Next Meeting, Friday 4th July
Doors Open 7.30pm
Ern Rose Memorial Pavilion, Seaver Grove, Reservoir

"Here's looking at you kid..."

July's meeting will feature a talk and demonstration of the latest in drone technology.
Come along and hear just how far the abilities and superb video quality have evolved with these.
What you will see is definitely not a toy...

News

HAARP GOING QRT

The High Frequency Active Auroral Research Program is being shutdown. The US Air Force plans to shut down the High Frequency Active Auroral Research Program (HAARP) in Gakona, Alaska, in the coming months, NBC News reports.

The $US300 million HAARP project has been the subject of controversy since it was launched in 1993.

Comprised of 180 antennae approximately 22 metres tall, which are linked together to function as one, HAARP can direct a powerful energy beam into the ionosphere, a region of the upper atmosphere.

Officially, the project was designed to help researchers better understand the ionosphere, which ranges between about 85 kilometres to 595 kilometres in altitude.

However, the program's capabilities have raised concerns that it could be used to alter the weather as a form of weaponry.

In 2010, Venezuelan leader Hugo Chavez blamed HAARP, or a similar program, for triggering the devastating earthquake in Haiti. And conspiracy theorists have blamed HAARP for global warming and a number of other natural disasters such as the deadly 2013 tornado in Moore, Oklahoma, and the 2011 earthquake and tsunami in Japan.

In a letter to Congress, David Walker, deputy assistant secretary of the Air Force for science, explained the decision to shut down the program. "We're moving on to other ways of managing the ionosphere, which the HAARP was really designed to do. To inject energy into the ionosphere to be able to actually control it. But that work has been completed," he told Congress.

Researchers from the University of Alaska have reportedly inquired about buying the facility but have yet to offer the $US5 million needed each year to keep it running.   *~Internet*

PORTABLE OPERATION

A part of modern Amateur Radio is being able to easily take it with you on a business trip, a holiday, or just while out somewhere. To encourage an even greater level of portable operation, particularly among Foundation Licensees, an opportunity to hear from the experts is being held in July by Amateur Radio Victoria.

The 'Master Class - Portable' will have mini-lectures on transceivers, batteries and antennas, locations, etiquette in operating, DXing, QSL'ing, logging, contesting, and of course, award chasing. It is aimed primarily at Foundation Licence holders and others genuinely wanting to operate portable.

This free session is on Saturday July the 19th at Ashburton. Attendance is limited. It requires an RSVP.

To book a place or for further information contact Tony Hambling VK3VTH. vk3vth@amateurradio.com.au   ~ARV

FOUNDATION LICENCE - ARV WEEKEND COURSES

Next course will be held 14 and 15 June

Courses are held at the Amateur Radio Victoria office 40G Victory Blvd, Ashburton. To enrol contact Barry Robinson VK3PV foundation@amateurradio.com.au or 0428 516 001

Future dates: August 23 & 24, October 11 & 12

--- LADDER LINE ---

WANSARC NEWS

THE MAGAZINE FOR MEMBERS

Got a story to tell?
Working on a project that is of interest to others?
Got gear to sell, buy and swap?
Looking for that hard to get part or information?
Seen something interesting that others should know about?
WANSARC Editor always looking for stories from members.

Send your news to Mick, VK3CH, at

magazine@wansarc.org.au

Don't think you're a good writer???
Just email photos and text to Mick,
and he will write it up for you.

AR LICENCE COURSE UPGRADES

The RadioActives as many know is a support group for all AR (and in particular ALARA... a loose group formed from ALARA OM's).

There are spaces available in the RadioActives second upgrade course. It is a 5 week intensive program based on the RES Standard course. There is more than enough in Bertrand's course with additional guidance for most advanced candidates. The free course is scheduled for August. Contact John VK3DQ @ vk3dq@wia.org.au for info.

