

The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum 2009



KiwiSAT IHU in temporary tray



Auckland VHF Group Inc.

Branch 66 NZART

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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; \$30 within the Auckland free dialling area, and \$25 outside. 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.

Coming Events:

February Meeting:

Monday 9th February at 19:30.
KiwiSAT by Fred Kennedy ZL1BYP

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From the Chair – February 2009

Welcome to the New Year.

Welcome to the first major edition of Spectrum for 2009.

The last two meetings have been social occasions. The December Christmas get-together was well attended and enjoyed by all. Then all too soon the January Barbeque came along, with everybody recounting the enjoyable holidays (or otherwise) that had been taken over the holiday period.

Unfortunately for some us, we had to work through the normal period when everyone takes off for a relaxing time! But never mind – our revenge will be sweet (when it comes!)

ATV Repeater Channel 39

The repeater is back on the air and has been running higher power over the holiday period. The work on the aerial system has been delayed until people and machinery are available. No volunteers came forward to offer a cheap solution to our cherry picker problem mentioned last year, so we have had to go to commercial operator. Some saving in cost of this item is being sought by sharing a unit that could be in the area, but this has meant changing the day to do the work to suit when a Cherry Picker is available.

The aerial system is the last major hurdle for this project, so once sorted we should see the system working reliably.



AREC Weekly Sked's

The Thursday evening AREC Sked's at 19.30 hours are back on 670 repeater. The meeting at Auckland CD headquarters on the 31st raised some interesting points, which should see some good topics for discussion appear on this net! As usual, if you have any suggestions or input you would like to contribute to AREC matters,

please do not hesitate to jump on the net and let them know you are there.

National System Award

The National System Award has attracted a number of stations on the National System, and the added twist of including DOC National parks etc, has certainly added some interesting activity.

There is still time to participate in this award, so if you are wondering how it works, find a December copy of Spectrum, where you will find all the details printed within.

This Months Meeting – A Special!

Some have predicted that 2009 is going to be a bad year – and financially this could be correct. However, for the Amateur Radio Experimenters, and in fact New Zealand as a country, this year will become very special later on.

Kiwi Sat – New Zealand’s very own designed and built Satellite is due for launch later this year. This is a very significant event for all.

Work is well on the way to seeing the final “Bird” assembly completed. Extensive testing has been completed and all the little “bugs” are being ironed out. The “transponder” has been active which gave us all a chance to test signals through the Satellite. All we need to do now is erect aerials and get the equipment ready for launch time, and then we can ALL participate in the project.

This little country in the South Pacific has found enough volunteers and local knowledge, to design, develop and construct a Satellite that is useful, can conduct experiments, is cost effective, and made it a reality. While the old “No 8 Fence Wire” and “Can do!” mentality has been very much alive, the effort, will power and dedicated team work that has gone into this project is worthy of a gold medal at the Olympics!

The **meeting on February the 9th** is dedicated to KiwiSAT, and is the beginning of a count down to launch later this year. To bring us the latest info, show us the latest parts and equipment, to tell us how to use the Satellite and what you need to access it, **Fred Kennedy, ZL1BYP**, will make a presentation at this meeting, and reveal all!

To compliment the meeting, and to assist those who would like to take part in the activity associated with the Satellite, the March issue of Spectrum has also been dedicated to Kiwi Sat, providing a hard copy of information for reference purposes for all to use.

This is a project all operators can become involved in, and the ZL Amateur fraternity can be proud off. So this is a meeting that cannot be missed.

See you all there.

Best 73’s
ZL1JD

Results of the Field Day Contest

6th and 7th December 2008

Band	Frequency	Callsign	Locator	Points
6 m (50 MHz)				
		ZL1BQ	RF64sg	3470
		ZL1AA	RF73ir	1896
		ZL2QS	RE89je	1247
		ZL2AS	RF80iu	547
		ZL4DK	RE54fe	522
		ZL1AOX	RF72mv	85
2 m (144 MHz)				
		ZL1BQ	RF64sg	2464
		ZL2AS	RF80iu	823
		ZL4DK	RE54fe	713
		ZL1AA	RF73ir	712
		ZL2QS	RE89je	470
		ZL3TY	RE57om	435
		ZL3TJ	RE78iq	372
		ZL1AOX	RF72mv	261
		ZL2MA	RF70ke	161

70 cm (432 MHz)		
ZL1BQ	RF64sg	1974
ZL1AA	RF73ir	658
ZL2IP	RF70bs	610
ZL2AS	RF80iu	588
ZL1AOX	RF72mv	553
ZL2QS	RE89je	531
ZL4DK	RE54fe	283
ZL3TJ	RE78iq	193
ZL3TY	RE57om	100

