



# QST63

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

## June 2012

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### Presidents Report

Hi everyone...

Well is good to back in Upper Hutt after my travels away to the USA/Canada and of course Dayton for the Dayton Hamvention ([www.hamvention.org](http://www.hamvention.org)). Coming back to the cooler 10C from the very warm 30C plus days is a bit of a struggle but there you go!

So only back for the week before I wing my way off to NZART Conference in Nelson over Queens Birthday Weekend (1-4 June). I think by the time I get into mid-June all my travel will be over as I am sure that living out of a suit case has lost its appeal!

This month (21st June) will be the first anniversary of the turning on of D-Star on Climie 860. It is amazing that a year has passed on this project already! Many hours have been put in by Gordon ZLARN, Simon ZL2BRG, Jens ZL2TJT and John ZL2TWS to get the project up and running. Looking back now in my opinion, I think the decision was correct and the knowledge gained as been immeasurable. I wonder how we let this technology pass us by for so long without picking up on it (I'm talking Digital Radio here – not just D-Star). One of the things I found at Dayton was the huge amount of hardware and software that various hams around the world are building, it is simply amazing, and many of it is non-ICOM based. I will comment more about this in next month's newsletter when I have the time to report on Dayton, what I saw and the like. I think watch this space over the next twelve months as many new products come to market, including many DIY projects.

Finally, thank to all those that expressed condolences over the passing of my mother – it was a sad time for all members of my family, but it came perhaps at an opportune time as I was then able to take my Dad on my trip to the USA – even though this was planned prior to my mother passing on. He had a good time and I think took a lot of stress and worries away from him. Again thanks for the thoughts.

There will be a report in the next newsletter on the outcomes (remits) of the NZART Conference, as well as how it all went.

Well that's the news from me... 73's and good DX....

Mark ZL2UFI,  
President

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## Repeater Update

A flurry of Climie site activity before winter hits.

On the First visit ZL2TNG and ZL2TWS reinstated the 6m beacon. On the second visit John and Gerry ZL2TDN Swapped 860 DV duplexer's and installed permanent stainless steel antenna mount for the 5GHz Wi-Fi link. See John's report below.



Many Thanks to John ZL2TWS, Neil ZL2TNG and Gerry ZL2TDN for their efforts.

### 6m Beacon

Neil ZL2TNG kindly built a replacement vertical antenna for the 6m beacon and on the first of the two recent working bee's Neil and John ZL2TWS reinstated the Beacon and it is now back on air. Reception reports appreciated from near and far !.

### 1292 23cm

Nothing to report. The repeater just works. However it is planned to upgrade the feeder to the antenna during the next site visit

As a note to anybody interested in trying 1292 FM if you ask nicely John ZL2TWS has a FT104 23cm handie available for short term loan to club members.

### **860 DStar 70cm**

John ZL2TWS has temporarily swapped out 860's 8 cavity duplexer with the spare 4 cavity unit. This was done to check the 8 cavity duplexer's alignment. Subsequently 860's receiver was shown to be suffering from de-sensing – due to the 4 cavity duplexer having a wider response. A subsequent site visit is planned to re-instate the 8 cavity unit once the tuning has been checked.

### **5425 2m Repeater**

Nothing to report.

### **10Ghz Beacon**

Waiting for hardware delivery from Simon ZL4PLM.

### **Loan Dstar Radio's**

The Club has two IC2820's Dstar Dual Band Mobile radio's and at least one of these is available to loan to club members who want to try out Dstar. Contact Mark ZL2UFI for details.

### **730 2m FM Repeater**

Still suffering from pager interference – from a pager transmitter at Normandale. Kordia have been informed.

Simon ZL2BRG  
Repeater Trustee

### **John ZL2TWS Work Reports**

Guys

Pictures attached of the new Stainless steel pipe clamp mount fitted today on Climie WiFi. It will not blow around the pipe now. Simon reports an increase of signal at the gateway. The down tilt appears to have helped. The spare dipole was removed and was full of water.

It had been installed upside down with the drain hole at the top.

Who are these people who install stuff like this?

Total loss I expect. No use having it and using it in that condition.

