



# QST63

WWW.ZL2VH.ORG.NZ

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Park Street, Upper Hutt

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TeMarua  
Upper Hutt 5018

Newsletter of The New Zealand Association of Radio Transmitters, Upper Hutt Branch 63, Inc.

## November 2012

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### Presidents Report

Hi everyone... thanks to all the operators at the recent KMMC Event. For those on the Saturday sorry about the weather and late finish, but a good effort put in. For those on the Sunday, better weather (was sunny and warm especially in the sun) was had, and overall a good result. Over the same weekend I travelled to the Palmerston North annual junk sale. Yet another good event was had, but as the number of vendors is getting less it perhaps was down on last year. Still some good buys especially in power supplies and used Chinese handhelds, both with excellent pricing. If Palmerston North is to survive, then more vendors are needed or else it may go the way of the Wellington EXPO.

This last month I have also had the opportunity to pass on the D-STAR message to Titahi Bay Branch 42. I spoke to them about all things D-STAR, a lighter version of the D-STAR 101 Training session I did for Branch 63, plus a talk on Dayton. Many of the members were very interested in both talks, with some considering D-STAR transceivers in the future or even to Dayton! In November I am talking at the Kapiti Branch 69, on the 14 November 2012 – this talk is on Mt Climie and what Branch 63 has done on the repeater site over the last ten years or so. So if you are in the area this should be an interesting talk – starts at about 7.30 pm or so. This will conclude my talking sessions for this year and I hope to continue to spread the word on D-STAR next year. We now have over twenty five users registered on the ZL2VH Gateway, although not all active we have quite a community of users, which is clearly seen on the ZL2VH Dashboard with those active listed.

I've had no feedback on my request for a Christmas function, so unless I hear otherwise (might be too late to book a venue now anyway) then we'll fire up the club BBQ on Friday 21 December 2012, starting at 6.30 pm for an hour and then continue into the branch meeting. This will be a BYO food and drink event, so place that in your calendar as it's not too far away.

Well that's about it from me....good DV and 73's.

Mark ZL2UFI

Buyers at 2012  
Palmerston North Junk Sale



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## Branch 63 Repeater Update

Not a great deal to report this month.

### Beacons

#### 3cm 6m 10m

Nothing to report both beacons operational. The 3cm unit is still under construction....

### 23cm

#### 1292 23cm

Nothing to report.

### D-Star

#### 860 70 cm

#### 5425 2m

Nothing to report.

### FM Repeaters

#### 730 2m

The Main Repeater has been reinstalled.

#### 395 6m

The Repeater is in transit to NZ.

Simon ZL2BRG.

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## AREC Report

Kapi Mana Motorcycle club asked us to help with the running of the Mini Motocross Nationals at their club track on Bulls Run Road, over the weekend of the 6th and 7th of November. Mini Motocross caters for 4 to 11 year old kids.

Our duties included traffic control, both pedestrian and vehicular, to ensure the competitors got safely from the pits to the track.

On two occasions we also provided traffic control on Bulls Run Road to expedite the passage of ambulances to A & E. One casualty was a burn from hot oil from a do-nut machine, the other was a wrist injury from competition.

The organisers expressed their appreciation of our assistance, as these events could not run without the help of willing people. They also made a cash donation to the branch.

Saturday was not the greatest of days weather wise, and woolly hats and thick jackets were a necessity. Sunday was more pleasant.

Thanks must go to David Philips, John & Judith Hallett, John MacDonald, Eric Wilby, Mark Gooding, Malcolm Wheeler and Gavin Smith.

Upcoming event: Although this is late notice. Kapi Mana have requested our assistance with an enduro event which they will be running on Labour Day Weeekend. It is expected that four operators and one 4wd vehicle will be required. This is still to be confirmed

Gavin Smith ZL2ACT  
Upper Hutt AREC Section Leader

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## ID-880H

### Accessing the Repeater Gateway

#### **Background**

There has been much frustration, despair, annoyance, and “give-up” by many Hams around the World, as they attempt to get through their local Gateway to the World Wide D-Star network using their ID-880H. This has also been evident here too on our ZL2VH D-Star repeaters by some of our ID-880H owners.

