

SPECTRUM

October 2007 Vol. 44 No. 10

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



View of South Island from the ISS/Shuttle



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

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

ATV Interest Group

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

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:

NOTE the change to the SECOND MONDAY of the month.

October 8th at 19:30:

At the October meeting we will be holding a social evening and farewell for Tim ZL1TN. Tim is leaving for a new life in Australia and I am sure we all wish him well. He will already be in Australia by the time we have the meeting. Also at the meeting we will be going through some of the equipment in the clubrooms with a view to sending what is left, after members pick through it, to the Western Suburbs sale on the 13th. There could be some real bargains!

October 20th: Working Bee at Klondyke starting 9-10am.

Listen to Sunday night net for details.

November 12th : AGM and Video (TBA).

December: End of year Bash.

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Contest Calendar:

October 6th and 7th – Microwave Contest.
All bands 614 MHz and up.

December 1st and 2nd: Field Day Contest.

Contest times: For all contests, the operating periods are 1700 to 2300 on the Saturday, and 0700 to 1300 on the Sunday, NZ local Time.

Trading Table

Trading Table will be at the Western Suburbs sale on Sat the 13th October.

Western Suburbs Radio Club Sale.

Saturday, 13th October.

The Western Suburbs Radio Club invites you to their annual new and used equipment sale at Rosebank Rd Primary School hall, 217 Rosebank Rd Avondale.

\$1 entry for buyers.

There will be four commercial vendors there. Feature Tech, Zares, R.H. Holdings and Echo Electronics.

Vendors 8am, buyers 9am. Sale closes Midday.

Cafeteria with hot sausages, tea, coffee and biscuits.

To pre-book a table please contact Ross ZL1VRR on 09 629 0504.

\$10 per table prepaid or \$15 on the day.

Even if you are not buying or selling, come along for the fun and meet fellow electronic enthusiasts. All NZART branches and private vendors are more than welcome to bring as much equipment for sale as they wish.

From the President:



Hi All,

Just to advise the current committee that I won't be in a position to stand for the coming year as President, because of a move to Queensland, Australia next month. I have received an employment offer that provides for significant advancement from where I am currently, and the money & conditions is significantly better what I'm currently getting, and am likely to get if I stay where I am.

This follows a quick trip to Brisbane back in early June to meet and talk with my future employer. I will be taking up a position in the industry that I spent time studying, so NZCE Telecom/Radio won't be on the shelf for ever.

I am likely to be travelling over during the first week of October, to start work on October 8th.

I thank you all for your support over the last 3 years, I think that we have recently made some changes that have benefited the Group, such as changing the general meeting night, with what has been a significantly increased attendance at meetings, and I thank everyone for the hard work organising our meetings, and keeping us running during this time. We have come a long way, don't stop now.

I think it would be appropriate to ask Alan, as Vice President, to take the chair for both the October General and committee meetings as well as the AGM. At the last AGM, I accepted the position once again, but this was provided that I remained resident in Auckland.

73, Tim ZL1TN.

(VK4TIM as of October, although I will keep the ZL call obviously).

**Minutes of the Auckland VHF Group
General Meeting held 7:30pm 10th
September 2007 at the Clubrooms, Hazel
Avenue, Mt. Roskill.**

Present: As per attendance book.

Apologies: ZL1PO & ZL1KM

Minutes of Previous Meeting: Moved Alan ZL1AWL Seconded ZL1AOX

Matters Arising: Nil

Correspondence In:

Mercury Energy \$53.27 Paid by direct credit. All these accounts are paid by automatic payment from our operational account, so no further action is required.
Invoice for Spectrum \$67.10

Newsletters from:

The 29er, Papakura RC, Western Suburbs RC
Subs: Sid Ireson ZL2TE \$25

Correspondence Out: Letter of thanks to Daniel Ayers

Accepted/Approved: ZL1TGC/Sec ZL1AWL

Treasurer's Report: As per the last committee meeting report.

Reports:

AREC: 12 people from branch 66 attended the rally of New Zealand. Laurie has called for people's names interested in AREC to revise the mailing list.

ATV: The ATV is back up and running however there are still some issues to resolve. Namely an intermittent power supply fault.

Spectrum: Ian has been doing a good job however much of the content has been supplied by Ian therefore all members are urged to think about contributing.

