Newsletter August 2015 - 1st Edition

Hello and Welcome to the 1st Edition of the newsletter.
We hope that this will become a regular newsletter where many can contribute.
You become a member of the "D-Star Newsletter"

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 still to be added.
Hamilton is Brian ZL1HN (zl1hn@xtra.co.nz)
Tauranga is Kevin ZL1KRH (zl1krh@ihug.co.nz)
Hawke's Bay region is Jan ZL2CZE (jan.s@eastek.co.nz)
Wellington region is John ZL2TWS (zl2tws@clear.net.nz)
Christchurch is Mike Barnes ZL3TMB (mike@barnes.net.nz)
Invercargill and ZL4 is Daniel ZL4DE (zl4de@icloud.com)

As web sites and new information become available existing D-Star users can lift their level of knowledge and new users can get information they need to enter this exciting aspect of Ham Radio. Please feel free to send this newsletter to anyone you think has an interest in joining the DV amateur standard.

The story so far from around New Zealand

Each region of New Zealand will have its story to tell. Read below as we head down the country. Let's hear what others are running over the next few newsletters so we can spread the word and share information.

Hamilton and Waikato Region

The first Home built repeater / D-Star repeater in NZ

I am Brian Farrell – ZL1HN. I have been interested in Ham Radio from an early age, so when Ham Radio took the next step to digital Ham Radio I was keen to get on board. I started on digital with an Icom 2820H radio and found that I could only make simplex contacts to Auckland from certain high altitude locations. I wanted to be able to sit in my chair at my QTH, so something had to happen. Then the Auckland gateway was installed which allowed me to make the odd overseas contact from again a high altitude location. I then started investigating a commercial Icom repeater but the cost was in the $15K region so that was ruled out and I had to get inventive. My next step was to purchase a DVAP from America which had just become available. After getting it going I then started experimenting with my second 2820 by cross banding the 2820 in the VFO mode FM narrow. I could then receive the DVAP on 2 metres and retransmit it on UHF to the D-Star radio in the car and that allowed me to have coverage all over Hamilton City and be able to work the world. I purchased a couple of second hand Tait T8105 RT's and with the generosity of a VK Ham, he sent me a circuit board which I built up as a GMSK modem. That allowed me to have a repeater that received and transmitted D-Star, DMR and FM by utilising CTCSS tone of 123 Hz. This allowed the FM user not to hear the digital noise coming through their speaker. When the CTCSS

tone was present an FM signal would come through the speaker clearly. This repeater was then installed on the top of a high rise building in Hamilton.
At this point some other local Ham radio users became interested and purchased radios and got on D-Star. At this stage the support for D-Star gained momentum and the Raglan Amateur Radio Club Branch 83 became involved in the project. Denis ZL2DHG, Barry ZLIBWL and Murray ZL1MGA made a donation which helped greatly to get it running on the Hamilton Site. I would also like to thank Dave ZL1AT for his labour input into the project. Many other home built repeaters and hot spots in NZ have benefited from knowledge I have shared to start up their D-Star projects without the expense of a commercial repeater.

Regards Brian ZL1HN

Editor note: Brian operates the ZL1CCT C gateway CCS 34243 zl1cct.d-star.nz. Brian has been running the repeaters since 2010 and was on air with a DVAP and Tait T8105 hotspot earlier than this.

Tauranga

We have approximately sixteen D-Star operators and we have three D-Star repeaters in the greater Tauranga area.

The Tauranga Branch 39 owns and operates two D-Star ZL1TPD repeaters:

- Tauranga 680 node C (146.800 – shift) is located on the Minden hill which is west of Te Puna.
- Papamoa 3025 node B (433.025 + shift) is located on the top of the Papamoa Hills Cultural Heritage Regional Park.

The system has been primarily set up by John ZL1BVA with support of others which includes Andrew ZL1TAP and Neill ZL1TAJ.

Neill ZL1TAJ who cares for both repeaters has carried out a mod to allow both the 680 and 3025 repeaters to pass both FM and DV.

