area of experimentation going on at the moment to bring fibre into the home, and how this may be achieved over time. It is a future that is still to unfold. He also explained where the latency hold up occurs in the overseas circuits, which tends to slow down traffic from distant sources, and explained how some major users are getting around the problem with use of local caches to help speed up the experience of using their resources.

Everybody enjoyed the very interesting information that came out of the presentation, confirmed by the way Bruce was invaded during the supper time. A great evening enjoyed by all.

670 locks up

Sometime on Friday 18th March, 670 repeater microprocessor locked up due to a power flip and had to be re-set. This was done on Saturday morning when Leith ZL1BCJ kindly volunteered to dash up the hill and do the re-set. Our thanks to Leith for doing this small job for us and getting 670 back on the air.

It should be remembered that 670 does not

have any back-up power, and should mains power disappear from this site, then 670 will go off while the power is out. Normally the Microprocessor will re-set when power is restored, but when a situation occurs when the power “flips” for a very short time, then the controller will sometimes – not always – lock up and needs a manual re-set.

There are plans to remedy this situation, but the frequency of occurrence is small and therefore has been pushed down the list a bit.



Scout Hall about to be demolished!

We received news that starting about the 4th April, the long serving companion next to our club rooms is going to be knocked down. The next time you come to one of the VHF Group meetings, in its place will be – nothingness!

Power and water are being re-connected via underground connections, with some of this work already under way.

The Scout Hall has seen the VHF Group use it for a number of special occasions, including our 50th birthday celebration and many Technology Conventions. There are a number of fond memories associated with the hall and it will be sadly missed when it goes.

Parks and reserves are planning on tidying up the area, but at this time it is not known when their beautification work will begin. We have communicated to them that when plans are known in more detail, we would like to spruce up our rooms and replace our front entrance access, but this will depend on if they decide to seal the existing car park. We await more communication on this issue.

Club Positions Becoming Vacant

There will be some committee vacancies coming up later this year. At the end of May Jim ZL2BHF who is our current Vice President could be shifting to Nelson permanently, and therefore his position within the committee will become vacant. We will miss Jim and his work that he has done inside the committee, and the occasions when he has had to take over my role.

It is vital to have this position filled so we will be looking for volunteers to fill this vacancy very soon. If you would like to play an important role in the running of the Group, here is an opportunity. Just let me or one of the committee know of your interest. We will be glad to hear from you.

In the recent NZART Council elections, congratulations must be handed out to Vaughan ZL1TGC, currently on our committee, and Stephen ZL1TPH who is currently our Spectrum editor.

While Stephen will carry on as editor until November, he obviously wants to give his role as Councillor his best effort, and therefore wants to retire as Editor of Spectrum. This early advice of his intentions allows us to find another Editor beforehand, and allows the opportunity for training and learning about how Spectrum is put together before there is an

urgent need in November. If you would like to get involved in this rather interesting and vital role for the group, please let me or one of the committee know as soon as so that we can get the process under way.

As I have stated last November, I intend to retire as the Groups President in November of this year - its time for someone else to take over. So start putting the thinking caps on and give some thought as to who you would like to take over the running of the Group, come this November.

All three of these positions are vital to the Groups running and continuing operation over the next few years, so please consider who you would like to see fill these vacancies and give them the support and encouragement to stand for the vacancies coming up. We need good people to come forward, and only you as members can make that happen. Now is the time for you to help the VHF Group into the future.

THIS MONTHS MEETING:

The use of Radar for the safe control of Aircraft around our skies has become quite sophisticated and a necessary tool for Civil Aviation. In a previous life, **Dave Probine ZL1TND** was very involved with this application of electronics and is going to give us an insight into the complexities of the system and how it works.

Don't miss this presentation entitled "**Radar and its use for Air Traffic Control**" at the Club rooms (without the Scout Den!) Monday April 11th, 7.30pm.

We look forward to seeing you all at the meeting.

Best 73's, de **ZL1JD**

Branch 66 AREC report

Well another month gone already. Highlight was providing help for the annual St Patricks day parade. It was a fine day and our job was to ensure that every one got off the floats safely at the end and keep members of the public not involved away from the area. (Good practise at crowd control) Everything went smoothly and no problems were encountered. The day finished with a glass of Irish ale and nibbles at a nearby Irish pub.



