



NERG NEWS

Incorporated 1985 in Victoria
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July 2002

NERG Inc.
PO Box 270
Greensborough
Victoria 3088

This Month:
7:45 PM THURSDAY 11th July 2002
Greenhills Community House

Mark Beacham (NERG) VK3XXX Digital modes – new and old With live demonstrations!

What's on this month?

NERG Mark Beacham VK3XXX is demonstrating Digital modes – old and new. See you at Greenhill's Community House located in Yandell Reserve, Greensborough (MELWAY 21-B1), off the intersection of Mountain View Road and St. Helena Road. Enter by the childproof gate into the child minding centre and follow the ramp to the meeting room.

June Meeting Report:

Our June Meeting was held at the Greenhills Community House and was well attended with about 30 members present.

Guest speaker for the evening was **Ron Daniels VK3AEO** from the **Melbourne Packet Radio Group**. Ron gave us a run down on Packet, notes from which appear later in this edition of NERG News.

The MPRG is very dedicated to maintaining a reliable network of packet radio nodes (repeaters) around Melbourne with an emphasis on long-term stability of packet backbone for Victoria. To concentrate on this task, some of the traditional services and experimental applications of packet, such as e-mail and APRS (amateur position reporting service) will now be run by the Moorabbin radio club.

The meeting closed with the usual hot drink, biscuits and discussions on Dxing, Dog-Piles, foxhunting, ARDF, new gear, QSLing and the non-arrival of cards for new counties etc.

73, Greg VK3VT

NERG NOVICE CLASSES!

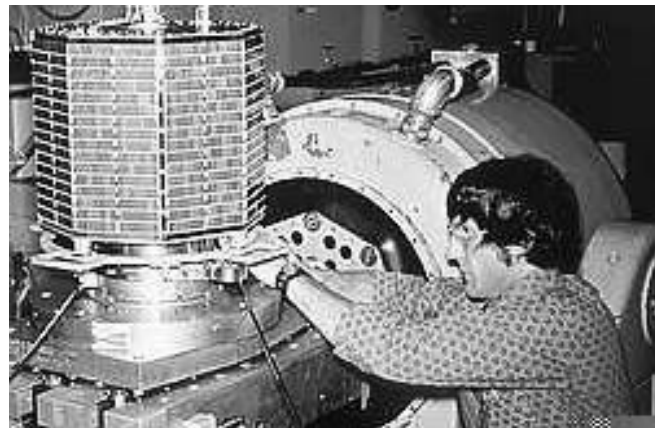
Classes start on Tuesday 23rd July for those interested in gaining their Novice license.

Classes cover all theory subjects with assistance in regulations & Morse Code

Classes run for 14 weeks, and are followed by exams.

Phone Peter Cosway on 9379-3626
or email Greg at vk3vt@nerg.asn.au

More details inside this issue



Stop Press – Oscar-7 lives again!

NERG DAYTIME MEETING

A great day was had at VK3JSE's on Tuesday 25th June, with catering largely managed by Besty, VK3HBK, a very good cook. Those attending were Dave, Ian, Gerhard, Mark (VK3XXX) and Jim. The usually chatter was engaged and a most enjoyable time was had by all.

The following schedule has been set for the next few months on the 4th Tuesday:

July	VK3DBQ
August	VK3JMB
September	VK3EWM
October	VK3JSE
November	VK3BGE

73, Jim VK3DBQ

Amateur Exams held soon!

NERG is holding an exam session in the next couple of weeks. If you wish to sit for any level of amateur exam contact Greg VK3VT (03) 9432 0563 as soon as possible so that exam papers can be ordered.

Membership Fees

A quick reminder to all NERG members that fees are due on the 1st August. Fees rose slightly to \$30 this year but still remains well below inflation!

Send payment to our treasurer (address on back of NERG NEWS) or drop in to our next meeting and pay her there!

International Lighthouse & Lightship Weekend

This event runs from 10 am (local EST) Saturday 17th to 10 am Monday, 19th of August, coinciding with the RD contest.

The aims of the lighthouse weekend are simple:

- (a) Find a lighthouse or lightship,
- (b) Set up a portable station on or near it,
- (c) Talk to as many other lighthouse stations as you like!

This is NOT a competition - just a good excuse to get out in a stiff sea breeze and play radios to celebrate the role radio and lighthouses played in bringing safety to the seas.

Continued...



ILLW continued...

The NERG plan to run VK3CNE again this year. Mark VK3XXX is helping arrange this event.

Last year we went to the Time Ball Tower / Williamstown Lighthouse at Point Gellibrand Park in Williamstown to participate in the ILLW. The Timeball tower is a tall square grey bluestone structure, originally used to synchronise ship's clocks to the local observatory time standard. Even though QRM was bad at this site it is likely to be the location for this year's ILLW as alternative lighthouses are hard to find.

For more on the ILLW, see:
<http://vk2ce.com/illw/2002.htm>

For more Australian lighthouses see Malcolm MacDonalds:
<http://www.lighthouse.net.au/>

For more on the Williamstown lighthouse see Grant and Tracey Maizles excellent Lighthouse site at:
<http://www.maizels.nu/lights/vic>

More light info can be found at:

http://au.geocities.com/aust_lighthouses2/williamstown/williamstown_lighthouse.htm

<http://www.environment.gov.au/cgi-bin/heritage/register/site.pl?005516>

http://au.geocities.com/aust_lighthouses2/gellibrand/gellibrand_lighthouse.htm,

For Victorian Lighthouses see Kristie Eggleston's:
http://au.geocities.com/aust_lighthouses/index.htm

Great Aust. Science Show

Fellow Amateurs - The WIA Victorian affiliated clubs are holding a public relations exercise at the GASS ' 2002.