Thanks to Adrian VK4TUX for his assistance in getting our ZL1TPD Dashboard up and running.

ZL1TPD Equipment:
HP 7700 PC with a 60GB Solid State drive running Ubuntu Linux 12.04 LTS with Jonathan Naylor G4KLX ircDDBGateway and DVRPTR modem repeater software package at John's ZL1BVA QTH.
The linking to the repeaters is via two Friendcom Data Radios, one UHF (Papamoa) and one VHF (Minden).

Te Puke

Te Puke Branch 53 owns and operates one Icom D-Star repeater:

- Te Puke 5725 (145.725 - shift) is located at the back of Te Puke near Shaw Road.

For Branch 39 - Kevin ZL1KRH

Napier
Jan ZL2CZE operates a local 437.250 MHz repeater see here on his web site.
http://zl2cze.co.nz/sample-page/
CCS connect using DTMF 96302.
Members of ZL2AS are currently working on a repeater for Hawke's Bay Area and it should be ready to deploy in couple of weeks time. It will be based on G4KLX repeater software package running two commercial radios and Internet gateway will be also available.
Call sign should be ZL2HBD (Hawke's Bay Digital) but at this time it is unofficial and still pending. We wish the Hawke's bay area all the best with their intended project.

Editor note: There are many around ZL running the same type of system and can help.

Wellington Region
In Wellington the first operator to get on D-Star was Mark ZL2UFI with a DV Dongle.
Mark reported that this was a big step forward for Ham Radio and not long after his initial experimentation asked the simple question "how did we let this technology pass us by"
As it worked out, we didn't!

Lucky for Wellington region, Branch 63 Upper Hutt was offered to take over the ICOM RP-4000 UHF repeater from Masterton Branch.
Masterton had been unsuccessful getting D-Star adopted over the initial trial period.

Branch 63 was not going to let this technology pass its membership by and brought D-Star to the discussion table. Gordon ZL2ARN built and donated the first G2 Dplus server that Simon ZL2BRG hosted. Simon continues to maintain the server and has recently facilitated the first ZL dual ircDDB / Dplus server PC. Simon has worked along side Adrian VK4TUX to achieve this. Adrian not only built the dual ircDDB / Dplus but also built the first ZL Reflector: http://162.248.141.148

Simon ZL2BRG and Mark ZL2UFI worked together to develop a way to remote D-Star to Mt. Climie using 5GHz WiFi. Read how this was done here:
http://zl2vh.org.nz/assets/pdf/other/climie-wifi-link-d-star-gateway.pdf

A small group purchased radios and the club voted to replace the analogue FM repeater at Mt. Climie with the UHF RP-4000. The RP-4000 first went live 21st June 2011 with the VHF RP-2000 repeater following on 6th August 2011.
The power supply unit is an Innovative Energies SC-250C model and the 6dB gain antenna is a SkyMast SM-4 on each repeater.
For information about the Mt Climie installation see the New Zealand Yahoo KiwiD-Star group https://groups.yahoo.com/neo/groups/KiwiD-STAR/info or http://zl2vh.org.nz/d-star/

Problems were experienced with QRM at our co-share site regarding the VHF FM repeaters and the D-Star RP-2000 repeater.
John ZL2TWS requested professional advice from Duplexers.eu in Finland. Along with help from experts in the field and a commercial duplexer tuning facility the old Wacom WP-639 duplexer and additional 8 inch diameter cavity filters were tuned to totally solve the problems.
More information can be found here: http://zl2vh.org.nz/assets/pdf/other/5425-overload-solution.pdf

And a block diagram here: http://zl2vh.org.nz/assets/image/repeater/vhf-block-diagram.png
For info about the UHF RP-4000 installation go here:
http://zl2vh.org.nz/assets/image/repeater/860-block-diagram.jpg
For clubs wanting to know more about the "do's and don'ts" of setting up a D-Star repeater go here: http://zl2vh.org.nz/assets/pdf/other/setting-up-dv-repeater.pdf

Both the D-Star and Repeaters pages at ZL2VH web site have many hours of interesting reading.
http://zl2vh.org.nz/repeaters/all/

Kapiti

ZL2KB 145.350 MHz gateway repeater is on air at Mt. Field. RF coverage is very good. There is no dashboard and when linking is made to ZL2KB you are connecting blind. Users should try the "I" or "U" command before linking via RF to ensure you get a clear module.
Remote users can connect using the IP address: 131.203.251.134 but you might find a live Dplus link established already. Kapiti advises they are working on a dashboard so we hope to be able to report the URL eventually.