AREC nets are still taking place 146700 repeaters, each Thursday evening at 7.30 pm. Thanks to those of you who have updated your details. Those who have not, please do so as soon as you can. Plans are being made for the next meeting and notice will be given shortly, I am trying to arrange an interesting speaker for this meeting.

SPECTRUM

New members are always welcome you can contact me PH6345130 or email perma@xtra.co.nz

Laurie Mathews, Section leader Br 66 AREC

Marlene ZL1MYL and Doug ZL1TTE wearing official Irish AREC hats

DEEP SKY AURORAS:

A solar wind stream hit Earth's magnetic field over the weekend, sending a wave of "deep sky auroras" over northern-tier US states.

The lights were pale-white or even invisible to the naked eye, but digital cameras revealed spectacular colors and luminous shapes above Wisconsin, Michigan, Minnesota, and elsewhere.

This weekend, April 2-3, Northern Lights spilled across the Canadian border into the United States with sightings as far south as Wisconsin, Minnesota, and Michigan. To the naked eye, the auroras were mostly pale-white, but exposures of 10 or more seconds with off-the-shelf digital cameras revealed spectacular color.

<http://spaceweather.com/>



AUCKLAND VHF GROUP (INC) BRANCH 66

MEETING NOTICE

April 11th, 7.30pm

***Location:* HAZEL AVENUE CLUB ROOMS**

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

***Subject:* “Radar and its use for Air Traffic Control”**

The use of Radar for the safe control of Aircraft around our skies has become quite sophisticated and a necessary tool for Civil Aviation. In a previous life, **Dave Probine ZL1TND** was very involved with this application of electronics and is going to give us an insight into the complexities of the system and how it works.

EVERYBODY WELCOME

The Auckland VHF Group has also invited the NZ Electronics Institute to join us at this meeting.

Dates to Remember over next few months.

Every Thursday 7.30 pm AREC Net 670

- April 3rd (Sun)** 8.15pm News and Net 6625 and 9875
- April 10th (Sun)** 8.15pm News and Net 6625 and 9875
- April 11th (Mon)** 7.30 pm Hazel Ave Clubrooms, Air Traffic Control Radar Systems – Dave Probine.
- April 17th (Sun)** 8.15pm News and Net 6625 and 9875
- April 20th (Wed)** Jumbo Trophy, Albany Hall 7.30pm
- April 22nd – 25th (Easter)** Technology Convention and Radio Expo, Wellington
- April 24th (Sun)** 8.00pm Official Broadcast followed by News and Net 6625 and 9875.
- April 25th (Mon)** Anzac Day – Note: No Committee Meet tonight. See May 2nd.

Every Thursday 7.30 pm AREC Net 670

- May 1st (Sun)** 8.15pm News and Net 6625 and 9875
- May 2nd (Mon)** Committee Meet, 7.30 pm Hazel Ave
- May 8th (Sun)** 8.15pm News and Net 6625 and 9875
- May 9th (Mon)** 7.30 pm Hazel Ave Clubrooms. Inside The ICOM Factory, also Prep for Conference including vote on 13 Remits.
- May 14th (Sat)** AM - REG Sale Hamilton
- May 15th (Sun)** 8.15pm News and Net 6625 and 9875
- May 22nd (Sun)** 8.15pm News and Net 6625 and 9875
- May 29th (Sun)** 8.00pm Official Broadcast followed by News and Net 6625 and 9875.
- May 30th (Mon)** Committee Meet, 7.30 pm Hazel Ave
- June 4th – 6th (Queens Birthday)** NZART Conference Upper Hutt, Wellington
- June 5th (Sun)** 8.00pm Conference Official Broadcast followed by News and Net 6625 and 9875.

Combiners for 144, 432 and 1296 MHz

The URL below from OZ2OE has calculation for a 2 way combiner for 144 MHz, a 4 way combiner for 432 MHz along with a 2 way combiner for 1296 MHz.