This year it is being held at the new Melbourne Museum from Friday 23rd to Sunday 25 August as part of Science Week.

This is a great opportunity to promote Amateur Radio to many people with an interest in science and technology as well as groups of secondary school students (on Friday). Last years event was good fun and was appreciated by many of the younger visitors.

Our club has been invited to participate and would appreciate several volunteers for morning and afternoon shifts on the WIA stand. All amateurs are invited to visit the stand and provide short-term relief for the volunteers.

Please let me know if you can help out, Mark Harrison, VK3BYY ph 9435-3043

Classic Kolm Cartoons

For a good laugh, check out some classic amateur radio cartoons from John Kolm (our April guest speaker) :

<http://www.radiomag.com/special.html>

NERG Novice Classes

Classes for the Novice Licence requirements commence on 23rd July at Greenhills Community House, Community Drive, Greensborough. For details contact Peter Cosway VK3DU on (03) 9379 3626.

Usually classes are run on Tuesday nights for around 14 weeks and commence at 8:00 PM. Classes continue till around 10:00 PM with a break in the middle for a cuppa and a chat.

Cost of the classes is \$100 plus membership of the club (currently \$30). Past students are invited to join classes for a free refresher – so long as they are current NERG members!

The following topics are covered:

Theory - Electrical laws & fundamentals, Semiconductors & valves, Power supplies, Oscillators & amplifiers, SSB & FM transmitters, Receivers, Propagation, Antennas & transmission lines, Test equipment & measurement, Interference and Safety.

Morse code (optional) - introduction to the code, an introductory tape and other documentation. Morse code practice and tuition starts at 7:30 PM on class nights.

Regulations - are not specifically studied but are generally covered in dealing with other topics on the course. Copies of the ACA regulations are supplied if unable to obtain them from the WWW. Details of the regulation requirements and a full copy of the question bank (these are the actual questions that the exams are taken from) can be downloaded from the WIA Vic. Division's web site.

Following completion of this course a bridging class is usually held to take the student to the Full Call level and runs for about 4 weeks.

Examinations are held at the end of each course and at other times as required.

If you would like to try a sample exam to see how you are going then have a look at the trial exams at the WIA Vic Division's web site.

VNG Time Signal out of time

Our good old Australian standard time and frequency transmitter has finally closed after 38 years of service.

Originally transmitting on 4.5, 7.5, and 12 MHz from Lyndhurst (N-E of Melbourne), it was down graded and moved to Llandilo, near Sydney in 1991 where it operated on 2.5, 5.0, 8.638, 12.984 and 16.0 MHz until now.

The National Standards Commission and other government and commercial users now employ alternative means, such as GPS satellites and high stability oscillators, to disseminate traceable time and frequency standards around Australia.

This leaves the US WWV & WWVH stations as the most accessible frequency standard for calibrating amateur radio gear on 2.5, 5.0, 10, 15, & 20 MHz.

The Commission is keen to find a good home for Radio VNG in its retirement - send your suggestions to Dr Richard Brittainme at the Commission, Ph 02-9856 0328 (direct), e-mail rbrittain@nsc.gov.au.

AO-7 satellite lives again!

Oscar 7 was last heard of back in 1981 so it was a great surprise when it's CW beacon was heard on 145.974 MHz last month.

Built by a team of German, Canadian, United States and Australian radio amateurs, this satellite was launched in 1974, making it 27.5 years old - not bad for a cheap amateur bird in a 1,460 km high orbit and built with very few high reliability parts and little radiation hardening.

Pat Gowan G3IOR heard it first at S9 on a vertical antenna and has since been confirmed by several AMSAT members.

Not only is the beacon working but the telemetry data even makes sense, giving clues as to its sudden reappearance.



OA-7 High reliability NiCd battery

Originally back in 1981, the NiCd battery cells (pictured) shorted out one by one until there was insufficient voltage to power the electronics.

Now, 21 years later, it appears a cell has finally gone open circuit, allowing the solar cells to power the electronics directly!

Jan King, W3GEY notes AO-7 is almost certainly running only off the solar panels. It is very likely to be on only when in the sun and off in eclipse. Since it is resetting each orbit it may not come on every time and when it does it may be in Mode A,B, or C. Reports of hearing the beacon just as it comes out of eclipse would be particularly interesting.

The Mode-B transmitter is working with rumors that contacts have been made through the Mode-A 2m to 10m translator. It may be worth listening out for the beacons on 29.502 MHz (200 mw Mode A) and 435.100 MHz (previously intermittent, 400 mw and 10mw).

News from AMSAT, for full story see: <http://www.amsat.org/amsat/news/ans2002/ans02174.html#02>

Faster than a speeding microwave...

The latest iteration of Intel's Pentium 4 processor chip runs at 2.53 GHz, which means it has an 'oscillator inside' running at a higher frequency than most microwave ovens (2.450 GHz) !

Intel claims its ultra-fast clock speed will give smoother, more lifelike animation in 3D games, and gives the power to create, edit, and share movies and photos quickly and easily.