Repeaters: The 1296 repeater is running at Mike's ZL1ABS QTH however there are some issues with the squelch. The 670 repeater is under test by Vaughan ZL1TGC.

Trading Table: There is still a little bit of equipment left from Irving's estate. This will be taken to the Western Suburbs sale.

General Business:

The meeting noted the recent release of NZART policy on Repeater & Fixed link fees.

Mike ZL1ABS invited members who wished to attend his upcoming wedding.

Brian ZL1HN noted that access to the clubrooms was a challenge for disabled members. Vaughan ZL1TGC moved that Brian investigate the matter. This was seconded by Brian ZL1HN and carried with two dissenting votes by Ian ZL1AOX and Jim ZL2BHF.

John ZL1JD gave a brief run down on the insurance claim for 690.

Mike ZL1ABS suggested that there be a working Bee on Labour weekend which was agreed to by all present. Peter is to advertise this on the web site.

The upcoming Hastings sale was noted.

Finally there was extended discussion with regard to the future direction of club activities as follows.

1. Replacing the 690 repeater. It is not certain if the same site is available in the future & some people suggested that there could be ample 2m repeaters in the South Auckland zone already (6625, 5775, 7325 for example).
2. Installing a National System 70cm extender repeater on the North Shore to cover downtown Auckland & the North.
3. Installing a 10 GHz link from the North Shore to Klondyke & possibly the Waitakere Ranges.
4. Having 23 cm D-Star equipment for Data/Voice connecting to the 10 GHz link.
5. Commissioning the 6m 53.725 to 845 repeater link.
6. Installing an IRLP node to access 670.
7. Repairing the Klondyke Data node & improving it.
8. Repairing the Channel 39 ATV repeater.
9. Repairing/completing the Whitford ATV repeater.

10. Repairing the aerals at the Hazel Ave clubrooms & improving the APRS Data node.
11. Installing an HF dipole at Hazel Ave for AREC and general Club use.

Meeting Closed 9:30pm

News & Net control operators:

October: Alan ZL1AWL
November: John ZL1JD
December: Laurie ZL1ICU

ARRL EME Contest dates:

1. **Object:** Two-way communications via the earth-moon-earth path on any authorized amateur frequency above 50 MHz.
2. **Date and Contest Period.** Three full weekend 48-hour periods (0000 UTC on Saturday through 2359 UTC Sunday). The 2007 dates and designated bands for each date are:
September 29-30 2304 MHz and Up
October 27-28 50 MHz through 1296 MHz
November 24-25 50 MHz through 1296 MHz
3. **Definitions:**
 1. 3.1 Single Operator. One person performs all operating and logging functions, equipment adjustments and antenna alignment.
 2. 3.2 Multi-Operator. Two or more persons participate.
 3. 3.3 Single Band. A station log where all the contacts are from a single band.
 4. 3.4 Multi-band. A station log where contacts from two or more bands are combined into one score.
 5. 3.5 Assisted operation (Assisted). Any active or passive use of amateur or non-amateur communication tools used during the contest period to solicit and/or coordinate a contact prior to the start of that contact. Once the process of making a contact started further coordination is prohibited until after the contact is completed in its entirety via the EME path. If, for some reason, the contact is not

completed in its entirety via the EME path and another attempt is coordinated or arranged, the process of making the contact must be restarted from the beginning. Self spotting is allowed.

6. 3.6 Mixed Mode. A contest score comprised of both analog mode contacts (CW, Phone) and Digital mode contacts.
4. **50 MHz through 1296 Weekends:**
5. 5.1 Analog (CW, Phone) and digital modes are allowed both weekends. On any given band a station may be worked once on analog mode and once again on digital mode.
6. 5.2 Assisted operation, as defined in Section 3.5, is always allowed on 50, 222, and 902 MHz.
7. 5.3 Operating Categories. Assisted operation, as defined in Section 3.5, is allowed only for those operating classes that state "Assisted".
8. 5.3.1 Single Operator, Analog Mode
9. 5.3.2 Single Operator, Digital Mode
10. 5.3.3 Single Operator, Mixed Mode
11. 5.3.4 Single Operator, Mixed Mode, Assisted. This category is intended to encourage smaller stations and operators who may be new to EME. It applies only to single-band operation on 144, 432, or 1296 MHz.
12. 5.3.5 Multi Operator, Analog Mode
13. 5.3.6 Multi Operator, Digital Mode
14. 5.3.7 Multi Operator, Mixed Mode
15. 5.3.8 Multi Operator, Mixed Mode, Assisted. This category is intended to encourage smaller stations and operators who may be new to EME. It applies only to single-band operation on 144, 432, or 1296 MHz.

