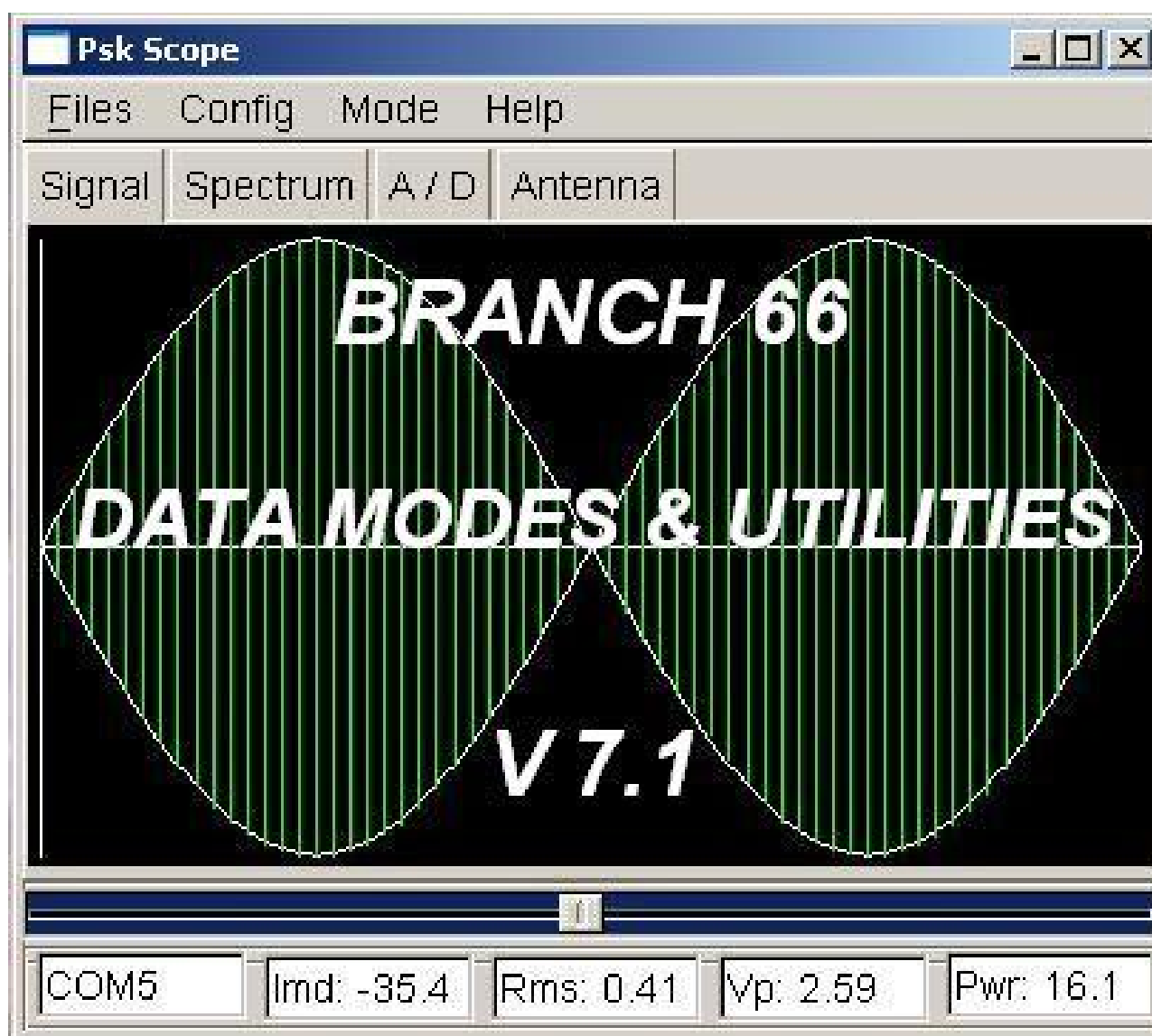
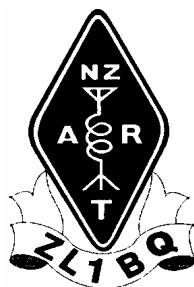


The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum 2007



The latest release of this World Famous in New Zealand Branch 66 Data Modes and Utilities CD is now available from the club. Price is still \$ 10 per copy.



Auckland VHF Group Inc.

Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446

Clubrooms: Hazel Ave, Mt Roskill

<http://www.qsl.net/zl1bq>

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Club Web Page
ATV Interest Group

<http://www.qsl.net/zl1bq>

<http://www.qsl.net/zl1qf/atvug/ATVusers.html>

Club News and Net:

The combined Auckland VHF Group and Auckland Regional Branch News and Net is 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 third Monday of each month at 7.30 pm. For other details, listen to the News and Net each Sunday.

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:

Monday February 19th 2007 at 19:30: Extraordinary meeting followed by General Meeting

These will be followed by Grant ZL1WTT
with a presentation on
“An Introduction to Digital Radio”

February 24/25:

Jock White Memorial Field Day Contest.

February 26th at 19:30: Committee Meeting at the Clubrooms.

March 3rd: Working Bee at Klondyke

Monday March 19th: Practical Night:
Bring along your project or radio and there
will be test equipment to check it out.

April 6th, 7th 8th and 9th: “VHF Convention 2007” at Wellington

Fill in the enclosed brochure from the
Wellington VHF Group and join in the
FUN.

April 23rd at 19:30 – Note meeting is on the 4th Monday of the month. Topic TBA

November: AGM

December: End of year Bash.

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Club Day on Saturday 10th February

The ZL1BQ-14 Xrouter Node had an update
today 10th February.

PORTALIAS2=WIDE1-1 was added to both
ports (144.575 MHz & 5625 Data Repeater) in
support of the APRS New Paradigm (as far as
the current version of Xrouter permits).

