



Hello and Welcome to the 3rd Edition of the newsletter.

Pervious issues of this newsletter are available from <http://zl2vh.org.nz/d-star/newsletter/> or the KiwiD-Star Yahoo group.

[https://groups.yahoo.com/neo/groups/KiwiD-STAR/files/D-Star Newsletters/2015](https://groups.yahoo.com/neo/groups/KiwiD-STAR/files/D-Star%20Newsletters/2015)

Please feel free to send this newsletter to anyone you think has an interest in joining the DV amateur standard.

### **The News from around New Zealand**

#### **Auckland**

Laurie ZL1ICU has updated the newsletter with the following information:

Correct address for ZL1VHD registration is <http://zl1vhd.dstar.org.nz>

Address to contact me is [zl1icu@dstar.org.nz](mailto:zl1icu@dstar.org.nz)

Information can also be found in repeater listing on [dstarusers.org](http://dstarusers.org)

#### **Hamilton and Waikato Region**

Repeater is functioning as expected. Brian ZL1HN CCS7 No. 5301074

Nothing else to report.

#### **Tauranga**

All repeaters are operating as they should.

#### **Te Puke**

Repeater operating as it should.

#### **Napier and Hastings**

Jan ZL2CZE reports that due to time constraints progress on the new repeater has stalled but is still listed as “Under Construction” The ZL2CZE hotspot is being updated to CCS7 and will be testing with other CCS7 ready hotspots over the next few weeks. CCS7 number is 5302015.

Napier hotspot is now using 438.2 MHz. <http://zl2cze.co.nz/dstar-hotspot-in-napier/>

Jan can be connected to using an RPi hotspot or WinDV with this IP. ZL2CZE 202.56.51.140.

#### **Wellington Region**

ZL2VH gateway gets CCS7 updates.

#### **Wellington Hotspots**

ZL2UDF Dashboard is running 59 days + on a Raspberry Pi 2 with VK4TUX image. Hope for an RF update next month with coverage results. Frequency is 144.550 MHz running a Tait tm 8105 series.

ZL2SFM “Motuhara” has been running 32 days + on the new dashboard and running a Raspberry Pi B 512meg version Xfce VK4TUX image.

Issues with the RPi2 hotspot regarding lockups we believe to have been a combination of the known PRi2 SMPS corruptions, dirty PSU, loose radio DC connector and internet disturbance. To prove this an older PiB version running Adrian's Xfce image has been tested over the last month for reliability on the ZL2SFM hotspot. Steve ZL2YD is experimenting with a mobile DV Mega dual band hotspot.

John ZL2TWS is experimenting with Solid Run Humming Board, HardKernel Odroid and Radxa eMMC hotspot computers. DVRPTR-V1, DummyRepeater and DVAP's have been tested. These units have higher performance than the RPi2 demonstrating the range of devices available for ham experimentation on D-Star.

### **Kapiti**

No updates.

### **Nelson**

No updates.

### **Blenheim**

No updates

### **Christchurch**

ZL3CHD C basic Hotspot is back on air.

The Hotspot is operating from a high altitude Cashmere Hills site. Frequency is 144.550 MHz.

### **Invercargill**

We have the following news.

James ZL3FV in Tapanui is now online with a DV Mega/Pi Hotspot.

ZL4DE is in the process of installing a UHF Repeater in the Invercargill City on 434.050MHz.

Daniel also advised the following: I have created a facebook page called ZL DSTAR

<https://www.facebook.com/groups/184445028555391/>

Regards, Daniel Erickson. ZL4DE.

## **HOTSPOTS**

### **Raspberry Pi2 DV Mega QRM**

A deafness problem has been identified with DV Mega (RPi Radio) boards mounted on top of the Raspberry Pi computers. Compared with the US DVAP the range was extremely disappointing. Test results from others around the world have measured the sensitivity of the DV Mega finding the units can only hear signal down to -47dbm. The US DVAP has sensitivity down to -120dbm i.e. the same as your regular FM transceiver. A massive 73db loss in sensitivity.

I contacted the designer and seller of the DV Mega who told me, Yes I was right and I had found a problem that they already know about. The seller only expects the DV Mega to be used in close range from the portable radio and that it works well for most users. The reason for the poor performance is the lack of an input RF filter between the antenna and the receiver.

This reduced the cost of the DV mega. "you get what you paid for" I do know that the US DVAP is more than twice the cost of the DV Mega and this is one reason. There are others including FCC compliance, connection cable, antenna and a housing.

My own testing with a spectrum analyser showed a lot of noise from the RPi on VHF through the UHF spectrum. There were strong spurious carriers on 437 MHz and around 429 MHz. The least amount of noise proximity to spurious carriers was between 431-435 MHz. The 10mW TX output was very clean.

#### Solution found.

With a 1 meter SMA extension cable and magnetic mount ¼ wave Icom FA-S270C antenna the RX performance increase was very noticeable and better by many db's.