32 cm (925 MHz)		
ZL1AA	RF73ir	165
ZL1BQ	RF64sg	131

23 cm (1296 MHz)		
ZL1BQ	RF64sg	1569
ZL1AA	RF73ir	585
ZL2IP	RF70br	567
ZL1AOX	RF72mv	440
ZL2AS	RF80iu	95
ZL4DK	RE54fe	25

13 cm (2424 MHz)		
ZL1AA	RF73ir	873
ZL1AOX	RF72mv	720
ZL1BQ	RF64sg	533
ZL2IP	RF70br	295

9 cm (3399/3400 MHz)		
ZL1AA	RF73ir	1746
ZL1AOX	RF72mv	1440
ZL2IP	RF70br	170

5 cm (5760 MHz)		
ZL1BQ	RF64sg	4928
ZL1AOX	RF72mv	2702
ZL1AA	RF73ir	2048
ZL2IP	RF70br	1777

3 cm (10368 MHz)		
ZL1BQ	RF64sg	3987
ZL2IP	RF70br	2962

TOTAL SCORES		
ZL1BQ	RF64sg	19056
ZL1AA	RF73ir	8684
ZL1AOX	RF72mv	6201
ZL2IP	RF70br	5771
ZL2QS	RE89je	2248
ZL2AS	RF80iu	2053

ZL4DK	RE54fe	1543
ZL2IP	RF70bs	610
ZL3TJ	RE78iq	565
ZL3TY	RE57om	535
ZL2MA	RF70ke	161

CHECK LOGS
ZL1TX, ZL2DW

BEST DX

6 m	ZL4DK – VK4SIX	3920 km
2 m	ZL1IU – ZL3TY	831 km
70 cm	ZL1IU – ZL3TY	831 km
32 cm	ZL1AA – ZL1BQ	121 km
23 cm	ZL1BQ – ZL3DC	631 km
13 cm	ZL1BQ – ZL2IP	391 km
9 cm	ZL1AA – ZL1AOX	97 km
5 cm	ZL1BQ – ZL2IP	391 km
3 cm	ZL1BQ – ZL2IP	391 km

178 STATIONS ACTIVE:

ZL1AA, ZL1AAO, ZL1ACM, ZL1AMO, ZL1AOX, ZL1AVZ, ZL1BBA, ZL1BK, ZL1BQ, ZL1BTT, ZL1BVA, ZL1DK, ZL1DT, ZL1GSM, ZL1HN, ZL1IU, ZL1JD, ZL1KIWI, ZL1KK, ZL1MRF, ZL1MRS, ZL1NX, ZL1QF, ZL1REG, ZL1RP, ZL1RS, ZL1TBG, ZL1TCJ, ZL1THG, ZL1TJ, ZL1TMF, ZL1TPH, ZL1TWR, ZL1TX, ZL1ULN, ZL1WTT
ZL2AAA, ZL2ACJ, ZL2ALW, ZL2AN, ZL2AO, ZL2AR, ZL2AS, ZL2AUB, ZL2BAF, ZL2BCK, ZL2BKC, ZL2BQ, ZL2BWL, ZL2BX, ZL2CMC, ZL2CS, ZL2DW, ZL2DX, ZL2FAR, ZL2GAZ, ZL2GV, ZL2HL, ZL2IP, ZL2JDM, ZL2LAB, ZL2LE, ZL2LW, ZL2MA, ZL2MER, ZL2MS, ZL2PW, ZL2QS, ZL2RB, ZL2RC, ZL2RZ, ZL2SG, ZL2SP, ZL2SR, ZL2ST, ZL2TC, ZL2TDA, ZL2TJX, ZL2TMB, ZL2TMC, ZL2TMV, ZL2TPQ, ZL2TPY, ZL2TRF, ZL2TW, ZL2TYB, ZL2UBG, ZL2VAF, ZL2VBJ, ZL2VC, ZL2VJW, ZL2WL
ZL3AAN, ZL3AAU, ZL3ADC, ZL3AG, ZL3CU, ZL3DC, ZL3DO, ZL3MH, ZL3NW, ZL3OC, ZL3OY, ZL3OZ, ZL3PX, ZL3RW, ZL3THQ, ZL3TJ, ZL3TLA, ZL3TT, ZL3TY
ZL4AH, ZL4AM, ZL4AS, ZL4CG, ZL4DK, ZL4DY, ZL4HL, ZL4IS, ZL4JM, ZL4JY, ZL4LV, ZL4RC, ZL4RMF, ZL4SA