#### **Research**

Searching and investigating various Google Groups and a number of topic related sites on the Internet, has revealed a variety of people attempting to resolve this annoying functionality. The most important link found was from one of the original ID-880H developers in Japan. He explains how to toggle the “Gateway Access” on and off, but does not explain why this function was provided in the first instance. In hindsight we can now have a good debate on whether we should, or should not remain in the “Gateway Access ON” state. !!

#### **How to toggle the Gateway Access**

It really is quite easy when you know “how to”.

First you must of course be registered with the D-Star Root Server. You do this with your local Gateway Administrator.

Then you must have set up your ID-880H radio for correct operation on your local repeaters and Gateway. i.e. you have correctly entered the appropriate repeater call signs in the RPT1 and RPT2 fields. Now when you trigger your local repeater, you may or may not find that the repeater returns to you “ZL2VH G” If you cannot see this then you are not accessing the Gateway and you now need to do the following.

On the left hand side of the ID-880H is a big round knob!! The centre of this is a simple push button.

It is called “MODE” !!

It is this “push button” that allows us to change the “Gateway Access”. Briefly push this button for LESS than 1 second. There are three options you can toggle through as you push this button.

1. GRP        UR
2. GRP        CQ
3. GRP        RP

It is the first one that allows Gateway Access, and you will see ZL2VH G returned when you trigger the repeater.

The other two options do NOT allow access to the Gateway and you will see ZL2VH B returned when you trigger the repeater. (or ZL2VH C if you are using the 2m Module).

#### **Conclusion**

Easy when you know how!!!!

But why have the designers done it this way, is another interesting question.

So now this flags up a rather important operational requirement. Those of us who are not accessing the gateway will not be heard by the D-Star World Wide Network, and so anyone coming into our Gateway from the Network will NOT know that you are working on the repeater. Doubling with the resultant R2D2 will occur. (Not sure here if the Gateway will flag up a “busy” signal to the external user??)

I recommend that we try to enforce Gateway Access where possible by all users.

ZL2ARN

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## Hardware/Software for use with D-STAR

### Hardware

#### DV Dongle (blue box)



The DV Dongle is a small plastic (blue) box containing electronic components that allow a user via an Internet connected Windows, Apple Mac or Linux based PC/Laptop/Netbooks to access the D-STAR Network (repeaters and reflectors). No D-STAR transceiver is required therefore this is the lowest cost entry point to D-STAR.

The DV Dongle connects to via a USB port and provides encoding and decoding of compressed audio using the DVSI (Digital Voice Systems, Inc) AMBE2000 full duplex vocoder DSP chip. AMBE technology is used in all D-STAR transceivers to provide efficient voice transmissions. (It is also used in some HF digital protocols by vendors like AOR.)

Once the DV Dongle is installed and connected to a PC it requires the DVTool application to access the D-STAR repeaters and reflectors. The DVTool may be installed and run on Microsoft Windows XP/Vista/Win7, Mac OS X Leopard, or many flavours of Linux. (Users need to install USB drivers prior to installing the DVTools application much like installing USB drivers for a printer for example). Users additionally also need a good quality microphone and speakers to produce good audio. Although laptop user's can use built-in microphone/speakers, experience has proved that a headset with a boom microphone produces the best results. Good audio in equal's good audio out.

D-STAR Registration (see later in this article) is required if users want to 'transmit' audio. Receive only audio doesn't require any registration so non-amateurs can also take part in D-STAR as well.

Links:

<http://dvdongle.com>

<http://www.opendstar.org/tools/>



#### DVAP or DV Access Point (red box)

The DVAP is a small plastic (red) box with a SMA stubby antenna, containing a very low power (10 mW) 144-148 MHz transceiver (frequency agile) that allows a user via an Internet connected Microsoft Windows XP/Vista/Win7, Mac OS X Leopard, or many flavours of Linux based PC/Laptop/Netbooks to access the D-STAR Network.

The DVAP connects to via a USB port and provides a low power two-metre simplex repeater (or access point) for use with a D-STAR enabled transceiver only. The DVAP has **no** AMBE chip like the DV Dongle. The DVAP passes the transmitted digital audio in both directions with the D-STAR enabled transceiver doing all the encoding and decoding.

The major difference between the DV Dongle software and the DVAP software is once installed and running no further user input from the PC is required. The D-STAR enabled transceiver controls all linking and unlinking to repeaters and reflectors.

D-STAR Registration (see later in this article) is required if users want to 'transmit' audio.

