



JUNE 2009

NERG Inc.
PO Box 270
Greensborough
Victoria 3088
news@nerg.asn.au

WHAT'S ON IN JUNE

Paul McMahon, VK3DIP, has been busy in his shack building test equipment again and had his article on sensitive power meters published in Amateur Radio magazine this month. Paul has been kind enough to give a talk on the related subject of making return loss bridges and testing them at this month's NERG meeting. A return loss bridge is the technical term for one of the circuits commonly used to measure SWR and load impedance. A return loss bridge together with a sensitive RF voltmeter and a tuneable RF source makes a very useful instrument in the shack. All visitors welcome!

73, Mark Harrison,

VK3BYY, NERG NEWS Editor

NEXT MONTHS NERG MEETING

Any offers to give a presentation of your favourite subject? Next month is your chance!

NERG will hold next month's regular meeting on **Thursday 9th July 2009**, starting 7:45pm at the Briar Hill Community Hall, 126 Mountain View Rd, Briar Hill, MELWAY 21 C3.

NERG COFFEE SHOP NIGHT - 25 JUNE

A quick reminder that the coffee shop night is held every fourth Thursday night at the club rooms (enter by kitchen door).

There is usually something to discuss or demonstrate informally over a cup of tea or coffee, or perhaps get some advice on your current projects, or play with the club radios.

Last month, Greg VK3VT demonstrated the setting up and use of several digital mode programs and associated logging tools. A roundup of Greg's demonstration appears later in this issue.

THE GAINFULLY UNEMPLOYED GROUP - MEETS TUESDAY 23 JUNE

A great meeting was held at the home of Barbara and Gerhard VK3EWW. The day kicked off early and just kept going. Those present were Ernie VK3FM, Dave VK3JMB, Ewen VK3OW, John VK3XD, Greg VK3VT, Ian VK3QL, Steve VK3JSE and Jim VK3KE. Many topics were explored in depth as usual! Radio controlled model cars got a special going over. It all finished just on 3pm (not bad for a Morning tea"!).

As all will know, one of our favourite topics is food and we were not disappointed. A wide array of cheeses, cold meats, and rolls preceded a very tasty soup.

As Barbara was present on the day the desert was something to behold; it was approximately 40cm long and about 13cm in diameter, a rolled log of cake and berries and cream. Just melted in my mouth. One of us asked to take a piece home for XYL!

The next meeting will be at the home of Carole and Dave VK3JMB from 10am on Tuesday the 23rd June.

GGREC HAMFEST - 18 JULY

The Gippsland Gates Radio & Electronics Club Hamfest will be held on Saturday 18 July 10am at the usual venue, the Cranbourne Public Hall. Call Dianne if you'd like to book a table on 56252545.

NERG NEWS

Incorporated 1985 in Victoria, Australia
Reg No A0006776V - <http://nerg.asn.au>
Affiliated with the Wireless Institute of Australia

NERG Meeting:

11th JUNE 2009

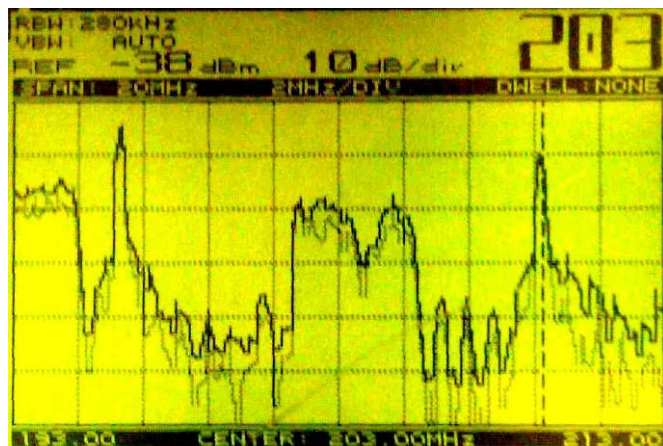
from 7.45 PM

Guest Speaker:

Paul McMahon

on

**Building return loss
bridges for RF
and antenna
measurements.**



A Spectrum analyser view of the new DAB+ broadcasts in Melbourne.

COFFEE SHOP NIGHT 25th June

BARG HAMVENTION - NEW VENUE

Early Notice! Have you heard??? The BARG Hamvention will be held at a new location... at the Ballarat Greyhound Racing Club.

The new location is at the corner of Rubicon and Sutton Streets Ballarat (next to the Trotting Track).