There are also plans for further ladies programs - which are proven to be very successful. Again contact John VK3DQ, Jean VK3VIP.   *~Steve Ireland VK3VM of the RadioActives*

NEW REGULATIONS INCLUDE EMR KNOWLEDGE

The Australian Communications and Media Authority (ACMA) has amended the Radiocommunications Licence Conditions (Apparatus Licence) Determination (LCD), or our regulations, to expand the demonstrated knowledge of Electromagnetic Radiation or EMR.

This follows the outcome of the high-power trial for Advance Licence holders, which the ACMA in consultation with the Wireless Institute of Australia (WIA), found that EMR knowledge could be increased. The WIA had a speaker on the topic at its annual general meeting in May and some radio club meetings have included EMR.

The teaching of prospective radio amateurs already includes the importance to keep all persons (and animals) a safe distance from antennas, their orientation, the role of Effective Radiated Power, and radio wave danger increases with higher frequencies and power levels.

The ACMA has gone further with its amended LCDs to spell out knowledge that EMR in a condition for all classes of amateur licence, and recall where to locate the ACMA document titled "EMR Assessment Guide for Amateur Radio".

It also wants known that the "Australian Radiation Protection and Nuclear Safety Agency" (ARPANSA) sets the standard for Maximum Exposure Levels, 100 kHz–300 GHz, its principles and methods of measurement.

New licence assessment papers from the WIA Exam Service issued to assessors from this month will reflect the new EMR provisions of the LCDs. The additional teaching time should be minor, but it will reflect knowledge of the licence requirements, stemming from community concern about radiation from transmitters.

EMR requirements which reflect community concern about radiation from transmitters, will now be taught slightly differently spelling out all the related LCDs requirements, that ARPANSA sets the exposure standard in Australian New Zealand, and its measurement.

The ACMA takes each year a random sample of all types of licences, in an audit of compliance.

Does your station meet the requirements?   *~ARV*

STANDARD LICENCE BRIDGING COURSE - ARV
A Standard Bridging Course will be held on Wednesday nights during July and August. The next Foundation Licence class and assessments are on August 23 & 24. For more information or to enrol in either contact Barry Robinson VK3PV foundation@amateurradio.com.au or 0428 516 001.

ACMA LICENCE FEE INCREASE
ACMA have advised that the Amateur Radio Licence yearly fee has been increased to $74.00. Variation to licence fee remains at $49.00.   *~ACMA*

VULNERABLE BROADBAND ROUTERS
Is your home internet running slow? Is your monthly internet bill larger than you expected? Perhaps your home broadband router is one of the 120,000 used by Australians that is vulnerable to a new type of scam being leveraged by criminals who use them to launch cyber attacks.

The vulnerability, which was discovered by IT security firm Nominum, affects 24 million broadband routers globally and has to do with a simple configuration issue that hackers can and have leveraged. In February, more than 5.3 million of these routers were used by criminals outside a home computer network to generate attack traffic - that is large volumes of requests to force target websites offline.

While routers are leveraged, their owners suffer from a degraded internet experience and potentially larger internet bills, said Bruce Van Nice, a director at Nominum.

The issue allows the hacker to craft a small "DNS" request that the router shouldn't answer but does.

"So someone at that home has absolutely no way of knowing that this is going on directly," Mr Van Nice said.

"They may see that their internet service starts to slow down either because their access connection is congested with traffic or because their home gateway is busy proxying these queries and forwarding huge answers back to a target. But they have no idea that their home router is potentially being bombarded with these queries." Nominum was working with internet providers to fix the routers affected, he said. The company had not yet been able to determine which specific routers had the configuration error. If this was able to be determined, Nominum could get the

manufacturers to alert router owners to fix the issue with a security patch. "Unfortunately, with the data we have, there is no way for us to tell what kind of router it is [that is affected]," Mr Van Nice said. "I think consumers are, unfortunately, not in a good position to do very much at all. We actually think that the solution lies with [internet] providers better protecting their DNS."

DNS is the domain name system. When a computer on a home network requests to visit google.com, it asks the router for the website's IP (internet protocol) address. This query is then usually forwarded on to a domain name server at the internet provider, which responds with it. In Google's case, this internet address looks something like 74.125.237.201.