These are abbreviated rules. Full details available from ARRL website or contact the Editor.

I've given the above details to encourage local Radio Amateurs to try listening for signals from the moon.

AREC training seminar

Hi everyone

There will be an AREC training seminar on Saturday November 10 at Papakura Radio Club Rooms Wellington Park, Great South Road, Papakura.

It will be an all day affair starting at 0830 finishing at around 1700. Lunch plus morning and afternoon tea will be provided.

Updated copies of the AREC Manual will be distributed at the meeting.

To be of any use, AREC operators need to be well prepared, both in regard to equipment and also procedure and knowledge of the underlying systems. This training update is necessary for all operators to ensure we remain current with the latest CD and LandSAR requirements.

Can the Auckland Area Branch Section Leaders please advise numbers and names that will attend from each Section ASAP to the AREC Area Manager Richard Gamble,

richard.gamble@slingshot.co.nz
so that planning can be completed.

Remember every operator that wishes to be an active AREC member should attend this training session.

Regards
David Wilkins ZL1MR
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THE FORUM DISCUSSION 07

A report of the Forum Discussion at the Auckland VHF Group General Meeting in September

By John Dunn

The forum was opened with the comments that it was timely to bring matters up for open discussion, so that projects could be identified that the Auckland VHF Group members would

like to see happen. This would allow the future direction of the Auckland VHF Group to be established, and provide guidance for the committee to work on.

690 Repeater.

The first subject was the recent loss of the equipment and site for the 690 repeater due to the fire at Puketutu. A claim for insurance has been put in by the VHF Group to its insurers, and this is progressing.

However, the question was raised as to the need to replace 690 in its original location, or should thought be given to relocating it to perhaps provide better coverage elsewhere in the district. The question was also raised as to whether 690 should be restored at all in view of the number of 2 meter repeaters that now exist in the district, and given the massive coverage 6625 now provided on 2 meters from Klondyke.

The feedback received during the meeting was that while 690 provided an alternative back-up to 6625, its location at Puketutu also provided back-fill coverage to the Southern side of the Bombay Hills, particularly to the East and North East Waikato region where the main lobes of the Klondyke aerials do not cover effectively. 690 was also used more frequently than 670 (located in the Waitakere's) due to its strategic location, providing an alternative link into Auckland from the Waikato.

The meeting also reviewed the possibility of moving 690 to a different location, but there appeared to be little point in going further north, as 6625 and the other repeaters already available on the Northward path appeared to provide good coverage of that area.

The meeting agreed on (a) restore the 690 repeater to air as quickly as practical, and (b) if at all possible, return it to the same site or somewhere near to its previous location.

In order to achieve (a), the Auckland VHF Groups STSP repeater was suggested as the quickest solution, re-crystallising it for 690 as a temporary measure until replacement

equipment could be acquired. At this time it is not known if the Puketutu site will be re-built, or if we will be able to be re-housed in the new building should this happen. To solve the issue until these factors are known, Ian ZL1AOX offered to house the 690 repeater at his QTH, provided it could be set-up so that it did not interfere with his Satellite control functions. The meeting thanked Ian for his offer.

2 Meter coverage of Auckland by repeaters.

As the matter of 2 meter repeater coverage of the Auckland area had been discussed reasonably well as part of the previous topic, no changes were sought at this stage so the meeting moved onto the next subject.

70 CM repeater coverage.

Two issues were raised. (a) That the Hamilton side of the Klondyke signal on 70 cm appeared to be down on the transmit side. The transmit coverage south did not appear to be as good as that going North. This was agreed, and there is a need to look at the power amplifier equipment set-up for the south aerial side of Klondyke. This has been listed as an on-going project for Klondyke.