I think they secretly wanted to build in the kitchen sink, as well as the toaster, the kettle and a microwave oven. The plan is to keep programmers at their desks for 24 hours a day and never need to get up for coffee or hot-dogs!

Pentium 5 is rumoured to come with a refrigerated co-processor unit that dispense cola and chilled chocolate bars....

Mark, vk3byy

Victorian Clubs Forum

Representatives of WIA Victoria affiliated clubs and groups met on 20 June for WIA Victoria's second club's forum.

Among the decisions taken was the mounting of an amateur radio display at the Great Australian Science Show to be held at the Melbourne Museum. The dates chosen were Friday 23 August to Sunday 25 August, the last three days of Science Week.

The proposed Low Level Entry Licence - often referred to as the Foundation Licence - was discussed in terms of how it could be implemented and fit in with the general system of amateur radio licensing.

If, as anticipated, the World Radio-communications Conference next year determines that CW is no longer required as a condition of some licence grades, the number of grades will reduce from the current five, to two, and there will then be room to accommodate the proposed new licence.

Attendees at the forum indicated that there appeared to be considerable interest from people wishing to enter the hobby via this new licence grade, with a number of people already wanting to register on waiting lists.

Inter-Club and Club-WIA Victoria communication were discussed and appeared to be adequate, with WIA Victoria requesting notification of exams and classes so prospective radio amateurs can be provided with that information.

From <http://www.wiavic.org.au/news/>

Cheap Power Supplies !

This is a special deal for NERG members on brand New Switch-Mode Power Supplies

One-off's are more expensive than if we purchase in quantity, so if we can get a few orders together we can save up to \$20.00 per power supply!! One off prices shown below:

Single O/P Caged versions:



MP-3110 12V 12.5A (150W)
\$92.80 + GST + Del.



MP-3118 13.8V 18A (248W)
\$172.00 + GST + Del.

Boxed versions:



MP-3074 13.8V 10A 138W \$107.18 +GST
MP-3075 13.8V 15A 207W \$111.32 +GST

This is about 50% off the normal price around town (check out Jaycar...). For those interested, please contact me by e-mail or Mobile.

David Aston, VK3THY,

A field day for satellites?

Strap on your rocket boosters and go into orbit for the satellite field day! - well, not quite, but AMSAT does run out of this world field days! It held for 24 hours on the 4th weekend of June in conjunction with the ARRL sponsored Field Day for Emergency Preparedness.

We've missed it this year so look out for it in June 2003. As usual the aim is to make as many contacts as possible through as many satellites as possible. Competition is so tough there is a "one QSO per FM bird" rule to avoid congestion of FM sats and ISS. Working SSB, CW and all digital modes is encouraged though. (Contest rules available from AMSAT News)

Packet Radio revealed:

First of all, what is "Packet"?

Packet radio is a means of sending digital information across a radio link. The information can be anything that can be stored in digital format – text, pictures, sounds, programs, if fact virtually anything you'd keep on a computer!

The information is sent across the radio link by modulating an ordinary amateur transmitter with an audio frequency signal that sounds similar to a FAX machine.

Its called "Packet" because long messages or data files are broken in to many smaller "packets" of a data which only take a few seconds each to send. The receiving station checks each packet as it comes in, requesting it again if it's not received correctly or asking for the next packet if it's ok (this is called handshaking). The packets are reassembled back into the full message at the receiver.

Each transmitter checks that the frequency is clear before sending its packet, otherwise waiting its turn to avoid "colliding" with any other transmissions. By using handshaking and collision avoidance, several interleaved QSO's can take place simultaneously on the same radio channel without interfering with each other (other than slowing down the packet transfers rate of each QSO).

You can hear all this happening if you tune into a busy packet frequency – you often hear strong local and distant weak stations blurring packets at each almost constantly with only very short breaks between transmissions. Usually the data packet is long (several seconds) and is followed by a brief acknowledgment (<1 sec) – this is why its often called RACKET radio.

Packet - What equipment is needed?

A number Terminal Node Controllers (TNC) can get you on the air:

- simple "BAYCOM" hardware with TSThost software for PC, or,

- a dedicated TNC which has more hardware and it's own processor. More of the work is done in the TNC.

In both cases you need a computer (any obsolete computer will do) and software:

- TPK - this has a DOS keyboard focus.
- Winpack – for Windows.

A computer with sound card based solution is also available and only needs simple interfacing to the radio to operate. The computer does all the hard work in this case.

Of course a radio is required as well - Most of the operation is on two metres so an FM box is required - a hand-held is fine.

Setting up:

In setting up a TNC Ron recommends that operators first do a factory reset then set your callsign (MYCALL command). If you can get a PK232 handbook this can be a good guide to packet operating.

Once you can receive packets you are well on the way. When connecting the radio, focus on getting one function working at a time - PTT first, then Microphone, then Speaker connections. If you have several radios, make adaptor cables for each radio to a common connector (such as DIN connector) and adaptor cable/s from the common connector to (all) your TNC's. Make cable from radio long, from TNC short.

What can packet be used for?

Packet can be used to hold a simplex QSO by typing messages to each other or in a group. Packet can be sent direct or via a digipeater (repeater) or via a chain of many repeaters (to reach interstate or internationally nodes).