In the case of the vulnerability identified by Nominum, hackers are crafting junk DNS queries that should normally return small answers that are only a few bytes. Instead, the answers to the queries are so large they are able to be used with other answers to take down websites. This is what is known as a distributed-denial-of-service (DDoS) domain name system amplification attack.

Typically, such amplification attacks have not leveraged home routers and have instead used publicly accessible domain name servers - the telephone books of the internet.

Mr Van Nice said criminals making use of the amplification attacks included gamers attacking one another, the owners of small websites who attacked each other, and the owners of websites with adult content, who used the attacks to entice customers to switch from one service to another.

He said it didn't require much skill for someone to make use of the vulnerability.

A spokesman for iiNet Group, which owns a number of Australian internet providers, including iiNet, Westnet, Internode and others, said it had noticed an increase in the incidence of DNS-based denial-of-service amplification attacks in February.

This had resulted in some complaints of poor response times from its domain name servers during severe attacks, causing websites to load slowly.

"Complaints have fallen sharply after making changes to our [domain name system] resolvers to blacklist targets and limit queries," the spokesman said.

Australian security expert Troy Hunt suspected the routers affected were ones internet providers distributed to their customers but didn't properly test to make sure they were immune to amplification attacks.

An iiNet spokesman said iiNet-branded routers did not permit DNS queries outside a customer's home network. But iiNet did find that some of its customers were running incorrectly configured routers which were used in attacks.

"We've been proactively contacting customers that were generating large volumes of DNS traffic to resolve these issues," the spokesman said.

A spokesman for Telstra said attempted attacks were "a real threat" and it had "capabilities in place to detect, protect and minimise" their effects.

"As a matter of policy, Telstra will not discuss these capabilities or operational details publicly," the spokesman said.   *~Internet*

NEW VK MICROWAVE DISTANCE RECORDS
Using both digital and SSB on 78 GHz or the 4-millimetre band in the Super High Frequency allocation, Alan Devlin VK3XPD and David Smith VK3HZ have been busy setting record distances.

To show how much further the latest contact is, the record on that band VK3XPD to Russell Lemke VK3ZQB was about 32 kilometres in December last year. The new records on May 15, had VK3XPD Mt William in Western Victoria and VK3HZ on Melbourne's Mt Dandenong Observatory, extending their efforts over two days to notch up a path of 139.8 kilometres.

A warm, bright and sunny sky and high-ish humidity, not really ideal for 78 GHz propagation, the record contact was first on digital WSJT/JT65C with -10 to -12 reports, then SSB had a 4 by 1 report.

The microwave exponent Alan VK3XPD points out that it not only sets a record SSB distance, but also the inaugural digital record on that band. That distance of 139.8 kilometres has been officially confirmed.

The lack of accessible high spots makes it very hard to find line-of-sight paths greater than 150 km, so Alan VK3XPD believes the current world record of 252 kilometres is unlikely to be challenged by Australians.

Alan VK3XPD and VK3HZ used 10 GHz as their liaison frequency to guide their very sharp 78 GHz dish antennas measuring 300 millimetres, which have a gain of about 45 dBi, feed with a mere 1 milliwatt.

VK3XPD has also worked David Minchin VK5KK on 47 GHz and 78 GHz, over a distance of 10 kilometres. The 47 GHz contact is claimed to extend the VK5 Record on that band.

Additionally, VK3XPD has claimed VK5 records on 78 GHz with Iain Crawford VK5ZD of 114 kilometres, on both SSB and digital modes. The three claims of VK5 distances are still to be officially verified.   *~ARV*

AMATEUR RADIO MAGAZINE DIGITAL
AR magazine will be available in digital format from the July issue, you will be able to view or download the July 2014 edition of AR Magazine in PDF format from the WIA website, http://www.wia.org.au

Here's how you collect your digital edition. First, you need to be registered for Memnet.

Haven't done that yet? Never mind. It's easy. On the WIA website, under the "For Members" menu, you will see – right at the top – "Log into Memnet". This opens a page where you can register by clicking on the "Register" link. Obvious, isn't it? This will get you a Memnet password once you have entered your WIA Member Number, name and callsign. You will find your member number on the address flysheet that came with your previous print editions of AR magazine.