David ZL3UDR brought an 8 port Ethernet
switch to put in between the Xrouter PC & the
UI-View PC. I made up an extra mains cable
& added a 6 way AC outlet box. Now the
monitors run off the 230 VAC direct rather
than the UPS power. The wall wart PSU for
the Ethernet switch is plugged into the UPS
powered 6 way box, along with the power
cords for the two PCs. No changes were
needed to anything software to make the
system work with the switch. A cross-over
Ethernet cable was changed for a straight thru
one (\$3.50 from the Two Dollar shop last
night).

David ZL3UDR ran & connected an Ethernet
cable from the club shack (where the Data
Node PCs are) to the front of the main room.
David volunteered to give a club talk on
Ethernet & PC Networking basics for Amateur
Radio operators.

Doug ZL1AVY brought a laptop PC for use
"up front" by the new secretary etc. This
laptop has Ethernet, so it was set up to test the
new cable. UI-View 32 bit was loaded off the
Group's DATA Modes CD. An Ethernet
address was assigned to it, and then
IPROUTE.SYS in Xrouter had the same new
Address added. Then the laptop was able to
send & receive data from RF over the new
Ethernet cable & the new Ethernet switch.

Quite a successful morning & the Trading
Table did good business too.

The 3 inch stainless steel U clamps I bought do
fit the club rooms' pipe mast above the first
collar. I can reach it standing on the roof, so
it's going to be possible to mount some fixed
direction aerials for Data links, ATV etc, & test

them out. No cherry picker needed for testing aerals.

I plan to have another 11am to 1pm Saturday event, next month at Hazel Ave.

From The Chair: February 2007

Hi all, yet another year has begun, we've all survived the silly season, and hopefully we're all feeling refreshed and had time to kick back and enjoy some of the warmer weather.

I've had some time to kick back, and time to get back into those projects, some of which are getting there slowly, had some time to spend with friends and relax.

The summer sailing season is also upon us, plenty of fresh air and sunshine to be had on the water too.

So far the year has had its ups and downs, but the challenges are coming on.

This month, we will be holding a special general meeting, the purpose of which is to get member's feedback on the future direction of the club, it has been quite tough to sort a few things out, and the levels of support that the committee has received from the membership has been presenting challenges. This is a trend that has been noticed during the last 5 years or so.

Once we have the business side of things over, Grant, ZL1WTT will be giving us an introduction to digital radio, which I'm sure will be an informative look at new digital modulation techniques, and new systems that are being rolled out. We're familiar perhaps with digital technology from mobile phones to digital satellite TV, but for most of us, we just use it, and it works, without knowing how it works.

There are new systems being developed from digital mobile radio to broadcasting, and the boundaries of what can be sent and done, are continually expanding.

Also, on March 3rd, we will be doing some work up at Klondyke. There is plenty of work to be done up there, around the grounds there is a large number of tall foxgloves that have grown up, and a number of other weeds to be brought into order, and up the tower there will be some wire brushing and painting a few bits

73 de Michael ZL1ABS, Michael J Sheffield



on the tower, as well as having a close look at the UHF antennas on the tower, and a check on the condition of the coaxes etc on the tower.

As usual, lets make it a social time, come up and lend a hand, have a look and get involved, if you haven't been up there and would like to, come on up.

I've said it before, if somebody can bring a BBQ, I'll put the food on it, and even cook it for you.

VHF Convention this year is going to be held in Wellington again. These are always great events to be part of, fun not to be missed, and the paper dart contest during the Saturday evening dinner is legendary! Let's get a group together and show the Wellington boys (and girls) how to have some fun!

Easter this year is April 6 to 9.

With that, I hope you have a good month ahead, and I'll look forward to seeing everyone at the next meeting on Feb 19.

73, Tim ZL1TN.

Editor's Note: The positions of Secretary and Treasurer will be confirmed at the February 19 meeting.

**Minutes of Auckland VHF Group
Committee Meeting held Monday 29
January 2007 at the Clubrooms, Hazel
Avenue, Mt. Roskill**

Present: ZL1TN, ZL1AWL, ZL1JD,
ZL1WTT, ZL1ICU, ZL1TGC

Apologies: ZL1TTE, ZL1HN

Minutes of Previous Meeting: These emailed by ZL1TN, and accepted as a true and correct record. Moved ZL1JD/Seconded ZL1AWL

Matters Arising:

ATV Amplifier delivered to Grant ZL1WTT.

Other items of General Business.

Extraordinary Business

ZL1JD moved that the committee move to Extraordinary Business – the vacancies on the committee of Secretary, Treasurer and Spectrum Editor. Seconded ZL1AWL.

ZL1JD outlined the options the Committee had. These were:

a. Constitutionally the Committee has the power to appoint people to the vacant positions on the committee. The positions do not have to be filled from existing committee members. He also noted that the constitution requires that an office holder may only hold one position. The previous Treasurer/Spectrum Editor was not in accordance with the Constitution.

b. The Constitution (Clause 17) provides for the setting up of a Repeater Trust which could take over the control and running of the Group's major assets, it's repeaters and beacons. If the VHF Group was wound up, the Repeater Trust could continue and have its overall control vested in the Auckland Regional Co-Ordination Committee.

c. That we combine with another Branch and the offer from Western Suburbs Branch 03 was received with thanks.

ZL1TGC asked that we have a look at any offers from members to assist received as a result of the publicity given to the Group's situation. Peter Bennett ZL1UPB had offered to help with the Secretary's job, Doug Cooke ZL1TTE had offered by email to take on the Treasurer's job, and Ian Ashley, ZL1AOX had indicated he would be Spectrum Editor provided the other two positions were filled.

Phone calls were made to ZL1UPB and ZL1AOX to confirm their availability. It was noted that Peter ZL1UPB was resident in Ngatea, and attending the monthly General and committee meetings would involve him in considerable travel. In discussion with Peter, he said he was still agreeable take on the Secretary's position, if there were no other offers. Ian ZL1AOX also agreed to be Editor of Spectrum Magazine. Tim ZL1TN to contact Doug Cooke and confirm his availability as Treasurer.