<http://oz2oe.dk/radio/combiner/combiner.html>

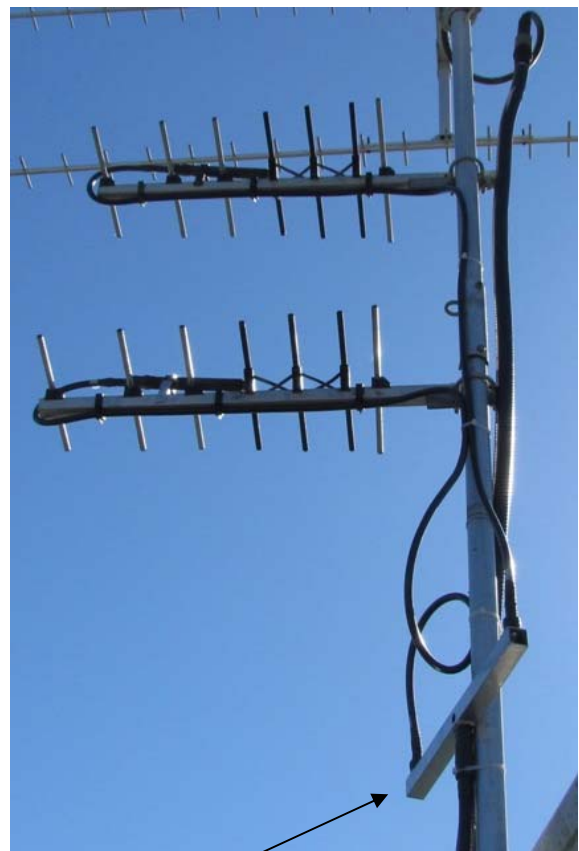
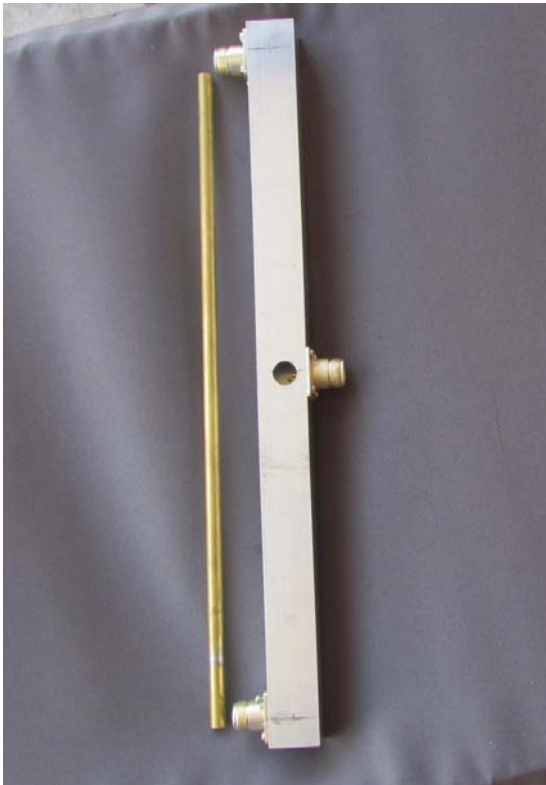
This combiner built for these two 70 cm Yagi's uses 22 mm inside diameter square aluminium tube and brass tubing from model hobby shops.

The RF connectors being N type were obtained from the AK VHF group.

From both end RF connectors, each coax to each antenna must be the same length two both Yagi's.

For more information visit this URL paper below with stacking, phasing and matching Yagi's from Gordon McDonald VK2ZAB.

<http://www.grantronics.com.au/docs/StkYagis.pdf>



Two way 70 cm combiner

**2011 Results of The DX Weekend
Contest
5th and 6th February 2011**

Band	Frequency	Callsign	Locator	Points
6 m				
ZL4DK	RE54fe	384		
ZL1SWW	RF73ir	85		
ZL1HI	RF73qs	35		
2 m				
ZL1SWW	RF73ir	1138		
ZL4DK	RE54fe	1087		
ZL1HI	RF73qs	442		
ZL2UGL	RE78js	106		
70 cm				
ZL4DK	RE54fe	1037		
ZL1SWW	RF73ir	641		
ZL1HI	RF73qs	407		
23 cm				
ZL1SWW	RF73ir	2908		
ZL4DK	RE54fe	830		
9 cm				
ZL1SWW	RF73ir	562		
5 cm				
ZL1SWW	RF73ir	3596		
3 cm				
ZL1SWW	RF73ir	1798		