Packet can operate like an e-mail system, forwarding messages around the world while unattended. You can put out messages requesting assistance, Ron gave examples of this. Ron has taken packet radio with him around the world twice. All that is required is a really old Laptop PC, a TNC, and a 2 meter hand held.

Packet can be used for DX spotting by monitoring the DX "cluster" messages where hams everywhere report DX openings and activity of rare stations. Overseas traffic can go via HF, amateur satellite, or the Internet.

How do you know what commands to use?

These days intelligent software handles everything and you don't need to remember all those dozens of old commands. Another bonus is that messages are often compressed to speed up transmission.

Speed:

Most user traffic is at 1200 baud on 2 meters while some 70cm traffic is at 9600baud. (about 100 and 900 characters per second respectively). A range of frequencies used for simplex and digipeaters are published in the WIA callbook.

Further information:

MPRG web site, under construction but improving rapidly: www.mprg.org.au

Yahoo Newsgroups (not used much): www.yahogroups/vk-packet

Other packet sites I have found since this meeting include:

Australian Amateur Packet Radio Association: <http://www.aapra.org.au/>

List of NSW packet BBS, other stations, and their frequencies:
<http://members.ozemail.com.au/~vk2wi/html/Packet.html>

Packet radio site in the US with lots of stuff:
<http://www.tapr.org/tapr/html/pktf.html>
(TAPR is perhaps THE biggest packet radio group in the world!)

More good gear from Buck K4ABT:
<http://www.packetradio.com/>

73 from Greg, VK3VT, and Mark VK3BYY

IARU Region 3 ARDF championships 2003

This important event will be held in the Ballarat area from Friday 28 November to Wednesday 3 December 2003.

Organisers are expecting more than 100 participants from member societies in IARU Region 3 including Japan, Korea, China, Mongolia, New Zealand, and Australia. Guest competitors from other Regions are also expected to attend.

The event will be run by the Victorian ARDF group and is sponsored by WIA Victoria.

Put it in your diary NOW and if you can assist in any way contact the ARDF group or Greg VK3VT (at vk3vt@nerg.asn.au) (**translators, bus drivers, transmitter sitters, and assistants of all kinds required!!!**).

EMR limits further delayed

The Electromagnetic Radiation (EMR) limits for amateur stations that were expected to begin on 1 July 2002, have been delayed at least six months.

The Australian Communications Authority (ACA) had planned to implement the EMR human exposure limits through the licence condition for amateur stations. However, the ACA has now advised the WIA that it has decided to delay the issuing of the new Licence Conditions until it can formally adopt a new radiation exposure standard.

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has developed a new Radiation Protection Standard - Maximum Exposure Levels to Radiofrequency Fields 3kHz to 300 GHz.

The ACA was using the lapsed Australian and New Zealand Standard AS2772.1 - and not the new standard. In practice, there is little difference between the two standards, at least as far as the Amateur Service is concerned.

The ACA has developed a discussion paper to stimulate industry and community considerations of its proposal to change the EMR standards and is seeking submissions in response to the issue raised in the paper by the end of July. The paper and addresses for written comments can be found at the ACA offices and web site.

The adoption of the new standard won't significantly change the EMR limits already proposed by the ACA and publicised in the June edition of Amateur Radio magazine.

In the meantime the WIA recommends that radio amateurs continue to be sensible with the use of RF energy, and keep in mind the proposed EMR limits when installing antennas.

From WIA Vic, 1st July 2002
<http://www.wiavic.org.au/news/> and also ACA web site www.aca.gov.au

Buying a Mobile Phone?

This month the Australian Communications Authority (ACA) released its "Mobile Phone Tool Kit". The Tool Kit provides simple and clear information to assist consumers in selecting the right mobile phone package. The pack includes typical user examples and a questionnaire to help consumers identify which category they fall under.

The Mobile Phone Tool Kit is available in hardcopy, CD ROM and on the ACA website at <http://toolkit.aca.gov.au>

Fibreglass for antennas

Quador (Aust) P/L is an importer of heatshrink tubing and Fibreglass. Popular amongst antenna builders and kite enthusiasts, the fibreglass comes in rods 3mm to 38.1mm diameter, round and square tubes 25 to 51 mm, angle and channel 38 to 150 mm. Standard length is 6m but can be purchased in shorter lengths for a small cutting fee.

Quador, 16 -18 Queen St Nunawading 3131, (03) 9874 7388

Powerline communications fact sheet

Powerline communications (PLC) equipment delivers voice and digital services over existing power lines and could be a great threat to amateur radio. To manage the risk of unwanted emissions or interference by PLC equipment to radio-based services, the Australian Communications Authority (ACA) has recognised European and international standards to cover this type of equipment under its electromagnetic compatibility (EMC) regulatory arrangements.

A new fact sheet talks about mandatory standards for PLC equipment intended for low voltage installations only. The ACA at present has no mandatory standard in its EMC regime for PLC equipment intended for high voltage distribution systems.

Low voltage PLC equipment is required to comply with one of several standards mandated by the ACA. Most cover frequencies between 3kHz to 148.5 kHz although IEC 61000-3-8 specifies disturbance limits in the frequency range from 3 kHz up to 400 GHz.

Although the ACA currently has no mandatory standards for PLC equipment that transmits information on frequencies above 525 kHz., penalties apply in accordance with section 197 of the Radiocommunications Act 1992 to a person or company who knowingly or recklessly causes interference to radiocommunications services.