VK1DJA, VK1DO
VK2AH, VK2ADB, VK2AH, VK2AMS,
VK2APG, VK2ARA, VK2BHO, VK2BMU,
VK2BX, VK2BXT, VK2BZE, VK2DJ,
VK2EJ, VK2ERF, VK2FA, VK2FUL,
VK2GJC, VK2GX, VK2HN, VK2HRX,
VK2JDS, VK2JGC, VK2KIT, VK2KOL,
VK2KYP, VK2ON, VK2PB, VK2SOB,
VK2TDN, VK2XG, VK2XN, VK2XQ,
VK2ZC, VK2ZT
VK3ALZ, VK3AMW, VK3BQJ, VK3JWR,
VK3JWZ, VK3LY, VK3WN, VK3YFI,
VK3YFL, VK3ZYC
VK4ARN, VK4BEG, VK4SIX, VK4XRA
VK5AYD, VK5BM, VK5BWG, VK5DK,
VK5GF
VK7GK

EQUIPMENT USED (WHERE STATED)

6 m

TS-680 + 60 W amplifier + 3-element yagi
IC-706MKIIG 10 W + discone
IC-706MKIIG 100 W + 3-element yagi
TS-60 100 W + 3-element yagi

2 m

TR-751 + 150 W amplifier + 10-element
(horizontal) or 6/6 skeleton slot (vertical)
TS-790A + 500 W amplifier + 4x 12-element
yagi
IC-706MKIIG 100 W + 3-element yagi
IC-910H + 80W amplifier + 7-element yagi
TS-700A + 7-element
TS-2000, 100 W
FT-290 II, 25W, 5-element (horizontal)
IC-271A + 120 W amplifier + 11-element yagi

70 cm

TR-851 + 80 W amplifier + 14-element yagi
TS-790A + 30 W amplifier + 22-element yagi
IC-910H 70W + KLM40CX
TR-9500 35 W + 11-element yagi
IC-490 + amplifier + 8-element
TS-2000
FT-790 II, 15W, 2 x 10-element (horizontal)
TS-811A + 100 W amplifier + 4x 10-element
yagi

32 cm

Homebrew 3 W transverter + 9-element yagi

FT-221 + 5W DEM transverter + 18-element
loop yagi

23 cm

Homebrew 1 W transverter (S53MV) + 17-
element yagi
IC-910H 10W + 1.2 m dish
IC-290 + 10 W transverter + 2.4 m dish
FT-2311R 10W + 34-element loop yagi
IC-910 10 W + 34-element loop yagi

13 cm

FT-221 + 1 W HB transverter + 60 cm dish
Converted DXR100 3 W + 44-element yagi
FT-290 + 1 W DB6NT transverter + 45-
element loop (horizontal)

9 cm

FT-221 + 1 W HB transverter + 60 cm dish
Converted DXR740 5 W + 19-element patch
antenna

5 cm

IC-202 + 4 W transverter + horn
IC-202 + 5W transverter + 40 cm dish
Converted DXR768 5 W + 60 cm dish

3 cm

IC-202 + 1 W transverter + 1.2 m dish
IC-402 + 5W transverter + 30 cm dish

THE NEXT CONTESTS

Note the change of dates

The next contest is the DX Weekend Contest, 50 MHz and above, on Saturday the 14th and Sunday the 15th of February 2009. The operating times are: Saturday 1700 to 2300 NZT and Sunday 0700 to 1300 NZT.

The following contest is the Low Band Contest, 50 MHz to 440 MHz, on Saturday the 4th and Sunday the 5th of April 2009. The operating times are: Saturday 1700 to 2300 NZT and Sunday 0700 to 1300 NZT.

The rules are available at:

<www.nzart.org.nz/nzart/update/contests/vhfco ntestrules0606.html>

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

Congratulations to the ZL1BQ team for an excellent result.

2m Meteor Scatter

Currently there are 2m meteor scatter activity sessions each weekend, Saturday and Sunday mornings from 8am to 9am local time. On Saturdays we try ZL - VK and Sundays ZL - ZL. The ZL - VK activity at present is between southern ZL and VK7 with occasional VK2 QSOs. We are using the digital mode FSK441, which is part of the WSJT software.