SPECTRUM

12 mm

ZL1SWW RF73ir 374

TOTAL SCORES

ZL1SWW RF73ir 11102

ZL4DK RE54fe 3338

ZL1HI RF73qs 884

ZL2UGL RE78js 106

BEST DX

6 m ZL1SWW - ZL4LV 1128 km

2 m ZL1SWW - ZL3CU 826 km

70 cm ZL1SWW - ZL2TAL 380 km

23 cm ZL1SWW - ZL2DX 559 km

9 cm ZL1SWW - ZL1TPH 104 km

5 cm ZL1SWW - ZL2IP 333 km

3 cm ZL1SWW - ZL2IP 333 km

12 mm ZL1SWW - ZL1TPH 104 km

36 STATIONS ACTIVE

ZL1ACM ZL1ADP ZL1AJY ZL1AKW
ZL1BK ZL1BQE ZL1GTB ZL1HI ZL1RDK
ZL1SWW ZL1TDU ZL1TO ZL1TPH
ZL1TWR ZL1UET

ZL2DX ZL2FAE ZL2IP ZL2TAL ZL2UGL

ZL3ADC ZL3ADT ZL3CU ZL3LM ZL3MH
ZL3NW ZL3OY ZL3PN ZL3PX ZL3THQ
ZL3TY

ZL4DK ZL4IS ZL4LV ZL4PLM ZL4PP

EQUIPMENT USED (IF STATED)

6 metres

TS-680 + 60 W + 3-element Yagi

FT-897D 100 W + 6-elment Yagi

IC-746 100 W + 3-element Yagi

2 metres

TR-751 + 150 W amplifier + 2 x 9-element Yagi

IC-821H 35 W + 2 x 5-element Yagi

FT-897D 50 W + 7/7 skeleton slot

IC-706MKII + 140 W amplifier + 12-element LP Yagi

70 cm

TR-851 + home brew amplifier + 3.3 metre dish

FT-897D 20 W + 11-element Yagi

TR-9500 + 130 W amplifier + stacked 7-element LP Yagis

23 cm

Home brew 10 W transceiver + 3.3 metre dish

VK5EME + PLL + 18 W + 56-element Yagi stack

9 cm

DXR740 5 W + 20-element patch Remec

5 cm

DXR700-768 5 W + 770 mm prime focus dish

3 cm

DXR700-710 5 W + 600 mm prime focus dish

12 mm

DB6NT mult + harmonic mixer 800 mW + 300 mm dish

THE NEXT CONTEST

The next contest is the Low Band Contest, 50 MHz to 440 MHz, on Saturday the 2nd and Sunday the 3rd of April 2011. The operating times are: Saturday 1700 to 2300 NZDST and Sunday 0700 to 1300 NZST. Note that Day-

light Saving ends half way through the contest. NZ Local Time applies on both days of the contest.

The contest after that is the Hibernation Contest, 50 MHz and up, on Saturday the 11th and Sunday the 12th of June 2011. This is the weekend after NZART Conference. The operating times are: Saturday 1700 to 2300 NZST and Sunday 0700 to 1300 NZST.

All contest logs should be sent, to arrive within two weeks, to:

zl2wa@clear.net.nz

with Contest Log in the subject line, or by post to:

Contest Manager
Wellington VHF Group
P.O. Box 12-259
Thorndon
Wellington

Best VHF DX Expedition of the Year 2010 vote – Make More Miles on VHF

DUBUS magazine out of German; "Reports under the Category of EME.

2nd place is awarded to Lance, W7GJ and Bob ZL1RS (as 3D2LR & 3D2RS)

There were more than a 100 voters from 32 different countries etc.

Congratulations to both Lance and Bob.

<http://www.mmmmonvhf.de/>

DTMF encoder I build using an AVR microcontroller

About the project: Hannes, ZL1LW

I was approached by a fellow ham with a request to assist him to build a DTMF generator.

He wanted to be able to make use of the IRLP and Echolink nodes in the area, but the cost of a DTMF microphone and lack of availability posed a problem. So we set out to build a low cost DTMF generator. We investigated ways of building a cost effective unit. The dedicated DTMF generator IC's available on the market seemed to be exactly what we needed. The problem was that the project cost will be in excess of NZD\$40. After a couple of days searching the internet we came across a handy application note for the AVR microcontroller from the manufacturer website. (www.atmel.com).

