



QST63

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Upper Hutt 5018

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

ZL2VH Newsletter — December 2014

President's Report

First off, the club sends its condolences to Morrie ZL2ADP on the very sad loss of his wife Dorothy.

The Club provided marshals and radio communication support for the Hutt City Triathlon on Sunday the 23rd. The weather gods were kind to us following a dreadful Saturday. Many thanks to the following for all your help. ZL2SY, ZL2OLY, ZL2ASD, ZL2BRG, ZL2HGR, ZL2TWS, ZL2HF, ZL2UP, ZL2YD, ZL2TED, ZL2ACT, ZL2KEA, ZL2SET, ZL2COL, ZL2TTS, ZL4WT, ZL2UDF, ZL2UX, ZL2UGL, ZL2ASO, ZL4CZ, ZL2TVM, ZL2CHV, ZL2UFI.

Special extra thanks go to Mark ZL2UFI for being the organizer and Brian ZL2CHV.

Hopefully you didn't get too sunburnt, and the day was a good one. The organisers Thomas and Mike pass on their thanks for a job well done!

The caravan's troublesome and costly brakes were recently removed to get its warrant. This is not a issue since its weight is 1200 kg loaded with the generator so is well below the 2000 kg threshold. However, Club Members need to be aware not to load up the caravan to keep it within the weight limitation. Also a more substantial towing vehicle is now required to cope with the extra un-braked towed weight.



73's and good DX

Simon ZL2BRG

A Note From the Treasurer

In recent years the club has enjoyed a good cash flow from outside sources, i.e. AREC exercises, conference, cash contributions from third parties, amateurs who appreciate what we do, and from a deceased estate. This has enabled us to embark on an ambitious maintenance and capital program, mostly centred on our Mt. Climie repeater site.

However, we recently had a couple of items, both maintenance- and capital-related, which depleted our cash reserves and caused me, as Treasurer, to consider our position. Please don't get me wrong, we are not financially embarrassed, but there is no escaping the fact that overall our cash flow is negative.

We arguably have the best repeater site in the Wellington region, and as such we have a responsibility to provide the best service we can. Indeed, many of our members are from outside what could be considered a traditional Upper Hutt catchment, and see their membership as their contribution to maintaining Climie.

So that begs the question: where to from here? On the AREC front, we have an annual exercise with the Triumph Car Club, and we are co-operating Br 18 on the Hutt Valley Marathon, and that's it. I see no likelihood of us re-establishing our relationship with the Kapi-Mana Motorcycle Club, or of us being able to provide the numbers of people they need. I suspect that we could put up a good case to apply for funds from a gaming charity, but I have never applied for these funds before, and was hoping that there is some one from within the club who could assist in putting together an application. My feeling that this is the sort of thing that you only get the occasional shot at, so it's best to get it right first time.

Regards

Gavin ZL2ACT

Br. 63 Treasurer

Repeater Update – December 2014

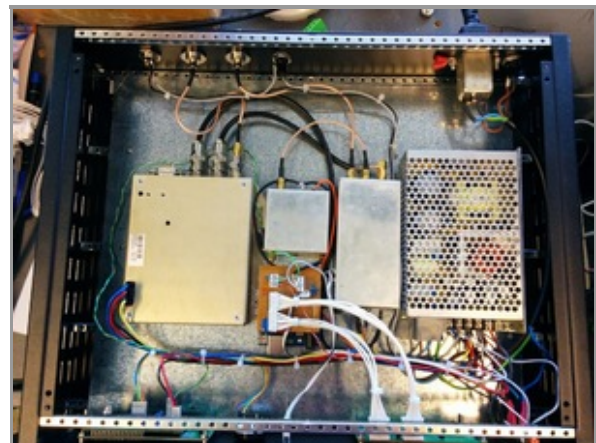
A busy month, and lot of upcoming maintenance work at Climie.

3 cm Beacon

The button is being pushed for the ZL2VHX beacon licence this month.



Beacon Controller Front Panel



Beacon Controller Internals



**3 cm Beacon's 16-Slot
Waveguide Antenna minus Radome**

1292 23 cm Repeater

Upcoming Maintenance work around the 5th of Dec to the North Hut means that the 1292 racks need to be removed. 1292 will be off air for the duration of the work.

860 D-Star Repeater

On Air

5425 D-Star Repeater

On Thursday 13th November, Brian ZL2CHV and John ZL2TWS installed the new refurbished WP-639 duplexer and 8 inch RF8-1V filters to 5425 D-Star.

