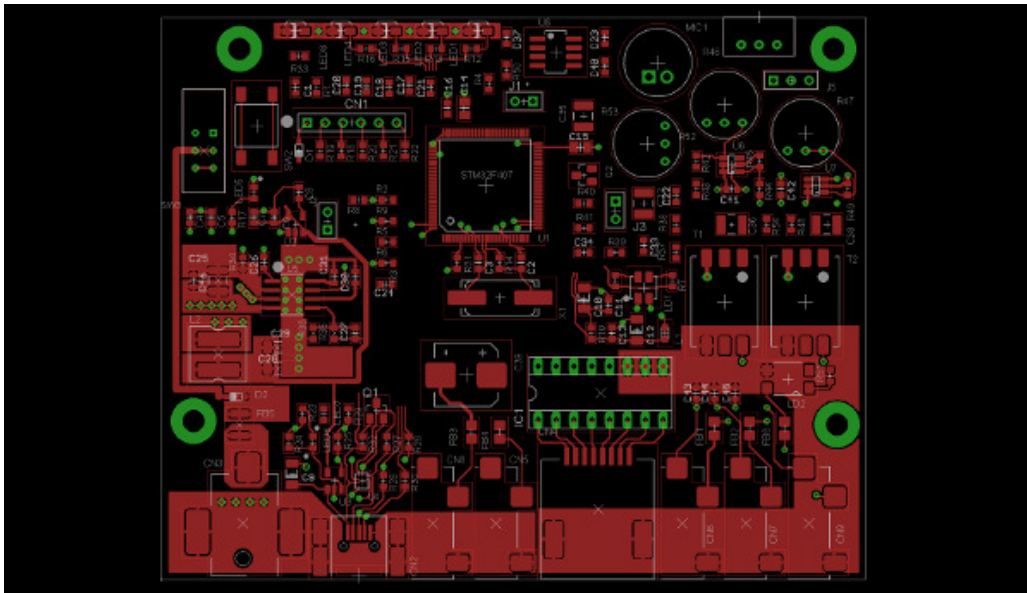


Ham Hum

May 2015



The official newsletter of
The Hamilton Amateur Radio Club (Inc.)
Branch 12 of NZART - ZL1UX
Active in Hamilton since 1923



Next Meeting 20th May : 19:30
Emergency Co-ordination Centre
Meet at clubrooms first

Disclaimer: The Hamilton Amateur Radio Club (Inc) accepts no responsibility for opinions expressed in this publication. Where possible, the articles source details will be published. Copyright remains with the author or HARC. All rights reserved.

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NZART Examiners: ZL1IC, ZL1PK & ZL1TJA

From the Editor

This months meeting will be at the Emergency Co-ordination Centre which is part of the area CD and emergency response system. Please gather at the club rooms for car pooling arrangements as parking is at a premium at the Centre which is at the south end of Victoria St.

Also at this meeting your vote on the Remits will be taken. They are included in this issue of Ham Hum for you to consider before the meeting.

Latest news for the NZART Conference : The conference programme will be very much along the same lines as previous years, with the AGM on Saturday, to be followed by the AREC FORUM and a dinner in the evening. On Sunday morning the AGM's will be held for WARO, AMSAT-ZL & OTC and others. This will be followed by 3 Forums in the morning and 2 x 3 Forums in the afternoon. A further dinner will be held in the evening. The usual type of alternative programme will be held on Saturday and Sunday. More details will be available soon.

Registrations will take place from 4pm to 9pm on Friday evening, and 8.00am to 9am on Saturday and Sunday, on the ground floor of the venue.

The FIFA U20 World Cup starts on the same weekend as the NZART Conference. In fact, on Sunday (31st May) there are two games at the Waikato Stadium in Hamilton. This is one of the reasons accommodation may be a bit tight.

On page 9 is a membership form for our club (Hamilton Amateur Radio Club—Branch 12 of NZART). IF you don't want to tear out that copy, please ask our secretary (ZL1PK) at the next General Meeting for a form to fill out.