We decided that this would be just what we need and started on the prototype. The inexpensive ATmega8515-8 was used for this project. All the parts for this project are available for the local electronic shop. The Code was migrated to enable us to use this microcontroller model. The total cost of the project was in the region of NZD\$20. This includes a suitable enclosure. For the prototype we used Vero board, also known as strip board. The project is easy to assemble and require basic electronic knowledge.

Programming the Micro:

The microcontroller can be programmed using a basic computer parallel port circuit and free software available from the internet or using a STK500 programming device available from the manufacturer at a cost around NZD\$80.

Microcontroller Code:

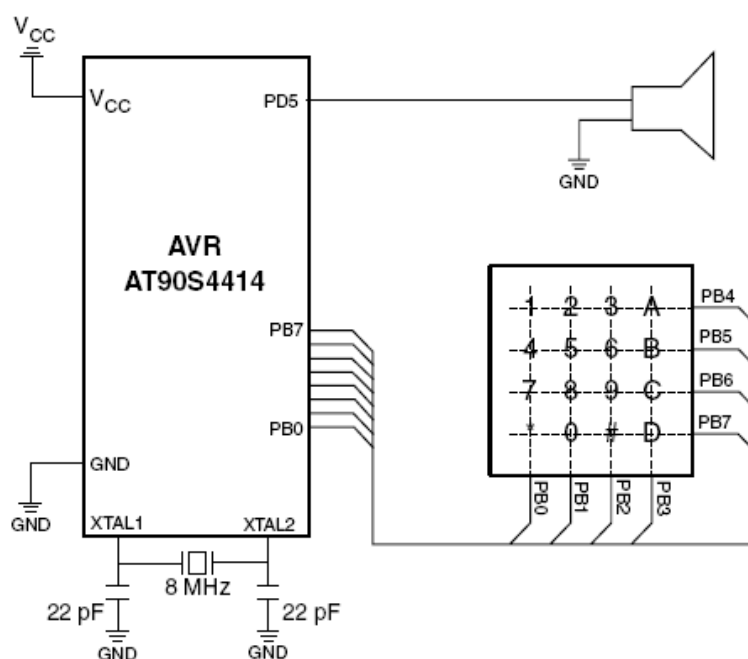
The code can be downloaded from the manufacturer website at: http://www.atmel.com/dyn/resources/prod_documents/AVR314.zip

It includes C-Code and Assembler versions.

How it generates DTMF tones:

Here we use an AVR microcontroller to generate DTMF (Dual-Tone Multiple Frequen-

Figure 1. DTMF Generator



cies) signalling that can be implemented using any AVR microcontroller with PWM (Pulse Width Modulation) and SRAM. Applications such as phones are using DTMF signals for transmitting dialling information. There are two frequencies added together to generate a valid DTMF signal, a low frequency (fb) and a high frequency (fa). Table 1 shows how the different frequencies are mixed to form DTMF tones. Below is the system diagram for the project.

Table 1. DTMF Tone Matrix

fb/fa	1209 Hz	1336 Hz	1477 Hz	1633 Hz
697 Hz	1	2	3	A
770 Hz	4	5	6	B
852 Hz	7	8	9	C
941 Hz	*	0	#	D

The rows of the matrix shown in Table 1 represent the low frequencies while the columns represent the high frequency values. For example, this matrix shows that digit 5 is represented by a low frequency of fb = 770 Hz and a high frequency of fa = 1336 Hz. The two frequencies are transformed to a DTMF signal and the ratio between the two amplitudes are calculated using complex equations.

Pulse Width Modulation (PWM) output, located on pin PD5 of the microcontroller, is used to generate the sine wave at the required frequency. We use a 68 Ohm resistor in series with the 8 or 4ohm speaker to prevent damage from occurring to pin PD5. This is to prevent the speaker from drawing too much current from the microcontroller.

According to the relation between high level and low level at the output pin of the PWM, the average voltage at this pin varies. Keeping the relation between both levels constant generates a constant voltage level. A sine wave can be generated if the average voltage generated by the PWM is changed every PWM cycle. The relation between high and low level has to be adjusted according to the voltage level of the sine wave at the respective time.