Gerry ZL2TDN has a genuine NEW unused Deltec VHF dipole to lend or donate to us for the purpose of fitting at the 730 pole for test purposes.

Coax also removed and the conduit pipe now covers the Cat5 cable all the way to the repeater hut.

POR15 anti rust paint was applied to the rusty section of the pipe seen in this photo and at the flange mount base.

Complete pole to be removed later along with guy wires.

We re-tensioned the guys, these stretch in time with heavy weather and will always be a problem with metal to metal joints.

At least the dipole is off the top and will reduce the wind loading.

860 duplexer removed for checking and tuning.

Temporary duplexer has reduced the 860 RX performance by almost 10dB.

This is I suspect due to the broad response of the duplexer compared with the 8 cavity design.

I will tune and return the 8 cavity ASAP.

73 and good DV, John ZL2TWS

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## DV Dongle

Following on from my comment in the Presidents report about D-Star, at a recent club meeting it was decided that to encourage more members from the club to experience D-Star, the club has invested in a DV Dongle.



The DV Dongle allows members to receive and transmit on any D-Star internet connected Gateway (Repeaters) or Reflectors world-wide.

Club members will need to be registered on the ZL2VH Gateway prior to using the DV Dongle in order to transmit from the dongle (this link explains how to register: [D-Star Registration: How to page](#) and this link to the ZL2VH Gateway: <https://123.255.47.67/Dstar.do> ).

Or check out the clubs D-Star Links page for further reading: <http://www.zl2vh.org.nz/dstarlinks.html>

Inside the DV Dongle box is a USB Pen Drive with the USB Driver software, and the DV Dongle software, as well as a short readme file.

The DV Dongle web site for additional reading is: [http://dvdongle.com/DV\\_Dongle/Home.html](http://dvdongle.com/DV_Dongle/Home.html)

### Equipment Loan Requirements:

Please complete the loan equipment book if taking the DV Dongle for a test drive.

As for loan time I would suggest two weeks initially and then if no one wants a turn then another two weeks (total four weeks maximum).

After the two or four weeks please return the DV Dongle to the club so that other users can have a turn.

### Issues to be reported:

Please report any issues with this or any equipment and don't simply return it in a damaged state or non-working state, and leave it for someone else to work out that the equipment is not operating to spec.

This is expensive equipment so please treat it with respect.



Enjoy.....  
Mark ZL2UFI

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# ICOM ID-880H: External GPS Antenna

Author: Mark S Gooding ZL2UFI (May 2012)

One of the many options available when operating a D-Star transceiver is to add in APRS styled information as part of DV (Digital Voice) Mode, known as D-PRS or Digital Position Reporting System. I have been fortunate in that one of the club members loaned me his ICOM IC-2820 VHF/UHF transceiver for an extended period of time. As part of this transceiver you need to purchase the ICOM D-Star UT-123 board to add D-Star capability. As part of installing this board you also get in the box an external GPS antenna that is both supplied power from the transceiver as well as returning GPS positioning back in return.



Figure 1: ICOM IC-2820H



Figure 2: ICOM UT-123 D-Star board and GPS Antenna

As I primarily operate in a mobile environment I decided that the ICOM ID-880H was a better fit for me. I purchased it from ICOM New Zealand as part of the Branch 63 Special offer in 2011. The ICOM ID-880H has the D-Star board already built in at purchase time so it's also a simple solution to add in an external GPS antenna as it is for the IC-2820. After searching the internet I found that the Garmin GPS 18x PC antenna was one that several hams had used with the ID-880H with some success.



Figure 3: ICOM ID-880H



Figure 4: Garmin GPS 18x Antenna

The Garmin 18 antenna comes in various models, the one that I required had a serial DB9 (standard nine pin serial PC styled connector) as well as a cigarette lighter adaptor to supply the required DC to power the GPS antenna. Other versions include USB (ideal for use with laptops); another is just bare wires at the end of a cable so you can roll your own connector. Additional hardware was also required, a nine pin null modem DB9 adaptor (connector) plus the ICOM Data Cable (Part Number: OPC-1529R Serial Data Cable to PC). The null modem is required to cross over some of the pins, much like an Ethernet cross over cable.