Next Committee Meetings - 6th May and 3rd June

Propagation de K7RA

Solar activity perked up this week, with average daily sunspot numbers rising from 65.6 in the previous seven days to 120.9 in the April 16-22 period.

Average daily solar flux increased from 132.5 to 150.4 over the same period.

The day with the most geomagnetic activity was April 16, when the mid-latitude A index was 28, planetary A index was 43, and the high latitude college A index in Alaska was 57. These are high numbers!

Predicted solar flux for the near term is 135 and 130 on April 24-25, 125 on April 26 through May 1, 130 on May 2-5, 135 and 140 on May 6-7, 145 on May 8-9, 140 on May 10, 135 on May 11-16 and then a jump to 150 on May 17-18 before declining to 125 on May 23.

Predicted planetary A index is 8 and 12 on April 24-25, 8 on April 26-27, 10 on April 28, 8 on April 29 through May 2, 5 on May 3-5, 8 on May 6-8, 5 on May 9-11, then 8, 15, 20, 12, 8 and 12 on May 12-17, and 5 on May 18-19.

From April 16-22 there was one new sunspot region appearing each day, except for April 21 when there were two.

If you check the solar flux prediction archive at <http://www.filedropper.com/filemanager/public.php?service=files&t=326dd41340bab1066cf91d13df36b8fd> (click on "Download This File") you can see how dramatically the prediction for the next few days changed recently. The forecasters pulled back on their estimates for higher solar flux.

F.K. Janda, OK1HH, sent his weekly geomagnetic prediction, and he sees quiet to active conditions April 24, active to disturbed April 25, quiet on April 26, quiet to active April 27, quiet to unsettled April 28, disturbed April 29, active to disturbed April 30 through May 1, quiet to active May 2, mostly quiet May 3-6, active to disturbed May 7-8, quiet to active May 9, mostly quiet May 10, quiet on May 11, active to disturbed May 12, disturbed May 13-14, quiet to active May 15, quiet to active May 16-18, and mostly quiet May 19-20.

OK1HH says that increases in solar wind are mostly unpredictable, but he expects increases on April 24, May 3-5, May 15-18, and May 20.

On Sunday, April 19 Jeff Hartley, N8II, of Shepherdstown, West Virginia wrote: "The high solar wind essentially closed 15 meters and up for a couple of days late last week except for South America. It is back to near normal now. I easily worked HS0ZCW on 12 meter SSB today at 1517Z and a few loud southern Europeans.

Ten meters never really opened to Europe, but EA8DAZ was S9+20 db.'

On April 23, Jon Jones, N0JK, of Kansas wrote: "10 meters was good to the South Pacific the afternoon of April 23. FW5JJ was quite loud to the Midwest USA around 2200z on 28.029 MHz. I worked him with 50 W while parked from my mobile. K index was 0.

"Last Saturday, April 18, there was strong early season sporadic E on 6 meters. I worked W7GJ in Montana and KE8FD in Utah at about 2145z on 50 MHz via Es. K7TNT in Wyoming had a pipeline to CE2AWW for 2 hours. No copy on CE2AWW in Kansas. I had to work Saturday night shift, but saw many people spotted FK8CP via Es link to TEP that evening."

I believe his ten meter mobile antenna is one of those shortened CB whips on the roof of his car.

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://arrl.org/propagation-of-rf-signals>. For an explanation of the numbers used in this bulletin, see <http://arrl.org/the-sun-the-earth-the-ionosphere>. An archive of past propagation bulletins is at <http://arrl.org/w1aw-bulletins-archive-propagation>. More good information and tutorials on propagation are at <http://k9la.us/>.