Further discussion followed. ZL1ICU noted the fall off in membership and said we needed to try and recruit some younger people into the Club. He felt there were too many clubs in Auckland and not enough members, particularly younger people. ZL1JD reported on a survey he did last year to try and find out why members did not attend more often. He found that older members were not so interested in "yet another night out" during the week, but would come to special events, and visits which they found interesting. Attending the Group's monthly General Meeting for the sake of it did not appeal.

Resolved that a report on the current progress the Group was making be made to Tuesday night's Regional Coordination Committee meeting and that the Committee would present to the Special General Meeting on Monday 19 February, its recommendations that Peter Bennett ZL1UPB be appointed Secretary, Doug Cooke ZL1TTE be appointed Treasurer, and Ian Ashley ZL1AOX be appointed Spectrum Editor.

As the General Business session was not likely to take too long, the meeting on 19 Feb would

also include a short presentation by Grant ZL1WTT on an introduction to digital radio.

This concluded the Extraordinary Business, and the regular Committee Meeting resumed.

Correspondence In:

Account from Mercury Energy for \$54.57 - power for Clubrooms. ZL1WTT asked about their Eco Bulb promotion. ZL1TGC to follow up and find out if it was still available.

Account from Meridian Energy for \$136.89 (credit) – power Brynderwyn site.

Account from Contact Energy for \$331.27 – power for Klondyke site.

All these accounts are paid by automatic payment from our operations account, so no further action required.

Invoice for \$38.00 from Doug ZL1AVY for purchases of CD's and cases for the Data Modes CD. Doug requested that this be applied a credit against his 2007 subscription. Carried over to new Treasurer for action.

Invoice for \$160.00 from Vaughan ZL1TGC – reimbursement for cash payment made to Auckland Scouts for hire of the Mt Roskill Scout Den for our Labour Weekend Reunion function.

Invoice from Auckland City Council for \$50.00 + GST (total \$56.25) for Ground Rental (Clubrooms on reserve land).

ASB Bank Term Investment Certificate. Our term investment has been re-invested with the ASB for a further 5 months at 7.2%. Term expires 20 June 2007.

Subscriptions received from:

John Bell ZL1FB

Hibiscus Coast Amateur Radio Club + \$20.00 donation to repeaters

Peter Bennett ZL1UPB sub + \$5.00 donation

Peter Loveridge ZL1UKG

Ken Boyce ZL1TD

Tim Moore ZL1TN

Laurie Matthews ZL1ICU

Te Puke Amateur Radio Club - notice of annual junk sale Saturday 3 March at Paengaroa Community Hall.

Newsletters from Franklin, Hibiscus Coast and Wellington VHF Group.

Correspondence Outward:

ZL1TN had sent an email to Ian ZL1AOX thanking him for producing December 2006 Spectrum.

Reports:

AREC - NIL. ZL1ICU to contact ZL1DFA and find out what was happening, proposed to hold a meeting of AREC Section members.

ATV – Extensive work done at Whitford site. 2 poles up, conduit in for coax and five runs of LDF5-50 coax in place. Mounting of aerials is next on list of work to be done. Nihotupu site agreement to be followed up with Waitakere City Council (action by ZL1TGC). New LDU200 ATV amplifier now on hand for Nihotupu and will require some work before it is ready to go. ZL1ICU advised he had received an email enquiry from what appeared to be a non-amateur in the Hamilton area about setting up a system like we have for Channel 39. No reply sent.

Spectrum – Following on from earlier phone call to ZL1AOX, the Committee resolved that for 2007, we would revert to the hard copy A5 size Spectrum Magazine. The experiment with an electronic copy did not seem to be that successful. ZL1TGC said he felt this had contributed to a drop off in numbers attending club meetings.

ZL1TGC reminded committee members that Ian would need support for the magazine with articles and information. ZL1WTT said he had two ready for publication.

Repeater Report: John ZL1JD advised that did not appear to be any current problems. He now has passwords for the MED's SMART

system and will be able to update licence details.

The Whitford APRS Repeater Form 10 was submitted last year but so far nothing has been heard back from FMTAG. ZL1JD said it was delayed due to the current backlog of engineering work needing to be done on new applications and there was nothing we could do at the moment but wait.

Klondyke – Tim ZL1TN, Harry ZL1BK and Colin ZL1ACM had visited the site on Saturday 27th, to investigate packet data on input to 6625 repeater. After some work found an intermod product being caused by having 6625, the 5625 data repeater and an external transmitter signal (possibly Police) all on simultaneously. Further work to be done. Site needs its annual tidy-up visit and a working bee is scheduled for Saturday March 3rd. Tim ZL1TN to circulate list of work to be done (weed eaters, painting up on tower, lower data repeater aerial coax plus more) to all club members and invite them to attend.

Treasurer's Report (via ZL1TGC):

Cheque account \$5257.69
Project Account \$15307.50
Term Deposit \$15137.05

As noted in correspondence, our Term Deposit has been rolled over for a further 5 months at 7.2%.

Payments of \$160.00 by cheque to ZL1TGC and \$56.25 to Auckland City Council made.

Meeting Programme:

February – Special General Meeting to discuss winding up the VHF Group followed by a talk by Grant ZL1WTT on “Introduction to the Future of Digital Radio”

March – Practical Night – Bring along your project, or radio and we will have the test equipment to check it out.