Armed with your Memnet password – on or after the 26th of June, go to the WIA website. Look under the "For Members" menu and select "AR Magazine". Look just below the page headline for "Digital Edition" and click the link there.

Once you have downloaded your July AR digital edition, you will see that it has been personalized with your Name, WIA member number and date you downloaded it. That will happen for each digital edition of AR you download in future.

The WIA Board decided to synchronise the release date for the digital edition with the expected date that the print edition will be available in member's letterboxes in the eastern states.

AR digital edition – another of the many growing benefits of WIA membership.   *~Roger Harrison VK2ZRH for WIA*

13 CM BAND THREATENED IN NETHERLANDS
It appears that Dutch radio amateurs may lose a substantial segment of the 2300 MHz (13 cm) band.

In the Netherlands, from Monday, June 23 the segment between 2330-2400 MHz was not to be used in a radius of 35 km around Assen. Dutch radio amateurs outside this area may not point their antennas to Assen. This is because these frequencies are used for the Dutch TT. A prelude to a permanent ban.   *~WIA*

IPS - BUREAU OF METEOROLOGY SPACE WEATHER SERVICES ...UNDER THREAT!
Government has its sights on the Ionosphere Prediction Service Bureau of Meteorology Space Weather Service.

If the Government cuts back or removes its funding of these services we as Radio Amateurs, Short Wave Listeners and Radio Astronomers will potentially lose access to a wonderful resource

of Science. Chancers are the Service may continue but it could become a service where registration and a fee applied to gain access....

A Review of Bureau of Meteorology Space Weather Services is underway, resulting from the Whole of Government response to the option 20 of the 'Review of the Bureau of Meteorology's extreme weather and seasonal forecasting capacity' to 'Cease or reduce the Ionospheric Prediction Service, or offer it as a commercial service.'

The Review Terms of Reference are:
Review the policy basis for the Bureau's Space Weather services;
Provide an analysis and international benchmarking comparison of the Bureau's Space Weather services, and use of observations and infrastructure, including: their current status; performance and impact; scope; manner of delivery; and adequacy of capabilities and resourcing to deliver the service;
Evaluate the extent to which the Bureau's Space Weather services meet user needs, especially those of significant user groups and high-impact users;
Assess the strategic outlook (over 5-10 years) for Space Weather services in Australian, regional and global settings and, in light of 1 to 3 above, provide advice on the capabilities required to meet the future challenges;
Comment on the potential for cost-recovery of Space Weather services;
Provide recommendations based on the above analyses, assessments and evaluations.
Feedback is open for this Review until 4th July 2014 to review@ips.gov.au   *~Internet*

ITU HANDBOOK FREE DOWNLOAD
The 2014 International Telecommunication Union (ITU) Handbook on Amateur and Amateur-Satellite Services is a free downloadable PDF file on the Belgian Amateur Radio Society (UBA) website. Produced by the ITU Radiocommunication Bureau (ITU-R), provides general information, extracts of the International Radio Regulations and other relevant texts.
It can be seen at
http://www.uba.be/sites/default/files/uploads/downloads/R-HDB-52-2014-OAS-MSW-E.pdf   *~ARV*

9 CM AMATEUR BAND MAY BE IN JEOPARDY
The 9 cm amateur band at 3300-3600 MHz may be in danger of losing some segments following a review of arrangements in the 3400-3600 MHz band just announced by the Australian Communications and Media Authority (ACMA). The ACMA is seeking comments on possible future licensing arrangements in the 3.5 GHz band, set out in its consultation paper titled "Transitioning the 3.5 GHz band for future opportunities". At present, 3400-3600 MHz has various segments allocated to primary users through a mix of apparatus and spectrum licences. Amateur use of 3300-3600 MHz is on a secondary basis. The ACMA says that use of the 3400-3600 MHz band overseas appears to be changing, and this is starting to put pressure on current Australian allocations. As applications for microwave communications technology is changing, a clear picture is yet to emerge of future applications in Australia. According to its website, "the ACMA's response to the complexity and growing pressures associated with the 3.5 GHz band is to look at implementing new arrangements that will maximise the band's future flexibility." The WIA is compiling a submission to respond to the ACMA's consultation paper and, to that end, is seeking input from all interested Australian amateurs, which can be mailed or faxed to the National Office, or emailed to: nationaloffice@wia.org.au, to reach us by or before close of business Monday, 21 July. The WIA also encourages all interested Australian amateurs to send your own submissions to the ACMA, which need to reach it by Wednesday, 30 July.
                                                      ~WIA