Figure 5: Null Modem Adaptor

As I ended up with two female connectors one on each end of the two cables an additional nine pin gender changer was required to complete the connection. Once the cable was completed it was a simple matter to plug one end into the IC-880H's data port, and the GPS cigarette lighter adaptor into the power socket in the car, then place the GPS antenna with a view of the sky on the dashboard of the car.

Various menu changes have to be made to the IC-880H to transmit D-PRS (Digital APRS styled packets) .One of the most important settings is to get the GPS antenna and the transceiver to talk to each other. You need to set the GPS Speed to **4800 baud** not the default of 9600 baud. See below for additional transceiver settings for the GPS to work correctly and thereby report your position as required.

(I use ICOM's (free) ID-880 programming software and OPC-1529R Serial Data Cable to PC to make these menu changes. You can of course do it manually through the front panel of the transceiver). Regardless how you program, under **GPS SETTINGS**.... set the following:

**GPS ON** - checked

**GPS Speed** - 4800 baud (CRITICAL, nominal (default) is wrong)

**Indicator** - checked (displays GPS icon on radio)

**Position Format** - mm.ss (my choice)

**Sentence Format** - RMC & GGA checked (CRITICAL, no other setting)

**TxMode Items** - DVA

**Units** – metric (unless you like feet/mile)

**UTC Offset** - +12:00 (for New Zealand plus 12 hours UTC)

**GPS Alarm** - off (you could turn ON)

**AutoTxTimer** - 30 minutes (you transmit DPRS data with every PTT)

**Unpronto Address** - API880,DSTAR\* (CRITICAL, nominal setting)

**Comment** – Mark ZL2VH-C (you have 39 characters to say whatever you wish....?)

**Data Extension** - OFF

**Symbol** – Car (similar to vehicle choices in APRS; your choice)

**Other symbol** - (blank)

**Time Stamp** - HMS



Figure 6: ICOM ID-880H display showing the GPS top right (indicates the GPS Antenna has a satellite lock). "DV A" appears when GPS transmission or GPS-A transmission is selected in the DV mode.

Track my positioning data (or other club members) on <http://aprs.fi>

**Parts List:**

Garmin 18x PC ( <http://www.triginstruments.co.nz> ) \$132.25.

ICOM Data Cable (OPC-1529R Serial Data Cable to PC) approximately \$75.00

DB-9 Null Modem Cable approximately \$10.00

**Garmin Reference Information:**

The GPS 18x is offered in 3 different cable configurations. All 3 versions of the GPS 18x come complete with non-volatile memory for storage of configuration information, a real-time clock and raw measurement output data for sophisticated customer applications:

- GPS 18x PC — has DB-9 pin serial connector with a 12 V cigarette lighter adapter; can output data in NMEA 0183 format (industry standard) or proprietary Garmin format.
  
- GPS 18x USB — has A-style USB connector, compatible with USB 2.0 and 1.1 full-speed hosts; can output data in Garmin proprietary format only.
  
- GPS 18x LVC — has bare wire for connection to a variety of applications; can output data in NMEA 0183 format (industry standard) or proprietary Garmin format; provides a pulse-per-second logic-level output with a rising edge aligned to within 1 microsecond of UTC time.

The GPS 18x OEM is a high-sensitivity GPS sensor that replaces the GPS 18 OEM.

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## Treasurers Report

The treasurer's report has been amended as requested at the AGM

The changes are

- 1 The donated 2820 transceivers are included on the asset list at a nominal value of \$1 each.
- 2 The WiFi link, previously recorded as an expense, is now an asset.

This has the effect of increasing our surplus, without affecting our cash position.  
Copies of the amended report will be available at the Branch or by request.

This version of the accounts will be forwarded to the Registrar of Incorporated Societies.

### Reminder - subscriptions are now due

73

Gavin Smith ZL2ACT  
Treasurer

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## More DV-Dongle

[DV-Tool 2.0 Beta5](#)

This is the best windows software for direct internet connection using the DV-Dongle. It even includes a level meter for setting up the mike gain. Click on the link to download installer.

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