Gordon ZL2ARN writes:

D-Star

Understanding the "To" and "From" fields

After you have entered your call sign into your new radio, the next most important step is to understand the functionality of the "TO" and "FROM" fields. These two fields determine exactly how your radio will communicate. They are similar to a letter in that there is a from me address, and a to you address.

1. **The "FROM" field.**

This field is where you set your home or local repeater (hot spot). When you access the overseas D-Star network, you do this via your local repeater. So the D-Star network knows where you are coming **FROM**.
You will discover programmed into your radio a very large number of repeaters from around the World. You may wonder why this is so if you are only going to use your local repeater. Well these radios are sold World wide and so must cater for Amateurs in all Countries.
Then you will find that there is only one or two ZL repeaters programmed in your radio !!
So now you will possibly have an interesting task programming and adding your local repeater into your radio.

2. **The "TO" field**

After you have set your local repeater into the "FROM" field, it is time to understand the various functions of the "TO" field.
This field is the "work horse" of your radio and does many things for you.
This field sends commands to your local repeater "Gateway".
2.1 It tells your gateway which remote repeater/reflector or hotspot you wish to connect to.
2.2 It allows you to disconnect with the "U" command from the distant repeater that your Gateway is linked to.
2.3 It allows you to send the "I" command to your local Gateway and it will advise you of its linked status, if any.

2.4 It allows you to send the “E” command to your local gateway and it will play back to you your last voice message.
2.5 After you have linked to your remote destination, return the “TO” field to the Reflector/CQCQCQ command. This is the position where you can now talk through your local gateway to the distant repeater.
Note here however, the ID-5100A allows you to do a direct link with your chosen remote repeater by leaving the remote repeater in the “TO” field.

Editor note: Thanks Gordon for your input to the newsletter. We look forward to hearing of ways to use the radios not thought about previously.

Nelson
Three radios used for local contacts only. No repeater or hotspot yet.

Blenheim
At least three users who access Mt. Climie across Cook Strait.

Christchurch
One hotspot located on the Cashmere Hills is on air with the call sign ZL3TJH. The hotspot is a RPiB + DVRPTR-V1 modem driving a Tait T8105 series transceiver. Users in this area known to date are Rene ZL3DG, Dave ZL3SMD, Gareth ZL3VP and Mike ZL3TMB We hope as this news letter circulates we will receive more information. We understand that the hotspot does not have port forwarding so remote users cannot connect to it yet.

Invercargill
Alex ZL4ARG President Branch 37 reports that ZL4GQ will be up soon on 144.550Mhz with a DVRPTR-V1, RPiB+ and a Tait T8105 25 watt radio. Dan ZL4DE advises 3 operators are active. Dan has a DV Mega "ZL4DE B" going was quite simple to setup. He did find a command missing from the Western DStar image. Once complete away she went running on 432.750MHz. Radios I use are ICOM 5100, 7100, 51.

HOTSPOTS
Many hotspots have been setup around the country and as this newsletter circulates we hope to receive feedback where they are. Many are using exclusively the VK4TUX image. We can all help operators to set these up with dashboards and port forwarding so that we can all enjoy connecting to them.
Adrian VK4TUX has been offering a donation based service to setup his image and dashboard to allow connections to DVAP, DV Dongle, Dummy Repeater, DV Mega and DVRPTR-V1 modems to use with 9600bps ready FM rigs.
The software image uses the G4KLX repeater and ircDDB gateway packages from Jonathan G4KLX in the UK.

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)

Gateways and Hotspots featuring a dashboard are the most useful and have the most traffic. Why?