Date: 25th October, 2009

Information also on the website: www.barg.org.au

GIPPSTECH REGISTRATIONS NOW OPEN

Registration can now be made online for the popular GippsTech amateur technical conference weekend (11-12 July 2009).

Go to: www.vk3bez.org/gippstech.htm

2009 WINTER VHF-UHF FIELD DAY

Don't forget the VHF-UHF Field Day on 20-21 June when intrepid operators head for the hills (and other high points) to see how far they can work.

For those of us that would rather stay home in a nice dry warm shack, there may be some interesting DX to be heard on the VHF bands and the field stations will be glad to make a few QSOs. Rules are available on the WIA web site and AR magazine.

DIGITAL MODES MADE EASY

Greg Williams, VK3VT demonstrated using a PC with a HF transceiver to operate digital modes at last month's Coffee Shop night. Digital modes include PSK and WSJT, as well as more conventional CW and RTTY modes. Greg spoke about the construction of simple interface circuits to couple audio between the PC and radio and to control the PTT. He also described homebrew circuits for remote control of modern transceivers from the PC. All you need is a PC with a serial port and an audio card.

Once we'd finished with the hardware, Greg moved on to demonstrate the installation and configuration of software on his notebook PC. We all soon learnt some of the intricacies of setting up software with radios, and got into a bit of trouble shooting to find the COM port and serial port speed settings that worked.

It wasn't long before Greg was exchanging text messages with Peter VK3TBN, who was sitting in the back row of the audience with a tiny portable HF box and an iPAQ pocket PC.

Plenty of commercial and freeware software can be found on the Internet for sending and receiving digital modes. There are some excellent logging programs around too for keeping track of your award points and contesting. Many of these tools now incorporate rig control facilities to automatically log the frequency of QSOs, and even link into the Internet DX cluster to suggest where you should look for your next rare DX QSO. Some rig remote control software is proprietary but some clever hams have figured out how these work and made some very good universal rig control programs that don't cost anything.

When you start to use two programs together, say a logging tool and a RTTY program, you can run into a serious limitation with Windows PCs. Normally only one program can take ownership of the serial port that's connected to a rig. Fortunately there is software called COM Port Replicators or "Virtualisers" that manage communications between a real serial port and a number of "virtual" ports. Each program running on the computer is then configured to talk to its own virtual port. In reality they talk to the one radio.

Here is a list of the software Greg demonstrated and recommends:

Logging and award tracking software:

DXLAB Suite – This is the "hamburger with the lot" tool. It's free, with regular updates. It has too many features to list but include a log keeper, spot collector, commander rig and rotator control, propagation prediction, DXview showing active DX paths, award tracking, eQSL submission, QSL card printer and labeller with automatic route lookup. Also includes WinWarbler for sending and receiving CW, RTTY and PSK digital modes, and automatic recorded voice calling. DXLAB also works together with other digital mode tools like MixW, MMSSTV, etc. Available from <http://www.dxlabsuite.com>

Logger32, a free logging tool from Bob K4CY at www.logger32.net incorporates rig and rotator control. Although he says it's not specifically design for contesting, it may still be useful for that purpose. Runs on most flavours of Windows with several international languages. Software can be modified for custom rig and internet interfaces.

DX4win is a commercially available program from www.dx4win.com and is a favourite with several NERG DX'ers. It features powerful logging tools, CW sending, DX cluster via packet radio or Internet, Voice and CW ID, etc.

Digital mode software:

MIXW is a favourite of many NERGs for running digital modes such as CW, PSK, QPSK, BPSK, FSK, MFSK, RTTY, Packet, Pactor, AMTOR, Hellschreiber, Throb, FAX, MT63, and SSTV. Decodes up to 10 narrow band stations simultaneously if within the receiver bandwidth. With rig control, can monitor beacons on all bands. Runs on anything from a 486 Windows 95 PC upwards. Download the 15 day free trial from www.mixw.net Shareware €50 from Ukraine.

MRP40 does nothing else but Morse Decoding. It's very hard to beat. 15 day trial, shareware €50 from www.polar-electric.com/Morse/MRP40-EN

Digipan is a free program for running PSK-31 and PSK-63 modes. Can display AND decode up to 50 PSK stations simultaneously! Run on a 266MHz Pentium with Windows 95 and up. See www.digipan.net

Rig controllers:

Ham Radio Deluxe specialises in rig control including mapping, satellite tracking, and a digital mode program named Digital Master 780 (DM780). Windows 2000, XP, Vista on a 500MHz Pentium minimum recommended. Free for amateurs. See www.ham-radio-deluxe.com

COM port replicator:

ETERLOGIC Virtual Serial Port Emulator allows several applications to access a common serial port simultaneously. www.eterlogic.com/Products.VSPE.html Free for 32 bit Windows 2000, XP, and Vista (licence fee for 64-bit).