Find out more at:

<http://www.aca.gov.au/standards/emcbook/in dex.htm>.

or get the fact sheet at:

<http://www.aca.gov.au/consumer/fsheets/ind ustry/fsi23.pdf>

DTMF keypad - offer #1

I have 7 Miniature Inquiry Terminals that could be used to dial up IRLP Nodes on radios without CTCSS facilities. They were designed for the early days of phone banking. They are physically about 85 mm in diameter and 30mm thick.

Each unit requires a small (40mm or less) 8 ohm speaker and a Power Supply. They are currently powered by the phone line, I have tried a small 6v battery and it works OK.

A small AC plug pack could also be used.



I am willing to GIVE these units to any NERG club member FREE of charge.

So for a few minutes work and a small outlay (for speaker & battery) IRLP is possible on any radio (such as FM92 or RT-85)!

Any requests to my Email Address:

geowils@alphalink.com.au ,

or vk3gfw@wia.org

George VK3GFW

Dave's DX Info

Belgium operator's are/were using the OS prefix to celebrate the Golden spurs battle of 1302. The battle of 12 Hertford place (VK3JMB's QTH) still continues!

Christmas Islands:

VK3XV is operating until May 25th then he will be at Lord Howe isle.

From June the R.N.A.R.S. will be operating as GB5ER to celebrate the golden jubilee.

QSL Cards:

Can be obtained at reasonable prices contact VK3JMH or VK3DBQ for further info.

Club QSL manager is now Bruce Renn VK3JWZ and he will handle club cards inwards and outwards. Greg VK3VT is still NERG QSL manager for all other cards.

New Radio:

Mark vk3xxx is now the proud owner of a TS2000 with 23cm module fitted.

Regards Dave VK3JMB

[**Congratulations Dave** on getting QSL cards back from 100 countries on HF! Now it's time to do it all again using CW ☺ , Ed.]

DTMF keypad - offer #2 !

NERG has a small number of self-contained pocket DTMF keypads for sale at \$6 each.



Simply hold close to a radio's microphone and push the buttons to dial up IRLP nodes, and special repeater functions. Small enough to hold against microphone with one hand. Contains TT-5088 DTMF chip & Piezo Spkr.

Requires two small calculator type batteries (A76 or AG13 - \$3.98/pair @ Dick Smith).

See me at the next NERG meeting (may not be at July meeting) – Mark VK3BYY.

DTMF keypad - offer #3 !

This is another **free offer** for homebrewers!

Tony, VK3BBD has kindly donated a number of new telephone DTMF circuit boards. They use a Mostek MK5087 (equiv Texas Inst. TCM5087) DTMF encoder chip and various discrete parts. Requires addition of a box, keypad, speaker and battery. See Mark VK3BYY about these.

VK3RMH upgrades

It's official! VK3RMH has new licenses for a 6 meter beacon and a dedicated IRLP link.

The 6 meter beacon has moved to the new frequency of 50.295 MHz, sending CW with 10 watts into a omni-directional horizontally polarised antenna. Signal reports should be sent to vk3rmh@hotmail.com . The beacon hardware constructed by Ewen VK3OW will be out of service while we make a few modifications and get it onto the new frequency. We expect to have it on air well before the summer DX season.

The IRLP link connects the VK3RMH 70cm repeater to another site where we have high speed Internet access and can connect to the rest of the world. This link operates on 70cm but is in the 420 & 440 MHz sections reserved for dedicated repeater linking.

The new link will allow us to provide better control over IRLP connections and allow local emergency traffic on the repeater to take priority.

IRLP node numbers

Here is a very rough guide to node numbers for IRLP repeaters around the world. There are many holes in this list, but it will give you an idea of which countries are available via IRLP. Stations in the USA fill in many of the gaps in the number range and were too numerous to list individually here.

Use this list for "Mystery QSO" – just pick a number in the range for a country's of your choice and see where you end up!

(P.S. Always announce your callsign after connecting to a node – it's actually illegal to cause a transmission on another node without a callsign! (It's also bad manners and you will be regarded as another annoying international "button pusher").

For the full node number list and the current status of all nodes, look up the WEB at:

<http://status.irlp.net/>

IRLP node codes by Country:

Canada	100 to 295
USA	300 to 504, 568-599 and many others...
England	510 to 560
Australia	600 to 680
New Zealand	691 to 692
Sweden	800,801
Japan	820
Ecuador	730
Dominica	700,710
Trinidad and Tobago	712, 750, 760
Barbados	777
South Africa	830, 840
Grenada	850
Netherlands	860 to 862
McMurdo Station – Antarctica:	888

IRLP Reflectors:

A reflector node allows many other IRLP nodes to be connected together. This allows people in several states or countries to hold group discussions. Reflectors are good places to call CQ if you want to demonstrate IRLP as there are often people all over the world listening.