Most weekends QSOs are completed between ZL1 and ZL3/4. Typically a station running 100W and a yagi antenna (horizontal polarisation) is needed. The software controls your radio, alternating between 30s tx and 30s rx periods. Stations in the south (beaming north) transmit in the first 30s and receive in the second 30s of each minute period, while northern stations are vice versa. You don't need a computer to listen, the meteor "pings" are audible, however you do need a computer to decode them and to transmit

To co-ordinate and chat we use the vk-vhf logger, on

<http://www.vklogger.com/vhflogger/set.php>

Meteor scatter uses QSO procedures a little different from the usual, and a unique feature is that multiple QSOs can take place simultaneously on the same frequency with little likelihood of QRM. Information on QSO procedures can be seen at

<http://vhfdx.oz-hams.org/digital.html>

The software is available free from <http://pulsar.princeton.edu/~joe/K1JT/>. In addition you need a fast computer and an interface between the rig and soundcard. This interface is the same as is used for digi-modes on HF like PSK31 etc.

We need more participants, particularly in the north. If you are near the extremities of ZL (ZL4, ZL1) then you have the best chance of making meteor scatter QSOs with the other end of the country. We operate on 144.23, with FSK441, start 8am for 1 hour. If you are interested and would like more information please email me.

b_mcquarrie@minidata.co.nz

73 Bob ZL3TY

Technology Convention 2009

From: KEVIN MURPHY <rfman@xtra.co.nz>

Hi,

Technology Convention 2009 is being held in Hamilton, New Zealand, during the 11th and 12th April, 2009.

This is about Amateur Radio related technology.

Registration forms will become available about the delivery time of the January/February NZART Break-In Magazine (First Week February). It is important that accommodation is booked EARLY, as the V8 racing is on the weekend following the Convention.

Registration Forms can be requested by email at techcon09@nzart.org.nz

We are looking for speakers, presentations, demonstrations for durations of 15 to 45 minutes. A data projector and laptop will be available.

Please contact Kevin Murphy at rfman@xtra.co.nz

ASAP with topics and expected duration.

Electronic format is preferred as we would like to a Proceedings CD of the Convention.

If you are unable to attend but wish to provide a presentation for the convention/ proceedings please contact me at the above email.

Kevin Murphy ZL1UJG

Good VHF prop to VK at present

Thursday 29th January 2009.

Bob ZL3TY

Channel 5a appeared here Monday evening, VK2ZT and VK2DVZ worked on 2m at around 0900z

Tuesday Ch5a was weaker, worked VK2ZT SSB and VK7MO JT65a with marginal conditions.

Wednesday morning 2m open to VK2 and VK7, signals weak, then in the afternoon slowly improved until VK3DUT 59 at 0300z, then VK2s and 3s. At 0655z VK3ZQV 55 on 70cm, also VK3VHF and VK2BHO (CW) on 70cm. One contact into Melbourne, VK3OE, I shut down at 1045z with the band still open.

This morning (Thursday) 2m still open to VK2. Then at 2057z completed a JT65a QSO with VK4JMC at 2363km.

The Hepburn charts indicate the possibility of good tropospheric ducting to VK for the next few days.

Totals for each day:

Monday: 2m 2 VK2

Tuesday: 2m 1 VK2 1 VK7

Wednesday: 2m 16 VK2, 5 VK3, 1 VK7; 70cm 1 VK2, 2 VK3

Thursday: (to 2300z) 2m 2 VK2, 1 VK4

Bob ZL3TY

Trans Tasman DX report

Ian ZL1AOX

Good band conditions continued and I worked seven different VK stations on Saturday the 31st January from my home station. Worked VK2ZT, VK2IDM, VK2DVZ, and VK3EB all on 2m and VK3EB on 70cm. We tried 1296 but not successful. Then VK3ERE/P and VK3ZYC/P who were portable 150 km East of Melbourne (2488km) popped up with good signals on 2m and 70cm. Several other local stations were working the VK's most of the day and the following day. Heard Simon ZL1SWW, Stephen ZL1TPH and Nick ZL1IU having many contacts.

GOSAT + Six SatPals Successfully

Launched by Japan

JAXA GOSAT launch site Japan has launched a satellite whose focus will be to observe the concentration distribution of greenhouse gases from space. The launch of the Ibuki satellite (also known by GOSAT - Greenhouse Gases Observing Satellite) took place on January 23rd at 03:54 UTC from the LP1 launch platform of the Yoshinubo launch complex on Tanegashima. Ibuki has an approximate mass of 1750 kg. It is equipped with two solar panels that generate 3.8 kW. The satellite will operate for 5 years on a sun-synchronous sub-recurrent orbit with an inclination of 98 degrees.

The small satellites with Amateur Radio capabilities launched with this satellite are SDS-1, SOHLA-1, SPRITESAT, PRISM, KKS-1, STARS-1, and the KAGAYAKI. Further information, frequencies and Keplerian data can be found on the AMSAT website. We have some new stars to be pointing to and check the website often as more information is passed on.