(b) Even though the North 70cm coverage was better than the South, there were obvious holes in and around the CBD Auckland, and in shaded areas of the North shore, where coverage has always been a problem on this band, particularly using the National system. In discussion, it was agreed that this was a problem simply of the terrain and distance from Klondyke. It made mobile operation on the National system un-useable in these areas.

Two tall buildings have over the past few years, appeared in Takapuna on the North shore, and were suggested possible sites for a location to put in a sub-repeater on 70 cm for the national system. This repeater would provide coverage of the Auckland CBD, and the shaded spots of the North shore, making it possible to work the national system from the CBD, Harbour Bridge and lower North Shore areas. It would also benefit the Auckland Civil Defence HQ which is located in a very sheltered spot in the central Auckland CBD.

Both the above suggestions were noted and will be taken forward to the committee to act upon further.

Klondyke.

A quick discussion about Klondyke and the work that needs to be done, took place. Replacement batteries and a proper intelligent battery charging system is another project that needs to be added to the list. The current batteries are at the end of their use by date.

10GHz Back Bone link.

The VHF Group recently acquired five pieces of microwave equipment that was found tuneable into the 10 GHz Amateur band. Recent experiments with the equipment found that they could pass 8mbs data through them. It might be possible to extend that to 10mbs with some modification. There is sufficient equipment to set up two complete sets of duplex links.

There has been a desire for some time to develop a better control system for Klondyke, and to extend a data linking system around Auckland, so that we can introduce IP type data transfer, similar to a “D-Star” arrangement. By having the back bone in place, 1296 MHz data repeaters can be linked together via the back-bone, with a possible port being created that could provide a link onto the Internet in the future if so desired.

With the development of the 1296 MHz data repeater, would come the 1296 MHz transceiver data kit that would allow people to build and experiment with Digital Radio’s, and be able to connect their computers into a VPN network. The 1296 MHz kit could be capable of approximately 2mbs data rate. This project could become the next “Walkie!”

Grant ZL1WTT had a sample 10 GHz link to show to the meeting, which also generated a lot of enthusiastic comment for the project.

Discussion also talked about what was currently happening overseas with “D-Star”

and the way it was spreading, and also some information was given as to the sort of money the group would need to raise in order to introduce “D-Star” to the local amateur fraternity, if it wanted to hurry the process up.

The project would increase the use of two bands that have very poor activity on them at present. It would also allow for the introduction of modern data exchange into the hobby, and could act as a catalyst to introduce a wider interest group (and hence new members) into the hobby of amateur radio.

Support for this project was unanimous.

Where to from here!

A lot of very positive discussion came out of the forum. It was obvious from those who attended the meeting that the future for the Group looked very good, and there was a lot that could be achieved easily. It was also agreed that the need to have the basic personnel to look after the running of the Groups affairs was important, and these people needed to be found urgently, so that the activities and projects outlined in to-nights meeting could make positive steps forward. This is the challenge that has to be faced now and may require the assistance of other branches around the Auckland area to help make it happen.

There are already people within the group ready to act. For example, Peter ZL1UPB has set up the Groups web-site so that if anybody wants to get involved with a project, or help the Group in any way, they can offer their services. The projects – and there progress – can also appear on the web-site, thus keeping everybody aware as to what is happening and where immediate assistance may be required.