News and Net Roster:

February - Tim ZL1TN
March - John ZL1JD
April - Laurie ZL1ICU

General Business:

1. Regional co-ordination committee meeting – to be held at Branch 66 clubrooms on Tuesday 30 January. ZL1TGC asked that his apology be made. John ZL1JD will attend and present a report on the Club's future.
2. VHF Convention – ZL1TGC asked who would be going. ZL1JD, ZL1TN, ZL1ICU, ZL1AWL, ZL1TGC. We should offer a talk on Digital Radio – ZL1JD and ZL1WTT will organise. Information to ZL1AOX for Spectrum. Need to coordinate travel down to Wellington.
3. Dx Weekend Contest. ZL1TGC, ZL1TN and ZL1SWW plan to go to Maunganui Bluff if the weather is OK.
4. Meeting Nights – Plan to swap General Meeting night and committee Meeting night to avoid clash with Vintage Radio Club which meets on the same night. We know of several of our members who don't attend meetings because of this clash of nights. First time will be the April General Meeting which will be held on the last Monday in April. Trial for 6 months to see if attendance at meetings improves.
5. Nihotupu Site Agreement with Waitakere City Council. ZL1JD passed the correspondence file to ZL1TGC who will make contact with their Manager, Emergency Management and report back.

The meeting closed at 21.43

KLONDIKE site visit 6th February 2007

Waitangi Day 6th February the Klondike Repeater site of the Auckland VHF Group Inc. was visited. The weather was mostly sunny, moderate wind and free of rain. There were few lupins left in flower and considerable numbers of flowering scotch thistles, attracting bumble bees.

Attending were: Ian Pople ZL1VFO, Michael Sheffield ZL1ABS & Vicky (YL)

A new (additional) DC Fuse panel was fitted instead of a blanking plate at the top of the Data equipment rack. Five fuses feed from Battery One and another five fuses from Battery Two. The fuses are NEC three prong wire spring fuses with alarm contacts. A card of spare household fuse wire is now in the spare fuses wall mounted box so that a blown fuse can be repaired (soldering iron and Philips screwdriver are needed for fuse repairs). Drilling the 20mm thick copper bus-bars (isolating transformer used to prevent a massive short circuit) was not too easy with old and blunt drills. A couple of small drills for the pilot holes snapped. Moral: buy some new twist drill bits occasionally, not all jobs are on soft aluminium project boxes. Once the pilot holes were through (rack covered with a large old towel to catch copper swarf), the 6mm bolt holes were drilled easily. Three cables (two red & one black coloured insulation) of 6mm² copper thickness run from crimped on lugs to the fuse panel.

The building power meter read 17525, which will enable the Group to bill it's customer who shares the private power cable from the Klondike road.

The High Reverse PWR red warning led was observed to be operating on the National System UHF South Tait PA. Checking the cabling to the circulator, filters and aerials found that the circulator 50 Ohm load connector was a bit loose. It was tightened. This may not overcome the problem & the aerial system should be measured for SWR on 3rd March (next Group planned visit). The circulator 50 Ohm load for the UHF North PA

runs quite hot, so there may be some amount of reflected power on that feeder too.



Battery One reads 12.7 Volts and Battery Two measures 13.6 Volts (unchanged from the November site visit). The cells electrolyte levels are between the minimum & maximum marks. Measuring a sample of cells from both batteries shows SG readings from 1230 to 1250, quite acceptable.

The ZL1PKT Data node PC (a 486) had some work done on it. Two internal fans are now wired up for additional cooling. The pesky +5 Volts pin on the USCC card ports 0 & 1 was disconnected. It always caused trouble when connecting or disconnecting the DB9 plugs as the +5 Volts line could be shorted, shutting down the PSU. The reset terminals on the mother board are now identified, allowing a future DTMF remote re-boot device to be connected later. The Xrouter.cfg file was updated in the light of experience gained with this DOS program at ZL1AB-1 & ZL1BQ-14 and the need to cater for the New Paradigm APRS being introduced around the world. New Portalias #2 of WIDE1-1 was added and the ID Path for the ZL1PKT APRS ID beacon increased to WIDE3-3. The secondary power supply (runs from Site battery supply) fails to run the PC when the mains PSU isn't working due to power outages (fairly common at Klondike). This was diagnosed as a lack of a 'Power good' output from this secondary supply. It has been taken away by Ian ZL1VFO to add the necessary extra circuitry so the PC (486) motherboard will work from it. The Ethernet card brought to site was a PCI slot type. The problem found was that the 486

PC motherboard has only ISA slots (3 spare); so another ISA slot type of Ethernet card will be brought next time. It's for the future Digital National System and 2.4 GHz Wi-Fi projects.

The Weather station (outputs to the ZL1PKT Data Node to send APRS WX reports) temperature sensor appears to be faulty so Ian ZL1VFO removed it. A note to bring a replacement next time was made. Hopefully other sensors for rainfall, wind speed and direction will be ready then also.

The paper copies of the rack face layouts have had an update and further details added from those noted last visit. Michael ZL1ABS will update the bmp files and email the Group Trustees a copy.

Thistles and lupins got a trimming with an electric hedge trimmer. A spade would have been handy for the bigger stems and useful for the clear up.



BBQ time February 2003

The To Do list for next time includes a DC filter unit for the PC DC Supply (which is under power good modification), WX station sensors, a physically smaller 50 Ohm load for the 70cm 438.350 MHz Data repeater circulator as the existing one protrudes into the space below needed for the new 144.575 MHz APRS Tait T355/02 RX (waiting on a crystal order), a wiring harness for the new 144.575 MHz RX, 2 pin header lead for the PC reset connector, push button for reset on PC front panel and rear socket for external reset input.



After leaving the site Vicky & I drove down to Port Waikato for a walk on the iron sand beach and an ice cream at the Wharf store (open until 8pm even on a holiday).

I will be interested in reports from APRS operators on 5625 and path monitoring site operators (internet or find u com) on how the Xrouter.cfg changes at ZL1PKT have made a difference.