Figure 3 visualizes this scheme. The values for adjusting the PWM can be calculated every PWM cycle or stored in a lookup table (LUT). Figure 3 also shows the dependency between frequency of the ground sine wave and the amount of samples. The more samples (Nc) are used, the more accurate the output signal gets. At the same time the PWM frequency is dependent on the PWM resolution. For an 8-bit resolution, the

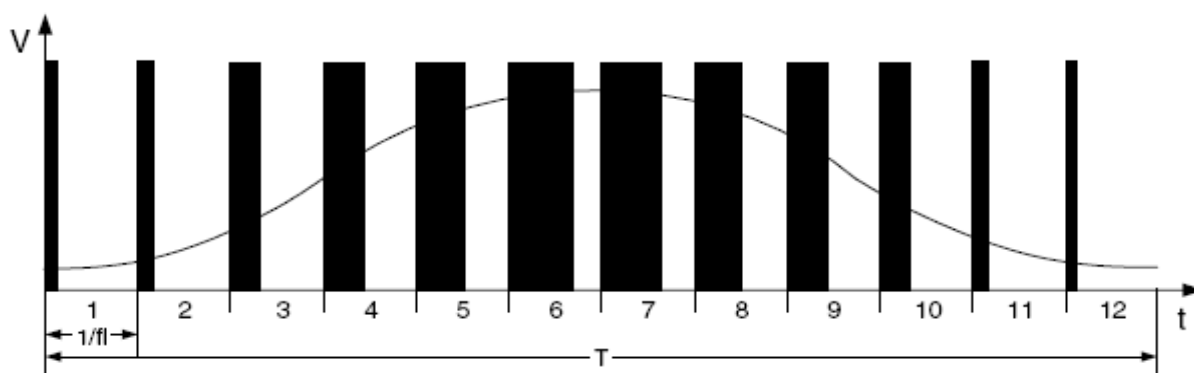
Timer TOP value is 0xFF (255). Because the timer counts up and down this value has to be doubled. In dividing the Timer Clock fCK by 510 the PWM frequency can be calculated.

According to this coherence a Timer Clock of 8 MHz generates a PWM frequency

of 15.6 kHz. Let's assume that the sinusoid samples for adjusting the PWM are not read in a sequentially manner from the lookup table but just every second value. At the same sample frequency an output signal with twice the frequency is generated.

Doubling the Output Frequency. In using not every second sample but every third, fourth, fifth... it is possible to generate different frequencies. Note: for high frequencies it will not

Figure 3. Generating a Sine Wave with PWM



be a sine wave any more.

For more information on the code and in depth operation visit http://www.atmel.com/dyn/resources/prod_documents/doc1982.pdf or feel free to contact me via email on z11w@orcon.net.nz.

Below is a photo of the prototype project.



VHF Forum, ATV, Satellites, Special Interest Groups and a forum for Repeater and Beacon Trustees and National System Trustees

The nearest motel is Aotea Lodge, near the Police College and there are 6+ other motels in Porirua, none more than 5-10 minutes drive and 3+ in Johnsonville, 4-5 minutes drive from Tawa.

The cost will be \$50 per person attending the Convention - includes afternoon tea on Saturday and morning tea/lunch/afternoon tea on Sunday. Arrangements are being made with a local restaurant for a pay as you go Dinner on Saturday night. Entry to the Wellington Expo-11 costs an additional \$4.00, to be paid at the door.

More details on the programme will be published via Infoline as soon as they are finalised. Registration forms are available on the Wellington VHF Group website www.vhf.org.nz

VHF Convention

Wellington – Easter 2011

The Wellington VHF Group invites you to attend the VHF Convention to be held in Wellington during Easter, 22nd – 24th April, 2011, at Tawa College in Tawa. Come and enjoy Lonely Planet’s 4th top city in the world to visit in 2011 and see for yourself why Wellington is the “Coolest Little Capital in the World”

On this occasion, the Convention is being held in conjunction with the annual Wellington Radio Expo - Wellington Expo-11. The Official Opening will be after lunch on Saturday 23rd April to enable out of towners and locals to fossick through the treasures at the Expo that will be seeking new homes.