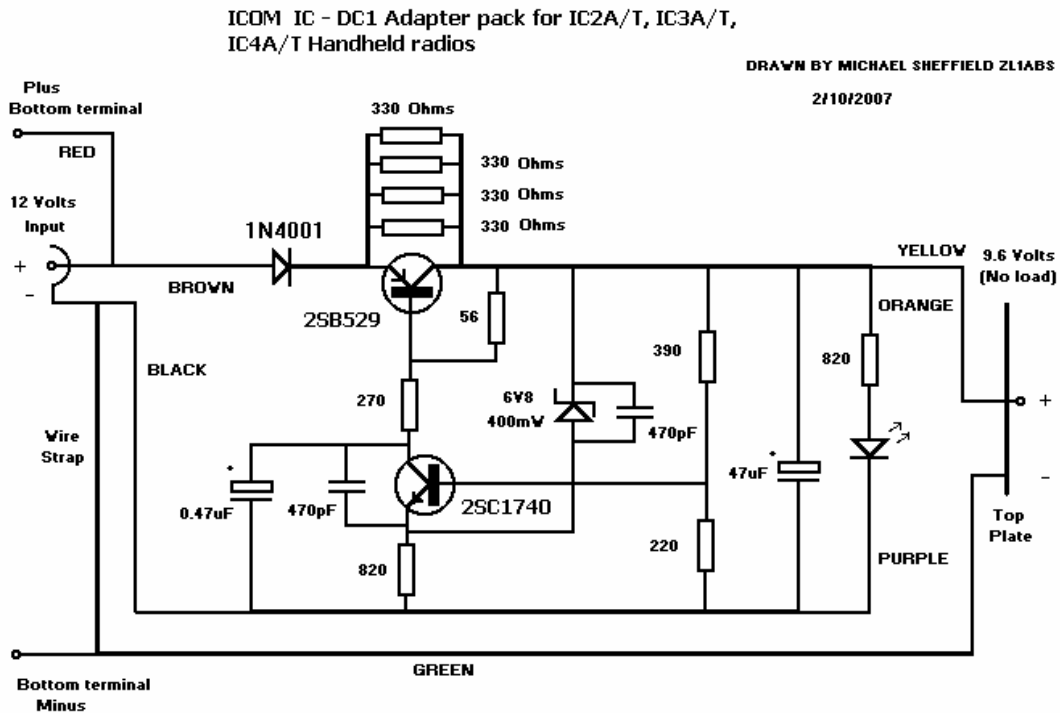
There is much to be done and achieved. But it needs the help of the members and other clubs to make it successful. As an individual, please assist as much as you can. Every little bit goes a long way when the efforts are combined in a common cause.

ICOM IC-DC1 regulator pack

I had to open up my IC-DC1 regulator pack (for my old IC2A/T handheld) to repair it. The Led would light but there was no output voltage. Fortunately the problem was a broken solid wire strap from the ground terminal of the input socket to the metal top plate.

I looked around on the internet for a schematic diagram & didn't find one. The manual for the IC2A/T doesn't include the IC-DC1. So I traced out the wiring & the parts on the small PCB to produce a BMP file (see attached).

73 de Michael ZL1ABS



Note: Replace Wire Strap with a short piece of insulated stranded wire as NO OUTPUT fault caused by broken Wire Strap connection between top plate & DC input socket

Corrected resistor value to 330 Ohms 2/10/2007

Here is an interesting approach to showing the repeaters in the Northland/Auckland area using Google maps.