The WP-639 duplexer is the old 730 duplexer removed after replacement with the new DPRE4-6 duplexer.

After strip-down the finger stock was found to have worn out and the silver plating covered in verdigris. Interconnection coax cables were corroded causing crackle and noise and had to be replaced.

Plungers were re-plated with 10 microns of silver from Zinc & Chrome Petone and new finger stock imported from JAG Electronics in Canada. Modified RG-214 coax was replaced with RG-142 double screened silver plated Teflon coax and all PL-259 / SO-239 / T piece connectors were replaced with quality brand N types.

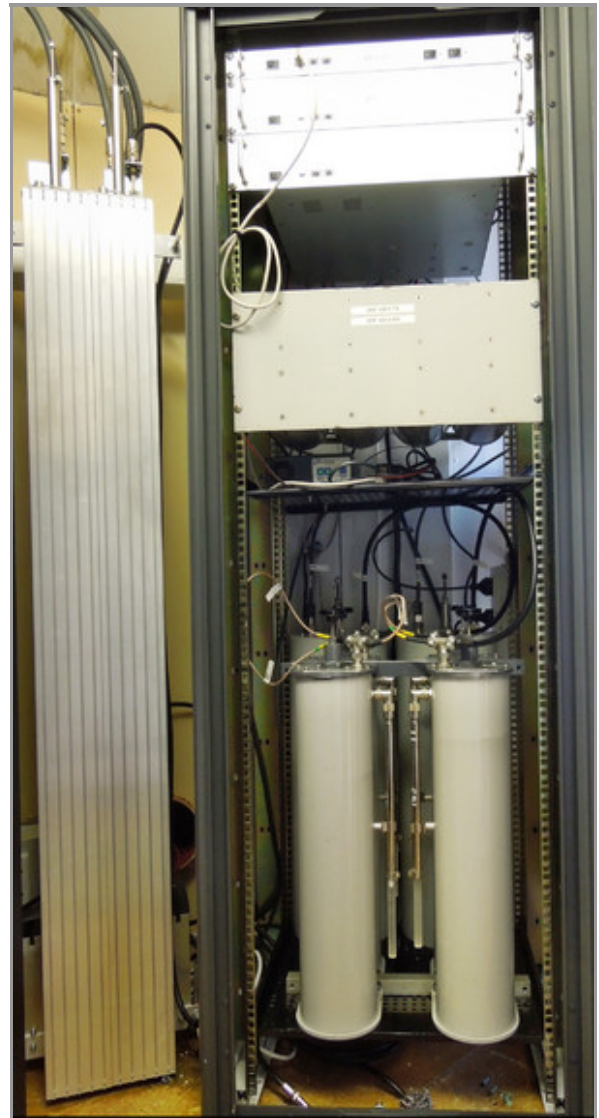
One photo shows the 395 6 m repeater duplexer on the left next to the D-Star cabinet. The tall aluminum unit. Compare the size of the 5425 VHF duplexer against the 395 6 m duplexer.