The Xrouter WIDEn-n isn't traceable at present. With PORTALIAS2=WIDE1-1 it is hoped that any station using WIDE1-1 in their path will be digipeated the same as if they had RELAY in their unproto path. The PIPEFLAG level was raised to permit UI frames addressed to a NODECALL or NODEALIAS to pass through to the 70cm 9k6 port. The unproto path for ZL1PKT's ID beacon APRS compatible was increased from nothing to allow it to propagate further on the developing RF network.

So some tests using different unproto paths into ZL1PKT 5625 port would be very helpful in showing what works, what doesn't work and what changes may be needed to other Xrouter stations in ZL.

73 de Michael ZL1ABS

DX Weekend Contest 3 & 4 February 2007

Hi All,

Thanks to all who made the effort to come up and make this event a success. Without you all we would not have a contest. Special thanks for the efforts of the ZL2 stations that were heard by us ZL1ers... Good to hear ZL2WA, ZL2DX & ZL1TYF up there.

Band conditions weren't kind to any of us, with poor levels of average signal strengths over the greater distances.

10Gigs for the first time in a while, was a struggle on some contacts with the QSB biting. 5.7 GHz was worse with weak and watery signals that normally would be better judging from past experience.

2.4 was reasonably "local" with max dist at 97km. 1.2 a bit better with 333km to Ted '2IP and 210km to Dave '1AKW.

2 & 70 pretty average.

Thanks Tim at ZL1BQ for the 4 contacts on 925MHz 0.5 watts goes 121km so it seems.

Well at least the weather was kind and no rain or high wind. The "Mr PutPut" generator performed well with only 2 carbon foul-ups this time. Vaughan, I hope you get your money back on the rental. Despite the setback, well done on all the contacts you did manage. Sounds like the BQ team was kicking butt into WLG.

Cheers all,

Simon
ZL1SWW - Aka ZL1AA for the contest.

Data Modes and Utilities CD

The latest release of this World Famous in New Zealand Branch 66 Data Modes and Utilities CD is now available from the club. Price is still \$10 per copy. This version has many new programmes and many updates to existing ones plus many more URLs which may save you time searching the 'net.

P.S. For those who can't make it to the clubrooms, send a cheque for \$ 11 made out to the Auckland VHF Group Inc to the following address and I'll post you a copy.

Doug Tennent
151 Farquhar Rd
Glendene
Waitakere City 0602

Klondike Data Rack additions for 2007

de Michael ZL1ABS
21-12-2006

In 2007 I propose some additions to the Klondike Data rack (the rack on the right as you enter the equipment room). I have drawn a file klondikedatarack1.bmp showing the new DC fuse panel, Site Alert APRS device, DTMF Remote Control for the Data Node and T355 Receiver for 144.575 MHz APRS.

DC Fuse Panel

The DC fuse panel is to be wired directly to the DC bus bars. The DC Distribution bus bars on the Klondike PA rack (centre rack of three in the equipment room) are fully used. I plan to place it at the top of the rack. Half the fuse mounts will be connected to Battery One and the other half to Battery Two. The fuses are a standard "NEC three prong" wire spring type with alarm contacts. They are re-wireable with standard fuse wire and a soldering iron. A roll of fuse wire will be kept at Klondike for the purpose. A lamp on the fuse panel lights when a fuse blows and each fuse has an indicator window to show it has blown. The fuses can be fitted with fuse wire rated up to 15 Amperes. Commonly fuse wire rated from 2 Amperes to 10 Amperes is used. The value of fuse rating is marked on the fuse carrier. The intention is that miscellaneous items that draw less than 15 Amperes will be connected to this new fuse panel, such as Site Alert & DTMF Remote Control.

Site Alert

This device monitors: Mains fail, Door Open, temperature and battery voltage. It sends periodic APRS telemetry frames via the ZL1PKT Data Node PC to 5625 & 8350 Data repeaters. If there is a state change, i.e. door open, a telemetry transmission is triggered. To monitor both batteries, a DTMF operated switch will changeover the battery voltage monitor input. Note: I have requested that the new version firmware for Site Alert have this provision built in. The telemetry data is monitored using APRS receiving software, such as UI-View. As the data will be sent to the worldwide APRS server network via the

ZL3UDR IGATE, data is viewable at findu.com and by connecting to the worldwide APRS server network. I plan to locate it immediately above the Data Node PC.

DTMF Remote Control

This DTMF Receiver connects to the 5625 receiver so that the Data Node PC can be remotely re-booted. It will also switch the battery voltage monitor input of the Site Alert device between the two battery banks. I plan to locate it immediately above the Data Node PC.

T355 Receiver for 144.575 MHz APRS

To add a receive only 144.575 MHz 1200 baud data to the ZL1PKT Data Node an additional FM receiver is required. 144.575 MHz is the FMTAG approved ZL APRS simplex channel. Presently mobile stations have to change channels to 5625 to be seen on the APRS network, when in range of the Klondike site and to the south. An additional 144.575 MHz receiver will remove this problem. Enquires to obtain a used Tait 300 series shelf mounted VHF Receiver to match the other VHF receivers (6625 & 5625) at Klondike are under way. I plan to fit the receiver in the Data repeater RF shelf next to the TEKK 9k6 70cm band radios. A used 100 MHz cavity filter is available to modify to 144.575 MHz. The 5625 Data receiver aerial feed will be tapped to go to the cavity for 144.575 MHz receive.