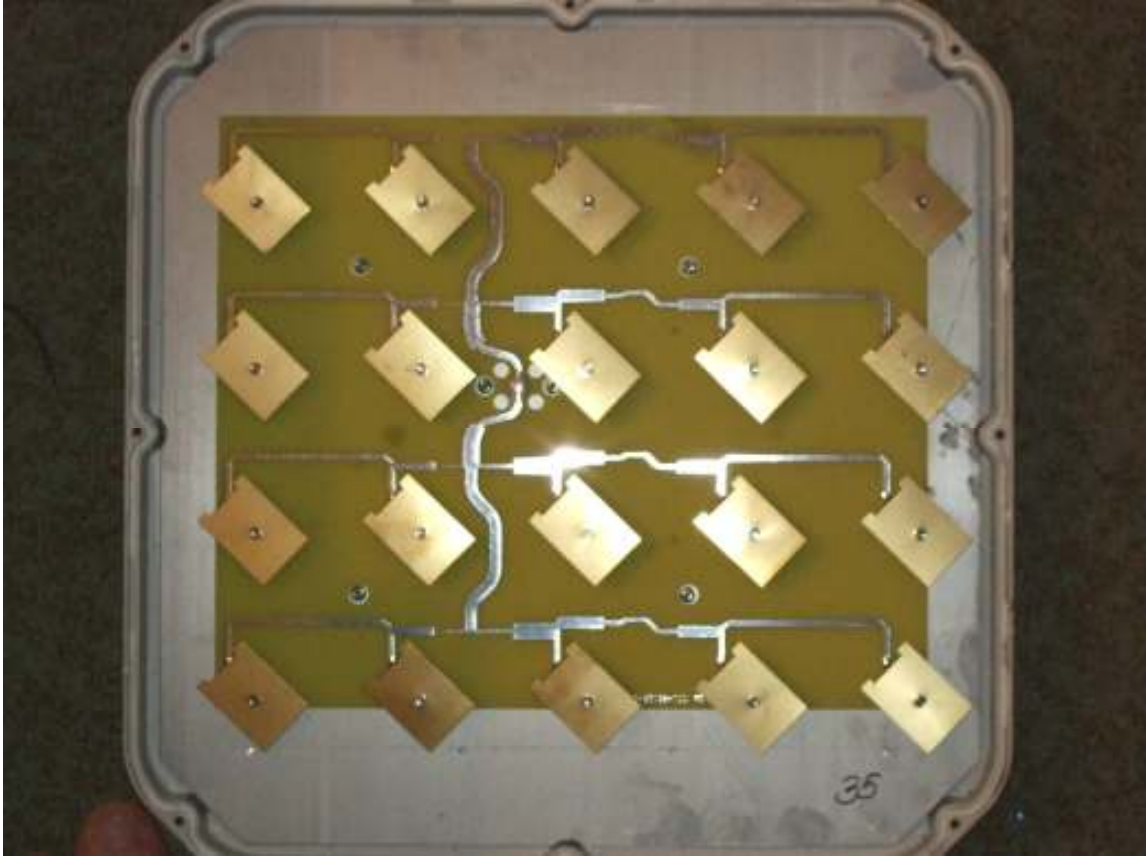
Northland & Auckland Amateur Repeaters

Amateur radio repeaters operated in Northland and Auckland New Zealand. 2m (VHF) and 70cm (UHF) / National System repeater locations. 70cm NS repeaters are linked as part of a nation wide system. Email comments / corrections to lonney@gmail.com ZL1SAT

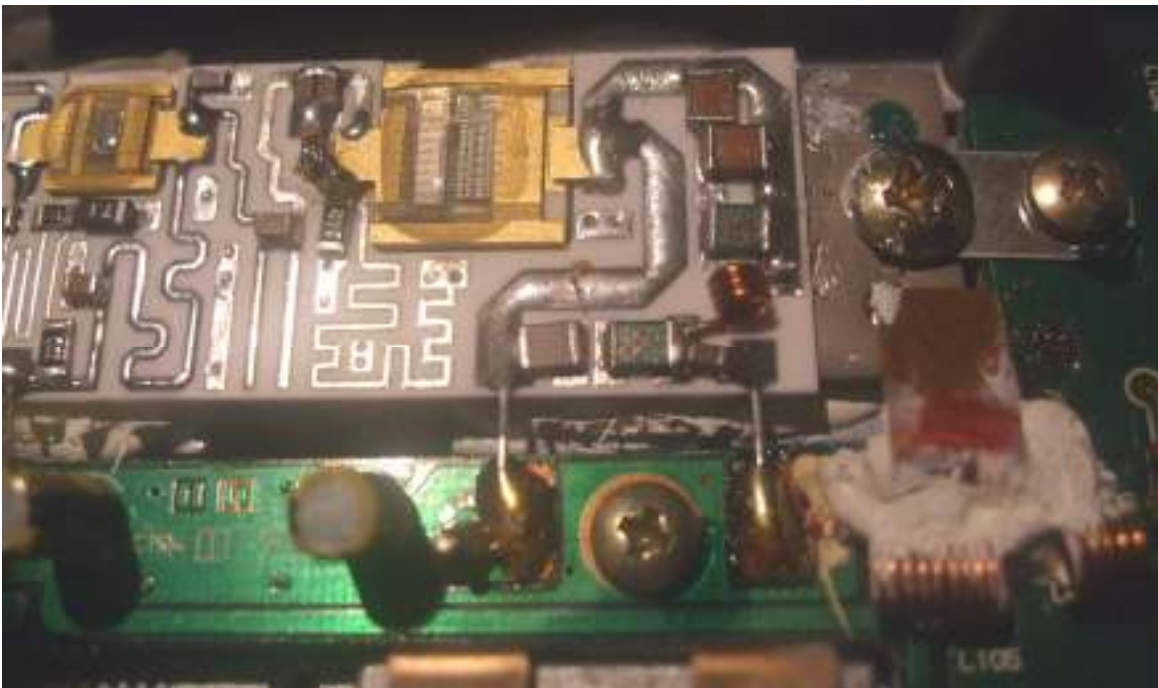
<http://maps.google.com/maps/ms?ie=UTF8&msa=0&hl=en&msid=113659062686562941811.00000112234959277b9ef>

(Thanks to Peter ZL1UPB for pointing out this link.)