[ANS thanks Masa, JN1GKZ, for the above information]

144 MHz array test schedule

ZL2ALW will be testing a 20 element 2m horizontally polarised vertically stacked array from MT Ranganui on this coming weekend (February 7th).

Mt Ranganui is in a line from Te Kuiti to Mangakino, near the OTO repeater. OTO is on the next highest hill at 830meters or so, Ranganui is 940m (3208feet) or so. Egmont/Taranaki and Ruapehu are both visible in good weather as is the Tasman Sea.

I will be arriving on-site sometime on Saturday morning, after spending the night at, the former sheep station, now base for conservationists and birdwatchers owned by the New Zealand Forest Restoration Trust.

I'm taking a long wire HF antenna with me too - probably be on 3.5, 7Mhz, 14 and 28Mhz from time to time.

Tests that will be carried out:

1. Installation of the elements to the erecting structure, in two patterns. Pattern A is equidistant 1.2 wavelength spacing between the 4 yagi, Pattern B is paired 1/4 wave between yagi with 1 wavelength between pairs. (My NEC4x modelling expects the latter to give a cleaner pattern with just 0.6dBi lower azimuth gain but better AGT)
2. The array will be rotated in azimuth while measuring a distant energy source (Auckland beacon, and any others that are 3dB above the noise.)
3. Test of calculated dBd against measured field strength vs. a dipole.
4. VSWR measurement across the usable bandwidth expected (150 kHz).
5. On air tests, I will call around 144.18/2 or so for anyone who would be interested in giving me a signal report.

Note: This Array is the first in a series of multi-element array I am constructing with the ultimate aim of achieving a proven 50dBi 2m antenna which will allow EME with 5watts PEP.

Current stations with 100W PEP and 1x 12element K1FO yagi do that now. The EIRP of my final array will be more than double that with just 5 watts.

My current array has a calculated 21.1dBi in configuration A and 20.6dBi in B. (which is about 4dB more than a single 12element already)

Anyone interested in the specifics of the array drop me a note and I'll put some more info up.

Regards,
ZL2ALW

ZL4 contacts into VK4 on 144 MHz?

By Terry Thomas ZL4TAE
Hi Guys

I'm just home from a few days Hols in Central Otago

I had a text from David ZL4DK about midday on 1st January.

We had a whole yard full of mates and families around for lunch at our Bannockburn home No2 but Es are Es so I packed my gear into the truck, headed into the Cairnmuir Range between Bannockburn (unfortunately in a

valley with 1600m hills all round) and Clyde and I found a spot at 830m altitude.

Rigged 9el yagi and TR751 + 200w and at switch on (about 1500hrs) heard VK2's as strong as like way over S9 both ways.

Made 6 contacts mostly Sydney and with 1 at Wollongong and one at North Beach but these slid off the dial after a while.

I had a yarn with Peter ZL4LV on 144.1 in the lull and then swung beam back west and heard weak sigs and made 5 contacts in VK3, I haven't looked them up yet so don't have locations for them.

These faded after 30mins or so. All contacts were weak and I had problems with QRN from a HV transmission line that runs along the Hawksburn valley in exactly the best direction to VK.

I missed the early part of the opening and missed a few QSOs due to pileups, just had to pick one at a time eh.

So no other states heard folks.

Now this is what interests me.

On NY eve we had an outdoor party.

www.spaceweather.com was reporting that earth was in a solar wind flow due to earlier coronal hole.

All night there was spectacular "wildfire" all around Central Otago.

Every few minutes in all random directions we could see bright white flashes, (NOT lightning) and very high, NO thunder.

Just these intense blue/white glows, sometimes in broad bands and sometimes occupying about a 25° diameter 'cloud' in the sky in a largely cloudless sky.

We had had threatening Wx all day with N-NW winds then it rained late afternoon for 3 hrs and in the middle of the rain a front went thru about 1700hrs with winds easing to nothing.

Not only that, around midnight I was looking up at the Southern Cross, very prominent in a clear sky and I could see what looked like packets of faint light scudding across the sky at 5-10 times the speed of the fastest meteorite I have ever seen and streaming from about SW or S, and about the same direction as I would expect the sun to be (except it had set 2-3hours earlier as had the newish moon).

These packets of light were about the size of a fingernail at arms length.

So my conjecture is, could the solar wind have produced these intense and silent flashes very high in the sky

and could the 'packets' of light scudding across the sky have been an auroral phenomena?

and could the same solar wind have assisted the lovely Es event on the 1st???

and I don't drink so I wasnae seeing lights before me eyes either.

Peter ZL4LV was watching the lightning site and could not see a lot happening but there was some lightning in south Tasman due to a small front extending from Fiordland nearly to Tassie and the lightning activity moved during the afternoon maybe explaining my two sets of QSOs VK2 to start and VK3 later.