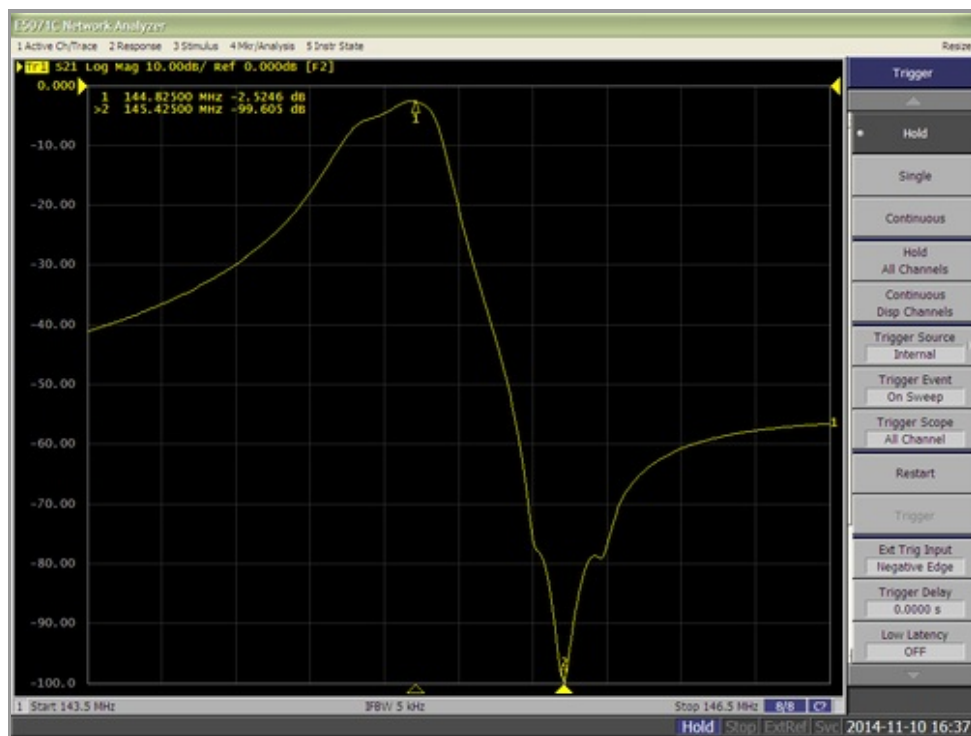
The network analyzer plots show that all overload and QRM problems between D-Star 5425 and 730 should be resolved. Overall rejection is greater than 100 dB. Any noise caused by D-Star 5425 to any other users close to the amateur VHF band should be illuminated. Installing and testing was the only thing left to do to prove the theory. Much of this design work was done by Duplexers.eu who helped Branch 63 find a solution.

On air, weak signal testing tonight has proved without doubt that the new duplexer filter solved all issues 100%.

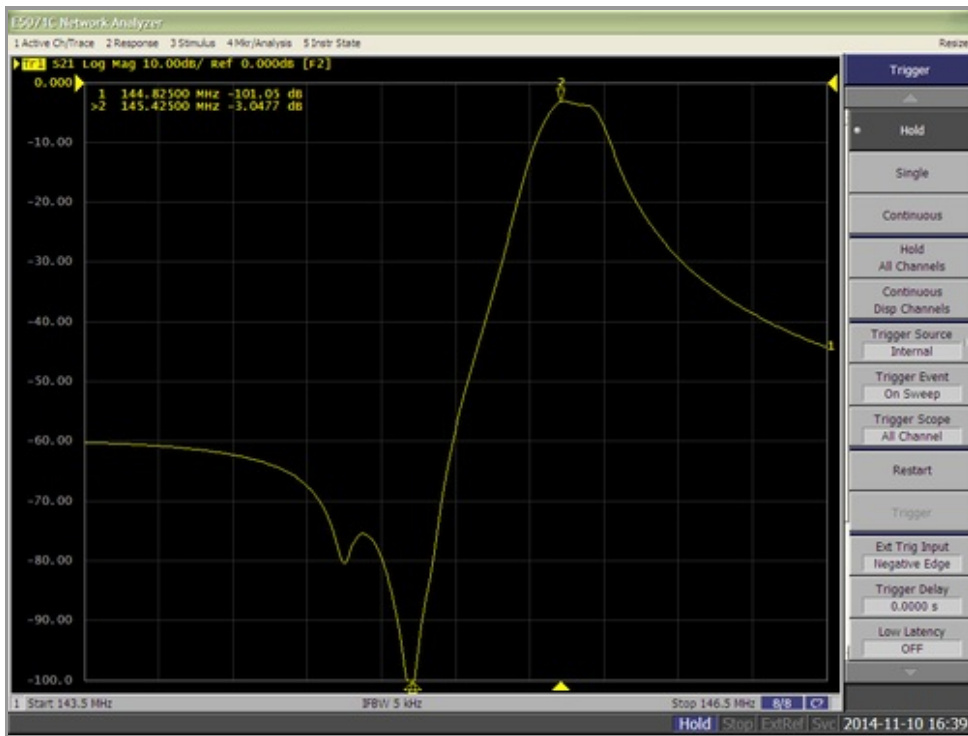
Special thanks to Scott ZL2Kordia for the time taken to tune the completed "hybrid" duplexer and filter set.

People involved with the project: John ZL2TWS, Chris ZL2DX, Simon ZL2BRG, Ken ZL2TKY, Alan from CASA Modular systems, the Wellington D-Star community.