900 Vancouver BC Canada
910 Toronto Reflector ON Canada
920 Denver Reflector CO USA
921 Raleigh NC USA
925 Las Vegas NV USA
930 Saskatoon Reflector SK Canada
931 Fredericton NB Canada
940 Yellowknife NWT Canada
950 Sydney - Virtual PUB NSW Australia
960 Philadelphia PA USA
970 Lancaster LANCS England

Australian IRLP nodes in Callsign order:

Node, Call, Location, Frequency (MHz)

611	VK1RBM	Canberra ACT	438.025
606	VK2RAG	Gosford NSW	438.075
600	VK2RBM	Sydney NSW	147.050
605	VK2RCZ	Sydney NSW	439.425
622	VK2RIC	Lismore	438.675
602	VK2RMB	Terry Hills	146.875
601	VK2RMP	Wollongong	146.850
603	VK2RMR	Mt Riverview	439.575

604	VK2RTZ	Newcastle NSW	146.775
621	VK2TTA	Wahroonga NSW	439.250
626	VK2WAG	Wagga Wagga	147.125
634	VK3DRB	Mt. Waverley	146.475
631	VK3HEG	Ballarat VIC	146.550
639	VK3JED	Experimental	146.550
630	VK3RGL	Melbourne VIC	147.000
635	VK3RMH	Melbourne VIC	438.325
633	VK3RPV	Arthur's Seat	439.725
632	VK3WRM	Merbein VIC	438.525
640	VK4BAB	Ipswich QLD	147.050
641	VK4FC	Bundaberg QLD	147.800
648	VK4RCA	Cairns QLD	146.950
650	VK5UJ	Adelaide SA	146.775
660	VK6AMS	Karratha W.A.	146.700
661	VK6RAL	Albany W.A.	146.725
620	VK6RFM	Fremantle WA	146.950
610	VK6RNC	Perth WA	146.625
662	VK6XAA	Collie W.A.	146.900
670	VK7AX	Ulverstone TAS	146.750
671	VK7DY	Tea Tree TAS	147.875
672	VK7HTW	Murdunna TAS	0.000
680	VK8ZAB	Darwin NT	146.850

Radio Repair Web sites

Looking for repair and modification notes for amateur radio transceivers, TNC' s and other accessories? Here is a great site containing hundreds of notes from manufacturers and amateurs for all the mainstream brands:

<http://www.mods.dk>

Another site with amateur radio schematics, manuals, and programming software is at:

http://hamradio.online.ru/sch_eng.html

It also has an interesting range of Russian commercial radios and test gear!

GippsTech2002 Conference

Ooops, too late to go this year, but there is always next year! If you have ever wondered what happens at GippsTech conferences, then here is the list of seminars held this year. As you will see it covers subjects for beginners through to hardened experimenters and DX'ers.

RF Radiation: Does your Station meet the new licensing assessment requirements?
Obtaining a High power permit. (VK3UM)

"\$5 directional coupler" & "\$5 slotted line".
(Peter Ward)

Speech Acoustics & Intelligibility
(A review of the acoustic characteristics of speech and the basic factors affecting speech intelligibility in communications systems)
(John VK2TK)

WSJT meteor scatter experiences. (VK7MO)

Using JT44 for tropospheric and EME propagation. (VK2FLR)

The trials and tribulations of running a basic VHF-UHF station. (Bob VK2TG)

Two unusual antennae for 2.4GHz. (Peter Ward)

Solving noise problems in modern radio systems. (Bryan VK3YNG)

Building coaxial gain antennas - overlooked principles. (Peter Ward)

Predicting Es propagation. (Brian VK3BCZ)

The VK3UM 10 metre dish installation: A pictorial presentation of the installation from

start to finish including the mount, drives, tracking and feed systems. (VK3UM)

Integration of a 1W 10GHz PA with a 650mm offset fed dish. (VK2EI)

Basic testing techniques at UHF and above.
(Peter ZL1UKG)

System integration with the Milliwave power amplifier at 24GHz (VK2EI)

XLNEC - free antenna design software.
(Peter Ward)

Siting the next generation radio telescope - the Square Kilometre Array. (VK2AMT)

Poster/Demo: Transmission line fault-finding using a simple homebrew TDR. (VK3ZRX)

More at: <http://www.qsl.net/vk3bez/>

Calendar July-Sept 2002 JULY

13th and 14th July

World Radiosport Team Championships

The Amateur Radio Olympics (WRTC2002) will this year involve 52 competing two member teams located in Finland with unique OJ callsigns, working within the IARU Contest. Organisers have put out a plea asking for as many radio amateurs as possible to listen for the OJ stations and keep them busy with contacts, and submit a log. The WRTC2002 teams will be using special ' 2x1' type of callsigns with special OJ1-OJ8 prefixes (e.g. OJ1A). These prefixes have never been used before. The event will be jointly hosted by the Contest Club Finland (CCF) and the Finnish Amateur Radio League (SRAL).

AUGUST

17th and 18th August

International Lighthouse/Lightship Weekend

Remembrance Day Contest - 17th and 18th

24th and 25th August

ALARA Contest

SEPTEMBER

19/20th September

Jamboree On The Air (JOTA)

26/27th September

Ballarat Hamvention:

At the Wool Pavillation at the Showgrounds, access off White Street. Info: Steven Dick VK3MNA 5331 5526 vk3mna@barg.org.au
Hamvention will be held at the Ballarat Showgrounds, on the corner of Creswick Road and Howitt Street Wendouree, on the last weekend of October, this is the same location as previous years, access is off White street.

Entry is \$5.00. (under 15 free), trestles hire is \$10.00 per trestle (Bookings Essential)

from WIA Vic. News Web site

CTCSS tone generator for transceivers

Here is a circuit by VK5AH using a PIC microprocessor for generating CTCSS tones. CTCSS stands for Continuous Tone-Controlled Squelch System and is a system whereby a receiver only opens its squelch if the incoming audio signal contains a low frequency (sub-audible) tone. This device is ideal for upgrading amateur and ex-commercial radios such as the FM900 and IC-22S.