North East Victoria Amateur Radio Club

One of the newest radio clubs in Victoria was formed on Sunday 29th June,
with a first meeting of its members.
In cold weather about 40 persons made the trip for a BBQ meeting.

It was decided that there was the need for a pro-active club in the
North East Victoria area.
And here it is, the formation of The North East Victoria Amateur Radio Club.
The Club was formed officially on the 15th June, 2014. It was talked about 6 months before that.
We Currently have 40+ members which is growing all the time.
Since being formed it has been incorporated, a logo design adopted, interactive website established at http://www.nevarc.net.au and a
growing member list from across Victoria, New South Wales, South Australia and Tasmania, that is just in the last month.
NEVARC began holding their weekly net on 3.560 from the 2nd July, the net hosted by Ron VK3MRH at 8.00pm.

President, Matt Bilston, VK3VS, Treasurer, Rob Groves, VK2FAAA, Secretary Judith Svoboda, SWL and the Committee,
Terry Svoboda, VK3FTHS and Gary Reeve, VK2VU. These are the founding members, who are caretaking until the AGM to
officialise it all.

The BBQ was well attended and prizes donated by LG were on offer, being 1st prize LG 55" 3D LED TV, 2nd prize LG 1000W 5.1ch
Surround Sound & blu-ray player and 3rd prize LG Blu-ray player.
The food put on was fantastic and in abundance, even beer...
Many came all the way from Melbourne and all over the state, word has gotten out, both via email, but certainly also by the well
patronised daily Net run each day from 10am on 7055kHz by Ron, VK3MRH.
At the BBQ meeting, membership signup on the day, was for the discounted price of $10 for the first year.
All enjoyed a free luncheon of food, drink, cakes etc well in excess of $10, sort like paying for lunch and getting free membership!!!

Hamburgers and Sausages from the local town butcher, country fresh, so tasty - REAL MEAT ↑

The time, trouble, planning and expense was evident that was put into the day.
Certainly worth making the trip for, in such peaceful high country natural beauty.

← Ron, VK3MRH, sampling the food.

Its alleged that Mick VK3CH was seen eating some of the tasty salad, but as no photos exist, this rumour remains just that...
But Mick grabbed the first snag and hamburger off the BBQ, with his bare hands... straight off the hotplate, who needs bread...

The prizes from LG and Icom Australia and the winners... Three lucky people won the members draw, VK3FRSK won the Telly, VK3AP won the Surround Sound unit, and VK3SQ won the Blu-ray player. Every person who attended left with a little something from Icom. Over $1000 was raised for the club.

↑ Ron, Net Controller for both the 2 meter and 80 meter Nets

← Club President, Matt, VK3VS, (seated) collecting membership applications

↓ The first club meeting for NEVARC
There was a good representation of Amateurs from all over the area

NEVARC have many projects planned in future, the quickest way to be in the know is to register at their club website, for breaking news and all the forums.   ~Mick VK3CH

Using Inexpensive TV USB Dongles and Videolan (VLC) to view Amateur Digital TV

Steve Ireland VK3VM / VK3SIR of the RadioActives (vk3vm@wia.org.au) and the users of VK3RTV

Most software within TVs, DVB-T set top boxes and supplied with DVB-T USB dongles scans from 177.5 MHz – 227.5 MHz and 474 MHz – 858 MHz missing our typical Amateur DVB-T frequency of 446.5 MHz. The limitation is not in most cases with the devices but with the consumer software/firmware loaded onto the devices.