Mix2DxLabs from N2AMG allows MixW to work together with the DXLab Suite of programs. N2AMG has written several other 'gateways' for linking various programs together and Logger32. Free from www.n2amg.com/software

Many of these software tools will be set up with the club HF transceiver for use by club members, allowing them to get experience with the digital modes without any of the initial technical setup problems.

DIGITAL RADIO BROADCASTING NOW ON THE AIR

Commercial digital radio was launched recently in Sydney with much fan fair despite having been on the air in many other Australian capital cities for several months prior. In Melbourne we now have: 3AW, 3MP, Fox, Gold, Koffee, Magic, Mix, Nova, Novanation, Pink Radio, Radar, SEN, Sport Radio, MMM, and Vega. From 1 July, we'll also have ABC (with all usual services like 774, News Radio, RN, Classic FM, Triple J, plus new music stations ABC Dig Music, ABC Country and ABC Jazz), and SBS services.

Australia has chosen the DAB+ standard for broadcast on spare VHF TV channels in Band III (currently using channel 9A). Because of its limited range (similar to FM) it will initially only be available in and around large cities.

DAB+ is based on Eureka-147, rather than the DRM standards used on MF & HF overseas. Generally a single transmitter broadcasts a broadband signal containing a number of channels or "stations" and additional data services.

The broadband nature of the transmission is obvious in the spectrum analyser photo of current DAB+ transmissions in Melbourne (see front page). The two relatively rectangular peaks near the centre of the screen are the two commercial transmitters serving Melbourne from Mt. Dandenong. The narrow peak to the left is channel 9 TV's analog video carrier, and the peak on the right is channel 10's video carrier.

RECEIVERS: DAB+ receivers come in many forms ranging from battery portables to HiFi component receivers. Most battery models appear to be rather large at present – more the size of a video cassette than a pocket radio. Perhaps this is because power consumption of a digital receiver is considerably more than a simple AM/FM receiver, and generally requires more batteries or use expensive rechargeable battery packs.

Models are available for cars including one dash-top unit that sticks on the windscreen and re-broadcasts the audio on a spare FM channel for reception by the existing FM car radio.

There are also USB stick receivers for use with PCs.

Prices of DAB+ receivers seem to range rapidly upwards of about \$150.

BUYER BEWARE:

Be careful when purchasing a digital radio receiver – there are still some old DAB radios around that won't receive the newer DAB+ broadcasts. If purchasing from overseas, make sure it's

not a DRM only receiver or a DAB+ receiver that only covers the 1.4GHz L-band frequency range (We use the 200MHz TV BAND-III in Australia).

Most receivers can also receive conventional FM, useful for tuning in the community and country stations that can't yet afford DAB+ transmitters.

There are some multi-mode digital radios that receive DAB, DAB+, DRM, AM and FM, which may be useful for global travellers. These may also have a wide frequency range to cover the DRM broadcasts on HF broadcast bands.

HOME BREW DAB+ RECEIVERS:

Unfortunately a simple RF down converter and software running on a standard PC isn't capable of decoding the wide bandwidth of DAB+.

Building a receiver from scratch is going to be difficult since none of the RF and decoder chips seem to be available from regular electronics distributors. Some chip manufacturers also produce DAB+ receiver modules. Again it's difficult to purchase these, but at least most of the difficult RF and digital stuff is done for you. A relatively simple microprocessor, LCD screen, keypad and amplifier is required to drive a module.

TECHNICAL NOTES:

The Eureka-147 digital radio standard is being used or being proposed for broadcasting audio and multimedia content in several forms.

- * Standard DAB is being used in UK, Denmark, Switzerland and Norway. Also being broadcast in Germany but not seen as a commercial success.
- * DAB+ used in Australia, will also be adopted in Switzerland and possibly in Germany to replace standard DAB.
- * DMB-Audio has been chosen by France for roll out in 2009. Also under consideration by parts of the German broadcast industry.
- * The US has its own non-DAB digital system
- * Several other countries have chosen DRM – a narrow band digital system that suits wide area broadcasting similar to MF and HF, replacing many AM stations.

DAB+ pros:

- + Tuned by station name – never need to look up a frequency.
- + Automatically selects the strongest transmitter – no retuning necessary while mobile.
- + Noise free reception
- + Text information on current program, what's on next, news, weather, 1 week electronic program guide, etc.
- + Pause and interrupt programs for up to 15 minutes without loss.