I would have to say my beam pointing was pretty much the same for both lots of QSOs so maybe the reflecting layer was over the south Tasman.

I will try and determine the pointing angle but in both cases the best angle also gave me QRN from the HV Line.

David (ZL4DK) can your boys please sort this out before the next opening....

And thanks for the text that woke me up

I don't have a means to make a new entry for a /p on VKlogger just now. In a case like this you just concentrate on getting to a good location, setup and go like hell to make the contacts, I had just no time to muck about.

So I posted a line on VKlogger after the event so those that I worked could see where I had been located. It was just a great afternoon.

I had setup my 2m gear 2 days earlier, there was real nice wx that day but numerous calls all round the compass gave no response except I worked back to the Dunedin 690 repeater and had a yarn with Bernie ZL4IS for a bit.

Cheers to all and the web postings are really appreciated down here

Terry ZL4TAE

Reply to ZL4TAE from David ZL4DK

Terry,

Your lights shooting across the sky certainly could be an Aurora. I have seen a number of these when I lived in Central (away from City Lights) and they can take a variety of forms including stationary glows, dancing curtains,

and shooting lights. There may also be other atmospheric/optical effects that may be responsible for some of the things you saw, I am not an expert.

In addition to Aurora reflecting VHF signals (with a distinctive raspy note) I believe they do also charge up clouds in the E layer which can then reflect signals (with more natural tones) for a few hours after an Aurora. As to whether Aurora had anything to do with openings the following day is hard to say. Aurora do continue to occur during the day, they are not visible due to the competition from the sunlight but this does not stop them from affecting radio signals.

However reflections from Aurora and even E clouds from Aurora distinguish themselves by the fact that signals generally come from the south (or north in the other hemisphere), whereas the signals received from VK on the 1st appeared to be coming via a relatively direct path.

Also although the "spaceweather.com" website mentions Aurora on New Years Eve it seems this event was a fairly mild as far as Auroras go. It seems you may have been lucky to observe a freak substorm during this event.

However as I said I am not an expert and I would be interested in what others have to say on the topic. You could even send your observations to the spaceweather.com site, they frequently respond to questions such as this.

Regards

David

23cm Trans Tasman contacts by Steve ZL1TPH

Good DX today 6th January 2009 – from RF65 (Cape Reinga - very top of ZL).

Local contacts – 2m Chris ZL2DX (796km)
2m Bob ZL3TY (902km) attempted 23cm with both.

2m to VK – VK2ZT, VK2AMS, VK2KOL, VK2EI, VK2TG, VK2IDM, VK2EY.

23cm to VK – VK2AMS, VK2ZT, VK2DVZ (2000km approx)

Highlights of the day – Two new VK stations on 23cm and to activate RF65 for the Australian grid square tallies.

73 Steve ZL1TPH/p

Holiday Fun - National System Award 2009

The management committee of Wellington VHF Group invite you to participate in this award to highlight the coverage of the National System, incorporating NZART Branch areas, and DOC public conservation land areas. Collect NZART Branches and DOC conservation areas.

- Contact any Amateur residing in each NZART Branch area via the National System = 1 point.
- Contact any Amateur in a DOC National Park, Conservation Park, Forest Park, Marine Reserve, or Marine Mammal Sanctuary via the National System = 1 point
- Contact ZL2WA, official station of Wellington VHF Group via the National System = 3 bonus points.

(1) The award will run from 1 January 2009 to 28 February 2009 and is available to all Amateurs. No fee applies.

(2) Each NZART Branch, and each DOC public conservation land area may be listed only once. Contacts are cumulative.

(3) An attractive Certificate will be issued showing the total number of contacts achieved.

(4) Send a log of contacts with; date, time, Callsign contacted, NZART Branch name or DOC public conservation land area, for each contact, to;

The Award Custodian
Wellington VHF Group Inc
PO Box 12259
Thorndon
WELLINGTON 6144

or E-mail zl2wa@clear.net.nz with NS2009 in the subject. Applications close 31 March 2009.

For a list of Branches consult Call Book, Page 6-4.

For DOC Parks and other land administered by DOC see brochure Exploring Parks available from DOC, or download from doc.govt.nz.