Some TVs and set top boxes have hidden alignment menus that can be researched and settings altered to change the band scanning limits. Information on these settings can be found by searching the web. I would not recommend this pathway – or at least would urge extreme caution before you consider this course of action. Most Amateurs are aware that our modern transceivers also have hidden menus and configuration settings and that it is dangerous to tinker with these configuration settings. In most cases these alignment settings do not have defaults and a wrong setting may render the device useless and therefore expensive to get fixed.

In previous "Amateur Radio" magazine articles (AR) we have seen how simple USB dongles can be used as quite powerful 20Mhz – to around 1.7 GHz Software Defined Radios (SDRs) using software such as SDR#. The key for using such dongles for SDR usage reception is to replace the drivers and software. Likewise, to be able to overcome limitations of the supplied consumer software we should replace it for our ATV purpose with the powerful yet free tool Videolan – commonly known as VLC.

Source: http://www.leadtek.com/eng/product/6/407/intro.aspx accessed 26/2/14

The latest version of Videolan can be downloaded at
http://www.videolan.org

This article will utilise the Winfast DTV Dongle Gold as the example dongle. This product is now considered end-of-life, but can still be found at many Australian and International retailers ranging from Big W to your local computer shop.

Source: http://www.essexham.co.uk/news/realtek-sdr-pc-dongle-for-under-20-pounds.html accessed 24/2/14

I have also verified procedures outlined here using tuners based around the Realtek RTL2832U Chip (as usable with SDR#). Note that you will need to use the native driver for the Realtek Chip as available from Windows Update rather than the ZADIAG "replaced" WinUSB version driver.

While proofing this article I discovered that only one set of driver packages should exist on the machine that you are installing the dongle onto. As an example, this means that if you previously had a Winfast device installed and you changed it to a Realtek RTL2832U based dongle then you would need to completely remove the Winfast device driver package via the "Control Panel" option "Add/Remove Software" before you could install the RTL2832U-based driver package.

Note that all the steps provided here assume that you have a suitable TV antenna that is zeroed in on the Digital ATV transmitter.

VLC can also be installed on Linux and OSX, and drivers are available for both Linux and OSX for many TV dongle technologies and chipsets. This article will be limited to MS-Windows installations and has been tested on Windows 7 and Windows 8.1.

Procedure

Step 1. Install the DVB-T Dongle's Software and Drivers

- Remove any previous driver versions or previous manufacturer's drivers first via "Add/Remove Software" from the Windows Control Panel.

- Follow the steps for the installation of your current dongle as per manufacturers' instructions with the latest set of drivers. Reboot the machine on completion.

- Ensure that you can scan, tune and receive "standard" free-to-air TV via the dongle and its standard software.

In a brief on-air conversation Ralph VK3LL reminded me that these dongles are cheap and do not have in many cases good front end amplifiers. The "cheap" antenna supplied with these devices will be inadequate except in perhaps the strongest signal areas.

Yet I have found that when near "resonant" antennas for the frequencies that we are examining are used with these devices then results are often quite good. I plug my Winfast and RTL2832U dongles into my main TV antenna and Amateur Antennas when the dongles are used for other purposes. My main TV antenna is, by luck, within the beam-width of VK3RTV as well as the Melbourne Mount Dandenong TV transmitters.

Step 2: Download and install Videolan (VLC)

The latest version of VLC can be downloaded from http://www.videolan.org. Follow all defaults for installing the product.