Archives of the NOAA/USAF daily 45 day forecast for solar flux and planetary A index are at <http://www.filedropper.com/filemanager/public.php?service=files&t=326dd41340bab1066cf91d13df36b8fd> and <http://www.filedropper.com/filemanager/public.php?service=files&t=be2a0a69fb6392907dc3d9a017dcace1>. Click on "Download this file" to download the archive and view in spreadsheet format.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://arrl.org/propagation>.

Instructions for starting or ending email distribution of ARRL bulletins are at <http://arrl.org/bulletins>.

Sunspot numbers for April 16 through 22 were 85, 93, 114, 142, 125, 153, and 134, with a mean of 120.9. 10.7 cm flux was 150.2, 149.6, 147.6, 151.7, 149.6, 153.8, and 150.3, with a mean of 150.4. Estimated planetary A indices were 43, 25, 13, 9, 10, 22, and 11, with a mean of 19. Estimated mid-latitude A indices were 28, 20, 10, 9, 9, 18, and 9, with a mean of 14.7.

NZART Remits

Here are the remits for Conference as published in the latest Break-In. Branch members can send in your thoughts on these remits via email to branch.12@nzart.org.nz

Christchurch Amateur Radio Club Branch 05 NZART – Non-transmitting

Remit 1

Christchurch Branch 05 requests NZART Council to coordinate a working group with the task of investigating the inadequate uptake of amateur radio as a hobby in New Zealand, compared to other countries. The working group should report their findings and suggest resolutions within six months to the Membership.

Explanation Remit 1

Through our extensive work with prospective amateurs and schools, we find many potential students discouraged by the entry level step of a full exam pass. And the work required to achieve this. We believe this entry step does not match the entry requirements as found with other modern day licences that require an exam, such as motor vehicle and pilots licenses, which all have a staged entry structure. A low level, low impact entry point would allow students to taste the benefits of our hobby. There must be a solution to this problem, and we should seek to find it.

Remit 2

That NZART should assemble a working group to investigate updating the New Zealand Amateur Radio Exam database. The aim will be to bring the exam into line with modern radio engineering techniques and test the capabilities of radio operators in the 21st century.

Explanation Remit 2

The Christchurch Branch 05 amateur examination team considers the current database to be outdated in relation to the modern radio techniques. Whilst mindful of MBIE to ensure amateur license holders are technically competent, there are many areas of modern radio and computer operations that are not tested in the exam, and we would suggest some of the older subjects, no longer relevant, be replaced. Through this upgrade, we would expect the amateur radio license exam to be more appropriate to modern radio operations and hold more interest for younger candidates. A dedicated working group should have twelve months to prepare a proto-

type exam database.

Manawatu Branch 20 NZART - Transmitting

Remit 3

Clause 6.1(a) of the NZART Constitution states: -

The Association must convene an annual general meeting each year. The annual general meeting must be held on the Saturday prior to the official Sovereign's birthday observance in the month of June at a venue which may be chosen not more than two years in advance by a previous annual general meeting.

This amendment to the constitution recommends that Clause 6.1(a) be removed and replaced by:

The Association must convene an annual general meeting each year. The annual general meeting must be held during the months May, June or July at a date and time agreed jointly by the hosts and the Executive Council.

Explanation Remit 3

The original clause stipulated that the AGM must be held on a Saturday and on the Saturday prior to the "official Sovereign's birthday observance". Furthermore prospective hosts cannot make any arrangements "more than two years in advance of a previous annual general meeting".

This clause originates at a time when weekend trading hardly existed and as a consequence many sporting and similar functions held over the weekend were fewer than they are now. Today it is becoming more and more difficult for prospective hosts to secure venues in advance over the public holiday weekend. A number of sporting associations, including schools, hold National tournaments etc over the long weekend and those members participating in them or who have children/grandchildren in them find themselves torn between supporting activity or attending the NZART conference.

Furthermore, accommodation and travel rates during winter other than public holiday weekend tend to be 'low season'.

It is also restrictive on the hosts in timetabling speakers for the educational part of the conference in that the AGM, which is of unknown length, has to be held on the Saturday (i.e. it cannot be moved to Sunday).