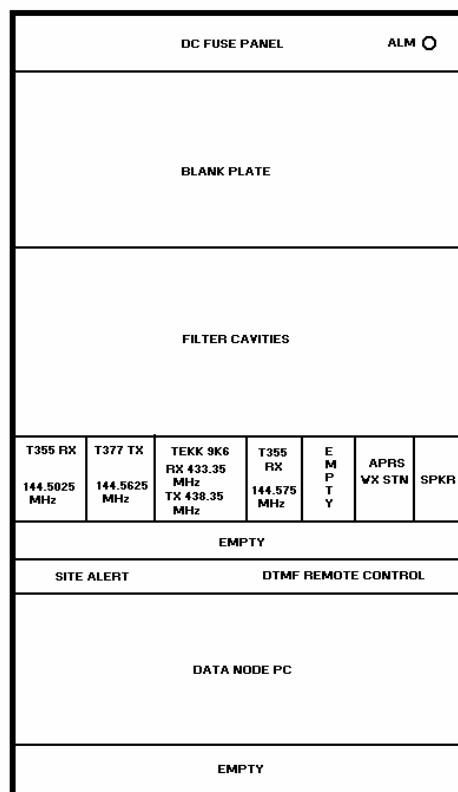
WX Station External sensors

The APRS weather station is connected to the ZL1PKT Data Node. To complete the installation external sensors for wind speed, rainfall, humidity and temperature need to be mounted on the tower. A clamp-on mounting plate to fit around a piece of the tower is planned.

Michael J Sheffield

Klondike Data Repeater Rack

Contains proposed new additions - DC Fuse panel, Site Alert, DTMF Remote Control, 144.575 MHz APRS receiver



Drawn by ZL1ABS Dec 2006

6 Metre High Q Stripline Filter

(Source ARRL VHF Handbook 3rd Edition p335)

“If harmonics or other spurious frequencies appear in the output of an amateur VHF transmitter they can be kept out of the antenna by a high-Q tuned circuit inserted in the line between the transmitter and the antenna. Such a “filter” will pass only a narrow band of frequencies, offering a substantially impassable barrier to most others. The tuned filter can be helpful in receiving as well, since it will reject energy on frequencies other than the desired ones, and thus prevent overloading from out-of-band ones”.

“With an insertion loss of 1dB at 50 MHz, this filter gives up to 40dB attenuation at 57 MHz.”

The 50 MHz filter is a quarter-wave line folded back upon itself to conserve space and allow the use of a standard chassis. L1 is a strip of aluminium (32 inches 81cm long by 13/16th 2cm wide by 1/16 1.5mm thick) with a mounting lip at the lower right end bolted to

that end of the chassis. The two coaxial fittings are above and below the strip. The partition shield (14 inches 355mm long by 3 inches 76mm tall) down through the middle is grounded to the main chassis surface and to the right end. L1 is isolated from the chassis, except at the ground point. The stripline (L1) is supported on ceramic standoffs. These are shimmed up with sections of hard wood or bakelite rod, to give the required 1 ½ inches (38mm) height from the walls of the chassis. The tuning capacitor (30pF) is at the far end of L1 on the other side of the partition shield. The coupling lines L2 & L3 are no10 or no12 wire 10 inches (25.4 cm) long. Spacing away from L1 is adjusted to ¼ inch (6mm). This may be increased for higher rejection, but this will result in increased insertion loss.

Currently my “store bought” 6 metre radios have no harmonic issues that I know about. But receiver overload from Channel one and two low band VHF television stations is a problem. Anytime my mobile station (Yaesu FT-8900) goes near the Sky Tower the receiver is blocked and I lose copy of the 53.725 MHz FM repeater from Klondike.

My homebrew 6 metre to 20 metre band receive converter is severely affected by low band TV signals. It may be the JFET front end is inadequately neutralized, but I could always tell when the TV station closed down or started up (the good old days). Now that TV runs 24/7, there is always a background burr going on.

A High-Q filter like this design may make a difference. A model I made for 615 MHz does do useful service in front of my ATV receiver preamp on channel 39.

It may not be necessary for a receive-only filter to have the behemoth proportions used in this transmit capable design. By using an air cored wound coil rather than a linear stripline the physical proportions will be less. I will report the results of a smaller sized 6 metre band filter in the future.

de ZL1ABS

KiwiSAT update

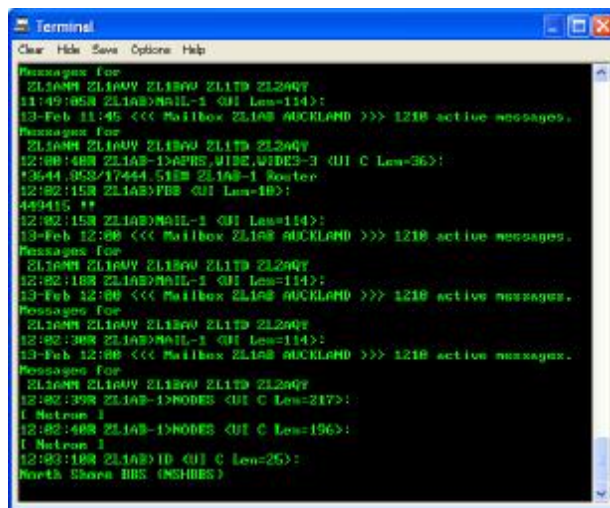
By ZL1AOX

AMSAT-ZL now has a new website at <http://www.kiwisat.org/>

Check it out for the latest news and progress on KiwiSAT.

Here is a screen shot from UI-View of data received off air (ZL1AB on 438.3 MHz) by the 9600 bps demodulator at the ZL1AOX QTH. We have two IHU’s under test, and both of the demodulators are working well on both boards. Signals from AO-51 and GO-32 have been successfully decoded.

It is planned to have a display of KiwiSAT at the VHF Convention at Tawa at Easter. We hope to see you there.



Asian Space Conference 2007.