GOSAT Launch Small Satellite Summary				
Satellite	Downlink	Beacon	Mode	Callsign
Kagayaki	437.375	437.375	FSK9K6/CW	
STARS	437.485/.465	437.305/.275	FM/CW	JR5YBN JR5YBO
KKS-1	437.445	437.385	AFSK/CW	JQ1YYY
PRISM	437.425	437.250	AFSK/GMSK/CW	JQ1YCX
SOHLA-1	437.505	437.505	AFSK/CW	
SPRITE	Scientific observation satellite			
SDS-1	Small demonstration satellite			

AUCKLAND VHF GROUP (INC) BRANCH 66

SPECIAL

MEETING NOTICE

February 9th 7.30PM HAZEL AVENUE CLUB ROOMS

(Located behind the Scout Den at the end of Hazel Avenue)

The Evenings Subject:-----

A FIRST FOR ZL

KiwiSAT LAUNCH THIS YEAR!

New Zealand Amateur's can be very proud of a small team of enthusiastic experimenters who have designed and built the **FIRST NEW ZEALAND SATELLITE**, which is due to be launched later this year. This is not only an achievement for New Zealand, but also an achievement for the Amateur Experimenters community within ZL.

To bring us the latest info, show us the latest parts and equipment, to tell us how to use the Satellite and what you need to access it, **Fred Kennedy, ZL1BYP, the Project Engineer**, will make a presentation at this meeting, and reveal all!

This is a special project that will achieve its aims later this year. Now is the time to start setting up equipment so that **you** are ready to participate in its operation once it is flying. At this meeting, learn how **you** as an operator can use this **New Zealand Satellite**, or retrieve information. A meeting that is a must for all!

EVERYBODY WELCOME

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

Market Day

07 March 2009

Paengaroa Community Hall

Te Puke Amateur Radio Club

Hall open from: Vendors 06.30am, Buyers at 10.00am

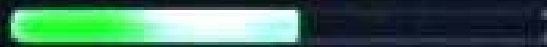
WARO annual get together at 11.00am

BR.66 DATA MODES

Version 8.12



Windows 7



Under Construction

and UTILITIES

Autorun

Latest Digital Programmes Disk

Available from the Trading Table or Webpage

Price: \$10.00

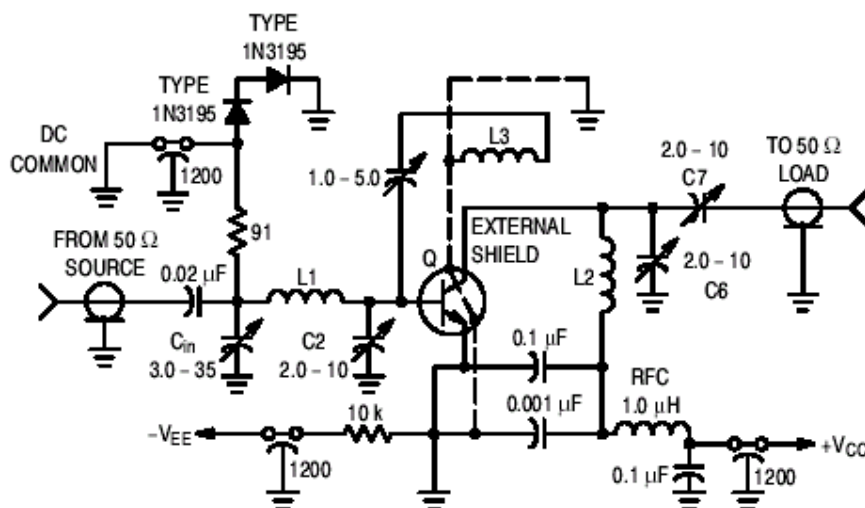
March Spectrum will feature KiwiSAT, with details of the various subsystems, frequencies of the transponder and beacons.

Using the MPS5179:

This device is designed for use in low noise UHF/VHF amplifiers with collector currents in the 100 μ A to 30 mA range in common emitter or common base mode of operation, and in low frequency drift, high output UHF oscillators.



The circuit shown below was taken from the On-Semiconductor data sheet:



- L1 1-3/4 Turns, #18 AWG, 0.5" L, 0.5" Diameter
- L2 2 Turns, #16 AWG, 0.5" L, 0.5" Diameter
- L3 2 Turns, #13 AWG, 0.25" L, 0.5" Diameter (Position 1/4" from L2)

Figure 1. 200 MHz Amplifier Power Gain and Noise Figure Circuit

Most of the components shown are self-explanatory. Some translation into 'metric' may be useful:

18 AWG = 1mm diameter

16 AWG = 1.3mm diameter

13 AWG = 1.8mm diameter

Diode type 1N3195 = Silicon diode 600 PIV 750mA.

For stability, a small external shield is needed around the collector lead.

The Trading table has good stock of the MPS5179 at only 50c each. Have a look at the Group's web site at <http://www.qsl.net/z11bq/> for the other components for this easy to build low cost preamplifier design.