VHF Convention offers a great programme for both the newcomer and the experienced Ham, and will include an exciting mix of speakers and events including technical presentations,

Using “symbol” font to type Greek letters

(shown in normal QWERTY keyboard layout)

θΘ ωΩ εΕ ρΡ τΤ ψΨ υΥ
ιΙ οΟ πΠ ρΡ wW eE rR tT
γΥ uU il oO pP

αΑ σΣ δΔ φΦ γΓ ηΗ φΦ
κΚ λΛ αΑ sS dD fF gG hH
jJ kK lL

ζΖ ξΞ χΧ τΤ βΒ νΝ

μΜ zZ xX cC vV bB nN mM

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 (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 adaptor (barrel joiner) 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 (solder less press fit into centre pin) for RG213	\$8.00 each
N Type male right angle, suit RG213 coax	\$4.00 each
N Type male solder on 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 quick-fit (solder less press fit into centre pin)	\$8.00 each
N Type male right angle, solder on suit RG213 coax	\$4.00 each
N Type male sliver plated solder/clamp on suit RG58 coax	\$3.00 each
N Type male crimp on suit RG58 coax **	\$2.50 each
N Type male crimp on for LMR400 / 9913 coax. **	\$3.50 each
N-Type panel mount socket (4-hole flange)	\$2.50 each
N-Type adaptor Male to Male	\$3.00 each
Adaptor SMA Male to N Female	\$3.00 each

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



Advertisement

Get the latest Satellite Information for the Pacific Region
Launches, Program Lists, Space Related News
Technically Interesting Subjects & Data.

PACIFIC SATELLITE NEWS

NOW IN NEW ZEALAND

Published 12 times a year

Subscribe Now

Contact: Laurie Mathews, ZL1ICU

Phone: 09 6345130

Fax: 09 6343019

Email: perma@xtra.co.nz

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 - Merv Passau ZL1AKX	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

TXO4010T 20.000MHz High Stability Crystal Oscillator - \$5.00 each from the Trading Table

2.0 FREQUENCY CHARACTERISTICS

2.1 Nominal Frequency	20.000 MHz
2.2 Frequency at room Temperature	+/-1.0ppm at 23 deg C +/-2 deg C
2.3 Operating Temperature Stability	+/-1.0ppm 0 to 40 deg C
2.4 Frequency Perturbations	<0.5ppm peak to peak with slope < 0.5ppm/deg C
2.5 Static Temperature Hysteresis	+/-0.4ppm
2.6 Supply Voltage Stability	+/-0.2ppm +5v+/-5%
2.7 Load Sensitivity	+/-0.2ppm max for 20KW//5pF +/-10%
2.8 Short Term	<1.0E-9 Allan Variance for 1 second Tau
2.9 Long Term	+/-1ppm/year
2.10 G Sensitivity	<1x10E-9 per G all three axis from 30Hz to 1500Hz
2.11 Manual Adjustment	+/-3.0ppm min by internal trimmer

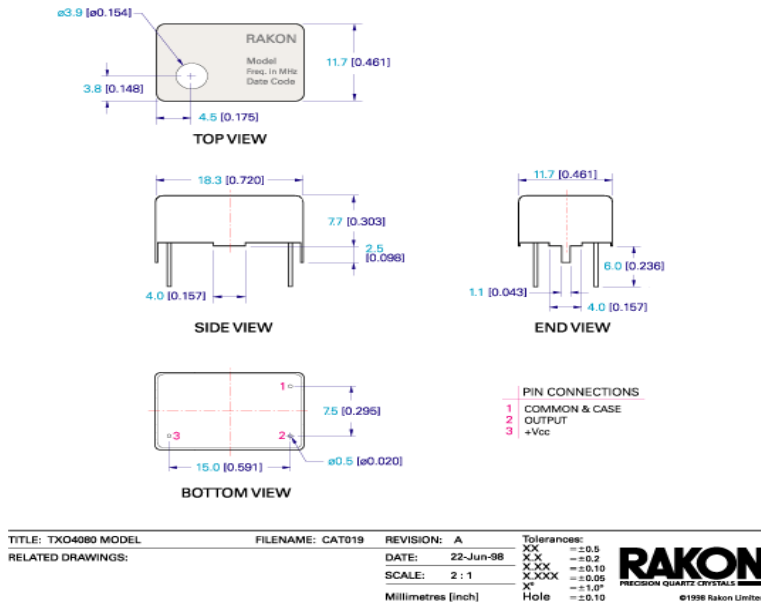
3.0 POWER SUPPLY

3.1 Voltage	+5V +/-5%
3.2 Current	2.0mA max

4.0 OSCILLATOR OUTPUT

4.1 Output Voltage	1.0Vp-p min
4.2 External Load	20KW//5pF dc-cut
4.3 Harmonics	-5dBc max

Note: Outline drawing is for the TXO4080. Pin out is identical but dimensions may differ from the TXO4010T