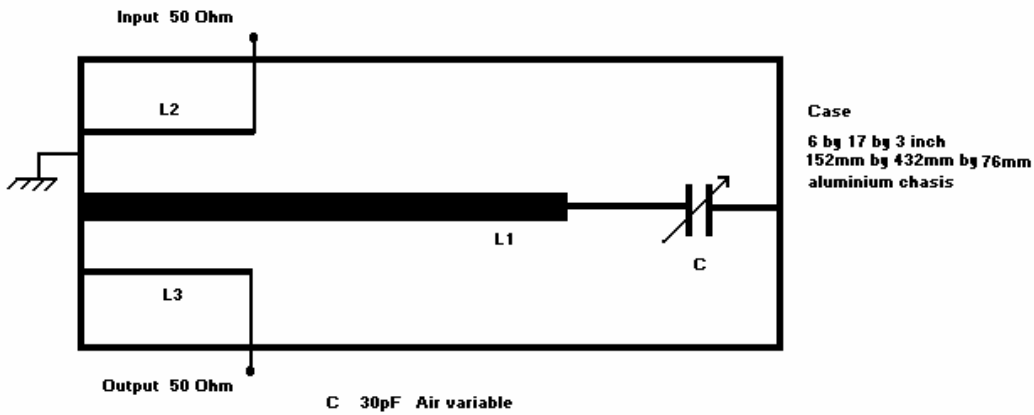
With the aid of Massey University, KiwiSAT Team Leader Mr. Fred Kennedy ZL1BYP will attend the Asian Space Conference in Singapore 21-23 March this year. Fred is to make a keynote presentation to the Conference on the design and development of KiwiSAT with an update on current progress.

AMSAT-ZL will have a display booth featuring KiwiSAT.

To quote Fred; 'The Nation that spawned Dr William Pickering, "whose leadership took America's space effort to the moon and beyond", can surely produce a MicroSAT by itself!'

6 Metre Filter

Source ARRL VHF Handbook 3rd Edition



C 30pF Air variable

L1 32 inches (81cm) by 13/16th inch (2cm) & 1/16th (1.5mm) thick copper or brass or aluminium

Folded into a "U" shape with a shield between to save space

Mount on insulators for support

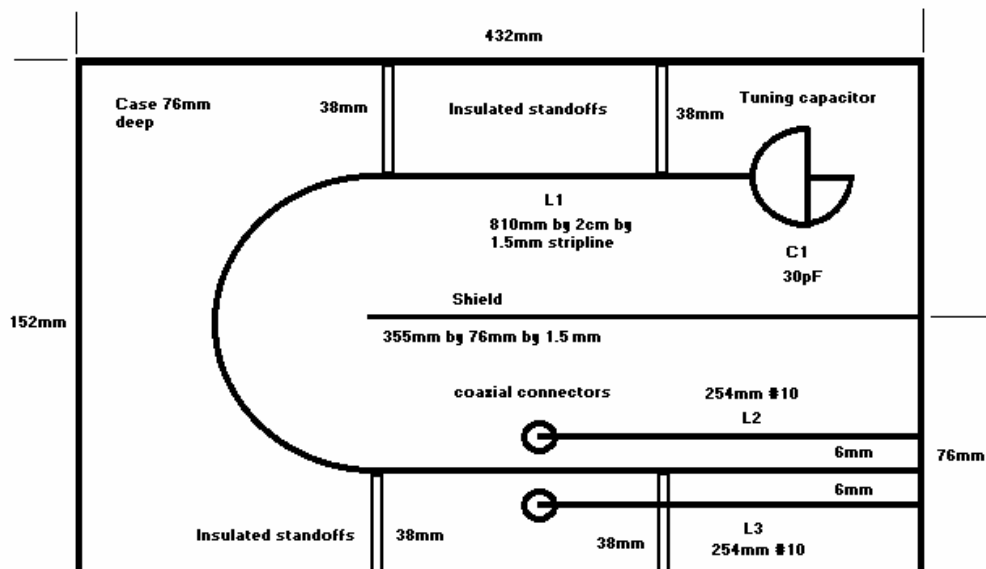
L2 10 inches (25.4cm) long #10 wire spaced 1/4 inch (6mm) from L1

L3 10 inches (25.4cm) long #10 wire spaced 1/4 inch (6mm) from L1

DRAWN by ZL1ABS

6 Metre Filter Layout

SOURCE ARRL VHF HANDBOOK 3rd Edition



DRAWN by ZL1ABS

10 GHz update Feb 13, 2007.

Had to go down to Whakatane and made many stops for geocaching as well as dropping in on Dave ZL1AKW to help him check out his 10 Gigs.

Took my Xverter / FT 817 etc and armed with my RF Generator and x10 multiplier, we were able to hear a strong signal from the multiplier at 10Gs. Seems his Xverter is spot on and maybe have to calibrate my xverter TCXo against my Genny again, can't actually remember testing the reference accurately apart from WWV but Doppler shifts etc make this an inaccurate source here in ZL.

Seems we may have been 26- 30kHz apart and maybe ships passed in the night re frequencies when we tried previously over a 210km path. Now we know where we are, we may have a chance at a good 10g QSO. Needed to do this test as no one else has 10Gs in the area so makes it hard for testing.

Good to see comparable RX sensitivity between two different units.

Managed to have a QSO in the workshop with each other without hearing each other's IF.

Had a really enjoyable evening over dinner kindly provided by Lee and Dave. Many hammy things discussed.

Hope to hear Dave on 10G's soon and good to see another populating the band.

Cheers,

Simon, ZL1SWW

National System Award 2007 Celebrating 20 years of the National System

Sponsored by the Wellington VHF Group, this third National System Award has three main objectives:

Purpose

To celebrate 20 years of the National System, which first became operational between Auckland and Wellington on 5th April 1987.

To highlight the continued support by NZART, many NZART branches and the devotion of the Trustees and other helpers. Mention must also be made of the donations of time, expertise and equipment by a number of companies that continue to make the National System possible.

To encourage home station and mobile use of the system, and to demonstrate the wide coverage over most of New Zealand.

The Award

You must obtain a minimum of 50 points to claim this award. Entry is open to all licensed amateurs. No fees apply.

Endorsements apply for each additional 25 points.

Applications for this award should include your name, callsign, address and log of contacts claimed, and be sent to:

The Award Custodian
Wellington VHF Group
PO Box 12-259
Wellington 6144

Applications close 30th April 2007.