Links:

<http://dvapdongle.com>

<http://www.opendstar.org/tools/>

**Update:** UHF (421-450 MHz) DVAP was released on 1 October 2012.

Note that these two devices are totally different, and so require different software to operate.

## Usage (DV Dongle & DVAP)

Both the DV Dongle and the DVAP offer users different methods of accessing D-STAR repeaters and reflectors. Some users may favour one over the other, and some users may not favour either of them, as they are not independent devices without the internet such as an RF transceiver.

One of the best features of the DV Dongle is the ability to listen to multiple channels on a Gateway at the same time, which D-STAR transceivers cannot do unless they continuously scan the same channels. This means that a DV Dongle user can monitor all four channels on a standard Gateway stack of repeaters, e.g. 1.2 GHz Voice, 1.2 GHz Data, 70Cm and 2M Voice. (In the Mt Climie situation this means both repeaters can be monitored at the same time.) D-STAR transceivers only have one DV board so can only decode one channel at a time, regardless of their ability to be a dual band, dual receive transceiver.

DVAP's have the advantage of being able to support more than just the one user. They operate as a hotspot and provide a way for many users to get on the air if they are within range. This provides coverage or access where a D-STAR repeater doesn't exist. The DVAP owner can lockout any user apart from himself as well, so there some built in security or piece of mind if you are using and paying for the internet connection especially via a cellular network.

Both the DV Dongle and the DVAP work readily via free WiFi hotspots such as those provided by restaurants, public libraries and airports to name a few. Like most VOIP type systems they are very economical with their bandwidth and do consume huge amounts of data.

Two examples show the versatility of these devices, one a user on a ship at sea uses his DV Dongle and laptop, via WiFi on the ship, to the ships satellite connection to get to the internet and then to his preferred repeater to stay in touch. The second was where a another user, using a DVAP in his vehicle, (using his mobile D-STAR transceiver as well) to connect his netbook, which in turn connects to the internet via his iPhone, and then out to the local repeater some 160 km away. So you are really never out of a touch of a traditional repeater just because you are outside its coverage area. Although perhaps none of these examples are new (EchoLink offers a similar solution) the fact that for little cost it makes them a great addition for any amateur wishing to stay in touch while on the road or holiday world wide.

## Software

Robin Cutshaw AA4RC is the developer for both the DV Dongle and DVAP hardware. As part of this development he provides the software or DV Tools that goes with his hardware.

Software for these two devices is continuously under development and new versions are regularly released from a number of developers independent of Robin.

Software sources and the reflectors they support:-

|  | D-Star Repeaters | Reflectors (REFxxx) | Xreflectors (XRFxxx) | DCS Reflectors (DCSxxx) |
|--|------------------|---------------------|----------------------|-------------------------|
| <b>DVTools</b><br>Robin Cutshaw<br>(AA4RC)                 | x                | x                   |                      |                         |
| <b>WinDV</b><br>Fred N. Van Kempen<br>(PA4YBR)             | x                | x                   | x                    | x                       |
| <b>PCRepeater Controller</b><br>Jonathan Naylor<br>(G4KLX) |                  |                     | x                    | x                       |

Both of the following software solutions require hardware of some description to work, whether that is a device from Robin Cutshaw or another like device.

### **WinDV** - Fred N. Van Kempen (PA4YBR)

**DV Node** (also known as WinDV, as it currently exists for Windows only) is a **next-generation implementation of a "D-STAR Hotspot"** application.

It supports both the "**Node Adapter**" series of boards as well as the "**DVAP**" and "**DV Dongle**" series of USB devices. So you can use either of Robin's hardware solutions with Fred's software to gain access to other repeaters and reflectors outside the normal offerings.

It can connect to reflectors and gateways using **DPlus, DExtra or DCS**. It can do **D-STAR Callsign Routing** through the **ircDDB network**. Additionally reporting of GPS positions of stations are handled through the built-in APRS-IS interface. Various data-handling options are now available through the D-RATS interface module.

This software can be found at [http://www.dutch-star.eu/dv\\_node/](http://www.dutch-star.eu/dv_node/)

You must log-in before you can download the WinDV software.

### **PCRepeaterController** - Jonathan Naylor (G4KLX)

The D-Star repeater exists in four flavours:

1. Works with a sound card to modulate and demodulate the D-Star GMSK data,
2. Works with D-Star GMSK Modems using either Satoshi (JK1ZRW) or Dutch\*Star firmware from Fred N. Van Kempen (PA4YBR).
3. Uses the DVAP.
4. Uses the DV-RPTR DSP modem.