DAB+ CONS:

- Poorer audio quality than FM (if broadcaster opts for lower bit rates, sacrificing quality for more stations).
- Expensive receivers
- Higher power consumption than AM/FM receivers

VK3RTV DIGITAL TV TESTS

The new digital TV transmitter was successfully tested from the VK3RTV tower last Sunday morning. Several people reported good reception via the 2-metre 147.4MHz ATV liaison frequency and another test will be scheduled shortly.

In many DTV TVs and set top boxes it's simple to program a spare channel to 446.5MHz with a 7MHz bandwidth. If the transmitter is on the air and you have a good signal then you'll see some sort of signal strength and/or quality (S/N) indicator and be able to save the new channel. Unfortunately not all DTV receivers have the facility to tune to non-standard frequencies. Some can be set and indicate good reception while setting the channel but refuse to save the channel as it's outside the Australian TV band plan.

So far, despite indicating a 98% quality signal, I've had no success saving the channel on a cheap MTV set top box (sold by Coles supermarkets). Also no luck with a LG RH2T80 DVD/HD recorder

as it can only be set to the standard channels (generally the LG is a nasty piece of work with numerous software bugs).

A Wintel PVR-X10 digital recorder looks more promising but being on a VHF antenna at the time, couldn't find enough signal to store the channel setting. I'll use a better antenna next time!

MONTHLY 2M SSB SCRAMBLE

A scramble competition is run on the last Sunday night of each month around Melbourne.

1030 - 1045UTC (8.30–8.45pm AEST) from April to September.
0930 - 945UTC (8.30–8.45pm AEDT) from October to March.
15 minutes duration only, with call back from 8.45 till 9.00pm on 144.150MHz

GENERAL RULES:

1. Work each station only once. Exchange will be RS report plus 4 digit Maidenhead locator.
2. Each month there will be a bonus station worth 2 points.
3. Operation will be between 144.110 and 144.200 on USB.
4. Power output is maximum 100watts PEP
5. 144.170 is designated the DX frequency. Stations >200km from Melbourne can call on this frequency toward Melbourne. Limit of 10 calls. Stations <200km from Melbourne can listen this frequency and call max. 4 times on this frequency.
6. Dx stations (>200Km from Melbourne) are encouraged to announce their participation on the VKlogger web site in the 30mins prior to its start.
7. Using VKlogger to communicate during the Scramble is not allowed.

SCORING:

1. Each gridsquare worked will act as a multiplier.
2. Scoring will be: Total = (number of QSO) x (number of grid squares worked)
3. The bonus station will count as two QSO

BONUS STATION: The winner each month will be the next bonus station and callback controller for the following month. They are excluded from winning in the month they are bonus station.

COMMENTS: The objective of the 2 metre scramble is to have fun and to promote activity on the two metre band. It is hoped stations will be encouraged to improve their operating conditions to improve their scores.

QUERIES: Contact Michael VK3KH on 0417392378.

2009 AMATEUR RADIO EVENTS

H = Hamfest, A = ARDF/RadiO/Foxhunt, C = Contest, M= Meeting, S = Special event, G = General, W = WICEN

FoxHunt = Friday night or weekend daylight mobile hunt.

RadiO = a simplified direction finding competition usually held at an orienteering event. **BushO** = Bush orienteering event. Check the ARDF web site for updates and further details at: www.ardf.org.au

June 2009

- C June 6-7 Worked All VK Shires,
- H June 6-7 South East Radio Group Convention, Mt Gambier
- C June 13 VK/trans-Tasman Contest – 160m Phone 0800-1400UTC, home.iprimus.com.au/vktasman
- C June 20-21 Winter VHF-UHF Field Day, Full details www.wia.org.au/members/contests/vhfuahf

July 2009

- C July Jack Files Contest - 80 Metre CW/SSB actual date to be announced. www.wia.org.au
- S July 11-12 GippsTech 2009 - Eastern Zone ARC Inc Annual GippsTech technical conference - VHF, UHF & microwave focus. See www.vk3bez.org
- C July 11-12 ARRL HF World Championships ^{###}
- H July 18 Gippsland Gate Radio & Electronics Club HAMFEST 09
- C July 25-26 IOTA (Islands On The Air), 1200-1200UTC, CW/SSB, 80/40/20/15/10m <http://www.vhfcc.org/hfcc/iota.shtml>

August 2009

- C Aug 15-16 Remembrance Day Contest, 0800 UTC 15 Aug to 0759 UTC 16th August 2009
- S Aug 15-16 International Lighthouse/ Lightship Weekend, See details and entry forms at <http://illw.net>
- C Aug 29-30 29th ALARA contest

September 2009

C Sep 26-27 CQWW RTTY DX contest

October 2009

S Oct 17-18 Jamboree On The Air (JOTA)

November 2009

C November Spring VHF-UHF Field Day, actual date to be announced. www.wia.org.au

C Nov 7-8 ARRL Sweepstakes – CW ##

C Nov 21-22 ARRL Sweepstakes - Phone ##

for ARRL contest details <http://www.arrl.org/contests/>

NOTE: always confirm details closer to the posted dates!