The AGM/Conference is critically dependent upon the willingness of Branches to act as hosts, yet they are being inhibited by other events held at the same time.

This amendment is intended to give more flexibility in the timing of the annual conference and AGM and thus encourage more Branches to be hosts. It will not affect the financial year or any similar administrative procedure and come into effect for the next as yet unallocated AGM.

This remit requires 60% majority.

AMSAT News Service Bulletin 116.01

>From AMSAT HQ KENSINGTON, MD.

DATE Month Day, 2015

To All RADIO AMATEURS

BID: \$ANS-116.01

AMSAT-NA Opportunity for Rideshare to Geostationary Orbit

AMSAT is excited to announce that we have accepted an opportunity to participate in a potential rideshare as a hosted payload on a geostationary satellite planned for launch in 2017. An amateur radio payload, operating in the Amateur Satellite Service, will fly on a spacecraft which Millennium Space Systems (MSS) of El Segundo, CA is contracted to design, launch, and operate for the US government based on their Aquila M8 Series Satellite Structure.

Introducing the SM1000 Smart Mic

By David Rowe (VK5DGR), on May 21st, 2014

For the last few months Rick Barnich KA8BMA and I have been working on the SM1000, an embedded hardware product that allows you to run FreeDV without a PC. Just plug it into your SSB or FM radio, and you now have Digital Voice (DV). It's based on a STM32F4 micro-controller, has a built in microphone, speaker amplifier, and transformer isolated interfaces to your radio. It's just 80 x 100mm, and can be held in your hand and used like a regular PTT microphone, or sit near your radio in a small box form factor. The SM1000 will be in production later in 2014 and will retail for US\$195.

The whole design is open hardware (TAPR license). It will run an embedded version of FreeDV which is also 100% open source. You can forget about proprietary, expensive DV modes from other vendors that force you to use their hardware and make it illegal for you to experiment. Open source is the future of Digital Voice.

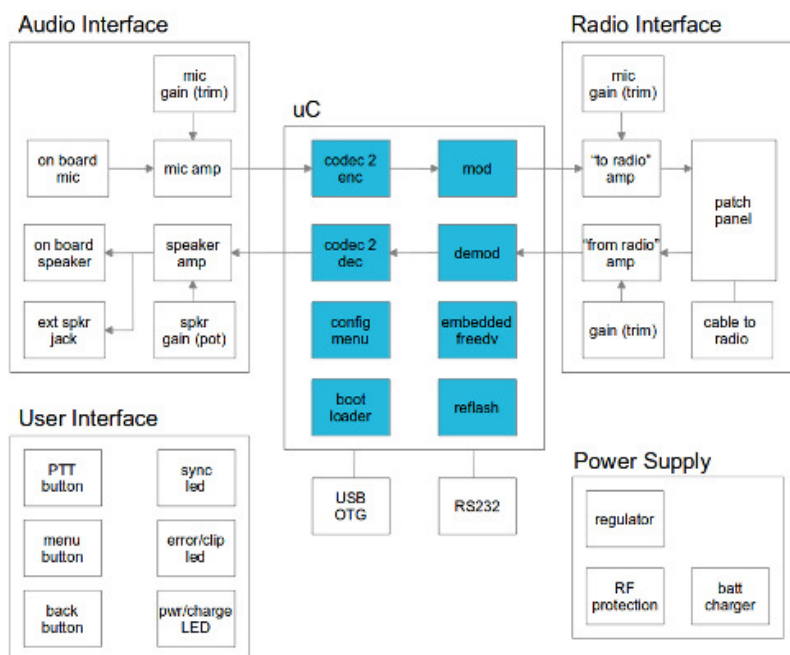
The schematic, PCB and other design files can be found in [SmartMic SVN](#). The software is taking shape in the stm32 part of [Codec 2 SVN](#).