With a 4 pole UHF filter connected in series with the extension antenna the range of the DV Mega was identical to that of the DVAP.

Opening up the DVAP the difference was clear to see. The DVAP has an SMC band pass filter right at the input SMA connector. It is this filter that makes the DVAP so good. The RF chip transceiver components used in the DV Mega and DVAP are identical. Note also that the DVAP is a remote USB connected device and not normally sitting on top of the RPi. DV Mega is great to make a more compact local coverage hotspot in a car but users need to know its limitations.

#### **CCS7 (Call Connection System 7)**

On the 26<sup>th</sup> September the CCS system was shutdown by the Europeans and replaced by the CCS7 system.

Due to the recent high growth of D-Star, CCS had run out of numbers only using 4 digit numbers for individuals and 5 digit numbers for repeaters.

The CCS7 system is a replacement using the DMR numbering system of 7 numbers. My DMR subscriber ID number is 5301011. The D-Star CCS7 equivalent is (530)1011. i.e. The same. The bracketed first three numbers indicate the regional code or MMC. (Mobile Country Code) ZL numbers start with 530. There is a trend to start the four digit code with 1 = North ZL, 2 = mid ZL, 3 = central South ZL and 4 = The deep south. Just like the regular call sign allocation. Early adopters of CCS7 started with 1xxx. Not sure if this will be changed or stay as legacy numbers.

Gateways and repeaters are expected to be enabled by 1st October.

The following list of stations is working so please try them. You can check each hotspot dashboard to verify your connection.

ZL2ARN (530)1082

ZL2SFM (530)1072

ZL2NSA (530)2018

ZL2TWT (530)1073 (Note: Currently on loan to ZL2JOTA and my not be port forwarded)

ZL1HN (530)1074

Simply program your auto DTMF dial memory for each of these numbers or use your DTMF keypad. Numbers need to be entered in quickly or the sequence will not be accepted. Once connected you will be able to call any stations using the RF side of the hotspot or DExtra side of the hotspot if they are using WinDV or compatible ircDDB connection.

## DV Dongle and DVAP devices

Adrian VK4TUX and John ZL2TWS have been busy this month with various small PC's.

The DummyRepeater on an Odroid C1, Humming board and Radxa Rock has been a satisfying project using the new DV3K DV3000 dongle.

DummyRepeater uses a USB (Logitech H390 is recommended) headset and microphone plugged into the USB port long with a DV dongle device.

## Pictured is the Odroid C1 Dummy + DVRPTR-V1 Repeater.

This uses a non Icom FM radio Yaesu FT-7800 or FT-857 and a Blue DV Dongle. Dual links are possible and the Dummy Repeater (using USB headset and microphone) is used to transmit via the non Icom FM radio on the second port. Seen here Repeater 1 is the RF and Repeater 2 is the DV Dongle with headset. I leave it to your imagination what you can do with D-Star connectability.

Date/Time	Year	My	RPT1	RPT2	Message
2015-09-09 18:09:58	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:09:59	CQCQCQ	ZL2TWS J5100	ZL2TWT G	ZL2TWT D	John Lower-Hutt
2015-09-09 18:09:21	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:09:12	CQCQCQ	ZL2TWS J5100	ZL2TWT G	ZL2TWT D	John Lower-Hutt
2015-09-09 18:08:06	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:07:26	CQCQCQ	ZL2TWS J5100	ZL2TWT G	ZL2TWT D	John Lower-Hutt
2015-09-09 18:07:12	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:06:44	CQCQCQ	ZL2TWS PID31	ZL2TWT G	ZL2TWT D	
2015-09-09 18:06:26	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:05:35	CQCQCQ	ZL2TWS PID31	ZL2TWT G	ZL2TWT D	Kia Ora D-Star users
2015-09-09 18:05:32	CQCQCQ	ZL2TWS PID31	ZL2TWT G	ZL2TWT D	
2015-09-09 18:04:21	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:03:53	CQCQCQ	ZL2TWS J5100	ZL2TWT G	ZL2TWT D	John Lower-Hutt
2015-09-09 18:03:27	CQCQCQ	ZL1HN J0VAP	ZL2TWT G	ZL2TWT D	BRIAN 73 NEW ZEALAND
2015-09-09 18:03:13	CQCQCQ	ZL2TWS PID31	ZL2TWT G	ZL2TWT D	Kia Ora D-Star users

## ircDDB Visibility

For those who want to be visible on the ircDDB “live” list.

<http://www.ircddb.net/live.htm>

Do the following from this URL:

<http://ircddb.net/live-vis.html>

UR:VIS ON and then transmit once.

Then revert the UR:CQCQCQ

Once you transmit via an ircDDB enabled gateway using RF your call sign will be seen to be live on the dashboard and also listed on the ircDDB “last heard” list on the local dashboard.