A special repeater has been created to combine more than one D-Star transmitter and receiver together to allow for diversity operation and/or increase the coverage area.

This software can be found at <http://groups.yahoo.com/group/pcrepeatercontroller/>

**You must be a member of the Yahoo group before you can download the PC Repeater Controller software.**

### **Gateway Registration (D-STAR)**

To 'transmit' or to pass audio back to the originating system using most, if not all of the above hardware/software solutions require that the user be registered on the D-STAR network.

Registration is a somewhat confusing process but is well documented on Robin's web site for either the DV Dongle or the DVAP. Once registered (a two stage process for those registering), there is no need to do it again as you are registered worldwide within hours of the process being completed. Once this system has replicated your registration worldwide you can operate from any country without any issues. Perhaps the only reason to re-register would be if your callsign changed or you decided to permanently move to another country and wish to be registered there.

One important rule is to ensure you only register once, on one Gateway.

The whole registration process should take from a few hours to a few days depending on the System Operators processing your registration.

It is suggested that you register in advance of using any of the above solutions so you are not waiting to have the registration process completed.

## Costs

DV Dongle - USD\$199.95

DVAP - USD\$249.95

WinDV - free download (requires registration via a log on process)

PC Repeater Controller - free download (requires registration via a log on process)

## DV Tool Evaluation September 2012

The following table has been produced to assist the users of the various software solutions, with comparisons across each software application or package. Each has its strengths and weaknesses, so we don't favour one over the other.

| DV Tool Evaluation September 2012 |        |                    |       |     |            |                 |                         |         |          |                  |           |                |     |
|-----------------------------------|--------|--------------------|-------|-----|------------|-----------------|-------------------------|---------|----------|------------------|-----------|----------------|-----|
| Tool                              | Win OS | Additional Drivers | Linux | Mac | Info DPlus | Error Reporting | Simultaneous Module Mon | History | GPS Data | Audio Modulation | Favourite | Text Messaging |     |
| DVTool2 Beta 5                    | Yes    | No                 | Yes   | Yes | Yes        | Yes             | Yes                     | Yes     | Yes      | Yes              | Yes       | Yes            | Yes |
| DVAP Tool 1.03                    | Yes    | No                 | Yes   | Yes | Yes        | No              | No                      | No      | No       | No               | No        | No             | No  |
| WinDV                             | Most   | Yes                | Yes   | No  | No         | No              | No                      | Yes     | Yes      | Yes              | No        | No             |     |
| DCS Client                        | Yes    | No                 | Yes   | No  | No         | No              | N/A                     | No      | No       | No               | No        | No             | No  |
| DExtra Client                     | Yes    | No                 | Yes   | No  | No         | No              | N/A                     | No      | No       | No               | No        | No             | No  |
| DVAP Client                       | Yes    | Yes                | Yes   | No  | No         | No              | No                      | No      | No       | No               | No        | No             | No  |

NOTE: Windows 8 does allow DVAP's to work once a missing DLL file is added to the Windows 8 PC. Other software has yet to be tested.

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## Interview about D-STAR

### Robin Cutshaw AA4RC

At a recent club night we played the video from HamRadioNow Episode 20 featuring an extended one on one interview with Robin Cutshaw AA4RC. This interview covers off the early days of Robin's experience on D-STAR, the development of D-PLUS Gateway software (plus other software developments), DV Dongle and DV Access Point hardware.

The video is not highly technical in nature so will be enjoyable viewing for anyone interested in D-STAR developments and how Robin's involvement has increased the usability and functionality of D-STAR.

Here is the link to YouTube: <http://youtu.be/a1Nqcfp0mqc>

The actual interview starts at about ten minutes and fifty-two seconds (10.52) in to the video, and runs for about another fifty minutes or so. Best option rather than watching it online maybe to download it (about 300 MB) and the watch it at your leisure when it suits you.

I thoroughly recommend watching it.

Mark ZL2UFI

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## Another Useful Web link

Icom D-STAR Gateway Registration

[http://www.youtube.com/watch?v=cPp8DHB9arQ&feature=em-share\\_video\\_user](http://www.youtube.com/watch?v=cPp8DHB9arQ&feature=em-share_video_user)

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