The SM1000 has a RJ45 and 3.5mm sockets to interface to your radio, including a little patch panel to configure the RJ45 wiring. As it's hand held and operates from 6-12V it could even run with low cost FM HTs, as an external mic.

We would welcome a review of the schematic and PCB design. Suggestions are welcome, but contributions much more so! Many hardware and software tasks are available for volunteers who are interested in contributing to the free and open future of Digital Voice. Rick Barnich KA8BMA is a recently retired engineer who is a veteran of over 100 PCB designs. He has done a fantastic job at schematic entry, sourcing parts, analog and digital design, and PCB layout – and he is having a great time in the process!

Rick and I are currently wrapping up the schematic and PCB design, and will be building up prototypes and various pieces of software over the next few months. Most of the analog design has been prototyped, Codec 2 is running on the micro-controller, but the modem still needs some work to reduce memory use. Lots of work required for the user interface, integration, and general micro-controller software

Here is a block diagram of the SM1000 -



**HAMILTON AMATEUR RADIO CLUB
 NZART BRANCH 12
 MEMBERSHIP APPLICATION**

***NAME:**

***ADDRESS:**

.....

***CITY:** ***POSTCODE:**

HOME PHONE: **EMAIL:**

MOBILE PHONE: **CALLSIGN:**

NZART Member **NZART Member Number**

Affiliated to Branch: ***Branch 12 member since:**

* Required by Incorporated Society Act 1908

2015 ANNUAL SUBSCRIPTION

- Member/Associate Member** \$40.00
- Family/Club Member** \$50.00
- Unwaged Member** \$35.00

Payment herewith Cash Cheque Direct Debit
 Club bank a/c 03-1555-0064133-00

Magazine (HamHum) **delivery** **Email only**

I agree to observe the Amateur's Code, and abide by the constitution of the Club.

Date **Signature**

OFFICE USE	Receipt No.
Approved by Committee	Class of Member T/NT/A
Notified in HamHum	

Post or Deliver this form to: The Secretary, Hamilton Amateur Radio Club (Inc),
 PO Box 606, Hamilton 3240

WANGANUI AMATEUR RADIO JUNK SALE
Saturday May 2nd, 2015
Branch 48 is pleased to announce their annual
JUNK SALE

Saturday May 2nd, 2015. Auction starts at 10am.

Wanganui intermediate School Hall. Dublin St, Wanganui.

(Same venue as last time, See <http://tinyurl.com/pq4a9yb>)

Lots accepted from 4pm till 8.00pm on Friday 1st & 7.30am to 9.30am Morning of the sale.

SALE CONDITIONS:

Sellers pay 15% commission with a minimum of \$1 and max of \$20 on any one item.

Accounts will be run. (to be settled on sale day before goods uplifted)

Bids will be possible only by registered bidder number.

Bidders must register with a \$5 fee. This will also provide them with a sale catalogue.
Cash, Cheque or EFTPOS accepted.

Time to Clean out your shack and make way for more goodies!

Come and enjoy the social side of this old fashioned junk sale auction and help us make this a great day for all.

For further information contact Graham Hawtree ZL2AHR
PH: 06 3447501 or grahamandval1@xtra.co.nz

Licensed Auctioneer



**Radio Electronics Group Inc
Branch 89**

Annual Equipment Sale.

Saturday 9th May 2015

**Glenview Club
211 Peacockes Road Hamilton.**

**Vendors from 8.30am
Sale 10.am.**

\$20 per table or \$25 On the day.