Step 3: Configure VLC to accept signals from the DVB-T Dongle, then, Start the VLC Media Player
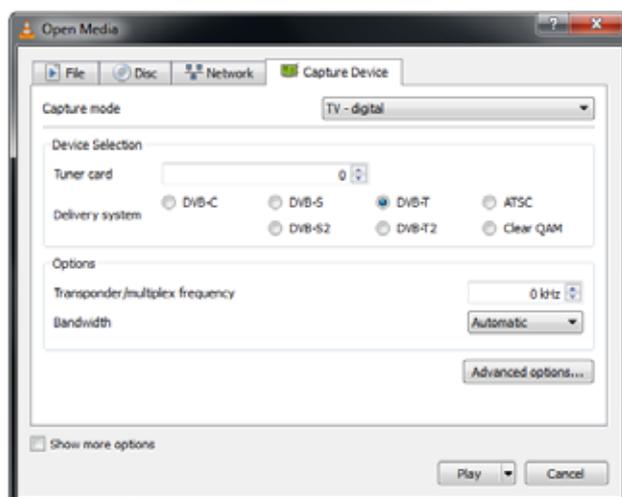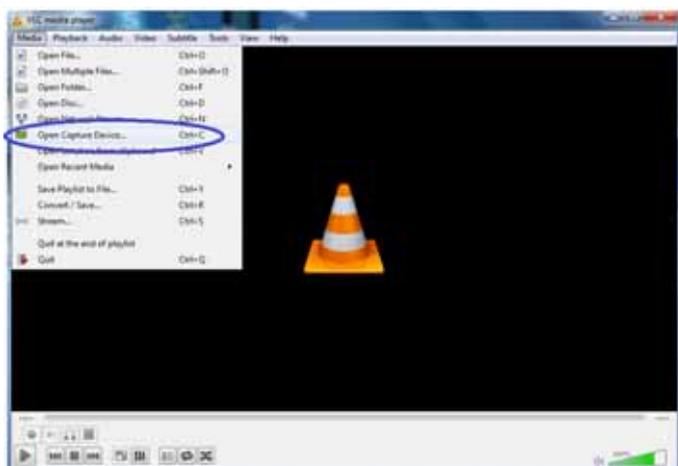
- Select "Media" / "Open Capture Device"

- Select the "Capture Device" Tab

- Under "Capture Mode" select "TV – Digital"

- Under "Options" enter the "Transponder/multiplex frequency" in Kilohertz.

The most common Amateur DVB-T frequency in Australia (and that for VK3RTV) will be 446500 KHz.
I have also noted better results if you manually set the bandwidth (7 MHz).
Note for most cards you will not have to adjust "tuner card" from "0".

- Click "Play".
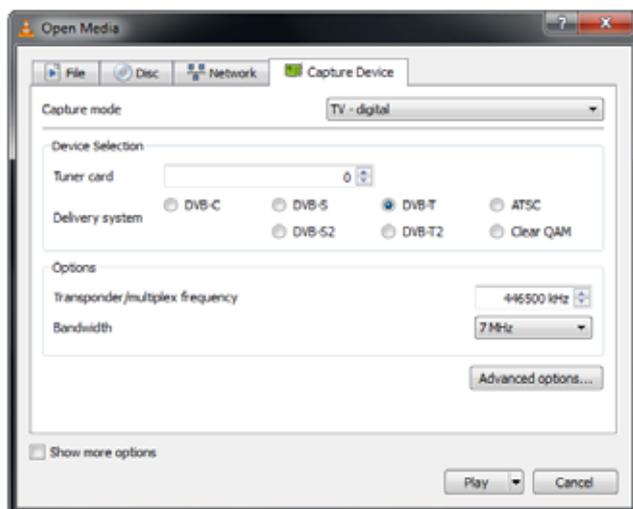
Be patient. You may need to wait a few seconds for an image and/or sound to appear:
If there is a signal on the Amateur transmitter then you should see it displayed.

Changing "Programs"

DVB-T TV standards employed within Australia permit multiple digital channels to be broadcast on the same frequency. VK3RTV as an example system also supports multiple channels – supporting one digital channel input (via DVB-S) on 1.255GHz (VK3RTV-1) and a second digital input (via DVB-S) on 1.276 GHz (VK3RTV-2). More information on all inputs (digital and analogue) and output frequencies and standards for this device can be found at http://www.vk3rtv.com   It is my understanding that other planned devices across the country may also support multiple digital channels from multiple DVB-S inputs.

By default VLC will display the data stream that has the lowest "identifier" number.