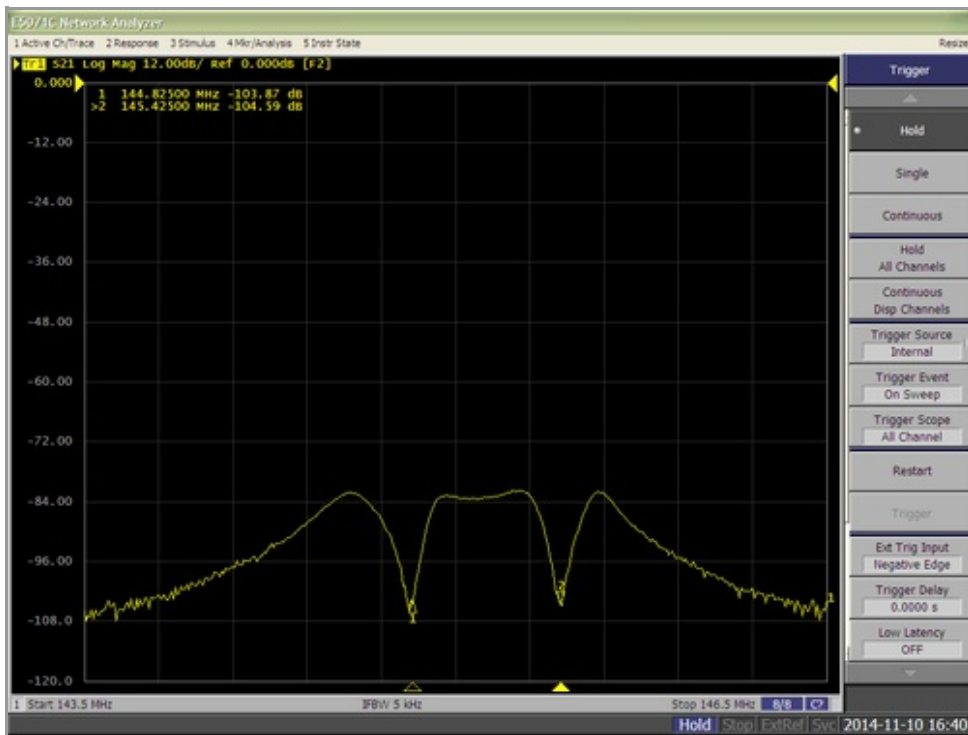




144.825 Pass



145.425 Pass



Isolation

730 2 m FM Repeater

Replacement Dipoles have arrived from SkyMast. Awaiting installation.

53.950 6 m FM Repeater

The 'new' repeater is performing excellently.

D-STAR 101 Sessions

On Saturday 28th November, fifteen members and five non-members joined together for a day learning about D-Star as presented by John ZL2TWS and Mark ZL2UFI.



Mark ZL2UFI leading the Introduction to D-Star 101 Session



Introduction to D-Star 101 Session attendees

DV Name	TX BW kHz	Time Slot 2 Channel	Synchronous Data GPS/DPRS	Text	Call up Linking	Permanent Link	DTMF linking	DVAP Dongle Direct Connect	Distance-limited
D-Star G2 Dplus	6	No	Yes	Yes	Yes	Optional	Not yet	Yes	No
D-Star DCS ircDDB	6	No	Yes	Yes	Yes	Optional	Yes	Yes	No
HF D-Star	6	No	Yes	Yes	?	No	No	No	No
APCO P25 Phase 1	12.5	No	No	Yes	No	Yes	No	No	No
APCO P25 Phase 2	6.25/12.5 Vocoder 2	Yes	No	Yes	No	Yes	No	No	Yes
Alinco DV	6.25	No	No	?	No	No	No	No	?
Yaesu C4FM	12.5	Yes	Dual Channel DV and Data	Yes	Yes	Yes	?	No	Yes
DMR-MARC	12.5	Yes	No	Yes	No	Yes	No	No	Yes
HF Free DV/Codec 2	2	No	No	Yes	No	No	No	No	No

NOTE: Add-on power amplifiers can only be used with D-Star, Free DV, Yaesu Fusion, Alinco DV and P25 Phase 1

Website Updates

A few things worth keeping you all in the loop with have happened with the website over the last month.

Facelift

On small devices such as smartphones and small tablets, it will automatically squash itself down to appear like the version shown below, making it a lot easier to use at such a small size. Since more and more people are using smartphones, it's important to keep up-to-date with the way we're getting the word out there about amateur radio, and this is a big step in that direction.

The design isn't set in stone, so please let me know if something looks off or you think there could be any improvements to be made. Also keep in mind that the website will still display as it normally does on desktops and devices with large screens.