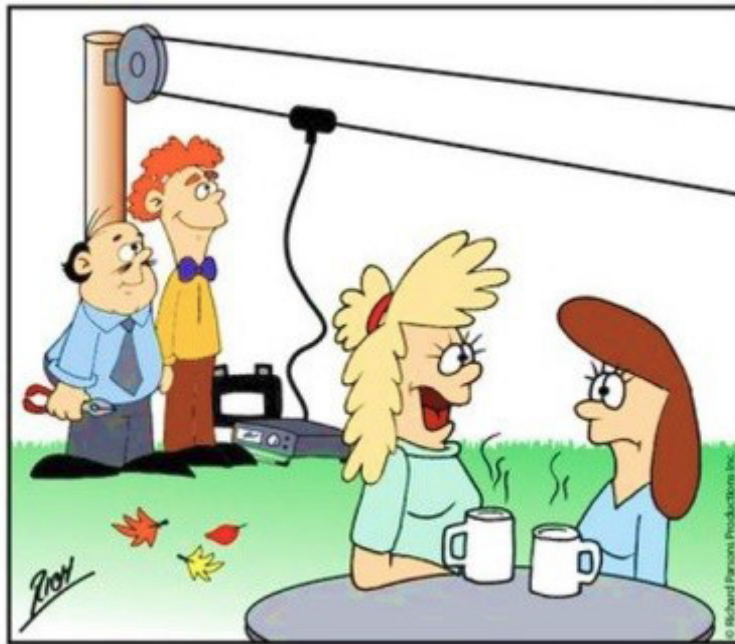
**Plenty of good food.
Motor Home parking (Please advise).**

**contact: Radio Electronics Group Inc
c/-T. R. Service ZL4GJ
5 Bremridge Plc
Hamilton 3206.**

**Ph: (07)8437 365
e-mail trevnz04@gmail.com**

SUCH A HAM

SH-005



Stan & Cliff have been working all day
on installing my clothesline, Mary.

There is only one
**NEW ZEALAND ASSOCIATION
of
RADIO TRANSMITTERS.**
It serves you at
local, national and international
levels.
*It deserves our full support
if we are to continue to have
the frequencies and operating privileges
we currently enjoy.*
**The Association
is what you and I make it.**

Upcoming Happenings & Events

<i>Date</i>	<i>Happenings & Events</i>
4th May	HF Net, 3.575 MHz, 19:30
5th May	VHF Net, 146.525 MHz, 20:00
8th May	NZART HQ-Infoline
11th May	HF Net, 3.575 MHz, 19:30
12th May	VHF Net, 146.525 MHz, 20:00
18th May	HF Net, 3.575 MHz, 19:30
19th May	VHF Net, 146.525 MHz, 20:00
20th May	Club General Meeting
22nd May	NZART HQ-Infoline
25th May	HF Net, 3.575 MHz, 19:30
26th May	VHF Net, 146.525 MHz, 20:00
29-31 May	NZART AGM & Conference (Br 12, Hamilton)
31st May	NZART Official Broadcast (Including Conference report)

5th June—NZART HQ-Infoline
6-7 June—NZART Hibernation Contest
17th June—Club General Meeting
19th June—NZART HQ-Infoline
28th June—NZART Official Broadcast
3rd July—NZART HQ-Infoline
17th July—NZART HQ-Infoline
26th July—NZART Official Broadcast
1-2 August—NZART Brass Monkey Contest
3-4 October—NZART Microwave Contest
5-6 December—NZART Field Day Contest

For more information on any of the above please contact myself or any committee member.

Club Information



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Business Meeting: 1930 First Wednesday of each month except January
88 Seddon Road, Hamilton

General Meeting: 1930 Third Wednesday of each month (except Jan)
88 Seddon Road, Hamilton

Homepage: <http://www.z1ux.org.nz>
eMail: branch.12@nzart.org.nz

HF Net: 3.575MHz LSB 1930 Mondays

VHF Net: 146.525MHz simplex 2000 Tuesdays

2m Repeater: 145.325MHz -600kHz split

STSP 146.675MHz -600kHz split

Repeaters: 438.725MHz -5 MHz split

ATV Repeater: Off air pending channel changes

Cover Photo: PCB layout for the SM1000 Smart Mic (see article inside).

Sender	Hamilton Amateur Radio Club (Inc) PO Box 606 Hamilton 3240
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