3.4 GHz Microwave Antenna



This one is the patch antenna for 3400 that I am using. It's an old Wired Country Remec 3.4 GHz antenna I scrapped to make an antenna in a hurry. There is a radome that goes over the top.



This picture is my crook power block in my Yaesu. Note the small hairline crack on the output stripline feeding the collector of the final. Was only getting 30.4mW out!! Fixed easily with a dose of the soldering iron. Now back to 47 watts out. Cheers, Simon ZL1SWW

Trading Table Specials – September 2007

MGF1302	Low noise GaAs FET Nf = 1.4dB @ 4GHz, 4dB @ 12Hz. [S.case]	\$15.00 each
BFR91	NS RF Amp. 5GHz 1.9dBnf @ 500MHz [S.case]	\$2.00 each
MPS5179	NS TO92 12V 50mA 200mW ft 2000MHz Nf 5.0dB [S.5.7] RF Transistor. Use in UHF/VHF amplifiers with collector currents in the 100 μ A to 30 mA range, and in low frequency drift, high output UHF oscillators.	\$0.50 each
MRF237	NS RF Pwr. VHF 4.0W 12V TO39 [S.5.8]	\$3.00 each
3SK73GR	Dual-Gate FET N-channel 30V 7mA [S.6.7]	\$1.50 each

SMD RESISTORS – 10 per pack. Most are 1206 Format.

Values in stock: 22, 33, 49, 100, 270, 330, 390, 510, 1k, 2k2, 68k 100k Ohms.

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

SMD CAPACITORS – 10 per pack. Most are 1206 Format

NPO 50V working: 2.2pF, 6.8pF, 47pF, 68pF, 82pF, 270pF, 470pF
63V working: 10pF, 100pF, 1nF, 10nF, 100nF
10uF 25V electrolytic

Kitsets:

VHF/UHF Preamplifier Kit.

Parts, pcb and instructions to build a preamp for 2m, 70cm,

Now includes instructions for using a SMD package transistor, e.g. the BFG67 in place of the BFR91A supplied with the kit.

\$18.00 each

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

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

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

\$3.00 each

Integrated Circuits

ZSM560 under voltage monitor IC's. 4.6 volt threshold for 5 volt systems.

Spec sheet available on request.

Packet of 5

\$2.00 per
packet

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

- 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.

For Sale from the Trading Table (Ex estate of ZL1MO)

Maker	Model	Description	Ticket
Kenwood	TH-D7A	Dual band Handheld + manual	\$400.00
Kenwood	TM 255A	2m multimode	\$450.00
Kenwood	TM 851A	70cm multimode	\$450.00
Kenwood	TR 7930	2m Mobile + mounting bracket	\$250.00
Sabtronics	8100	Frequency counter 100 MHz	\$75.00
TAPR	PSK-1	300 bps + manual	\$60.00
TAPR	PSK-1	1200 bps + manual	\$80.00
Uniden	UBC 100XL	16 channel Handheld scanner	\$125.00
Yaesu	709-R	70cm Handheld + extended manual	\$150.00
Yaesu	G-250	Rotator	\$300.00

NEW INTO STOCK – LIMITED NUMBERS – A/V Distribution Amplifiers.

Talia professional Audio/Video Distribution amplifiers in a single 1U rack unit. 75 ohm looping video input with 10 separate outputs, all on BNC connectors. Stereo balanced or unbalanced audio input (RTS Jack's) with 10 stereo outputs on RCA connectors. This will be the last of these.

Limited numbers available. \$40.00 each.

ADVANCED NOTICE:

AUCKLAND VHF GROUP BRANCH 66 OF NZART ANNUAL GENERAL MEETING

This is Official Notice that the Annual General Meeting of the above group will be held at the Clubrooms, Hazel Avenue, Mount Roskill, Auckland, on Monday the 12th of November 2007, commencing at 7.30pm. The presentation of reports and balance sheets will be made along with the election of officers for the following year.

NOTE that we will require a new President, Vice President and Secretary.