UTC dates may be used for International events.

Dates gathered from WIA, AR Vic, ARRL, various clubs, VK Contest Club www.vkcc.com, and Banyule City calendars.



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ARDF & FOXHUNTING EVENTS

The Victorian Amateur Radio Direction Finding Group has the following events listed in their calendar. Many RadiO (a simplified form of orienteering involving radio direction finding) and ARDF events are held together with conventional orienteering events.

Friday night mobile transmitter hunts normally run on the 3rd Friday night of each month.

Event	Date		Map
FoxHunt & MTBO	Sat, 6 June	Australian Foxhunting Championships	Mt Gambier
FoxHunt	Fri, 19 June	Fox hunt	
RadiO	Sun, 21 June	Maribyrnong Valley	28 B10
RadiO	Sun, 28 June	Irishtown Hageby	

The NERG Inc. RegNo 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 in August):

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

Send to: NERG Treasurer, PO box 270, Greensborough, Vic., 3088

Committee

President	Greg Williams	VK3VT	9432 0563
Secretary	John Weir	VK3XD	9431 0667
Treasurer	Marg Baxter	VK3VOJ	9467 1253
Assistant	Jim Baxter	VK3KE	
Committee	Betsy King	VK3HBK	
	David Aston	VK3UQ	0411-877-051
	Peter Cosway	VK3DU	9379 3626
	Don Haslam	VK3KDT	0409 024 597
News/Repeaters	Mark Harrison	VK3BYY	9435 3043

Meetings

Main Meeting: 2nd Thursday of each month at 7.45 PM (ex Dec & Jan)
Coffee Shop nights: 4th Tuesday each month.
Briar Hill Community Hall, 126 Mountain View Road, Briar Hill
(Near Sherbourne Road intersection) Melway map ref 21-C3

Classes & Exams

NERG occasionally runs classes and exams for Amateur licences

Callsigns and Repeaters (25km North East of Melbourne)

Club call - VK3CNE <http://www.nerg.asn.au/vk3cne>

6m repeater VK3RMH FM 52.550 MHz in 53.550 MHz out

70cm rpt. VK3RMH FM 433.325 MHz in 438.325 MHz out

with 70cm IRLP node 6350, EchoLink node 140587

6m beacon VK3RMH CW 10 Watts H 50.2950 MHz

10m beacon VK3RMH CW 20 Watts V 28.2565 MHz

Packet Radio VK3CNE 2m 144.700 MHz, 1200 bps

VK3CNE-1 for mail,BBS; VK3CNE-7 for the DX Cluster. 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. Also used as a general Net frequency.

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

post: 266 Nell Street West, Watsonia, 3087

email: news@nerg.asn.au



NERG

North-East Radio Group VK3CNE

NERG Incorporated 1985
BOX 270 GREENSBOROUGH VIC 3088

STAMP

Next Meeting: 7.45 pm Thursday 11th June 2009

2009 CALENDAR (NERG ACTIVITIES IN BOLD TYPE)

June 4	NERG Net – 146.575MHz FM 8.30-9.30pm
June 6-7	SERG convention and Aust. Foxhunt Championships, Mount Gambier.
June 11	NERG meeting – Subject: Paul McMahon on building return loss bridges and their uses
June 18	NERG Net – 146.575MHz FM 8.30-9.30pm
June 19	Friday night Fox Hunt
June 23	NERG Tuesday Lunch Group
June 25	NERG coffee night meeting
July 2	NERG Net – 146.575MHz FM 8.30-9.30pm
July 9	NERG meeting
July 11-12	GippsTech conference, Monash University Gippsland Campus, Churchill (near Morwell)
July 16	NERG Net – 146.575MHz FM 8.30-9.30pm
July 17	Friday Night Hidden Transmitter foxhunt
July 23	NERG coffee night meeting
July 28	NERG Tuesday Lunch Group
July 30	NERG Net – 146.575MHz FM 8.30-9.30pm