CTCSS is often used to access repeaters, either because nearby interference makes normal squelch unreliable, or as a means of activating special features of the repeater. For instance Melbourne's VK3RHF cross-band repeater must hear an 88.5 Hz CTCSS tone before it will rebroadcast you signal on its non-novice band outputs. This helps prevent novices calling on the 70 cm input from accidentally re-broadcasting on 6m and 23 cm. The most commonly used tones for VK repeaters are 123 Hz & 88.5 Hz.

I have the program code and can program the PIC's for those interested, or download from VK5AH at:
<http://homepages.picnowl.com.au/wavetel/pic.htm>

I am also interested in hearing from anyone who may be interested in a Morse Code Decoder using a PIC with a LCD display. The unit decodes and displays Morse from your HF receiver and can also have a Morse key connected so that you can practice and see what you really sent and at what speed. (Runs from a 9V Battery)

Regards, David Aston, VK3THY

Circuit Notes:

Use a 4Mhz crystal with 2 x 18pf capacitors.
 PTT line is active LOW. PTT is RB7 Pin 13.
 OUTPUT tone is on RA2 Pin 1, see Lowpass Filter notes.

A DIP switch can be connected to pins RB0-RB5 to set tone frequencies in table 1. A "1" indicates RB pin is logic HI (switch open or OFF). All RB port pins have internal pullup resistors and will go HI if left open. The binary inputs are only read at power up and not when the PTT is keyed.

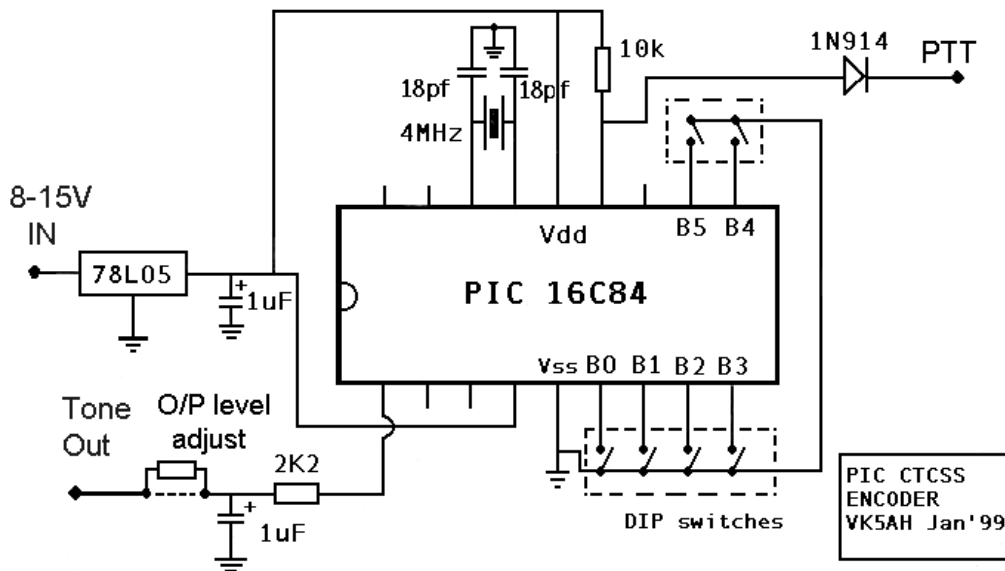
For CTCSS tones, use a Low pass filter as shown to smooth the squarewave output from the PIC. An extra active low pass filter will further improve waveshape and remove audible harmonics. RO is a padding resistor to adjust output level - typically 20k.

Philips FM900/FM92 hints:

You can find a suitable PTT signal at SK403 pin 6 or switch it manually or just connect the PTT input to ground permanently. Use a 2Meg resistor for RO and inject at U301 pin 9. Both of these locations are on the Synth/Control board of the FM900.