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

2.0 FREQUENCY CHARACTERISTICS

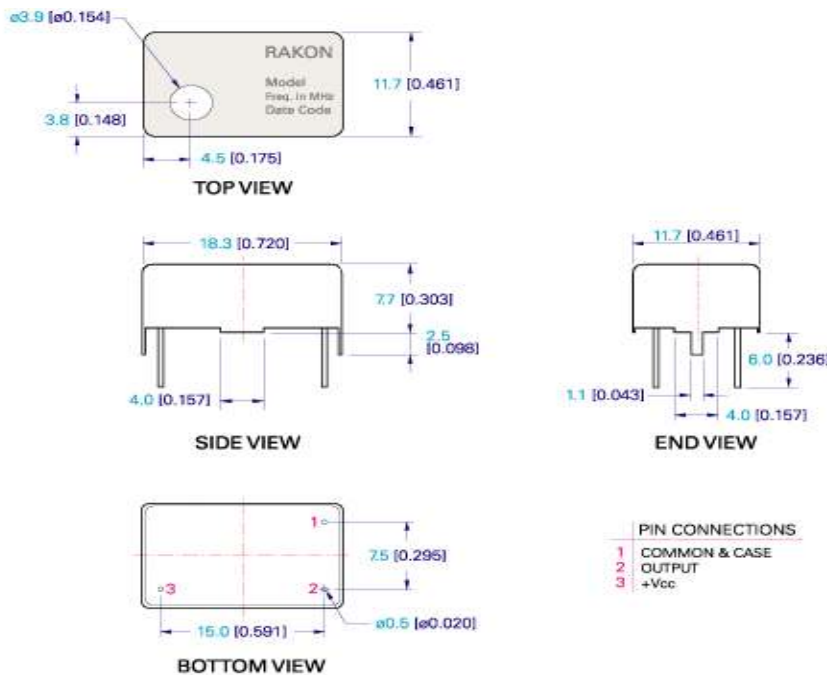
2.1 Nominal Frequency	20.000 MHz
2.2 Frequency at room Temperature	+/-1.0ppm at 23 deg C +/-2 deg C
2.3 Operating Temperature Stability	+/-1.0ppm 0 to 40 deg C
2.4 Frequency Perturbations	<0.5ppm peak to peak with slope < 0.5ppm/deg C
2.5 Static Temperature Hysteresis	+/-0.4ppm
2.6 Supply Voltage Stability	+/-0.2ppm +5v+/-5%
2.7 Load Sensitivity	+/-0.2ppm max for 20KΩ//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	20KΩ//5pF dc-cut
4.3 Harmonics	-5dBc max



TITLE: TXO4080 MODEL	FILENAME: CAT019	REVISION: A	Tolerances:
RELATED DRAWINGS:	DATE: 22-Jun-98	SCALE: 2 : 1	XX = ±0.5
	Millimetres [inch]		XX = ±0.2
			X_XX = ±0.10
			X_XXX = ±0.05
			X* = ±1.0°
			Hole = ±0.10

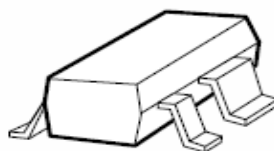


Note: Outline drawing is for the TXO4080. Pinout is identical but dimensions may differ from the TXO4010T

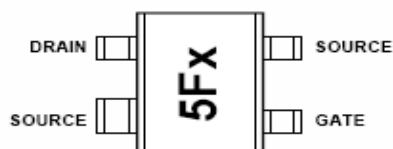
Trading Table New Item:

ATF55143 Low noise E-PHEMT 0.6dB 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 \$1.00 each.

Surface Mount Package SOT-343



Pin Connections and Package Marking



Note:
 Top View. Package marking provides orientation
 and identification

"5F" = Device Code
 "x" = Date code character
 identifies month of manufacture.

Remember you can now order on line from our
 Trading Table. Go to the VHF Group's web site at
www.qsl.net/z11bq and log in to access your account. If
 you don't have an account set up – its free – click on
 "Log In" on the top right hand corner of the main web
 page and follow the simple prompts to enable you to set
 up an account.




Don't forget our range of specialty fixed and variable
 capacitors:

Capacitors, Metal Clad Mica (Unelco, Semco) \$2.20 each

Values (in pF): Or 10 up for \$2.00 each
 3.9, 4.7, 6.8, 10, 12,15, 20, 22, 24, 27, 30, 33, 34, 47, 51, 62, 82,
 100, 120, 130, 150, 220, 240, 300, 360, 680pF
 Most are rated 500V working.
 Similar to illustration, tab does not have hole:



Capacitors, Variable

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