Trading Table New Items:

Surface Mount 455kHz IF Filters

PBFS-455P20D3 20kHz bandwidth at 6dB points, 6dB insertion loss (max), 1.5k Ohm matching impedance. Data sheet available.

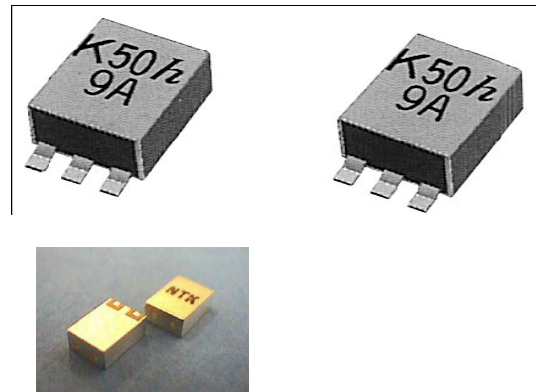
Limited quantity \$1.00 each.

MFK947CS12A 3 pole ceramic filters

Interdigital type filter, centre frequency 947 MHz

Similar to illustration, surface mount.

Limited quantity, \$0.50 each



TFS112G SAW Filters

Centre frequency 112.32 MHz.

3dB bandwidth 1.05 MHz

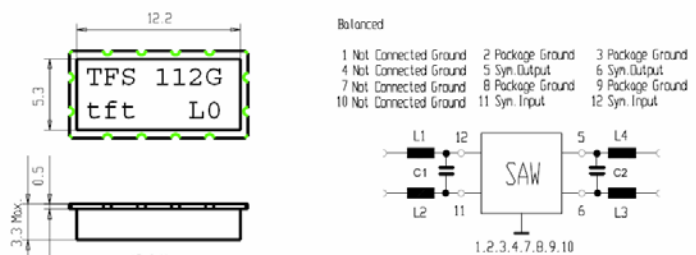
6dB bandwidth 1.72 MHz

20dB bandwidth 2.17 MHz

40dB bandwidth 2.66 MHz

Insertion Loss typically 13.5 dB.

SMD 12pin package. Data sheet supplied. \$0.50 each. Limited quantity.



PL259 Right Angle Adaptors:

\$3.00 each



TRADING TABLE

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 200 MHz, and are usable with caution up to 500 MHz. 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.



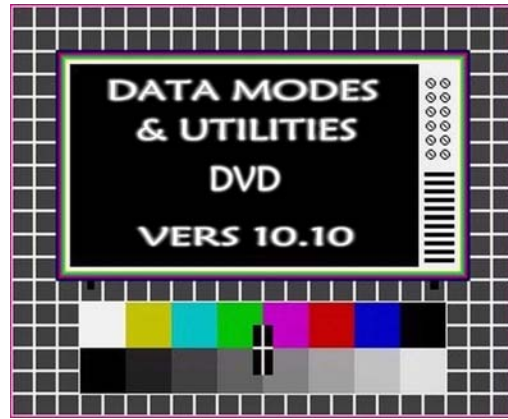
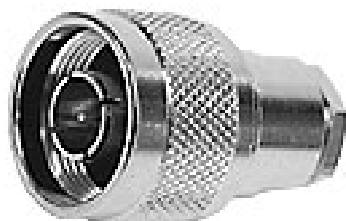
Nickel-plated on brass construction, will fit RG58/U 50 ohm coaxial cable.

Our price: 50c each.

We also have a limited number of reducing adaptors for RG8-X coax as well. Ask!

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 the right crimp tool!

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



DATA MODES & UTILITIES CD has even more updates and new programmes on this latest release. **Still only \$10.00**

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



Subscriptions for the 2011 year are now due. Please check your details on the wrapper around your Spectrum, and forward the updated form with payment to the Treasurer or bring to the next meeting.