New Articles

Along with consistently providing fresh, new content for [the club website](#), usually in the form of articles, John ZL2TWS has kindly provided me with updated versions of a few articles which have been on the website for a while now. These are quite a good read for all, and especially for those who haven't been part of the club as long as some:

- [23 cm Band Repeater Antenna Specs](#) gives a quick history of the 1292 repeater, and covers the entire antenna design for the coaxial collinears that the repeater uses and has used.
- [Mt Climie 860: A Beginning](#) is an excellent recount of the events surrounding the installation of the original analogue 860 repeater back in 1982, and the events since.

Thanks John!

Web Hosting

It was decided on Friday 28th of November to seek a new web hosting provider for the website as our current arrangement is ending in April 2015. I hope to have the switch fully completed, entirely transparently, sometime over the summer.

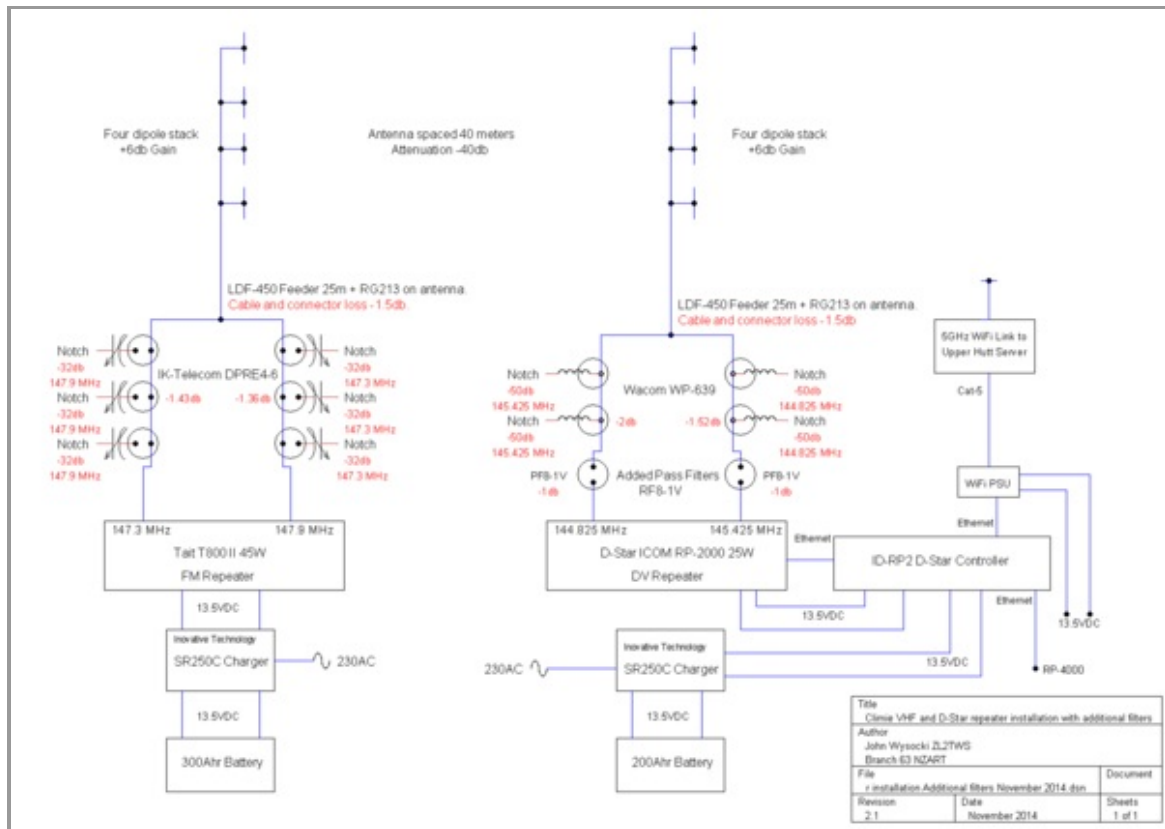
David ZL2DBP, Webmaster



Our website as displayed on a typical smartphone

Repeater Diagram

This month, it's the VHF repeaters that John ZL2TWS has provided a diagram for. Remember that you can always find these images, in full size on our website, on the [Repeaters](#) or [D-Star](#) pages.



VHF Repeaters Block Diagram

NZART Branch 63 Incorporated
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Secretary: Justin ZL2UGL
Treasurer: Gavin ZL2ACT