TONE	16C84 pin: FREQ	11 RB5	10 RB4	9 RB3	8 RB2	7 RB1	6 RB0	Notes
000	1000	0	0	0	0	0	0	Test tone
001	67.0	0	0	0	0	0	1	
002	69.4*	0	0	0	0	1	0	
003	71.9	0	0	0	0	1	1	
004	74.4	0	0	0	1	0	0	
005	77.0	0	0	0	1	0	1	
006	79.7	0	0	0	1	1	0	
007	82.5	0	0	0	1	1	1	
008	85.4	0	0	1	0	0	0	
009	88.5	0	0	1	0	0	1	
010	91.5	0	0	1	0	1	0	
011	94.8	0	0	1	0	1	1	
012	97.4	0	0	1	1	0	0	
013	100.0	0	0	1	1	0	1	
014	103.5	0	0	1	1	1	0	
015	107.2	0	0	1	1	1	1	
016	110.9	0	1	0	0	0	0	
017	114.8	0	1	0	0	0	1	
018	118.8	0	1	0	0	1	0	
019	123.0	0	1	0	0	1	1	
020	127.3	0	1	0	1	0	0	
021	131.8	0	1	0	1	0	1	
022	136.5	0	1	0	1	1	0	
023	141.3	0	1	0	1	1	1	
024	146.2	0	1	1	0	0	0	
025	151.4	0	1	1	0	0	1	
026	156.7	0	1	1	0	1	0	
027	159.8*	0	1	1	0	1	1	
028	162.2	0	1	1	1	0	0	
029	165.5*	0	1	1	1	0	1	
030	167.9	0	1	1	1	1	0	
031	171.3*	0	1	1	1	1	1	
032	173.8	1	0	0	0	0	0	
033	177.3*	1	0	0	0	0	1	
034	179.9	1	0	0	0	1	0	
035	183.5*	1	0	0	0	1	1	
036	186.2	1	0	0	1	0	0	
037	189.9*	1	0	0	1	0	1	
038	192.8	1	0	0	1	1	0	
039	196.6*	1	0	0	1	1	1	
040	199.5*	1	0	1	0	0	0	
041	203.5	1	0	1	0	0	1	
042	206.5*	1	0	1	0	1	0	
043	210.7	1	0	1	0	1	1	
044	218.1	1	0	1	1	0	0	
045	225.7	1	0	1	1	0	1	
046	229.1*	1	0	1	1	1	0	
047	233.6	1	0	1	1	1	1	
048	241.8	1	1	0	0	0	0	
049	250.3	1	1	0	0	0	1	
050	254.1*	1	1	0	0	1	0	
051	255.0*	1	1	0	0	1	1	
052	1750	1	1	0	1	0	0	Eu Tone
053	1800	1	1	0	1	0	1	Eu Tone
054	1200	1	1	0	1	1	0	Packet
055	2200	1	1	0	1	1	1	Packet
056	800*	1	1	1	0	0	0	Test tone
057	900*	1	1	1	0	0	1	Test tone
058	1100*	1	1	1	0	1	0	Test tone
059	1300*	1	1	1	0	1	1	Test tone
060	1500*	1	1	1	1	0	0	Test tone
061	2000*	1	1	1	1	0	1	Test tone
062	2500*	1	1	1	1	1	0	Test tone
063	3500*	1	1	1	1	1	1	Test tone

* Indicates NON-EIA standard tone
 All CTCSS tones are within EIA standard of .08% .



The NERG Inc. Reg No A0006776V <http://nerg.asn.au>

The North Eastern Radio Group, Inc. is an amateur radio club devoted to encouraging members and others to enjoy the hobby of amateur radio. It tries not to hang on ceremony and endless reporting but rather participate in the fun aspects of this fascinating hobby.

Membership Fees (due each August):

Full: \$30 Family: \$40 Concession: \$20

Committee

President	Greg Williams	VK3VT	9432 0563
Secretary	Mark Beacham	VK3XXX	9459-9876
Treasurer	Marg Baxter	VK3VOJ	9467 1253
Committee	Dave Pricter	VK3JMB	9465 9708
	Betsy King	VK3HBK	9431 2191
	Peter Cosway	VK3DU	9379 3626
Social Sec.	Don Haslam	VK3KDT	9439 1102
Repeaters	Mark Harrison	VK3BYY	9435 3043

Meetings

2nd Thursday of each month at 7.45 PM (excepting Dec. & Jan.)
Greenhills Community House, Yandell Reserve, off St. Helena Road,
Greensborough. (Melway map ref 21-B1)

Classes

NERG occasionally runs classes and exams for Amateur license candidates.

Callsigns and Repeaters (25km North East of Melbourne)

Club call - VK3CNE <http://www.qsl.net/vk3cne>

6m rpt VK3RMH FM 52.550 MHz in 53.550 MHz out

70cm rpt VK3RMH FM 433.325 MHz in 438.325 MHz out

IRLP node 635

6m beacon VK3RMH CW 10 Watts 50.295 MHz – Soon!

10m bec'n VK3RMH CW 20Watts 28.2565 MHz

Occasionally home to the Scout Radio & Electronics Group repeater:

2m VK3RSR FM 146.375 MHz in 146.975 MHz out

NETS

NERG NETS run on 146.575 MHz FM Simplex (8.30 – 9.30 pm Thursdays).

Please join the discussions. NERGs often monitor this frequency and the 70cm VK3RMH repeater.

WEB Sites: <http://nerg.asn.au> and <http://www.qsl.net/vk3rmh>

NERG NEWS submissions and comments invited:

editor: Mark Harrison VK3BYY

ph: 9435-3043 hm (btwn. 7.30-9.30 p.m. please)

post: 266 Nell Street West, Watsonia, 3087

email: vk3byy@nerg.asn.au



NERG

North – East Radio Group VK3CNE
Incorporated 1985
BOX 270 GREENSBOROUGH VIC 3088

MEETING this week::

7:45 PM Thursday 11th July 2002

on the 2nd THURSDAY of each Month at

Greenhill's Community Centre, Yandell Reserve, Greensborough

This Month: Mark Beacham, VK3XXX, on Digital Radio Modes

CALENDAR 2002

July 11th

Next month's NERG MEETING – Digital Modes

July 13/14th

World Radiosport Team Championships (WRTC2002) - 52 teams with never before used OJ1-OJ8 prefix callsigns (e.g. OJ1A) compete in Finland during IARU Contest.

July 19th

Friday Night Fox Hunt - Fox for the evening will be the VK3VR/MZ/JMD/TVB team. Start and supper locations to be announced

August 8th

NERG Annual General Meeting & Birthday Party

August 17/18th

**International Lighthouse Weekend (NERG activity)
AND Remembrance Day Contest (HF & VHF)**