If DVAP, DV Dongle, DV Mega and similar internet based stations are unable to find a gateway or hotspot IP address then simply no-one knows they exist. This means no connections with the end result that RF users get exclusive repeater gateway use. Hotspots will typically be one way outbound connections without incoming calls.

This will be clear to you by looking at the following dashboards:

Auckland. http://dashboard.dstar.org.au/zl1vhd.html (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

To connect to a gateway that is not G2 Dplus the WinDV node for windows software is required. Down load V1.5.8-3 that works for both DV Dongles and ThumbDV drives. Once installed a replacement dxhosts.txt file must be added replacing the existing file. This has the current ZL list of gateways and hotspots that you can connect to. It is included with the newsletter.

What is the difference between ircDDB and Dplus?

ircDDB is http://ircddb.net/ and description here:
http://db0fhn.efi.fh-nuernberg.de/doku.php?id=projects:dstar:ircddb

An advanced routing network that developed out of Europe. It features DTMF gateway and hot spot access. Call sign routing at a faster speed than the ICOM G2 US-Trust based system. The G2 Dplus is a closed system closely control by US based groups. ircDDB is an open source system with many methods and devices used that connect to the European and US based system.

Some DV Dongle devices can only use the supplied software with Dplus gateways and require alternative software to use on ircDDB systems. This also affects Dplus only gateways like ZL1VHD, ZL1ZLD and ZL1IBD that can be connected to by ircDDB gateways but cannot connect to ircDDB gateways. For example ZL1ZLD cannot connect to ZL1CCT but ZL1CCT can connect to ZL1ZLD. If a connection is established by the ircDDB gateway a QSO can begin.

ZL2VH can connect to any system and can receive incoming calls from all devices. ZL2VH is at the time of writing the second unique gateway in the world of this type. ZL2VH is at the leading edge of the ‘all in one” gateway system. Special thanks to Adrian VK4TUX and Simon ZL2BRG.

DV Dongle and DVAP devices

This subject will be dealt with in more detail next issue as it is developing rapidly. We hope to be able to list the legacy and latest devices available to be "hamed"
These devices are what makes D-Star what it is today. The ability to use home brew is at the heart of ham radio with DV no exception.

Next edition content

Over the next few months we hope to have input from Auckland and Dunedin once the word gets out and others want to contribute. However, Laurie ZL1ICU is running an ICOM D- Star Repeater on Klondyke Branch 66 VHF group site and he can be contacted on zl1icu@dstar.org.nz for any enquiries. Details about the New Zealand reflector XRF063, StarNet and how to use it so we can start a net. How to use CCS DTMF and DCS reflector DTMF linking.

XRF063: We are looking for a net controller so if you feel you can run a net and use it like an AREC exercise please contact me for more information.

New DV SDR devices are being released allowing D-Star to DMR cross platform operation.
From what I understand D-Star radios will be able to access the DMR network via appropriate SRD or DV Mega – DVRPTR type interface units.
Real ham radio that you can learn about and do yourself.

Mark ZL2UFI was at "HamRadio" convention at Friedricshafen this year and has sent me pictures of the new Non ICOM SDR DV radio for all DV systems currently available for amateur radio.
http://www.hamradio-friedrichshafen.de/ham-en/

I am waiting for an update advising when these can be purchased by the end of the year. NW digital also have their version due for release in Q4 so we wait for more info on the UDRX-440. Both Mark ZL2UFI and John ZL2TWS have pre-orders for the units. http://nwdigitalradio.com/

D-Star QSO Party

This annual event is very popular with Kiwi's.
Last year Tom ZL4HD from Bluff won an ID-51 hand held.
Its lots of fun and good operating practice.
Check this web site for details: http://www.icom.co.jp/world/dqp/

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 at the top of this newsletter. 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 final words that possibly sums up why we choose D-Star as the DV mode of choice

"I'd rather live in a world full of eccentric thinkers than one full of unthinking consumers"

73 and good DV.
Chief editor John ZL2TWS
Proof reader Brian ZL1HN