Full details available on the Branch 74 website.

<http://www.vhf.org.nz/nsaward/>

(We hope to be able to hand out Certificates for this Award at the VHF Convention in Wellington at Easter. We are still working on the practical details to make this possible.)

Rules

1. All Award stations must operate in accordance with the Radio Regulations, the Amateur GURL, these contest rules, and expected procedures. In particular, they must:

- Absolutely give way to AREC or other Emergency traffic.
- Give way to the NZART Broadcast and regular nets.
- Ensure non-Award stations have fair access to the National System. Extra care is required during the morning and afternoon "Drive Time".

2. The Award will run for one month, from the 1st March 2007 to the 31st March 2007.

3. Award station types can be either of:

- Home Station / Fixed. (Score as "HS")
- Mobile / Portable / Field Station. (Score as "Mobile")

4. All contacts must be on the National System, and your log must record date, time, callsign, and NZART Branch number and station type given and received.

Trading Table – February 2007

New from December:

ATF-55143 - Low Noise Enhancement Mode Pseudomorphic HEMT in a Surface Mount Plastic Package (SOT-343) (4 lead SC-70). Ideal for systems in the 450 MHz to 6 GHz frequency range. Spec: 2 GHz; 2.7V, 10ma (Typ). 24.2 dBm output 3rd order intercept. 14.4 dBm output power at 1 dB gain compression. 0.6 dB noise figure. 17.7 dB associated gain. \$2.50 each
Packet of 5 for \$10.00

Full Spec sheet available on request.

SMD RESISTORS – 10 per pack. 1206 Format.

Values in stock: 2E7, 4E7, 56, 68, 100, 180, 680, 820 Ohms.

10 per packet.
50c per packet
10 per packet.
50c per packet

SMD CAPACITORS – 10 per pack. 1206 Format. (50v)

Values in stock: 5E6pf, 10pf, 22pf, 33pf, 100pf, 1200pf, 2200pf, 4700pf, 100nf.

SMD CAPACITORS – 10 per pack. 0603 Format. (50v)

Values in stock: E68pf, 1.2pf 1.8pf 2.2pf 6.8pf 8.2pf.

10 per packet.
50c per packet
5 per packet
\$2.00 per packet.

TRANSISTOR MPSA77, PNP Darlington, TO92, Max Vceo = -60v, Max Vcbo = -60v, Max Vebo = -10v, Max Ic – continuous = -1.2A

RG178 50 ohm coaxial cable, (1.8mm O/all diameter, Brown colour). Cut to your nearest meter of length. (ie. 1.5meters will be cut to 2 meters, etc.)

\$2.50 per meter.

RG178B/U (Belden 83265) 50 ohm coaxial cable in cut (75mm) lengths. Ideal for those “interboard” connections. Stripped and Pre-tinned ready for connection. 10 lengths per packet.

\$1.00 per packet

PL259 Plugs – the old favourite: Still in stock. Sorry no reducers – yet!

\$2.50 each

Moving Coil Meters - 500µA movement with back lighting via separate terminals.

Two scales 0 – 30 and 0 – 100, plus a battery “replace/good” indication.

\$3.00 each

Scale can be removed/reversed for different uses. A very versatile meter.

Integrated Circuits

ZSM560 under voltage monitor IC's. 4.6 volt threshold for 5 volt systems. Spec sheet available on request. \$2.00 per packet
Packet of 5

HEF4060B SMD IC's. and HEF4060BT 14-stage ripple-carry binary counter/divider and oscillator. Spec sheets available on request.

\$1.00 each

74HC74D SMD IC's Dual D-type flip-flop with set and reset; positive- edge trigger. Spec sheets available on request.

\$1.00 each

LM393D IC's (SO8 package) and LM393DT Low Power Dual Voltage Comparators. Wide single supply voltage range or dual supplies: +2V to +36V or +/- 1V to +/- 18V. Spec sheets available on request.

\$0.50 each

74LS38N IC's Quad 2-Input NAND Buffer with Open-Collector Outputs. Still in original RS packets.

\$1.00 each

Limited stock left of the following:

- GPS Patch Antenna:** GPS Patch antenna mounted in waterproof white plastic housing. Comes with 10m of RG174 coax and SMA plug. Antenna has a pre-amp inside. These are brand new. \$25.00 each
- GPS Receivers** – 12 channel GPS receivers in plastic dome mounting with DB9 Connector. RS232 output on pins 2,3 and 5 and power +ve 6-12V on pin 6. NMEA output sentences. \$120.00 each
- GPS Patch Antenna** – with Macom SO8 preamp 26dB @ 1.575 GHz, 1.15 dB NF. It still has 20dB gain @ 1.3GHz but the noise figure is rising a bit. Fitted with 3m of RG174 cable and MCX connector. No housing/case for patch antenna. \$10.00 each
- GPS Patch Antenna** – as above but in plastic case. Fitted with about 3m RG58 coax cable and SMA connector. \$20.00 each

Mail Order accepted. Please forward your mail orders to Auckland VHF Group, PO Box 10138, Dominion Road, Auckland. Or Email to john.dunn@clear.net.nz.

Please Note: For mail orders please add \$5.00 for packing and postage.

SPECIAL SALE ITEMS:

G.E. repeater unit complete with Rx & Tx and Control modules, with a grunty power supply, all in a 24U rack & cabinet Assembly. Power Supply is labelled 230 volt A.C. input: 500 watts. The P.A. module name plate indicates RF output power of 17 to 50 watts. All appropriate interface boards appear to be fitted. A lot of information is available on the net about these units.



Price: POA.

SPECIAL SALE ITEMS:

50 volt 10 amp battery charger complete with cabinet and meters. Ready to plug into the power!



Price: POA.

The above two items are cash and carry from the club rooms, Hazel Ave.