## JOTA / JOTI 2015

ZL2JOTA and ZL3JOTA are expected to be on air this year **16th, 17th and 18th October.**

ZL2VH C and ZL2VH B will have activity from ZL2JOTA and the new Christchurch hot spot we hope will support ZL3JOTA. REF033A is allocated for JOTA use but many of the usual reflectors such as REF001C, REF030C with new DCS including DCS005B (UK) and DCS028B (Australia) will carry traffic.

**ZL D-Star Net:** We are looking for a net controller so if you feel you can run a net and use it to practice for an AREC exercise please contact me for more information. Dplus ZL2VH C could be the first place to start the NET being an easy to connect to gateway. XRF063 C is an alternative.

### **How to contribute to this newsletter**

The newsletter is published in the first week of each month.

Send any articles and pictures sized no larger than 200kbs to one of the editors listed below.

The editor will acknowledge that the information has been received and will be distributed to the chief editor for compilation. The close off date is the last day of each month.

The following is a list of editors and the local contact people to send articles for the newsletter.

The newsletter is compiled from input given to these editors.

Auckland is Laurie ZL1ICU ([zl1icu@dstar.org.nz](mailto:zl1icu@dstar.org.nz))

Hamilton is Brian ZL1HN ([zl1hn@xtra.co.nz](mailto:zl1hn@xtra.co.nz))

Tauranga is Kevin ZL1KRH ([zl1krh@ihug.co.nz](mailto:zl1krh@ihug.co.nz))

Hawke's Bay region is Jan ZL2CZE ([jan.s@eastek.co.nz](mailto:jan.s@eastek.co.nz))

Wellington region is John ZL2TWS ([zl2tws@clear.net.nz](mailto:zl2tws@clear.net.nz))

Christchurch is Mike Barnes ZL3TMB ([mike@barnes.net.nz](mailto:mike@barnes.net.nz))

Invercargill and ZL4 is Daniel ZL4DE ([zl4de@icloud.com](mailto:zl4de@icloud.com))

Each month useful links will be placed at the end of the newsletter so you always know where to go quickly to find them.

### **Gateways with dashboards:**

**Auckland.** <https://zl1vhd.dstar.org.nz/> (Dplus)

**Auckland.** <https://zl1hk.dyndns.org> (Dplus)

**Hamilton.** <http://zl1cct.d-star.nz> (ircDDB)

**Tauranga.** <http://johnkc.dyndns.tv:81> (ircDDB)

**Te Puke.** <https://zl1ibd.dstar.org.nz> (Dplus)

**Wellington.** <http://123.255.47.67> (dual system dashboard with Dplus below the ircDDB)

**New Zealand Reflector XRF063.** <http://162.248.141.148>

### **Other sites for reference information:**

**ZL2VH Web site.** <http://zl2vh.org.nz/d-star/>

**KiwiD-Star group.** <https://groups.yahoo.com/neo/groups/KiwiD-STAR/info>

**VK4TUX Host Lookup.** <http://vk4tux.duckdns.org/lookup.html>

**VK4TUX development and Quadnet StarNet bridge.** <http://vk4tux.duckdns.org/>

**Current up to date host files:**

[http://vk4tux.duckdns.org/OD/DPlus\\_Hosts.txt](http://vk4tux.duckdns.org/OD/DPlus_Hosts.txt)

[http://vk4tux.duckdns.org/OD/DExtra\\_Hosts.txt](http://vk4tux.duckdns.org/OD/DExtra_Hosts.txt)

To connect to a gateway that is not G2 Dplus the WinDV node for windows software is required or a Hotspot running G4KLX gateway software. Down load V1.5.8-3 that works for both DV Dongles and ThumbDV drives. Once installed additions to the dxhosts.txt and dphosts.txt updates are required. These are found in the C:\Program Files (x86)\MicroWalt Corporation\WinDV directory. You need to have administrator privileges to edit this file in both WinDV and G4KLX. G4KLX files are Dplus\_Hosts.txt and DExtra\_Hosts.txt found in /usr/local/etc folder. DummyRepeater on a Raspberry Pi2 works all gateway systems available.

**Examples of these hotspots that you can view and connect to this month:**

ZL2SFM (<http://zl2sfm.ddns.net:82>)

ZL2ARN (<http://zl2arn.dyndns.org:82>)

ZL2UDF (<http://202.154.159.177:82>)

ZL2NSA (<http://zl2nsa.ddns.net:82>)

**Next edition content**

Details about the New Zealand reflector XRF063, StarNet and how to use these features will be in the November issue, all going well. Letting the CCS7 upgrade be completed and allowing operators to experiment with DTMF connect-ability first.

Any one wanting a subject explained in more detail please email the editors.

73 and good DV.

Chief editor John ZL2TWS. Proof reader Brian ZL1HN