- The channel to be viewed can be selected/changed via the "Playback" / "Program" menu:
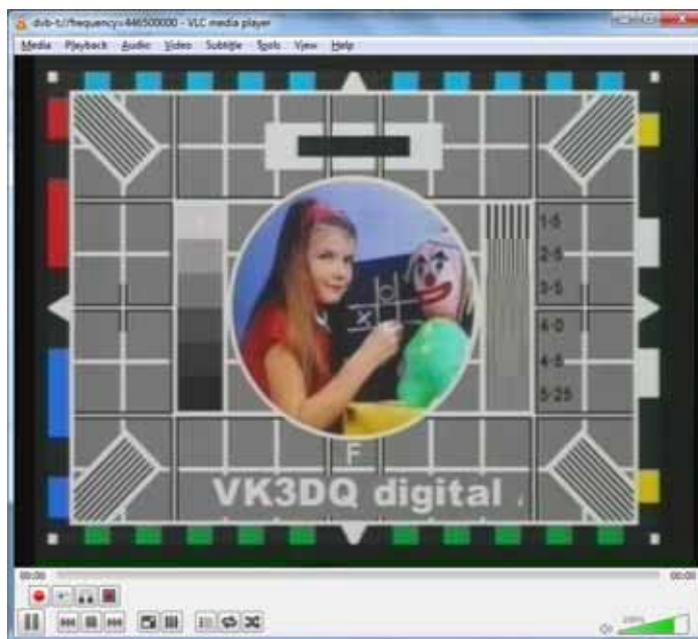
Shown above is the program input via VK3RTV-2 viewed with VLC that John VK3DQ placed on VK3RTV while writing this article.

References and Thanks

- http://www.vk3rtv.com
- http://www.videolan.org
- http://www.leadtek.com/eng/product/6/407/intro.aspx
- http://www.essexham.co.uk/news/realtek-sdr-pc-dongle-for-under-20-pounds.html
- And also special thanks to Amateur Radio Victoria, Peter Cossins VK3BFG, John Fisher VK3DQ, Ralph Parkhurst VK3LL and the VK3RTV distribution group for their comments and assistance.

WANSARC NET
Tuesday Night, 8pm Check In
VK3AWS
146.450MHz   FM Simplex

WANSARC VK3AWS

PRESIDENT: Frank Petrowitz   **VK3OP**   vk3op@hotmail.com
SECRETARY: John Karr   **VK3FMPB**   johnkarr@bigpond.net.au

All correspondence to be addressed to the SECRETARY: PO Box 336, RESERVOIR 3073

WANSARC CLUB PROFILE

History
The Western and Northern Suburbs Amateur Radio Club (**WANSARC**) was first formed in 1969 and since then has served the needs and interests of amateur radio operators, short wave listeners and those interested in hobby radio and electronics. The club is not gender specific, having both female and male members. Members come from all walks of life with a mix of experience, young and mature, novice and technical. The most important aspect of the club is the willingness of all members to share their knowledge for the benefit of others. Members mainly reside in the west and north of Melbourne; however membership is encouraged from all interested. **WANSARC** is an affiliated club of **The Wireless Institute of Australia**.

Meetings
Meetings held at the **Ern Rose Memorial Pavilion, SEAVER GROVE, RESERVOIR** (Melway Map 18 D5) on the **1st Friday of each month** (excluding January) commencing at **7.30pm local time**. Talk in on **146.450MHz FM**—call club station **VK3AWS**.

Benefits
Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts, excellent club facilities and environment plus an informative monthly newsletter for members to post articles, news, classifieds for all radio, test equipment, etc, featuring Amateur Radio news from WANSARC, ARV, WIA, ACMA, Melbourne Clubs, VK and Worldwide.

Club Nets
146.450MHz FM each Tuesday evening commencing 8.00pm local time. Net Control Station - VK3AWS

Website: www.wansarc.org.au   **Postal:**   **WANSARC PO Box 336 RESERVOIR 3073**

A proud tradition of supporting hobby radio and electronics enthusiasts since 1969